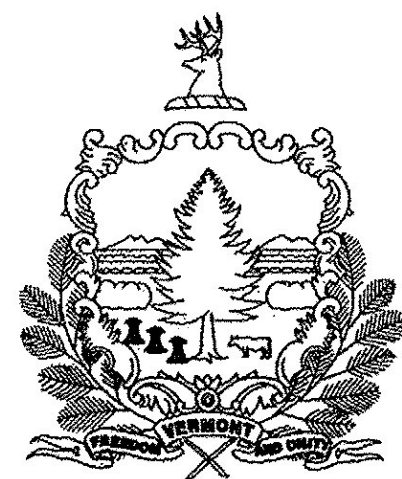
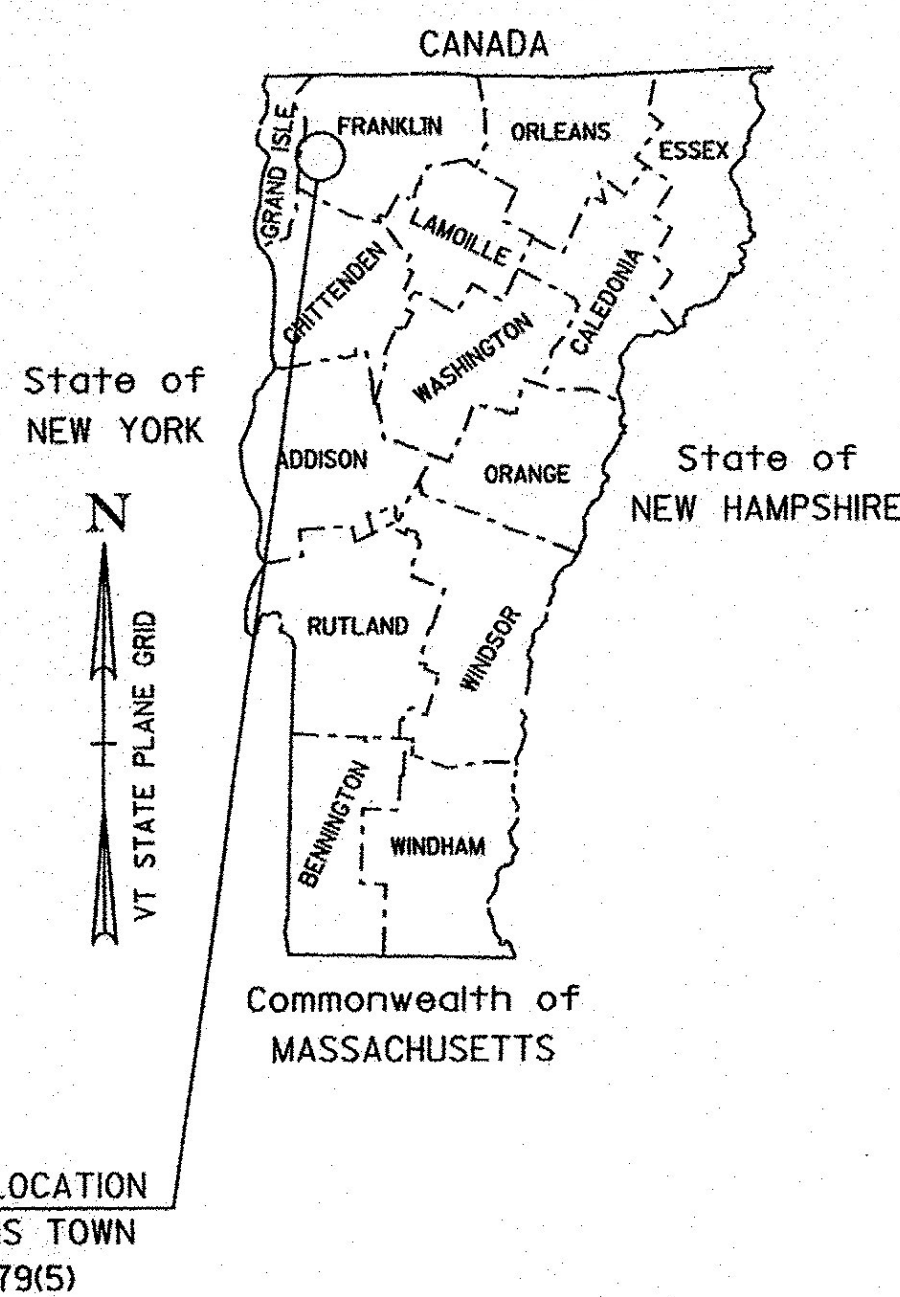
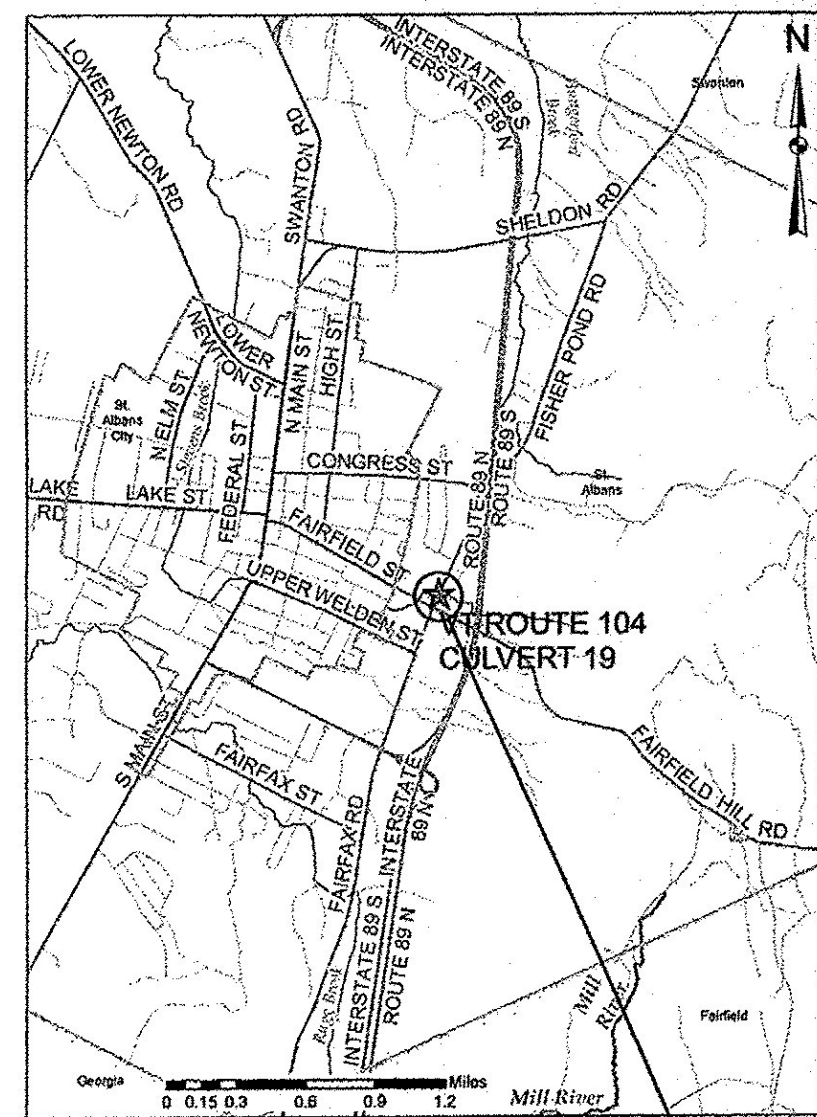


STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF ST. ALBANS
COUNTY OF FRANKLIN



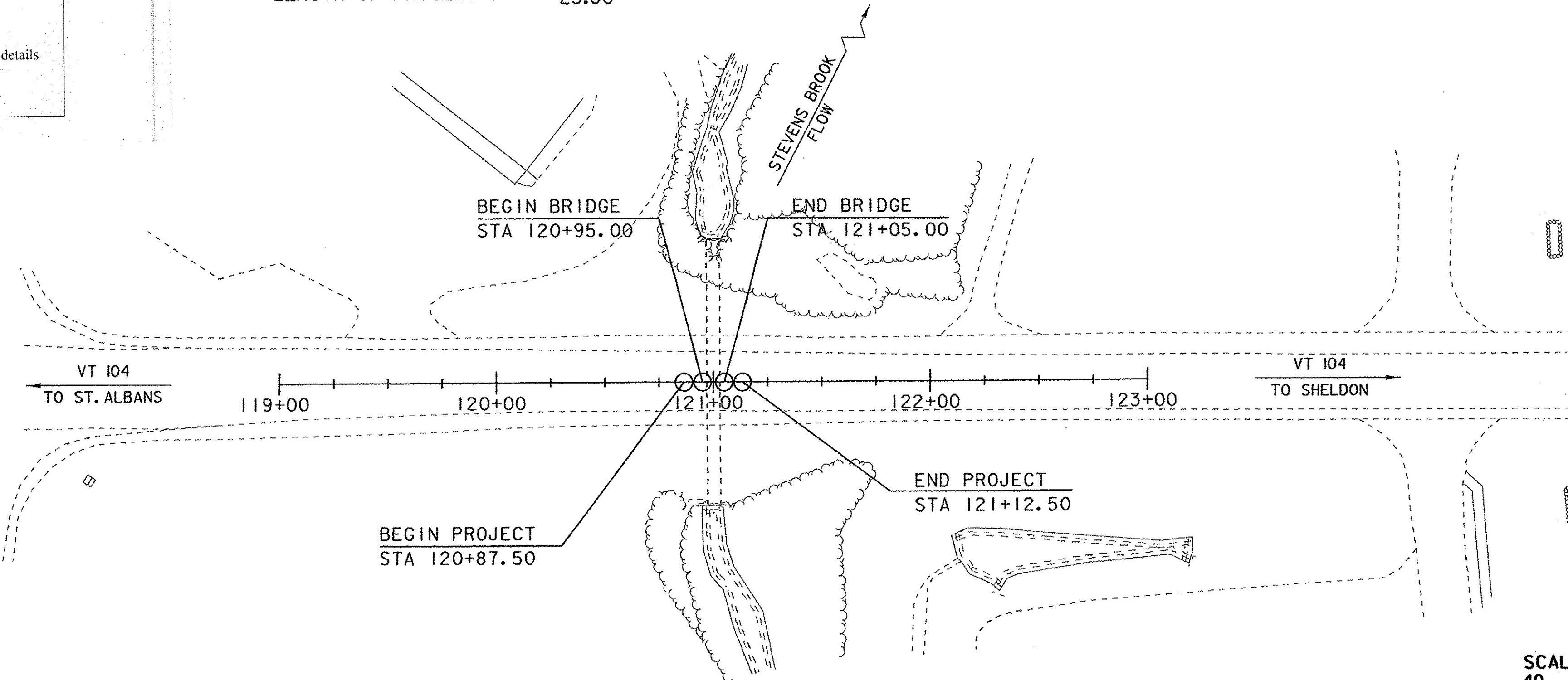
RECORD PLANS	
CONTRACTOR:	CCS CONSTRUCTORS LLC-MORRISVILLE, VT
RESIDENT ENGINEER:	SCOTT WHEATLEY
CONSTRUCTION BEGAN:	JULY 27, 2017
CONSTRUCTION COMPLETE:	AUGUST 05, 2017
RECORD PLANS BY:	SCOTT WHEATLEY & JESSE IVES
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.	
BY	RESIDENT ENGINEER
DATE	JULY 24, 2018
NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.	

ROUTE NO : VT 104 (RURAL MAJOR COLLECTOR), CULVERT #19

PROJECT LOCATION : APPROXIMATELY 350 FT NORTH OF THE INTERSECTIONS OF VT 36 AND VT 104.

PROJECT DESCRIPTION : REMOVAL OF EXISTING STRUCTURE AND REPLACEMENT WITH A NEW PRECAST STRUCTURE.

LENGTH OF STRUCTURE : 10.00
LENGTH OF ROADWAY : 15.00
LENGTH OF PROJECT : 25.00



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 :	L. ORVIS, PC
SURVEYED DATE :	1-7-2015
DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (1992)

SCALE 1" = 40' - 0"

DIRECTOR OF PROJECT DELIVERY	
APPROVED	DATE 1/5/2017
PROJECT MANAGER : J.B. MCCARTHY	
PROJECT NAME : ST. ALBANS TOWN	
PROJECT NUMBER : BF 0279(5)	
SHEET 1 OF 29 SHEETS	

INDEX OF SHEETS							FINAL HYDRAULIC REPORT									
PLAN SHEETS 1 TITLE SHEET 2 PRELIMINARY INFORMATION SHEET 3 LEGEND SHEET 4 PROJECT NOTES 5 - 6 QUANTITY SHEETS 7 TIE SHEET 8 EXISTING CONDITIONS 9 TYPICAL SECTIONS 10 LAYOUT SHEET 11 PROFILE SHEET 12 DETOUR PLAN 13 TRAFFIC CONTROL SHEET 14 UTILITY RELOCATION PLAN 15 BORING INFORMATION SHEET 16 BORING LOGS 17 PRECAST CULVERT DETAIL SHEET 18 - 20 MAINLINE CROSS SECTIONS 21 - 24 CHANNEL CROSS SECTIONS 25 EPSC NARRATIVE 26 EPSC PLAN 27 EPSC DETAILS 28 R.O.W. DETAIL SHEET 29 R.O.W. LAYOUT SHEET																

STANDARDS LIST

E-136B

STATE ROUTE MARKER SIGN DETAILS

08-08-1995

E-191

PAVEMENT MARKING DETAILS

02-01-1999

E-192

PAVEMENT MARKING DETAILS

10-12-2000

E-193

PAVEMENT MARKING DETAILS

08-18-1995

T-1

TRAFFIC CONTROL GENERAL NOTES

04-25-2016

T-2

TRAFFIC SIGN GENERAL NOTES

04-25-2016

T-10

CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING

08-06-2012

T-11

CONSTRUCTION APPROACH SIGNING DIVIDED HIGHWAY ONE LANE CLOSED

08-06-2012

T-17

TRAFFIC CONTROL MISCELLANEOUS DETAILS

08-06-2012

T-24

TRAFFIC CONTROL FOR MAINTENANCE PAVEMENT MARKING OPERATION

08-06-2012

T-28

CONSTRUCTION SIGN DETAILS

08-06-2012

T-29

CONSTRUCTION SIGN DETAILS

08-06-2012

T-30

CONSTRUCTION SIGN DETAILS

08-06-2012

T-35

CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS

08-06-2012

T-36

CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS FOR PAVING

08-06-2012

T-42

BRIDGE NUMBER PLAQUE

04-09-2014

T-45

SQUARE TUBE SIGN POST AND ANCHOR

01-02-2013

T-92

ROUTE MARKER FRAME DETAILS

10-26-2015

STRUCTURES DETAIL SHEETS

SD-501.00

CONCRETE DETAILS AND NOTES

2/9/2012

SD-502.00

CONCRETE DETAILS AND NOTES

10/10/2012

HSD-400.01

SAFETY EDGE DETAILS

3/29/2016

HYDROLOGIC DATA

Date: October 2015

DRAINAGE AREA : 1.1 sq. mi.

CHARACTER OF TERRAIN : Hilly, mostly forested with some open and developed land

STREAM CHARACTERISTICS : Alluvial, sinuous, probably incised

NATURE OF STREAMBED : Gravel and cobbles

PEAK FLOW DATA - ANNUAL EXCEEDANCE PROBABILITY (AEP)

43% = 70 cfs

2% = 240 cfs

10% = 150 cfs

1% = 280 cfs

4% = 200 cfs

0.2% = 390 cfs

DATE OF FLOOD OF RECORD : Unknown

ESTIMATED DISCHARGE: Unknown

WATER SURFACE ELEV.: Unknown

NATURAL STREAM VELOCITY : @ 2% AEP = 8.0 fps

ICE CONDITIONS : Moderate

DEBRIS: Light

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: XIMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Corrugated metal pipe

YEAR BUILT: 1989

CLEAR SPAN(NORMAL TO STREAM): 6.5'

VERTICAL CLEARANCE ABOVE STREAMBED: 6.5'

WATERWAY OF FULL OPENING: 33 sq. ft.

DISPOSITION OF STRUCTURE: Remove and replace with a new structure

TYPE OF MATERIAL UNDER SUBSTRUCTURE: See boring logs

WATER SURFACE ELEVATIONS AT:

43% AEP = 559.1'

10% AEP = 560.9'

4% AEP = 562.0'

2% AEP = 562.9'

1% AEP = 563.9'

VELOCITY = 9.5 fps

" 11.6 fps

" 12.4 fps

" 13.1 fps

" 13.4 fps

LONG TERM STREAMBED CHANGES: Channel bank erosion. Scour and possibly some channel degradation downstream.

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No

FREQUENCY: Above 1% AEP

RELIEF ELEVATION: 567.1'

DISCHARGE OVER ROAD @ 1% AEP: None

UPSTREAM STRUCTURE

TOWN: NA - stream divides

DISTANCE:

HIGHWAY #:

STRUCTURE #:

CLEAR SPAN:

CLEAR HEIGHT:

YEAR BUILT:

FULL WATERWAY:

STRUCTURE TYPE:

DOWNSTREAM STRUCTURE

TOWN: St. Albans

DISTANCE: 500'

HIGHWAY #: VT 36

STRUCTURE #: 1A

CLEAR SPAN: 8'

CLEAR HEIGHT: 8'

YEAR BUILT: 1938 & 1989

FULL WATERWAY: 62 sq. ft.

STRUCTURE TYPE: Concrete box

LRFR LOAD RATING FACTORS

LOADING LEVELS

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: TABLE TO BE COMPLETED BY CONTRACTOR'S DESIGNER

CULVERT DESIGN CRITERIA

1. PROPOSED CULVERT IS A PRECAST CONCRETE STRUCTURE (10'-0" x 7'-0" x 90'-0" BOX)

2. CULVERT ENDS ARE SKEWED BY AN ANGLE OF 90°

3. CULVERT WILL BE SET AT A SLOPE OF 27.00 IN. ON 90 FT.

4. CULVERT WILL REQUIRE FISH PASSAGE ACCOMODATIONS

5. CULVERT CONSTRUCTION WILL REQUIRE A TEMPORARY PIPE

TRAFFIC DATA

YEAR

ADT

DHV

% D

% T

ADTT

20 year ESAL for flexible pavement from 2014 to 2034 : 2541000

40 year ESAL for flexible pavement from 2014 to 2054 : 5.631.00

Design Speed : 40 mph

PROPOSED STRUCTURE

STRUCTURE TYPE: Precast concrete box

CLEAR SPAN(NORMAL TO STREAM): 10'

VERTICAL CLEARANCE ABOVE STREAMBED: 5'

WATERWAY OF FULL OPENING: 50 sq. ft.

WATER SURFACE ELEVATIONS AT:

43% AEP = 557.8'

10% AEP = 558.9'

4% AEP = 559.6'

2% AEP = 560.1'

1% AEP = 560.5'

VELOCITY= 6.8 fps

" 9.1 fps

" 10.1 fps

" 10.9 fps

" 11.5 fps

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No

FREQUENCY: Above 1% AEP

RELIEF ELEVATION: 567.1'

DISCHARGE OVER ROAD @ 1% AEP: None

BRIDGE LOW CHORD ELEVATION: 561.0' at inlet

FREEBOARD: @ 2% AEP = 0.9' at inlet

SCOUR: Not calculated for a box.

REQUIRED CHANNEL PROTECTION: See Additional Information below.

PERMIT INFORMATION

AVERAGE DAILY FLOW: -

DEPTH OR ELEVATION: -

ORDINARY LOW WATER: -

ORDINARY HIGH WATER: -

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: No temporary bridge required.

CLEAR SPAN (NORMAL TO STREAM):

VERTICAL CLEARANCE ABOVE STREAMBED:

WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

Stone Fill, Type II should be used on streambanks at the inlet.

Stone Fill, Type IV should be used on the banks at the outlet.

Special Provision (Stone Fill, Stream Bed Material)(Type II) should be used in the box and in the streambed.

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

dp: 3.0 INCH

3. CULVERT OPENING

D: 0.00 FT

4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS) Δ:

5. PRESTRESSING STRAND

fy: ---

6. PRESTRESSED CONCRETE STRENGTH

f'c: ---

7. PRESTRESSED CONCRETE RELEASE STRENGTH

f'ci: ---

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

fy: 60 KSI

13. STRUCTURAL STEEL AASHTO M270

fy: ---

14. NOMINAL BEARING RESISTANCE OF SOIL

qn: ---

15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)

φ: ---

16. NOMINAL BEARING RESISTANCE OF ROCK

qn: ---

17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)

φ: ---

18. PILE RESISTANCE FACTOR

φ: ---

19. LATERAL PILE DEFLECTION Δ:

20. BASIC WIND SPEED

V3s: ---

21. MINIMUM GROUND SNOW LOAD

pg: ---

22. SEISMIC DATA

PGA: 0

Ss: ---

St: ---

23.

24.

25.

26.

PROJECT NAME: ST. ALBANS

PROJECT NUMBER: BF 0279(5)

FILE NAME: s12c598PI.DGN

PLOT DATE: 1/10/2017

PROJECT LEADER: J.B. MCCARTHY

DRAWN BY: J. SALVATORI

DESIGNED BY: J. SALVATORI

CHECKED BY: J.B. MCCARTHY

PRELIMINARY INFORMATION SHEET 1

SHEET 2 OF 29

GENERAL INFORMATION

SYMBOLGY LEGEND NOTE

THE SYMBOLGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLGY. THE SYMBOLGY 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. SYMBOLGY 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 VALVE
⌘	H	TREE HARDWOOD
△	HCTRL	CONTROL HORIZONTAL
△	HVCTRL	CONTROL HORIZ. & VERTICAL
◇	HYD	HYDRANT
⊙	IP	IRON PIN
⊙	IPIPE	IRON PIPE
⌘	LI	LIGHT - STREET OR YARD
⌘	MB	MAILBOX
⊙	MH	MANHOLE (MH)
▣	MM	MILE MARKER
⊙	PM	PARKING METER
▣	PMK	PROJECT MARKER
⊙	POST	POST STONE/WOOD
⌘	RRSIG	RAILROAD SIGNAL
⌘	RRSL	RAILROAD SWITCH LEVER
⌘	S	TREE SOFTWOOD
⊙	SAT	SATELLITE DISH
⌘	SHRUB	SHRUB
⌘	SIGN	SIGN
⌘	STUMP	STUMP
⌘	TEL	TELEPHONE POLE
⊙	TIE	TIE
⌘	TSIGN	SIGN W/DOUBLE POST
⌘	VCTRL	CONTROL VERTICAL
⊙	WELL	WELL
×	WSO	WATER SHUT OFF

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

PROPOSED GEOMETRY CODES

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

UTILITY SYMBOLGY

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

ABOVE GROUND UTILITIES (AERIAL)	
— T —	UTILITY (GENERIC-UNKNOWN)
— E —	TELEPHONE
— C —	ELECTRIC
— EC —	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 SYMBOLGY

