REVIEWER'S NOTES:

1. THE INTENT OF THE PROJECT IS TO REPLACE THE EXISTING BRIDGE WITH A NEW WIDER BRIDGE THAT ACCOMMODATES SIDEWALKS ON BOTH SIDES OF THE BRIDGE.

2. DESIGN INFORMATION FROM BARRE TOWN STP HES 0169(8) INTERSECTION IMPROVEMENT PROJECT HAS BEEN USED TO ESTABLISH EXISTING CONDITIONS AND INCORPORATED INTO THE PRELIMINARY PLANS. SIDEWALK TYPE, THICKNESS AND SUBBASE UNDER THE ROADWAY MATCHES THE BARRE TOWN STP HES 0169(8) PROJECT.

3. AN 8" I.D. PRE-INSULATED DUCTILE IRON TOWN OWNED WATERLINE WITH HEAT TRACE IS TO BE LOCATED ON THE BRIDGE. THE EXACT LOCATION OF THE WATERLINE WILL BE DETERMINED DURING THE FINAL DESIGN STAGE. VTrans WILL DESIGN AND PROVIDE WATERLINE SUPPORTS ON THE BRIDGE. DESIGN OF THE WATERLINE IS THE RESPONSIBILITY OF THE TOWN.

4. ADDITIONAL RIGHT-OF-WAY WILL BE REQUIRED.

5. WINGWALL 1 FINAL LAYOUT TO BE DETERMINED DURING FINAL DESIGN. COORDINATION WITH THE TOWN REQUIRED TO DETERMINE THE FINAL LOCATION OF THE WATERLINE AND LOCATION BEHIND THE ABUTMENT AND WALL.

6. A SLOPE OF 1.25:1 IS PROPOSED AT WINGWALL 1 WITH STONE FILL TYPE IV TO MINIMIZE IMPACTS TO THE UTILITIES AND STREAM BELOW. STONE FILL TO BE LAID AROUND AND WITHIN EXISTING GRANITE STACKED WALL.

7. FINAL GEOTECHNICAL REPORT TO BE DEVELOPED DURING THE FINAL DESIGN PHASE.

8. PAVEMENT THICKNESS DEVELOPED FROM SIMPLIFIED PAVEMENT DESIGN FOR SMALL PROJECTS.

9. TOTAL EARTH DISTURBANCE FOR THIS PROJECT IS ANTICIPATED TO BE APPROXIMATELY 0.25 ACRES. SINCE IT IS UNDER AN ACRE, THE PROJECT WILL FOLLOW THE NON-JURISDICTIONAL TYPE II VTRANS EPSC PROTOCOL.

10. PRELIMINARY SOIL SAMPLING AND TESTING RESULTS INDICATE THAT SOIL CONTAMINATION IS DUE TO PETROLEUM. SPECIAL PROVISIONS REGARDING SOIL HANDLING, WATER TREATMENT AND DISPOSAL TO BE DEVELOPED DURING FINAL DESIGN.

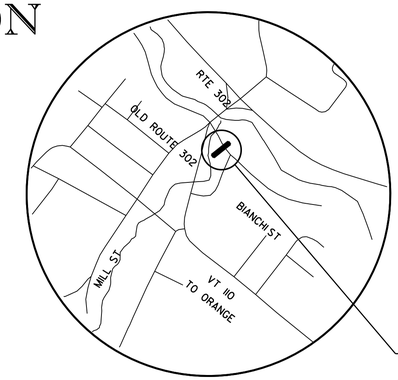
11. CURRENT SUPERSTRUCTURE DESIGN RETAINS THE EXISTING LOW CHORD.

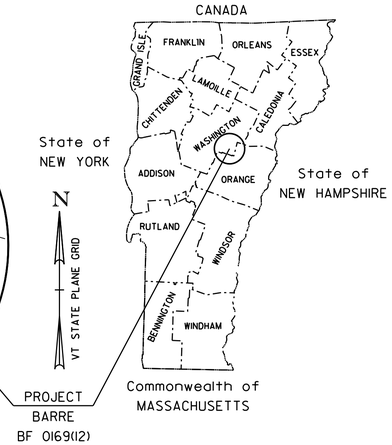
12. THE APPROACH SLAB AT ABUTMENT 2 EXTENDS TO THE EDGE OF TRAVEL LANE, RATHER THAN EDGE OF SHOULDER TO ACCOMMODATE THE PROPOSED DRAINAGE STRUCTURES THAT ARE REQUIRED.

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

QUALITY ASSURANCE PROGRAM : LEVEL 2
SURVEYED BY : VTRANS SURVEYED DATE : SEPTEMBER 18, 2018
DATUM VERTICAL NAVD 88 HORIZONTAL NAD83(96)

STATE OF VERMONT
AGENCY OF TRANSPORTATION



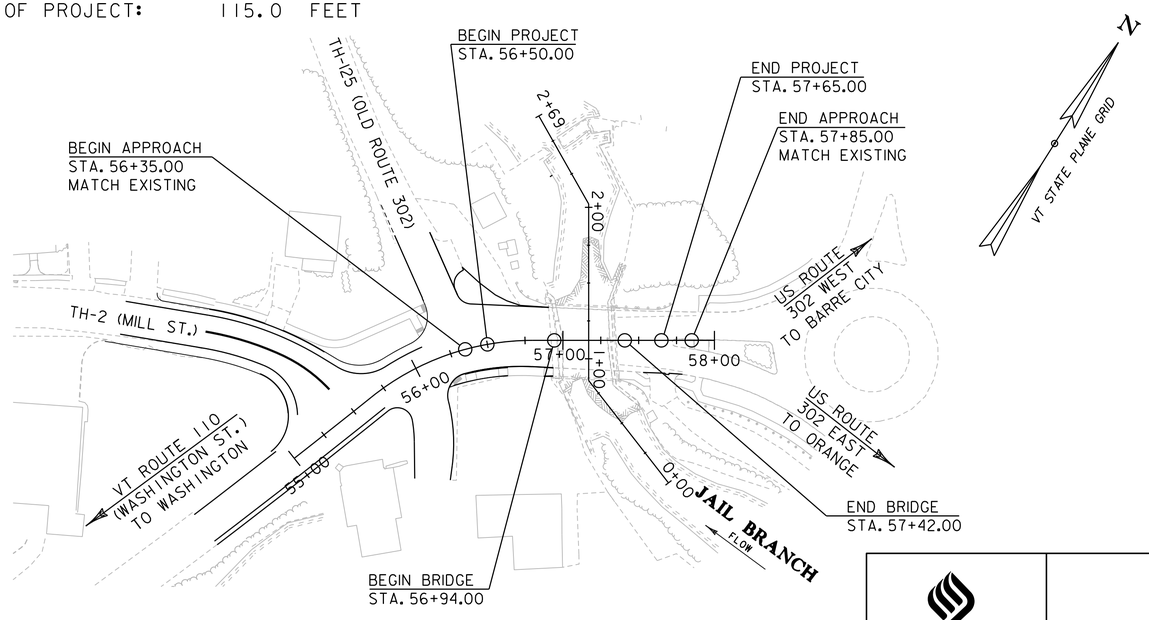


PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF BARRE
COUNTY OF WASHINGTON
VT ROUTE 110 (WASHINGTON STREET), MAJOR COLLECTOR
BRIDGE NO. 21

PROJECT LOCATION: APPROXIMATELY 100 FEET SOUTHWEST OF THE JUNCTION WITH US ROUTE 302.

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

LENGTH OF STRUCTURE:	48.0	FEET
LENGTH OF ROADWAY:	67.0	FEET
LENGTH OF PROJECT:	115.0	FEET



SCALE 1" = 50'-0"
50 0 50

PRELIMINARY PLANS
4/8/2021

McFarland Johnson

HIGHWAY DIVISION, CHIEF ENGINEER

APPROVED _____ DATE _____

PROJECT MANAGER : MAHENDRA THILLIYAR P.E.

PROJECT NAME : BARRE TOWN
PROJECT NUMBER : BF 0169(12)

SHEET 1 OF 25 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version
LRFD

INDEX OF SHEETS

PLAN SHEETS

HIGHWAY SAFETY & STRUCTURES DETAIL SHEETS

STANDARDS LIST

E-136B	STATE ROUTE MARKER SIGN DETAILS	08-08-1995
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	03-10-2017
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)	03-10-2017
G-19	GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS	11-15-2002
T-1	TRAFFIC CONTROL GENERAL NOTES	04-25-2016
T-2	TRAFFIC SIGN GENERAL NOTES	04-25-2016
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-17	TRAFFIC CONTROL MISCELLANEOUS DETAILS	08-06-2012
T-30	CONSTRUCTION SIGN DETAILS	08-06-2012
T-42	BRIDGE NUMBER PLAQUE	04-09-2014
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013
T-56	STANDARD SIGN PLACEMENT	10-26-2015

FINAL HYDRAULIC REPORT (PREPARED BY VTRANS)

HYDROLOGIC DATA

Date: 2/11/2021

DRAINAGE AREA : 38.9 sq. mi.
CHARACTER OF TERRAIN : Hilly to mountainous
STREAM CHARACTERISTICS : Straight to sinous with narrow floodplain
NATURE OF STREAMBED : Gravel and Cobble with ledge substrate

PEAK FLOW DATA - ANNUAL EXCEEDANCE PROBABILITY (AEP)

43% =	470 cfs	2% =	780 cfs
10% =	630 cfs	1% =	850 cfs
4% =	720 cfs	0.2% =	990 cfs

DATE OF FLOOD OF RECORD : 10/01/1920
ESTIMATED DISCHARGE: 1,820 cfs
WATER SURFACE ELEV.: Unknown
NATURAL STREAM VELOCITY : @ 2% AEP = 10.2 fps +/-
ICE CONDITIONS : Moderate
DEBRIS: Low to Moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No
IS ORDINARY RISE RAPID? No
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Yes
IF YES, DESCRIBE: Tailwater is affected by downstream uncontrolled dam

WATERSHED STORAGE: 2% HEADWATERS:
UNIFORM:
IMMEDIATELY ABOVE SITE: X

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single Span Concrete T-Beam
YEAR BUILT: 1930
CLEAR SPAN(NORMAL TO STREAM): 36.5 ft +/-
VERTICAL CLEARANCE ABOVE STREAMBED: 14.6 ft +/-
WATERWAY OF FULL OPENING: 420.4 sq. ft. +/-
DISPOSITION OF STRUCTURE: Replacement
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See Borings

WATER SURFACE ELEVATIONS AT:

43% AEP =	1076.5 ft	VELOCITY =	10.1 fps
10% AEP =	1077.0 ft	"	11.1 fps
4% AEP =	1077.2 ft	"	11.6 fps
2% AEP =	1077.4 ft	"	11.9 fps
1% AEP =	1077.5 ft	"	12.2 fps

LONG TERM STREAMBED CHANGES: Unknown

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: NO
FREQUENCY: N/A
RELIEF ELEVATION: N/A
DISCHARGE OVER ROAD @ 1% AEP: N/A

UPSTREAM STRUCTURE

TOWN: Barre DISTANCE: 2,000 ft +/-
HIGHWAY # : N/A STRUCTURE #: N/A
CLEAR SPAN: N/A CLEAR HEIGHT: N/A
YEAR BUILT: N/A FULL WATERWAY: N/A
STRUCTURE TYPE: East Barre Reservoir Dam

DOWNSTREAM STRUCTURE

TOWN: Barre DISTANCE: 2,310 ft +/-
HIGHWAY # : US 302 STRUCTURE #: 14
CLEAR SPAN: 202 ft CLEAR HEIGHT: Unknown
YEAR BUILT: 1959 FULL WATERWAY: Unknown
STRUCTURE TYPE: 3 Span Rolled Beam

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE	**20**	**36**	**36**	**66**	**30**	**34.5**	**38**
INVENTORY							
POSTING							
OPERATING							
COMMENTS:							

PROPOSED STRUCTURE

STRUCTURE TYPE: Single Span

CLEAR SPAN(NORMAL TO STREAM): 45.0 ft +/-
VERTICAL CLEARANCE ABOVE STREAMBED: 16.5 ft
WATERWAY OF FULL OPENING: 553 sf

WATER SURFACE ELEVATIONS AT:

43% AEP =	1076.4 ft	VELOCITY=	10.1 fps
10% AEP =	1077.0 ft	"	11.2 fps
4% AEP =	1077.2 ft	"	11.8 fps
2% AEP =	1077.3 ft	"	12.2 fps
1% AEP =	1077.5 ft	"	12.6 fps

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: NO
FREQUENCY: N/A
RELIEF ELEVATION: N/A
DISCHARGE OVER ROAD @ 1% AEP: N/A

BRIDGE LOW CHORD ELEVATION: 1085.9 ft +/-
FREEBOARD: @ 2% AEP = 8.6 ft +/-

SCOUR: N/A - Spread footings founded on ledge

REQUIRED CHANNEL PROTECTION: Stone Fill Type IV*

PERMIT INFORMATION

		DEPTH OR ELEVATION:
AVERAGE DAILY FLOW:	-	
ORDINARY LOW WATER:	-	-
ORDINARY HIGH WATER:	-	-

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: N/A
CLEAR SPAN (NORMAL TO STREAM): N/A
VERTICAL CLEARANCE ABOVE STREAMBED: N/A
WATERWAY AREA OF FULL OPENING: N/A

ADDITIONAL INFORMATION

*E-Stone Type IV to be used for all in channel work

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
2. TEMPORARY TRAFFIC SIGNALS ARE NOT REQUIRED.
3. PEDESTRIAN TRAFFIC MAINTAINED ON OFF SITE DETOUR.
4. BRIDGE CLOSURE DURATION OF 60-DAYS.

DESIGN VALUES

1.	DESIGN LIVE LOAD		HL-93
2.	FUTURE PAVEMENT	d_P:	0.0 INCH
3.	DESIGN SPAN	L:	46.00 FT
4.	MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	TBD
5.	PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	f_y:	270 KSI
6.	PRESTRESSED CONCRETE STRENGTH	f'_c:	TBD
7.	PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	TBD
8.	HIGH PERFORMANCE CONCRETE, CLASS AA	f'_c:	4.0 KSI
9.	HIGH PERFORMANCE CONCRETE, CLASS A	f'_c:	4.0 KSI
10.	CONCRETE HIGH PERFORMANCE, CLASS B	f'_c:	3.5 KSI
11.	CONCRETE, CLASS C	f'_c:	3.0 KSI
12.	REINFORCING STEEL	f_y:	60 KSI
13.	STRUCTURAL STEEL AASHTO M270	f_y:	50 KSI
14.	NOMINAL BEARING RESISTANCE OF SOIL	q_n:	- - -
15.	SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	- - -
16.	NOMINAL BEARING RESISTANCE OF ROCK	q_n:	1200.0 KSF
17.	ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	0.45
18.	PILE RESISTANCE FACTOR	ϕ:	- - -
19.	LATERAL PILE DEFLECTION	Δ:	- - -
20.	BASIC WIND SPEED	V_{3s}:	- - -
21.	MINIMUM GROUND SNOW LOAD	p_g:	- - -
22.	SEISMIC DATA PGA : 8 %g	S_s:	18 %g
		S_1:	5 %g
23.			
24.			- - -
25.			
26.			

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2023	4800	550	53	1.3	300
2043	5200	600	53	2	490

20 year ESAL for flexible pavement from 2023 to 2043 : 2050000
40 year ESAL for flexible pavement from 2023 to 2063 : 4968000
Design Speed : 35 mph

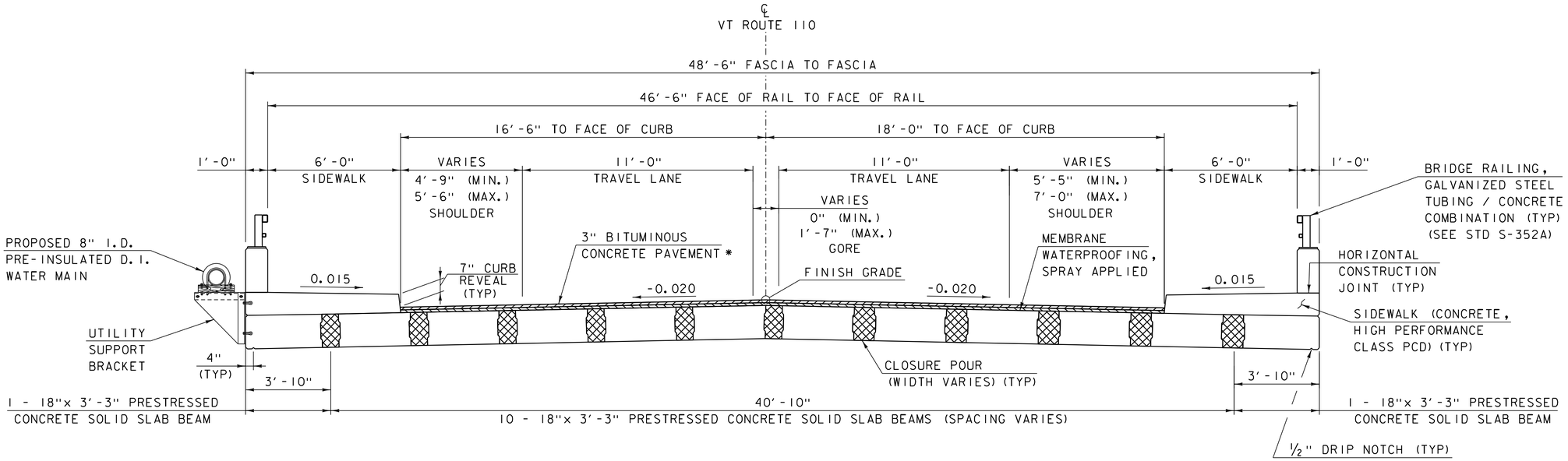
AS BUILT "REBAR" DETAIL

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

PROJECT NAME: **Barre Town**
PROJECT NUMBER: **BF 0169(12)**

FILE NAME: **PI Sheet Builder_v008-20c.xls**
PROJECT LEADER: **D. Kull**
DESIGNED BY: **S. Lister/VTrans**
PRELIMINARY INFORMATION SHEET

PLOT DATE: 1/7/2021
DRAWN BY: **S. Merkwan**
CHECKED BY: **R. Joy**



FLOW

BRIDGE TYPICAL SECTION

SCALE ⅜" = 1'-0"

NOTE: TRAVEL WAY DIMENSIONING IS MEASURED PERPENDICULAR TO THE ALIGNMENT.

