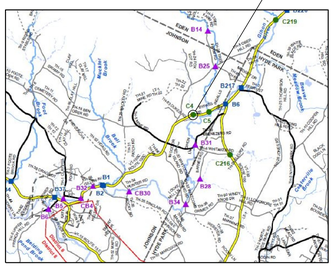
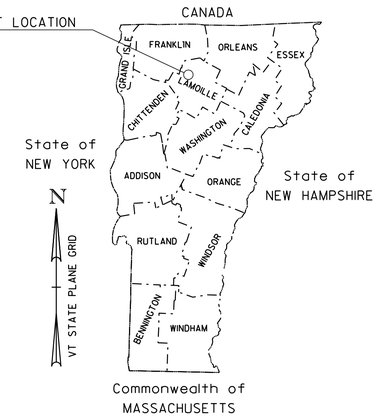
STATE OF VERMONT
AGENCY OF TRANSPORTATION





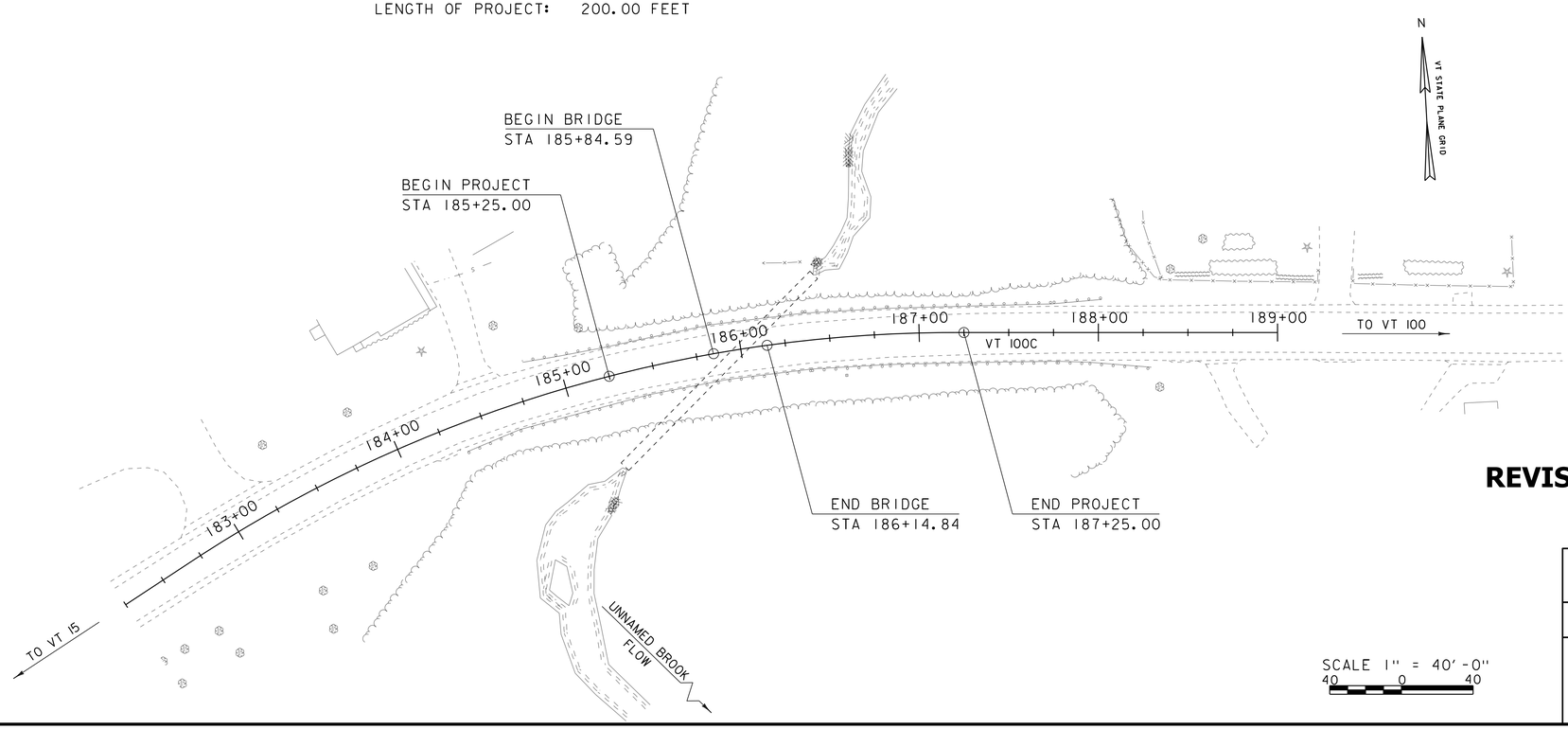
PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF JOHNSON
COUNTY OF LAMOILLE
VT ROUTE 100C (RURAL MAJOR COLLECTOR) BRIDGE 4 OVER UNNAMED BROOK

PROJECT LOCATION: APPROXIMATELY 3.8 MILES NORTH OF THE JUNCTIONS OF VT 15 AND 100C

PROJECT DESCRIPTION: REPLACEMENT OF THE EXISTING CULVERT WITH A NEW PRECAST RIGID FRAME OR ARCH TYPE WITH RELATED APPROACH AND CHANNEL WORK.

LENGTH OF STRUCTURE: 30.25 FEET
LENGTH OF ROADWAY: 169.75 FEET
LENGTH OF PROJECT: 200.00 FEET



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

QUALITY ASSURANCE PROGRAM : LEVEL 2	
SURVEYED BY :	VTRANS
SURVEYED DATE :	2015
DATUM	
VERTICAL	NAVD88
HORIZONTAL	NAD83

REVISED PRELIMINARY PLANS
15-APR-2016

DIRECTOR OF PROJECT DELIVERY	
APPROVED _____ DATE _____	
PROJECT MANAGER : WENDY PELLETIER	
PROJECT NAME :	JOHNSON
PROJECT NUMBER :	BF 0248(7)
SHEET 1 OF 36 SHEETS	

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version
LRFD

INDEX OF SHEETS

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STANDARDS LIST

E-193	PAVEMENT MARKING DETAILS	08-18-1995
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	11-10-2015
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)	02-10-2014
T-1	TRAFFIC CONTROL GENERAL NOTES	08-06-2012
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-30	CONSTRUCTION SIGN DETAILS	08-06-2012
T-42	BRIDGE NUMBER PLAQUE	04-09-2014
T-44	MILEMARKER DETAILS STATE AND TOWN HIGHWAYS	04-09-2014
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013

STRUCTURES DETAIL SHEETS

SD-501.00	CONCRETE DETAILS AND NOTES	5/7/2010
SD-502.00	CONCRETE DETAILS AND NOTES	5/7/2010

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: December 2015

DRAINAGE AREA : 1.3 sq. mi.
CHARACTER OF TERRAIN : Hilly to mountainous, mostly wooded, rural
STREAM CHARACTERISTICS : Sinuous, incised
NATURE OF STREAMBED : Gravel, cobbles

PEAK FLOW DATA - ANNUAL EXCEEDANCE PROBABILITY (AEP)

43% =	80 cfs	2% =	280 cfs
10% =	185 cfs	1% =	330 cfs
4% =	240 cfs	0.2% =	460 cfs

DATE OF FLOOD OF RECORD: Unknown
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV.: Unknown
NATURAL STREAM VELOCITY : @ 2% AEP = 8.9 fps
ICE CONDITIONS : Moderate
DEBRIS: Light to moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes
IS ORDINARY RISE RAPID? Yes
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
IF YES, DESCRIBE:

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: 6' ACCGMP
YEAR BUILT: 1951
CLEAR SPAN(NORMAL TO STREAM): 6'
VERTICAL CLEARANCE ABOVE STREAMBED: 6'
WATERWAY OF FULL OPENING: 28.3 sq. ft.
DISPOSITION OF STRUCTURE: Remove and replace
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See borings

WATER SURFACE ELEVATIONS AT:

43% AEP =	843.6'	VELOCITY =	16.1 fps
10% AEP =	846.2'	"	20.7 fps
4% AEP =	847.7'	"	22.2 fps
2% AEP =	849.1'	"	22.5 fps
1% AEP =	851.1'	"	24.1 fps

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No
FREQUENCY: N/A
RELIEF ELEVATION: 859.4'
DISCHARGE OVER ROAD @ 1% AEP:

UPSTREAM STRUCTURE

TOWN: Johnson — DISTANCE: 4130'
HIGHWAY # : TH 26 — STRUCTURE #:
CLEAR SPAN: 5' — CLEAR HEIGHT: 5'
YEAR BUILT: — FULL WATERWAY:
STRUCTURE TYPE: Corrugated Metal Pipe

DOWNSTREAM STRUCTURE

TOWN: Johnson — DISTANCE: 1000'
HIGHWAY # : — STRUCTURE #:
CLEAR SPAN: — CLEAR HEIGHT:
YEAR BUILT: — FULL WATERWAY:
STRUCTURE TYPE: Confluence with Gihon River

PROPOSED STRUCTURE

STRUCTURE TYPE: Precast Rigid Frame or Arch

CLEAR SPAN(NORMAL TO STREAM): 16'
VERTICAL CLEARANCE ABOVE STREAMBED: 7.5'
WATERWAY OF FULL OPENING: 120 sq. ft.

WATER SURFACE ELEVATIONS AT:

43% AEP =	842.1'	VELOCITY=	7.4 fps
10% AEP =	843.1'	"	11.7 fps
4% AEP =	843.5'	"	13.2 fps
2% AEP =	843.8'	"	13.9 fps
1% AEP =	844.2'	"	14.9 fps

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No
FREQUENCY: N/A
RELIEF ELEVATION: 859.4'
DISCHARGE OVER ROAD @ 1% AEP:

BRIDGE LOW CHORD ELEVATION: 848.3'
FREEBOARD: @ 2% AEP = 4.5'

SCOUR: Bottom of footings should be 6' minimum below new streambed

REQUIRED CHANNEL PROTECTION: Stone Fill Type IV

PERMIT INFORMATION

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

TEMPORARY BRIDGE REQUIREMENTS

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

ADDITIONAL INFORMATION

Special Provision (Stone Fill, Stream Bed Material)(Type IV) required in channel

TRAFFIC MAINTENANCE NOTES

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

DESIGN VALUES

1.	DESIGN LIVE LOAD		HL-93
2.	FUTURE PAVEMENT	d_P:	3.0 INCH
3.	DESIGN SPAN	L:	0.00 FT
4.	MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	---
5.	PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	f_y:	270 KSI
6.	PRESTRESSED CONCRETE STRENGTH	f'_c:	6.0 KSI
7.	PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	5.0 KSI
8.	CONCRETE, HIGH PERFORMANCE CLASS AA	f'_c:	4.0 KSI
9.	CONCRETE, HIGH PERFORMANCE CLASS A	f'_c:	4.0 KSI
10.	CONCRETE, HIGH PERFORMANCE CLASS B	f'_c:	3.5 KSI
11.	CONCRETE, CLASS C	f'_c:	3.0 KSI
12.	REINFORCING STEEL	f_y:	60 KSI
13.	STRUCTURAL STEEL AASHTO M270	f_y:	---
14.	NOMINAL BEARING RESISTANCE OF SOIL	q_n:	4.0 KSF
15.	SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
16.	NOMINAL BEARING RESISTANCE OF ROCK	q_n:	10.0 KSF
17.	ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
18.	PILE RESISTANCE FACTOR	ϕ:	---
19.	LATERAL PILE DEFLECTION	Δ:	---
20.	BASIC WIND SPEED	V_{3s}:	---
21.	MINIMUM GROUND SNOW LOAD	p_g:	---
22.	SEISMIC DATA PGA: 0	S_s:	---
		S_1:	---
23.			
24.			---
25.			---
26.			---

LRFR LOAD RATING FACTORS

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

AS BUILT "REBAR" DETAIL

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

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2015	2700	300	61	6.8	210
2035	2800	320	61	9.3	300

20 year ESAL for flexible pavement from 2015 to 2035 : 1595000
40 year ESAL for flexible pavement from 2015 to 2055 : 3435000
Design Speed : 50 mph

PROJECT NAME: **JOHNSON**
PROJECT NUMBER: **BF 0248(7)**

FILE NAME: **s12c590pi.dgn**
PROJECT LEADER: **W. PELLETIER**
DESIGNED BY: **J. SALVATORI**
PRELIMINARY INFORMATION SHEET 1

PLOT DATE: 3/29/2016
DRAWN BY: **J. SALVATORI**
CHECKED BY: **G. LAROCHE**

GENERAL INFORMATION

SYMBOLOGY LEGEND NOTE

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

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

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

COMMON TOPOGRAPHIC POINT SYMBOLS

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

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

PROPOSED GEOMETRY CODES

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

UTILITY SYMBOLOGY

UNDERGROUND UTILITIES

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

ABOVE GROUND UTILITIES (AERIAL)

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

PROJECT CONSTRUCTION SYMBOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOGY

— -- — CZ — -- —	CLEAR ZONE
———————	PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

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

CONVENTIONAL BOUNDARY SYMBOLOGY

BOUNDARY LINES

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

EPSC LAYOUT PLAN SYMBOLOGY

EPSC MEASURES

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

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLOGY

ENVIRONMENTAL RESOURCES

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

ARCHEOLOGICAL & HISTORIC

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

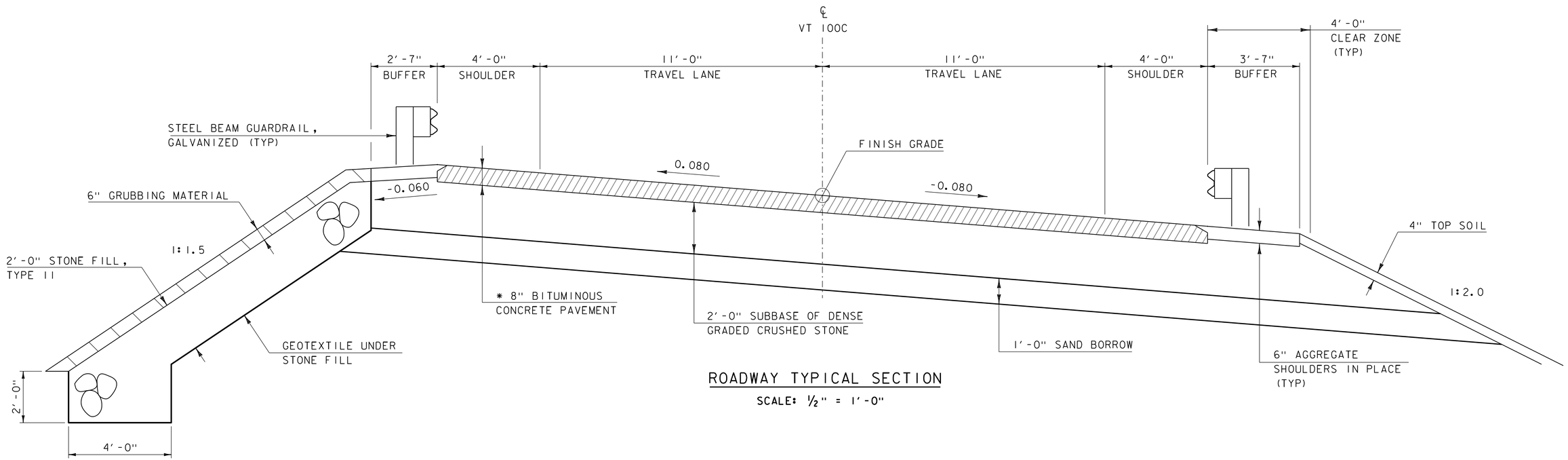
CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

EXISTING FEATURES

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

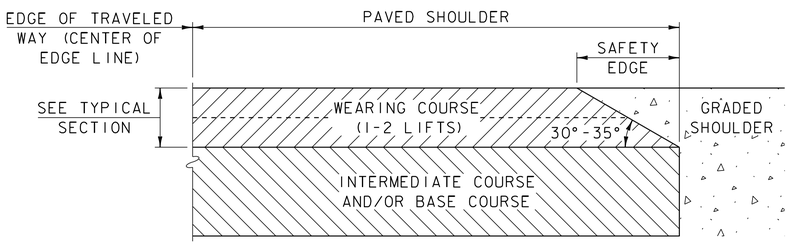
PROJECT NAME:	JOHNSON
PROJECT NUMBER:	BF 0248(7)
FILE NAME: sl2c590leg.dgn	PLOT DATE: 15-APR-2016
PROJECT LEADER: W. PELLETIER	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY:
LEGEND SHEET	SHEET 3 OF 36

* 1 ½" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT TYPE IVS, OVER
1 ½" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT TYPE IVS, OVER
2 ½" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT TYPE IIS, OVER
2 ½" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT TYPE IIS



ROADWAY TYPICAL SECTION

SCALE: ½" = 1'-0"



SAFETY EDGE DETAIL

(NOT TO SCALE)

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

MATERIAL TOLERANCES

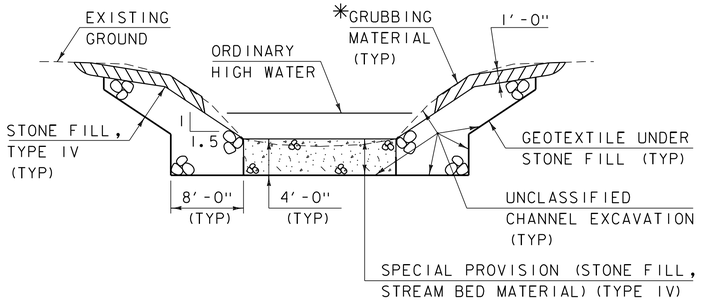
(IF USED ON PROJECT)

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

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: sl2c590typ.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
TYPICAL SECTIONS

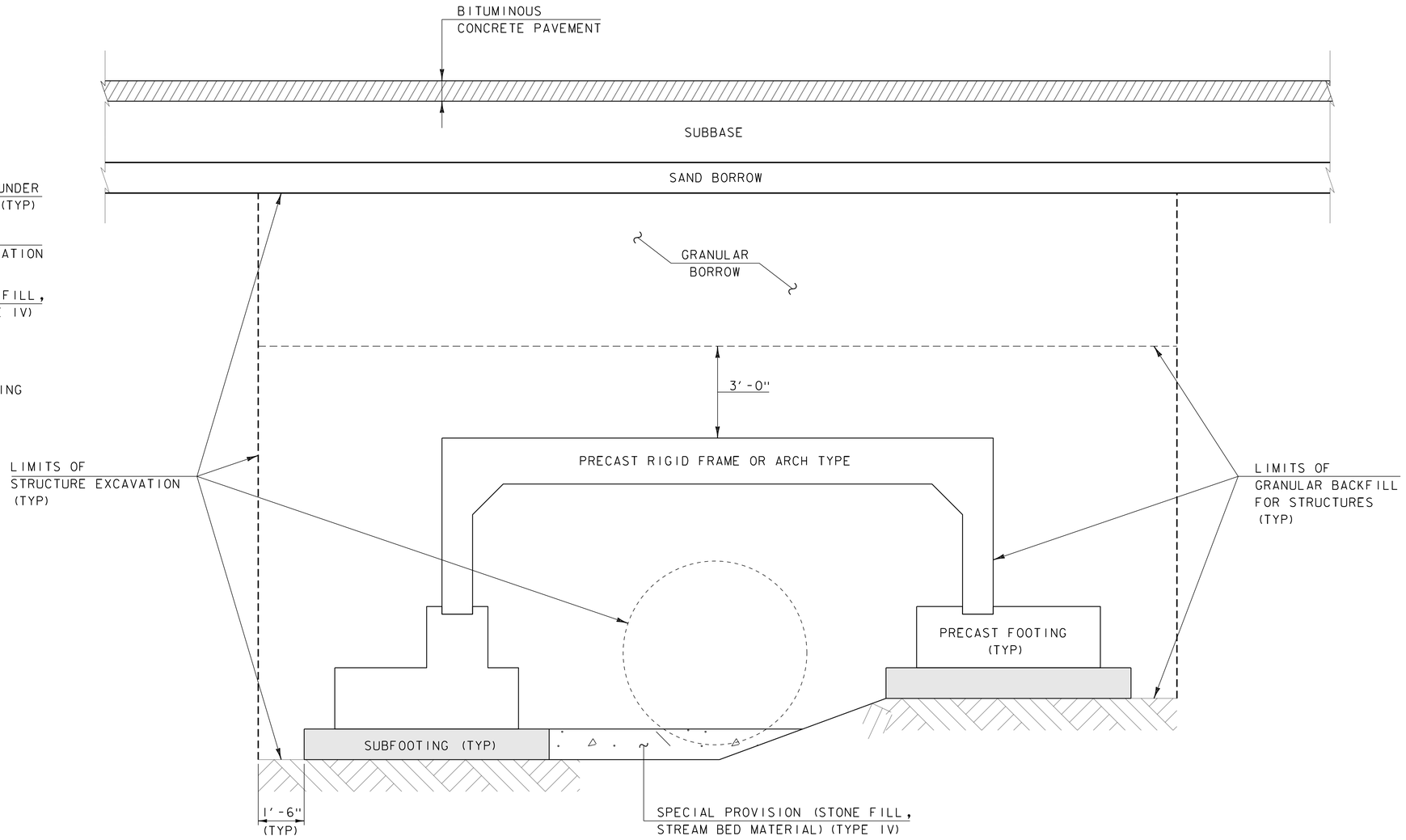
PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: G. LAROCHE
SHEET 4 OF 36



CHANNEL TYPICAL SECTION

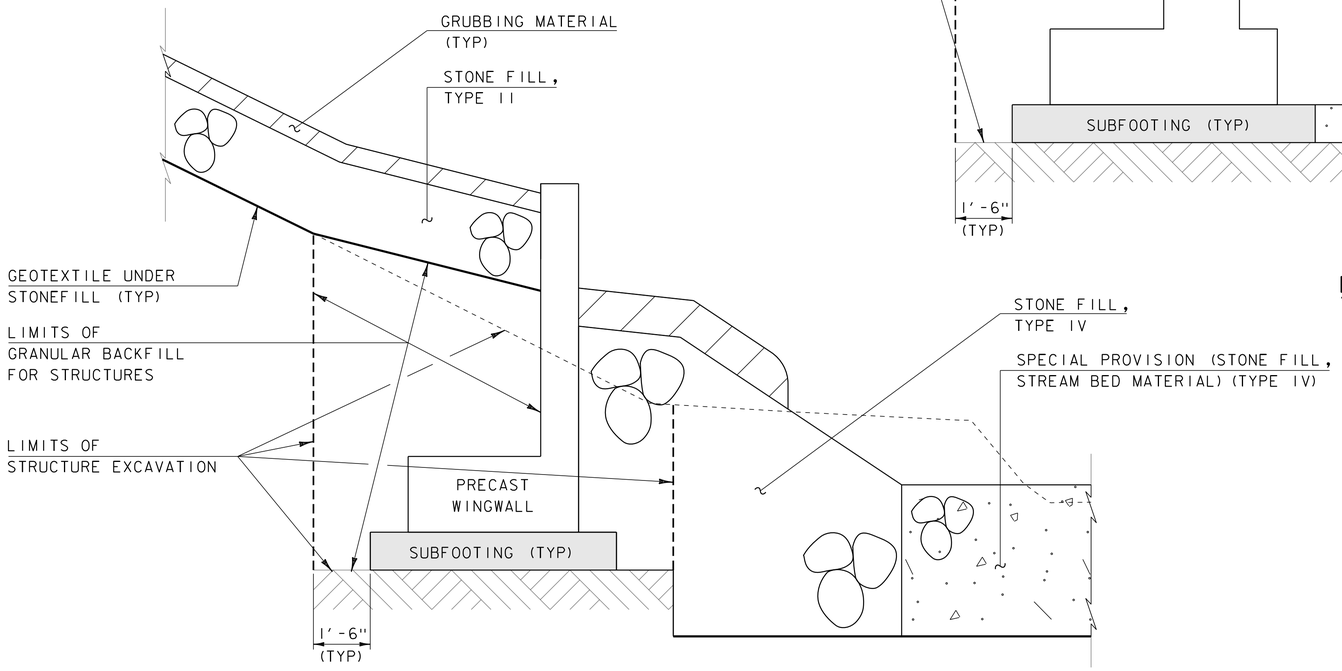
NOT TO SCALE

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



EARTHWORK TYPICAL SECTION

NOT TO SCALE



WINGWALL TYPICAL SECTION

NOT TO SCALE

PROJECT NAME:	JOHNSON
PROJECT NUMBER:	BF 0248(7)
FILE NAME: sl2c590typ.dgn	PLOT DATE: 15-APR-2016
PROJECT LEADER: W. PELLETIER	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: G. LAROCHE
TYPICAL SECTIONS	SHEET 5 OF 36

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011 AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 6TH EDITION, AND ITS LATEST REVISIONS.

2. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES F UNLESS OTHERWISE NOTED.