PROJECT DESIGN & LAYOUT SYMBOLGY	
— — — 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 — x — x — BF — x —	BARRIER FENCE
xxxxxxxxxxxxxxxxxxxx	TREE PROTECTION ZONE (TPZ)
//////////	STRIPING LINE REMOVAL
~~~~~	SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLGY

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

EPSC LAYOUT PLAN SYMBOLGY

EPSC MEASURES	
ONNOONNOONNO	FILTER CURTAIN
— — — — —	SILT FENCE
— x — x — x — x —	SILT FENCE WOVEN WIRE
— — — — —	CHECK DAM
▣	DISTURBED AREAS REQUIRING RE-VEGETATION
⊗	EROSION MATTING

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLGY

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

ARCHEOLOGICAL & HISTORIC	
—— ARCH ———	ARCHEOLOGICAL BOUNDARY
—— HISTORIC DIST ———	HISTORIC DISTRICT BOUNDARY
—— HISTORIC ———	HISTORIC AREA
Ⓜ	HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLGY

EXISTING FEATURES	
-----	ROAD EDGE PAVEMENT
-----	ROAD EDGE GRAVEL
-----	DRIVEWAY EDGE
-----	DITCH
———	FOUNDATION
x — x — x — x —	FENCE (EXISTING)
□ — □ — □ — □ —	FENCE WOOD POST
○ — ○ — ○ — ○ —	FENCE STEEL POST
~~~~~	GARDEN
○ — ○ — ○ — ○ —	ROAD GUARDRAIL
	RAILROAD TRACKS
-----	CULVERT (EXISTING)
ooooo	STONE WALL
-----	WALL
~~~~~	WOOD LINE
~~~~~	BRUSH LINE
~~~~~	HEDGE
=====	BODY OF WATER EDGE
=====	LEDGE EXPOSED

PROJECT NAME: ST. ALBANS TOWN	
PROJECT NUMBER: BF 0279(5)	
FILE NAME: sl2c598legend.dgn	PLOT DATE: 10-JAN-2017
PROJECT LEADER: JB MCCARTHY	DRAWN BY: M.LONGSTREET
DESIGNED BY:	CHECKED BY:
LEGEND SHEET	SHEET 3 OF 29



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 STEEL PLATES INSTALLED IN THE NORTH BOUND LANE SHALL REMAIN PROPERTY OF THE AGENCY. SEE SPECIAL PROVISION 20 FOR THE REMOVAL AND DISPOSAL OF THE STEEL PLATES.

TRAFFIC CONTROL

5.

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

DURING THE ACTUAL CLOSURE. ELIMINATE PHASE 3 FOR S-1, AND REMOVE S-2 (SEE DETOUR PLAN).
7.

A UNIFORMED TRAFFIC CONTROL OFFICER SHALL BE POSTED AT THE CLOSEST INTERSECTIONS TO THE CONSTRUCTION SITE DURING NIGHTTIME HOURS OF THE CLOSURE.
8.

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).
9.

DETOUR SIGNS SHALL BE LOCATED ADJACENT TO EXISTING INTERSECTION ROUTE MARKER ASSEMBLIES WHERE APPLICABLE.
10.

CONFIRMATION ROUTE MARKERS SHALL BE INSTALLED IMMEDIATELY FOLLOWING EACH TURN AND AT ALL LOCATIONS ALONG DETOUR WHERE ROUTE MARKERS EXIST FOR THE PARENT ROUTE.
11.

ANY EXISTING SIGNS THAT CONFLICT WITH THE TRAFFIC CONTROL PLAN SHALL BE COVERED AS DIRECTED BY THE ENGINEER.
12.

THE CONTRACTOR CANNOT BEGIN CONSTRUCTION UNTIL THE TRAFFIC CONTROL PLAN HAS BEEN APPROVED.

EARTHWORK

13.

THE CONTRACTOR MAY SUBSTITUTE SUBBASE MATERIAL FOR THE SAND BORROW AS SHOWN IN THE MATERIAL TRANSITION DETAIL. THE SUBBASE MATERIAL SHALL BE THE TYPE SPECIFIED IN THE CONTRACT AND BE PLACED TO MEET THE SUBBASE SPECIFICATIONS. IF SUBBASE IS PLACED IN LIEU OF SAND BORROW, A GEOTEXTILE MEETING THE REQUIREMENTS OF ITEM 649.11 "GEOTEXTILE FOR ROADBED SEPARATOR" SHALL BE PLACED BETWEEN THE SUBGRADE AND SUBBASE MATERIAL. THIS GEOTEXTILE SHALL BE INCIDENTAL TO ITEM 301.35 "SUBBASE OF DENSE GRADED CRUSHED STONE".
14.

THE AREA OF DISTURBANCE FOR THIS CULVERT HAS BEEN DEEMED BY THE VTRANS ARCHAEOLOGY OFFICER TO BE PREVIOUSLY DISTURBED.
15.

CONCRETE BOUNDARY MARKERS ARE TO BE LOCATED AND RESET BY A LICENSED LAND SURVEYOR. PAYMENT SHALL BE MADE UNDER ITEM 619.20 "REMOVING AND RESETTING PROPERTY MARKERS".

PRECAST CONCRETE

16.

ALL CONCRETE SHALL BE PRECAST. NO SUBSTITUTIONS WILL BE ALLOWED.
17.

ITEM 540.10 "PRECAST CONCRETE STRUCTURE" INCLUDES ALL PRECAST CONCRETE COMPONENTS INCLUDING ALL BOX SEGMENTS, BAFFLES, CUT OFF WALLS, HEADWALLS, WINGWALLS AND ALL CONNECTIONS BETWEEN THESE COMPONENTS. SAID CONNECTIONS SHALL BE DESIGNED BY THE PRECAST FABRICATOR AND SUBMITTED TO THE VTRANS ENGINEER. 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) = N/A

D.

NOMINAL BEARING RESISTANCE (GRANULAR BACKFILL) = 3.69 KSF

E.

BEARING RESISTANCE FACTOR = 0.45

F.

DESIGN FILL OVER BOX = SEE PLAN DETAILS

G.

AT-REST EARTH PRESSURE (Ko) = 0.43

H.

CONCRETE COMPRESSIVE STRENGTH = SEE SUBSECTION 540.05(e)

FURTHER DATA CAN BE FOUND IN THE GEOTECHNICAL REPORT DATED SEPTEMBER 24TH, 2015
18.

THE PRECAST CONCRETE STRUCTURE SHALL BE DESIGNED FOR HYDROSTATIC PRESSURE UNLESS RAPID DRAINING MATERIAL MEETING THE REQUIREMENTS OF SUBSECTION 704.16 IS USED.
19.

THE PRECAST BOX SECTIONS ARE SHOWN FOR REFERENCE ONLY. THE ACTUAL DIMENSIONS AND SHAPE WILL BE DEPENDENT ON THE FABRICATOR. THE MINIMUM INSIDE DIMENSIONS SHALL BE 7'-0" IN HEIGHT AND 10'-0" IN WIDTH. THE OVERALL LENGTH OF THE BOX SHALL BE 90'-0" ALONG THE STREAMBED GRADE. THE EXPOSED ENDS OF THE FIRST AND LAST UNITS SHALL BE VERTICAL.

20.

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.
21.

NO ADDITIONAL WORK (I.E. BACKFILLING OR MEMBRANE) IS ALLOWED UNTIL THE GROUT HAS REACHED A STRENGTH OF 2000 PSI OR 30% OF MAXIMUM.
22.

ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1".
23.

WATER REPELLENT, SILANE SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 514 AND SHALL BE APPLIED TO ALL EXPOSED EXTERIOR SURFACES OF THE PRECAST CONCRETE STRUCTURE.
24.

SHEET MEMBRANE WATERPROOFING, PREFORMED SHEET, MEETING THE REQUIREMENTS OF SUBSECTION 519.02 SHALL BE APPLIED TO THE TOP AND THREE (3) FEET DOWN THE SIDES OF THE JOINTS BETWEEN ADJACENT PRECAST CONCRETE BOXES. PAYMENT FOR MEMBRANE WILL BE INCIDENTAL TO CONTRACT ITEM 540.10 "PRECAST CONCRETE STRUCTURE (10'-0" X 7'-0" X 90'-0" BOX)".
25.

GEOTEXTILE FABRIC SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 649 AND SHALL BE APPLIED TO THE INTERFACE OF THE BOX SEGMENT AND WINGWALLS. PAYMENT FOR THIS GEOTEXTILE FABRIC WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 540.10 10 "PRECAST CONCRETE STRUCTURE (10'-0" X 7'-0" X 90'-0" BOX)".
26.

A BRIDGE PLAQUE FURNISHED BY THE AGENCY SHALL BE CAST INTO WINGWALL 2. SEE SD-502.00 FOR FURTHER DETAILS.
27.

BAFFLES SHALL BE DESIGNED BY THE FABRICATOR AND SHALL BE SPACED A MAXIMUM OF EVERY 8'-0" AND AT THE INLET AND OUTLET.

REINFORCING STEEL

28.

ALL REINFORCING STEEL SHALL BE LEVEL I (EPOXY) REINFORCING STEEL IN ACCORDANCE WITH SECTION 507.
29.

ALL REINFORCING STEEL SHALL HAVE A MINIMUM CLEAR COVER OF 2"
30.

REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE AS FOLLOWS:

A.

SPACING +/- 1"

B.

CLEARANCE +/- ¼"

ENVIRONMENTAL

31.

EROSION CONTROL MEASURES SHALL BE UTILIZED AS REQUIRED AND SHALL BE PER SECTION 105 OF THE STANDARD SPECIFICATIONS AND THE LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL FROM THE AGENCY OF NATURAL RESOURCES. SEE SUBSECTION 105.23 FOR EROSION CONTROL PLAN REQUIREMENTS.
32.

THE CONTRACTOR SHALL PREVENT ANY MATERIAL FROM ENTERING THE WATERWAY DURING EXCAVATION, OR THE INSTALLATION OF THE NEW STRUCTURE.
33.

THE DESIGN INTENT IS TO ALLOW THE CONTRACTOR TO STAGE IN THE TRAVELED ROADWAY OF THE APPROACHES TO THE BRIDGE DURING THE CLOSURE PERIOD. ANY STAGING AREAS OUTSIDE OF THIS SHALL BE CLEARED FOR RESOURCES THROUGH THE VTRANS ENVIRONMENTAL UNIT.
34.

AN EXISTING CONDITIONS SHEET HAS BEEN INCLUDED IN THE PLANS FOR USE OF THE CONTRACTOR IN SUBMITTALS.

PROJECT NAME: ST. ALBANS TOWN	
