

REVIEW NOTES

- 1) THE PROPOSED SIDE SLOPE AT WINGWALL 3 IS APPROXIMATELY 1:1 SINCE A 1:1.5 SLOPE WILL CARRY THE STONE FILL ALL THE WAY DOWN TO THE RIVER BED. THIS PROPOSED SLOPE MAY NEED TO BE REINFORCED AND THE GEOTECHNICAL SECTION MAY NEED TO TAKE A CLOSER LOOK AT AREA TO DETERMINE SLOPE STABILITY HERE. SEE CROSS SECTIONS 51+50 AND 51+65.
- 2) THE TOWN OF NEWFANE HAS VOTED TO REPLACE THE EXISTING CONCRETE ARCH WITH A WIDER 28-FOOT ARCH. THE INTENTION IS TO STRIPE THE BRIDGE FOR (1) 12-FT TRAVEL LANE AND (2) 7-FT PEDESTRIAN / BICYCLE LANES. THIS WILL ALLOW THE TOWN TO MAINTAIN ONE-WAY TRAFFIC ACROSS THE BRIDGE WITH A 3-WAY YIELD CONDITION, BUT ALSO ACCOMODATE TWO LANES OF TRAFFIC DURING EMERGENCY SITUATIONS OR PERMANENTLY IF DESIRED IN THE FUTURE.
- 3) IT IS ANTICIPATED THAT RIGHT-OF-WAY ACQUISITION WILL BE NECESSARY FOR THIS PROJECT.
- 4) FINAL HYDRAULICS HAS BEEN REQUESTED BUT NOT INCLUDED ON THE PI SHEET IN THIS REVIEW PERIOD.
- 5) NOTE THAT DEPOT ROAD AND DOVER ROAD ARE BOTH TH 2.
- 6) IT IS ANTICIPATED THAT CONSTRUCTION WILL LAST ONE CONSTRUCTION SEASON. THE BRIDGE WILL BE CLOSED TO TRAFFIC DURING CONSTRUCTION BUT TRAFFIC VIA TH 2 (DOVER RD) AND TH 5 (GRIMES HILL RD) MUST BE MAINTAINED.

STATE OF VERMONT AGENCY OF TRANSPORTATION



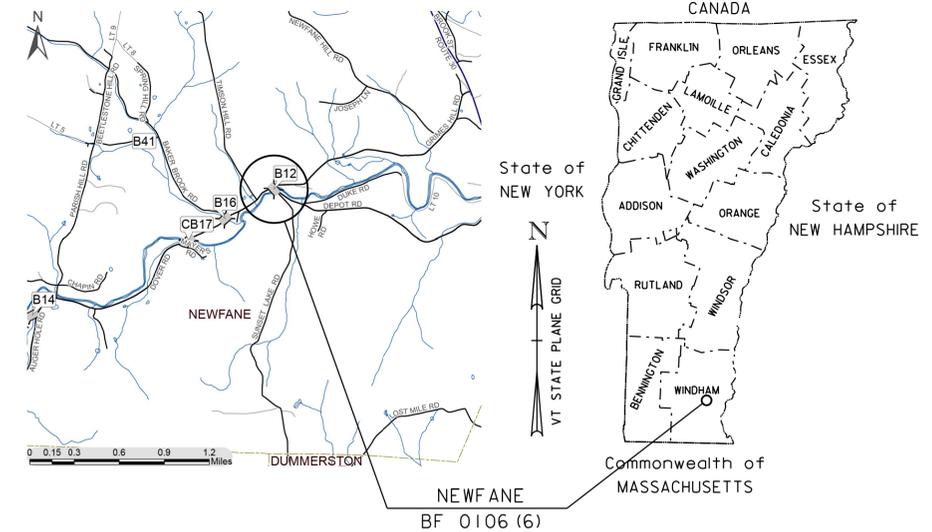
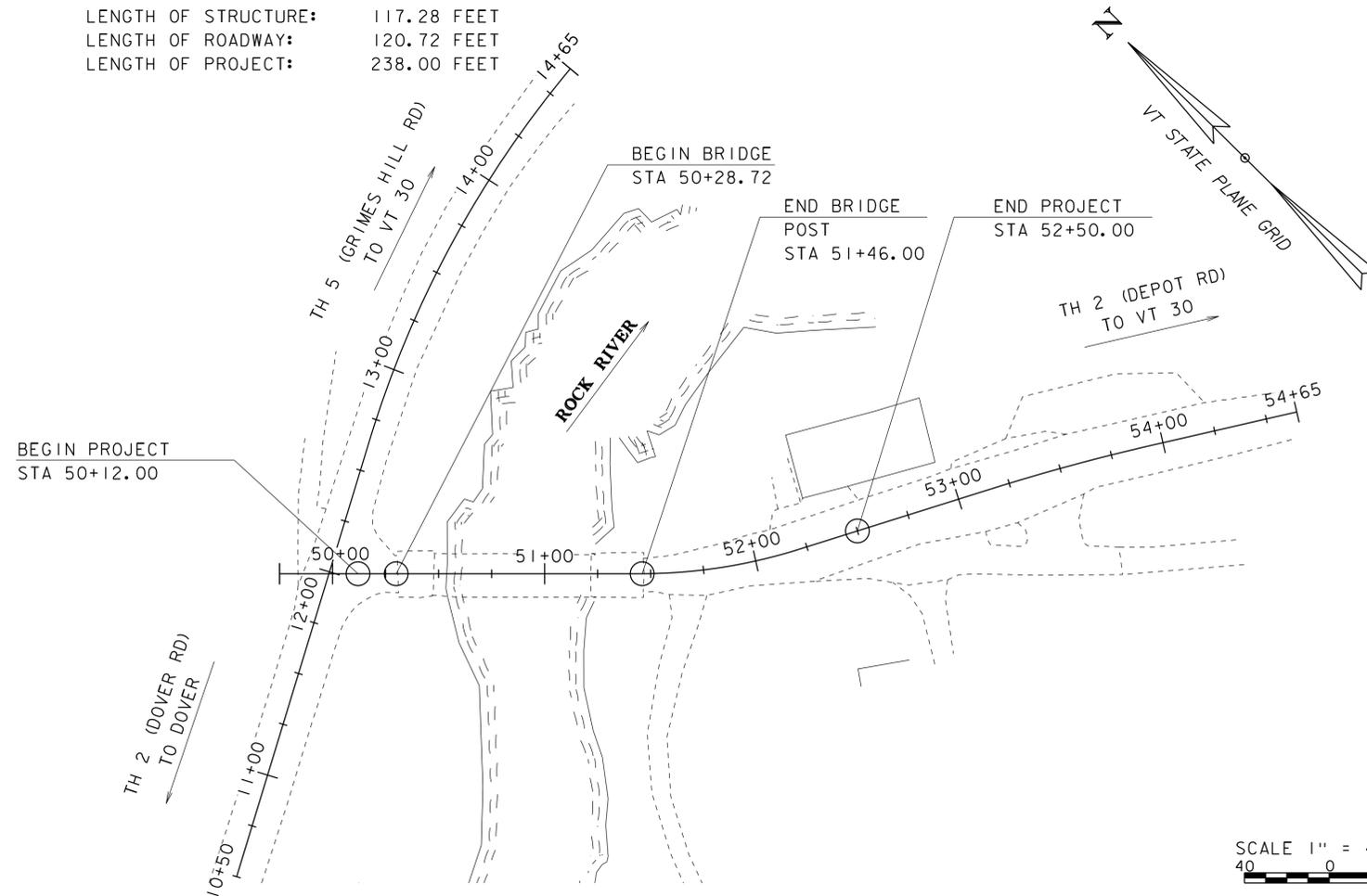
PROPOSED IMPROVEMENT BRIDGE PROJECT

TOWN OF NEWFANE
COUNTY OF WINDHAM

ROUTE NO : FAS ROUTE 106 (TH 2 / DEPOT ROAD) , MAJOR COLLECTOR (CLASS 2) , BRIDGE NO : 12

PROJECT LOCATION: ON TH 2 (DEPOT ROAD) BEGINNING APPROXIMATELY 1.9 MILES WESTERLY OF THE INTERSECTION OF TH 2 & VT 30 AND EXTENDING EASTERLY APPROXIMATELY .045 MILES.
PROJECT DESCRIPTION: REMOVAL OF EXISTING CONCRETE ARCH BRIDGE AND REPLACEMENT WITH A NEW CONCRETE ARCH BRIDGE AND RELATED ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE: 117.28 FEET
LENGTH OF ROADWAY: 120.72 FEET
LENGTH OF PROJECT: 238.00 FEET



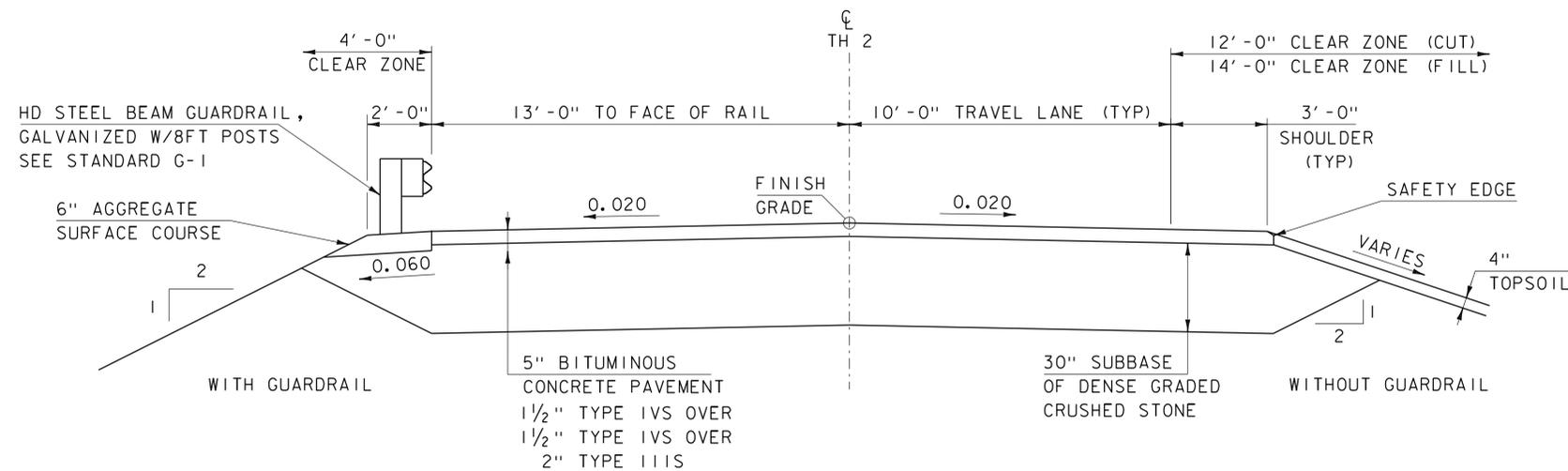
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS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

QUALITY ASSURANCE PROGRAM : LEVEL 2	
SURVEYED BY :	R. GILMAN
SURVEYED DATE :	04-22-2013
DATUM	
VERTICAL	NAVD88
HORIZONTAL	NAD83 (2011)

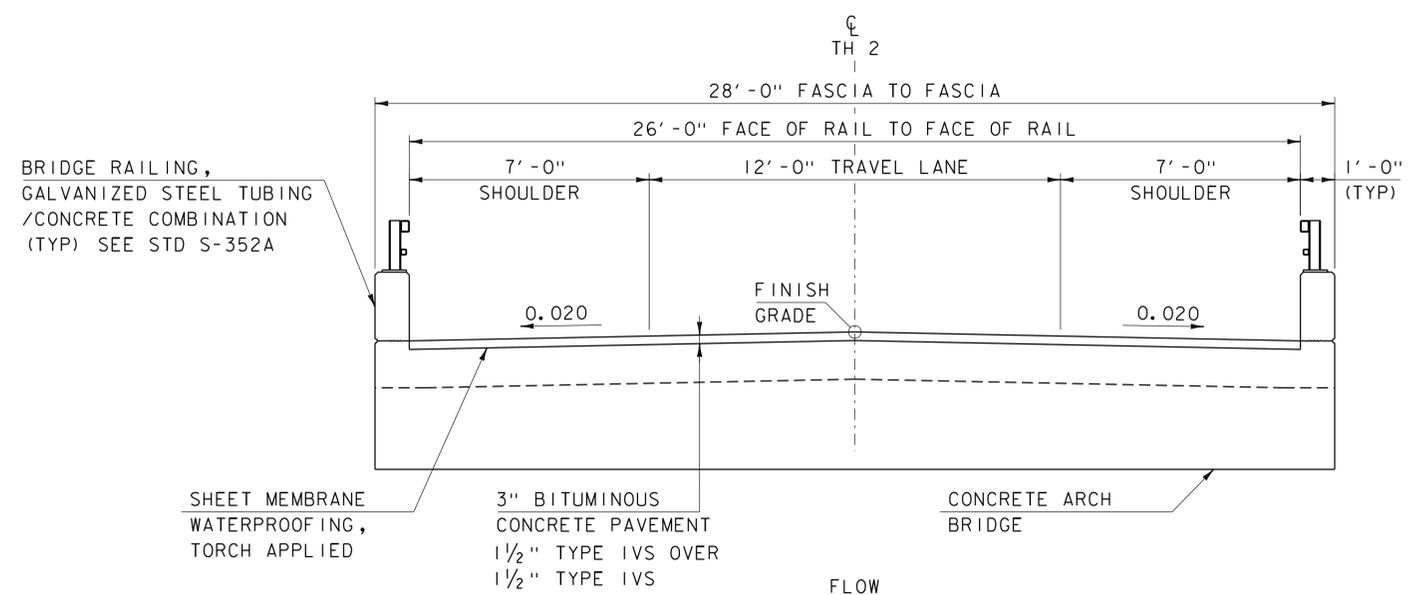
PRELIMINARY PLANS
25-JUL-2016

DIRECTOR OF PROJECT DELIVERY	
APPROVED _____	DATE _____
PROJECT MANAGER : CAROLYN W. CARLSON, P. E.	
PROJECT NAME :	NEWFANE
PROJECT NUMBER :	BF 0106 (6)
SHEET 1 OF 39 SHEETS	

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



ROADWAY TYPICAL SECTION
SCALE $\frac{3}{8}'' = 1'-0''$



BRIDGE TYPICAL SECTION
SCALE $\frac{3}{8}'' = 1'-0''$

TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE OF 0.025 GAL/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT, 0.08 GAL/SY FOR EMULSION ON MILLED SURFACES, OR AS DIRECTED THE ENGINEER.

MATERIAL TOLERANCES (IF USED ON PROJECT)	
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

PROJECT NAME:	NEWFANE	PLOT DATE:	25-JUL-2016
PROJECT NUMBER:	BF 0106(6)	DRAWN BY:	M. LONGSTREET
FILE NAME:	sl3j306typ.dgn	DESIGNED BY:	C. BURRALL
PROJECT LEADER:	C.W. CARLSON	CHECKED BY:	C. BURRALL
TYPICAL SECTIONS		SHEET	3 OF 39

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

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

PROPOSED GEOMETRY CODES

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

UTILITY SYMBOLGY

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+TELEP.
— 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+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 — x	BARRIER FENCE
xxxxxxxxxxxxxxxxxxxxxxxx	TREE PROTECTION ZONE (TPZ)
//////	STRIPING LINE REMOVAL
~~~~~	SHEET PILES

**CONVENTIONAL BOUNDARY SYMBOLGY**

**BOUNDARY LINES**

—————	TOWN BOUNDARY LINE
—————	COUNTY BOUNDARY 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 — P —	PROPERTY LINE (P/L)
— L — 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 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)
-----	STONE WALL
-----	WALL
~~~~~	WOOD LINE
~~~~~	BRUSH LINE
~~~~~	HEDGE
-----	BODY OF WATER EDGE
-----	LEDGE EXPOSED

PROJECT NAME: NEWFANE  
PROJECT NUMBER: BF 0106(6)

FILE NAME: s13j306 for ms.dgn PLOT DATE: 25-JUL-2016  
PROJECT LEADER: C.W. CARLSON DRAWN BY: M. LONGSTREET  
DESIGNED BY: C. BURRALL CHECKED BY: C. BURRALL  
CONVENTIONAL SYMBOLGY LEGEND SHEET 4 OF 39

GPS CONTROL POINTS

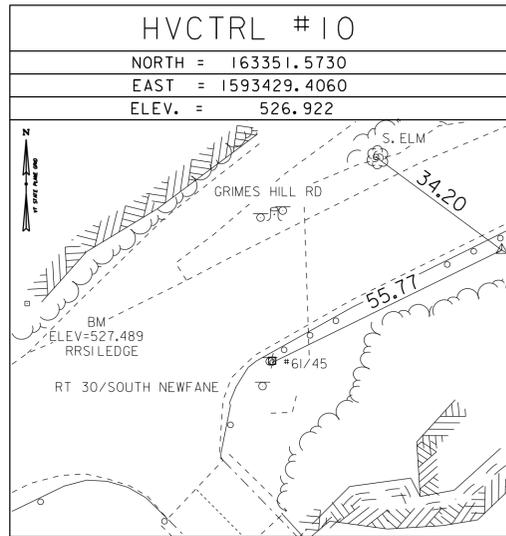
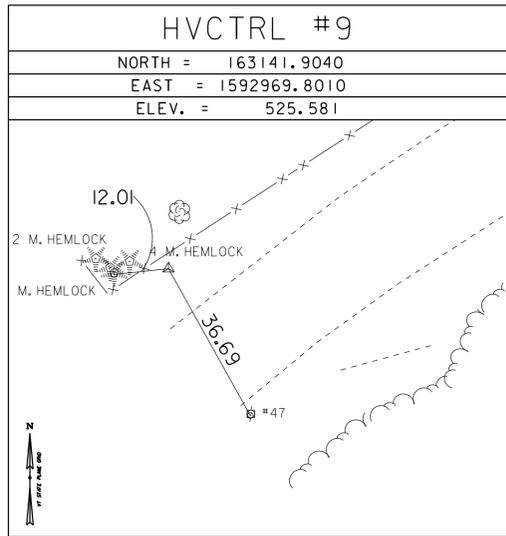
PT #1 SHOSKES  
 NORTH = 160026.0120  
 EAST = 1589110.8970  
 ELEV. = 587.330

TO REACH FROM THE INTERSECTION OF U.S. ROUTE 5 AND VERMONT ROUTE 30 NORTH IN BRATTLEBORO, GO NORTH ON VT ROUTE 30 FOR 8.8 MI (14.2 KM) TO THE INTERSECTION OF TOWN HIGHWAY 2 LEFT (ROAD LEADING TO WILLIAMSVILLE, SOUTH NEWFANE, EAST DOVER, DOVER, AND WEST DOVER). TURN LEFT AND GO NORTH AND WEST ALONG TH2 FOR 2 MI (3.2 KM) TO THE BRIDGE OVER ROCK RIVER. AT THE END OF THE BRIDGE TURN LEFT AND GO WEST ALONG TH2 FOR 0.6 MI (1.8 KM) TO THE COVERED BRIDGE OVER ROCK RIVER. CONTINUE STRAIGHT ON TH2 FOR 0.4 MI (0.6 KM) TO THE MARK ON THE LEFT. THE MARK IS SET IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT POURED 1.3 M (4.3 FT) DEEP. IT IS 4.8 M (15.7 FT) SOUTHEAST OF AND ABOUT 0.2 M (0.7 FT) HIGHER THAN THE CENTERLINE OF TH2, 11.8 M (38.7 FT) NORTHEAST OF THE NORTHEAST END OF A STONEWALL, 39.3 M (128.9 FT) NORTHEAST OF THE CENTERLINE OF GRAVEL DRIVE LEADING TO THE SHOSKES RESIDENCE, AND 1.6 M (5.2 FT) SOUTHWEST OF POLE NO. 39/93 AND FIBERGLASS WITNESS POST.

PT #2 SHOSKES AZ MK  
 NORTH = 161007.5780  
 EAST = 1589488.8650  
 ELEV. = 565.030

TO REACH FROM THE INTERSECTION OF U.S. ROUTE 5 AND VERMONT ROUTE 30 NORTH IN BRATTLEBORO, GO NORTH ON VT ROUTE 30 FOR 8.8 MI (14.2 KM) TO THE INTERSECTION OF TOWN HIGHWAY 2 LEFT (ROAD LEADING TO WILLIAMSVILLE, SOUTH NEWFANE, EAST DOVER, DOVER, AND WEST DOVER). TURN LEFT AND GO NORTH AND WEST ALONG TH2 FOR 2 MI (3.2 KM) TO THE BRIDGE OVER ROCK RIVER. AT THE END OF THE BRIDGE TURN LEFT AND GO WEST ALONG TH2 FOR 1.1 MI (1.8 KM) TO THE COVERED BRIDGE OVER ROCK RIVER. CONTINUE STRAIGHT ON TH2 FOR 0.2 MI (0.3 KM) TO THE MARK ON THE RIGHT. THE MARK IS SET IN THE TOP OF A LARGE BOULDER ABOUT 0.5 M (1.6 FT) BELOW GROUND SURFACE ACCESSIBLE BY AN ACCESS COVER. IT IS 6.6 M (21.7 FT) NORTHWEST OF AND ABOUT 0.7 M (2.3 FT) LOWER THAN THE CENTERLINE OF TH2, 23.5 M (77.1 FT) SOUTHWEST OF POLE NO. 61/86/32, 8.4 M (27.6 FT) SOUTHEAST OF A 30 CM WHITE PINE, AND 0.4 M (1.3 FT) SOUTHEAST OF A FIBERGLASS WITNESS POST.

