District 4
Certcode 1403-0

CERTIFICATE OF HIGHWAY MILEAGE
YEAR ENDING FEBRUARY 10, 2024

Fill out form, make and file a copy with the Town Clerk, and submit the Mileage Certificate on or before February 20, 2024 to: Vermont Agency of Transportation, Division of Policy, Planning and Intermodal Development, Mapping Section via email to: aot.mileagecertificates@vermont.gov or if necessary via mail to: VTrans PPAID - Mapping Section, 219 North Main Street, Barre VT 05641.

We, the members of the legislative body of BARNARD *in* WINDSOR *County on an oath state that the mileage of highways, according to Vermont Statutes Annotated, Title 19, Section 305, added 1985, is as follows:*

PART I - CHANGES TOTALS - Please fill in and calculate totals.

Town Highways	Previous Mileage	Added Mileage	Subtracted Mileage	Total	Scenic Highways
Class 1	0.000			0.00	0.000
Class 2	15.640			15.640	0.000
Class 3	41.10		.01	41.09	0.000
State Highway	9.615			9.615	0.000
Total	66.355			66.345	0.000
* Class 1 Lane	0.000			0.00	
* Class 4	44.47		.01	44.46	0.000
* Legal Trail	2.45			2.45	

DS PD

* Mileage for Class 1 Lane, Class 4, and Legal Trail classifications are NOT included in total.

PART II - INFORMATION AND DESCRIPTION OF CHANGES SHOWN ABOVE.

1. NEW HIGHWAYS: Please attach Selectmen's "Certificate of Completion and Opening".

2. DISCONTINUED: Please attach SIGNED copy of proceedings (minutes of meeting).

3. RECLASSIFIED/REMEASURED: Please attach SIGNED copy of proceedings (minutes of meeting).

-0.01 mi CL3 TH-68 (Old Route 12) realigned and remeasured (B35 relocation and updated intersection with VT-12)
-0.01 mi CL4 TH-68 realigned and remeasured (B35 relocation)
CL3 TH-70 (Old Route 12) realigned (B35 relocation) - no net mileage change

4. SCENIC HIGHWAYS: Please attach a copy of order designating/discontinuing Scenic Highways.

IF THERE ARE NO CHANGES IN MILEAGE: Place an X in the box and sign below. ☐

PART III - SIGNATURES - PLEASE SIGN.

Signatures of Selectmen/ Aldermen/ Trustees: Robert Edmunds

Richard Lancaster

Signature of T/C/V Clerk: Wanda Kinney Date Filed: 1/24/2024

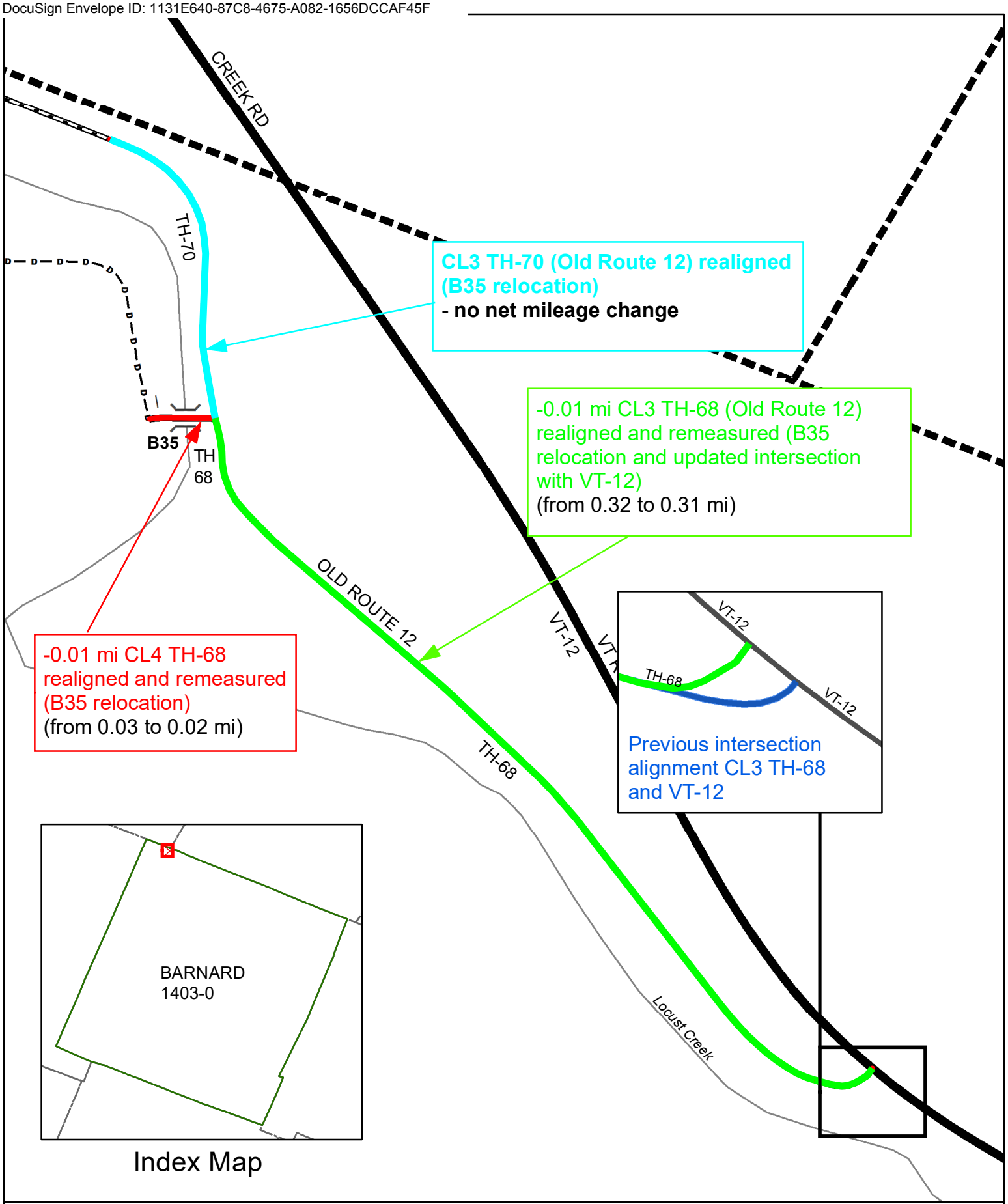
Please sign ORIGINAL and return it for Transportation signature.

AGENCY OF TRANSPORTATION APPROVAL:

Signed copy will be returned to T/C/V Clerk.

APPROVED: DocuSigned by: Johnathan Croft 8B1F350F309C4C9... DATE: 1/30/2024

Representative, Agency of Transportation



Index Map

Mileage Certificate Changes 2024
BARNARD TH-68 AND TH-70
(CTUA:1403-0)
(CERTCODE:1403-0)

Mapping Section
Division of Policy and Planning
Vermont Agency of Transportation -- January 29, 2024

N

0 Miles 0.05

From: Rob Ramrath
To: DeAndrea, Pam
Subject: RE: New bridge in Barnard
Date: Monday, November 6, 2023 7:41:32 AM
Attachments: image002.png
image003.png
LOCUS CREEK BRIDGE #35 PLANS_DEWOLFE ENG_01-06-2015.pdf
Selex Min 170823.pdf
Selex Min 170927.docx
Selex Min 171025.docx
Selex Min 190605.pdf
Selex Min 190619.docx
Selex Min 190619.pdf

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Pam,

I've learned the background of this bridge was to facilitate turning radius for vehicles. I've attached the plans as wells as several Selectboard meeting minutes with some background. Please let me know if you have any other questions. Thank you.

Rob Ramrath
Town Administrator
Zoning Administrator
Town of Barnard
P.O. Box 274
Barnard, VT 05031
802-234-9211 x2 (office)
603-762-5280 (cell)

From: DeAndrea, Pam <Pam.DeAndrea@vermont.gov>
Sent: Friday, November 3, 2023 1:52 PM
To: Rob Ramrath <selectboard@barnardvt.us>
Cc: Rainey, Diane <barnardto@gmail.com>
Subject: New bridge in Barnard

Good afternoon Rob,

I wanted to reach out to you with what looks like to be a new bridge along a Class 4 road (TH-68) which has altered the alignment of the road (see yellow highlight in image below). We still have the bridge as Town Road and can update this on the next Town Highway map. Do you perhaps have the plans for the bridge? That would be helpful for us to accurately map the new location of the Town Road.

Thank you,

Pam

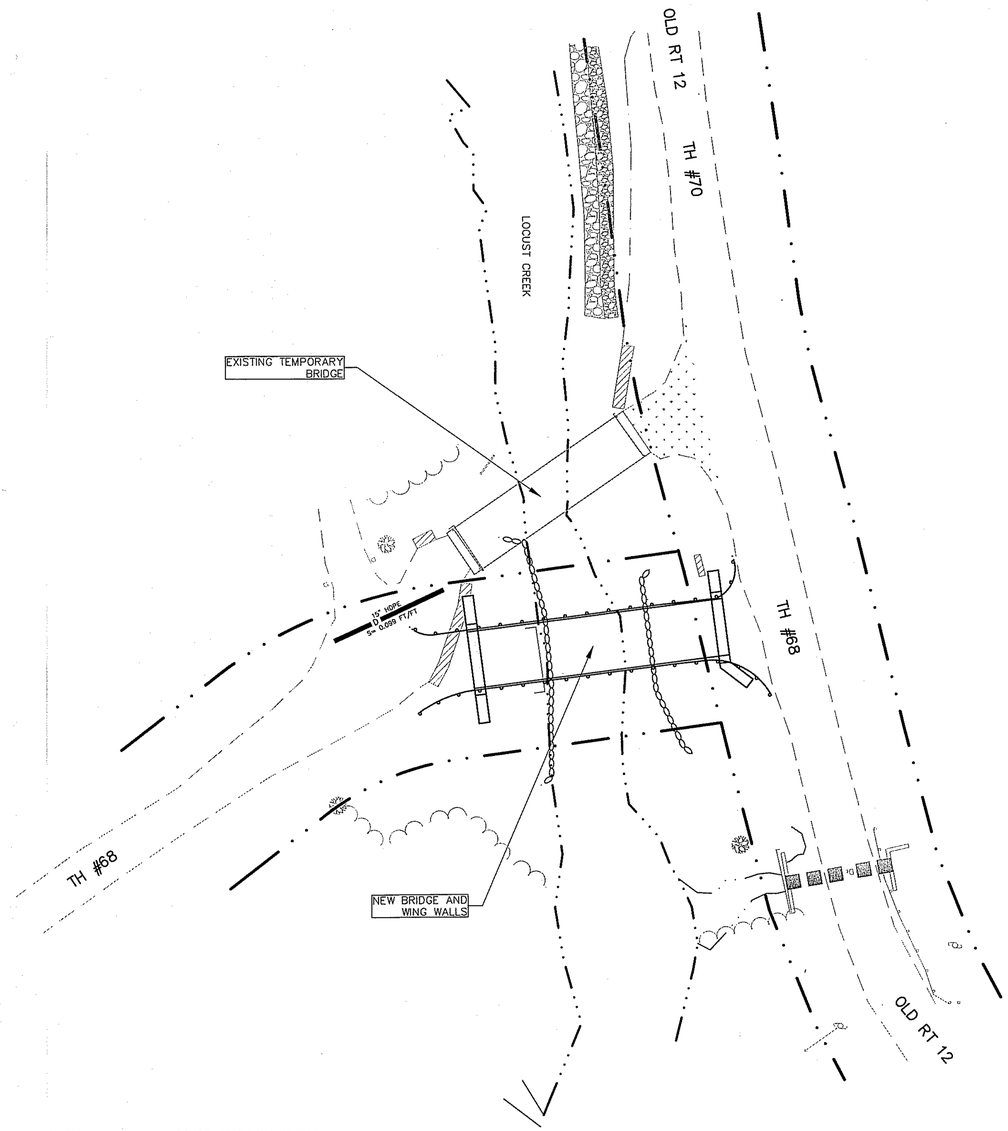
Pamela DeAndrea (she/her) | AOT GIS Professional III
Policy, Planning & Research Bureau – Mapping Section
Policy, Planning & Intermodal Development Division
Vermont Agency of Transportation
219 N. Main Street | Barre, VT 05641
802-793-7555 phone | pam.deandrea@vermont.gov
http://vtrans.vermont.gov

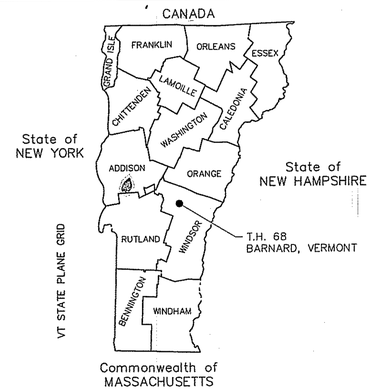
VERMONT
AGENCY OF TRANSPORTATION

Help raise money for Vermonters impacted by flood damage and show your Vermont pride with *Vermont Strong* and *Tough Too* license plates and socks. Click here to purchase your Vermont Strong gear or visit DMV.Vermont.gov/VermontStrong23.