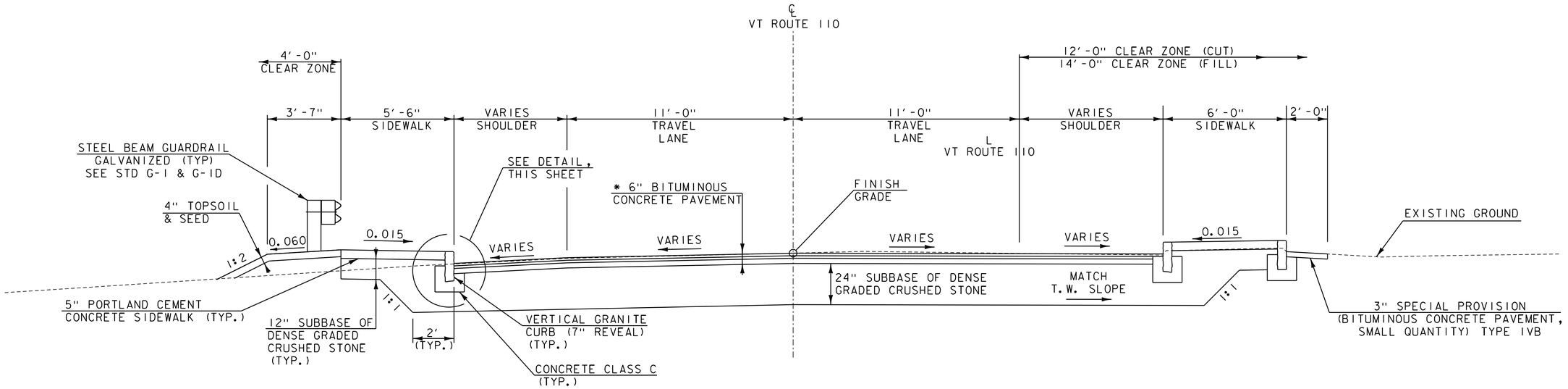
* 1½" SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) TYPE IVB OVER
1½" SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) TYPE IVB

McFarland Johnson

PROJECT NAME: BARRE TOWN
PROJECT NUMBER: BF 0169(12)

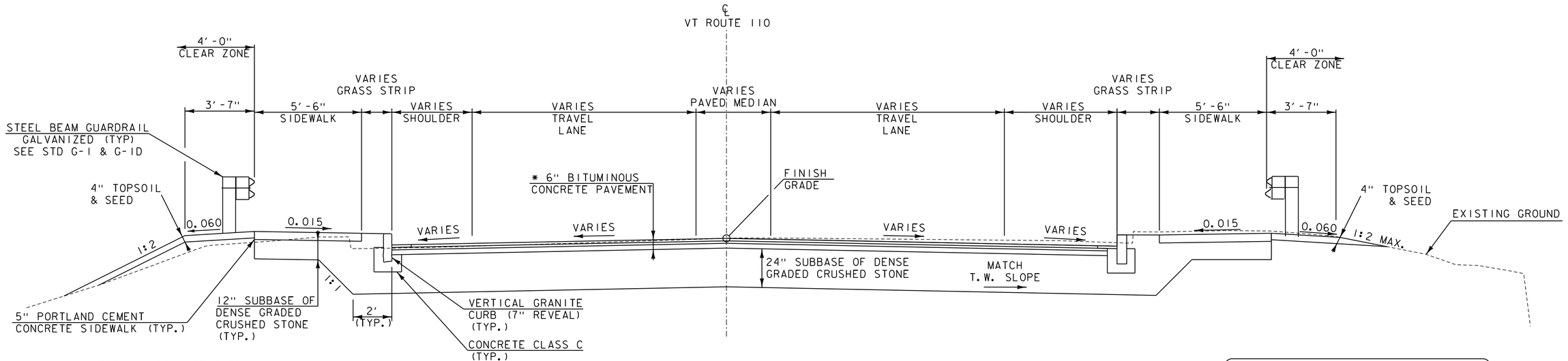
FILE NAME: z12c576br_typ.dgn
PROJECT LEADER: D. KULL
DESIGNED BY: D. WHITE
TYPICAL BRIDGE SECTION SHEET

PLOT DATE: 4/7/2021
DRAWN BY: S. MERKWAN
CHECKED BY: R. JOY
SHEET 3 OF 25



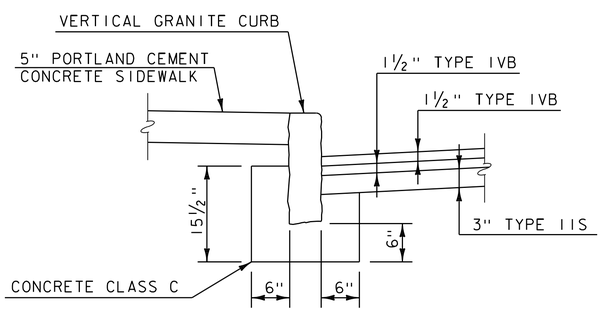
VERMONT ROUTE 110

SCALE 3/8" = 1'-0"
STA 56+35.00 TO STA 56+94.00



VERMONT ROUTE 110

SCALE 3/8" = 1'-0"
STA 57+42.00 TO STA 57+85.00



CURB AND SIDEWALK CONSTRUCTION

SCALE 1" = 1'-0"

* 1 1/2" SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) TYPE IVB OVER
1 1/2" SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) TYPE IVB OVER
3" SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) TYPE IIS

NOTE: TRAVEL WAY DIMENSIONING IS MEASURED PERPENDICULAR TO THE ALIGNMENT.

MATERIAL TOLERANCES
(IF USED ON PROJECT)

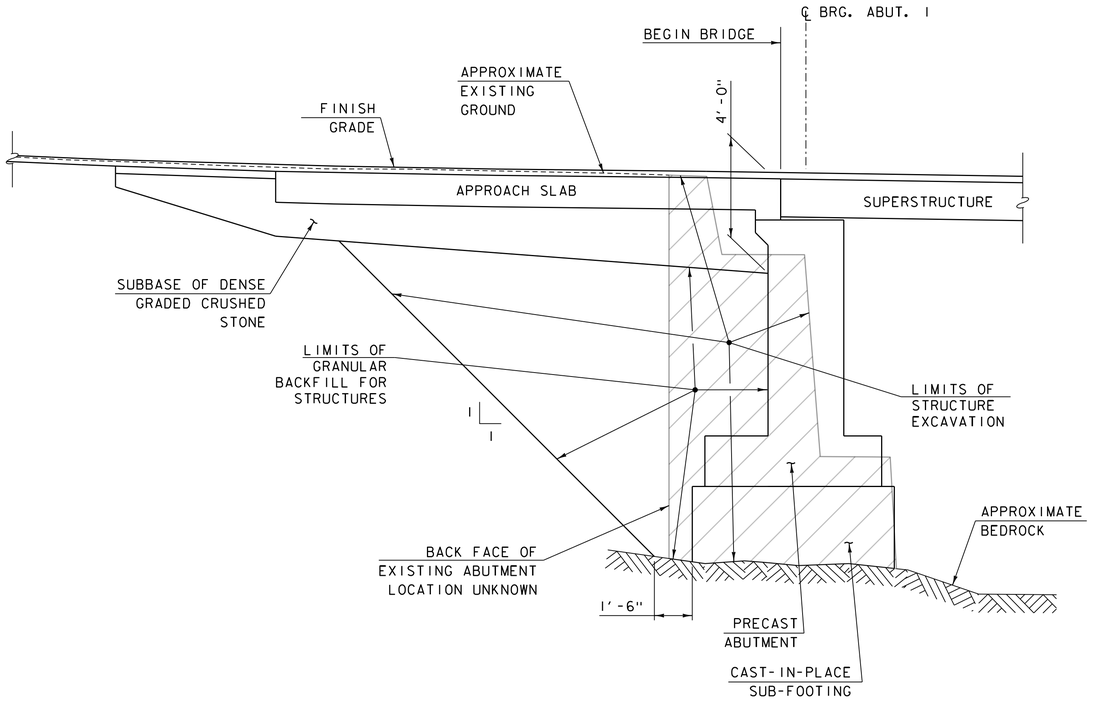
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

McFarland Johnson

PROJECT NAME: BARRE TOWN
PROJECT NUMBER: BF 0169(12)

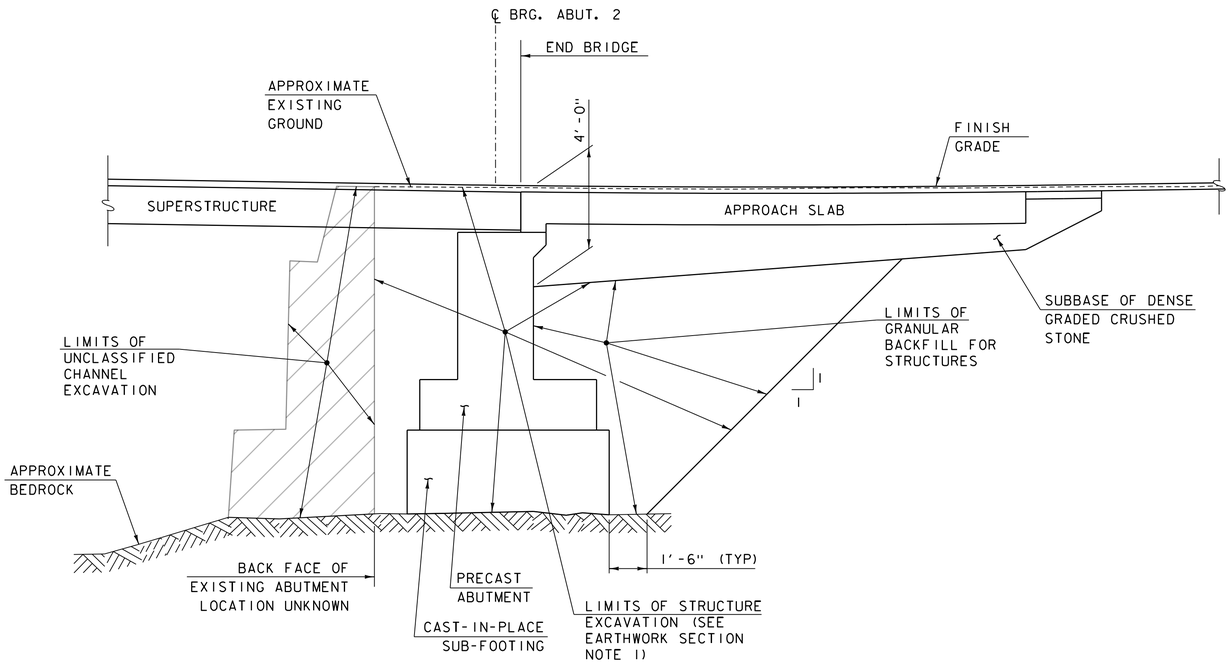
FILE NAME: zl2c576typ.dgn
PROJECT LEADER: D. KULL
DESIGNED BY: S. LISTER
TYPICAL ROADWAY SECTION SHEET

PLOT DATE: 4/7/2021
DRAWN BY: M. LOVETT
CHECKED BY: B. COLBURN
SHEET 4 OF 25



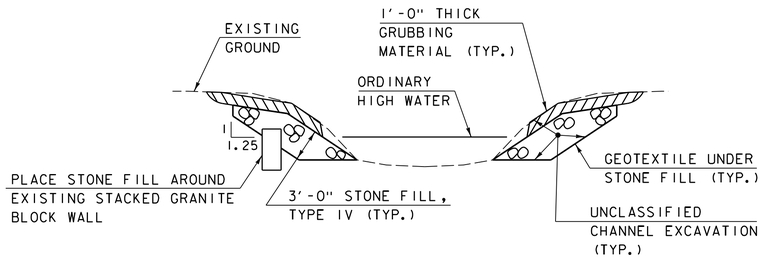
TYPICAL ABUTMENT NO 1 EARTHWORK SECTION

NOT TO SCALE



TYPICAL ABUTMENT NO 2 EARTHWORK SECTION

NOT TO SCALE



TYPICAL CHANNEL SECTION

(NOT TO SCALE)

1) GRUBBING MATERIAL SHALL BE PLACED UNDERNEATH STRUCTURES WHERE THERE IS MORE THAN 6 FEET VERTICALLY FROM ORDINARY HIGH WATER (OHW) TO THE BOTTOM OF SUPERSTRUCTURE AND MORE THAN 6 FEET HORIZONTALLY FROM OHW LINE TO FRONT FACE OF ABUTMENT. THIS MATERIAL SHALL START JUST ABOVE THE OHW ELEVATION AND TERMINATE 3 FEET HORIZONTALLY FROM THE FRONT FACE OF THE ABUTMENT. THIS MATERIAL SHALL NOT BE PLACED UNDERNEATH DOWNSPOUTS. SEE THE CHANNEL SECTIONS FOR ADDITIONAL DETAILING.

2) WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.

EARTHWORK SECTION NOTE

1. ACTUAL LIMITS OF STRUCTURE EXCAVATIONS SHALL BE DETERMINED BY THE CONTRACTOR. HOWEVER, ONLY THE STRUCTURE EXCAVATION BETWEEN THE LIMITS SHOWN WILL BE PAID FOR UNDER ITEM 204.25 "STRUCTURE EXCAVATION". EXCAVATION BY THE CONTRACTOR OUTSIDE OF THESE LIMITS WILL BE AT THE EXPENSE OF THE CONTRACTOR INCLUDING ANY COSTS RELATED TO REMOVAL, HANDLING, TRANSPORATION AND STORAGE OF CONTAMINATED SOILS OUTSIDE OF THE LIMITS SHOWN.

McFarland Johnson

PROJECT NAME: BARRE TOWN
PROJECT NUMBER: BF 0169(12)

FILE NAME: z12c576earth_typ.dgn
PROJECT LEADER: D. KULL
DESIGNED BY: S. LISTER
TYPICAL CHANNEL & EARTHWORK SECTIONS

PLOT DATE: 4/7/2021
DRAWN BY: S. MERKWAN
CHECKED BY: R. JOY
SHEET 5 OF 25

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
	BF	BARRIER FENCE
	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
	PDF	PROJECT DEMARCATION FENCE
	R&RES	REMOVE & RESET
	R&REP	REMOVE & REPLACE
	R.T.& I.	RIGHT, TITLE, AND INTEREST
	SR	SLOPE RIGHT
	UE	UTILITY EASEMENT
	(P)	PERMANENT EASEMENT
	(T)	TEMPORARY EASEMENT
■	BNDNS	BOUND SET
⊡	BNDNS	BOUND TO BE SET
◎	IPNF	IRON PIN FOUND
●	IPNS	IRON PIN TO BE SET
⊠	CALC	EXISTING ROW POINT
○	PROW	PROPOSED ROW POINT
[LENGTH]		LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

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

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

PROPOSED GEOMETRY CODES

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

UTILITY SYMBOLOGY

UNDERGROUND UTILITIES

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

ABOVE GROUND UTILITIES (AERIAL)

- AGU — UTILITY (GENERIC-UNKNOWN)
- T — TELEPHONE
- E — ELECTRIC
- C — CABLE (TV)
- EC — ELECTRIC+CABLE
- ET — ELECTRIC+TELEPHONE
- AER E&T — ELECTRIC+TELEPHONE
- CT — CABLE+TELEPHONE
- ECT — ELECTRIC+CABLE+TELEPHONE
- 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
- PROJECT DEMARCATION FENCE (PDF)
- BARRIER FENCE (BF)
- 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
- PROPERTY LINE (P/L)
- SLOPE RIGHTS (SR)
- 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

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLOGY

ENVIRONMENTAL RESOURCES

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

ARCHEOLOGICAL & HISTORIC

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

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

EXISTING FEATURES

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

McFarland Johnson

PROJECT NAME:	BARRE TOWN
PROJECT NUMBER:	BF 0169(12)
FILE NAME: zl2c576leg.dgn	PLOT DATE: 4/7/2021
PROJECT LEADER: D. KULL	DRAWN BY: M. LOVETT
DESIGNED BY: S. LISTER	CHECKED BY: S. IRELAND
CONVENTIONAL SYMBOLOGY - LEGEND	SHEET 6 OF 25

PRIMARY CONTROL

HVCTRL #1

STANDARD DISC STAMPED

EAST BARRE DAM AZ MK

N = 602716.48
E = 1654602.64

TO REACH FROM THE INTERSECTION OF U.S.ROUTE 302 AND VT ROUTE 110 IN EAST BARRE GO SOUTHWEST ALONG ROUTE 110 FOR 0.6 MI TO THE INTERSECTION OF A FIELD DRIVE RIGHT, ABOUT OPPOSITE THE EAST BARRE DAM ON THE LEFT. TURN RIGHT AND GO SOUTWEST ALONG THE FIELD DRIVE AND THROUGH AN OPEN FIELD FOR ABOUT 295 FT TO THE SITE OF THE MARK IN THE FIELD. THE MARK IS SET IN THE TOP OF A 2 FT X 1.5 FT TRIANGULAR SHAPED ROCK OUTCROP WHICH PROJECTS ABOUT 2 IN ABOVE THE GROUND SURFACE. IT IS 294 FT SOUTHWEST OF AND ABOUT 1.5 FT HIGHER THAN THE CENTERLINE OF ROUTE 110, 264.5 FT WEST BY SOUTHWEST OF POLE #22/167, 362.5 FT SOUTH SOUTHWEST OF POLE #21/166, 334.5 FT SOUTH BY SOUTHWEST OF THE CENTER OF THE WEST (INLET) END OF A 24 IN DIAMETER METAL CULVERT WITH CONCRETE HEADWALL, 3.5 FT SOUTH BY SOUTHEAST OF A 4 IN DIAMETER CEDAR SIGN POST, AND 2.6 FT SOUTH SOUTHEAST OF A FIBERGLASS WITNESS POST.

HVCTRL #2

STANDARD DISC STAMPED

EAST BARRE DAM

N = 604224.91
E = 1655483.71
ELEV: = 1190.60

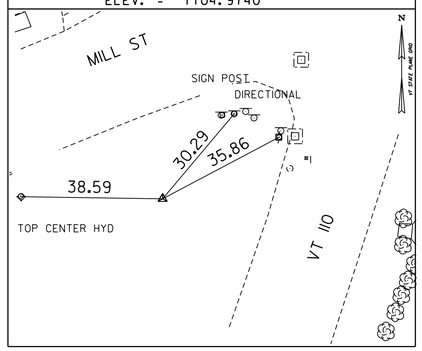
TO REACH FROM THE INTERSECTION OF U.S.ROUTE 302 AND VT ROUTE 110 IN EAST BARRE GO SOUTHEAST ALONG U.S.ROUTE 302 FOR 0.4 MI (0.6 KM) TO THE INTERSECTION OF A GRAVEL DRIVE RIGHT LEADING TO A PARKING AREA FOR THE EAST BARRE DAM. TURN RIGHT AND GO WEST UP THE GRAVEL DRIVE FOR ABOUT 70 M (229.7 FT) TO THE PARKING AREA. PARK VEHICLE AND WALK NORTH FOR ABOUT 12 M (39.4 FT) TO THE SITE OF THE MARK AT THE TOP OF A BANK. THE MARK IS SET 4 CM BELOW GROUND SURFACE IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT POURED 1.4 M (4.6 FT) DEEP. IT IS 21.3 M (69.9 FT) SOUTHWEST OF AND ABOUT 4 M (13.1FT) HIGHER THAN THE CENTERLINE OF U.S.ROUTE 302, 11.6 M (38.1FT) NORTH NORTHEAST OF THE STEEL BEAM GUARD RAIL WHICH SURROUNDS THE PARKING AREA, 16.8 M (55.1FT) NORTH NORTHWEST OF THE NORTH CORNER OF A STONE MONUMENT WITH A BRASS SIGN, 24.0 M (78.7 FT) NORTHWEST OF THE NORTHWEST POST OF A WOOD SIGN (EAST BARRE DAM, MODIFIED IN 1960), AND 2.2 M (7.2 FT) SOUTHWEST OF A FIBERGLASS WITNESS POST AT THE TOP OF THE BANK.