TRAVERSE TIES



NORTH =

EAST =

ELEV. =

NORTH =

EAST =

ELEV. =

NORTH =

EAST =

ELEV. =

ALIGNMENT TIES

NORTH =

EAST =

ELEV. =

DATUM

VERTICAL NAVD88

HORIZONTAL NAD83(92)

ADJUSTMENT COMPASS

PROJECT NAME: NEWFANE

PROJECT NUMBER: BF 0106(6)

FILE NAME: x13j306+ie PLOT DATE: 25-JUL-2016

PROJECT LEADER: C.W. CARLSON DRAWN BY: C. CYR

DESIGNED BY: C. BURRALL CHECKED BY: P. BEYOR

TIE SHEET SHEET 5 OF 39

**REMOVAL AND DISPOSAL OF GUARDRAIL**

DOVER STA 11+33.57 RT - 12+00.08 RT  
 GRIMES STA 12+16.74 RT - 12+49.55 RT  
 DEPOT STA 51+46.85 RT - 51+56.25 RT  
 DEPOT STA 51+46.97 LT - 51+99.89 LT

**GUARDRAIL APPROACH SECTION TO CONCRETE COMBINATION BRIDGE RAILING, TL-3**

DOVER STA 11+83.97 RT - 11+94.88 RT  
 GRIMES STA 12+21.62 RT - 12+30.94 RT  
 DEPOT STA 51+46.00 RT - 51+55.87 RT  
 DEPOT STA 51+46.00 LT - 51+65.24 LT

**BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION**

DEPOT STA 50+31.11 LT - 51+46.00 LT  
 DEPOT STA 50+26.42 RT - 51+46.00 RT

**HD STEEL BEAM GUARDRAIL**

DOVER STA 11+35.89 RT - 11+83.97 RT  
 GRIMES STA 12+30.94 RT - 12+49.55 RT  
 DEPOT STA 51+52.68 RT - 51+55.87 RT  
 DEPOT STA 51+65.24 LT - 52+10.32 LT

PI (CURVE 1)  
 STA 13+66.37

TH 5 CURVE (1)  
 DELTA = 22°55'06"  
 D = 11°27'33"  
 R = 500.00'  
 T = 101.36'  
 L = 200.00'  
 E = 10.17'

CONSTRUCT DRIVE (GRAVEL APRON)  
 DEPOT STA 51+52.42 RT - 51+74.80 RT  
 DEPOT STA 52+07.67 RT - 52+70.45 RT

CONSTRUCT DRIVE (PAVED)  
 GRIMES STA 11+82.50 LT - 12+27.80 LT  
 DEPOT STA 52+10.36 LT - 52+55.13 LT

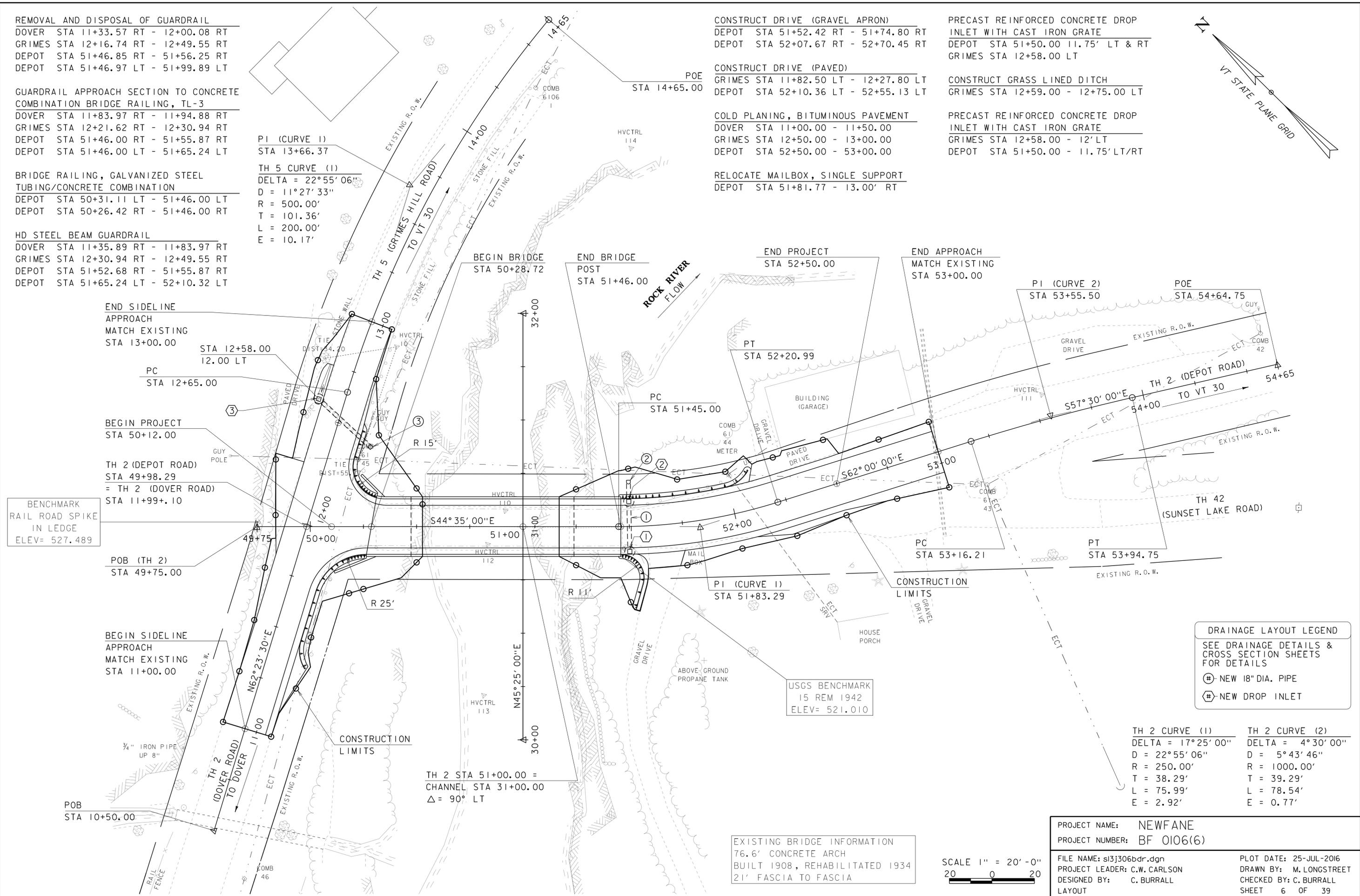
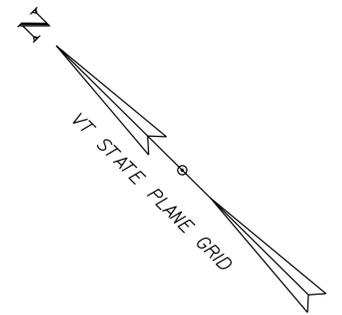
COLD PLANING, BITUMINOUS PAVEMENT  
 DOVER STA 11+00.00 - 11+50.00  
 GRIMES STA 12+50.00 - 13+00.00  
 DEPOT STA 52+50.00 - 53+00.00

RELOCATE MAILBOX, SINGLE SUPPORT  
 DEPOT STA 51+81.77 - 13.00' RT

PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE  
 DEPOT STA 51+50.00 11.75' LT & RT  
 GRIMES STA 12+58.00 LT

CONSTRUCT GRASS LINED DITCH  
 GRIMES STA 12+59.00 - 12+75.00 LT

PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE  
 GRIMES STA 12+58.00 - 12' LT  
 DEPOT STA 51+50.00 - 11.75' LT/RT



BENCHMARK  
 RAIL ROAD SPIKE  
 IN LEDGE  
 ELEV= 527.489

USGS BENCHMARK  
 15 REM 1942  
 ELEV= 521.010

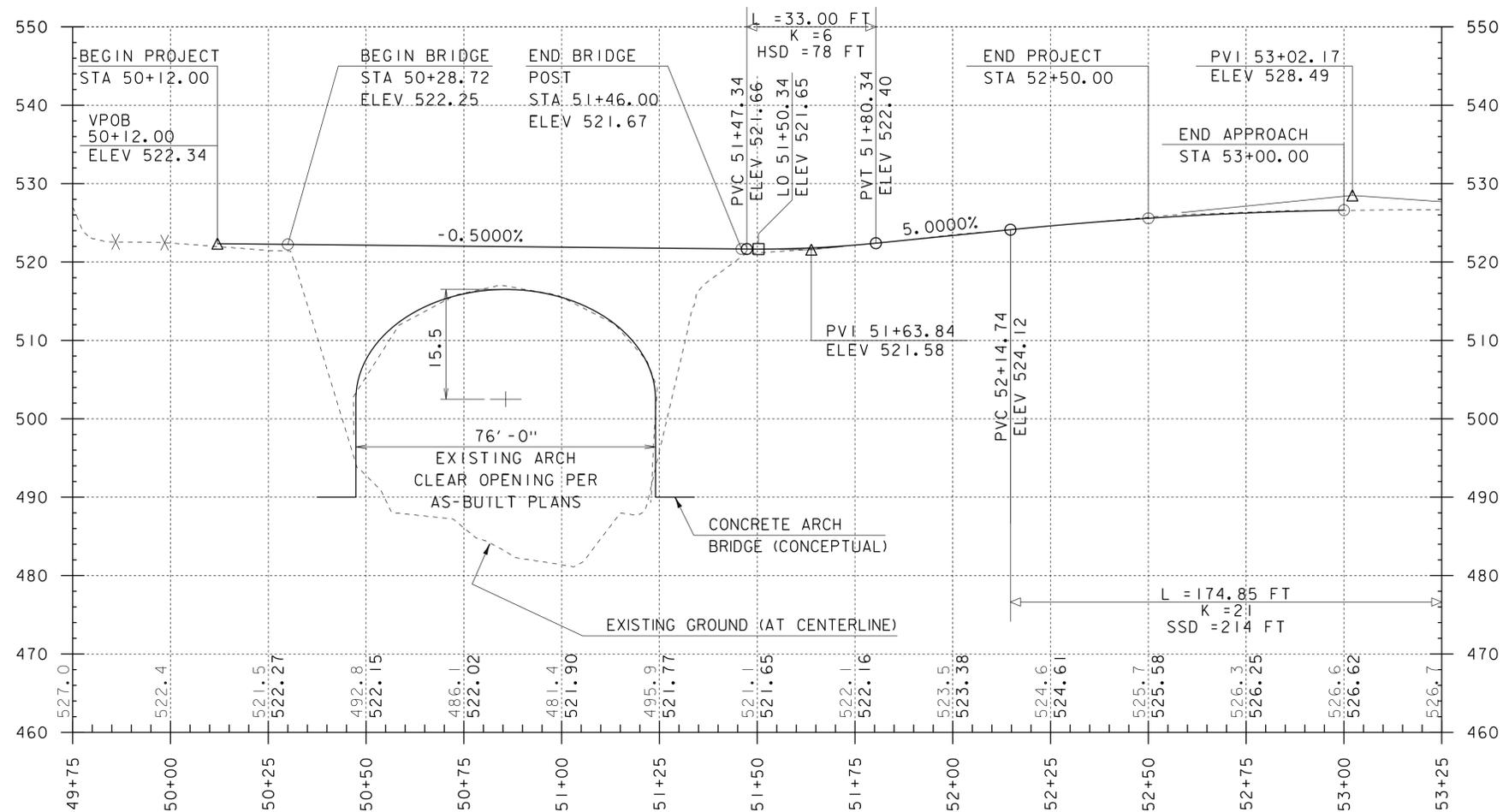
**DRAINAGE LAYOUT LEGEND**  
 SEE DRAINAGE DETAILS &  
 CROSS SECTION SHEETS  
 FOR DETAILS  
 (⊕) NEW 18" DIA. PIPE  
 (⊕) NEW DROP INLET

TH 2 CURVE (1)	TH 2 CURVE (2)
DELTA = 17°25'00"	DELTA = 4°30'00"
D = 5°43'46"	D = 5°43'46"
R = 250.00'	R = 1000.00'
T = 38.29'	T = 39.29'
L = 75.99'	L = 78.54'
E = 2.92'	E = 0.77'

EXISTING BRIDGE INFORMATION  
 76.6' CONCRETE ARCH  
 BUILT 1908, REHABILITATED 1934  
 21' FASCIA TO FASCIA

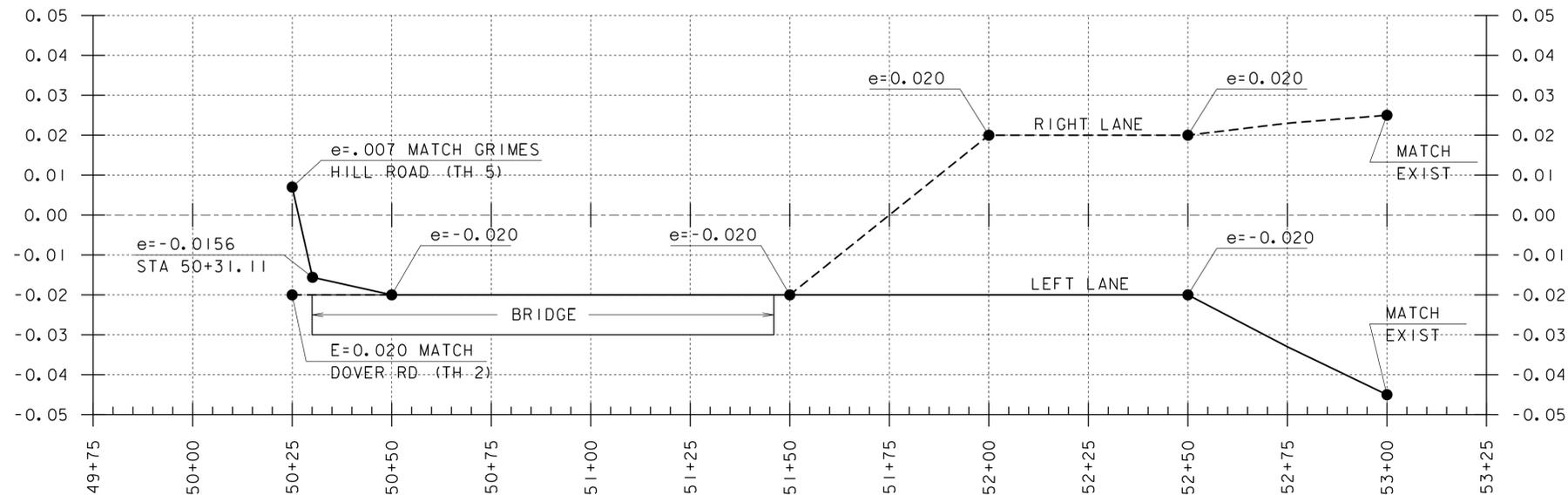
SCALE 1" = 20' - 0"  
 20 0 20

PROJECT NAME: NEWFANE  
 PROJECT NUMBER: BF 0106(6)  
 FILE NAME: s13j306bdr.dgn  
 PROJECT LEADER: C.W. CARLSON  
 DESIGNED BY: C. BURRALL  
 LAYOUT  
 PLOT DATE: 25-JUL-2016  
 DRAWN BY: M. LONGSTREET  
 CHECKED BY: C. BURRALL  
 SHEET 6 OF 39



PROFILE ALONG DEPOT RD (TH 2)

HORIZONTAL SCALE: 1" = 20' - 0" / VERTICAL SCALE: 1" = 10' - 0"

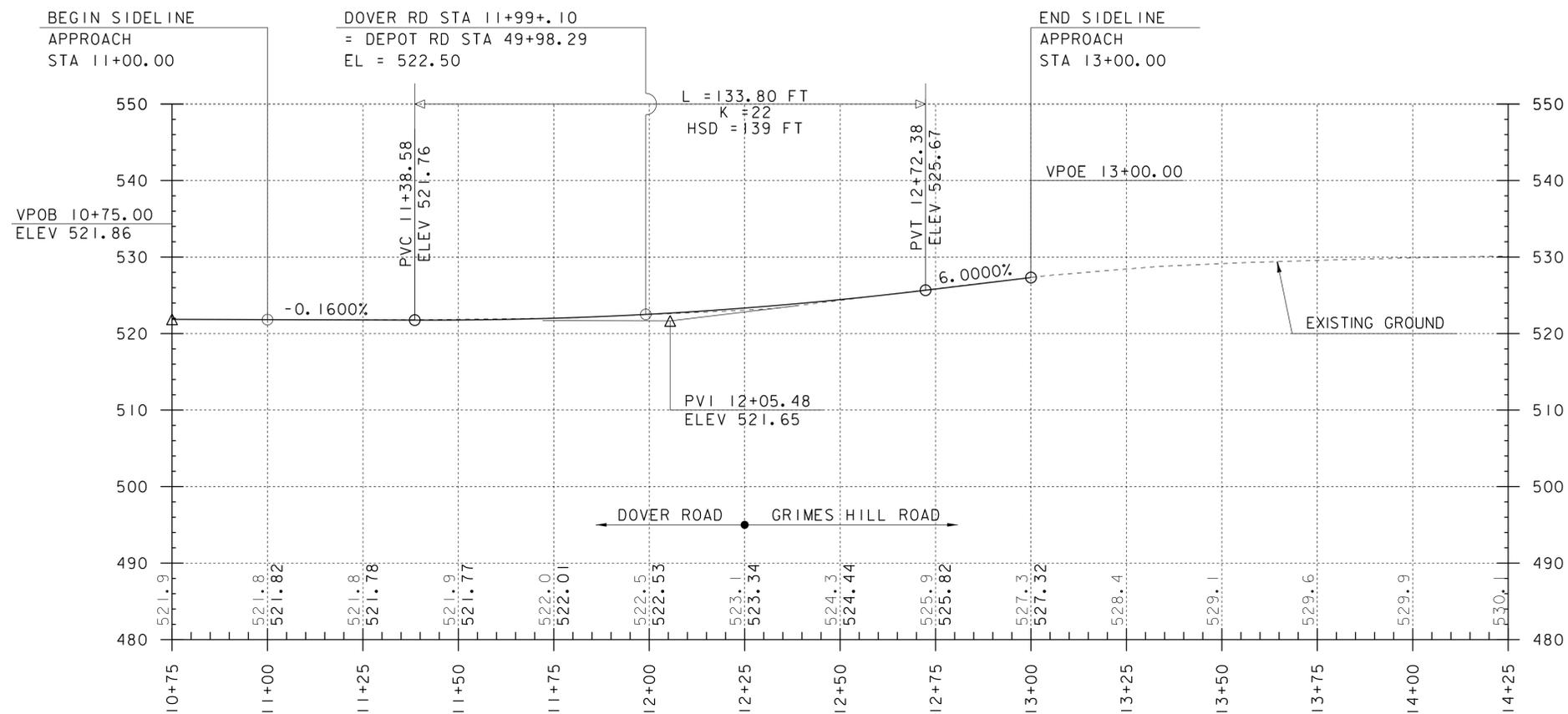


DEPOT RD (TH 2) BANKING DIAGRAM

HORIZONTAL SCALE: 1" = 20' - 0" / VERTICAL SCALE: 1" = e0.020

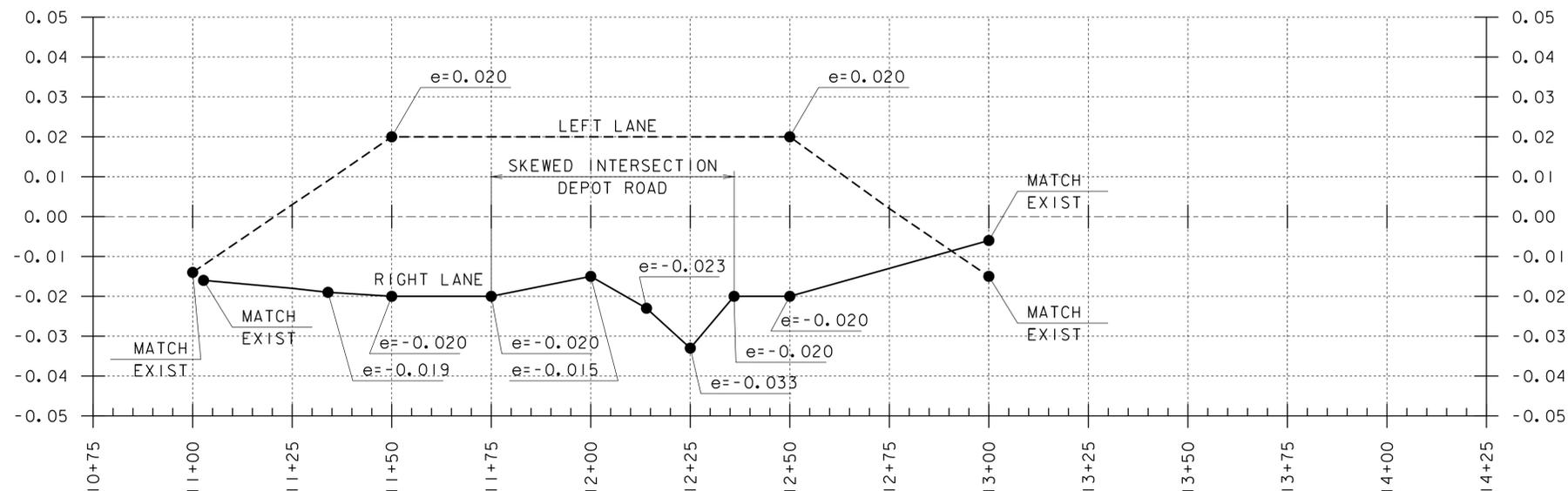
NOTE:  
 ELEVATIONS SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG PROPOSED CENTERLINE.  
 ELEVATIONS SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADES ALONG PROPOSED CENTERLINE.

PROJECT NAME:	NEWFANE	PLOT DATE:	25-JUL-2016
PROJECT NUMBER:	BF 0106(6)	DRAWN BY:	M. LONGSTREET
FILE NAME:	s13j306profile.dgn	CHECKED BY:	C. BURRALL
PROJECT LEADER:	C.W. CARLSON	SHEET	7 OF 39
DESIGNED BY:	C. BURRALL	DEPOT RD PROFILE & BANKING DIAGRAM	



PROFILE ALONG DOVER RD (TH 2) & GRIMES HILL RD (TH 5)

HORIZONTAL SCALE: 1" = 20' - 0" / VERTICAL SCALE: 1" = 10' - 0"



DOVER RD (TH 2) & GRIMES HILL RD (TH 5) BANKING DIAGRAM

HORIZONTAL SCALE: 1" = 20' - 0" / VERTICAL SCALE: 1" = 10' - 0"

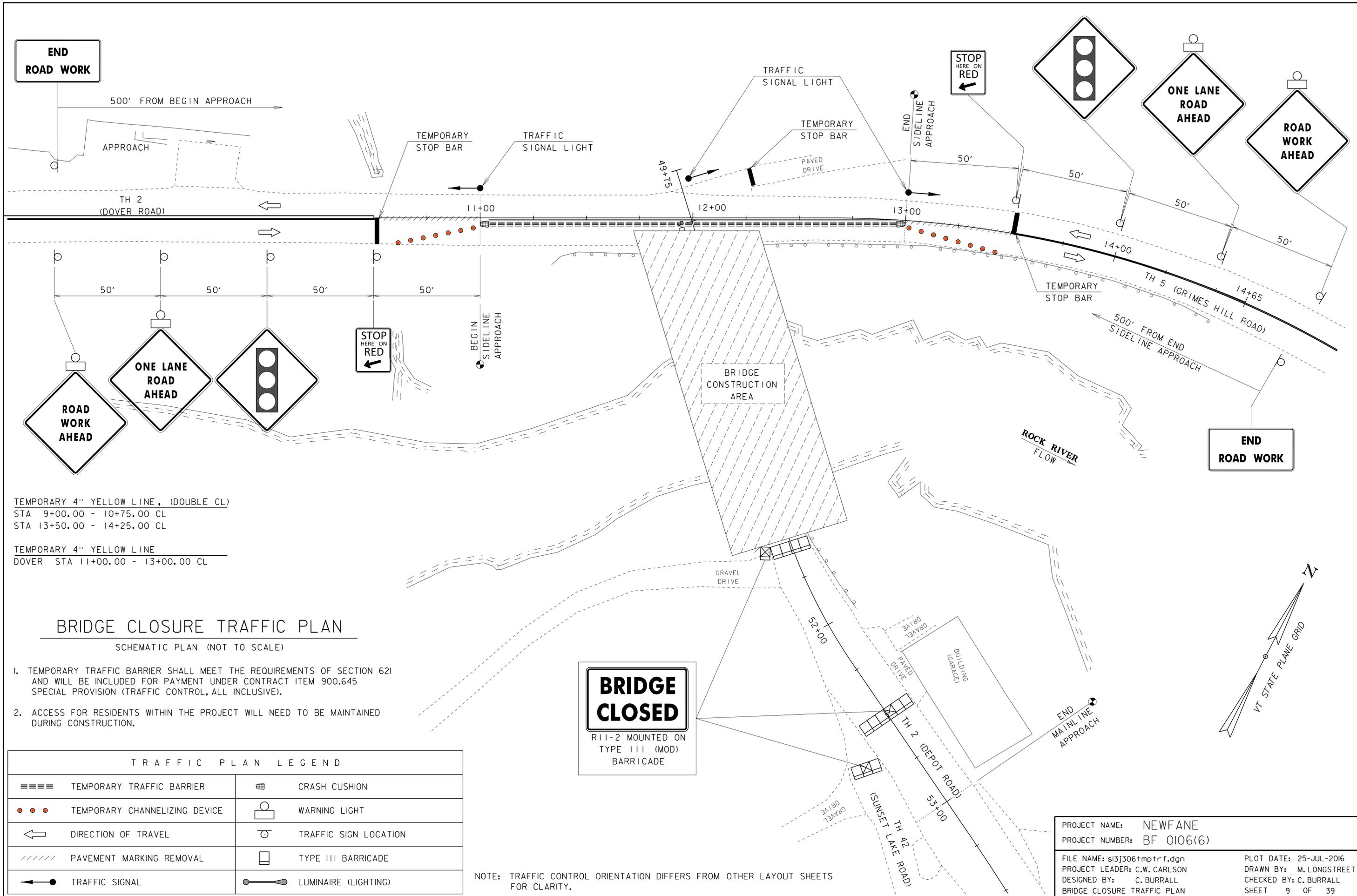
NOTE:

ELEVATIONS SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG PROPOSED CENTERLINE.

ELEVATIONS SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADES ALONG PROPOSED CENTERLINE.