3. ITEM 404.65 "EMULSIFIED ASPHALT" IS TO BE APPLIED AT A RATE OF 0.025 GAL/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT, OR AS DIRECTED BY THE ENGINEER.

4. THE REMOVAL OF EXISTING STRUCTURE WILL BE PAID FOR UNDER ITEM 529.15 "REMOVAL OF STRUCTURE (6'-0" X 166'-0" CGMP)". THIS WORK SHALL INCLUDED ANY PORTIONS OF THE EXISTING STRUCTURE THAT FALL OUTSIDE THE LIMITS OF STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION.

5. THE CONTRACTOR SHALL EXTEND THE UNDERDRAIN CARRIER PIPE AT STATION 184+62.00 RT TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR THE UNDERDRAIN WILL BE AT THE UNIT PRICE FOR ITEM 605.20.

TRAFFIC CONTROL

6. PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE FULLY OPERATIONAL A MINIMUM OF TWO WEEKS PRIOR TO THE BRIDGE CLOSURE PERIOD.

7. PAYMENT FOR ALL TEMPORARY TRAFFIC CONTROL DEVICES FOR IMPLEMENTING THE DETOUR WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).

8. DETOUR SIGNS SHALL BE LOCATED ADJACENT TO EXISTING INTERSECTION ROUTE MARKER ASSEMBLIES WHERE APPLICABLE.

9. CONFIRMATION ROUTE MARKERS SHALL BE INSTALLED IMMEDIATELY FOLLOWING EACH TURN AND AT ALL LOCATIONS ALONG DETOUR WHERE ROUTE MARKERS EXIST FOR THE PARENT ROUTE.

10. COVER ANY CONFLICTING EXISTING SIGNS AS DIRECTED BY THE ENGINEER

EARTHWORK

11. CRUSHED STONE BEDDING MEETING THE REQUIREMENTS OF SUBSECTION 704.02 TABLE B, MAY BE SUBSTITUTED FOR "GRANULAR BACKFILL FOR STRUCTURES", UNDER THE PROPOSED STRUCTURE ONLY.

12. THE STONE FILL AND STREAM BED MATERIAL UNDER THE BRIDGE SHALL BE PLACED AS SHOWN IN THE PLANS PRIOR TO THE INSTALLATION OF THE RIGID FRAME.

SUBSTRUCTURES ON BEDROCK

13. FOOTINGS OR SUBFOOTINGS FOR SUBSTRUCTURES FOUNDED ON BEDROCK SHALL BE PLACED ON CLEAN COMPETENT ROCK. ALL LOOSE ROCK AND DEBRIS SHALL BE REMOVED.

14. UPON COMPLETION OF THE EXCAVATION FOR SUBSTRUCTURES FOUNDED ON BEDROCK AND PRIOR TO PLACING FORMWORK, THE ENGINEER SHALL NOTIFY THE PROJECT MANAGER AND THE VTRANS SOILS AND FOUNDATION ENGINEER. THE SOILS AND FOUNDATION ENGINEER WILL DETERMINE IF THE BEDROCK IS COMPETENT TO OBTAIN THE NOMINAL BEARING RESISTANCE AS SHOWN ON THE PLANS. FIVE (5) WORKING DAYS FROM NOTIFICATION SHALL BE ALLOWED TO MAKE THE INSPECTION AND THE DETERMINATION FOR THE COMPETENCY OF THE BEDROCK.

15. ONCE THE ELEVATION OF COMPETENT BEDROCK HAS BEEN DETERMINED, THE CONTRACTOR SHALL PROVIDE A BEDROCK PROFILE TO THE PROJECT MANAGER TO DETERMINE WHETHER THE DESIGN BOTTOM OF FOOTING ELEVATION SHALL BE RAISED OR LOWERED AND WHETHER A SUBFOOTING SHALL BE REQUIRED. FOOTING ELEVATIONS SHALL NOT BE ADJUSTED WITHOUT APPROVAL OF THE PROJECT MANAGER. THREE (3) WORKING DAYS FROM THE RECEIPT OF THE BEDROCK PROFILES SHALL BE ALLOWED TO MAKE THIS DETERMINATION. NO WORK SHALL BE DONE ON THE FOOTINGS UNTIL A REPLY IS RECEIVED.

16. THE LIMITS OF SUBFOOTINGS SHALL BE 1'-0" OUTSIDE THE HORIZONTAL LIMITS OF THE FOOTINGS. THE TOP SURFACE OF ALL SUBFOOTINGS SHALL BE INTENTIONALLY ROUGHENED TO ¼" AMPLITUDE.

17. PAYMENT FOR ANY CONCRETE REQUIRED FOR SUBFOOTINGS SHALL BE PAID FOR WITH ITEM 541.30, "CONCRETE, CLASS C". AN ESTIMATED QUANTITY OF ITEM 541.30 HAS BEEN INCLUDED IN THE CONTRACT.

18. ANY BEDROCK THAT NEEDS TO BE REMOVED SHALL BE PAID FOR WITH THE CORRESPONDING EXCAVATION ITEM INCLUDED IN THE CONTRACT. OVERBREAKAGE BEYOUND THE AVERAGE MAXIMUM ALLOWANCE SPECIFIED IN SUBSECTIONS 204.09(B)(1) AND 208.11(C) WILL BE AT THE CONTRACTOR'S EXPENSE.

19. DOWELS SHALL BE DRILLED AND GROUTED INTO BEDROCK WHEN SHOWN ON THE PLANS OR AS ORDERED BY THE ENGINEER. THE DOWELS SHALL HAVE A 2'-0" MINIMUM EMBEDMENT IN THE BEDROCK EXTEND IN THE FOOTING OR SUBFOOTING A MINIMUM OF 1'-6", UNLESS OTHERWISE NOTED.

PRECAST CONCRETE

20. ALL CONCRETE SHALL BE PRECAST. NO SUBSTITUTIONS WILL BE ALLOWED.

21. ITEM 540.10 "PRECAST CONCRETE STRUCTURE" INCLUDES ALL PRECAST CONCRETE COMPONENTS INCLUDING ALL FOOTINGS, PEDESTAL WALLS, RIGID FRAME OR ARCH, HEADWALLS, WINGWALLS AND ALL CONNECTIONS BETWEEN THESE COMPONENTS SHALL BE DESIGNED BY THE PRECAST FABRICATOR. THE SOIL PROPERTIES AND DESIGN PARAMETERS USED FOR THIS PROJECT ARE AS INDICATED BELOW.

    A. SOIL UNIT WEIGHT = 140 PCF
    B. DESIGN LIVE LOAD = HL-93
    C. NOMINAL BEARING RESISTANCE (BEDROCK) = 10 KSF
    D. NOMINAL BEARING RESISTANCE (GRANULAR BACKFILL) = 4 KSF
    E. BEARING RESISTANCE FACTOR = 0.45
    F. DESIGN FILL OVER BOX = 0-2 FEET
    G. AT-REST EARTH PRESSURE (Ko) = 0.398
    H. CONCRETE COMPRESSIVE STRENGTH = SEE SUBSECTION 540.05(e)

22. THE PRECAST CONCRETE STRUCTURE SHALL BE DESIGNED FOR HYDROSTATIC PRESSURE UNLESS RAPID DRAINING MATERIAL MEETING THE REQUIREMENTS OF SUBSECTION 704.18 IS USED.

23. THE PRECAST SECTIONS ARE SHOWN FOR REFERENCE ONLY. THE ACTUAL DIMENSIONS AND SHAPE WILL BE DEPENDENT ON THE FABRICATOR. THE MINIMUM INSIDE DIMENSIONS SHALL BE 5'-9" IN HEIGHT AND 16'-0" IN WIDTH. THE OVERALL LENGTH OF THE RIGID FRAME SHALL BE 170'-0" ALONG THE STREAMBED GRADE. THE EXPOSED ENDS OF THE FIRST AND LAST UNITS SHALL BE VERTICAL.

24. ALL LIFTING HOLES AND BOLT POCKETS SHALL BE FILLED WITH MORTAR TYPE IV AFTER BEING SET IN THEIR FINAL POSITION. FILLING THE JOINTS BETWEEN SEGMENTS WITH GROUT IS NOT REQUIRED.

25. NO ADDITIONAL WORK (I.E. BACKFILLING OR MEMBRANE) IS ALLOWED UNTIL THE GROUT HAS REACHED A STRENGTH OF 2000 PSI OR 30% OF MAXIMUM.

26. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1".

27. WATER REPELLENT, SILANE SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 514 AND SHALL BE FIELD APPLIED TO ALL EXPOSED EXTERIOR SURFACES OF THE PRECAST CONCRETE STRUCTURE. PAYMENT FOR SILANE WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 540.10.

28. SHEET MEMBRANE WATERPROOFING SHALL COVER THE TOP OF THE BOX IN ITS ENTIRETY, AND CONTINUE DOWN THE SIDES AT LEAST THREE (3) FEET. A TWO (2) FOOT WIDE STRIP WILL PLACED AT EACH JOINT, CENTERED ON THE JOINT AND COVERING THE FULL HEIGHT. THE SIDES OF THE BOX SHALL BE COVERED PRIOR TO THE TOP. ANY OVERLAPPING OF MEMBRANE SHALL BE DONE IN A SHINGLE TYPE STYLE AND SHALL OVERLAP A MINIMUM OF ONE FOOT. PAYMENT FOR MEMBRANE WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 540.10.

29. GEOTEXTILE FABRIC SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 649 AND SHALL BE APPLIED TO THE BARRED INTERFACE OF THE BOX SEGMENT AND WINGWALLS. PAYMENT FOR GEOTEXTILE FABRIC WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 540.10.

30. A BRIDGE PLAQUE FURNISHED BY THE AGENCY SHALL BE CAST INTO WINGWALL 2. SEE SD-502.00 FOR FURTHER DETAILS.

REINFORCING STEEL

31. ALL REINFORCING STEEL SHALL BE LEVEL I (EPOXY) REINFORCING STEEL IN ACCORDANCE WITH SECTION 507.

32. ALL REINFORCING STEEL SHALL HAVE A MINIMUM CLEAR COVER OF 2"

33. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE AS FOLLOWS:

    A. SPACING +/- 1"
    B. CLEARANCE +/- ¼"

PROJECT NAME:	JOHNSON
PROJECT NUMBER:	BF 0248(7)
FILE NAME: sl2c590notes.dgn	PLOT DATE: 15-APR-2016
PROJECT LEADER: W. PELLETIER	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: ------
PROJECT NOTES	SHEET 6 OF 36

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES												TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
												GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
									1			1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				
									1725			1725		CY	COMMON EXCAVATION	203.15				
											480	480		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27				
									340			340		CY	SAND BORROW	203.31				
											800	800		CY	GRANULAR BORROW	203.32				
									1			1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
											2800	2800		CY	STRUCTURE EXCAVATION	204.25				
											1100	1100		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
									510			510		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
									750			750		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35				
									55			55		CY	AGGREGATE SHOULDERS, IN PLACE	402.10				
									14			14		CWT	EMULSIFIED ASPHALT	404.65				
									1			1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
											1900	1900		LB	REINFORCING STEEL, LEVEL I	507.11				
											400	400		LF	DRILLING AND GROUTING DOWELS	507.16				
											1	1		EACH	REMOVAL OF STRUCTURE (6'-0" x 166'-0" CGMP)	529.15				
											1	1		LS	PRECAST CONCRETE STRUCTURE (16'-0" x 5'-9" x 170'-0" RIGID FRAME OR ARCH TYPE)	540.10				
											1	1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT 1)	540.10				
											1	1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT 2)	540.10				
											270	270		CY	CONCRETE, CLASS C	541.30				
										1		1		MGAL	DUST CONTROL WITH WATER	609.10				
									820			820		CY	STONE FILL, TYPE II	613.11				
											310	310		CY	STONE FILL, TYPE IV	613.13				
									1			1		EACH	RELOCATE MAILBOX, SINGLE SUPPORT	617.10				
									577			577		LF	STEEL BEAM GUARDRAIL, GALVANIZED	621.20				
									3			3		EACH	MANUFACTURED TERMINAL SECTION, FLARED	621.50				
									1			1		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60				
									725			725		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
									200			200		HR	FLAGGERS	630.15				
									1			1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
									2			2		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
									900			900		LF	DURABLE 4 INCH WHITE LINE	646.400				
									900			900		LF	DURABLE 4 INCH YELLOW LINE	646.410				
									1000			1000		SY	GEOTEXTILE FOR ROADBED SEPARATOR	649.11				
											340	340		SY	GEOTEXTILE UNDER STONE FILL	649.31				
										290		290		SY	GEOTEXTILE FOR SILT FENCE	649.51				
										10		10		LB	SEED	651.15				
										80		80		LB	FERTILIZER	651.18				
										1		1		TON	AGRICULTURAL LIMESTONE	651.20				
										1		1		TON	HAY MULCH	651.25				

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: sl2c590qs.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
QUANTITY SHEET

PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: ------

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES												TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
												GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
										75		75		CY	TOPSOIL	651.35				
									1000		160	1160		SY	GRUBBING MATERIAL	651.40				
										1		1		LS	EPSC PLAN	652.10				
										40		40		HR	MONITORING EPSC PLAN	652.20				
										1		1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30				
										60		60		CY	VEHICLE TRACKING PAD	653.35				
										1		1		EACH	FILTER BAG	653.45				
										970		970		LF	BARRIER FENCE	653.50				
									1.5			1.5		SF	TRAFFIC SIGNS, TYPE A	675.20				
									24			24		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
									2			2		EACH	REMOVING SIGNS	675.50				
									4			4		EACH	DELINEATOR WITH STEEL POST	676.10				
											1	1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50				
											310	310		CY	SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL)(TYPE IV)	900.608				
									1			1		DL	SPECIAL PROVISION (INCENTIVE/DISINCENTIVE)(N.A.B.I)(BF0248(7))	900.615				
											1	1		LS	SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)	900.645				
									1			1		LU	SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)	900.650				
									520			520		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: sl2c590qs.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
QUANTITY SHEET

PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: ------
SHEET 8 OF 36

CONTROL POINTS

HVCTRL #1
"FIELD DAYS"
NORTH = 784963.8310
EAST =1606535.0920
ELEV. = 847.2710

TO REACH FROM THE INTERSECTION OF VT ROUTE 100 AND VT ROUTE 100C IN NORTH HYDE PARK, GO SOUTHWEST ALONG VT ROUTE 100C FOR 1.6 MI (2.6 KM) TO THE INTERSECTION OF MINE ROAD RIGHT AND WILSON ROAD LEFT. TURN LEFT AND GO EAST ALONG WILSON ROAD FOR 0.1 MI (0.2 KM) TO THE NEWPORT AMBULANCE SERVICE BUILDING ON THE RIGHT AND THE SITE OF THE MARK ON THE RIGHT JUST EAST OF THE EAST END OF THE PARKING LOT. THE MARK IS SET 8 CM (3 INCHES) BELOW GROUND SURFACE IN THE TOP OF A FENO STYLE MONUMENT. IT IS 4.9 M (16.1 FT) SOUTHWEST OF AND ABOUT 0.4 M (1.3 FT) LOWER THAN THE CENTERLINE OF WILSON ROAD, 32.1 M (105.3 FT) SOUTHEAST OF THE CENTERLINE OF THE ENTRANCE DRIVE TO THE NEWPORT AMBULANCE SERVICE BUILDING, 10.5 M (34.4 FT) SOUTH OF AND ACROSS THE ROAD FROM POLE NO 2/93A/4-5/1 AND 31.5 M (103.3 FT) NORTHWEST OF POLE NO 2/93A/1 1/2.

HVCTRL #2
"STEARNS"
NORTH = 786817.5160
EAST = 1606801.6720
ELEV. = 853.0540

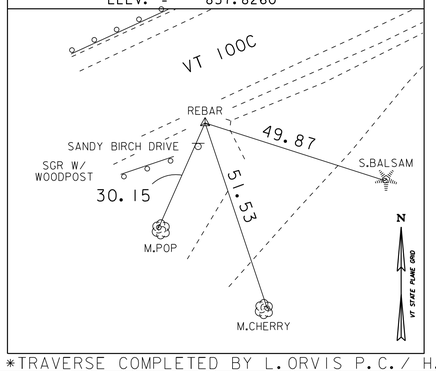
TO REACH FROM THE INTERSECTION OF VT ROUTE 100 AND VT ROUTE 100C IN NORTH HYDE PARK, GO SOUTHWEST ALONG VT ROUTE 100C FOR 1.3 MI (2.1 KM) TO THE SITE OF THE MARK ON THE RIGHT LOCATED IN FRONT OF HOUSE NO 3241. THE MARK IS SET 18 CM (7 INCHES) BELOW THE GROUND SURFACE IN THE TOP OF A FENO STYLE MONUMENT. IT IS 7.4 M (24.3 FT) NORTHWEST OF AND ABOUT 0.6 M (2.0 FT) LOWER THAN THE CENTERLINE OF VT ROUTE 100C, 30.0 M (98.4 FT) SOUTH-SOUTHWEST OF THE CENTERLINE OF A GRAVEL DRIVE LEADING TO HOUSE NO 3241, 35.2 M (115.5 FT) SOUTH-SOUTHWEST OF AN UNNUMBERED POLE, 20.7 M (67.9 FT) SOUTH OF THE SOUTHEAST CORNER OF THE HOUSE AND 20.7 M (67.9 FT) NORTH OF AND ACROSS THE ROAD FROM POLE NO 84 AND MILE MARKER POST 1003/0806/0320.

*GPS CONTROL PROVIDED BY VT GSU 2015

TRAVERSE TIES

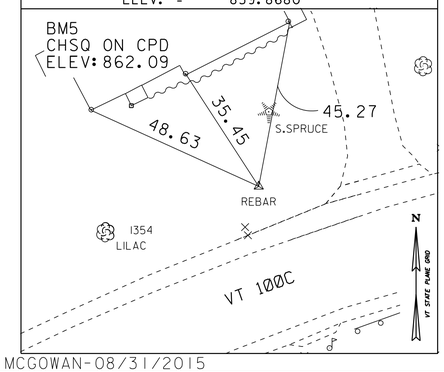
HVCTRL #4

NORTH = 787956.7910
EAST =1608246.5909
ELEV. = 857.8260



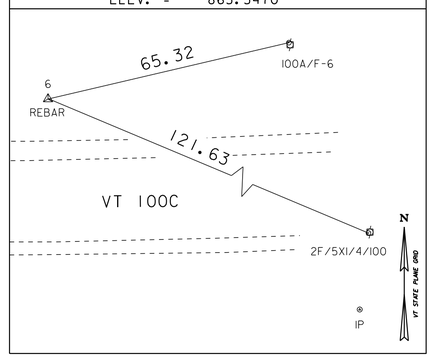
HVCTRL #5

NORTH = 788433.2238
EAST = 1609068.3200
ELEV. = 859.8680



HVCRTL #6

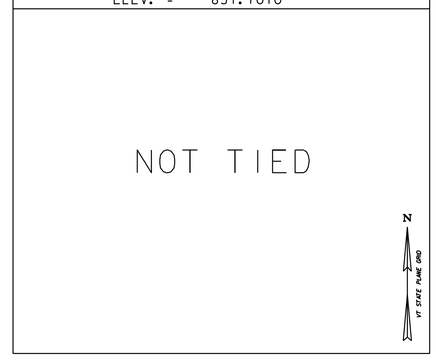
NORTH = 788448.9874
EAST =1609946.5482
ELEV. = 865.5470



HVCTRL #7

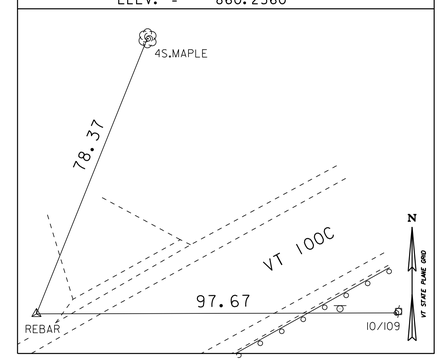
NORTH = 788564.2108
EAST =1610732.6750
ELEV. = 851.7010

NOT TIED



HVCTRL #8

NORTH = 789139.3037
EAST =1611663.3024
ELEV. = 860.2560

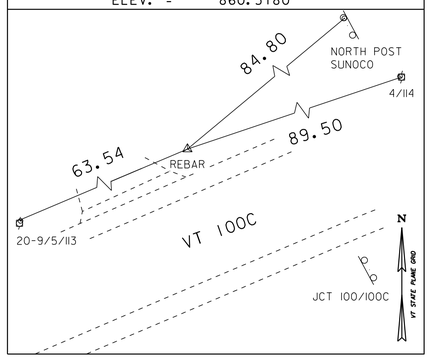


*TRAVERSE COMPLETED BY L.ORVIS P.C./ H.MCGOWAN-08/31/2015

TRAVERSE TIES

HVCTRL #9

NORTH = 789572.8168
EAST = 1612587.6877
ELEV. = 860.3180



NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (2011)
ADJUSTMENT COMPASS

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: XI2C590TI.DGN
PROJECT LEADER: J. FITCH
DESIGNED BY: VTRANS
TIE SHEET

PLOT DATE: 15-APR-2016
DRAWN BY: G. HITCHCOCK
CHECKED BY: P. BEYOR
SHEET 9 OF 36

EXISTING CONDITIONS

SCALE 1" = 20'-0"

EXISTING BRIDGE INFORMATION
BUILT 1951
166' LONG 6' DIA CGMP (DEFORMED)
AVERAGE COVER: 18'
28 SQFT WATERWAY AREA

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: sl2c590bdr.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
EXISTING CONDITIONS

PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: ------
SHEET 10 OF 36

MAINLINE CURVE#1
DELTA = 33°20'00"
D = 7°23'35"
R = 775.00'
T = 232.02'
L = 450.88'
E = 33.99'

CHANNEL CURVE#1
DELTA = 45°00'00"
D =229°10'59"
R = 25.00'
T = 10.36'
L = 19.63'
E = 2.06'

CHANNEL CURVE#2
DELTA = 55°00'00"
D =229°10'59"
R = 25.00'
T = 13.01'
L = 24.00'
E = 3.18'

N

VT STATE PLANE GRID

CHANNEL POB
STA 50+00.00
N = 788564.1355
E = 1609321.9831

50+00

S 2°45'00" W

CHANNEL PC#1
STA 50+45.72

CHANNEL PI#1
STA 50+56.08 BK =
STA 50+55.00 AHD
N = 788508.1201
E = 1609319.2925

MAINLINE PI#1
STA 185+01.20 BK =
STA 184+88.03 AHD
N = 788459.6852
E = 1609137.2481

BEGIN PROJECT
STA 185+25.00

CHANNEL PT#1
STA 50+65.36

51+00

N 59°50'00" E

S 86°50'00" E

MAINLINE POE
STA 189+00.00
N = 788436.9280
E = 1609548.5796

BEGIN APPROACH
STA 184+00.00

183+00

184+00

185+00

186+00

187+00

188+00

189+00

TO VT 15

VT 100C

TO VT 100

S 47°45'00" W

52+00

END BRIDGE
STA 186+14.84
FG = 859.56

END PROJECT
STA 187+25.00

MAINLINE STA 186+00.00 =
CHANNEL STA 51+50.00
DELTA = 45° LT

MAINLINE PT#1
STA 187+20.06
N = 788446.8681
E = 1609368.9140

END APPROACH
STA 188+50.00

CHANNEL PC#2
STA 52+76.99

CHANNEL PI#2
STA 52+90.00 BK =
STA 52+87.98 AHD
N = 788350.1139
E = 1609145.3413

CHANNEL PT#2
STA 53+00.99

53+00

S 7°15'00" E

53+50

CHANNEL POE
STA 53+50.00
N = 788288.5840
E = 1609153.1689

BEGIN BRIDGE
STA 185+84.59
FG = 859.43

MAINLINE PC#1
STA 182+69.18
N = 788343.0909
E = 1608936.6510

UNNAMED BROOK
FLOW

ALIGNMENT SHEET

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

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: s12c590bdr_align.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
ALIGNMENT SHEET

PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: G. LAROCHE
SHEET 11 OF 36

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS WIDTH (in)	SIGN DIMENSIONS HEIGHT (in)	NEW SIGN "A"	EXIST POST RETAIN	EXIST POST SALVAGE	NEW SIGN POSTS NO. OF POSTS	NEW SIGN POSTS SQUARE STEEL (in) 2.0 lb/ft 2.16	2.0 lb/ft 2.42	2.5 lb/ft 3.35	ANCHOR	SLEEVE	REMARKS	SIGN DETAIL DETAIL IN SHSM	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
185+25.00 RT	BRIDGE 4 VT 100C	6	10	0.50			1	8			X		VD-701			E-134
186+58.00 RT	1003 0806 0380	6	10	0.50			1	8			X		VD-701			E-134
186+75.00 LT	BRIDGE 4 VT 100C	6	10	0.50			1	8			X		VD-701			E-134
								FT	FT 24	FT		EA				
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE VTRANS "SIGN POST DESIGN GUIDELINE."		**TOTALS**		SF 1.50				FT 24					SIGN LEGEND N = NEW R = REMOVE S = SALVAGE RET = RETAIN SHSM = STANDARD HIGHWAY SIGNS AND MARKINGS (MUTCD) (APPROVED BY THE FHWA)				

