TOWN OF BRANDON, VT
COUNTY OF RUTLAND

PROPOSED IMPROVEMENT
BRIDGE PROJECT

T.H. 22 (CHURCHILL ROAD) - BRIDGE NO. 22 OVER NESHOBE RIVER

PROJECT LOCATION: BEGINNING AT A POINT ON T.H. 22, APPROXIMATELY 0.1 MILES NORTHERLY OF ITS INTERSECTION WITH VT 73, AND EXTENDING NORTHERLY 0.031 MILES.

PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 22 WITH PRESTRESSED CONCRETE VOIDED SLAB SUPERSTRUCTURE AND CAST-IN-PLACE CONCRETE ABUTMENTS, WITH RELATED APPROACH AND CHANNEL WORK.

LENGTH OF STRUCTURE: 41.02 FEET = 0.008 MILES
LENGTH OF ROADWAY: 123.98 FEET = 0.023 MILES
LENGTH OF PROJECT: 165.00 FEET = 0.031 MILES

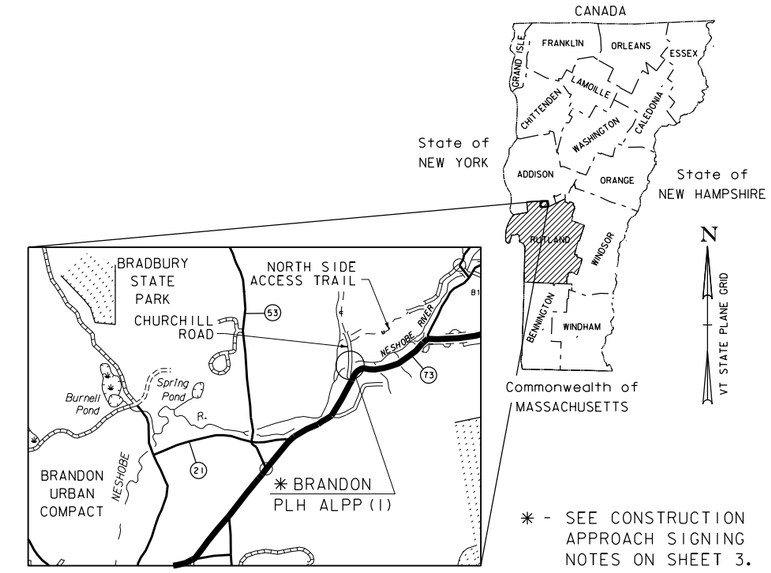
INDEX OF SHEETS

STANDARDS LIST

G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS) (3/10/17)
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN) (3/10/17)
S-367A	BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING (2/2/17)
S-367B	GUARDRAIL APPROACH SECTION, GALVANIZED HD STEEL BEAM (2/2/17)
T-1	TRAFFIC CONTROL GENERAL NOTES (4/25/16)
T-45	SQUARE TUBE SIGN POST AND ANCHOR (1/2/13)

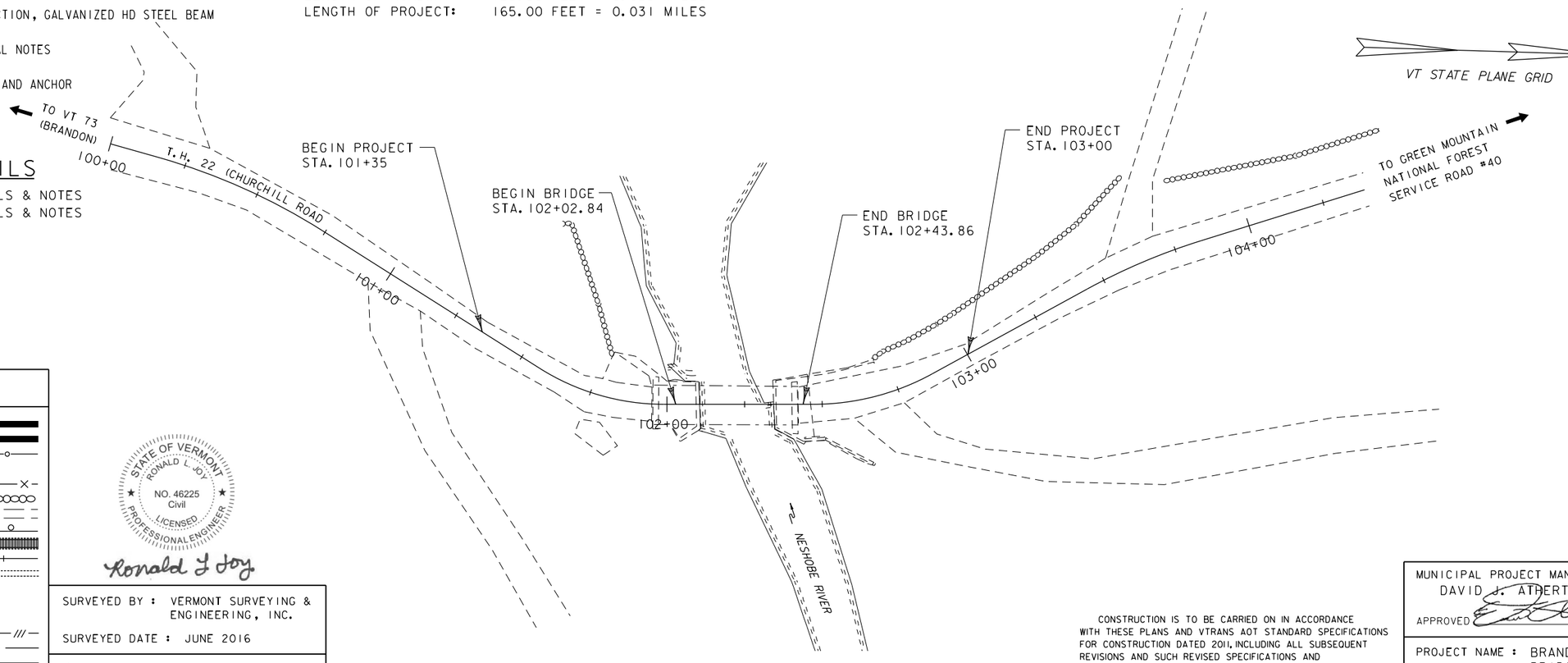
STRUCTURES DETAILS

SD-501.00	CONCRETE DETAILS & NOTES
SD-502.00	CONCRETE DETAILS & NOTES



LOCATION MAP
NOT TO SCALE

* - SEE CONSTRUCTION APPROACH SIGNING NOTES ON SHEET 3.



CONVENTIONAL SYMBOLS

COUNTY LINE
TOWN LINE
LIMITS OF ACCESS
POINT OF ACCESS
FENCE LINE
STONE WALL
TRAVELED WAY
GUARD RAIL
RAILROAD
SURVEY LINE
CULVERT
POWER POLE
TELEPHONE POLE
TREES
CONTROL OF ACCESS
PROPERTY LINE
R.O.W. TAKING LINE
SLOPE RIGHTS (SR SR SR)
TOP OF CUT
TOE OF SLOPE

STATE OF VERMONT
RONALD L. JOY
NO. 46225
Civil
LICENSED
PROFESSIONAL ENGINEER

Ronald L Joy

SURVEYED BY : VERMONT SURVEYING & ENGINEERING, INC.

SURVEYED DATE : JUNE 2016

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (cors 96)

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND VTRANS AOT STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

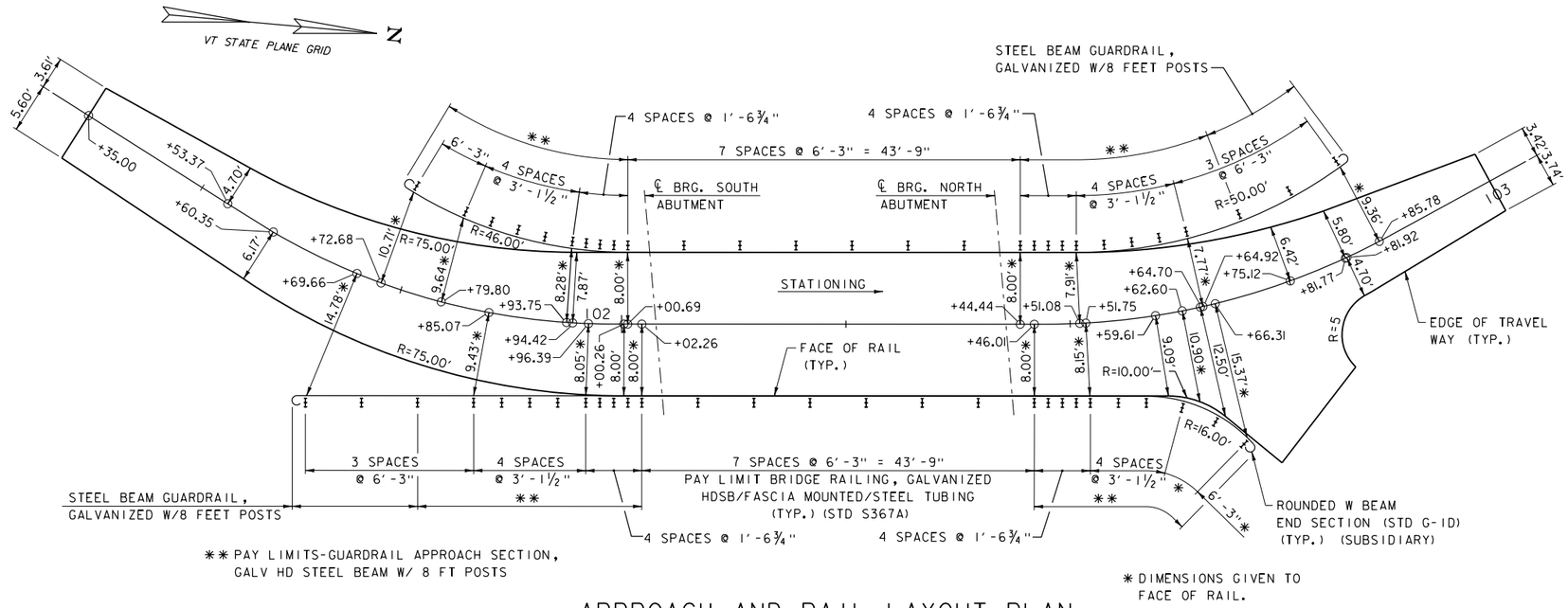
McFarland Johnson

MUNICIPAL PROJECT MANAGER :
DAVID J. ATHERTON, TOWN MANAGER
APPROVED _____ DATE 4/20/18

PROJECT NAME : BRANDON-CHURCHILL ROAD BRIDGE

PROJECT NUMBER : BRANDON PLH ALPP (1)

SHEET 1 OF 23 SHEETS

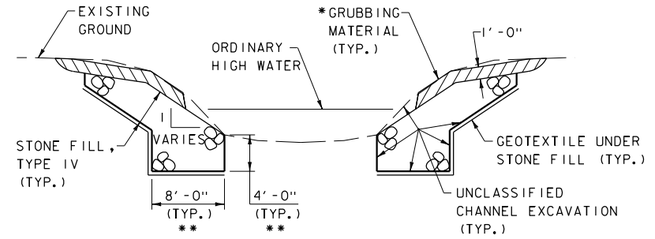


** PAY LIMITS-GUARDRAIL APPROACH SECTION, GALV HD STEEL BEAM W/ 8 FT POSTS

* DIMENSIONS GIVEN TO FACE OF RAIL.

APPROACH AND RAIL LAYOUT PLAN

NOT TO SCALE

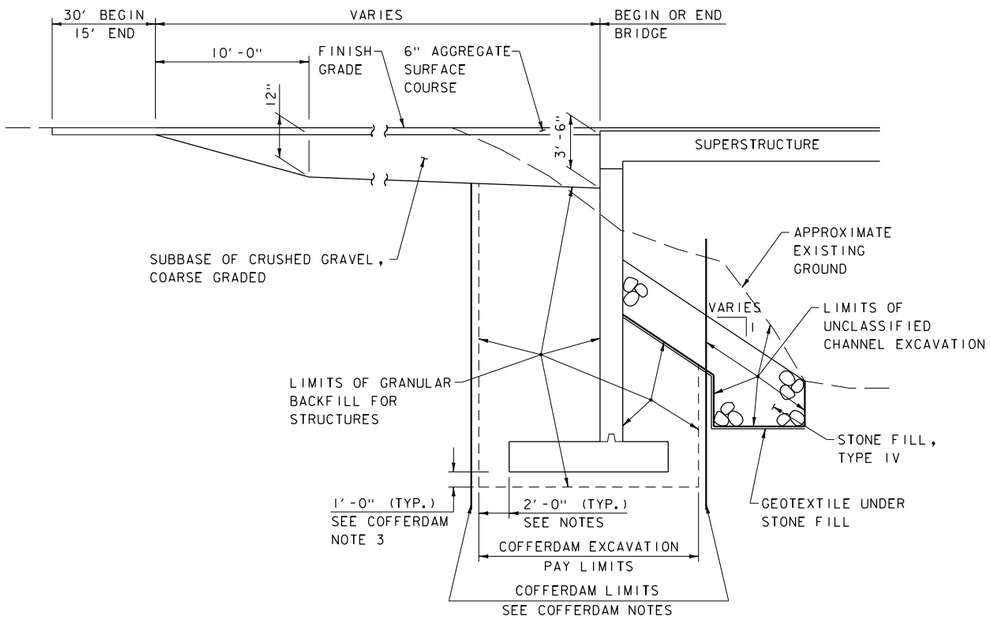


TYPICAL CHANNEL SECTION

NOT TO SCALE

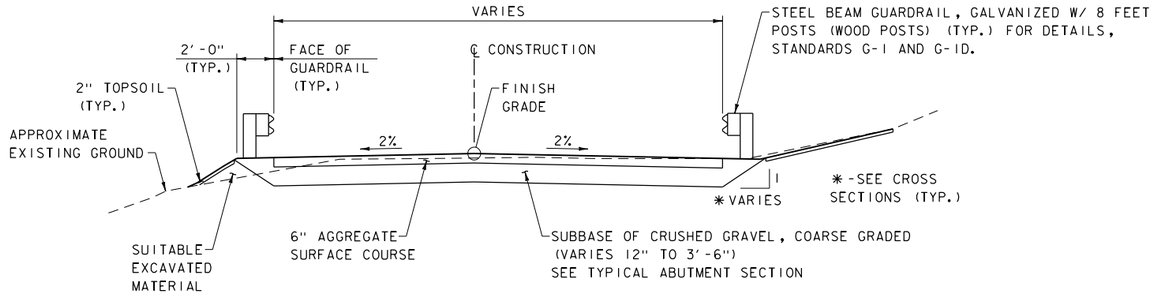
* WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.

** STONE FILL, TYPE II KEY DIMENSIONS ARE 2'-0"(V) AND 4'-0"(H).



TYPICAL ABUTMENT SECTION

NOT TO SCALE



TYPICAL ROADWAY SECTION

SCALE: ¼" = 1'-0"

MATERIAL ITEM	TOLERANCE
AGGREGATE SURFACE COURSE	± ½"
SUBBASE	± 1"

COFFERDAM NOTES

1. COFFERDAM LIMITS TO BE DETERMINED BY THE CONTRACTOR.
2. THE PAY LIMITS OF "COFFERDAM EXCAVATION, EARTH" AND "COFFERDAM EXCAVATION, ROCK" SHALL BE 2'-0" OUTSIDE THE PERIMETER OF THE FOOTING, UP TO EXISTING GROUND OR BOTTOM OF SUBBASE, WHICHEVER IS LOWER.
3. ONE FOOT UNDERCUT AS DETERMINED NECESSARY BY THE RESIDENT ENGINEER.
4. IF A COFFERDAM IS CONSTRUCTED WHICH IS LARGER THAN THE INDICATED COFFERDAM EXCAVATION PAY LIMITS, PAYMENT FOR ALL UNCLASSIFIED CHANNEL EXCAVATION, INCLUDING THAT PORTION WHICH IS INSIDE THE COFFERDAM BUT OUTSIDE THE COFFERDAM EXCAVATION PAY LIMITS, WILL BE MADE AT THE CONTRACT UNIT PRICE FOR UNCLASSIFIED CHANNEL EXCAVATION.

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SHEET NAME: TYPICAL SECTIONS AND DETAILS

PROJECT NAME: BRANDON-CHURCHILL ROAD BRIDGE

PROJECT NUMBER: BRANDON PLH ALPP(I)

FILE NAME:	z8013typ.dgn	PLOT DATE:	4/20/2018
PROJECT LEADER:	J. Lund	DRAWN BY:	D. DePaolo
DESIGNED BY:	D. Martel	CHECKED BY:	R. Joy
		SHEET	2 OF 23

PROJECT NOTES:

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2011 STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE LATEST AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND ITS LATEST INTERIMS.

2. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION, ESPECIALLY RAW CONCRETE, FROM ENTERING THE NESHOBE RIVER.

3. EXISTING STEEL PONY TRUSS SNOWMOBILE BRIDGE AND CONCRETE WASTE BLOCK FOUNDATIONS WILL BE REMOVED BY VAST PRIOR TO START OF CONSTRUCTION.

4. REMOVAL OF STRUCTURE, ITEM 529.15, SHALL INCLUDE THE FOLLOWING:
   -ORIGINAL STEEL BEAM AND WOOD PLANK BRIDGE UNDER SNOWMOBILE BRIDGE
   -EXISTING CONCRETE FACED STONE ABUTMENTS AND WING WALLS AT EACH END OF THE EXISTING BRIDGE. REMOVAL LIMITS ARE 1 FT. BELOW GRADE ON LOW SIDE OF WALL AND 4 FT. BEHIND FACE OF WALL.
   -EXISTING STEEL PIPE CULVERT

5. EXISTING JERSEY BARRIERS BLOCKING VEHICULAR ACCESS TO THE BRIDGE FROM THE SOUTH SHALL BE RELOCATED BY THE CONTRACTOR AS REQUIRED TO ACCESS THE SITE. JERSEY BARRIERS SHALL REMAIN THE PROPERTY OF THE TOWN OF BRANDON.