PROJECT NUMBER: BF 0279(5)	
FILE NAME: sl2c598notes.dgn	PLOT DATE: 10-JAN-2017
PROJECT LEADER: J.B. MCCARTHY	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: J.B.MCCARTHY
PROJECT NOTES	SHEET 4 OF 29



STATE OF VERMONT  
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES												TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
								ROADWAY	EROSION CONTROL	BRIDGE	FULL CE	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
								1				1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				<b>EARTHWORK SUMMARY</b>
								360				360		CY	COMMON EXCAVATION	203.15		360.00	CY	COMMON EXCAVATION (360*1.0)
										520		520		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27		390.00	CY	UNCLASSIFIED CHANNEL EXCAVATION (520*0.75)
																		480.00	CY	STRUCTURE EXCAVATION (640*0.75)
								80				80		CY	SAND BORROW	203.31				
								1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22		1230.00	CY	SUB TOTAL
										640		640		CY	STRUCTURE EXCAVATION	204.25		0	CY	ROUNDING
										300		300		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30		1230.00	CY	TOTAL FILL AVAILABLE
								450				450		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10		10.00	CY	TOTAL FILL REQUIRED
								160				160		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35		1220.00	CY	TOTAL WASTE
								7				7		CWT	EMULSIFIED ASPHALT	404.65				
								1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				<b>SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)</b>
										10		10		GAL	WATER REPELLENT, SILANE	514.10		150	TON	SUPERPAVE BITUMINOUS CONCRETE PAVEMENT TYPE IIS
										1		1		LS	PRECAST CONCRETE STRUCTURE (10'-0" x 7'-0" x 90'-0" BOX)	540.10		130	TON	SUPERPAVE BITUMINOUS CONCRETE PAVEMENT TYPE IVS
									1			1		MGAL	DUST CONTROL WITH WATER	609.10		280	TON	TOTAL SUPERPAVE
										360		360		CY	STONE FILL, TYPE IV	613.13				
								3				3		EACH	REMOVING AND RESETTING PROPERTY MARKERS	619.20				
								120				120		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
								200				200		HR	FLAGGERS	630.15				
											1	1		LS	FIELD OFFICE, ENGINEERS	631.10				
											1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
											3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
								1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
								6				6		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
								412.5				412.5		LF	4 INCH WHITE LINE	646.20				
								400				400		LF	4 INCH YELLOW LINE	646.21				
										480		480		SY	GEOTEXTILE UNDER STONE FILL	649.31				
									115			115		SY	GEOTEXTILE FOR SILT FENCE	649.51				
									13			13		LB	SEED	651.15				
									120			120		LB	FERTILIZER	651.18				
									1			1		TON	AGRICULTURAL LIMESTONE	651.20				
									1			1		TON	HAY MULCH	651.25				
								110				110		CY	TOPSOIL	651.35				
										150		150		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				
									470			470		LF	PROJECT DEMARCATION FENCE	653.55				
								1.67				1.67		SF	TRAFFIC SIGNS, TYPE A	675.20				

PROJECT NAME: ST. ALBANS TOWN  
PROJECT NUMBER: BF 0279(5)

FILE NAME: sl2c598qs.dgn  
PROJECT LEADER: J.B. MCCARTHY  
DESIGNED BY: J. SALVATORI  
QUANTITY SHEET 1

PLOT DATE: 10-JAN-2017  
DRAWN BY: J. SALVATORI  
CHECKED BY: J.B. MCCARTHY  
SHEET 5 OF 29



# QUANTITY SHEET 2

PROJECT NAME: ST. ALBANS TOWN	
PROJECT NUMBER: BF 0279(5)	
FILE NAME: si2c598qs.dgn	PLOT DATE: 10-JAN-2017
PROJECT LEADER: J.B. MCCARTHY	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: J.B. MCCARTHY
QUANTITY SHEET 2	SHEET 6 OF 29



GPS CONTROL POINTS

FAFASTA 1  
NORTH = 824454.5256  
EAST = 1490671.2570  
ELEV. = 603.3550

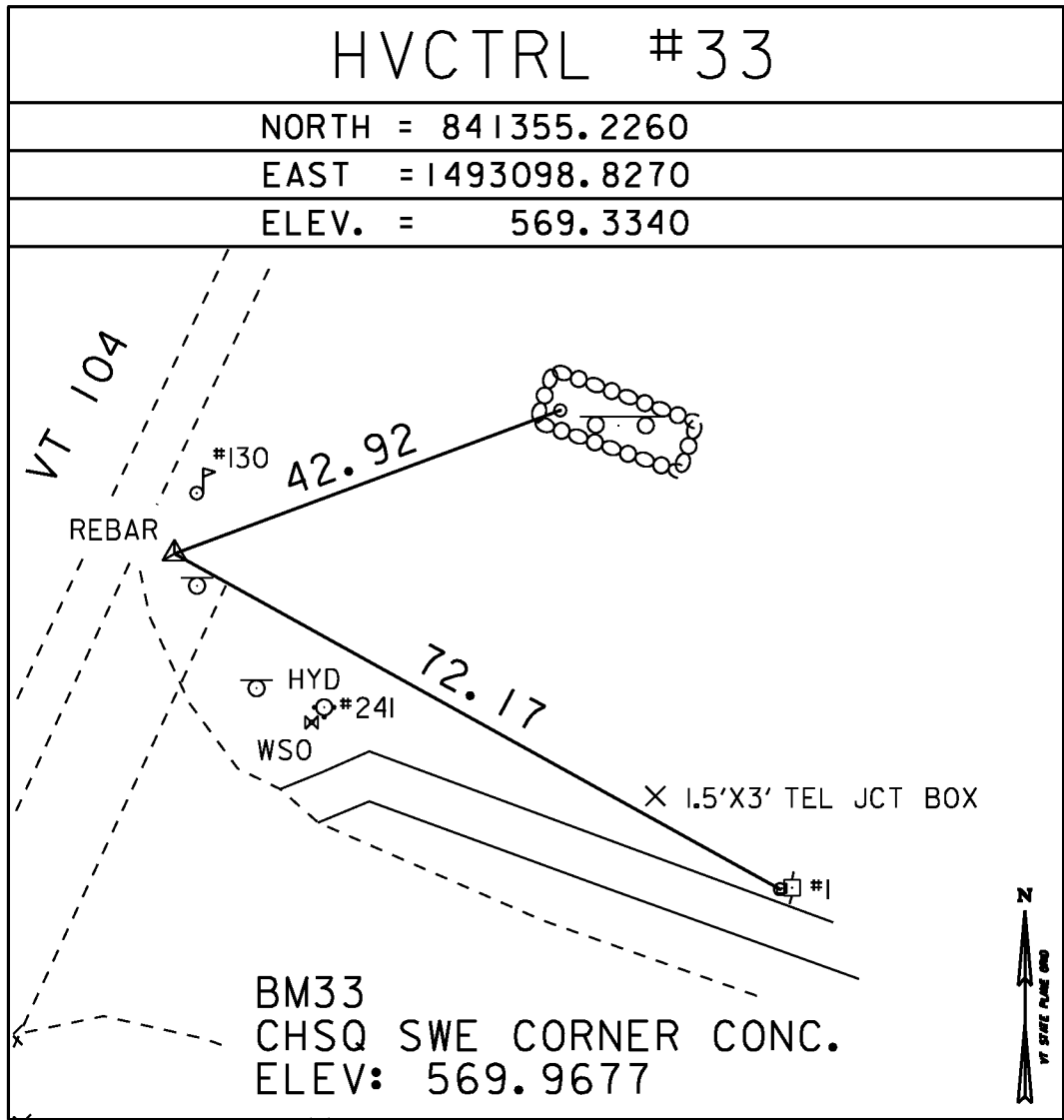
GENERAL LOCATION, FAIRFAX, VT. TO REACH FROM THE I-89 SOUTHBOUND BRIDGE OVER THE ACCESS ROAD AT EXIT 19 IN ST ALBANS GO SOUTH ALONG I-89 SOUTHBOUND FOR 2.4 MI (3.9 KM) TO THE SOUTH END OF THE I-89 SOUTHBOUND BRIDGE OVER VT ROUTE 104 AND THE SITE OF THE MARK ON THE LEFT IN THE MEDIAN. THE MARK IS A CENTERPUNCHED REBAR DRIVEN FLUSH WITH GROUND SURFACE. IT IS 8.1 M (26.6 FT) SOUTHEAST OF THE SOUTHEAST CORNER OF THE SOUTHBOUND BRIDGE ABUTMENT, 6.4 M (21.0 FT) WEST OF THE SOUTHWEST CORNER OF THE NORTHBOUND BRIDGE ABUTMENT, 1.7 M (5.6 FT) SOUTH OF THE SOUTH FACE OF THE GUARD RAIL, AND 0.3 M (1.0 FT) SOUTH OF A FIBERGLASS WITNESS POST.

FAFASTA 2  
NORTH = 822766.3039  
EAST = 1490357.1370  
ELEV. = 624.1130

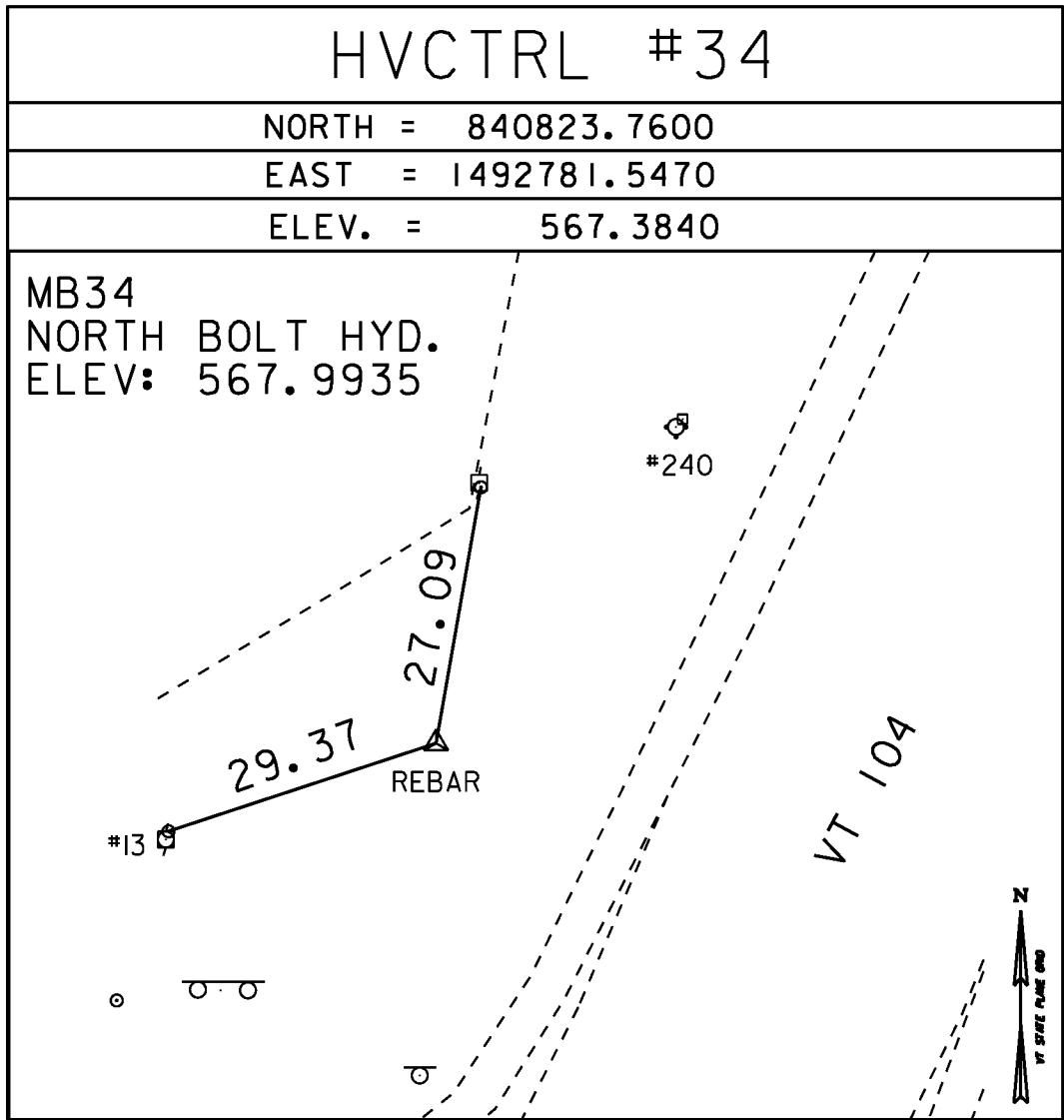
GENERAL LOCATION, FAIRFAX, VT. TO REACH FROM THE I-89 SOUTHBOUND BRIDGE OVER THE ACCESS ROAD AT EXIT 19 IN ST ALBANS GO SOUTH ALONG I-89 SOUTHBOUND FOR 2.8 MI (4.5 KM) TO THE SOUTHBOUND REST AREA ON THE RIGHT AND THE MARK ON THE RIGHT IN A GRASS AREA BETWEEN THE REST AREA AND THE SOUTHBOUND LANE. THE MARK IS A DRILL HOLE IN THE TOP OF THE NORTH END OF A CONCRETE DROP INLET TOP. IT IS 3.8 M (12.5 FT) WEST OF AND ABOUT 1 M (3.3 FT) LOWER THAN THE WEST EDGE OF PAVEMENT OF THE SOUTHBOUND LANE, 28.2 M (92.5 FT) NORTH OF MILE MARKER 110.95, 18.4 M (60.4 FT) EAST OF A 15 CM MAPLE, AND 0.4 M (1.3 FT) EAST OF A FIBERGLASS WITNESS POST.

*GPS CONTROL PROVIDED BY VT GSU 2014

TRAVERSE TIES



*TRAVERSE COMPLETED 12/02/2014 BY L. ORVIS P.C. & H. MCGOWAN



NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

ALIGNMENT TIES

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

DATUM

VERTICAL NAVD 88

HORIZONTAL NAD 83 (1992)

ADJUSTMENT COMPASS

PROJECT NAME: ST. ALBANS TOWN

PROJECT NUMBER: BF 0279 (5)

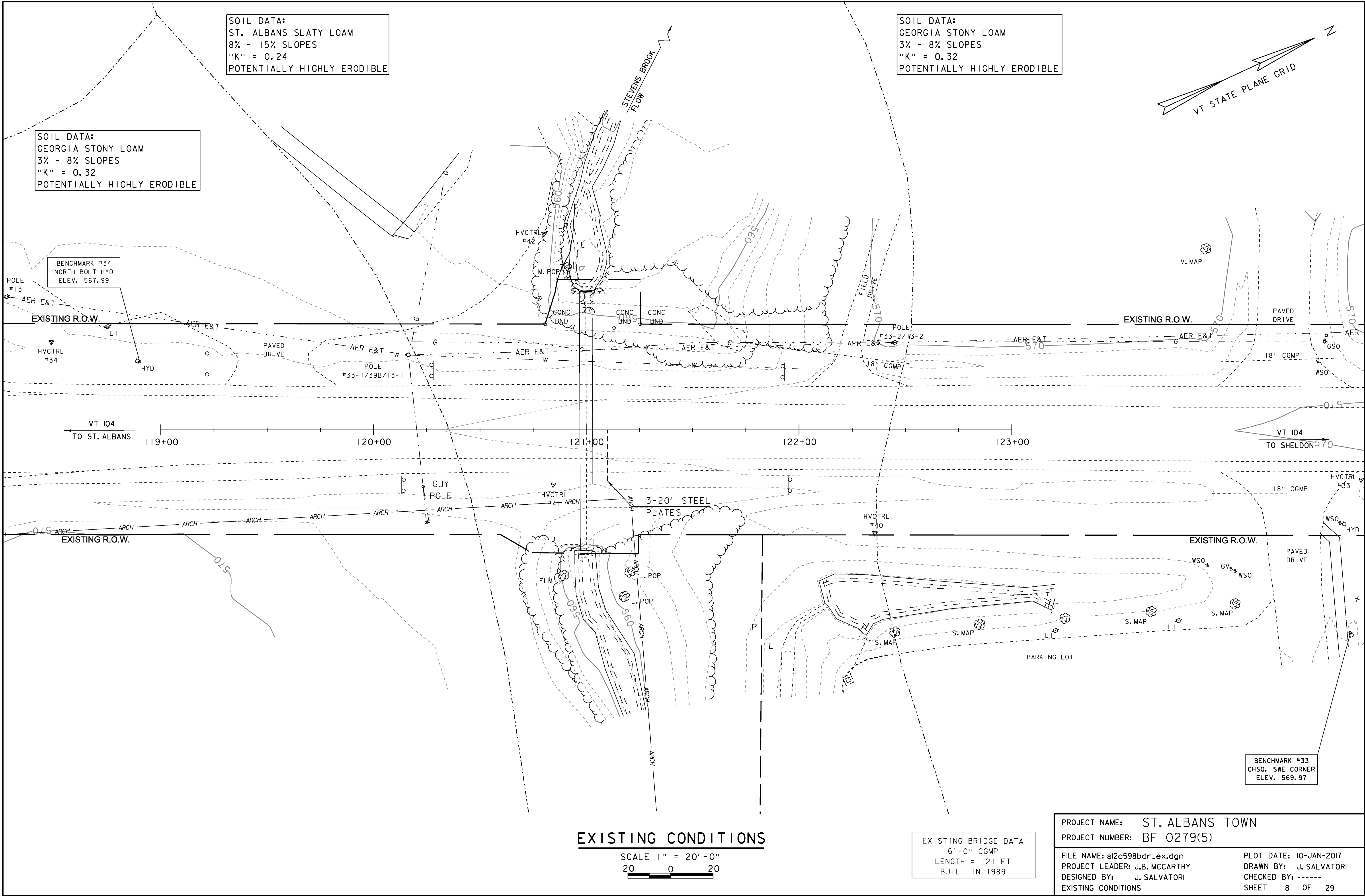
FILE NAME: X12C598TI.DGN PLOT DATE: 10-JAN-2017

PROJECT LEADER: J.B. MCCARTHY DRAWN BY: G. HITCHCOCK

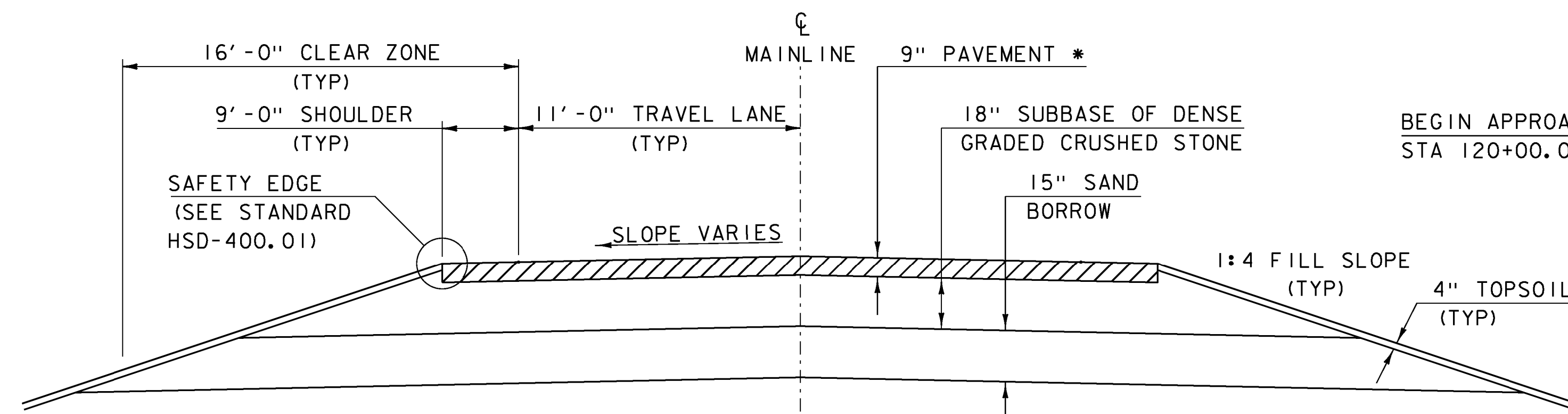
DESIGNED BY: VTRANS CHECKED BY: P. BEYOR

TIE SHEET 1 SHEET 7 OF 29





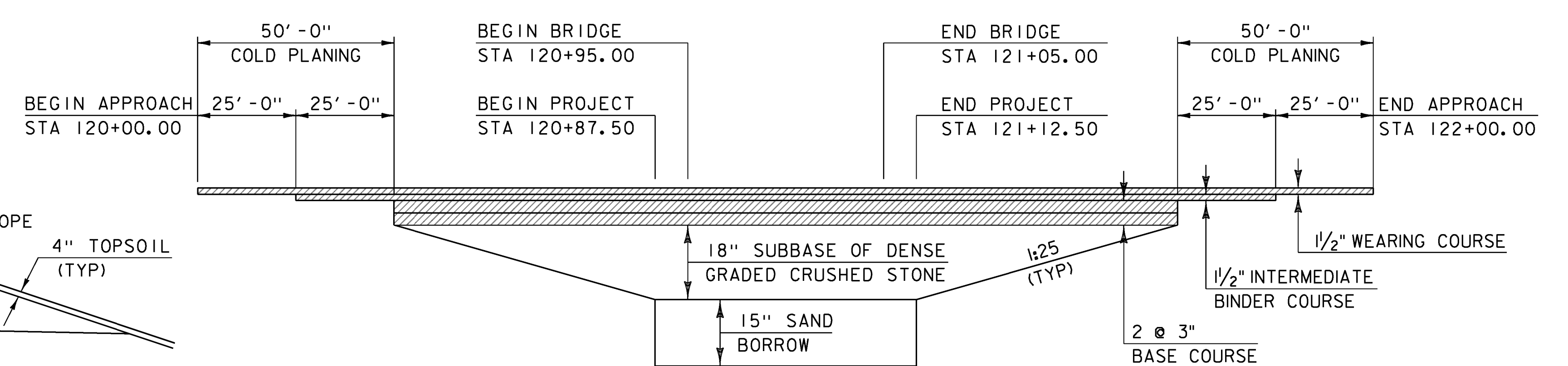




**ROADWAY TYPICAL SECTION**

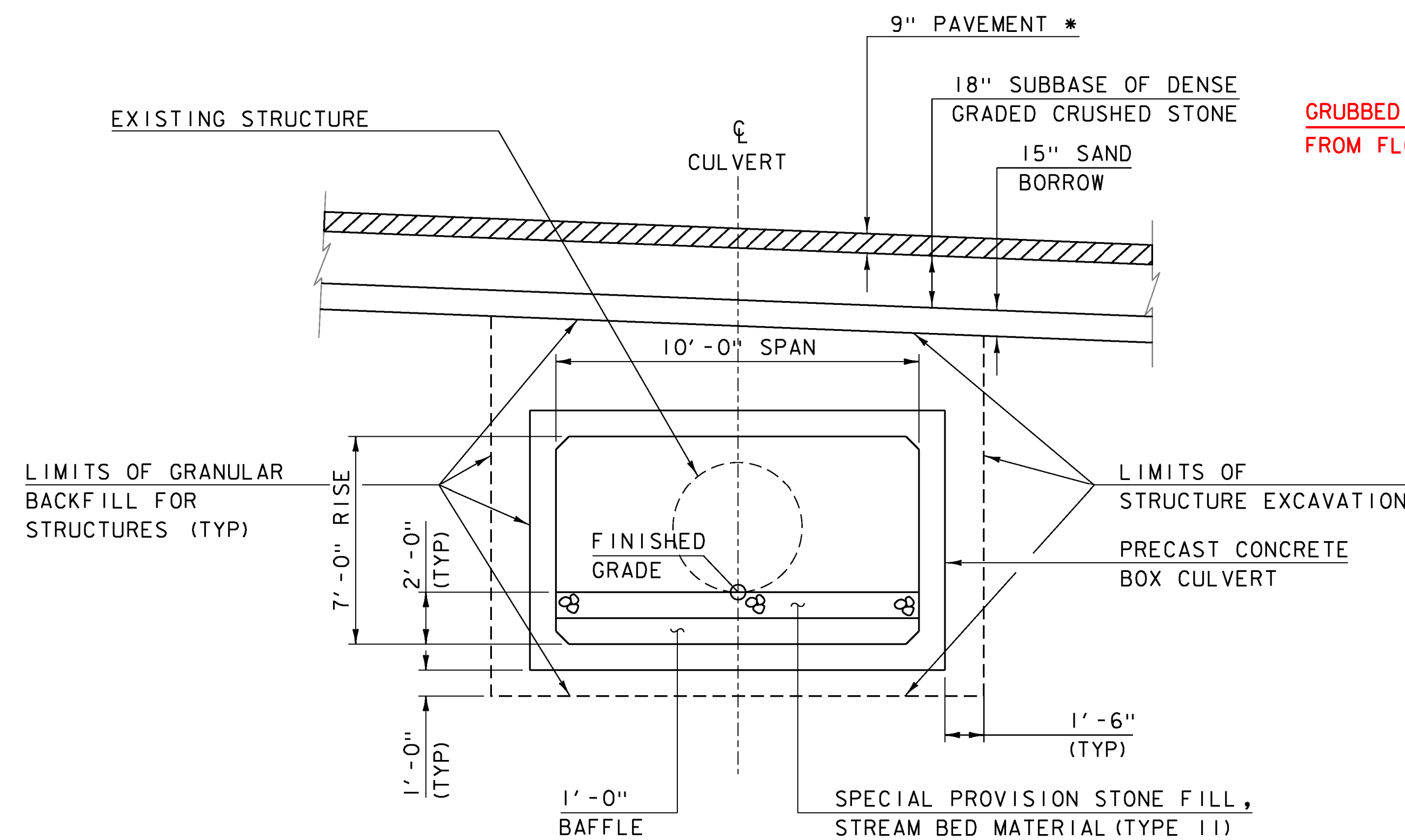
NOT TO SCALE

- * 1 1/2" TYPE IVS OVER
- 1 1/2" TYPE IVS OVER
- 3" TYPE IIS OVER
- 3" TYPE IIS



**MATERIAL TRANSITION**

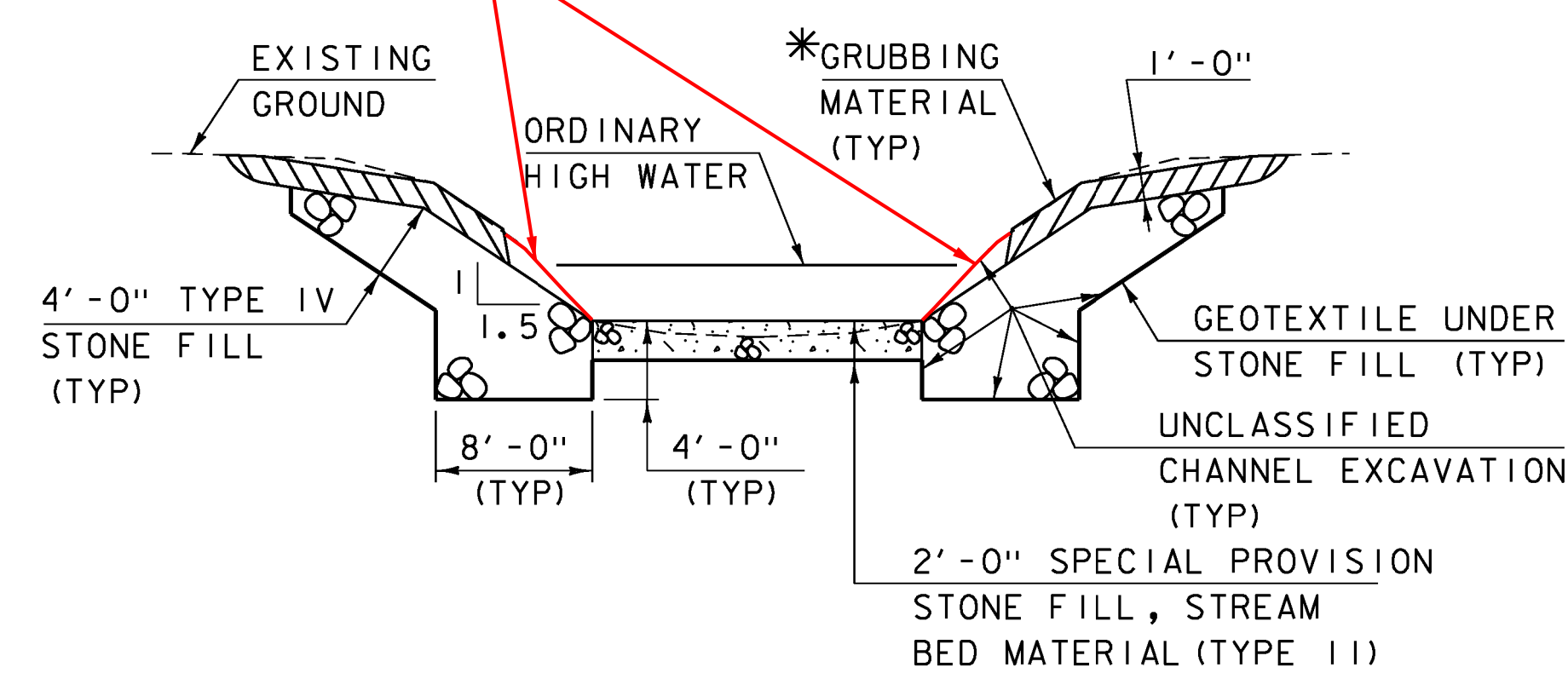
HOR. SCALE 1" = 20'-0"  
NO VER. SCALE



**CULVERT TYPICAL SECTION**

NOT TO SCALE

GRUBBED TO PREVENT STREAM FLOW  
FROM FLOWING INTO TYPE IV STONE FILL



**CHANNEL TYPICAL SECTION**

NOT TO SCALE

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

**MATERIAL TOLERANCES**  
(IF USED ON PROJECT)

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

PROJECT NAME: ST. ALBANS TOWN  
PROJECT NUMBER: BF 0279(5)

FILE NAME: sl2c598+yp.dgn  
PROJECT LEADER: J.B.MCCARTHY  
DESIGNED BY: J.SALVATORI  
TYPICAL SECTIONS

PLOT DATE: 10-JAN-2017  
DRAWN BY: D.D.BEARD  
CHECKED BY: J.B.MCCARTHY  
SHEET 9 OF 29



4 INCH WHITE LINE  
STA 120+00.00 - 122+00.00 LT/RT

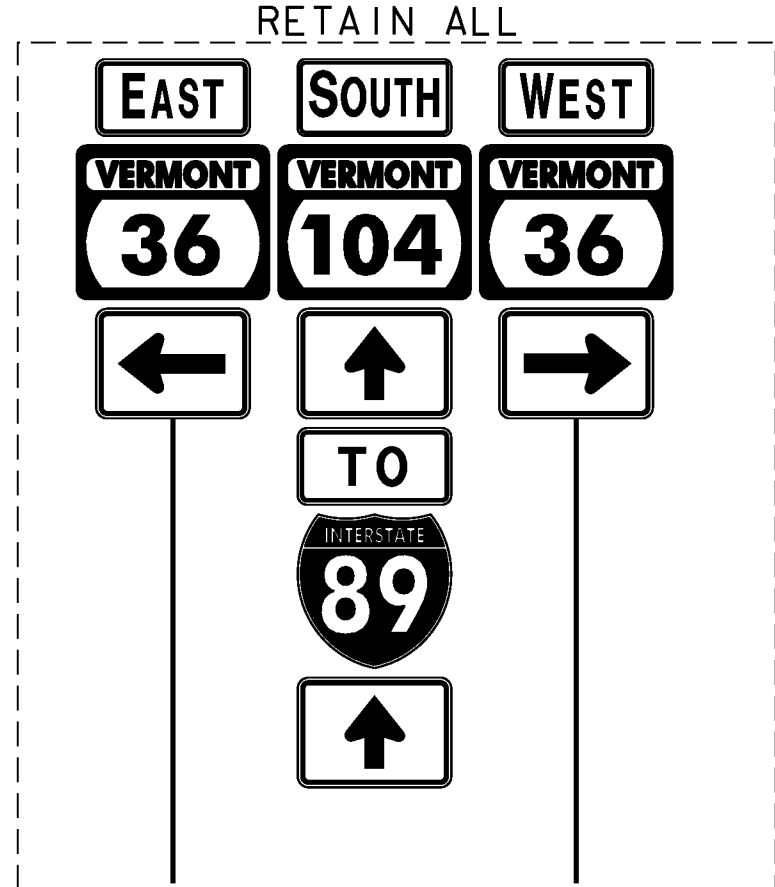
4 INCH WHITE LINE (DASHED)  
STA 120+00.00 - 120+50.00 LT

4 INCH YELLOW LINE  
STA 120+00.00 - 122+00.00 CL

REMOVING AND RESETT  
PROPERTY MARKERS  
STA 120+80 LT  
STA 121+13 LT  
STA 121+25 LT

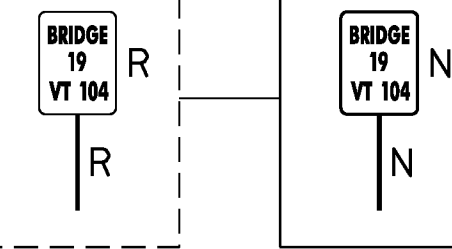
POB MAINLINE  
STA 119+00.00  
N = 840853.0520  
E = 149240.5768

BENCHMARK #34  
NORTH BOLT HYD  
ELEV. 567.99

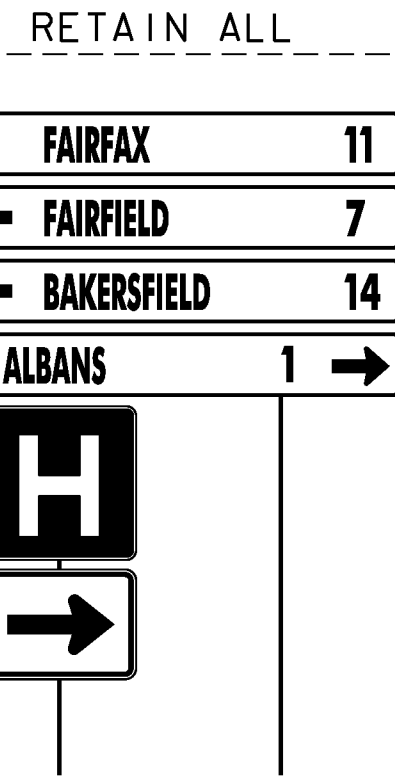


POE CHANNEL  
