REVIEWER NOTES:

1. THIS PROJECT IS INTENDED TO BE CONSTRUCTED ALONG WITH THREE OTHER PROJECTS ON THE VT 11 CORRIDOR.

2. OTHER VTRANS CORRIDOR PROJECTS HAVE BEEN IDENTIFIED THAT WILL CAUSE ADDITIONAL IMPACTS IN THE AREA OF THIS PROJECT. SEE TMP SECTION ONE FOR DISCUSSION OF REGIONAL PROJECT IMPACTS. PROJECT MANAGERS WILL WORK TO RESOLVE THESE CONFLICTS.

3. THIS PROJECT WILL MAINTAIN TWO-WAY TRAFFIC FOR PHASE 1 AND ONE-WAY ALTERNATING TRAFFIC FOR PHASE 2.

4. PEDESTRIAN TRAFFIC WILL BE ACCOMMODATED FOR ALL PHASES OF CONSTRUCTION.

5. AERIAL UTILITY RELOCATION HAS NOT BEEN VERIFIED. STAKEHOLDER MEETING 10/17/2018.

6. THE TEMPORARY BRIDGE INSTALLED OVER THE NORTH HALF OF THE EXISTING STRUCTURE WILL BE UTILIZED THROUGHOUT PHASE 1 AND REMOVED AS PART OF THIS PROJECT.

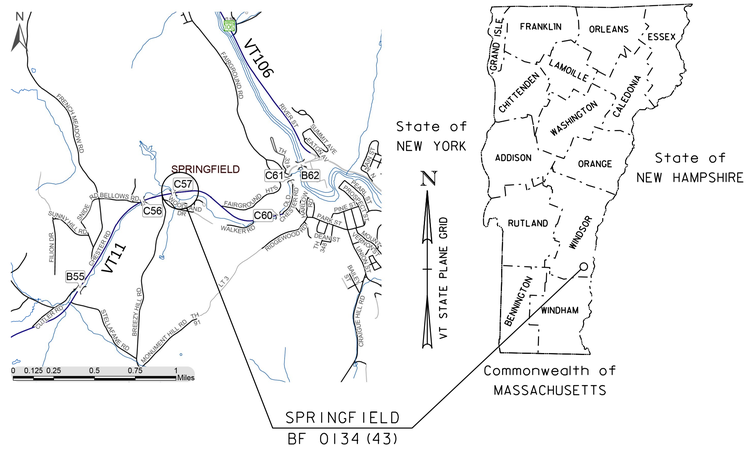
7. COFFERDAMS ARE NOT ANTICIPATED FOR THE INSTALLATION OF THE PROPOSED STRUCTURE.

8. PROJECT LIMITS HAVE BEEN CONSIDERED TO ACCOMODATE FOR THE TEMPORARY RELOCATION OF STREAM. THE STREAM MAY BE MAINTAINED IN THE EXISTING PIPE UNTIL STONE FILL IS INSTALLED. THE STREAM MAY BE SHIFTED FOR THE INSTALLATION OF THE STONE FILL.

9. THE CONTRACTOR SHALL PROVIDE A SITE-SPECIFIC EROSION PREVENTION AND SEDIMENT CONTROL PLAN (EPSC) IN ACCORDANCE WITH SECTION 653 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. ESTIMATED QUANTITIES FOR EPSC WORK HAVE BEEN INCLUDED IN THE CONTRACT FOR BIDDING PURPOSES. IF THE CONTRACTOR'S EPSC PLAN REQUIRES ITEMS OF WORK THAT ARE NOT INCLUDED IN THE CONTRACT, THE ITEMS WILL BE INCLUDED IN THE PAYMENT OF ITEM 653.03 MAINTENANCE OF EPSC PLAN.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF SPRINGFIELD
COUNTY OF WINDSOR

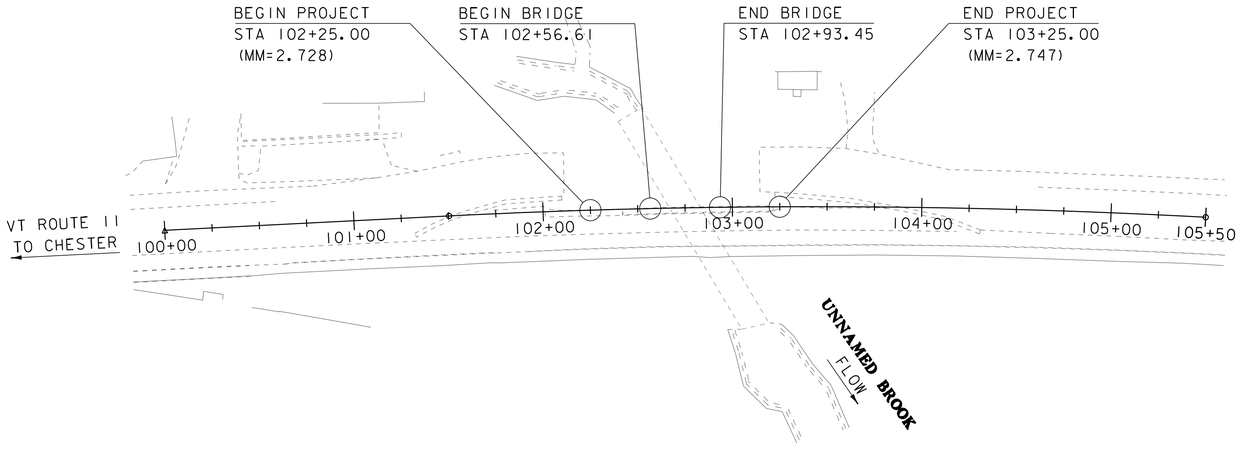


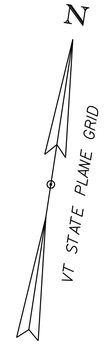
ROUTE NO : VT ROUTE 11 BRIDGE NO : 57

PROJECT LOCATION : 1.25 MILES FROM THE INTERSECTION OF VT 11 AND VT 106 IN SPRINGFIELD, VT, WEST ON VT 11. AT AN UNNAMED BROOK CROSSING.

PROJECT DESCRIPTION : REPLACEMENT OF EXISTING STRUCTURE (BRIDGE #57) WITH A NEW BURIED STRUCTURE WITH RELATED APPROACH ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE :	36.84 FEET.
LENGTH OF ROADWAY :	63.16 FEET.
LENGTH OF PROJECT :	100.00 FEET.





SCALE 1" = 40'-0"
40 0 40

PRELIMINARY PLANS
25-SEP-2019

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

QUALITY ASSURANCE PROGRAM : LEVEL 2	
SURVEYED BY :	R. GILMAN
SURVEYED DATE :	06-10-2014
DATUM	
VERTICAL	NAVD88
HORIZONTAL	NAD 83 (2011)

HIGHWAY DIVISION, CHIEF ENGINEER

APPROVED _____ DATE _____

PROJECT MANAGER : NICK WARK, P.E.

PROJECT NAME : SPRINGFIELD
PROJECT NUMBER : BF 0134(43)

SHEET 1 OF 33 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET

Version
LRFD

INDEX OF SHEETS

PLAN SHEETS

STANDARDS LIST

B-71	STANDARD FOR RESIDENTIAL AND COMMERCIAL DRIVES	07-08-2005
C-3A	SIDEWALK RAMPS	03-10-2008
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G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	03-10-2017
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)	03-10-2017
G-19	GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS	11-15-2002
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T-30	CONSTRUCTION SIGN DETAILS	08-06-2012
T-31	CONSTRUCTION SIGN DETAILS	08-06-2012
T-35	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS	08-06-2012
T-40	DELINEATORS AND MILEPOSTS	01-02-2013
T-42	BRIDGE NUMBER PLAQUE	04-09-2014
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013

DETAIL SHEETS

HSD-400.01	SAFETY EDGE DETAILS	1/5/2018
HSD-621.06	GUARDRAIL TERMINAL LABEL DETAIL	2/27/2017
HSD-621.01	POST AND BLOCKOUT DETAILS FOR STEEL BEAM GUARDRAIL, GAL	6/9/2015
SD-501.00	CONCRETE DETAILS AND NOTES	2/9/2012
SD-502.00	CONCRETE DETAILS AND NOTES	10/10/2012

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: March, 2019

DRAINAGE AREA : 3.7 sq. mi.
CHARACTER OF TERRAIN : Residential, hilly and forested
STREAM CHARACTERISTICS : Sinuous alluvial fan laterally confined by roadway
NATURE OF STREAMBED : Cobbles, gravel and sand

PEAK FLOW DATA - ANNUAL EXCEEDANCE PROBABILITY (AEP)

43% =	150 cfs	2% =	460 cfs
10% =	280 cfs	1% =	550 cfs
4% =	380 cfs	0.2% =	790 cfs

DATE OF FLOOD OF RECORD : Unknown
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV.: Unknown
NATURAL STREAM VELOCITY : @ 2% AEP = 9.2 fps*
ICE CONDITIONS : Moderate
DEBRIS: Moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No
IS ORDINARY RISE RAPID? No
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Yes
IF YES, DESCRIBE: Confluence 70 ft. upstream as well as another confluence 230 ft. downstream.

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: CGMPPA
YEAR BUILT: 1961
CLEAR SPAN(NORMAL TO STREAM): 14 ft. 1 in.
VERTICAL CLEARANCE ABOVE STREAMBED: 8 ft. 9 in.
WATERWAY OF FULL OPENING: 97 sq. ft.
DISPOSITION OF STRUCTURE: Remove and replace
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See borings

WATER SURFACE ELEVATIONS AT:

43% AEP =	556.5 ft.	VELOCITY =	7.4 fps**
10% AEP =	557.9 ft.	"	9.1 fps
4% AEP =	558.9 ft.	"	10.0 fps
2% AEP =	559.5 ft.	"	10.7 fps
1% AEP =	560.3 ft.	"	11.2 fps

LONG TERM STREAMBED CHANGES: Grade change and stream profile indicate that this reach is moderately depositional.

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No
FREQUENCY: -
RELIEF ELEVATION: 569.0 ft.
DISCHARGE OVER ROAD @ 1% AEP: -

UPSTREAM STRUCTURE

TOWN: Springfield DISTANCE: 0.25 mi.
HIGHWAY # : VT-11 STRUCTURE #: C-56
CLEAR SPAN: 13 ft. CLEAR HEIGHT: 8 ft.
YEAR BUILT: 1961 FULL WATERWAY: 85 sq. ft.
STRUCTURE TYPE: CGMPPA

DOWNSTREAM STRUCTURE

TOWN: Springfield DISTANCE: 0.64 mi.
HIGHWAY # : TH-98, Walker Rd. STRUCTURE #: B-70
CLEAR SPAN: 168 in. CLEAR HEIGHT: 96 in.
YEAR BUILT: Unknown FULL WATERWAY: 90 sq. ft.
STRUCTURE TYPE: Steel Corrugated Arch

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A STR.	4A STR.	5A SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY							
POSTING							
OPERATING							
COMMENTS:	TABLE TO BE COMPLETED BY CONTRACTOR'S DESIGNER						

DESIGN CRITERIA

1 SEE TYPICAL SECTIONS AND DESIGN PARAMETERS SHEET FOR DETAILS

PROPOSED STRUCTURE

STRUCTURE TYPE: Buried Structure

CLEAR SPAN(NORMAL TO STREAM): 30 ft.
VERTICAL CLEARANCE ABOVE STREAMBED: 10 ft.
WATERWAY OF FULL OPENING: 240 sq. ft.

WATER SURFACE ELEVATIONS AT:

43% AEP =	557.1 ft.	VELOCITY=	6.6 fps**
10% AEP =	558.2 ft.	"	7.8 fps
4% AEP =	558.8 ft.	"	8.4 fps
2% AEP =	559.3 ft.	"	8.8 fps
1% AEP =	559.8 ft.	"	9.2 fps

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No
FREQUENCY: -
RELIEF ELEVATION: 568.9 ft.
DISCHARGE OVER ROAD @ 1% AEP: -

BRIDGE LOW CHORD ELEVATION: 563.2 ft. (inlet)
FREEBOARD: @ 2% AEP = 3.9 ft.

SCOUR: @ 1% AEP = 0.6 ft. of contraction scour

REQUIRED CHANNEL PROTECTION: Stone Fill, Type II; E-stone, Type II

PERMIT INFORMATION

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

TEMPORARY BRIDGE REQUIREMENTS

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

ADDITIONAL INFORMATION

* - Largest velocity observed in natural channel configuration with the structure removed.
** - Velocities are reported at the structure outlet.

TRAFFIC MAINTENANCE NOTES

1. PHASE 1: MAINTAIN TWO LANE TRAFFIC ON EXISTING TEMPORARY BRIDGE
2. INSTALL SIDEWALK ON LEFT SIDE OF TEMPORARY BRIDGE.
3. PHASE 2: MAINTAIN ONE-WAY ALTERNATING TRAFFIC OVER NEW STRUCTURE
4. MAINTAIN PED. TRAFFIC ON TEMPORARY SIDEWALK OVER NEW STRUCTURE.

DESIGN VALUES

1.	DESIGN LIVE LOAD		HL-93
2.	FUTURE PAVEMENT	d_P:	0 INCH
3.	DESIGN SPAN	D:	31.00 FT
4.	MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	---
5.	PRESTRESSING STRAND	f_y:	---
6.	PRESTRESSED CONCRETE STRENGTH	f'_c:	---
7.	PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	---
8.	HIGH PERFORMANCE CONCRETE, CLASS PCD	f'_c:	4.0 KSI
9.	HIGH PERFORMANCE CONCRETE, CLASS PCS	f'_c:	3.5 KSI
10.	HIGH PERFORMANCE CONCRETE, CLASS SCC	f'_c:	4.0 KSI
11.	CONCRETE, CLASS C	f'_c:	3.0 KSI
12.	REINFORCING STEEL	f_y:	60 KSI
13.	STRUCTURAL STEEL AASHTO M270	f_y:	---
14.	NOMINAL BEARING RESISTANCE OF SOIL	q_n:	4.0 KSF
15.	SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
16.	NOMINAL BEARING RESISTANCE OF ROCK	q_n:	10.0 KSF
17.	ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
18.	PILE RESISTANCE FACTOR	ϕ:	0.65
19.	LATERAL PILE DEFLECTION	Δ:	---
20.	BASIC WIND SPEED	V_{3s}:	---
21.	MINIMUM GROUND SNOW LOAD	p_g:	---
22.	SEISMIC DATA PGA: ---	S_s:	---
		S_1:	---
23.			
24.			---
25.			---
26.			---

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T
2017	5000	570	56	4.9
2037	5300	600	56	6.9

20 year ESAL for flexible pavement from 2017 to 2037 : 0
40 year ESAL for flexible pavement from 2017 to 2057 : 0
Design Speed : 40 mph

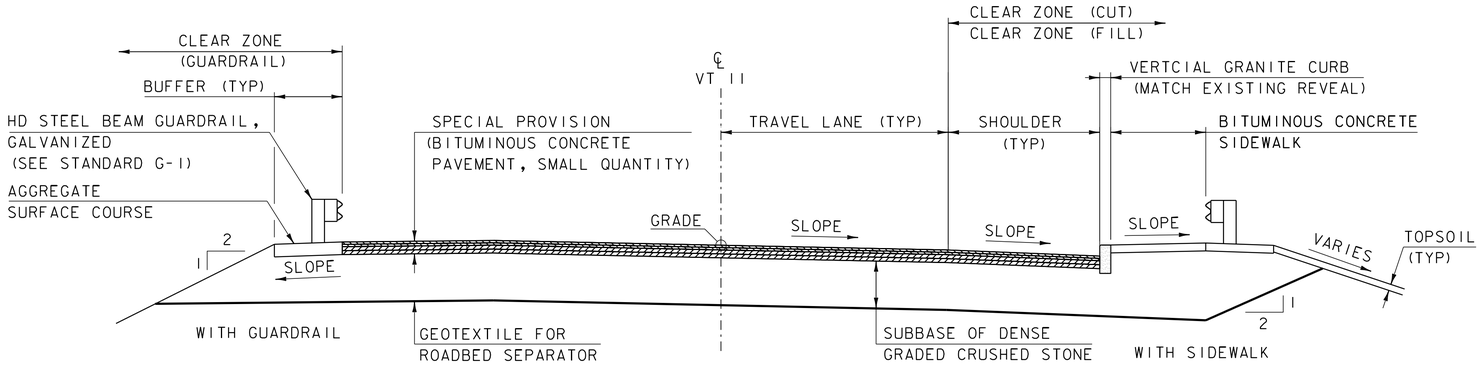
AS BUILT "REBAR" DETAIL

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

PROJECT NAME: **SPRINGFIELD**
PROJECT NUMBER: **BF 0134(43)**

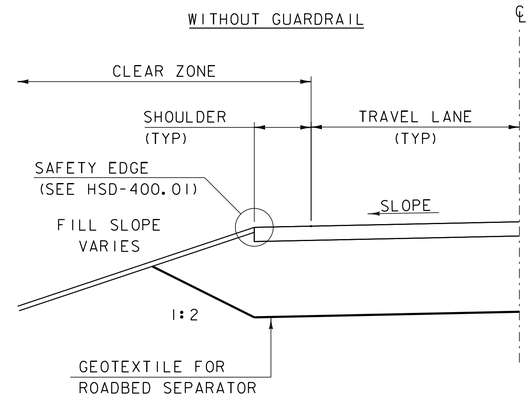
FILE NAME: **s13c334pi.xls**
PROJECT LEADER: **N. WARK**
DESIGNED BY: **G. LAROCHE**
PRELIMINARY INFORMATION SHEET 1

PLOT DATE: 2019
DRAWN BY: **G. LAROCHE**
CHECKED BY: **G. DARGAN**



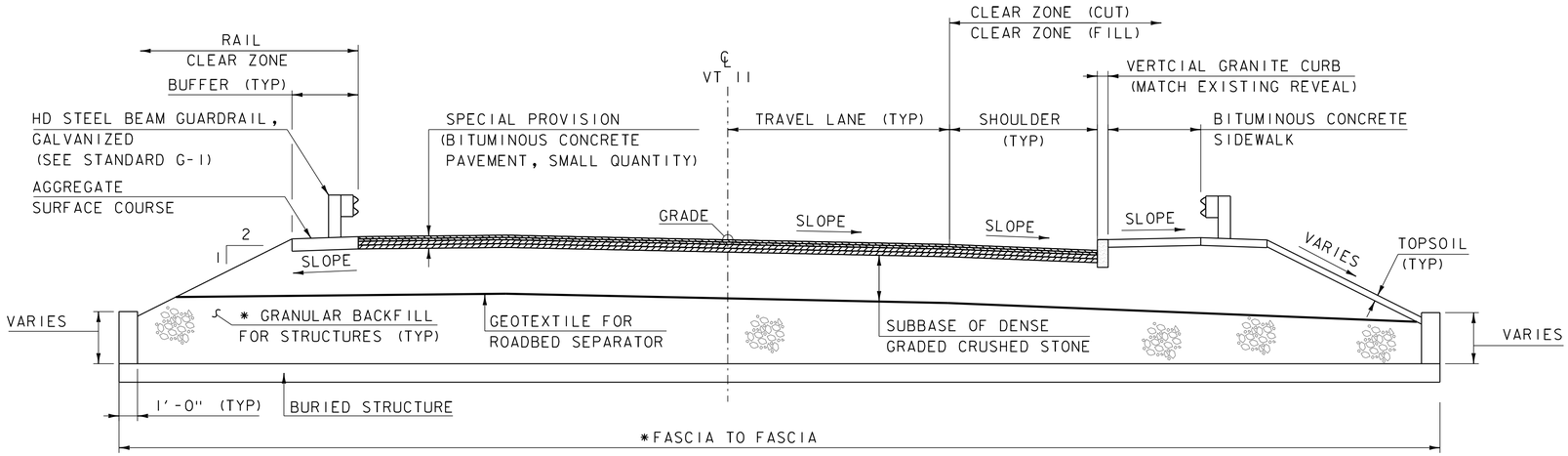
VTII TYPICAL SECTION

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



ROADWAY TYPICAL SECTION

NOT TO SCALE



*SEE TYPICAL SECTION SHEET 3 FOR DIMENSION VALUE

VTII TYPICAL SECTION AT BURIED STRUCTURE

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

ROAD TYPICAL REQUIREMENTS

	LEFT		RIGHT	
	WIDTH	SLOPE	WIDTH	SLOPE
TRAVEL LANE	12'-0"	0.021	12'-0"	-0.021
SHOULDER	8'-0"	-0.010	8'-0"	-0.040
CURB	---	---	0'-6"	0.000
SIDEWALK	---	---	5'-0"	0.021
BUFFER	3'-7"	-0.060	3'-7"	-0.060
FILL SLOPE	---	1:2.0	---	1:2.0
CLEAR ZONE (CUT)	12'-0"	---	12'-0"	---
CLEAR ZONE (FILL)	14'-0"	---	14'-0"	---
CLEAR ZONE (GUARDRAIL)	4'-9"	---	4'-9"	---

ROADWAY MATERIAL REQUIREMENTS

	THICKNESS	DESCRIPTION
BINDER	70-28	PERFORMANCE GRADE ASPHALT BINDER
GYRATION	65	DESIGN NUMBER OF GYRATIONS
WEARING COURSE	1½"	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) (TYPE IVS)
INTERMEDIATE COURSE	1½"	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) (TYPE IVS)
BASE COURSE #2	2½"	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) (TYPE IIS)
BASE COURSE #1	2½"	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) (TYPE IIS)
EMULSIFIED ASPHALT	---	STANDARD SPECIFICATIONS TABLE 406.12A
SIDEWALK	2"	BITUMINOUS CONCRETE SIDEWALK (TYPE IVS)
BUFFER	VARIES	AGGREGATE SURFACE COURSE (MATCH PAVE THICK)
SUBBASE	30"	SUBBASE OF DENSE GRADED CRUSHED STONE
TOPSOIL	4"	TOPSOIL