6. ROAD IS CURRENTLY CLOSED AND SHALL REMAIN CLOSED THROUGHOUT CONSTRUCTION. A TRAIL TO ACCESS THE NORTH SIDE IS SHOWN ON THE LOCATION MAP (SHT. 1), AND MAY BE USED BY THE CONTRACTOR AS AN ALTERNATIVE TO A TEMPORARY ACCESS BRIDGE PROVIDED THE CONTRACTOR FINDS IT SUITABLE FOR THEIR USE.

7. THE FABRICATOR SHALL DESIGN AND DETAIL THE PRESTRESSED CONCRETE MEMBERS AND THE STEEL REINFORCED ELASTOMERIC BEARINGS. THE FABRICATOR SHALL PROVIDE STAMPED DESIGN CALCULATIONS AND PLANS PREPARED AND REVIEWED BY A REGISTERED VERMONT PROFESSIONAL ENGINEER. THE FABRICATOR SHALL OBTAIN WRITTEN APPROVAL FROM THE ENGINEER PRIOR TO FABRICATION.

8. PRESTRESSED, PRECAST MEMBERS AND ELASTOMERIC BEARINGS SHALL:

   A. CONFORM TO SECTION 510 "PRESTRESSED CONCRETE".
   B. CONFORM TO SECTION 531 "BRIDGE BEARING DEVICES".
   C. BE 18" X 48" SKEWED VOIDED SLAB UNITS.
   D. HAVE THE ENDS OF THE STRANDS RECESSED AND GROUTED AS PER PCI GUIDELINES.
   E. USE CONCRETE WITH F'c = 6500 PSI AND F'ci = 4000 PSI.
   F. USE PRESTRESSING STRANDS WHICH SHALL BE 0.60", LO-RELAXATION STRANDS PULLED TO 75% OF THEIR YIELD.
   G. BE DESIGNED FOR HL-93 LIVE LOAD, PLUS A DEAD LOAD OF 75 PSF (OVERLAY LOAD) IN ADDITION TO THE PRECAST BEAM WEIGHT.

9. FABRICATION DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION.

10. VOID DRAINS SHALL BE PLACED TO CLEAR STRAND AND INSTALLED AT EACH END OF ALL VOIDS. THE VOID DRAINS SHALL BE 1" DIAMETER AND NON-FERROUS. THE DRAINS SHALL BE CLEANED UPON REMOVAL FROM THE FORMS. COST SHALL BE INCIDENTAL TO ITEM 510.22.

11. THE STEEL REINFORCED ELASTOMERIC BEARING PADS, CONFORMING TO SECTION 731.03 AND AASHTO M251, WILL BE PAID FOR UNDER ITEM 531.17, "BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD".

12. AFTER FINISHING, THE SURFACE SHALL BE GIVEN A SUITABLE TEXTURE WITH AN ARTIFICIAL TURF DRAG MADE OF MOLDED POLYETHYLENE OR OTHER MATERIAL OR OTHER METHOD THAT WILL PROVIDE AN ACCEPTABLE FINISH. THE SELECTION OF TURF DRAG OR OTHER METHOD SHALL BE CAPABLE OF PRODUCING A SURFACE TEXTURE WITH A HORIZONTAL PEAK TO PEAK DISTANCE RANGING FROM 0.02 INCH TO LESS THAN OR EQUAL TO 0.25 INCH AND HAVING A PEAK TO PEAK AMPLITUDE OF 0.005 INCH TO 0.8 INCH. SELECT A TURF DRAG MATERIAL OR OTHER ACCEPTABLE METHOD THAT WILL MINIMIZE TEARING AND ROLLING OF COARSE AGGREGATE FROM THE SURFACE.

13. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE LEVEL AS SHOWN IN THE SUBSTRUCTURE DETAILS. THE SURFACE SHALL BE A SMOOTH TROWEL FINISH AND SHALL BE LEVEL FROM FRONT TO BACK.

14. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" BY 1" EXCEPT WHERE NOTED.

15. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

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

17. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".

18. REINFORCING PLACEMENT TOLERANCES SHALL BE:

    SPACING +/- 1"
    CLEARANCE +/- 1/4"

19. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF THE PRESTRESSED UNITS BETWEEN THE DRIP NOTCHES. NO WATER REPELLENT SHALL BE APPLIED TO THE PRESTRESSED UNITS PRIOR TO THE PLACEMENT OF THE OVERLAY.

20. ALL DIMENSIONS ARE EITHER HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES F, EXCEPT AS NOTED.

21. THE FOLLOWING ALLOWABLE STRESSES AND WEIGHTS APPLY TO THESE PLANS FOR DESIGN PURPOSES.

    CAST IN PLACE CONCRETE: f'c = 3500 psi HPC B
    f'c = 4000 psi HPC AA

    REINFORCING STEEL: Ft = 24,000 psi Fy = 60,000 psi GRADE 60
    GRANULAR BACKFILL FOR STRUCTURES: 140 pcf

22. THE CONTRACTOR SHALL DEVELOP THE REINFORCING STEEL SCHEDULE AND SUBMIT IT TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING FABRICATION.

23. IF BEDROCK IS ENCOUNTERED PRIOR TO ACHIEVING THE BOTTOM OF FOOTING SUB-BASE ELEVATIONS PROVIDED IN THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY RESIDENT ENGINEER AND EXPOSE ROCK SURFACE WITHIN THE FOOTPRINT OF THE FOOTINGS. BASED ON THE ACTUAL ROCK SURFACE ELEVATIONS ENCOUNTERED, AS SURVEYED BY THE CONTRACTOR, THE ROCK MAY BE EXCAVATED OR THE FOOTING DESIGN MAY BE MODIFIED TO SUIT. THE CONTRACTOR SHALL SUBMIT AN RFI FOR RESOLUTION. PRIOR TO ANY ROCK EXCAVATION. IF BEDROCK IS ENCOUNTERED, THE ENGINEER WILL NOTIFY THE VTRANS STATE GEOLOGIST TO DETERMINE IF THE BEDROCK IS COMPETENT TO OBTAIN A HIGHER NOMINAL BEARING RESISTANCE THAN USED FOR DESIGN.

SUGGESTED SEQUENCE OF CONSTRUCTION FOR PRESTRESSED VOIDED SLABS:

1. LAYOUT WORKING LINES
   * LAY OUT WORKING LINES FOR THE BRIDGE'S ENTIRE WIDTH ON THE BEAM SEAT. MEASURE ALL WORKING LINES FROM A COMMON WORKING POINT.
   * BASE THE WORKING LINES ON THE NOMINAL BEAM WIDTHS.

2. VERIFY BEAM SEAT ELEVATIONS
   * TAKE ELEVATIONS AT BEAM SEATS.
   * IF SEATS ARE HIGH, GRIND TO CORRECT ELEVATIONS.
   * IF SEATS ARE LOW, ADD SHIMS.
   * LOCATE AND DRILL ONE 3 INCH DIAMETER HOLE AT EACH ANCHOR BOLT LOCATION.
   * INSTALL BEARINGS.

3. ERECT BEAMS
   * VERIFY THAT THE PRECASTER ROUGHENED THE SHEAR KEY FASCIAS OF THE BEAMS
   * PRIOR TO ERECTING THE BEAMS, POWER-WASH THE FASCIA WITH WATER TO REMOVE DUST AND OTHER DEBRIS.
   * PLACE BEAMS TO FIT WITHIN THE WORKING LINES.
   * AS WORK PROGRESSES, INSTALL HARDWOOD WEDGES BETWEEN ADJACENT BEAMS TO MAINTAIN PROPER JOINT OPENING WITH A MINIMUM OF ONE WEDGE AT EACH LATERAL TIE.
   * PLACE ANCHOR BOLTS.
   * GROUT ANCHOR BOLTS INTO THE SUBSTRUCTURE.

4. INSTALL OAKUM OR EQUIVALENT JOINT FILLER (BACKER ROD)
   * FIT FILLER MATERIAL AT THE BOTTOM OF THE SHEAR KEY AS SHOWN ON THE PLANS.

5. INSTALL TRANSVERSE POST-TENSIONING TENDONS
   * A SEAMLESS POLYPROPYLENE SHEATH SHALL COMPLETELY ENCASE THE POST-TENSIONING TENDONS (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND).
   * SLIDE THE TRANSVERSE POST-TENSIONING TENDONS THROUGH DUCTS.
   * VERIFY THAT HARDWOOD WEDGES ARE IN PLACE AS REQUIRED TO PREVENT SLIPPAGE OF BEAMS.
   * USING CALIBRATED JACK, POST-TENSION TENDON TO APPROXIMATELY 5,000 LBS. TO REMOVE SAG IN THE TIE AND TO SEAT THE CHUCK.

6. GROUT SHEAR KEYS
   * CLEAN JOINT WITH AN OIL FREE AIR-BLAST IMMEDIATELY BEFORE GROUT PLACEMENT. THEN VERIFY THAT THE BACKER ROD IS STILL IN PLACE.
   * ADDITIONAL JOINT PREPARATION AND GROUT PLACEMENT SHALL BE PER MANUFACTURER'S RECOMMENDATIONS, AND SPEC SECTION 510.13.
   * CAREFULLY ROD JOINTS TO ELIMINATE ANY POSSIBILITY OF VOIDS.

7. POST-TENSION TRANSVERSE TENDONS
   * GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 1,500 PSI, BASED ON THE MANUFACTURER'S RECOMMENDATIONS, PRIOR TO STRESSING.
   * USING A CALIBRATED JACK OPERATED BY QUALIFIED PERSONNEL, POST-TENSION TENDONS TO 47 KIPS FOR EACH 0.6" DIAMETER STRAND.
   * BEGIN WITH THE TENDONS AT EACH END AND THEN WORK SYMMETRICALLY TOWARDS THE MIDSPAN FROM EACH END. THIS WILL PROVIDE THE MAXIMUM COMPRESSIVE FORCE BETWEEN DECK BEAMS.

8. END DETAILS
   * GROUT ANCHOR BOLTS INTO THE SLEEVES IN THE PRESTRESSED UNITS AT THE FIXED ENDS. BEFORE THE GROUT CURES, PLACE THE WASHER PLATE, AND INSTALL THE NUT ON TOP AND TIGHTEN.
   * PLACE THE COLD POURED JOINT SEALER IN THE SLEEVES IN THE PRESTRESSED UNITS AT THE EXPANSION ENDS. PLACE THE WASHER PLATE AND INSTALL THE NUT ON TOP. HAND-TIGHTEN AND THEN LOOSEN 1/2 TURN.
   * GROUT OVER THE NUT AND BOLT IN THE ANCHOR BOLT BLOCK OUT ON THE FIXED ENDS. FILL THE ANCHOR BOLT BLOCK OUTS ON THE EXPANSION ENDS WITH COLD POURED JOINT SEALER.

9. FINISH WORK
   * REMOVE WEDGES, AND PATCH DECK AND FASCIA BEAMS AT TRANSVERSE TIES.
   * IF REQUIRED, PLACE AN OVERLAY.

ASHLAR STONE FORM LINER NOTES:

ASHLAR STONE FORM LINER FINISH SHALL BE EITHER OF THOSE LISTED BELOW, OR APPROVED EQUAL. ALL COSTS SHALL BE INCIDENTAL TO ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B.

ASHLAR STONE NO. 330 MULTI-CAST
THE GREENSTREAK GROUP
3400 TREE COURT INDUSTRIAL BOULEVARD
ST. LOUIS, MO 63122
TEL: 1-800-325-9504

ASHLAR STONE #16986
FITZGERALD FORM LINERS
1341 EAST POMONA STREET
SANTA ANNA, CA 92705
TEL: 1-800-547-7760

ASHLAR STONE P/C 30664
SYMONS DURA-TEX
SYMONS CORPORATION
200 E. TOUHY AVENUE
DES PLAINES, IL 60018
TEL: 1-800-733-7654

HYDRAULICS REPORT - PROPOSED STRUCTURE

DRAINAGE AREA : 10.4 square miles
STRUCTURE TYPE : Prestressed Concrete Deck with Cast-in Place Concrete Abutments

CLEAR SPAN (NORMAL TO STREAM) : 35 feet
VERTICAL CLEARANCE ABOVE STREAMBED : 8 feet
WATERWAY OF FULL OPENING : 280 feet

PEAK FLOW DATA

Q 2.33 =	590 cfs	VELOCITY =	8.2 fps
Q 10 =	1250 cfs	VELOCITY =	10.5 fps
Q 25 =	1650 cfs	VELOCITY =	11.5 fps
Q 50 =	2000 cfs	VELOCITY =	12.2 fps
Q 100 =	2500 cfs	VELOCITY =	13.2 fps

IS THE ROADWAY OVERTOPPED BELOW Q100 : No.
FREQUENCY : > Q100
RELIEF ELEVATION : N/A
DISCHARGE OVER ROAD @ Q100 : 0 cfs

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE : 774.1'
VERTICAL CLEARANCE : @ Q25 = 765.65'

SCOUR :

REQUIRED CHANNEL PROTECTION : Type IV Stone Fill

PERMIT INFORMATION

AVERAGE DAILY FLOW :	25 cfs	DEPTH OR ELEVATION
ORDINARY LOW WATER :	15 cfs	761.69'
ORDINARY HIGH WATER :		

ADDITIONAL INFORMATION

CONSTRUCTION APPROACH SIGNING NOTES:

1. TWO (2) 48" x 48" DIAMOND SHAPED "TRUCKS ENTERING" CONSTRUCTION APPROACH SIGNS (W42-7) SHALL BE ADDED ALONG VT73 (FOREST DALE ROAD). SIGNS SHALL BE PLACED 250 FEET IN EACH DIRECTION FROM THE CHURCHILL ROAD/VT 73 INTERSECTION.
2. CONSTRUCTION SIGNS SHALL BE NEW OR IN LIKE NEW CONDITION.
3. ALL SIGNS SHALL HAVE ASTM D4956-01 TYPE VII, TYPE VIII, OR TYPE IX FLUORESCENT ORANGE RETRO-REFLECTIVE SHEETING.
4. PROJECT APPROACH SIGNING SHALL BE IN PLACE BEFORE ANY WORK BEGINS. NO CONSTRUCTION SIGNS SHALL BE INSTALLED AS TO INTERFERE OR OBSTRUCT THE VIEW OF EXISTING TRAFFIC CONTROL DEVICES, STOPPING SIGHT DISTANCE AND CORNER SIGHT DISTANCE FROM DRIVES AND TOWN HIGHWAYS. EXISTING SIGNS WHICH WOULD CONFLICT WITH TEMPORARY TRAFFIC CONTROL SHALL BE COMPLETELY COVERED OR REMOVED.
5. SIGNS SHALL BE MOUNTED ON TWO 3 LBS/FT FLANGED CHANNEL POSTS. NO SIGN POSTS SHALL EXTEND OVER THE TOP EDGE OF THE SIGN INSTALLED ON SAID POSTS.
6. THE CONTRACTOR SHALL PROVIDE ACCESS THROUGH THE TRAFFIC PACKAGE FOR EMERGENCY VEHICLES AT ALL TIMES.
7. THE COST OF ALL PROJECT TRAFFIC CONTROL ZONE DEVICES (EXCEPT TEMPORARY TRAFFIC BARRIERS) WILL BE INCLUDED IN THE COST FOR ITEM 635.11, MOBILIZATION/DEMOBILIZATION.