STA 52+25.00  
N = 841087.0626  
E = 1492811.1823

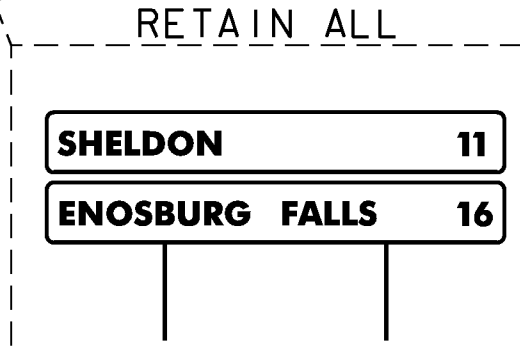
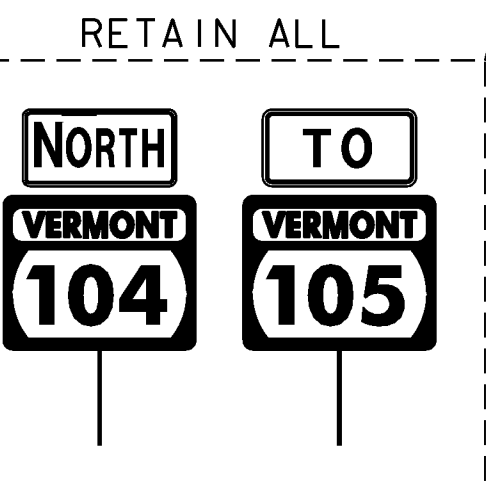
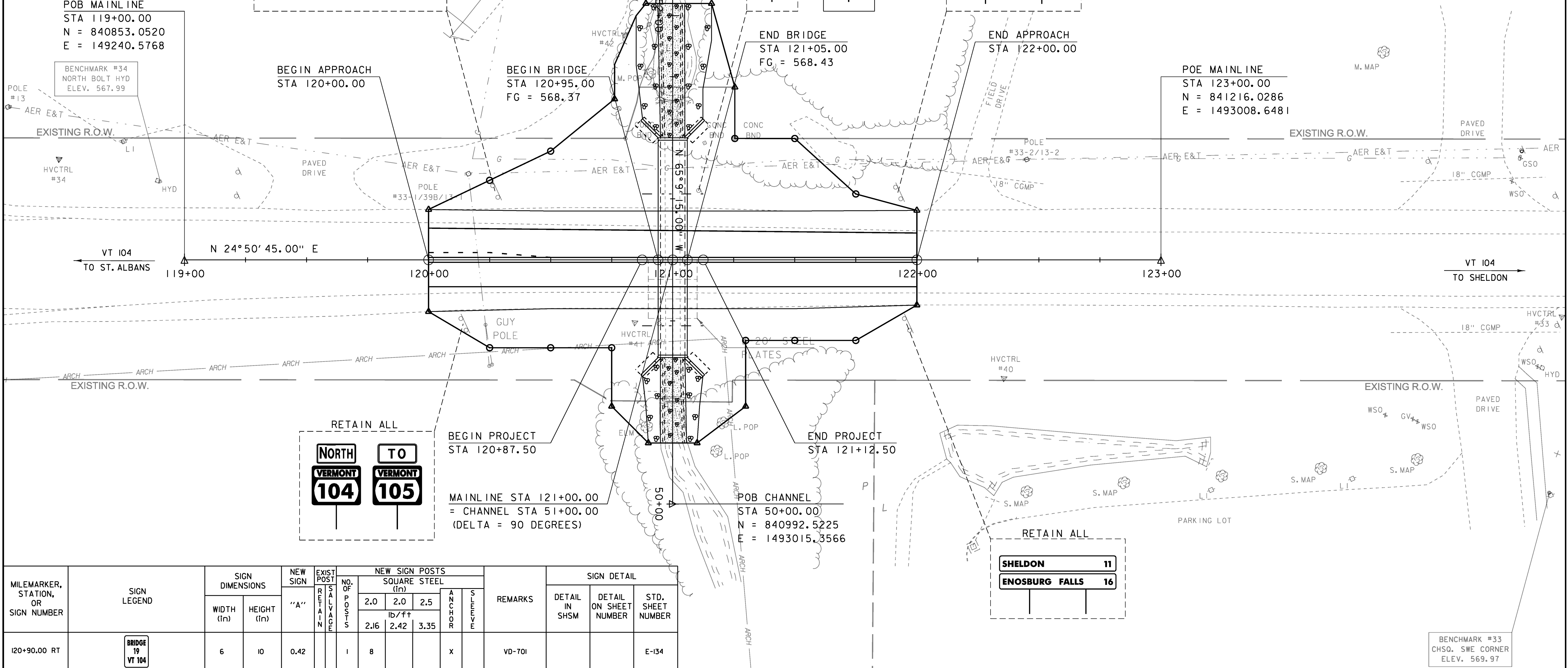
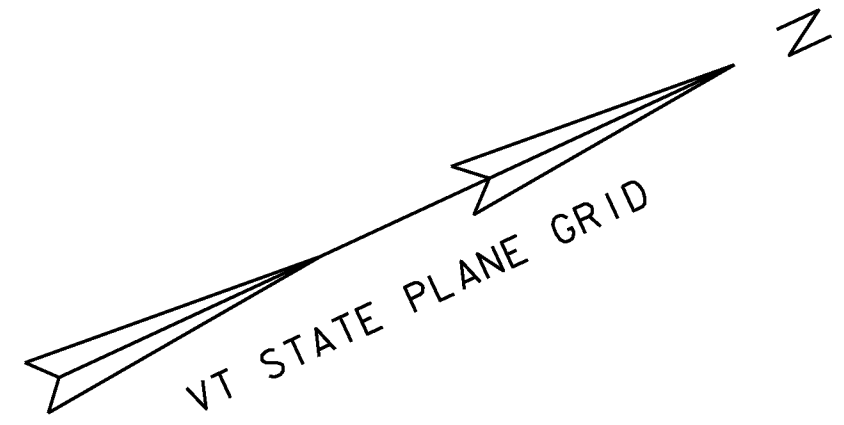
STA 120+90.00 RT  
STA 121+10.00 LT

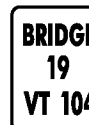
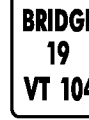
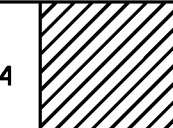


END BRIDGE  
STA 121+05.00  
FG = 568.43



POE MAINLINE  
STA 123+00.00  
N = 841216.0286  
E = 1493008.6481



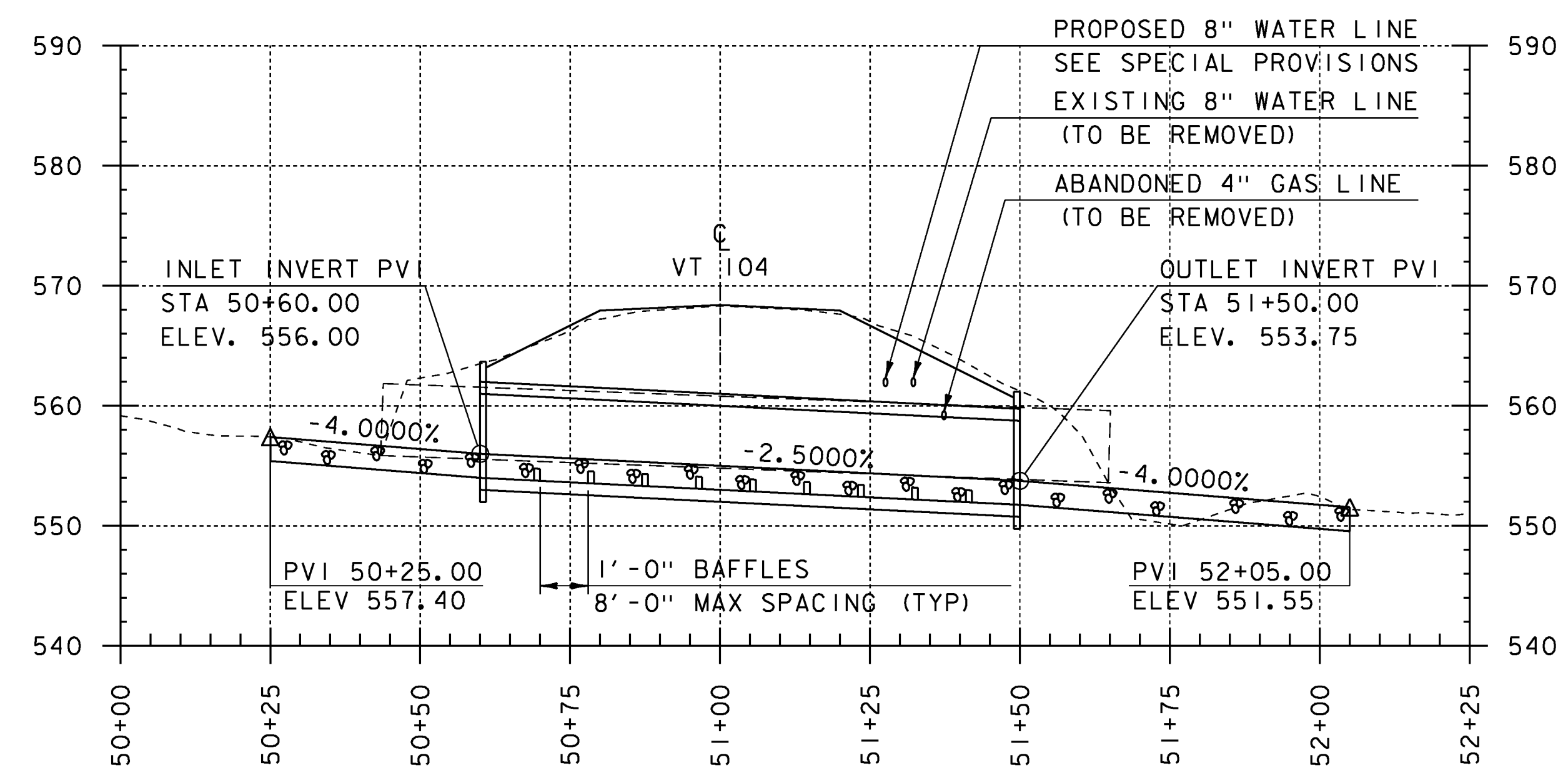
MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW SIGN "A"	EXIST POST RETAIN	SALVAGE	NO. OF POSTS	NEW SIGN POSTS SQUARE STEEL (in)			ANCHOR	SPACERS	REMARKS	SIGN DETAIL			
		WIDTH (in)	HEIGHT (in)					2.0	2.0	2.5				DETAIL IN SHSM	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER	
								2.16	2.42	3.35							
120+90.00 RT		6	10	0.42			1	8				X		VD-701			E-134
121+10.00 LT		6	10	0.42			1	8				X		VD-701			E-134
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."								FT	FT	FT		EA	SIGN LEGEND N = NEW R = REMOVE S = SALVAGE RET = RETAIN				
TOTALS				SF 0.84		FT 16							SHSM = STANDARD HIGHWAY SIGNS AND MARKINGS (MUTCD) (APPROVED BY THE FHWA)				

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

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

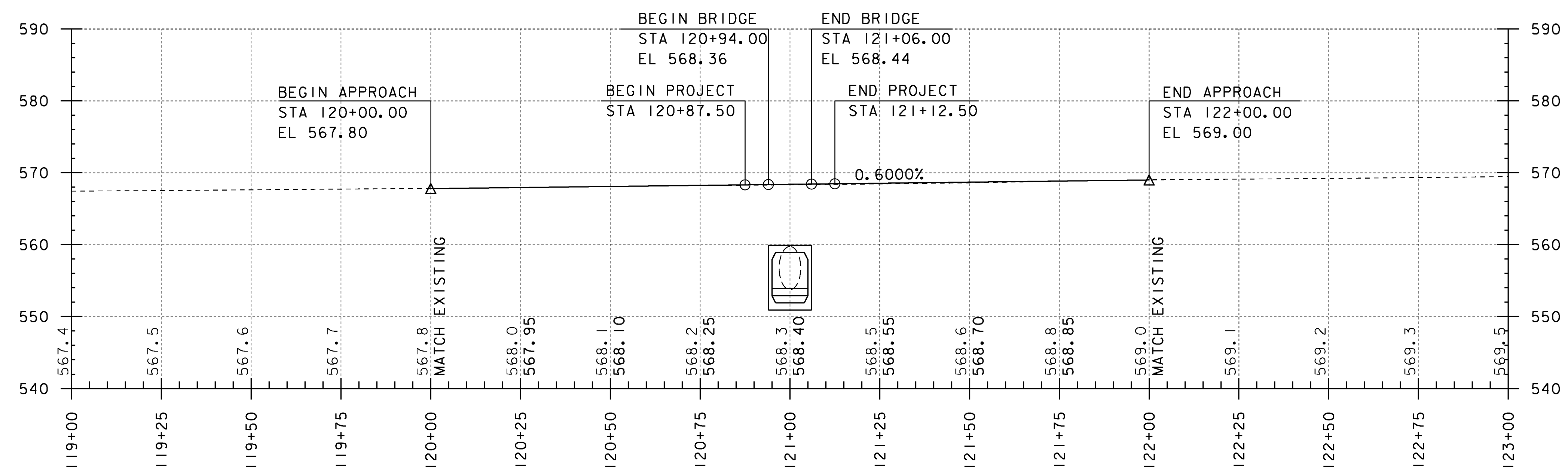
PROJECT NAME:	ST. ALBANS TOWN	PLOT DATE:	10-JAN-2017
PROJECT NUMBER:	BF 0279(5)	DRAWN BY:	J. SALVATORI
FILE NAME:	sl2c598bdr.dgn	CHECKED BY:	J.B.MCCARTHY
PROJECT LEADER:	J.B. MCCARTHY	LAYOUT SHEET	SHEET 10 OF 29





#### CHANNEL PROFILE

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



#### 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.

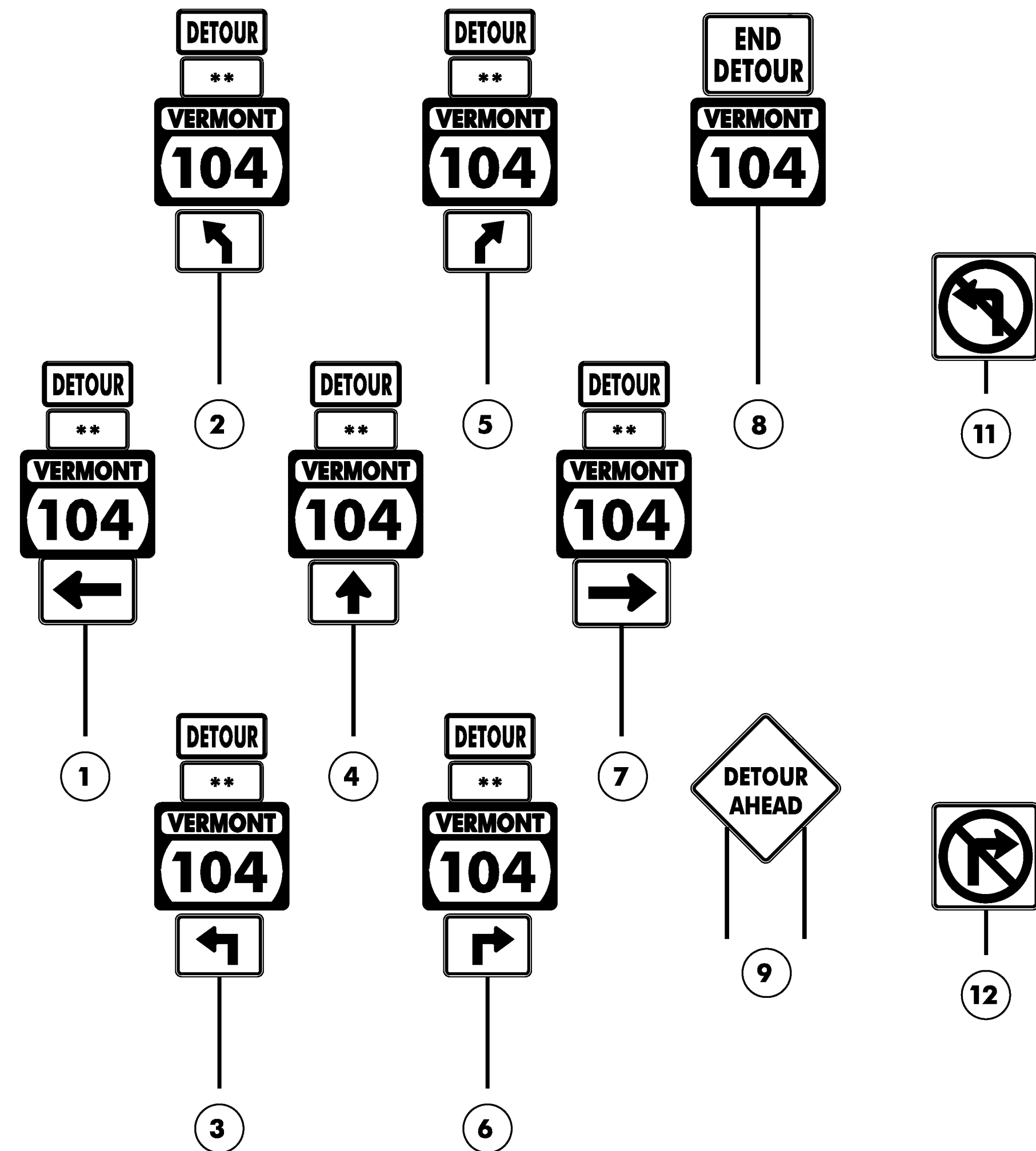
PROJECT NAME: ST. ALBANS TOWN

PROJECT NUMBER: BF 0279(5)

FILE NAME: sl2c598pro.dgn  
PROJECT LEADER: J.B. MCCARTHY  
DESIGNED BY: J. SALVATORI  
PROFILE SHEET

PLOT DATE: 10-JAN-2017  
DRAWN BY: J. SALVATORI  
CHECKED BY: J.B. MCCARTHY  
SHEET 11 OF 29





**N = NORTH  
OR  
S = SOUTH

**ROAD CLOSED**  
XX MILES AHEAD  
NO THRU TRAFFIC

V	T	1	0	4		
C	L	O	S	E	D	

PHASE 1

B	E	T	W	E	E	N
V	T	3	6	-		
V	T	1	0	5		

PHASE 2

*	F	R	I		M	/	D	D	
	6	P	M	-			M	O	N
*	M	/	D	D		6	A	M	

PHASE 3

* M = MONTH  
D = DAY

(S-1)

R	O	A	D			
C	L	O	S	E	D	

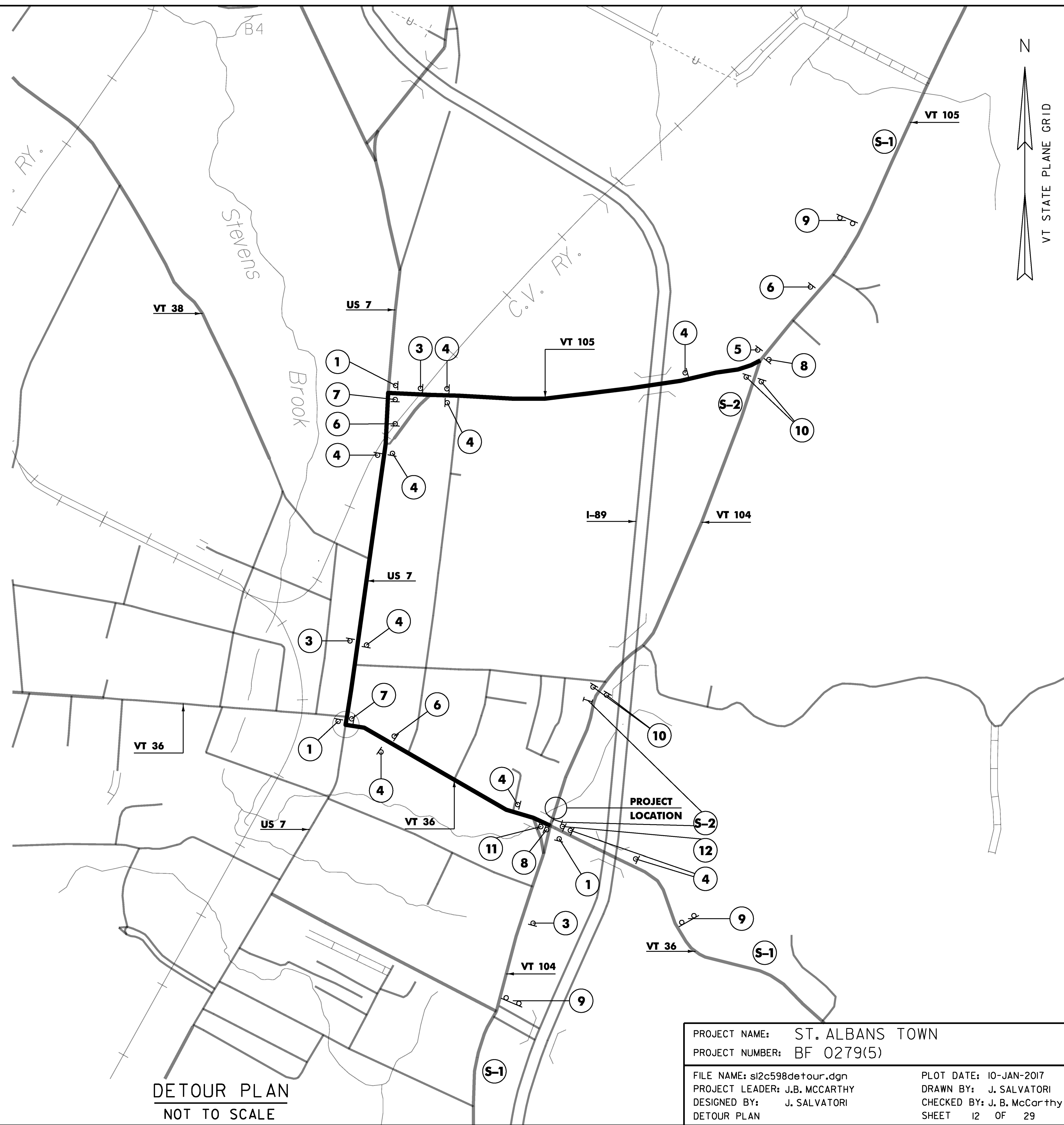
PHASE 1

*	F	R	I		M	/	D	D
	6	P	M	-			M	O
*	M	/	D	D		6	A	M

PHASE 2

* M = MONTH  
D = DAY

(S-2)



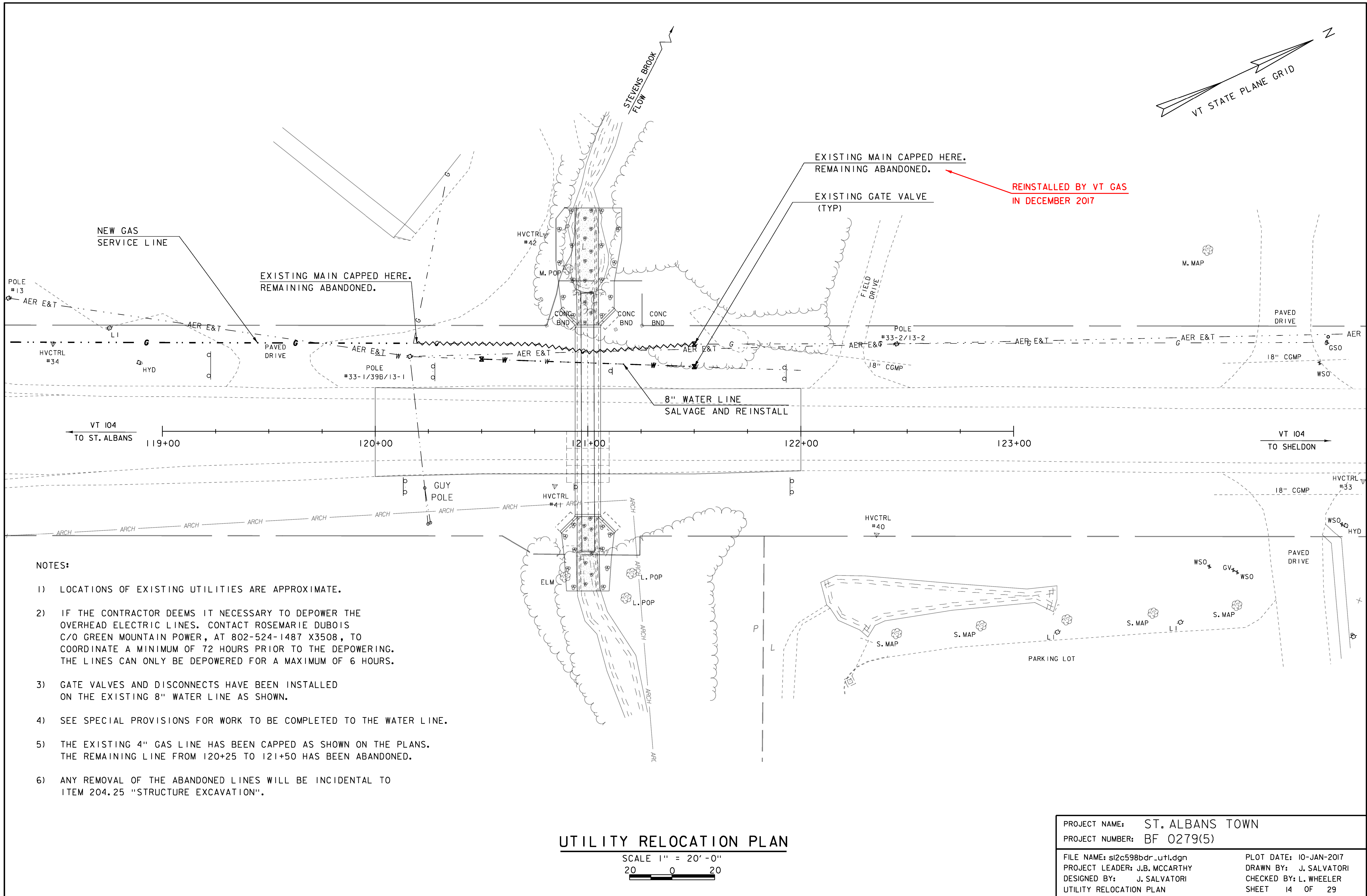
**DETOUR PLAN**  
NOT TO SCALE

PROJECT NAME: ST. ALBANS TOWN	
PROJECT NUMBER: BF 0279(5)	
FILE NAME: sl2c598detour.dgn	PLOT DATE: 10-JAN-2017
PROJECT LEADER: J.B. MCCARTHY	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: J. B. McCarthy
DETOUR PLAN	SHEET 12 OF 29









- NOTES:
- 1) LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE.
  - 2) IF THE CONTRACTOR DEEMS IT NECESSARY TO DEPOWER THE OVERHEAD ELECTRIC LINES. CONTACT ROSEMARIE DUBOIS C/O GREEN MOUNTAIN POWER, AT 802-524-1487 X3508, TO COORDINATE A MINIMUM OF 72 HOURS PRIOR TO THE DEPOWERING. THE LINES CAN ONLY BE DEPOWERED FOR A MAXIMUM OF 6 HOURS.
  - 3) GATE VALVES AND DISCONNECTS HAVE BEEN INSTALLED ON THE EXISTING 8" WATER LINE AS SHOWN.
  - 4) SEE SPECIAL PROVISIONS FOR WORK TO BE COMPLETED TO THE WATER LINE.
  - 5) THE EXISTING 4" GAS LINE HAS BEEN CAPPED AS SHOWN ON THE PLANS. THE REMAINING LINE FROM 120+25 TO 121+50 HAS BEEN ABANDONED.
  - 6) ANY REMOVAL OF THE ABANDONED LINES WILL BE INCIDENTAL TO ITEM 204.25 "STRUCTURE EXCAVATION".

UTILITY RELOCATION PLAN

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

PROJECT NAME: ST. ALBANS TOWN	
PROJECT NUMBER: BF 0279(5)	
FILE NAME: sl2c598bdr_util.dgn	PLOT DATE: 10-JAN-2017
PROJECT LEADER: J.B. MCCARTHY	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: L. WHEELER
UTILITY RELOCATION PLAN	SHEET 14 OF 29



SOIL CLASSIFICATION

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

ROCK QUALITY DESIGNATION

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

SHEAR STRENGTH

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

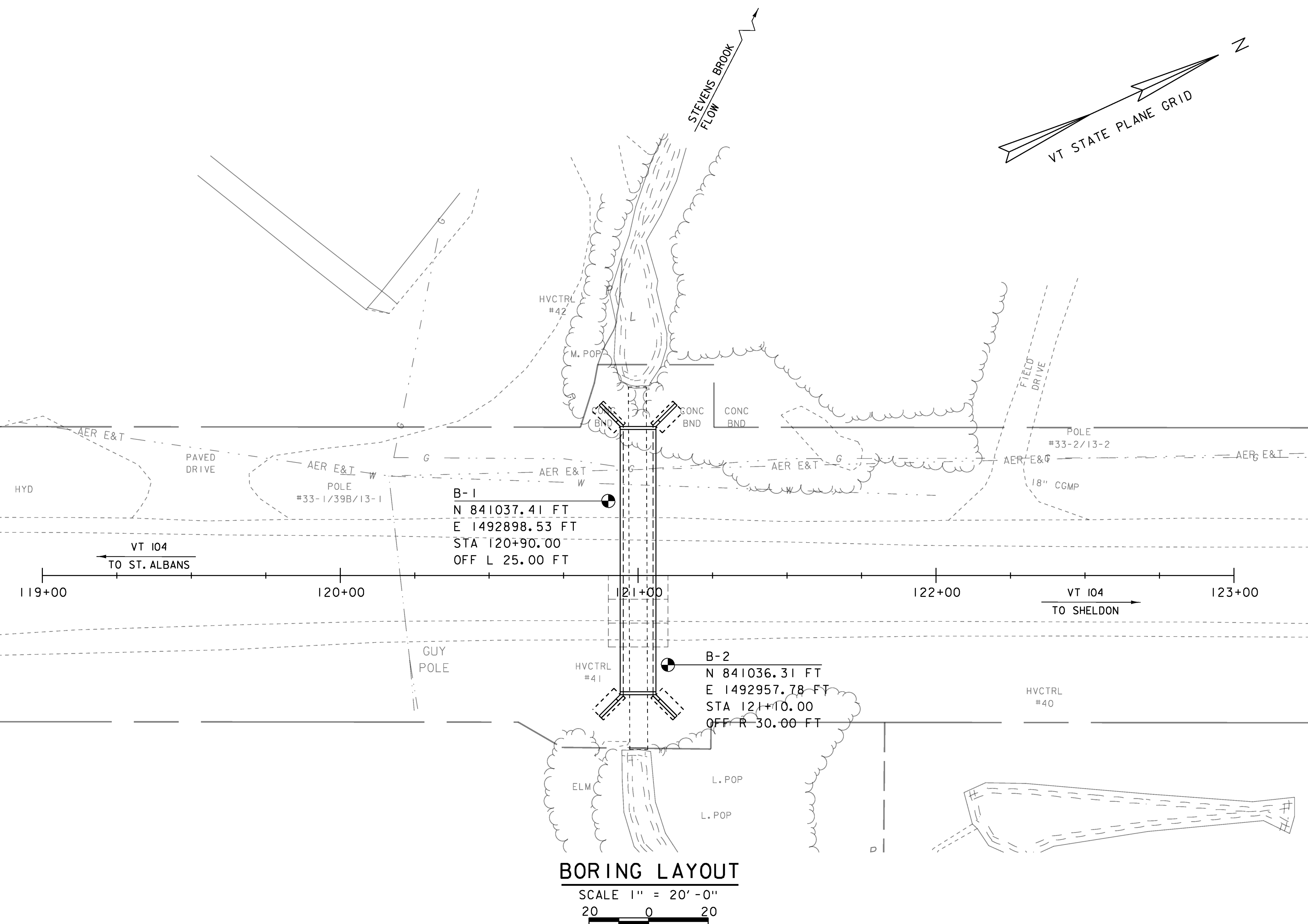
CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

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

COMMONLY USED SYMBOLS

▼	Water Elevation
⊕	Standard Penetration Boring
⊗	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per Foot For: 2" O.D. Sampler 1 3/8" I.D. Sampler Hammer Weight Of 140 Lbs. Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 1 1/8"
BX	Core Size 1 3/8"
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
Sl	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		



BORING LAYOUT

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

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 > 0.075" (#10 sieve).  
**SAND** - Particles of rock < 0.075" (#10 sieve) and > 0.0025" (#200 sieve).  
**SILT** - Soil < 0.0025" (#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.

GENERAL NOTES

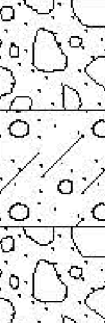
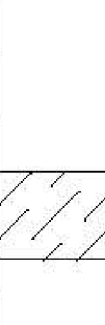
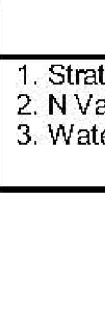
- The subsurface explorations shown herein were made between 8/26/2015 and 8/27/2015 by the Agency.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- 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.
- Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
- 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.
- 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.
- Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

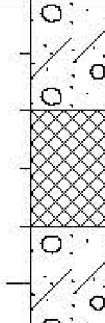
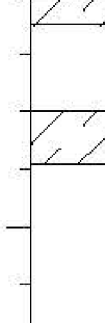
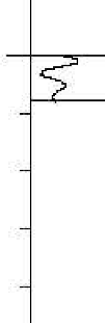
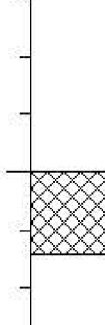
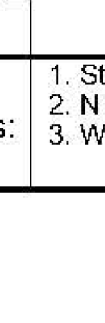
PROJECT NAME: ST. ALBANS TOWN  
PROJECT NUMBER: BF 0279(5)

FILE NAME: SI2c598bor.dgn  
PROJECT LEADER: J.B. MCCARTHY  
DESIGNED BY: J. SALVATORI  
BORING INFORMATION SHEET

PLOT DATE: 10-JAN-2017  
DRAWN BY: J. SALVATORI  
CHECKED BY: J.B. MCCARTHY  
SHEET 15 OF 29



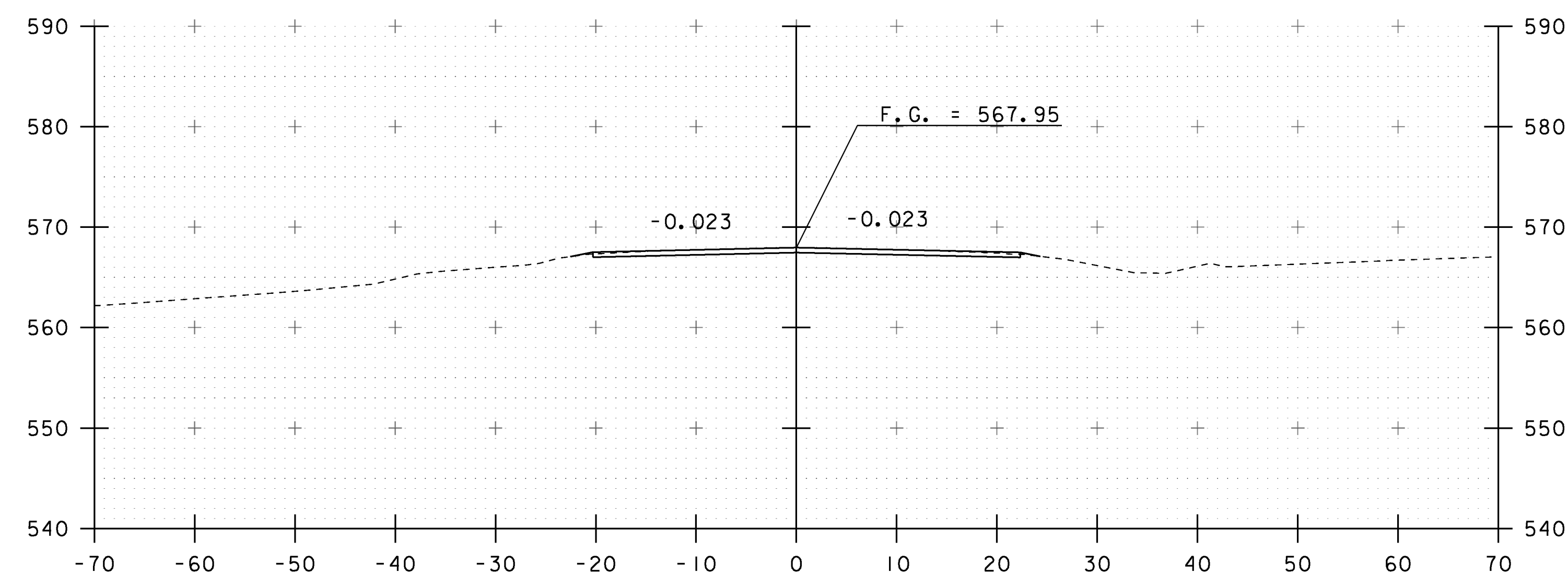
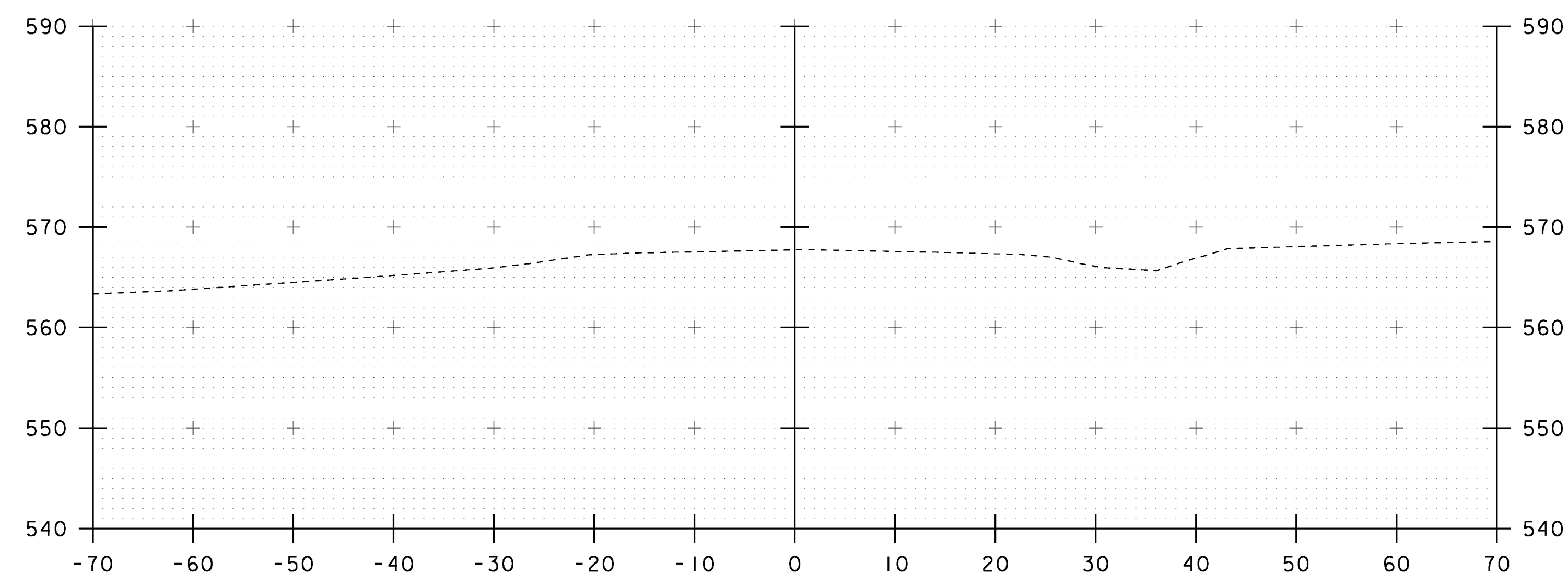
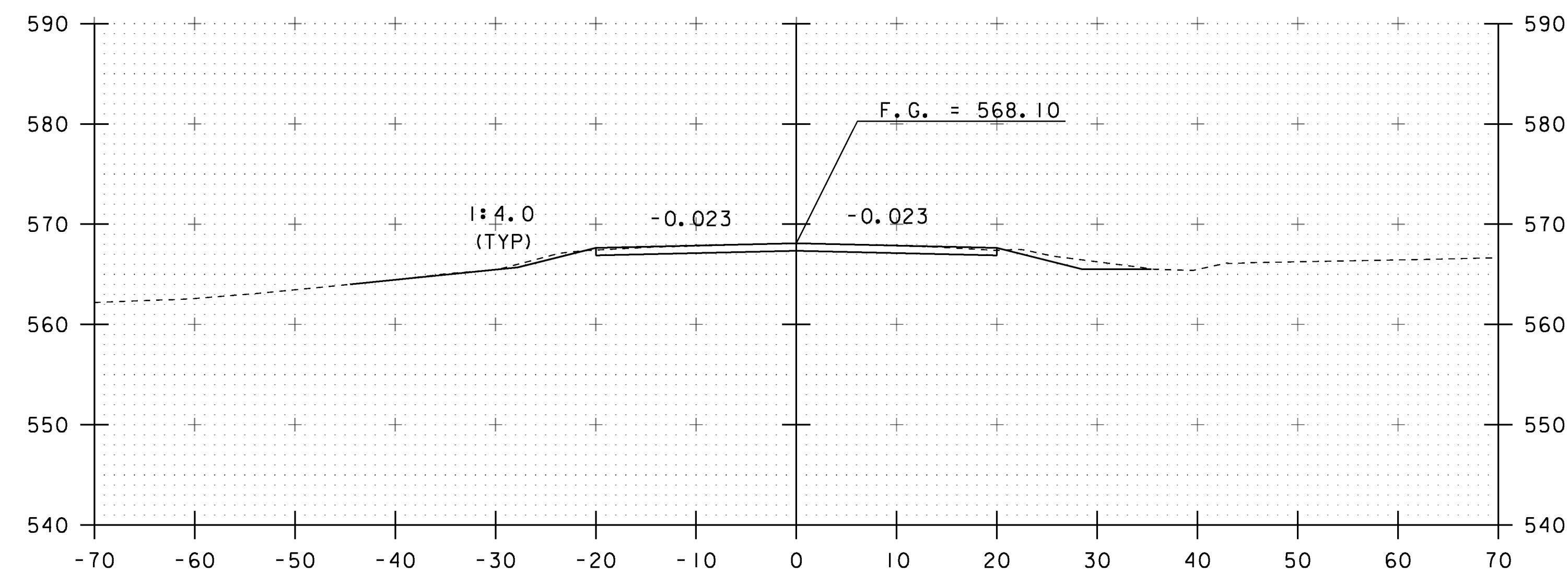
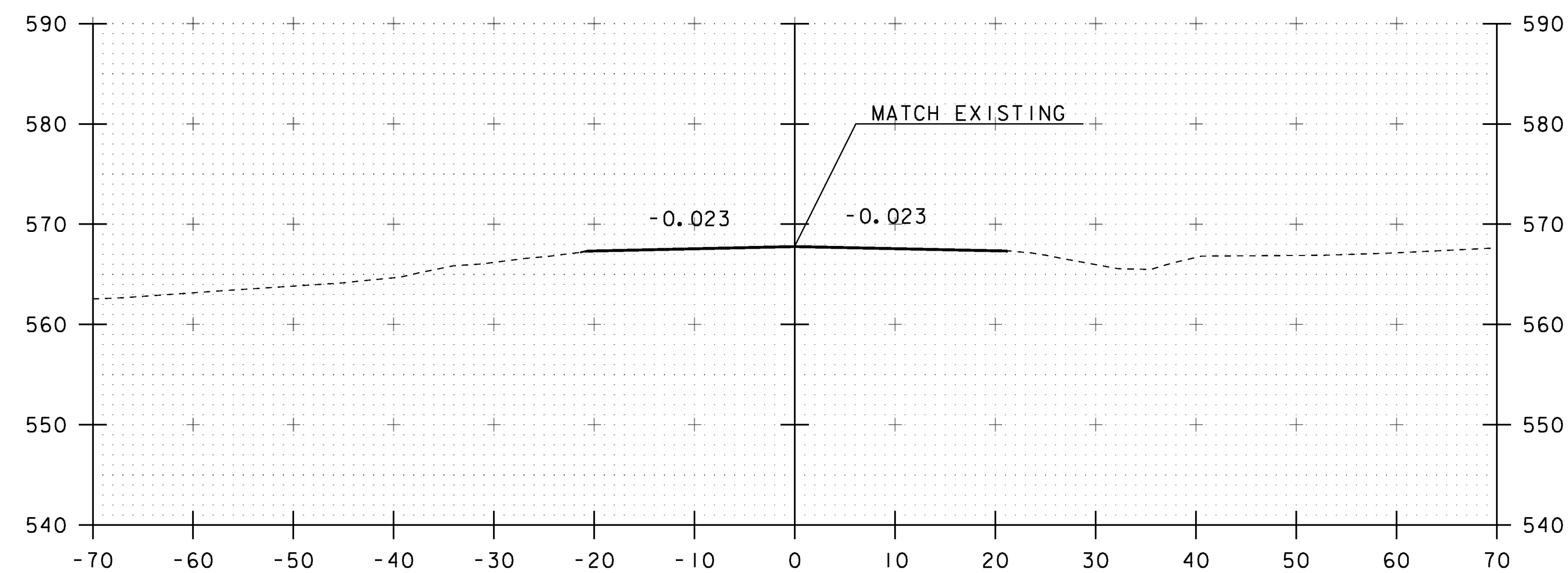
		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-101</b>				
				ST ALBANS TOWN BF 0279(5) VT 104 BR #19		Page No.: 1 of 1				
						Pin No.: 12c598				
						Checked By: END				
Boring Crew: GARROW, NIETO				Casing WB		Sampler SS				
Date Started: 8/27/15 Date Finished: 8/27/15				Type: WB		Groundwater Observations				
VTSPG NAD83: N 841037.41 ft E 1492898.53 ft				I.D.: 4 in 1.5 in		Date Depth Notes				
Station: 120+90.00 Offset: -25.00				Hammer Wt: N.A. 140 lb.		08/27/15 10.1 After Drilling.				
Ground Elevation: 566.61 ft				Hammer Fall: N.A. 30 in.						
				Hammer/Rod Type: Auto/AWJ						
				Rig: CME 45C SKID AUTO C _E = 1.33						
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
5		A-1-b, GrSa, bm-Lt/gry, Moist, Rec. = 1.4 ft, Lab Note: Broken Rock was within sample.		WH-6-6-5 (12)	6.4	36.6	49.9	13.5		
		A-2-4, Sa, Lt/bm-Lt/gry, Moist, Rec. = 1.6 ft		5-5-5-5 (10)	8.8	19.4	66.2	14.4		
		A-1-b, GrSa, Lt/bm, Moist, Rec. = 0.9 ft, Lab Note: Broken Rock was within sample.		10-12-10-8 (20)	8.6	37.6	43.8	18.6		