* DESCRIPTION PROVIDED BY VERMONT AGENCY OF TRANSPORTATION GEODETIC SURVEY UNIT

SECONDARY CONTROL

HVCTRL #6

NORTH = 605122.6810
EAST = 1653616.7590
ELEV. = 1104.9740



HVCTRL #10

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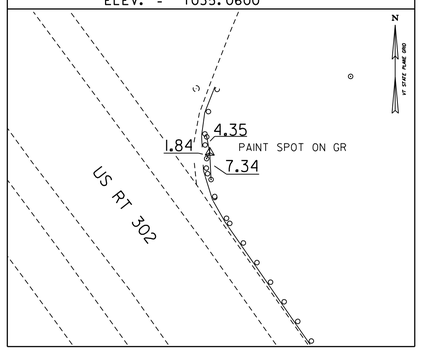
EAST = 1653275.0800
ELEV. = 1035.0600



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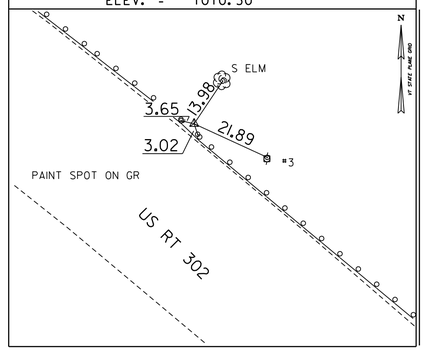

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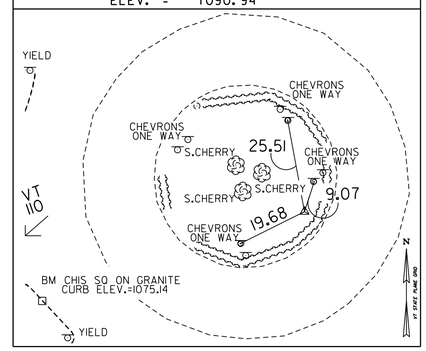
EAST = 1653956.20
ELEV. = 1090.94



HVCTRL #21

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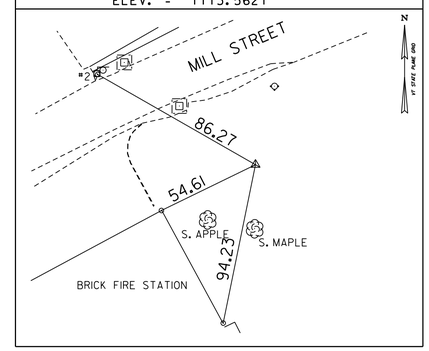


* MAIN TRAVERSE COMPLETED: MARCH 21, 2005 BY R.GILMAN, P.WINTERS, & D.BREER SECOND TRAVERSE COMPLETED SEPTEMBER 28,2019 BY R.GILMAN

ALIGNMENT TIES

HVCTRL

NORTH =
EAST =
ELEV. =

NORTH =
EAST =

NORTH =
EAST =

NORTH =
EAST =

NORTH =
EAST =

DATUM

VERTICAL NAVD 88

HORIZONTAL NAD 83 (96)

ADJUSTMENT Compass

McFarland Johnson

PROJECT NAME: BARRE TOWN
PROJECT NUMBER: BF 0169(12)

FILE NAME: z12c576t1.dgn
PROJECT LEADER: D. KULL
DESIGNED BY: S. LISTER
TIE SHEET

PLOT DATE: 4/7/2021
DRAWN BY: M. LOVETT
CHECKED BY: S. IRELAND
SHEET 7 OF 25

REMOVAL AND DISPOSAL OF GUARDRAIL

STA 56+70.8 - STA 56+89.2 LT
STA 57+34.5 - STA 57+73.5 LT
STA 57+37.4 - STA 57+57.1 RT

STEEL BEAM GUARDRAIL, GALVANIZED

STA 56+43.0 - STA 56+73.4 LT
STA 57+58.4 - STA 57+86.0 LT

CONCRETE RAIL-GUARDRAIL TRANSITION, GALVANIZED

STA 56+73.4 - STA 56+91.5 LT
STA 57+40.3 - STA 57+56.0 RT
STA 57+40.3 - STA 57+58.4 LT

ANCHOR FOR STEEL BEAM RAIL

STA 56+43 LT
STA 57+56 RT
STA 57+86 LT

STEEL BEAM GUARDRAIL, GALVANIZED
25 FT RADIUS

STA 57+13.1 - STA 57+78.3 RT

PROPOSED DRAINAGE

(1) STA STA 57+51.0 RT TO 57+51.0 LT
NEW 18" X 31' CPEP
NEW 4' DIA. PRCCB
W/ CI GRATE TYPE D AT 57+51.0 LT

(2) STA STA 57+68.9 RT TO 57+51.0 RT
NEW 18" X 16' CPEP
NEW 4' DIA. PRCCB
W CI GRATE TYPE D AT 57+51.0 RT

REMOVE EXISTING CATCH BASIN

[3] STA 57+44.8 RT

[4] STA 57+48.9 LT

VERTICAL GRANITE CURB

STA 56+38.8 - STA 56+94.0 LT
STA 57+42.0 - STA 57+85.0 LT
STA 56+87.7 - STA 56+94.0 RT
STA 57+42.0 - STA 57+57.4 RT

PORTLAND CEMENT CONCRETE SIDEWALK
5-INCH

STA 56+38.8 - STA 56+94.0 LT
STA 57+42.0 - STA 57+89.8 LT
STA 56+87.7 - STA 56+94.0 RT
STA 57+42.0 - STA 57+57.4 RT

DETECTABLE WARNING SURFACE (DWS)

STA 56+38.8 LT
STA 57+89.5 RT

STONE FILL, TYPE IV

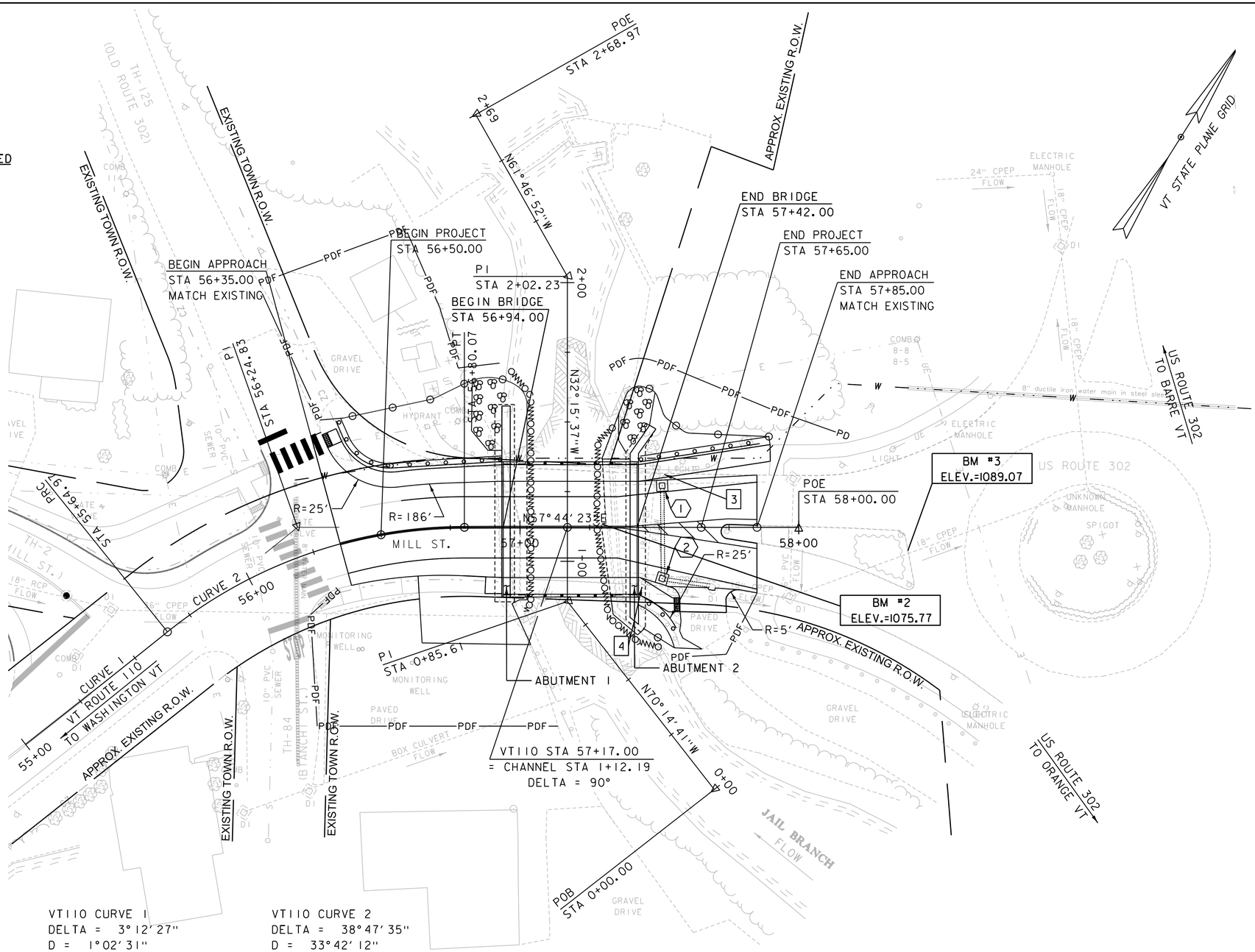
STA 56+79.5 - STA 57+00.2 LT
STA 57+29.5 - STA 57+51.6 RT

GEOTEXTILE UNDER STONE FILL

STA 56+79.5 - STA 57+00.2 LT
STA 57+29.5 - STA 57+51.6 RT

CONSTRUCT DRIVES

STA 56+50 RT
STA 57+65 RT



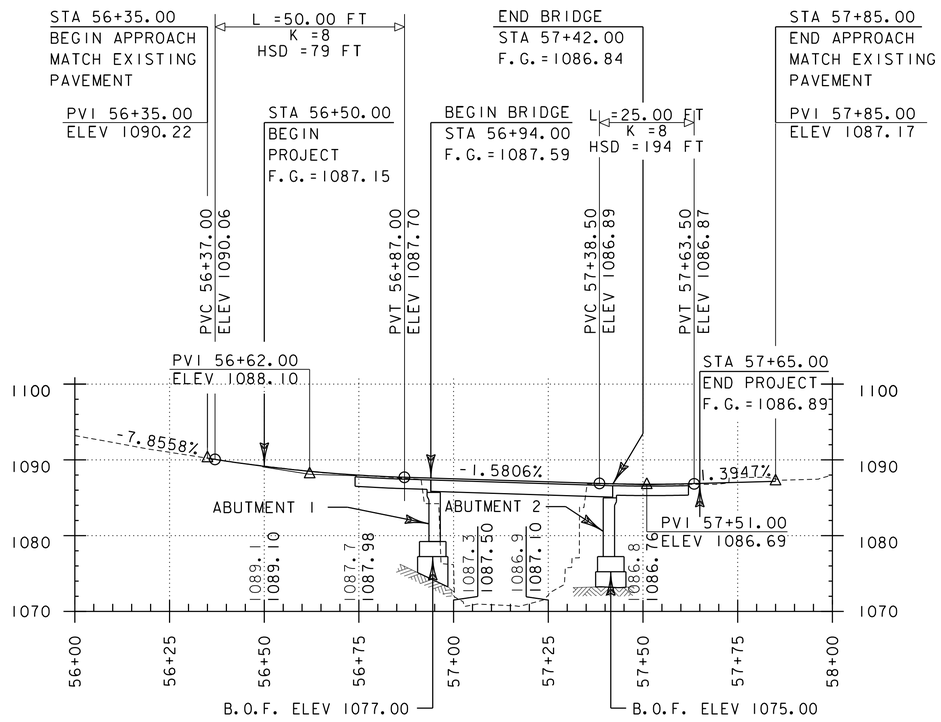
VT110 CURVE 1
DELTA = 3°12'27"
D = 1°02'31"
R = 5498.20'
T = 153.95'
L = 307.81'
E = 2.15'
BRG BHD = N22°09'14.68"E

VT110 CURVE 2
DELTA = 38°47'35"
D = 33°42'12"
R = 170.00'
T = 59.86'
L = 115.10'
E = 10.23'
BRG AHD = N57°44'23"E

SCALE 1" = 20'-0"
20 0 20

McFarland Johnson

PROJECT NAME:	BARRE TOWN
PROJECT NUMBER:	BF 0169(12)
FILE NAME: z12c576bdr_nul.dgn	PLOT DATE: 4/7/2021
PROJECT LEADER: D. KULL	DRAWN BY: M. LOVETT
DESIGNED BY: S. LISTER	CHECKED BY: B. COLBURN
LAYOUT SHEET	SHEET 8 OF 25

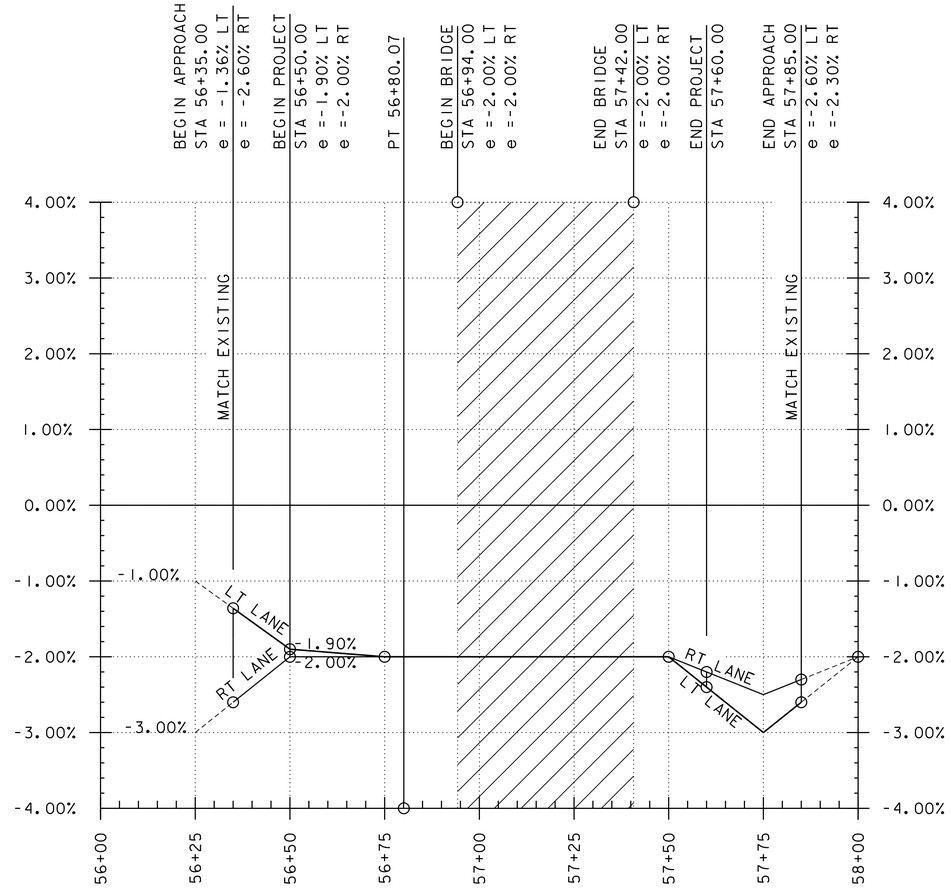


VT RTE 110 (WASHINGTON ST.) PROFILE

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

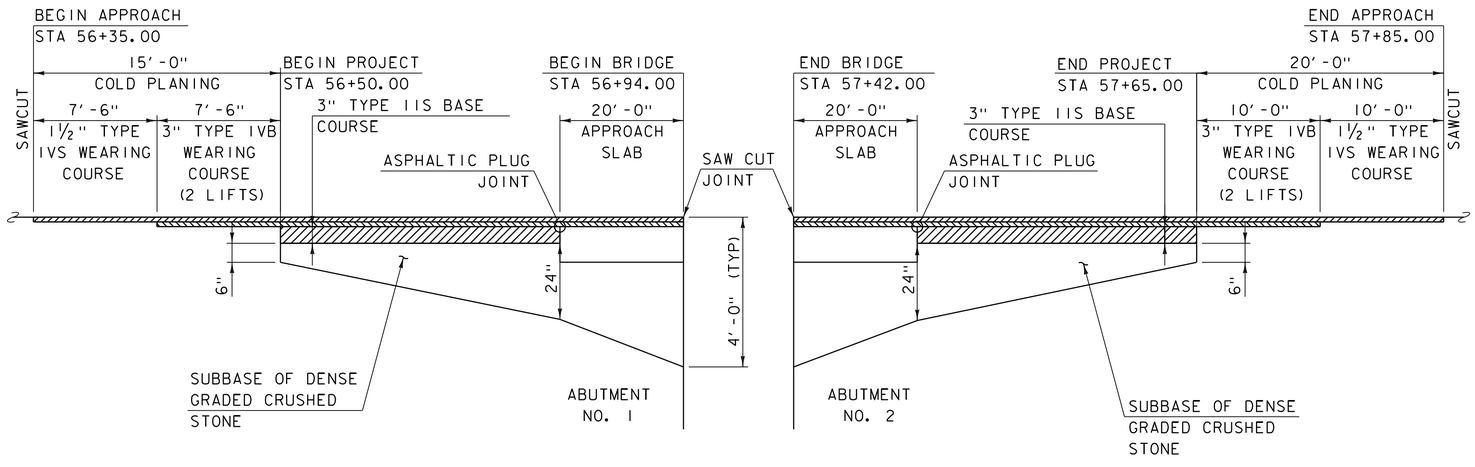
THE ELEVATIONS SHOWN TO THE NEAREST TENTH ARE FOR EXISTING GROUND ALONG THE CENTERLINE.

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



BANKING DIAGRAM

SCALE: 1"=20' (H)
1"=1% (V)

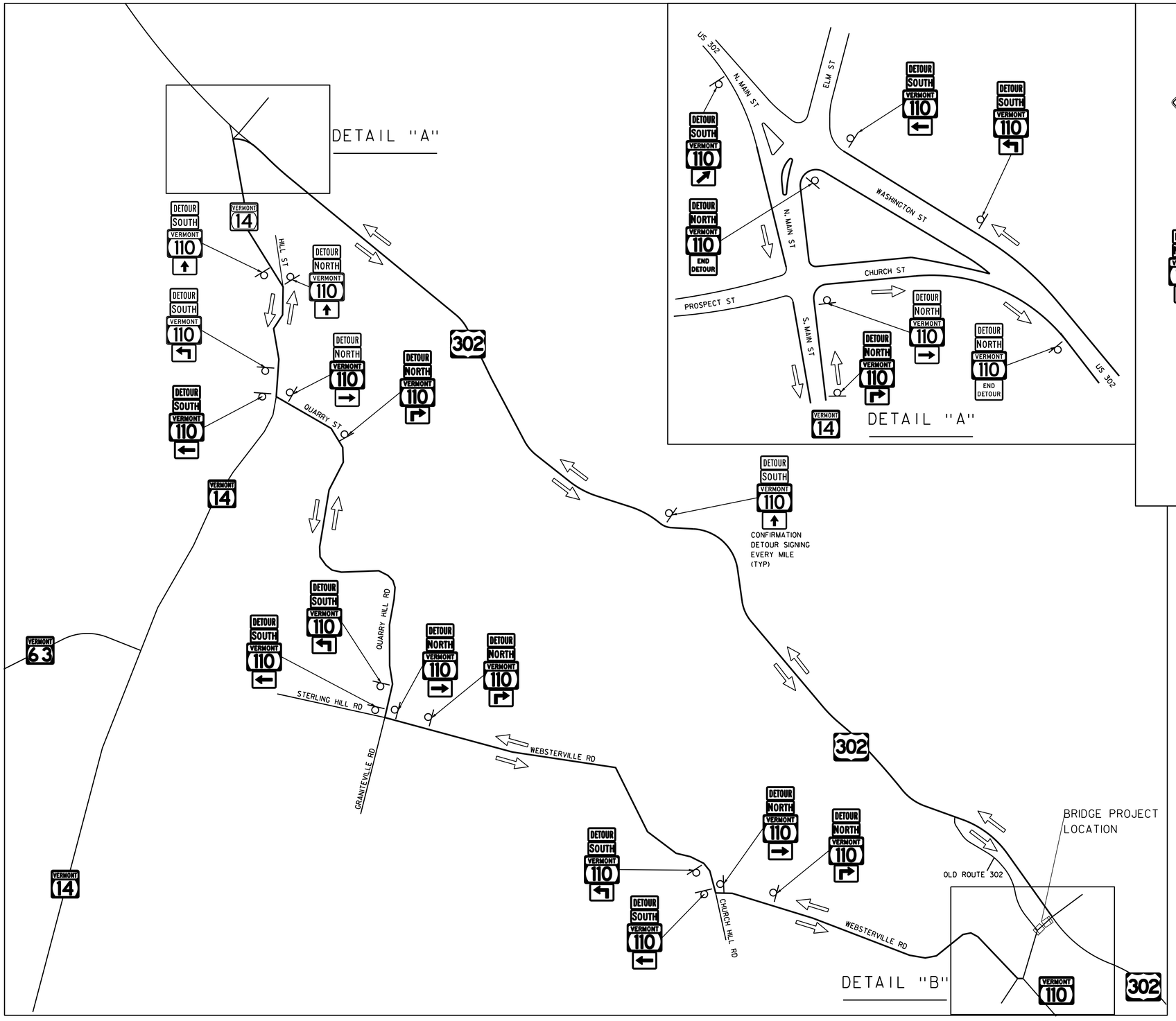


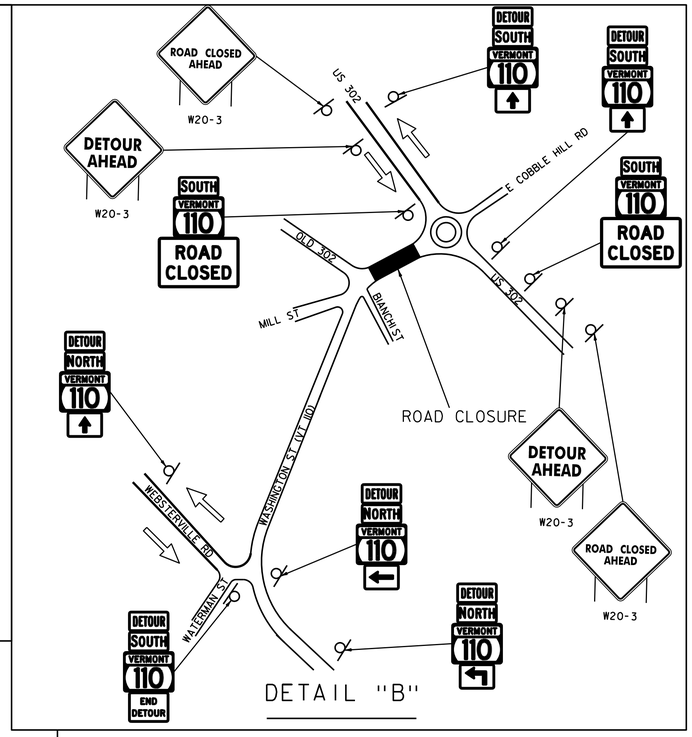
MATERIAL TRANSITION DETAIL

NOT TO SCALE

PROJECT NAME:	BARRE TOWN
PROJECT NUMBER:	BF 0169(12)
FILE NAME: z12c576prof.dgn	PLOT DATE: 4/7/2021
PROJECT LEADER: D. KULL	DRAWN BY: M. LOVETT
DESIGNED BY: S. LISTER	CHECKED BY: S. IRELAND
PROFILE, BANKING DIAGRAM, MAT. TRANSITION	SHEET 9 OF 25