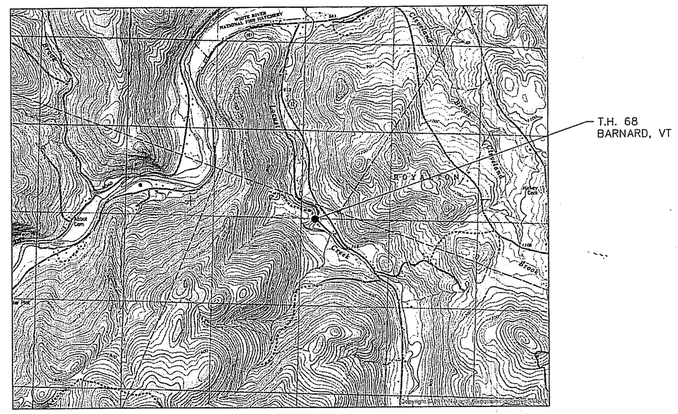
Impacted Vermonters can find resources and referrals by visiting Vermont.Gov/Flood.

LOCUST CREEK BRIDGE, BR #35





#2
BUSPECS
PW2855



OWNER/ APPLICANT:

TOWN OF BARNARD
P.O. BOX 274
BARNARD, VT 05031

PROJECT DESCRIPTION:

THE PROJECT IS THE REPLACEMENT OF THE TOWN HIGHWAY BRIDGE OVER LOCUST CREEK WHICH WAS DESTROYED DURING TROPICAL STORM IRENE ON TOWN HIGHWAY #68.

SHEET INDEX

Civil & Structural Engineers
DeWolfe ENGINEERING ASSOCIATES INCORPORATED
81 River St., P.O. Box 1578, Montpelier, VT 05601-1576
t. 802-223-4727 f. 802-223-4740 www.dirtdevil.com

NO.	DATE	SUBMISSION	NO.	DATE	REVISION
1			1		

PROJECT NO. 12120
DATE 06 JAN 2015
C0.01
SHEET SHEET 1 OF 10

LEGEND

EXISTING		PROPOSED
	PROPERTY LINE	
	ABUTTER'S PROPERTY LINE	
	EASEMENT LINE	
	RIGHT OF WAY LINE	
	ZONING SETBACK LINE	
	ZONING BOUNDARY	
	TOWN LINE	
	SOIL TYPE BOUNDARY	
500	MAJOR CONTOUR	500
501	MINOR CONTOUR	501
	BUILDINGS	
	BUILDING OVERHANG	
	ROADWAY CENTERLINE	
	EDGE OF PAVEMENT	
	CURB	
	EDGE OF GRAVEL	
	TRAIL	
	STONE WALL	
	TREE LINE	
	EDGE OF WETLANDS	
	WETLAND/ SHORELINE BUFFER	
	EDGE OF WATER	
	FLOOD PLAIN BOUNDARY	
	DITCH LINE	
	CONCRETE PAD	
X X	BARBED WIRE FENCE	X X
o o	CHAIN LINK FENCE	o o
	WOOD RAIL	
	GUARDRAIL	
D_X	STORM DRAIN LINE	D D
S_E	SEWER LINE	S S
FM_E	FORCE MAIN LINE	FM FM
W_E	WATER LINE	W W
G_E	GAS LINE	G G
ST_E	STEAM LINE	ST ST
FW_E	FIRE WATER LINE	FW FW
UGE_E	UNDERGROUND ELECTRIC	UGE UGE
OHE_E	OVERHEAD ELECTRIC	OHE OHE
UGU_E	UNDERGROUND UTILITY	UGU UGU
OHU_E	OVERHEAD UTILITY	OHU OHU
$UGU-E_E$	UNDERGROUND UTILITY & ELECTRIC	UGU-E
$OHU-E_E$	OVERHEAD UTILITY & ELECTRIC	OHU-E
	CONSTRUCTION FENCE/ LIMIT OF DISTURBANCE	CF CF CF CF
	SILT FENCE	SF SF SF SF
	SIGN	
	LIGHTS	
MW	MONITORING WELLS	
B-#	BORING LOCATIONS	
TP	TEST PITS	
496.88 x	SPOT ELEVATIONS	496.88
	CATCH BASINS	
c.o.	CLEAN OUTS	c.o.
	DRAINAGE MANHOLES	
E	ELECTRIC PADS/ HANDHOLDS	E
	GATES VALVES	
	HYDRANTS	
S	SEWER MANHOLES	S
T	TELEPHONE/ UTILITY PADS & VAULTS	T
	UTILITY POLES	
W	POTABLE WATER WELLS	W
	WATER SHUT OFFS	
	GUY POLES	
	GUY WIRES	
	CATCH BASIN- SEDIMENT TRAPS	
	HAY BALES	
	STONE CHECK DAM	
	STONE INLET PROTECTION	
	DECIDUOUS TREES	
	EVERGREEN TREES	
	CONCRETE BOUNDARY MONUMENT	
	IRON ROD/ PIPE BOUNDARY MONUMENT	
	MAILBOX	
	STONE LINING	
	EROSION CONTROL MATTING	
	SNOW STORAGE AREAS	

GENERAL NOTES

1 GENERAL:

1.1 ALL WORK SHALL BE PERFORMED IN A FIRST CLASS MANNER, AND IN ACCORDANCE WITH STATE CODE (IBC 2012 WITH LATEST SUPPLEMENTS), AND LOCAL CODES AND ORDINANCES.

1.2 ALL EXISTING UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE. THE CONTRACTOR SHALL CONTACT DIG-SAFE (1-888-DIG-SAFE) AT LEAST 48 HOURS AND LESS THAN 30 DAYS PRIOR TO STARTING CONSTRUCTION AND SHALL VERIFY ALL UTILITY LOCATIONS IN THE FIELD.

1.3 THE LIMITS OF SITE WATER AND SEWER WORK SHALL TERMINATE 2'-0" INSIDE THE BUILDING. THE SITE CONTRACTOR SHALL PROVIDE PIPING. GENERAL CONTRACTOR SHALL PROVIDE SLEEVES AS NECESSARY.

1.4 GAS AND ELECTRIC LINES SHALL BE EXCAVATED AND BACKFILLED BY THE SITE CONTRACTOR. PIPING SHALL BE PROVIDED AND INSTALLED BY THE APPROPRIATE SUBCONTRACTOR

1.5 USE THESE CIVIL DRAWINGS IN CONJUNCTION WITH THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, LANDSCAPING & MECHANICAL DRAWINGS. SHOULD A CONFLICT DEVELOP, NOTIFY THE ENGINEER BEFORE PROCEEDING.

1.6 ALL DIMENSIONS AND ELEVATIONS SHOWN MUST BE VERIFIED BY THE CONTRACTOR DURING CONSTRUCTION BY THE AID OF DRAWINGS, FIELD CHECKS, AND SUBCONTRACTORS SHOP DRAWINGS.

1.7 CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES, AND UTILITY LINES FROM ALL DAMAGE.

1.8 CONTRACTOR IS RESPONSIBLE FOR ADEQUATE BRACING OF WALLS AND/OR SHORING OF EXCAVATIONS DURING CONSTRUCTION.

1.9 THE CONTRACTOR SHALL REVIEW AND STAMP ALL SHOP DRAWINGS AND SUBMITTALS BEFORE SUBMISSION TO THE ENGINEER; THUS, PROVIDING ANY INFORMATION REQUIRED OF THE FABRICATOR SUCH AS FIELD DIMENSIONS, ELEVATIONS, ETC. OTHERWISE THE SHOP DRAWINGS OR SUBMITTALS WILL BE REJECTED UNTIL SUCH INFORMATION IS FURNISHED BY THE CONTRACTOR.

1.10 BACKFILL INSIDE OF FOUNDATION WALLS, UNDER CONCRETE SURFACES, AND UNDER PAVED SURFACES WITH IMPORTED BANK RUN GRAVEL, OR SELECT ON-SITE MATERIAL THAT WILL MEET COMPACTION CRITERIA, AS DETERMINED BY THE TESTING LABORATORY, IN 8" LIFTS TO 95% OF THE MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT, ASTM D1557.

1.11 GENERAL BACKFILL SHALL BE COMPACTED TO 90% OF THE MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT, ASTM D1557.

2 CONCRETE:

2.1 ALL CONCRETE AND REINFORCING WORK SHALL BE IN STRICT ACCORDANCE WITH THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-02)". EXTERIOR CONCRETE SHALL BE AIR-ENTRAINED WITH AIR CONTENT AS RECOMMENDED BY ACI. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. SUBMIT CONCRETE MIX DESIGN IN ACCORDANCE WITH ACI 318 FOR REVIEW OF ENGINEER. CONTRACTOR SHALL TAKE 4 TEST CYLINDERS OF CONCRETE FOR EACH 50 CUBIC YARDS OF CONCRETE OR FOR EACH DAYS POUR IF LESS THAN 50 C.Y.

2.2 CONCRETE SHALL BE PROTECTED FROM FREEZING. CONTRACTOR SHALL FOLLOW THE "RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING" (ACI 306, LATEST EDITION).

2.3 ALL CONCRETE SHALL BE PLACED IN THE DRY. PUMP WATER FROM EXCAVATIONS AS NECESSARY.

2.4 CONCRETE SHALL BE PROPORTIONED SO AS TO HAVE A MAXIMUM SLUMP OF 4".

2.5 EXTERIOR CONCRETE SHALL BE REINFORCED IN ACCORDANCE WITH THE PLAN DETAILS AND SPECIFICATIONS

2.6 CHAMFER ALL EXPOSED EDGES OF CONCRETE.

2.7 CURING: HORIZONTAL SURFACES SHALL BE KEPT CONTINUOUSLY MOIST OVER ENTIRE SURFACE FOR SEVEN DAYS WHEN WATER CURING IS USED. VERTICAL SURFACES SHALL RECEIVE 2 COATS ONE AT TIME OF STRIPPING AND ANOTHER 3 DAY LATER) OF AN APPROVED NON-TOXIC LIQUID CURING COMPOUND.

2.8 ALL WALLS SHALL BE ADEQUATELY BRACED TO WITHSTAND BACKFILLING AND CONSTRUCTION LOAD PRESSURES. WALLS MUST BE AT LEAST SEVEN DAYS OLD BEFORE BACKFILLING.

3 PRECAST CONCRETE:

3.1 PRECAST CONCRETE SHALL BE THE PRODUCT OF A MANUFACTURER WHO HAS DEMONSTRATED THE ABILITY TO PRODUCE PRECAST PRODUCTS AND HAS BEEN IN BUSINESS FOR AT LEAST THE LAST THREE YEARS. THE MANUFACTURING PLANT AND METHODS SHALL CONFORM TO THE LATEST STANDARDS OF THE PRECAST CONCRETE INSTITUTE. THE DESIGN OF THE PRECAST MEMBERS SHALL BE BY A REGISTERED ENGINEER EXPERIENCED IN THE DESIGN OF PRECAST, PRESTRESSED CONCRETE DESIGN. PRECAST CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI AT 28 DAYS OR HIGHER STRENGTH AS DEEMED NECESSARY BY DESIGN. ALL STEEL CONNECTION MATERIAL SHALL BE HOT-DIPPED GALVANIZED.