		A-2-4, SiGrSa, Lt/bm, Moist, Rec. = 0.2 ft		4-4-1-1 (5)	10.1	28.6	50.8	20.6		
10		Field Note: No Recovery		(WR)						
		A-1-b, SaGr, bm, Moist, Rec. = 0.4 ft, Lab Note: Broken Rock was within sample.		WH-WH-2-12 (2)	12.7	49.6	35.3	15.1		
		A-4, GrSaSi, gry, Moist, Rec. = 1.5 ft, Lab Note: Broken Rock was within sample.		3-20-37-27 (57)	11.0	25.3	27.2	47.5		
		A-4, SaSi, gry, Moist, Rec. = 1.3 ft		27-48-R@2.5" (R)	10.3	16.9	22.4	60.7	19	4
15		A-4, GrSaSi, gry, Moist, Rec. = 1.1 ft, Lab Note: Broken Rock was within sample.		35-R@5.0" (R)	11.6	22.0	23.3	54.7		
		A-4, GrSaSi, gry, Moist, Rec. = 1.3 ft, Lab Note: Broken Rock was within sample.		18-35-R@5.0" (R)	11.3	20.4	20.9	58.7	20	6
20										
25		A-4, SaSi, gry, Moist, Rec. = 1.6 ft		25-33-R@6.0" (R)	9.2	16.8	25.2	58.0	19	5
30		A-4, SaSi, gry, Moist, Rec. = 1.1 ft		32-48-R@1.0" (R)	9.1	14.5	25.0	60.5		
35		A-4, SaSi, gry, Moist, Rec. = 1.3 ft, Lab Note: Broken Rock was within sample. A Trace of clay was noticeable. Sample tested non-plastic		26-39-R@6.0" (R)	8.7	17.4	24.2	58.4		
		Hole stopped @ 36.5 ft								
40		Remarks: Hole collapsed at 24.0 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 _E 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.								

		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-102</b>		
				ST ALBANS TOWN BF 0279(5) VT 104 BR #19		Page No.: 1 of 1		
						Pin No.: 12c598		
						Checked By: END		
Boring Crew: GARROW, NIETO				Casing WB		Sampler SS		
Date Started: 8/26/15 Date Finished: 8/26/15				Type: WB		Groundwater Observations		
VTSPG NAD83: N 841036.31 ft E 1492957.78 ft				I.D.: 4 in 1.5 in		Date Depth Notes		
Station: 121+10.00 Offset: 30.00				Hammer Wt: N.A. 140 lb.		08/26/15 5.7 After Drilling.		
Ground Elevation: 564.92 ft				Hammer Fall: N.A. 30 in.				
				Hammer/Rod Type: Auto/AWJ				
				Rig: CME 45C SKID AUTO C _E = 1.33				
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5		A-2-4, SiGrSa, bm, Moist, Rec. = 1.1 ft, Lab Note: Broken Rock, grass, and roots were within sample.		1-2-3-5 (5)	10.5	29.7	44.9	25.4
		Field Note: No Recovery		5-4-4-3 (8)				
		Visual Description: SiSa, bm, Moist, Rec. = 0.1 ft, Lab Note: Insufficient sample size for testing.		5-4-4-4 (8)	11.1			
		A-1-B, SiSaGr, bm-Lt/bm, Moist, Rec. = 1.0 ft, Lab Note: Broken Rock was within sample.		6-9-5-4 (14)	10.8	48.0	31.6	20.4
10		A-1-B, SiSaGr, bm-gry, Moist, Rec. = 0.4 ft, Lab Note: Broken Rock was within sample.		12-6-6-6 (12)	12.1	45.1	33.0	21.9
		A-1-B, GrSa, Lt/bm-gry, Moist, Rec. = 0.8 ft, Lab Note: Broken Rock was within sample.			17.5	37.9	42.1	20.0
		A-4, GrSaSi, gry-Lt/bm, Moist, Rec. = 1.0 ft		3-2-6-R@5.0" (8)	12.7	24.2	32.5	43.3
		Visual Description: Broken Rock with SaSi, gry, Moist, Rec. = 0.3 ft, Lab Note: Insufficient sample size for testing.		R@3.5" (R)	7.9			
15		A-4, SaGrSi, gry, Moist, Rec. = 0.5 ft, Lab Note: Broken Rock was within sample. A trace of clay was noticeable. Sample tested non-plastic.		R@6.0" (R)	7.9	35.4	23.7	40.9
		A-4, SaSi, gry, Moist, Rec. = 0.5 ft, Lab Note: Broken Rock was within sample. A trace of clay was noticeable. Sample tested non-plastic.		R@6.0" (R)	9.9	17.8	26.5	55.7
		A-4, Si, gry, Moist, Rec. = 1.1 ft, Lab Note: A trace of clay was noticeable. Sample tested non-plastic.		37-R@5.0" (R)	13.2	11.6	19.1	69.3
20								
25		Visual Description: Broken Rock with Si, gry, Moist, Rec. = 0.3 ft, Lab Note: Insufficient sample size for testing.		R@3.5" (R)	9.5			
30		A-4, SaGrSi, gry, Moist, Rec. = 0.4 ft, Lab Note: Broken Rock was within sample.		R@5.0" (R)	7.9	33.4	28.2	38.4
35		Field Note: No Recovery		26-35-R@5.0" (R)				
		Hole stopped @ 36.4 ft						
40		Remarks: Hole collapsed at 7.6 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 _E 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.						



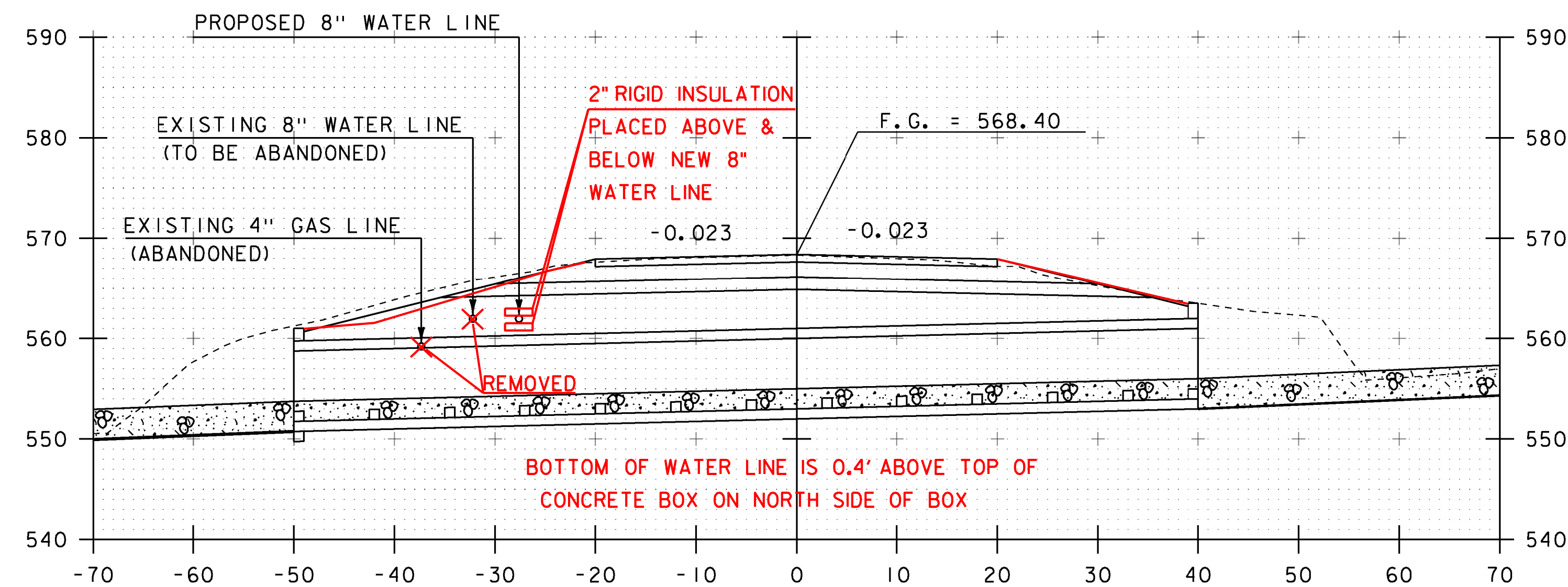




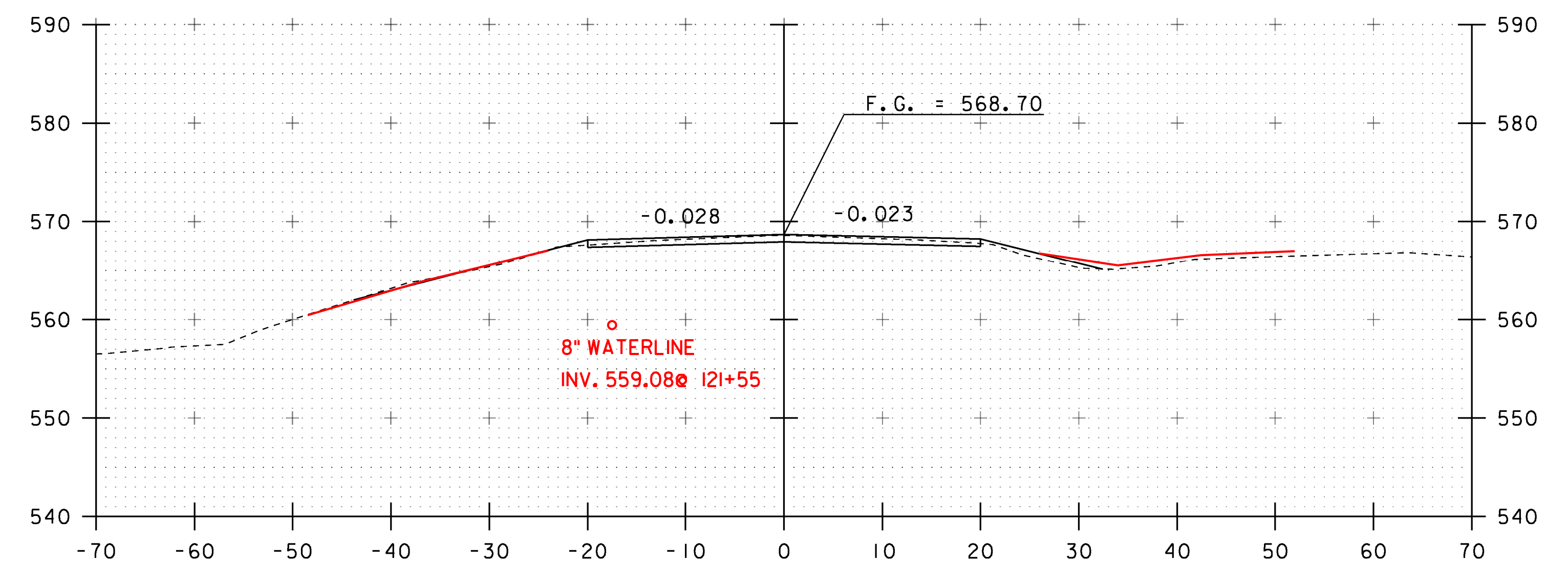


PROJECT NAME: ST. ALBANS TOWN	
PROJECT NUMBER: BF 0279(5)	
FILE NAME: sl2c598xs.dgn	PLOT DATE: 10-JAN-2017
PROJECT LEADER: J.B. MCCARTHY	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: J.B. MCCARTHY
MAINLINE CROSS SECTIONS	SHEET 18 OF 29

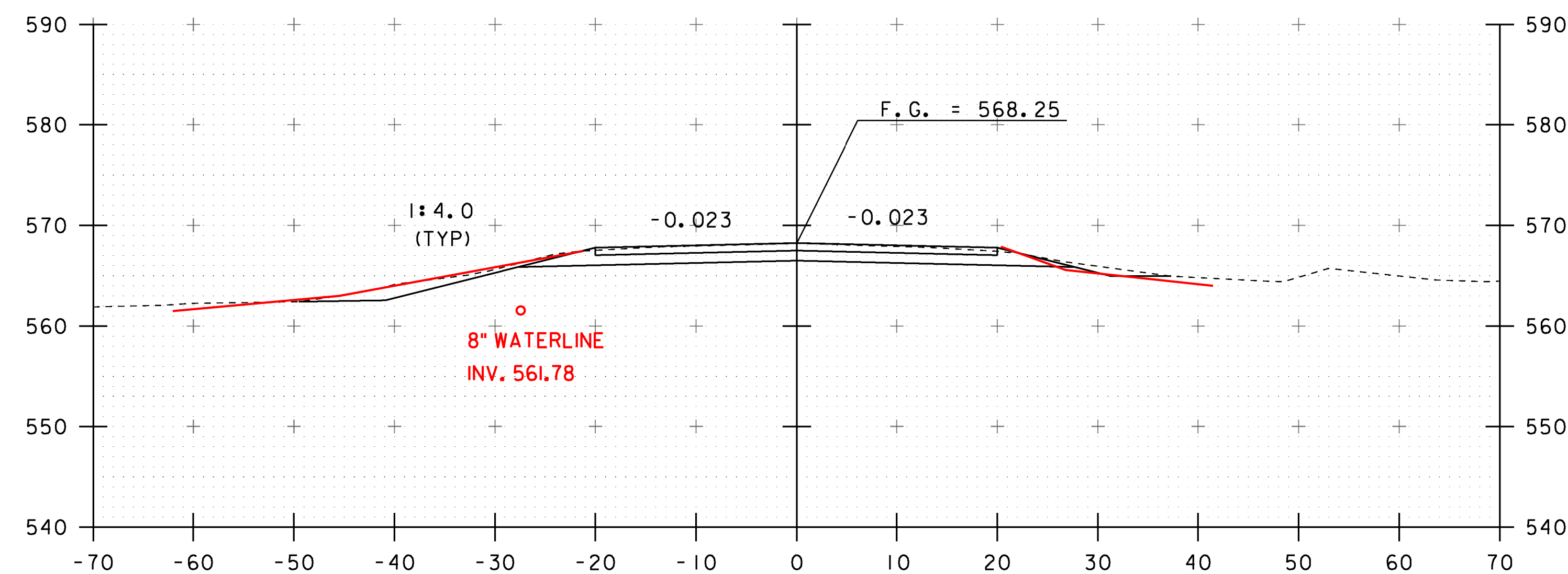




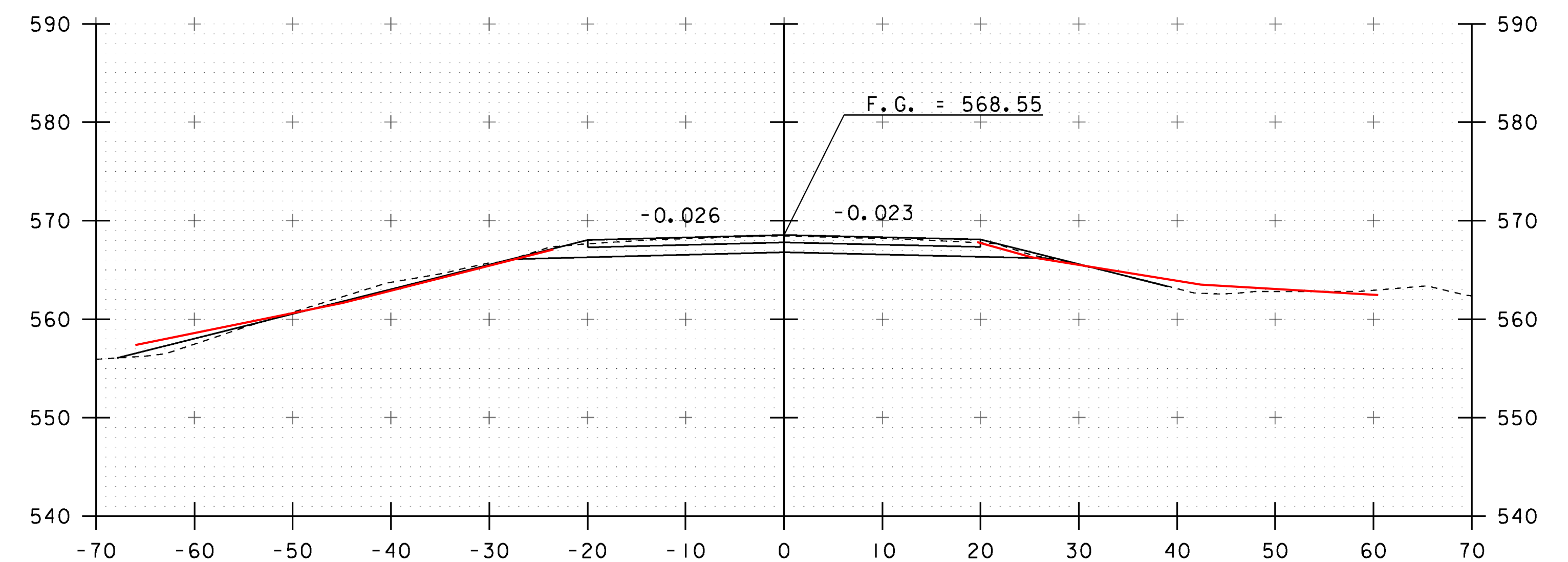
121+00  
STA 121+12.50 END PROJECT



121+50



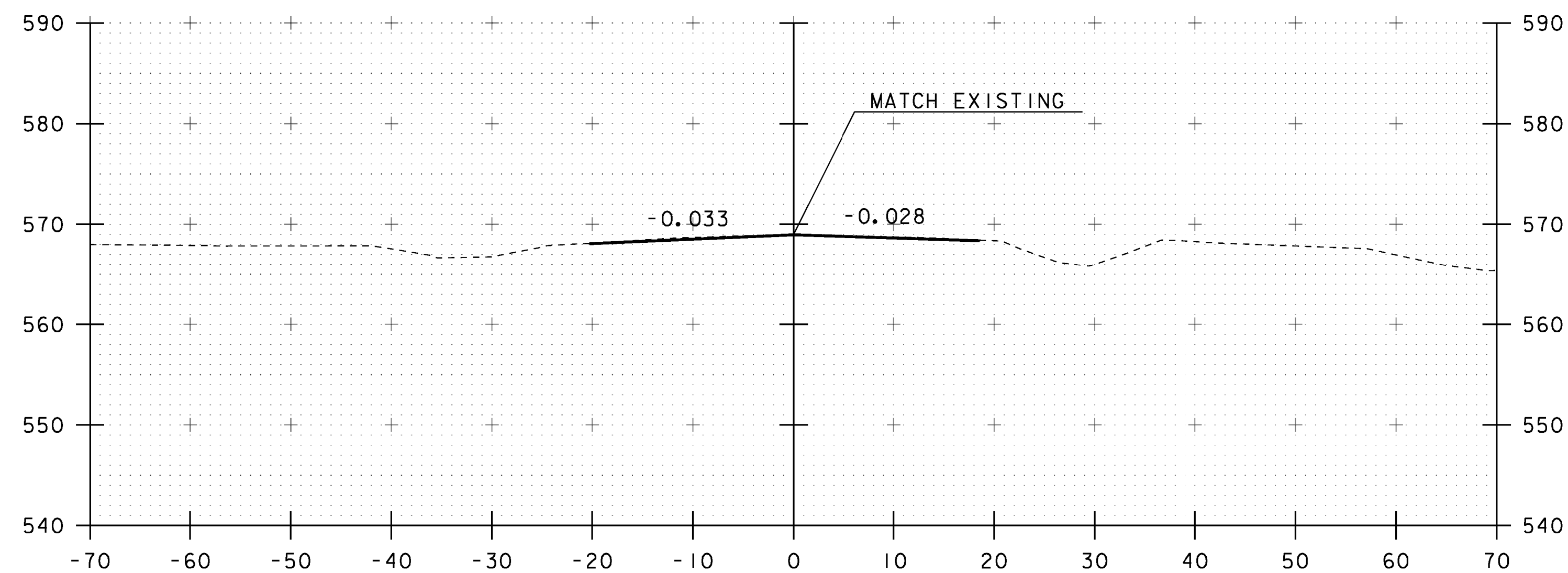
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STA 120+87.50 BEGIN PROJECT



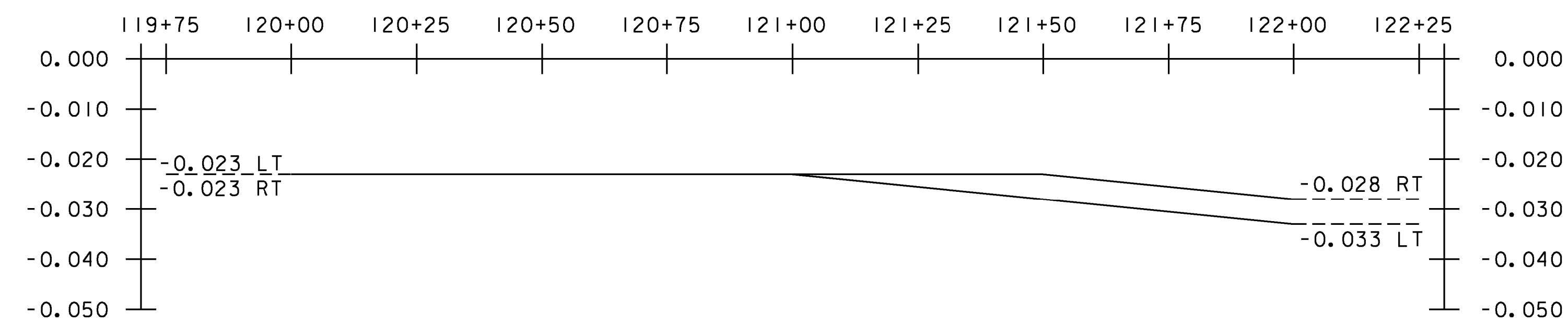
121+25

PROJECT NAME: ST. ALBANS TOWN	
PROJECT NUMBER: BF 0279(5)	
FILE NAME: sl2c598xs.dgn	PLOT DATE: 10-JAN-2017
PROJECT LEADER: J.B. MCCARTHY	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: J.B. MCCARTHY
MAINLINE CROSS SECTIONS	SHEET 19 OF 29

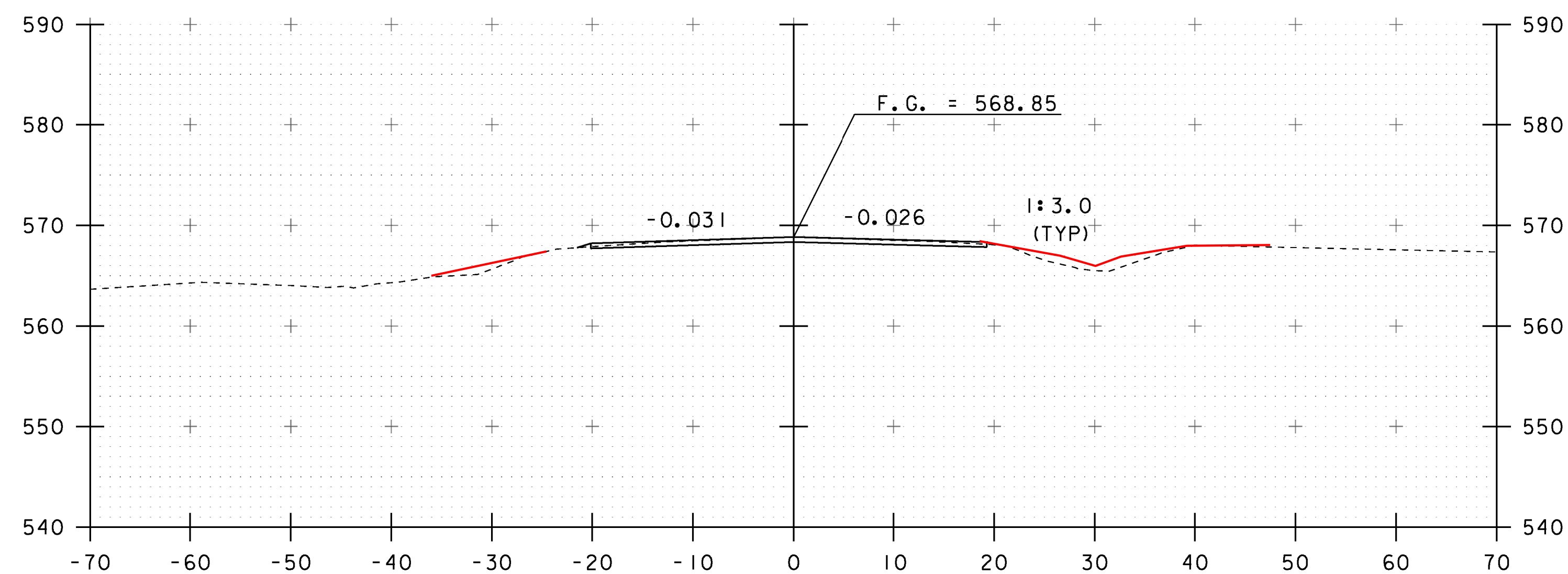




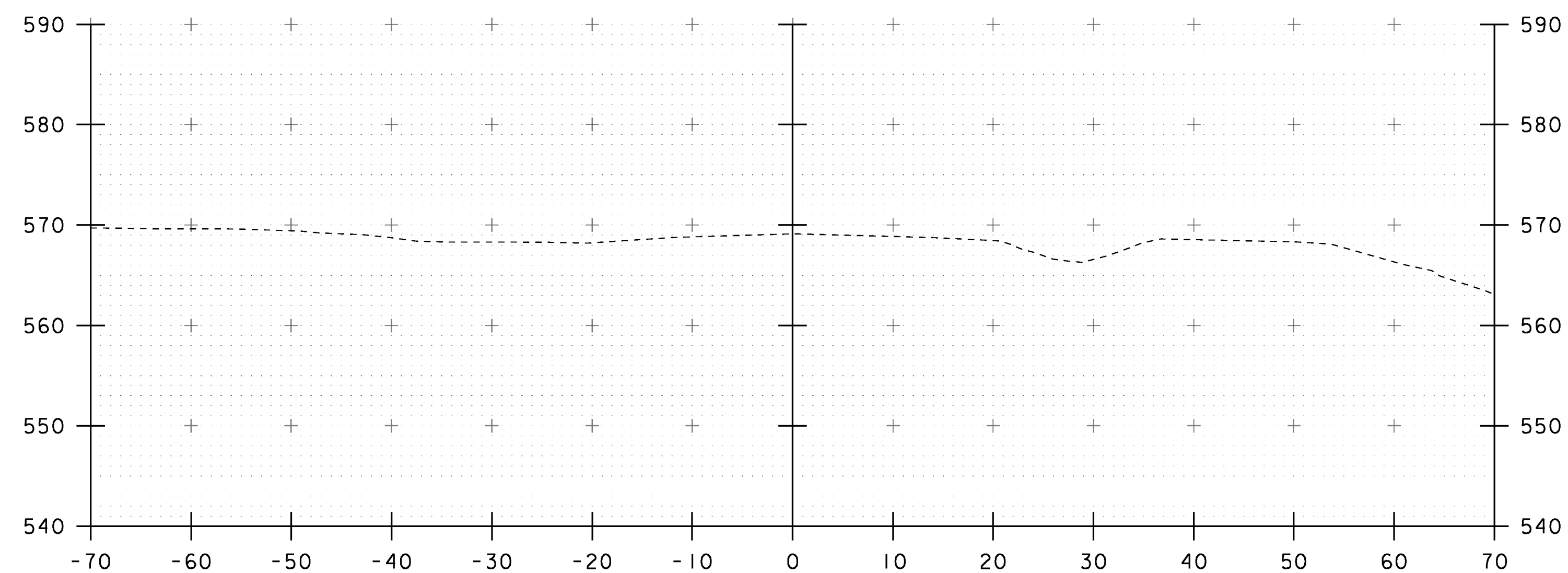
122+00  
END APPROACH



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



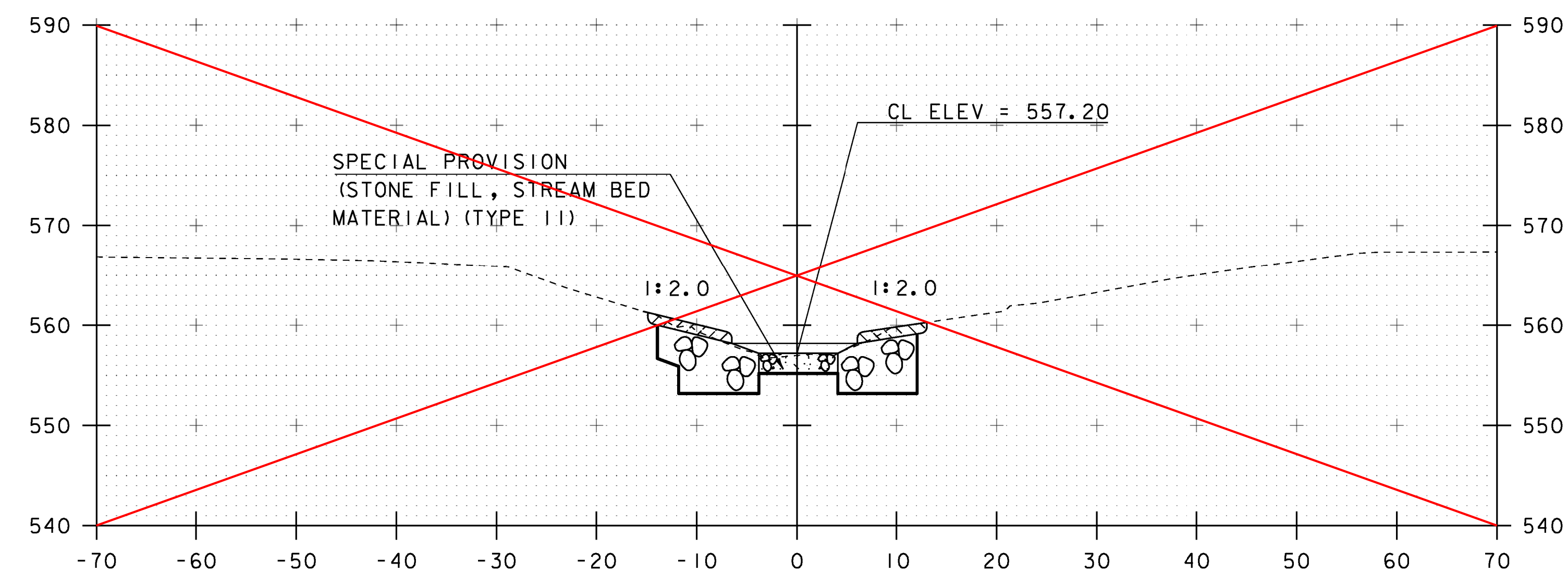
121+75



122+25

PROJECT NAME: ST. ALBANS TOWN	
PROJECT NUMBER: BF 0279(5)	
FILE NAME: sl2c598xs.dgn	PLOT DATE: 10-JAN-2017
PROJECT LEADER: J.B. MCCARTHY	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: J.B. MCCARTHY
MAINLINE CROSS SECTIONS	SHEET 20 OF 29

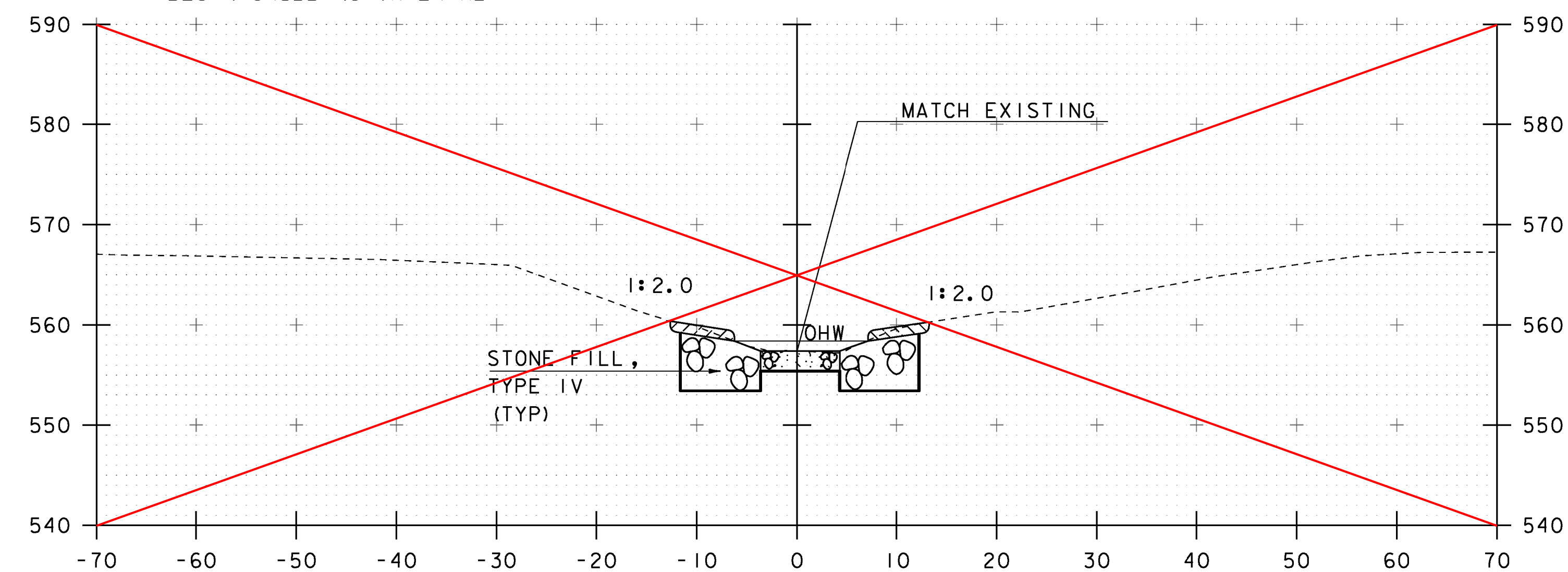




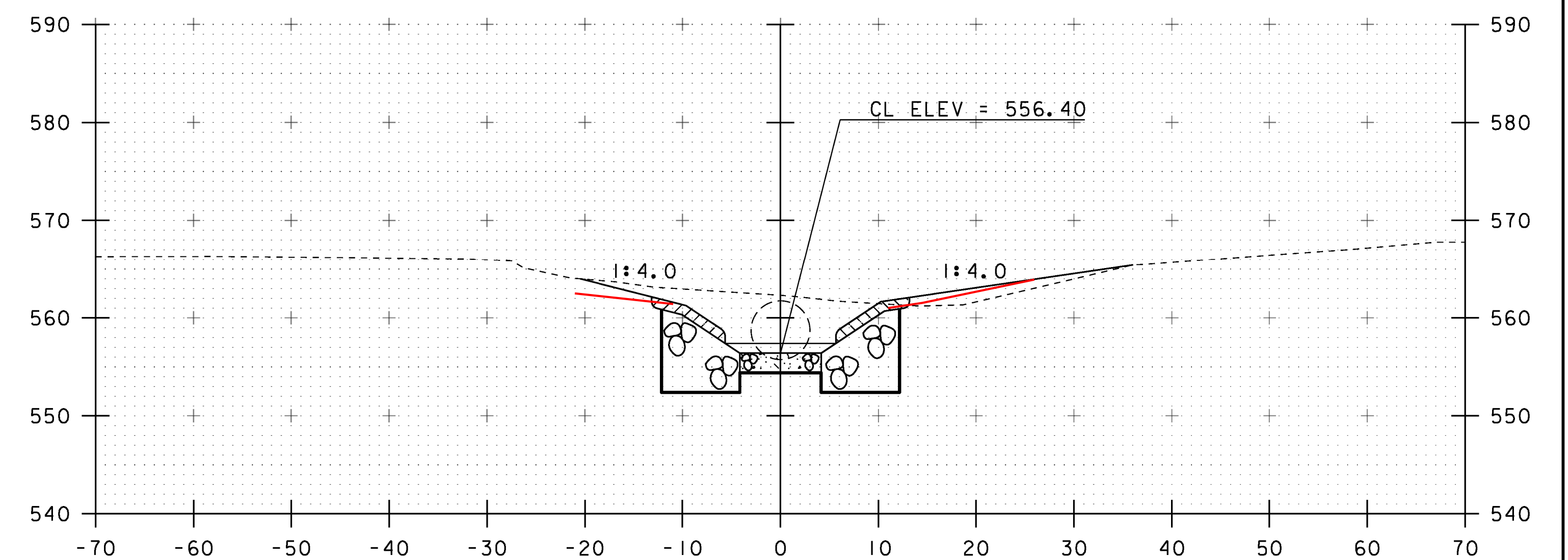
50+30

AS PER PROJECT MANAGER REQUEST  
TO SAVE LARGE ELM TREE

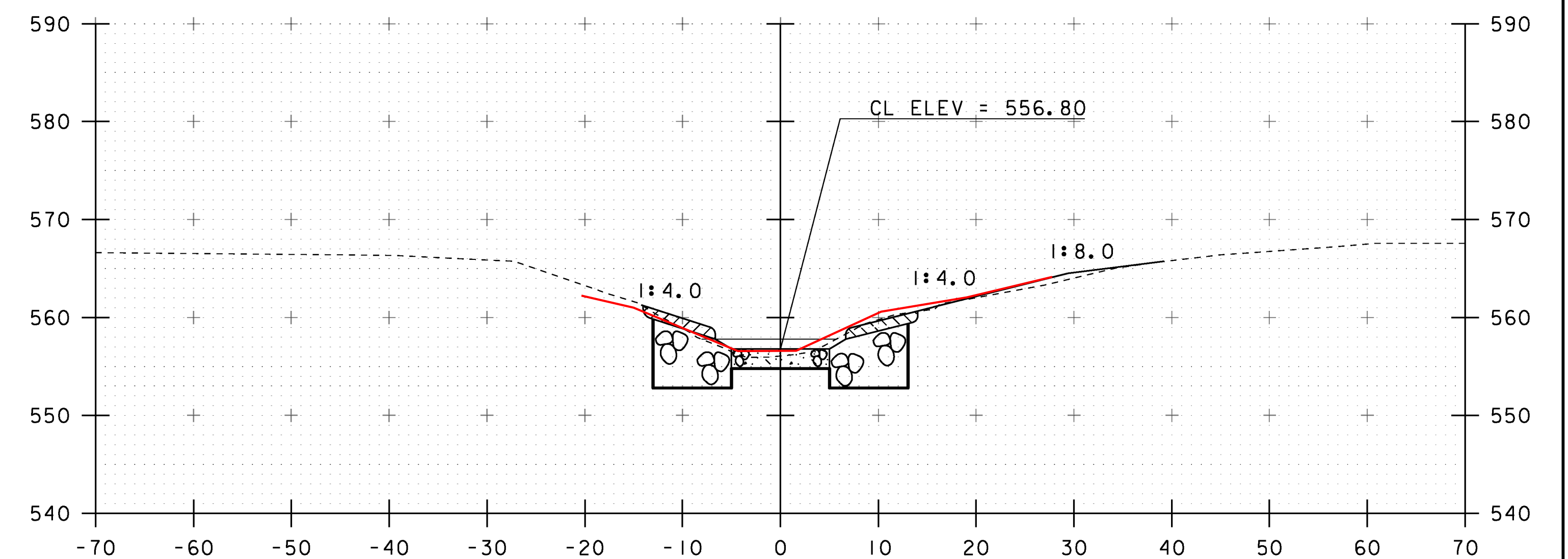
STA ~~50+25~~ 50+40  
BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
BEGIN GEOTEXTILE UNDER STONE FILL  
BEGIN STONE FILL, TYPE IV  
BEGIN SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL) (TYPE II)  
BEGIN GRUBBING MATERIAL



50+25



50+50

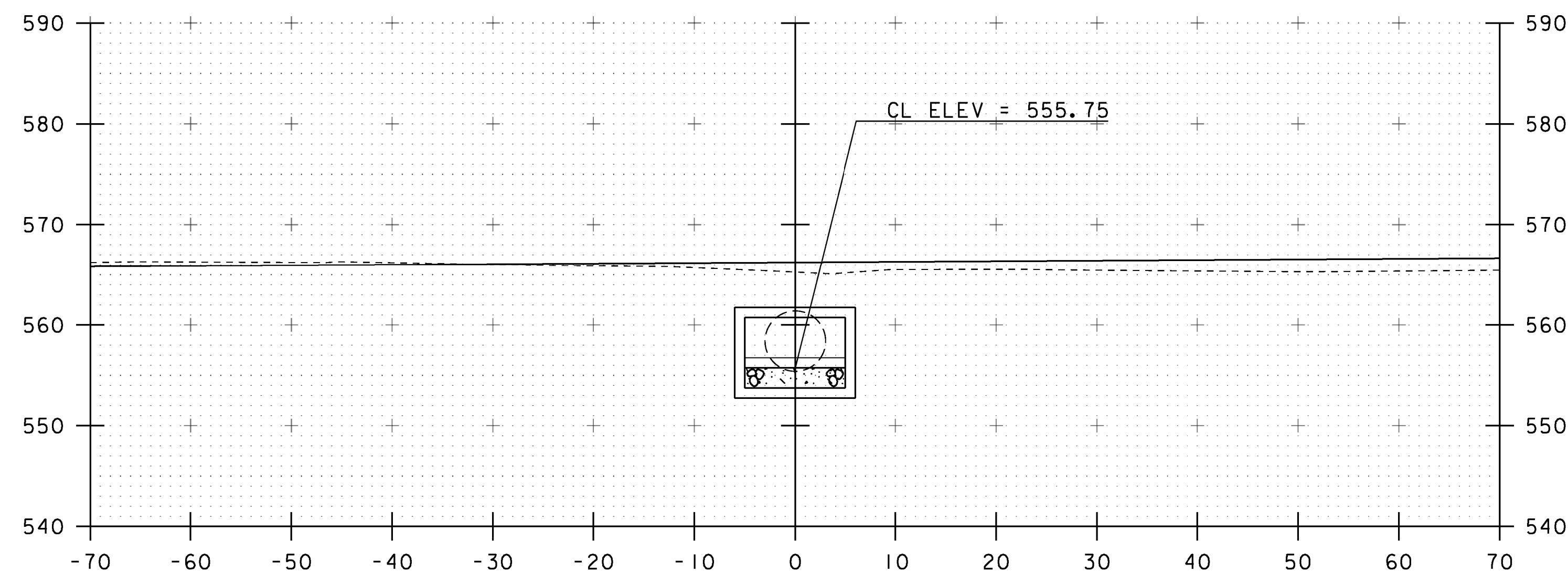


50+40

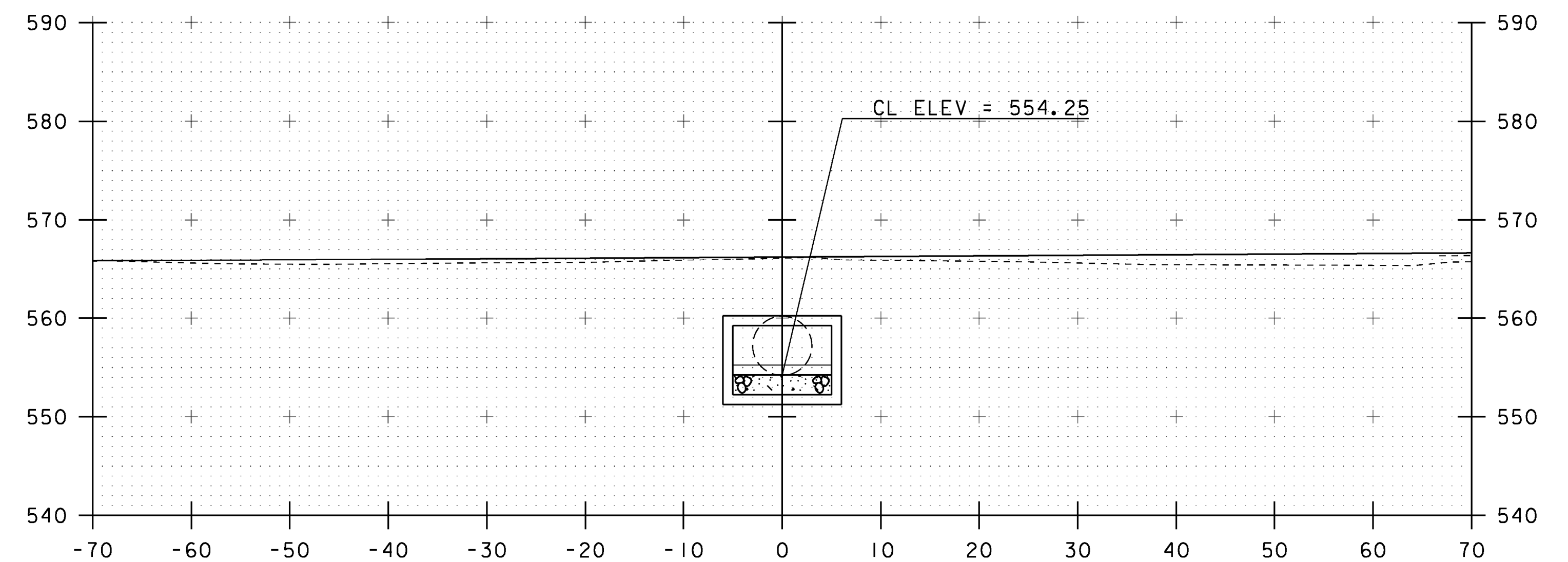
PROJECT NAME: ST. ALBANS TOWN	
PROJECT NUMBER: BF 0279(5)	
FILE NAME: sl2c598xs.dgn	PLOT DATE: 10-JAN-2017
PROJECT LEADER: J.B. MCCARTHY	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: J.B. MCCARTHY
CHANNEL CROSS SECTIONS	SHEET 21 OF 29

STA. 50+25 TO STA. 50+50



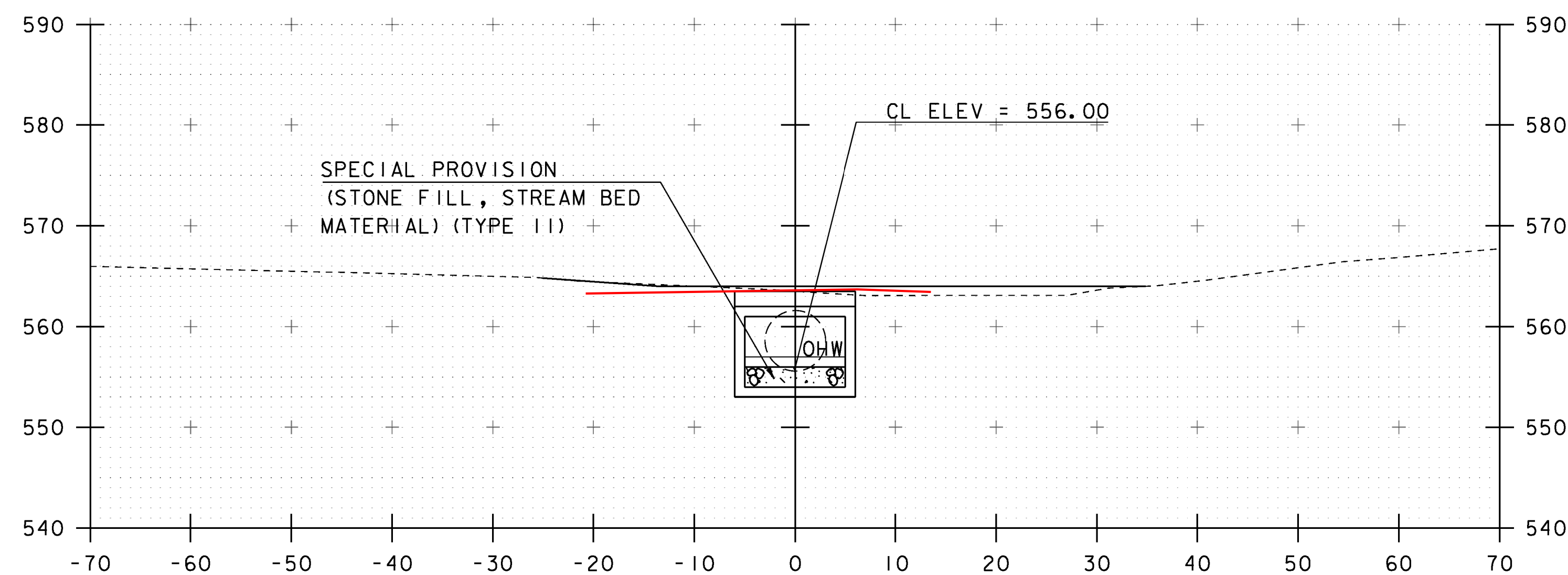


50+70

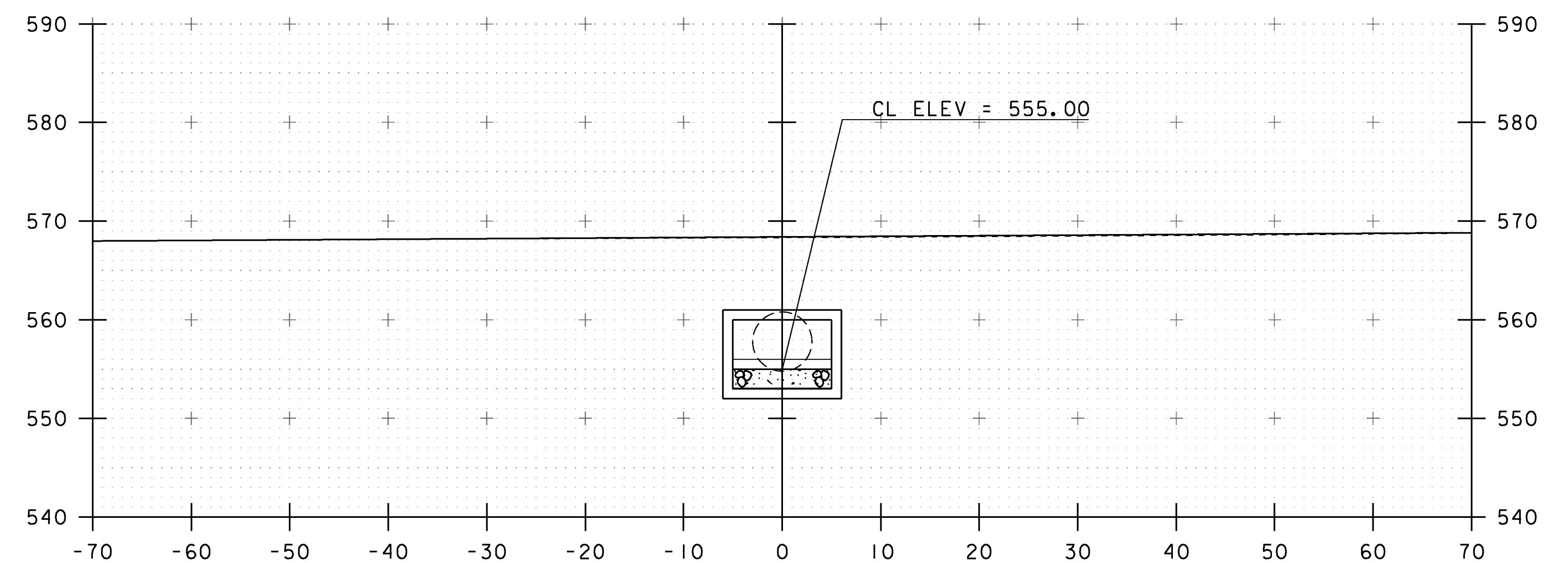


51+30

STA 50+60 BACK STATION  
END UNCLASSIFIED CHANNEL EXCAVATION  
END GEOTEXTILE UNDER STONE FILL  
END STONE FILL, TYPE IV  
END GRUBBING MATERIAL



50+60



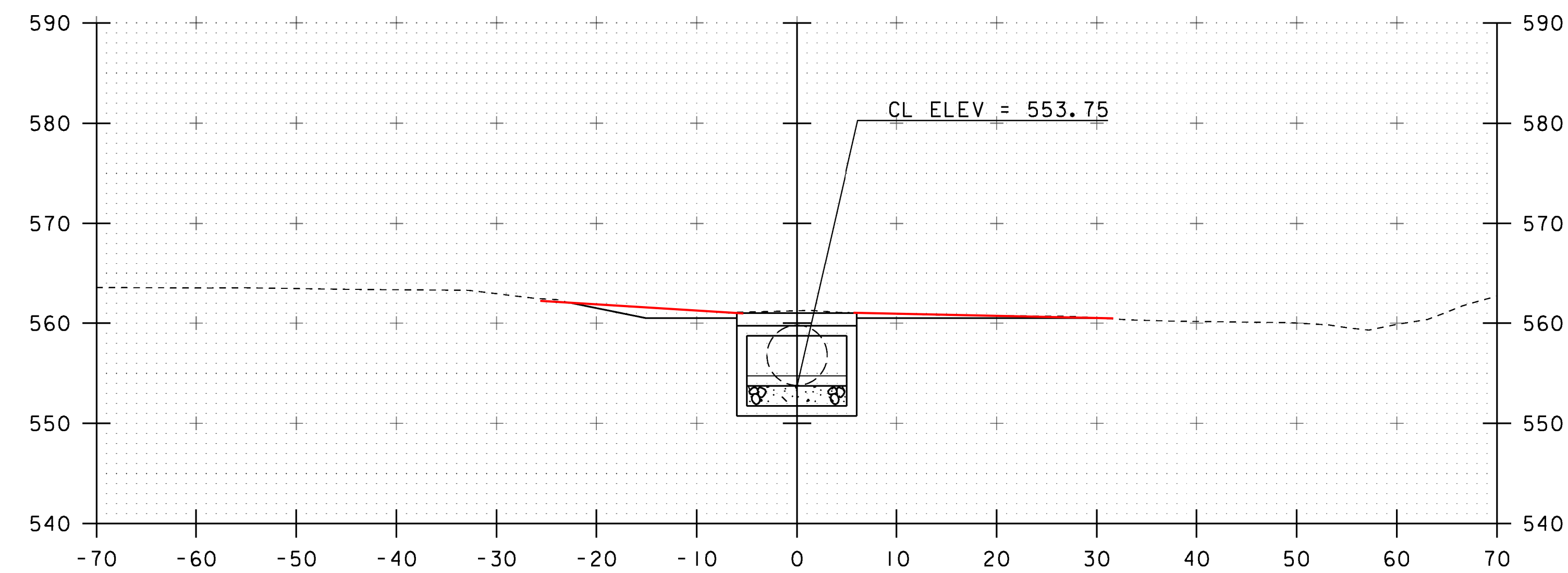
51+00

STA. 50+60 TO STA. 51+30

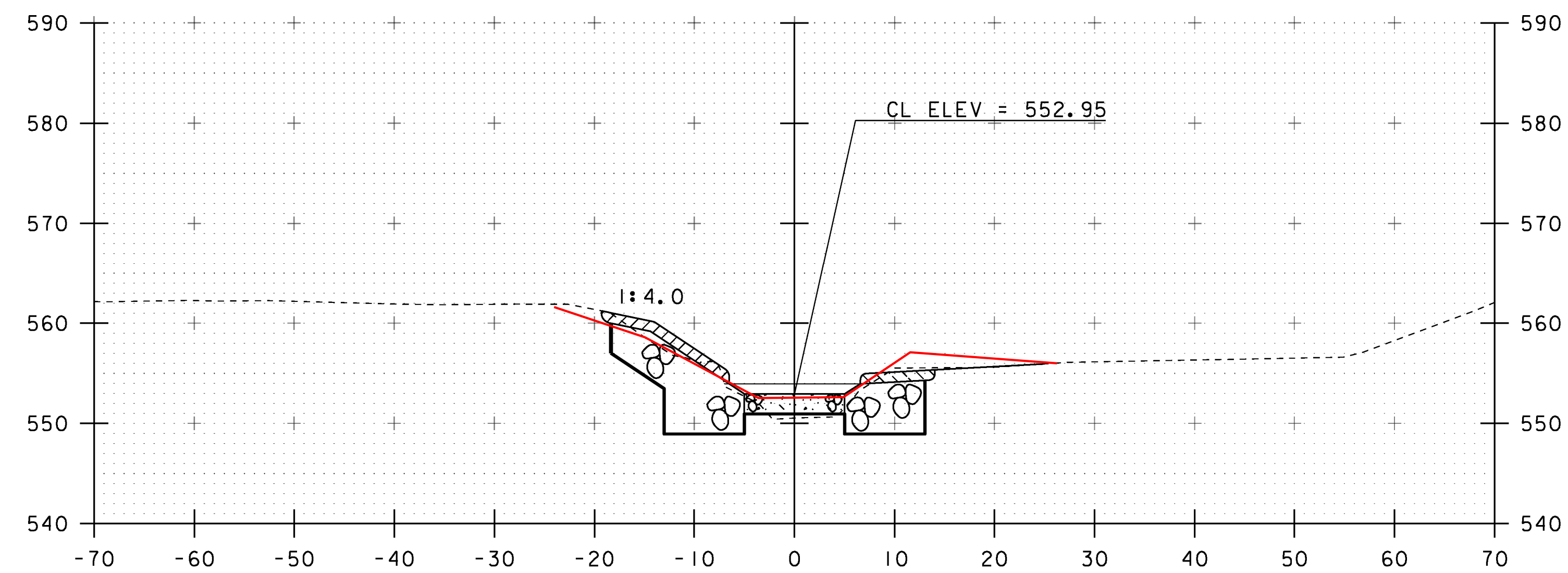
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PROJECT NUMBER: BF 0279(5)	
FILE NAME: sl2c598xs.dgn	PLOT DATE: 10-JAN-2017
PROJECT LEADER: J.B. MCCARTHY	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: J.B. MCCARTHY
CHANNEL CROSS SECTIONS	SHEET 22 OF 29



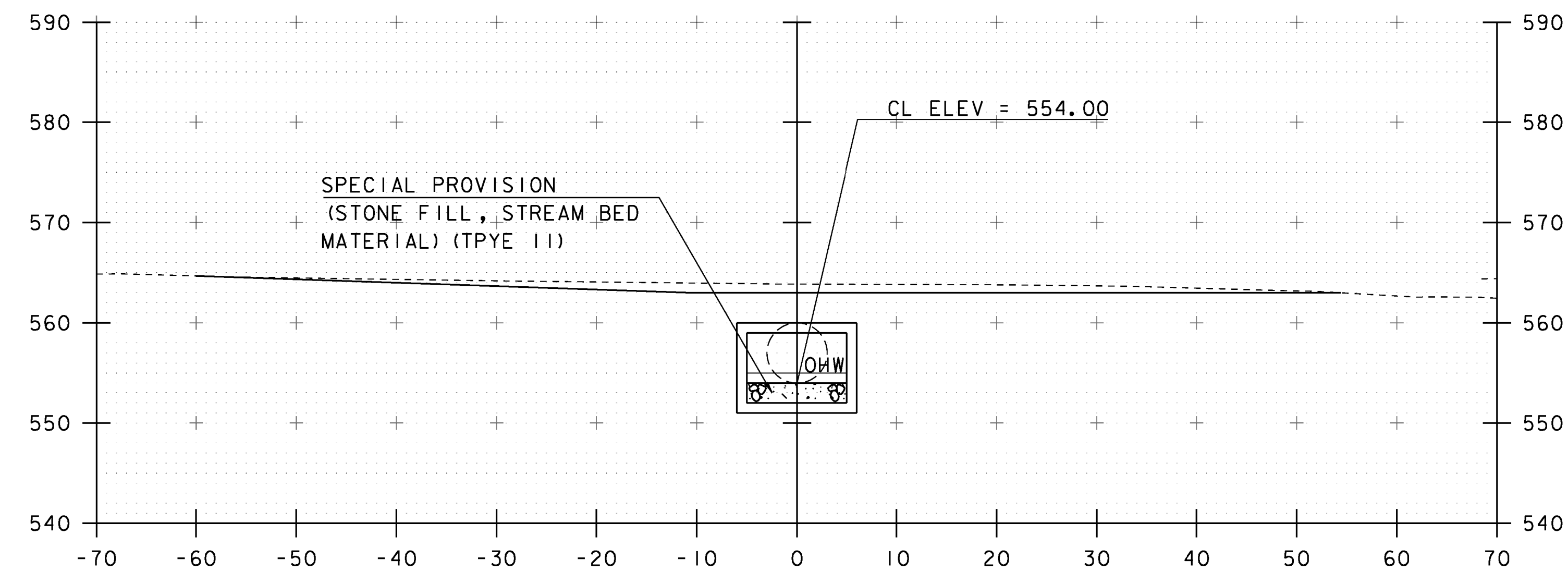
STA 51+50 AHEAD STATION  
BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
BEGIN GEOTEXTILE UNDER STONE FILL  
BEGIN STONE FILL, TYPE IV  
BEGIN GRUBBING MATERIAL



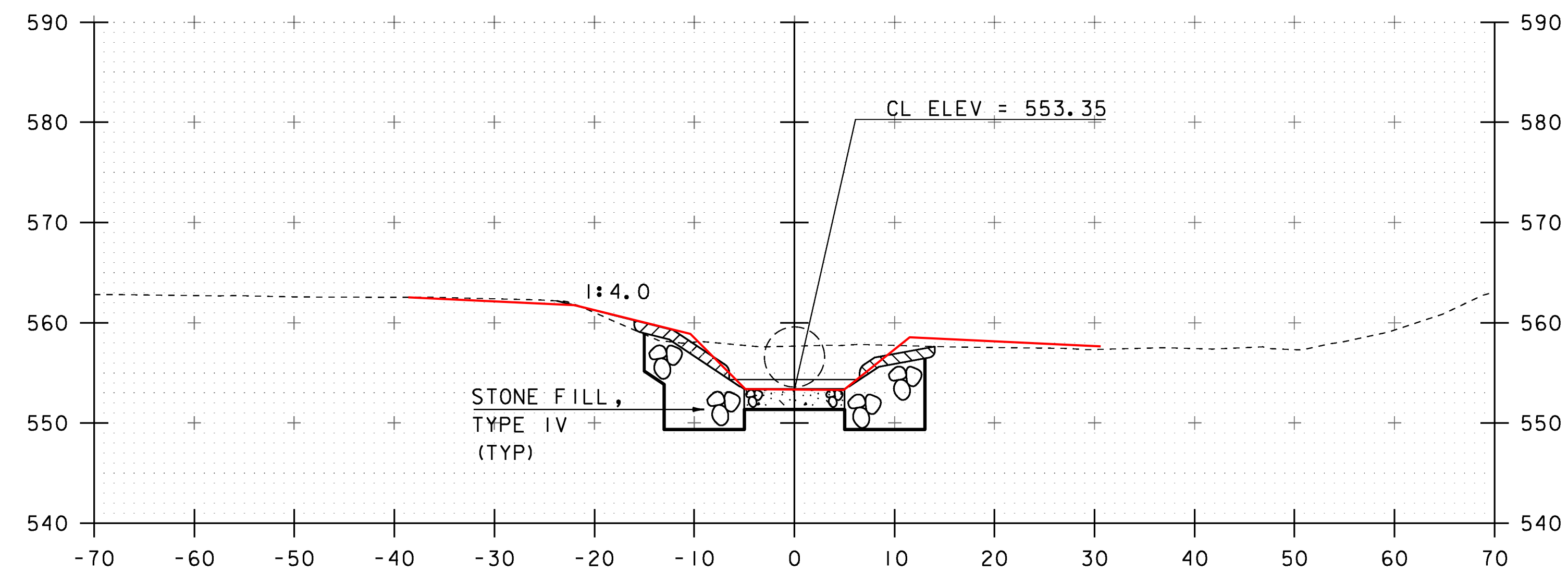
51+50



51+70



51+40

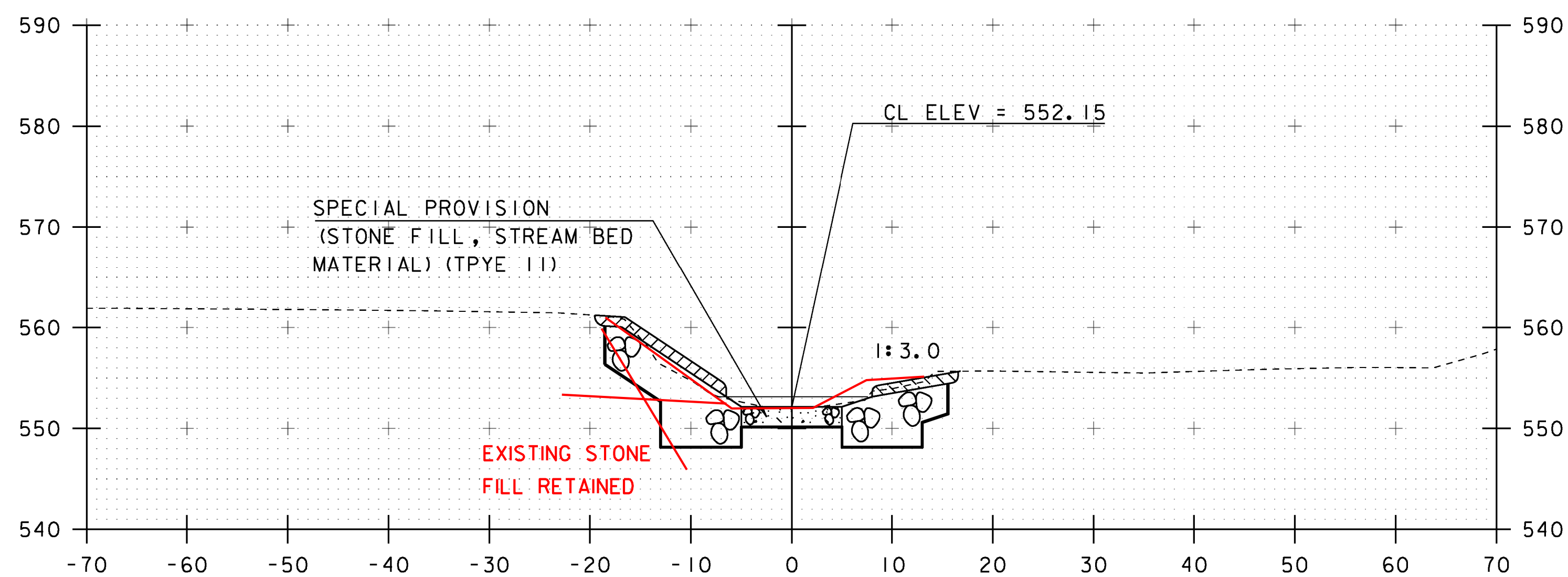


51+60

PROJECT NAME: ST. ALBANS TOWN	
PROJECT NUMBER: BF 0279(5)	
FILE NAME: sl2c598xs.dgn	PLOT DATE: 10-JAN-2017