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FILE NAME: s13j306profile.dgn  
 PROJECT LEADER: C.W. CARLSON  
 DESIGNED BY: C. BURRALL  
 DOVER & GRIMES PROFILE & BANKING DIAGRAM  
 PLOT DATE: 25-JUL-2016  
 DRAWN BY: M. LONGSTREET  
 CHECKED BY: C. BURRALL  
 SHEET 8 OF 39



TEMPORARY 4" YELLOW LINE, (DOUBLE CL)  
 STA 9+00.00 - 10+75.00 CL  
 STA 13+50.00 - 14+25.00 CL

TEMPORARY 4" YELLOW LINE  
 DOVER STA 11+00.00 - 13+00.00 CL

**BRIDGE CLOSURE TRAFFIC PLAN**  
 SCHEMATIC PLAN (NOT TO SCALE)

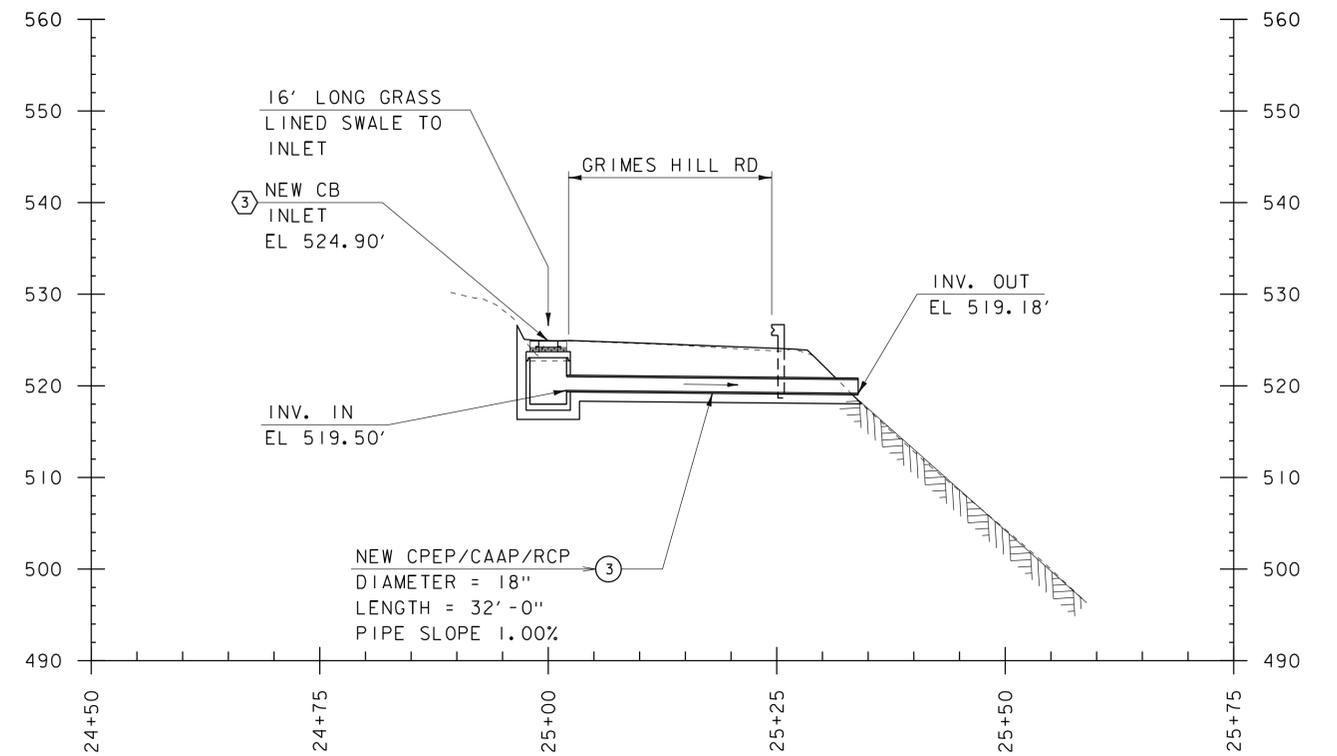
1. TEMPORARY TRAFFIC BARRIER SHALL MEET THE REQUIREMENTS OF SECTION 621 AND WILL BE INCLUDED FOR PAYMENT UNDER CONTRACT ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL INCLUSIVE).
2. ACCESS FOR RESIDENTS WITHIN THE PROJECT WILL NEED TO BE MAINTAINED DURING CONSTRUCTION.

**BRIDGE CLOSED**  
 R11-2 MOUNTED ON  
 TYPE III (MOD)  
 BARRICADE

TRAFFIC PLAN LEGEND			
=====	TEMPORARY TRAFFIC BARRIER	⊞	CRASH CUSHION
● ● ●	TEMPORARY CHANNELIZING DEVICE	⊞	WARNING LIGHT
←	DIRECTION OF TRAVEL	⊞	TRAFFIC SIGN LOCATION
////	PAVEMENT MARKING REMOVAL	⊞	TYPE III BARRICADE
⊞	TRAFFIC SIGNAL	⊞	LUMINAIRE (LIGHTING)

NOTE: TRAFFIC CONTROL ORIENTATION DIFFERS FROM OTHER LAYOUT SHEETS FOR CLARITY.

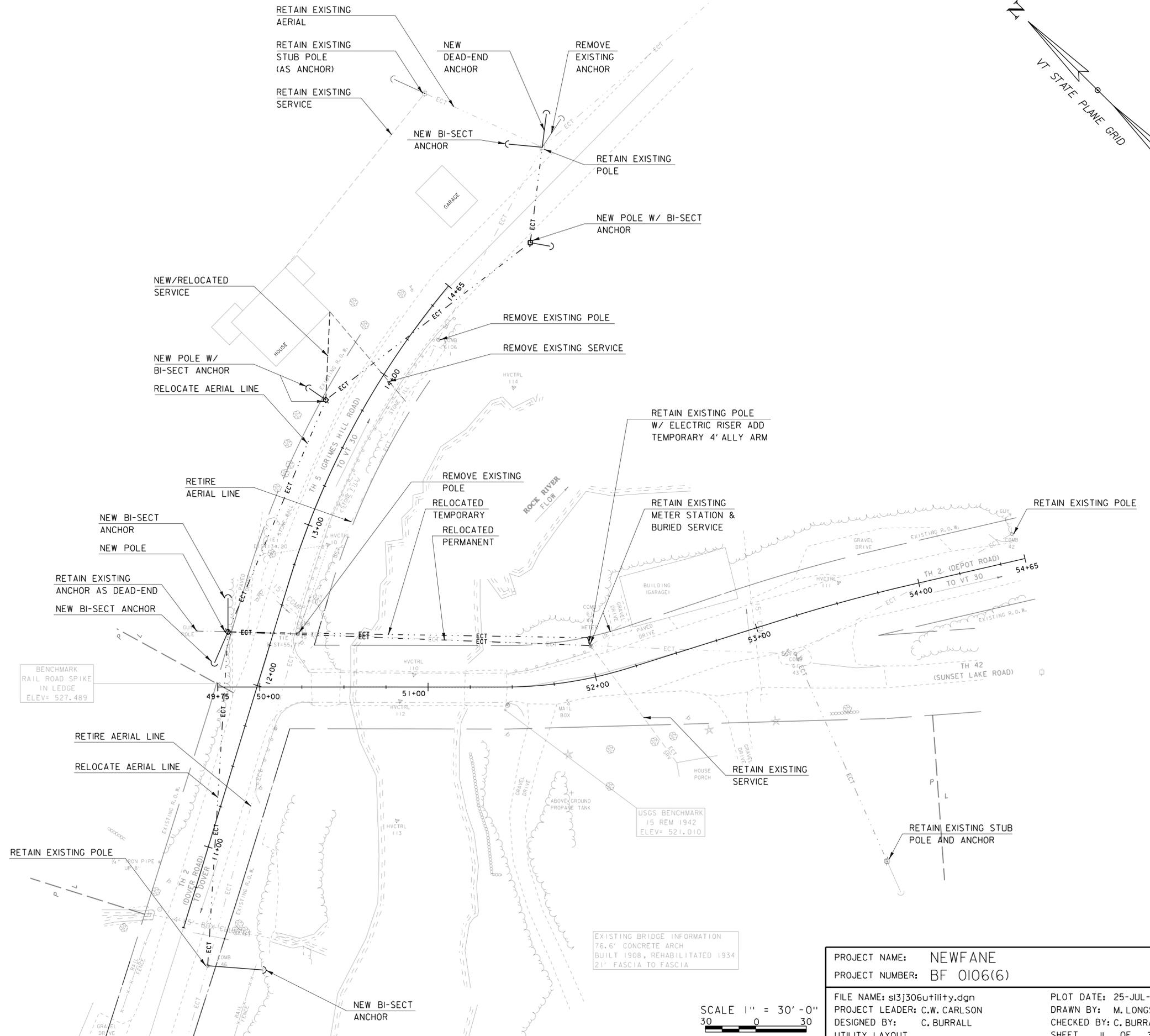
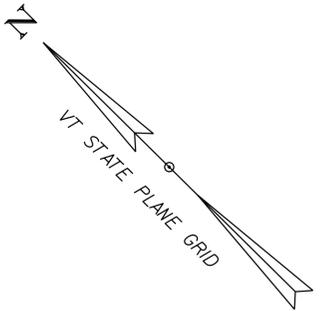
PROJECT NAME: NEWFANE  
 PROJECT NUMBER: BF 0106(6)  
 FILE NAME: s13j306tmptr.f.dgn  
 PROJECT LEADER: C.W. CARLSON  
 DESIGNED BY: C. BURRALL  
 BRIDGE CLOSURE TRAFFIC PLAN  
 PLOT DATE: 25-JUL-2016  
 DRAWN BY: M. LONGSTREET  
 CHECKED BY: C. BURRALL  
 SHEET 9 OF 39



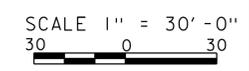
GRIMES HILL RD  
INLET #3 AND PIPE #3 PROFILE

NOTE:  
SEE "DEPOT ROAD CROSS SECTIONS 2" STA 51+50  
FOR INLET 1-2 AND PIPE 1-2 PROFILE DETAILS.

PROJECT NAME: NEWFANE	
PROJECT NUMBER: BF 0106(6)	
FILE NAME: s13j306xs.dgn	PLOT DATE: 25-JUL-2016
PROJECT LEADER: C.W. CARLSON	DRAWN BY: M. LONGSTREET
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
DRAINAGE DETAILS	SHEET 10 OF 39



PROJECT NAME:	NEWFANE	PLOT DATE:	25-JUL-2016
PROJECT NUMBER:	BF 0106(6)	DRAWN BY:	M. LONGSTREET
FILE NAME:	s13j306utility.dgn	DESIGNED BY:	C. BURRALL
PROJECT LEADER:	C.W. CARLSON	UTILITY LAYOUT	CHECKED BY: C. BURRALL
			SHEET 11 OF 39

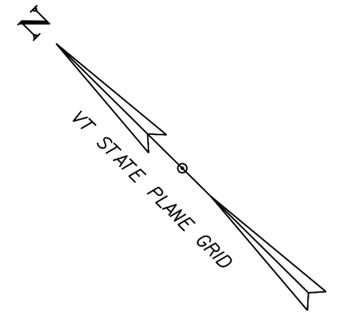


DURABLE 4" YELLOW LINE, (DOUBLE CL)  
 DOVER STA 11+00.00 - 11+71.00 CL  
 GRIMES STA 12+35.00 - 13+00.00 CL  
 DEPOT STA 52+00.00 - 35+00.00 CL

DURABLE 4" WHITE LINE  
 DEPOT STA 50+04.33 RT - 51+54.96 RT  
 DEPOT STA 50+19.29 LT - 51+56.20 LT

DURABLE 4" WHITE LINE  
 (HATCHED BRIDGE SHOULDERS)  
 DEPOT STA 50+04.33 RT - 51+54.96 RT  
 DEPOT STA 50+19.29 LT - 51+56.20 LT

DURABLE 24" STOP BAR  
 DOVER STA 11+71.00 RT  
 GRIMES STA 12+36.00 LT  
 DEPOT STA 52+00.00 LT



ONE LANE BRIDGE N (W5-3)  
 YIELD N (R1-2)  
 TO ONCOMING TRAFFIC N (R1-2ap)  
 DEPOT 52+02.70

ONE LANE BRIDGE R

STOP R  
 ONE LANE BRIDGE R

RT 30 → R  
 ← So NEWFANE R  
 ← WILLIAMSVILLE R  
 RT 30 → N  
 ← So NEWFANE N  
 ← WILLIAMSVILLE N

STOP N (R1-1)  
 ONE LANE BRIDGE N (W5-3)  
 GRIMES 12+48.60

GRIMES HILL RD R  
 GRIMES HILL RD N

ONE LANE BRIDGE N (W5-3)  
 YIELD N (R1-2)  
 TO ONCOMING TRAFFIC N (R1-2ap)  
 DOVER STA 11+78.90

YEILD TO BRIDGE TRAFFIC R  
 ONE LANE BRIDGE R

DEPOT RD TH2 R  
 DOVER RD TH2 R  
 DEPOT RD TH2 N  
 DOVER RD TH2 N

TRUCKS ENTERING R

TRUCKS ENTERING N

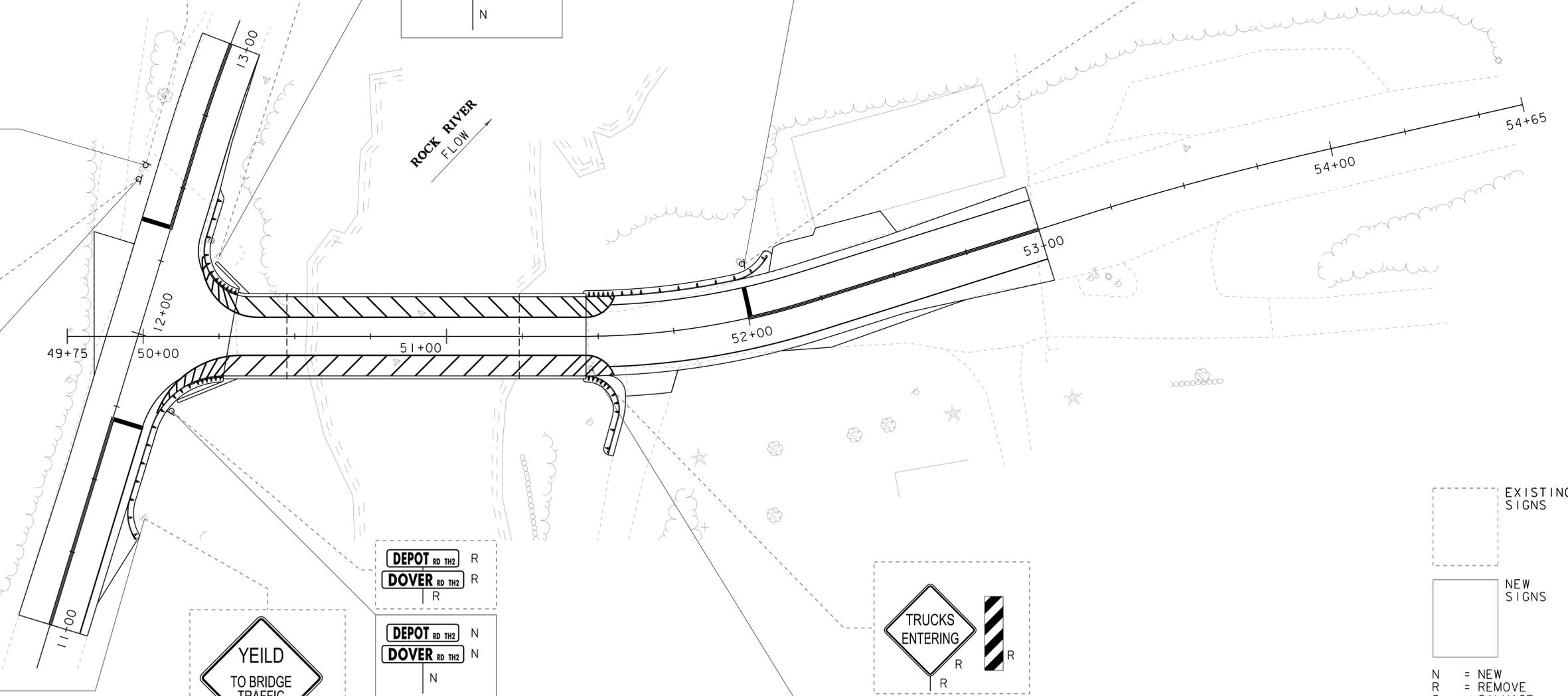
EXISTING SIGNS

NEW SIGNS

N = NEW  
 R = REMOVE  
 S = SALVAGE  
 RET = RETAIN  
 R&S = REMOVE AND SALVAGE

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

PROJECT NAME: NEWFANE  
 PROJECT NUMBER: BF 0106(6)  
 FILE NAME: s13j306bdrtraf.dgn  
 PROJECT LEADER: C.W. CARLSON  
 DESIGNED BY: C. BURRALL  
 SIGNS & PAVEMENT MARKINGS  
 PLOT DATE: 25-JUL-2016  
 DRAWN BY: M. LONGSTREET  
 CHECKED BY: C. BURRALL  
 SHEET 12 OF 39



**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.O.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**

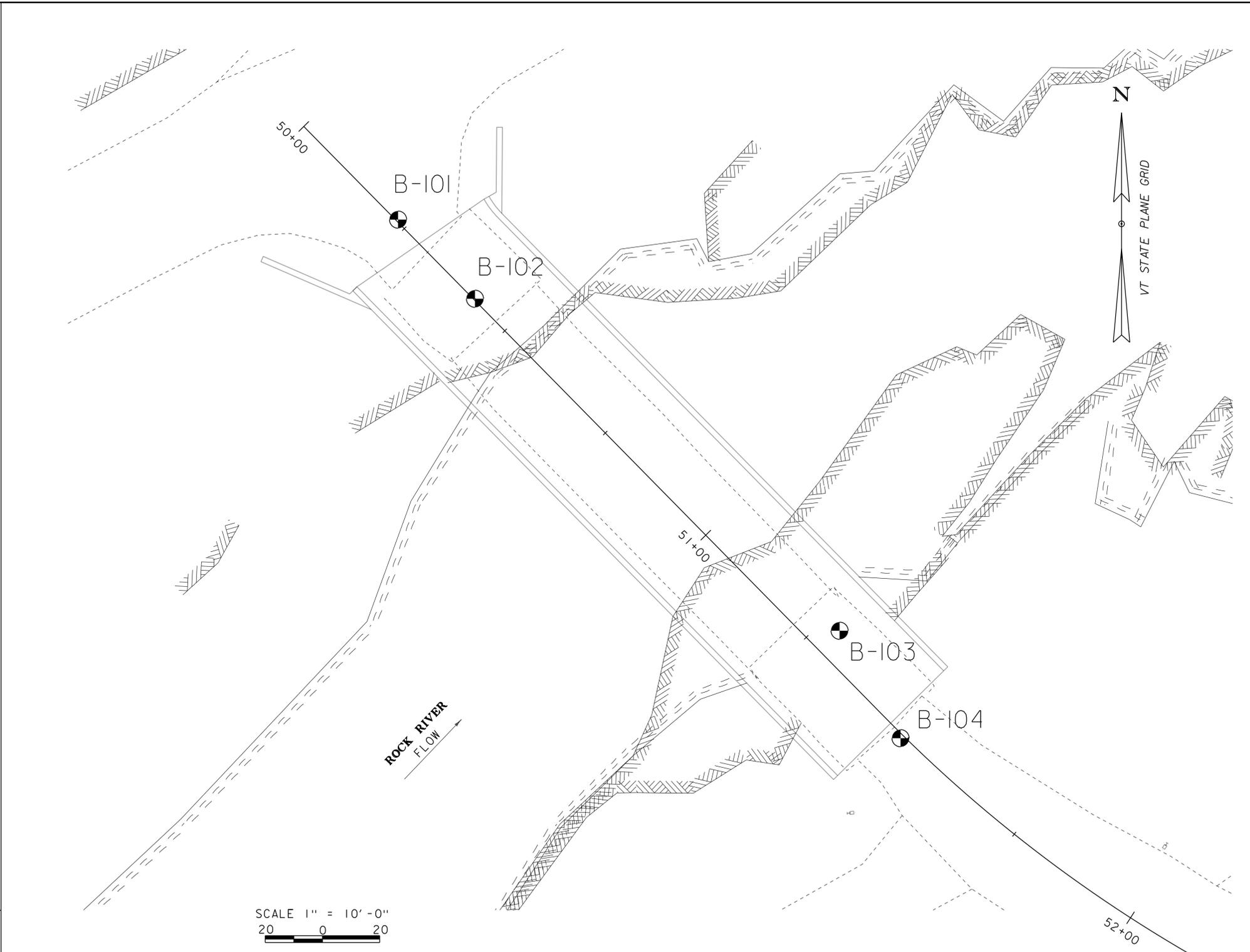
- ▼ Water Elevation
- ⊕ Standard Penetration Boring
- ⊕ Auger Boring
- ⊙ Rod Sounding
- S Sample
- N Standard Penetration Test  
Blow Count Per Foot For:  
2" O.D. Sampler  
1 3/8" I.D. Sampler  
Hammer Weight Of 140 Lbs.  
Hammer Fall Of 30"
- VS Field Vane Shear Test
- US Undisturbed Soil Sample
- 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
- 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
- 1/2 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
gr'y	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mltc	Multicolored
or	Orange		

**DEFINITIONS (AASHTO)**

- BEDROCK (LEDGE)** - Rock in its native location of indefinite thickness.
- BOULDER** - A rock fragment with an average dimension > 12 inches.
- COBBLE** - Rock fragments with an average dimension between 3 and 12 inches.
- GRAVEL** - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).
- SAND** - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).
- SLT** - 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.



SCALE 1" = 10' - 0"  
20 0 20

**GENERAL NOTES**

1. The subsurface explorations shown herein were made between June 22 and June 30, 2015 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 NUMBER	STATION	OFFSET	NORTHING	EASTING	ELEVATION
B-101	50+23.12	-0.33	163305.11	1593357.33	493.75
B-102	50+42.37	-0.22	163291.32	1593370.76	505.45
B-103	51+28.26	-4.96	163233.47	1593434.43	497.31
B-104	51+49.07	0.64	163214.74	1593445.08	506.02

PROJECT NAME: NEWFANE	
PROJECT NUMBER: BF 0106(6)	
FILE NAME: s13j306bor.dgn	PLOT DATE: 25-JUL-2016
PROJECT LEADER: C.W. CARLSON	DRAWN BY: M. LONGSTREET
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
BORING INFORMATION SHEET	SHEET 13 OF 39

STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-101</b>					
		<b>NEWFANE BF 0106(6) TH-2 BR-12</b>		Page No.: 1 of 1					
				Pin No.: 13J306					
				Checked By: TDE					
Boring Crew: JUDKINS, HOOK		Casing	Sampler	Groundwater Observations					
Date Started: 6/24/15 Date Finished: 6/29/15		Type: WB	SS	Date	Depth (ft)	Notes			
VTSPG NAD83: N 163305.11 ft E 1593357.33 ft		I.D.: 4 in	1.5 in						
Station: 40+24 Offset: 0.27LT		Hammer Wt: N.A.	140 lb.						
Ground Elevation: 521.55 ft		Hammer Fall: N.A.	30 in.						
		Hammer/Rod Type: Auto/AWJ							
		Rig: CME 55 TRACK	C = 1.46						
Depth (ft)	Strata (1)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
	Asphalt Pavement, 0.0 ft - 0.75 ft								
	A-1-b, GrSa, brn, Moist, Rec. = 1.1 ft				15-22-12-8 (34)	9.0	36.6	47.4	16.0
5	Field Note: Cleaned out with roller cone Visual Description: Broken Rock with sand, red-brn, MTW, Rec. = 0.3 ft				2-2-2-5 (4)	9.6			
10	Field Note: NXDC, Cleaned out casing. Appears to be Concrete and Broken Rock A-1-a, SaGr, Lt/gry, Moist, Rec. = 0.7 ft				19-35-R@0.0" (R)	11.5	44.4	40.5	15.1
15	Field Note: NXDC, Cleaned out casing. Appears to be Concrete and Broken Rock Field Note: Appears to be Concrete & Broken Rock Field Note: NXDC, Cleaned out casing. Appears to be Concrete and Broken Rock				R@1.0" (R)				
20	Field Note: No Movement Field Note: Cleaned out casing, NXDC				R@1.0" (R)				
25	22.8 ft - 27.8 ft, Fill & Concrete. NXMDC	1	20	3					
30	27.8 ft - 32.8 ft, Dark gray, To black porphyritic AMPHIBOLITE, with rust staining on joints. Hard, Very slightly weathered, Poor rock, NXMDC, RMR = 22	2 (75)	20 (0)	2					Top of Bedrock @ 27.8 ft
35	32.8 ft - 37.8 ft, Dark gray, To black porphyritic AMPHIBOLITE, with rust staining on joints. Hard, Very slightly weathered, Fair rock, NXMDC, RMR = 43	3 (75)	96 (71)	2					
	Hole stopped @ 37.8 ft								
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.									