3.1.1 THE SUPERIMPOSED DESIGN LOADS ON ALL BURIED STRUCTURES SHALL MEET OR EXCEED AASHTO HS-20 LOADING UNLESS OTHERWISE NOTED.

4 MATERIAL SPECIFICATIONS

4.1 MATERIALS NOT SPECIFIED HEREIN SHALL MEET OR EXCEED VERMONT AGENCY OF TRANSPORTATION (VAOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION.

4.2 GENERAL FILL SHALL BE A COMPATIBLE SAND OR GRAVEL REASONABLY FREE FROM LOAM, SILT, CLAY AND ORGANIC MATERIALS AND SHALL HAVE 0-20 PERCENT PASSING THE NO. 100 SIEVE AND 40-100 PERCENT PASSING THE NO. 4 SIEVE.

4.3 BANK RUN GRAVEL SHALL BE FREE FROM LOAM, SILT, CLAY AND ORGANIC MATERIALS AND SHALL HAVE 100 PERCENT PASSING A 3 INCH SIEVE, 20-75 PERCENT PASSING A NO. 4 SIEVE, 0-12 PERCENT PASSING A NO. 100 SIEVE AND 0-6 PERCENT PASSING A NO. 200 SIEVE.

4.4 CRUSHED BANK RUN GRAVEL SHALL BE FREE FROM LOAM, SILT, CLAY AND ORGANIC MATERIALS AND SHALL HAVE 100 PERCENT PASSING A 2 INCH SIEVE, 90-100 PERCENT PASSING A 1½ INCH SIEVE 30-60 PERCENT PASSING A NO. 4 SIEVE, 0-12 PERCENT PASSING A NO. 100 SIEVE AND 0-6 PERCENT PASSING A NO. 200 SIEVE.

4.5 STONE FILL SHALL BE TYPE II AS SPECIFIED BY THE VAOT UNLESS OTHERWISE NOTED.

STANDARD ABBREVIATIONS

BCC – BITUMINOUS CONCRETE CURB
VGC – VERTICAL GRANITE CURB
SGC – SLOPED GRANITE CURB
CCC – CAST-IN-PLACE CONCRETE CURB
PCC – PRECAST CONCRETE CURB
ICC – INTEGRAL CONCRETE CURB
RCC – REINFORCED CONCRETE CURB
BCP – BITUMINOUS CONCRETE PAVEMENT
GRV – GRAVEL DRIVE SURFACE
PCS – PORTLAND CEMENT CONCRETE SIDEWALK
BCS – BITUMINOUS CONCRETE SIDEWALK
CB – CATCHBASIN
DMH – DRAINAGE MANHOLE
SMH – SEWER MANHOLE

EROSION CONTROL DURING CONSTRUCTION

1. BEFORE ANY CLEARING, GRUBBING, OR DEMOLITION OF THE SITE IS INITIATED, AND DURING ALL EARTHWORK PHASES, EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED AT THE INLET OF ANY STORM DRAINS, SWALES, AND DITCHES RECEIVING WATER FROM THE PROJECT. SEE TYPICAL DETAILS AND PLANS FOR TYPES AND LOCATIONS.

2. SILT FENCE SHALL BE PLACED DOWN GRADIENT OF ALL DISTURBED AREAS. IF THE DISTURBED AREA IS 100' OR LESS FROM THE WATERS OF THE STATE THE SILT FENCE SHALL BE WIRE MESH REINFORCED.

3. ALL STOCKPILED SOIL SHALL BE ENCIRCLED WITH SILT FENCE, UNLESS AN EXISTING BARRIER WILL ENTRAP ALL EROSION FROM SUCH A STOCKPILE OR THE STOCKPILE IS COMPLETELY COVERED WITH VEGETATION THAT PREVENTS EROSION.

4. NO MORE THAN 500 FEET OF TRENCH SHALL BE OPEN AT ONE TIME AND EXCAVATED MATERIAL TO USED FOR BACKFILL SHALL BE PLACED ON THE UPHILL SIDE OF THE TRENCH. ALL OTHER EXCAVATED MATERIAL SHALL BE DISPOSED OF OFF-SITE AT AN APPROVED LOCATION.

5. BEFORE AND AFTER EVERY STORM ALL STRUCTURAL EROSION CONTROL MEASURES SHALL BE INSPECTED FOR FAILURES OR CLOGGING, AND ANY FAILURE OR CLOGGING SHALL BE RECTIFIED. DURING THE WINTER CONSTRUCTION SEASON SPECIAL ATTENTION SHALL BE PAID THE CHANGES IN WEATHER THAT COULD CAUSE SIGNIFICANT SNOW MELT AND RUNOFF.

6. STONE CHECK DAMS SHALL ALSO BE PLACED IN NEWLY CONSTRUCTED SWALES, DITCHES, OR OTHER WATERWAYS DURING THE CONSTRUCTION PERIOD. STONE INLET PROTECTION OR SEDIMENT CATCH BASIN INSERTS SHALL BE PLACED IN ALL NEW AND EXISTING CATCHBASIN WHICH RECEIVED RUNOFF FROM DISTURBED AREAS. THE PLACING OF THESE TRAPS AND DAMS SHALL BE AS SHOWN ON THE PLANS. MAINTENANCE SHALL BE AS IN #4 ABOVE.

7. EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM NUMBER REQUIRED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO USE ADDITIONAL BARRIERS AS FIELD CONDITIONS DICTATE AND TO INSURE THAT ANY EROSION CREATED BY THIS PROJECT DOES NOT REACH THE STATE'S WATERWAYS OR LEAVE THE SITE.

8. NEW SWALES AND DITCHES (AND ANY OTHER AREA SUBJECT TO CONCENTRATED STORM RUNOFF) SHALL BE FERTILIZED AND SEEDED WITH THE FOLLOWING MIXTURE TO AT LEAST TWO (2) FEET ABOVE THE CHANNEL BOTTOM:

SEED	LBS/ACRE
CREEPING RED FESCUE	20
REDTOP	2
SMOOTH BROMEGRASS	20

AND SHALL HAVE MULCH APPLIED AT THE RATE OF 2 TONS PER ACRE.

9. IN ALL NEW SWALES AND DITCHES, AND WHERE SLOPE GRADE EXCEEDS 25 PERCENT (1 ON 4 SLOPE), JUTE MATTING SECURELY ATTACHED TO THE GROUND SHALL BE PLACED OVER MULCH AND MAINTAINED UNTIL A PERMANENT GRASS COVER IS ESTABLISHED.

10. ALL DISTURBED TERRAIN AT FINAL GRADE SHALL BE SEEDED AND MULCHED WITHIN 48 HOURS OF COMPLETION, AND BY SEPTEMBER 15TH AT THE LATEST. BEFORE APPLYING FINAL SEEDING FOUR (4) INCH AVERAGE DEPTH OF TOPSOIL SHALL BE PLACED IN ALL DISTURBED AREAS TO BE SEEDED. FERTILIZER SHALL BE APPLIED TO THE TOP 2-INCHES OF TOPSOIL AT A RATE OF 500 LBS/ACRE. SEED MIXTURES SHALL BE ONE AS SPECIFIED ON LANDSCAPING PLAN. IF NO SEED MIXTURE IS SPECIFIED IT SHALL BE ONE OF THE FOLLOWING, AS APPROPRIATE.

EMBANKMENT/SLOPING GROUND	LBS/ACRE
MIXTURE#1 CREEPING RED FESCUE	20
REDTOP	2
BIRDSFOOT TREFOIL	8
OR CROWNVETCH	15
MIXTURE#2 TALL FESCUE	10
REDTOP	2
FLAT PEA (LATHCO)	30
MIXTURE#3 CREEPING RED FESCUE	15
FLAT PEA (LATHCO)	30

FLAT/LEVEL GROUND	LBS/ACRE
MIXTURE#1 KENTUCKY BLUE GRASS	20
CREEPING RED FESCUE	20
RYE (PERENNIAL), OR	
REDTOP	5
MIXTURE#2 CREEPING RED FESCUE	20
REDTOP	2
TALL FESCUE	20

11. ALL NEWLY SEEDED AREAS SHALL BE MULCHED AT A RATE OF TWO (2) TONS PER ACRE OF HAY, STRAW, OR WOODCHIPS. DURING WINTER CONSTRUCTION MULCH SHALL BE APPLIED AT A RATE OF 4 TONS PER ACRE. JUTE OR OTHER EQUAL NETTING SHALL BE USED WHERE WIND OR WATER MAY ERODE NEWLY-PLACED SEED OR MULCH OR WHERE GRADE EXCEEDS 25% (1:4). ALL NETTING, WHERE USED, SHALL BE STAKED TO THE GROUND IN COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

12. ALL AREAS THAT REACH FINISHED GRADE DURING THE WINTER CONSTRUCTION SEASON SHALL BE MULCHED AT A RATE OF 4 TONS/ACRE AND TACKED DOWN TO PREVENT WINDTHROW WITHIN 24 HOURS OF REACHING FINAL GRADE. THESE AREAS SHALL BE SEEDED AS SPECIFIED IN NOTE 9 IN THE SPRING AS SOON AS WEATHER ALLOWS.

13. ALL HAY MULCH SHALL BE TACKED DOWN TO PREVENT WINDTHROW. JUTE MATTING OR EQUIVALENT SHALL BE USED WHERE INDICATED ON PLANS. IN ALL OTHER AREAS MULCHED SHALL BE TRACKED WITH A BULLDOZER. THE CLEATS OF THE BULLDOZER SHALL BE PARALLEL TO THE CONTOURS. DURING THE WINTER CONSTRUCTION SEASON NETTING OR JUTE MATTING SHALL BE USED TO TACK DOWN ALL MULCH.

14. ALL DISTURBED AREAS NOT AT FINAL GRADE THAT WILL NOT BE DISTURBED AGAIN FOR A PERIOD OF GREATER THAN THIRTY (30) DAYS, SHALL BE SEEDED WITH A TEMPORARY, RAPID-GROWING COVER CROP, SUCH AS RYE GRASS AND MILLET, AND SHALL BE MULCHED. NETTING SHALL ALSO BE APPLIED, AS SPECIFIED IN ITEM 13, TO STABILIZE THE MULCH AND SEED.

15. ALL DISTURBED AREAS MUST HAVE TEMPORARY OR FINAL STABILIZATION WITHIN 14 DAYS OF THE INITIAL DISTURBANCE. AFTER THIS TIME, ANY DISTURBANCE IN THE AREA MUST BE STABILIZED AT THE END OF EACH WORK DAY. THE FOLLOWING EXCEPTIONS APPLY: i) STABILIZATION IS NOT REQUIRED IF WORK IS TO CONTINUE IN THE AREA IN THE NEXT 24 HOURS AND THERE IS NO PRECIPITATION FORECAST FOR THE NEXT 24 HOURS. ii) STABILIZATION IS NOT REQUIRED IF THE WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION (I.E. NO OUTLET) WITH A DEPTH OF 2-FEET OR GREATER (E.G. FOUNDATION EXCAVATION, UTILITY TRENCHES)

16. DURING WINTER CONSTRUCTION ALL DISTURBED AREAS MUST HAVE TEMPORARY OR FINAL STABILIZATION AT THE END OF EACH WORK DAY. THE FOLLOWING EXCEPTIONS APPLY: i) STABILIZATION IS NOT REQUIRED IF WORK IS TO CONTINUE IN THE AREA IN THE NEXT 24 HOURS AND THERE IS NO PRECIPITATION FORECAST FOR THE NEXT 24 HOURS. ii) STABILIZATION IS NOT REQUIRED IF THE WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION (I.E. NO OUTLET) WITH A DEPTH OF 2-FEET OR GREATER (E.G. FOUNDATION EXCAVATION, UTILITY TRENCHES)

17. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS OF PERMANENT STABILIZATION OF THE SITE.

18. EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER ANY RAIN EVENT WHICH PRODUCES RUNOFF BY THE ON-SITE COORDINATOR, WHO WILL BE RESPONSIBLE FOR RECTIFYING ANY PROBLEMS FOUND. ALL INSPECTION FORMS SHALL BE KEPT ON-SITE AS RECORDS OF THE CONDITION OF THE EROSION CONTROL MEASURES. TEMPORARY EROSION CONTROL MEASURE SHALL BE REMOVE WITH 30 DAYS OF PERMANENT SITE STABILIZATION.

19. NO MORE THAN 3 ACRES SHALL BE DISTURBED (WITHOUT TEMPORARY OR FINAL STABILIZATION) AT ANY ONE TIME

20. SEEDING MUST BE COMPLETED BY SEPTEMBER 15.

NO.	DATE	REVISION
1		
2		
3		
4		
5		
6		

Civil & Structural Engineers
DeWolfe ENGINEERING ASSOCIATES
81 River St., P.O. Box 1576, Montpelier, VT 05601-1576
t. 802.223-4727 f. 802.223-4740 www.dfdsteel.com

LOCUST CREEK BRIDGE
TOWN HIGHWAY 68
BARNARD, VT
TOWN OF BARNARD

SHEET DESCRIPTION
LEGEND AND GENERAL NOTES

PROJECT NO.	DATE
12120	06 JAN 2015
SCALE: NTS	C0.02
DRAWN: DLF	
CHECKED	SHEET 2 OF 10

G:\Jobfiles\12120- Barnard Bridge\Civil\dwg\12120-CVR.dwg 6 Jan 2015 12:20 PM Drothingham

G:\Jobfiles\12120- Barnard Bridge\Civil\dwg\12120-ex.dwg 8 Jan 2015 12:20 PM Dfrothingham

N

NO.	DATE	REVISION
1		
2		
3		
4		
5		
6		
7		

Civil & Structural Engineers
DeWolfe ENGINEERING ASSOCIATES P.C.
81 River St., P.O. Box 1576, Montpelier, VT 05601-1576
t. 802.223-4727 f. 802.223-4740 www.dfrothingham.com

BARNARD TH#68 BRIDGE

TOWN HIGHWAY 68
BARNARD, VT

TOWN OF BARNARD

SHEET DESCRIPTION
EXISTING CONDITIONS

PROJECT NO.	DATE
12120	06 JAN 15
SCALE 1"=20'	C1.01
DRAWN DLF	
CHECKED	SHEET SHEET 3 OF 10

REMOVE CONCRETE BLOCK BARRIER AFTER CONSTUCTION OF NEW BRIDGE, SALVAGE BLOCKS TO OWNER

REMOVE TEMPORARY BRIDGE AFTER CONSTRUCTION OF NEW BRIDGE SALVAGE STEEL BEAMS, DECKING, AND CONCRETE BLOCKS TO OWNER

REMOVE CONCRETE BLOCK BARRIER AFTER CONSTUCTION OF NEW BRIDGE, SALVAGE BLOCKS TO OWNER

END CONSTRUCTION OF NEW GRAVEL ROAD

NEW 15" HDPE CULVERT
INV IN= 713.35'
INV OUT= 710.0'

STA 9 +61

SALVAGE CONCRETE BLOCKS TO OWNER

NEW W-BEAM GUARDRAIL
SEE SHEET C5.01 & S2.1
FOR DETAILS

REMOVE SLOPE AS NEEDED TO PROVIDE ONE-WAY TRAFFIC THROUGH OUT CONSTRUCTION

BEGIN CONSTRUCTION OF NEW GRAVEL ROAD

BEGIN CONSTRUCTION OF NEW GRAVEL ROAD

NEW CONCRETE BRIDGE DECK
SEE STRUCUTRAL PLANS FOR DETAILS

NEW CAST IN PLACE
CONCRETE ABUTMENT, TYP OF 2
SEE STRUCTURAL PLANS FOR DETAILS

TBM #1
ELEV=719.33 (assumed datum)
Chiseled square at the northwest of concrete headwall with punch hole.

4'x4' conc. box culvert
inv in= 713.4'
inv out= 713.2'

outlet of box culvert is undermined

IRENE FLOOD LEVEL (APPROXIMATE)

IRENE FLOOD LEVEL (APPROXIMATE)

LOCUST CREEK

Small brook

OLD RT 12

ANCHOR POLE

CABLE GUY ANCHOR

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

NO.	DATE	REVISION

Civil & Structural Engineers
DeMoore ENGINEERING ASSOCIATES INCORPORATED
81 River St., P.O. Box 1376, Montpelier, VT 05601-1376
802/223-1427 802/223-1440 www.demoore.com

LOCUST CREEK BRIDGE

TOWN HIGHWAY 68
BARNARD, VT

TOWN OF BARNARD

SHEET DESCRIPTION
SITE PLAN

PROJECT NO.	DATE
12120	06 JAN 2015
SCALE 1"=10'	C1.02
DRAWN DLF	
CHECKED	SHEET SHEET 4 OF 10

REMOVE EXISTING GRAVEL AND PLACE 6" OF TOPSOIL, SEED, FERTILIZE, AND MULCH PER EROSION CONTROL NOTES

TYPE IV STONE LINING

TEMPORARY COFFER DAM, TYP. PLACE OUTSIDE OF STONE SLOPE EXCAVATION STABILIZE ONE BANK BEFORE DISTURBING OTHER BANK

EROSION CONTROL FABRIC NORTH AMERICAN GREEN S75BN OR APPROVED EQUAL

TEMPORARY STONE CHECK DAM, TYP 3

TYPE IV STONE LINING

IRENE FLOOD LEVEL (APPROXIMATE)

IRENE FLOOD LEVEL (APPROXIMATE)

LOCUST CREEK

Small brook

Small brook

TBM #1
ELEV= 719.33 (assumed datum)
Chiseled square at the northwest of concrete headwall with punch hole.

4'x4' conc. box culvert
inv in= 713.4'
inv out= 713.2'

outlet of box culvert is undermined

ERODED AREA

Concrete block barrier

Temporary bridge

Gate post

Ledge

STA 9

STA 2

T.H. #65

18" MAPLE

8" & 14" yellow birch

BOULDERS

ANCHOR POLE

CABLE GUY ANCHOR

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

NO.	DATE	REVISION

Civil & Structural Engineers
DeMoffe ENGINEERING ASSOCIATES INCORPORATED
81 River St., P.O. Box 1576, Montpelier, VT 05601-1576
t.802.223-7227 f.802.223-4169 www.demoffeassociates.com

LOCUST CREEK BRIDGE

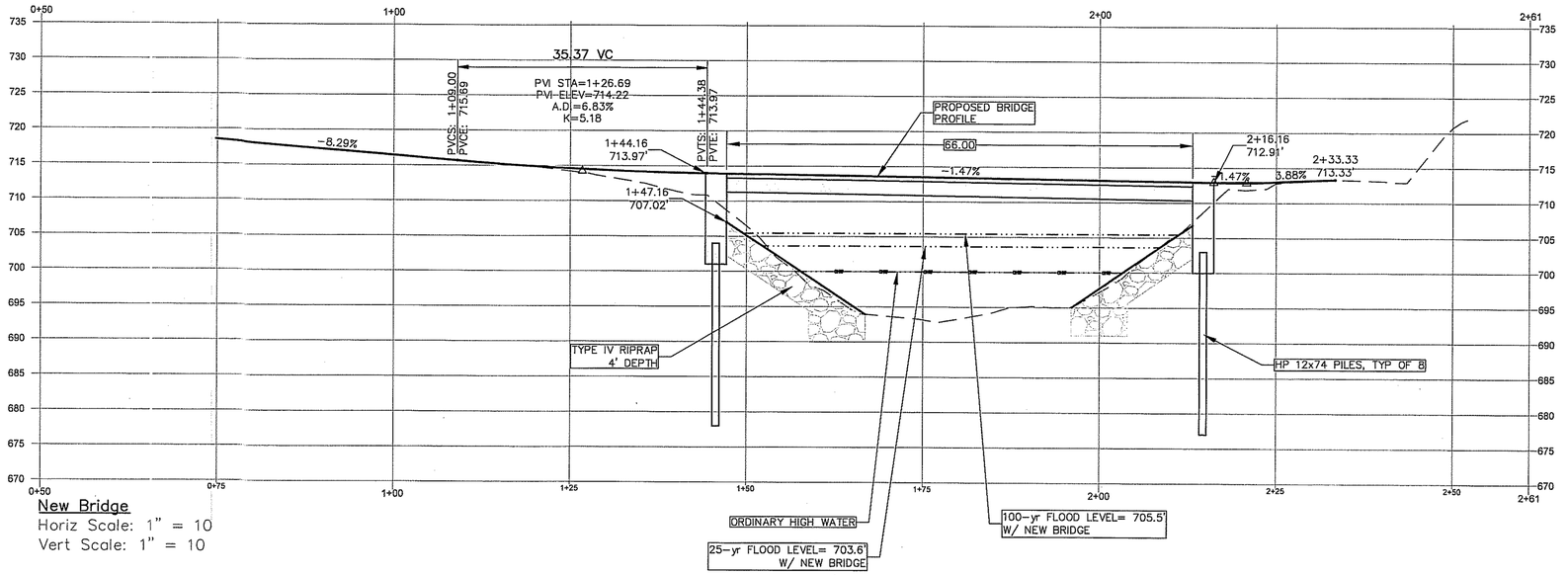
TOWN HIGHWAY 68
BARNARD, VT

TOWN OF BARNARD

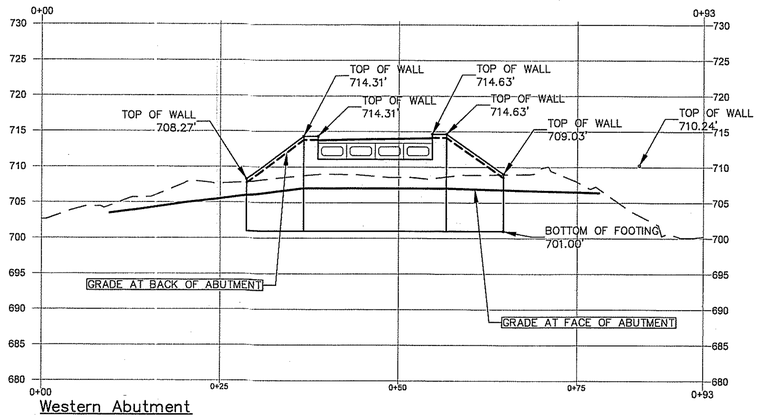
SHEET DESCRIPTION
EROSION CONTROL PLAN

PROJECT NO.	DATE
12120	06 JAN 2015
SCALE 1"=10'	C1.03
DRAWN DLF	
CHECKED	SHEET SHEET 5 OF 10

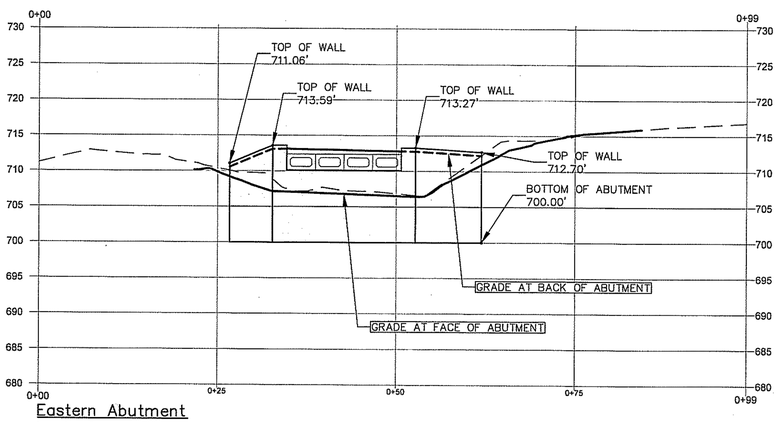
G:\Jobfiles\12120- Barnard Bridge\Civil\dwg\12120-sp.dwg 6 Jan 2015 12:20 PM Dfrothingham