PROJECT LEADER: J.B. MCCARTHY	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: J.B. MCCARTHY
CHANNEL CROSS SECTIONS	SHEET 23 OF 29

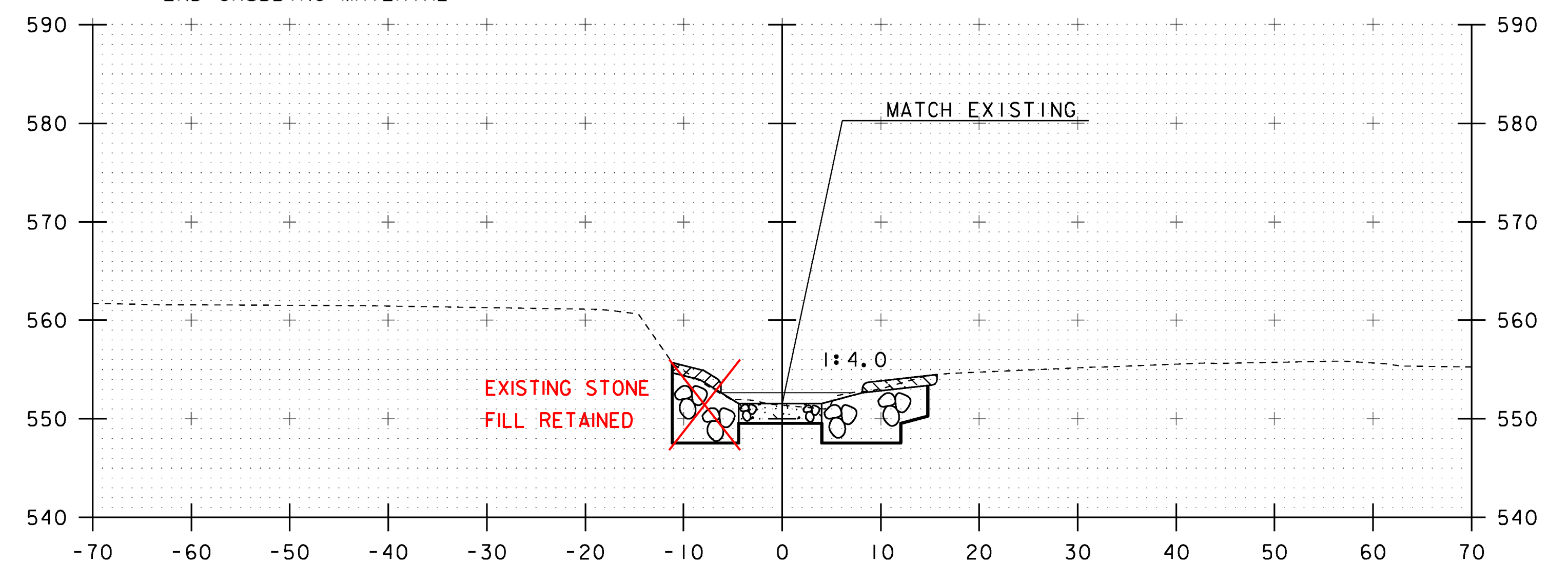
STA. 51+40 TO STA. 51+70



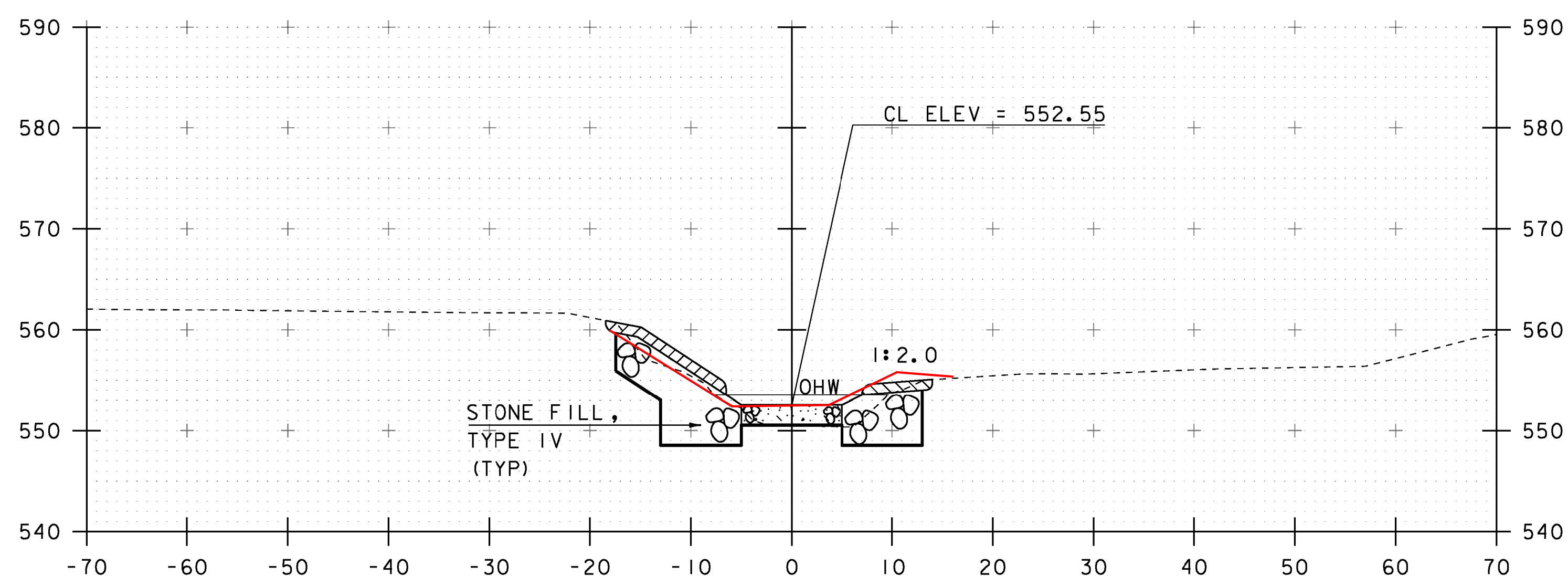


51+90

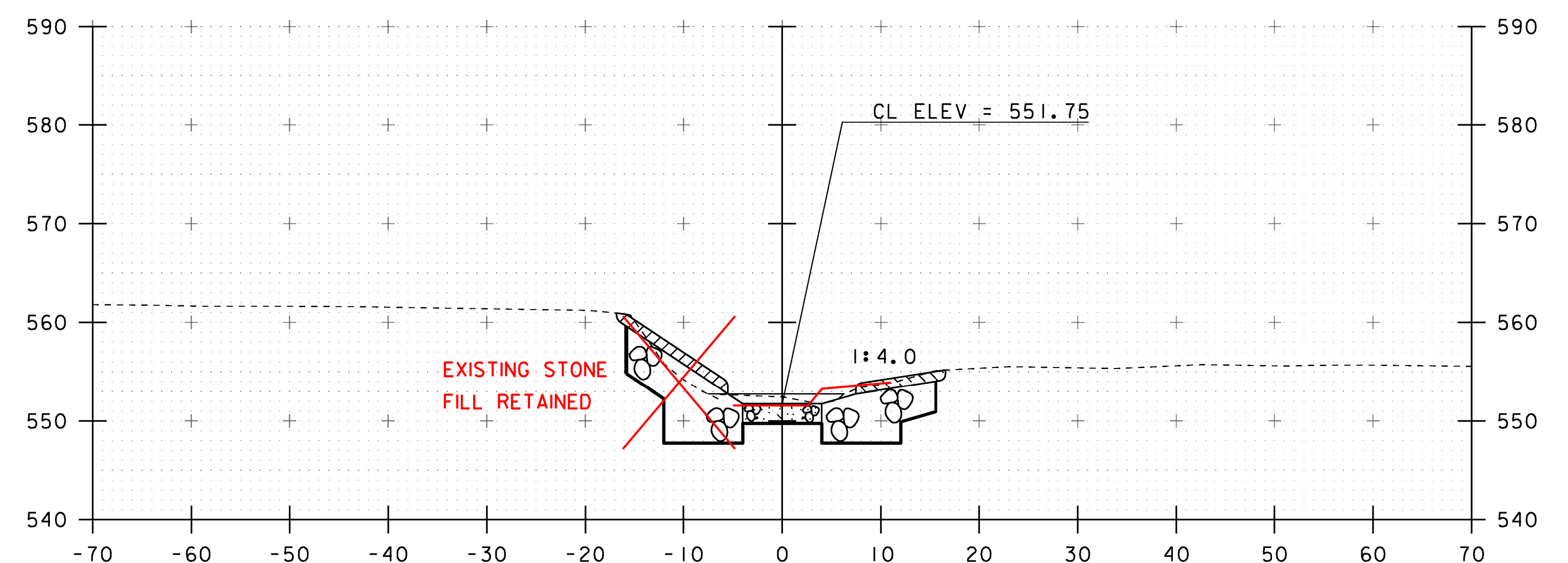
STA 52+05  
END UNCLASSIFIED CHANNEL EXCAVATION  
END GEOTEXTILE UNDER STONE FILL  
END STONE FILL, TYPE IV  
END SPECIAL PROVISION (STONE FILL STREAM BED MATERIAL) (TYPE II)  
END GRUBBING MATERIAL



52+05



51+80



52+00

STA. 51+80 TO STA. 52+05

PROJECT NAME: ST. ALBANS TOWN	
PROJECT NUMBER: BF 0279(5)	
FILE NAME: sl2c598xs.dgn	PLOT DATE: 10-JAN-2017
PROJECT LEADER: J.B. MCCARTHY	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: J.B. MCCARTHY
CHANNEL CROSS SECTIONS	
SHEET 24 OF 29	



EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL OF EXISTING STRUCTURE AND REPLACEMENT WITH A NEW PRECAST CONCRETE STRUCTURE.

THE PROJECT IS LOCATED APPROXIMATELY 350 FT NORTH OF THE INTERSECTION OF VT 36 AND VT 104.

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 0.60 ACRES.

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

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE PROJECT AREA IS RELATIVELY FLAT.

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

THE STEVEN BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE BROOK IS CLASSIFIED AS STEEP, SINUOUS, NARROW, WITH A CONFINED AND ARMORED CHANNEL AT THE SITE. THE STREAM BED CONSISTS OF GRAVEL, COBBLES AND BOULDERS.

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 FRANKLIN, VERMONT.

SOILS ON THE PROJECT SITE ARE GEORGIA STONY LOAM, 3% TO 8% SLOPES, “K FACTOR” = 0.28 AND ST ALBANS SLATY LOAM, 8-15% SLOPES, “K FACTOR” = 0.10.

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. ARCHEOLOGICAL AREA FOUND IN THE SOUTHEASTERN QUADRANT. FOUND TO HAVE NO KNOWN OR EXPECTED ARCHAEOLOGICAL SITES IN THE AREA OF POTENTIAL EFFECT.  
PRIME AGRICULTURAL LAND: NO  
THREATENED AND ENDANGERED SPECIES: NO  
WATER RESOURCE: STEVENS BROOK  
WETLANDS: NO

1.3 RISK EVALUATION

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

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

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

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

1.4.1 MARK SITE BOUNDARIES

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

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

1.4.2 LIMIT DISTURBANCE AREA

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

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

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

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

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

1.4.4 INSTALL SEDIMENT BARRIERS

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

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

1.4.5 DIVERT UPLAND RUNOFF

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

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

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSION 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.

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 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 SUBSECTIONS 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

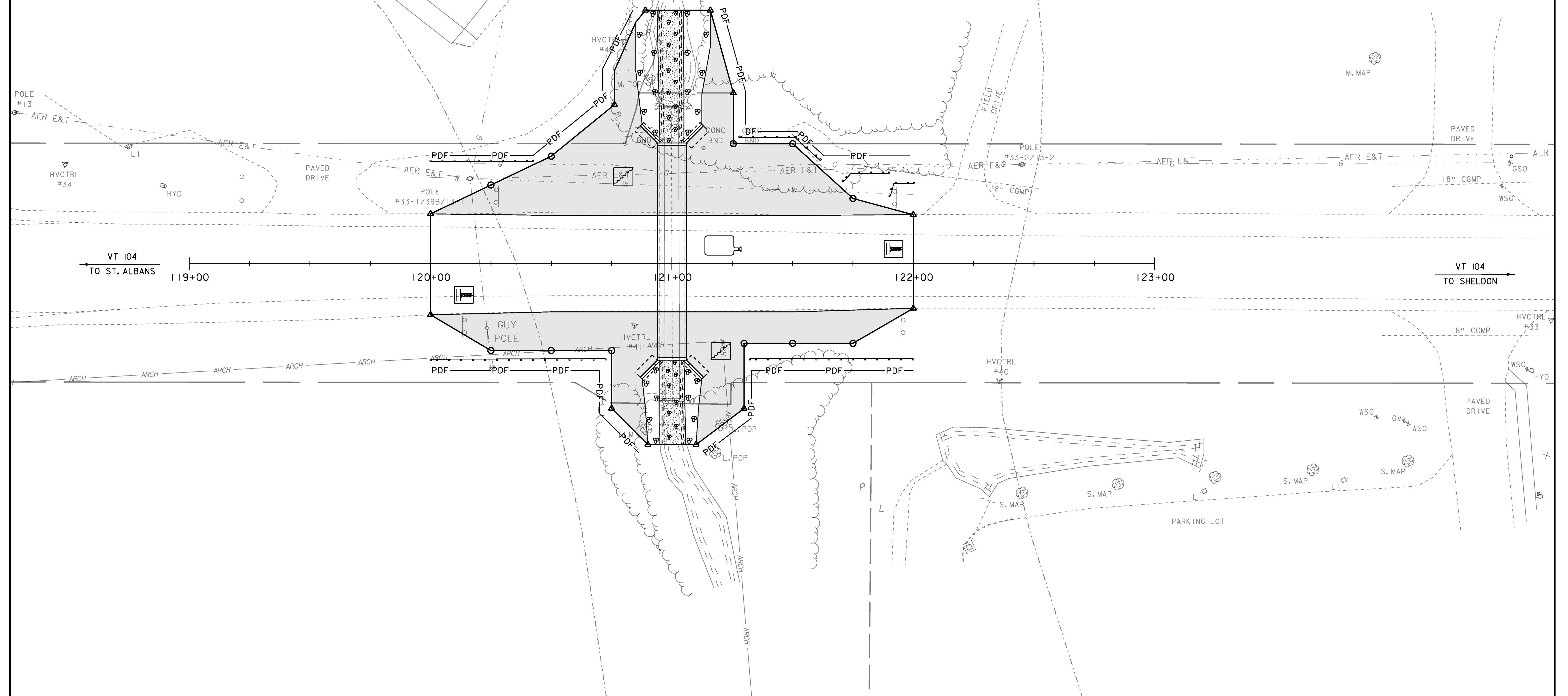
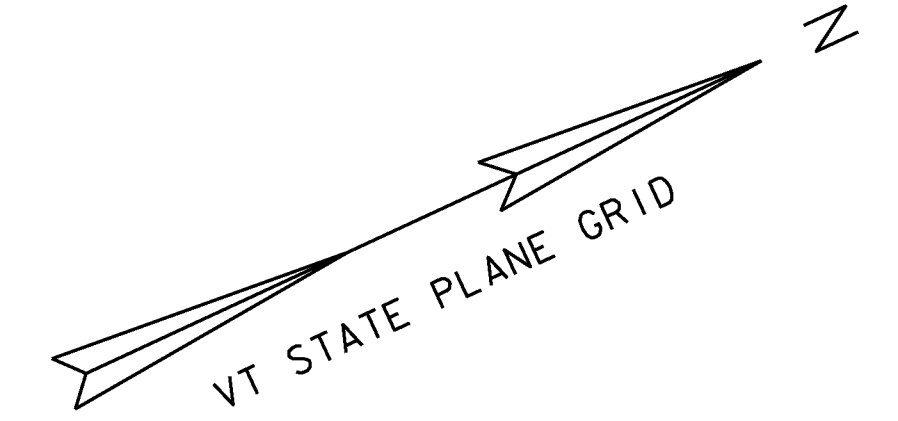
1.5.3 UPDATES

PROJECT NAME: ST. ALBANS TOWN	
PROJECT NUMBER: BF 0279(5)	
FILE NAME: sl2c598epsc_nor.dgn	PLOT DATE: 10-JAN-2017
PROJECT LEADER: J.B. MCCARTHY	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: J.B. MCCARTHY
EPSC NARRATIVE	SHEET 25 OF 29



SOIL DATA:  
GEORGIA STONY LOAM  
3% - 8% SLOPES  
"K" = 0.32  
POTENTIALLY HIGHLY ERODIBLE

SOIL DATA:
GEORGIA STONY LOAM
3% - 8% SLOPES
"K" = 0.32
POTENTIALLY HIGHLY ERODIBLE



 DISTURBED AREAS  
REQUIRING RE-VEGETATION

EPSC PLAN

SCALE 1" = 20' - 0"

20 0 20

A horizontal graphic scale bar with three segments. The first segment is labeled '20', the middle segment is labeled '0', and the third segment is labeled '20'. The segments are separated by vertical tick marks.

PROJECT NAME: ST. ALBANS TOWN	
PROJECT NUMBER: BF 0279(5)	
FILE NAME: si2c598bdr_.eps.c.dgn	PLOT DATE: 10-JAN-2017
PROJECT LEADER: J.B. MCCARTHY	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: J.B. MCCARTHY
EPSC PLAN	SHEET 26 OF 29



VAOT LOW GROW/FINE FESCUE MIX						
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				

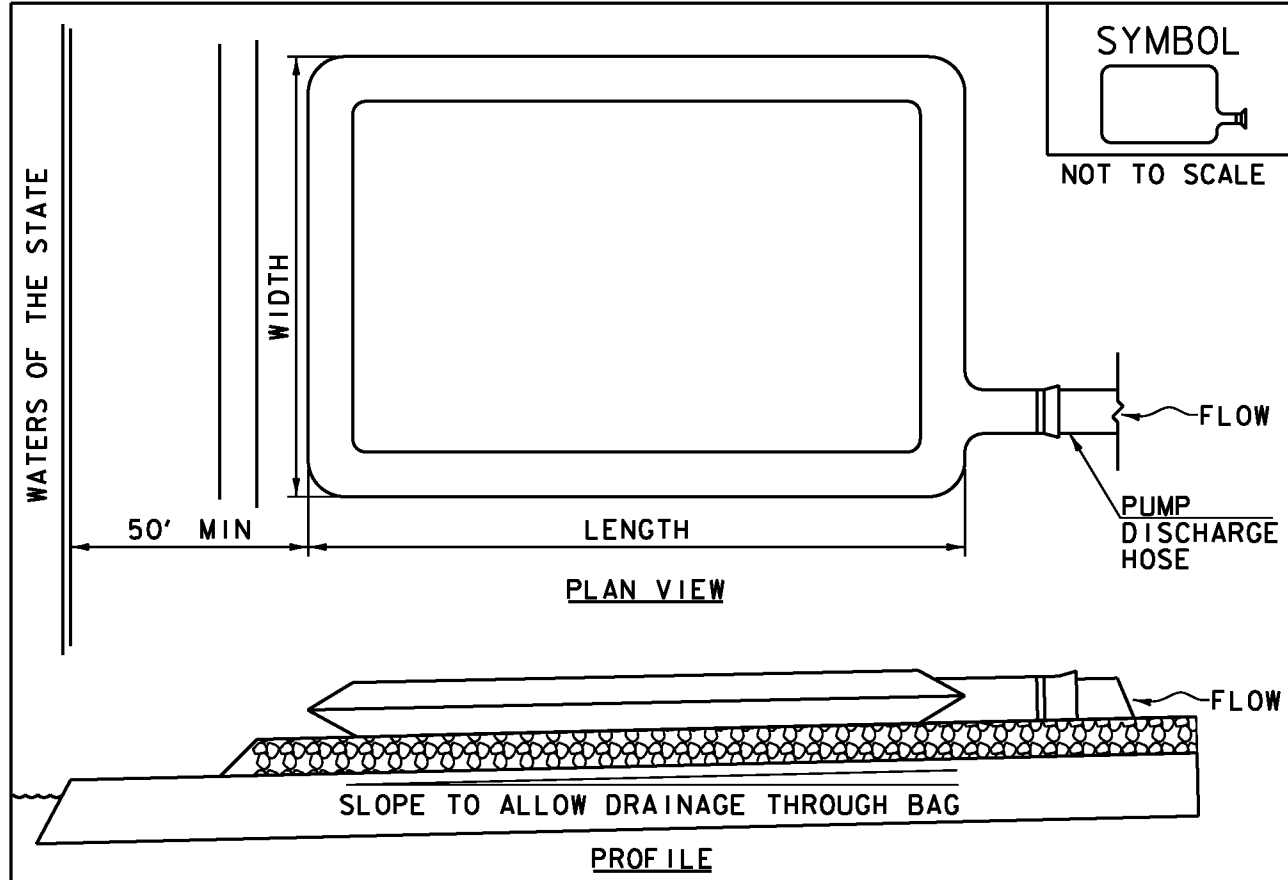
VAOT RURAL AREA MIX						
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
37.5%	22.5	45	CREeping RED FESCUE	FESTUCA RUBRA VAR. RUBRA	85%	98%
37.5%	22.5	45	TALL FESCUE	FESTUCA ARUNDINACEA	90%	95%
5.0%	3	6	RED TOP	AGROSTIS GIGANTEA	90%	95%
15.0%	9	18	WHITE FIELD CLOVER	TRIFOLIUM REPENS	85%	98%
5.0%	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

- SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
- SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
- ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
- FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.
- 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.
- 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.
- TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

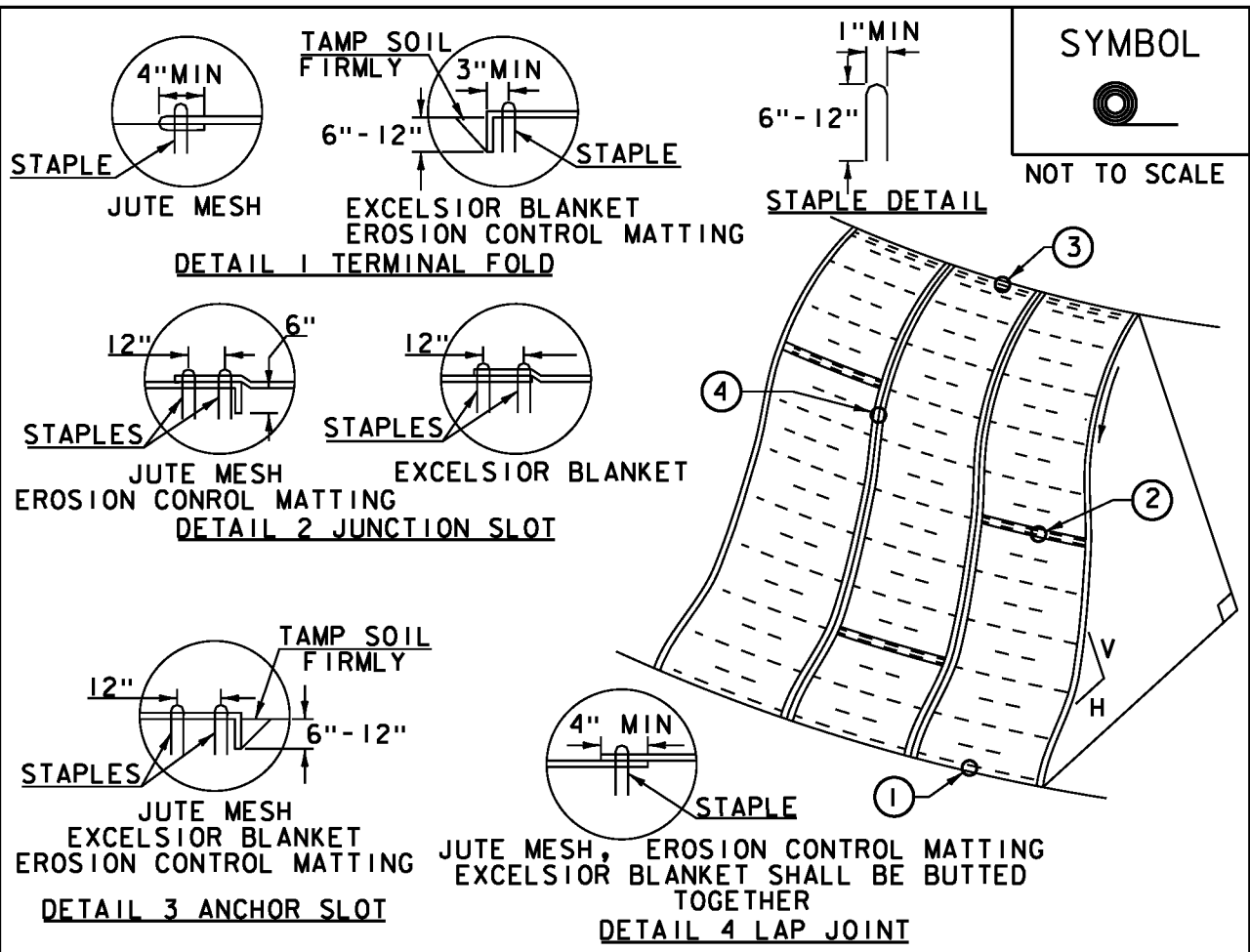
ADAPTED FROM VTTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES	TURF ESTABLISHMENT
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651FOR SEED (PAY ITEM 651J5)	REVISIONS JANUARY 12, 2015    WHF



#### CONSTRUCTION SPECIFICATIONS

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

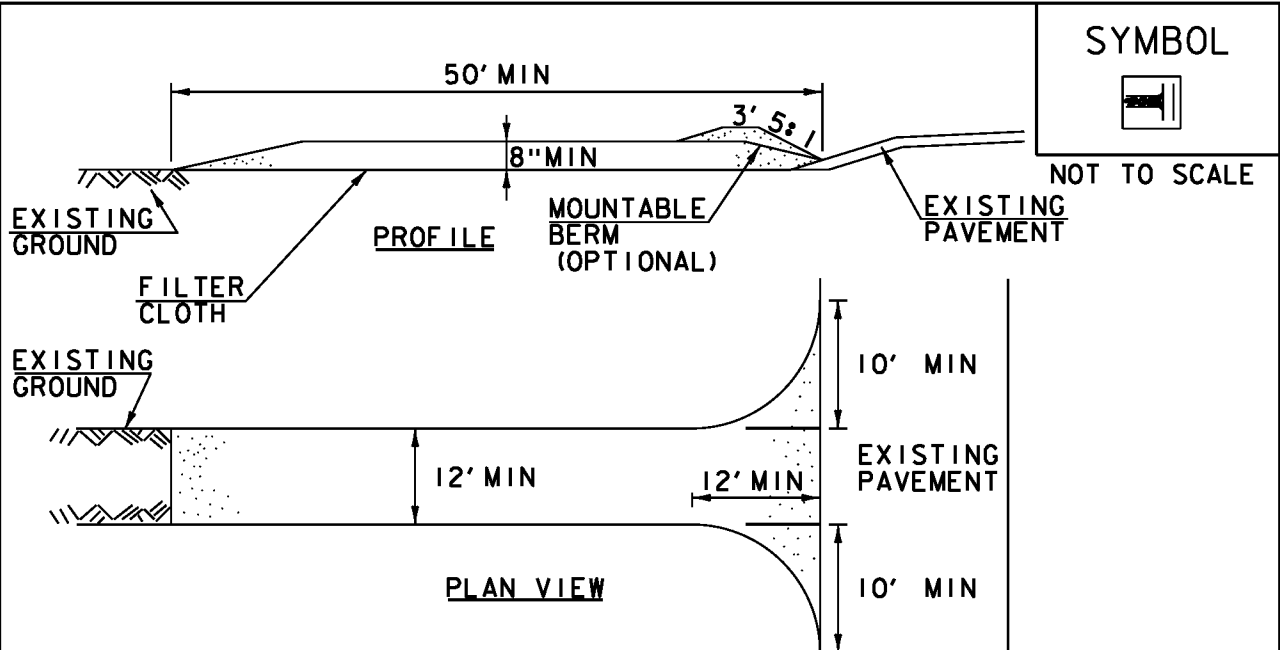
	FILTER BAG
NOTES: REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.	REVISIONS MARCH 24, 2008    WHF JANUARY 13, 2009    WHF
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR FILTER BAG (PAY ITEM 653.45) AND AS SPECIFIED IN THE CONTRACT.	



#### CONSTRUCTION SPECIFICATIONS

- APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
- APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
- 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.
- DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
- ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

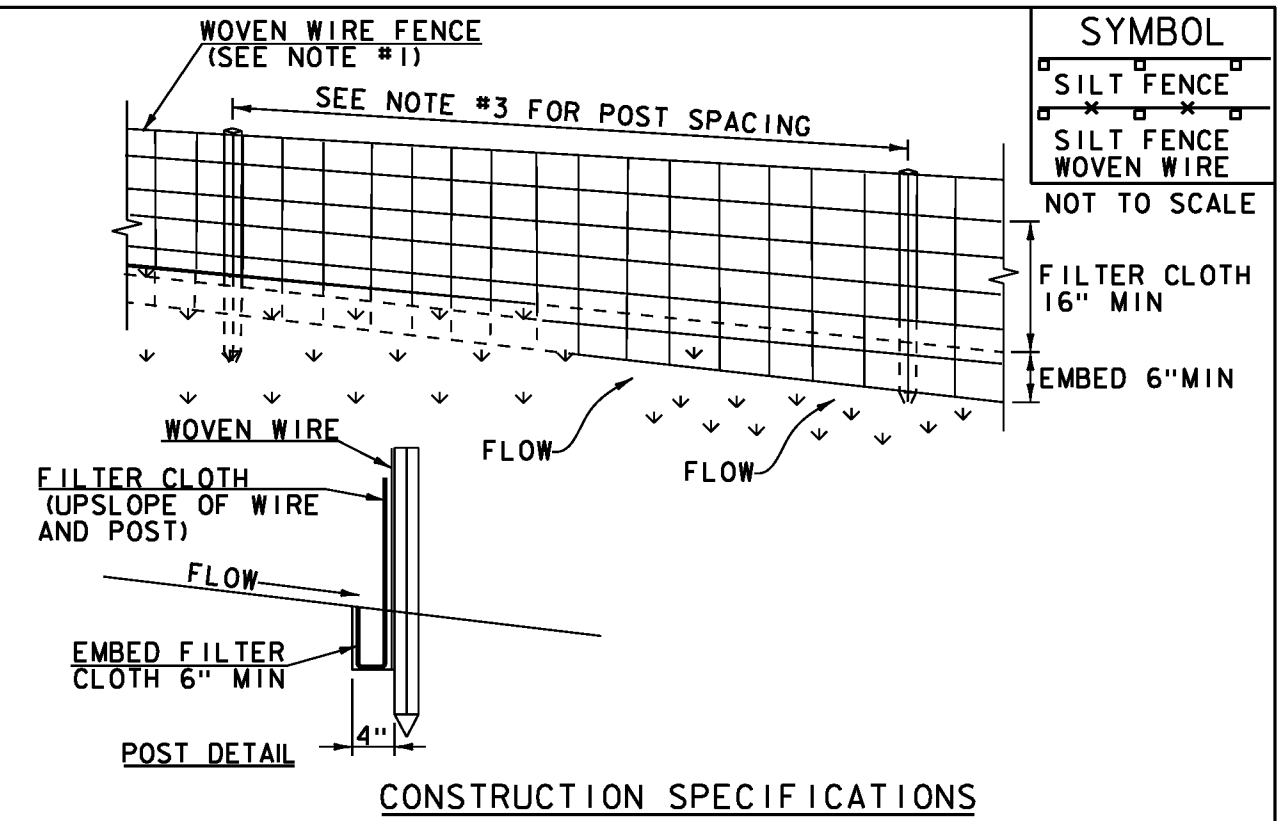
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE
NOTES: REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT 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



#### CONSTRUCTION SPECIFICATIONS

- STONE SIZE- USE 1-4" STONE, RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
- THICKNESS- NOT LESS THAN 8".
- WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
- GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
- 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.
- 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.
- WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

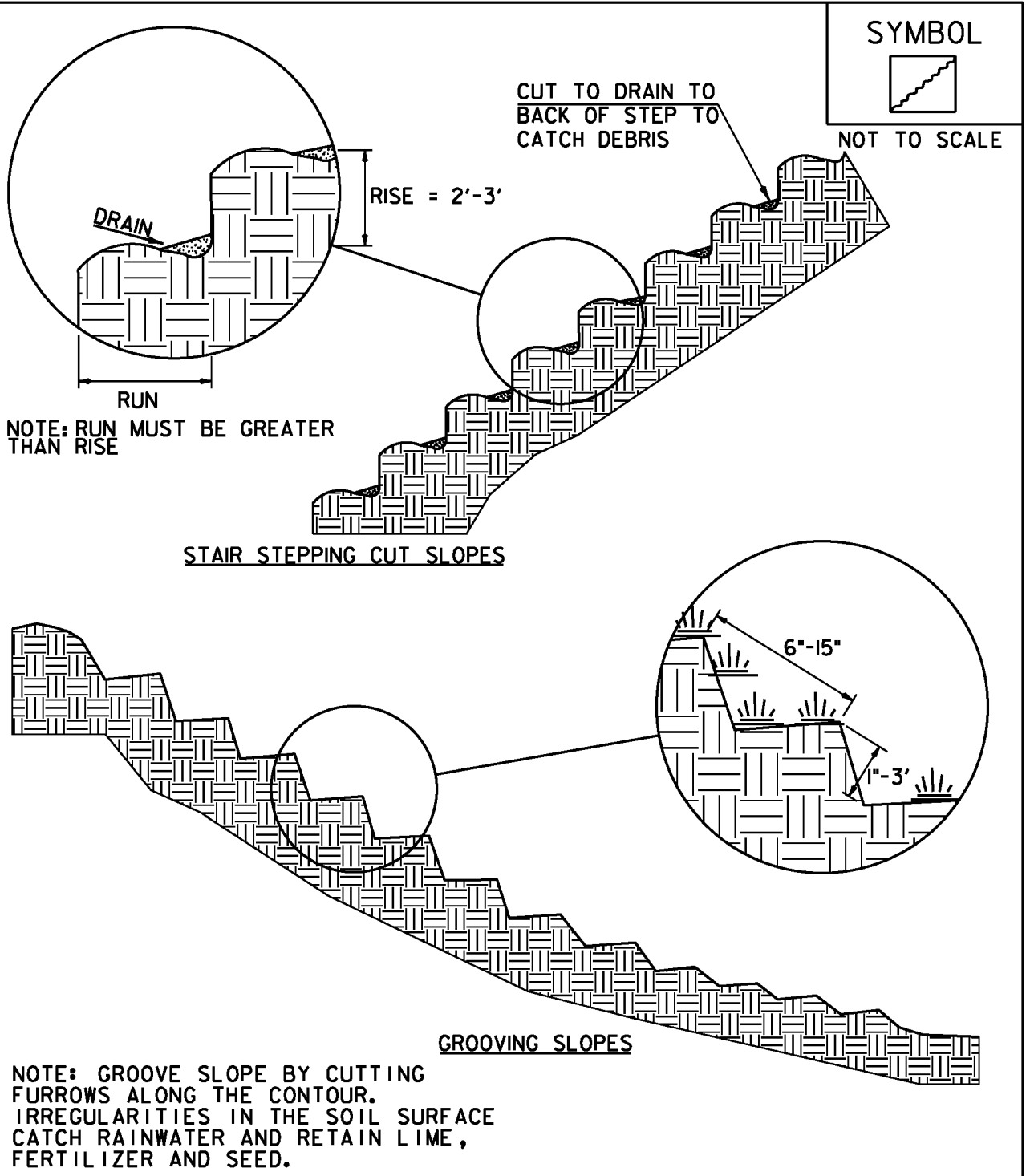
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	STABILIZED CONSTRUCTION ENTRANCE
NOTES: REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL 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