5'-0" PAVED APRON
STA 184+44.00 - 184+64.00 LT

REMOVING SIGNS
STA 185+12.00 RT
STA 186+58.00 LT

DELINEATOR WITH STEEL POST
STA 184+16.00 RT (BLUE)
STA 184+80.00 LT (GREEN)
STA 188+03.00 LT (BLUE)
STA 188+28.00 RT (GREEN)

DURABLE 4 INCH WHITE LINE
STA 184+00.00 - 188+50.00 LT/RT

DURABLE 4 INCH YELLOW LINE (DOUBLE)
STA 184+00.00 - 188+50.00 CL

ANCHOR FOR STEEL BEAM RAIL
STA 184+92.00 LT

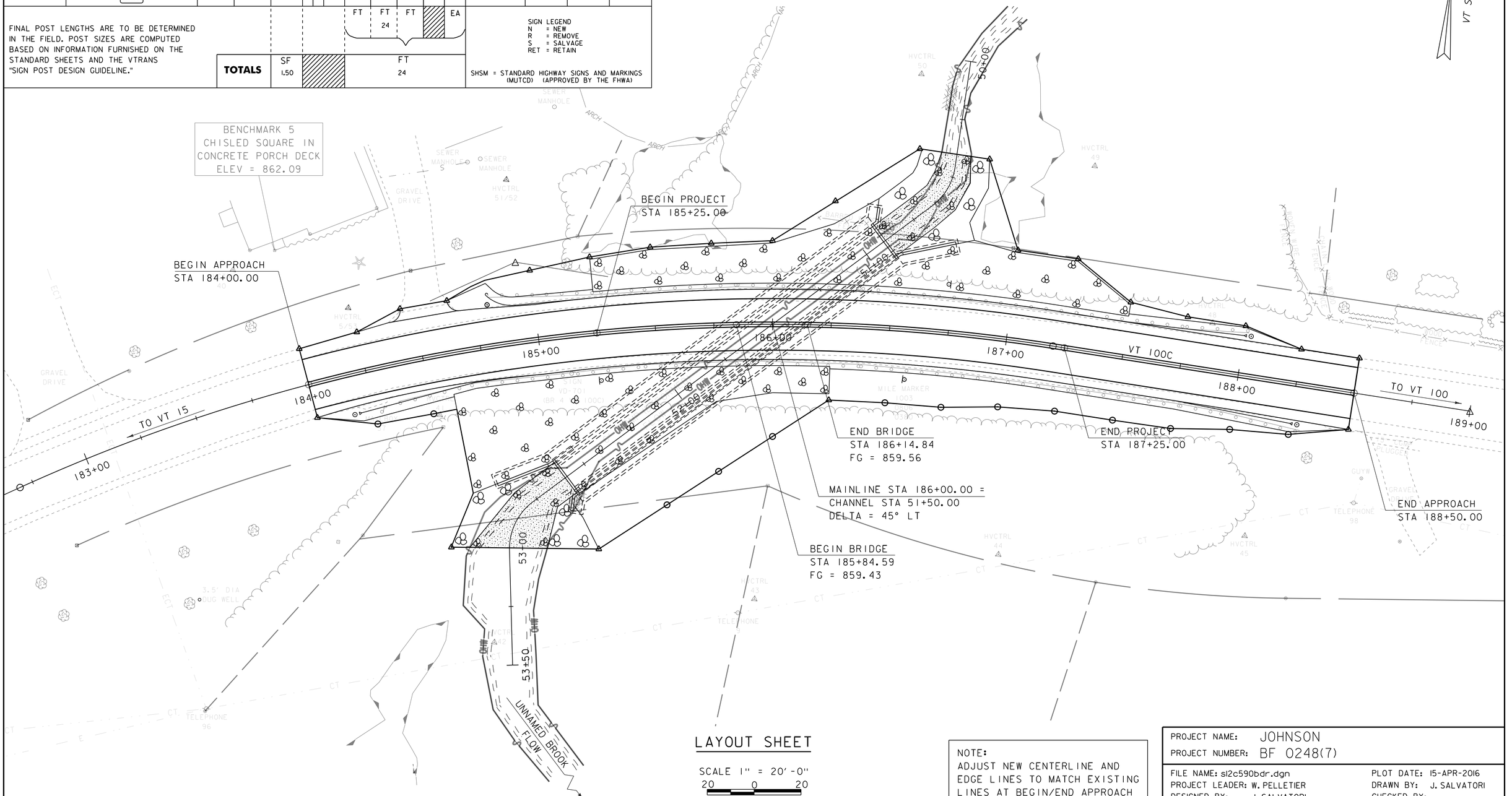
EXTEND EXISTING
6" UNDERDRAIN CARRIER PIPE
STA 184+62.00 RT

REMOVAL AND DISPOSAL OF GUARDRAIL
STA 184+36.00 - 188+29.00
STA 184+81.00 - 188+02.00

STEEL BEAM GUARDRAIL, GALVANIZED
STA 184+70.00 - 187+75.00 RT
STA 184+80.00 - 187+50.00 LT

MANUFACTORED TERMINAL SECTION, FLARED
STA 184+18.00 - 184+70.00 RT
STA 187+50.00 - 188+00.00 LT
STA 187+75.00 - 188+26.00 RT

N
VT STATE PLANE GRID



LAYOUT SHEET

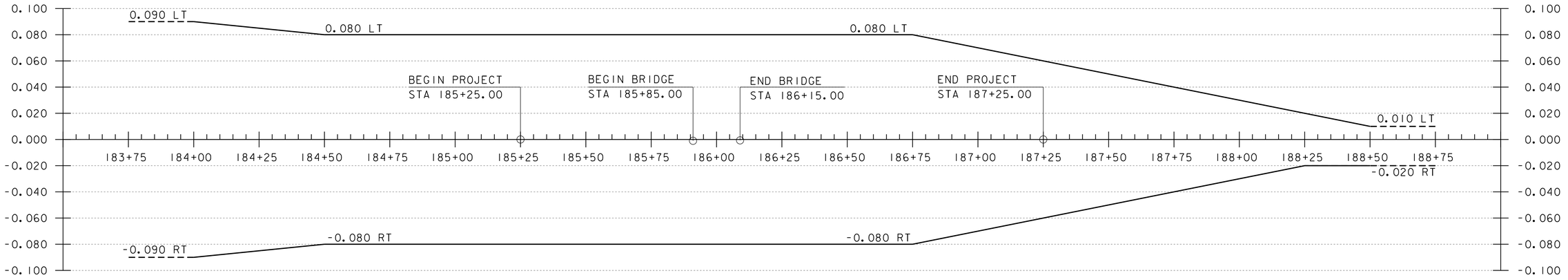
SCALE 1" = 20'-0"
20 0 20

NOTE:
ADJUST NEW CENTERLINE AND EDGE LINES TO MATCH EXISTING LINES AT BEGIN/END APPROACH

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

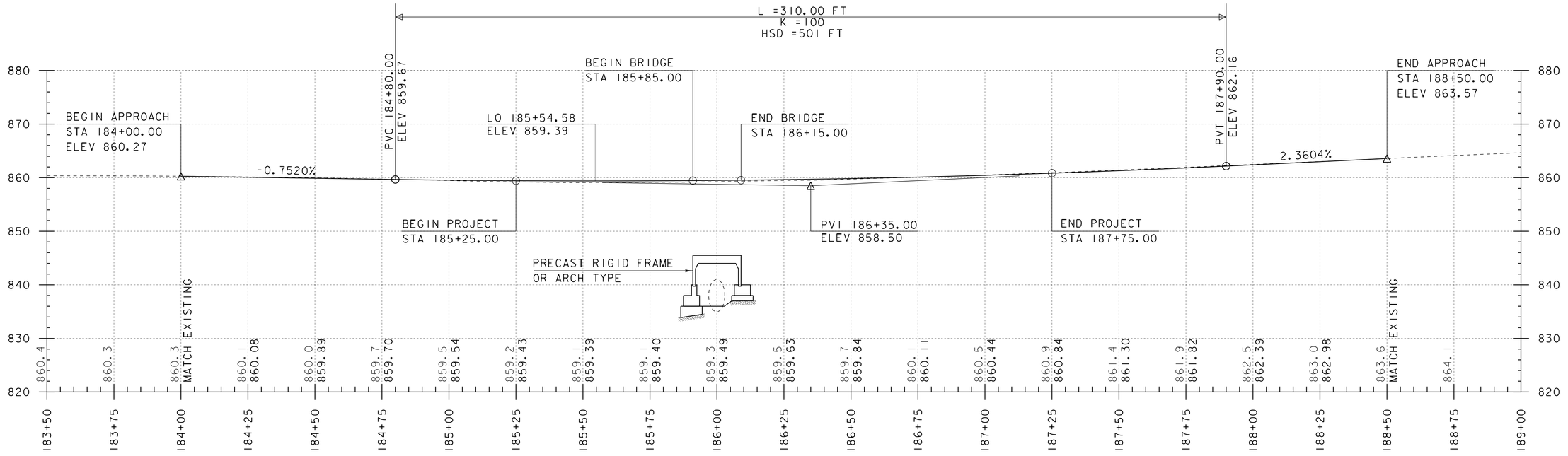
FILE NAME: sl2c590bdr.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
LAYOUT SHEET

PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: ------
SHEET 12 OF 36



BANKING DIAGRAM

HOR. SCALE 1" = 20'-0"
NO VER. SCALE



MAINLINE PROFILE

HOR. SCALE 1" = 20'-0"
VER. SCALE 1" = 10'-0"

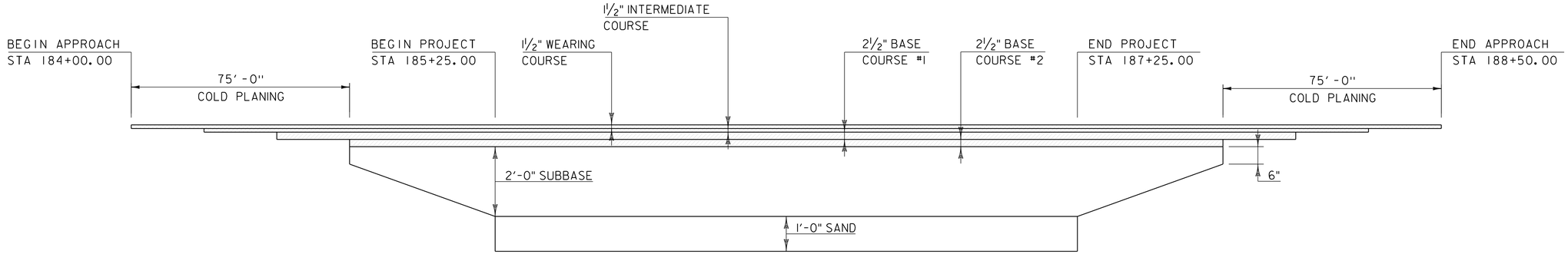
THE GRADES SHOWN TO THE NEAREST TENTH ARE THE ORIGINAL GROUND ELEVATIONS ALONG THE PROPOSED ALIGNMENT.

THE GRADES SHOWN TO THE NEAREST HUNDREDTH ARE THE FINISH GRADES ALONG THE PROPOSED ALIGNMENT.

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

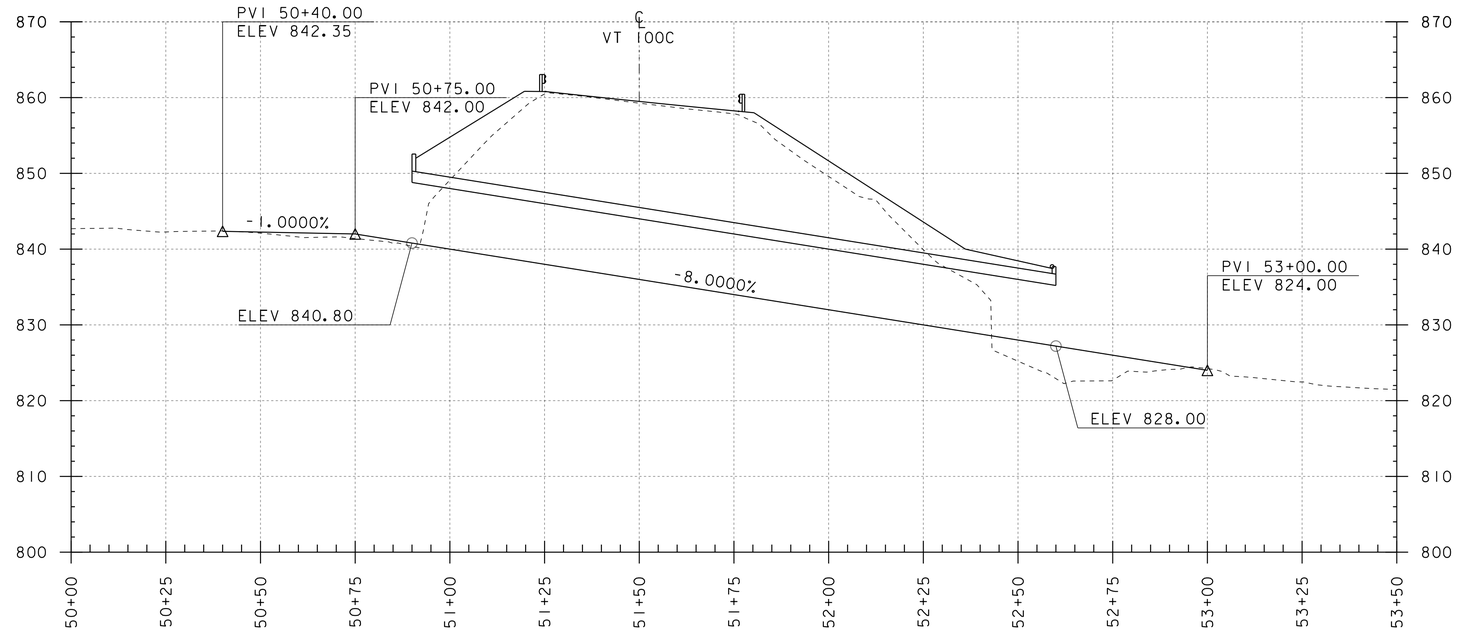
FILE NAME: s12c590pro.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
MAINLINE PROFILE AND BANKING DIAGRAM

PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: G. LAROCHE
SHEET 13 OF 36



MATERIAL TRANSITION

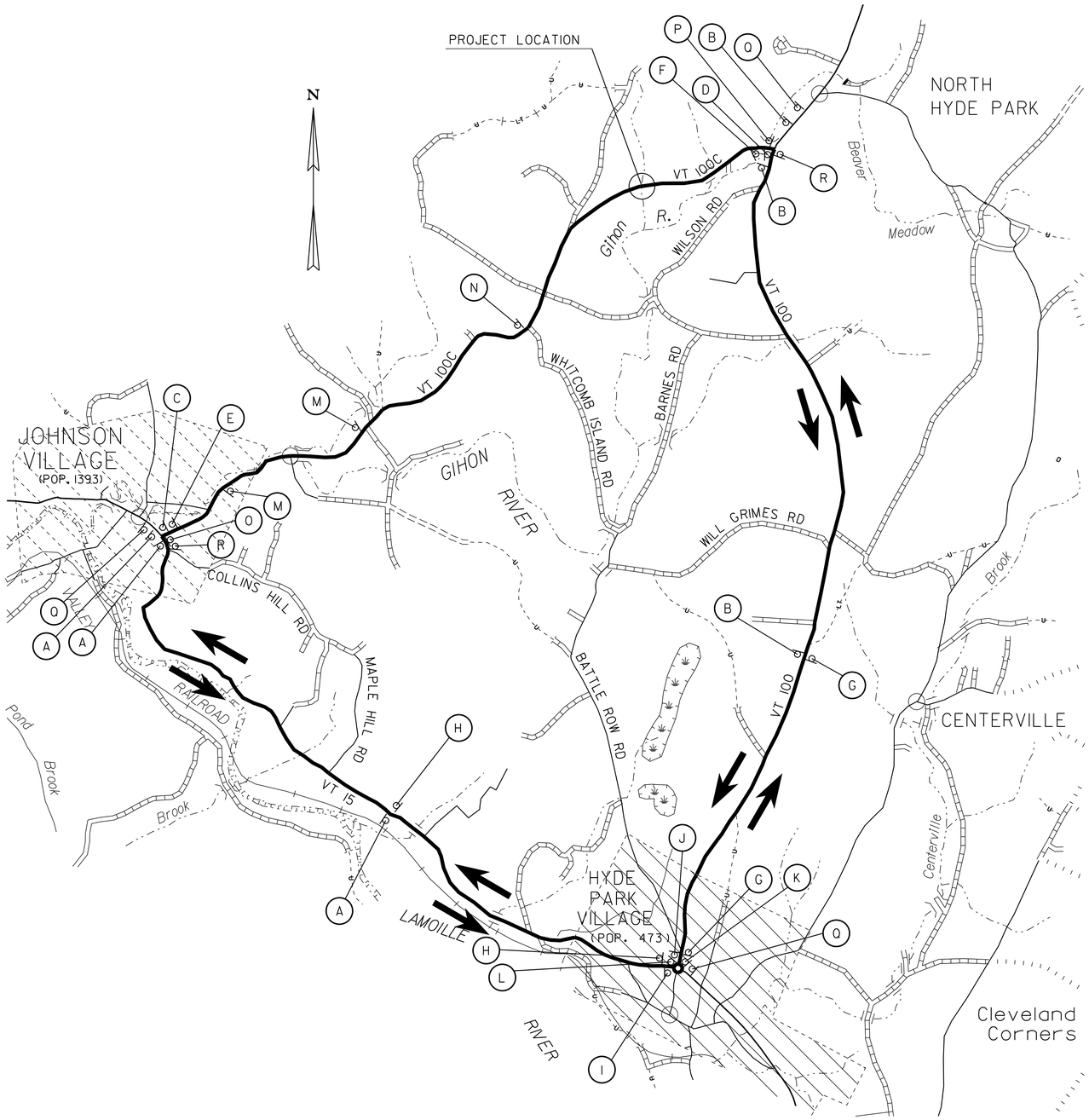
HOR. SCALE 1" = 20'-0"
NO VER. SCALE



CHANNEL PROFILE

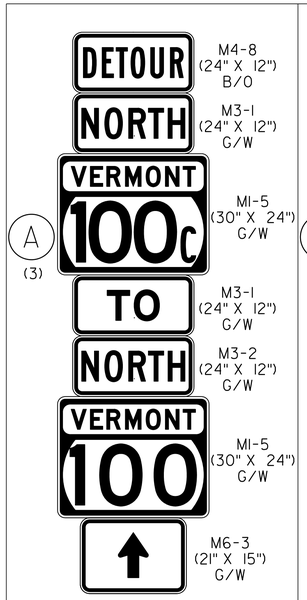
HOR. SCALE 1" = 20'-0"
VER. SCALE 1" = 10'-0"

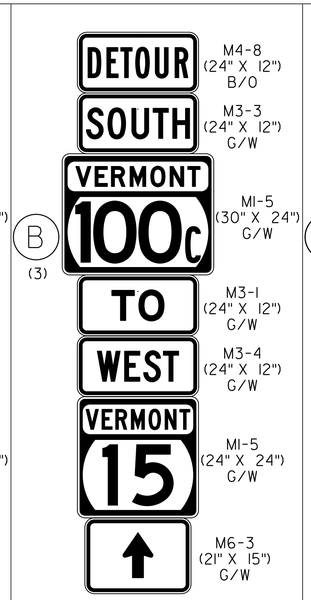
PROJECT NAME:	JOHNSON
PROJECT NUMBER:	BF 0248(7)
FILE NAME: sl2c590pro.dgn	PLOT DATE: 15-APR-2016
PROJECT LEADER: W. PELLETIER	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: G. LAROCHE
CHANNEL PROFILE	SHEET 14 OF 36

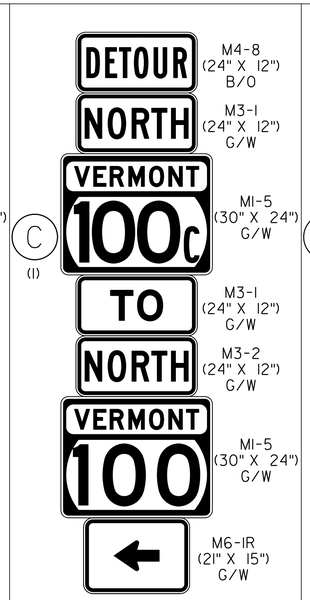


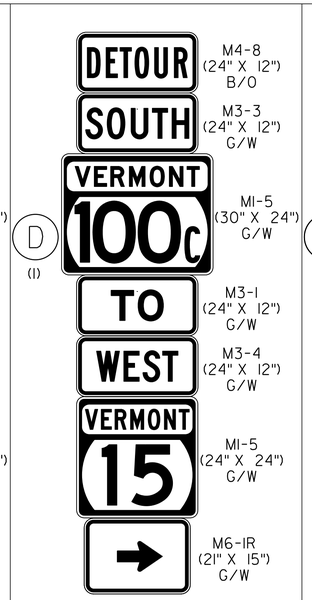
TEMPORARY DETOUR MAP

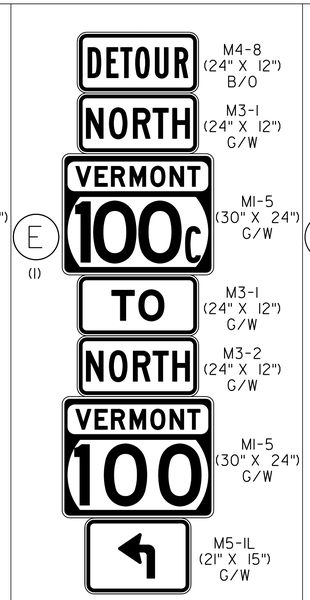
PROJECT NAME:	JOHNSON
PROJECT NUMBER:	BF 0248(7)
FILE NAME: sl2c590detour.dgn	PLOT DATE: 15-APR-2016
PROJECT LEADER: W. PELLETIER	DRAWN BY: CHA
DESIGNED BY: CHA	CHECKED BY: CHA
DETOUR PLAN	SHEET 15 OF 36

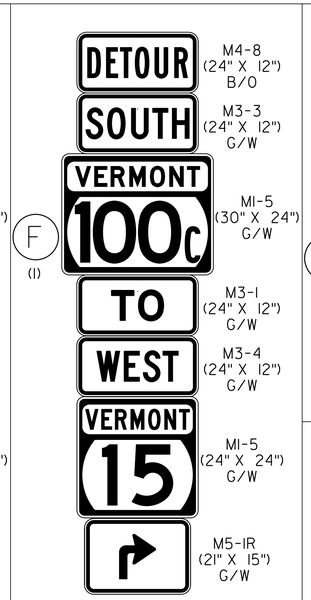


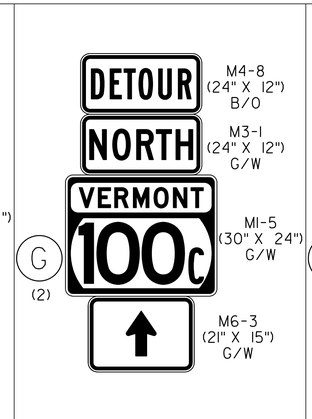


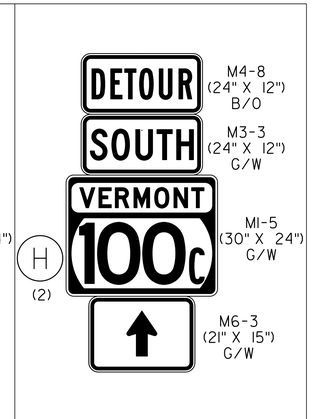


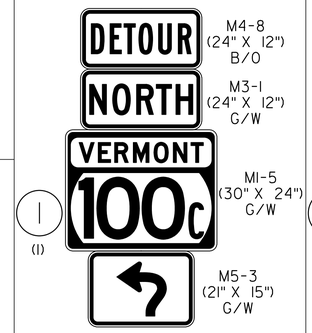


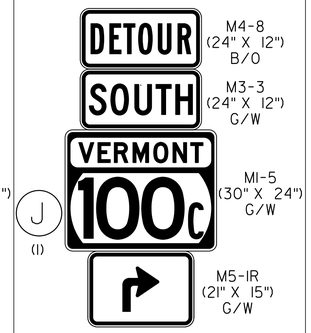


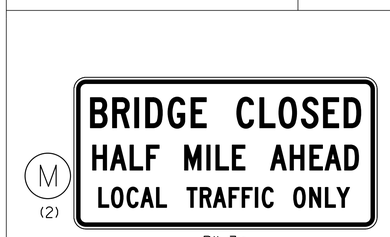


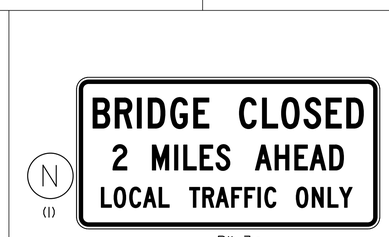


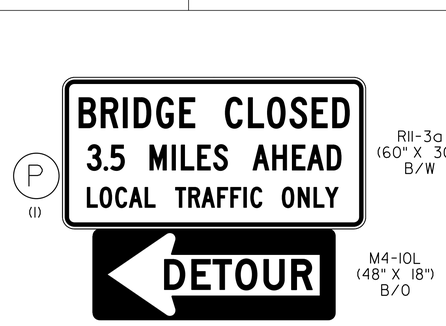


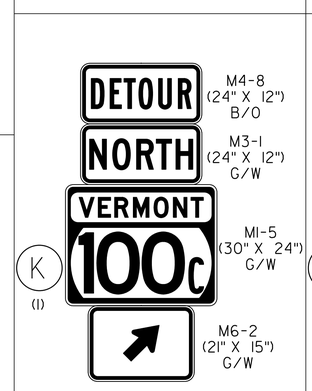


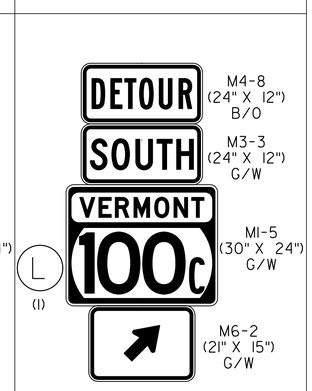












Q (3)	B	R	I	D	G	E		
	C	L	O	S	E	D		
	V	T		1	O	O	C	

PORTABLE CHANGEABLE MESSAGE SIGN - PHASE 1

	J	O	H	N	S	O	N	
*	M	M	M	M		D	D	-
*	M	M	M	M		D	D	

PORTABLE CHANGEABLE MESSAGE SIGN - PHASE 2

* M=MONTH
D=DAY

NOTES:

1. SIGN COLORS:
   B/W: BLACK LETTERING ON WHITE BACKGROUND
   G/W: GREEN LETTERING ON WHITE BACKGROUND
   B/O: BLACK LETTERING ON ORANGE BACKGROUND

2. THE ESTIMATED NUMBER OF EACH SIGN PACKAGE REQUIRED IS REPRESENTED BY THE NUMBER UNDERNEATH EACH LETTER DESIGNATOR.

3. SEE TRAFFIC CONTROL NOTES AND DETOUR MAP FOR SIGN LOCATIONS.

SIGN	ROAD TYPE	WIDTH	HEIGHT	LETTER SIZE
M-P	CONVENTIONAL	5'	2'-6"	6C 5C 4C

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: sl2c590detour.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: CHA
DETOUR DETAILS

PLOT DATE: 15-APR-2016
DRAWN BY: CHA
CHECKED BY: CHA
SHEET 16 OF 36

SOIL CLASSIFICATION

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

ROCK QUALITY DESIGNATION

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

SHEAR STRENGTH

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

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

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

COMMONLY USED SYMBOLS

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

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

DEFINITIONS (AASHTO)

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

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

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

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

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

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

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

VARVED - Alternate layers of silt and clay.