MATERIAL TOLERANCES

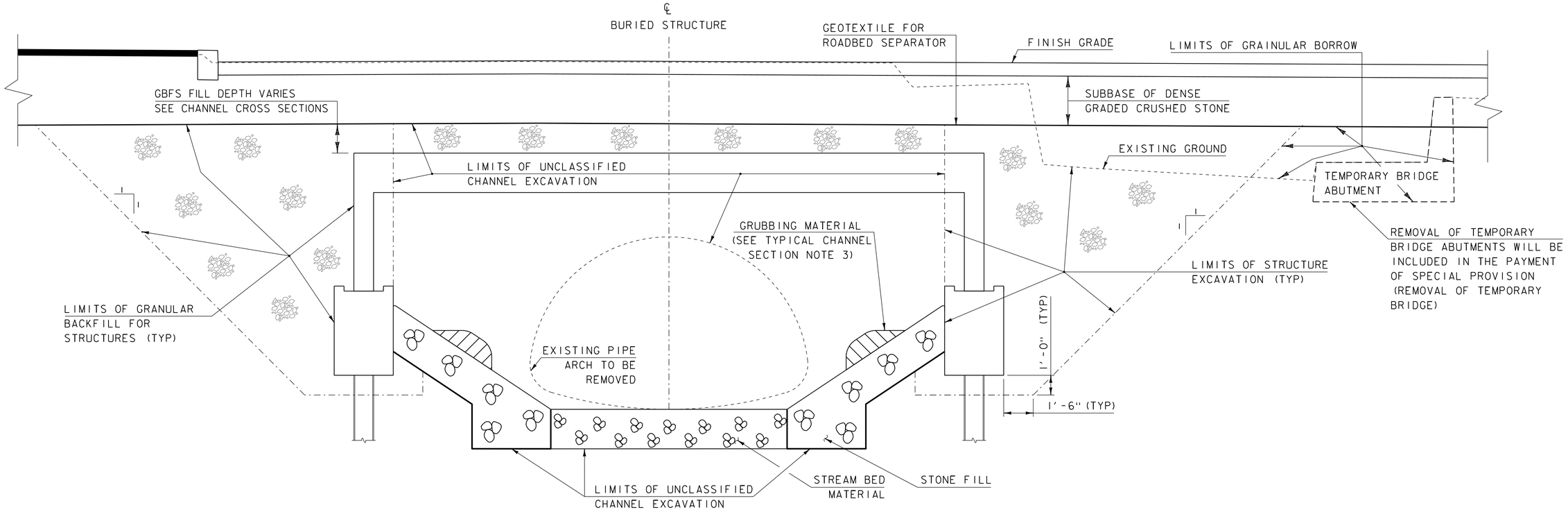
(IF USED ON PROJECT)

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

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

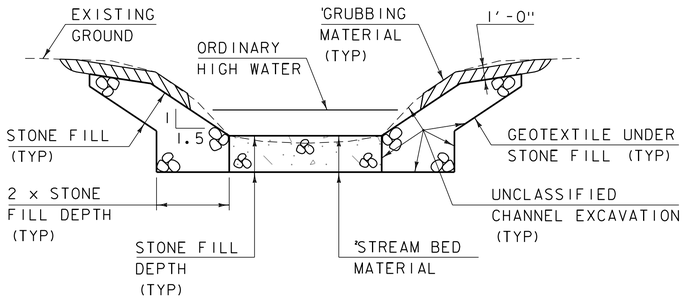
FILE NAME: sl3c334typ.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: G. LAROCHE
TYPICAL SECTION SHEET 1

PLOT DATE: 25-SEP-2019
DRAWN BY: G. LAROCHE
CHECKED BY: G. DARGAN
SHEET 3 OF 33



BURIED STRUCTURE EARTHWORK TYPICAL SECTION

NOT TO SCALE



TYPICAL CHANNEL SECTION

NOT TO SCALE

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

2. THE CONTRACTOR SHALL CREATE A LOW FLOW CHANNEL IN THE STREAM BED MATERIAL AS DIRECTED BY THE ENGINEER.

3. GRUBBING MATERIAL SHALL BE PLACED UNDERNEATH STRUCTURES WHERE THERE IS MORE THAN 6 FEET VERTICALLY FROM ORDINARY HIGH WATER (OHW) TO THE BOTTOM OF SUPERSTRUCTURE AND MORE THAN 6 FEET HORIZONTALLY FROM OHW LINE TO FRONT FACE OF ABUTMENT. THIS MATERIAL SHALL START JUST ABOVE THE OHW ELEVATION AND TERMINATE 3 FEET HORIZONTALLY FROM THE FRONT FACE OF THE ABUTMENT. THIS MATERIAL SHALL NOT BE PLACED IN AREAS THAT WILL SEE CONCENTRATED FLOWS RESULTING FROM SURFACE WATER RUNOFF. GRUBBING MATERIAL MAY BE OMITTED IF LESS THAN 3 FEET IN WIDTH BENEATH A STRUCTURE. SEE CHANNEL SECTIONS FOR ADDITIONAL DETAILING.

4. WHENEVER BEDROCK IS ENCOUNTERED DURING EXCAVATION OF THE CHANNEL KEY OR FILL SLOPES, THE ENGINEER WILL COORDINATE WITH THE RIVER MANAGEMENT ENGINEER FOR APPROVAL OF HOW THE CHANNEL SHALL BE CONSTRUCTED.

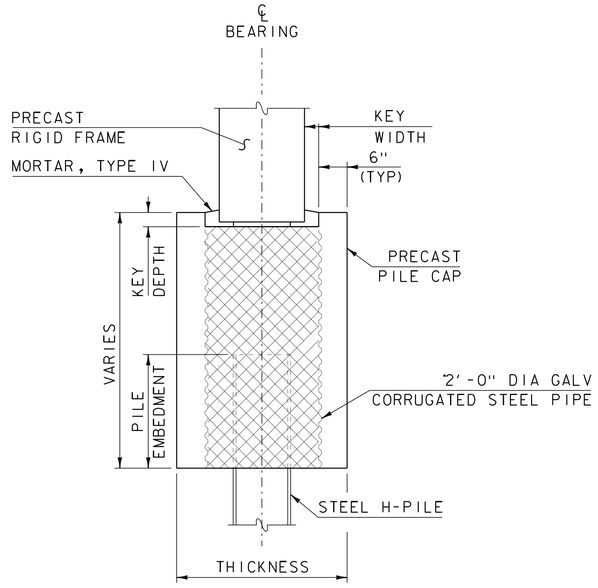
CHANNEL MATERIAL REQUIREMENTS

	THICKNESS	TYPE
STONE FILL	2'-0"	STONE FILL, TYPE II
STREAM BED MATERIAL	2'-0"	STONE FILL, STREAM BED MATERIAL (E-STONE, TYPE II)

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: sl3c334typ.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: G. LAROCHE
TYPICAL SECTION SHEET 2

PLOT DATE: 25-SEP-2019
DRAWN BY: G. LAROCHE
CHECKED BY: G. DARGAN
SHEET 4 OF 33



PILE CAP TYPICAL SECTION

NOT TO SCALE

▨ * LIMITS OF SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)

* OMIT CORRUGATED STEEL PIPE AND RAPID SET CONCRETE FOR CAST-IN-PLACE OPTION

BURIED STRUCTURE DIMENSIONS

FRAME	
	DIMENSION
LEG THICKNESS	1'-0"
LEG HEIGHT	5'-0"
SLAB THICKNESS	2'-0"
*FASCIA-FASCIA	89'-0"

PILE CAP	
	DIMENSION
THICKNESS	3'-0"
HEIGHT	VARIES
KEY WIDTH (MIN)	0'-3"
KEY DEPTH	0'-3"
PILE EMBEDMENT	2'-0"

*SEE TYPICAL SECTION SHEET 1

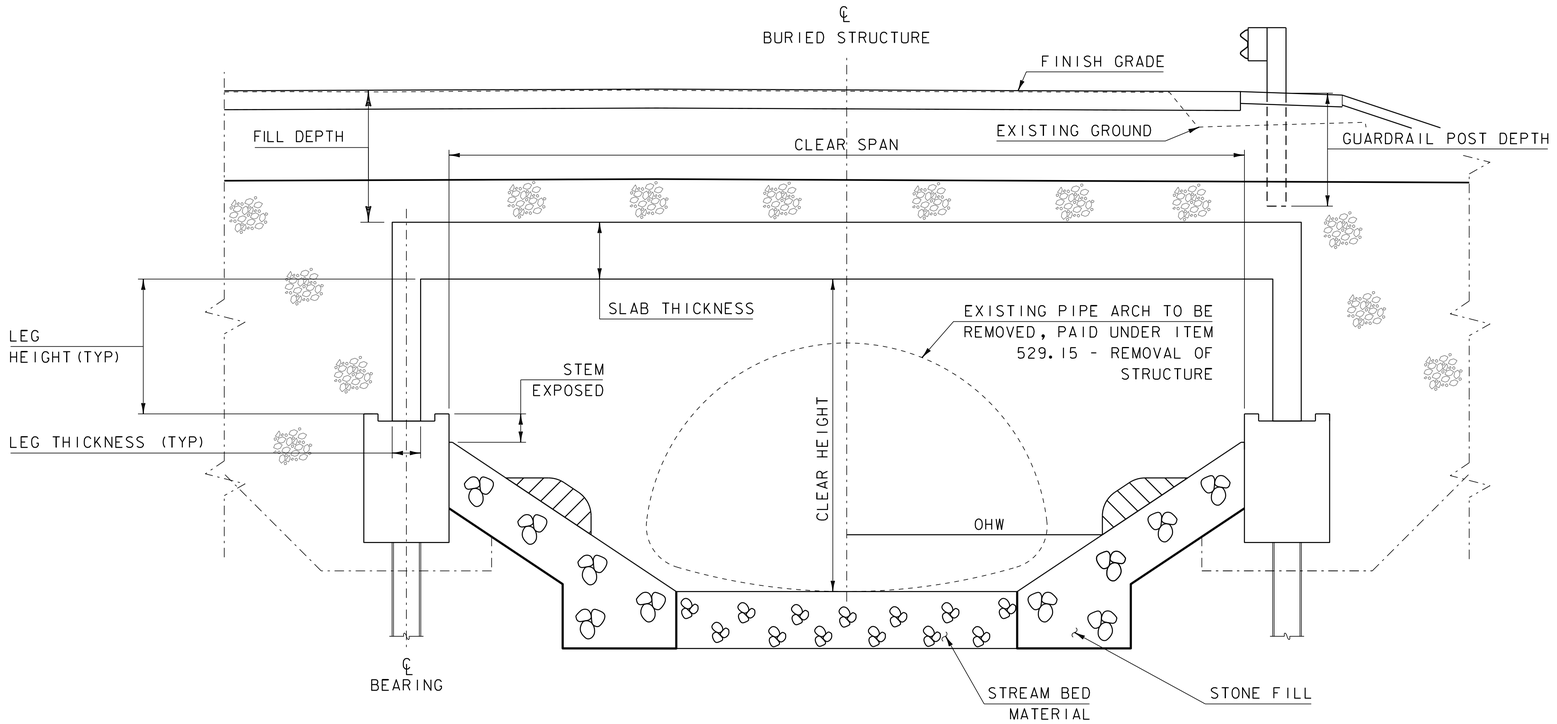
FABRICATOR TO DETERMINE ALL FINAL STRUCTURE DIMENSIONS NOT SHOWN HERE. DIMENSIONS ARE ONLY USED FOR PLAN GENERATION.

MINIMUM REQUIRED STRUCTURE GEOMETRY

	DIMENSION	DESCRIPTION
CLEAR HEIGHT	10'-4"	REQUIRED OPENING HEIGHT
CLEAR SPAN	28'-0"	PILE CAP (NEAR FACE - NEAR FACE)
FILL DEPTH	4' - 6'	DESIGN FILL HEIGHT OVER STRUCTURE
GUARDRAIL POST DEPTH	4'-0"	HEAVY DUTY STEEL BEAM GUARDRAIL
STEM EXPOSED '	0'-0"	STEM EXPOSED ABOVE STONE FILL

1. TOP OF ABUTMENT PEDESTAL SHALL BE 1'-0" ABOVE OHW (MIN)

STRUCTURAL DIMENSIONS LISTED IN THE MINIMUM STRUCTURE GEOMETRY TABLE MAY BE MODIFIED TO SUIT THE CONTRACTOR'S MEANS AND METHODS WHILE REMAINING IN ACCORDANCE WITH ALL CONTRACT REQUIREMENTS. THE CONTRACTOR SHALL SUBMIT THE DESIRED STRUCTURAL DESIGN MEETING THE MINIMUM REQUIREMENTS SPECIFIED HEREIN. THE GEOMETRY SHALL FIT ALL ASPECTS OF SITE DESIGN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MODIFICATION AT NO ADDITIONAL COST TO THE STATE.



DESIGN PARAMETERS TYPICAL SECTION

NOT TO SCALE

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: sl3c334typ.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: G. LAROCHE
TYPICAL SECTIONS 3

PLOT DATE: 25-SEP-2019
DRAWN BY: G. LAROCHE
CHECKED BY: G. DARGAN
SHEET 5 OF 33

GENERAL INFORMATION

SYMBOLOGY LEGEND NOTE

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

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

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

COMMON TOPOGRAPHIC POINT SYMBOLS

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

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

PROPOSED GEOMETRY CODES

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

UTILITY SYMBOLOGY

UNDERGROUND UTILITIES

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

ABOVE GROUND UTILITIES (AERIAL)

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

PROJECT CONSTRUCTION SYMBOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOGY

- CZ — CLEAR ZONE
- PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

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

CONVENTIONAL BOUNDARY SYMBOLOGY

BOUNDARY LINES

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

EPSC LAYOUT PLAN SYMBOLOGY

EPSC MEASURES

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

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLOGY

ENVIRONMENTAL RESOURCES

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

ARCHEOLOGICAL & HISTORIC

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

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

EXISTING FEATURES

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

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: sl3c334fms
PROJECT LEADER: N. WARK
DESIGNED BY: M. LONGSTREET
PLAN SYMBOLOGY LEGEND

PLOT DATE: 25-SEP-2019
DRAWN BY: M. LONGSTREET
CHECKED BY: G. LAROCHE
SHEET 6 OF 33

GPS CONTROL POINTS

PT #1 SPRING 57 AZ MK

NORTH = 291633.6750
EAST = 1636877.4610
ELEV. = 593.789

GENERAL LOCATION, SPRINGFIELD, VT.
THE MARK IS SET 15 CM (6 INCHES) BELOW GROUND SURFACE IN THE TOP OF A FENO STYLE MONUMENT. IT IS 7.9 M (25.9 FT) NORTH OF AND ABOUT LEVEL WITH THE CENTERLINE OF VT ROUTE 11, 20.7 M (67.9 FT) EAST OF THE CENTERLINE OF BELLOWS ROAD, 4.9 M (16.1 FT) SOUTH OF POLE NO 7/91/91/6, 7.6 M (24.9 FT) NORTHWEST OF THE SOUTHWEST CORNER OF A CONCRETE BASE FO R A STEEL TELEPHONE JUNCTION BOX, 32.5 M (106.6 FT) WEST OF THE CENTER OF THE NORTH (INLET) END OF BRIDGE 56.

PT #2 SPRING 57

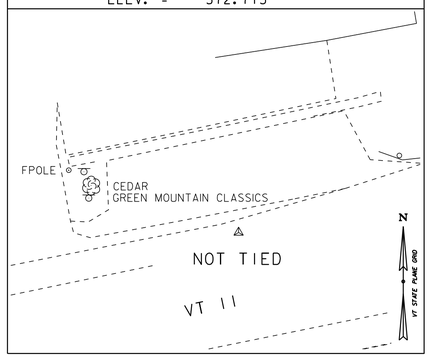
NORTH = 291938.9420
EAST = 1638030.0990
ELEV. = 567.043

SRINGFIELD, VT.
THE MARK IS SET 15 CM BELOW GROUND SURFACE IN THE TOP OF A FENO STYLE MONUMENT. IT IS 7.5 M NORTH OF AND ABOUT 40 CM LOWER THAN THE CENTERLINE OF VT ROUTE 11, 8.8 M WEST OF THE CENTERLINE OF THE DRIVEWAY LEADING TO HOUSE NO 117, 12.2 M SOUTH-SOUTHEAST OF THE SOUTHWEST CORNER OF THE HOUSE, 11.5 M SOUTH-SOUTHWEST OF THE SOUTHEAST CORNER OF THE HOUSE AND 25.7 M SOUTHEAST OF THE CENTER OF BRIDGE NO 57.

TRAVERSE TIES

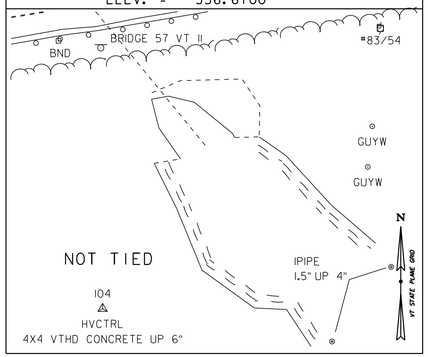
HVCTRL #100

NORTH = 291884.3602
EAST = 1637779.1022
ELEV. = 572.713



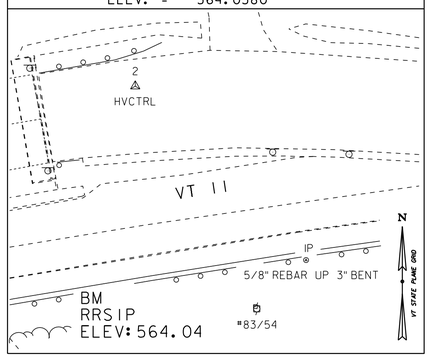
HVCTRL #104

NORTH = 291806.17
EAST = 1637988.8316
ELEV. = 556.6700



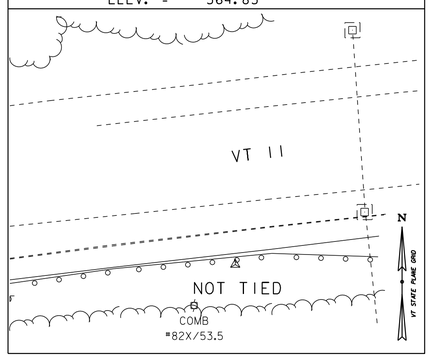
BM #1468

NORTH = 291880.77
EAST = 1638061.8156
ELEV. = 564.0380



HVCTRL #105

NORTH = 291906.7776
EAST = 1638189.8262
ELEV. = 564.85



(blank)

NORTH =
EAST =
ELEV. =

ALIGNMENT TIES

NORTH =	NORTH =	NORTH =	NORTH =	NORTH =
EAST =	EAST =	EAST =	EAST =	EAST =
ELEV. =	ELEV. =	ELEV. =	ELEV. =	ELEV. =

DATUM

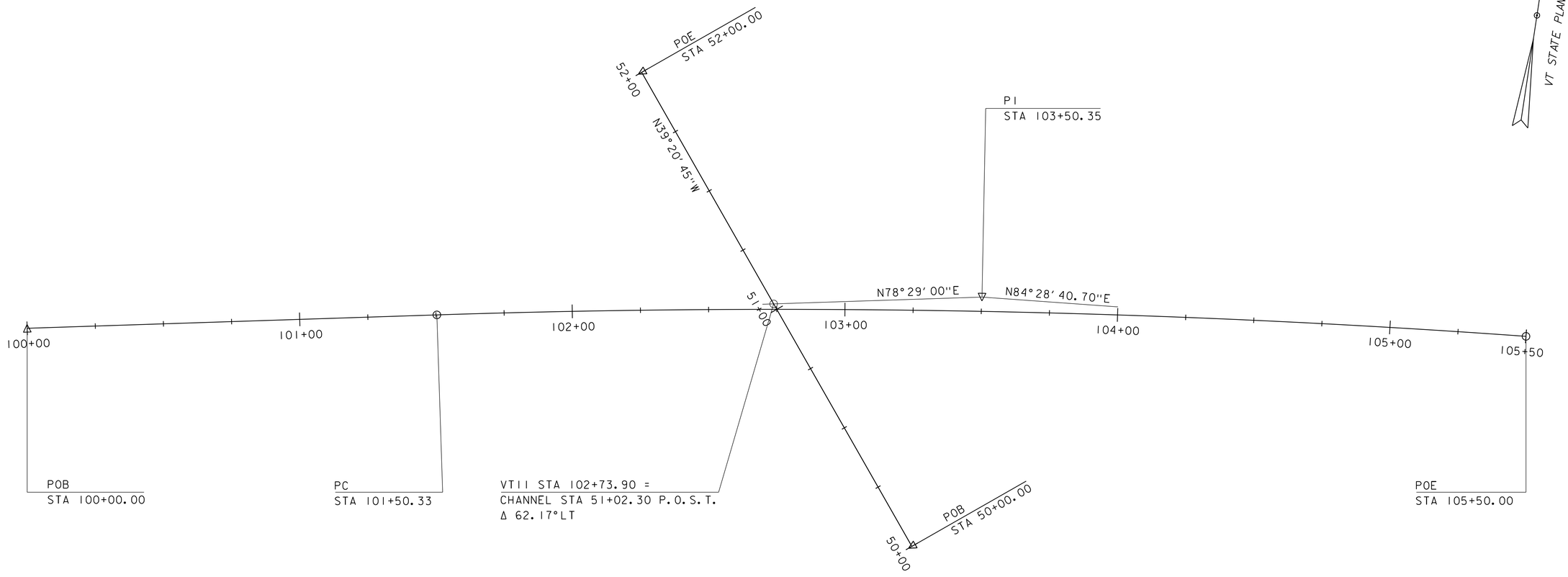
VERTICAL	NAVD88
HORIZONTAL	NAD83(2011)
ADJUSTMENT	COMPASS

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: X13C334TI.DGN
PROJECT LEADER: C. WILLIAMS
DESIGNED BY: VTRANS
TIE SHEET

PLOT DATE: 25-SEP-2019
DRAWN BY: C. CYR
CHECKED BY: P. BEYOR
SHEET 7 OF 33

MAINLINE CURVE DATA
CURVE (1)
DELTA = 5°59'41"
D = 1°30'00"
R = 3820.00'
T = 200.02'
L = 399.67'
E = 5.23'



CONTROL LINE DATA - VT11prop											
POINT ID	BEARING	DISTANCE (FEET)	NORTHING (Y)	EASTING (X)	PC	PI	PT	DELTA	R	L	T
9	N 78°29'00.00" E	150.33 '	291851.7746	1637700.671		100+00.00					
	N 84°28'40.70" E		291921.7223	1638043.964	101+50.33		105+50.00	5°59'40.70"	3820.00 '	399.67 '	200.02 '

CONTROL LINE DATA - CH_C57											
POINT ID	BEARING	DISTANCE (FEET)	NORTHING (Y)	EASTING (X)	PC	PI	PT	DELTA	R	L	T
14	N 39°20'45.00" W	200.00 '	291827.3481	1638033.919		50+00.00					
13			291982.0148	1637907.119		52+00.00					

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

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: sl3c334align.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: G. LAROCHE
ALIGNMENT SHEET

PLOT DATE: 25-SEP-2019
DRAWN BY: G. LAROCHE
CHECKED BY: G. DARGAN
SHEET 8 OF 33

SOIL INFORMATION:
URBAN LAND-COLTON-CROGHAN COMPLEX
(NOT HIGHLY ERODIBLE)
K-FACTOR = 0.24/0.17, 0%-8% SLOPES
HYDROLOGICAL SOIL GROUP: UNRATED

SOIL INFORMATION:
ADAMS LOAMY FINE SAND
POTENTIALLY HIGHLY ERODIBL
K-FACTOR = 0.17, 8%-15%
HYDROLOGICAL SOIL GROUP: A

N

VT STATE PLANE GRID

RIPARIAN BUFFER

EXISTING ROW

GUY

OHW

52+00

GUY

STONE FILL

HVCTRL 103

COMB 7 2300 55.5

N39° 20' 45"W

560

E 15" CGMP FLOW

PAVED DRIVE

EXISTING ROW

4X4 VTHD CONCRETE BOUNDRY MARKER UP 1'

GUY

COMB 7 85 56

ECT

PAVED DRIVE

SIGN "GREEN MOUNTAIN CLASSICS"