McFarland Johnson

SHEET NAME: PROJECT NOTES
PROJECT NAME: BRANDON-CHURCHILL ROAD BRIDGE
PROJECT NUMBER: BRANDON PLH ALPP(I)

FILE NAME:	z8013gen_notes.dgn	PLOT DATE:	4/20/2018
PROJECT LEADER:	J. Lund	DRAWN BY:	D. DePaolo
DESIGNED BY:	D. Martel	CHECKED BY:	R. Joy
		SHEET	3 OF 23

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	SUPER STRUCTURE	SOUTH ABUT.	NORTH ABUT.	EROSION CONTROL	ROADWAY	CHANNEL	FULL E&C	TOTAL
201.10	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	LS					1			1
203.15	COMMON EXCAVATION	CY					230			230
203.27	UNCLASSIFIED CHANNEL EXCAVATION	CY						310		310
204.30	GRANULAR BACKFILL FOR STRUCTURES	CY		200	235					435
208.30	COFFERDAM EXCAVATION, EARTH	CY		315	380					695
208.35	COFFERDAM EXCAVATION, ROCK	CY		30	40					70
208.40	COFFERDAM (SOUTH ABUTMENT)	LS		1						1
208.40	COFFERDAM (NORTH ABUTMENT)	LS			1					1
301.25	SUBBASE OF CRUSHED GRAVEL, COARSE GRADED	CY					220			220
401.10	AGGREGATE SURFACE COURSE	CY					35			35
501.32	CONCRETE, HIGH PERFORMANCE CLASS AA	CY	13							13
501.34	CONCRETE, HIGH PERFORMANCE CLASS B	CY		80	95					175
506.75	STRUCTURAL STEEL	LS	1							1
507.11	REINFORCING STEEL, LEVEL I	LB		8725	11325					20050
507.12	REINFORCING STEEL, LEVEL II	LB	1400							1400
507.16	DRILLING AND GROUTING DOWELS	LF		8	8					16
510.22	PRESTRESSED CONCRETE VOIDED SLABS (18" X 48")	LF	164							164
510.24	GROUTING SHEAR KEYS	LF	125							125
514.10	WATER REPELLENT, SILANE	GAL	10	5	5					20
525.44	BRIDGE RAILING, GALVANIZED HDSB / FASCIA MOUNTED / STEEL TUBING	LF	87.5							87.5
529.15	REMOVAL OF STRUCTURE	EA	1							1
531.17	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	EA	16							16
613.11	STONE FILL, TYPE II	CY					40			40
613.13	STONE FILL, TYPE IV	CY						380		380
621.205	STEEL BEAM GUARDRAIL, GALVANIZED W/ 8 FEET POSTS	LF					25			25
621.60	ANCHOR FOR STEEL BEAM RAIL	EA					4			4
621.738	GUARDRAIL APPROACH SECTION, GALV HD STEEL BEAM W/ 8FT POSTS	EA					4			4
621.90	TEMPORARY TRAFFIC BARRIER	LF					40			40
631.16	TESTING EQUIPMENT, CONCRETE	LS							1	1
635.11	MOBILIZATION / DEMOBILIZATION	LS					1			1
649.31	GEOTEXTILE UNDER STONE FILL	SY						350		350
649.51	GEOTEXTILE FOR SILT FENCE	SY				50				50
649.61	GEOTEXTILE FOR FILTER CURTAIN	SY				100				100
651.15	SEED	LB				10				10
651.17	SEED, WINTER RYE	LB				10				10

ITEM NUMBER	ITEM DESCRIPTION	UNIT	SUPER STRUCTURE	SOUTH ABUT.	NORTH ABUT.	EROSION CONTROL	ROADWAY	CHANNEL	FULL E&C	TOTAL
651.18	FERTILIZER	LB				100				100
651.20	AGRICULTURAL LIMESTONE	TON				1				1
651.25	HAY MULCH	TON				1				1
651.35	TOPSOIL	CY				10				10
651.40	GRUBBING MATERIAL	SY				100				100
652.10	EPSC PLAN	LS				1				1
652.20	MONITORING EPSC PLAN	HR				50				50
652.30	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	LU				1				1
653.20	TEMPORARY EROSION MATTING	SY				60				60
653.25	TEMPORARY STONE CHECK DAM, TYPE I	CY				20				20
653.35	VEHICLE TRACKING PAD	CY				30				30
653.45	FILTER BAG	EA				1				1
653.50	BARRIER FENCE	LF				30				30
653.55	PROJECT DEMARCATION FENCE	LF				330				330
675.20	TRAFFIC SIGNS, TYPE A	SF					12			12
675.341	SQUARE TUBE SIGN POST AND ANCHOR	LF					52			52

McFarland Johnson

PROJECT NAME: BRANDON - CHURCHILL ROAD BRIDGE
PROJECT NUMBER: BRANDON PLH ALPP(1)

FILE NAME: z8013qsh FINAL.xls
PROJECT LEADER: J. Lund
DESIGNED BY: D. Martel
PLOT DATE: 11/8/2017
DRAWN BY: D. DePaolo
CHECKED BY R. Joy
SHEET 4 OF 23

GPS/NGS CONTROL POINTS

MIDDLEBURY CORS ARP

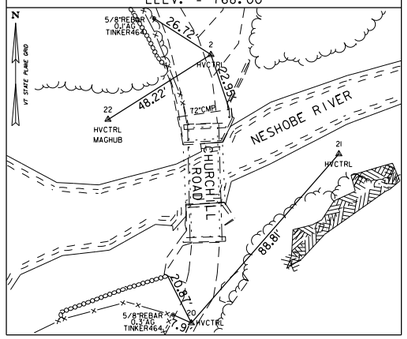
PID DL2744
N = 546895.26
E = 1468689.89
ELLIP HEIGHT = 315.07

STATION IS A GPS CONTINOUSLY OPERATING REFERENCE STATION. STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA. THE ANTENNA IS MOUNTED ON THE ROOF OF MIDDLEBURY UNION MIDDLE SCHOOL, MIDDLEBURY, VT. THE MONUMENT IS ATTACHED TO A 3 STORY CONCRETE/BRICK BUILDING WITH A 10 FT CONCRETE FOUNDATION BUILT IN 1996. MAST IS A TWO INCH DIA GALV PIPE THAT IS 120 INCHES LONG AND HAS A SMALL CIRLULAR LEVELING DEVICE WELDED TO THE TOP. THE MAST IS WELDED TO 3 OUTRIGGERS AND MOUNTING PLATES ARE WELDED TO THE END OF EACH OUTRIGGER. EACH MOUNTING PLATE CONTAINS 4 ATTACHMENT POINTS CONSISTING OF 1/2 INCH DIA HOLES. ATTACHMENTS ARE EITHER MADE BY THROUGH BOLTING WITH WITH 1/2 INCH STAINLESS STEEL ROD, WASHERS, AND NUTS OR 1/2 INCH STAINLESS STEEL LAGS WITH LEAD ANCHORS. THE TOP PLATE IS SECURED WITH ONE THROUGH BOLT AND 3 ANCHORS. THE MIDDLE PLATE IS SECURED WITH 2 THROUGH BOLTS AND 2 ANCHORS. THE BOTTOM PLATE IS SECURED WITH 2 THROUGH BOLTS AND 2 ANCHORS.

TRAVERSE TIES

HVCTRL #2 — 5/8"REBAR SET FLUSH YELLOW VSE CONTROL CAP

NORTH = 488910.31
EAST = 1497333.89
ELEV. = 768.00



HVCTRL #20 — MAGHUB

NORTH = 488253.99
EAST = 1497783.88
ELEV. = 774.64

SEE HVCTRL #2 SKETCH

HVCTRL #21 — MAGHUB

NORTH = 488320.88
EAST = 1497842.29
ELEV. = 768.09

SEE HVCTRL #2 SKETCH

HVCTRL #22 — MAGHUB

NORTH = 488334.52
EAST = 1497750.85
ELEV. = 766.94

SEE HVCTRL #2 SKETCH

SURVEY COMPLETED: JUNE 23, 2016 BY VSE, R. GAUVIN-PC, T. YEFCHAK

ALIGNMENT TIES

PT 100+73.85

NORTH = 488177.8838
EAST = 1497736.9147

ALIGNMENT TIES (CONT.)

PC 101+56.68

NORTH = 488249.1980
EAST = 1497779.0393

PT 101+99.00

NORTH = 488289.6448
EAST = 1497789.4283

PC 102+47.11

NORTH = 488337.7304
EAST = 1497787.9513

PT 102+87.17

NORTH = 488375.8194
EAST = 1497776.9534

PC 103+43.90

NORTH = 488424.7272
EAST = 1497748.1999

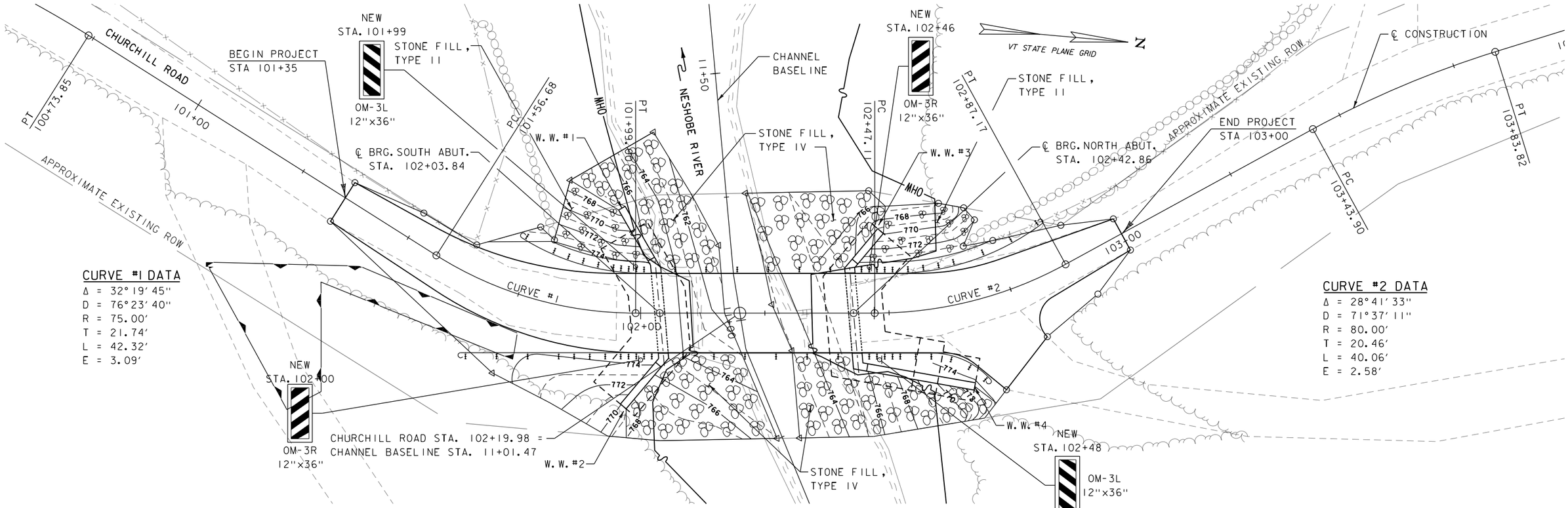
DATUM
VERTICAL NAVD 88(GEOID03) FT
HORIZONTAL NAD 83(CORS) sFT
ADJUSTMENT LSQ

VERMONT SURVEY AND ENGINEERING

PROJECT NAME:
PROJECT NUMBER: BRANDON PLH ALPP(I)

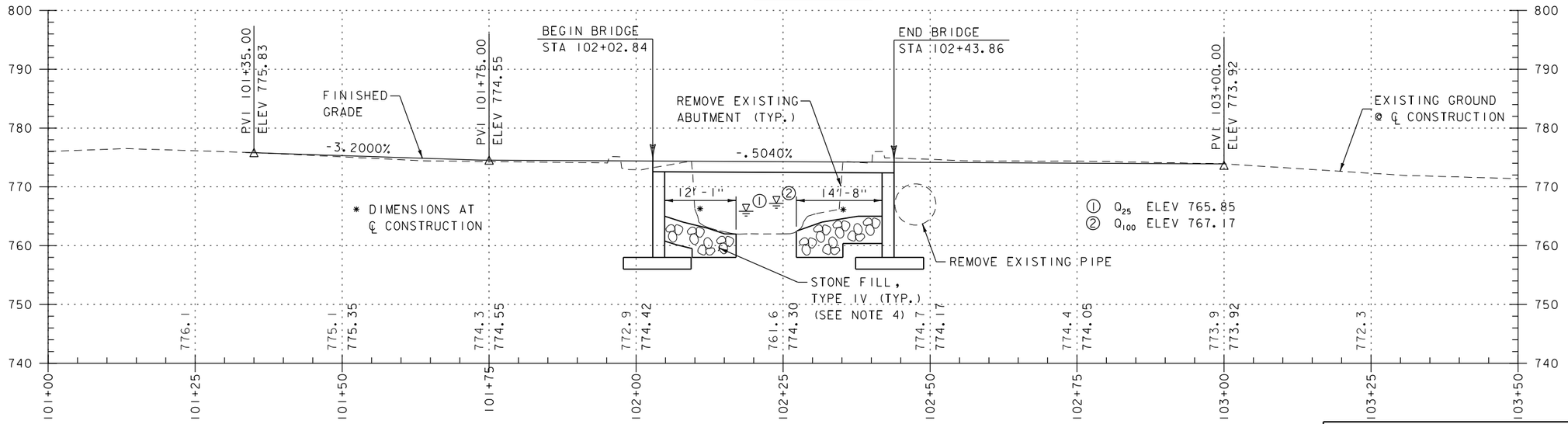
FILE NAME: $FILEABBREV$
PROJECT LEADER: J. Lund
DESIGNED BY: D. Martel
SURVEY TIE SHEET

PLOT DATE: 4/20/2018
DRAWN BY: D. DePaolo
CHECKED BY: R. Joy
SHEET 5 OF 23



ROADWAY PLAN

10 0 10



ROADWAY PROFILE

10 0 10

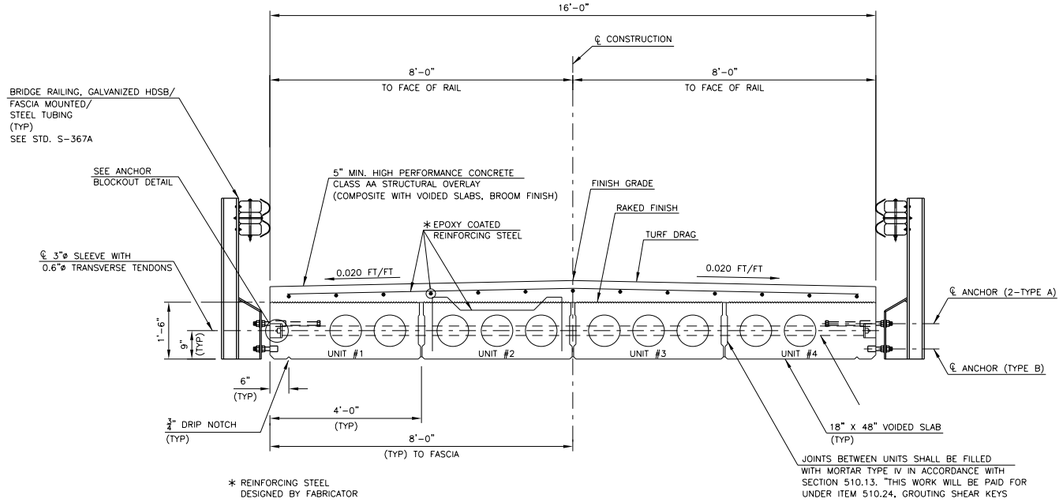
NOTES

1. THE GRADES SHOWN TO THE NEAREST TENTH ARE THE ORIGINAL GROUND ELEVATIONS ALONG THE PROPOSED CENTERLINE. THE GRADES SHOWN TO THE NEAREST HUNDREDTH ARE THE FINISH GRADES ALONG THE PROPOSED CENTERLINE.
2. SURVEY AND MAPPING PERFORMED BY VERMONT SURVEY & ENGINEERING (VSE), INC., APRIL 2008 AND JUNE 2016.
3. RIGHT-OF-WAY SHOWN IS BASED ON PINS SET BY TINKER SURVEYS AND PICKED UP BY VSE.
4. STONE FILL, TYPE IV SHALL BE TYPE E4 STONE (TYPE IV MIXED WITH NATIVE MATERIAL EXCAVATED FROM EXISTING STREAM BED).

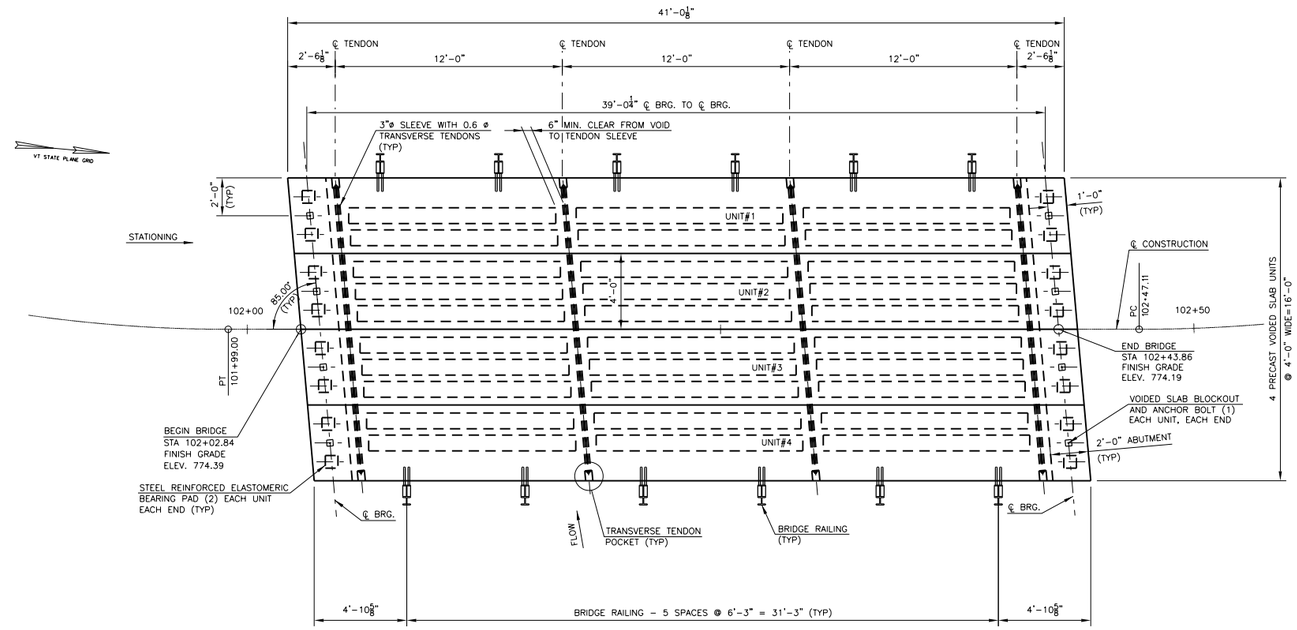
McFarland Johnson

SHEET NAME: ROADWAY PLAN AND PROFILE
PROJECT NAME: BRANDON-CHURCHILL ROAD BRIDGE
PROJECT NUMBER: BRANDON PLH ALPP(I)

FILE NAME: z8013pln.dgn
PROJECT LEADER: J. Lund
DESIGNED BY: D. Martel
PLOT DATE: 4/20/2018
DRAWN BY: D. DePaolo
CHECKED BY: R. Joy
SHEET 6 OF 23



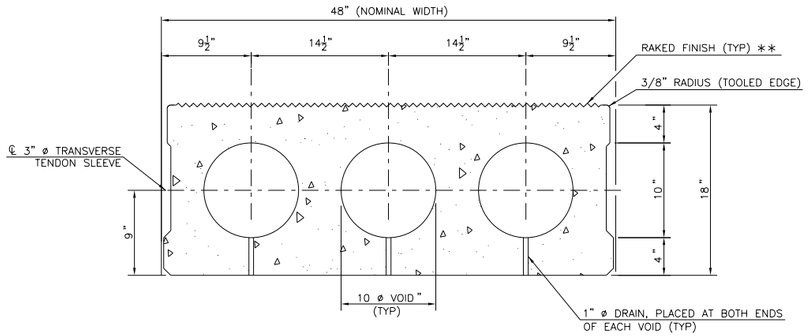
TYPICAL BRIDGE SECTION
SCALE: 1/2" = 1'-0"



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

SHEET NAME:	SUPERSTRUCTURE DETAILS (1 OF 2)
PROJECT NAME:	BRANDON-CHURCHILL ROAD BRIDGE
PROJECT NUMBER:	BRANDON PLH ALPP(1)
FILE NAME:	z8013ssdtl_1of2.dgn
PROJECT LEADER:	J. Lund
DESIGNED BY:	D. Martel
PLOT DATE:	4/20/2018
DRAWN BY:	D. DePaolo
CHECKED BY:	R. Joy
SHEET	7 OF 23

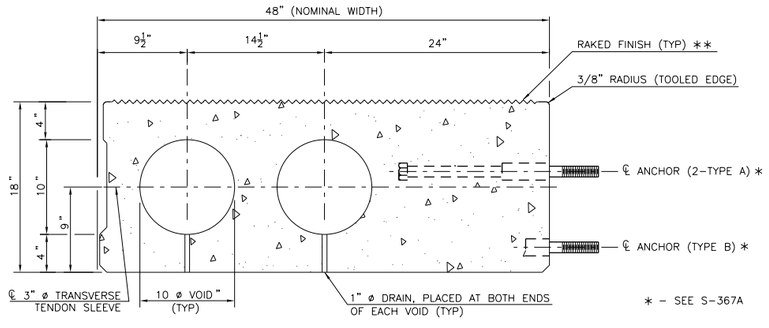
McFarland Johnson



TYPICAL INTERIOR VOIDED SLAB UNIT

SCALE: 1½" = 1'-0"

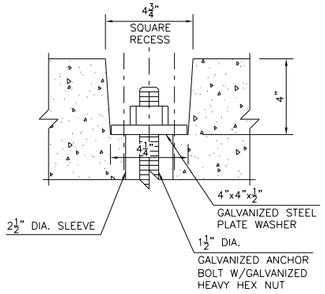
** THE TOP OF ALL BEAMS SHALL BE INTENTIONALLY ROUGHENED TO A 1/4-INCH AMPLITUDE DURING FABRICATION.