TOP OF  
BEDROCK  
EL = 493.75

TOP OF  
BEDROCK  
EL = 505.45

BORING LOG 2 NEWFANE BF 0106(6) GPJ VERMONT AOT.GDT 7/30/15

STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-102</b>					
		<b>NEWFANE BF 0106(6) TH-2 BR-12</b>		Page No.: 1 of 1					
				Pin No.: 13J306					
				Checked By: TDE					
Boring Crew: JUDKINS, HOOK		Casing	Sampler	Groundwater Observations					
Date Started: 6/25/15 Date Finished: 6/29/15		Type: WB	SS	Date	Depth (ft)	Notes			
VTSPG NAD83: N 163291.32 ft E 1593370.76 ft		I.D.: 4 in	1.5 in						
Station: 40+44 Offset: 0.23LT		Hammer Wt: N.A.	140 lb.						
Ground Elevation: 521.45 ft		Hammer Fall: N.A.	30 in.						
		Hammer/Rod Type: Auto/AWJ							
		Rig: CME 55 TRACK	C = 1.46						
Depth (ft)	Strata (1)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
	Asphalt Pavement, 0.0 ft - 0.52 ft								
	A-1-b, GrSa, orange-brn, Moist, Rec. = 1.7 ft				30-20-18-12 (38)	6.9	45.5	40.8	13.7
5	Field Note: NXDC, Cleaned out casing Field Note: No Recovery, Appears to be gravelly sand				6-3-2-2 (5)				
10	Field Note: NXDC, Cleaned out casing Visual Description: Broken Rock with sand, blk-brn, Moist, Rec. = 0.2 ft				R@2.5" (R)	8.7			
15	Field Note: NXDC, Cleaned out casing. Appears to be weathered rock Visual Description: Broken Rock with sand, gry-brn, Moist, Rec. = 0.2 ft				R@2.5" (R)	11.7			
20	16.0 ft - 21.0 ft, Light gray, Strongly foliated amphibole-mica-SCHIST, with rust staining on joints. Medium hard, Moderately weathered, Poor rock, NXMDC, RMR = 22	1 (70)	34 (0)	2					Top of Bedrock @ 16.0 ft
25	21.0 ft - 21.6 ft, Tan, Strongly foliated amphibole-mica-SCHIST, with rust on joints. Medium hard, Moderately weathered 21.6 ft - 22.8 ft, Light gray, Strongly foliated amphibole-mica-SCHIST, with rust on joints. Hard, Slightly weathered 22.8 ft - 26.0 ft, Dark gray, Porphyritic AMPHIBOLITE, with rust on joints. Hard, Very slightly weathered, Poor rock, NXMDC, RMR = 36	2 (70-75)	98 (37)	2					
	Hole stopped @ 26.0 ft								
Remarks: Hole collapsed at 14.0 ft.									
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.									

PROJECT NAME:	NEWFANE	PLOT DATE:	25-JUL-2016
PROJECT NUMBER:	BF 0106(6)	DRAWN BY:	M. LONGSTREET
FILE NAME:	s13j306bor.dgn	CHECKED BY:	C. BURRALL
PROJECT LEADER:	C.W. CARLSON	SHEET	14 OF 39
DESIGNED BY:	C. BURRALL		
BORING LOGS SHEET 1			

STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-103</b>					
NEWFANE BF 0106(6) TH-2 BR-12		Page No.: 1 of 1		Pin No.: 13J306					
Checked By: TDE		Boring Crew: JUDKINS, HOOK		Groundwater Observations					
Date Started: 6/22/15 Date Finished: 6/25/15		Type: WB	Sampler: SS	Date	Depth (ft)	Notes			
VTSPG NAD83: N 163233.47 ft E 1593434.43 ft		I.D.: 4 in	1.5 in						
Station: 41+25 Offset: 5.29LT		Hammer Wt: N.A.	140 lb.						
Ground Elevation: 521.01 ft		Hammer Fall: N.A.	30 in.						
		Hammer/Rod Type: Auto/AWJ							
		Rig: CME 55 TRACK	C = 1.46						
Depth (ft)	Strata (1)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
	Asphalt Pavement, 0.0 ft - 0.68 ft								
	A-1-b, GrSa, brn, Moist, Rec. = 1.2 ft				12-10-22-9 (32)	7.4	43.7	44.4	11.9
	Field Note: NXDC, Cleaned out casing								
5	Visual Description: Broken Rock (washed), orange-brn, Moist, Rec. = 0.4 ft				5-1-2-1 (3)	5.5			
	Field Note: Cleaned out casing, NXDC								
10	Visual Description: Concrete & Broken Rock pieces, gry, Moist, Rec. = 0.1 ft				R@1.0" (R)				
	11.2 ft - 16.2 ft, Concrete, steel, and rock fill. NXMDC	1	82	5					
	16.2 ft - 16.8 ft, Rock fill. NXMDC			2					
	16.8 ft - 18.2 ft, Concrete	2	100	3					
	18.2 ft - 19.3 ft, Rock fill			4					
	19.3 ft - 19.6 ft, Concrete			3					
	19.6 ft - 21.2 ft, Rock fill			5					
	21.2 ft - 22.1 ft, Concrete & Rock								
	22.1 ft - 23.7 ft, Concrete filled joints and rock	3		2					
	NXMDC			2					
	23.7 ft - 27.1 ft, Gray, AMPHIBOLITE, with 80-85 degree dipping joints that have rust and purple staining along surface. Hard, Slightly weathered, Poor rock, RMR = 22	(-)	100 (0)	2					Top of Bedrock @ 23.7 ft
	2			2					
	2			2					
	Hole stopped @ 27.1 ft								
	Remarks: Concrete was encountered at 9.3 ft.								
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.									

TOP OF  
BEDROCK  
EL = 497.31

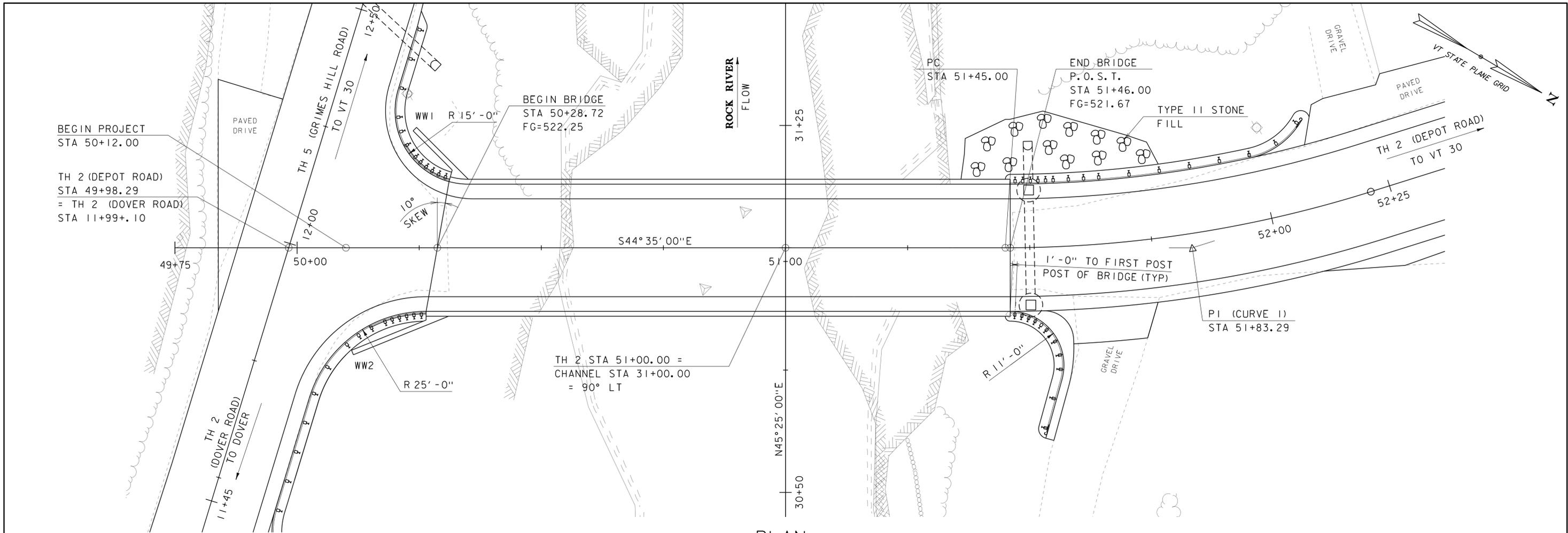
BORING LOG 2 NEWFANE BF 0106(6) GPJ VERMONT AOT.GDT 7/30/15

STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-104</b>					
NEWFANE BF 0106(6) TH-2 BR-12		Page No.: 1 of 1		Pin No.: 13J306					
Checked By: TDE		Boring Crew: JUDKINS, HOOK, HULBERT		Groundwater Observations					
Date Started: 6/30/15 Date Finished: 6/30/15		Type: WB	Sampler: SS	Date	Depth (ft)	Notes			
VTSPG NAD83: N 163214.74 ft E 1593445.08 ft		I.D.: 4 in	1.5 in						
Station: 41+45.3 Offset: 0.22RT		Hammer Wt: N.A.	140 lb.						
Ground Elevation: 521.12 ft		Hammer Fall: N.A.	30 in.						
		Hammer/Rod Type: Auto/AWJ							
		Rig: CME 55 TRACK	C = 1.46						
Depth (ft)	Strata (1)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
	Asphalt Pavement, 0.0 ft - 0.5 ft								
	A-1-b, GrSa, brn, Moist, Rec. = 1.1 ft				14-12-8-5 (20)	10.6	38.2	48.0	13.8
	Field Note: Cleaned out casing with roller cone								
5	Visual Description: A-2-4, Sa, Lt/brn, Moist, Rec. = 0.9 ft, Lab Note: Sample was orange colored.				2-2-3-4 (5)	21.4	0.7	80.4	18.9
	Field Note: NXDC, Cleaned out casing								
10	Visual Description: Severly weathered rock, Lt/brn, Moist, Rec. = 1.7 ft				19-18-17-22 (35)	20.2			
	Field Note: NXDC, Cleaned out casing								
15	Visual Description: Severly weathered rock, grn-blk, Moist, Rec. = 0.1 ft				R@1.0" (R)				
	15.1 ft - 20.1 ft, Dark gray, Massive AMPHIBOLITE, with vertical rust staining on joints. Hard, Very slightly weathered, Poor rock, NXMDC, RMR = 22	1 (-)	100 (0)	3					Top of Bedrock @ 15.1 ft
	20.1 ft - 25.1 ft, Dark gray, AMPHIBOLITE, with rust staining on joints. Hard, Slightly weathered, Poor rock, NXMDC, RMR = 29	2 (70-75)	100 (32)	2					
				5					
				7					
				6					
				4					
				4					
				8					
				4					
				4					
	Hole stopped @ 25.1 ft								
	Remarks: Hole collapsed at 16.9 ft.								
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.									

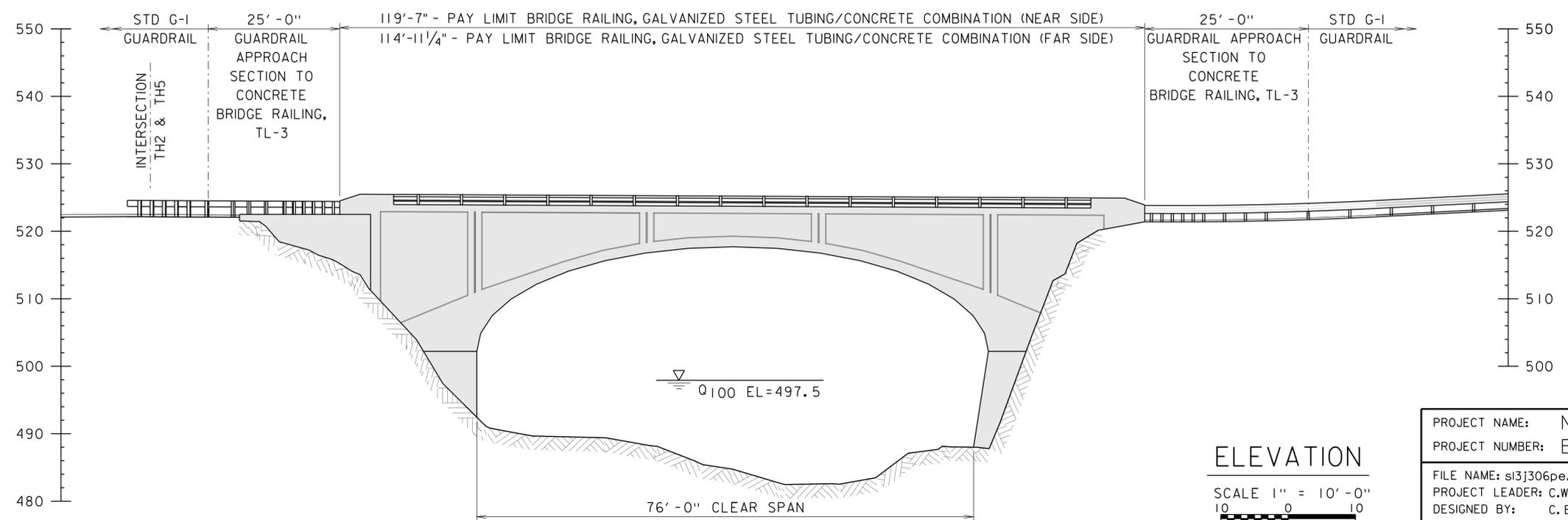
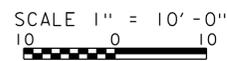
TOP OF  
BEDROCK  
EL = 506.02

BORING LOG 2 NEWFANE BF 0106(6) GPJ VERMONT AOT.GDT 7/30/15

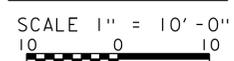
PROJECT NAME:	NEWFANE	PLOT DATE:	25-JUL-2016
PROJECT NUMBER:	BF 0106(6)	DRAWN BY:	M. LONGSTREET
FILE NAME:	s13j306bor.dgn	CHECKED BY:	C. BURRALL
PROJECT LEADER:	C.W. CARLSON	SHEET	15 OF 39
DESIGNED BY:	C. BURRALL		
BORING LOGS SHEET 2			



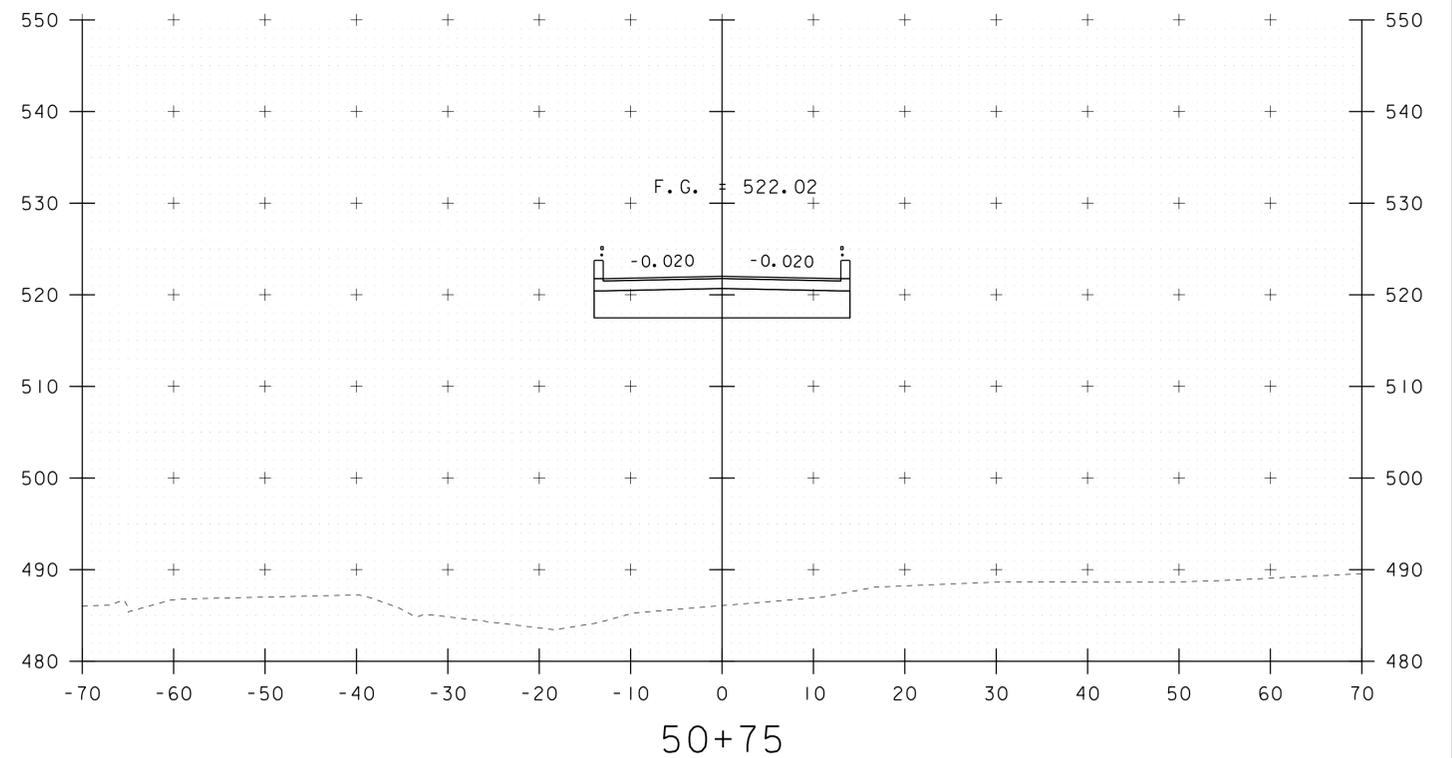
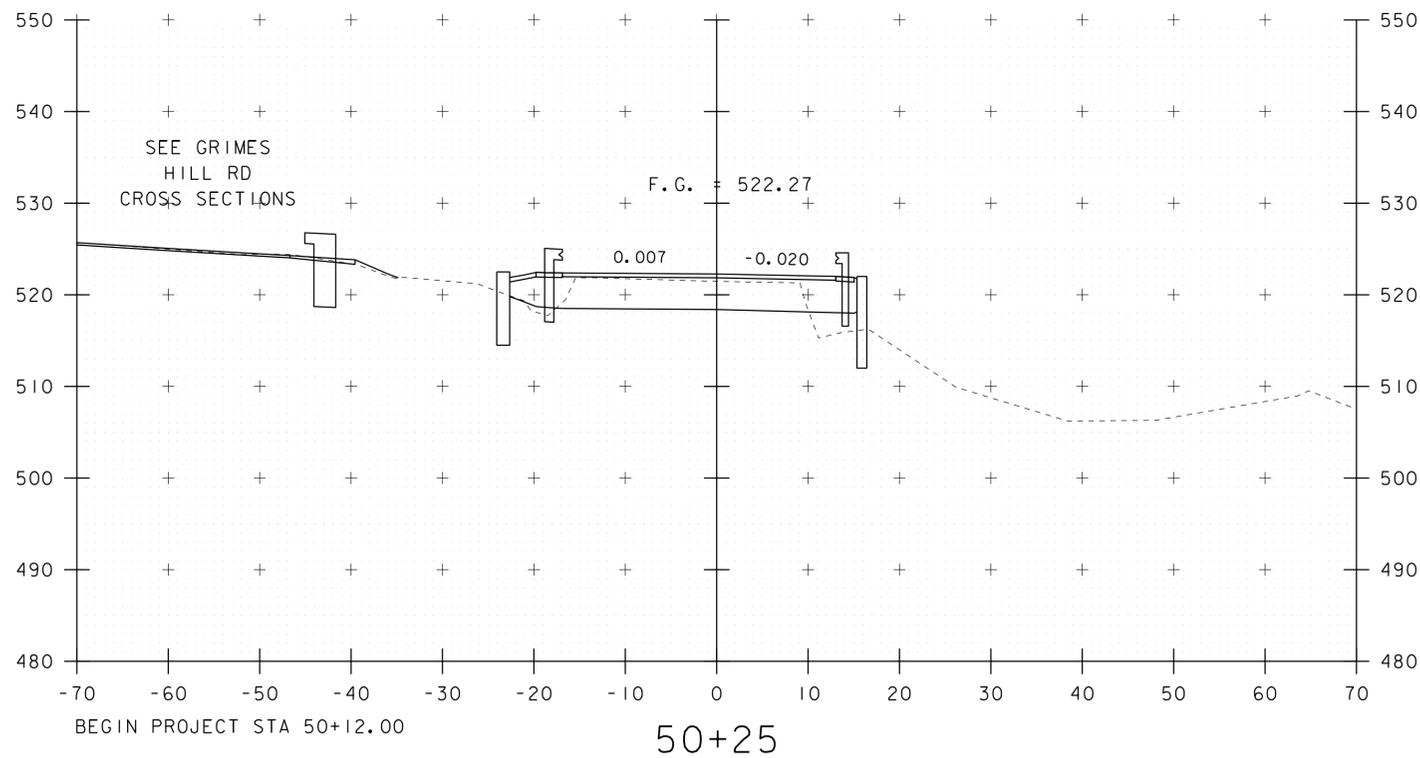
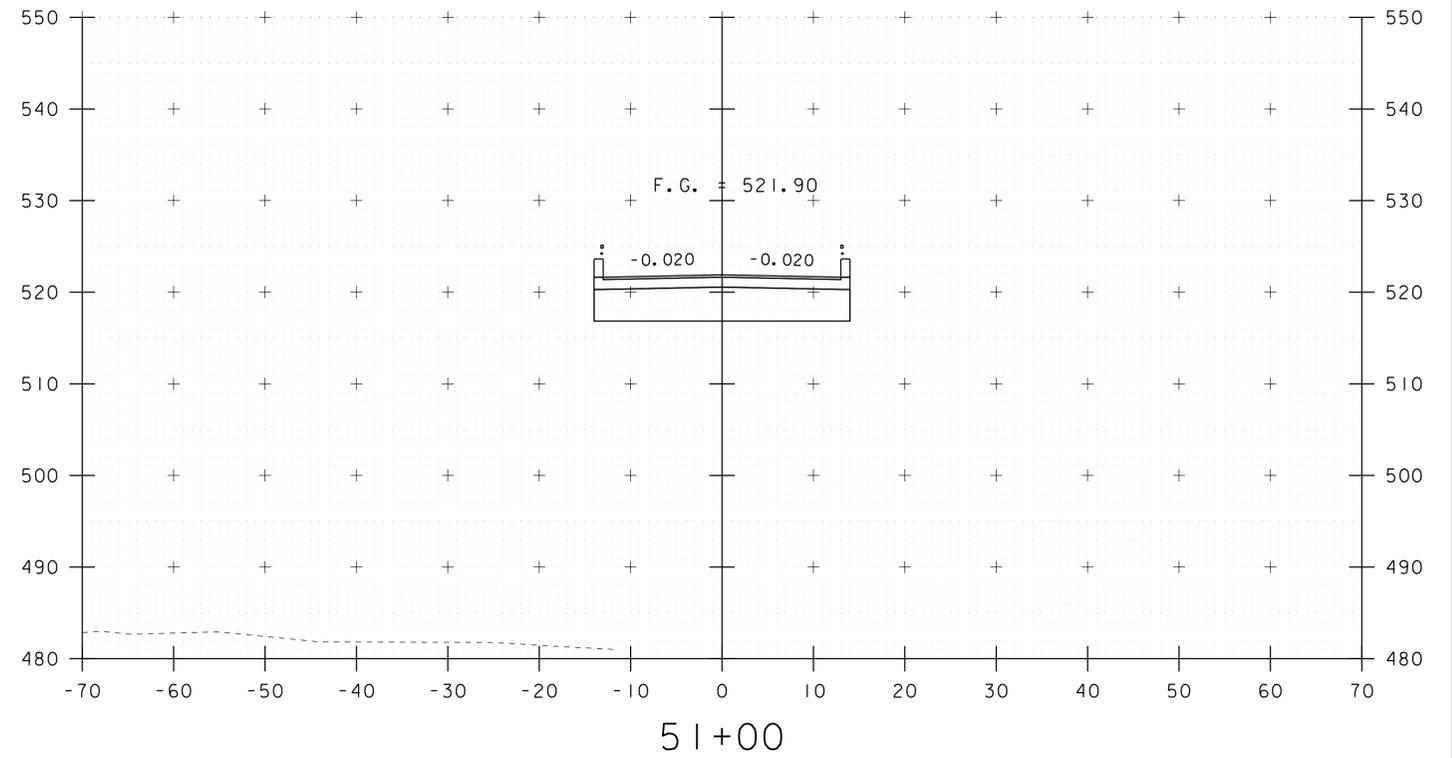
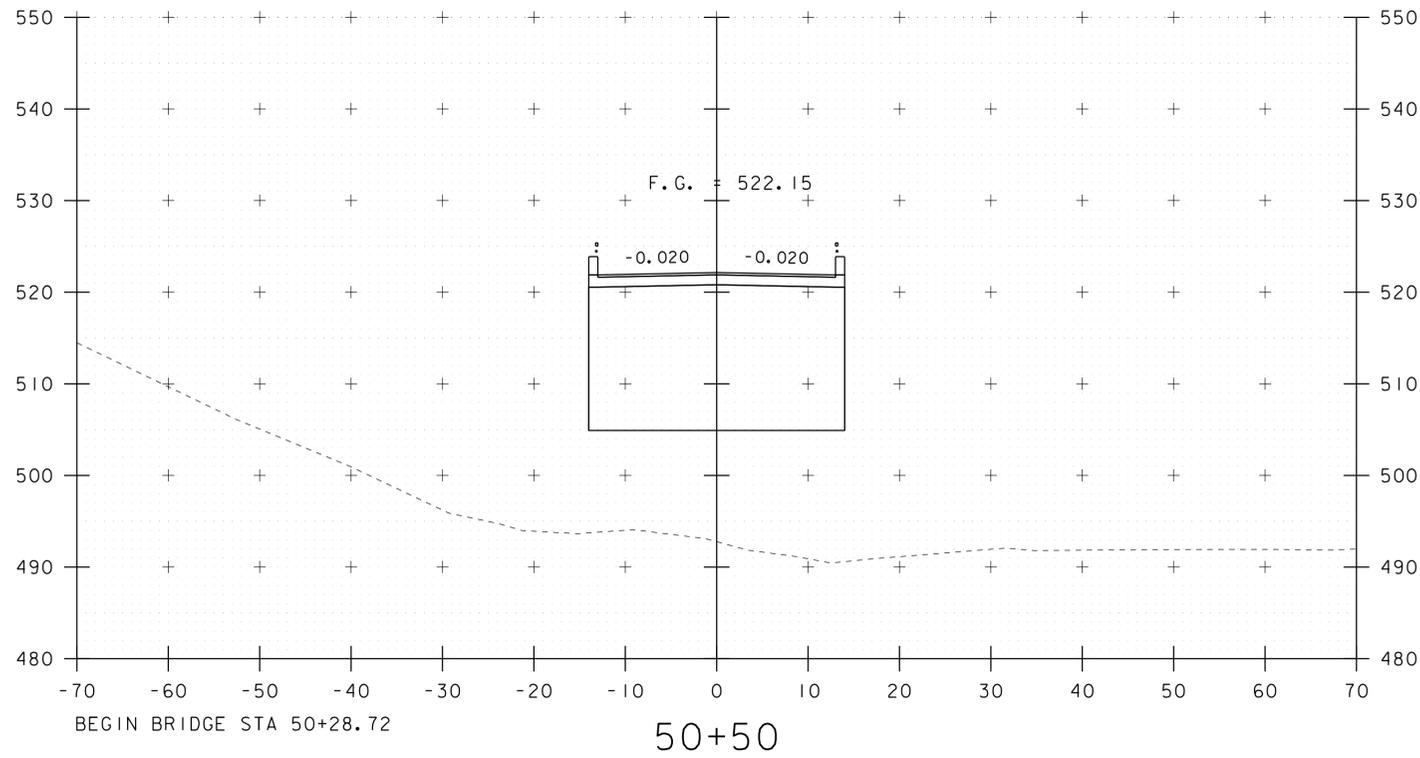
**PLAN**