GRAVEL DRIVE

570

WOOD FENCE

SIGN OM3-L

HVCTRL 101

SIGN VD-701 (BRIDGE 57 VT 11)

SIGN OM3-R

MBOX RELOCATED

HVCTRL REMOVED

MBOX

DI

VT ROUTE 11 TO CHESTER

HVCTRL 100

SIGN OM3-R

SIGN OM3-L

SIGN WI-8

100+00

101+00

102+00

103+00

104+00

VT ROUTE 11 TO VT106

105+00

105+50

PIPE FLOW

EOP

SIDEWALK

EXISTING ROW

WOOD FENCE

WOOD FENCE

HVCTRL 102

BOUNDRY MARKER REBAR ONLY POOR CONDITION

SIGN VD-701 (BRIDGE 57 VT 11)

STONE FILL

560

51+00

14' - 1" X 8' - 9" CGMPPA

FLOW

5/8" REBAR BENT UP 3'

ECR2 (40)

SIGN

HVCTRL 105

COMB 82X 53.5

COMB 83 54

GUY

GUY

EXISTING ROW

50+00

1/2" IRON PIPE IP 4'

2" IRON PIPE

BOUNDRY MARKER REBAR ONLY

4X4 VTHD CONCRETE BOUNDRY MARKER UP 6"

5/8" REBAR W/CAP DAVID UP 8"

1/2" IRON PIPE IP 1'

UNNAMED BROOK FLOW

RIPARIAN BUFFER

BENCHMARK
RAIL ROAD SPIKE
IN POLE
ELEV = 564.04

EXISTING 132'-0" LONG CGMPPA
14'-1" SPAN X 8'-9" RISE
BUILT 1961
7' AVERAGE COVER

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

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	BF 0134(43)
FILE NAME: sl3c334exist.dgn	PLOT DATE: 25-SEP-2019
PROJECT LEADER: N. WARK	DRAWN BY: G. LAROCHE
DESIGNED BY: G. LAROCHE	CHECKED BY: G. DARGAN
EXISTING CONDITIONS SHEET	SHEET 9 OF 33

COARSE-MILLING, BITUMINOUS PAVEMENT
STA 100+75.0 - 101+75.0
STA 103+75.0 - 104+25.0

REMOVING AND RESETTING PROPERTY MARKERS
STA 102+77.0 - 28.5' RT

REMOVE AND RESET MAILBOX, SINGLE SUPPORT
REMOVE FROM STA 104+24.5 LT
RELOCATE TO STA 103+31.7 LT

REMOVING AND RESETTING FENCE
STA 101+46.6 - STA 101+57.8 LT
STA 100+71.0 - STA 101+66.0 RT

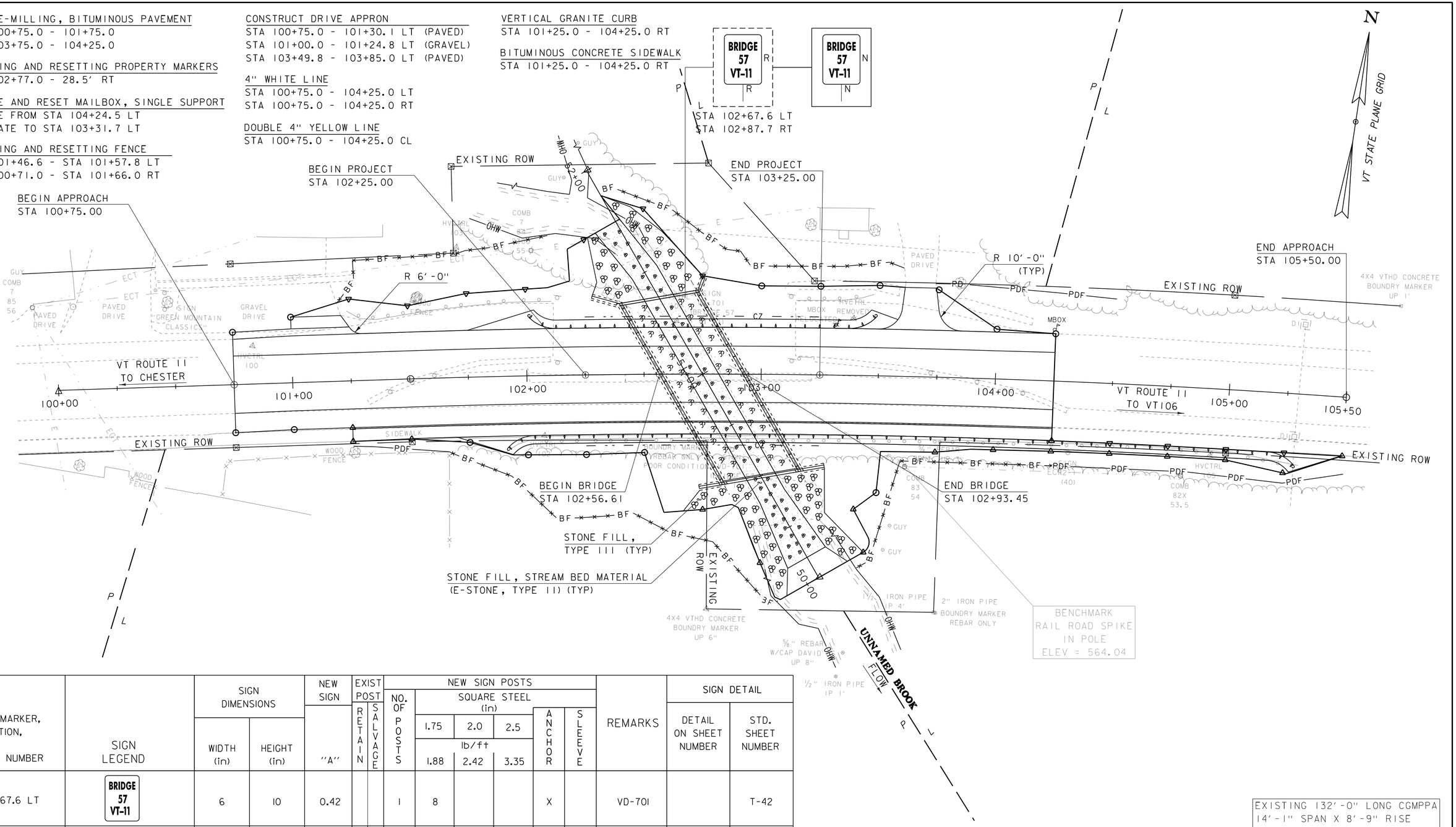
CONSTRUCT DRIVE APPRON
STA 100+75.0 - 101+30.1 LT (PAVED)
STA 101+00.0 - 101+24.8 LT (GRAVEL)
STA 103+49.8 - 103+85.0 LT (PAVED)

4" WHITE LINE
STA 100+75.0 - 104+25.0 LT
STA 100+75.0 - 104+25.0 RT

DOUBLE 4" YELLOW LINE
STA 100+75.0 - 104+25.0 CL

VERTICAL GRANITE CURB
STA 101+25.0 - 104+25.0 RT

BITUMINOUS CONCRETE SIDEWALK
STA 101+25.0 - 104+25.0 RT



MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS WIDTH (in)	SIGN DIMENSIONS HEIGHT (in)	NEW SIGN "A"	EXIST POST RETAIN	EXIST POST SALVAGE	NEW SIGN POSTS NO. OF POSTS	SQUARE STEEL (in) 1.75 lb/ft 1.88	2.0 lb/ft 2.42	2.5 lb/ft 3.35	ANCHOR	SLEEVE	REMARKS	SIGN DETAIL DETAIL ON SHEET NUMBER	SIGN DETAIL STD. SHEET NUMBER
102+67.6 LT	BRIDGE 57 VT-11	6	10	0.42			1	8			X		VD-701		T-42
102+87.7 RT	BRIDGE 57 VT-11	6	10	0.42			1	8			X		VD-701		T-42
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 16	FT	FT		EA			
	TOTALS			SF 0.66				FT 16					SHS = STANDARD HIGHWAY SIGNS (MUTCD)		

EXISTING 132'-0" LONG CGMPPA
14'-1" SPAN X 8'-9" RISE
BUILT 1961
7' AVERAGE COVER

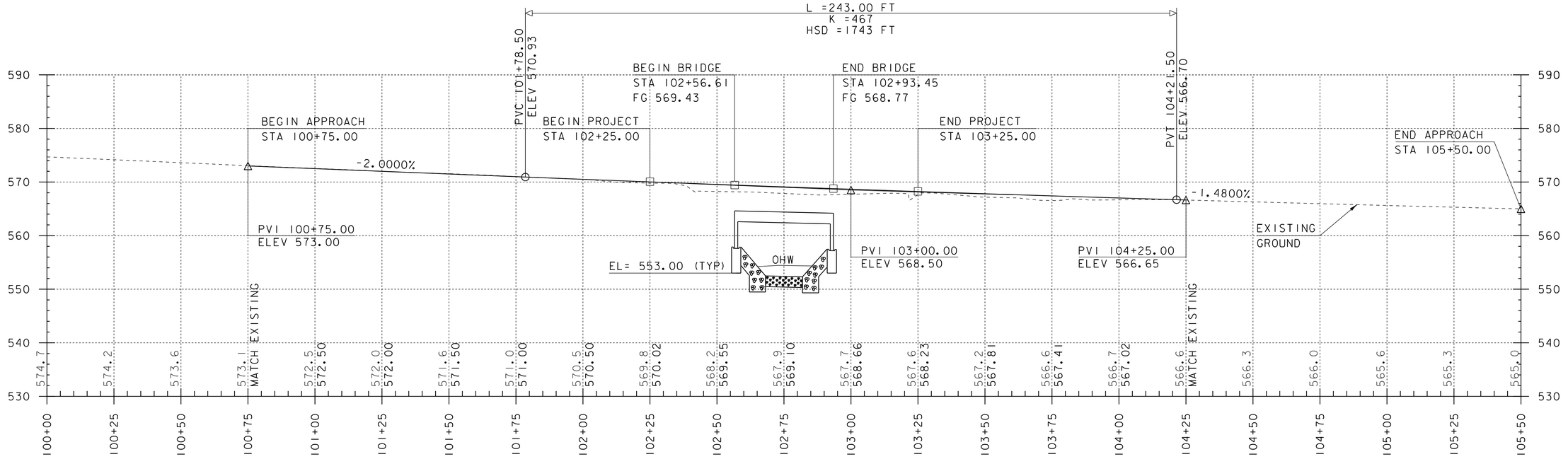
SIGN LEGEND
R = REMOVE
S = SALVAGE = REMOVE & RESET
N = NEW
RET = RETAIN
B-B = BACK TO BACK
EXISTING = ———·
NEW = ———

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

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

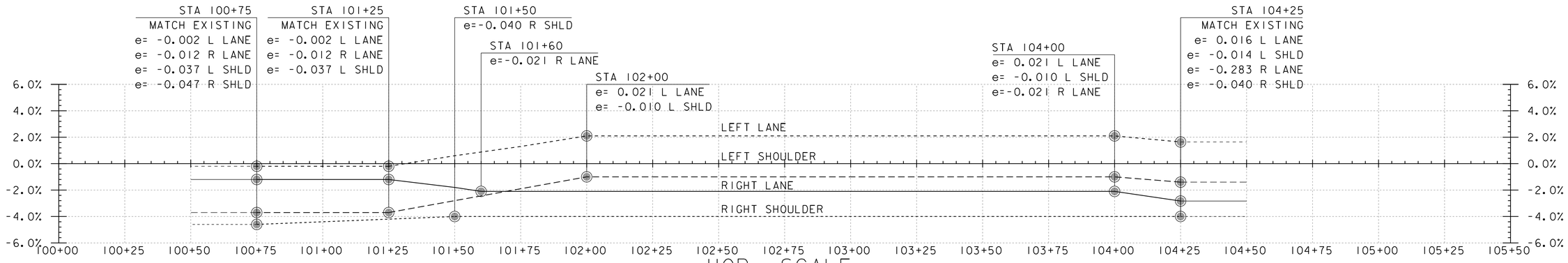
FILE NAME: sl3c334bdr.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: G. LAROCHE
LAYOUT SHEET

PLOT DATE: 25-SEP-2019
DRAWN BY: G. LAROCHE
CHECKED BY: G. DARGAN
SHEET 10 OF 33



MAINLINE PROFILE

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



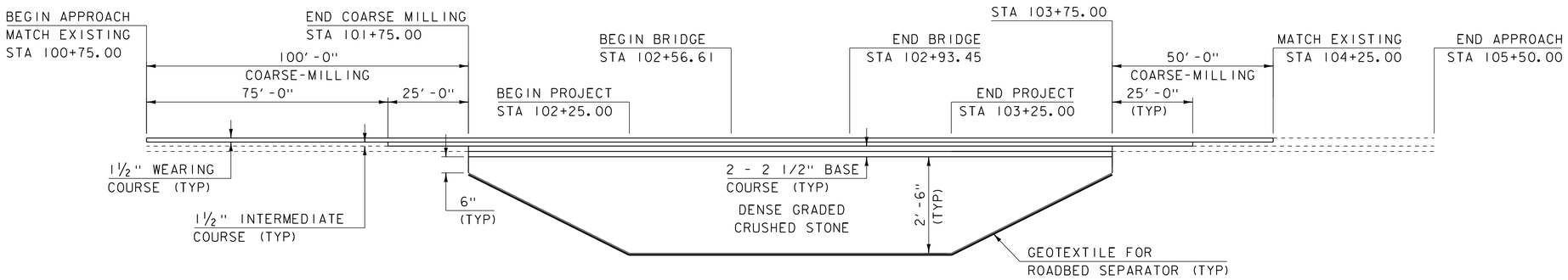
BANKING DIAGRAM

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

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

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

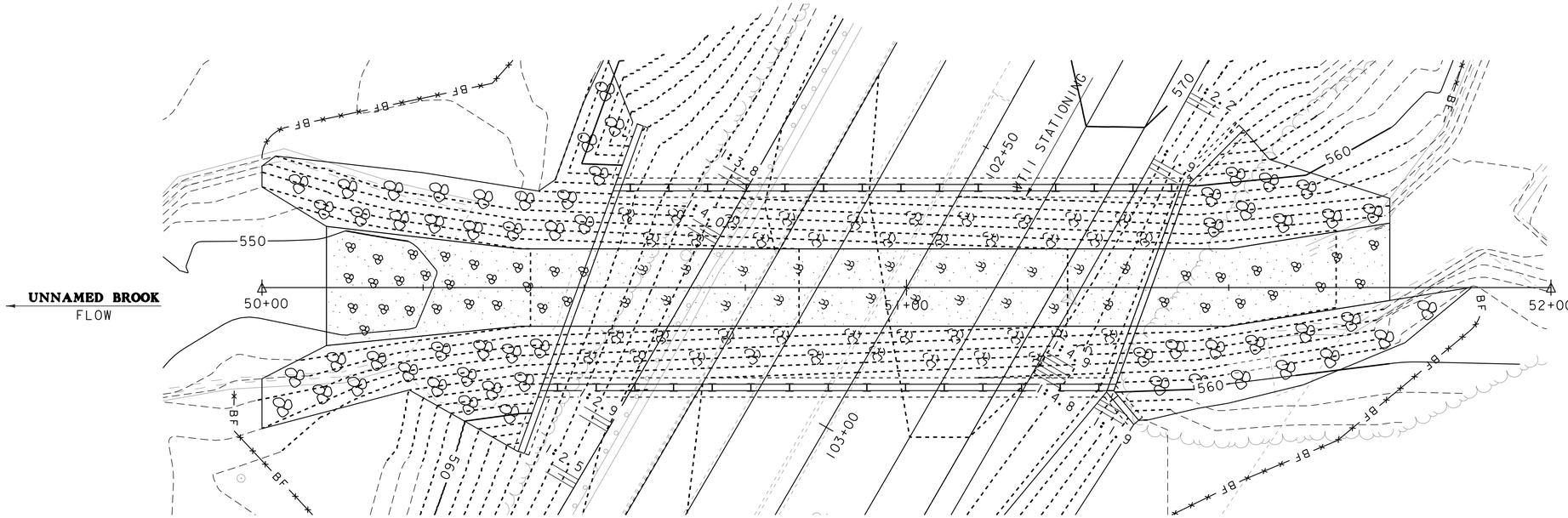
PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	BF 0134(43)
FILE NAME: sl3c334pro.dgn	PLOT DATE: 25-SEP-2019
PROJECT LEADER: N. WARK	DRAWN BY: G. LAROCHE
DESIGNED BY: G. LAROCHE	CHECKED BY: G. DARGAN
VTII PROFILE & BANKING DIAGRAM	SHEET 11 OF 33



VT 11 MATERIAL TRANSITION DETAIL

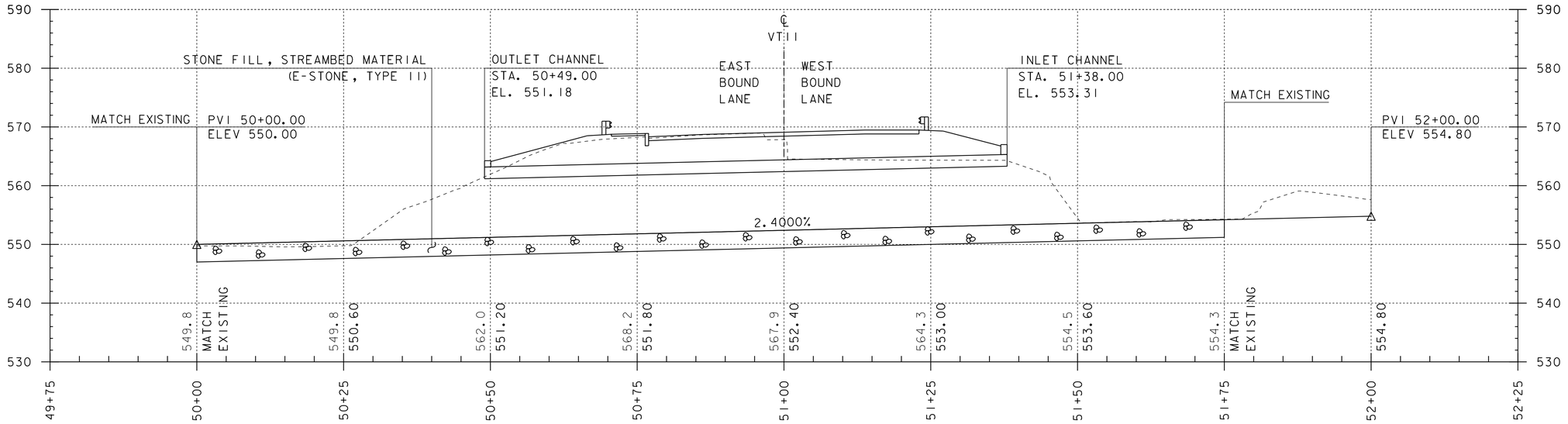
NOT TO SCALE

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	BF 0134(43)
FILE NAME: sl3c334pro.dgn	PLOT DATE: 25-SEP-2019
PROJECT LEADER: N. WARK	DRAWN BY: G. LAROCHE
DESIGNED BY: G. LAROCHE	CHECKED BY: G. DARGAN
MATERIAL TRANSITION	SHEET 12 OF 33



STRUCTURE PLAN

SCALE: 1"=10'-0"



STRUCTURE CHANNEL PROFILE

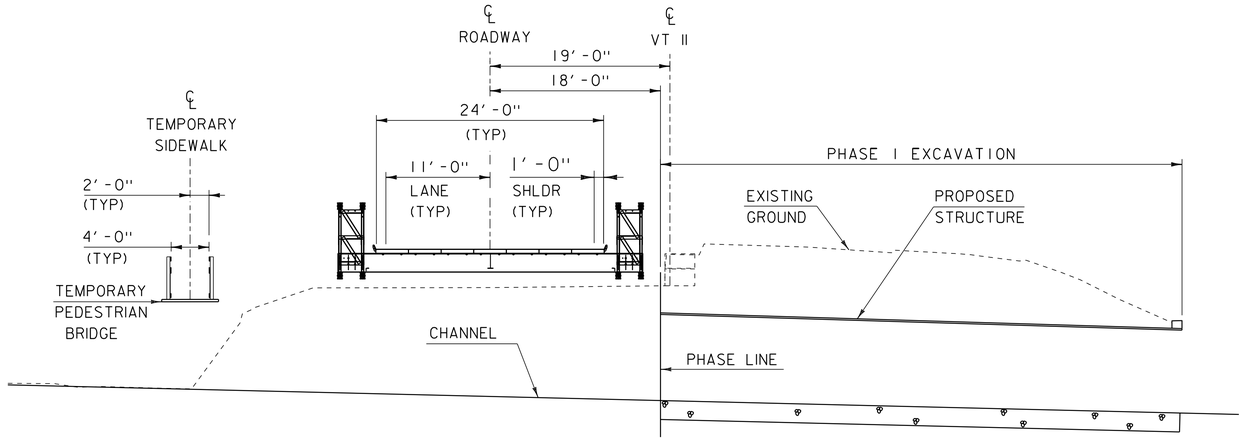
SCALE: 1"=10'-0"

NOTE:

ELEVATIONS SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG CHANNEL GEOMETRY.

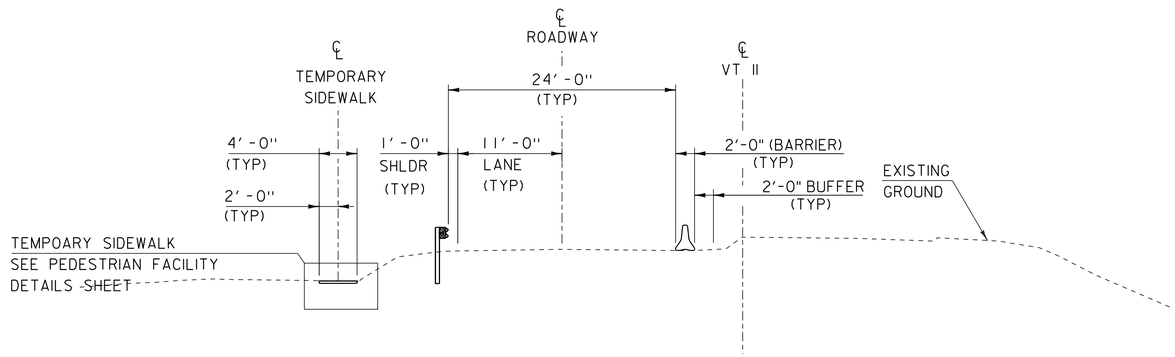
ELEVATIONS SHOWN TO THE NEAREST HUNDREDTH ARE STREAM BED ALONG THE CHANNEL GEOMETRY.