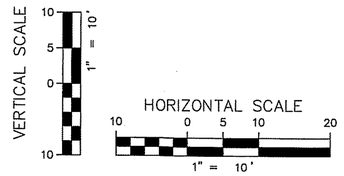
New Bridge
Horiz Scale: 1" = 10
Vert Scale: 1" = 10



Western Abutment
Horiz Scale: 1" = 10
Vert Scale: 1" = 10



Eastern Abutment
Horiz Scale: 1" = 10
Vert Scale: 1" = 10



NO.	DATE	REVISION

Civil & Structural Engineers
DeMoffe ENGINEERING ASSOCIATES
81 River St., P.O. Box 1576, Montpelier, VT 05601-1576
t: 802-223-4727 f: 800-223-4143 www.demoffeeng.com

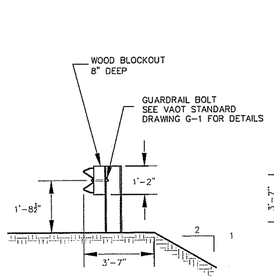
LOCUST CREEK BRIDGE

TOWN HIGHWAY 68
BARNARD, VT

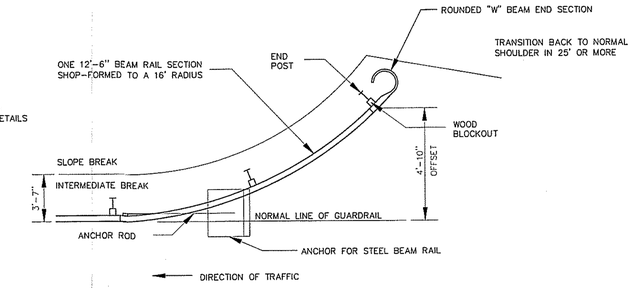
TOWN OF BARNARD

SHEET DESCRIPTION
BRIDGE PROFILE

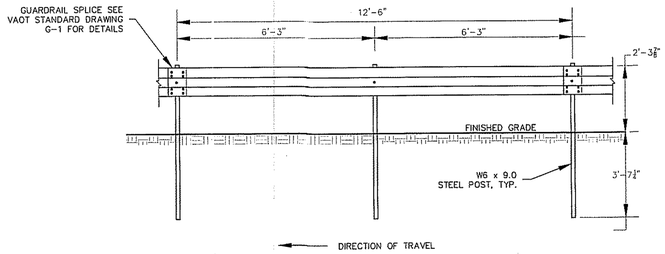
PROJECT NO.	DATE
12120	06 JAN 2015
SCALE: AS NOTED	C2.01
DRAWN: DLF	
CHECKED	SHEET: SHEET 6 OF 10



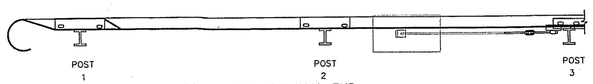
SECTION AT POST



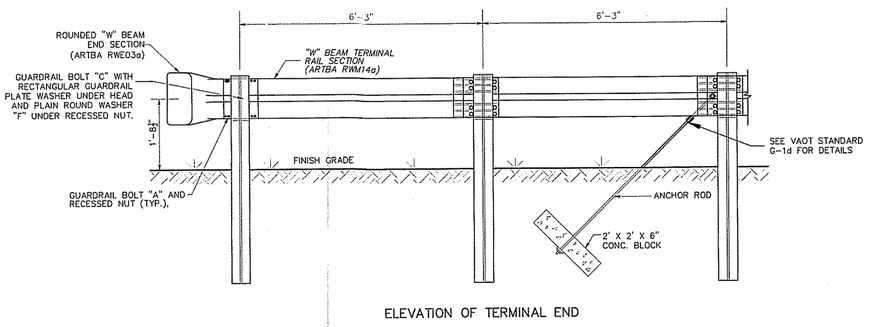
PLAN VIEW APPROACH END



ELEVATION FROM ℄ OF ROAD



PLAN VIEW TERMINAL END



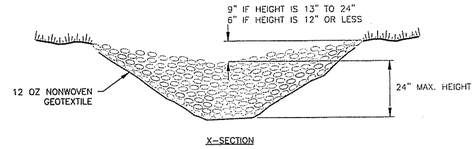
ELEVATION OF TERMINAL END

NOTES:

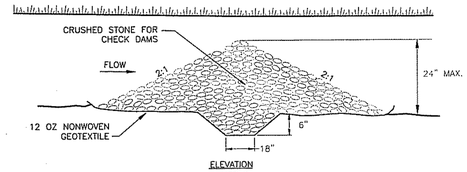
1. ALL METAL PARTS SHALL BE GALVANIZED
2. ALL WOOD PARTS SHALL BE GIVEN A PRESERVATIVE TREATMENT PER AASHTO M 133.
3. DETAILS PERTINENT TO THE STANDARD INSTALLATION OF "W" BEAM SECTIONS WILL BE FOUND ON VAOT STANDARD DRAWING G-1.
4. GUARDRAIL SHALL MEET THE REQUIREMENTS OF AASHTO M 180, CLASS A, TYPE I, UNLESS OTHERWISE DESIGNATED.
5. GUARDRAIL SECTIONS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW FOR THE LANE NEAREST THE GUARDRAIL.
6. STANDARD STEEL BEAM TO BE 3/8" THICK.

TYPICAL GUARDRAIL DETAILS

NOT TO SCALE



X-SECTION



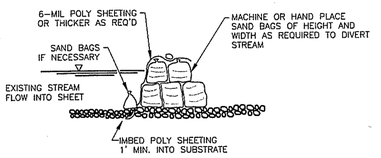
ELEVATION

NOTES

1. STONE CHECK DAMS WILL BE PLACED AS SHOWN ON THE PLANS.
2. EXTEND STONE A MAXIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
3. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR TURF REINFORCEMENT MATTING AS APPROPRIATE.
4. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE BY DISPLACED STONE.

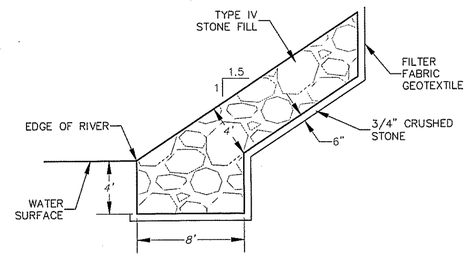
STONE CHECK DAM

NOT TO SCALE



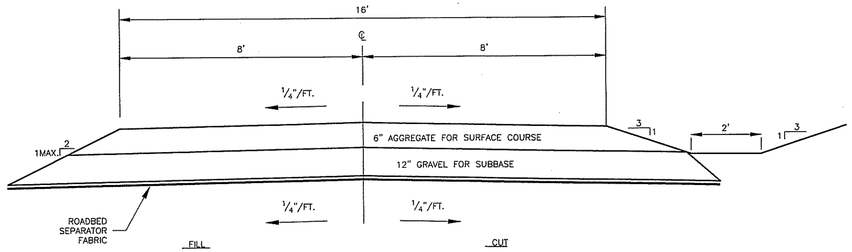
TEMPORARY SANDBAG COFFERDAM

NOT TO SCALE



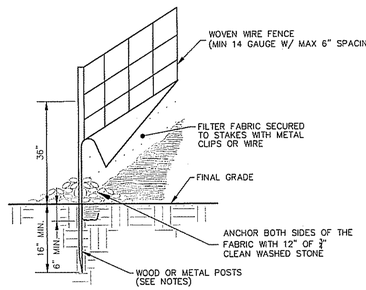
TYPE IV STONE FILL DETAIL

NOT TO SCALE



TYPICAL GRAVEL ROAD SECTION

NOT TO SCALE



INSTALLATION NOTE:

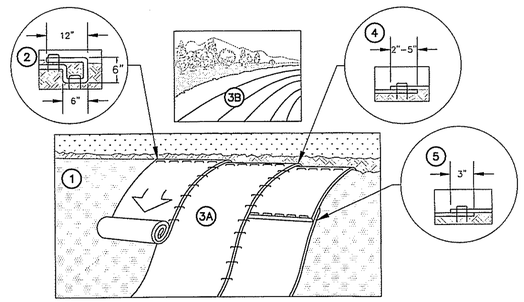
1. DRIVE POSTS A MINIMUM OF 16" INTO THE GROUND.
2. EMBED GEOTEXTILE PLACED IN A 8"x8" TRENCH.
3. STAKE SPACING IS TO BE AS FOLLOWS:
   - 3.1 STAKE 4'-0" O.C. WHERE ASTM D 4632 ELONGATION IS GREATER THAN OR EQUAL TO 50%.
   - 3.2 STAKE 6'-0" O.C. WHERE ASTM D 4632 ELONGATION IS LESS THAN 50%
   - 3.3 IF 16 GAUGE x 6" SQUARE WIRE MESH BACKING IS USED, STAKE SPACING MAY BE INCREASED TO 10'-0" O.C.
4. MAINTAIN A 10'-0" BORDER BETWEEN THE SILT FENCE AND CONSTRUCTION ACTIVITY.
5. INSTALL SILT FENCE PARALLEL CONTOUR LINES.
6. USE A CONTINUOUS SHEET OF GEOTEXTILE TO PREVENT FAILURE AT JOINTS.
7. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. WIRE FENCE REINFORCEMENT REQUIRED WITHIN 100 FT UPSLOPE OF RECEIVING WATERS.
8. GEOTEXTILE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH WIRE TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
9. WHEN TWO SECTIONS OF GEOTEXTILE ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED.
10. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.

MAINTENANCE NOTE:

1. CHECK AFTER EVERY RAINFALL EVENT AND WEEKLY.
2. REMOVE SEDIMENT WHEN IT REACHES ½ OF FENCE HEIGHT.
3. PATCH TORN FENCES, OR REPLACE THE ENTIRE FENCE SECTION WHEN TEARS OCCUR.

STONE REINFORCED SILT FENCE

NOT TO SCALE



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" TO 5" OVERLAP DEPENDING ON RECP's TYPE.
5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECP's WIDTH. NOTE: *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

SLOPE INSTALLATION
ROLLED EROSION CONTROL MATTING

NOT TO SCALE

NO.	DATE	REVISION

Civil & Structural Engineers
DeWolfe ENGINEERING ASSOCIATES, P.C.
81 River St., P.O. Box 1576, Montpelier, VT 05601-1576
t. 802-223-4727 f. 802-223-4749 www.dwelltool.com