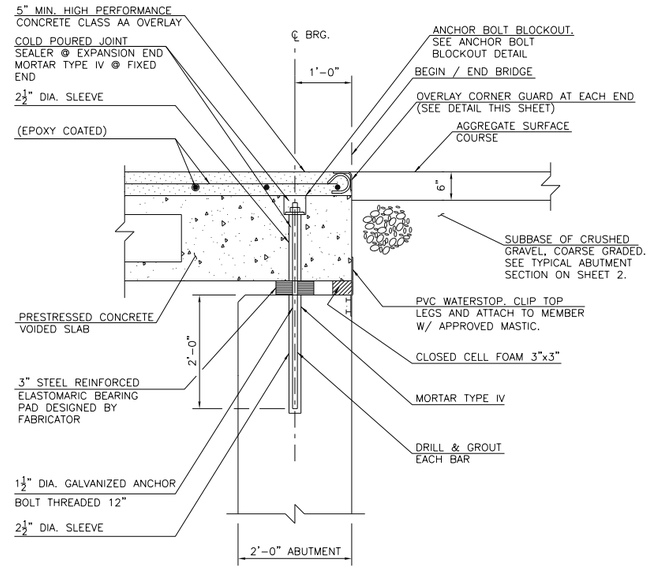
* - SEE S-367A

TYPICAL EXTERIOR VOIDED SLAB UNIT

SCALE: 1½" = 1'-0"



ANCHOR BLOCKOUT DETAIL



END OF BRIDGE DETAIL

SCALE: ¾" = 1'-0"

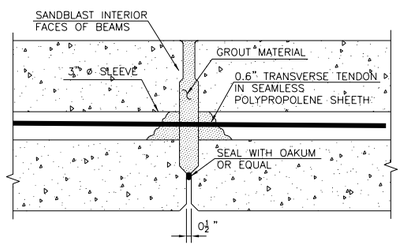
ANCHOR BOLT NOTE

ANCHOR BOLTS, STEEL PLATES, NUTS, AND WASHERS SHALL BE PAID FOR AS PART OF ITEM 510.22, PRESTRESSED CONCRETE VOIDED SLABS AND SHALL MEET THE FOLLOWING REQUIREMENTS:

A. ANCHOR BOLTS SHALL BE SWEDGED AND GALVANIZED, THREADED FOR 12 INCHES.

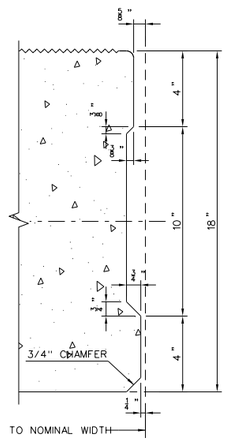
B. EACH ANCHOR BOLT SHALL HAVE A SINGLE NUT. ON THE EXPANSION END, THE CONTRACTOR SHALL HAND TIGHTEN THE NUT AND THEN LOOSENED IT BY ½ TURN. ON THE FIXED END, THE CONTRACTOR SHALL TIGHTEN THE NUT.

C. ALL ANCHOR BOLTS, AND NUTS SHALL BE ANSI A449, AND ALL WASHERS SHALL BE AASHTO M270 GRADE 50, UNLESS OTHERWISE NOTED.



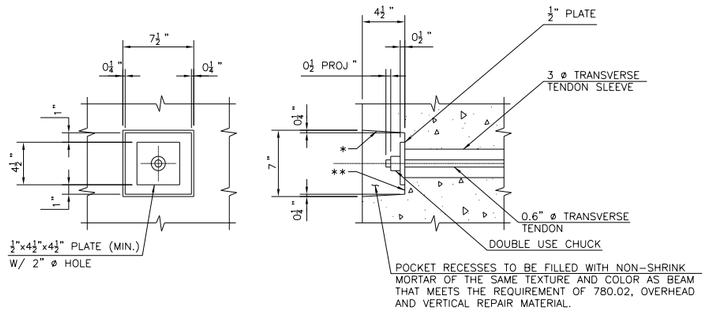
LONGITUDINAL JOINT AT TRANSVERSE TENDON

SCALE: 1½" = 1'-0"



SHEAR KEY DETAIL FOR VOIDED SLAB

SCALE: 3" = 1'-0"

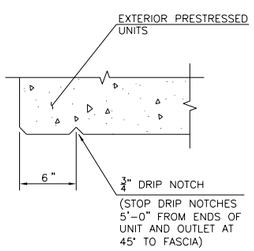


* - CLEAN AND ROUGHEN TENDON POCKET PRIOR TO PAINTING WITH EPOXY BONDING AGENT.

** - PAINT TENDON POCKET SURFACE WITH EPOXY BONDING AGENT MEETING REQUIREMENT OF ASTM C881 (TYPE II, GRADE 2) PRIOR TO PLACEMENT OF GROUT

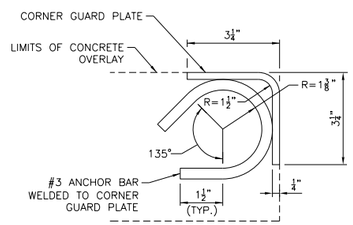
TRANSVERSE TENDON POCKET DETAIL

SCALE: 1½" = 1'-0"



DRIP NOTCH DETAIL

SCALE: 1½" = 1'-0"



OVERLAY CORNER GUARD DETAIL

SCALE: 3" = 1'-0"

OVERLAY CORNER GUARD NOTES:

1. LIMITS OF EACH CORNER GUARD ASSEMBLY SHALL EXTEND FULL WIDTH OF THE CONCRETE OVERLAY (16 FEET). THE #3 BAR ANCHORS SHALL BE SET 6 INCHES FROM THE EXTENTS OF THE DECK OVERLAY AND SPACED AT 18 INCHES ON CENTER.
2. CORNER GUARD ASSEMBLIES SHALL BE HOT DIP GALVANIZED.
3. THE CORNER GUARD ASSEMBLIES SHALL MEET THE REQUIREMENTS OF SECTION 506 (STRUCTURAL STEEL), WITH THE COST INCLUDED IN ITEM 506.75, STRUCTURAL STEEL.

SHEET NAME: SUPERSTRUCTURE DETAILS (2 OF 2)

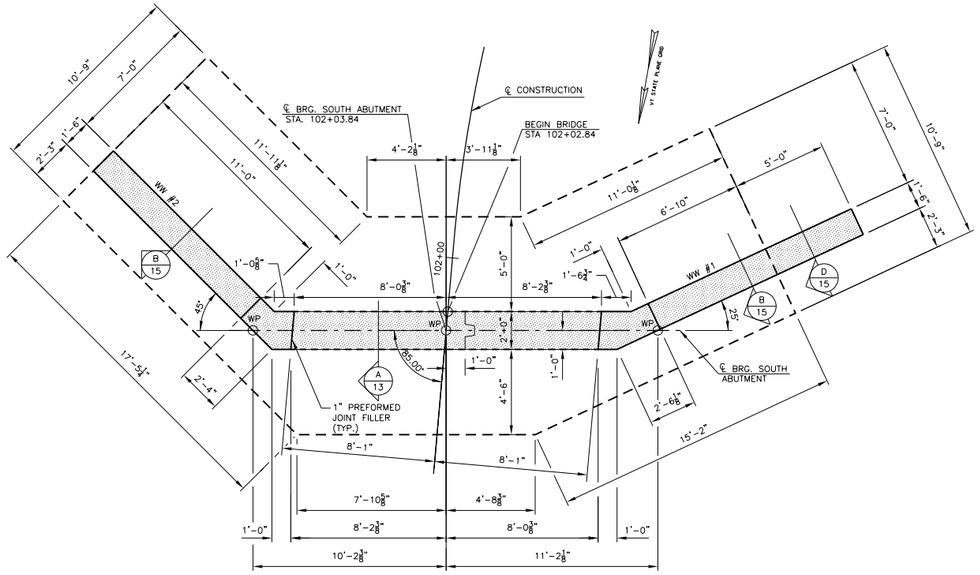
PROJECT NAME: BRANDON-CHURCHILL ROAD BRIDGE

PROJECT NUMBER: BRANDON PLH ALPP(I)

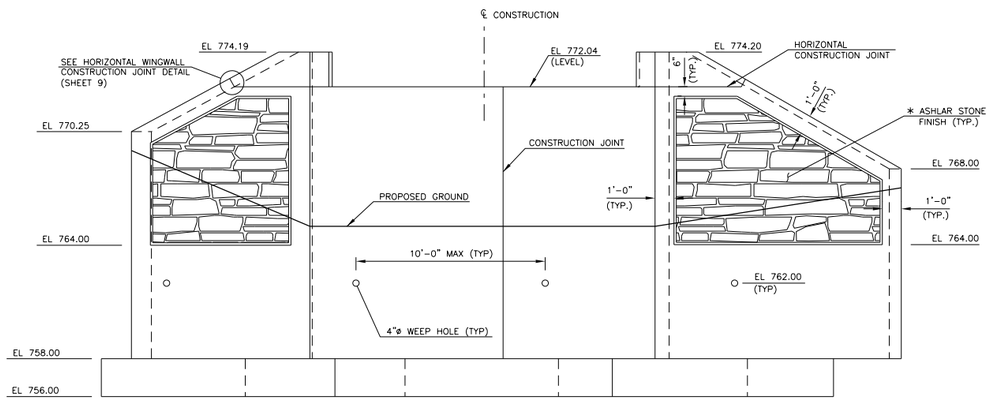
FILE NAME: z8013ssdtl_2of2.dgn
PROJECT LEADER: J. Lund
DESIGNED BY: D. Martel

PLOT DATE: 4/20/2018
DRAWN BY: D. DePaolo
CHECKED BY: R. Joy

McFarland Johnson

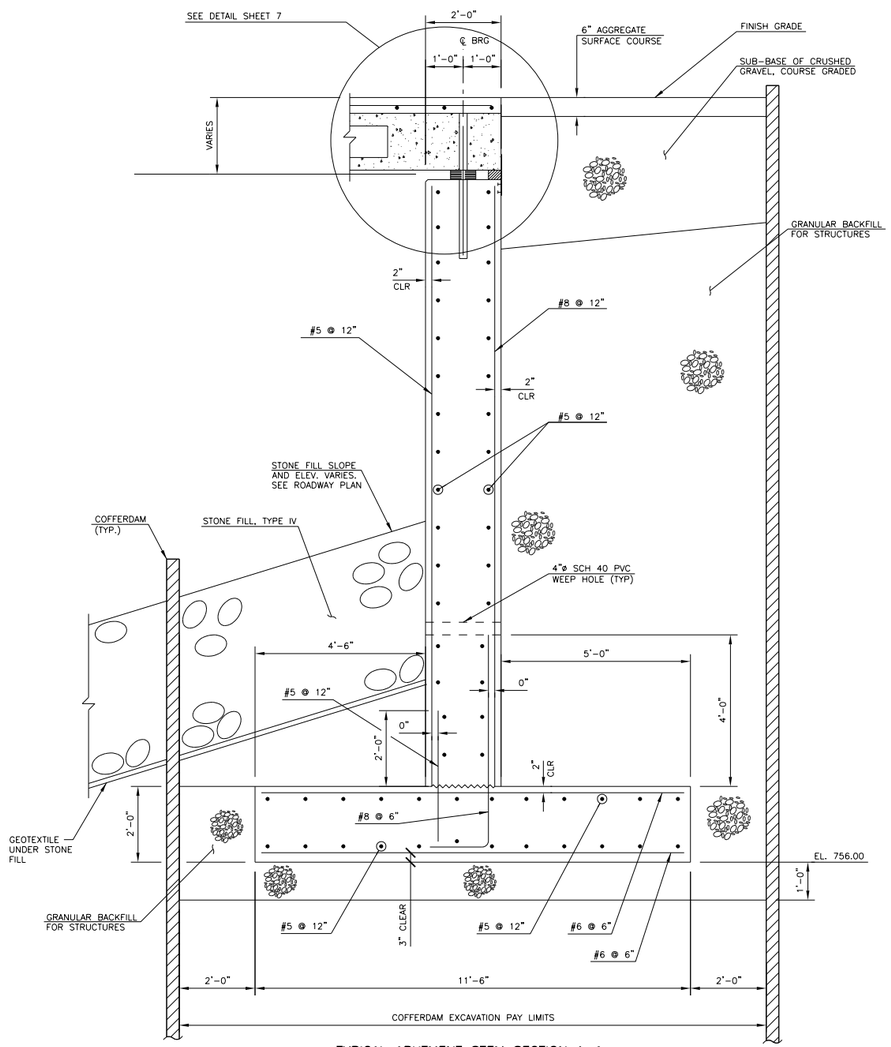


SOUTH ABUTMENT PLAN
SCALE: ¼" = 1'-0"



SOUTH ABUTMENT ELEVATION
SCALE: ¼" = 1'-0"

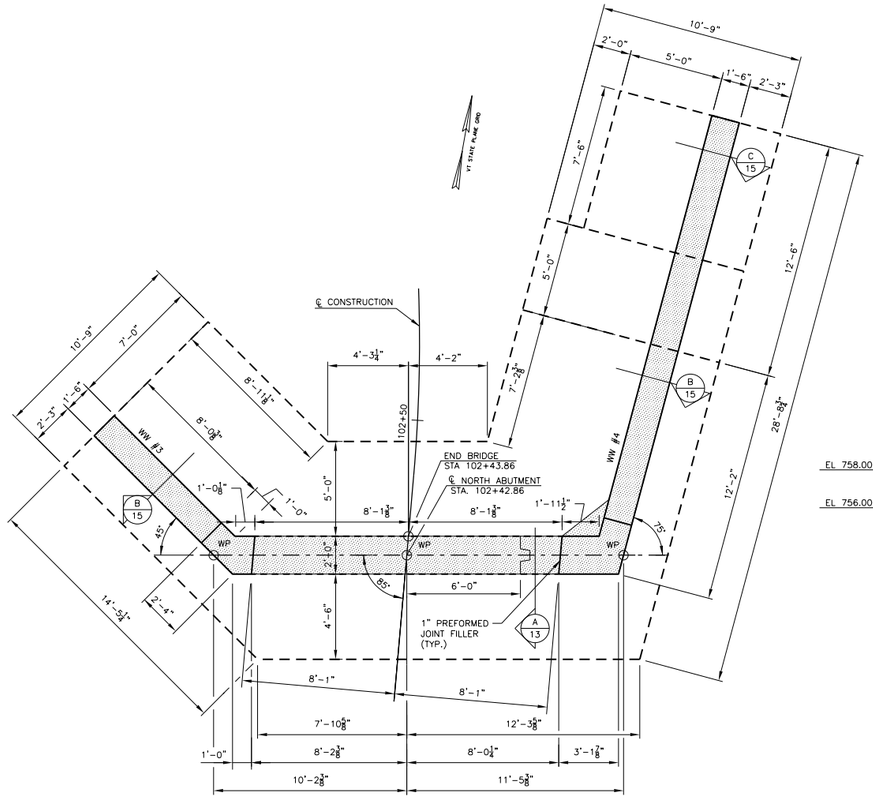
* – SEE ASHLAR STONE FORM LINER NOTES ON SHEET 16.