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

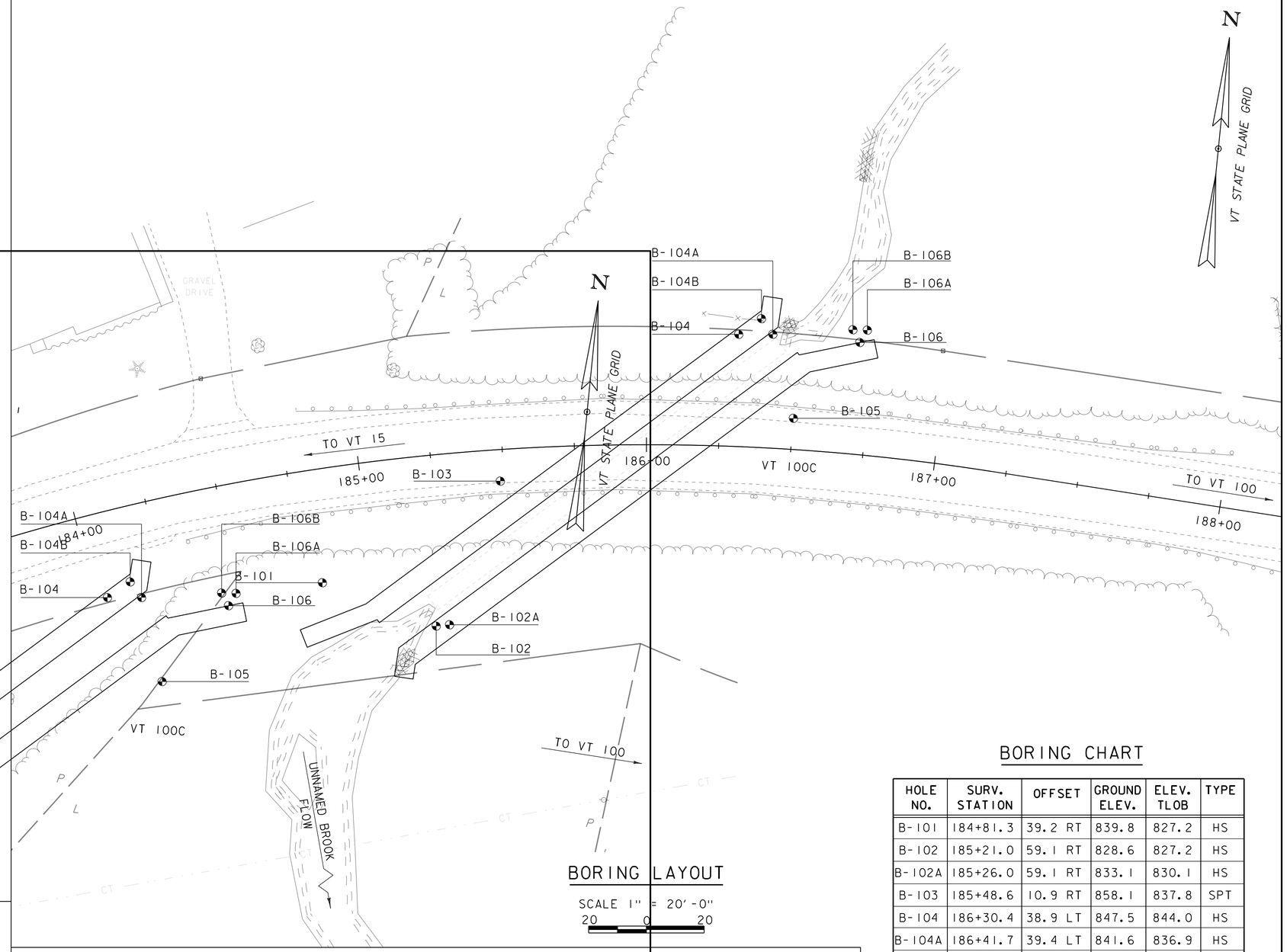
MUCK - Soft organic soil (containing > 10% organic material.

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

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

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

DIP - Inclination of bed with a horizontal plane.



BORING LAYOUT

SCALE 1" = 20'-0"

20 0 20

BORING LAYOUT

SCALE 1" = 20'-0"

20 0 20

BORING CHART

HOLE NO.	SURV. STATION	OFFSET	GROUND ELEV.	ELEV. TLOB	TYPE
B-101	184+81.3	39.2 RT	839.8	827.2	HS
B-102	185+21.0	59.1 RT	828.6	827.2	HS
B-102A	185+26.0	59.1 RT	833.1	830.1	HS
B-103	185+48.6	10.9 RT	858.1	837.8	SPT
B-104	186+30.4	38.9 LT	847.5	844.0	HS
B-104A	186+41.7	39.4 LT	841.6	836.9	HS
B-104B	186+37.7	44.6 LT	847.0	842.6	HS
B-105	186+50.0	10.8 LT	860.6	837.3	SPT
B-106	186+70.5	38.8 LT	844.5	845.3	HS
B-106A	186+72.6	43.3 LT	844.1	838.9	HS
B-106B	186+67.8	42.9 LT	843.9	837.2	HS

GENERAL NOTES

1. The subsurface explorations shown herein were made between 02-01-2016 and 02-29-2016 by the Agency.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
4. Engineering judgment was exercised in preparing the subsurface interpretation presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretations, independent analysis or judgment by the Contractor.
5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
7. Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

PROJECT NAME:	JOHNSON
PROJECT NUMBER:	BF 0248(7)
FILE NAME:	s12c590bdr_bor.dgn
PROJECT LEADER:	W. PELLETIER
DESIGNED BY:	J. SALVATORI
BORING INFORMATION SHEET	
PLOT DATE:	15-APR-2016
DRAWN BY:	J. SALVATORI
CHECKED BY:	------
SHEET	17 OF 36

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

BORING LOG

Johnson
BF 0248(7)
Bridge #4 VT 100C

Boring No.: **B-103**
Page No.: 1 of 1
Pin No.: 12c590
Checked By: END

Boring Crew: Hook, Judkins, Nieto
Date Started: 2/22/16 Date Finished: 2/29/16
VTSPG NAD83: N 788426.63 ft E 1609199.91 ft
Station: 185+45.6 Offset: 12.00
Ground Elevation: 858.1 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 45C TRACK	C_e = 1.34

Groundwater Observations

Date	Depth (ft)	Notes
02/23/16	5.8	W.T. after drilling
02/29/16	17.1	W.T. before drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.5 ft, Depth Unknown								
		A-1-a, SaGr, brn-blk, Moist, Rec. = 0.8 ft				44-R@3.5" (R)	10.8	56.9	38.0	5.1
		NXDC, Cleaned out casing, 4.1 ft - 5.0 ft								
5		A-2-4, Sa, brn, Moist, Rec. = 0.6 ft				5-3-3-3 (6)	15.8	16.2	72.0	11.8
		NXDC, Cleaned out casing, 9.0 ft - 10.0 ft								
10		A-1-b, GrSa, Lt/brn, Moist, Rec. = 0.6 ft				4-3-3-3 (6)	14.7	41.8	47.2	11.0
		NXDC, Cleaned out casing, 14.0 ft - 15.0 ft								
15		A-2-4, GrSiSa, Lt/brn-Lt/gry, Moist, Rec. = 1.2 ft				9-12-14-20 (26)	14.5	28.2	42.6	29.2
		NXDC, Cleaned out casing, 18.8 ft - 20.0 ft								
20		A-2-4, SiSa, gry, Moist, Rec. = 0.3 ft				R@3.5" (R)	14.1	19.8	49.5	30.7
		20.3 ft - 25.3 ft, Dark gray to black, Graphitic pyrite bearing PHYLLITE, with quartz laminae. Smooth joint surfaces with rust and orange staining.. Hard, Very slightly weathered, Fair rock, NX, RMR=49	1 (75-80)	93 (53)	7 6 6 9 9					
25		25.3 ft - 30.3 ft, Dark gray to black, Graphitic pyrite bearing PHYLLITE, with quartz laminae. Rare calcite along quartz laminae. Smooth clean joints.. Hard, Unweathered, Good rock, NX, RMR=65	2 (75-80)	88 (100)	11 10 9 9 10					
30		Hole stopped @ 30.3 ft								

Remarks:
Hole collapsed at 3.0 feet.
Top of Bedrock 20.3 feet.

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

BORING LOG 2 JOHNSON BF 0248(7).GPJ VERMONT AOT.GDT 3/14/16

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

BORING LOG

Johnson
BF 0248(7)
Bridge #4 VT 100C

Boring No.: **B-105**
Page No.: 1 of 1
Pin No.: 12c590
Checked By: END

Boring Crew: Garrow, Judkins, Hook
Date Started: 2/01/16 Date Finished: 2/02/16
VTSPG NAD83: N 788458.36 ft E 1609298.72 ft
Station: 186+50 Offset: -12.00
Ground Elevation: 860.6 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 45C SKID	C_e = Unknown

Groundwater Observations

Date	Depth (ft)	Notes
02/01/16	10.1	W.T. after drilling
02/02/16	19.5	W.T.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.55 ft								
		A-1-b, GrSa, brn, Moist, Rec. = 0.9 ft				48-R@5" (R)	8.9	41.2	42.1	16.7
		NXDC, Cleaned out casing, 2.5 ft - 3.0 ft								
		A-1-b, GrSa, brn, Moist, Rec. = 1.2 ft				17-13-12-11 (25)	12.6	40.1	45.3	14.6
5		A-1-b, GrSa, brn, Moist, Rec. = 1.1 ft				9-7-9-17 (16)	9.7	40.7	45.9	13.4
		NXDC, Cleaned out casing, 6.5 ft - 7.0 ft								
		A-1-b, GrSa, brn, Moist, Rec. = 1.1 ft				12-11-9-10 (20)	13.5	39.3	46.4	14.3
		NXDC, Cleaned out casing, 8.6 ft - 9.0 ft								
10		A-2-4, GrSa, brn-Lt/brn, Moist, Rec. = 1.1 ft				10-7-4-6 (11)	18.3	22.7	59.9	17.4
		NXDC, Cleaned out casing, 10.5 ft - 11.0 ft								
		A-1-b, GrSa, gry-brn, Moist, Rec. = 0.8 ft				3-4-10-8 (14)	16.2	38.9	45.8	15.3
		NXDC, Cleaned out casing, 12.5 ft - 13.0 ft								
15		A-1-a, SaGr, brn-gry, Moist, Rec. = 0.6 ft				2-4-5-27 (9)	11.4	53.3	36.6	10.1
		NXDC, Cleaned out casing, 14.4 ft - 15.0 ft								
		A-1-b, GrSa, brn, Moist, Rec. = 1.0 ft				15-10-4-5 (14)	16.1	34.8	49.6	15.6
		A-1-a, SaGr, Dk/brn, Moist, Rec. = 0.4 ft				3-2-4-6 (6)	15.8	50.5	36.3	13.2
20		A-1-a, SaGr, Dk/gry, Moist, Rec. = 0.3 ft				6-7-2-2 (9)	17.5	64.3	26.5	9.2
		A-1-b, SaGr, gry, Moist, Rec. = 1.2 ft				5-30-30-R@1" (60)	15.4	43.7	39.5	16.8
		Cleaned out casing, 22.5 ft - 23.0 ft								
		A-1-b, SaGr, gry, Moist, Rec. = 0.2 ft	1 (70-80)	100 (28)	3 4 4 6 5	R@3.5" (R)	12.0	53.6	29.2	17.2
25		23.3 ft - 28.3 ft, Dark gray to black, Vuggy, graphitic pyrite bearing PHYLLITE, with quartz laminae. Rust staining along joint surfaces.. Hard, Slightly weathered, Fair rock, NX, RMR=44								
30		28.3 ft - 33.3 ft, Dark gray to black, Graphitic pyrite bearing PHYLLITE, with quartz laminae. Solution cavity forming in calcitenodule at 29.7-29.8 feet. Scarce CaCO3 powder along joint surfaces and minor rust staining.. Hard, Slightly weathered, Fair rock, NX, RMR=49	2 (70-80)	100 (50)	11 4 5 4 4					
35		Hole stopped @ 33.3 ft								

Remarks:
Hole Collapsed at 12.4 feet.
Top of Bedrock 23.3 feet.

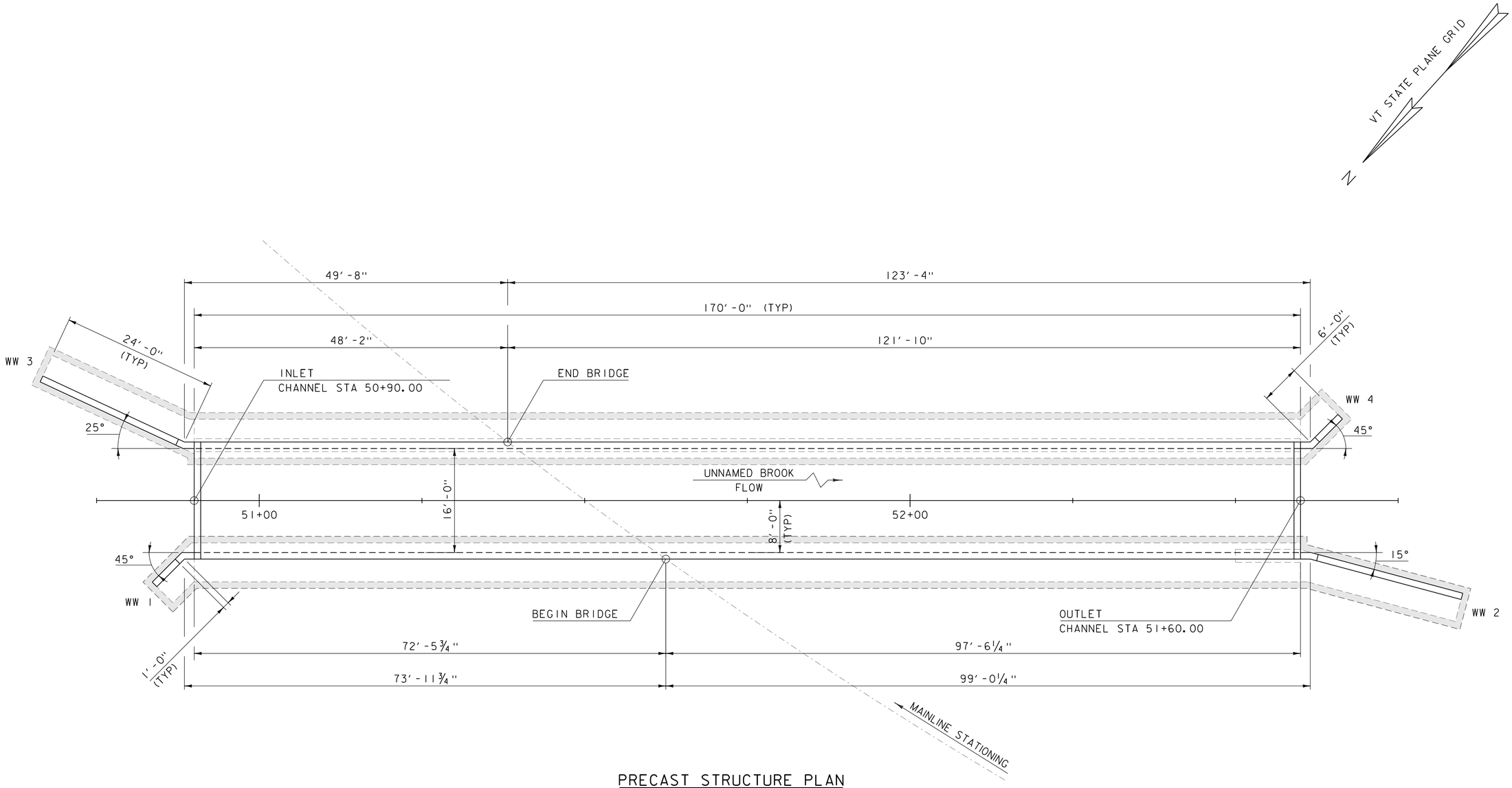
Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may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

BORING LOG 2 JOHNSON BF 0248(7).GPJ VERMONT AOT.GDT 3/14/16

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: sl2c590bdr_borlog.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
BORING LOGS

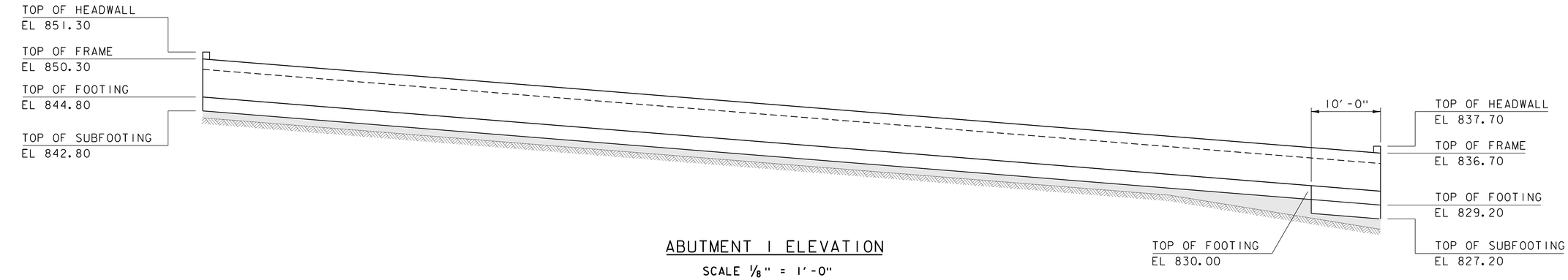
PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: ------



PRECAST STRUCTURE PLAN

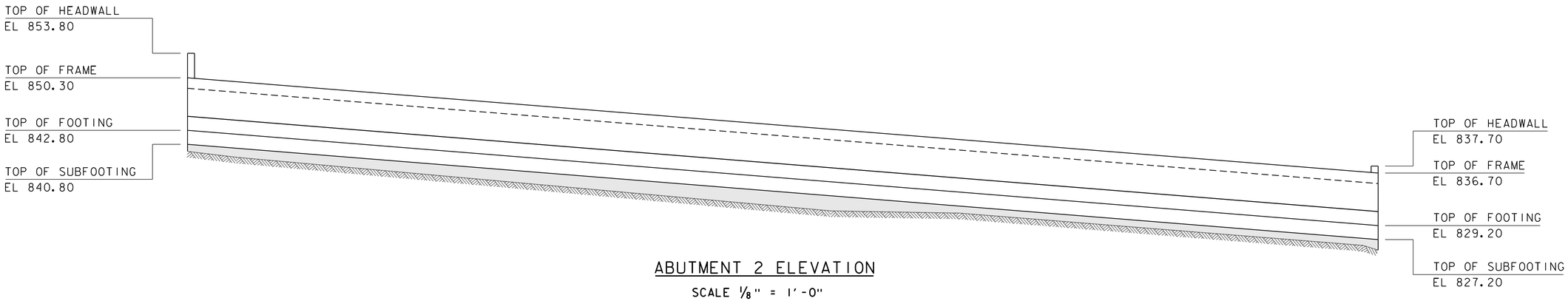
SCALE 1/8" = 1'-0"

PROJECT NAME:	JOHNSON
PROJECT NUMBER:	BF 0248(7)
FILE NAME: sl2c590sub.dgn	PLOT DATE: 15-APR-2016
PROJECT LEADER: W. PELLETIER	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: ------
PRECAST STRUCTURE PLAN	SHEET 19 OF 36



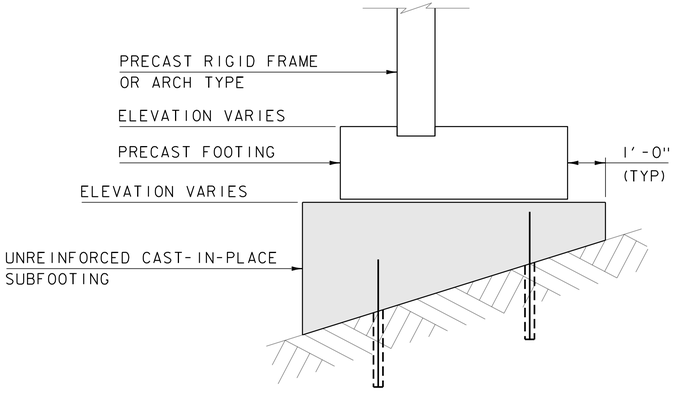
ABUTMENT 1 ELEVATION

SCALE 1/8" = 1'-0"



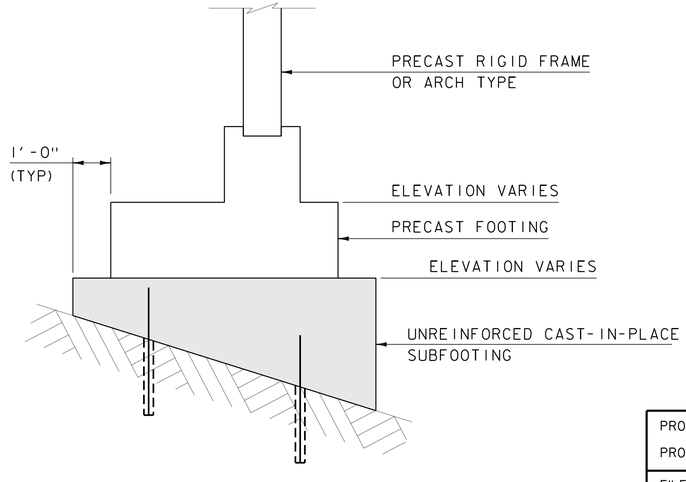
ABUTMENT 2 ELEVATION

SCALE 1/8" = 1'-0"