**ELEVATION**

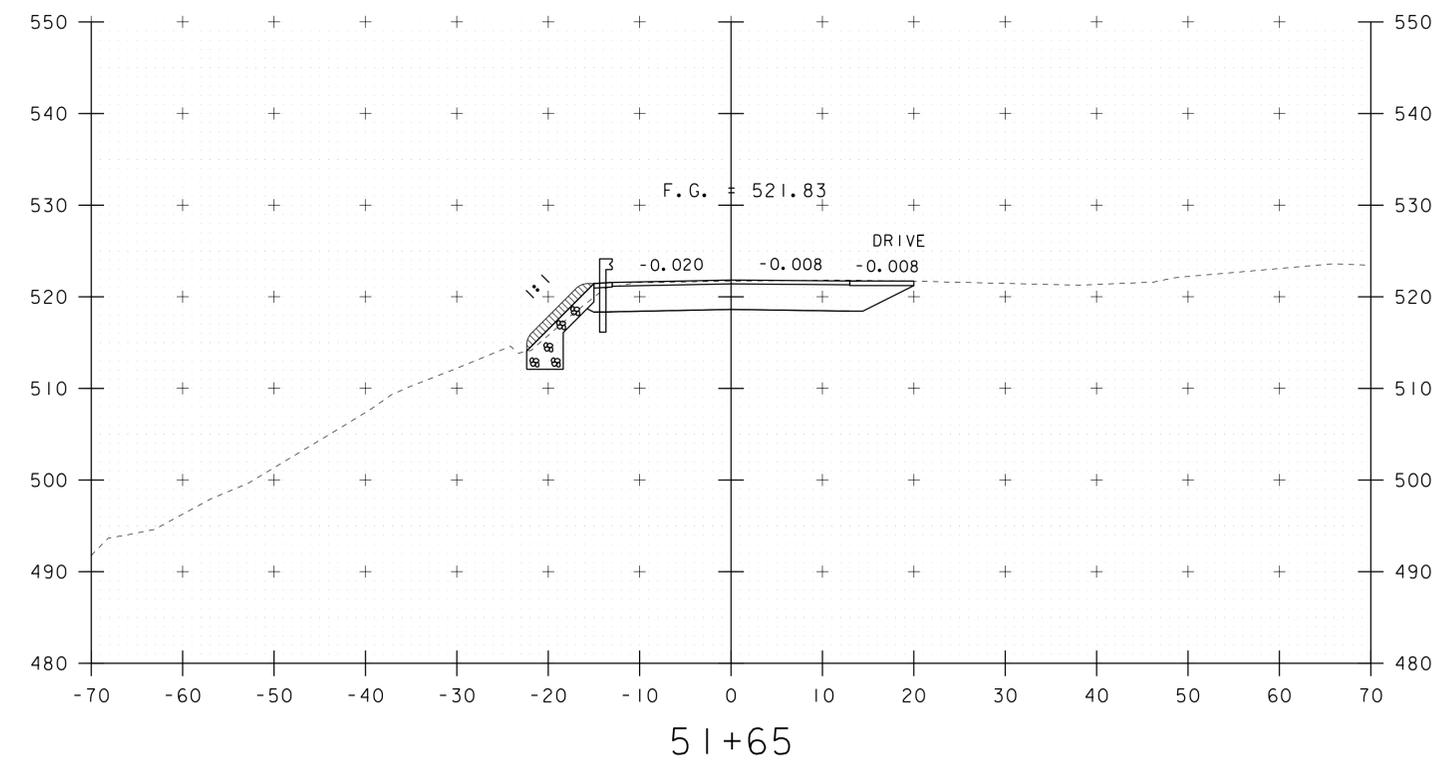
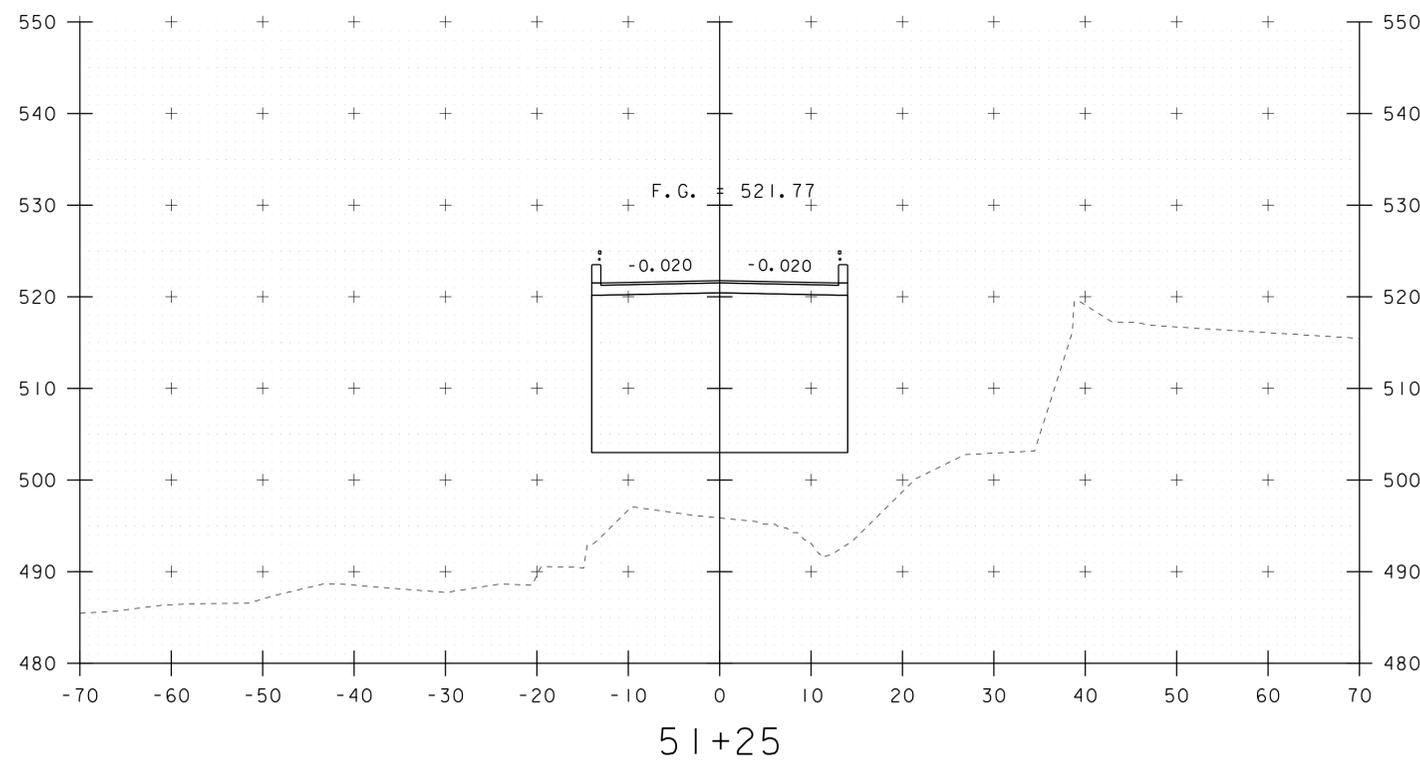
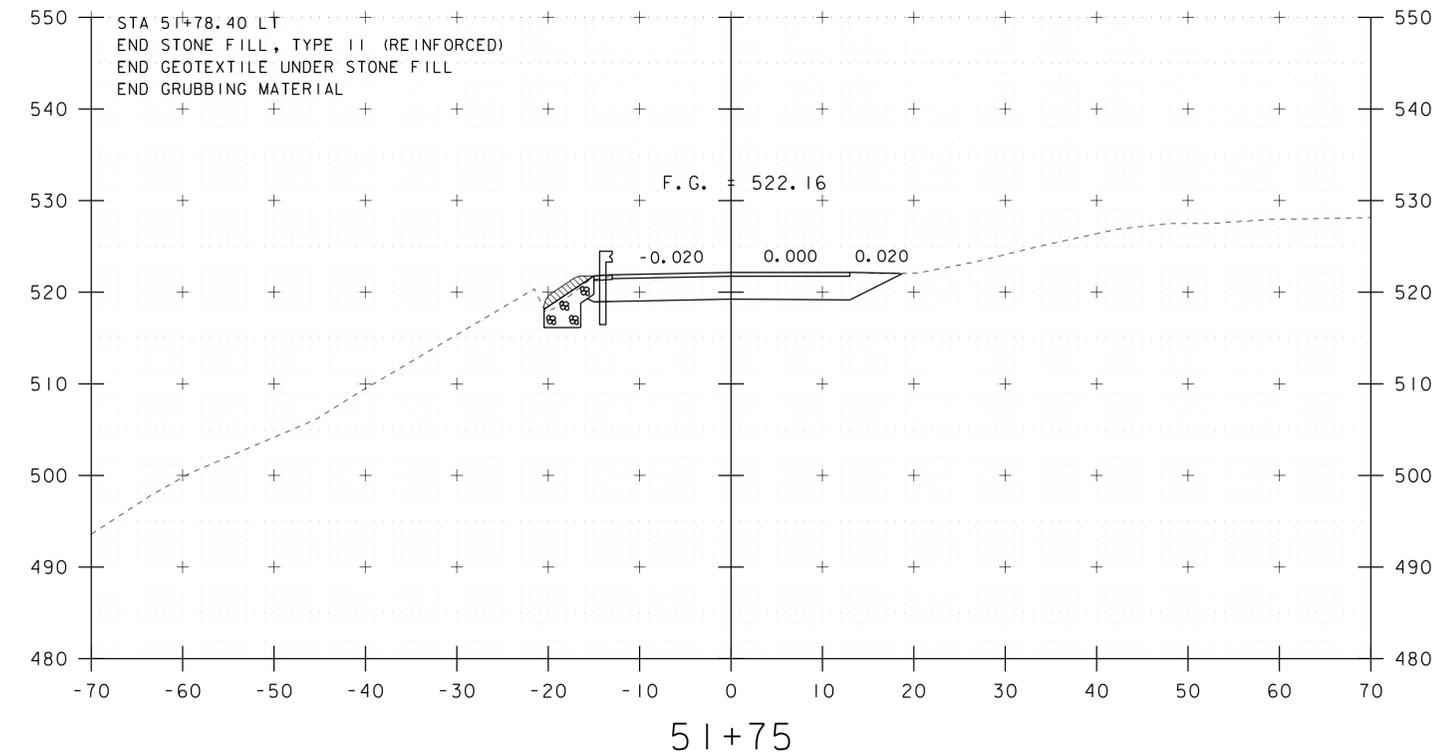
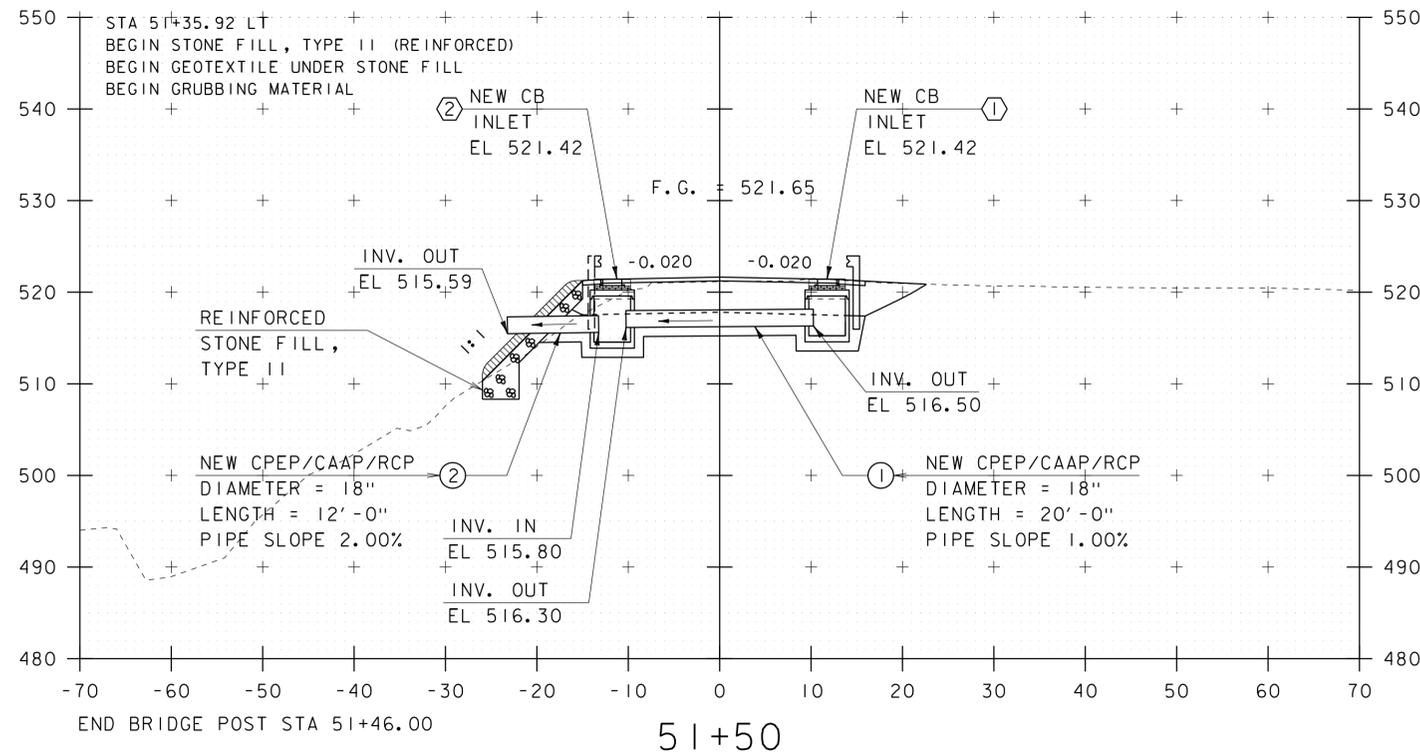


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PROJECT NUMBER:	BF 0106(6)	DRAWN BY:	M. LONGSTREET
FILE NAME:	s13j306pe.dgn	CHECKED BY:	C. BURRALL
PROJECT LEADER:	C.W. CARLSON	SHEET	16 OF 39
DESIGNED BY:	C. BURRALL		
PLAN & ELEVATION			



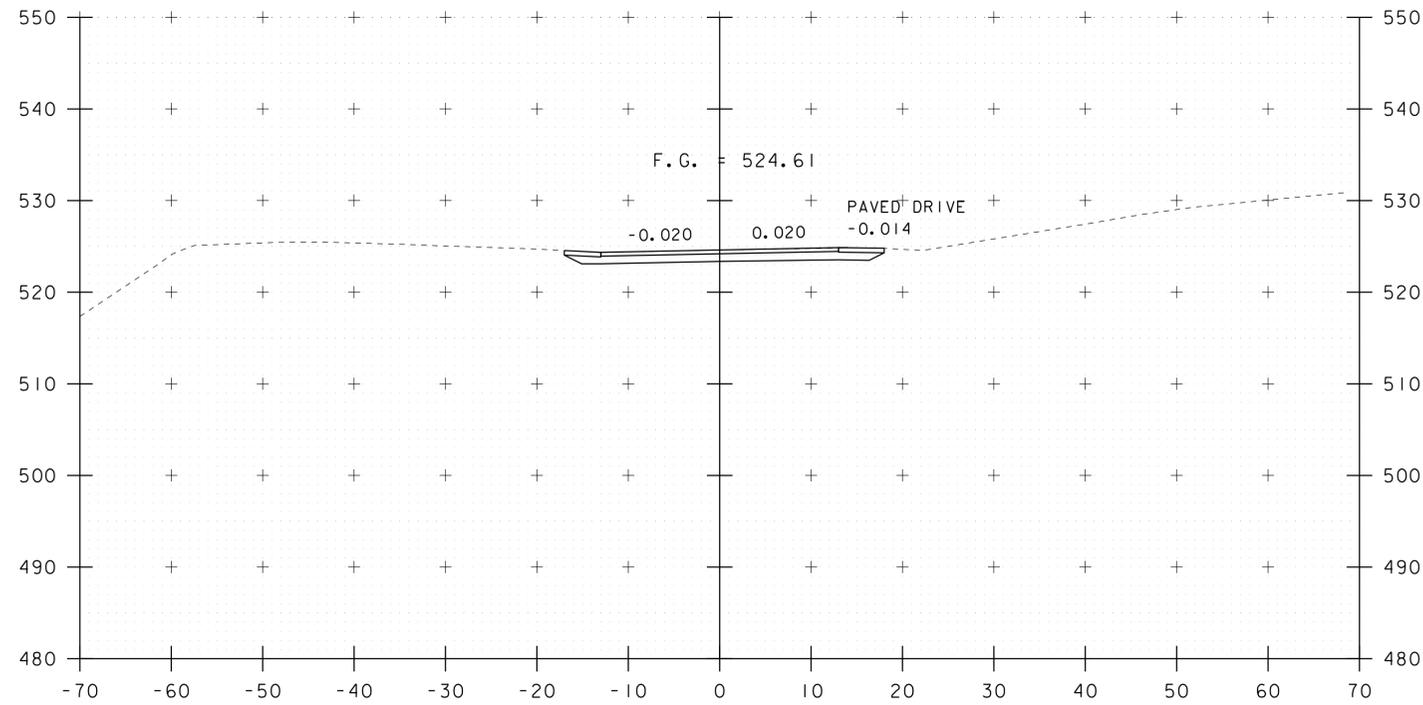
STA. 50+25 TO STA. 51+00

PROJECT NAME: NEWFANE	PLOT DATE: 25-JUL-2016
PROJECT NUMBER: BF 0106(6)	DRAWN BY: M. LONGSTREET
FILE NAME: s13j306xs.dgn	DESIGNED BY: C. BURRALL
PROJECT LEADER: C.W. CARLSON	CHECKED BY: C. BURRALL
DEPOT ROAD CROSS SECTIONS I	SHEET 17 OF 39

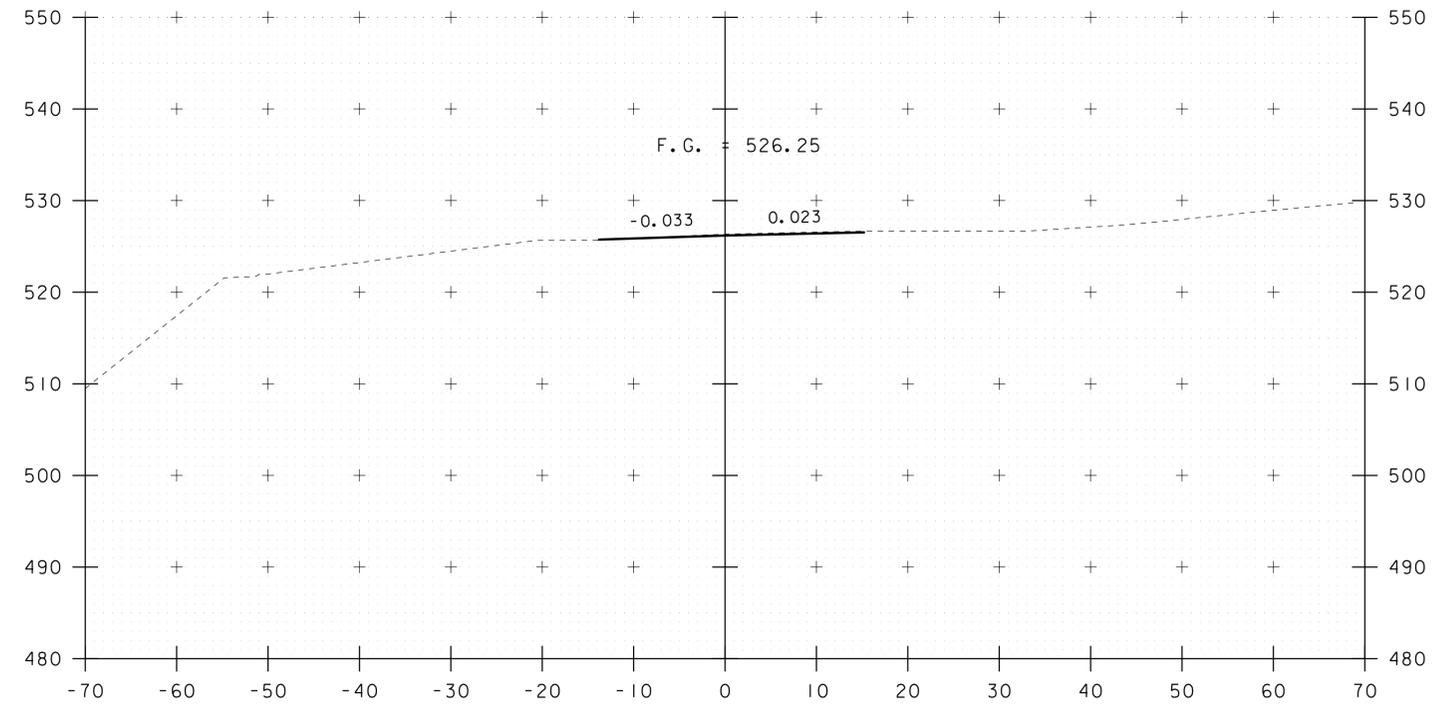


STA. 51+25 TO STA. 51+75

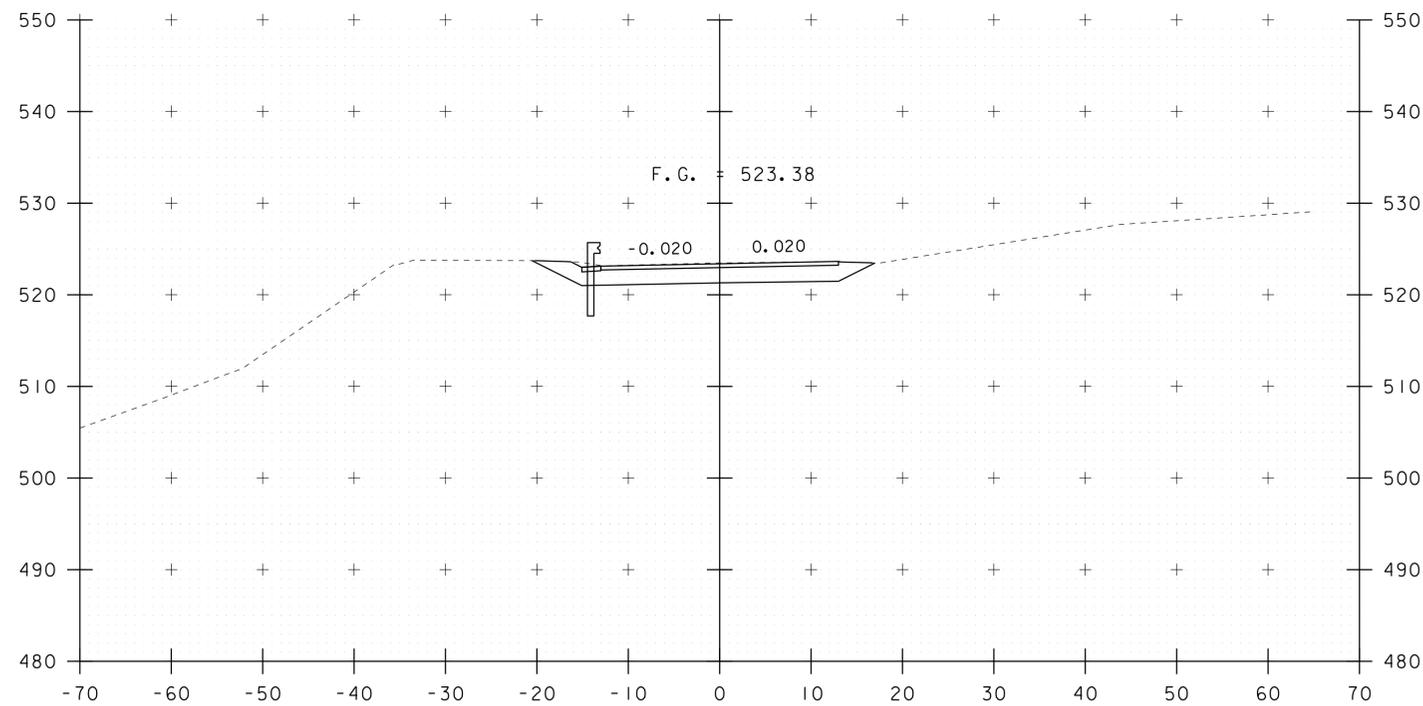
PROJECT NAME: NEWFANE	
PROJECT NUMBER: BF 0106(6)	
FILE NAME: s13j306xs.dgn	PLOT DATE: 25-JUL-2016
PROJECT LEADER: C.W. CARLSON	DRAWN BY: M. LONGSTREET
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
DEPOT ROAD CROSS SECTIONS 2	SHEET 18 OF 39