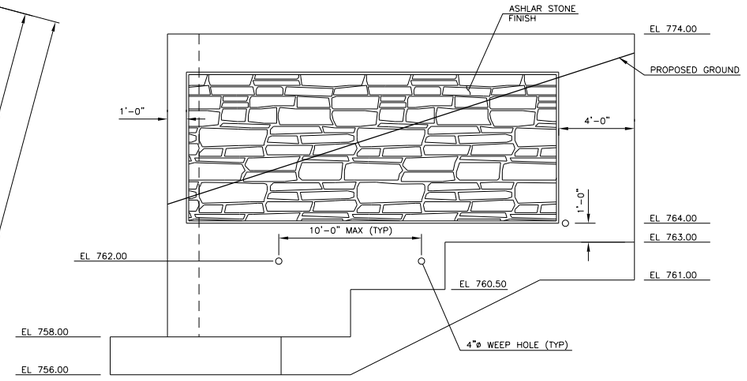
TYPICAL ABUTMENT STEM SECTION A–A
SCALE: ½" = 1'-0"

SHEET NAME:	SOUTH ABUTMENT
PROJECT NAME:	BRANDON-CHURCHILL ROAD BRIDGE
PROJECT NUMBER:	BRANDON PLH ALPP(I)
FILE NAME: z8013abut south.dgn	PLOT DATE: 4/20/2018
PROJECT LEADER: J. Lund	DRAWN BY: D. DePaolo
DESIGNED BY: D. Martel	CHECKED BY: R. Joy
	SHEET 9 OF 23

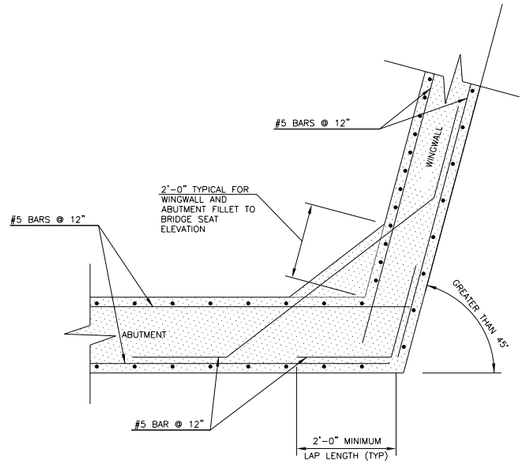
McFarland Johnson



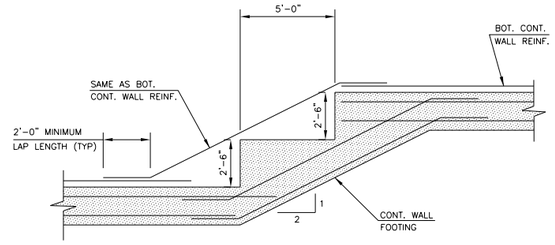
NORTH ABUTMENT PLAN
SCALE: ¼" = 1'-0"



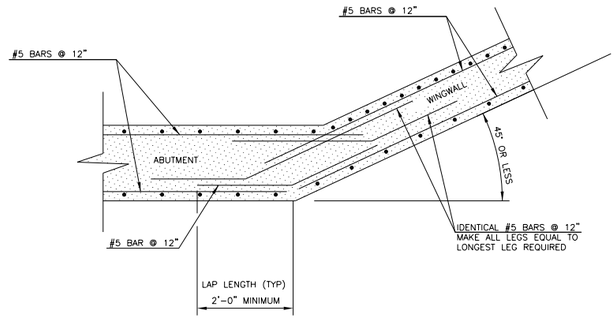
WINGWALL NO. 4 ELEVATION
SCALE: ¼" = 1'-0"



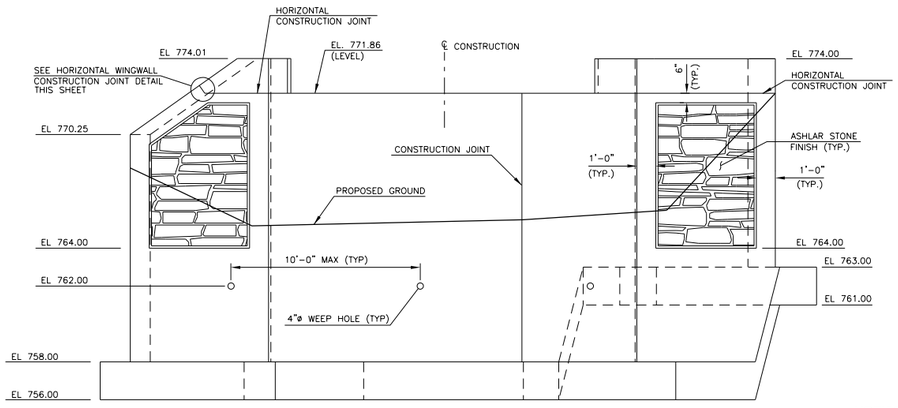
WINGWALL CORNER DETAIL FOR MORE THAN 45° ANGLE
SCALE: ½" = 1'-0"



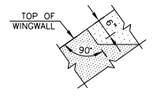
TYPICAL STEPPED FOOTING DETAIL
SCALE: ¼" = 1'-0"



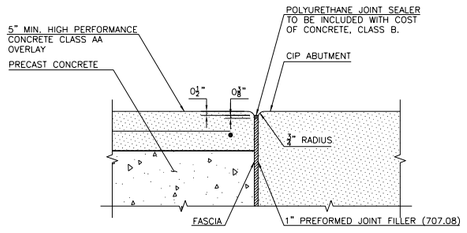
WINGWALL CORNER DETAIL FOR 45° OR UNDER
SCALE: ½" = 1'-0"



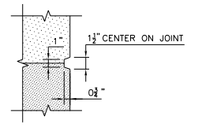
NORTH ABUTMENT ELEVATION VIEW
SCALE: ¼" = 1'-0"



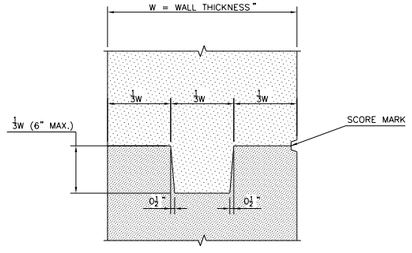
HORIZONTAL WINGWALL CONSTRUCTION JOINT DETAIL
SCALE: ½" = 1'-0"



JOINT BETWEEN FASCIA AND ABUTMENT
SCALE: 1½" = 1'-0"



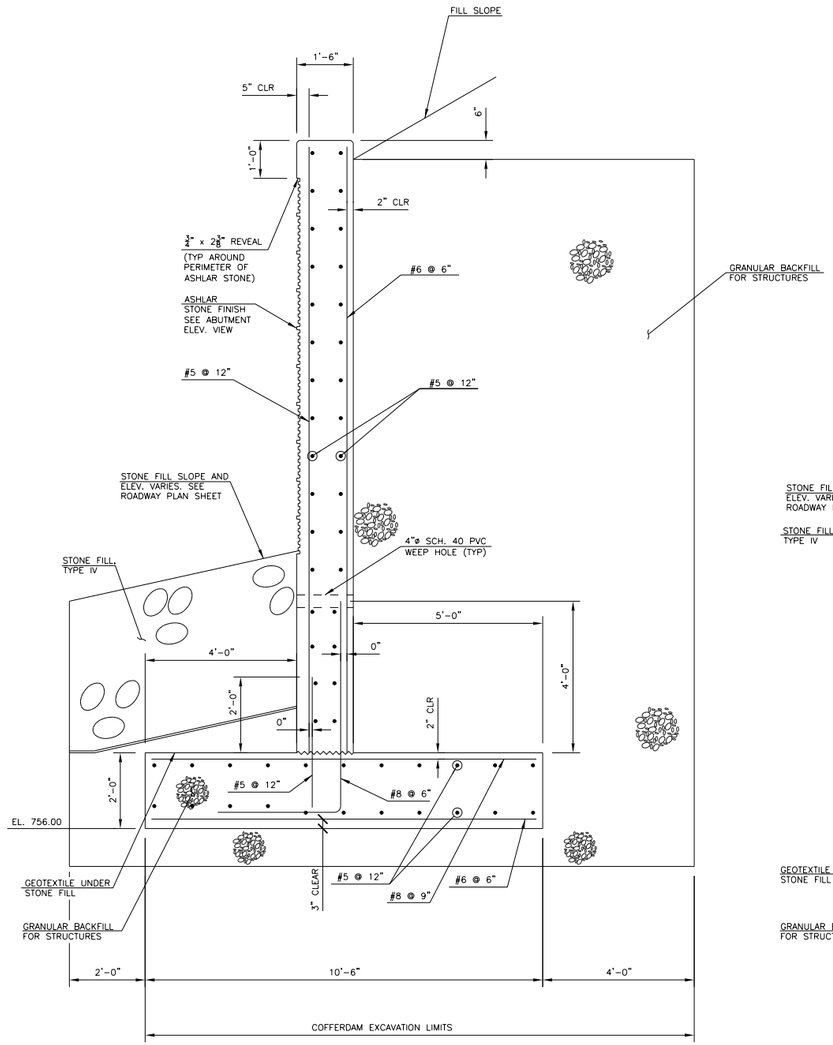
SCORE MARK DETAIL
SCALE: 1½" = 1'-0"



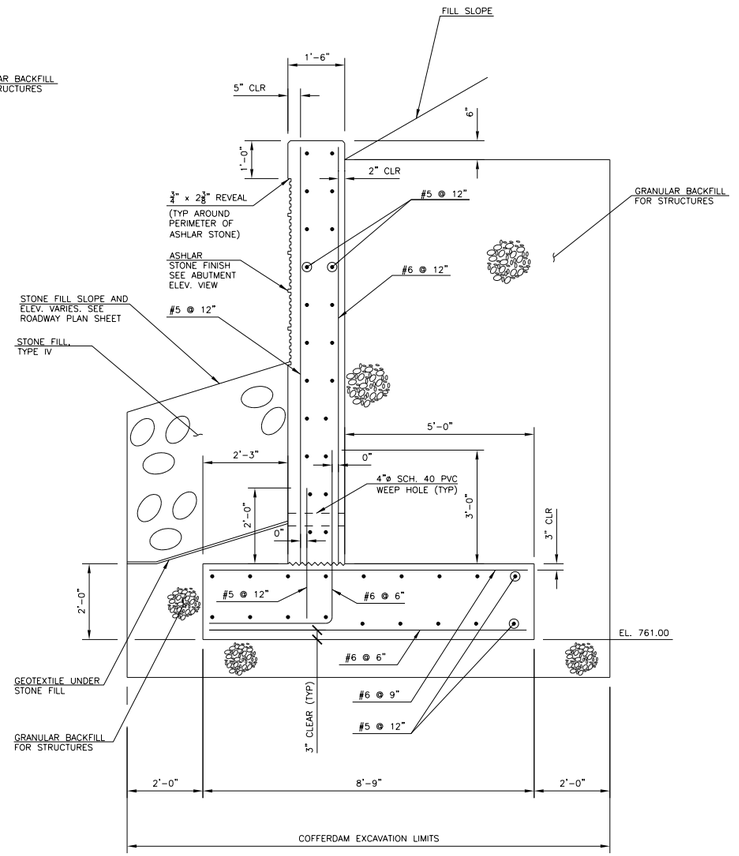
TYPICAL VERTICAL CONCRETE CONSTRUCTION JOINT
SCALE: 1½" = 1'-0"

SHEET NAME: NORTH ABUTMENT	
PROJECT NAME: BRANDON-CHURCHILL ROAD BRIDGE	
PROJECT NUMBER: BRANDON PLH ALPP(I)	
FILE NAME: z8013abut_north.dgn	PLOT DATE: 4/20/2018
PROJECT LEADER: J. Lund	DRAWN BY: D. DePaolo
DESIGNED BY: D. Martel	CHECKED BY: R. Joy
	SHEET 10 OF 23

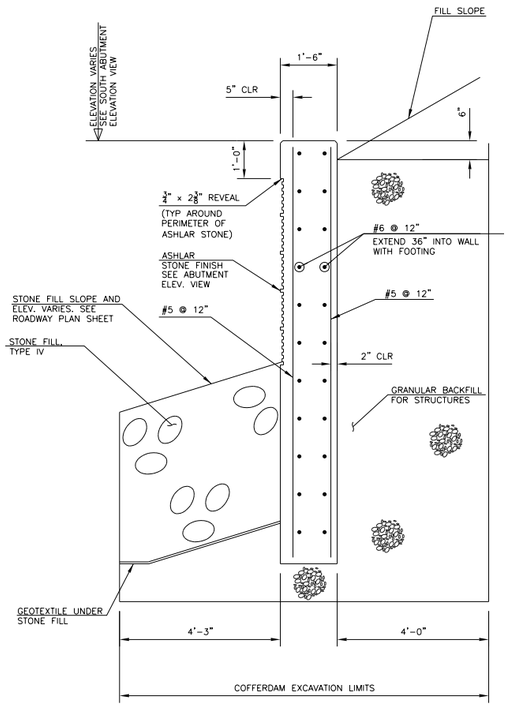
McFarland Johnson



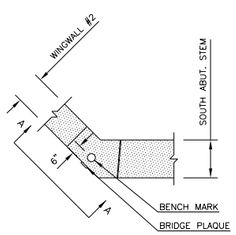
WINGWALL SECTION B–B
SCALE: ½" = 1'-0"



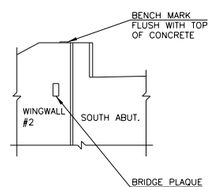
WINGWALL SECTION C–C
SCALE: ½" = 1'-0"



WINGWALL SECTION D–D
SCALE: ½" = 1'-0"



BENCHMARK LOCATION PLAN
SCALE: ¼" = 1'-0"



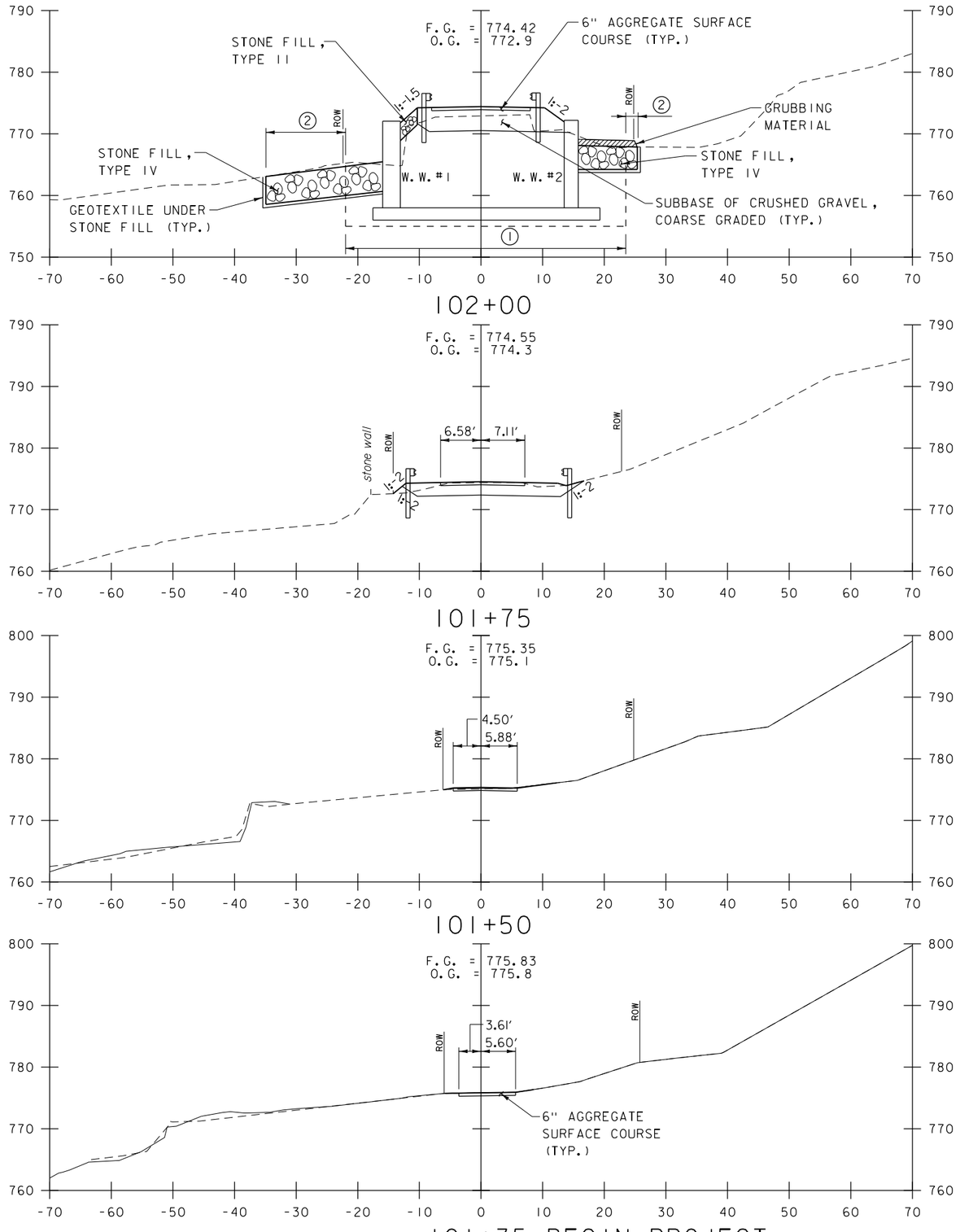
VIEW A–A
SCALE: ¼" = 1'-0"

BENCHMARK AND BRIDGE PLAQUE NOTE

THE BENCH MARK AND BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR ON WW #2 OF THE SOUTH ABUTMENT AS SHOWN OR AS DIRECTED BY THE ENGINEER. SEE SD-502 FOR BRIDGE PLAQUE LOCATION.