ABUTMENT 1 TYPICAL

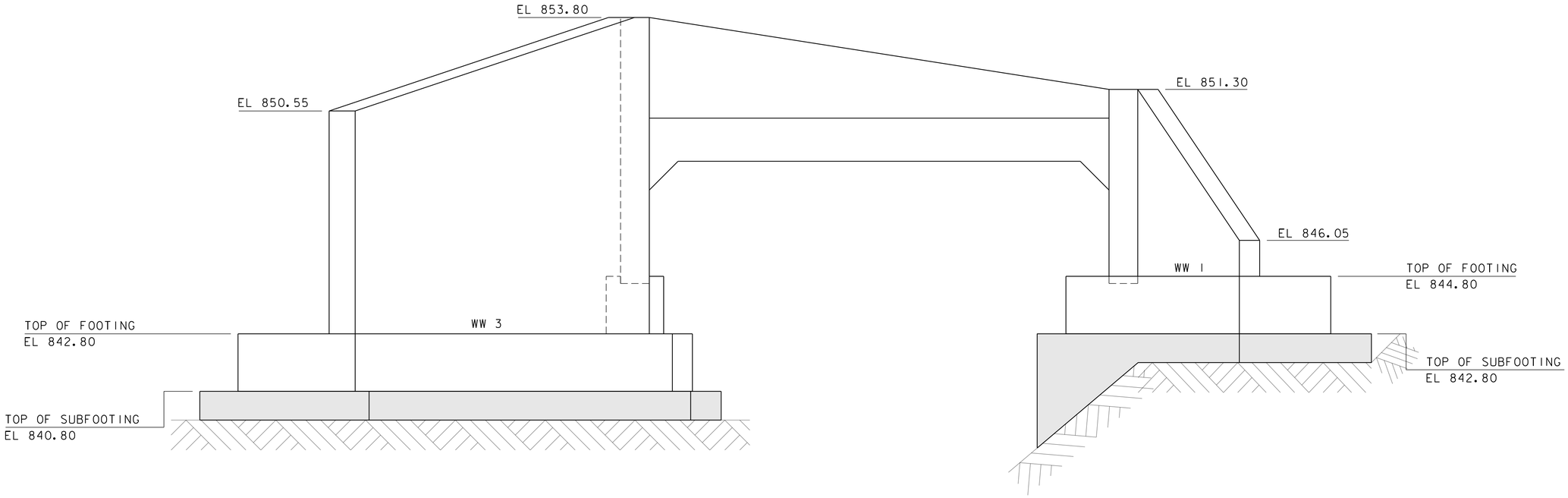
SCALE 1/2" = 1'-0"



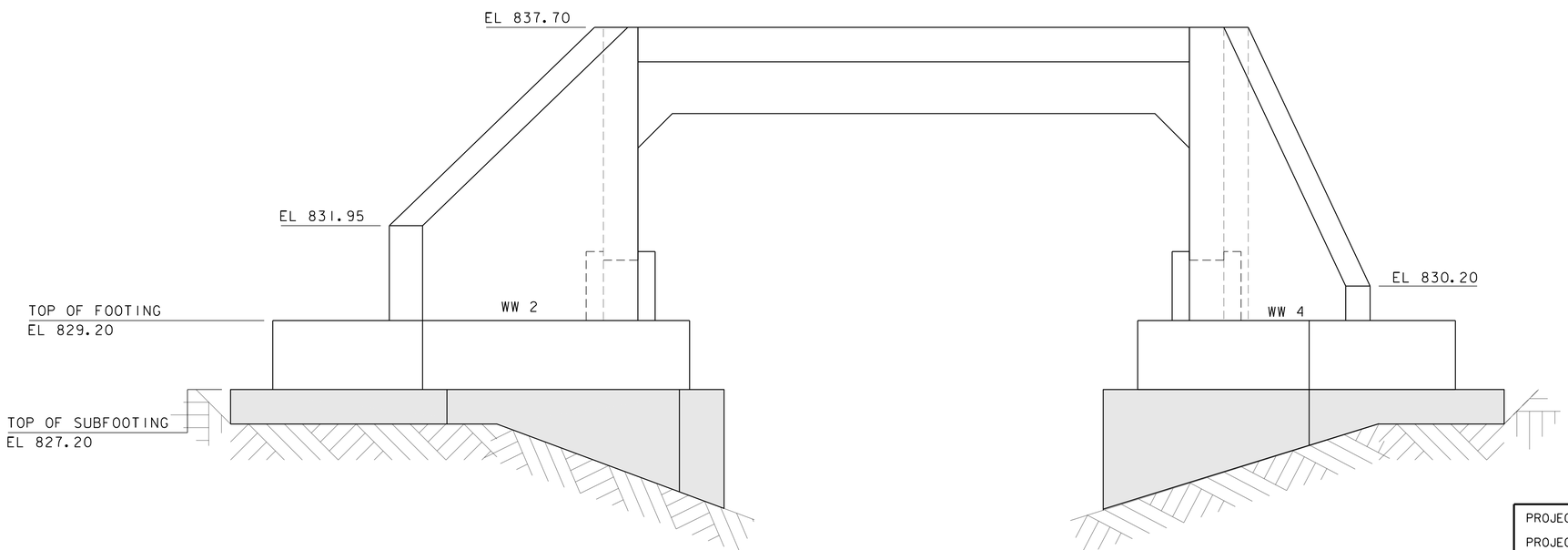
ABUTMENT 2 TYPICAL

SCALE 1/2" = 1'-0"

PROJECT NAME:	JOHNSON
PROJECT NUMBER:	BF 0248(7)
FILE NAME: s12c590sub.dgn	PLOT DATE: 15-APR-2016
PROJECT LEADER: W. PELLETIER	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: ------
ABUTMENT ELEVATION	SHEET 20 OF 36



INLET ELEVATION
SCALE 1/4" = 1'-0"

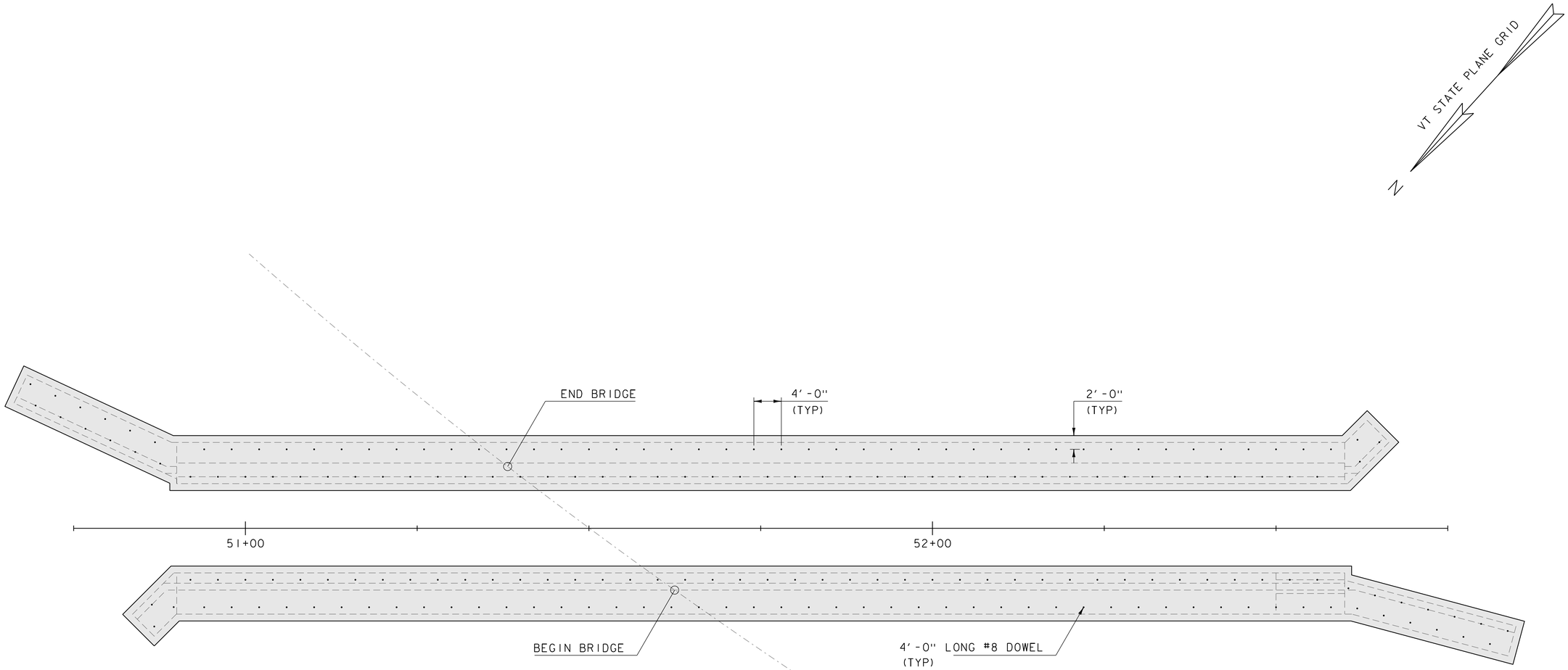


OUTLET ELEVATION
SCALE 1/4" = 1'-0"

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

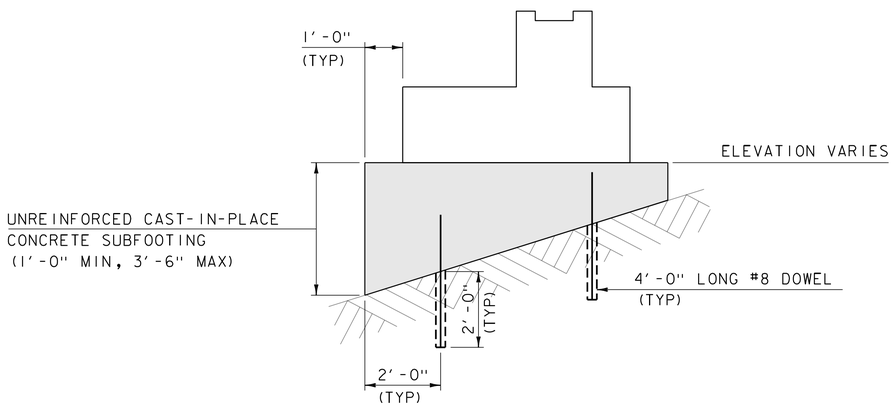
FILE NAME: sl2c590sub.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
INVERT ELEVATIONS

PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: ------
SHEET 21 OF 36



SUBFOOTING PLAN

SCALE 1/8" = 1'-0"

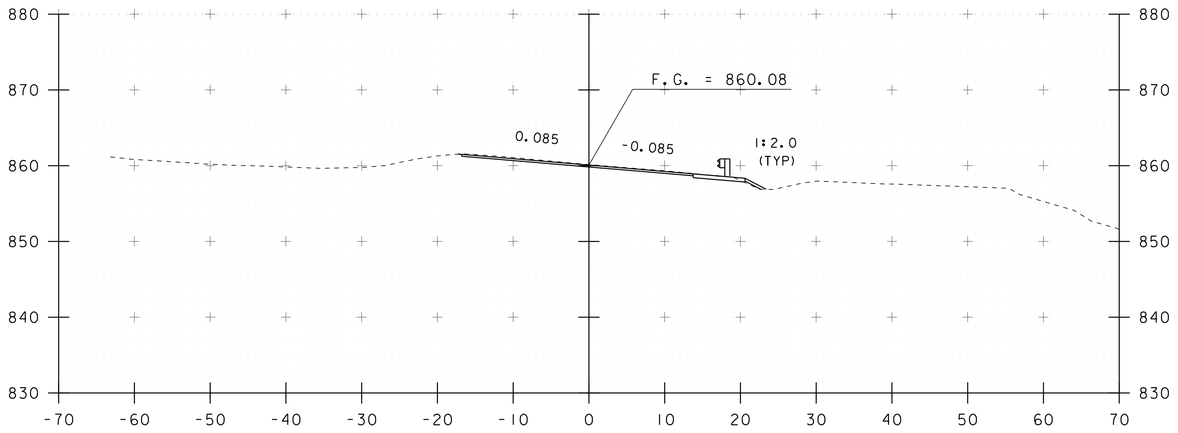


SUBFOOTING TYPICAL

SCALE 1/4" = 1'-0"

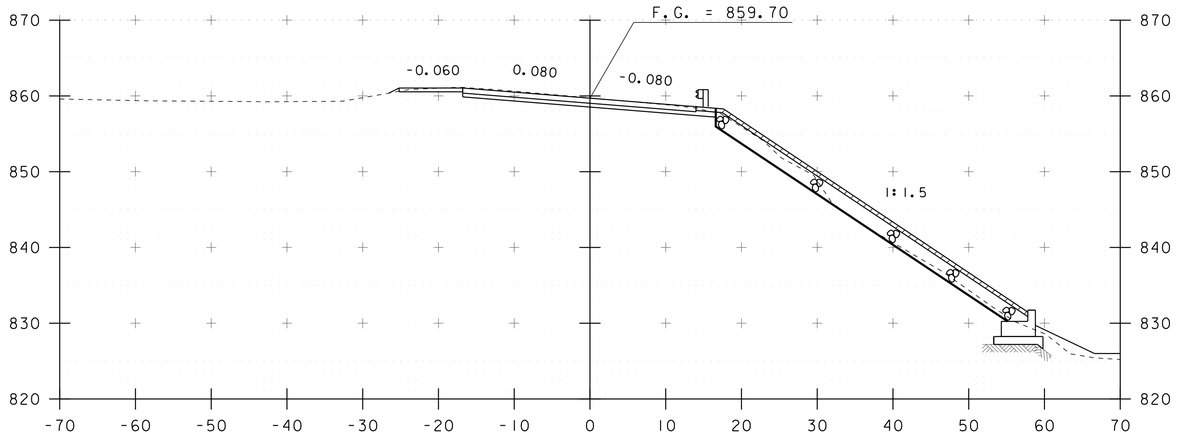
PROJECT NAME:	JOHNSON
PROJECT NUMBER:	BF 0248(7)

FILE NAME: sl2c590sub.dgn	PLOT DATE: 15-APR-2016
PROJECT LEADER: W. PELLETIER	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: ------
SUBFOOTING PLAN	SHEET 22 OF 36

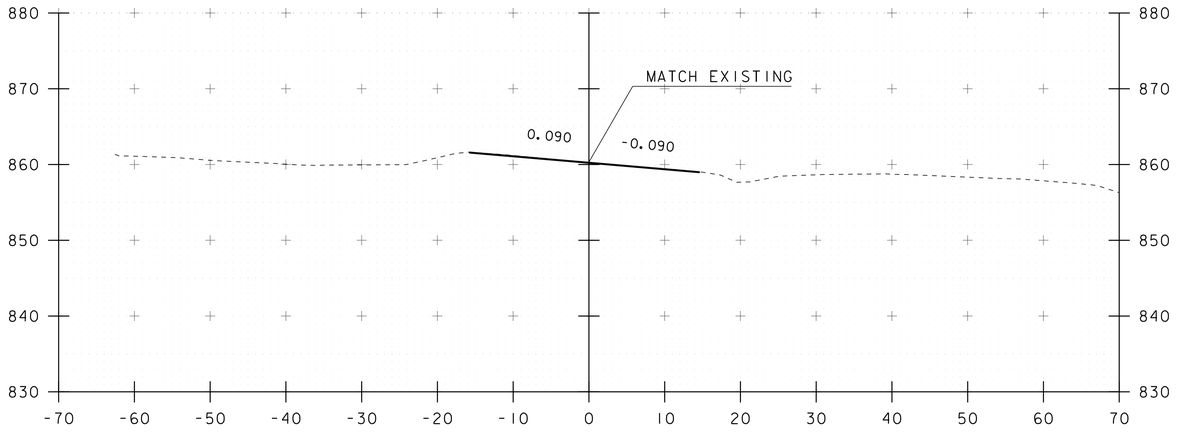


184+25

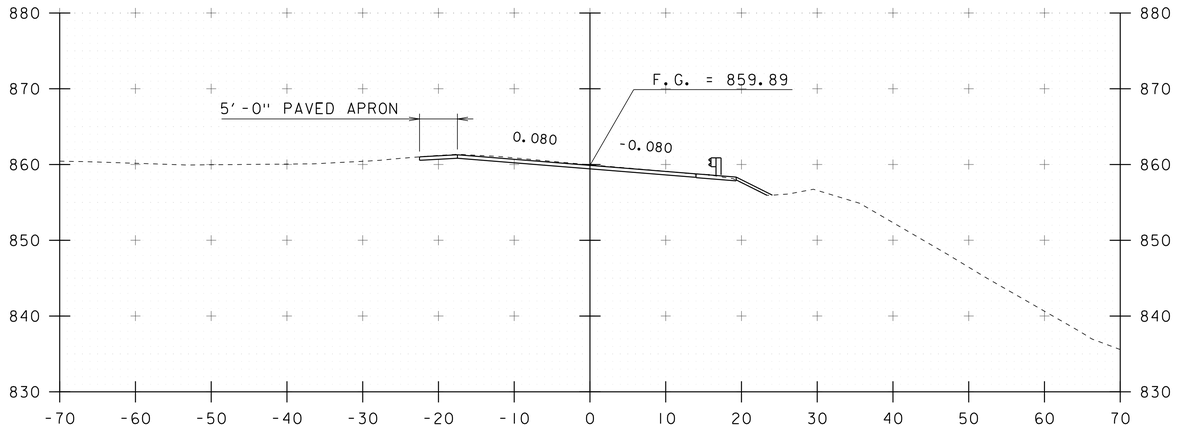
STA 184+60.00 RT
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE FILL, TYPE II
BEGIN GRUBBING MATERIAL



184+75



184+00
BEGIN APPROACH



184+50

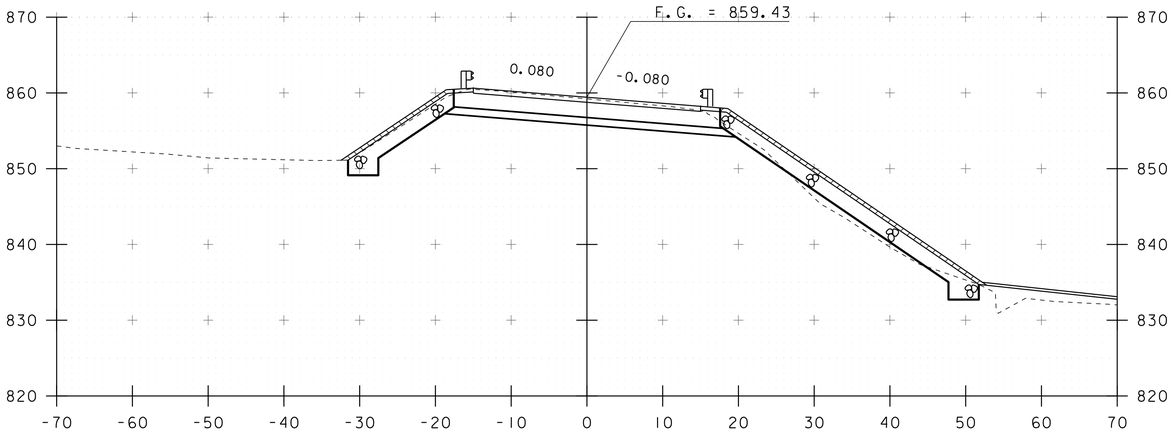
STA. 184+00 TO STA. 184+75

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

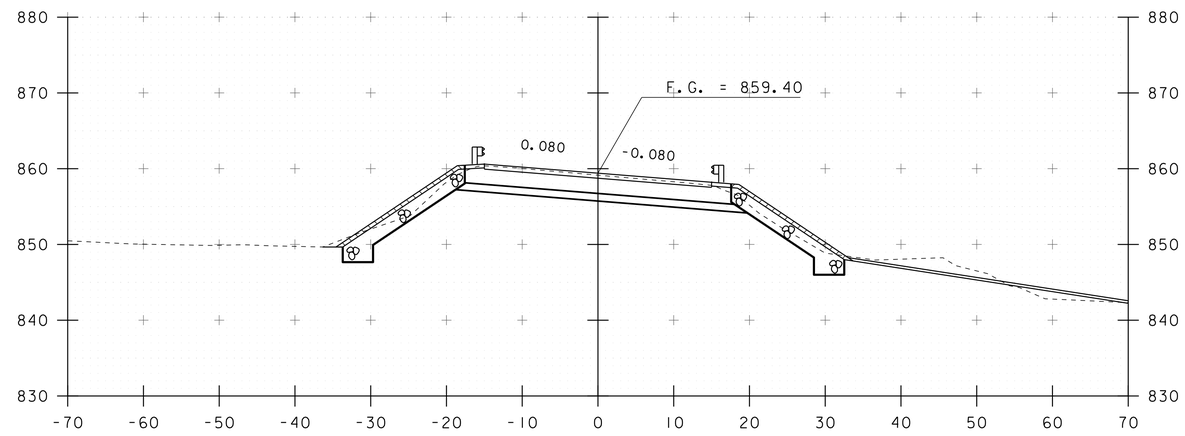
FILE NAME: sl2c590xs.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
MAINLINE SECTIONS

PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: ------
SHEET 23 OF 36

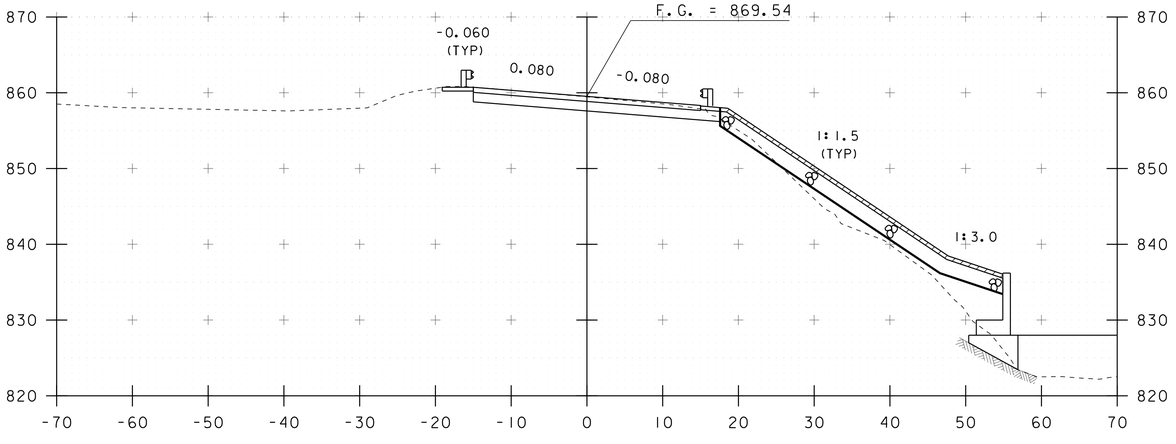
STA 185+25.00
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE FILL, TYPE II
BEGIN GRUBBING MATERIAL