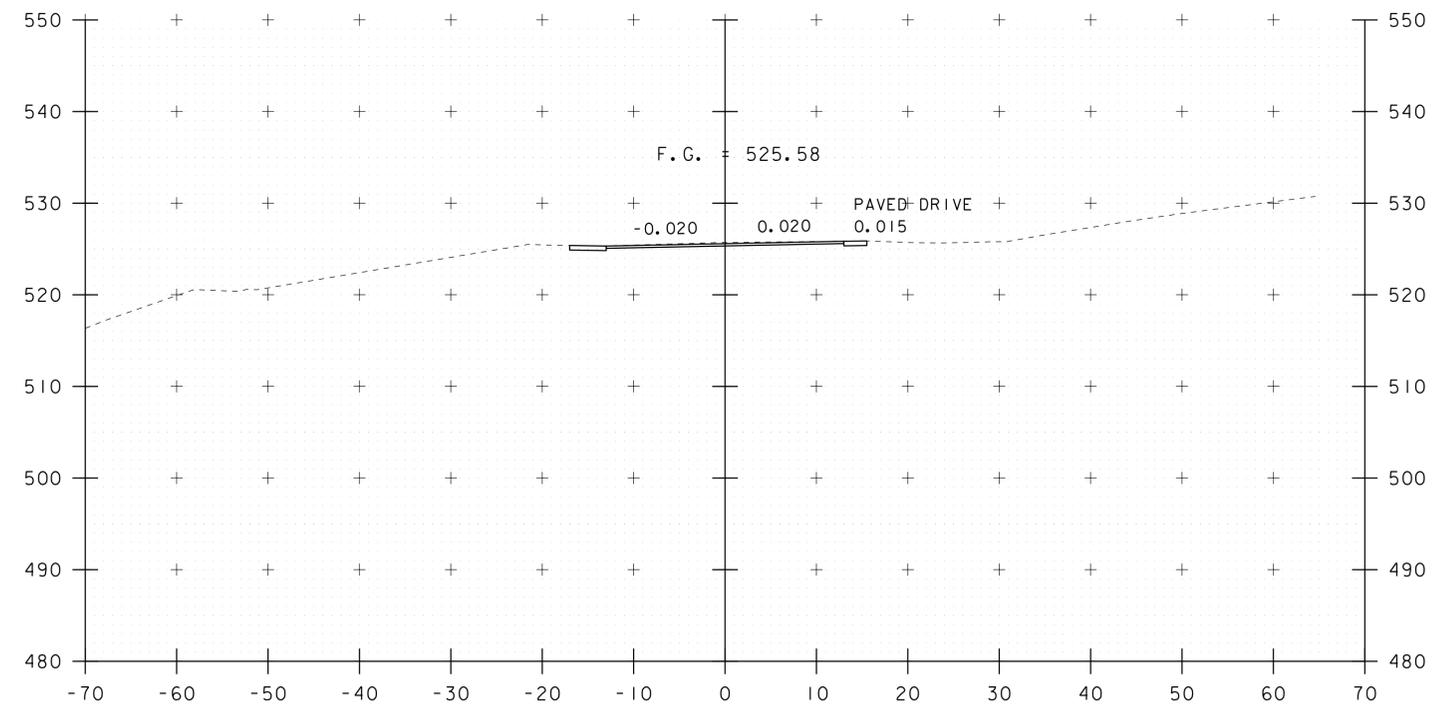
52+25



52+75



52+00

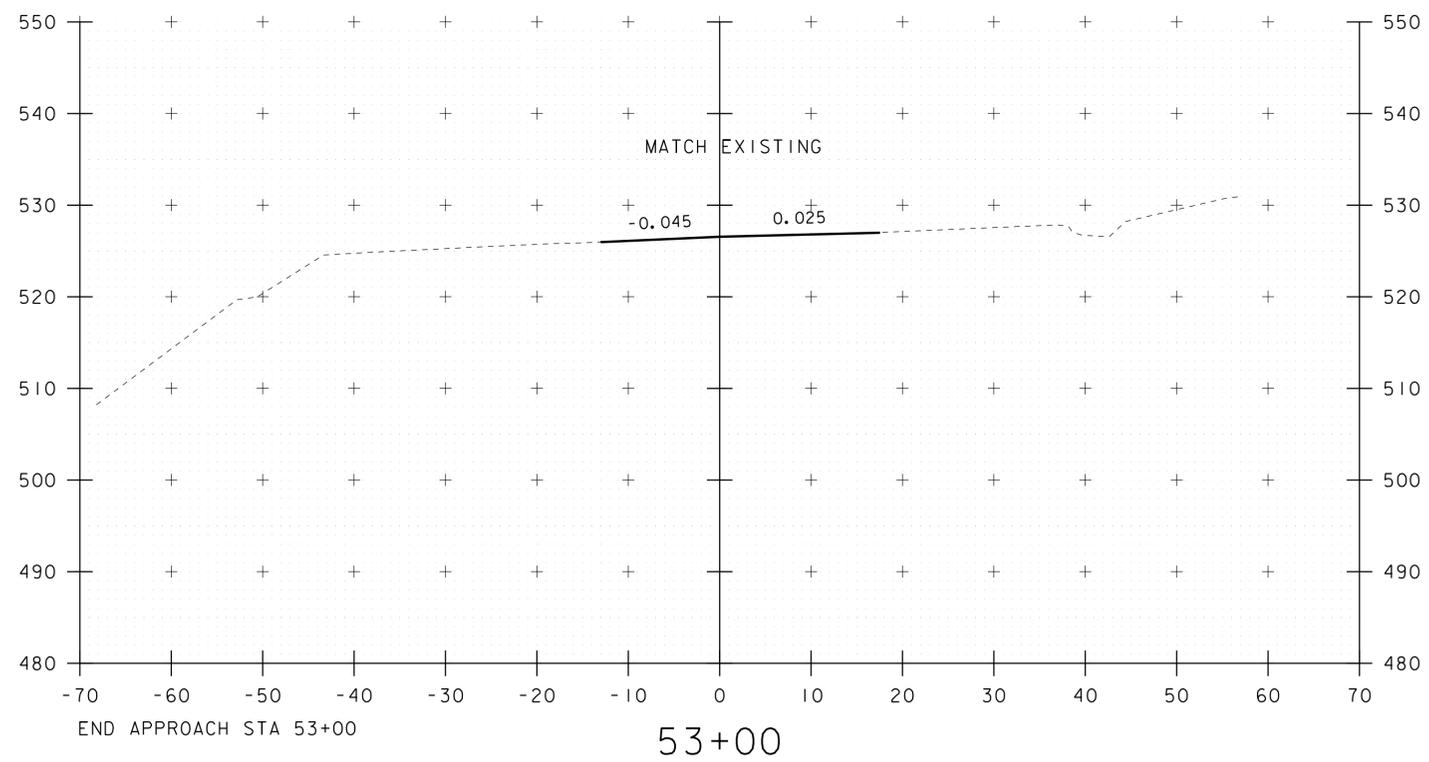


END PROJECT STA 52+50

52+50

STA. 52+00 TO STA. 52+75

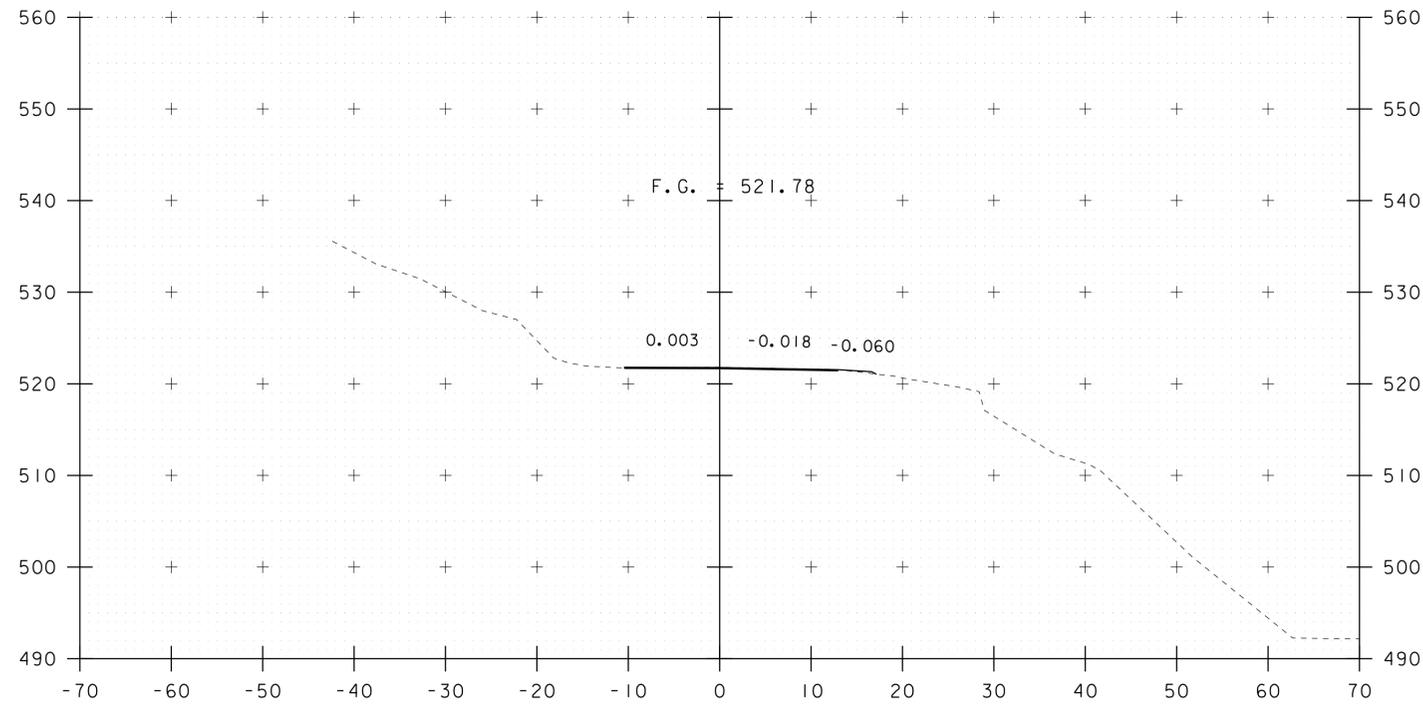
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FILE NAME: s13j306xs.dgn	PLOT DATE: 25-JUL-2016
PROJECT LEADER: C.W. CARLSON	DRAWN BY: M. LONGSTREET
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
DEPOT ROAD CROSS SECTIONS 3	SHEET 19 OF 39



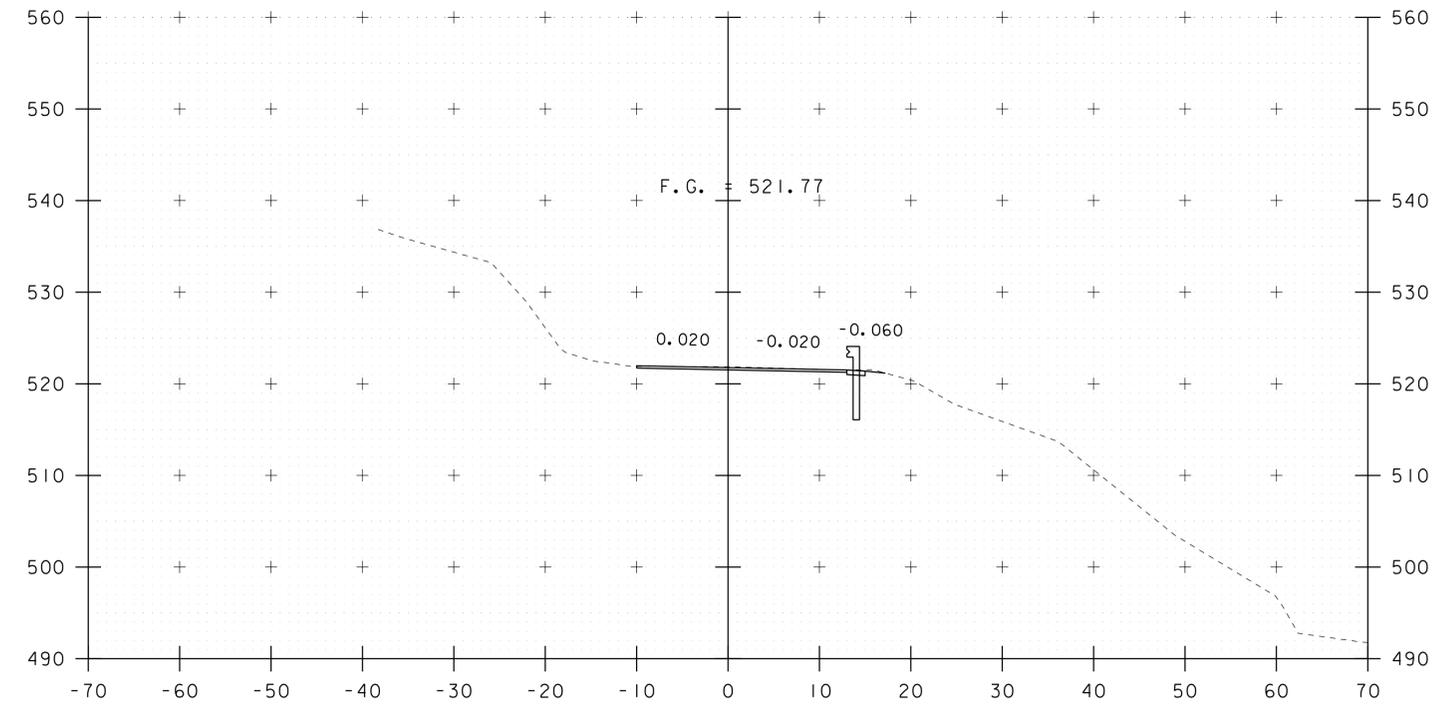
STA. 53+00 TO STA. 53+00

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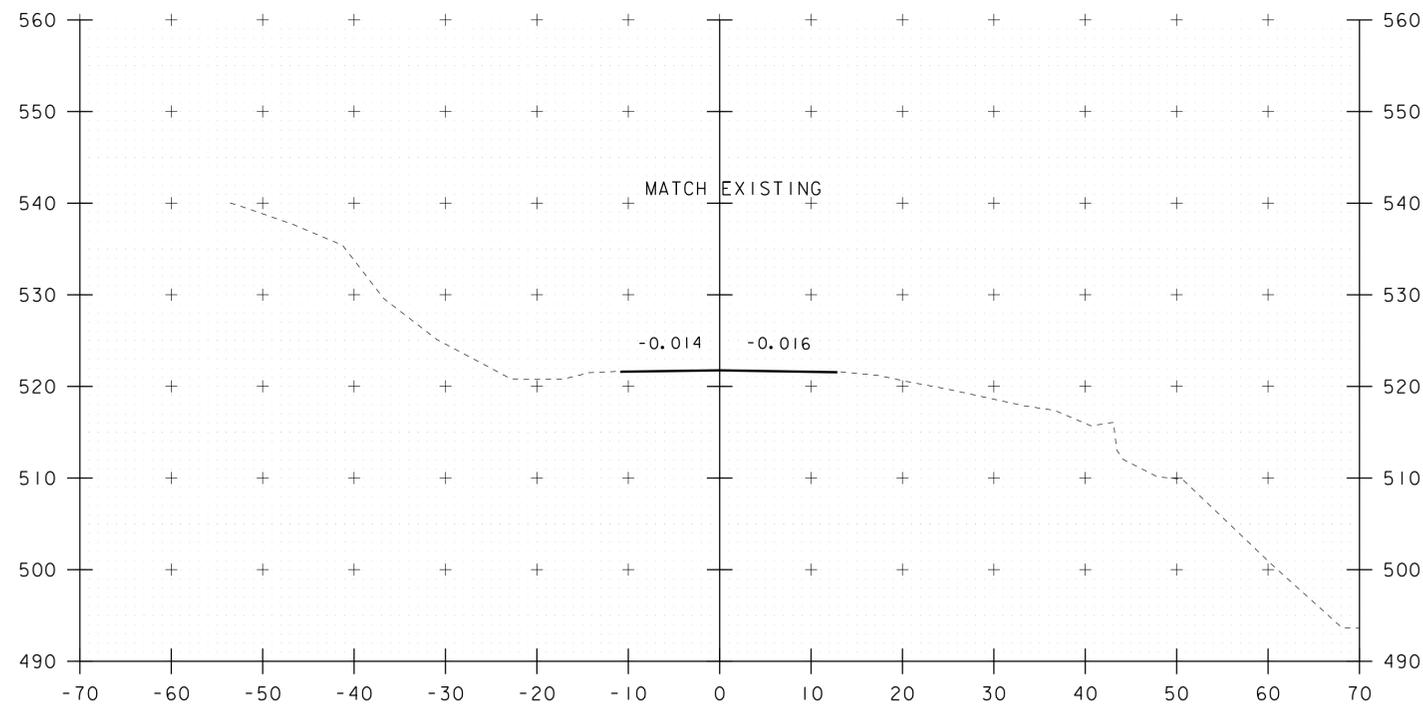
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PROJECT LEADER: C.W. CARLSON	DRAWN BY: M. LONGSTREET
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
DEPOT ROAD CROSS SECTIONS 4	SHEET 20 OF 39