McFarland Johnson

SHEET NAME:	ABUTMENT DETAILS
PROJECT NAME:	BRANDON-CHURCHILL ROAD BRIDGE
PROJECT NUMBER:	BRANDON PLH ALPP(I)
FILE NAME:	z8013wingwall_dtls.dgn
PROJECT LEADER:	J. Lund
DESIGNED BY:	D. Martel
PLOT DATE:	4/20/2018
DRAWN BY:	D. DePaolo
CHECKED BY:	R. Joy
SHEET	11 OF 23



102+00

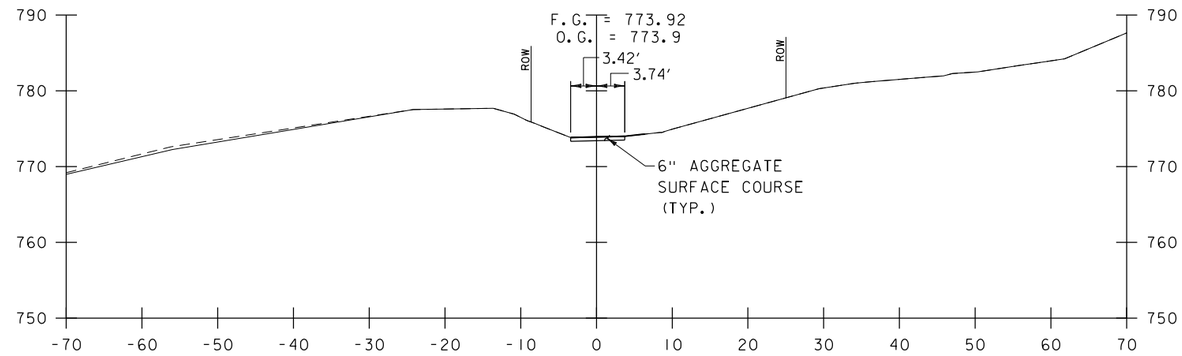
101+75

101+50

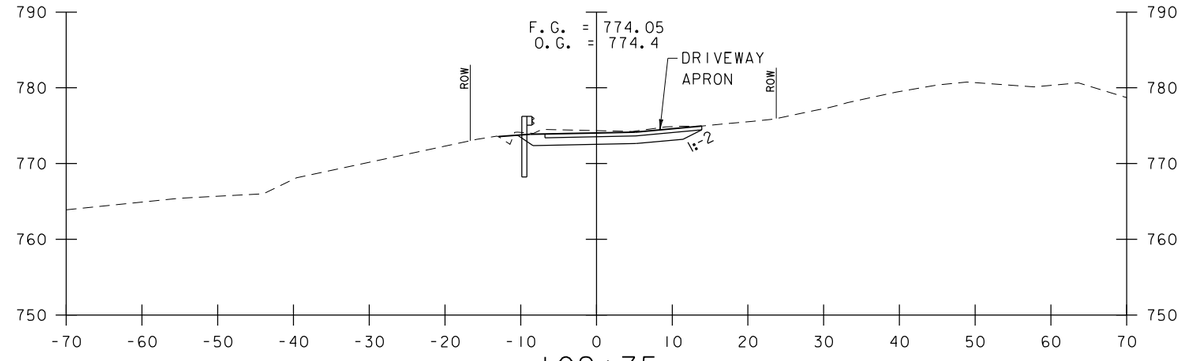
101+35 BEGIN PROJECT

① COFFERDAM EXCAVATION, EARTH AND COFFERDAM EXCAVATION, ROCK

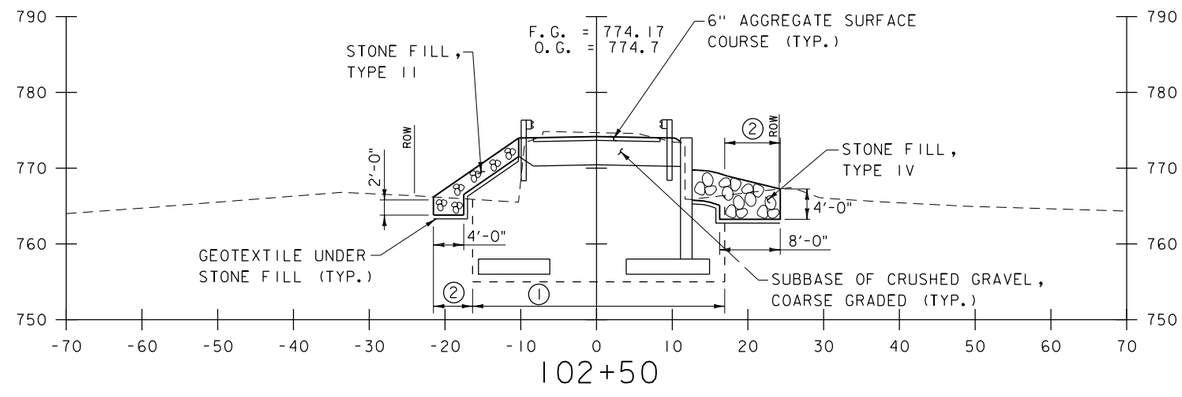
② UNCLASSIFIED CHANNEL EXCAVATION



103+00 END PROJECT



102+75



102+50

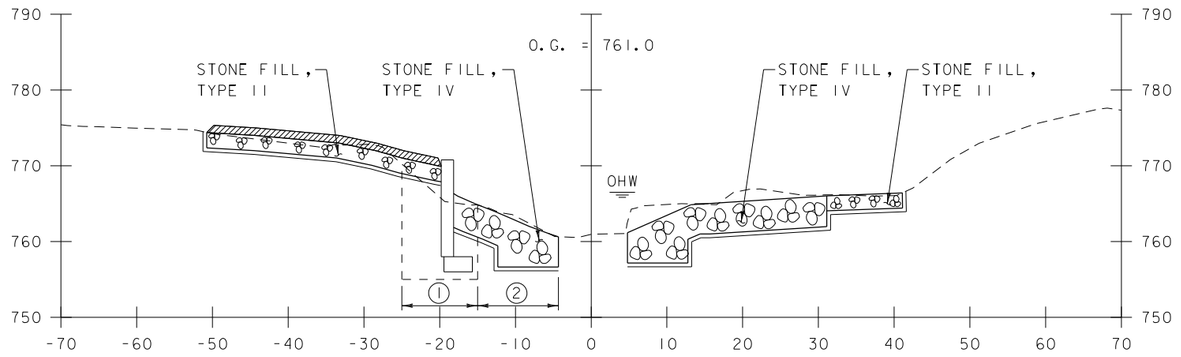
LEGEND

F.G. FINISH GRADE
O.G. ORIGINAL GROUND

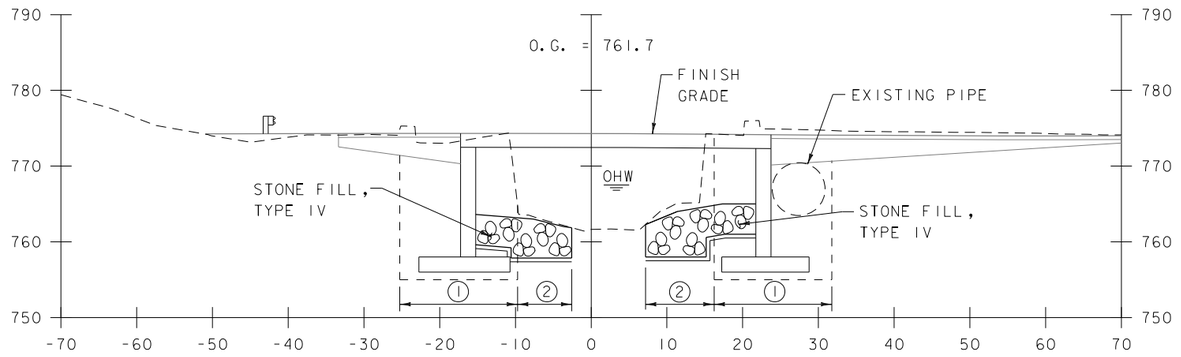
McFarland Johnson

SHEET NAME:	ROADWAY CROSS SECTIONS
PROJECT NAME:	BRANDON-CHURCHILL ROAD BRIDGE
PROJECT NUMBER:	BRANDON PLH ALPP(I)

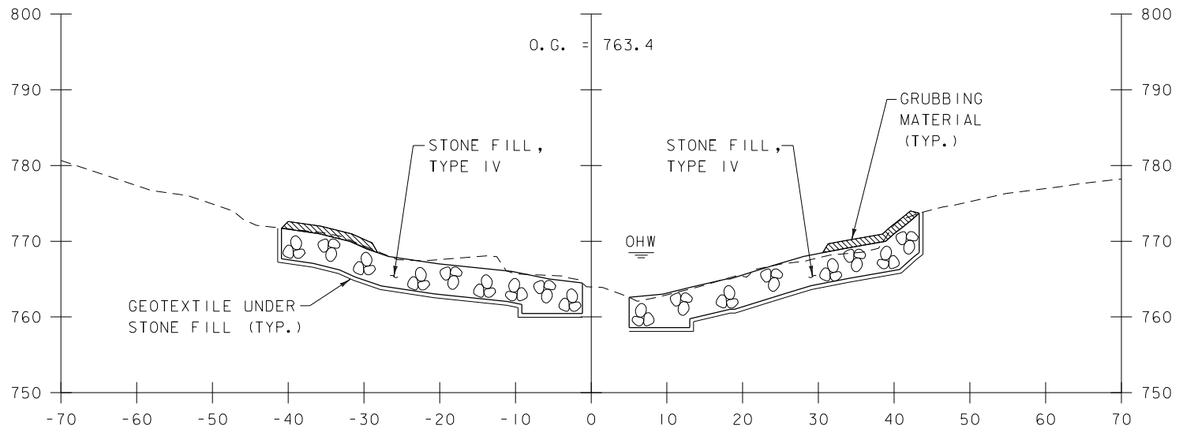
FILE NAME:	z8013xs.dgn	PLOT DATE:	4/20/2018
PROJECT LEADER:	J. Lund	DRAWN BY:	D. DePaolo
DESIGNED BY:	D. Martel	CHECKED BY:	R. Joy
		SHEET	12 OF 23



11+20



11+00



10+80
(SKEWED PARALLEL TO THE MAINLINE)

① COFFERDAM EXCAVATION, EARTH AND COFFERDAM EXCAVATION, ROCK

② UNCLASSIFIED CHANNEL EXCAVATION

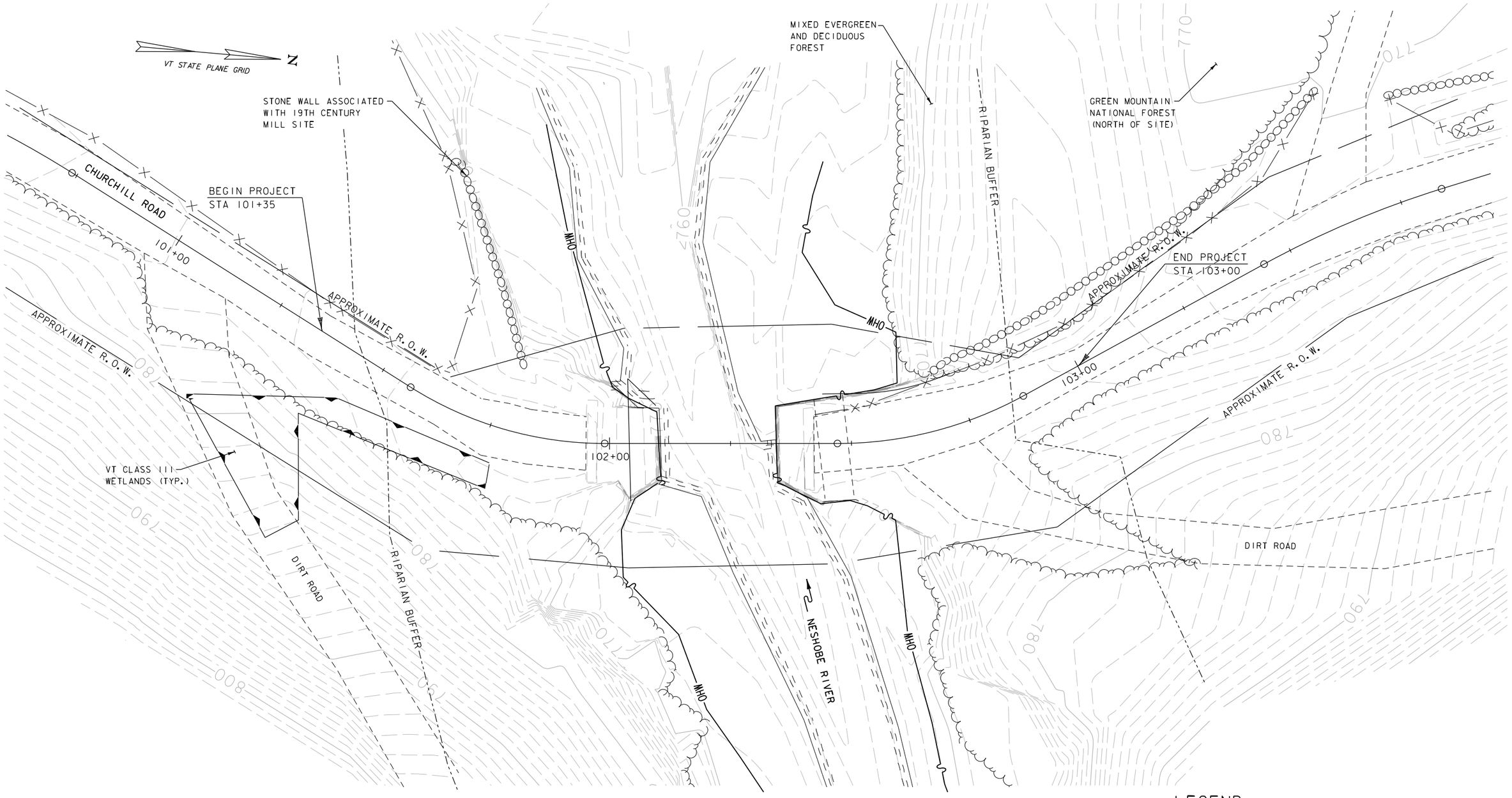
McFarland Johnson

SHEET NAME: CHANNEL CROSS SECTIONS

PROJECT NAME: BRANDON-CHURCHILL ROAD BRIDGE

PROJECT NUMBER: BRANDON PLH ALPP(I)

FILE NAME:	z8013cxs.dgn	PLOT DATE:	$$$DATE$$$
PROJECT LEADER:	J. Lund	DRAWN BY:	D. DePaolo
DESIGNED BY:	D. Martel	CHECKED BY:	R. Joy
		SHEET	13 OF 23



NOTES

1. SURVEY AND MAPPING PERFORMED BY VERMONT SURVEY & ENGINEERING (VSE), INC., APRIL 2008 AND JUNE 2016.
2. RIGHT-OF-WAY SHOWN IS BASED ON PINS SET BY TINKER SURVEYS AND PICKED UP BY VSE.
3. SITE LIES WITHIN THE "CHURCHILL MILL ARCHAEOLOGICAL DISTRICT" (SITE VT-RU-585).
4. SOILS IN VICINITY OF BRIDGE ARE WELL-DRAINED, COARSE-LOAMY, DUXBURY-COLTON COMPLEX, 2-8% SLOPES.

RESOURCE PLAN

10 0 10

LEGEND

DELINEATED WETLAND

OHW — ORDINARY HIGH WATER

McFarland Johnson

SHEET NAME:	RESOURCE LAYOUT SHEET
PROJECT NAME:	BRANDON-CHURCHILL ROAD BRIDGE
PROJECT NUMBER:	BRANDON PLH ALPP(I)
FILE NAME: z8013res.dgn	PLOT DATE: 4/20/2018
PROJECT LEADER: J. Lund	DRAWN BY: D. DePaolo
DESIGNED BY: D. Martel	CHECKED BY: R. Joy
	SHEET 14 OF 23

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE NO. 22 LOCATED ON CHURCHILL ROAD (TH 22) AND SPANNING OVER THE NESHOBE RIVER IN BRANDON, VT. THE EXISTING SUPERSTRUCTURE, ABUTMENTS AND OVERFLOW PIPE CULVERT WILL BE REMOVED. A NEW SUPERSTRUCTURE WILL BE CONSTRUCTED ON NEW CAST-IN-PLACE CONCRETE ABUTMENTS WITH SPREAD FOOTINGS. THE TOTAL ROADWAY WORK, INCLUDING APPROACHES, IS APPROXIMATEDLY 165 FEET. NATURAL RESOURCES NEAR THE PROJECT AREA HAVE BEEN CLEARLY IDENTIFIED AND SHOWN ON THE RESOURCE PLANS.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 4235 SQUARE FEET (0.10 ACRES).

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

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS A SADDLE THAT IS GENERALLY MOUNTAINOUS WITH THE GROUND SLOPING STEEPLY ADJACENT TO THE RIVER. THE WOODED AREA WITHIN THE SITE SLOPES STEEPLY DOWN TO THE RIVER AS WELL. CHURCHILL ROAD IS A DIRT ROAD. THERE IS ONE RESIDENCE LOCATED APPROXIMATELY 300 FEET SOUTH OF THE EXISTING BRIDGE. THERE ARE NO UTILITIES WITHIN THE IMMEDIATE AREA.

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

THE NESHOBE RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE NESHOBE RIVER IS A RURAL WATERWAY IN A MOUNTAINOUS DRAINAGE BASIN THAT FLOWS IN AN OVERALL SOUTHWESTERN DIRECTION FROM ITS HEADWATERS IN GOSHEN TO ITS CONFLUENCE WITH THE OTTER CREEK IN BRANDON. THE OTTER CREEK OUTLETS INTO LAKE CHAMPLAIN IN FERRISBURG. THE NESHOBE RIVER BED MATERIAL CONSISTS OF GRAVEL, COBBLES, BOULDERS AND LEDGE. THE RIVER IS A HIGH ENERGY SYSTEM. AN ARCHAEOLOGICAL AREA (OLD MILL HOUSE FOUNDATION WALL) IS LOCATED WITH THE PROJECT AREA. THIS AREA IS PROTECTED BY BARRIER FENCE AS SHOWN ON THE EPSC PLANS.