McFarland Johnson





LEGEND

- TYPE III BARRICADE
- PROJECT AREA

NOTES

1. FOR TRAFFIC CONTROL NOTES, SEE SHEET 15.
2. THRU LENGTH : 0.1 MILES
   DETOUR LENGTH : 6.3 MILES
   60 DAY PROPOSED CLOSURE
   ADDITIONAL LENGTH : 6.2 MILES
   END TO END LENGTH : 6.3 MILES
3. DETOUR ROUTE CONFIRMATION SIGNS ARE NEEDED AFTER EACH MAJOR INTERSECTION AND EVERY MILE ALONG THE DETOUR ROUTE IN BOTH DIRECTIONS OF TRAVEL.
4. TYPE III BARRICADES SHALL BE INSTALLED AT BOTH PROJECT LIMITS ON VERMONT 110

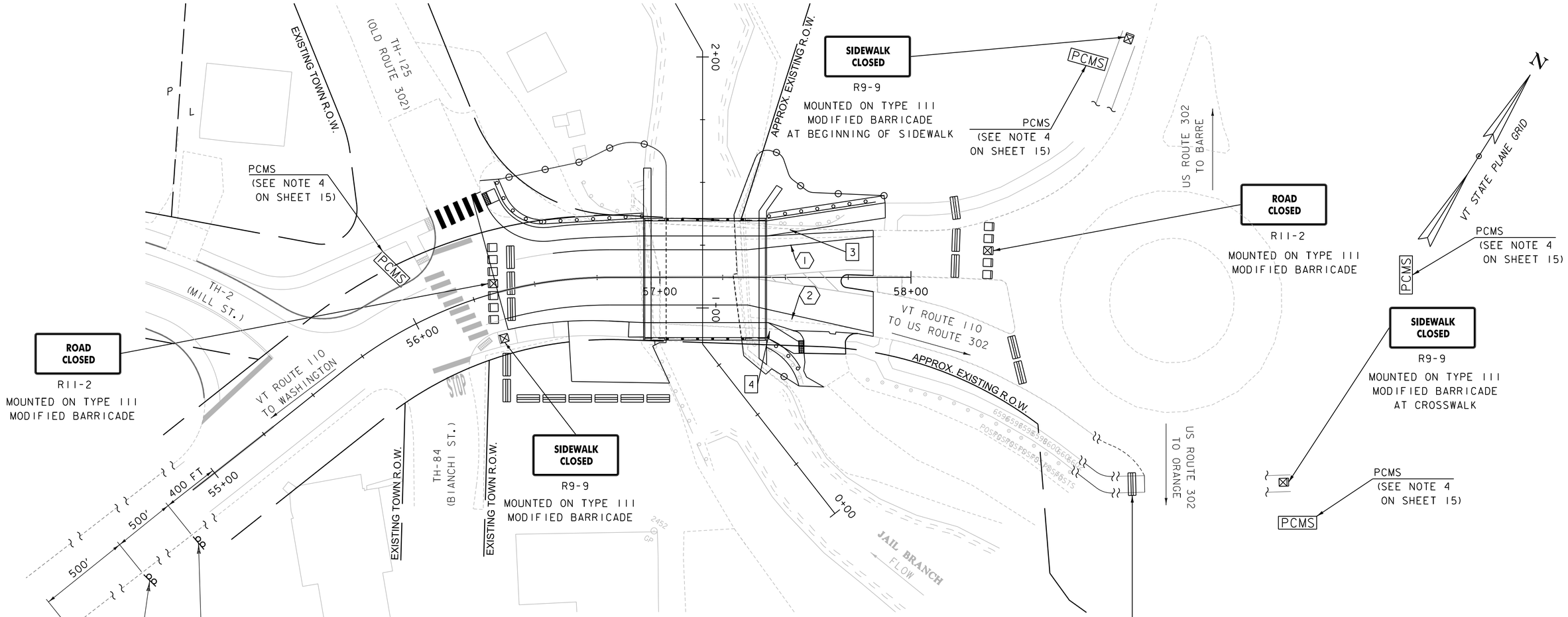
REGIONAL DETOUR PLAN

McFarland Johnson

PROJECT NAME: BARRE TOWN
PROJECT NUMBER: BF 0169(12)

FILE NAME: z12c576tcp_det.dgn
PROJECT LEADER: D. KULL
DESIGNED BY: S. LISTER
REGIONAL DETOUR PLAN SHEET

PLOT DATE: 4/7/2021
DRAWN BY: S. LISTER
CHECKED BY: B. COLBURN
SHEET 10 OF 25



TRAFFIC CONTROL PLAN

MESSAGES FOR PORTABLE CHANGEABLE MESSAGE SIGNS

PCMS

MESSAGE 1	MESSAGE 2	
VT 110	MMMM DD	✳
ROAD	THRU	
CLOSED	MMMM DD	✳

✳ MONTH SHALL BE SPELLED OUT
MAY 1, NOT 5/1

LEGEND

- □— TYPE III BARRICADE
- ⊠— TYPE III (MOD) BARRICADE
- ▬▬▬— TEMPORARY TRAFFIC BARRIER
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN

SCALE 1" = 20'-0"
20 0 20

McFarland Johnson

PROJECT NAME: BARRE TOWN
PROJECT NUMBER: BF 0169(12)

FILE NAME: z12c576tcp.dgn
PROJECT LEADER: D. KULL
DESIGNED BY: S. LISTER
TRAFFIC CONTROL PLAN SHEET

PLOT DATE: 4/7/2021
DRAWN BY: M. LOVETT
CHECKED BY: S. IRELAND
SHEET 11 OF 25

4" WHITE LINE, DURABLE PAINT

STA	56+60.2 - STA	57+85.0	LT
STA	56+35.0 - STA	57+85.0	RT

4" YELLOW LINE, DURABLE PAINT

STA	56+35 - STA 57+85 CENTERLINE
STA	57+43 - STA 57+72 GORE

CROSSWALK MARKING, DURABLE PAINT

STA	56+19.9 - STA	56+39.9	LT

DURABLE 24 INCH STOP BAR

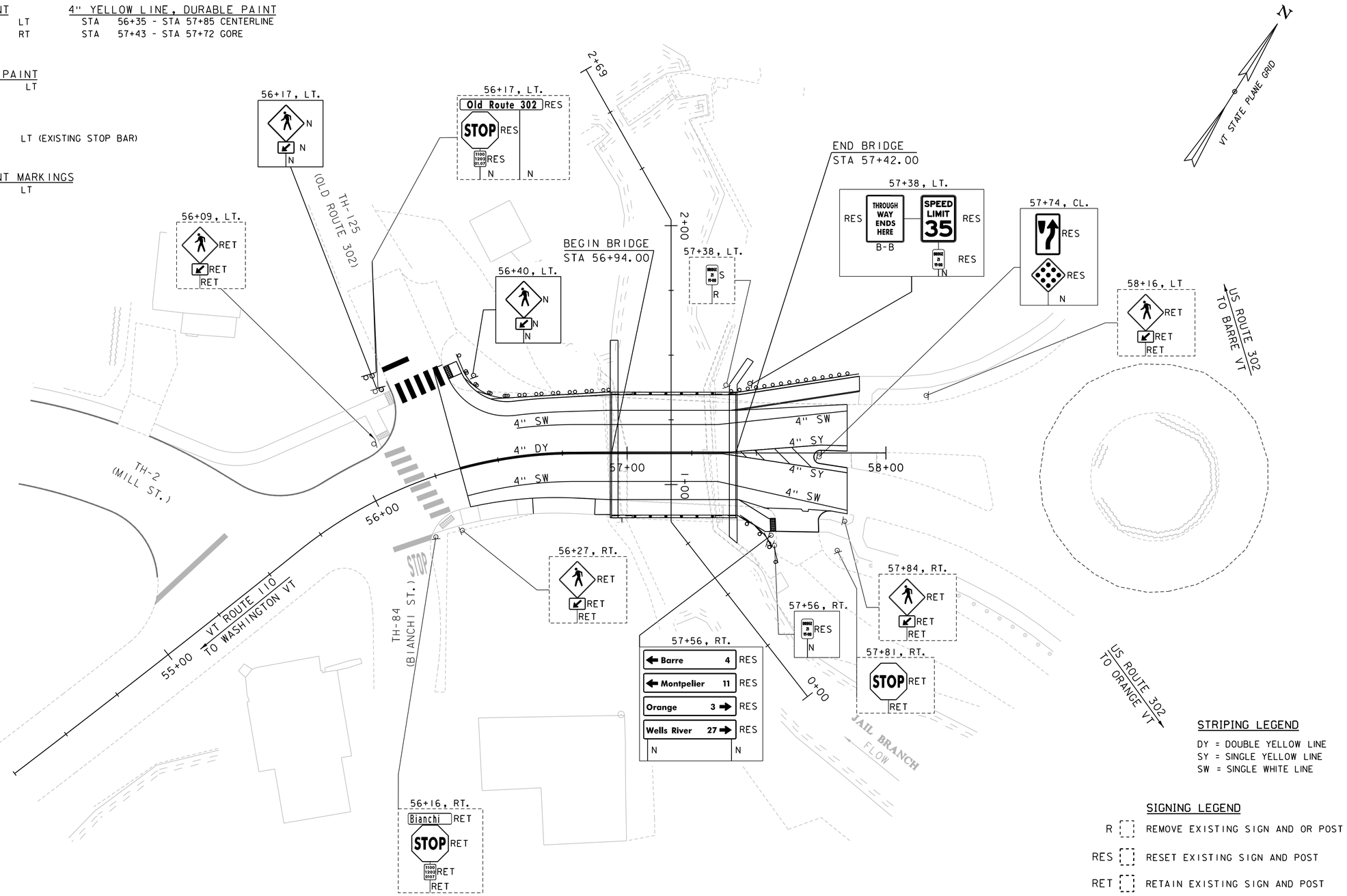
STA	56+19.9 - STA	56+28.5	LT (EXISTING STOP BAR)

REMOVAL OF EXISTING PAVEMENT MARKINGS

STA	56+16.1 - STA	56+30.9	LT

RESETTING SIGNS AS SHOWN

STA	57+38	LT
STA	57+47	LT
STA	57+56	RT
STA	57+56	RT
STA	57+74	CL



STRIPING LEGEND

DY = DOUBLE YELLOW LINE
SY = SINGLE YELLOW LINE
SW = SINGLE WHITE LINE

SIGNING LEGEND

R	REMOVE EXISTING SIGN AND OR POST
RES	RESET EXISTING SIGN AND POST
RET	RETAIN EXISTING SIGN AND POST
N	NEW SIGN AND/OR POST

SCALE 1" = 20'-0"
20 0 20

McFarland Johnson

PROJECT NAME: BARRE TOWN
PROJECT NUMBER: BF 0169(12)

FILE NAME: zl2c576sign.dgn
PROJECT LEADER: D. KULL
DESIGNED BY: S. LISTER
SIGNING AND STRIPING PLAN

PLOT DATE: 4/7/2021
DRAWN BY: M. LOVETT
CHECKED BY: S. IRELAND
SHEET 12 OF 25

TEMPORARY TRAFFIC SIGN SUMMARY

ID NUMBER	SIGN TEXT	SIZE OF SIGN		NUMBER OF SIGNS REQ'D	AREA OF EACH SIGN (SF)	COLOR	REMARKS
		WIDTH (IN)	HEIGHT (IN)				
M4-8	DETOUR	24	12	40	2.0	BLACK AND FLUORESCENT ORANGE	MOUNT ABOVE M3-2 OR M3-4
M3-2	NORTH	24	12	21	2.0	GREEN AND WHITE	MOUNT ABOVE MI-6
M3-4	SOUTH	24	12	19	2.0	GREEN AND WHITE	MOUNT ABOVE MI-6
MI-6	VERMONT 110	30	24	40	5.0	GREEN AND WHITE	
M6-3	↑	21	15	16	2.19	BLACK AND FLUORESCENT ORANGE	MOUNT BELOW MI-6
M6-1R	→	21	15	4	2.19	BLACK AND FLUORESCENT ORANGE	MOUNT BELOW MI-6
M5-1R	↱	21	15	4	2.19	BLACK AND FLUORESCENT ORANGE	MOUNT BELOW MI-6
M6-1L	←	21	15	5	2.19	BLACK AND FLUORESCENT ORANGE	MOUNT BELOW MI-6
M5-1L	↰	21	15	5	2.19	BLACK AND FLUORESCENT ORANGE	MOUNT BELOW MI-6
M6-2R	↗	21	15	1	2.19	BLACK AND FLUORESCENT ORANGE	MOUNT BELOW MI-6
M4-8a	END DETOUR	24	18	3	3.0	BLACK AND FLUORESCENT ORANGE	MOUNT BELOW MI-6
W20-2	ROAD CLOSED AHEAD	48	48	3	24.0	BLACK AND FLUORESCENT ORANGE	INSTALL ON 2 POSTS
W20-2	DETOUR AHEAD	48	48	2	24.0	BLACK AND FLUORESCENT ORANGE	INSTALL ON 2 POSTS
W20-3	ROAD CLOSED 500 FT	48	48	3	24.0	BLACK AND FLUORESCENT ORANGE	INSTALL ON 2 POSTS
W20-3	ROAD CLOSED 1000 FT	48	48	2	24.0	BLACK AND FLUORESCENT ORANGE	INSTALL ON 2 POSTS
R9-9	SIDEWALK CLOSED	24	12	3	6.0	BLACK AND WHITE	INSTALL ON TYPE III BARRICADE
R11-2	ROAD CLOSED	48	30	2	10.0	BLACK AND WHITE	INSTALL ON TYPE III BARRICADE

THE ESTIMATED QUANTITIES OF "PERMANENT CONTROLS" ARE HEREBY LISTED. ADDITIONAL SIGNS REQUIRED FOR THE CONSTRUCTION APPROACHES ARE SHOWN ON STANDARD DETAIL T-10. THE CONTRACTOR IS RESPONSIBLE FOR ALL "OPERATIONAL CONTROLS" REQUIRED UNDER SECTION 641 OF THE 2018 VTRANS SPECIFICATIONS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), PART VI LATEST EDITION.