11+25

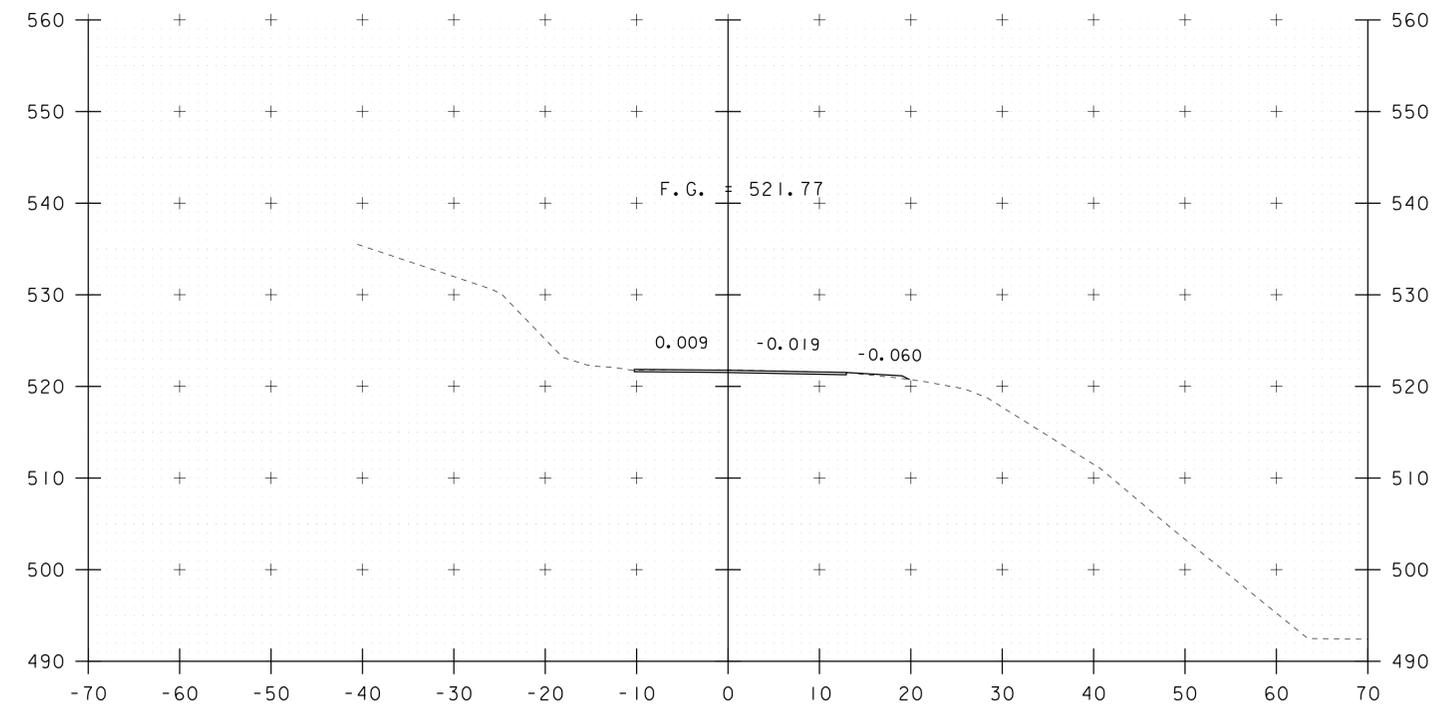


11+50



11+00

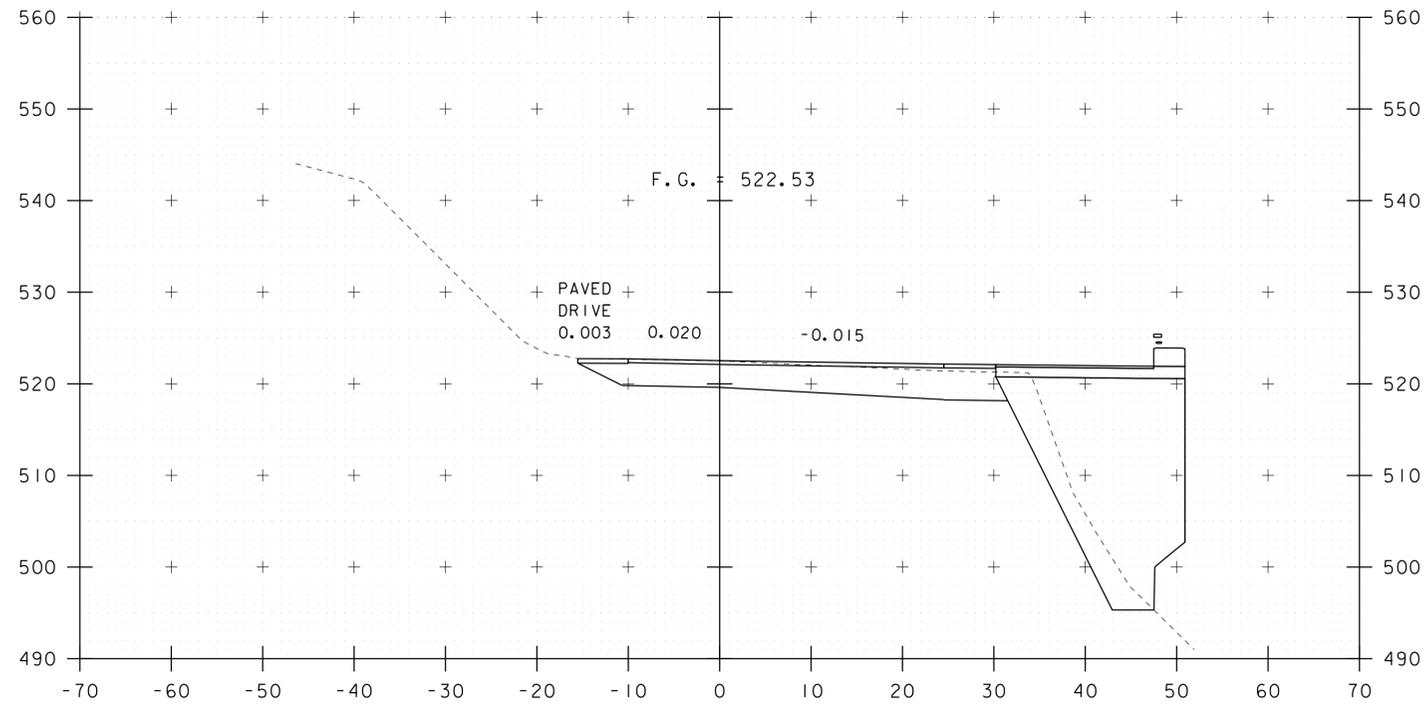
BEGIN SIDELINE  
APPROACH STA 11+00



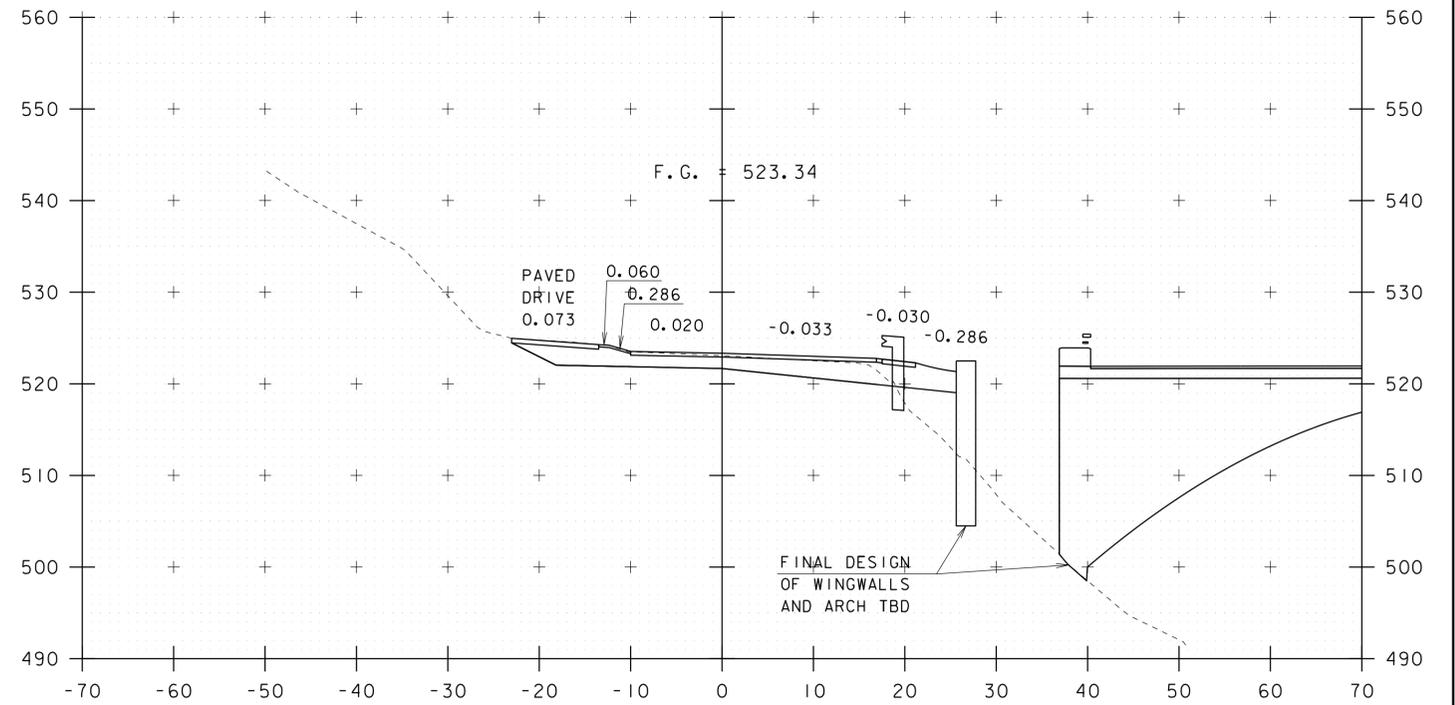
11+34

STA. 11+00 TO STA. 11+50

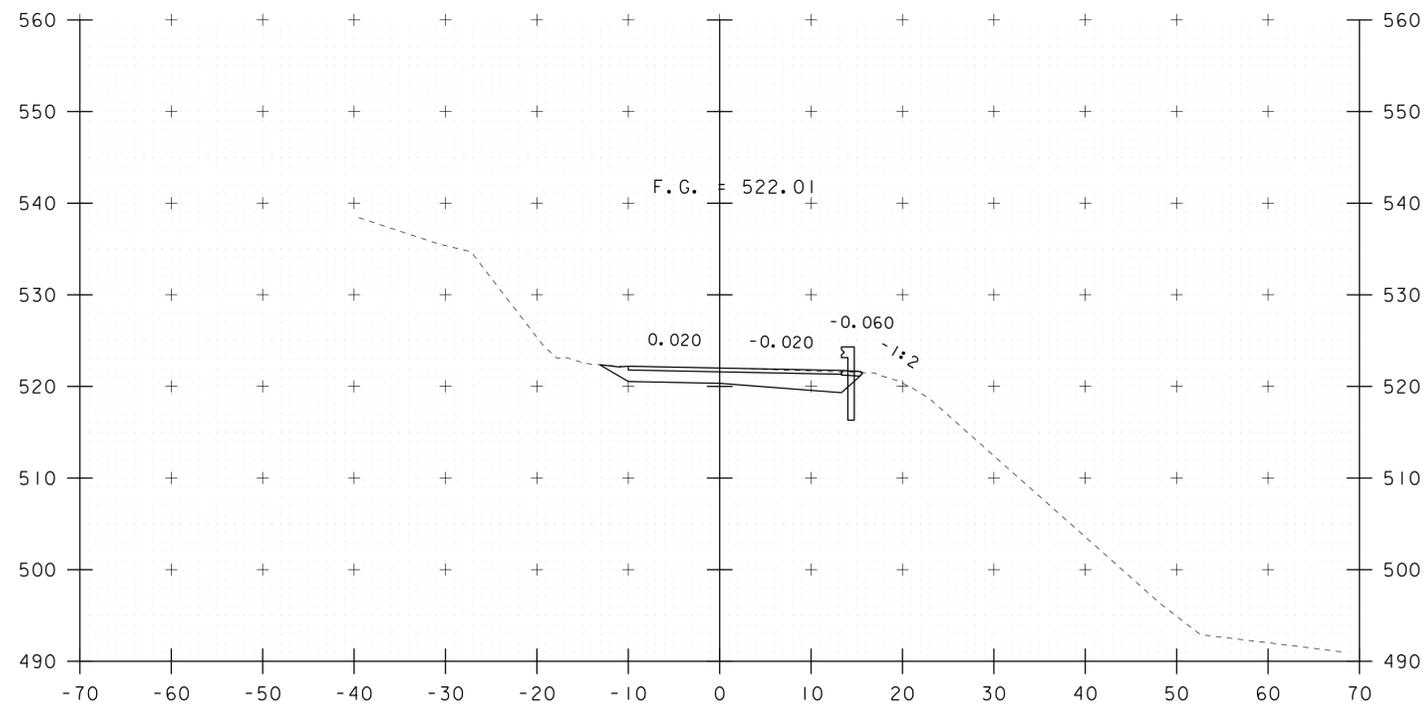
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PROJECT NUMBER: BF 0106(6)	
FILE NAME: s13j306xs.dgn	PLOT DATE: 25-JUL-2016
PROJECT LEADER: C.W. CARLSON	DRAWN BY: M. LONGSTREET
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
DOVER RD & GRIMES HILL RD SECTIONS I	SHEET 21 OF 39



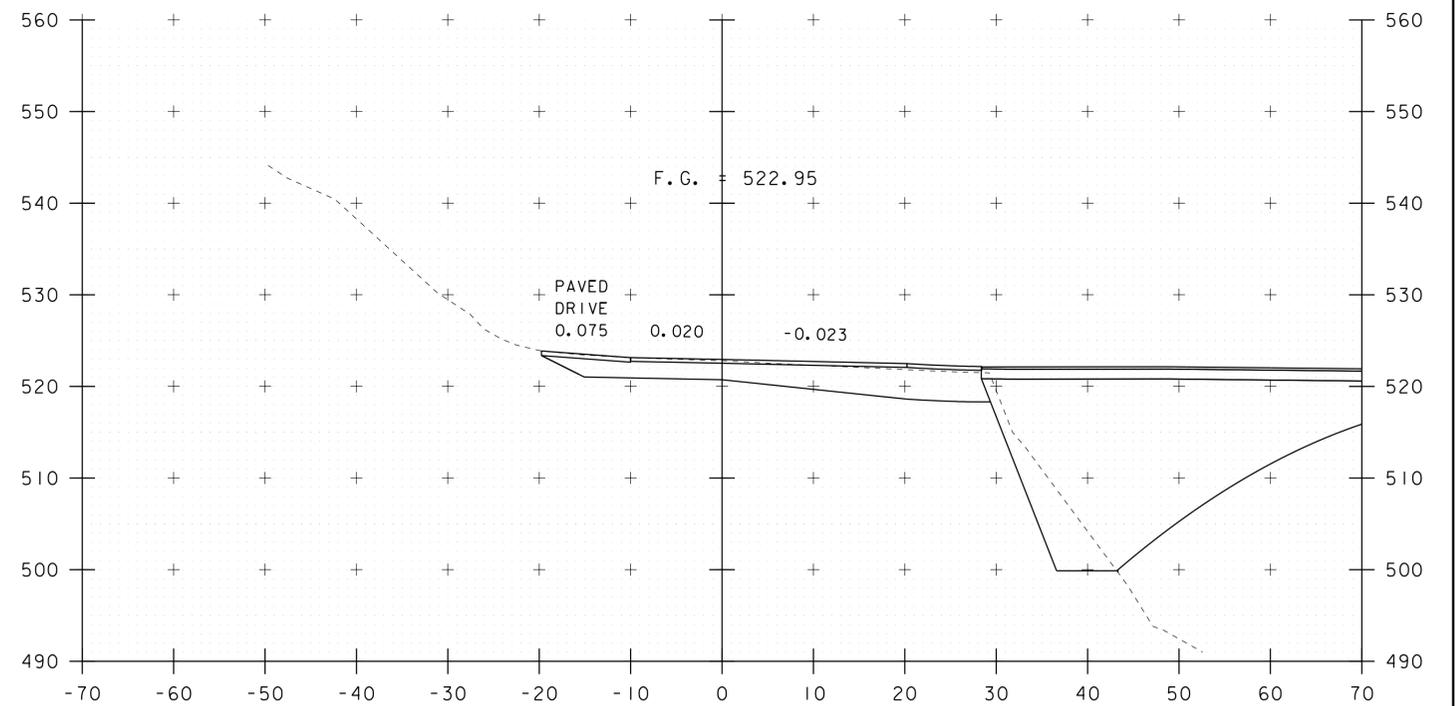
12+00



12+25



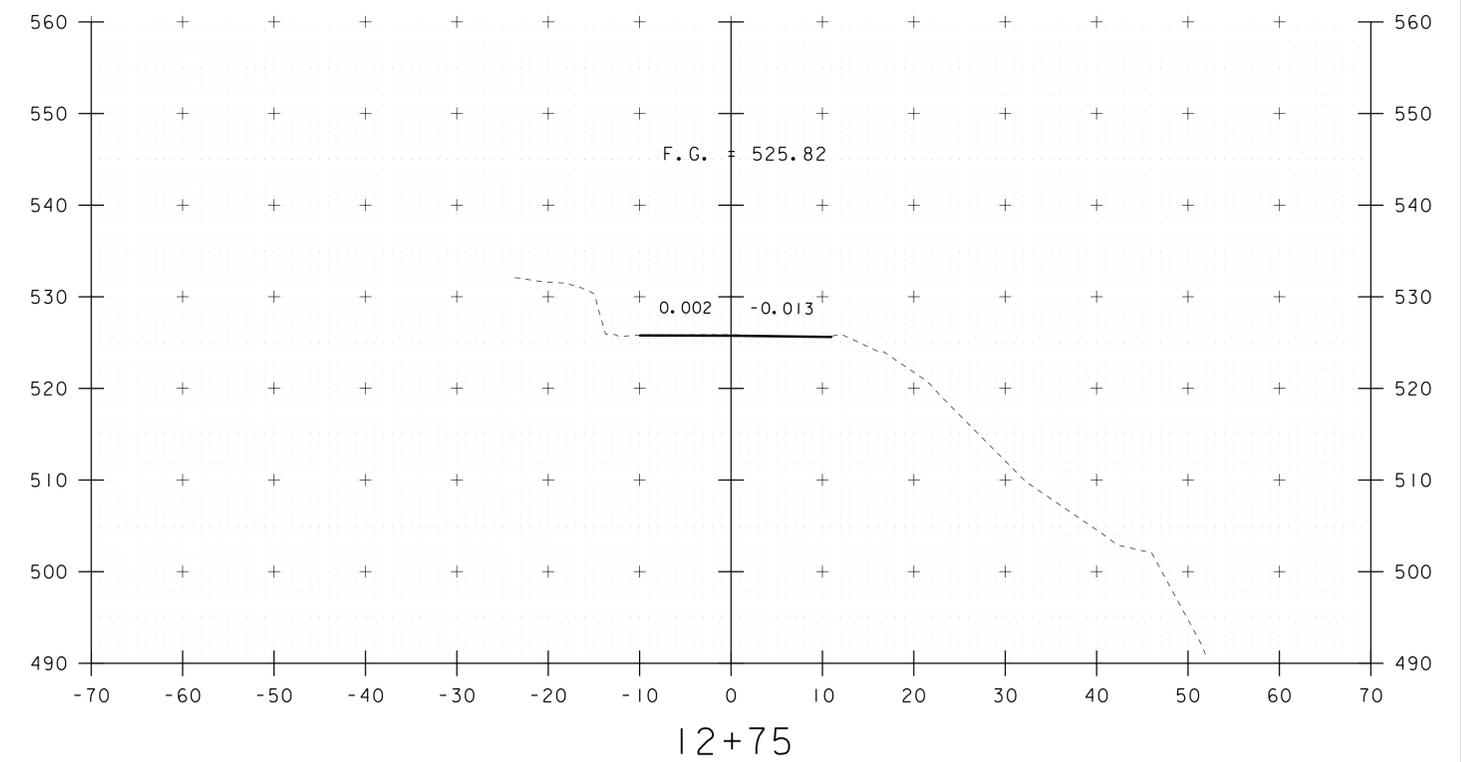
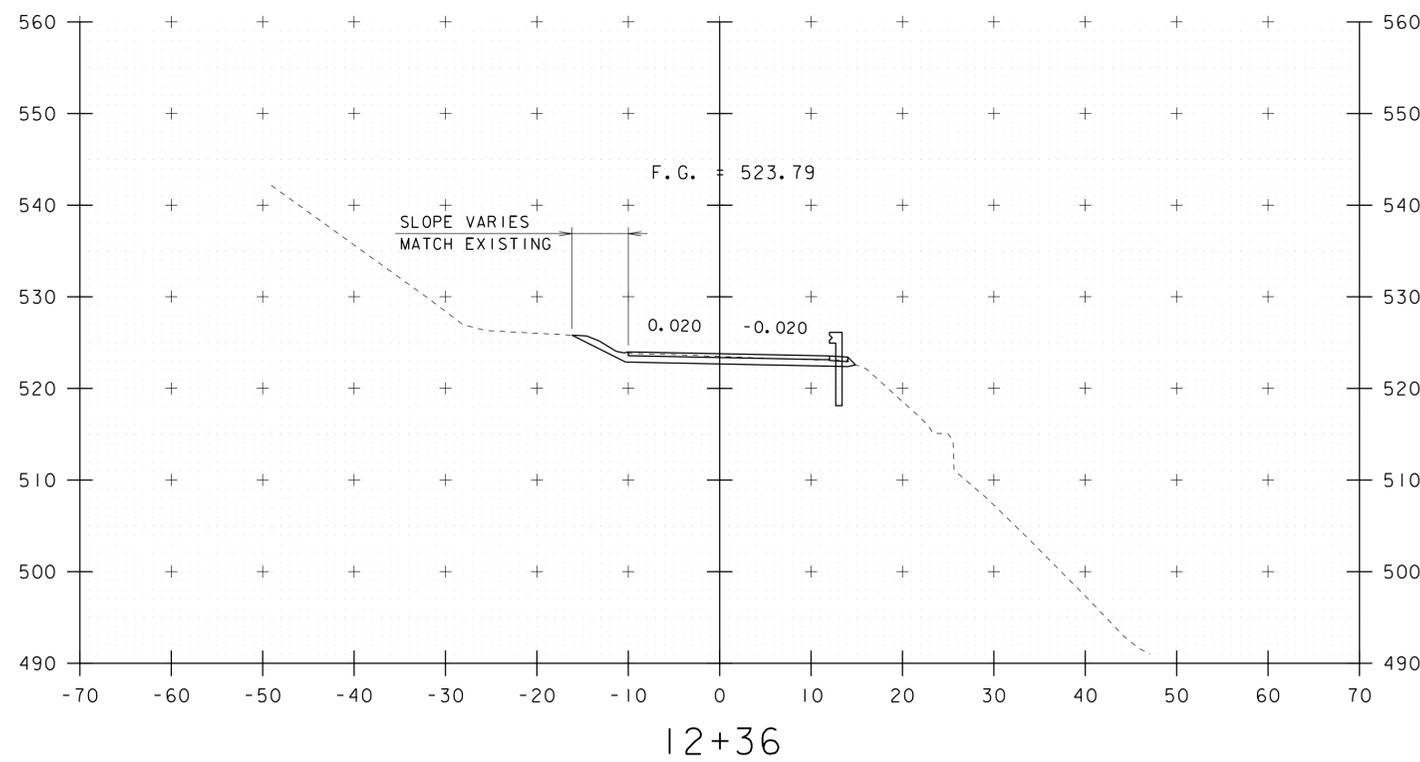
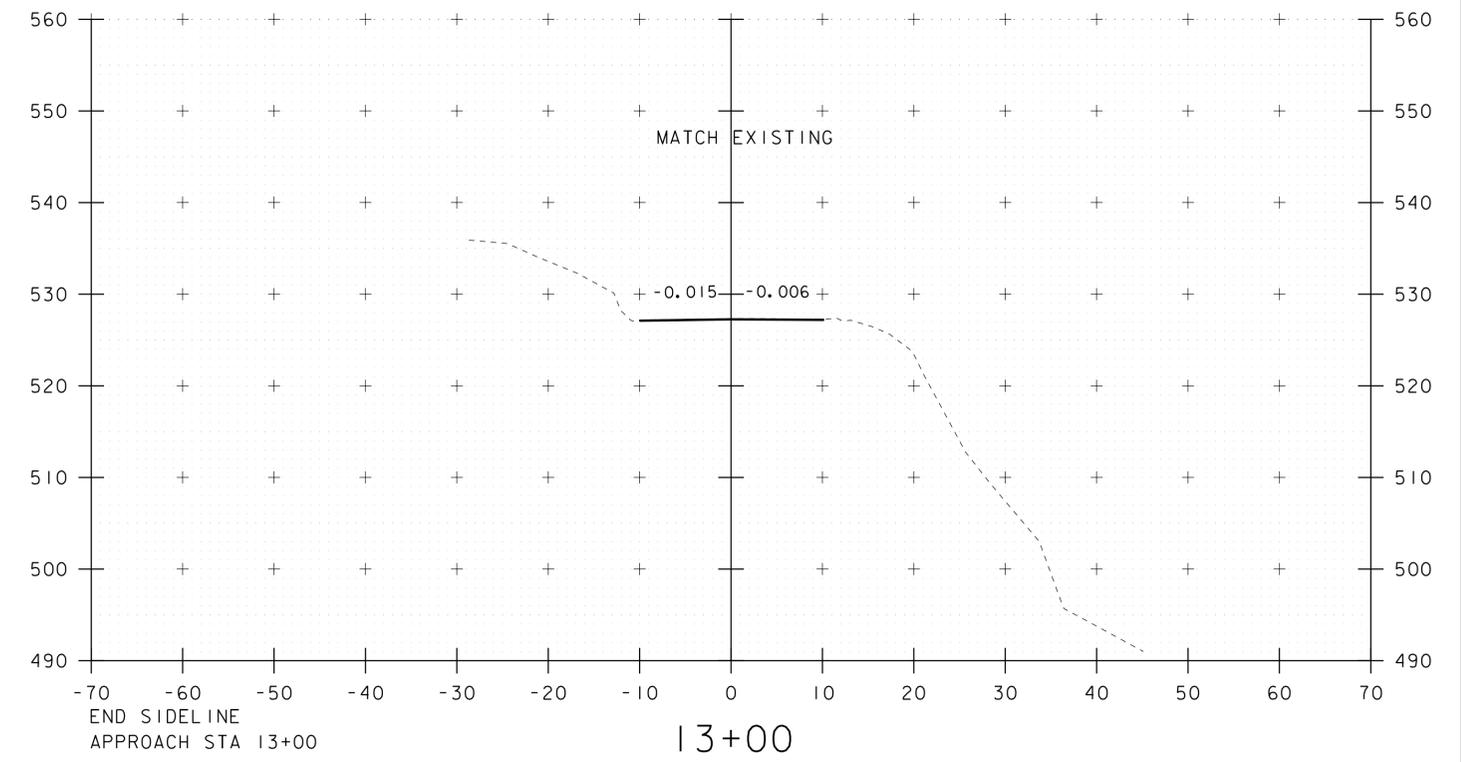
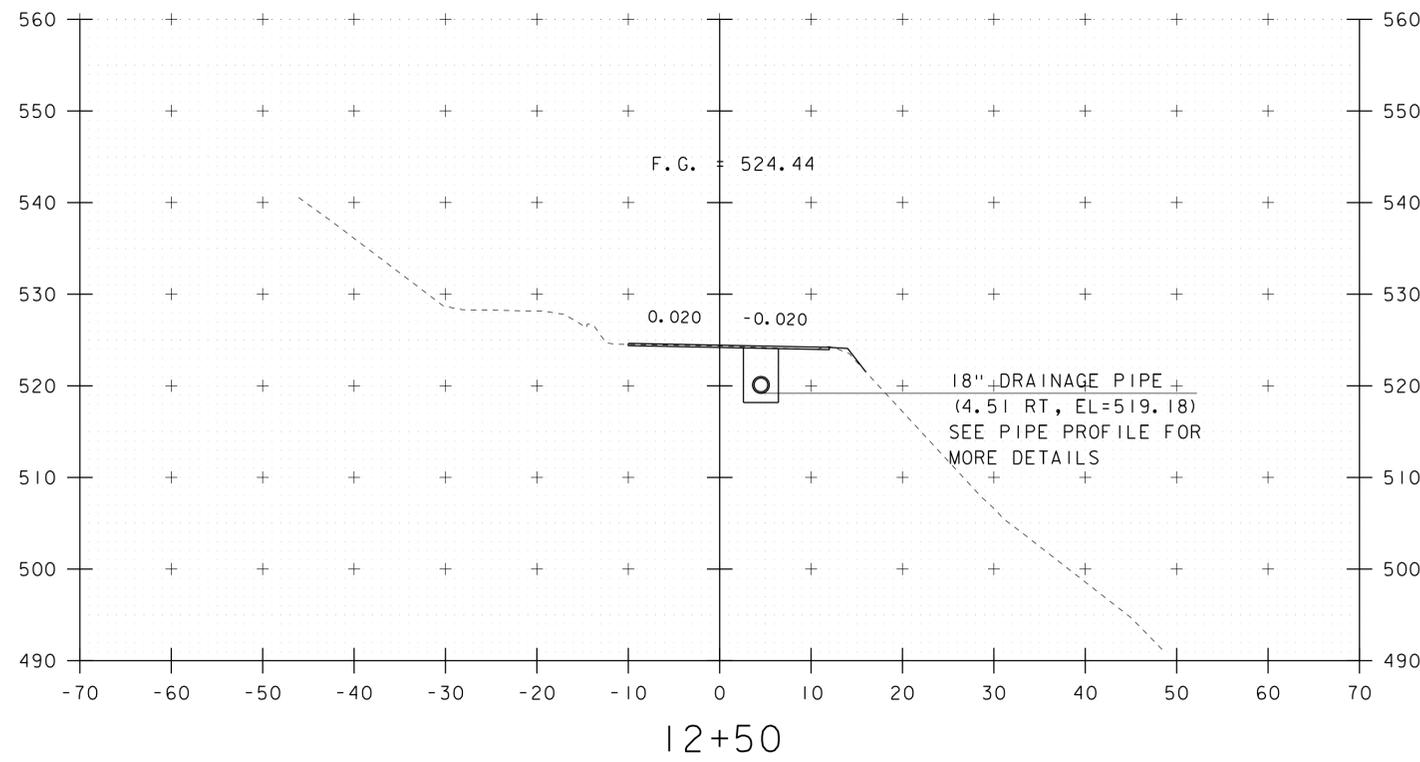
11+75