PROJECT NAME: SPRINGFIELD	
PROJECT NUMBER: BF 0134(43)	
FILE NAME: sl3c334pp.dgn	PLOT DATE: 25-SEP-2019
PROJECT LEADER: N. WARK	DRAWN BY: G. LAROCHE
DESIGNED BY: G. LAROCHE	CHECKED BY: G. DARGAN
PLAN & PROFILE SHEET	SHEET 13 OF 33



PHASE I AT STRUCTURE TYPICAL

SCALE 1/8" = 1'-0"



PHASE I APPROACH TYPICAL

SCALE 1/8" = 1'-0"

NOTES

1. PHASE I REFLECTS TWO-WAY TRAFFIC MAINTAINED ON AN EXISTING TEMPORARY BRIDGE.

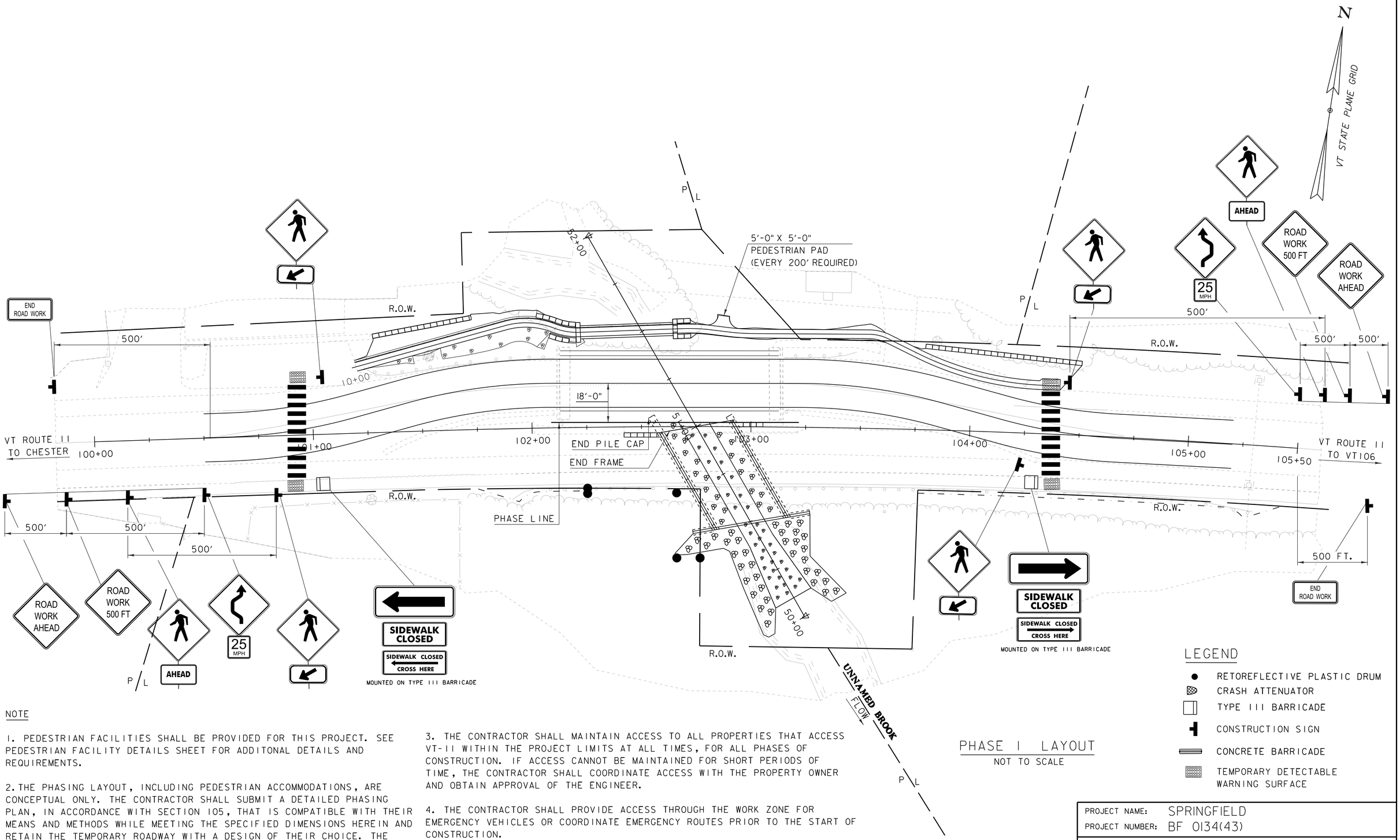
2. PHASING TYPICAL SECTIONS ARE CONCEPTUAL ONLY. THE CONTRACTOR SHALL SUBMIT A DETAILED PHASING PLAN, IN ACCORDANCE WITH SECTION 105, THAT IS COMPATIBLE WITH THEIR MEANS AND METHODS WHILE MEETING THE SPECIFIED DIMENSIONS HEREIN AND RETAIN THE TEMPORARY ROADWAY WITH A DESIGN OF THEIR CHOICE. PAYMENT FOR THE PHASING PLAN WILL BE INCLUDED IN THE PAYMENT OF ITEM 900.645 - SPECIAL PROVISION (TEMPORARY ROADWAY).

3. PHASING TYPICAL SECTIONS ARE INTENDED TO COMMUNICATE BASIC SITE CONDITIONS THAT INCLUDE LANE WIDTHS, SHOULDER WIDTHS, FILL SLOPES, AND ANTICIPATED LOCATIONS WHERE EARTH MAY NEED TO BE RETAINED.

4. PEDESTRIAN FACILITIES SHALL BE PROVIDED FOR THIS PROJECT. SEE PEDESTRIAN FACILITY DETAILS SHEET FOR ADDITONAL DETAILS AND REQUIREMENTS.

5. CONCRETE BARRIER EXPOSED TO TRAFFIC SHALL BE DELINEATED TO MATCH THE CORRESPONDING TEMPORARY PAVEMENT MARKING. REFLECTORS SHALL BE MOUNTED EVERY 20 FEET ALONG THE SIDE OF THE BARRIER EXPOSED TO TRAFFIC.

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	BF 0134(43)
FILE NAME: sl3c334phasing.dgn	PLOT DATE: 25-SEP-2019
PROJECT LEADER: N. WARK	DRAWN BY: G. LAROCHE
DESIGNED BY: G. LAROCHE	CHECKED BY: G. DARGAN
PHASE ITYPICAL SECTIONS	SHEET 14 OF 33



NOTE

1. PEDESTRIAN FACILITIES SHALL BE PROVIDED FOR THIS PROJECT. SEE PEDESTRIAN FACILITY DETAILS SHEET FOR ADDITONAL DETAILS AND REQUIREMENTS.

2. THE PHASING LAYOUT, INCLUDING PEDESTRIAN ACCOMMODATIONS, ARE CONCEPTUAL ONLY. THE CONTRACTOR SHALL SUBMIT A DETAILED PHASING PLAN, IN ACCORDANCE WITH SECTION 105, THAT IS COMPATIBLE WITH THEIR MEANS AND METHODS WHILE MEETING THE SPECIFIED DIMENSIONS HEREIN AND RETAIN THE TEMPORARY ROADWAY WITH A DESIGN OF THEIR CHOICE. THE PHASING PLAN WILL BE INCLUDED IN THE PAYMENT OF ITEM 900.645 - SPECIAL PROVISION (TEMPORARY ROADWAY).

3. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES THAT ACCESS VT-11 WITHIN THE PROJECT LIMITS AT ALL TIMES, FOR ALL PHASES OF CONSTRUCTION. IF ACCESS CANNOT BE MAINTAINED FOR SHORT PERIODS OF TIME, THE CONTRACTOR SHALL COORDINATE ACCESS WITH THE PROPERTY OWNER AND OBTAIN APPROVAL OF THE ENGINEER.

4. THE CONTRACTOR SHALL PROVIDE ACCESS THROUGH THE WORK ZONE FOR EMERGENCY VEHICLES OR COORDINATE EMERGENCY ROUTES PRIOR TO THE START OF CONSTRUCTION.

PHASE I LAYOUT

NOT TO SCALE

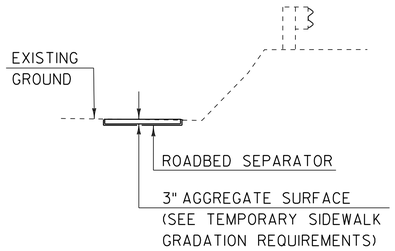
LEGEND

- RETOREFLECTIVE PLASTIC DRUM
- CRASH ATTENUATOR
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- CONCRETE BARRICADE
- TEMPORARY DETECTABLE WARNING SURFACE

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

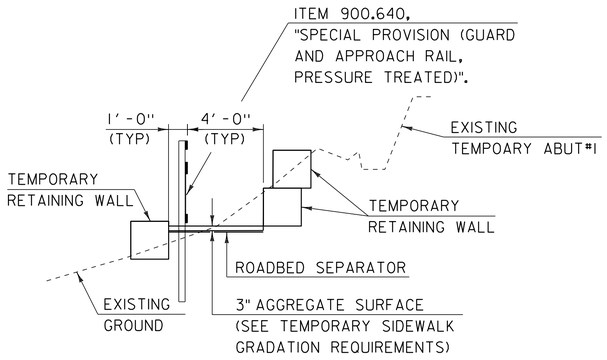
FILE NAME: sl3c334phasing.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: G. LAROCHE
PHASE I LAYOUT SHEET

PLOT DATE: 25-SEP-2019
DRAWN BY: G. ROKES
CHECKED BY: G. LAROCHE
SHEET 15 OF 33



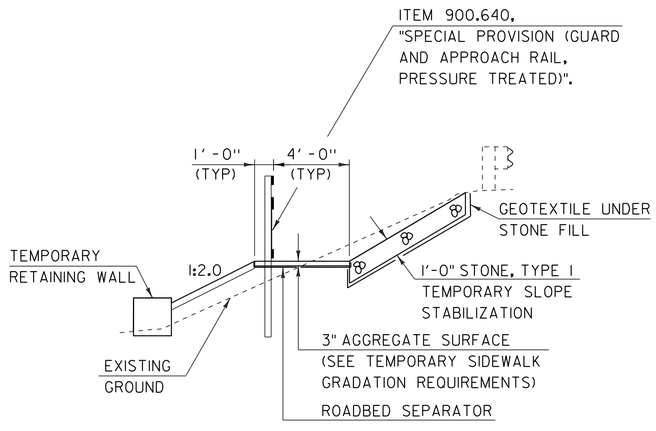
TEMPORARY SIDEWALK DETAIL 1

NOT TO SCALE



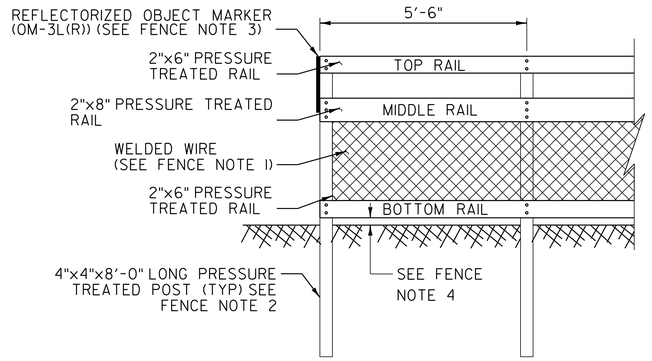
TEMPORARY SIDEWALK DETAIL 2

NOT TO SCALE



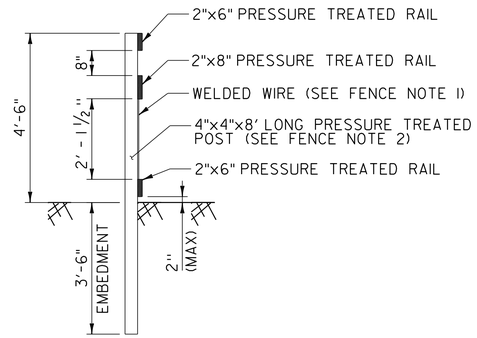
TEMPORARY SIDEWALK DETAIL 3

NOT TO SCALE



TEMPORARY SIDEWALK ELEVATION

NTS



TEMPORARY SIDEWALK SECTION

NTS

FENCE NOTES

1. THE WELDED WIRE SHALL BE VINYL PVC COATED, 2"X4", 11 GAUGE, BLACK.

2. WOODEN POSTS AND PRESSURE TREATED BOARDS SHALL MEET THE REQUIREMENTS OF SECTION 522 FOR STRUCTURAL LUMBER AND TIMBER, TREATED.

3. REFLECTORIZED OBJECT MARKERS WILL BE INCLUDED IN THE PAYMENT OF ITEM 900.645 - SPECIAL PROVISION (TEMPORARY ROADWAY).

4. THE TOP, MIDDLE, AND BOTTOM RAIL ARE TO BE SET AT THE SAME SLOPE AS THE TRAIL PROFILE GRADE AT THE EDGE OF THE TRAIL. THE BOTTOM RAIL WILL BE SET AT MAXIMUM OF 2INCHES FROM THE TRAIL SURFACE.

5. THE TOP AND BOTTOM RAILS ARE TO BE ATTACHED TO THE POSTS WITH TWO 1/2" DIA. GALVANIZED CARRIAGE BOLTS WITH A 3/4" WASHER UNDER THE NUT. THREE 1/2" DIA. GALVANIZED CARRAIGE BOLTS WITH A 3/4" WASHER UNDER THE NUT SHALL BE USED FOR CONNECTIONG THE MIDDLE RAIL TO THE POST. ALL CARRAIGE BOLTS SHALL BE ASTM A307.

6. ALL COSTS ASSOCIATED WITH FABRICATING AND INSTALLING THE APPROACH/GUARD RAIL WILL BE INCLUDED IN THE PAYMENT OF ITEM 900.645 - SPECIAL PROVISION (TEMPORARY ROADWAY).

PROJECT NOTES

1. PEDESTRIAN FACILITIES SHALL BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION.

2. THE CONTRACTOR SHALL DESIGN A SITE-SPECIFIC TRAFFIC CONTROL PLAN THAT INCLUDES SAFE PEDESTRIAN AND BICYCLIST ACCESS THROUGH THE WORK ZONE FOR ALL PHASES OF CONSTRUCTION. THE PLAN SHALL BE DEVELOPED IN ACCORDANCE WITH THE VERMONT BICYCLE AND PEDESTRIAN WORK ZONE TRAFFIC CONTROL GUIDE - ISSUED JULY 2018 AND THE LATEST EDITION OF THE MUTCD. PAYMENT FOR DEVELOPMENT OF THE SITE-SPECIFIC TRAFFIC CONTROL PLAN TO INCLUDE BIKE/PED FACILITIES WILL BE INCLUDED IN THE PAYMENT OF ITEM 641.11 TRAFFIC CONTROL, ALL-INCLUSIVE.

3. ALL WORK AND MATERIALS, INCLUDING RETAINING WALLS, REQUIRED TO INSTALL, RESET, REMOVE, AND MAINTAIN THE PEDESTRIAN FACILITY DURING ALL PHASES OF CONSTRUCTION WILL BE INCLUDED IN THE PAYMENT OF ITEM 528.12 - PEDESTRIAN BRIDGE.

4. THE CONTRACTOR SHALL PROVIDE ACCESS THROUGH THE WORK ZONE FOR BICYCLE TRAFFIC. THE CONTRACTOR SHALL MAINTAIN THE BICYCLE RIDING SURFACE AND KEEP THE DESIGNATED PATH OF TRAVEL FREE OF OBSTACLES.

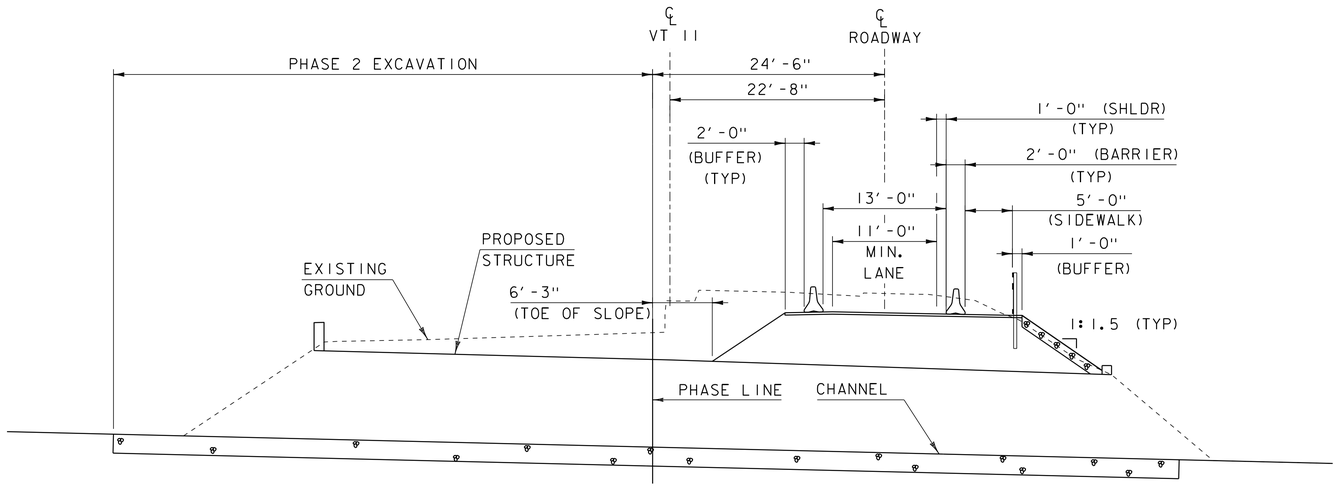
TEMPORARY SIDEWALK GRADATION REQUIREMENTS

SIEVE DESIGNATION REQUIREMENTS	PERCENTAGE BY WEIGHT PASSING SQUARE MESH SIEVES
3/8 INCH (9.50 mm)	100
No. 4 (4.75 mm)	90-100
No. 8 (2.36 mm)	55-80
No. 16 (1.18 mm)	40-70
No. 30 (0.600 mm)	25-50
No. 200 (0.75 mm)	6-15

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

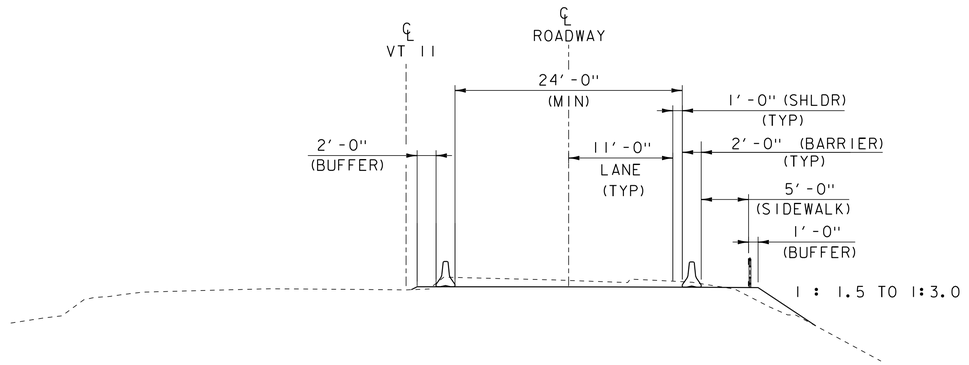
FILE NAME: sl3c334phasing.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: G. LAROCHE
PEDESTRIAN FACILITY DETAILS

PLOT DATE: 25-SEP-2019
DRAWN BY: G. LAROCHE
CHECKED BY: G. DARGAN
SHEET 16 OF 33



PHASE 2 AT STRUCTURE TYPICAL

SCALE 1/8" = 1'-0"



PHASE 2 APPROACH TYPICAL

SCALE 1/8" = 1'-0"

NOTES

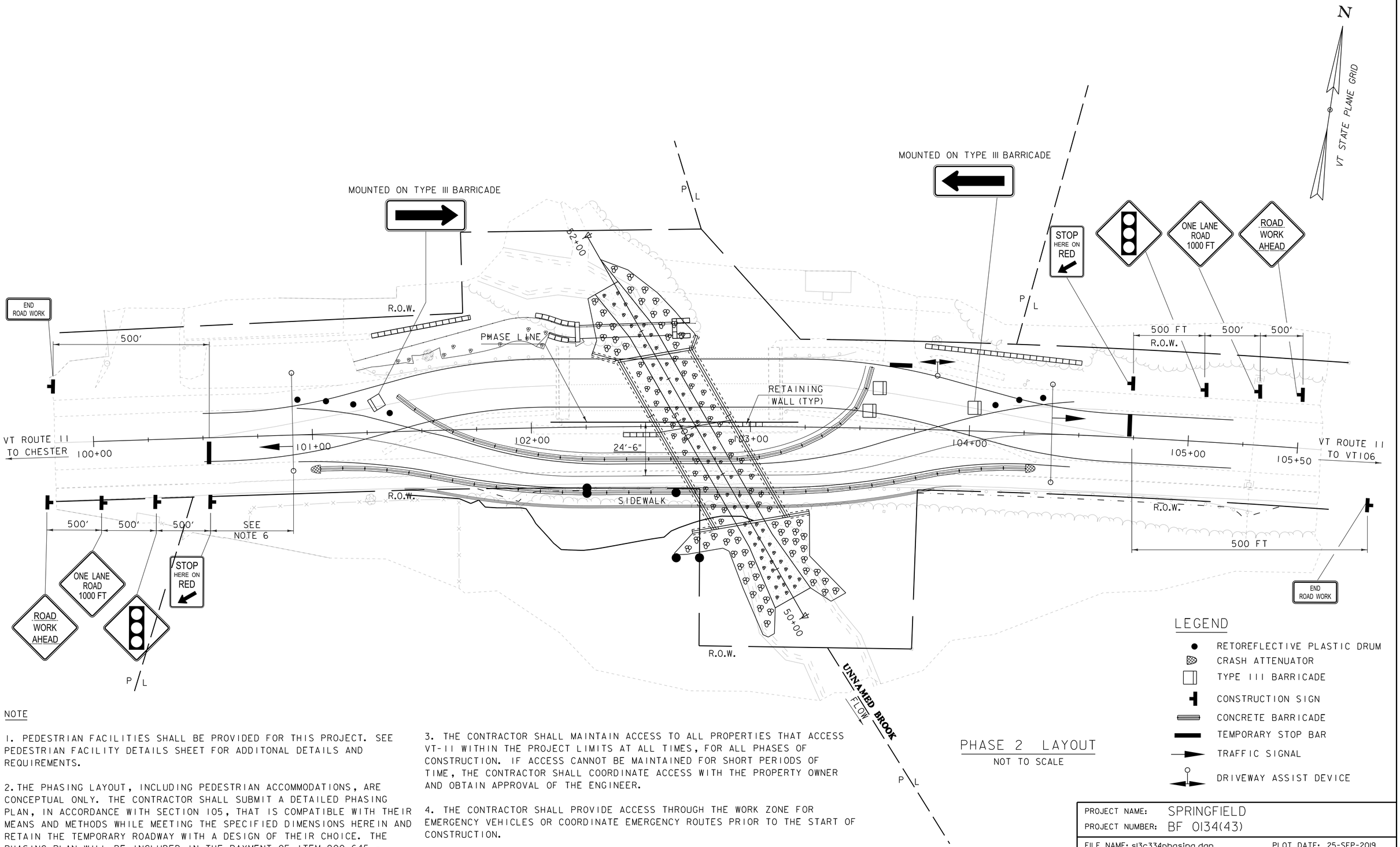
1. PHASING TYPICAL SECTIONS ARE CONCEPTUAL ONLY. THE CONTRACTOR SHALL SUBMIT A DETAILED PHASING PLAN, IN ACCORDANCE WITH SECTION 105, THAT IS COMPATIBLE WITH THEIR MEANS AND METHODS WHILE MEETING THE SPECIFIED DIMENSIONS HEREIN AND RETAIN THE TEMPORARY ROADWAY WITH A DESIGN OF THEIR CHOICE.