VTI10 TRAFFIC CONTROL NOTES

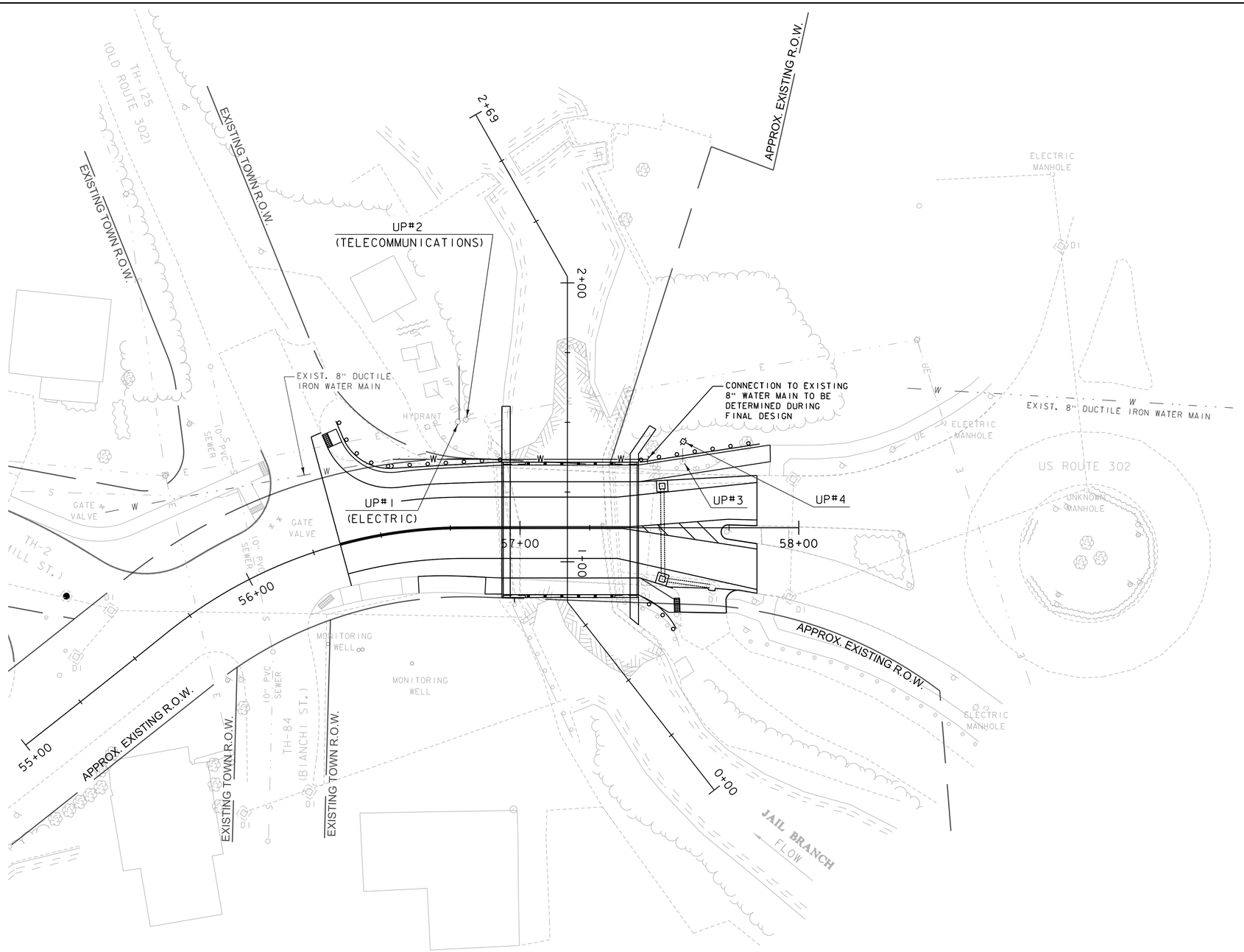
1. THE OFFICIAL STATE DETOUR SIGNING PLAN FOR THE ROAD CLOSURE IS SHOWN ON TRAFFIC CONTROL SHEET 10.
2. A PUBLIC OUTREACH COORDINATOR SHALL BE USED FOR PUBLICIZING AND COORDINATING DETOUR INFORMATION, INCLUDING (BUT NOT LIMITED TO) TRAFFIC DELAYS FOR THE PUBLIC. THE CONTRACTOR SHALL COORDINATE WITH THE PUBLIC OUTREACH COORDINATOR AS NEEDED.
3. THE CONTRACTOR SHALL IMPLEMENT THE ROAD CLOSURE, TRAFFIC CONTROL, AND DETOUR AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF A SITE-SPECIFIC TRAFFIC CONTROL PLAN FOR ANY STAGES OF CONSTRUCTION NOT SHOWN IN THE PLANS. THE PLAN SHALL CLEARLY DETAIL HOW TRAFFIC WILL BE MAINTAINED. THE PLAN SHALL SPECIFY ALL CONSTRUCTION ACTIVITIES, RELATE THOSE ACTIVITIES TO THE CONSTRUCTION SCHEDULE, AND SHOW APPROPRIATE TEMPORARY TRAFFIC CONTROL. THE CONTRACTOR SHALL SUBMIT DETAILED TRAFFIC CONTROL PLANS TO THE ENGINEER FOR APPROVAL PER SUBSECTION 105.03.
   ALL COSTS WILL BE INCLUDED IN ITEM 641.11, "TRAFFIC CONTROL, ALL-INCLUSIVE".
4. 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 ROAD CLOSURE TO WARN OF THE IMPENDING CLOSURE & DETOURS, THEN BE MOVED OUT TO START OF DETOUR. PCMS SHALL BE PLACED OFF THE EDGE OF THE ROAD, OUTSIDE THE CLEAR ZONE AS DEFINED IN THE ROADSIDE DESIGN GUIDE, BUT SHALL BE VISIBLE FROM THE ROADWAY.
5. THE ROUTE MARKERS USED FOR THE DETOUR AS SHOWN ON THE PLANS SHALL FOLLOW THE LATEST EDITION OF THE MUTCD AND ITS LATEST REVISIONS. THESE SIGNS SHALL BE REMOVED AT THE END OF THE ROAD CLOSURE.
6. ALL TRAFFIC CONTROL DEVICES SHALL BE KEPT IN THEIR PROPER POSITION AT ALL TIMES AND SHALL BE REPAIRED, REPLACED OR CLEANED BY THE CONTRACTOR AS NECESSARY TO PRESERVE THEIR APPEARANCE AND CONTINUITY.
7. ALL SIGNS SHALL HAVE ORANGE FLAGS ATTACHED AND BE PLACED WITHIN EXISTING STATE OR TOWN RIGHTS-OF-WAY, UNLESS OTHERWISE NOTED.
8. ACCESS TO ALL EXISTING DRIVES AND SIDE ROADS SHALL BE MAINTAINED AT ALL TIMES DURING ALL PHASES OF CONSTRUCTION UNLESS OTHERWISE NOTED ON THE PLANS. (INCIDENTAL TO ITEM 641.11 - TRAFFIC CONTROL, ALL-INCLUSIVE)
9. INSTALLATION OF DETOUR AND ON-SITE SIGNS SHALL NOT BLOCK ANY EXISTING TRAFFIC CONTROL SIGN ASSEMBLIES AND SHALL MODIFY OR BE PLACED ADJACENT TO EXISTING ROUTE MARKER SIGN ASSEMBLIES WHEN POSSIBLE.
   THE CONTRACTOR SHOULD MAINTAIN AT LEAST 200 FEET BETWEEN SIGN ASSEMBLIES WHENEVER POSSIBLE.
10. EXISTING SIGNS THAT ARE IN CONFLICT WITH THE TRAFFIC FLOW OF THE DETOUR SHALL BE REMOVED OR COVERED BY THE CONTRACTOR, AS DIRECTED BY THE ENGINEER. ALL SIGNS REMOVED OR COVERED SHALL BE REPLACED OR UNCOVERED WHEN THE TRAFFIC CONTROL PACKAGE IS DISASSEMBLED.
11. NO CONSTRUCTION SIGNS SHALL BE INSTALLED AS TO INTERFERE WITH STOPPING SIGHT DISTANCE AND CORNER SIGHT DISTANCE FROM DRIVES AND TOWN HIGHWAYS.
12. CONTACT DIG-SAFE AT 1-888-344-7233 PRIOR TO BREAKING GROUND TO INSTALL ANY SIGN POSTS.
13. THE CONTRACTOR SHALL COORDINATE WITH THE LOCAL SCHOOLS AND BICYCLE EVENT COORDINATORS TO INFORM THEM OF THE START AND END OF THE ROAD CLOSURE.

McFarland Johnson

PROJECT NAME: BARRE TOWN
PROJECT NUMBER: BF 0169(12)

FILE NAME: zl2c576sum_sgn.dgn
PROJECT LEADER: D. KULL
DESIGNED BY: S. LISTER
SIGN SUMMARY & TRAFFIC CONTROL NOTES

PLOT DATE: 4/7/2021
DRAWN BY: S. LISTER
CHECKED BY: B. COLBURN
SHEET 13 OF 25



MARK	STATION	OFFSET	NORTHING	EASTING	REMARKS	POLE NUMBER
UP#1	56+78.5	39.0' LT	605284.0	1653723.5	GREEN MOUNTAIN POWER TO ALLY ARM CONDUCTOR TO BACK SIDE OF POLE PRIOR TO CONSTRUCTION. POLE TO BE TEMPORARILY BRACED DURING CONSTRUCTION WITH TEMPORARY PUSH BRACE	TBD
UP#2	56+80.5	39.0' LT	605286.0	1653725.5	TO BE TEMPORARILY BRACED DURING CONSTRUCTION. EXISTING GUY WIRE TO BE TEMPORARILY REMOVED DURING CONSTRUCTION.	TBD
UP#3	57+58.5	23.5' LT	605315.0	1653799.5	REMOVE EXISTING STREET LIGHT ASSEMBLY	
UP#4	57+58.5	31.0' LT	605321.0	1653796.0	NEW STREET LIGHT ASSEMBLY	

SCALE 1" = 20'-0"
20 0 20

McFarland Johnson

PROJECT NAME: BARRE TOWN
PROJECT NUMBER: BF 0169(12)

FILE NAME: z12c576bdr_uty.dgn
PROJECT LEADER: D. KULL
DESIGNED BY: S. LISTER
UTILITY RELOCATION SHEET

PLOT DATE: 4/7/2021
DRAWN BY: S. MERKWAN
CHECKED BY: S. IRELAND
SHEET 14 OF 25

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.

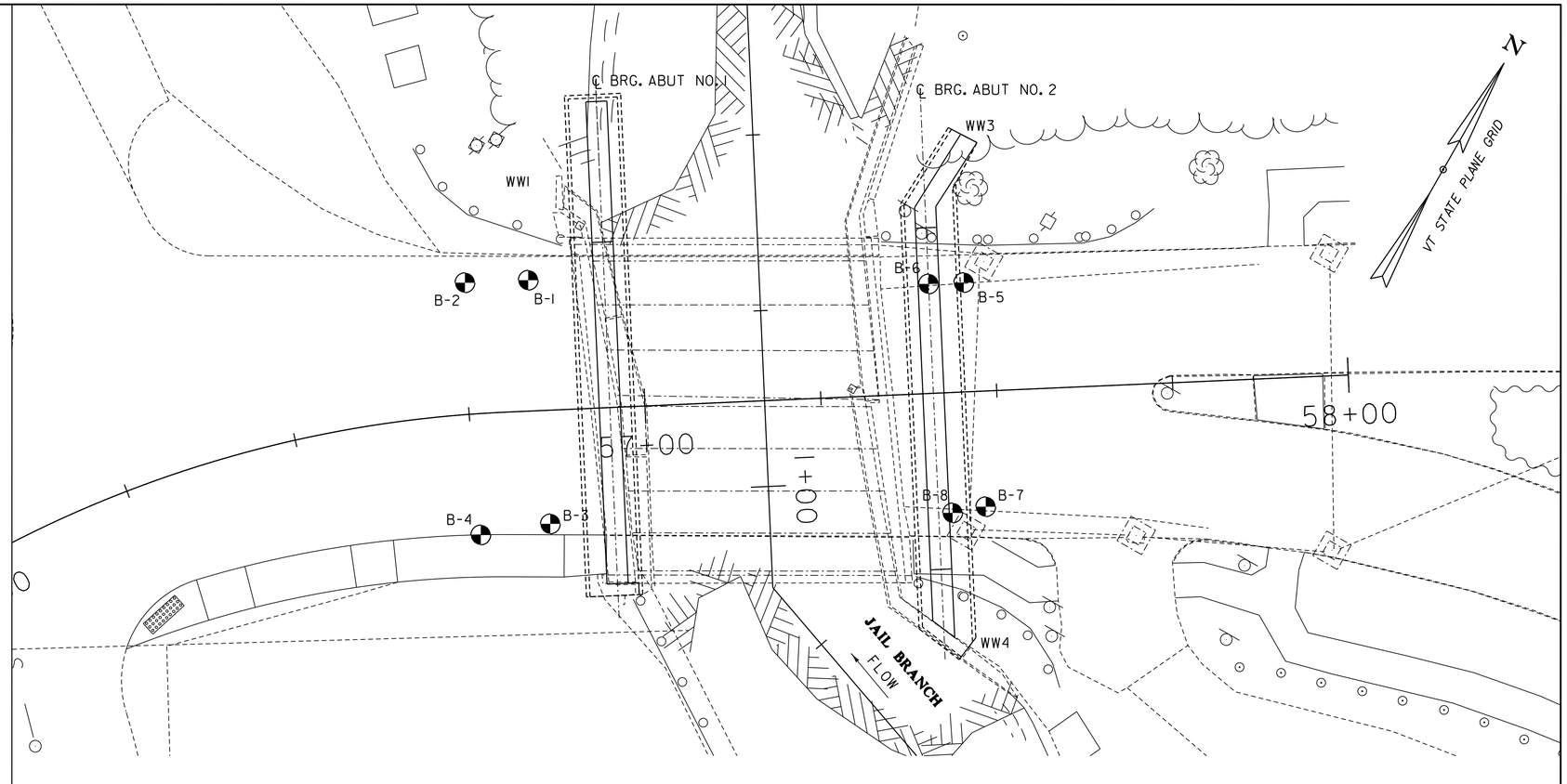
MUCK - Soft organic soil (containing > 10% organic material.

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.



BORING CHART

HOLE NO.	BASELINE STATION	OFFSET	GROUND ELEV.	ELEV TLOB (FT.)	NORTHING	EASTING
B-1	56+84	18' LT.	1088.0	1074.6	605271.09	1653739.49
B-2	56+75	19' LT.	1088.0	N/A	605266.32	1653731.86
B-3	56+86	16' RT.	1088.0	1076.0	605242.58	1653759.39
B-4	56+75	17' RT.	1088.0	N/A	605236.32	1653751.59
B-5	57+46	15' LT.	1086.5	N/A	605301.48	1653793.37
B-6	57+41	15' LT.	1086.0	1072.9	605298.83	1653789.13
B-7	57+48	16' RT.	1086.5	N/A	605275.37	1653811.88
B-8	57+43	17' RT.	1086.0	1073.0	605272.27	1653808.23

BORING LAYOUT

10 0 10

SCALE: 1" = 10'-0"

GENERAL NOTES

1. The subsurface explorations shown herein were made between 11/30/20 and 12/03/20 by GZA.
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: BARRE TOWN
PROJECT NUMBER: BF 0169(12)

FILE NAME: z12c576bor_lay.dgn
PROJECT LEADER: D. KULL
DESIGNED BY: S. LISTER
BORING LAYOUT SHEET

PLOT DATE: 4/7/2021
DRAWN BY: S. MERKWAN
CHECKED BY: R. JOY
SHEET 15 OF 25

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Bridge No. 21 Replacement Project
Barre Town BF 0169(12)
Barre, Vermont

Boring No.: B-1
Page No.: 1 of 1
Pin No.: 12C576
Checked By: D. Lamothe

Boring Crew: M. D'Ambrosio (NEBC), J. Szmyt (GZA)
Date Started: 11/30/20 Date Finished: 11/30/20
VTSPG NAD83: N 605271.09 ft E 1653739.49 ft
Station: 56+84 Offset: 18 LT
Ground Elevation: 1088.0 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	2 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	Versadrill GT8 TRUCK	CE = 1.3

Groundwater Observations		
Date	Depth (ft)	Notes
11/30/20	13.3	Stab. time = 0.25 hrs.

ABUTMENT NO 1
BOTTOM OF FTG.
EL 1077.00

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Visual Description, Approximately 10 inches of pavement, ASPHALT					
		Visual Description, (Modified Burmister), S-1 (0.8-2.8'): Medium dense, brown, fine to medium SAND, little Gravel, trace Silt (A-1-a). Moist. ND, Rec. = 1.08 ft, FILL	10-11-9-9 (20)				
		Visual Description, (Modified Burmister), S-2 (2.8-4.8'): Medium dense, brown, fine to medium SAND, little Gravel, trace Silt (A-1-a). Moist. ND, Rec. = 0.67 ft, FILL	8-7-6-7 (13)				
5		Visual Description, (Modified Burmister), S-3 (4.8-6.8'): Medium dense, brown, fine to medium SAND, little Silt, trace Gravel, trace Wood (A-1-b). Moist. ND, Rec. = 1.0 ft, FILL	6-8-5-71 (13)				
		Visual Description, (Modified Burmister), S-4 (6.8-8.8'): Very dense, brown, fine to medium SAND, little Silt, trace Gravel (A-1-b). Moist. ND, Rec. = 1.08 ft, FILL	92-36-17-9 (53)				
		Visual Description, FILL	4-5-3-4 (8)				
10		Visual Description, (Modified Burmister), S-5 (9.0-11.0'): Loose, brown, fine to coarse SAND, some Gravel, little Silt (A-1-b). Wet. 238 ppm, Rec. = 0.33 ft, FILL					
		Visual Description, (Modified Burmister), S-6 (11.0-13.0'): Medium dense, brown, fine to medium SAND, little Silt, trace Gravel (A-1-b). Wet. ND, Rec. = 0.67 ft, FILL	6-5-6-8 (11)				
		Visual Description, (Modified Burmister), S-7 (13.0-13.4'): Very dense, brown, fine to coarse SAND, little Gravel, trace Silt (A-1-a). Wet. ND, Rec. = 0.42 ft, FILL	100/5" (REF)				
15		Advanced 3-inch-diameter roller bit into probable bedrock, 13.4 ft - 15.0 ft					
		Hole stopped @ 15.0 ft					
20							
25							
30							

Remarks:
1. Soil samples were screened for total volatile organic compounds (VOCs) using a Tiger photoionization detector with 10.6eV bulb, referenced to an isobutylene-in-air standard. Total VOCs detected are reported in parts per million (ppm). "ND" indicates no VOCs detected above background.
2. Due to low sample recovery from sample S-5 which consisted primarily of gravel, VOC grab sample collected from sample S-6. Composite sample obtained from samples S-1 through S-7.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE 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 04.0191154.03 VTRANS BARRE BF 0169(12).GPJ VERMONT AOT.GDT 1/8/21

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Bridge No. 21 Replacement Project
Barre Town BF 0169(12)
Barre, Vermont

Boring No.: B-2
Page No.: 1 of 1
Pin No.: 12C576
Checked By: D. Lamothe

Boring Crew: M. D'Ambrosio (NEBC), J. Szmyt (GZA)
Date Started: 12/01/20 Date Finished: 12/01/20
VTSPG NAD83: N 605266.32 ft E 1653731.86 ft
Station: 56+75 Offset: 19 LT
Ground Elevation: 1088.0 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	2 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	Versadrill GT8 TRUCK	CE = 1.3

Groundwater Observations		
Date	Depth (ft)	Notes
12/01/20		Not Encountered

ABUTMENT NO 1
BOTTOM OF FTG.
EL 1077.00

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Visual Description, Approximately 10 inches of pavement, ASPHALT					
		Visual Description, (Modified Burmister), S-1 (0.8-2.8'): Medium dense, brown, fine to medium SAND, little Silt, trace Gravel (A-1-b). Moist. ND, Rec. = 0.83 ft, FILL	13-15-10-10 (25)				
		Visual Description, (Modified Burmister), S-2 (2.8-4.8'): Dense, brown, fine to medium SAND, little Gravel, little Silt (A-1-b). Moist. ND, Rec. = 0.75 ft, FILL	24-22-13-11 (35)				
5		Visual Description, (Modified Burmister), S-3 (4.8-6.8'): Loose, brown, fine to medium SAND, little Silt, trace Gravel, trace Wood (A-1-b). Moist. ND, Rec. = 1.0 ft, SAND	5-4-2-2 (6)				
		Visual Description, (Modified Burmister), S-4 (6.8-8.8'): No recovery, Rec. = 0.0 ft, SAND	1-2-3-2 (5)				
10		Visual Description, (Modified Burmister), S-5 (8.8-10.8'): Loose, brown, fine to medium SAND, little Silt, trace Gravel (A-1-b). Moist. ND, Rec. = 0.92 ft, SAND	2-2-2-2 (4)				
		Hole stopped @ 10.8 ft					
15							
20							
25							
30							

Remarks:
1. Soil samples were screened for total volatile organic compounds (VOCs) using a Tiger photoionization detector with 10.6eV bulb, referenced to an isobutylene-in-air standard. Total VOCs detected are reported in parts per million (ppm). "ND" indicates no VOCs detected above background.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE 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 04.0191154.03 VTRANS BARRE BF 0169(12).GPJ VERMONT AOT.GDT 1/8/21

McFarland Johnson

PROJECT NAME: BARRE TOWN
PROJECT NUMBER: BF 0169(12)

FILE NAME: z12c576bor_log.dgn
PROJECT LEADER: D. KULL
DESIGNED BY: S. LISTER
BORING LOGS SHEET NO. 1

PLOT DATE: 4/7/2021
DRAWN BY: S. MERKWAN
CHECKED BY: R. JOY
SHEET 16 OF 25

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Bridge No. 21 Replacement Project
Barre Town BF 0169(12)
Barre, Vermont

Boring No.: B-3
Page No.: 1 of 1
Pin No.: 12C576
Checked By: D. Lamothe

Boring Crew: M. D'Ambrosio (NEBC), J. Szmyt (GZA)
Date Started: 12/01/20 Date Finished: 12/01/20
VTSPG NAD83: N 605242.58 ft E 1653759.39 ft
Station: 56+86 Offset: 16 RT
Ground Elevation: 1088.0 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	2 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	Versadrill GT8 TRUCK	CE = 1.3

Groundwater Observations		
Date	Depth (ft)	Notes
12/01/20	10.6	Stab. time = 0.25 hrs.