#### CONSTRUCTION SPECIFICATIONS

- 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.
- FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFIL100X, STABILINKA T140N OR APPROVED EQUIVALENT.
- 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'.
- 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.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
- 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.	REVISIONS MARCH 21, 2008    WHF DECEMBER 11, 2008    WHF JANUARY 13, 2009    WHF
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.50) OR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).	



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:	ST. ALBANS TOWN
PROJECT NUMBER:	BF 0279(5)
FILE NAME: sl2c598@psc.d\et.dgn	PLOT DATE: 10-JAN-2017
PROJECT LEADER: J.B. MCCARTHY	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: J.B. MCCARTHY
EPSC DETAILS	SHEET 27 OF 29

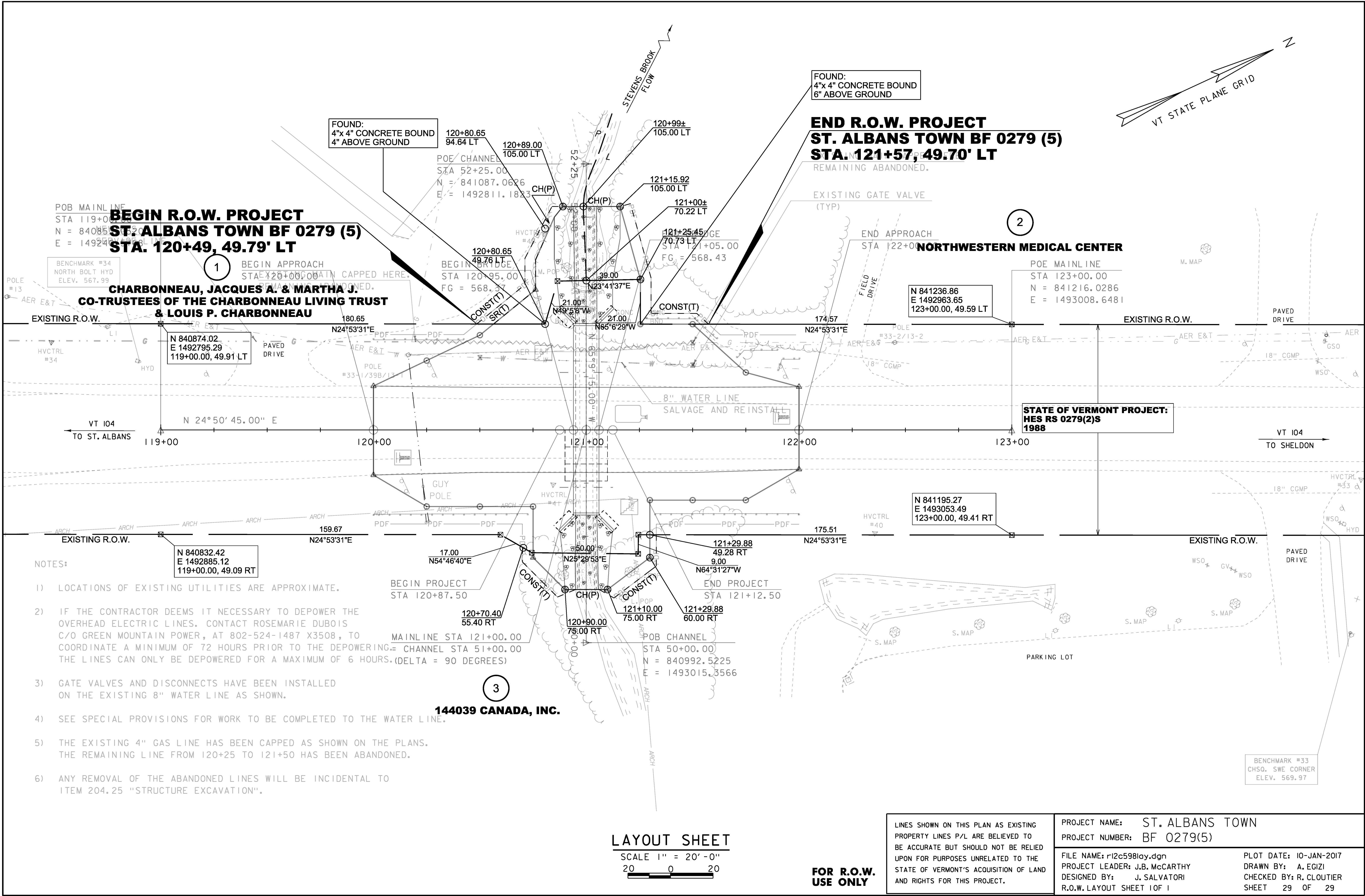


# RIGHT - OF - WAY DETAIL SHEET

[illegible]

APPROVED: RYAN CLOUTIER DATE: 03-25-16  
CHIEF, PLANS & TITLES







TOWN OF ST. ALBANS  
VT ROUTE 104, CULVERT #19  
ST. ALBANS, VT

10'-0" x 7'-0" BOX CULVERT

PREPARED FOR:  
CAMP PRECAST CONCRETE PRODUCTS  
78 PRECAST ROAD  
MILTON, VT 05468

PREPARED BY:  
ENGINEERING VENTURES, PC  
208 FLYNN AVENUE SUITE 2A  
BURLINGTON, VT 05401

1. DESIGN IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION, 2014, WITH LATEST INTERIM REVISIONS.
2. THE FOLLOWING CRITERIA WAS USED FOR DESIGN:

LIVE LOAD:

EARTH COVER:  
FUTURE WEARING SURFACE:  
SOIL WEIGHT:  
BACKFILL ANGLE OF INTERNAL FRICTION:  
MINIMUM LIFTING/HANDLING CONCRETE STRENGTH:  
28 DAY CONCRETE STRENGTH (f_c):  
STEEL REINFORCEMENT YIELD STRENGTH:

HL-93 + LANE LOAD OR  
TANDEM + LANE LOAD  
VARIES 6 FT TO 7.5 FT  
3 INCHES  
140 LBS/CF  
34°  
3,500 PSI  
5,000 PSI  
60,0000 PSI
3. ENGINEER OF RECORD TO VERIFY CULVERT AND WINGWALL SUITABILITY TO SITE CONDITIONS INCLUDING HYDRAULIC CAPACITY, EFFECTS OF FROST, SCOUR, SETTLEMENT, GLOBAL STABILITY OF WINGWALL, RETAINED SOIL, FOUNDATION SOIL AND SITE GRADING.
4. PRECAST CULVERT AND WINGWALL NOT DESIGNED FOR HYDROSTATIC PRESSURE. CONTRACTOR TO USE RAPID DRAINING MATERIAL MEETING REQUIREMENTS OF VTRANS STANDARD SPECIFICATION SECTION 704.16. E.O.R. TO FIELD VERIFY RAPID DRAINING MATERIAL INSTALLED.
5. ALL REINFORCING STEEL SHALL BE GRADE 60 DEFORMED BARS CONFORMING TO ASTM A-615 EPOXY COATED IN ACCORDANCE WITH ASTM A 934. REPAIR DAMAGED EPOXY COATING WITH EPOXY REPAIR COATING ACCORDING TO ASTM D 3963. USE EPOXY-COATED STEEL WIRE TIES TO FASTEN EPOXY-COATED REINFORCING
6. CLEAR COVER TO REINFORCING STEEL SHALL BE 2", UNLESS NOTED OTHERWISE.
7. ALL EXPOSED CONCRETE EDGES SHALL BE CHAMFERED 3/4-INCH.
8. APPLY WATER REPELLENT, SILANE IN ACCORDANCE WITH VTRANS STANDARD SPECIFICATION SECTION 514 TO ALL EXPOSED EXTERIOR SURFACES OF PRECAST CONCRETE.
9. EACH SECTION SHALL BE DRAWN TOGETHER WITH DRAW CONNECTORS AS SHOWN IN DRAWINGS. FILL ALL RECESSES & LIFTING VOIDS WITH 5,000 PSI (28-DAY) NON-SHRINK GROUT MEETING REQUIREMENTS OF ITEM 707.03 MORTAR, TYPE IV IN THE LATEST EDITION OF THE VTRANS STANDARD SPECIFICATION FOR CONSTRUCTION AND LISTED ON VTRANS APPROVED PRODUCTS LIST.
10. DESIGN BASED ON INFORMATION IN THE FOLLOWING RESOURCES:

DRAWINGS TITLED "ST. ALBANS TOWN, BF 0279(5)" PREPARED BY STATE OF VERMONT AGENCY OF TRANSPORTATION AND LAST DATED JANUARY 10, 2017.
11. IF ANY OF THE WORK TO BE DONE AS SHOWN ON THE DRAWINGS DOES NOT CORRESPOND WITH THE EXISTING FIELD CONDITIONS, CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK IN QUESTION.
12. LIFTING INSERTS ASSUME SLING ANGLE 60 DEGREES OR GREATER FROM HORIZONTAL. PROVIDE SPREADER BEAMS AND ROLLING BLOCKS AS REQUIRED TO LOAD INSERTS EQUALLY.

CURING, HANDLING & STORAGE PRACTICES AND PROCEDURES:

1. THE CONCRETE UTILIZED WILL BE PRODUCED, INSPECTED, HANDLED, PLACED, FINISHED AND REPAIRED AS PER SECTIONS 540.05 THROUGH 540.07 OF THE VERMONT STANDARD SPECIFICATIONS FOR CONSTRUCTION. THE SPECIFIC MIX DESIGN WAS APPROVED ON 4-12-17 BY VTAOT STRUCTURAL CONCRETE ENGINEER, JAMES WILD.
2. AFTER REACHING A MINIMUM STRIPPING STRENGTH OF 3,500 PSI THE CULVERT SECTION MAY BE PLACED INTO A WOOD AND STEEL STRUCTURE TO BEGIN ITS CURING PERIOD.
3. IMMEDIATELY AFTER THE STRIPPING PROCESS IS COMPLETE, THE CULVERT SECTION WILL BE PLACED INTO A WOOD AND STEEL STRUCTURE TO BEGIN ITS CURING PERIOD.
4. CURING PROCEDURES SHALL FOLLOW SECTIONS 501.17 AND 540.08 OF THE VERMONT STANDARD SPECIFICATIONS FOR CONSTRUCTION EXCEPT AS FOLLOWS:

A. SECTION 501.17 (b) WATER CURING, SHALL BE MODIFIED TO INCLUDE CONTINUOUS MISTING AND OR FOGGING TO MAINTAIN, AS NEAR AS POSSIBLE, AN ATMOSPHERE OF 100% HUMIDITY.
5. WHEN THE CULVERT SECTION ATTAINS DESIGN STRENGTH AS EVIDENCED BY TEST CYLINDER BREAKS CURED WITH THE PRECAST BOX SECTION, CURING PROCEDURES WILL END AND THE CONTAINMENT BUILDING WILL BE REMOVED.
6. AT THIS POINT, SECONDARY POURS (FISH BAFFLES, HEADWALLS) CAN BE PERFORMED.
7. STRUCTURAL SECONDARY POURS SHALL BE CURED IN ACCORDANCE WITH VERMONT STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 501.17 (5).
8. AS PER SECTION 540.09 THE CULVERT SECTIONS "SHALL BE HANDLED, STORED, AND SHIPPED IN SUCH A MANNER AS TO MINIMIZE CHIPPING, CRACKS, FRACTURES, DISCOLORATION, AND EXCESSIVE BENDING STRESSES. UNITS DAMAGED BY HANDLING, STORAGE, OR SHIPPING SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE."
9. AS PER SECTION 540.09 "PRECAST CONCRETE WILL NOT BE CONSIDERED FOR SHIPMENT UNTIL IT HAS BEEN ACCEPTED." (BY VTAOT OR IT'S REPRESENTATIVE). "THIS ACCEPTANCE SHALL INCLUDE VERIFICATION THAT PIECES ARE FREE FROM DEFECTS AND ALL SPECIFICATION REQUIREMENTS INCLUDING THE COMPRESSIVE STRENGTH AND TOLERANCE REQUIREMENTS HAVE BEEN ACHIEVED. IN ADDITION, PRECAST CONCRETE WILL NOT BE CONSIDERED FOR SHIPMENT FOR A MINIMUM OF 72 HOURS FOLLOWING THE COMPLETION OF CASTING."

Vermont Agency of Transportation

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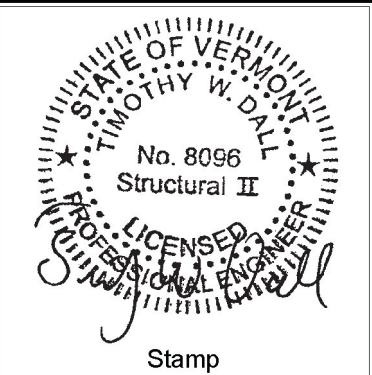
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May 17, 2017

RESUBMIT No Approved  
BY J. B. McCarthy DATE 05/18/17

INDEX OF SHEETS:

1. TITLE SHEET
2. CULVERT PLAN AND OUTLET ELEVATION
3. CULVERT ELEVATION AND SECTION
4. CULVERT REINFORCING SECTION
5. OUTLET WINGWALL PLANS, ELEVATIONS AND SECTION
6. INLET WINGWALL PLANS, ELEVATIONS AND SECTION
7. CUTOFF WALL PLANS AND ELEVATIONS
8. DETAILS
9. CUTOFF WALL LAYOUT PLAN



No.	Description	Date
1	SUBMITTAL REVIEW COMMENTS	04/26/17
2	CURING, HANDLING & STORAGE PRACTICES AND PROCEDURES ADDED	05/09/17
3	SUBMITTAL REVIEW COMMENTS	05/15/17

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SHEET TITLE

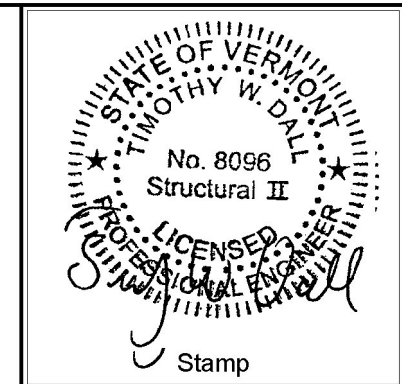
TOWN OF ST. ALBANS  
VT ROUTE 104, CULVERT #19  
ST. ALBANS, VERMONT

Designed By:	CPA
Checked By:	TWD
Drawn	JTM
Scale:	AS NOTED
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Date	Description
04/26/17	SUBMITTAL REVIEW COMMENTS
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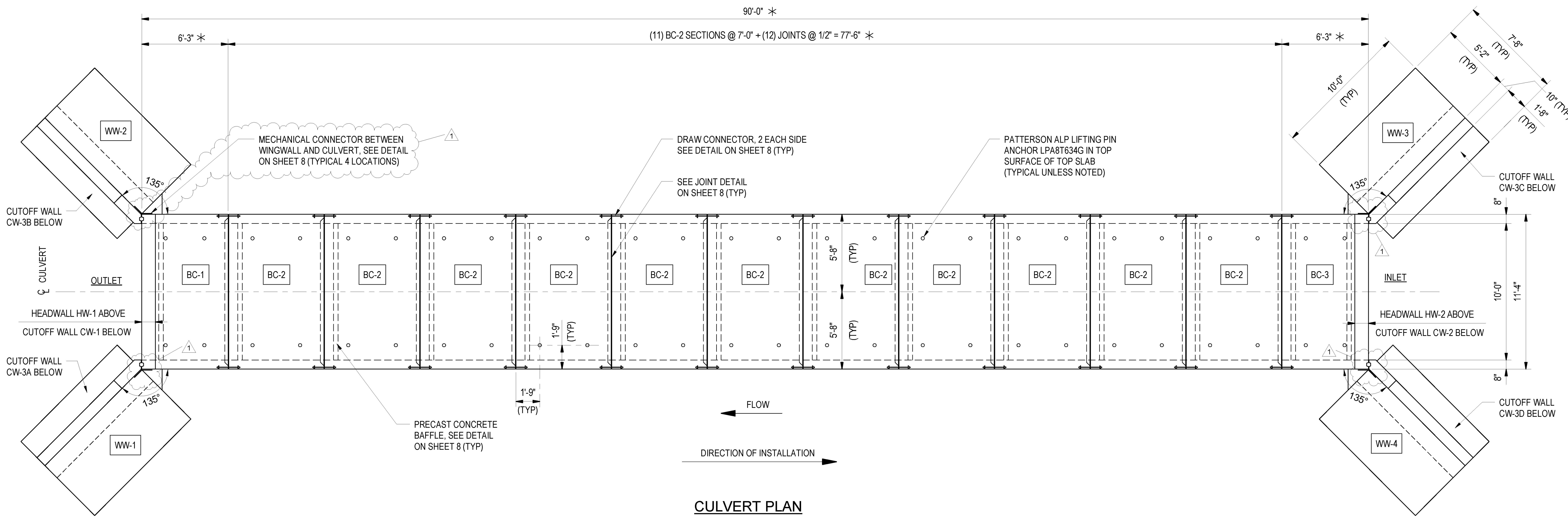
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CULVERT PLAN AND  
OUTLET ELEVATION  
TOWN OF ST. ALBANS  