2. PHASING TYPICAL SECTIONS ARE INTENDED TO COMMUNICATE BASIC SITE CONDITIONS THAT INCLUDE LANE WIDTHS, SHOULDER WIDTHS, FILL SLOPES, AND ANTICIPATED LOCATIONS WHERE EARTH MAY NEED TO BE RETAINED.

3. PEDESTRIAN FACILITIES SHALL BE PROVIDED FOR THIS PROJECT. SEE PEDESTRIAN FACILITY DETAILS SHEET FOR ADDITONAL DETAILS AND REQUIREMENTS.

4. CONCRETE BARRIER EXPOSED TO TRAFFIC IS TO BE DELINEATED. DELINEATION COLOR TO MATCH CORRESPONDING TEMPORARY PAVEMENT MARKING. REFLECTORS SHALL BE MOUNTED EVERY 20 FEET ALONG THE SIDE OF THE BARRIER EXPOSED TO TRAFFIC.

PROJECT NAME: SPRINGFIELD	
PROJECT NUMBER: BF 0134(43)	
FILE NAME: sl3c334phasing.dgn	PLOT DATE: 25-SEP-2019
PROJECT LEADER: N. WARK	DRAWN BY: G. LAROCHE
DESIGNED BY: G. LAROCHE	CHECKED BY: G. DARGAN
PHASE 2 TYPICAL SECTIONS	SHEET 17 OF 33



LEGEND

- RETOREFLECTIVE PLASTIC DRUM
- CRASH ATTENUATOR
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- CONCRETE BARRICADE
- TEMPORARY STOP BAR
- TRAFFIC SIGNAL
- DRIVEWAY ASSIST DEVICE

PHASE 2 LAYOUT

NOT TO SCALE

NOTE

1. PEDESTRIAN FACILITIES SHALL BE PROVIDED FOR THIS PROJECT. SEE PEDESTRIAN FACILITY DETAILS SHEET FOR ADDITONAL DETAILS AND REQUIREMENTS.

2. THE PHASING LAYOUT, INCLUDING PEDESTRIAN ACCOMMODATIONS, ARE CONCEPTUAL ONLY. THE CONTRACTOR SHALL SUBMIT A DETAILED PHASING PLAN, IN ACCORDANCE WITH SECTION 105, THAT IS COMPATIBLE WITH THEIR MEANS AND METHODS WHILE MEETING THE SPECIFIED DIMENSIONS HEREIN AND RETAIN THE TEMPORARY ROADWAY WITH A DESIGN OF THEIR CHOICE. THE PHASING PLAN WILL BE INCLUDED IN THE PAYMENT OF ITEM 900.645 - SPECIAL PROVISION (TEMPORARY ROADWAY).

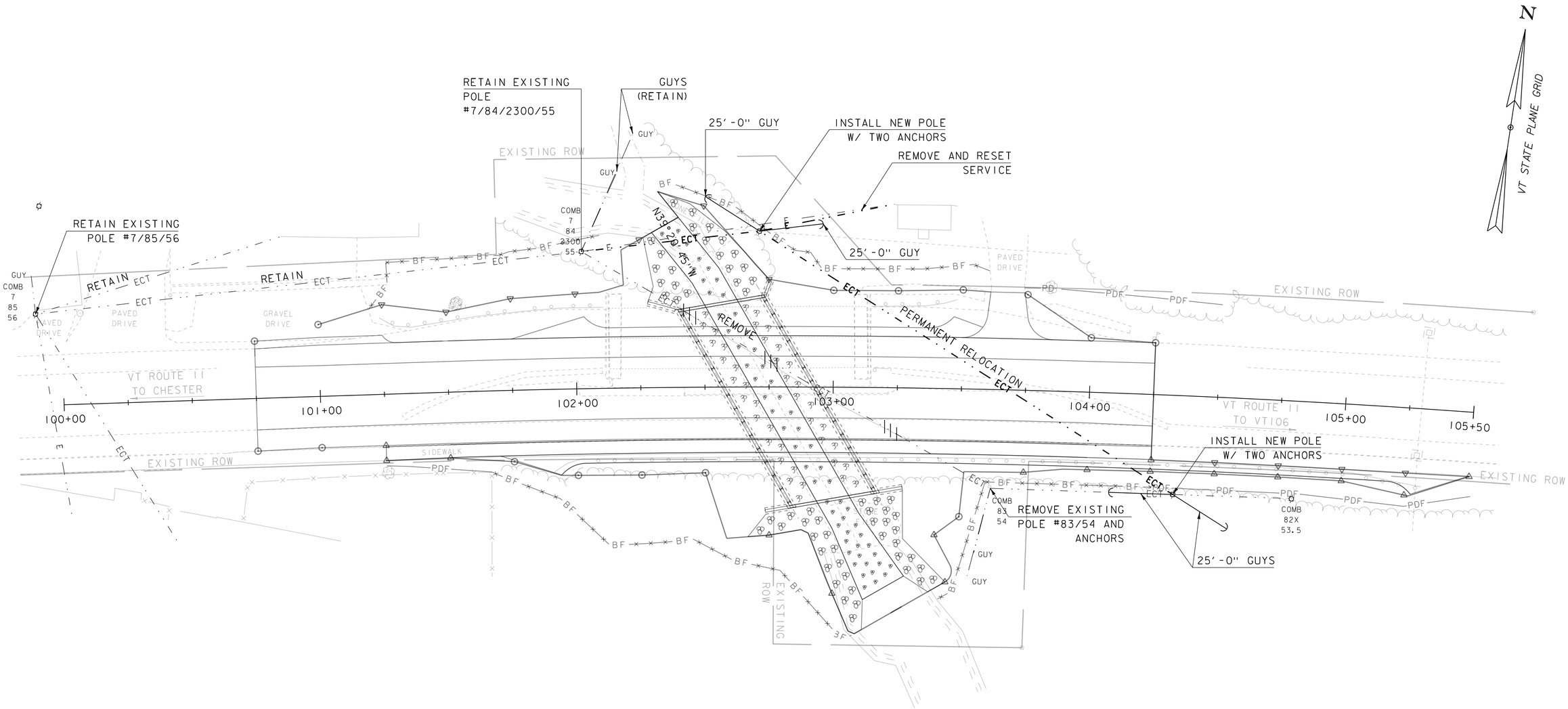
3. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES THAT ACCESS VT-11 WITHIN THE PROJECT LIMITS AT ALL TIMES, FOR ALL PHASES OF CONSTRUCTION. IF ACCESS CANNOT BE MAINTAINED FOR SHORT PERIODS OF TIME, THE CONTRACTOR SHALL COORDINATE ACCESS WITH THE PROPERTY OWNER AND OBTAIN APPROVAL OF THE ENGINEER.

4. THE CONTRACTOR SHALL PROVIDE ACCESS THROUGH THE WORK ZONE FOR EMERGENCY VEHICLES OR COORDINATE EMERGENCY ROUTES PRIOR TO THE START OF CONSTRUCTION.

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: sl3c334phasing.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: G. LAROCHE
PHASE 2 LAYOUT SHEET

PLOT DATE: 25-SEP-2019
DRAWN BY: G. ROKES
CHECKED BY: G. LAROCHE
SHEET 18 OF 33



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

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	BF 0134(43)
FILE NAME: sl3c334ut_relocate.dgn	PLOT DATE: 25-SEP-2019
PROJECT LEADER: N. WARK	DRAWN BY: G. ROKES
DESIGNED BY: G. ROKES	CHECKED BY: G. LAROCHE
UTILITY LAYOUT SHEET - RELOCATE	SHEET 19 OF 33

SOIL CLASSIFICATION

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

ROCK QUALITY DESIGNATION

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

SHEAR STRENGTH

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

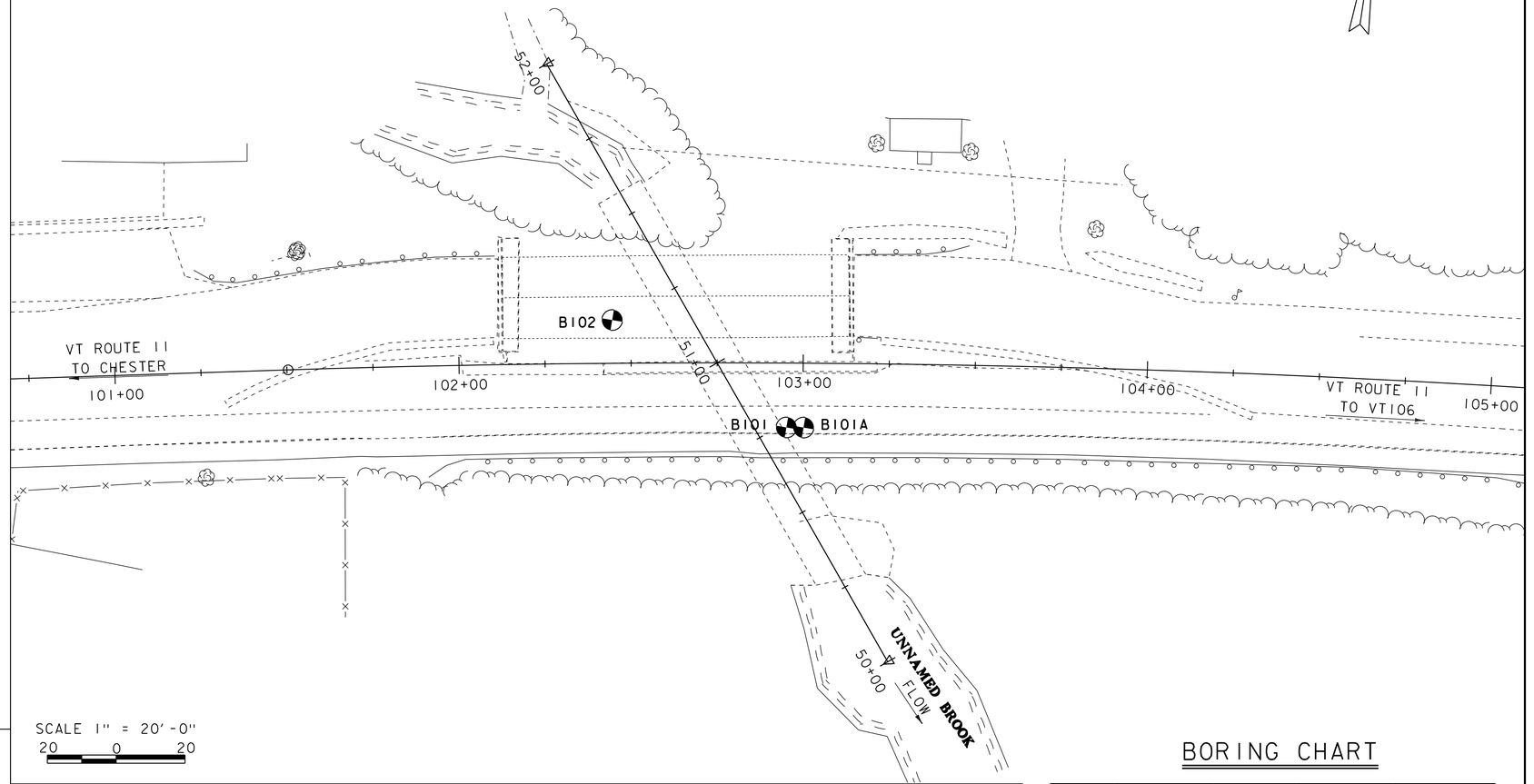
CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

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

COMMONLY USED SYMBOLS

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

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



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 > 0.0787" (#10 sieve).

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

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

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

VARVED - Alternate layers of silt and clay.

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

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

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

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

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

DIP - Inclination of bed with a horizontal plane.

GENERAL NOTES

1. The subsurface explorations shown herein were made between 7/25/2016 and 7/26/2016 by the Agency.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
4. Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
7. Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

BORING CHART

HOLE NO.	SURV. STATION	OFFSET	NORTHING	EASTING
101	102+95.21	18.71 RT	291889.55	1637993.49
101A	103+00.22	18.72 RT	291890.35	1637998.41
102	102+44.60	12.57 LT	291911.84	1637938.37

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: sl3c334bor.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: G. ROKES
BORING INFORMATION SHEET

PLOT DATE: 25-SEP-2019
DRAWN BY: G. ROKES
CHECKED BY: G. LAROCHE
SHEET 20 OF 33

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

BORING LOG

Springfield
BF 0134(43)
VT 11 Culvert 57

Boring No.: B-101
Page No.: 1 of 1
Pin No.: 13c334
Checked By: END

Boring Crew: Gomes, Judkins, Emerson
Date Started: 7/25/16 Date Finished: 7/25/16
VTSPG NAD83: N 291889.55 ft E 1637993.49 ft
Station: 102+95.21 Offset: 18.71 RT
Ground Elevation: 568.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:		Auto/AWJ
Rig:	CME 45C SKID	CE = 1.42

Groundwater Observations

Date	Depth (ft)	Notes
07/25/16		No W.T. observed

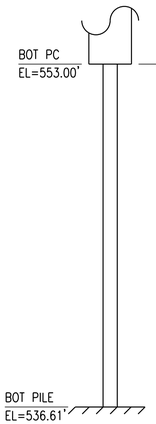
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft – 0.5 ft					
		A-1-b, GrSa, gry-brn, Moist, Rec. = 0.8 ft	2-3-3-3 (6)	10.5	33.5	55.8	10.7
2.5		Field Note:, Rollercone, Cleaned out casing					
		A-2-4, GrSiSa, gry-brn, Moist, Rec. = 0.8 ft	4-6-8-8 (14)	9.3	26.2	44.6	29.2
		Field Note:, Rollercone, Cleaned out casing					
5.0		A-2-4, SiSa, gry-brn, Moist, Rec. = 1.0 ft	8-4-7-5 (11)	9.0	18.3	52.2	29.5
		Field Note:, Rollercone, Cleaned out casing					
7.5		A-3, Sa, brn, Moist, Rec. = 1.0 ft	3-4-3-3 (7)	12.9	5.3	86.7	8.0
		A-3, GrSa, brn, Moist, Rec. = 0.5 ft	1-R@3.5" (R)	17.0	20.8	72.1	7.1
10.0		Hole stopped @ 9.8 ft					
12.5							

Remarks:
Hole collapsed at 9.3 feet.

1.) Hit culvert at 9.8 feet. Aborted drilling operations.

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

BORING LOG 2 SPRINGFIELD BF 0134(43).GPJ VERMONT AOT.GDT 3/12/19



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

BORING LOG

Springfield
BF 0134(43)
VT 11 Culvert 57

Boring No.: B-101A
Page No.: 1 of 1
Pin No.: 13c334
Checked By: END

Boring Crew: Gomes, Judkins, Emerson
Date Started: 7/25/16 Date Finished: 7/26/16
VTSPG NAD83: N 291890.35 ft E 1637998.41 ft
Station: 103+00.22 Offset: 18.72 RT
Ground Elevation: 567.9 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:		Auto/AWJ
Rig:	CME 45C SKID	CE = 1.42

Groundwater Observations

Date	Depth (ft)	Notes
07/26/16	16.6	W.T. before drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft – 0.43 ft								
5										
10		Field Note:, NXDC, Cleaned out casing								
		Field Note:, No Reocvery, Rock stuck in end of sampler				6-7-11-9 (20)				
		A-1-a, SaGr, brn, Moist, Rec. = 0.5 ft, Lab Note: Broken rock was within sample				7-7-11-9 (18)	12.3	50.1	42.7	7.2
15		Field Note:, NXDC, Cleaned out casing				11-13-11-13 (24)	8.9	73.2	22.7	4.1
		A-1-a, SaGr, brn, Moist, Rec. = 0.1 ft 16.4 ft – 17.0 ft				16-15-6-5 (21)	11.3	59.7	31.2	9.1
		A-1-a, SaGr, brn, Moist, Rec. = 0.3 ft 18.3 ft – 19.0 ft				2-2-2-2 (4)	29.2	0.8	75.4	23.8
20		A-2-4, SiSa, brn, Moist, Rec. = 1.0 ft								
25		24.4 ft – 25.0 ft A-1-b, SaGr, gry-brn, Moist, Rec. = 0.5 ft, Lab Note: Broken and weathered rock was within sample				12-44-R@5" (R)	12.0	54.8	30.1	15.1
		28.7 ft – 30.0 ft								
30		A-1-b, SaGr, blk, Moist, Rec. = 0.1 ft, Lab Note: Broken and weathered rock was within sample	1 (70)	94 (21)	3 4 3 2 4	R@1" (R)	8.2	52.3	32.3	15.4
		30.1 ft – 35.1 ft, Gray to dark gray, Biotite-muscovite-quartz-plagioclase gneissic SCHIST, Slightly vuggy along some plagiclase foliations, rust and brown staining along joints. Hard, Slightly weathered, Poor rock, NX, RMR=39								
35		35.1 ft – 40.1 ft, Gray to dark gray, Biotite-muscovite-quartz-plagioclase gneissic SCHIST, Few vugs along plagioclase foliations and rust staining along joints. Hard, Slightly weathered, Fair rock, NX, RMR=50	2 (70)	100 (66)	3 2 2 2 3					
40		Hole stopped @ 40.1 ft								

Remarks:
Hole collapsed at 19.1 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. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 SPRINGFIELD BF 0134(43).GPJ VERMONT AOT.GDT 3/12/19

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: sl3c334bor.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: M. LONGSTREET
BORING LOG SHEET 1

PLOT DATE: 25-SEP-2019
DRAWN BY: M. LONGSTREET
CHECKED BY: G. LAROCHE
SHEET 21 OF 33

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

BORING LOG

Springfield
BF 0134(43)
VT 11 Culvert 57

Boring No.: B-102
Page No.: 1 of 1
Pin No.: 13c334
Checked By: END

Boring Crew: Judkins, Gomes
Date Started: 7/26/16 Date Finished: 7/27/16
VTSPG NAD83: N 291911.84 ft E 1637938.37 ft
Station: 102+44.60 Offset: -12.57 LT
Ground Elevation: 569.9 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:		Auto/AWJ
Rig:	CME 45C SKID	CE = 1.42

Groundwater Observations

Date	Depth (ft)	Notes
07/27/16	12.1	W.T. after drilling
07/27/16	17.0	W.T. before drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, brn, Moist, 0.0 ft - 0.58 ft								
		A-1-b, GrSa, brn, Moist, Rec. = 1.4 ft				10-15-18-8 (33)	9.0	31.9	53.4	14.7
		Field Note:, NXDC, Cleaned out casing								
		A-2-4, SiSa, brn, Moist, Rec. = 1.4 ft				8-11-14-14 (25)	10.0	10.9	60.6	28.5
		Field Note:, NXDC, Cleaned out casing								
		A-1-b, GrSa, brn, Moist, Rec. = 1.0 ft				24-18-14-12 (32)	7.6	36.1	49.6	14.3
		Field Note:, Rollercone, Cleaned out casing								
		A-2-4, GrSa, brn, Moist, Rec. = 1.0 ft				9-9-10-5 (19)	9.0	25.2	59.0	15.8
BOT PC EL=553.00'		A-4, SaSi, brn, Moist, Rec. = 0.9 ft				3-3-2-2 (5)	25.0	8.2	39.6	52.2
10		Field Note:, Rollercone, Cleaned out casing								
		A-2-4, SiSa, brn, Moist, Rec. = 0.9 ft				3-3-2-7 (5)	19.2	14.8	53.8	31.4
		A-2-4, GrSa, brn, Moist, Rec. = 1.4 ft				7-5-3-4 (8)	17.4	21.7	60.6	17.7
		Field Note:, Rollercone, Cleaned out casing								
		A-1-b, GrSa, brn, Moist, Rec. = 1.1 ft				3-5-14-15 (19)	11.9	33.9	54.2	11.9
		Field Note:, Rollercone, Cleaned out casing								
		A-1-b, GrSa, brn, Moist, Rec. = 1.2 ft				15-12-18-12 (30)	14.0	32.5	51.9	15.6
20		A-2-4, SiGrSa, brn, Moist, Rec. = 0.7 ft				9-12-26-25 (38)	13.7	31.4	42.5	26.1
		Field Note:, NXDC, Cleaned out casing								
		A-2-4, SiSa, brn, Moist, Rec. = 1.0 ft, Lab Note: Broken rock was within sample				15-20-20-R@2.5" (40)	16.2	16.8	52.8	30.4
		Field Note:, NXDC, Cleaned out casing								
30		A-2-4, GrSa, gry, Moist, Rec. = 0.9 ft, Lab Note: Broken rock was within sample				R@5" (R)	15.8	34.8	48.3	16.9
		Field Note:, NXDC, Cleaned out casing								
		Field Note:, No Recovery				R@3.5 (R)				
		Field Note:, NXDC, Cleaned out casing								
40		A-1-b, SaGr, gry, Moist, Rec. = 0.3 ft, Lab Note: Broken rock was within sample				R@5" (R)	7.6	58.9	22.8	18.3
BOT PILE EL=520.49'		42.0 ft - 47.0 ft, Gray to white, Muscovite-biotite-plagioclase-quartz granitic GNEISS, Rust and brown staining along joints. Hard, Slightly weathered, Fair rock, NX, RMR=47	1 (65)	80 (18)	5 3 3 2 2					
		Top of Bedrock @ 42.0 ft								
		Hole stopped @ 47.0 ft								
50		Remarks: Hole collapsed at 14.4 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. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 SPRINGFIELD BF 0134(43).GPJ VERMONT AOT.GDT 3/12/19

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: sl3c334bor.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: M. LONGSTREET
BORING LOG SHEET 2

PLOT DATE: 25-SEP-2019
DRAWN BY: M. LONGSTREET
CHECKED BY: G. LAROCHE
SHEET 22 OF 33

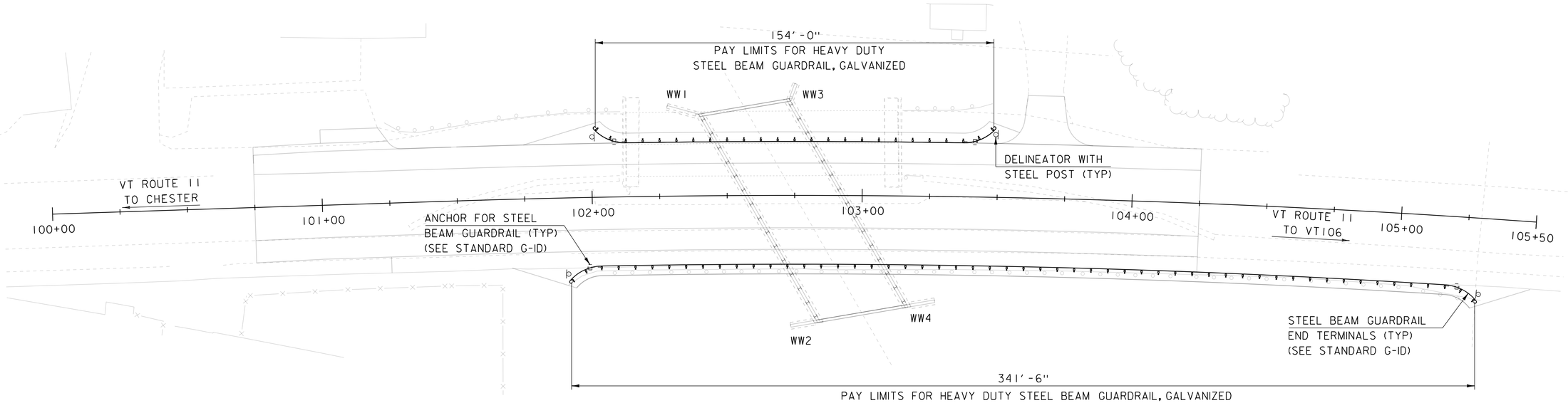
REMOVAL AND DISPOSAL OF GUARDRAIL
STA 101+23.9 - STA 103+47.7 LT
STA 101+90.5 - STA 105+31.3 RT