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 %
		Visual Description, Approximately 11 inches of pavement, ASPHALT								
		Visual Description, FILL				7-7-5-3 (12)				
		Visual Description, (Modified Burmister), S-1 (1.0-3.0'): Medium dense, brown, fine to medium SAND, trace Silt, trace Gravel (A-3). Moist. 205 ppm. Petroleum odor, Rec. = 0.83 ft, FILL				2-4-1-3 (5)				
5		Visual Description, (Modified Burmister), S-2 (3.0-5.0'): Loose, brown, fine to medium SAND, little Silt, trace Gravel (A-1-b). Moist. 191 ppm, Rec. = 1.0 ft, FILL				4-1-2-4 (3)				
		Visual Description, (Modified Burmister), S-3 (5.0-7.0'): Very loose, brown, fine to medium SAND, little Gravel, trace Silt (A-1-a). Moist. 32.4 ppm, Rec. = 0.42 ft, FILL				2-18-10-11 (28)				
		Visual Description, (Modified Burmister), S-4 (7.0-9.0'): Medium dense, brown, fine to medium SAND, little Silt, trace Gravel (A-1-b). Moist. 24.5 ppm, Rec. = 0.58 ft, FILL				6-100/6" (REF)				
10		Visual Description, (Modified Burmister), S-5 (9.0-10.0'): Very dense, brown, fine to medium SAND, trace Gravel, trace Silt (A-3). Moist. 35.4 ppm, Rec. = 0.33 ft, FILL				75/4" (REF)				
ABUTMENT NO 1 BOTTOM OF FTG. EL 1077.00		Advanced roller bit through cobble, 10.0 ft - 10.5 ft								
		Visual Description, (Modified Burmister), S-6 (10.5-10.8'): Very dense, brown, fine to medium SAND, little Gravel, little Silt (A-1-b). Wet. ND, Rec. = 0.25 ft, FILL								
		Advanced roller bit through cobbles, 10.8 ft - 12.0 ft	C-1	97 (93)	2					
15		Advanced roller bit into bedrock and began coring, 12.0 ft - 13.3 ft			2					
		13.3 ft - 18.3 ft, C-1: Hard, fresh, gray, black and white, fine to medium grained, GRANODIORITE. Joints are low angle, moderately spaced to wide, rough, undulating, discolored, and partially open.			2 1.5 2					
		18.3 ft - 23.3 ft, C-2: Hard, fresh, gray, black and white, fine to medium grained, GRANODIORITE. Joints are low angle, widely spaced, rough, undulating, fresh, and partially open.	C-2	100 (98)	1.5 2 2.5 2.5 3					
20										
		Hole stopped @ 23.3 ft								
25										
30										

Remarks:
1. Soil samples were screened for total volatile organic compounds (VOCs) using a Tiger photoionization detector with 10.6eV bulb, referenced to an isobutylene-in-air standard. Total VOCs detected are reported in parts per million (ppm). "ND" indicates no VOCs detected above background.
2. VOC and TPH fingerprint grab samples collected from sample S-1. Composite sample obtained from samples S-1 through S-6.
3. Borehole grouted within rock core runs and backfilled with drill cuttings for remainder of borehole.
4. Bedrock testing completed on C-1 (13.3-14.5 ft.) sample, UCS = 13.8 ksi, unit weight = 162.7 pcf.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE 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 04.0191154.03 VTRANS BARRE BF 0169(12).GPJ VERMONT AOT.GDT 1/8/21

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Bridge No. 21 Replacement Project
Barre Town BF 0169(12)
Barre, Vermont

Boring No.: B-4
Page No.: 1 of 1
Pin No.: 12C576
Checked By: D. Lamothe

Boring Crew: M. D'Ambrosio (NEBC), J. Szmyt (GZA)
Date Started: 12/01/20 Date Finished: 12/01/20
VTSPG NAD83: N 605236.32 ft E 1653751.59 ft
Station: 56+75 Offset: 17 RT
Ground Elevation: 1088.0 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	2 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	Versadrill GT8 TRUCK	CE = 1.3

Groundwater Observations		
Date	Depth (ft)	Notes
12/01/20		Not Encountered

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Visual Description, Approximately 11 inches of pavement, ASPHALT					
		0.9 ft - 1.0 ft, FILL	9-13-10-9 (23)				
		Visual Description, (Modified Burmister), S-1 (1.0-3.0'): Medium dense, brown, fine to medium SAND, little Silt, trace Gravel (A-1-b). Moist. 33.8 ppm, Rec. = 1.33 ft, FILL					
		Visual Description, (Modified Burmister), S-2 (3.0-5.0'): Medium dense, brown, fine to medium SAND, little Silt, trace Gravel (A-1-b). Moist. 21.5 ppm, Rec. = 0.33 ft, SAND	6-6-5-2 (11)				
5		Visual Description, (Modified Burmister), S-3 (5.0-7.0'): Very loose, brown, fine to medium SAND, trace Silt, trace Gravel (A-3). Moist. 19.5 ppm, Rec. = 0.5 ft, SAND	2-2-1-1 (3)				
		Visual Description, (Modified Burmister), S-4 (7.0-9.0'): Loose, brown, fine to medium SAND, trace Silt, trace Gravel (A-3). Moist. 10.5 ppm, Rec. = 0.58 ft, SAND	2-6-2-4 (8)				
10		Visual Description, (Modified Burmister), S-5 (9.0-11.0'): Loose, brown, fine to medium SAND, little Gravel, trace Silt (A-1-a). Wet. 8.4 ppm, Rec. = 0.5 ft, SAND	2-6-3-5 (9)				
ABUTMENT NO 1 BOTTOM OF FTG. EL 1077.00		Hole stopped @ 11.0 ft					
15							
20							
25							
30							

Remarks:
1. Soil samples were screened for total volatile organic compounds (VOCs) using a Tiger photoionization detector with 10.6eV bulb, referenced to an isobutylene-in-air standard. Total VOCs detected are reported in parts per million (ppm). "ND" indicates no VOCs detected above background.
2. VOC grab sample collected from sample S-1. Composite sample obtained from samples S-1 through S-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. CE 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 04.0191154.03 VTRANS BARRE BF 0169(12).GPJ VERMONT AOT.GDT 1/8/21

McFarland Johnson

PROJECT NAME: BARRE TOWN
PROJECT NUMBER: BF 0169(12)

FILE NAME: z12c576bor_log.dgn
PROJECT LEADER: D. KULL
DESIGNED BY: S. LISTER
BORING LOGS SHEET NO. 2

PLOT DATE: 4/7/2021
DRAWN BY: S. MERKWAN
CHECKED BY: R. JOY

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Bridge No. 21 Replacement Project
Barre Town BF 0169(12)
Barre, Vermont

Boring No.: B-5
Page No.: 1 of 1
Pin No.: 12C576
Checked By: D. Lamothe

Boring Crew: M. D'Ambrosio (NEBC), J. Szmyt (GZA)
Date Started: 12/02/20 Date Finished: 12/02/20
VTSPG NAD83: N 605301.48 ft E 1653793.37 ft
Station: 57+46 Offset: 15 LT
Ground Elevation: 1086.5 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	2 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	Versadrill GT8 TRUCK	CE = 1.3

Groundwater Observations		
Date	Depth (ft)	Notes
12/02/20		Not Encountered

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Visual Description, Approximately 11 inches of pavement, ASPHALT					
		0.9 ft – 1.0 ft, FILL	8-18-14-11 (32)				
		Visual Description, (Modified Burmister), S-1 (1.0–3.0'): Dense, gray-brown, fine to medium SAND, trace Gravel, trace Silt (A-3). Moist. ND, Rec. = 1.08 ft, FILL					
		Visual Description, (Modified Burmister), S-2 (3.0–5.0'): Medium dense, gray-brown, fine to medium SAND, trace Gravel, trace Silt (A-3). Moist. ND, Rec. = 0.67 ft, FILL	7-7-10-10 (17)				
5		Visual Description, (Modified Burmister), S-3 (5.0–7.0'): Medium dense, gray, fine to medium SAND, little Gravel, trace Silt (A-1-a). Moist. ND, Rec. = 0.42 ft, FILL	7-6-7-10 (13)				
		Visual Description, (Modified Burmister), S-4 (7.0–9.0'): Very dense, gray-brown, fine to medium SAND, little Gravel, little Silt (A-1-b). Moist. ND, Rec. = 1.25 ft, FILL	21-18-33-9 (51)				
10		Visual Description, (Modified Burmister), S-5 (9.0–11.0'): Medium dense, gray-brown, fine to medium SAND, little Gravel, trace Silt (A-1-a). Moist. ND, Rec. = 1.08 ft, FILL	9-11-9-10 (20)				
ABUTMENT NO 2 BOTTOM OF FTG. EL 1075.00		Hole stopped @ 11.0 ft					
15		Remarks: 1. Soil samples were screened for total volatile organic compounds (VOCs) using a Tiger photoionization detector with 10.6eV bulb, referenced to an isobutylene-in-air standard. Total VOCs detected are reported in parts per million (ppm). "ND" indicates no VOCs detected above background.					
20							
25							
30							

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE 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 04.0191154.03 VTRANS BARRE BF 0169(12).GPJ VERMONT AOT.GDT 1/8/21

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Bridge No. 21 Replacement Project
Barre Town BF 0169(12)
Barre, Vermont

Boring No.: B-6
Page No.: 1 of 1
Pin No.: 12C576
Checked By: D. Lamothe

Boring Crew: M. D'Ambrosio (NEBC), J. Szmyt (GZA)
Date Started: 12/02/20 Date Finished: 12/02/20
VTSPG NAD83: N 605298.83 ft E 1653789.13 ft
Station: 57+41 Offset: 15 LT
Ground Elevation: 1086.0 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	2 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	Versadrill GT8 TRUCK	CE = 1.3

Groundwater Observations		
Date	Depth (ft)	Notes
12/02/20	9.2	Stab. time = 0.25 hrs.

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 %
		Visual Description, Approximately 11 inches of pavement, ASPHALT								
		Visual Description, FILL				14-19-14-12 (33)				
		Visual Description, (Modified Burmister), S-1 (1.0–3.0'): Dense, gray-brown, fine to medium SAND, trace Silt, trace Gravel (A-3). Moist. ND, Rec. = 1.25 ft, FILL				10-9-9-8 (18)	7.3	16.1	74.7	9.2
		Visual Description, (Modified Burmister), S-2 (3.0–5.0'): Medium dense, brown, fine to medium SAND, trace Silt, trace Gravel (A-3). Moist. ND, Rec. = 1.08 ft, FILL								
5		Visual Description, (Modified Burmister), S-3 (5.0–7.0'): Medium dense, brown, fine to medium SAND, little Gravel, trace Silt (A-1-a). Moist. ND, Rec. = 0.67 ft, FILL				8-11-8-6 (19)				
		Visual Description, (Modified Burmister), S-4 (7.0–9.0'): Medium dense, brown, fine to medium SAND, some Gravel, trace Silt (A-1-a). Wet. 9.3 ppm, Rec. = 0.5 ft, FILL				6-7-6-9 (13)				
10		Visual Description, (Modified Burmister), S-5 (9.0–11.0'): Medium dense, brown, GRAVEL and fine to medium Sand, little Silt (A-1-b). Wet. ND, Rec. = 0.42 ft, FILL				2-6-8-12 (14)	8.6	53.7	31.3	15.0
ABUTMENT NO 2 BOTTOM OF FTG. EL 1075.00		Visual Description, (Modified Burmister), S-6 (11.0–13.0'): Medium dense, brown, fine to medium SAND, little Silt, trace Gravel (A-1-b). Wet. ND, Rec. = 0.42 ft, SAND				5-7-9-5 (16)				
		Visual Description, (Modified Burmister), S-7 (13.0–14.1'): Very dense, brown, fine to medium SAND, little Gravel, little Silt (A-1-b). Wet. ND, Rec. = 0.58 ft, SAND				21-29-50/1" (REF)				
15		Visual Description, SAND				50/1" (REF)				
		Visual Description, (Modified Burmister), S-8 (15.0–15.1'): Very dense, olive-brown, fine to medium SAND and Gravel, little Silt (A-1-b). Wet. ND, Rec. = 0.08 ft, SAND	C-1	84 (72)	2.5					
		Advanced roller bit into bedrock and began coring, 15.1 ft – 15.8 ft			3					
		15.8 ft – 20.8 ft, C-1: Hard, fresh, gray, black and white, fine to medium grained, GRANODIORITE. Joints are horizontal to low angle, very closely spaced to widely spaced, rough, undulating, fresh, and partially open.			4.5 4.5 4					
20		20.8 ft – 25.8 ft, C-2: Hard, fresh, gray, black and white, fine to medium grained, GRANODIORITE. Joints are horizontal to low angle, very closely spaced to widely spaced, rough, undulating, fresh, and partially open.	C-2	91 (88)	6 5 4.5 5 5.5					
25		Hole stopped @ 25.8 ft								
30		Remarks: 1. Soil samples were screened for total volatile organic compounds (VOCs) using a Tiger photoionization detector with 10.6eV bulb, referenced to an isobutylene-in-air standard. Total VOCs detected are reported in parts per million (ppm). "ND" indicates no VOCs detected above background. 2. Borehole grouted within rock core runs and backfilled with drill cuttings for remainder of borehole. 3. Bedrock testing completed on C-1 (15.9–16.7 ft.) sample, UCS = 13.7 ksi, unit weight = 164.5 pcf.									

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE 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 04.0191154.03 VTRANS BARRE BF 0169(12).GPJ VERMONT AOT.GDT 1/8/21

McFarland Johnson

PROJECT NAME: BARRE TOWN
PROJECT NUMBER: BF 0169(12)

FILE NAME: z12c576bor_log.dgn
PROJECT LEADER: D. KULL
DESIGNED BY: S. LISTER
BORING LOGS SHEET NO. 3

PLOT DATE: 4/7/2021
DRAWN BY: S. MERKWAN
CHECKED BY: R. JOY
SHEET 18 OF 25

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Bridge No. 21 Replacement Project
Barre Town BF 0169(12)
Barre, Vermont

Boring No.: B-7
Page No.: 1 of 1
Pin No.: 12C576
Checked By: D. Lamothe

Boring Crew: M. D'Ambrosio (NEBC), J. Szmyt (GZA)
Date Started: 12/03/20 Date Finished: 12/03/20
VTSPG NAD83: N 605275.37 ft E 1653811.88 ft
Station: 57+48 Offset: 16 RT
Ground Elevation: 1086.5 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	2 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	Versadrill GT8 TRUCK	CE = 1.3

Groundwater Observations

Date	Depth (ft)	Notes
12/03/20		Not Encountered

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Visual Description, Approximately 11 inches of pavement, ASPHALT					
		0.9 ft – 1.0 ft, FILL	12-16-10-13 (26)				
		Visual Description, (Modified Burmister), S-1 (1.0-3.0'): Medium dense, brown, fine to medium SAND, little Gravel, trace Silt (A-1-a). Moist. ND, Rec. = 1.17 ft, FILL					
		Visual Description, (Modified Burmister), S-2 (3.0-5.0'): Loose, brown, fine to medium SAND, trace Gravel, trace Silt (A-3). Moist. ND, Rec. = 0.92 ft, FILL	6-4-5-5 (9)				
5		Visual Description, (Modified Burmister), S-3 (5.0-7.0'): Loose, brown, fine to medium SAND, little Gravel, trace Silt (A-1-a). Moist. ND, Rec. = 0.58 ft, FILL	7-5-4-10 (9)				
		Visual Description, (Modified Burmister), S-4 (7.0-9.0'): Medium dense, brown, fine to medium SAND, little Gravel, trace Silt (A-1-a). Moist. ND, Rec. = 1.08 ft, FILL	7-5-20-4 (25)				
10		Visual Description, (Modified Burmister), S-5 (9.0-11.0'): Medium dense, brown, fine to medium SAND, little Gravel, trace Silt (A-1-a). Moist. ND, Rec. = 1.25 ft, FILL	2-12-12-6 (24)				
		Hole stopped @ 11.0 ft					

ABUTMENT NO 2
BOTTOM OF FTG.
EL 1075.00

Remarks:
1. Soil samples were screened for total volatile organic compounds (VOCs) using a Tiger photoionization detector with 10.6eV bulb, referenced to an isobutylene-in-air standard. Total VOCs detected are reported in parts per million (ppm). "ND" indicates no VOCs detected above background.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE 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 04.0191154.03 VTRANS BARRE BF 0169(12).GPJ VERMONT AOT.GDT 1/8/21

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Bridge No. 21 Replacement Project
Barre Town BF 0169(12)
Barre, Vermont

Boring No.: B-8
Page No.: 1 of 1
Pin No.: 12C576
Checked By: D. Lamothe

Boring Crew: M. D'Ambrosio (NEBC), J. Szmyt (GZA)
Date Started: 12/03/20 Date Finished: 12/03/20
VTSPG NAD83: N 605272.27 ft E 1653808.23 ft
Station: 57+43 Offset: 17 RT
Ground Elevation: 1086.0 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	2 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	Versadrill GT8 TRUCK	CE = 1.3

Groundwater Observations

Date	Depth (ft)	Notes
12/03/20	13.2	Stab. time = 0.25 hrs.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Visual Description, Approximately 11 inches of pavement, ASPHALT					
		0.9 ft – 1.0 ft, FILL	14-16-7-5 (23)	4.5	23.9	63.5	12.6
		Visual Description, (Modified Burmister), S-1 (1.0-3.0'): Medium dense, brown, fine to coarse SAND, little Gravel, little Silt (A-1-b). Moist. ND, Rec. = 1.08 ft, FILL					
		Visual Description, (Modified Burmister), S-2 (3.0-5.0'): Loose, brown, fine to medium SAND, trace Gravel, trace Silt (A-3). Moist. ND, Rec. = 0.75 ft, FILL	5-4-4-3 (8)				
5		Visual Description, (Modified Burmister), S-3 (5.0-7.0'): Loose, gray, fine to medium SAND, little Gravel, trace Silt (A-1-a). Moist. ND, Rec. = 0.75 ft, FILL	3-4-5-14 (9)				
		Visual Description, (Modified Burmister), S-4 (7.0-8.4'): Very dense, olive-brown, fine to coarse SAND and Gravel, little Silt (A-1-b). Moist. ND, Rec. = 0.58 ft, FILL	10-15-50/5" (REF)	5.8	51.0	35.7	13.3
		Advanced roller bit through cobbles, 8.4 ft – 9.5 ft					
10		Visual Description, (Modified Burmister), S-5 (9.5-11.5'): Dense, gray-brown, fine to medium SAND and Gravel, trace Silt (A-1-a). Wet. ND, Rec. = 0.17 ft, SAND	3-4-36-3 (40)				
		Visual Description, (Modified Burmister), S-6 (11.5-11.6'): Very dense, gray, fine to medium SAND and Gravel, trace Silt (A-1-a). Wet. ND, Rec. = 0.08 ft, SAND	50/1" (REF)				
		Advanced roller bit through cobbles, 11.6 ft – 15.0 ft					
15		Advanced roller bit into probable bedrock, 15.0 ft – 17.0 ft					
		Hole stopped @ 17.0 ft					

ABUTMENT NO 2
BOTTOM OF FTG.
EL 1075.00

Remarks:
1. Soil samples were screened for total volatile organic compounds (VOCs) using a Tiger photoionization detector with 10.6eV bulb, referenced to an isobutylene-in-air standard. Total VOCs detected are reported in parts per million (ppm). "ND" indicates no VOCs detected above background.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE 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 04.0191154.03 VTRANS BARRE BF 0169(12).GPJ VERMONT AOT.GDT 1/8/21

McFarland Johnson

PROJECT NAME: BARRE TOWN
PROJECT NUMBER: BF 0169(12)

FILE NAME: z12c576bor_log.dgn
PROJECT LEADER: D. KULL
DESIGNED BY: S. LISTER
BORING LOGS SHEET NO. 4

PLOT DATE: 4/7/2021
DRAWN BY: S. MERKWAN
CHECKED BY: R. JOY
SHEET 19 OF 25

LIMIT OF WORK

STONE FILL, TYPE IV (TYP)

℄ BRG. ABUTMENT NO 1
STA. 56+95.00

℄ BRG. ABUTMENT NO 2
STA. 57+41.00

LIMIT OF WORK

END BRIDGE
STA 57+42.00
F. G. = 1086.84

LIMIT OF WORK

END PROJECT
STA 57+65.00

END APPROACH
STA 57+85.00
MATCH EXISTING

EXISTING TOWN R.O.W.

BEGIN BRIDGE
STA 56+94.00
F. G. = 1087.59

WW1

N32° 15' 37"W

STATIONING

WW3

W W

LIMIT OF WORK

PRECAST APPROACH SLAB

FACE OF CURB (TYP)

90° 00' 00"

US ROUTE 302 WEST TO BARRE CITY

N

VT STATE PLANE GRID

57+00

FACE OF RAIL (TYP)

N57° 44' 23"E

58+00

00+

PRECAST APPROACH SLAB

LIMIT OF WORK (TYP)

VT ROUTE 110
(WASHINGTON ST.)
TO ORANGE

56+00

℄ CONSTRUCTION

36" CPEP FLOW

US ROUTE 302 EAST TO ORANGE

APPROX. EXISTING R.O.W.