LOCUST CREEK BRIDGE

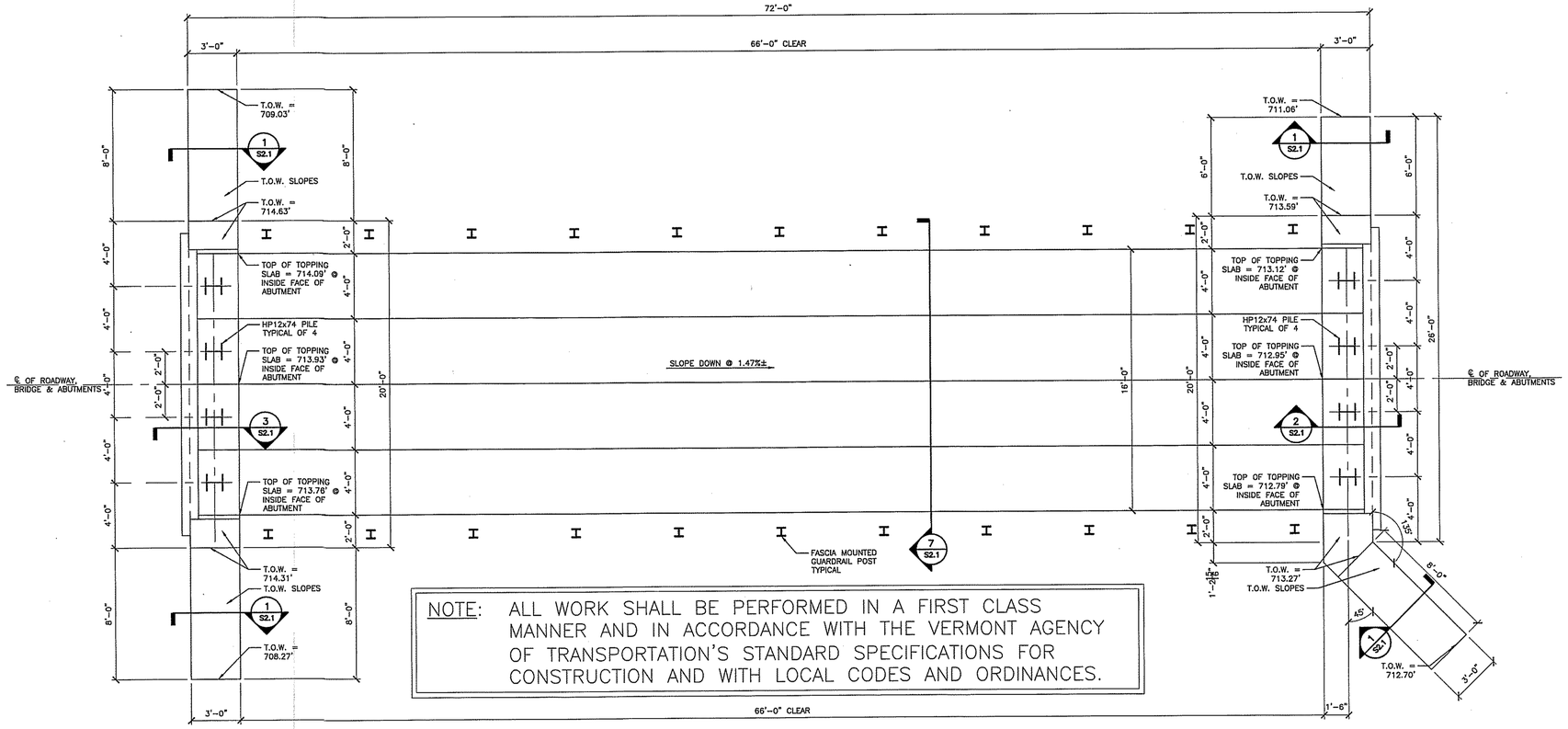
OLD RTE 12
BARNARD, VT

TOWN OF BARNARD

SHEET DESCRIPTION

CONSTRUCTION DETAILS

PROJECT NO.	DATE
12120	06 JAN 2015
SCALE	
AS SHOWN	C5.01
DRAWN	
DLF	
CHECKED	SHEET
	SHEET 7 OF 10



NOTE: ALL WORK SHALL BE PERFORMED IN A FIRST CLASS MANNER AND IN ACCORDANCE WITH THE VERMONT AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION AND WITH LOCAL CODES AND ORDINANCES.

BRIDGE DECK & ABUTMENT PLAN

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

ABBREVIATIONS

T.O.S.	TOP OF SLAB
EL.	ELEVATION
DIM.	DIMENSION
T.O.W.	TOP OF WALL
F.O.C.	FACE OF CONCRETE
E.F.	EACH FACE
E.W.	EACH WAY
U.O.N.	UNLESS OTHERWISE NOTED
CONT.	CONTINUOUS
NTS.	NOT TO SCALE
TYP.	TYPICAL
℄	CENTERLINE
DIA.	DIAMETER
DWL.	DOWEL
CL.	CLEAR
DWGS.	DRAWINGS
HD	HOT DIPPED

CONCRETE REINFORCING SPLICE LENGTHS

Fy=60 KSI	F'c=3.5 KSI	
BAR	TOP BARS	OTHER BARS
4	27"	20"
5	30"	22"
6	35"	26"
7	49"	38"
8	62"	44"

CHART BASED ON THE FOLLOWING:
- CLASS C SPLICES AS PER VTRANS STRUCTURES MANUAL
- TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW THE BAR.
- FOR EPOXY COATED REBAR, MULTIPLY SPLICE LENGTHS IN CHART BY A FACTOR OF 1.2
- BAR SPACING 6" MINIMUM
- CLEAR COVER 2 BAR DIAMETERS MINIMUM

REFER TO THE VTRANS STRUCTURES MANUAL FOR OTHER CONDITIONS.

GENERAL NOTES

1 GENERAL:

1.1 ALL WORK SHALL BE PERFORMED IN A FIRST CLASS MANNER, AND SHALL BE IN STRICT ACCORDANCE WITH STATE CODE (VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2011 EDITION), THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION, THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, 3RD EDITION, AND LOCAL CODES AND ORDINANCES.

1.2 BEFORE ORDERING MATERIALS, CONTRACTOR SHALL REVIEW ALL CONSTRUCTION DOCUMENTS, INCLUDING STRUCTURAL, CIVIL, SUBCONTRACTORS SHOP DRAWINGS, AND OTHER RELATED DOCUMENTS, TO VERIFY AND COORDINATE DIMENSIONS, LOCATIONS, PLACEMENT, AND APPLICABILITY OF BRIDGE COMPONENTS. THE CONTRACTOR SHALL MAKE FIELD CHECKS TO VERIFY THE ACCURACY OF DIMENSIONS, TOPOGRAPHY, AND OTHER EXISTING CONDITIONS. IF THERE IS ANY DISCREPANCY IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS POSSIBLE.

1.3 CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES, UTILITY LINES FROM ALL DAMAGE.

1.4 CONTRACTOR IS RESPONSIBLE FOR ADEQUATE BRACING OF STRUCTURAL MEMBERS, WALLS, AND NON-STRUCTURAL ITEMS DURING CONSTRUCTION.

1.5 THE CONTRACTOR SHALL THOROUGHLY CLEAN THE PREMISES AT COMPLETION OF WORK AND AT TIMES AS DIRECTED BY THE OWNER. LEGALLY DISPOSE OF EXCESS MATERIAL OFF SITE.

1.6 JOB-SITE SAFETY CONDITIONS, INCLUDING, BUT NOT LIMITED TO, LATERAL STABILITY AND WIND BRACING, SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

1.7 SURFACE DRAINAGE SHALL BE DIRECTED AWAY FROM THE BRIDGE. CONTRACTOR IS RESPONSIBLE FOR WATER STOPS AND WATERPROOFING AS SHOWN AND AS NECESSARY.

2 SOILS/GEOTECHNICAL

2.1 ALL FILL MATERIAL PLACED WITHIN THE FOOTING LIMITS AND EXTENDING 2'-0" MINIMUM BEYOND THE FOOTING PERIMETER SHALL BE WELL COMPACTED, FREE DRAINING, GRANULAR BACKFILL FOR STRUCTURES AS PER SECTION 704.08 OF THE VAOT SPECIFICATIONS.

2.2 THE HEIGHT OF FILL BEHIND ABUTMENTS WILL BE LIMITED TO THE BRIDGE SEAT ELEVATION UNTIL THE DECK HAS BEEN POURED AND THE CURING PERIOD IS UP.

3 CONCRETE:

3.1 CONCRETE MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH SECTION 501 – HPC STRUCTURAL CONCRETE OF THE VAOT SPECIFICATIONS. UNLESS OTHERWISE NOTED, ALL CONCRETE SHALL BE HIGH PERFORMANCE CLASS B AS PER TABLE 501.03A. CONCRETE FOR THE TOPPING SLAB, BACK WALLS, AND INFILL BETWEEN SEAT AND UNDERSIDE OF BOX BEAM SHALL BE HIGH PERFORMANCE CLASS AA AS PER TABLE 501.03A. SUBMIT CONCRETE MIX DESIGNS FOLLOWING PROCEDURES OUTLINED IN THE SPECIFICATION. CONTRACTOR SHALL TAKE 4 TEST CYLINDERS OF CONCRETE FOR EACH 50 CUBIC YARDS OF CONCRETE OR FOR EACH DAYS POUR IF LESS THAN 50 C.Y. TESTING WILL BE AT OWNER'S EXPENSE.

3.2 CONCRETE ABUTMENT WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS. PLACING, CURING AND FINISHING SHALL BE COMPLETED PER THE SPECIFICATIONS.

3.3 NO CONCRETE IN ABUTMENTS OR WING WALLS SHALL BE PLACED ABOVE THE BRIDGE SEAT ELEVATIONS UNTIL THE BOX BEAMS HAVE BEEN PROFILED AND THE FINISHED GRADE OF THE DECK HAS BEEN DETERMINED.

3.4 THE VERTICAL KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT.

3.5 SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL. ALL OTHER AREAS OF BRIDGE SEATS SHALL BE SLOPED DOWN 1/4"/FOOT TOWARD THE NEAREST OUTSIDE FACE OF THE SUBSTRUCTURE UNIT, SUCH AS TO PREVENT WATER PONDING ON THE BRIDGE SEAT AREA. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE GIVEN A MAGNESIUM FLOAT FINISH.

3.6 RELATIVE TO GRADE, ALL DECK POURS SHALL BEGIN FROM THE LOW ELEVATION END AND PROCEED TOWARDS THE HIGH ELEVATION END.

3.7 THE DECK IS TO BE POURED IN ONE CONTINUOUS POUR WITH A MAXIMUM DURATION OF EIGHT HOURS. IF CIRCUMSTANCES BEYOND THE CONTRACTOR'S CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A TRANSVERSE CONSTRUCTION JOINT SHALL BE USED BETWEEN ADJACENT POURS. A MINIMUM 96 HOUR DELAY BETWEEN ADJACENT POURS SHALL BE OBSERVED.

3.8 WATER REPELLENT, SILANE, SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.

3.9 PRIOR TO ANY COLD WEATHER CONCRETE PLACEMENT AS DEFINED IN SECTION 501, THE CONTRACTOR SHALL SUBMIT A PLAN TO THE RESIDENT ENGINEER FOR APPROVAL. THE PLAN AT A MINIMUM SHALL PROVIDE METHODS FOR INSULATING, CURING, HEATING, TEMPERATURE MONITORING, AND ANY WEATHER RESTRICTIONS FOR CONCRETE PLACEMENT. THE PLAN SHALL BE SPECIFIC TO THE LOCATION OF THE PLACEMENT AND BE SUBMITTED A MINIMUM OF 14 DAYS PRIOR TO THE ANTICIPATED PLACEMENT DATE. COLD WEATHER CONCRETE SHALL NOT BE PLACED PRIOR TO APPROVAL OF THE PLAN.

3.10 ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1"x1".

3.11 THE TOP SURFACE OF THE CONCRETE TOPPING SLAB SHALL HAVE A TEXTURED FINISH APPLIED DURING SCREEDING IN ACCORDANCE WITH THE AASHTO LRFD CONSTRUCTION SPECIFICATIONS TO ENSURE ADEQUATE TRACTION FOR VEHICLES.

4 REINFORCING STEEL:

4.1 REINFORCING STEEL MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH SECTION 507 – REINFORCING STEEL OF THE VAOT SPECIFICATIONS.

4.2 REINFORCING STEEL SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW BY THE ENGINEER.

4.3 ALL REINFORCING STEEL USED IN THE TOPPING SLAB AND BACKWALLS SHALL BE EPOXY COATED.

4.4 THE MINIMUM CLEAR DISTANCE FROM REINF. STEEL TO ADJACENT SURFACE SHALL BE AS INDICATED ON THE DRAWINGS. WHERE CLEAR COVER IS NOT INDICATED ON DRAWINGS, PROVIDE 2" CLEAR COVER.

4.5 REINFORCEMENT SHALL BE SECURELY TIED IN ITS PROPER PLACE BEFORE AND DURING CONCRETE PLACEMENT OPERATIONS USING APPROVED TIES, CHAIRS, AND SPACERS AS REQUIRED. NO BARS SHALL BE CUT OR OMITTED IN THE FIELD WITHOUT THE APPROVAL OF THE ENGINEER. USE PLASTIC TIPPED ACCESSORIES IN CONCRETE EXPOSED TO WEATHER, WATER, OR VIEW.