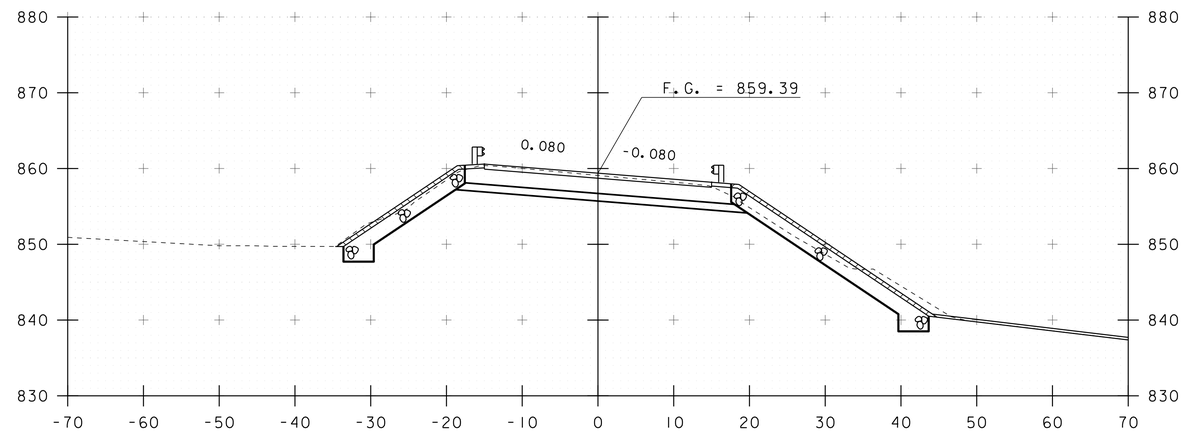
185+25
BEGIN PROJECT



185+75



185+00



185+50

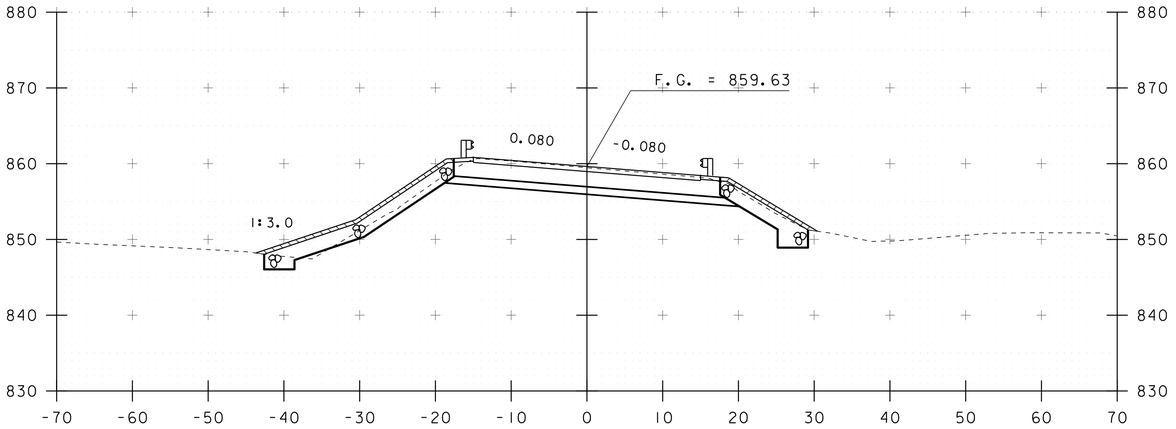
STA. 185+00 TO STA. 185+75

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

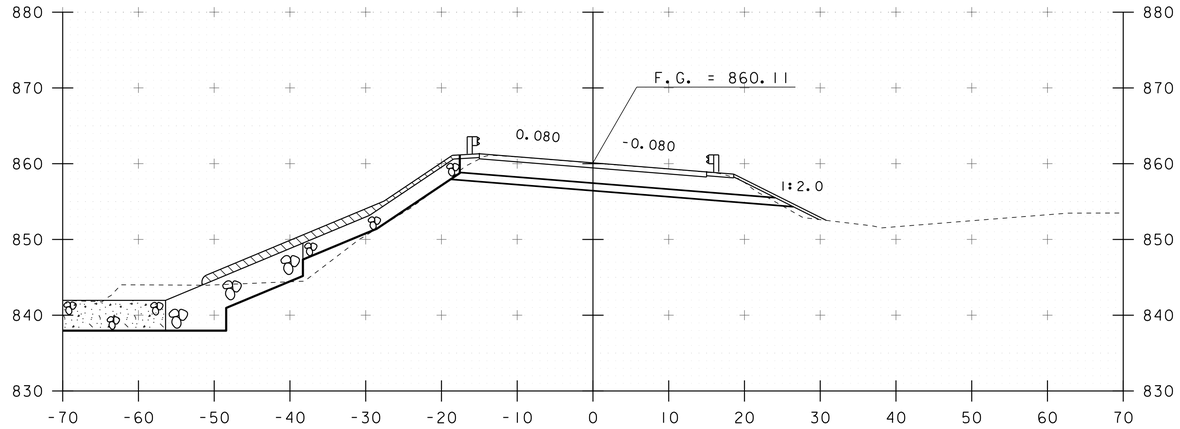
FILE NAME: sl2c590xs.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
MAINLINE SECTIONS

PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: ------
SHEET 24 OF 36

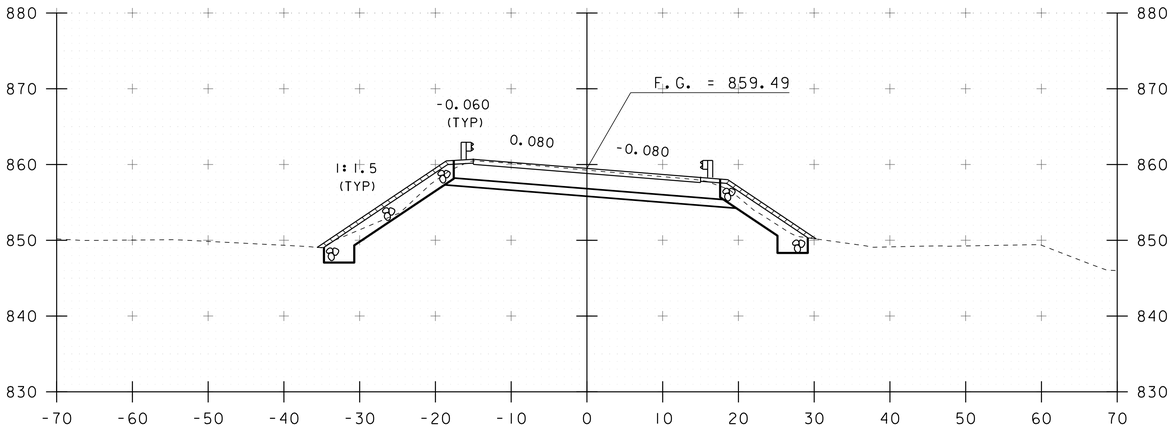
STA 186+25.00 RT
END GEOTEXTILE UNDER STONE FILL
END STONE FILL, TYPE II
END GRUBBING MATERIAL



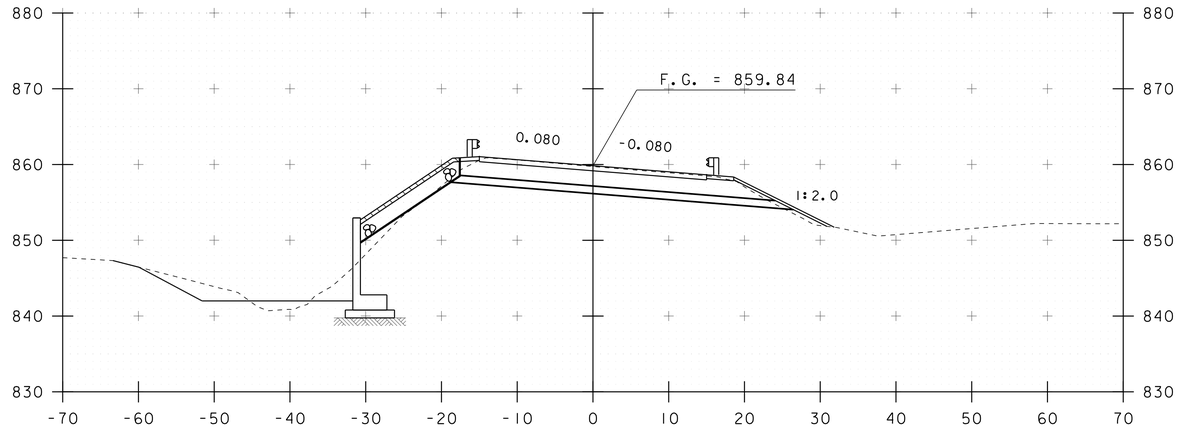
186+25



186+75



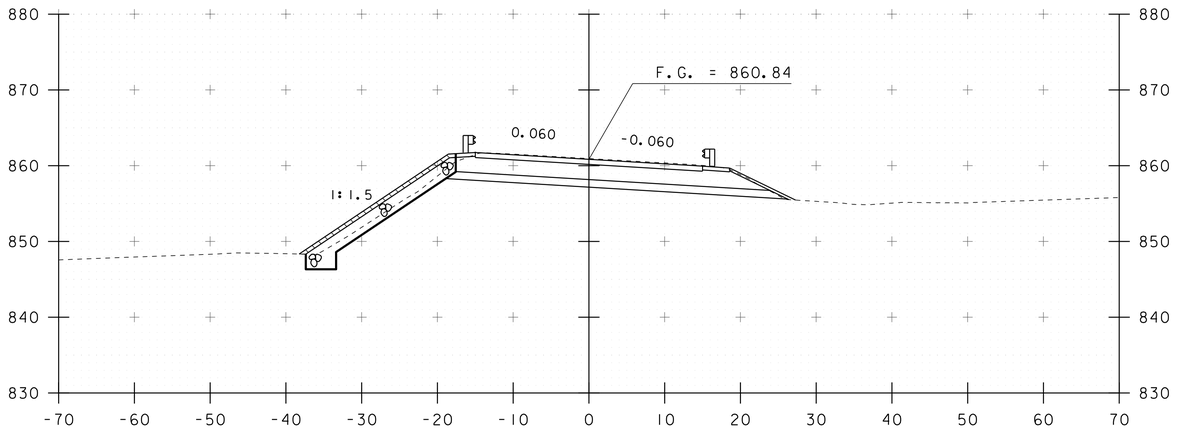
186+00



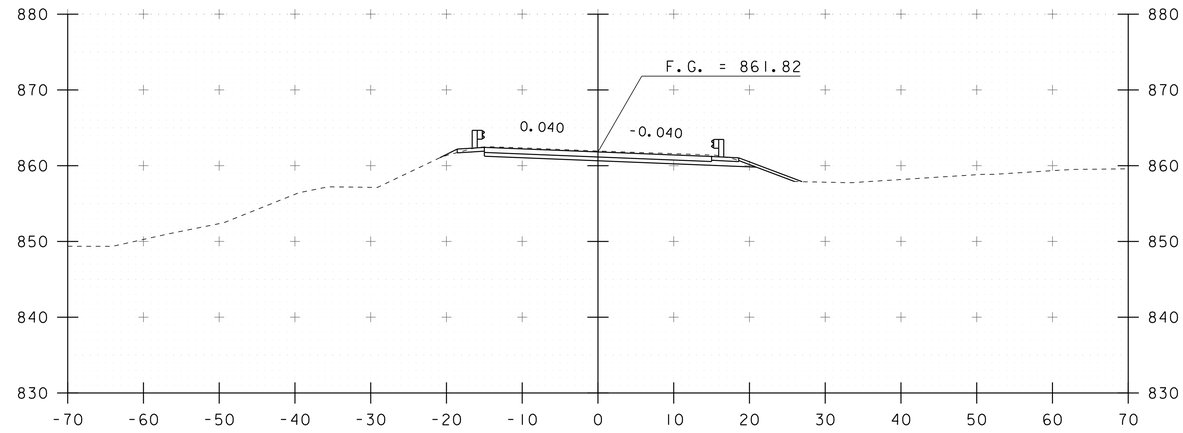
186+50

STA. 186+00 TO STA. 186+75

PROJECT NAME:	JOHNSON
PROJECT NUMBER:	BF 0248(7)
FILE NAME: sl2c590xs.dgn	PLOT DATE: 15-APR-2016
PROJECT LEADER: W. PELLETIER	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: ------
MAINLINE SECTIONS	SHEET 25 OF 36

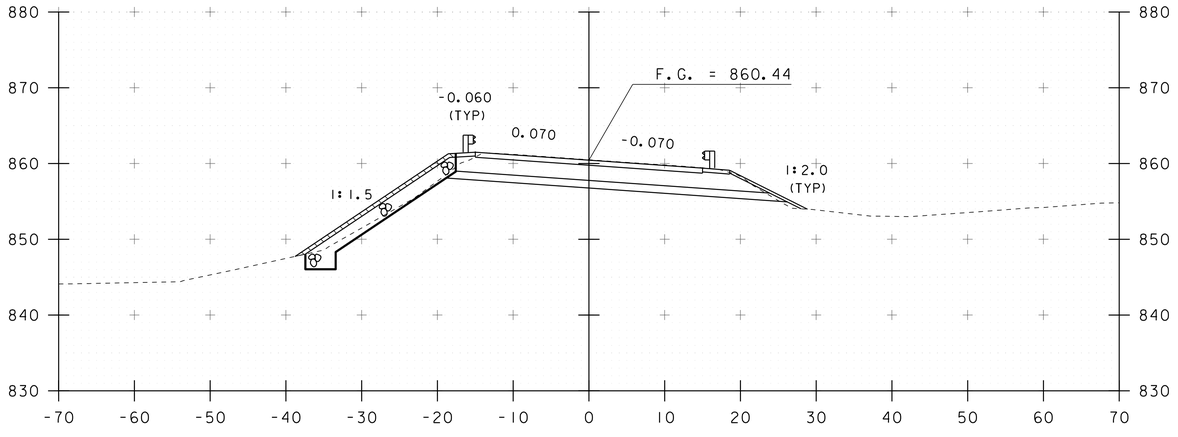


187+25
END PROJECT

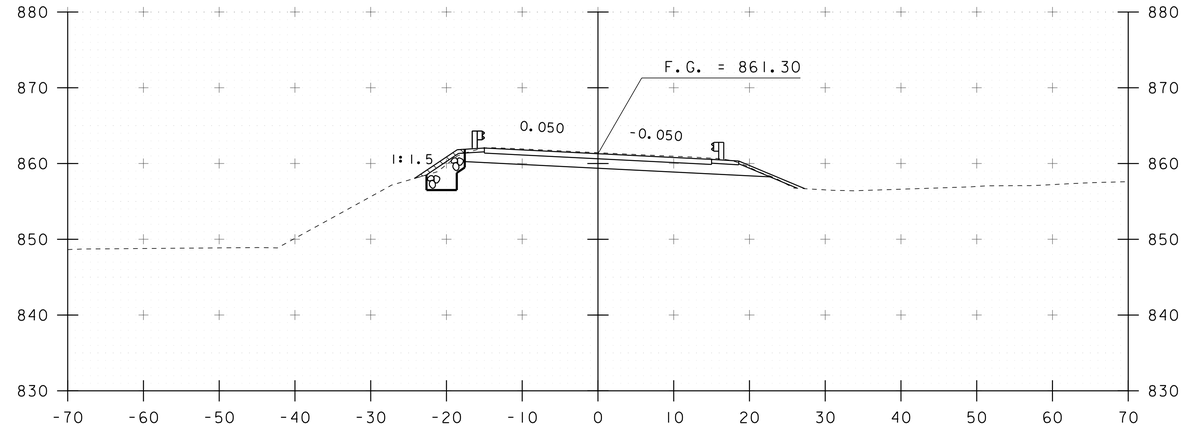


187+75

STA 187+50.00 LT
END GEOTEXTILE UNDER STONE FILL
END STONE FILL, TYPE II
END GRUBBING MATERIAL



187+00



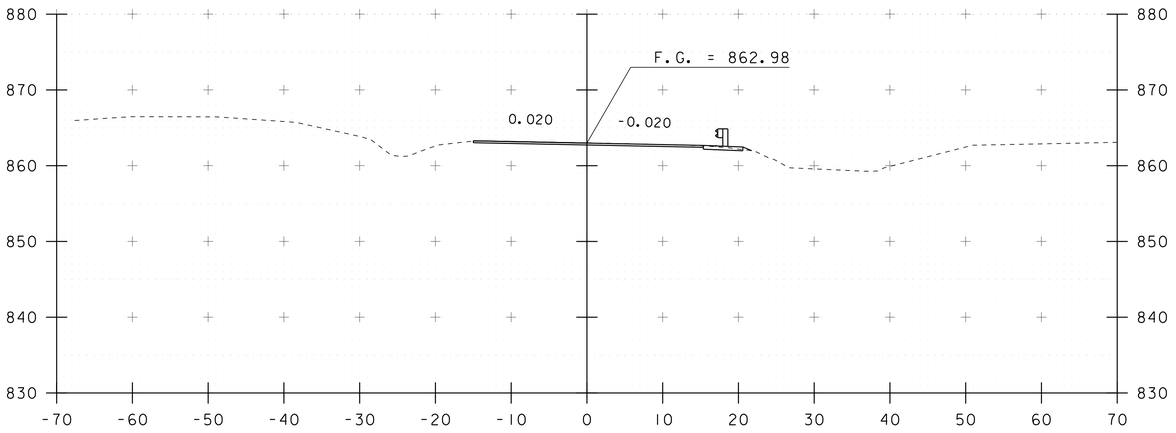
187+50

STA. 187+00 TO STA. 187+75

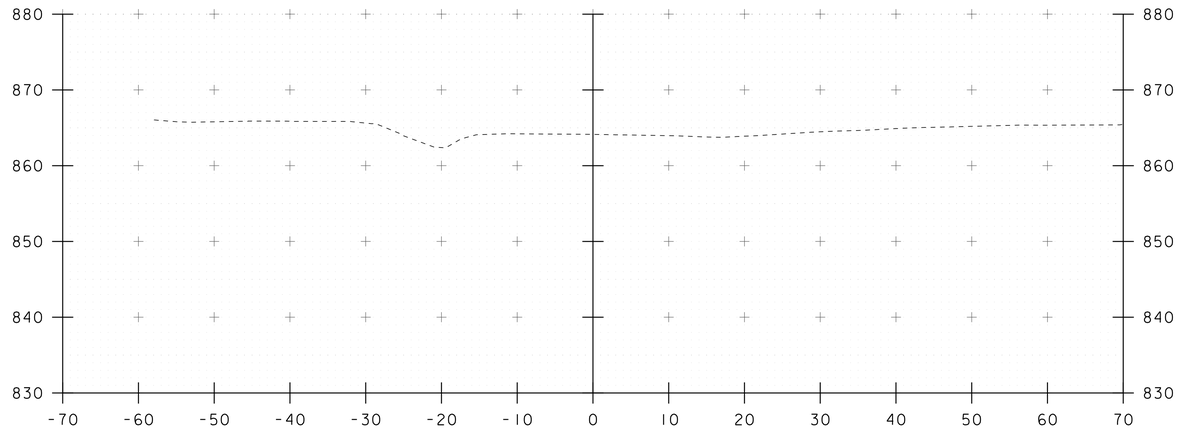
PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: sl2c590xs.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
MAINLINE SECTIONS

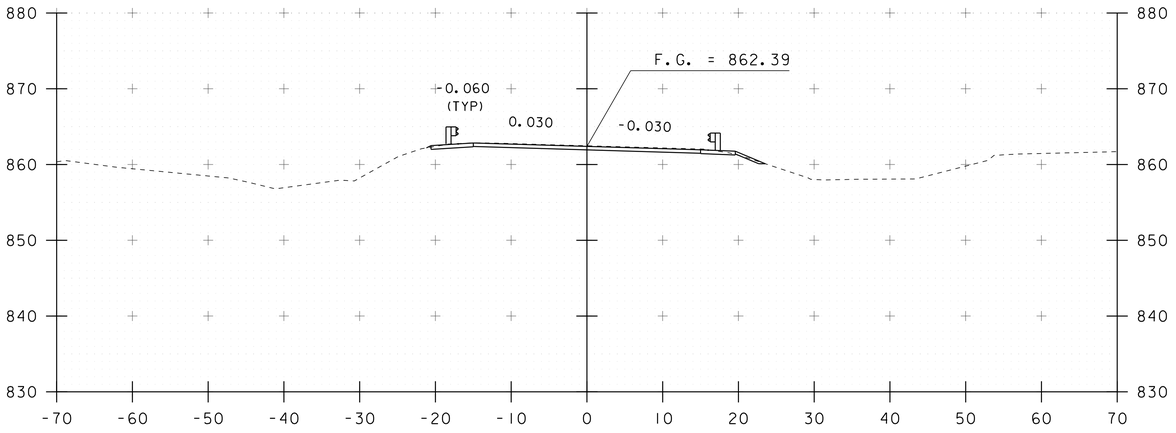
PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: ------
SHEET 26 OF 36



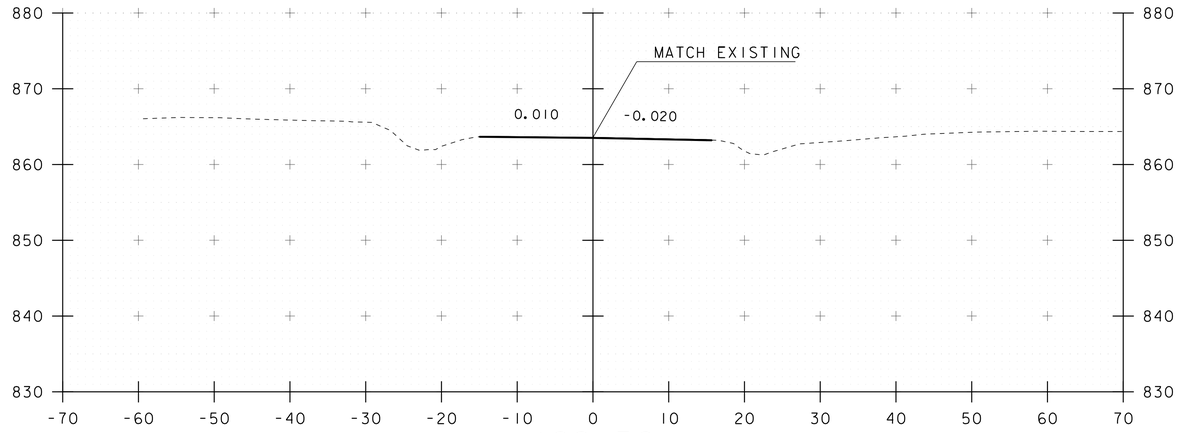
188+25



188+75



188+00



188+50

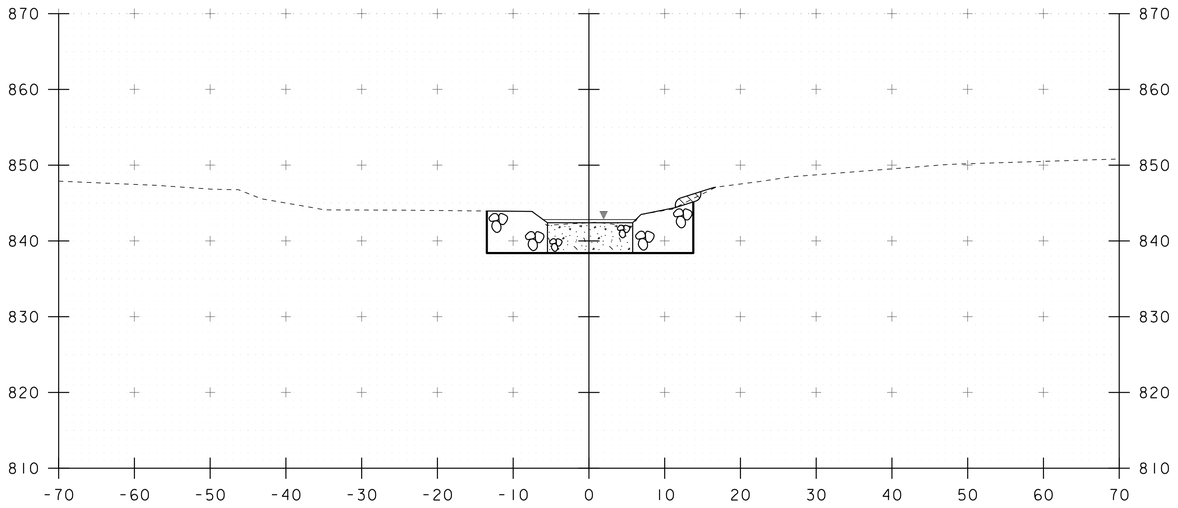
END APPROACH

STA. 188+00 TO STA. 188+75

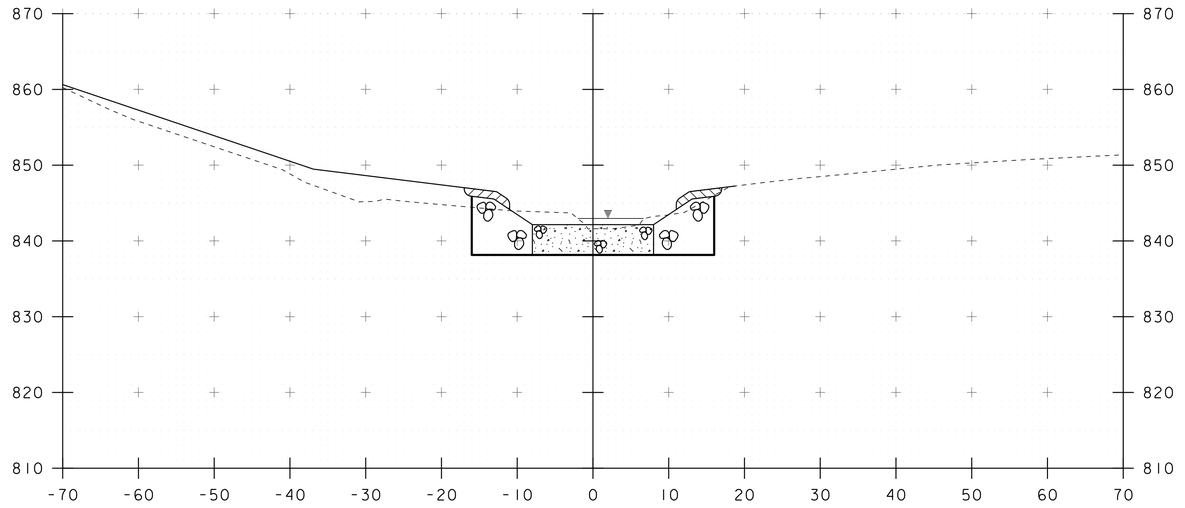
PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: sl2c590xs.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
MAINLINE SECTIONS

PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: ------
SHEET 27 OF 36

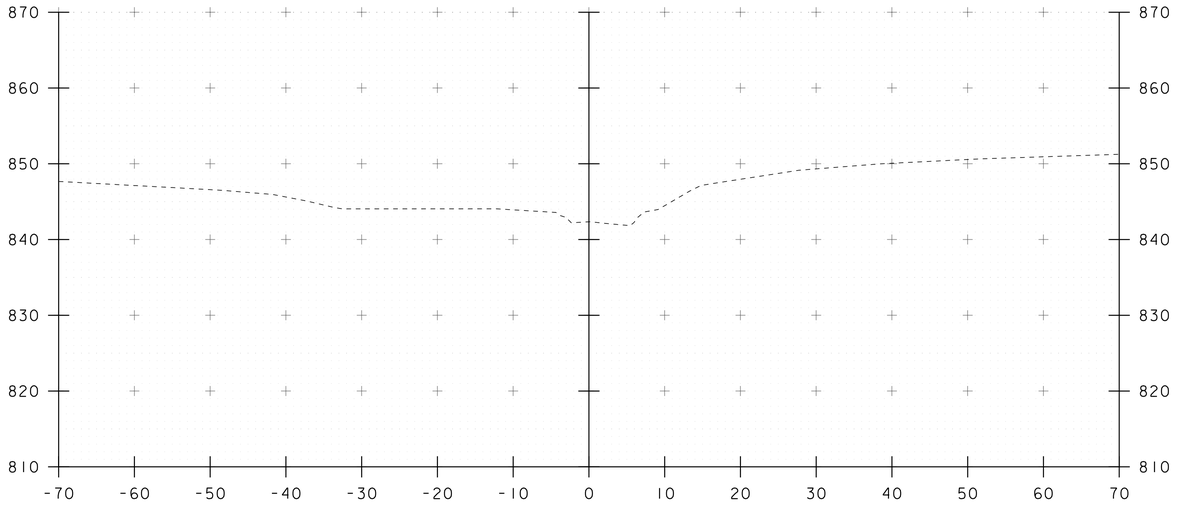


50+40

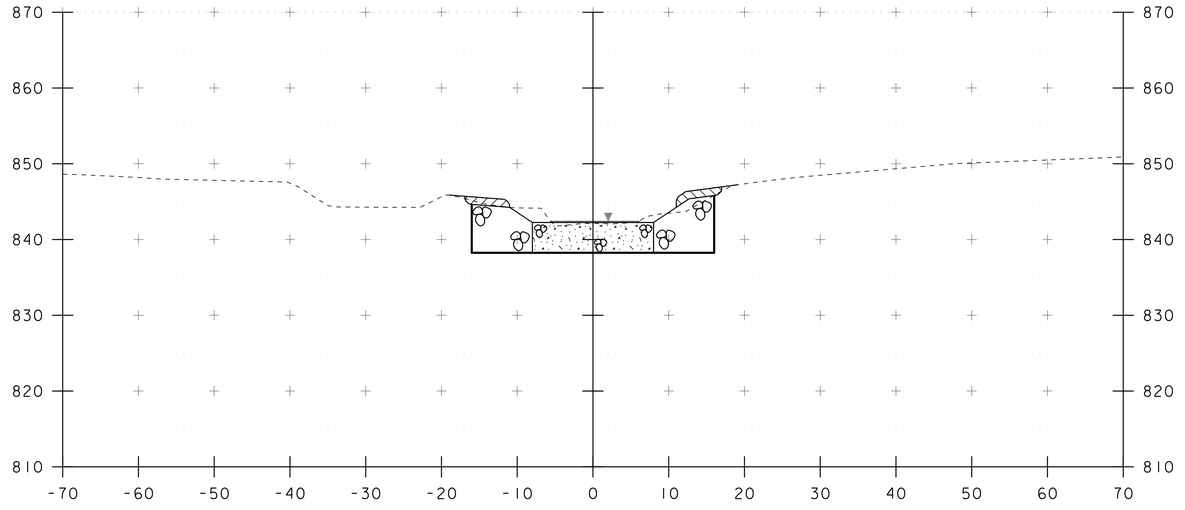


50+60

STA 50+40.00
BEGIN CHANNEL EXCAVATION
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE FILL, TYPE IV
BEGIN SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL) (TYPE IV)
BEGIN GRUBBING MATERIAL



50+30



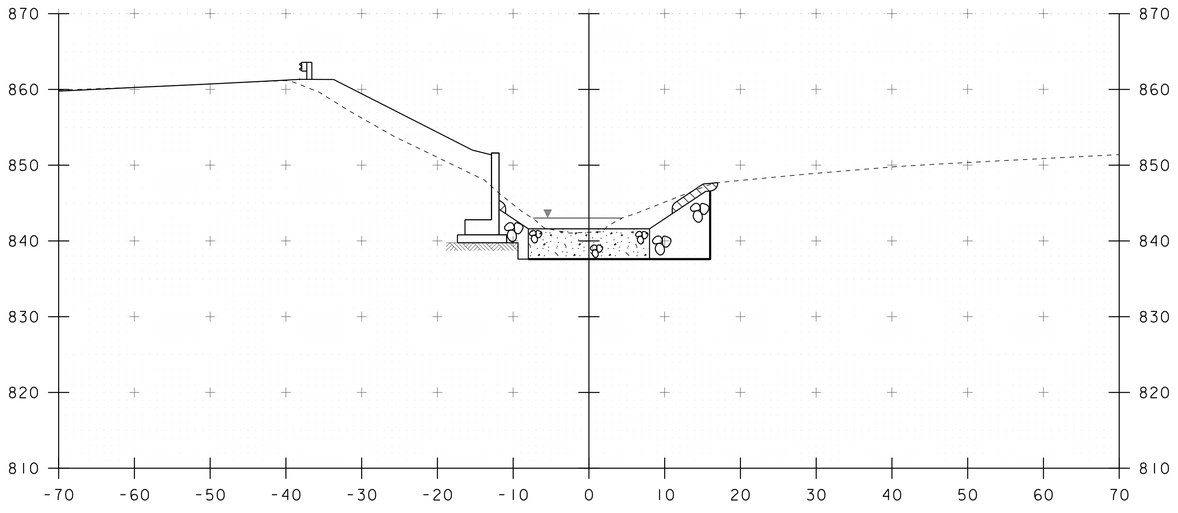
50+50

STA. 50+30 TO STA. 50+60

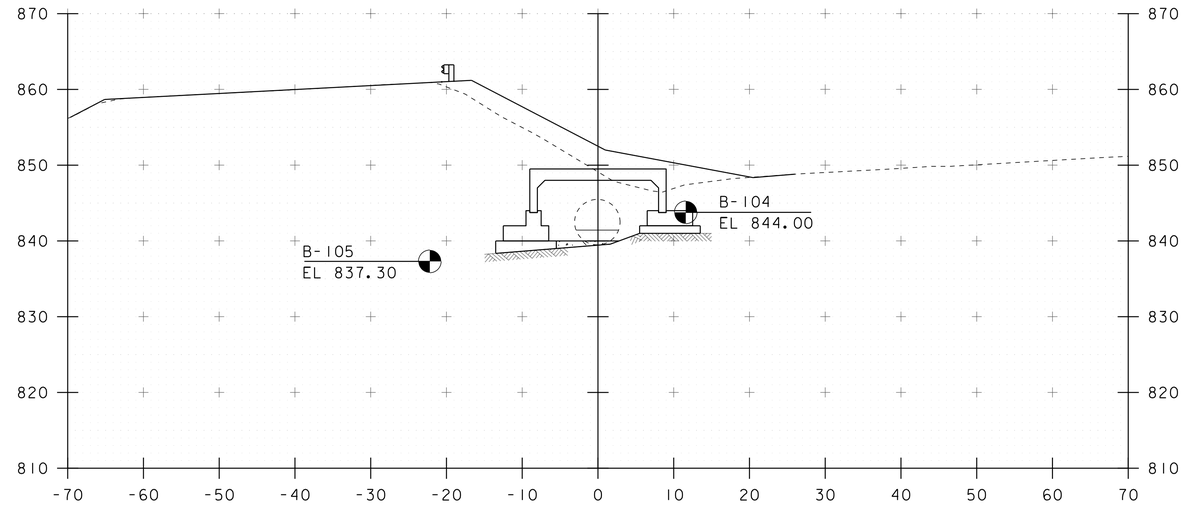
PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: sl2c590xs.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
CHANNEL SECTIONS

PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: ------
SHEET 28 OF 36

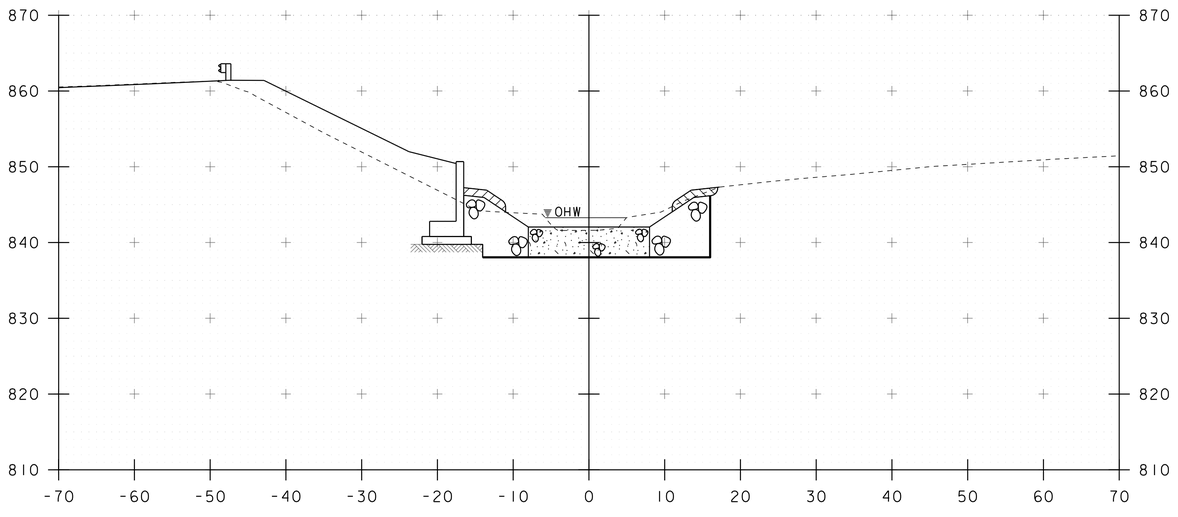


50+80

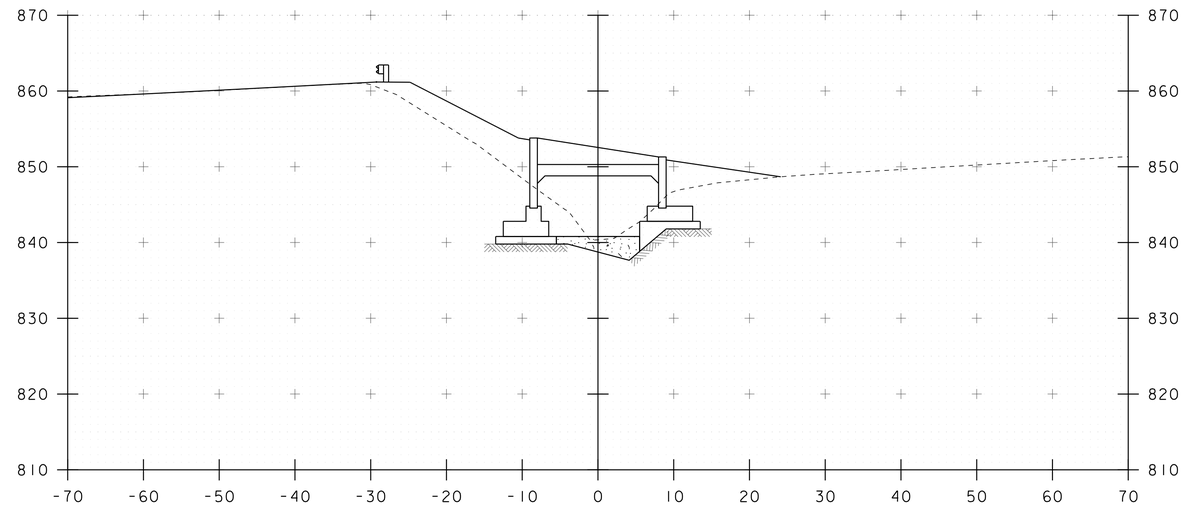


51+00

STA 50+90.00
END CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END STONE FILL, TYPE IV
END GRUBBING MATERIAL



50+70



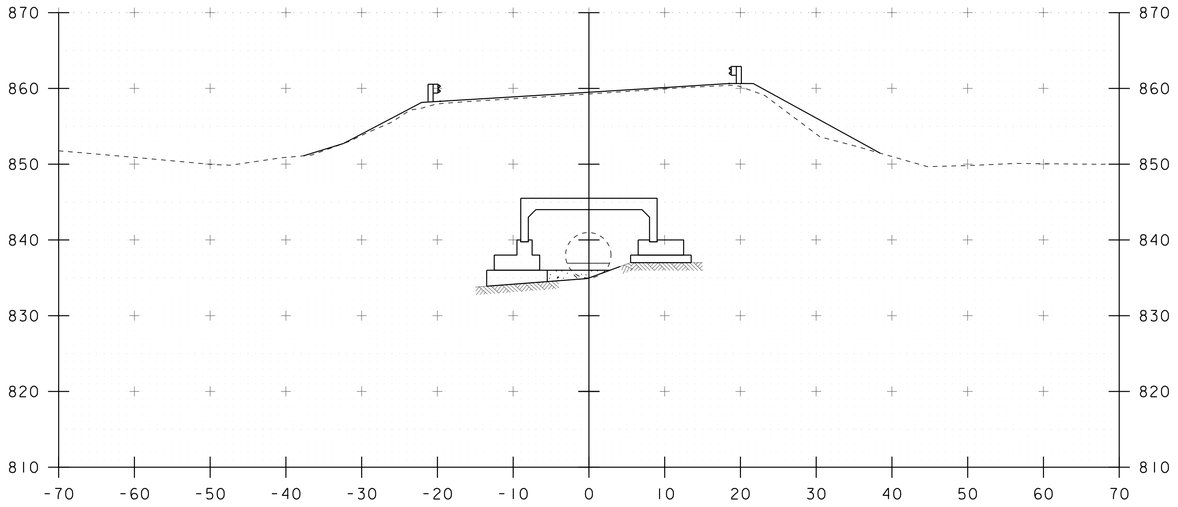
50+90

STA. 50+70 TO STA. 51+00

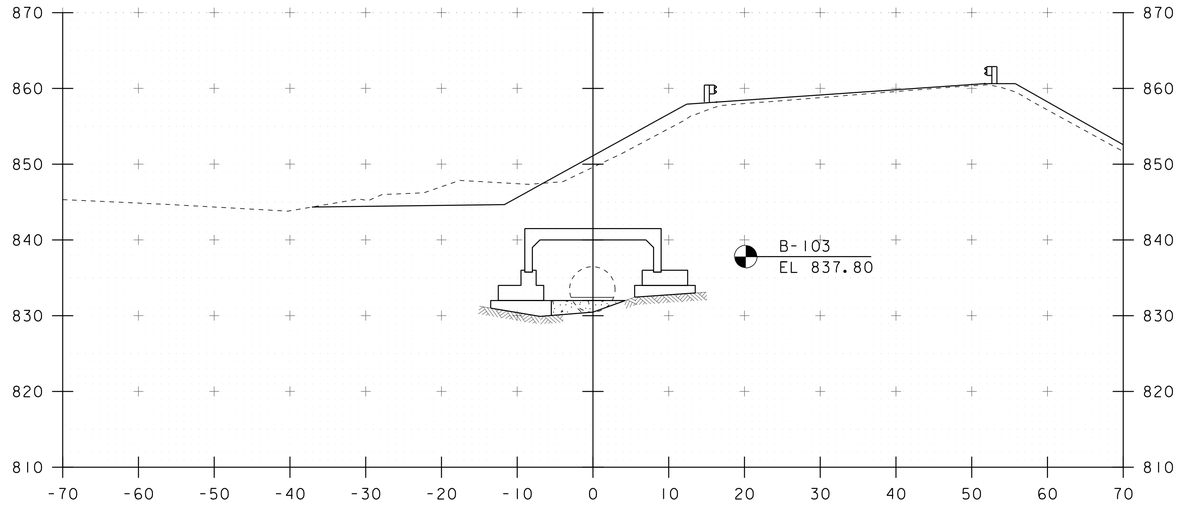
PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: sl2c590xs.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
CHANNEL SECTIONS

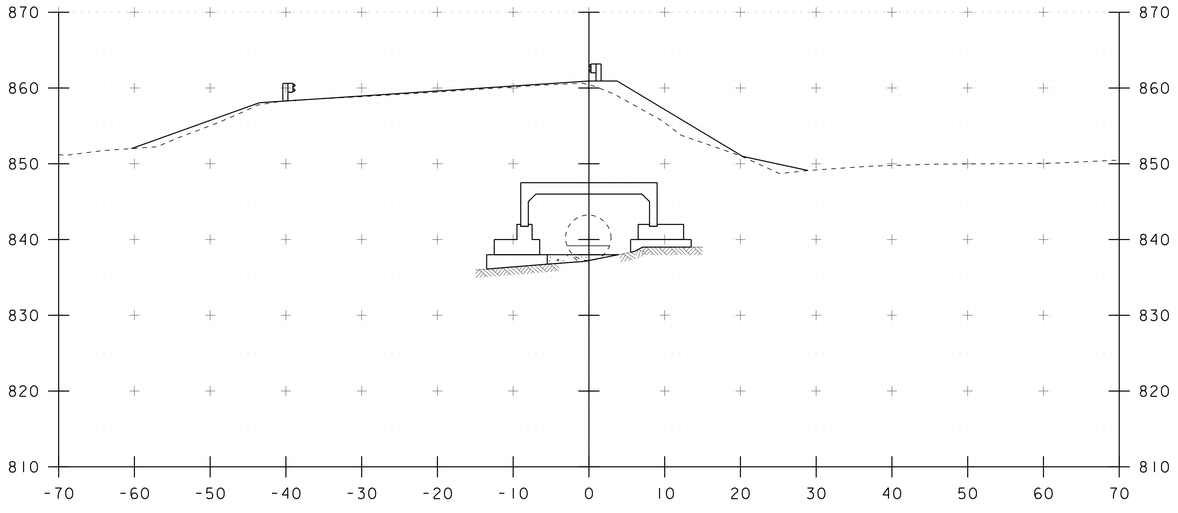
PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: ------
SHEET 29 OF 36



51+50



52+00



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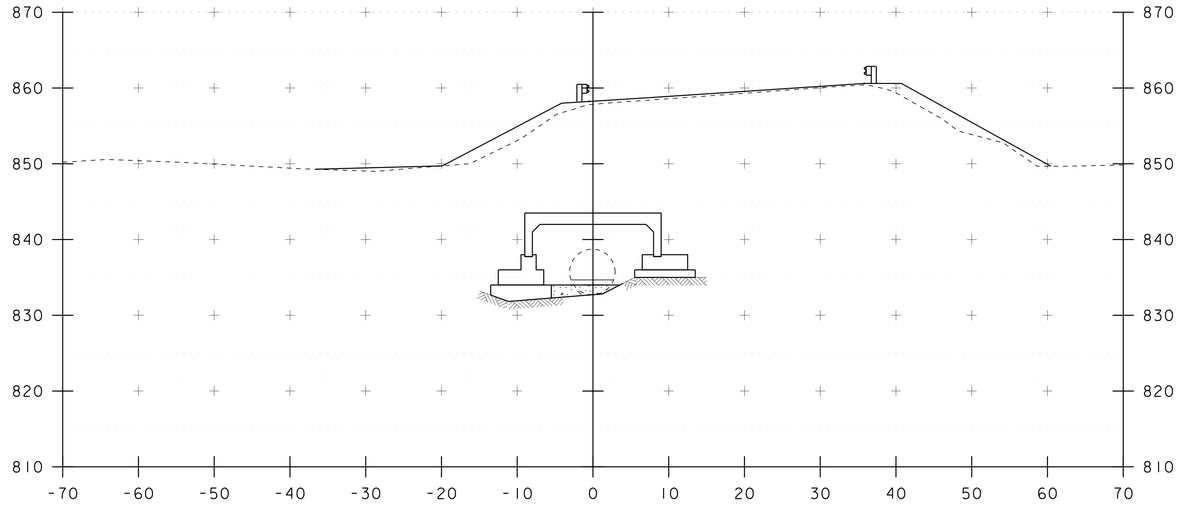


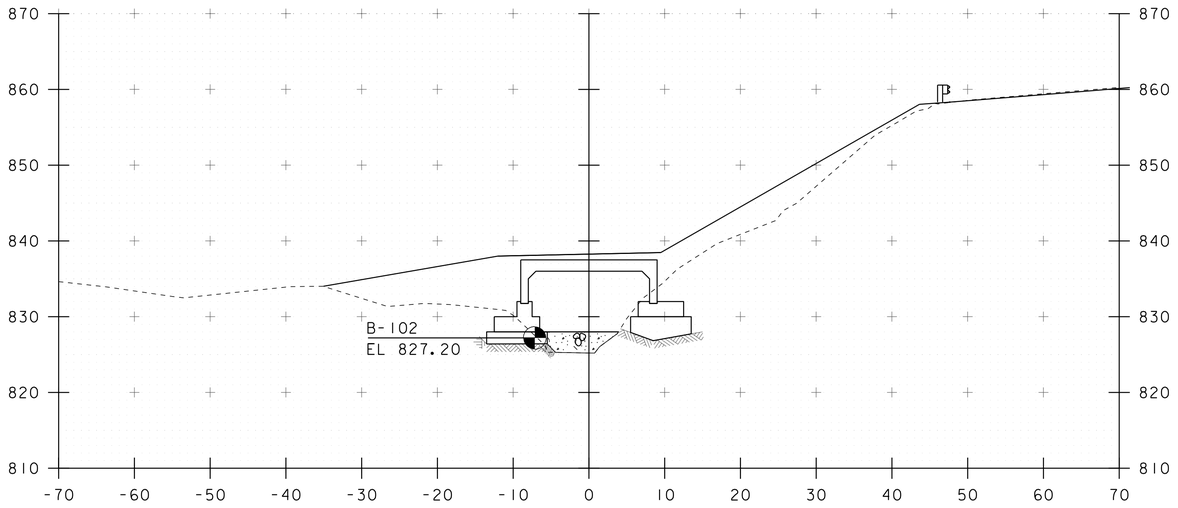
51+75

STA. 51+25 TO STA. 52+00

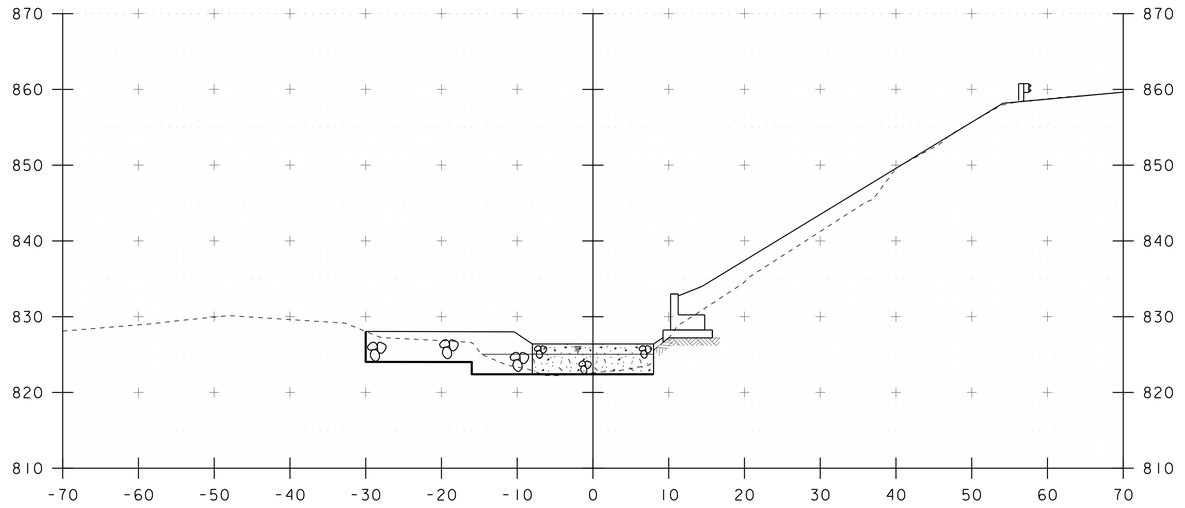
PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: sl2c590xs.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
CHANNEL SECTIONS

PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: ------
SHEET 30 OF 36

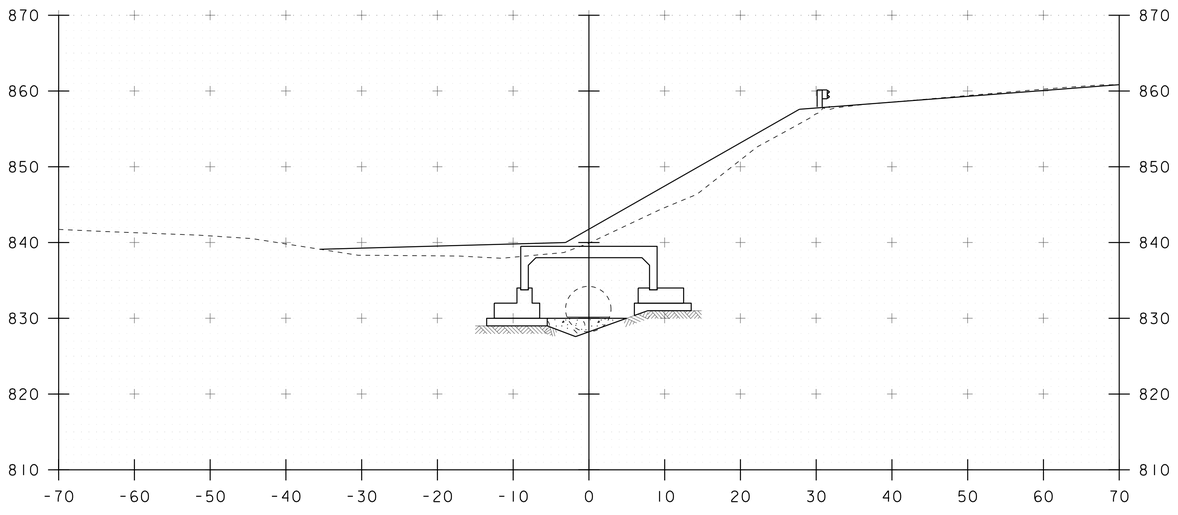


52+50

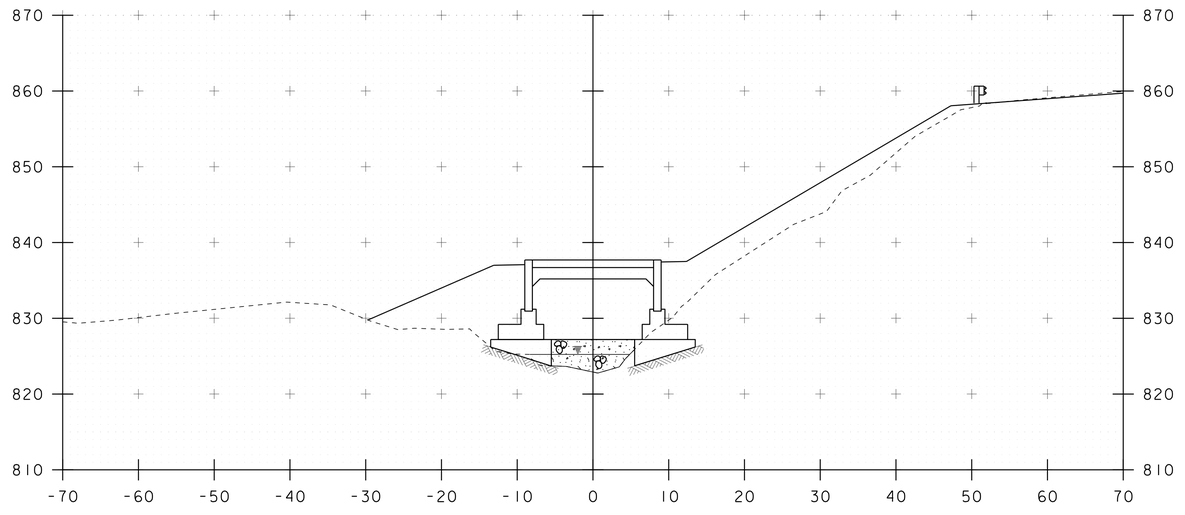


52+70

STA 52+60.00
BEGIN CHANNEL EXCAVATION
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE FILL, TYPE IV



52+25



52+60

STA. 52+25 TO STA. 52+70

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: sl2c590xs.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
CHANNEL SECTIONS

PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: ------
SHEET 31 OF 36

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF THE EXISTING CULVERT WITH A NEW PRECAST CONCRETE STRUCTURE WITH RELATED CHANNEL AND APPROACH WORK.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.85 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 HILLY TO MOUNTAINOUS, MOSTLY WOODED, RURAL RESIDENTIAL.

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

AN UNNAMED BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE BROOK IS CLASSIFIED AS SINUOUS AND INCISED AT THE SITE. THE STREAM BED CONSISTS OF GRAVEL AND COBBLES. DUE TO THE NATURE OF THE SURROUNDING TERRAIN THE PROJECT SITE COULD RECEIVE RUNOFF WATER FROM A FEW NEARBY SLOPES.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING CULVERT. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE IV AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF LAMOILLE, VERMONT. SOILS ON THE PROJECT SITE ARE AS FOLLOWS:

CoB - COLTON-DUXBURY COMPLEX, 2 - 8% SLOPES, "K FACTOR" = 0.10

CoE - COLTON-DUXBURY COMPLEX, 25 - 50% SLOPES, "K FACTOR" = 0.10

FrB - CABOT SILT LOAM, 0% TO 8% SLOPES, "K FACTOR" = 0.49

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

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: YES, NORTHWEST CORNER OF PROJECT
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: YES, SUITABLE HABIT FOR NOTHERN LONG EARED BAT
WATER RESOURCE: UNNAMED BROOK
WETLANDS: YES, NORTHEAST, NORTHWEST AND SOUTHWEST CORNERS OF THE PROJECT

1.3 RISK EVALUATION

THIS PROJECT FALLS UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES FOR LOW RISK PROJECTS. ANY MODIFICATIONS TO THE PROJECT THAT INCREASE THE RISK TO ENVIRONMENTAL RESOURCES SHALL BE EVALUATED IN ACCORDANCE WITH THE PERMIT REQUIREMENTS. 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.

BARRIER FENCING (BF) SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

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. BECAUSE THIS PROJECT FALLS UNDER THE CGP 3-9020, WOVEN WIRE REINFORCED SILT FENCE SHALL BE USED INSTEAD OF SILT FENCE WITHIN 100 FEET UPSLOPE OF RECEIVING WATERS.

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.

IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

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

IT IS NOT ANTICIPATED THAT CHECK STRUCTURES WILL BE NECESSARY.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

IT IS NOT ANTICIPATED THAT PERMANENT CONTROLS WILL BE NECESSARY.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

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

1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

1.4.10 STABILIZE SOIL AT FINAL GRADE

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

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.

EROSION CONTROL MATTING SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

1.4.11 DE-WATERING ACTIVITIES

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

TREATMENT OF DEWATERING COFFERDAM IS ANTICIPATED. A FILTER BAG LOCATION FOR TREATMENT HAS BEEN PROPOSED AND IS SHOWN ON THE PLANS. HOWEVER THE SPECIFIC MEANS FOR TREATMENT OF DISCHARGE SHALL BE PROVIDED BY THE CONTRACTOR.

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.

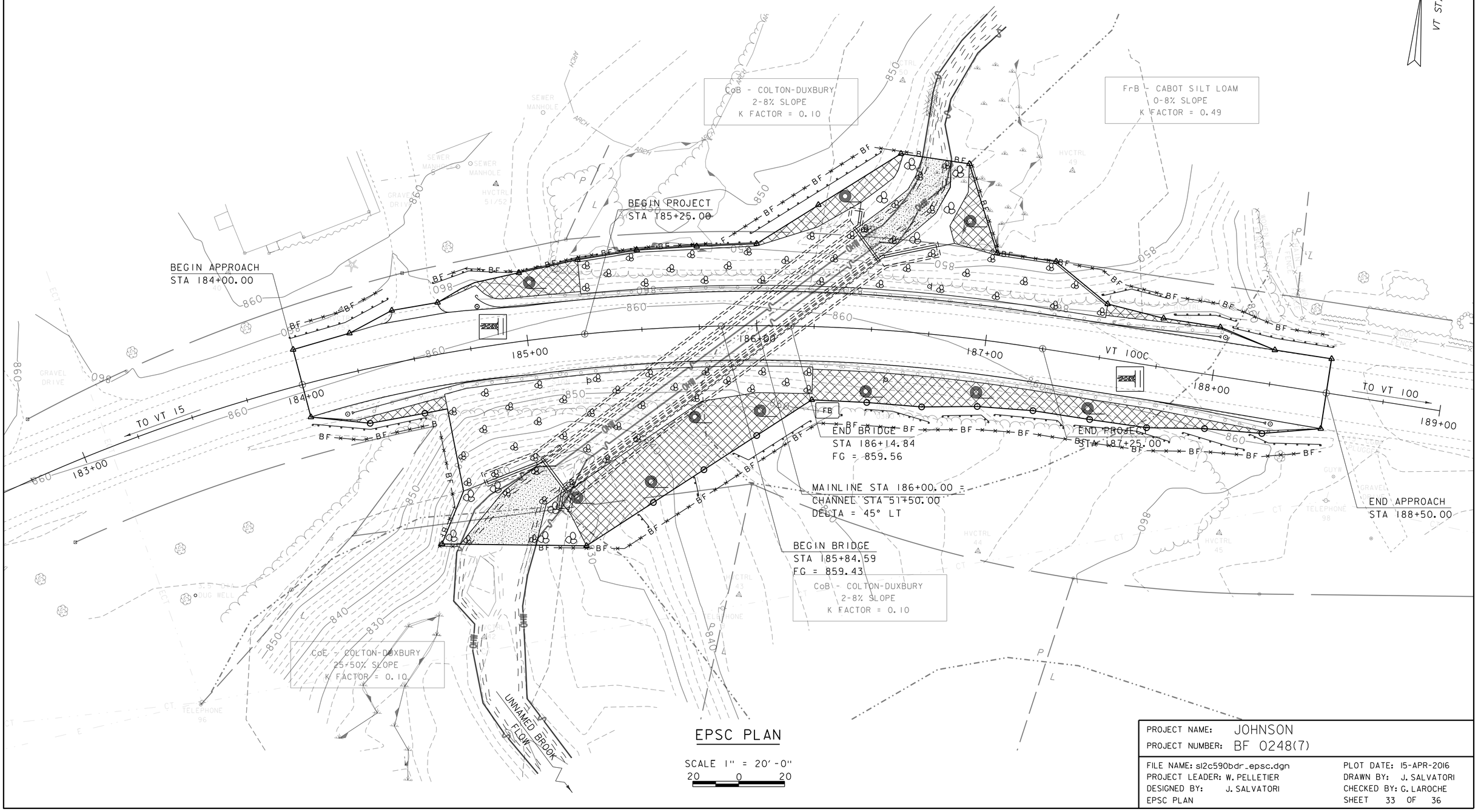
1.5.3 UPDATES

PROJECT NAME:	JOHNSON
PROJECT NUMBER:	BF 0248(7
FILE NAME: s12c590epsc_nar.dgn	PLOT DATE: 15-APR-2016
PROJECT LEADER: W. PELLETIER	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: ------
EPSC NARRATIVE	SHEET 32 OF 36

NOTES:

1. EXISTING CONTOURS SHOWN. SEE CROSS SECTIONS FOR FINAL CONDITIONS.

2. FOR CLARITY, AREAS TO BE SEEDED AND MULCHED HAVE NOT BEEN INDICATED. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED AS APPLICABLE.



EPSC PLAN

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

PROJECT NAME:	JOHNSON
PROJECT NUMBER:	BF 0248(7)
FILE NAME: s12c590bdr_epsc.dgn	PLOT DATE: 15-APR-2016
PROJECT LEADER: W. PELLETIER	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: G. LAROCHE
EPSC PLAN	SHEET 33 OF 36

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

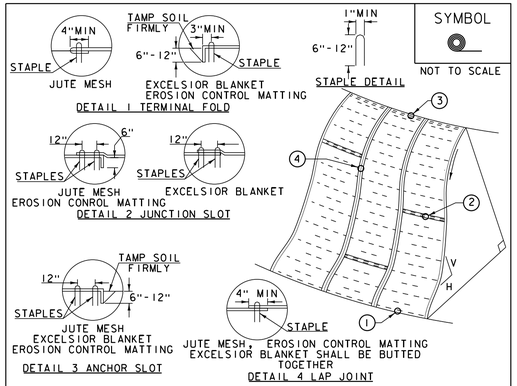
1. SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
2. SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT 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 651 FOR SEED (PAY ITEM 651.15)

REVISIONS		
JANUARY 12, 2015	WHF	



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

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

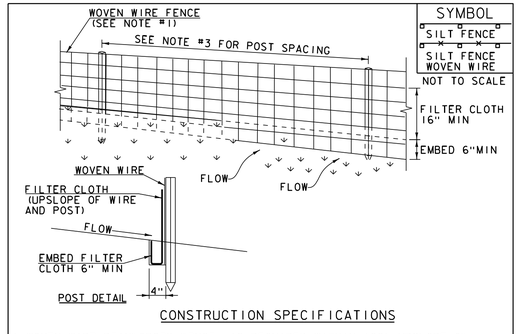
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

REVISIONS		
APRIL 16, 2007	JMF	
JANUARY 13, 2009	WHF	



SYMBOL

SILT FENCE

SILT FENCE WOVEN WIRE

NOT TO SCALE

FILTER CLOTH 16" MIN

EMBED 6"MIN

CONSTRUCTION SPECIFICATIONS

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

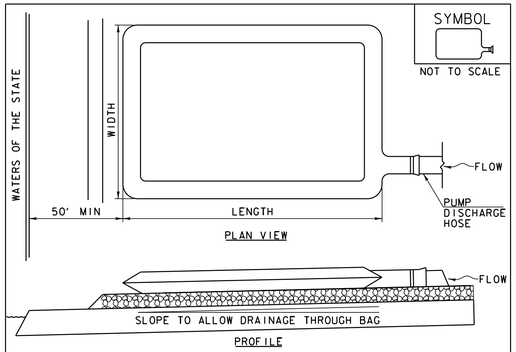
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

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

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

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



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

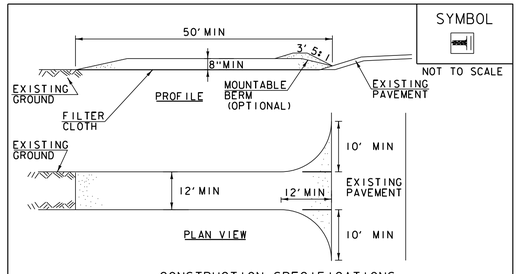
1. THE PRIMARY PURPOSE OF FILTER BAG IS TO RETAIN SILT, SAND, AND FINES DURING DEWATERING OPERATIONS.
2. FILTER BAGS SHALL BE INSTALLED ON A VEGETATED SLOPE GRADED TO ALLOW INCOMING WATER TO FLOW THROUGH THE BAG.
3. FILTER BAGS MAY ALSO BE PLACED ON COARSE AGGREGATE, STONE, OR HAYBALES TO INCREASE FILTRATION 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	



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.

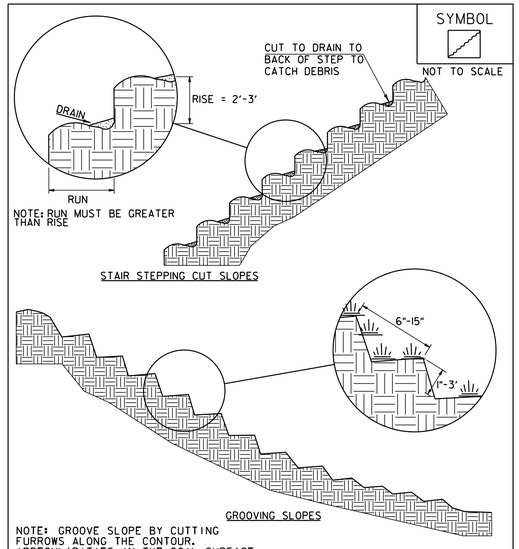
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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

NOTE: GROOVE SLOPE BY CUTTING FURROWS ALONG THE CONTOUR. IRREGULARITIES IN THE SOIL SURFACE CATCH RAINWATER AND RETAIN LIME, FERTILIZER AND SEED.

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

SURFACE ROUGHENING

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

THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT

REVISIONS		
APRIL 1, 2008	WHF	
JANUARY 13, 2009	WHF	

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: sl2c590epsc_det.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
EPSC DETAILS

PLOT DATE: 15-APR-2016
DRAWN BY: J. SALVATORI
CHECKED BY: ----
SHEET 34 OF 36

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	LATTIMORE, RICHARD J. &	1	184+45.88 RT	185+55.65 RT	1,104 SF		HIGHWAY	P							
	KILLAM, KATHERINE		184+44 RT	185+81 RT			CONSTRUCTION	T	533 SF						INCL. EC & BF
2	K. A. HARVEY'S MANUFACTURED	1	186+07.74 LT	186+99.75 LT	2,319 SF		HIGHWAY	P							
	HOUSING, INC.		185+92 LT	187+01 LT			CONSTRUCTION	T	941 SF						INCL. EC & BF
3	VERMONT ELECTRIC COOPERATIVE, INC.		184+44 RT	187+01 LT											UTILITY
4	COMCAST OF CONNECTICUT/GEORGIA/		184+44 RT	187+01 LT											UTILITY
	MASSACHUSETTS/NEW HAMPSHIRE/														
	NEW YORK/NORTH CAROLINA/VIRGINIA/														
	VERMONT, LLC														
5	TELEPHONE OPERATING COMPANY OF		184+44 RT	187+01 LT											UTILITY
	VERMONT LLC														

TABLE OF REVISIONS

REVISION NO.	ROW SET SHEET #	DESCRIPTION	DATE

PROJECT NAME: **JOHNSON**

PROJECT NUMBER: **BF 0248(7)**

FILE NAME: **r12c590detail.xls**
PROJECT LEADER: **W. PELLETIER**
DESIGNED BY: **D. KENISON**
R.O.W. DETAIL SHEET #1

PLOT DATE: 15-APR-2016
DRAWN BY: **M. TROTTIER**
CHECKED BY: **R. CLOUTIER**
SHEET 35 OF 36

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS WIDTH (in)	SIGN DIMENSIONS HEIGHT (in)	NEW SIGN "A"	EXIST POST RETAIN	EXIST POST SALVAGE	NEW SIGN POSTS NO. OF POSTS	SQUARE STEEL (in) 2.0 lb/ft 2.16	2.0 lb/ft 2.42	2.5 lb/ft 3.35	ANCHOR	SLEEVE	REMARKS	SIGN DETAIL DETAIL IN SHSM	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
185+25.00 RT	BRIDGE 4 VT 100C	6	10	0.50			1	8			X		VD-701			E-134
186+58.00 RT	1003 0806 0380	6	10	0.50			1	8			X		VD-701			E-134
186+75.00 LT	BRIDGE 4 VT 100C	6	10	0.50			1	8			X		VD-701			E-134
								FT	FT 24	FT		EA				
TOTALS				SF 1.50					FT 24							

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

SIGN LEGEND
N = NEW
R = REMOVE
S = SALVAGE
RET = RETAIN

SHSM = STANDARD HIGHWAY SIGNS AND MARKINGS (MUTCD) (APPROVED BY THE FHWA)

5'-0" PAVED APRON
STA 184+44.00 - 184+64.00 LT

REMOVING SIGNS
STA 185+12.00 RT
STA 186+58.00 LT

DELINEATOR WITH STEEL POST
STA 184+16.00 RT (BLUE)
STA 184+80.00 LT (GREEN)
STA 188+03.00 LT (BLUE)
STA 188+28.00 RT (GREEN)

DURABLE 4 INCH WHITE LINE
STA 184+00.00 - 188+50.00 LT/RT

DURABLE 4 INCH YELLOW LINE (DOUBLE)
STA 184+00.00 - 188+50.00 CL

ANCHOR FOR STEEL BEAM RAIL
STA 184+92.00 LT

EXTEND EXISTING
6" UNDERDRAIN CARRIER PIPE
STA 184+62.00 RT

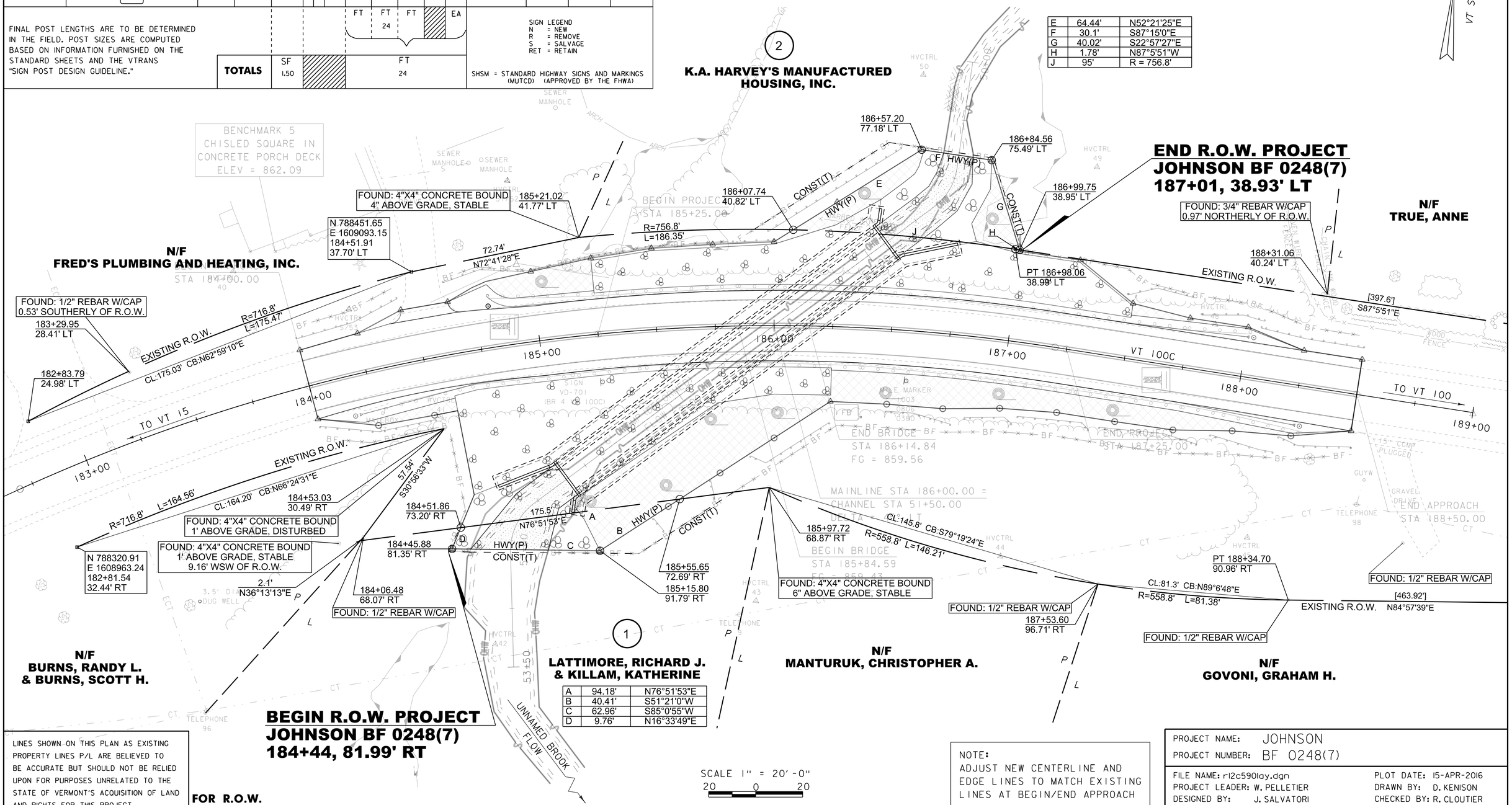
REMOVAL AND DISPOSAL OF GUARDRAIL
STA 184+36.00 - 188+29.00
STA 184+81.00 - 188+02.00

STEEL BEAM GUARDRAIL, GALVANIZED
STA 184+70.00 - 187+75.00 RT
STA 184+80.00 - 187+50.00 LT

MANUFACTORED TERMINAL SECTION, FLARED
STA 184+18.00 - 184+70.00 RT
STA 187+50.00 - 188+00.00 LT
STA 187+75.00 - 188+26.00 RT

N
VT STATE PLANE GRID

E	64.44'	N52°21'25"E
F	30.1'	S87°15'0"E
G	40.02'	S22°57'27"E
H	1.78'	N87°5'51"W
J	95'	R = 756.8'



A	94.18'	N76°51'53"E
B	40.41'	S51°21'0"W
C	62.96'	S85°0'55"W
D	9.76'	N16°33'49"E

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

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

NOTE:
ADJUST NEW CENTERLINE AND EDGE LINES TO MATCH EXISTING LINES AT BEGIN/END APPROACH

PROJECT NAME: JOHNSON
PROJECT NUMBER: BF 0248(7)

FILE NAME: rl2c590lay.dgn
PROJECT LEADER: W. PELLETIER
DESIGNED BY: J. SALVATORI
R.O.W. LAYOUT SHEET 1OF 1

PLOT DATE: 15-APR-2016
DRAWN BY: D. KENISON
CHECKED BY: R. CLOUTIER
SHEET 36 OF 36