LIMIT OF WORK

WW4

CHANNEL BASELINE

VT 110 STA 57+17.00
= CHANNEL STA 1+12.19
DELTA = 90°

JAIL BRANCH FLOW

BEGIN PROJECT
STA 56+50.00

LIMIT OF WORK

STOP

EXISTING TOWN R.O.W.

BEGIN APPROACH
STA 56+35.00
MATCH EXISTING

PLAN

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

℄ BRG. ABUTMENT NO 1
(FIXED)

℄ BRG. ABUTMENT NO 2
(EXP)

46'-0" SPAN LENGTH

48'-0" PAY LIMITS FOR BRIDGE RAILING, GALVANIZED STEEL TUBING / CONCRETE COMBINATION

PAY LIMITS STEEL BEAM GUARDRAIL GALVANIZED, 16' RADIUS (MEASURED ALONG RADIUS)

1100
1090
1080
1070
1060

TOP OF EXISTING PARKING LOT

8'-0" (TYP)

1'-0" (TYP)

6'-0" (TYP)

Q_{50} EL 1077.3

OHW EL 1073.0

EXISTING WINGWALL

APPROXIMATE BEDROCK

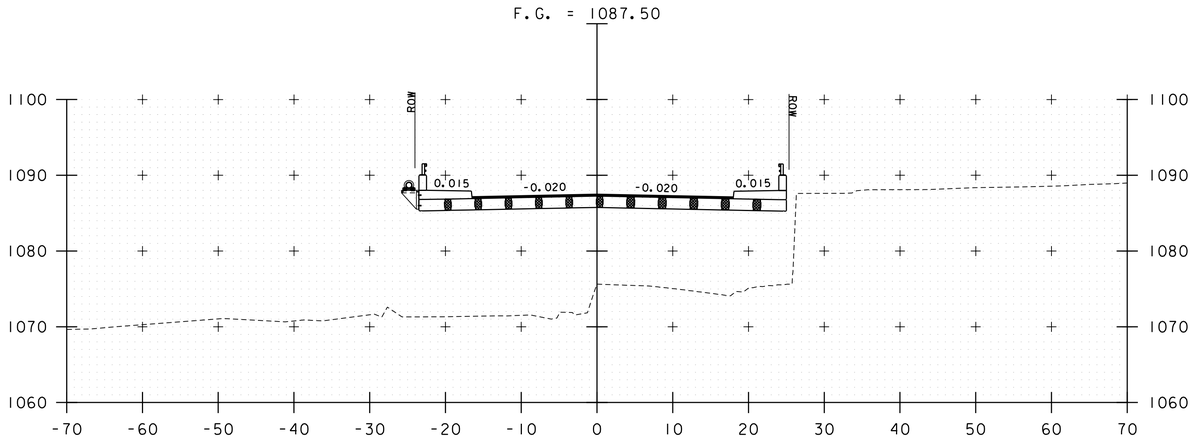
NOTE:
EXISTING RETAINING WALL ADJACENT TO EXISTING PARKING LOT NOT SHOWN FOR CLARITY.

ELEVATION

(LOOKING DOWNSTREAM)
SCALE 1" = 10'-0"
10 0 10

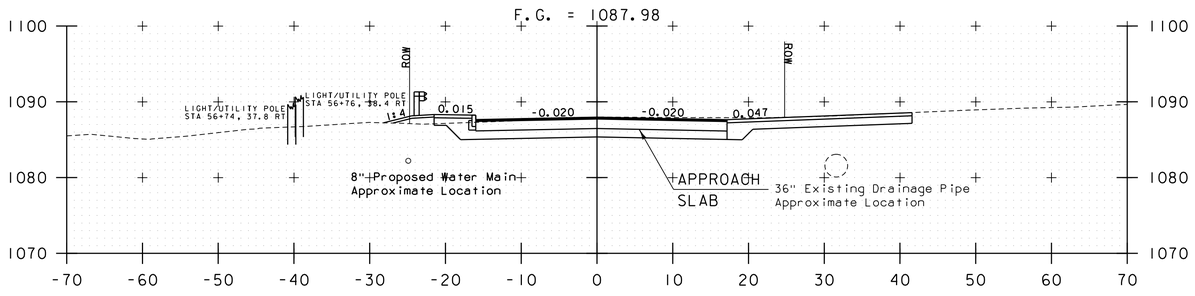
McFarland Johnson

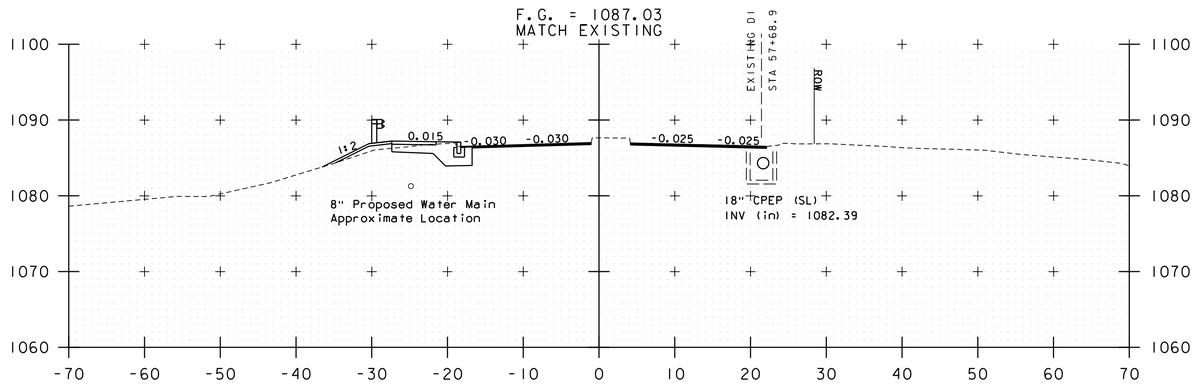
PROJECT NAME:	BARRE TOWN
PROJECT NUMBER:	BF 0169(12)
FILE NAME: z12c576pe.dgn	PLOT DATE: 4/7/2021
PROJECT LEADER: D. KULL	DRAWN BY: S. MERKWAN
DESIGNED BY: S. LISTER	CHECKED BY: D. KULL
PLAN AND ELEVATION SHEET	SHEET 20 OF 25



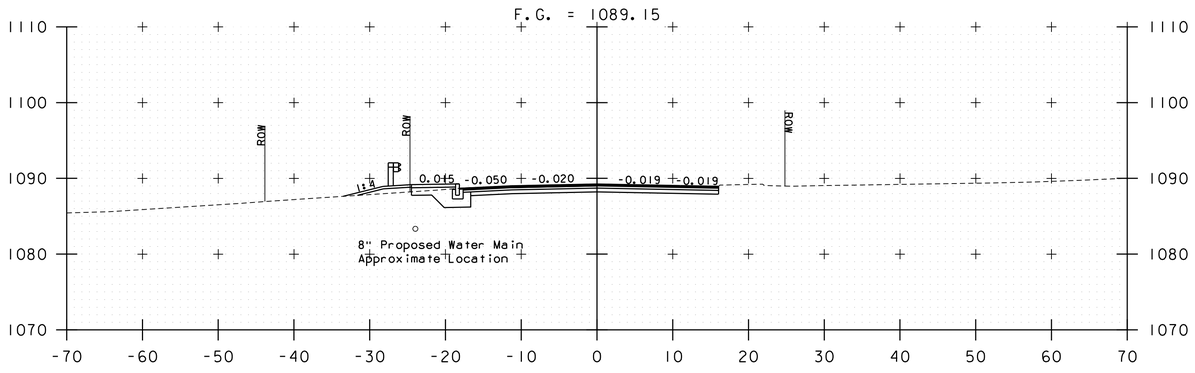
57+00

STA 56+94.00
BEGIN BRIDGE





56+75

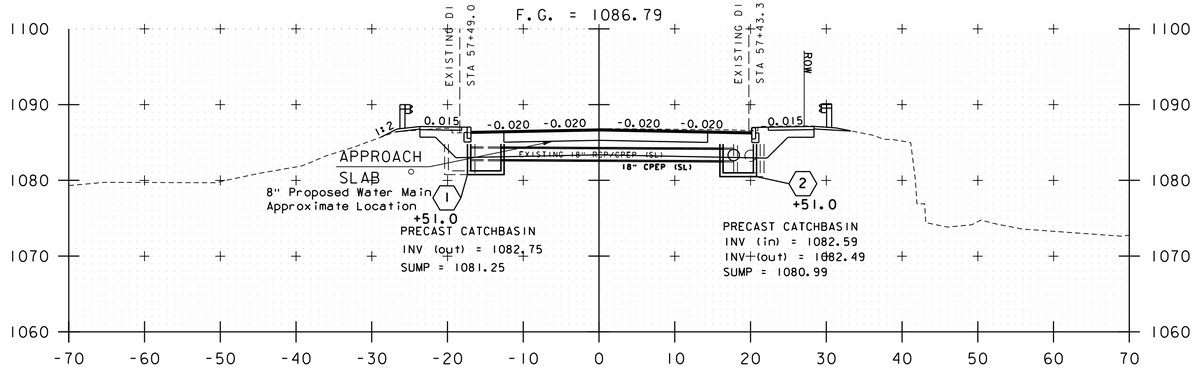


56+50

STA 56+35.00
MATCH EXISTING BCP

57+75

STA 57+85.00
MATCH EXISTING BCP



57+50

STA 57+42.00
END BRIDGE

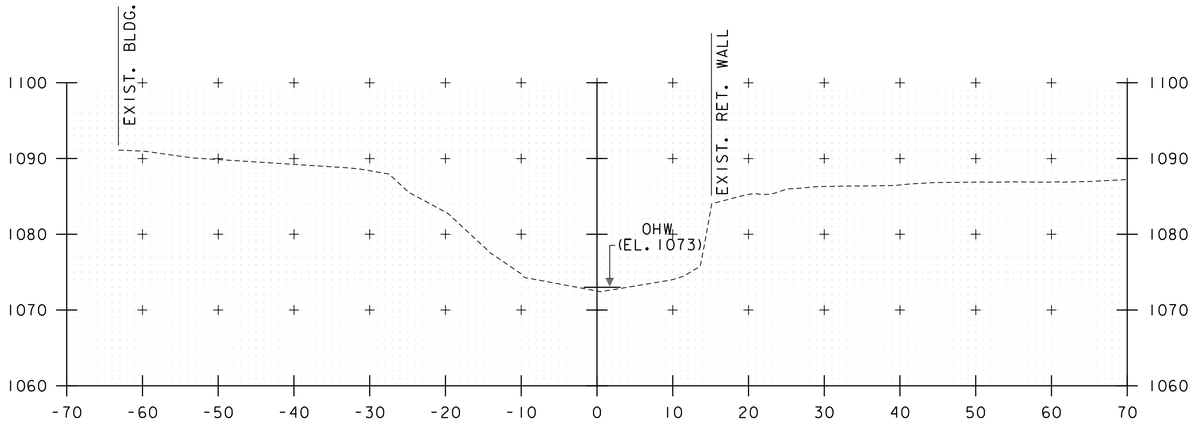
STA. 56+50 TO STA. 57+75

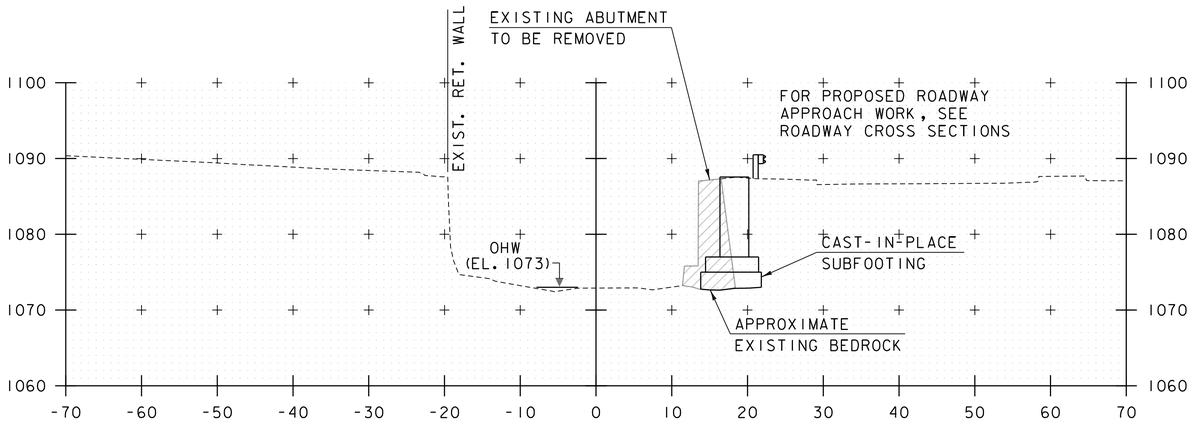
McFarland Johnson

PROJECT NAME: BARRE TOWN
PROJECT NUMBER: BF 0169(12)

FILE NAME: z12c576xsl.dgn
PROJECT LEADER: D. KULL
DESIGNED BY: S. LISTER
VT110 CROSS SECTIONS

PLOT DATE: 4/7/2021
DRAWN BY: M. LOVETT
CHECKED BY: S. IRELAND
SHEET 21 OF 25





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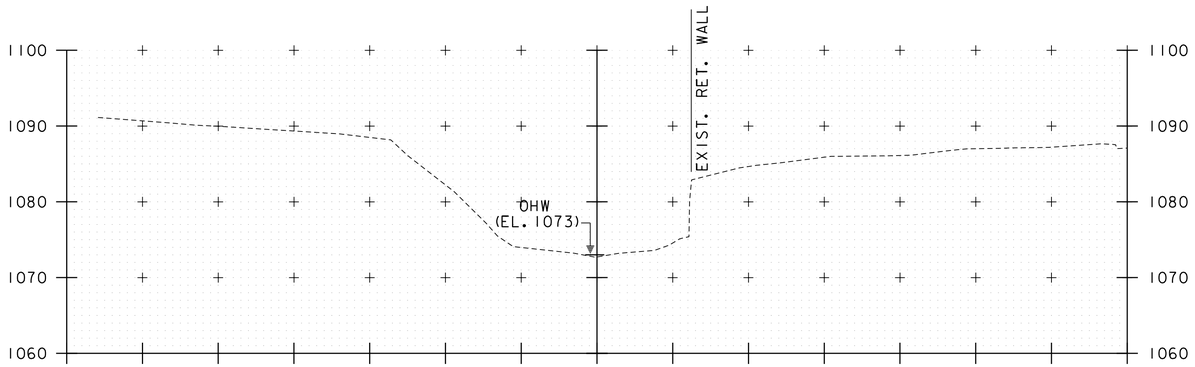

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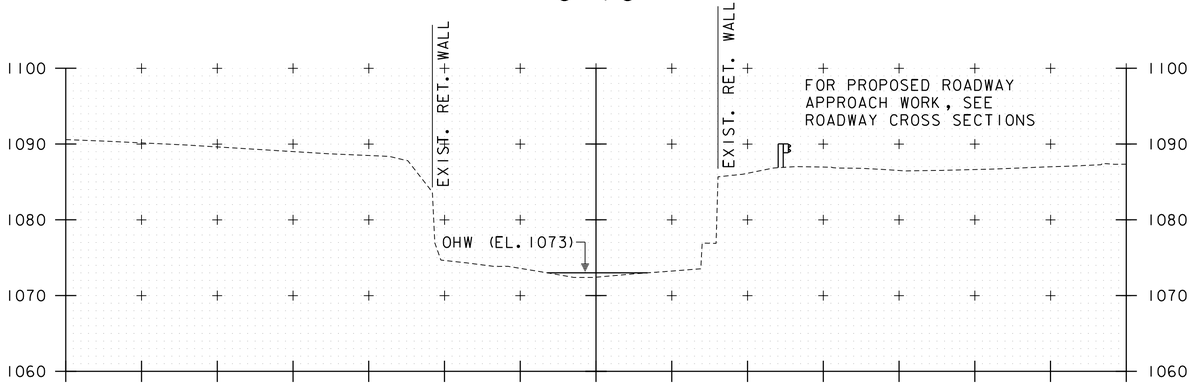

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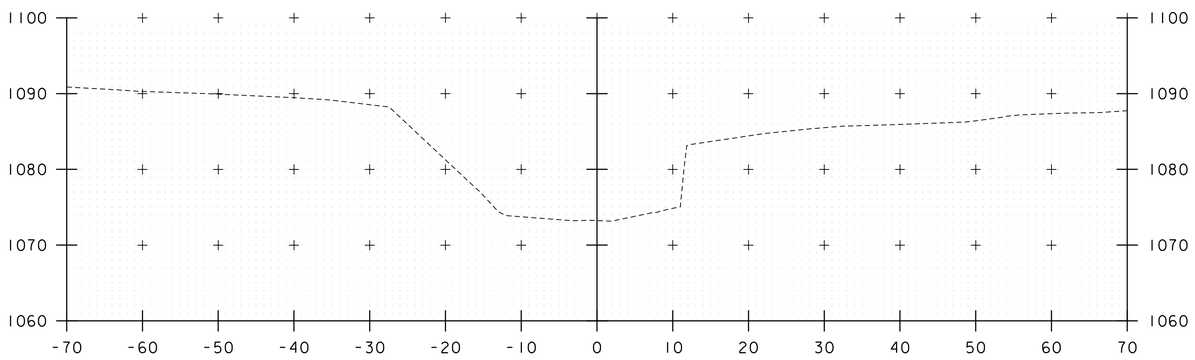

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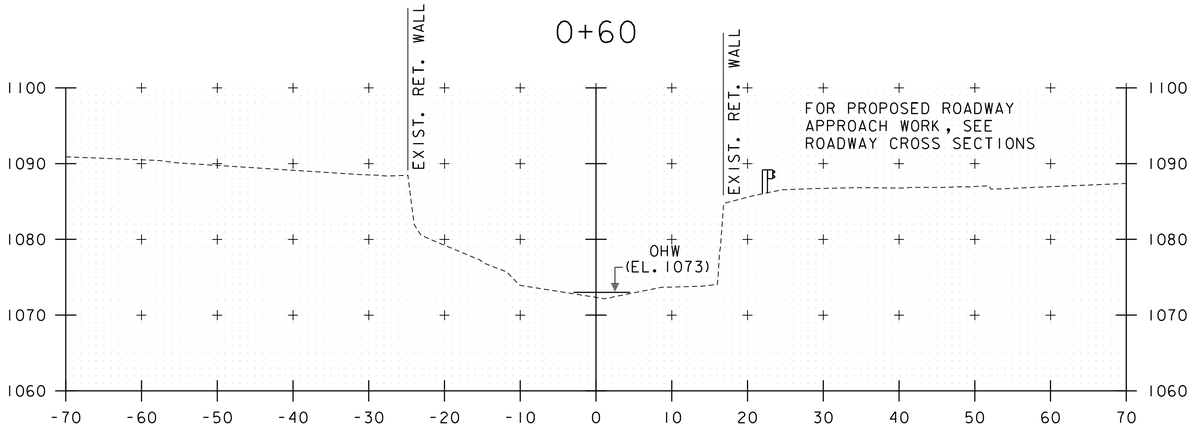