5 STRUCTURAL PRECAST PRESTRESSED CONCRETE

5.1 STRUCTURAL PRECAST PRESTRESSED CONCRETE MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH SECTION 510 – PRESTRESSED CONCRETE AND SECTION 540 – PRECAST CONCRETE OF THE VAOT SPECIFICATIONS. IF CONFLICTS EXIST BETWEEN THE REQUIREMENTS OF THESE SECTIONS, THE STRICTER CRITERIA SHALL APPLY.

5.2 THE MINIMUM 28 DAY COMPRESSIVE STRENGTH OF CONCRETE USED IN STRUCTURAL PRECAST PRESTRESSED MEMBERS SHALL BE 5,000 PSI OR HIGHER AS DEEMED NECESSARY BY DESIGN.

5.3 REINFORCING STEEL MATERIALS AND WORK FOR STRUCTURAL PRECAST PRESTRESSED CONCRETE MEMBERS SHALL BE IN ACCORDANCE WITH SECTION 507 – REINFORCING STEEL OF THE VAOT SPECIFICATIONS.

5.4 REINFORCING STEEL USED IN STRUCTURAL PRECAST PRESTRESSED MEMBERS SHALL BE EPOXY COATED.

5.5 STEEL CONNECTION MATERIAL USED IN STRUCTURAL PRECAST PRESTRESSED MEMBERS SHALL BE HOT DIP GALVANIZED.

5.6 STRUCTURAL PRECAST PRESTRESSED MEMBERS SHALL BE THE PRODUCT OF A MANUFACTURER WHO HAS DEMONSTRATED THE ABILITY TO PRODUCE STRUCTURAL PRECAST PRESTRESSED PRODUCTS AND HAS BEEN IN BUSINESS FOR AT LEAST THE LAST THREE YEARS. THE MANUFACTURING PLANT AND METHODS SHALL CONFORM TO THE VAOT STANDARDS AND THE LATEST STANDARDS OF THE PRECAST CONCRETE INSTITUTE.

5.7 THE DESIGN OF STRUCTURAL PRECAST PRESTRESSED MEMBERS SHALL BE THE SOLE RESPONSIBILITY OF THE MANUFACTURER. DESIGN SHALL BE BY A REGISTERED ENGINEER EXPERIENCED IN THE DESIGN OF STRUCTURAL PRECAST PRESTRESSED MEMBERS. DESIGN CALCULATIONS AND SHOP DRAWINGS, STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF VERMONT, SHALL BE SUBMITTED FOR REVIEW BY THE ENGINEER.

5.8 STRUCTURAL PRECAST PRESTRESSED MEMBERS SHALL BE DESIGNED IN ACCORDANCE WITH THE VAOT STRUCTURES MANUAL AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION. REQUIREMENTS OF THE STRUCTURES MANUAL TAKE PRECEDENCE OVER REQUIREMENTS OF THE AASHTO SPECIFICATIONS. MEMBERS SHALL BE DESIGNED FOR ALL LOADS AND LOAD COMBINATIONS REQUIRED BY THE TWO DOCUMENTS NOTED ABOVE. STRUCTURAL PRECAST PRESTRESSED CONCRETE SLAB DESIGN LOADS SHALL BE AS FOLLOWS:

SELFWEIGHT OF PRECAST PRESTRESSED CONCRETE SLABS
SUPERIMPOSED DEAD LOAD: VARIES FROM 62.5 PSF TO 112.5 PSF (5" – 9" NONSTRUCTURAL CONCRETE OVERLAY)
LIVE LOAD: HL-93 PER AASHTO LRFD SPECIFICATIONS, 6TH EDITION
LL IMPACT: PER AASHTO LRFD SPECIFICATIONS, 6TH EDITION
NUMBER OF LANES: 2
OTHER LOADS: IN ACCORDANCE WITH AASHTO LRFD SPECIFICATIONS, 6TH EDITION & VAOT STRUCTURES MANUAL
DEFLECTION CRITERIA: IN ACCORDANCE WITH AASHTO LRFD SPECIFICATIONS, 6TH EDITION

5.9 ALL PRECAST PRESTRESSED BOX BEAMS SHALL HAVE VOID DRAINS MADE OF NONFERROUS, 3/4"ø DRAIN MATERIAL. CONTRACTOR SHALL CLEAN VOID DRAINS FOLLOWING ERECTION OF BOX BEAMS.

5.10 STRUCTURAL PRECAST PRESTRESSED CONCRETE SLABS SHALL BE TRANSVERSE POST-TENSIONED IN ACCORDANCE WITH THE VAOT STRUCTURES MANUAL AND SECTION 510.14 OF THE VAOT SPECIFICATIONS. AT A MINIMUM, TRANVERSE POST-TENSIONING SHALL BE PROVIDED AT EACH END OF THE SLABS AND AT MIDSPAN OF THE SLABS.

5.11 SHEAR KEYS BETWEEN STRUCTURAL PRECAST PRESTRESSED CONCRETE SLABS SHALL BE GROUTED IN ACCORDANCE WITH THE VAOT STRUCTURES MANUAL AND SECTION 510 – PRESTRESSED CONCRETE OF THE VAOT SPECIFICATIONS. ALL SURFACES TO BE GROUTED SHALL BE SANDBLASTED TO ENSURE A CLEAN, OIL-FREE ROUGHENED SURFACE.

5.12 THE TOP SURFACE OF PRECAST PRESTRESSED SLABS SHALL BE FINISHED TO PROVIDE A SURFACE SUITABLE FOR BONDING OF THE 5" – 9" NON-STRUCTURAL OVERLAY.

6 H-PILES

6.1 THE PILES SHALL BE HP12x74.

6.2 TO PREVENT DAMAGE TO THE PILES, PILE SHOES ARE REQUIRED FOR DRIVEN PILES AND SHALL CONFORM TO SUB SECTION 505.04 (f).

6.3 THE PILE LOCATIONS SHALL BE PRE-EXCAVATED TO A MINIMUM DEPTH OF 8'-0" BELOW THE PILE CAP AS PER DETAIL ON SHEET S2.1. PRE-EXCAVATED HOLES SHALL BE 24" IN DIAMETER. PAYMENT FOR PRE-EXCAVATION SHALL BE MADE UNDER ITEM 900.640, "SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENTS PILES, EARTH)" OR ITEM 900.640, "SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENTS PILES, ROCK)". THE ENTIRE PRE-EXCAVATED HOLE SHALL BE BACK FILLED WITH SAND AFTER THE PILE IS SET. SAND SHALL CONFORM TO THE REQUIREMENTS OF SUB SECTION 703.03.

6.4 THE PILES SHALL BE DRIVEN TO A NOMINAL AXIAL PILE DRIVING RESISTANCE (RNDR) OF 402 KIPS, OR REFUSAL, PROVIDED A MINIMUM PENETRATION OF 22'-0" BELOW THE BOTTOM OF PILE CAP HAS BEEN ACHIEVED. THE MINIMUM REQUIRED PILE LENGTH IS 25'-0". IF COMPETENT BEDROCK IS ENCOUNTERED SHALLOWER THAN 22'-0" BELOW THE BOTTOM OF PILE CAP, PRE-EXCAVATION TO A MINIMUM OF 22'-0" BELOW BOTTOM OF PILE CAP IS REQUIRED. PRE-EXCAVATION & PAYMENT SHALL BE AS PER GENERAL NOTE 6.3.

6.5 THE TOPS OF THE PILES AFTER DRIVING OR PLACEMENT SHALL NOT VARY FROM THE POSITION SHOWN ON THE PLANS BY MORE THAN 3". THE PILE ORIENTATION SHALL NOT VARY BY MORE THAN 5 DEGREES. THE CONTRACTOR SHALL DEMONSTRATE HOW THE TOLERANCES WILL BE MET TO THE SATISFACTION OF THE ENGINEER. THESE MEASURES SHALL BE DEMONSTRATED IN A SUBMITTAL TO BE ACCEPTED BEFORE PILE DRIVING COMMENCES.

6.6 A MINIMUM OF ONE DYNAMIC PILE TEST SHALL BE CONDUCTED AT EACH ABUTMENT. MORE TESTS MAY BE REQUIRED BY THE ENGINEER. THE FIRST TEST PILE SHALL BE THE FIRST PRODUCTION PILE DRIVEN FOR EACH ABUTMENT. THE PILE WILL BE DRIVEN AT THE PLAN LOCATION AND THE PILE SHALL BE MEASURED FOR PAYMENT UNDER CONTRACT ITEM 505.16. THIS SHALL BE PAID FOR UNDER ITEM 505.45, "DYNAMIC PILE LOADING TEST".

6.7 FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS ELEVATION 678.00 AT THE EAST ABUTMENT & EL. 679.00 AT THE WEST ABUTMENT. THE ACTUAL IN PLACE LENGTHS MAY VARY.

7 BRIDGE RAILINGS

7.1 ALL BRIDGE RAILING MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH SECTION 525 – BRIDGE RAILINGS OF THE VAOT SPECIFICATIONS.

ISSUED FOR BIDDING – NOT FOR CONSTRUCTION

N

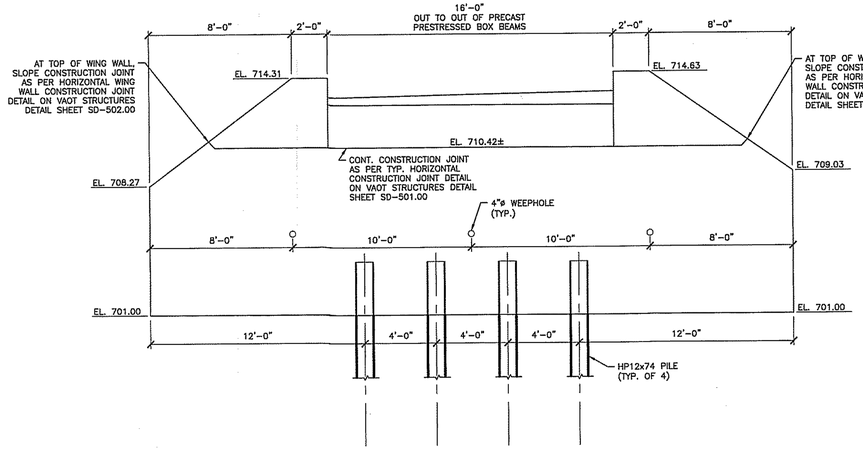
NO.	DATE	REVISION

Civil & Structural Engineers
DeMoore ENGINEERING ASSOCIATES INCORPORATED
81 River St., P.O. Box 1576, Montpelier, VT 05601-1576
t. 802-223-4727 f. 802-223-4740 www.dfdstest.com

LOCUST CREEK BRIDGE
BARNARD, VERMONT
TOWN OF BARNARD

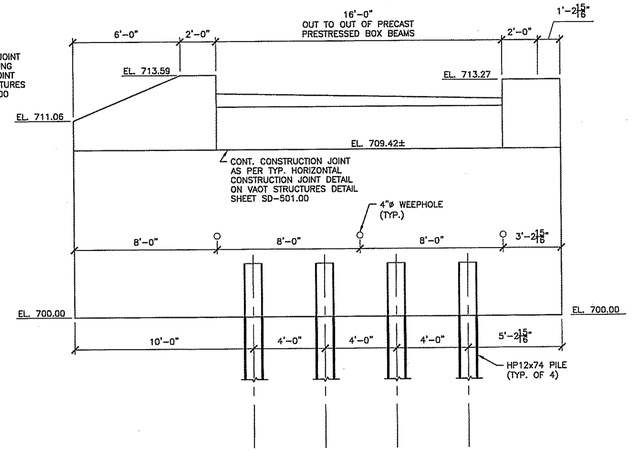
SHEET DESCRIPTION
BRIDGE DECK & ABUTMENT PLAN