VT ROUTE 104, CULVERT #19  
ST. ALBANS, VERMONT

Designed By:	CPA
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**CULVERT PLAN**  
1/4" = 1'-0"  
1. * - DENOTES DIMENSION ALONG CULVERT SLOPE

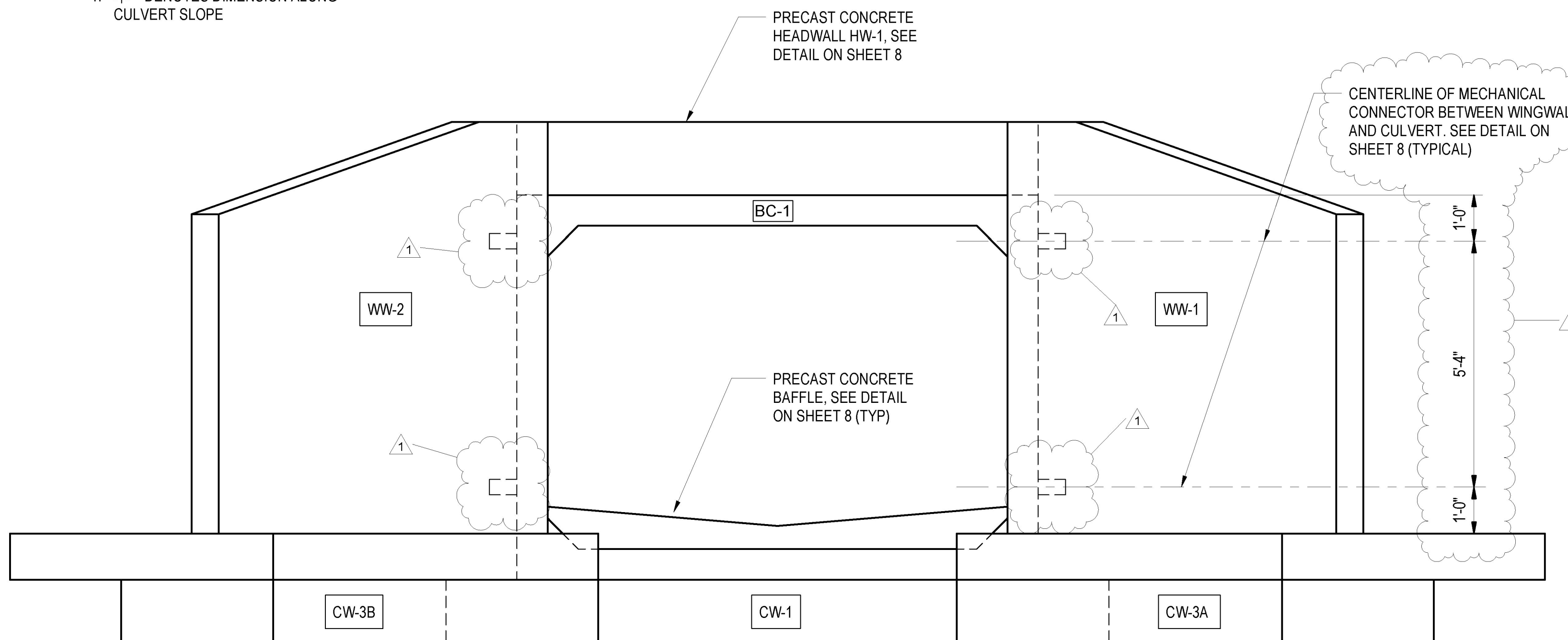
TABLE OF UNITS				
MARK	QTY	Q LENGTH	VOL (CY)	WEIGHT (TONS)
BC-1**	1	6'-4 1/4"	6.71	13.59
BC-2 *	11	7'-0"	6.66	13.49
BC-3***	1	6'-1 3/4"	6.71	13.59
WW-1	1	10'-0"	5.41	10.95
WW-2	1	10'-0"	5.41	10.95
WW-3	1	10'-0"	5.49	11.11
WW-4	1	10'-0"	5.49	11.11
CW-1	1	12'-11"	0.97	1.97
CW-2	1	12'-11"	0.94	1.91
CW-3A	1	10'-0"	2.26	4.58
CW-3B	1	10'-0"	2.26	4.58
CW-3C	1	10'-0"	2.26	4.58
CW-3D	1	10'-0"	2.26	4.58

1. * INDICATES WEIGHT AND VOLUME OF ONE PRECAST BAFFLE ADDED.

2. ** INDICATES WEIGHT AND VOLUME OF ONE PRECAST BAFFLE AND ONE HEADWALL ADDED.

3. *** INDICATES WEIGHT AND VOLUME OF TWO PRECAST BAFFLES AND ONE HEADWALL ADDED.

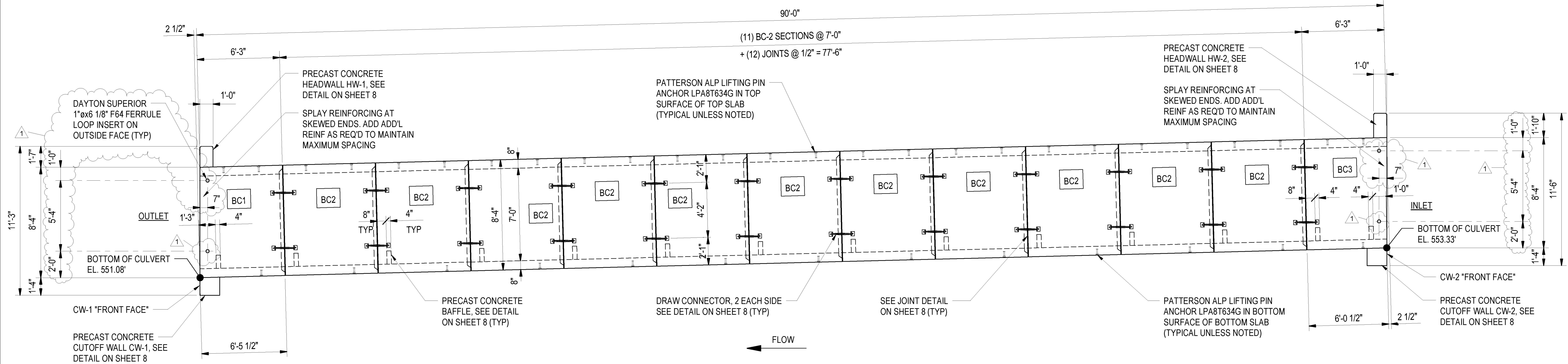
4. ALL WEIGHTS AND VOLUMES ARE APPROXIMATE.



**CULVERT OUTLET ELEVATION**  
1/2" = 1'-0"  
1. INLET END VIEW SIMILAR.

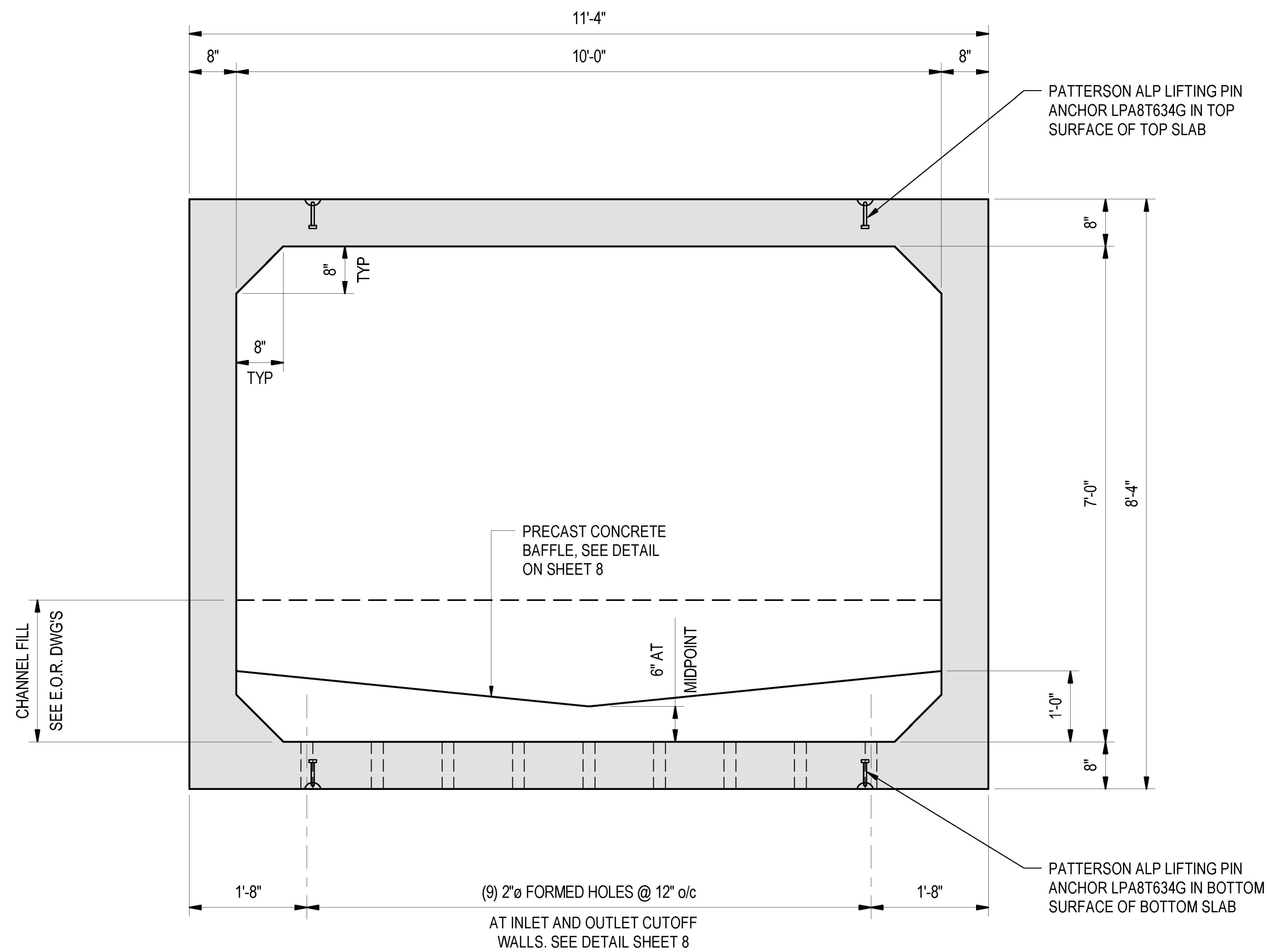
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# CULVERT ELEVATION

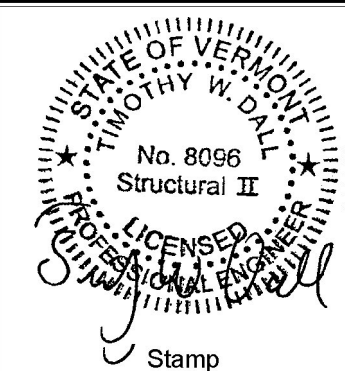
1/4" = 1'-0"



# CULVERT SECTION

3/4" = 1'-0"

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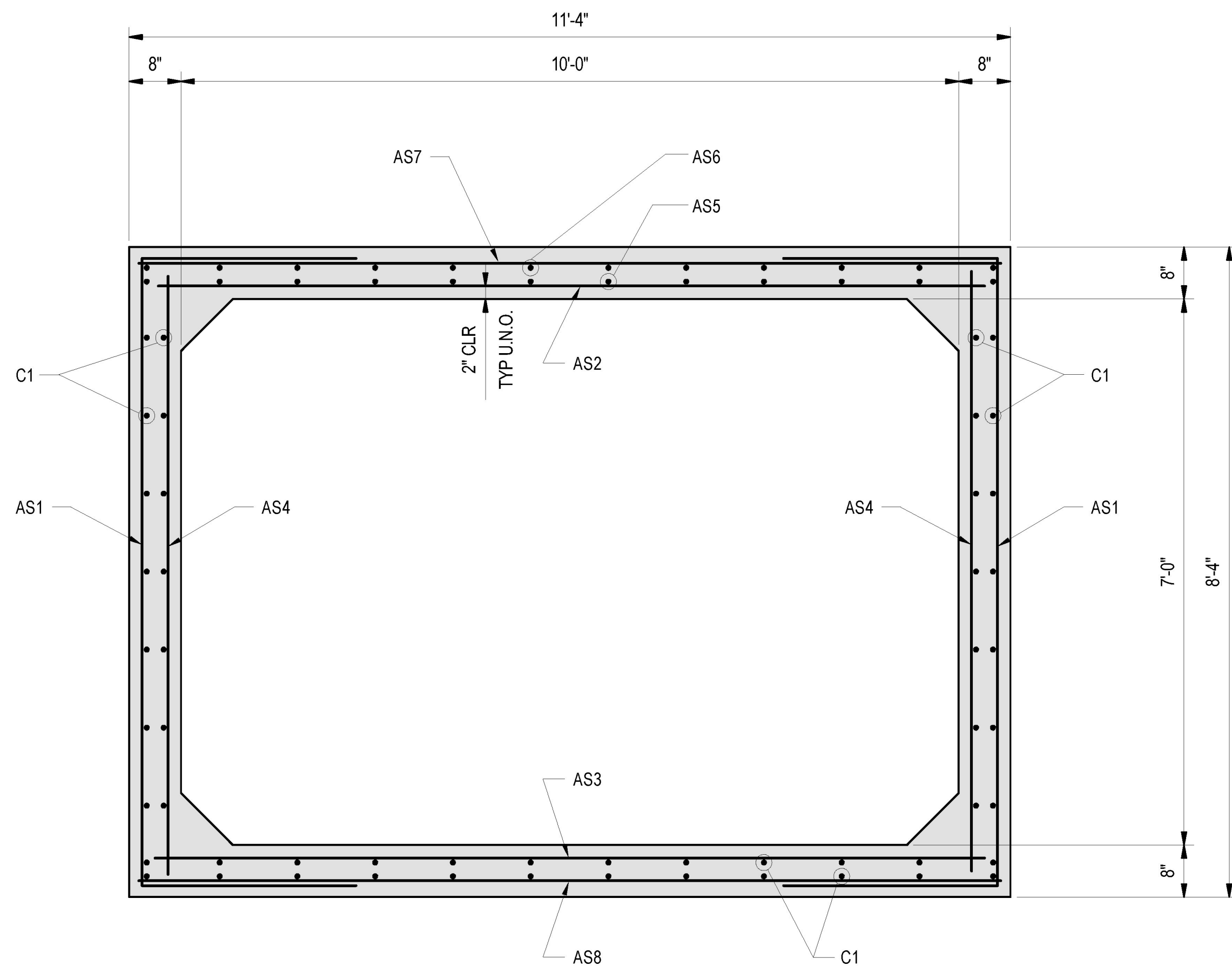
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Sheet Title: CULVERT ELEVATION AND SECTION  
 Project Title: TOWN OF ST. ALBANS  
 VT ROUTE 104, CULVERT #19  
 ST. ALBANS, VERMONT

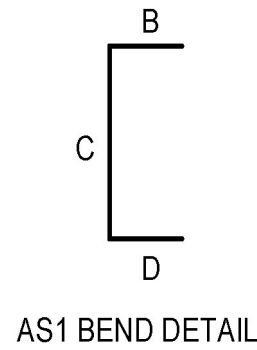
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CULVERT REINFORCING SECTION  
3/4" = 1'-0"

BAR SCHEDULE							
MARK	BAR SIZE	MAX SPACING	LENGTH	TYPE	B	C	D
AS1	#5	6"	18'-0"	BENT	5'-0"	8'-0"	5'-0"
AS2	#6	4"	10'-8"	STR			
AS3	#6	4"	10'-8"	STR			
AS4	#4	12"	7'-8"	STR			
AS5	#4	18"	VARIES	STR			
AS6	#4	18"	VARIES	STR			
AS7	#4	18"	11'-0"	STR			
AS8	#4	18"	11'-0"	STR			
C1	#4	18"	VARIES	STR			

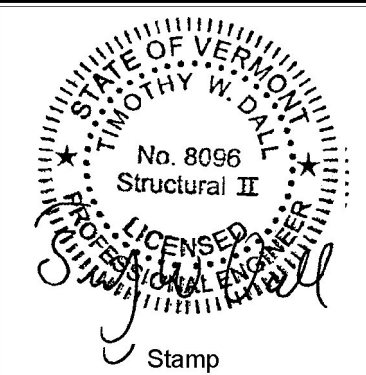


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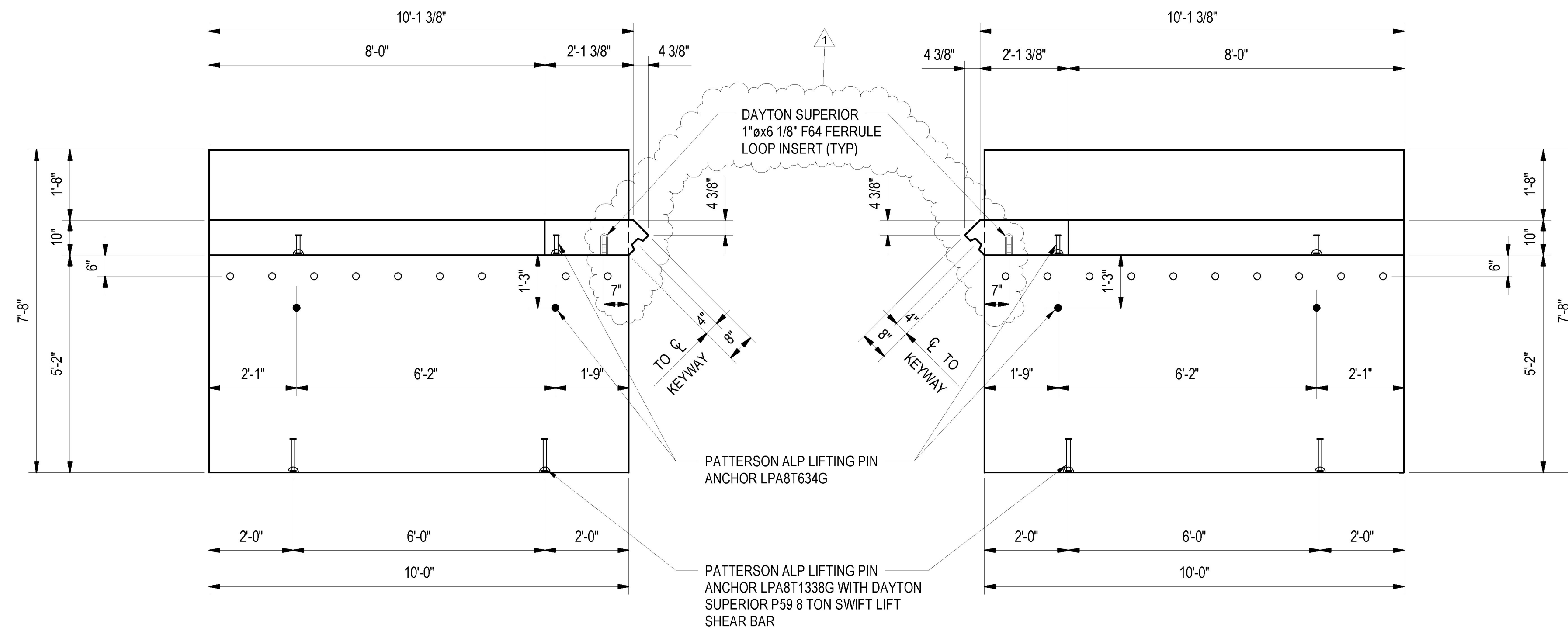
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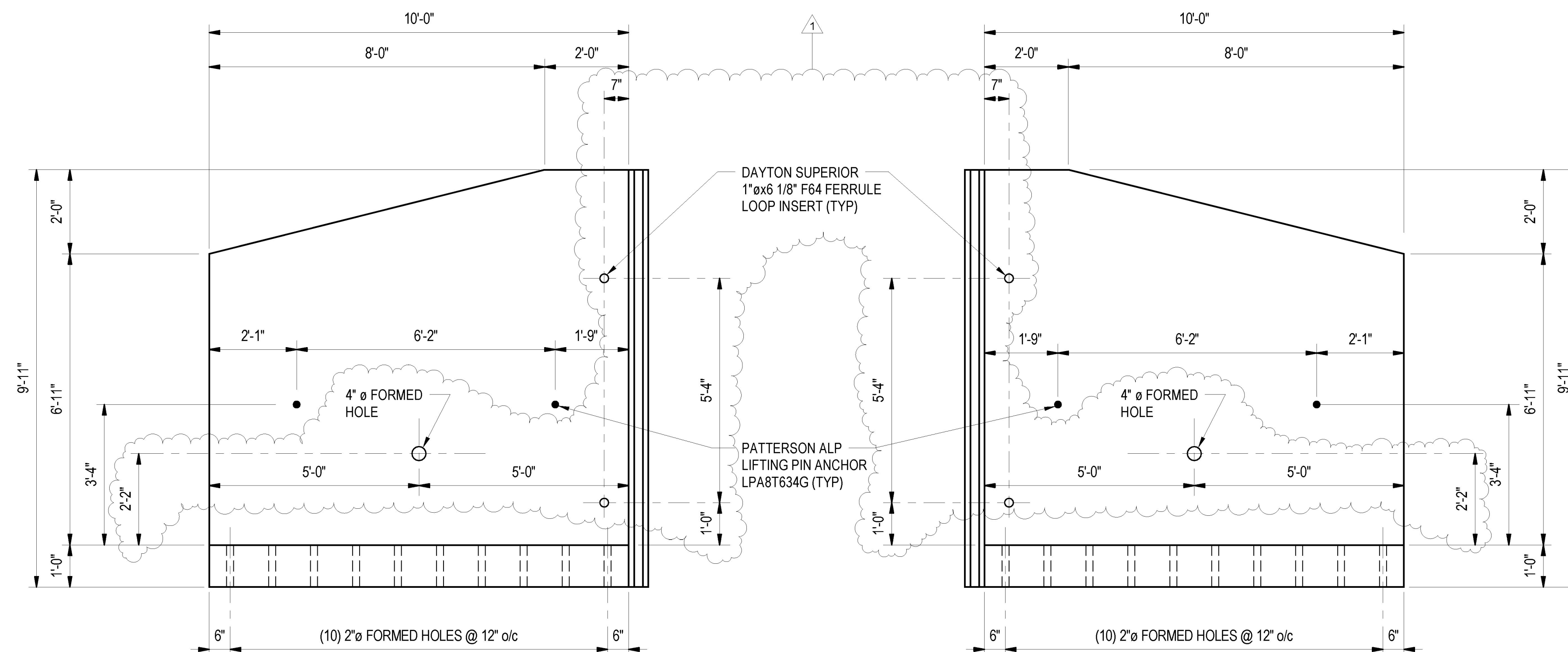
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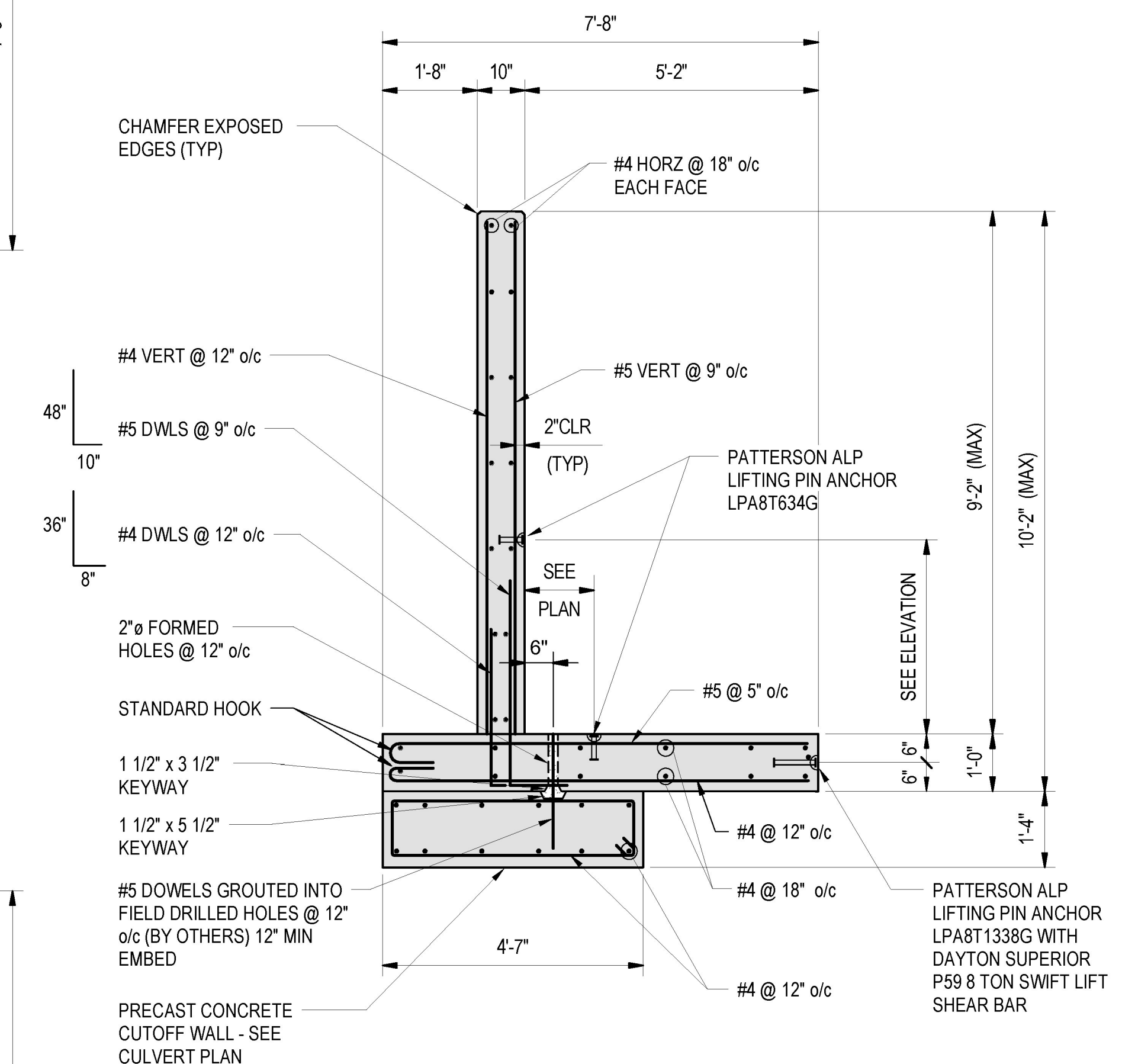
**WINGWALL WW-1 PLAN**  
1/2" = 1'-0"

**WINGWALL WW-2 PLAN**  
1/2" = 1'-0"



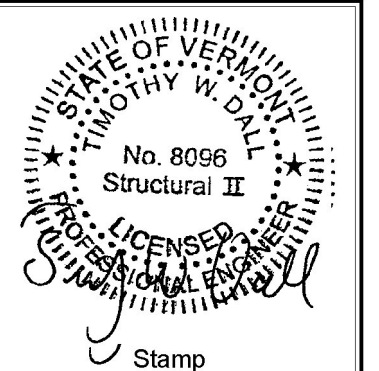
**WINGWALL WW-1 ELEVATION**  
1/2" = 1'-0"  
1. VIEW FROM BACK OF WALL.

**WINGWALL WW-2 ELEVATION**  
1/2" = 1'-0"  
1. VIEW FROM BACK OF WALL.



**TYPICAL WINGWALL SECTION**  
1/2" = 1'-0"

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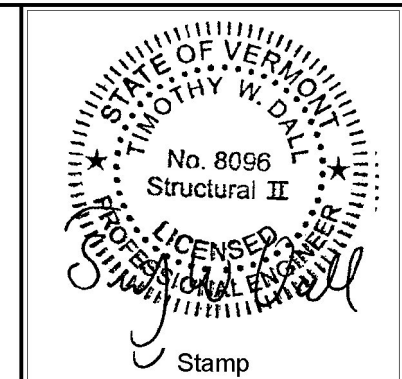
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Sheet Title: **OUTLET WINGWALL PLANS, ELEVATIONS AND SECTION**  
Project Title: **TOWN OF ST. ALBANS VT ROUTE 104, CULVERT #19**  
ST. ALBANS, VERMONT

Designed By:	CPA
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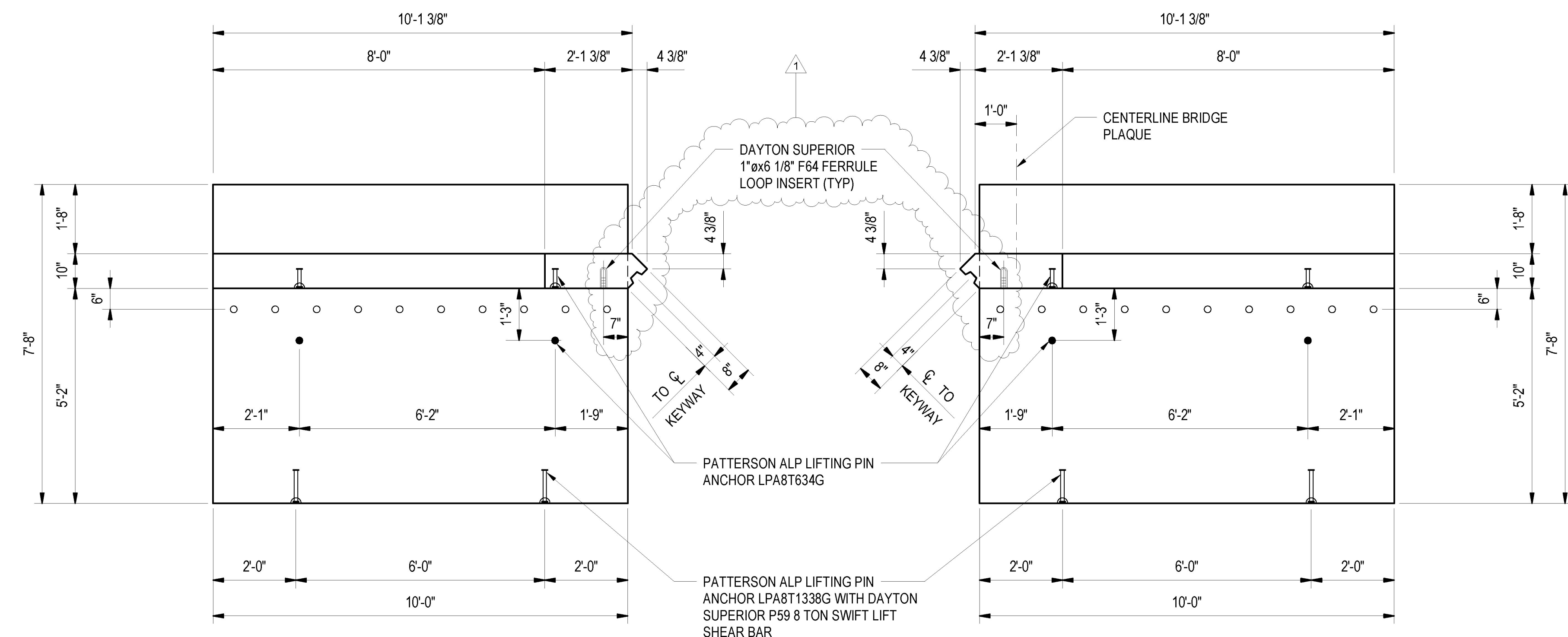
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70 PRECAST ROAD  
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FAX: (802) 893-1542

Sheet Title: **INLET WINGWALL PLANS, ELEVATIONS AND SECTION**  
Project Title: **TOWN OF ST. ALBANS VT ROUTE 104, CULVERT #19**  
ST. ALBANS, VERMONT

Designed By:	CPA
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Drawn	JTM
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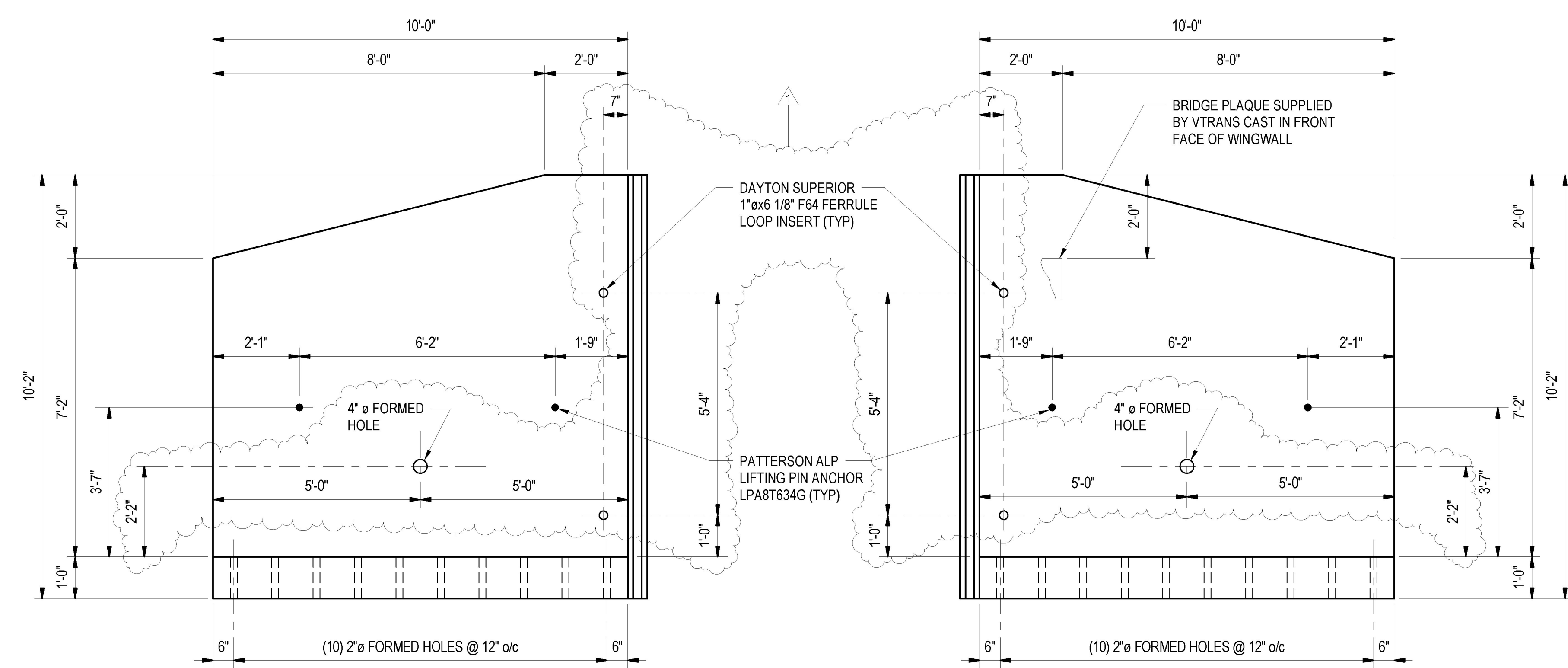
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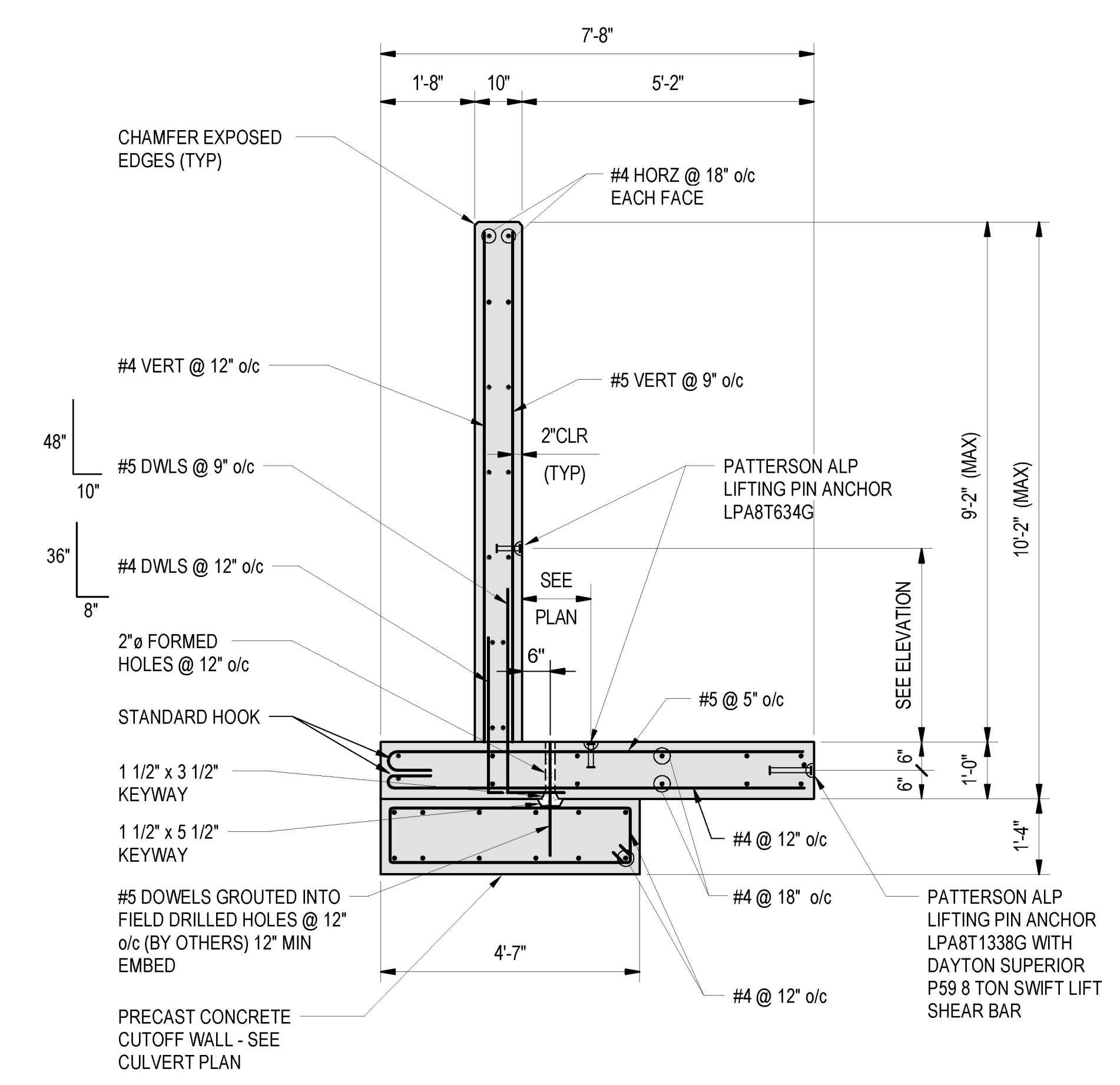
**WINGWALL WW-3 PLAN**

**WINGWALL WW-4 PLAN**



**WINGWALL WW-3 ELEVATION**

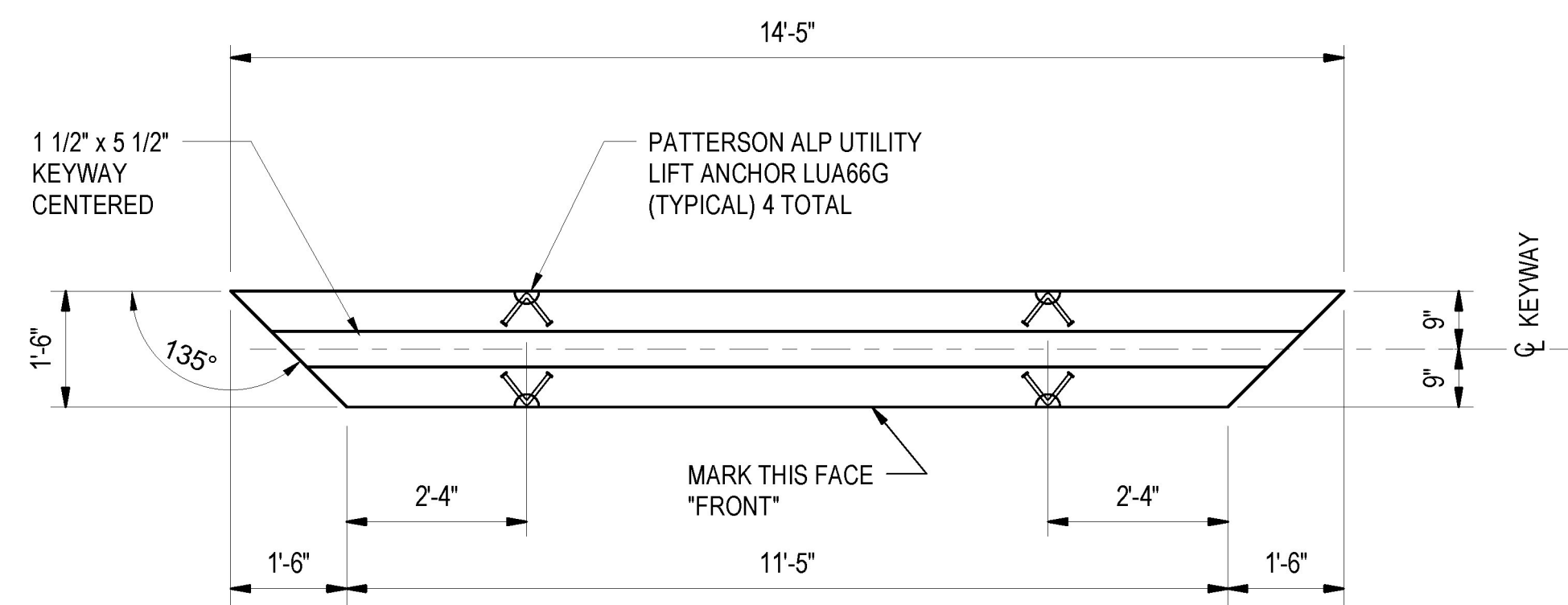
**WINGWALL WW-4 ELEVATION**



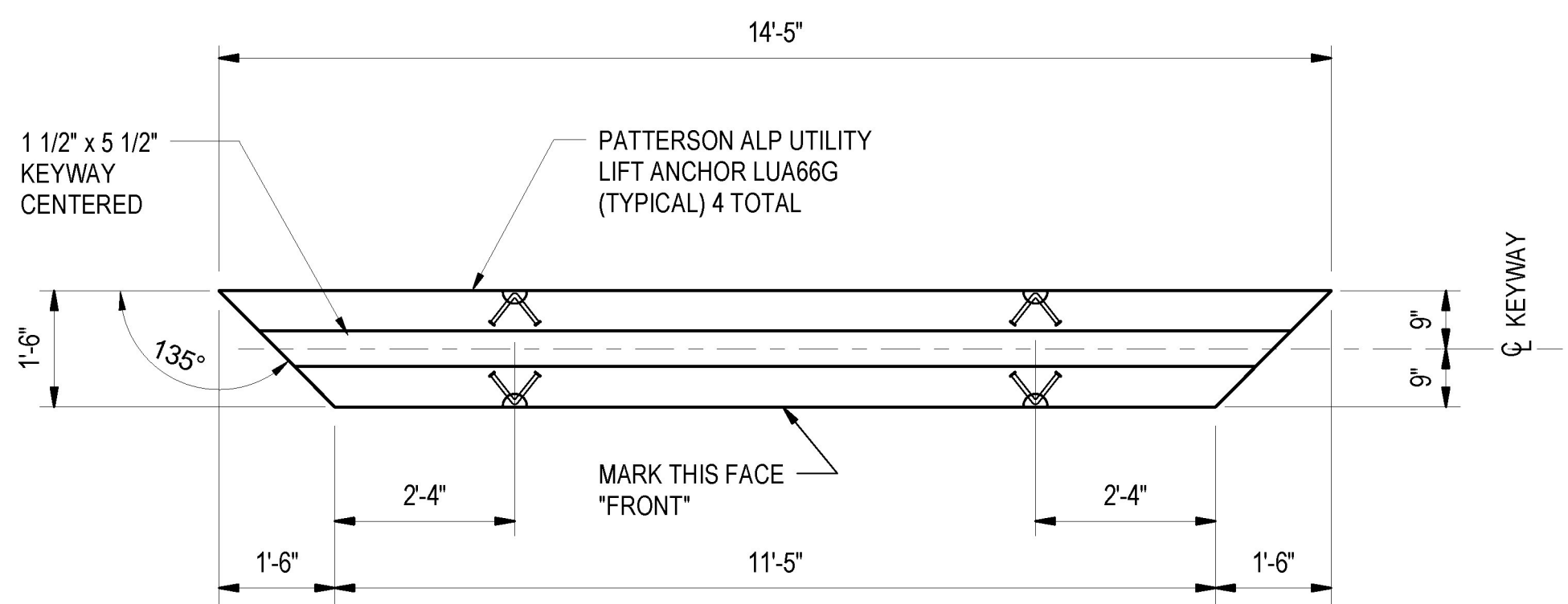
**TYPICAL WINGWALL SECTION**

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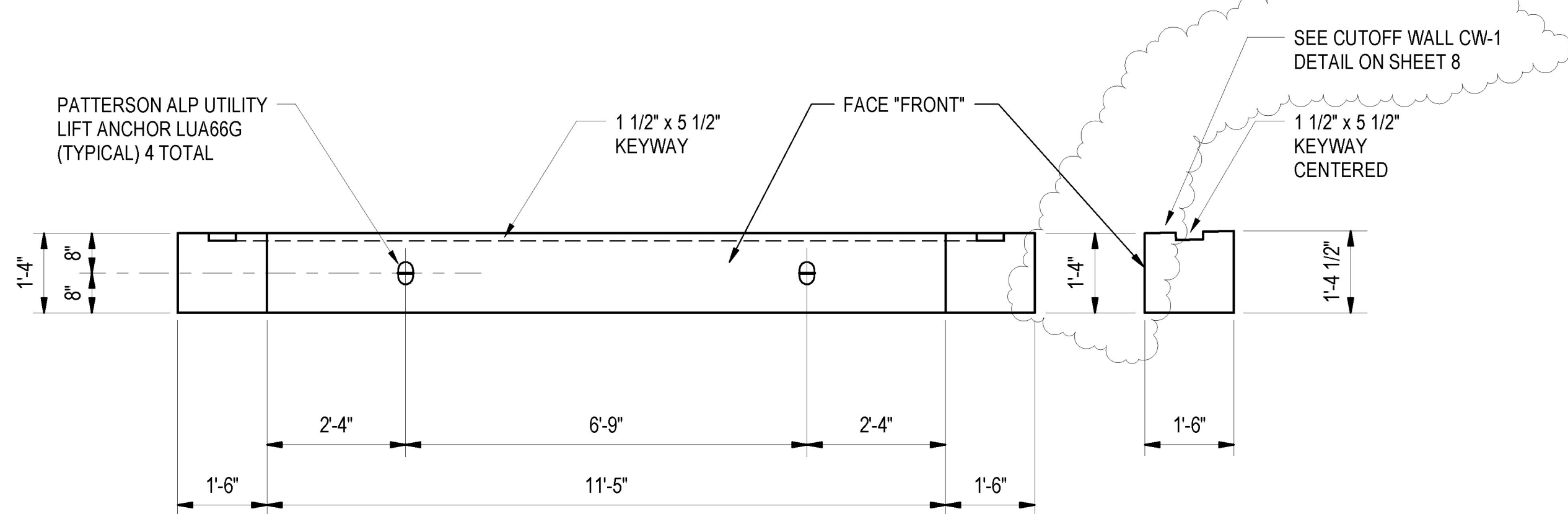




**CUTOFF WALL CW-1 PLAN**  
1/2" = 1'-0"

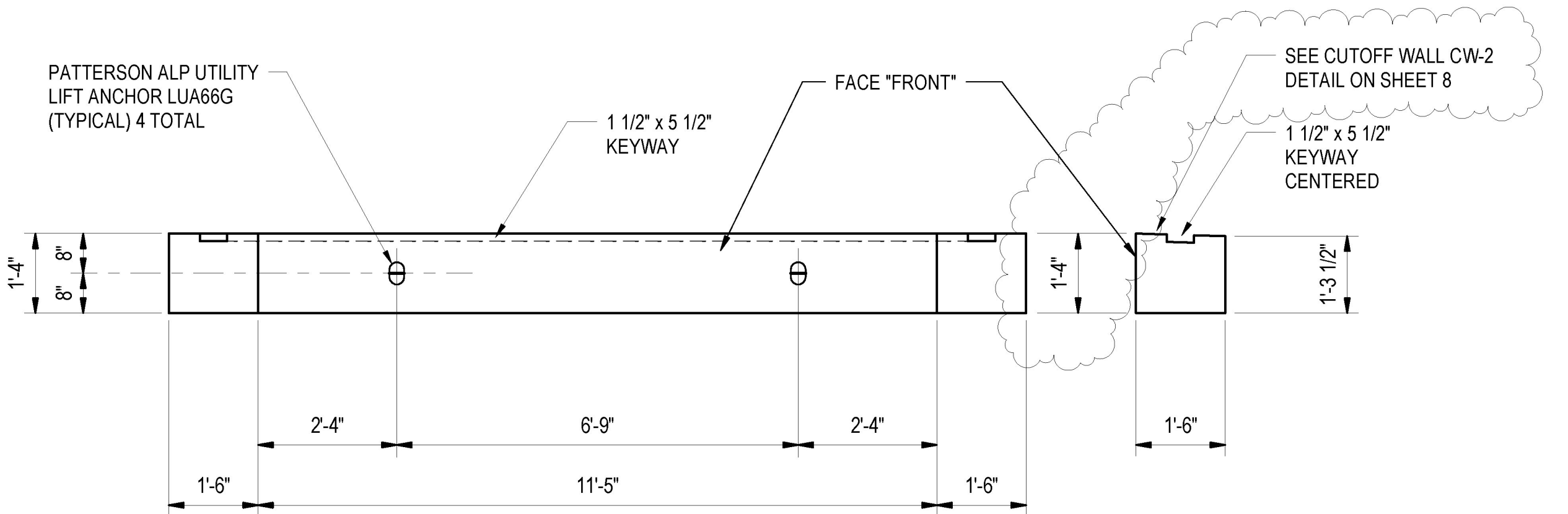


**CUTOFF WALL CW-2 PLAN**  
1/2" = 1'-0"



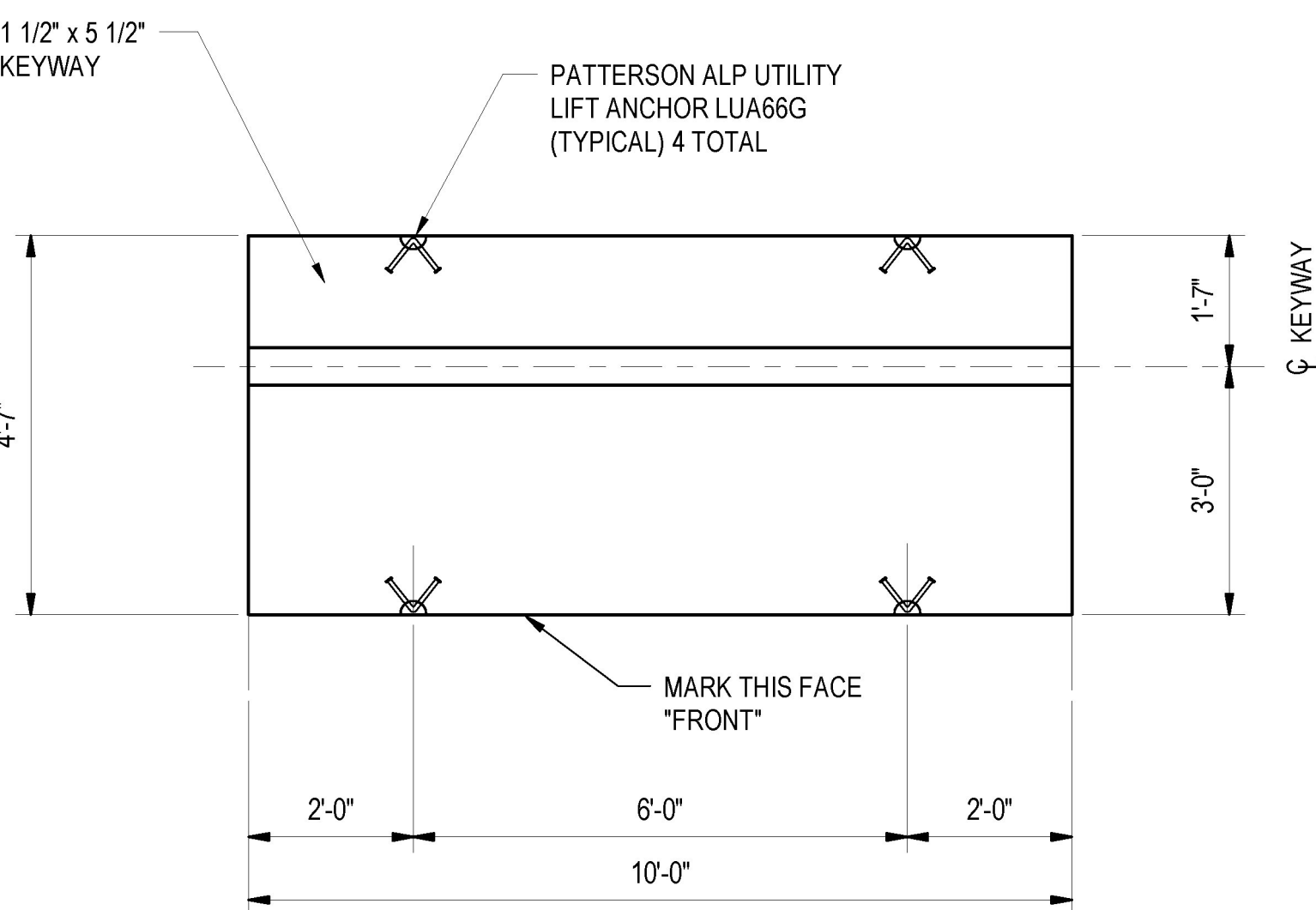
**CUTOFF WALL CW-1 ELEVATION**  
1/2" = 1'-0"

NOTE: REINFORCING STEEL NOT SHOWN IN PLAN, ELEVATION AND SECTION VIEWS.

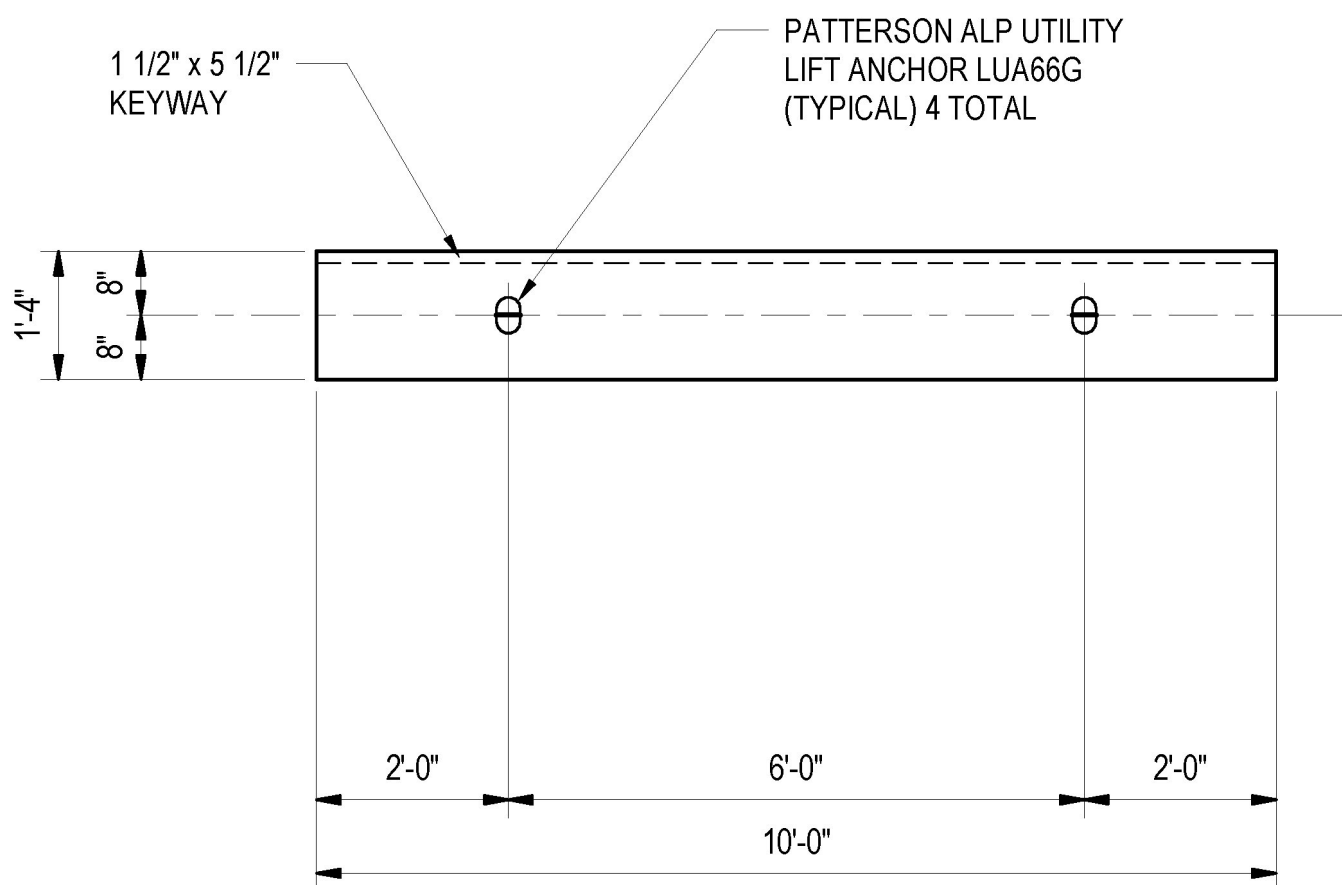


**CUTOFF WALL CW-2 ELEVATION**  
1/2" = 1'-0"

NOTE: REINFORCING STEEL NOT SHOWN IN PLAN, ELEVATION AND SECTION VIEWS.



**CUTOFF WALL CW-3 PLAN**  
1/2" = 1'-0"



**CUTOFF WALL CW-3 ELEVATION**  
1/2" = 1'-0"

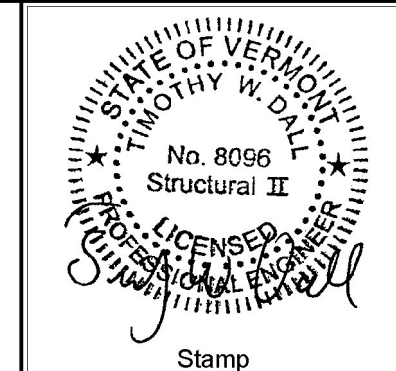
1. DETAILS APPLICABLE AT CW-3A, CW-3B, CW-3C AND CW-3D.
2. REINFORCING STEEL NOT SHOWN IN PLAN AND ELEVATION VIEWS.

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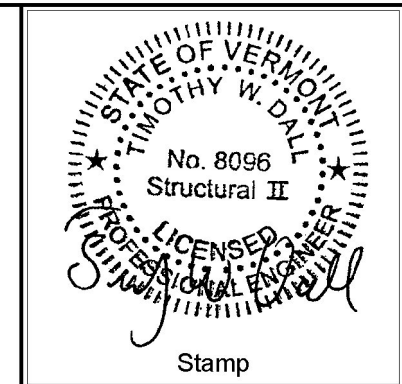
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Project Title: TOWN OF ST. ALBANS  
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ST. ALBANS, VERMONT

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Checked By:	TWD
Drawn:	JTM
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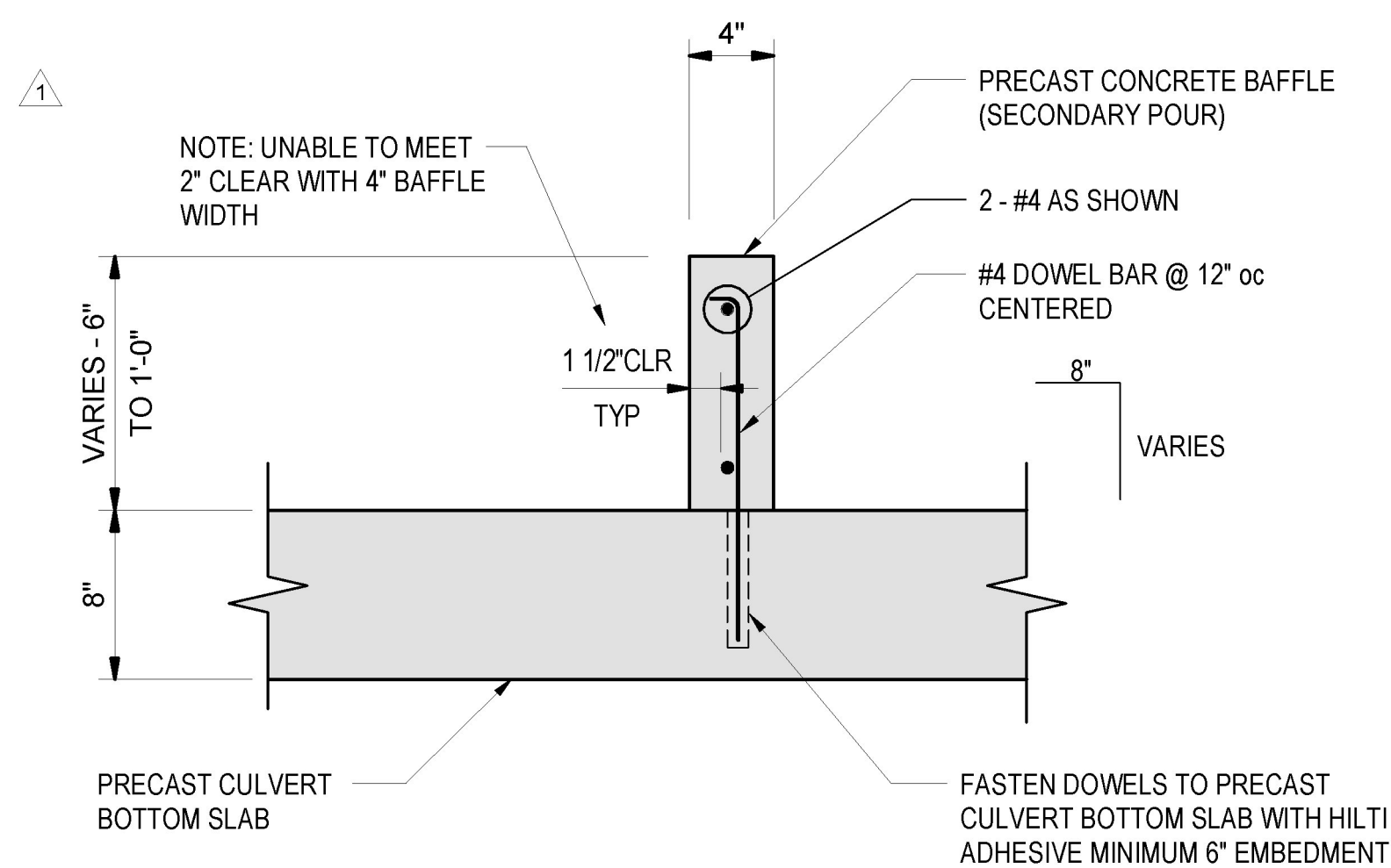
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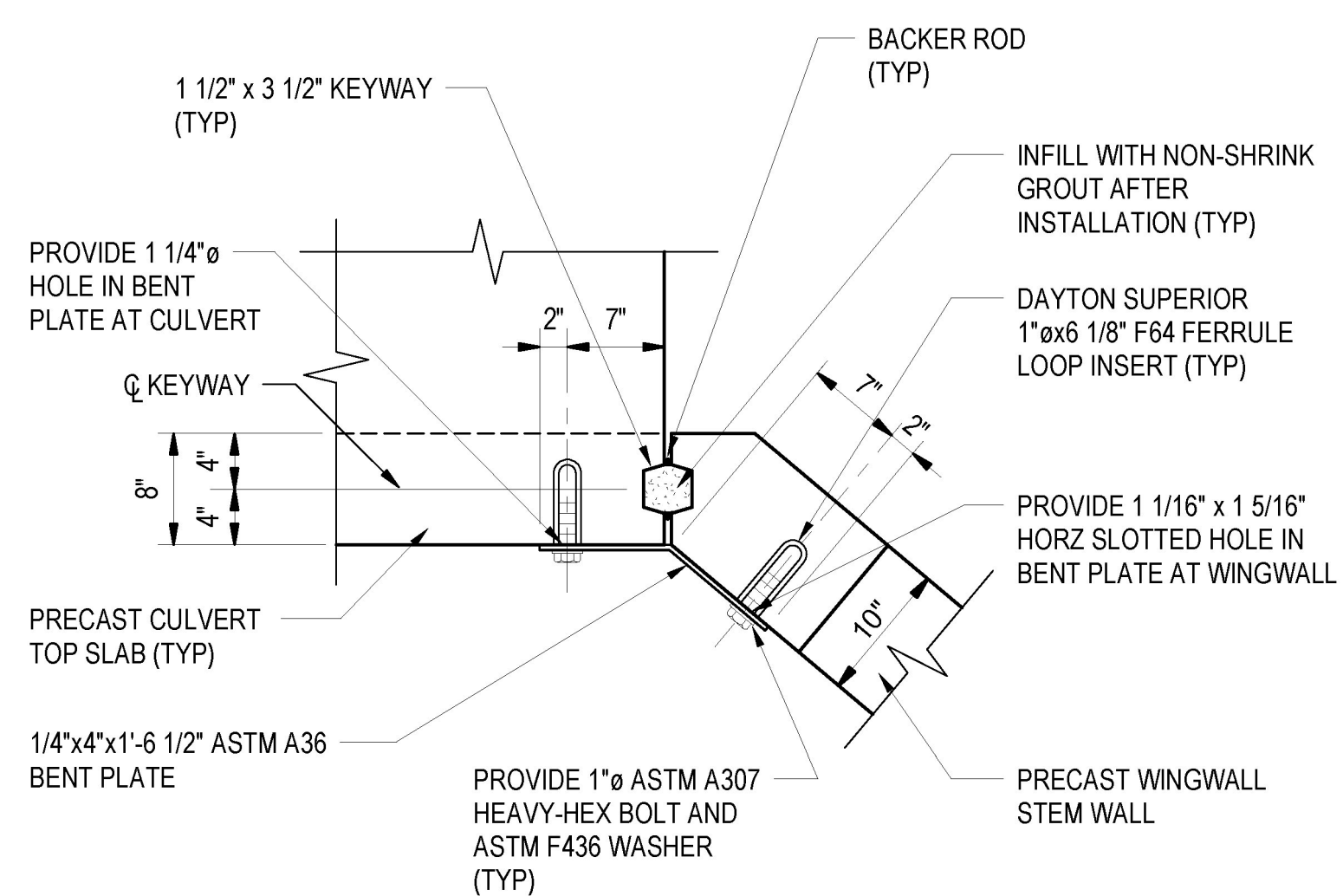
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**8**  
EV Project #17022.02

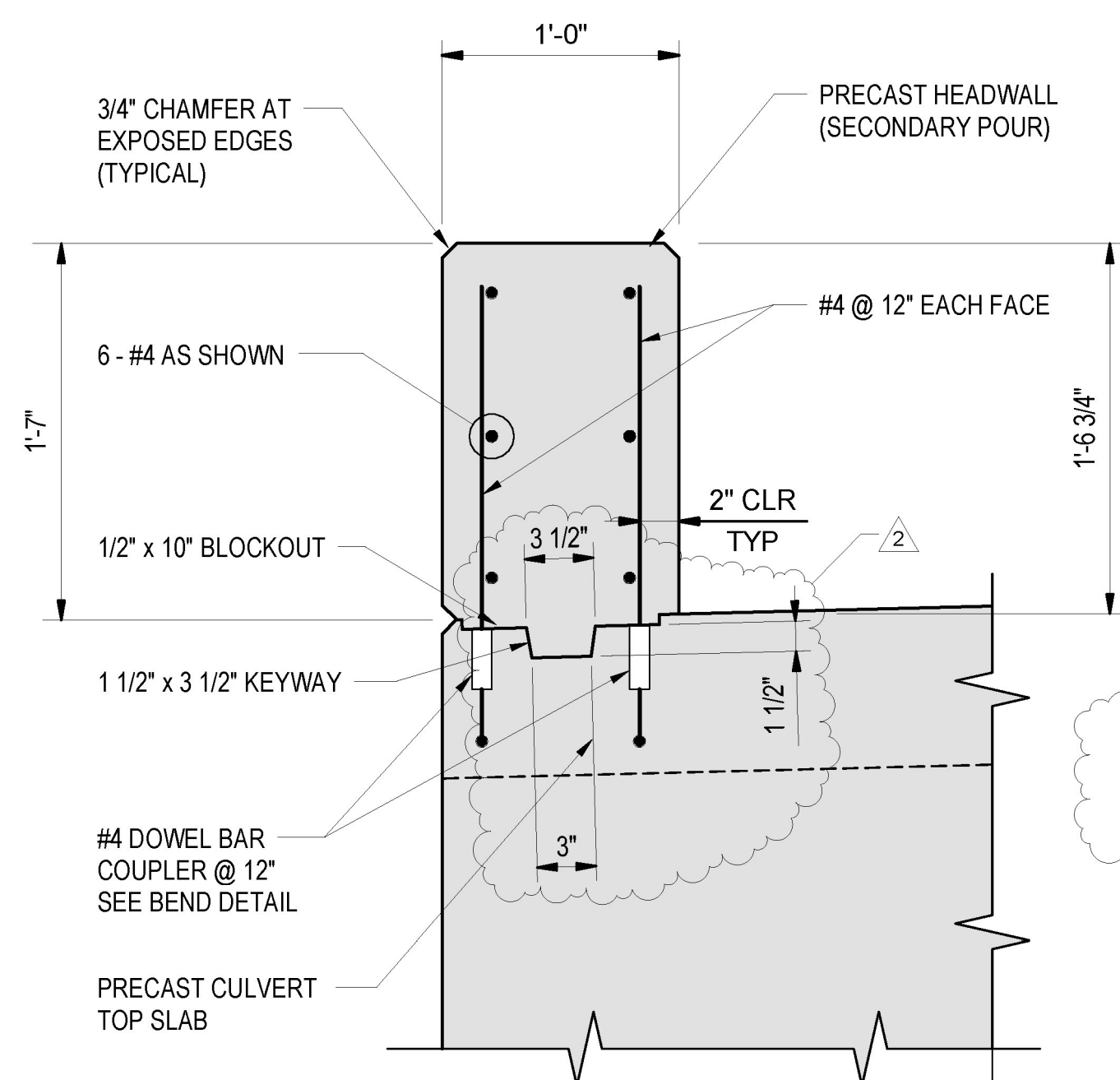


**TYPICAL PRECAST CONCRETE BAFFLE SECTION**  
1 1/2" = 1'-0"

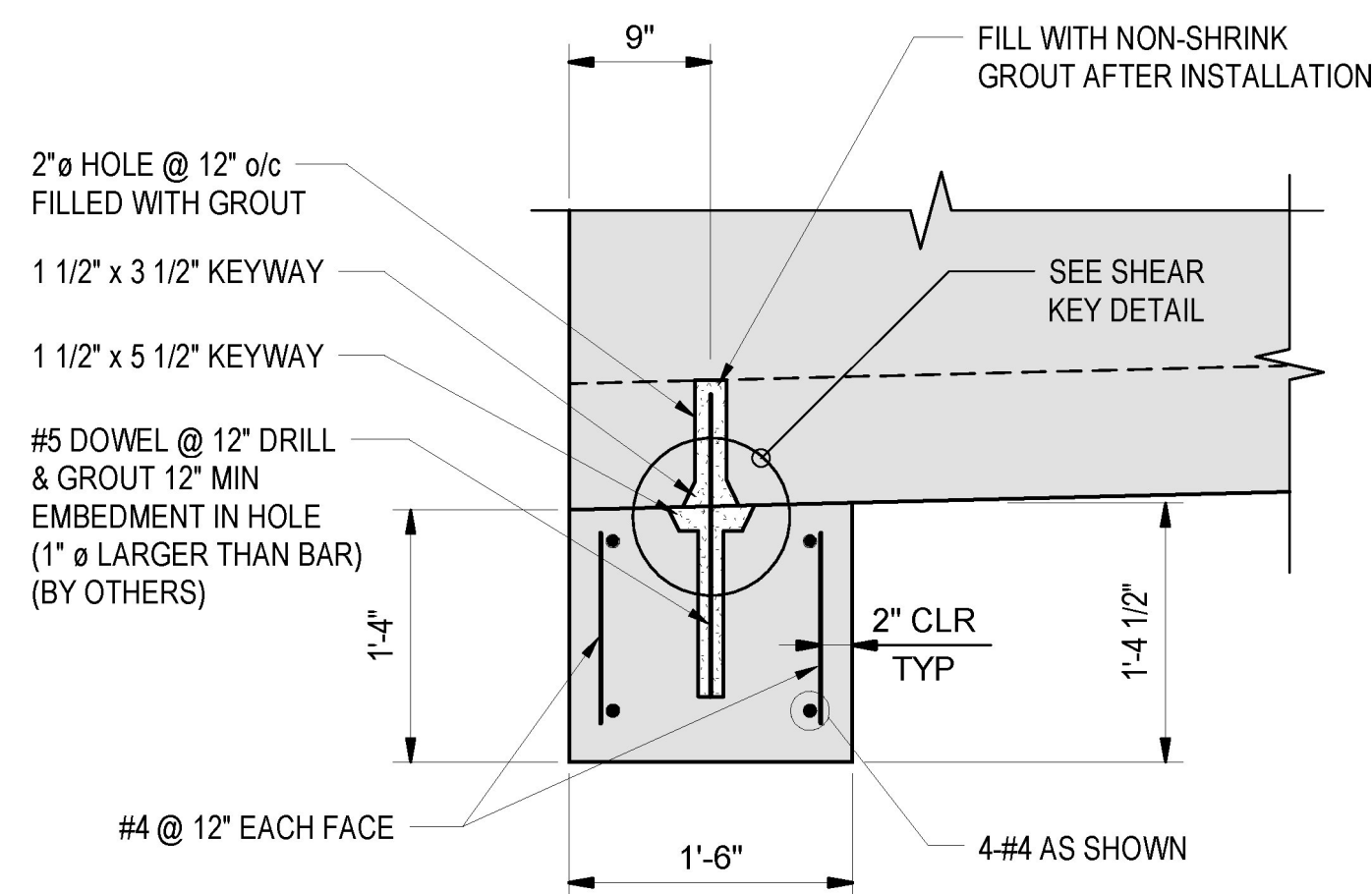
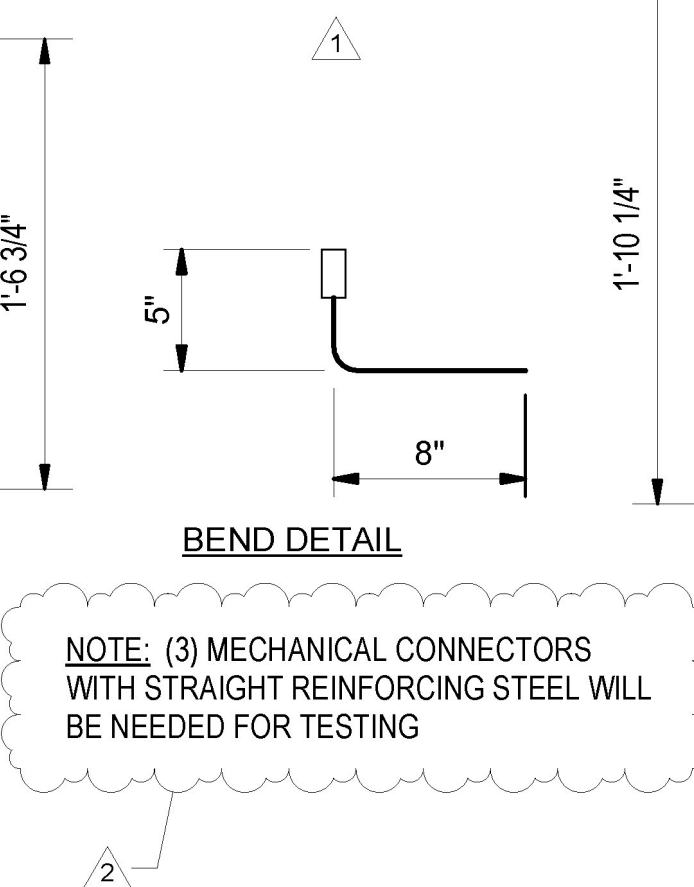


**TYPICAL WINGWALL/CULVERT CONNECTION DETAIL**  
1" = 1'-0"

- ALL MECHANICAL CONNECTOR STEEL BETWEEN WINGWALL AND CULVERT SHALL BE GALVANIZED.

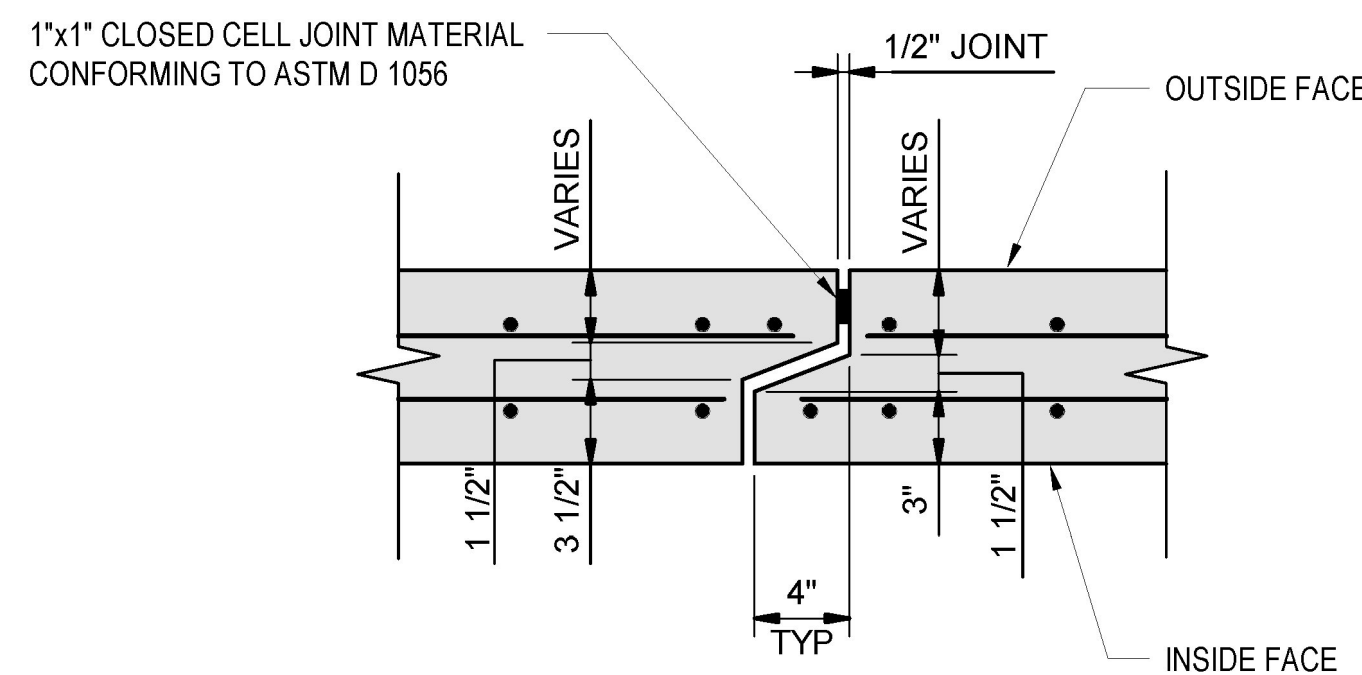


**HEADWALL HW-1 SECTION**  
1 1/2" = 1'-0"

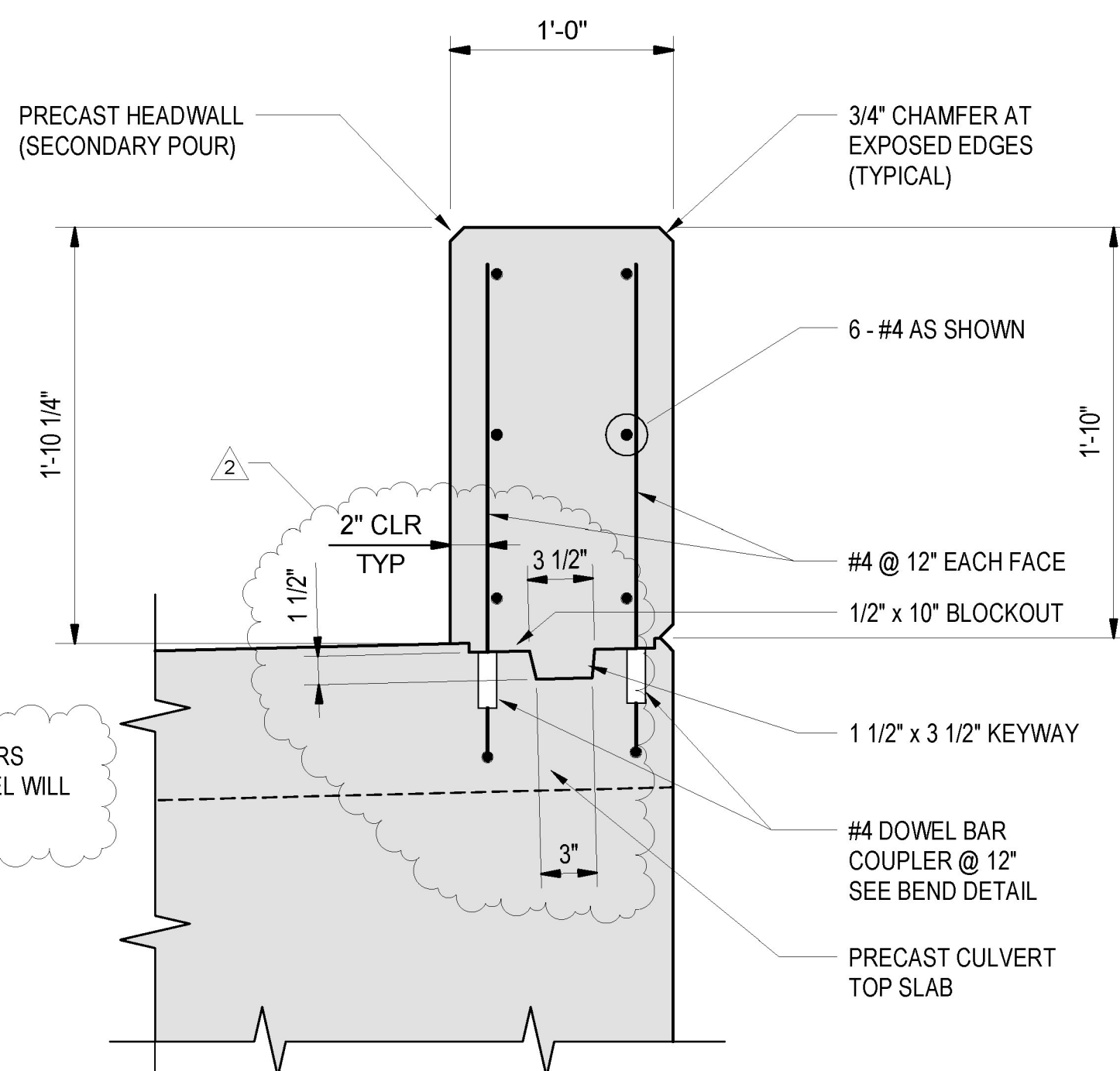


**CUTOFF WALL CW-1 SECTION**  
1" = 1'-0"

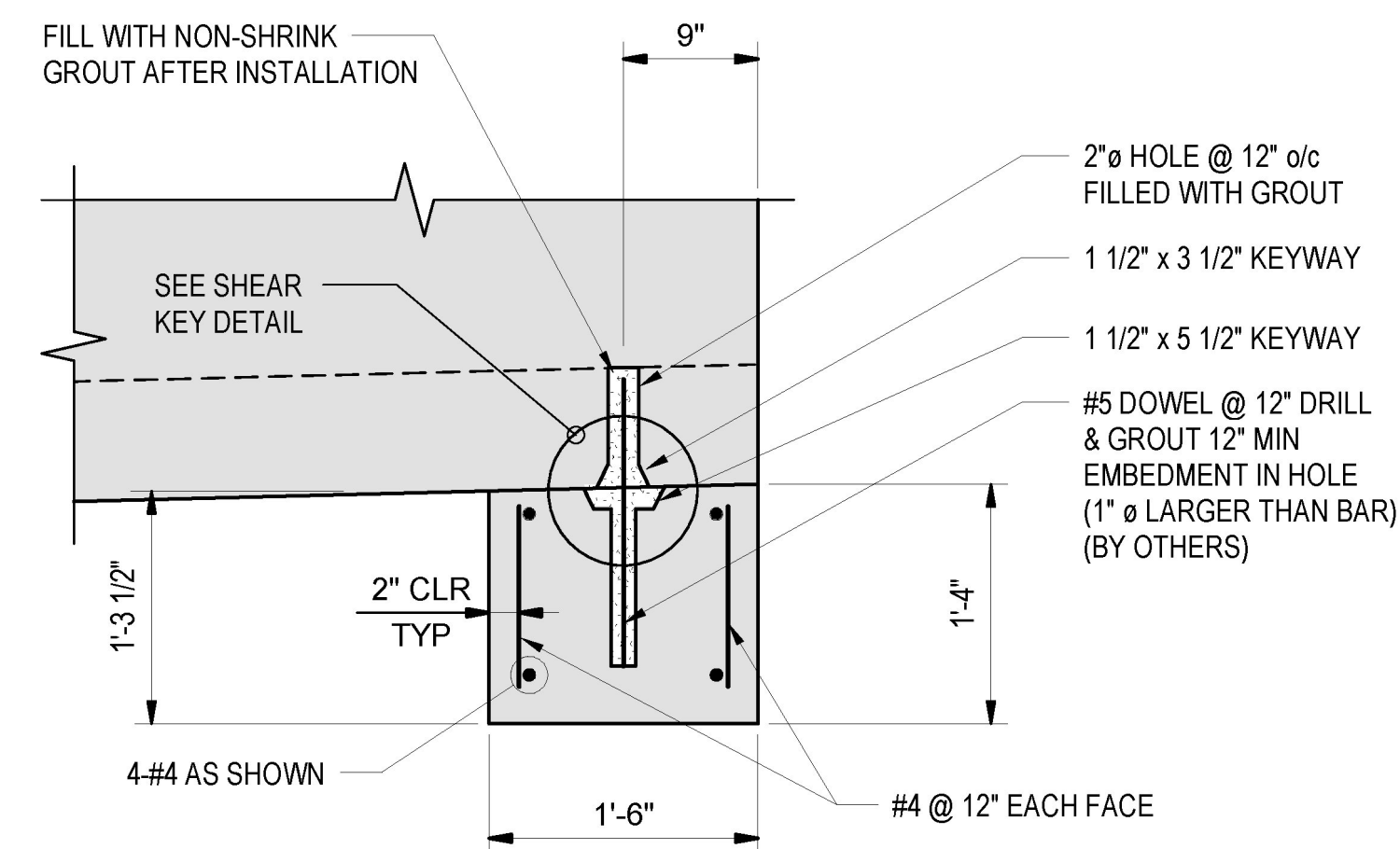
NOTE: SEE E.O.R. DRAWINGS REFERENCED IN DESIGN NOTES ON SHEET 1 FOR JOINT SEALING AND WATERPROOFING REQUIREMENTS



**TYPICAL JOINT DETAIL**  
NOT TO SCALE

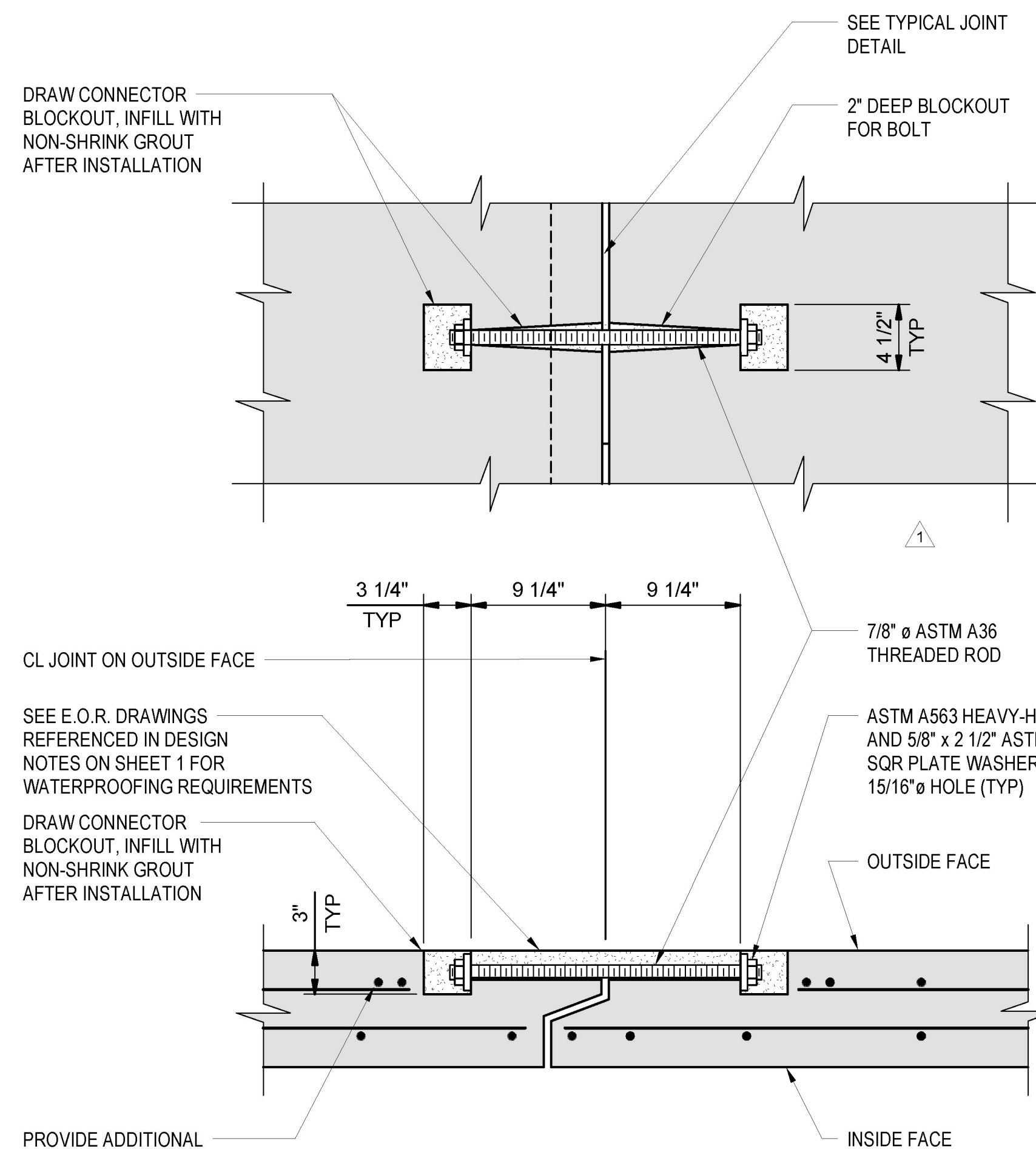


**HEADWALL HW-2 SECTION**  
1 1/2" = 1'-0"



**CUTOFF WALL CW-2 SECTION**  
1" = 1'-0"

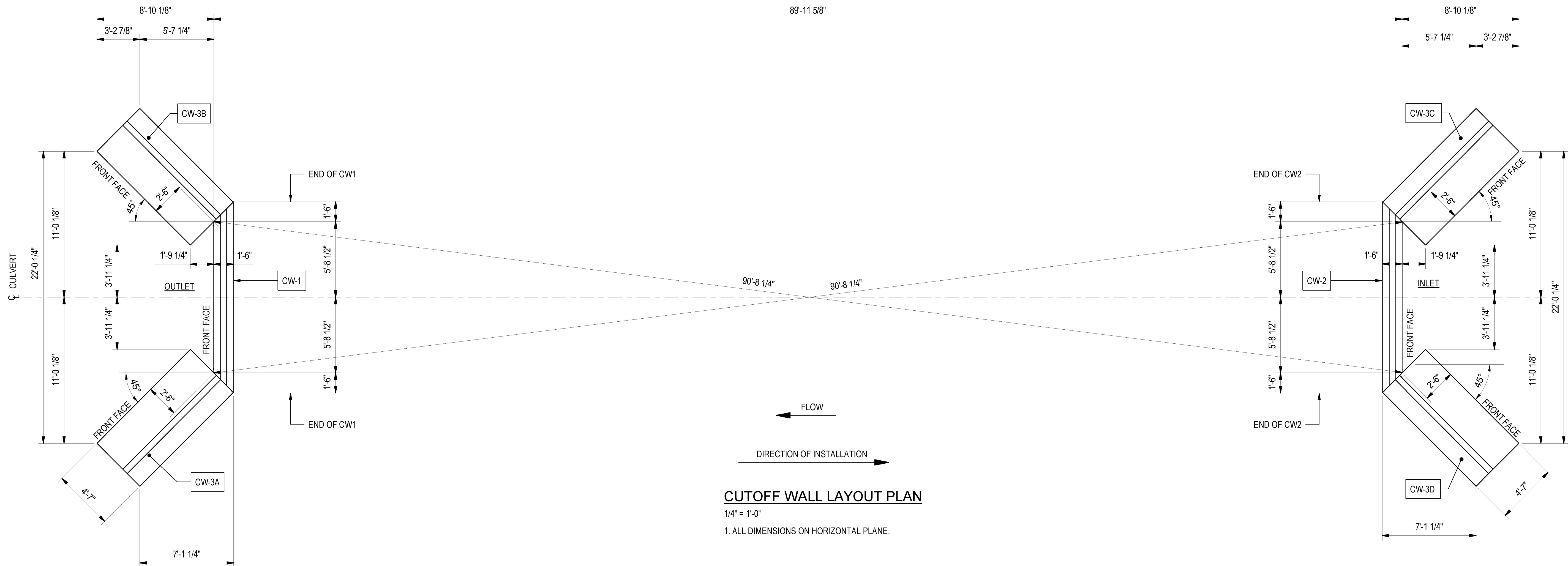
Vermont Agency of Transportation  
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May 17, 2017  
RESUBMIT No Approved  
BY J. B. McCarthy DATE 05/18/17



**TYPICAL DRAW CONNECTOR DETAIL**  
NOT TO SCALE

- ALL DRAW CONNECTOR HARDWARE TO BE HOT-DIP GALVANIZED.
- DRAW CONNECTOR TO REMAIN IN PLACE AFTER INSTALLATION.
- DRAW CONNECTOR TO BE PULLED UNTIL JOINT MATERIAL IS COMPRESSED.





CUTOFF WALL LAYOUT PLAN

1/4" = 1'-0"  
1. ALL DIMENSIONS ON HORIZONTAL PLANE.

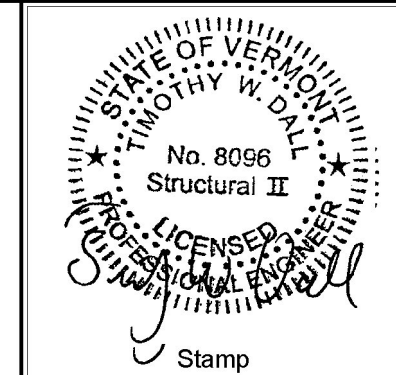
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May 17, 2017

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BY J. B. McCarthy DATE 05/18/17



Date	Description	No.

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78 PRECAST ROAD  
MILTON, VT 05469  
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FAX: (802) 893-1542

Sheet Title: CUTOFF WALL LAYOUT PLAN  
Project Title: TOWN OF ST. ALBANS  
VT ROUTE 104, CULVERT #19  
ST. ALBANS, VERMONT

Designed By:	CPA
Checked By:	TWD
Drawn	JTM
Scale:	AS NOTED
Date:	04/04/2017