1.2.3 VEGETATION

THE VEGETATION ALONG CHURCHILL HILL ROAD AND ADJACENT TO THE RIVER IS DENSELY WOODED. THERE IS AN ACTIVE PASTURE LOCATED SOUTHWEST OF THE SITE.

THE CHANNEL WILL BE ARMORED WITH STONE FILL, TYPE IV AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES. STEEP SLOPES AT THE PROPOSED WINGWALLS WILL BE STABILIZED WITH STONE FILL, TYPE II AS SPECIFIED ON THE PLANS.

1.2.4 SOILS

ALL UPLAND SOILS IN THE AREA ARE WELL DRAINED SANDY LOAM, IDENTIFIED IN THE RUTLAND SOIL SURVEY AS DUXBURY-COLTON COMPLEX, 2-8% SLOPES. THIS TYPE OF SOIL IS CONSIDERED TO HAVE A MODERATE ERODABILITY POTENTIAL.

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: HISTORIC OLD MILL HOUSE FOUNDATION WALL IN SOUTHWEST PROJECT QUADRANT
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: NESHOBE RIVER
WETLANDS: SMALL WETLAND LOCATED IMMEDIATELY EAST OF PROJECT BEGINNING.

1.3 RISK EVALUATION

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

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

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

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

1.4.1 MARK SITE BOUNDARIES

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

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

BARRIER FENCING (BF) SHALL BE USED AT THE LOCATIONS SHOWN ON THE PLANS TO PHYSICALLY MARK KEY HISTORICAL RESOURCES.

1.4.2 LIMIT DISTURBANCE AREA

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

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

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

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

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

1.4.4 INSTALL SEDIMENT BARRIERS

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

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN

1.4.5 DIVERT UPLAND RUNOFF

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

THE IMMEDIATE PROJECT AREA IS NOT LIKELY TO BE IMPACTED BY RUNOFF FROM UPSLOPE AREAS. THEREFORE IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY. CONTRACTOR TO INSTALL DIVERSION MEASURES IF IT IS NECESSARY.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

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

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

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES ARE NOT NECESSARY AS PART OF THIS PROJECT.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE.

BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

1.4.9 WINTER STABILIZATION

NO WINTER CONSTRUCTION IS ANTICIPATED. HOWEVER, VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

1.4.10 STABILIZE SOIL AT FINAL GRADE

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

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

1.4.11 DE-WATERING ACTIVITIES

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

TREATMENT OF DEWATERING COFFERDAMS IS ANTICIPATED. A LOCATION FOR TREATMENT (FILTER BAG) HAS BEEN PROPOSED AND IS SHOWN ON THE PLANS. HOWEVER THE SPECIFIC MEANS FOR TREATMENT OF DISCHARGE SHALL BE PROVIDED BY THE CONTRACTOR. ALL COSTS FOR TREATMENT OF DISCHARGE WILL BE PAID UNDER ITEM 653.45.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

1.5 SEQUENCE AND STAGING

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

1.5.1 CONSTRUCTION SEQUENCE

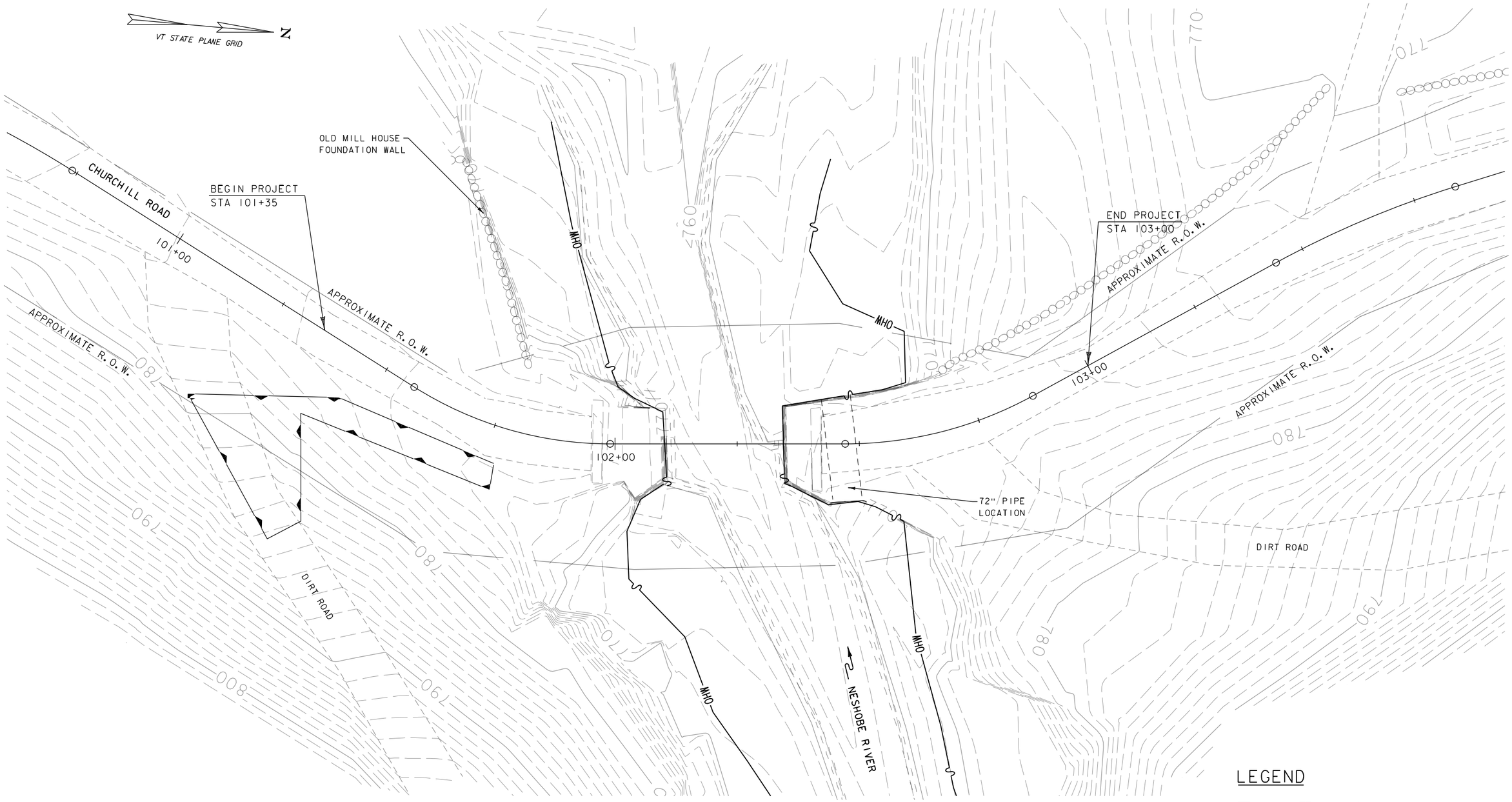
1.5.2 OFF-SITE ACTIVITIES

IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SPECIFICATION 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

McFarland Johnson

SHEET NAME: EROSION CONTROL NARRATIVE
PROJECT NAME: BRANDON-CHURCHILL ROAD BRIDGE
PROJECT NUMBER: BRANDON PLH ALPP(I)

FILE NAME: z8013ero nar.dgn
PROJECT LEADER: J. Lund
DESIGNED BY: D. Martel
PLOT DATE: 4/20/2018
DRAWN BY: D. DePaolo
CHECKED BY: R. Joy
SHEET 15 OF 23



LEGEND

DELINEATED WETLAND

OHW — ORDINARY HIGH WATER

EXISTING CONDITIONS SITE PLAN

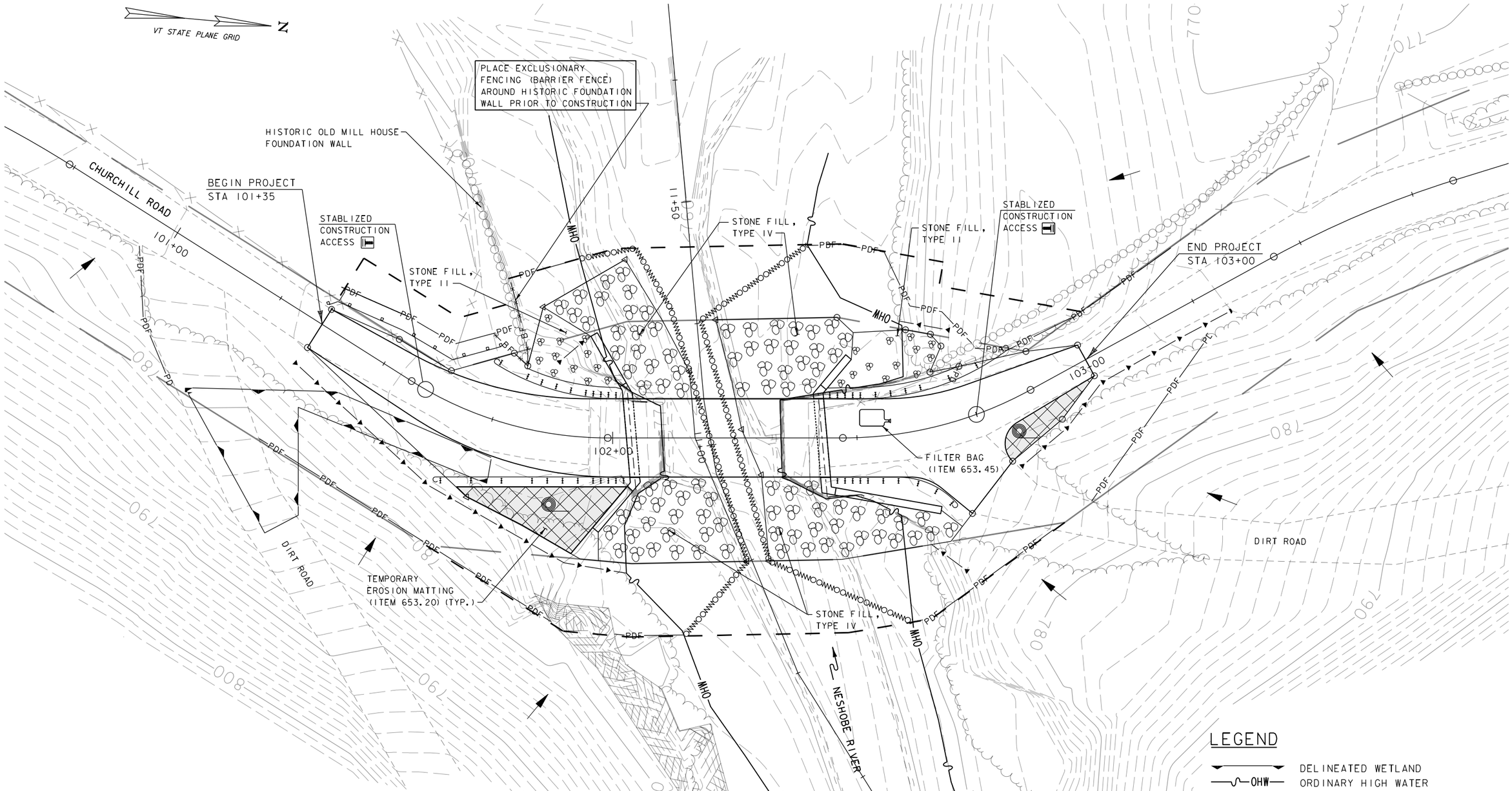
10 0 10

NOTES

1. SURVEY AND MAPPING PERFORMED BY VERMONT SURVEY & ENGINEERING (VSE), INC., APRIL 2008 AND JUNE 2016.
2. RIGHT-OF-WAY SHOWN IS BASED ON PINS SET BY TINKER SURVEYS AND PICKED UP BY VSE.

McFarland Johnson

SHEET NAME:	EXISTING CONDITIONS SITE PLAN
PROJECT NAME:	BRANDON-CHURCHILL ROAD BRIDGE
PROJECT NUMBER:	BRANDON PLH ALPP(I)
FILE NAME:	z8013exc.dgn
PROJECT LEADER:	J. Lund
DESIGNED BY:	D. Martel
PLOT DATE:	4/20/2018
DRAWN BY:	D. DePaolo
CHECKED BY:	R. Joy
SHEET	16 OF 23



EROSION CONTROL LAYOUT

10 0 10

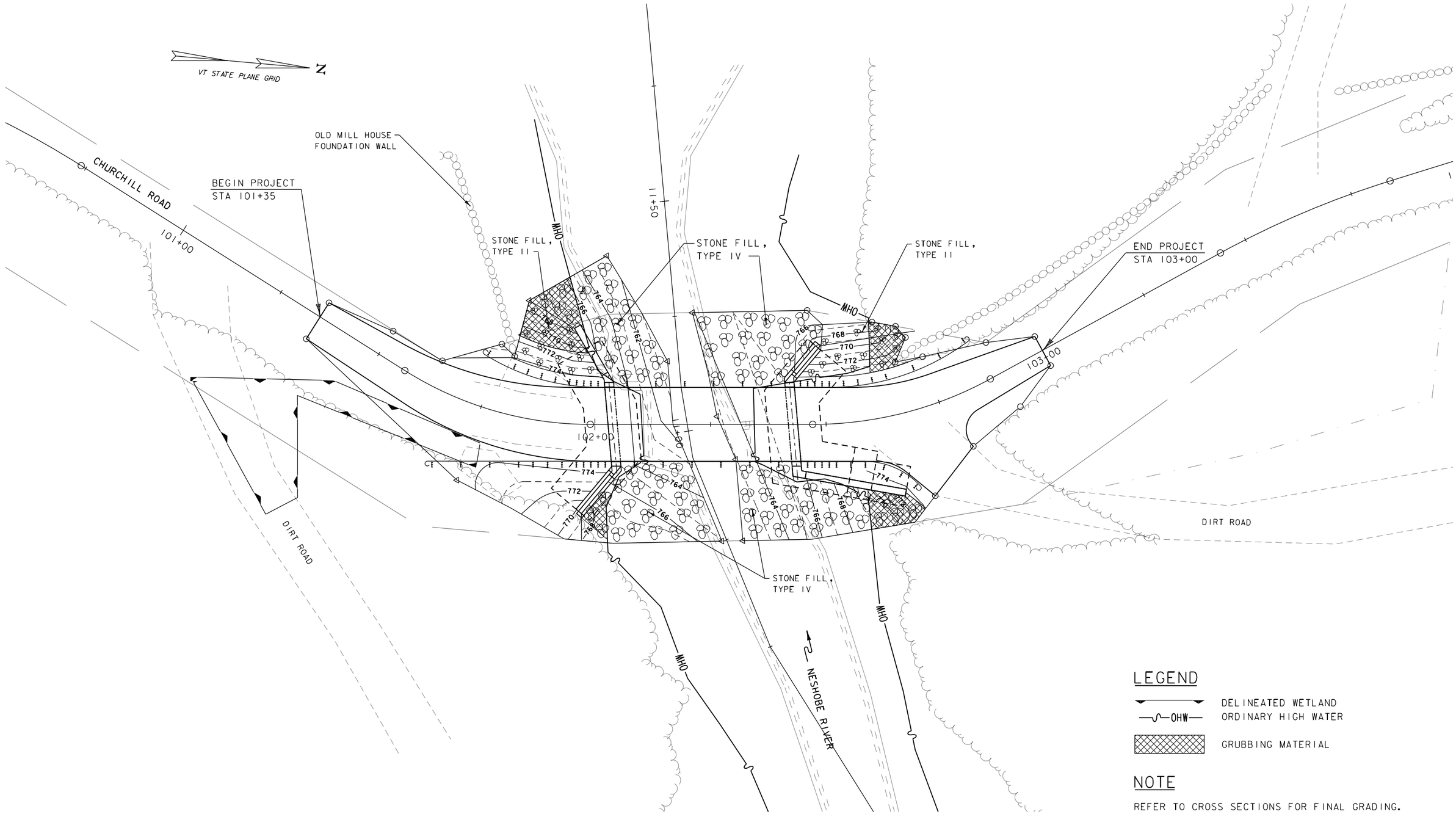
LEGEND

- DELINEATED WETLAND
- OHW — ORDINARY HIGH WATER
- FILTER CURTAIN (649.61)
- ROCK CHECK DAM (653.25)
- PDF — PROJECT DEMARCATION FENCE (653.55)
- BF — BARRIER FENCE (653.50)
- SILT FENCE (649.51)

SHEET NAME: EPSC CONSTRUCTION SITE PLAN
PROJECT NAME: BRANDON-CHURCHILL ROAD BRIDGE
PROJECT NUMBER: BRANDON PLH ALPP(I)

FILE NAME: z8013erl.dgn
PROJECT LEADER: J. Lund
DESIGNED BY: D. Martel
PLOT DATE: 4/20/2018
DRAWN BY: D. DePaolo
CHECKED BY: R. Joy
SHEET 17 OF 20

McFarland Johnson



LEGEND

- DELINEATED WETLAND
- OHW — ORDINARY HIGH WATER
- GRUBBING MATERIAL

NOTE

REFER TO CROSS SECTIONS FOR FINAL GRADING.