PROJECT NO.	DATE
12120	JANUARY 6, 2015
SCALE: AS NOTED	S1.1
DRAWN: K.L.A.	
CHECKED	SHEET 8 OF 10



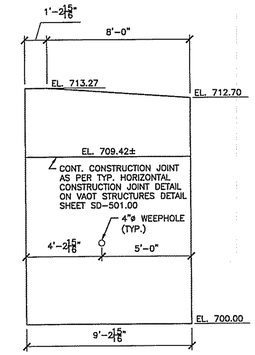
WEST ABUTMENT ELEVATION

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



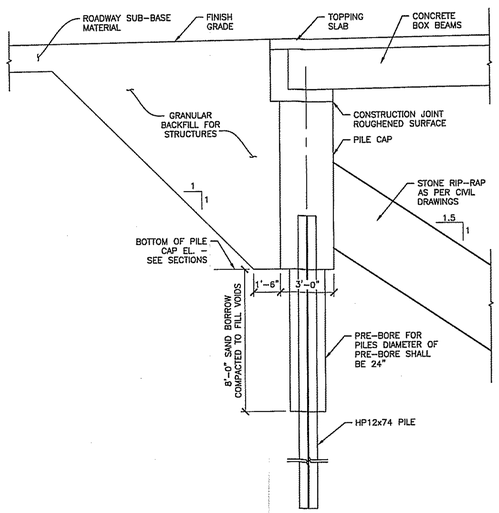
EAST ABUTMENT ELEVATION

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



SOUTHEAST ABUTMENT ELEVATION

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



TYPICAL EARTHWORK DETAIL (1 / S1.2)

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

ISSUED FOR BIDDING – NOT FOR CONSTRUCTION

NO.	DATE	REVISION

Civil & Structural Engineers
DeMott ENGINEERING ASSOCIATES INCORPORATED
81 River St., P.O. Box 1576, Montpelier, VT 05601-1576
t. 802-223-4727 f. 802-223-4745 www.dmsteel.com

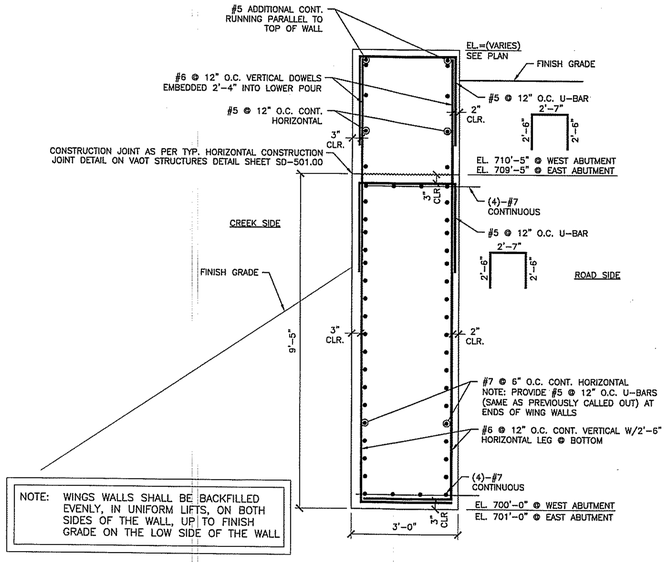
LOCUST CREEK BRIDGE

BARNARD, VERMONT

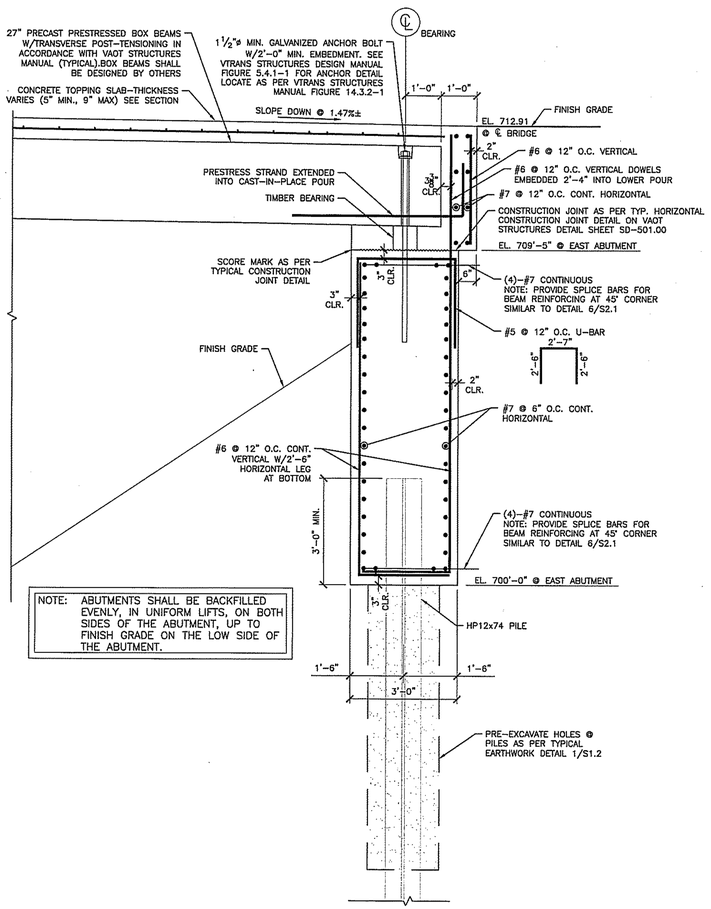
TOWN OF BARNARD

SHEET DESCRIPTION: CONCRETE ELEVATIONS

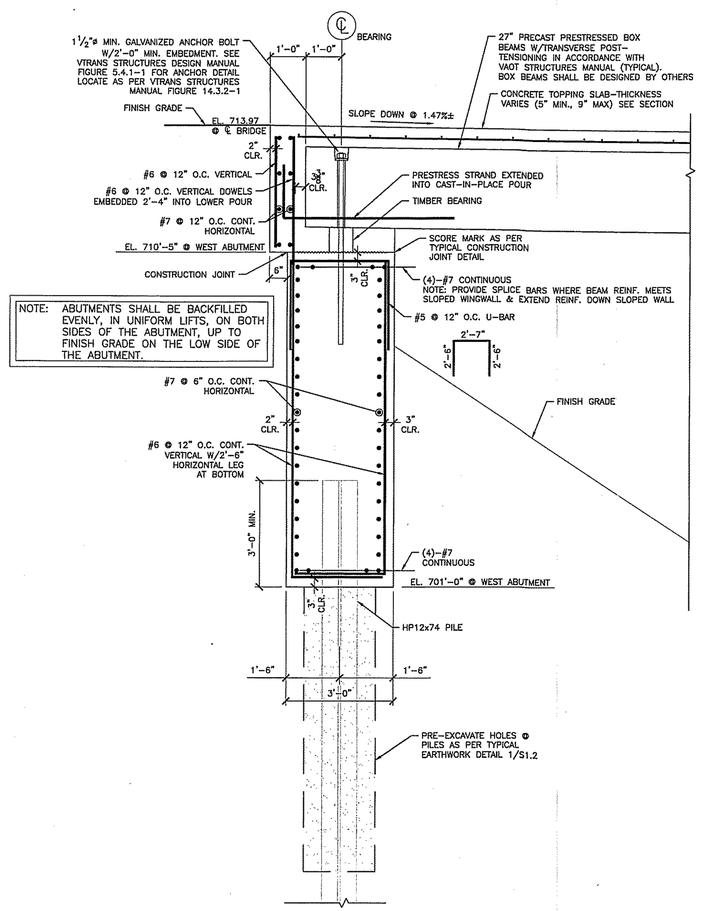
PROJECT NO.	DATE
12120	JANUARY 6, 2015
SCALE: AS NOTED	S1.2
DRAWN: K.L.A.	
CHECKED	SHEET 9 OF 10



INTEGRAL WING WALL SECTION (1 / S2.1)
SCALE: 1/2"=1'-0"

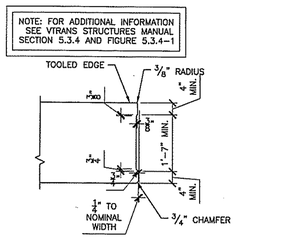


EAST ABUTMENT WALL SECTION (2 / S2.1)
SCALE: 1/2"=1'-0"

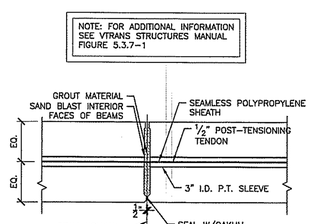


WEST ABUTMENT WALL SECTION (3 / S2.1)
SCALE: 1/2"=1'-0"

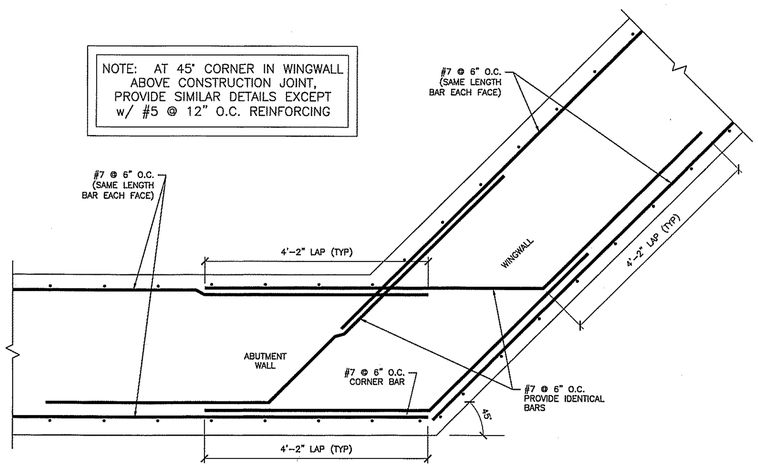
ISSUED FOR BIDDING – NOT FOR CONSTRUCTION



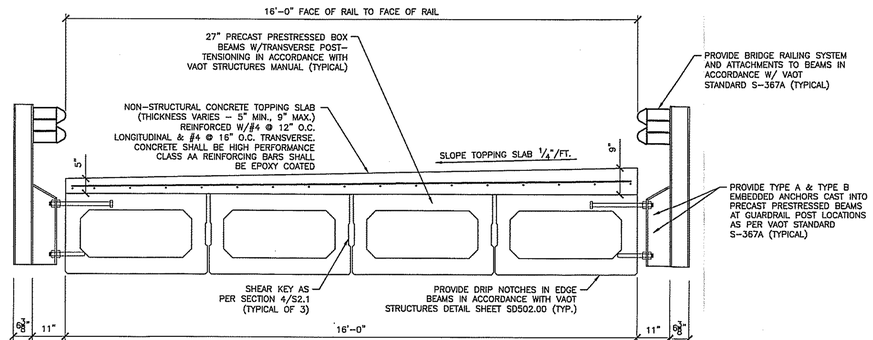
SHEAR KEY SECTION (4 / S2.1)
SCALE: 1/2"=1'-0"



LONGITUDINAL JOINT SECTION @ TRANSVERSE TENDON (5 / S2.1)
SCALE: 1/2"=1'-0"



TYPICAL 45° WALL CORNER DETAIL (6 / S2.1)
SCALE: N.T.S.



BRIDGE SLAB SECTION (7 / S2.1)
SCALE: 1/2"=1'-0"

NO.	DATE	REVISION
1		
2		
3		
4		
5		
6		
7		

Civil & Structural Engineers
DeWolfe ENGINEERING ASSOCIATES
81 River St., P.O. Box 1535, Montpelier, VT 05601-1535
t. 802-223-4727 f. 802-223-4740 www.dfdesign.com

LOCUST CREEK BRIDGE
BARNARD, VERMONT
TOWN OF BARNARD

SHEET DESCRIPTION
ABUTMENT & WING WALL DETAILS

PROJECT NO.	DATE
12120	JANUARY 6, 2015
SCALE: AS NOTED	S2.1
DRAWN: K.L.A.	
CHECKED	SHEET 10 OF 10