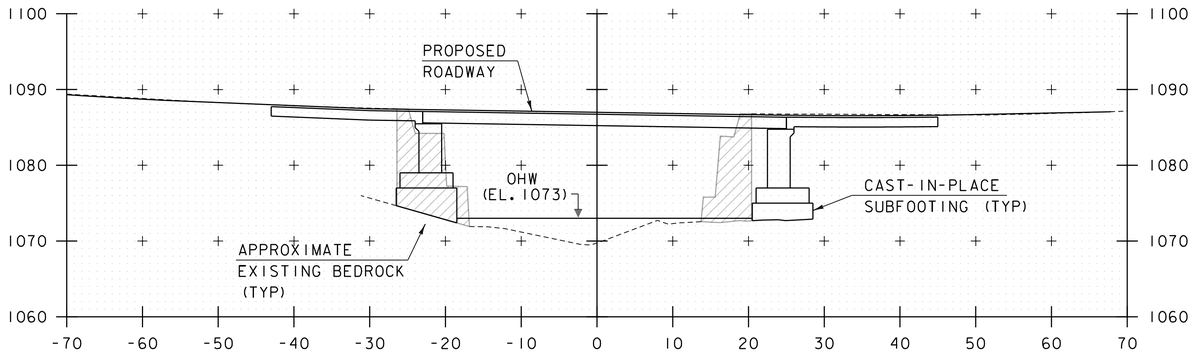
0+20

0+50

STA. 0+20 TO STA. 0+70

McFarland Johnson

PROJECT NAME:	BARRE TOWN
PROJECT NUMBER:	BF 0169(12)
FILE NAME: z12c576xsl.dgn	PLOT DATE: 4/7/2021
PROJECT LEADER: D. KULL	DRAWN BY: S. MERKWAN
DESIGNED BY: S. LISTER	CHECKED BY: S. IRELAND
CHANNEL CROSS SECTIONS SHEET 1	SHEET 22 OF 25



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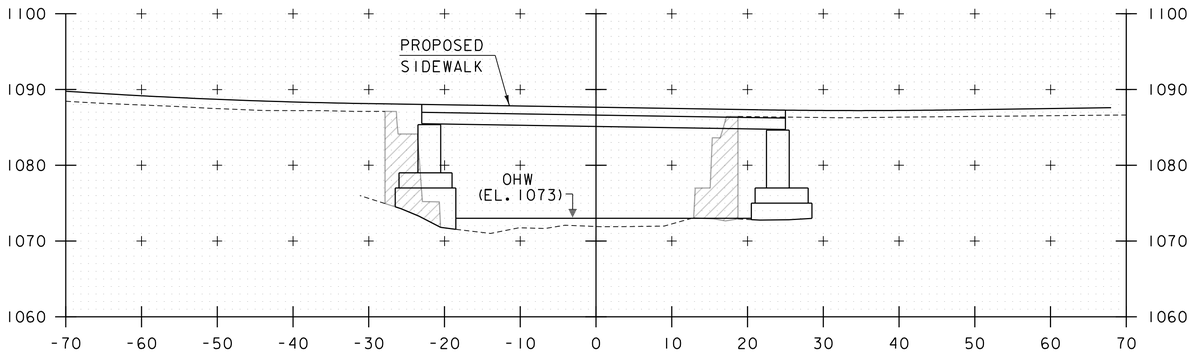

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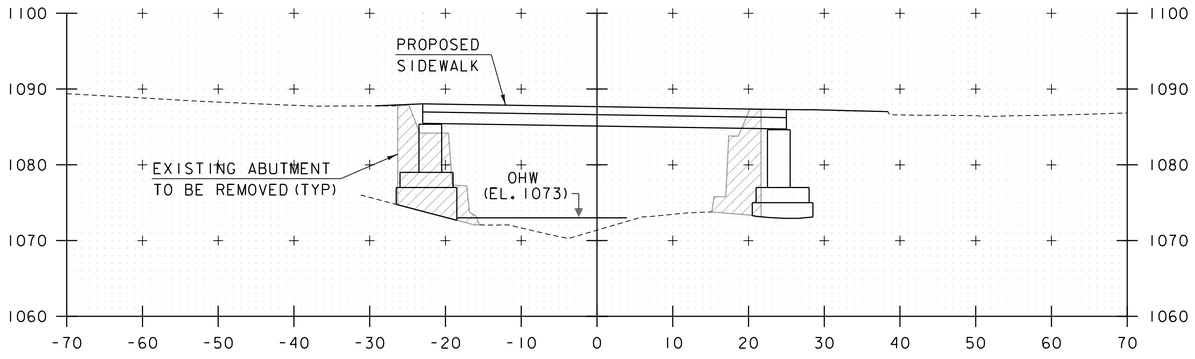

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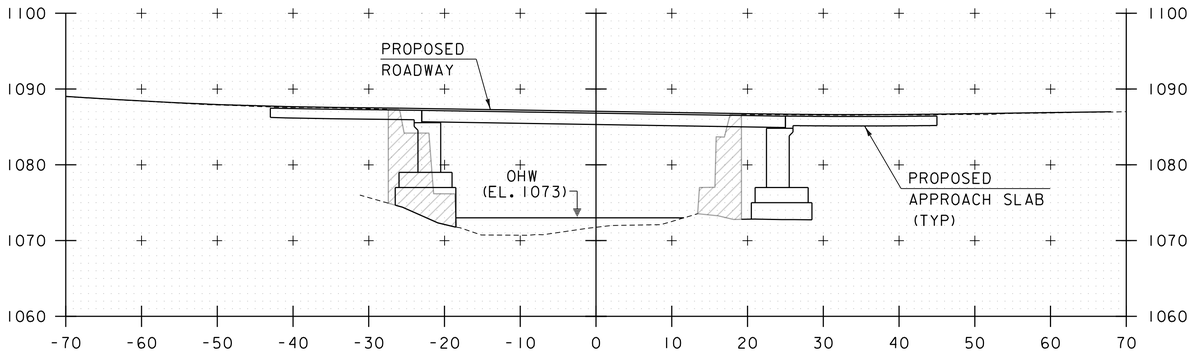

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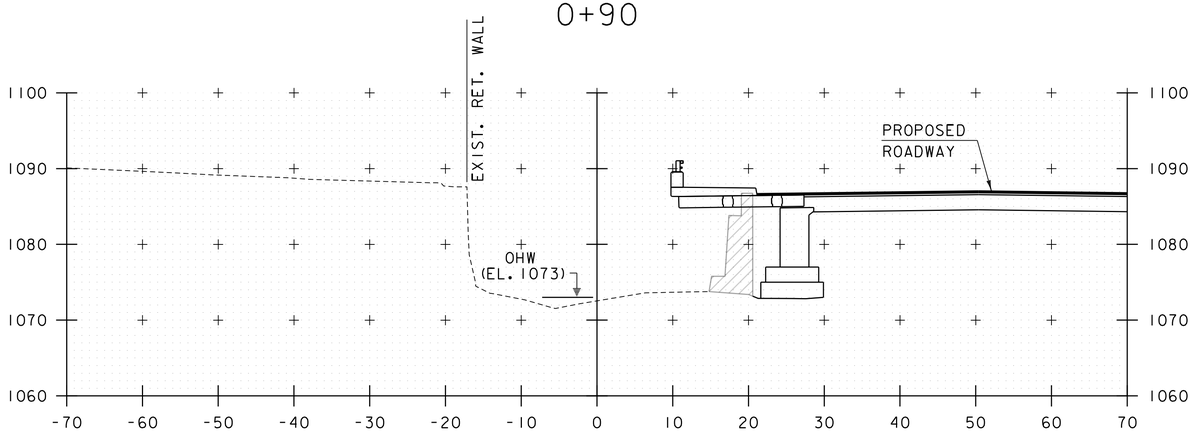
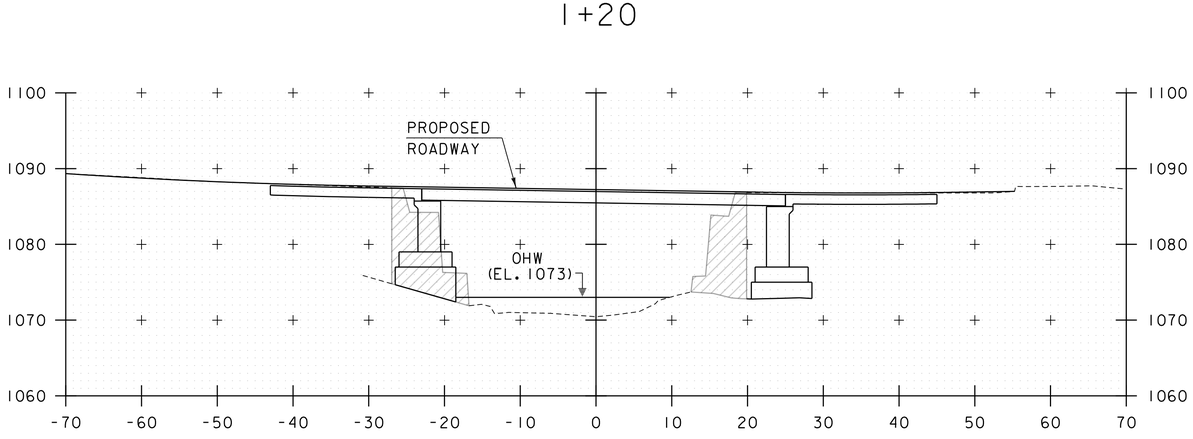


0+80

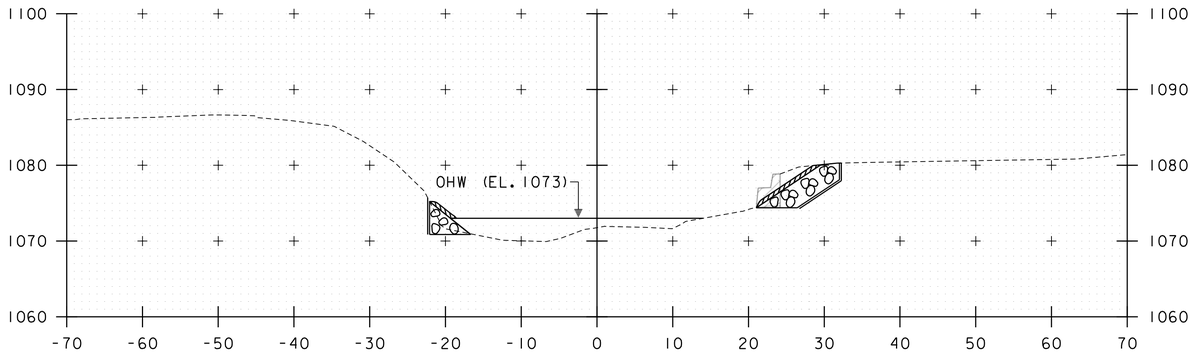


1+10

STA. 0+80 TO STA. 1+30

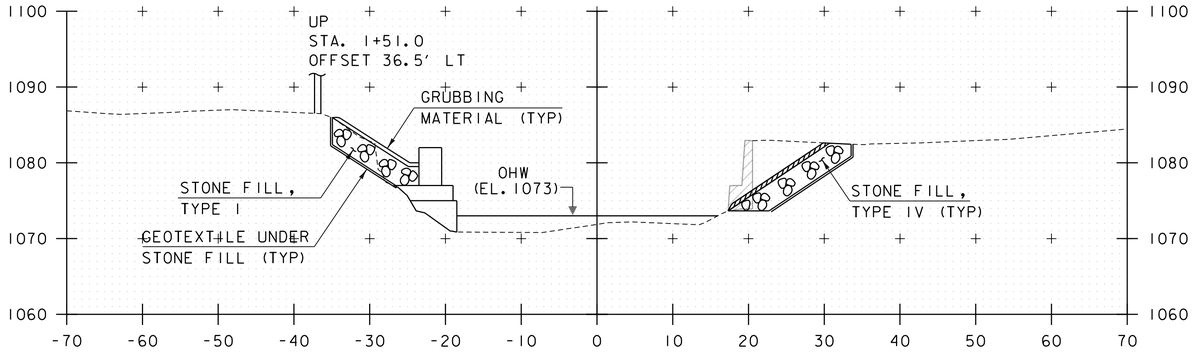
McFarland Johnson

PROJECT NAME:	BARRE TOWN
PROJECT NUMBER:	BF 0169(12)
FILE NAME: z12c576xsl.dgn	PLOT DATE: 4/7/2021
PROJECT LEADER: D. KULL	DRAWN BY: S. MERKWAN
DESIGNED BY: S. LISTER	CHECKED BY: S. IRELAND
CHANNEL CROSS SECTIONS SHEET 2	SHEET 23 OF 25



END GEOTEXTILE UNDER STONE FILL
END STONE FILL, TYPE III
END GRUBBING MATERIAL (12")

1+60

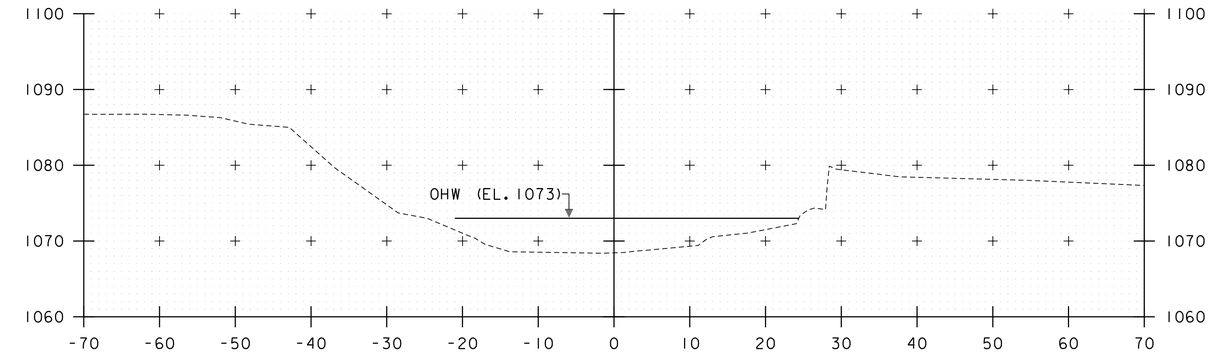


BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE FILL, TYPE IV
BEGIN GRUBBING MATERIAL (12")

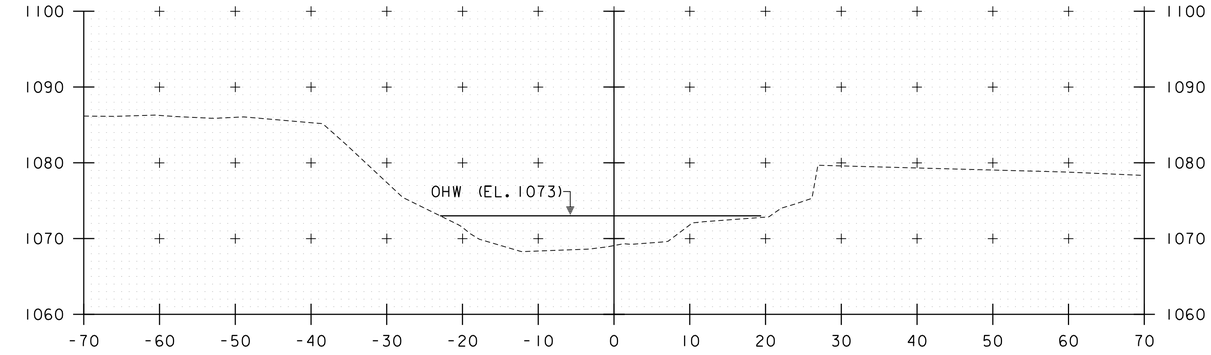
1+50

END GEOTEXTILE UNDER STONE FILL
END STONE FILL, TYPE III
END GRUBBING MATERIAL (12")

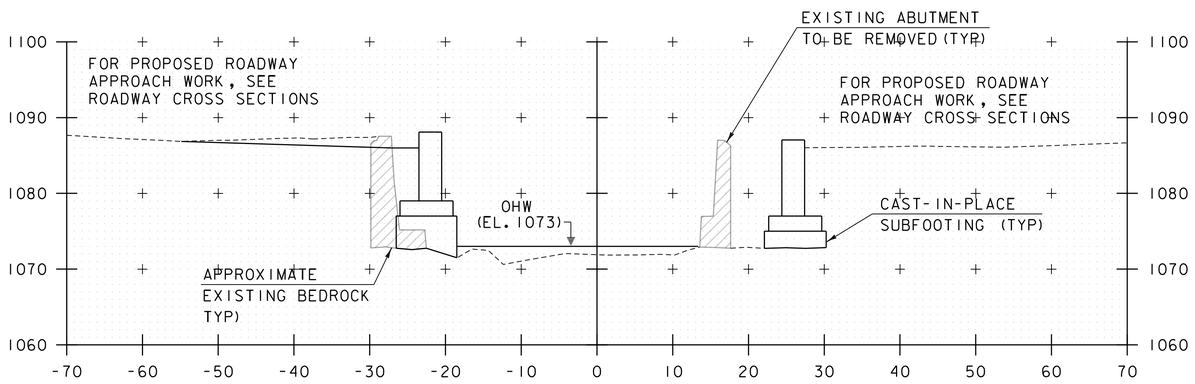
1+60



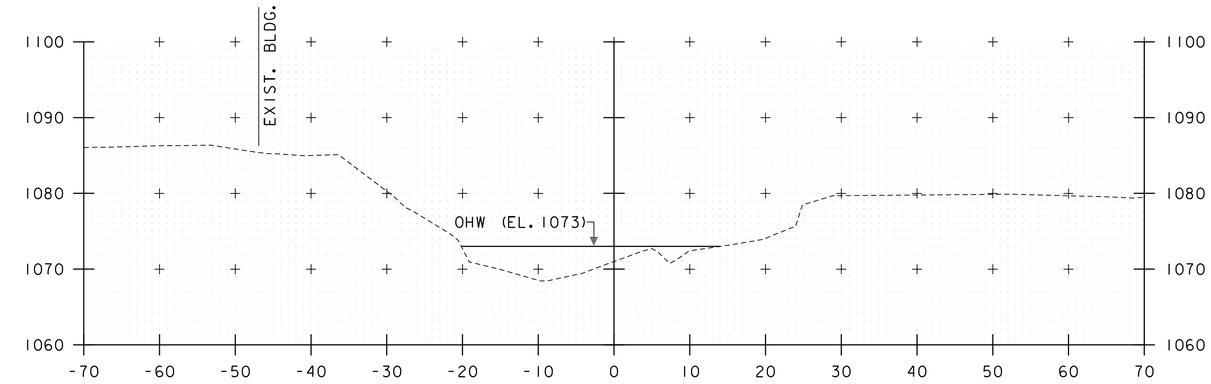
1+90



1+80



1+40



1+70

STA. 1+40 TO STA. 1+90

McFarland Johnson

PROJECT NAME:	BARRE TOWN
PROJECT NUMBER:	BF 0169(12)
FILE NAME: z12c576xsl.dgn	PLOT DATE: 4/7/2021
PROJECT LEADER: D. KULL	DRAWN BY: S. MERKWAN
DESIGNED BY: S. LISTER	CHECKED BY: S. IRELAND
CHANNEL CROSS SECTIONS SHEET 3	SHEET 24 OF 25

BUCKLAND LOAM
3-8% SLOPES
ERODIBLE
K = 0.32

DEMELL, WILLLIAM M. & JODI L.

HOOD, JERRY W.; WRIGHT, JODIE R.

TOWN OF BARRE

MORRIS, STEVEN C. JR. & LORRAINE A.

TOWN OF BARRE

EASY PARROTT PROPERTIES LLC

GILBERT, RICHARD C. & ERICKSON, SANDRA

TOWN OF BARRE

EXISTING TOWN R.O.W.

EXISTING TOWN R.O.W.

EXISTING TOWN R.O.W.

EXISTING TOWN R.O.W.

(OLD ROUTE 302)

TH-125

TH-2 (MILL ST.)

TH-84 (BIANCHI ST.)

VT ROUTE 110 TO WASHINGTON

US ROUTE 302

JAIL BRANCH FLOW

VT STATE PLANE GRID

N

0+00

1+00

2+00

2+69

55+00

56+00

57+00

58+00

BUCKLAND LOAM
3-8% SLOPES
ERODIBLE
K = 0.32

Existing Bridge Information:
Built in 1930, Reconstructed 1959
44' Long, Single Span Concrete T-Beams,
Concrete Deck

SCALE 1" = 20'-0"
20 0 20

McFarland Johnson

PROJECT NAME:	BARRE TOWN
PROJECT NUMBER:	BF 0169(12)
FILE NAME: z12c576bdr_exc.dgn	PLOT DATE: 4/7/2021
PROJECT LEADER: D. KULL	DRAWN BY: M. LOVETT
DESIGNED BY: S. LISTER	CHECKED BY: S. IRELAND
EXISTING CONDITIONS SITE PLAN	SHEET 25 OF 25