FINAL CONDITIONS LAYOUT

10 0 10

SHEET NAME:	EPSC FINAL CONDITIONS SITE PLAN
PROJECT NAME:	BRANDON-CHURCHILL ROAD BRIDGE
PROJECT NUMBER:	BRANDON PLH ALPP(I)
FILE NAME:	z8013fnc.dgn
PROJECT LEADER:	J. Lund
DESIGNED BY:	D. Martel
PLOT DATE:	4/20/2018
DRAWN BY:	D. DePaolo
CHECKED BY:	R. Joy
SHEET	18 OF 23

McFarland Johnson

EPSC LAYOUT PLAN SYMBOLOGY LEGEND

PROJECT BOUNDARY FENCE

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

EPSC MEASURES

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

ENVIRONMENTAL RESOURCES

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

ARCHEOLOGICAL & HISTORIC

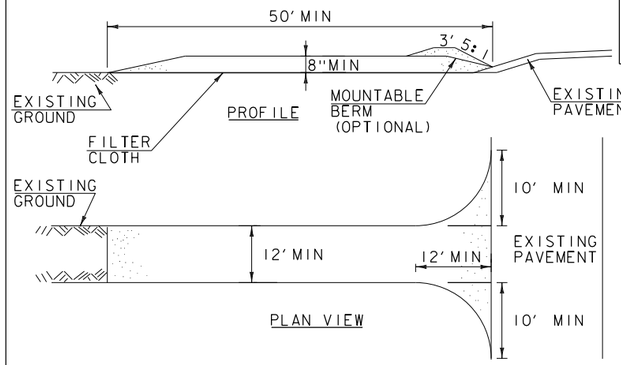
- ARCHEOLOGICAL BOUNDARY
- HISTORIC DISTRICT BOUNDARY
- HISTORIC AREA
- (H) HISTORIC STRUCTURE

UTILITY SYMBOLOGY

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

CONSTRUCTION FEATURES

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



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

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

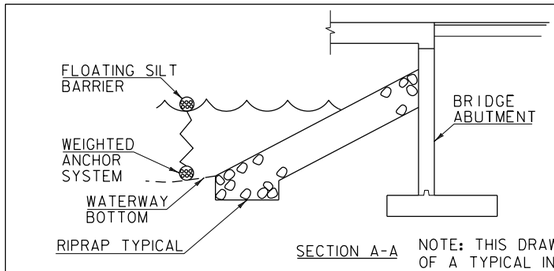
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STABILIZED CONSTRUCTION ENTRANCE

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

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

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

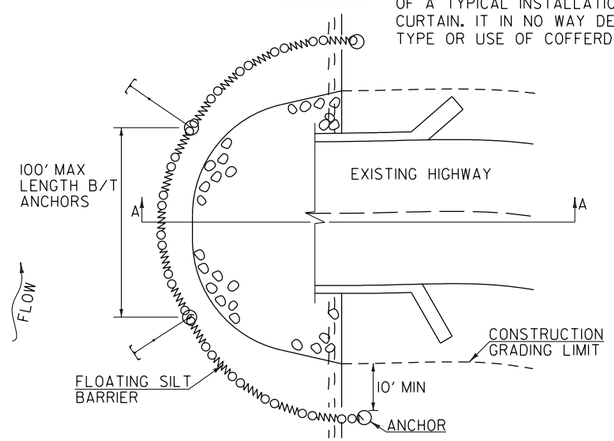


SYMBOL

NOT TO SCALE

SECTION A-A

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



CONSTRUCTION SPECIFICATIONS

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

FILTER CURTAIN

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

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

McFarland Johnson

SHEET NAME: EPSC DETAILS (1 OF 3)

PROJECT NAME: BRANDON-CHURCHILL ROAD BRIDGE

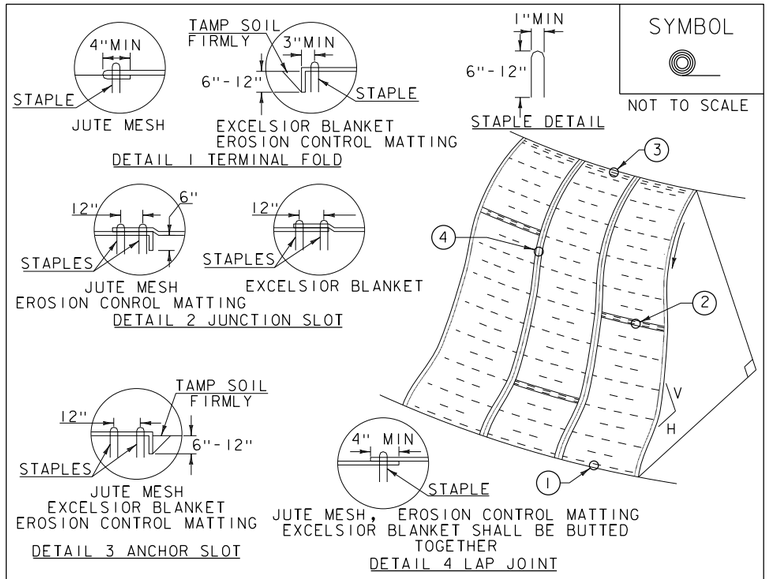
PROJECT NUMBER: BRANDON PLH ALPP(1)

FILE NAME: z8013ero_det.dgn
PROJECT LEADER: J. Lund
DESIGNED BY: D. Martel

PLOT DATE: 4/20/2018
DRAWN BY: D. DePaolo
CHECKED BY: R. Joy
SHEET 19 OF 23

SYMBOL

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

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

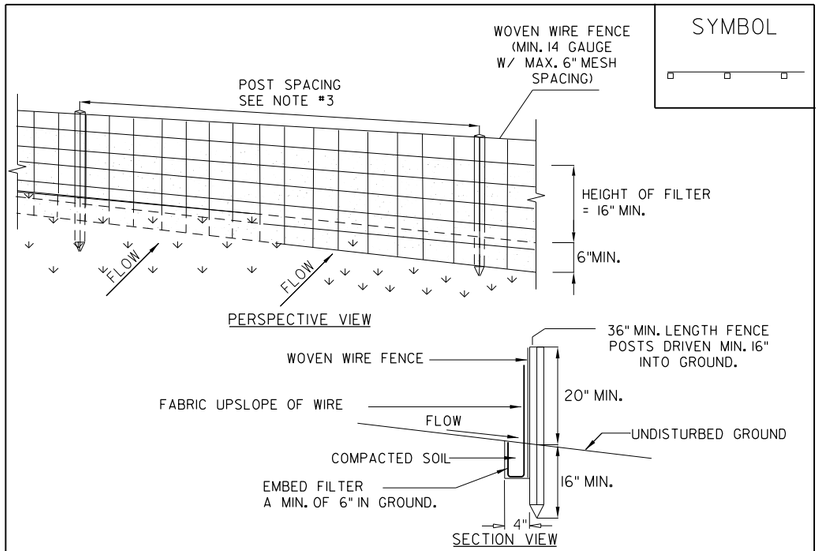
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

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

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF

SYMBOL



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE REINFORCEMENT IS ONLY REQUIRED WITHIN 100 FT UPSLOPE OF RECEIVING WATERS.
2. WHERE REQUIRED FENCE SHALL BE WOVEN WIRE, MIN. 14 GAUGE WITH A 6" MAXIMUM MESH OPENING. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4'. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED.
6. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
7. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

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

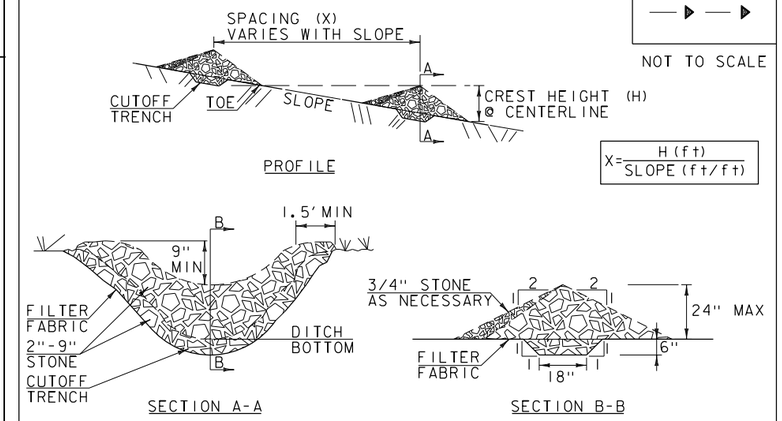
SILT FENCE

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

THIS ITEM SHALL BE PAID FOR UNDER ITEM

SYMBOL

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

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

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

CHECK DAM

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

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

REVISIONS	
MARCH 21, 2008	WHF
JANUARY 8, 2009	WHF

SHEET NAME: EPSC DETAILS (2 OF 3)

PROJECT NAME: BRANDON-CHURCHILL ROAD BRIDGE
PROJECT NUMBER: BRANDON PLH ALPP(1)

FILE NAME: z8013ero_det.dgn
PROJECT LEADER: J. Lund
DESIGNED BY: D. Martel
PLOT DATE: 4/20/2018
DRAWN BY: D. DePaolo
CHECKED BY: R. Joy
SHEET 20 **OF** 23

McFarland Johnson

VAOT LOW GROW/FINE FESCUE MIX

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

VAOT RURAL AREA MIX

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

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

CONSTRUCTION GUIDANCE

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

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

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

REVISIONS	
JANUARY 12, 2015	WHF

VAOT URBAN LAWN MIX

	LBS/AC					
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
42.5%	34	68	CREEPING RED FESCUE	FESTUCA RUBRA X RUBRA	85%	98%
20.0%	16	32	PERENNIAL RYE GRASS	LOLIUM PERENNE	90%	95%
32.5%	26	52	KENTUCKY BLUE GRASS	POA PRATENSIS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	LOLIUM MULTIFLORUM	85%	95%
100%	80	160				

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

CONSTRUCTION GUIDANCE

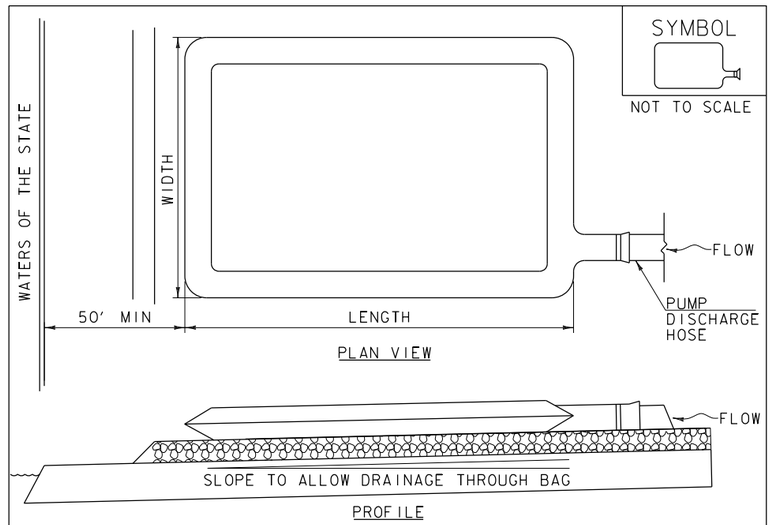
1. SEED MIX: THE URBAN AREA MIX SHALL NOT BE USED IN WETLANDS OR ANY WATERS OF THE STATE OF VERMONT.
2. SEED MIX: USE ONLY AS INDICATED IN THE PLANS.
3. SEED MIX: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES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

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

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

REVISIONS	
JANUARY 22, 2015	WHF



CONSTRUCTION SPECIFICATIONS

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

FILTER BAG

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

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

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

McFarland Johnson

SHEET NAME: EPSC DETAILS (3 OF 3)
PROJECT NAME: BRANDON-CHURCHILL ROAD BRIDGE
PROJECT NUMBER: BRANDON PLH ALPP(I)

FILE NAME: z8013ero_det.dgn
PROJECT LEADER: J. Lund
DESIGNED BY: D. Martel
PLOT DATE: 4/20/2018
DRAWN BY: D. DePaolo
CHECKED BY: R. Joy
SHEET 21 OF 23

STATE OF VERMONT
AGENCY OF TRANSPORTATION

RIGHT - OF - WAY DETAIL SHEET

TABLE OF PROPERTY ACQUISITION

PARCEL NO.	PROPERTY OWNER	ROW LAYOUT NO.	BEGINNING STATION	ENDING STATION	TAKE	REMAINDER	RIGHT			RECORDING DATA					REMARKS
					AREA±	AREA±	TYPE	T / P	AREA ±	TITLE	DATE	TOWN / CITY	BOOK	PAGE	
1	TIMOTHY G. AND MELISSA H.W. GIBBUD	1	101+35.00 LT	102+11.59 LT			CONSTRUCTION	T	613 sf			BRANDON			PDF & EROSION CONTROL
1	TIMOTHY G. AND MELISSA H.W. GIBBUD	1	101+79.00 LT	102+09.81 LT			CHANNEL	T	227 sf			BRANDON			INCLUDING STONE FILL
2	TIMOTHY G. AND MELISSA H.W. GIBBUD	1	102+11.59 LT	103+03.89 LT			CONSTRUCTION	T	1106 sf			BRANDON			PDF & EROSION CONTROL
3	TIMOTHY G. AND MELISSA H.W. GIBBUD	1	101+71.58 RT	102+34.78 RT			CONSTRUCTION	T	931 sf			BRANDON			PDF & EROSION CONTROL
4	DONALD & CRESCENT REMANIAK	1	102+34.78 RT	102+82.05 RT			CONSTRUCTION	T	622 sf			BRANDON			PDF & EROSION CONTROL

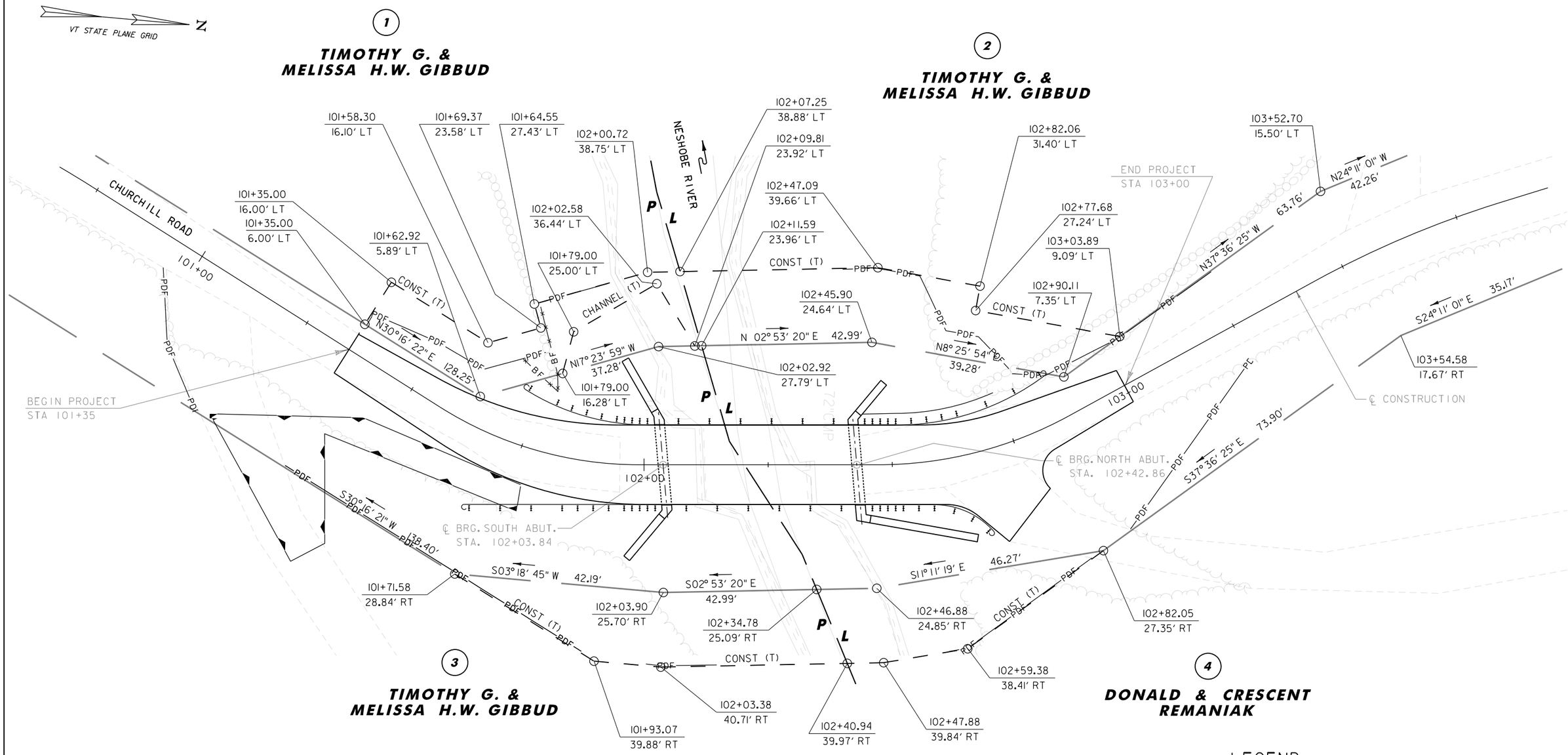
TABLE OF REVISIONS

REVISION NO.	ROW SET SHEET #	DESCRIPTION	DATE

PROJECT NAME: **Brandon-Churchill Road Bridge**
PROJECT NUMBER: **Brandon PLH ALPP(1)**

FILE NAME: **Brandon ROW Detail Sheet**
PROJECT LEADER: **J. Lund**
DESIGNED BY: **D. Martel**
R.O.W. DETAIL SHEET #1

PLOT DATE:
DRAWN BY: **D. DePaolo**
CHECKED BY: **R. Joy**
SHEET 22 of 23



ROW LAYOUT PLAN

10 0 10

LEGEND

PDF — PROJECT DEMARCATION FENCE (653.55)

BF — BARRIER FENCE (653.50)

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

FOR R.O.W. USE ONLY

McFarland Johnson

SHEET NAME: R.O.W. PLAN

PROJECT NAME: BRANDON-CHURCHILL ROAD BRIDGE

PROJECT NUMBER: BRANDON PLH ALPP(I)

FILE NAME:	z8013row.dgn	PLOT DATE:	4/20/2018
PROJECT LEADER:	J. Lund	DRAWN BY:	D. DePaolo
DESIGNED BY:	D. Martel	CHECKED BY:	R. Joy
ROW LAYOUT SHEET 1 OF 1		SHEET	23 OF 23