HEAVY DUTY STEEL BEAM GUARDRAIL, GALVANIZED
STA 102+00.9 - STA 103+49.1 LT
STA 101+90.9 - STA 105+29.8 RT

ANCHOR FOR STEEL BEAM RAIL
STA 102+03.1 RT
STA 105+17.7 RT
STA 102+12.8 LT
STA 103+37.1 LT

DELINEATOR WITH STEEL POST
STA 102+00.9 LT (GREEN)
STA 103+49.1 LT (BLUE)
STA 101+90.9 RT (BLUE)
STA 105+29.8 RT (GREEN)

N
VT STATE PLANE GRID

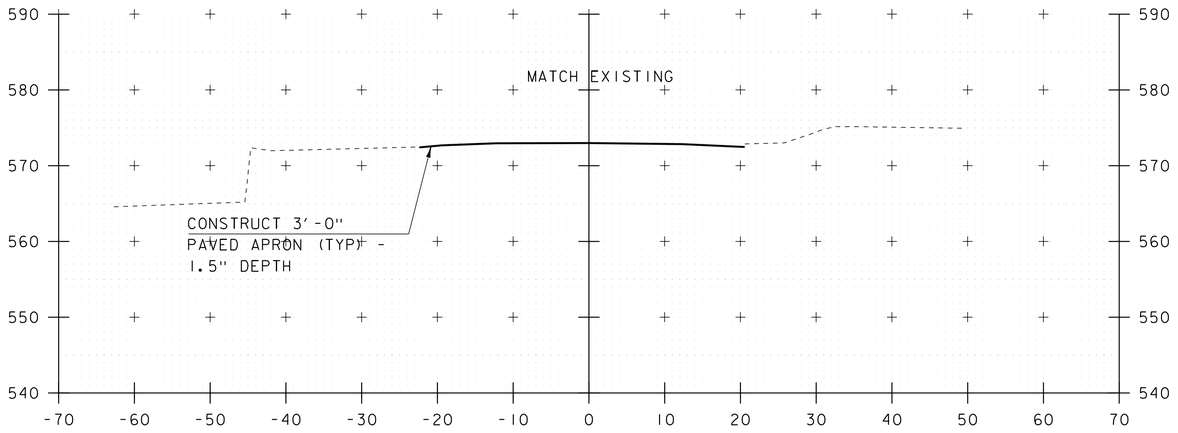


SCALE 1" = 20'-0"
20 0 20

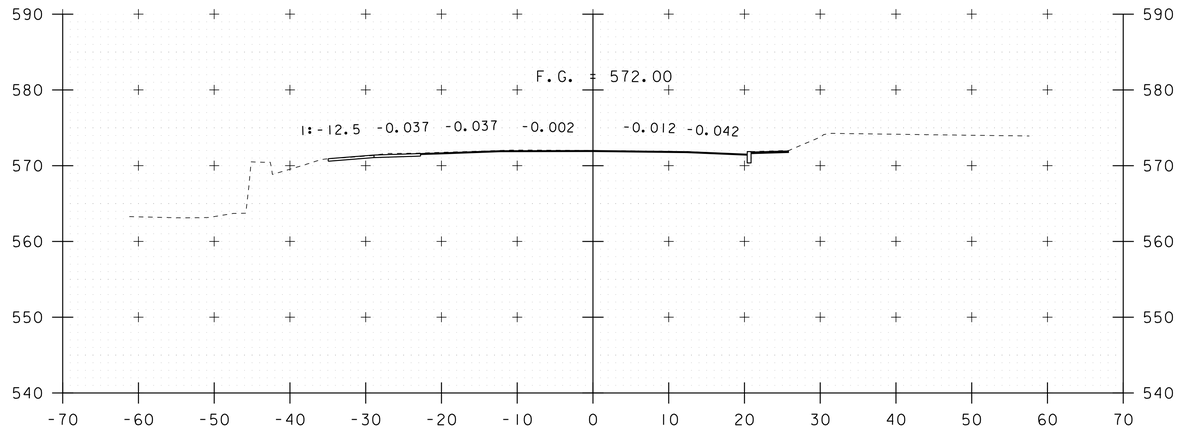
PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: sl3c334rail.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: G. ROKES
RAIL LAYOUT SHEET

PLOT DATE: 25-SEP-2019
DRAWN BY: G. ROKES
CHECKED BY: G. LAROCHE
SHEET 23 OF 33



100+75
BEGIN APPROACH



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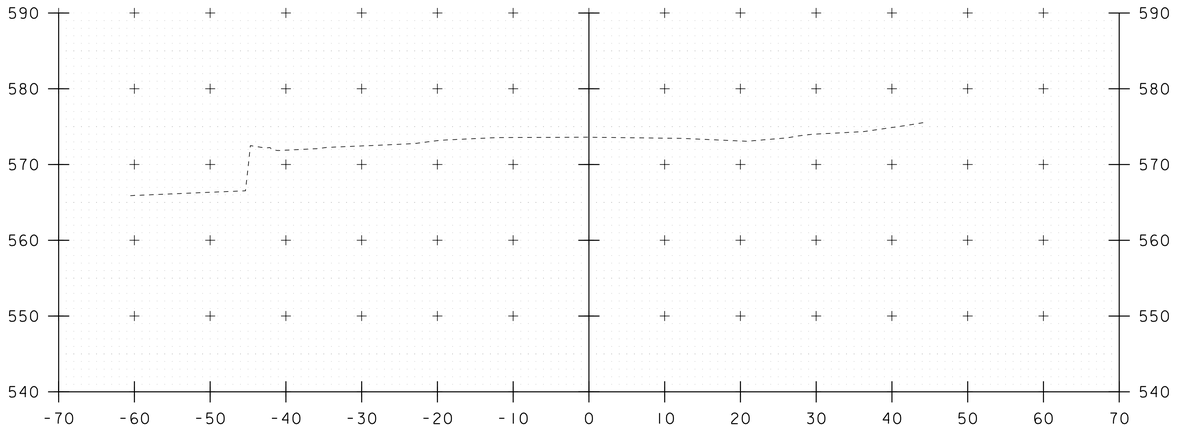

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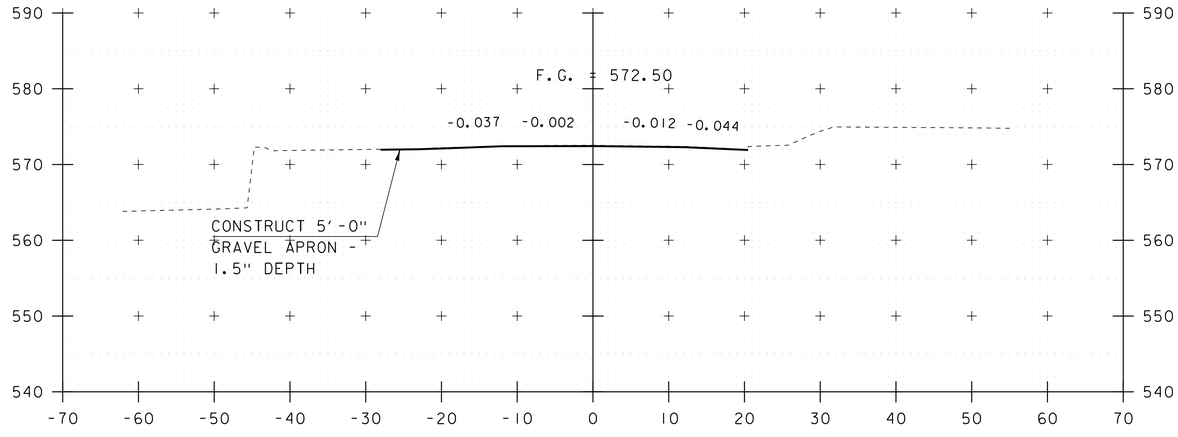
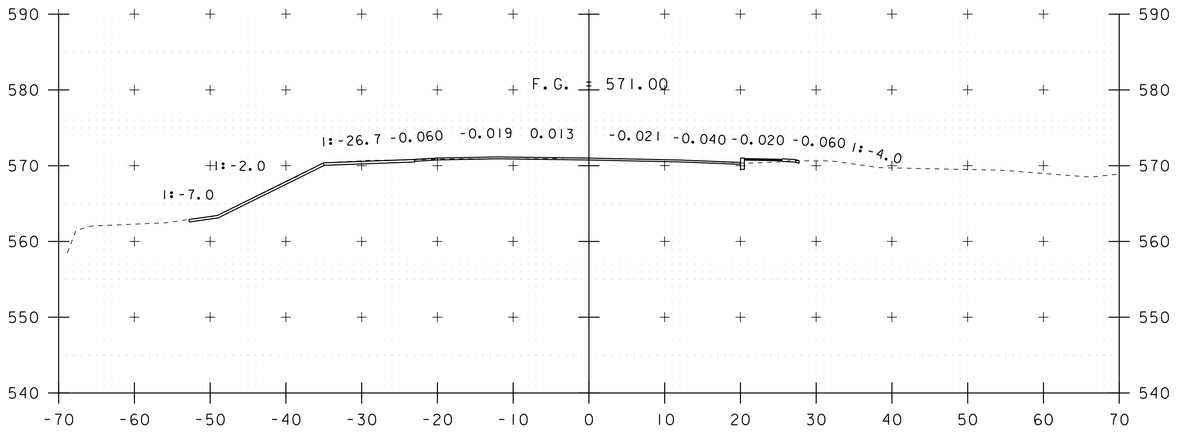


101+00

STA. 100+50 TO STA. 101+25

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	BF 0134(43)
FILE NAME: sl3c334xs.dgn	PLOT DATE: 25-SEP-2019
PROJECT LEADER: N. WARK	DRAWN BY: G. LAROCHE
DESIGNED BY: G. LAROCHE	CHECKED BY: G. DARGAN
MAINLINE SECTIONS SHEET 1	SHEET 24 OF 33



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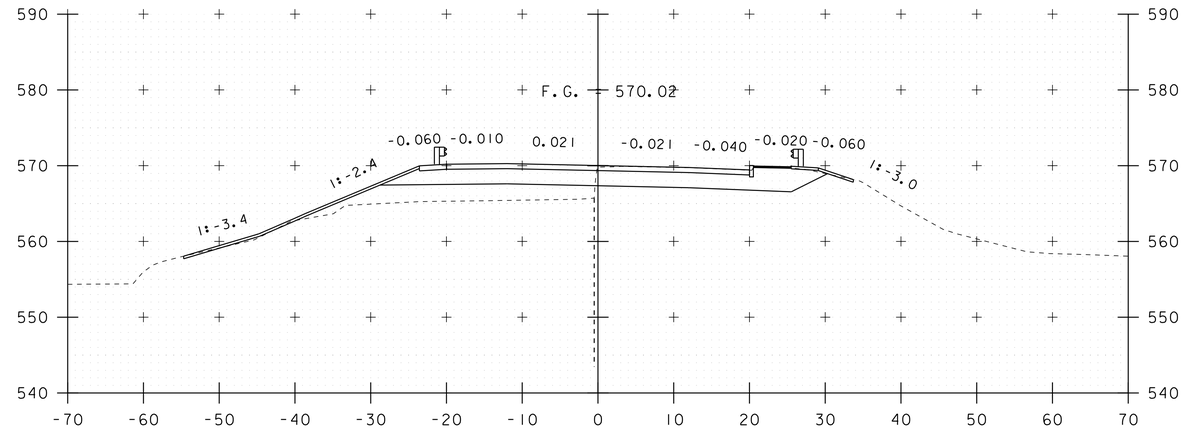

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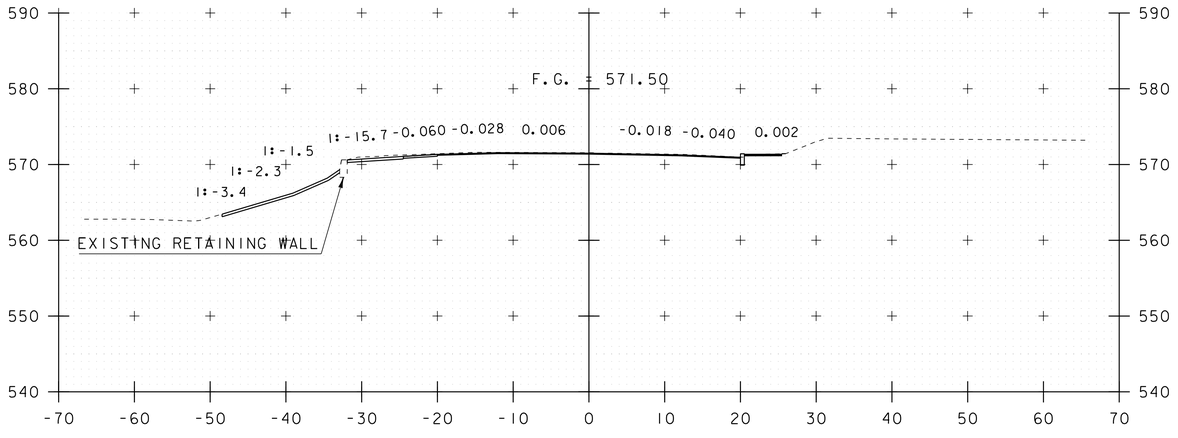

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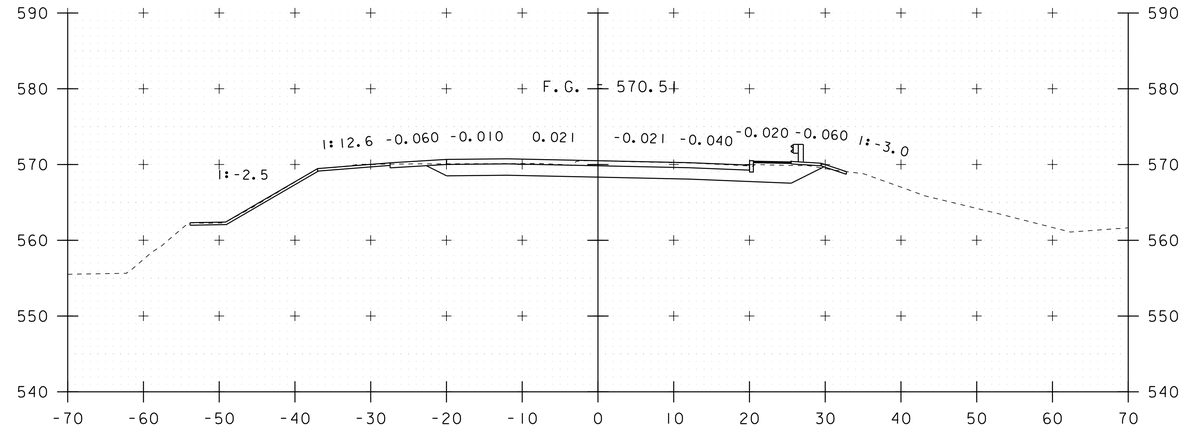


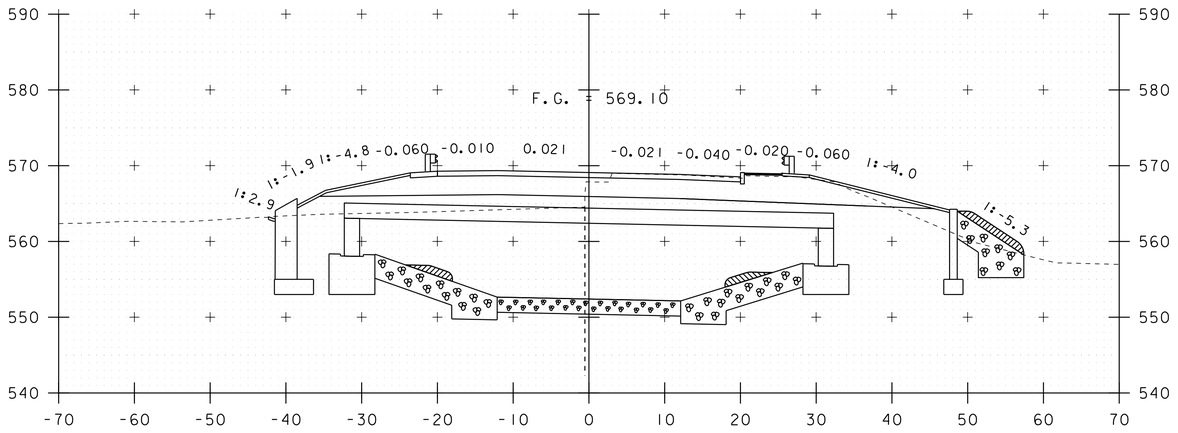
102+00

STA. 101+50 TO STA. 102+25

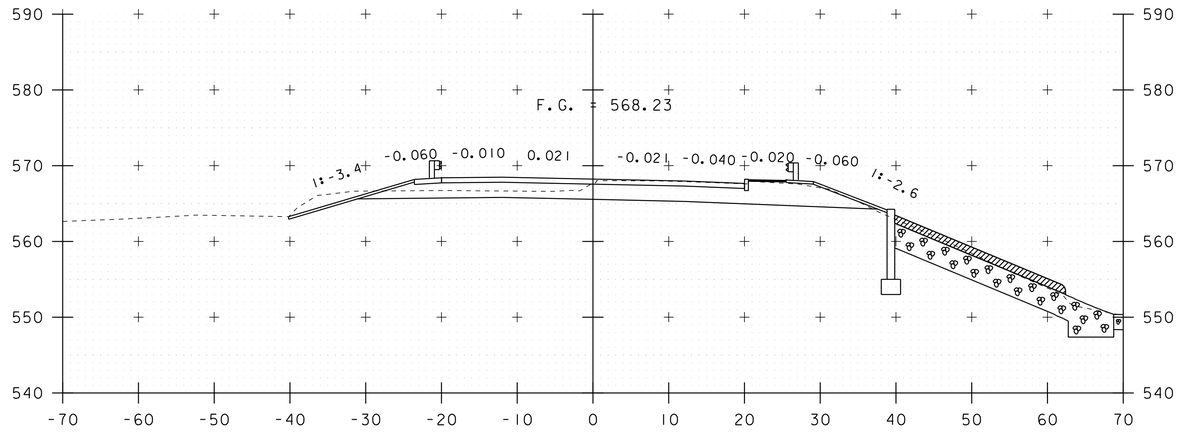
PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: sl3c334xs.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: G. LAROCHE
MAINLINE SECTIONS SHEET 2

PLOT DATE: 25-SEP-2019
DRAWN BY: G. LAROCHE
CHECKED BY: G. DARGAN
SHEET 25 OF 33



102+75
BEGIN BRIDGE STA 102+56.61
END BRIDGE STA 102+93.45



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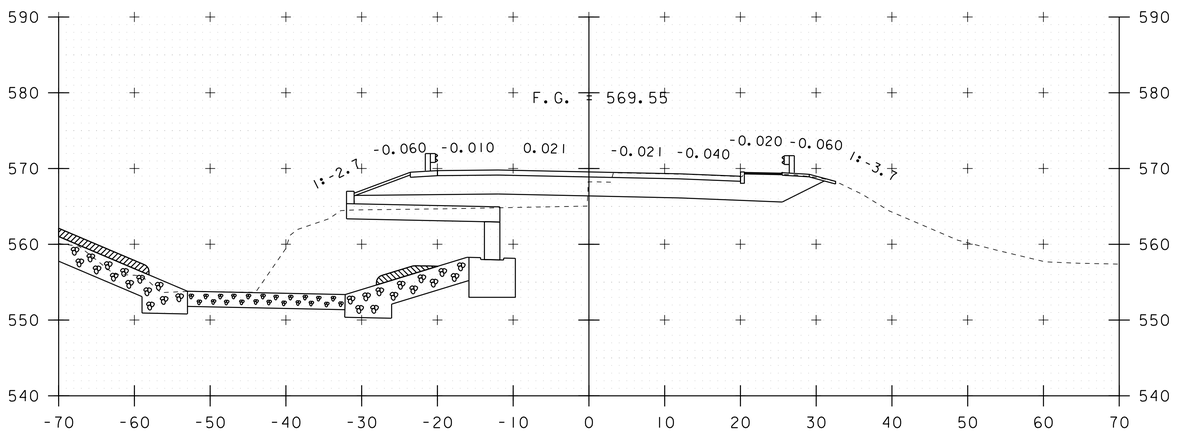
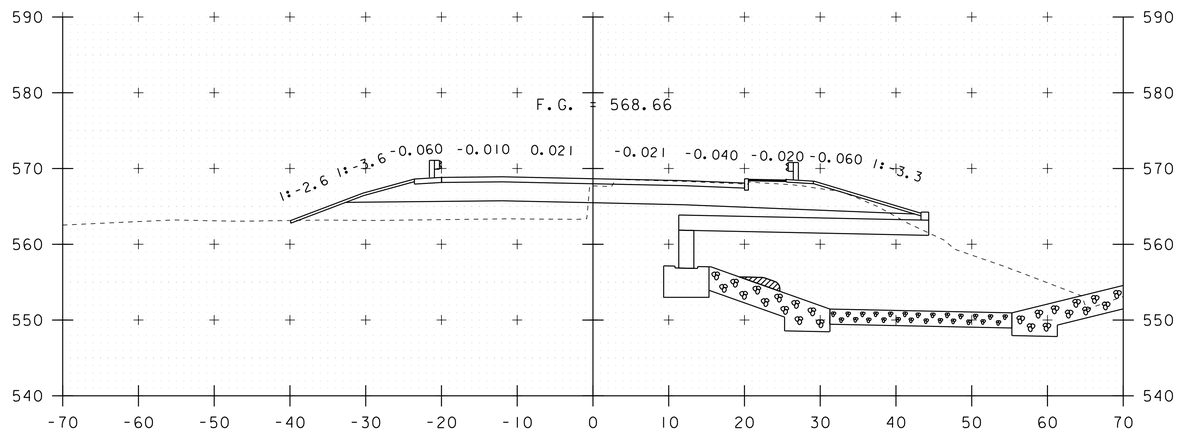


102+50



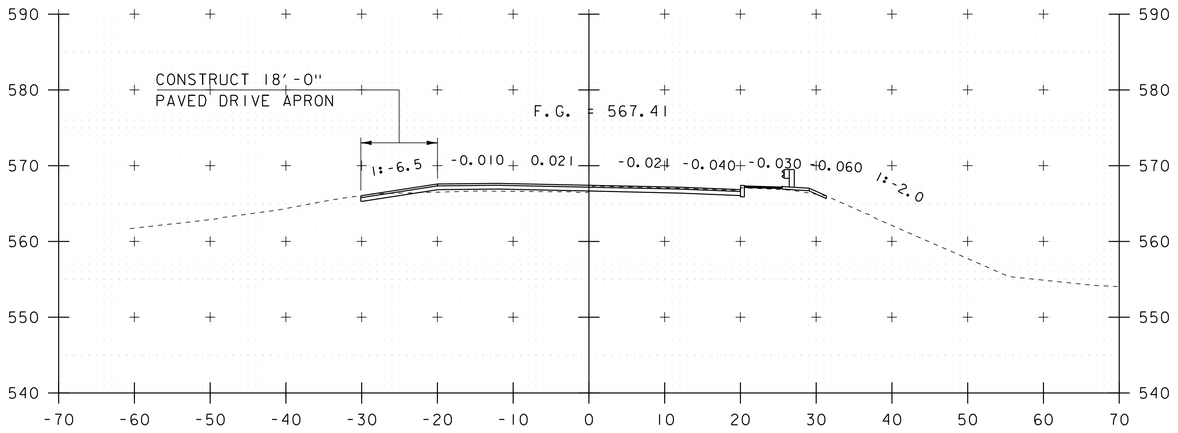
103+00

STA. 102+50 TO STA. 103+25

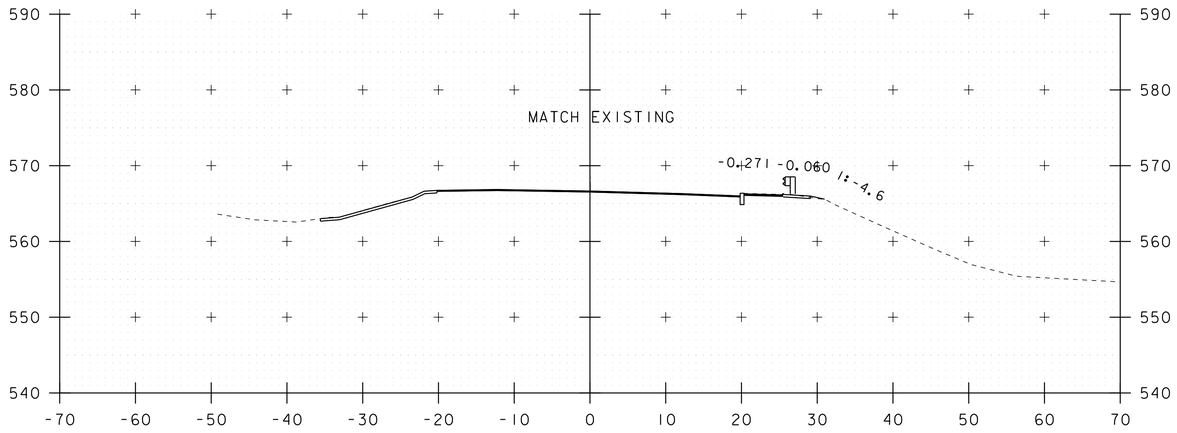
PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: sl3c334xs.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: G. LAROCHE
MAINLINE SECTIONS SHEET 3

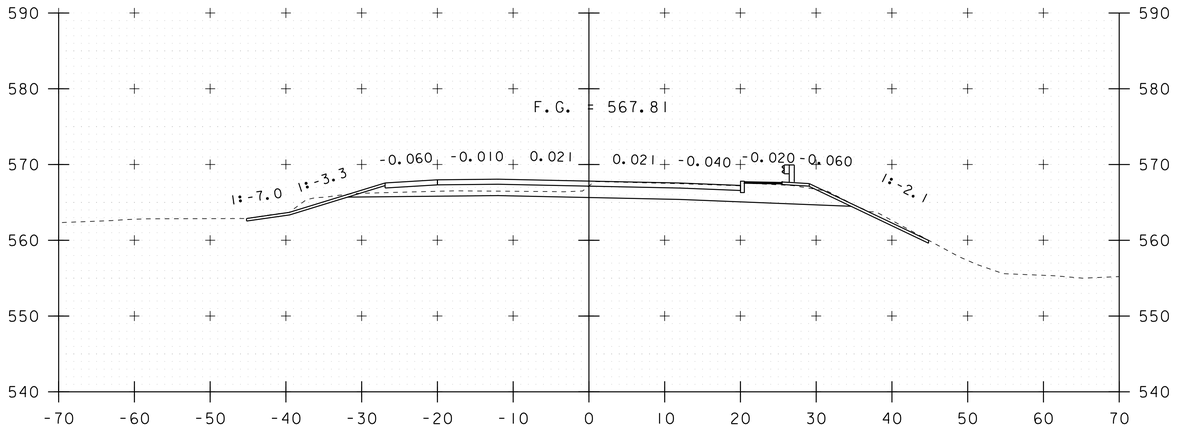
PLOT DATE: 25-SEP-2019
DRAWN BY: G. LAROCHE
CHECKED BY: G. DARGAN
SHEET 26 OF 33



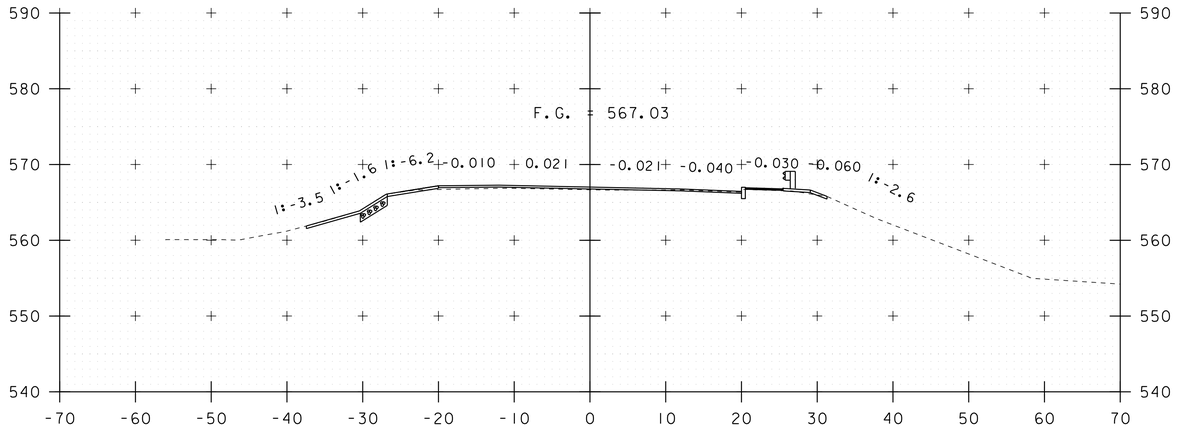
103+75



104+25



103+50



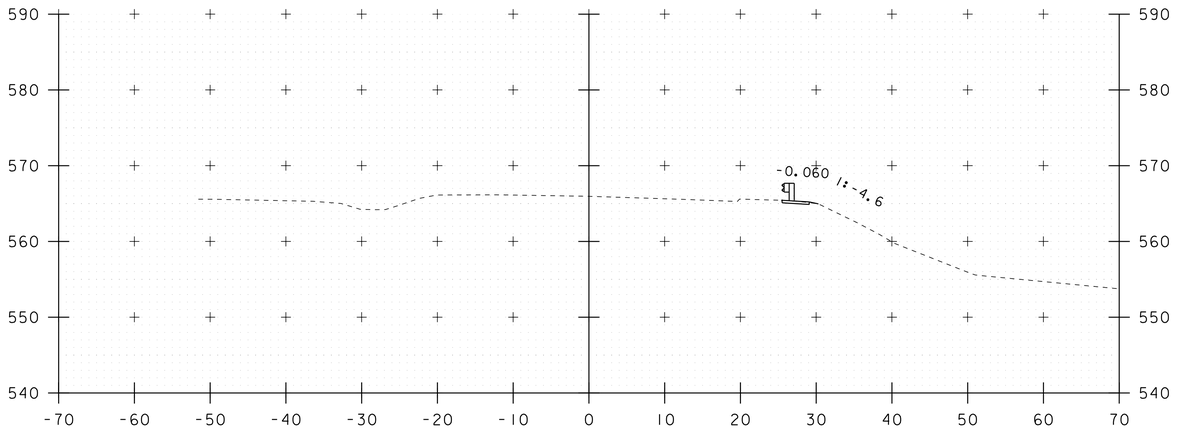
104+00

STA. 103+50 TO STA. 104+25

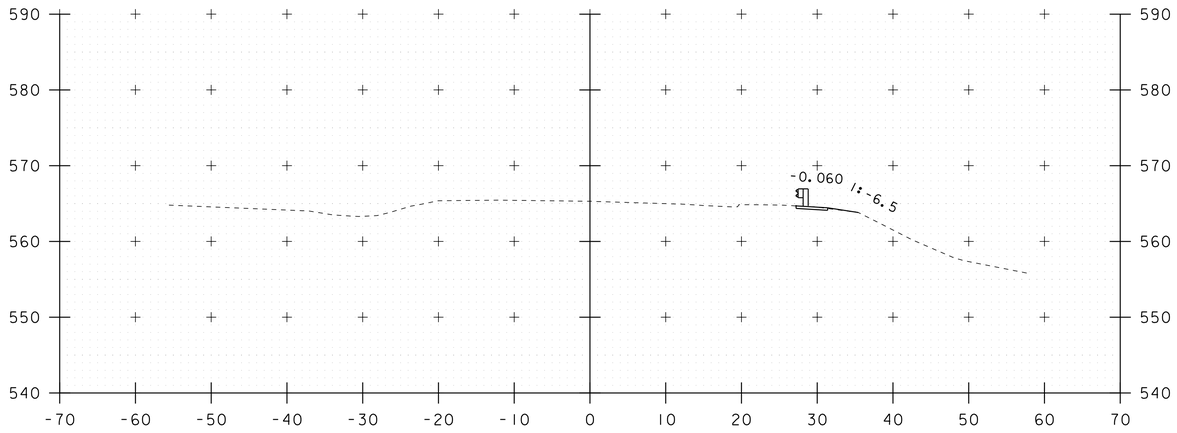
PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: sl3c334xs.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: G. LAROCHE
MAINLINE SECTIONS SHEET 4

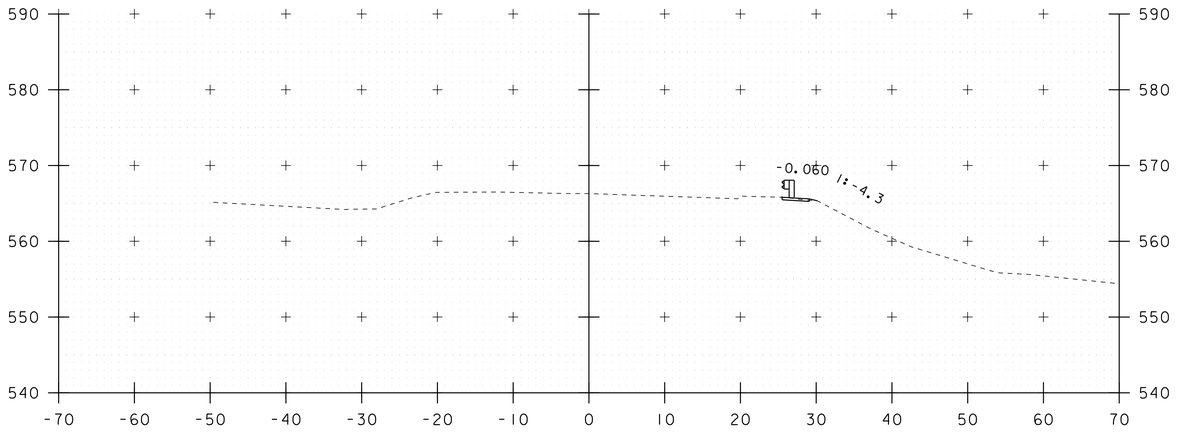
PLOT DATE: 25-SEP-2019
DRAWN BY: G. LAROCHE
CHECKED BY: G. DARGAN
SHEET 27 OF 33



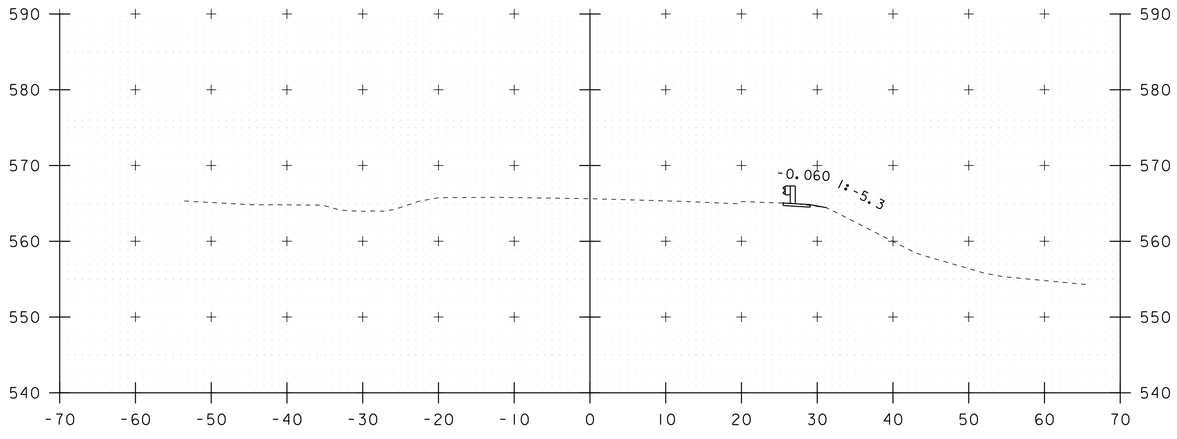
104+75



105+25



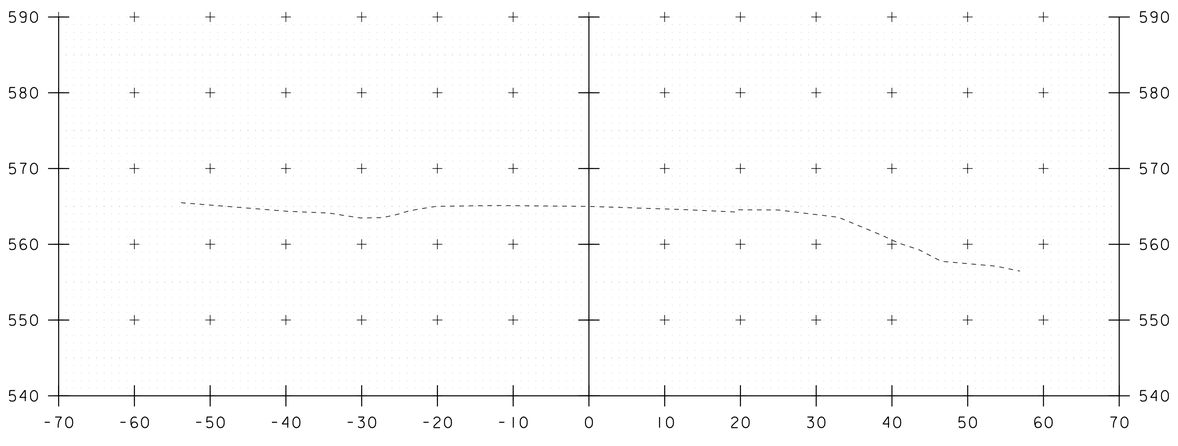
104+50



105+00

STA. 104+50 TO STA. 105+25

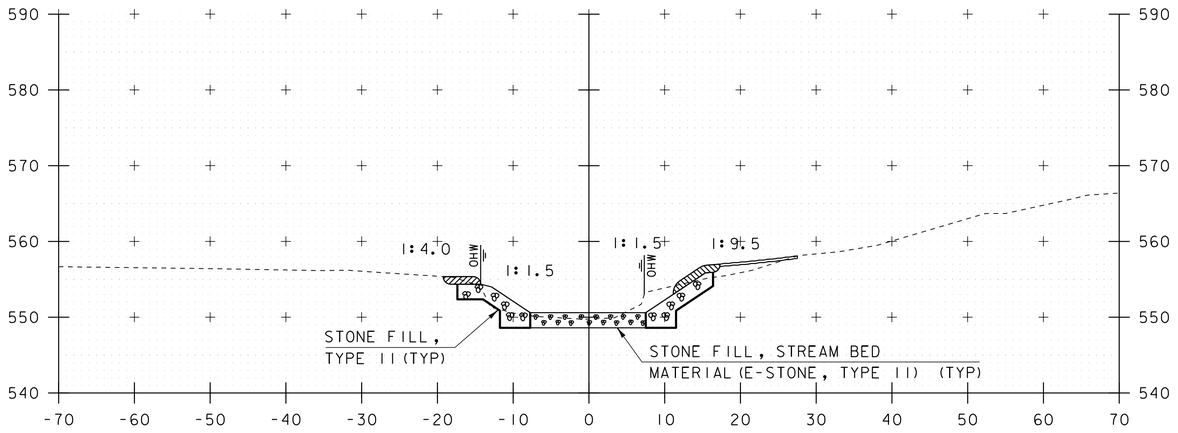
PROJECT NAME: SPRINGFIELD	
PROJECT NUMBER: BF 0134(43)	
FILE NAME: sl3c334xs.dgn	PLOT DATE: 25-SEP-2019
PROJECT LEADER: N. WARK	DRAWN BY: G. LAROCHE
DESIGNED BY: G. LAROCHE	CHECKED BY: G. DARGAN
MAINLINE SECTIONS SHEET 5	SHEET 28 OF 33



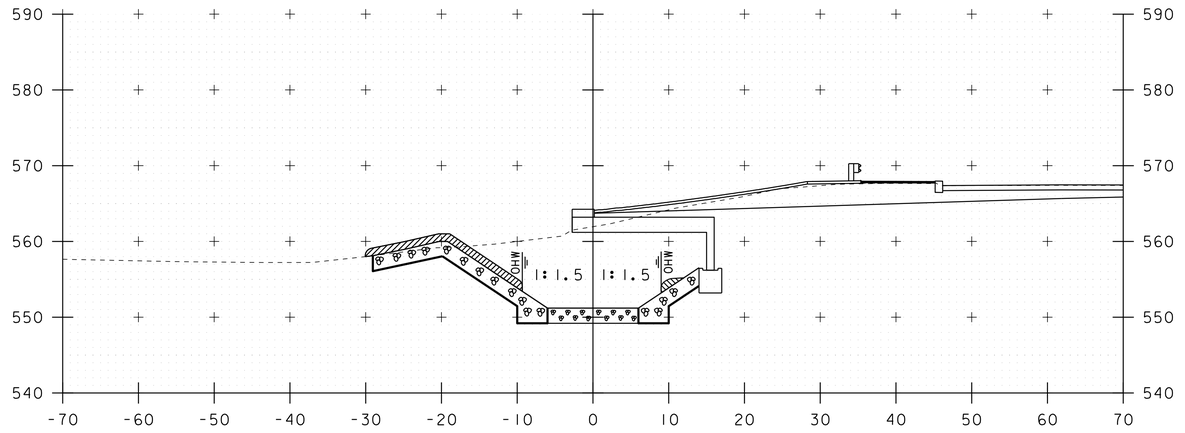
105+50
END APPROACH

STA. 105+50 TO STA. 105+50

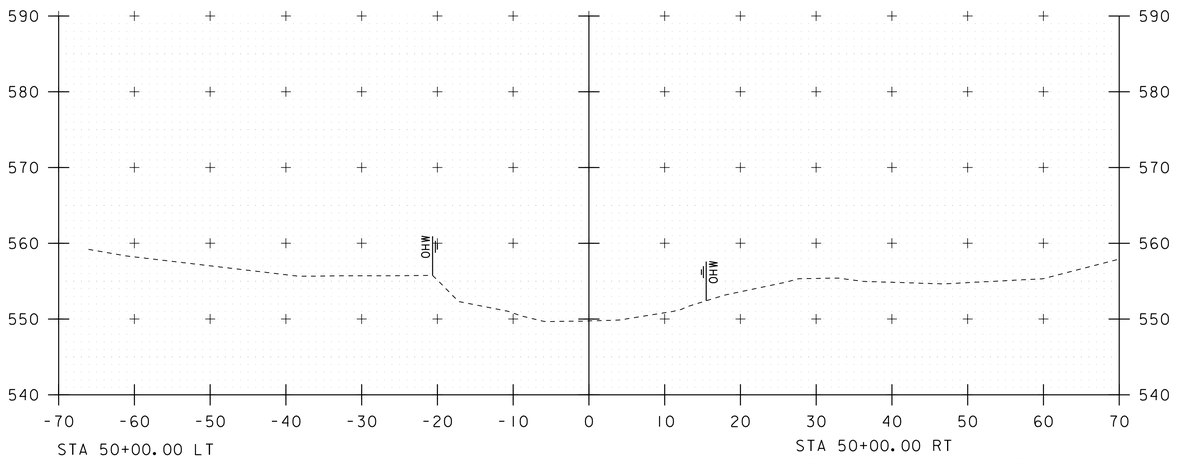
PROJECT NAME: SPRINGFIELD	
PROJECT NUMBER: BF 0134(43)	
FILE NAME: sl3c334xs.dgn	PLOT DATE: 25-SEP-2019
PROJECT LEADER: N. WARK	DRAWN BY: G. LAROCHE
DESIGNED BY: G. LAROCHE	CHECKED BY: G. DARGAN
MAINLINE SECTIONS SHEET 6	SHEET 29 OF 33



50+25



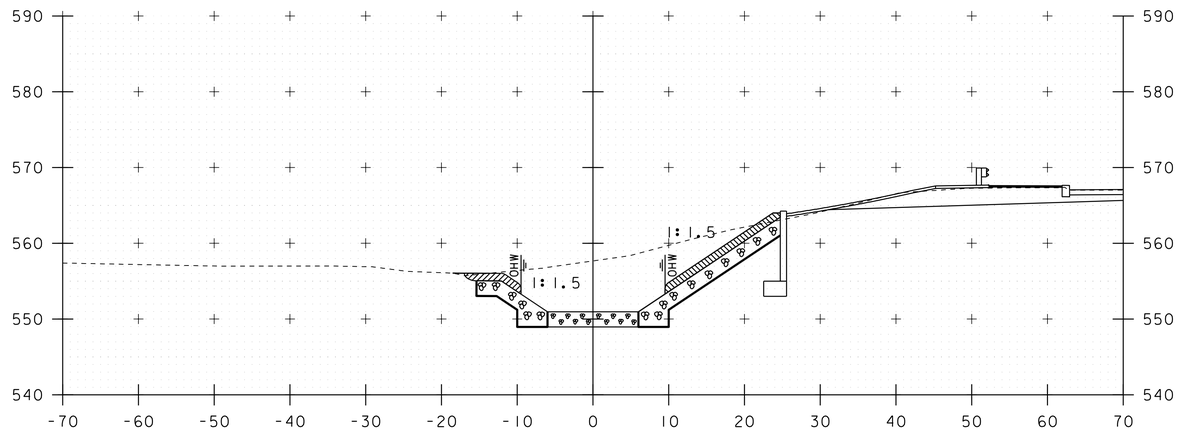
50+50



STA 50+00.00 LT
BEGIN STONE FILL, TYPE II
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL
UNCLASSIFIED CHANNEL EXCAVATION

50+00

STA 50+00.00 RT
BEGIN STONE FILL, TYPE II
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL
UNCLASSIFIED CHANNEL EXCAVATION
STA 50+10.00
BEGIN STONE FILL, STREAM BED
MATERIAL (E-STONE, TYPE II)



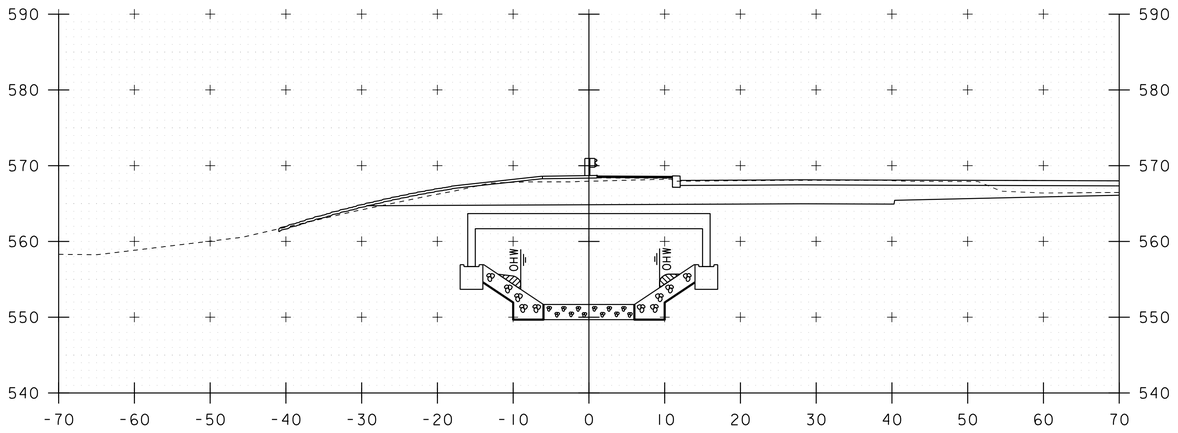
50+40

STA. 50+00 TO STA. 50+50

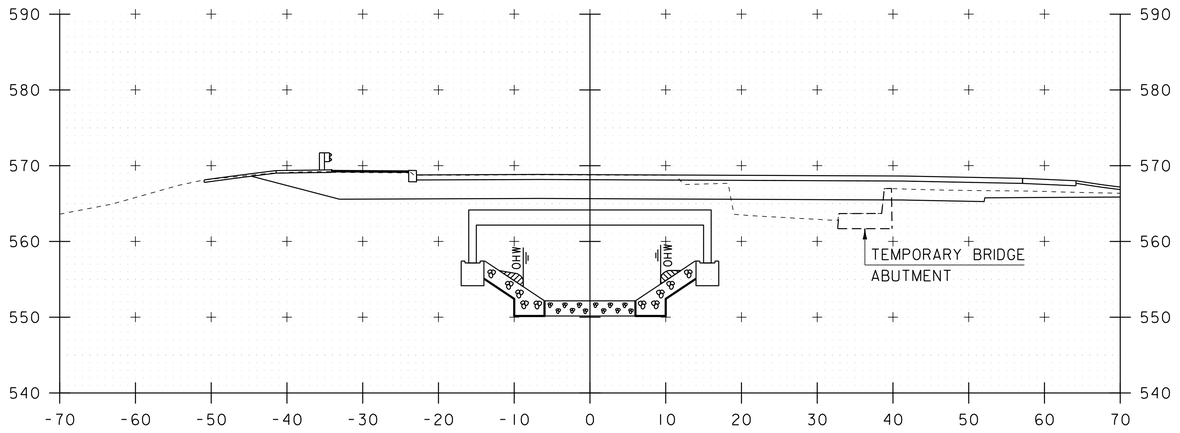
PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: sl3c334xsCH.dgn
PROJECT LEADER: N. WARK
DESIGNED BY: G. LAROCHE
CHANNEL SECTIONS SHEET 1

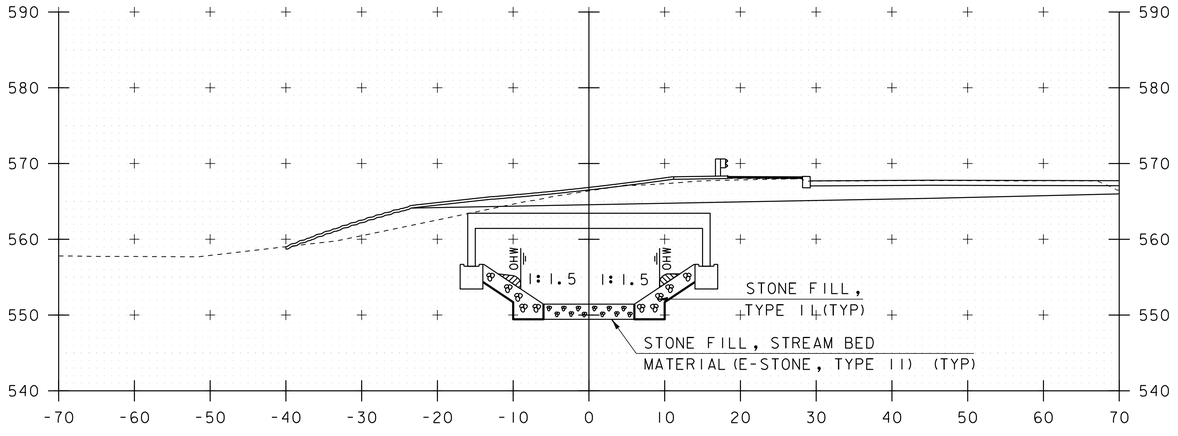
PLOT DATE: 25-SEP-2019
DRAWN BY: G. LAROCHE
CHECKED BY: G. DARGAN
SHEET 30 OF 33



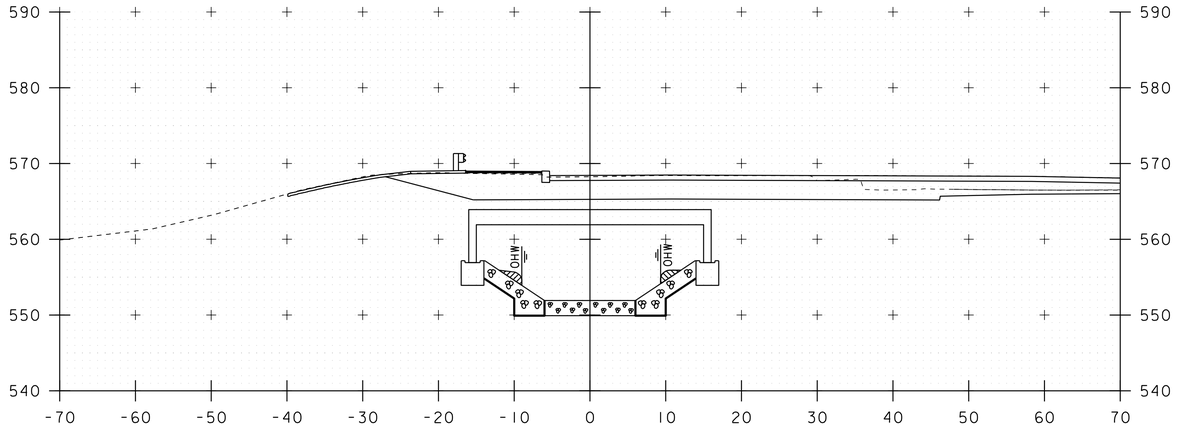
50+70



50+90



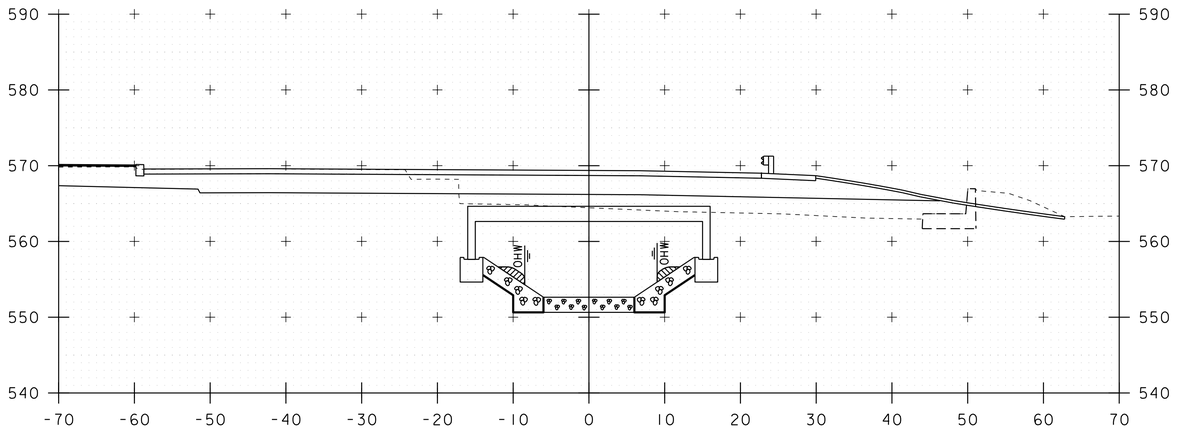
50+60



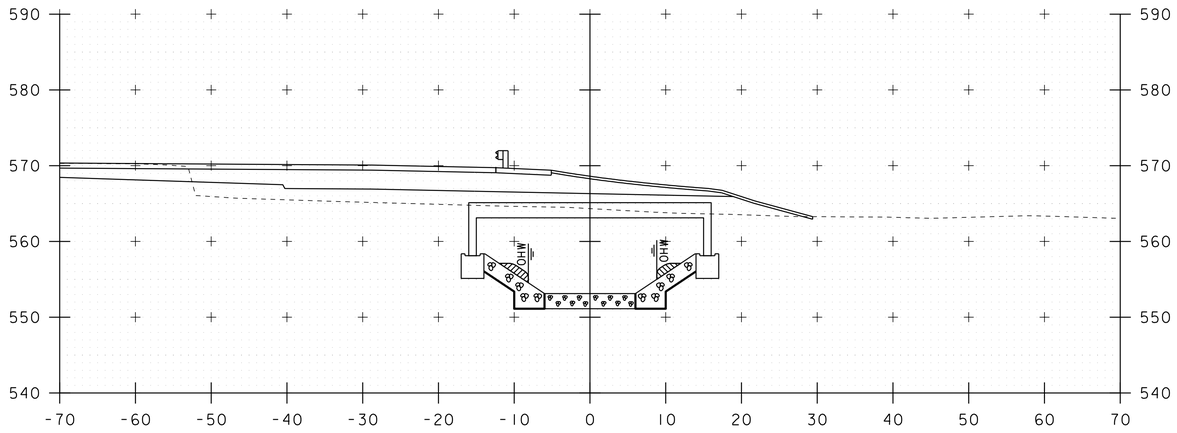
50+80

STA. 50+60 TO STA. 50+90

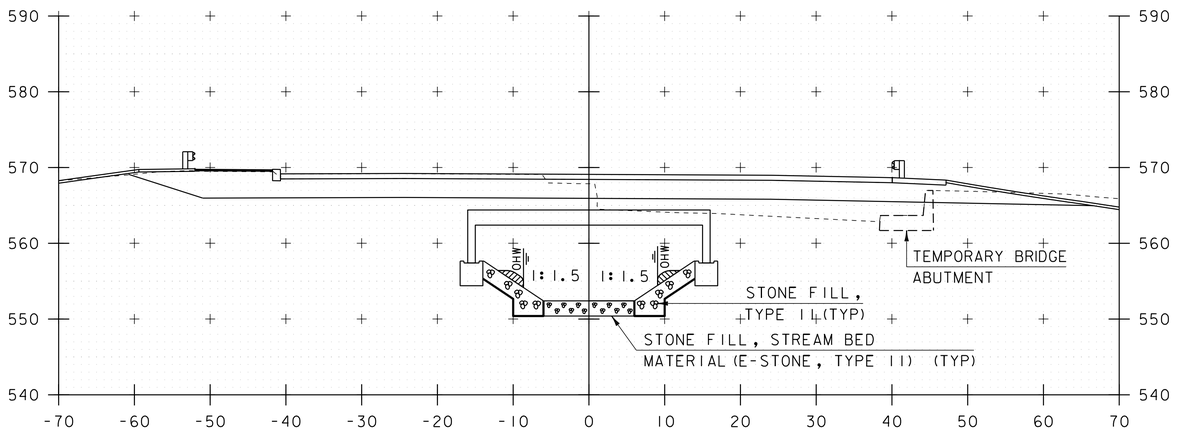
PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	BF 0134(43)
FILE NAME: sl3c334xsCH	PLOT DATE: 25-SEP-2019
PROJECT LEADER: N. WARK	DRAWN BY: G. LAROCHE
DESIGNED BY: G. LAROCHE	CHECKED BY: G. DARGAN
CHANNEL SECTION SHEET 2	SHEET 31 OF 33



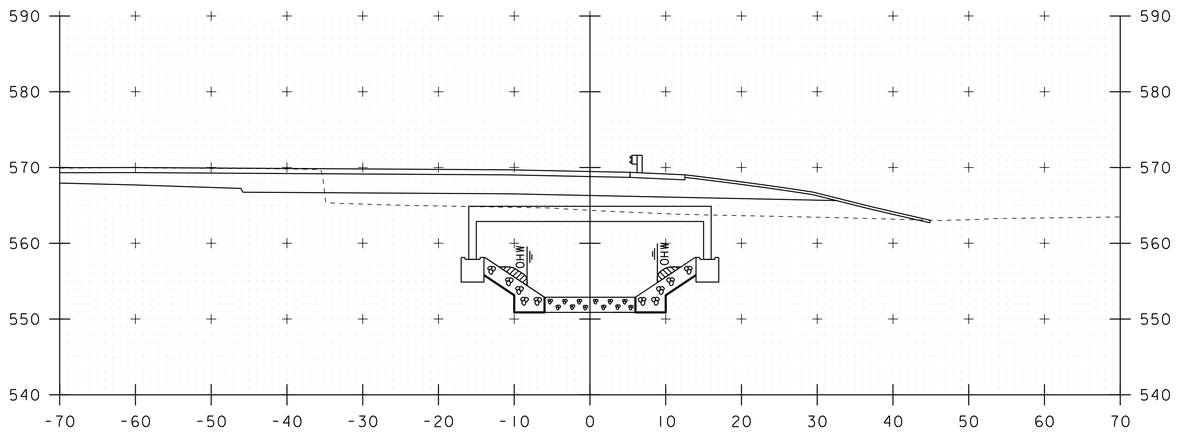
51+10



51+30



51+00



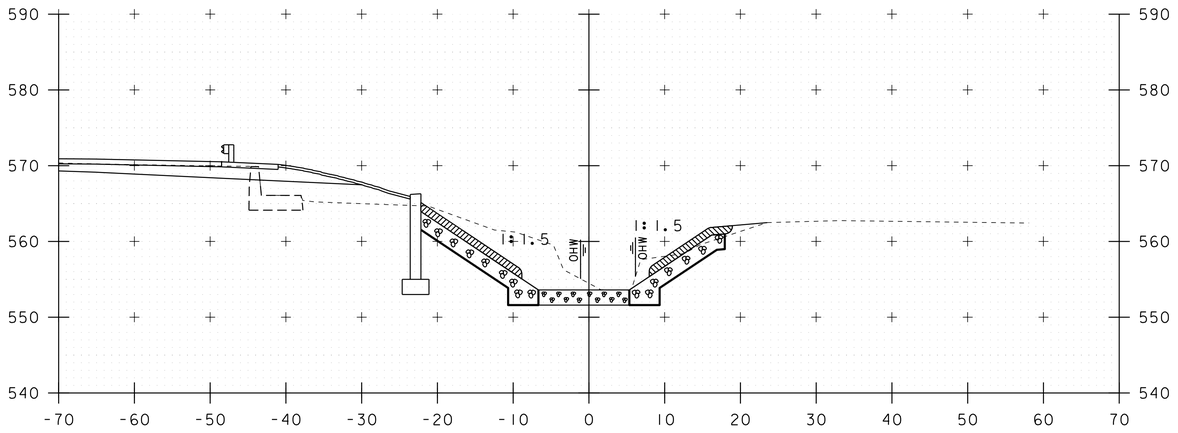
51+20

STA. 51+00 TO STA. 51+30

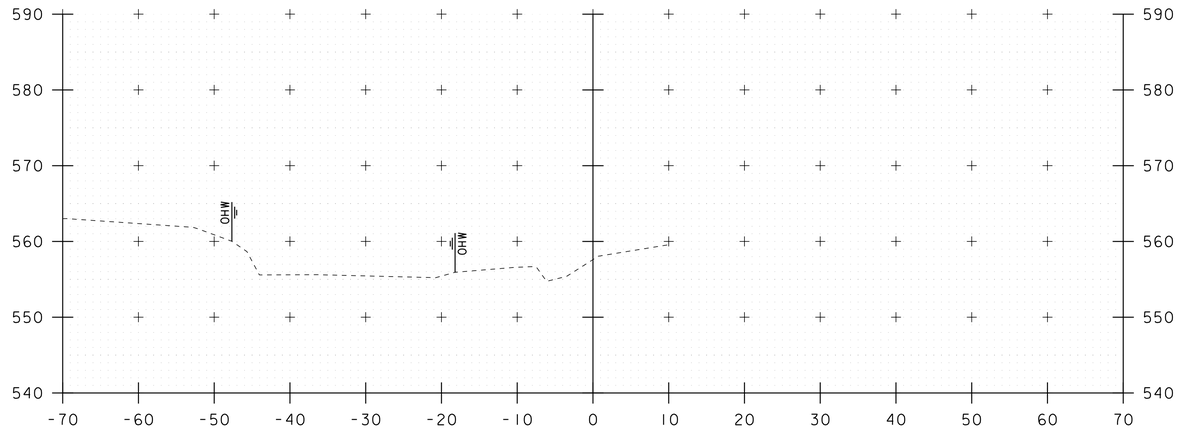
PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: sl3c334xsCH
PROJECT LEADER: N. WARK
DESIGNED BY: G. LAROCHE
CHANNEL SECTIONS SHEET 3

PLOT DATE: 25-SEP-2019
DRAWN BY: G. LAROCHE
CHECKED BY: G. DARGAN
SHEET 32 OF 33

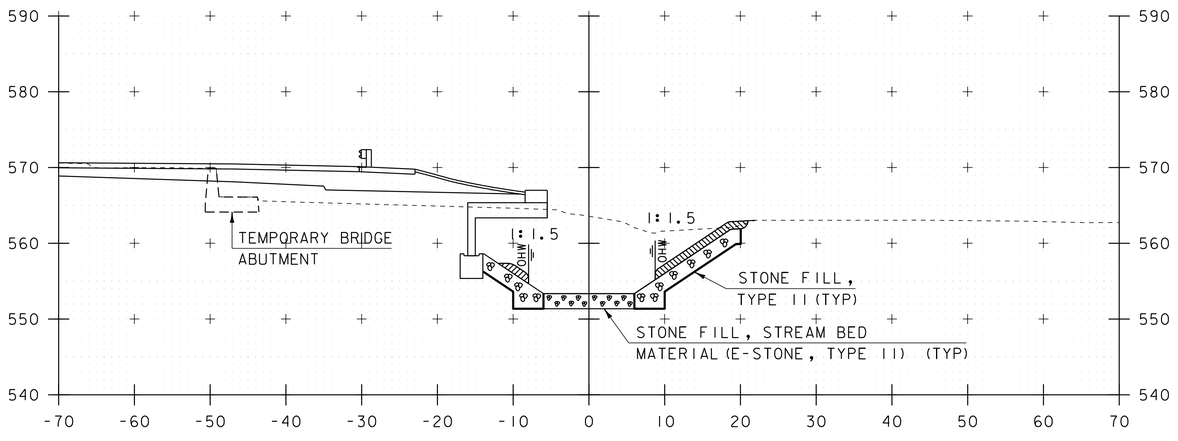


51+50

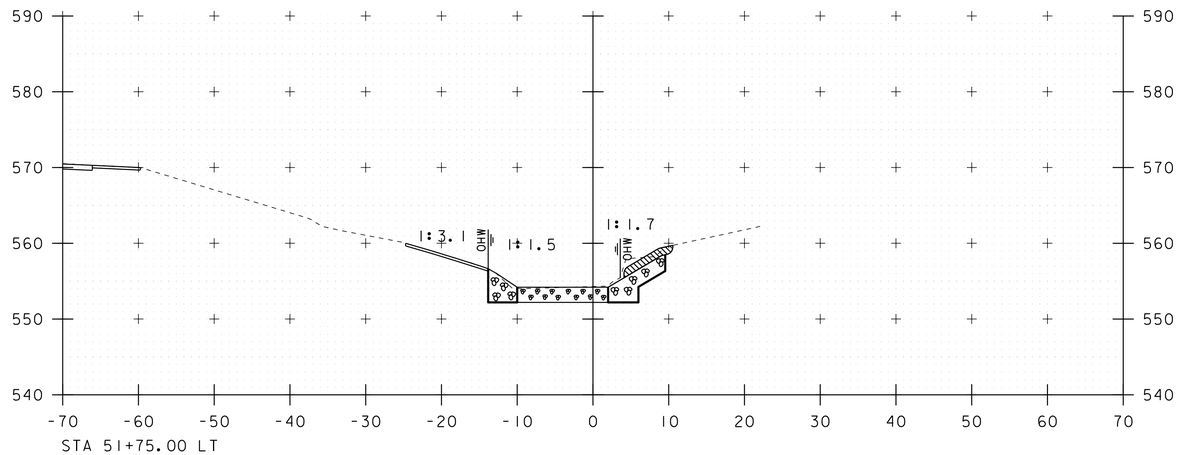


52+00

STA 51+87.66 RT
END STONE FILL, TYPE II
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL
UNCLASSIFIED CHANNEL EXCAVATION



51+40



STA 51+75.00 LT
END STONE FILL, STREAM BED
MATERIAL (E-STONE, TYPE II)
END STONE FILL, TYPE II
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL
UNCLASSIFIED CHANNEL EXCAVATION

51+75

STA. 51+40 TO STA. 52+00

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: BF 0134(43)

FILE NAME: sl3c334xsCH
PROJECT LEADER: N. WARK
DESIGNED BY: G. LAROCHE
CHANNEL SECTIONS SHEET 4

PLOT DATE: 25-SEP-2019
DRAWN BY: G. LAROCHE
CHECKED BY: G. DARGAN
SHEET 33 OF 33