12+14

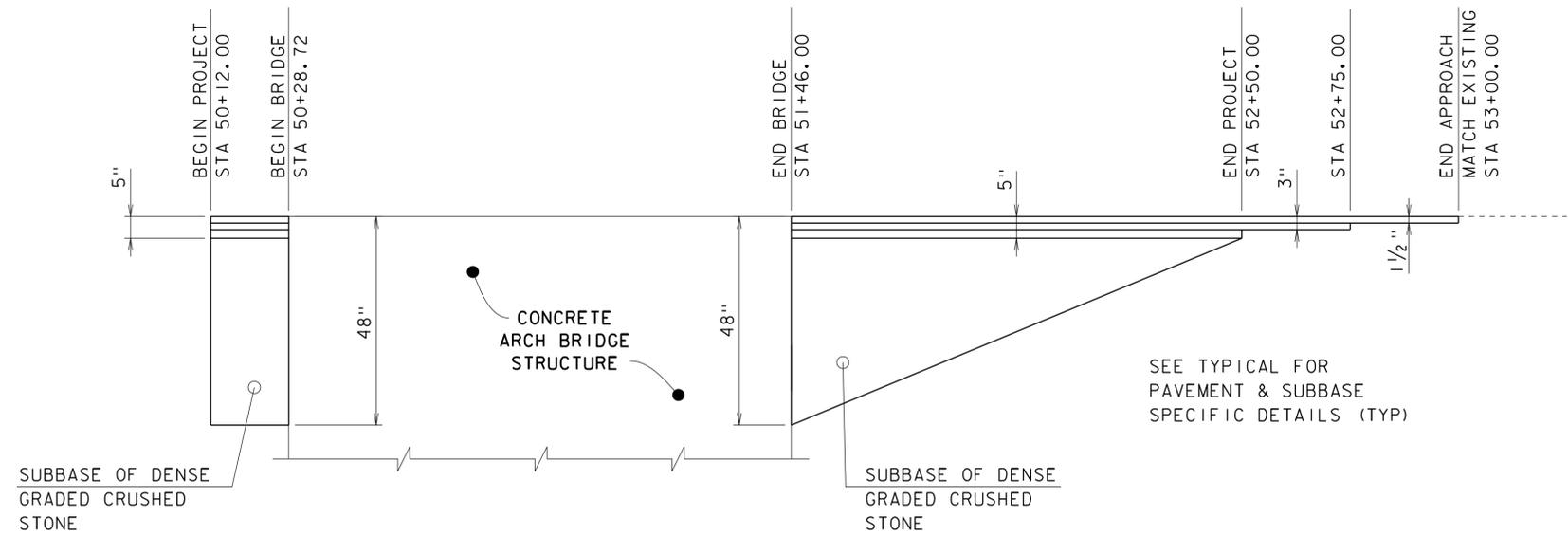
STA. 11+75 TO STA. 12+25

PROJECT NAME: NEWFANE	
PROJECT NUMBER: BF 0106(6)	
FILE NAME: s13j306xs.dgn	PLOT DATE: 25-JUL-2016
PROJECT LEADER: C.W. CARLSON	DRAWN BY: M. LONGSTREET
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
DOVER RD & GRIMES HILL RD SECTIONS 2	SHEET 22 OF 39



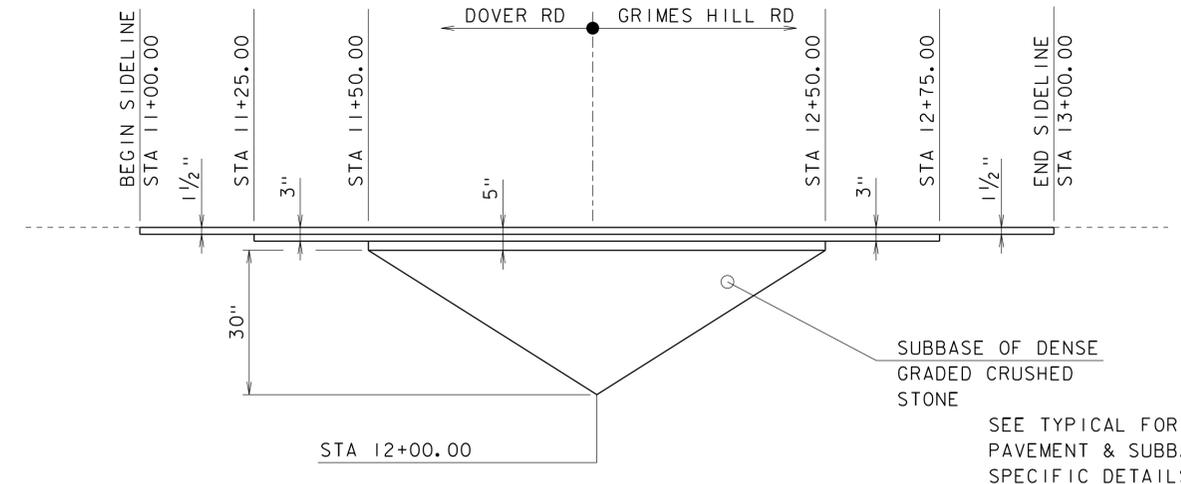
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PROJECT NAME: NEWFANE	
PROJECT NUMBER: BF 0106(6)	
FILE NAME: s13j306xs.dgn	PLOT DATE: 25-JUL-2016
PROJECT LEADER: C.W. CARLSON	DRAWN BY: M. LONGSTREET
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
DOVER RD & GRIMES HILL RD SECTIONS 3	SHEET 23 OF 39



**DEPOT RD (TH 2) MATERIAL TRANSITION DETAIL**

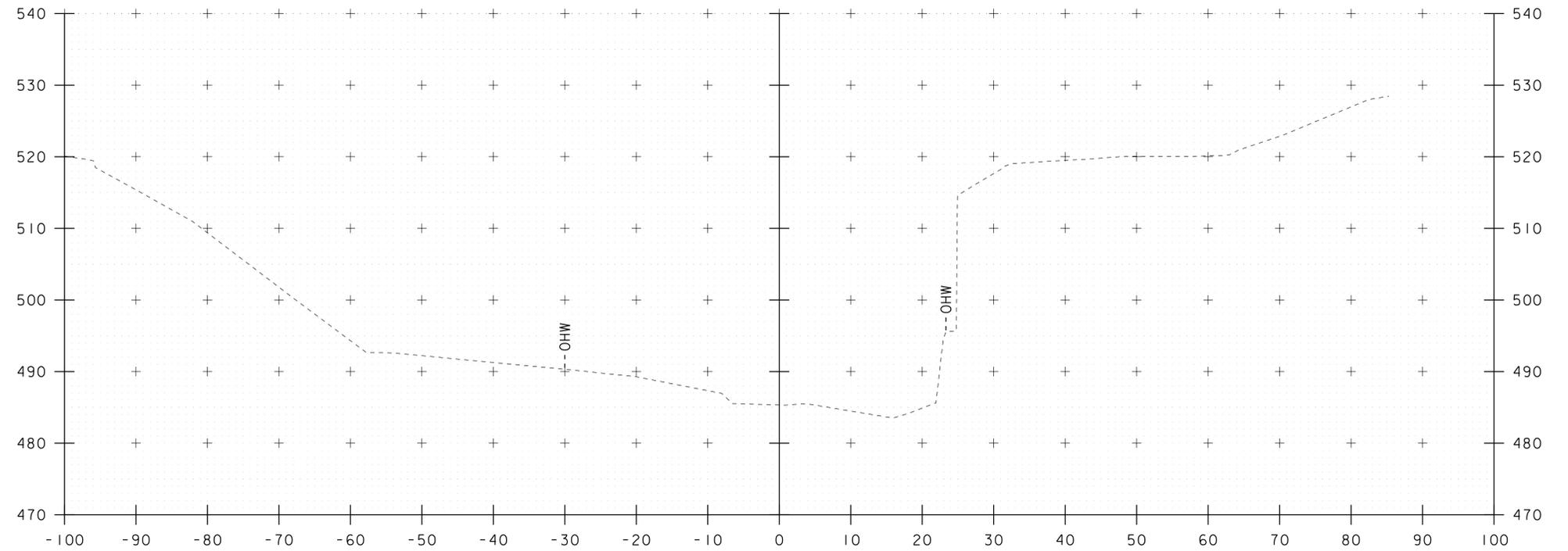
HORIZONTAL SCALE: 1" = 20' -0"  
NO VERTICAL SCALE



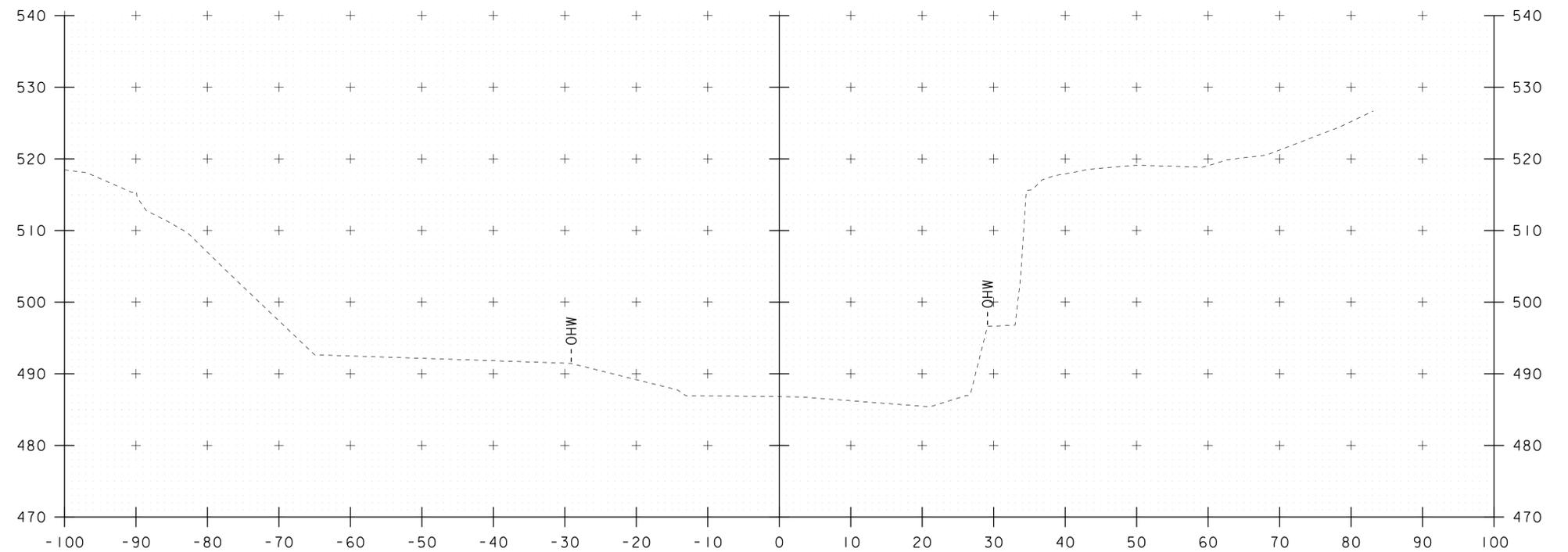
**DOVER RD (TH 2) & GRIMES HILL RD (TH 5) MATERIAL TRANSITION DETAIL**

HORIZONTAL SCALE: 1" = 20' -0"  
NO VERTICAL SCALE

PROJECT NAME: NEWFANE	
PROJECT NUMBER: BF 0106(6)	
FILE NAME: s13j306profile.dgn	PLOT DATE: 25-JUL-2016
PROJECT LEADER: C.W. CARLSON	DRAWN BY: M. LONGSTREET
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
MATERIAL TRANSITION DETAILS	SHEET 24 OF 39



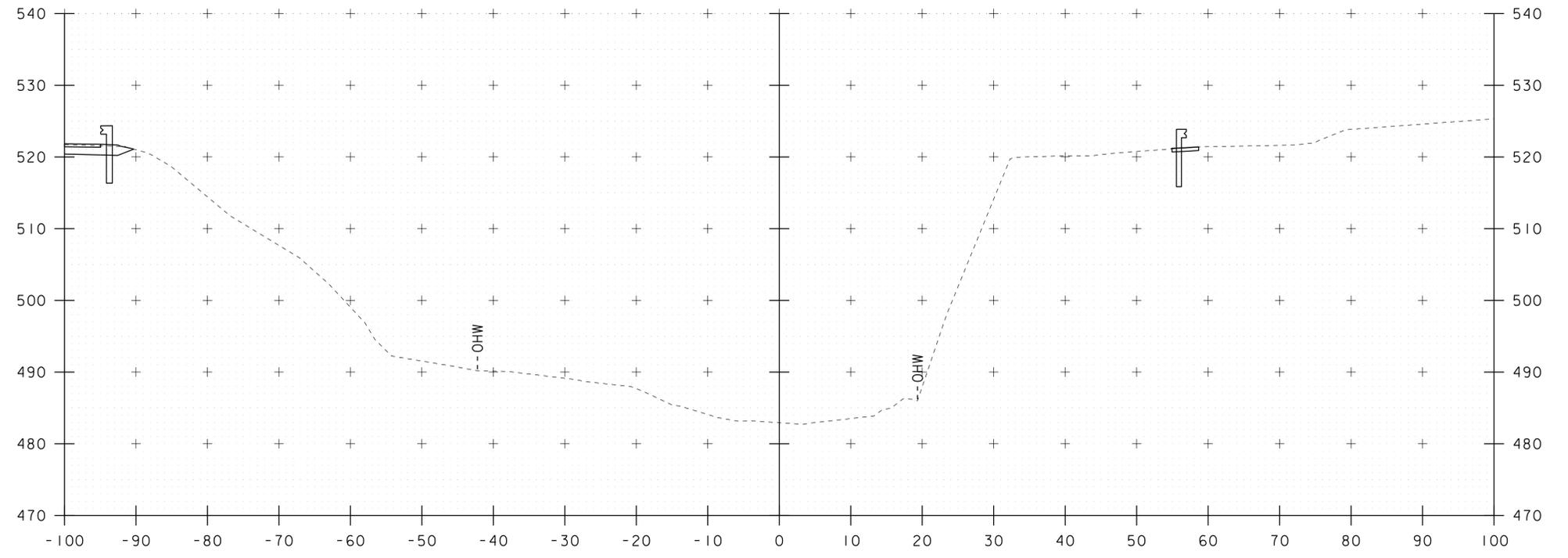
30+25



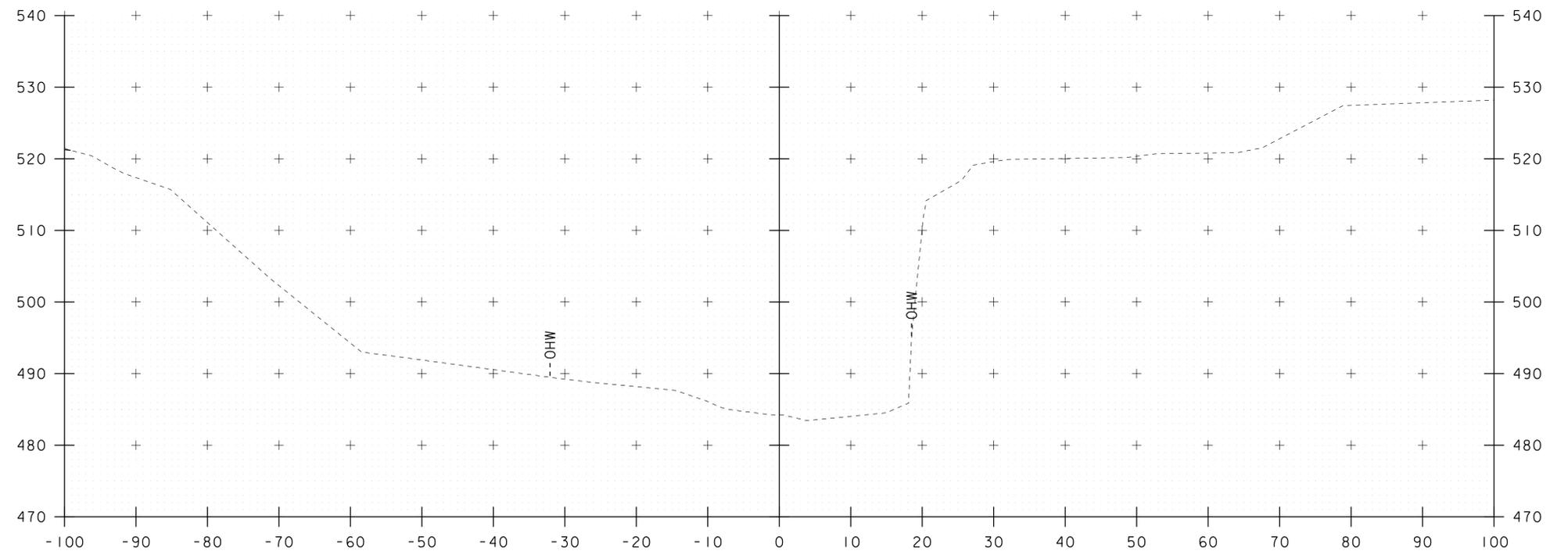
30+00

STA. 30+00 TO STA. 30+25

PROJECT NAME: NEWFANE	
PROJECT NUMBER: BF 0106(6)	
FILE NAME: s13j306xs.dgn	PLOT DATE: 25-JUL-2016
PROJECT LEADER: C.W. CARLSON	DRAWN BY: M. LONGSTREET
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
CHANNEL CROSS SECTIONS 1	SHEET 25 OF 39



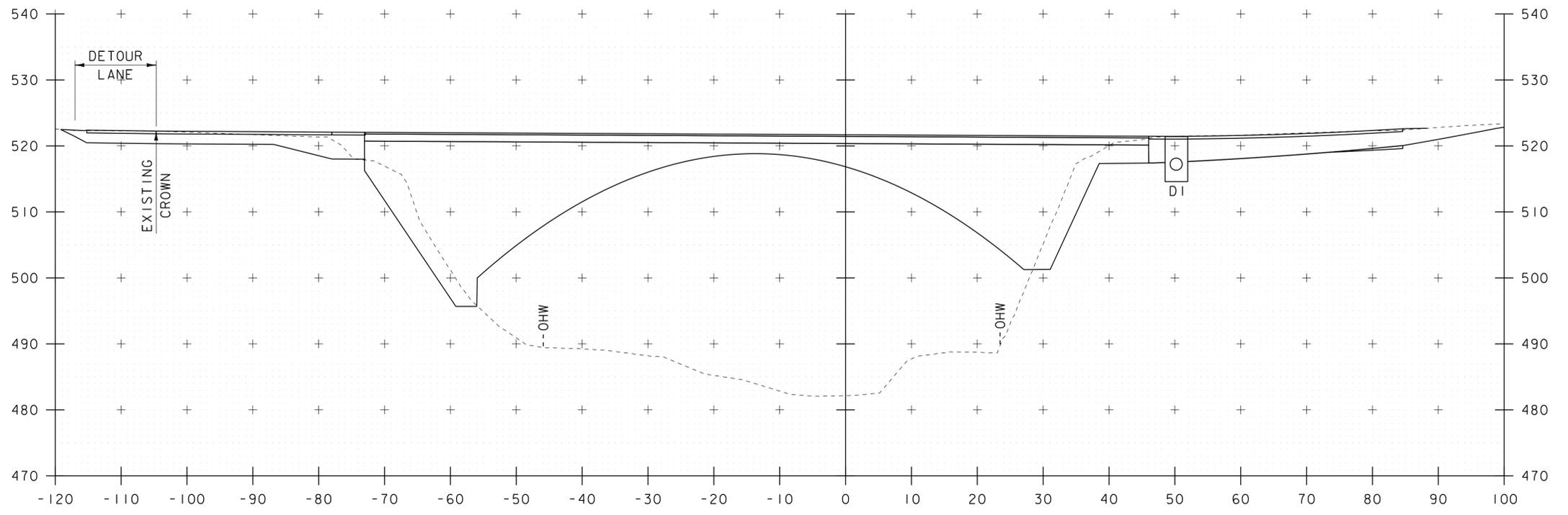
30+75



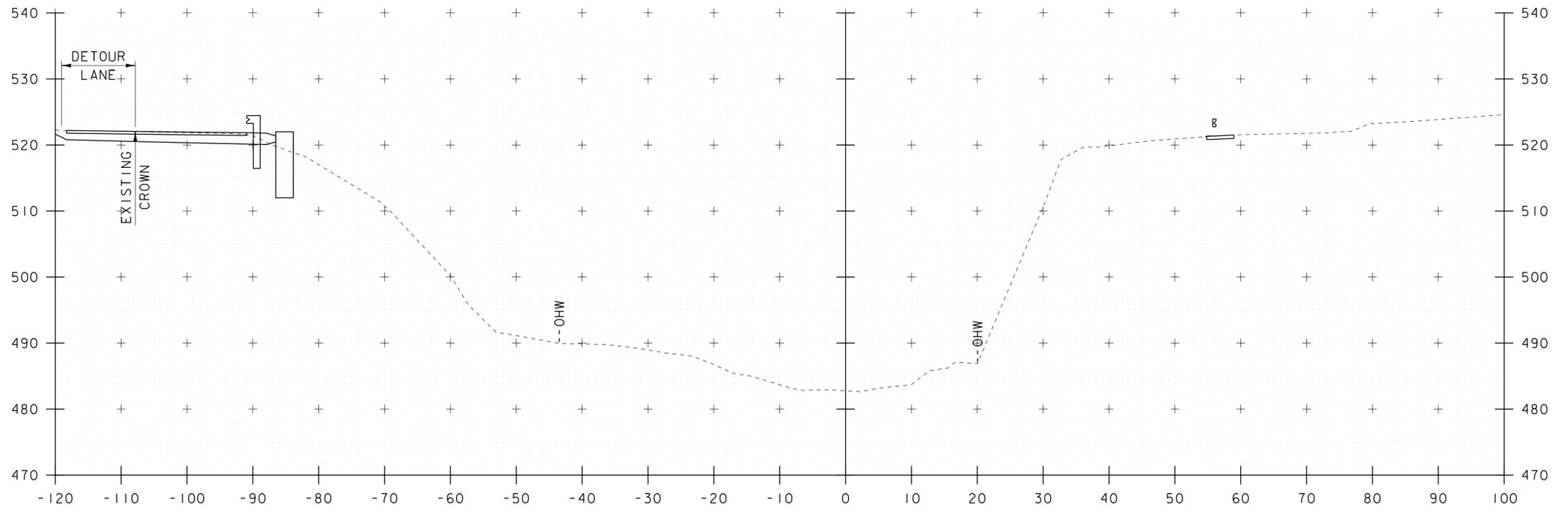
30+50

STA. 30+50 TO STA. 30+75

PROJECT NAME:	NEWFANE	PLOT DATE:	25-JUL-2016
PROJECT NUMBER:	BF 0106(6)	DRAWN BY:	M. LONGSTREET
FILE NAME:	s13j306xs.dgn	DESIGNED BY:	C. BURRALL
PROJECT LEADER:	C.W. CARLSON	CHECKED BY:	C. BURRALL
CHANNEL CROSS SECTIONS 2		SHEET	26 OF 39



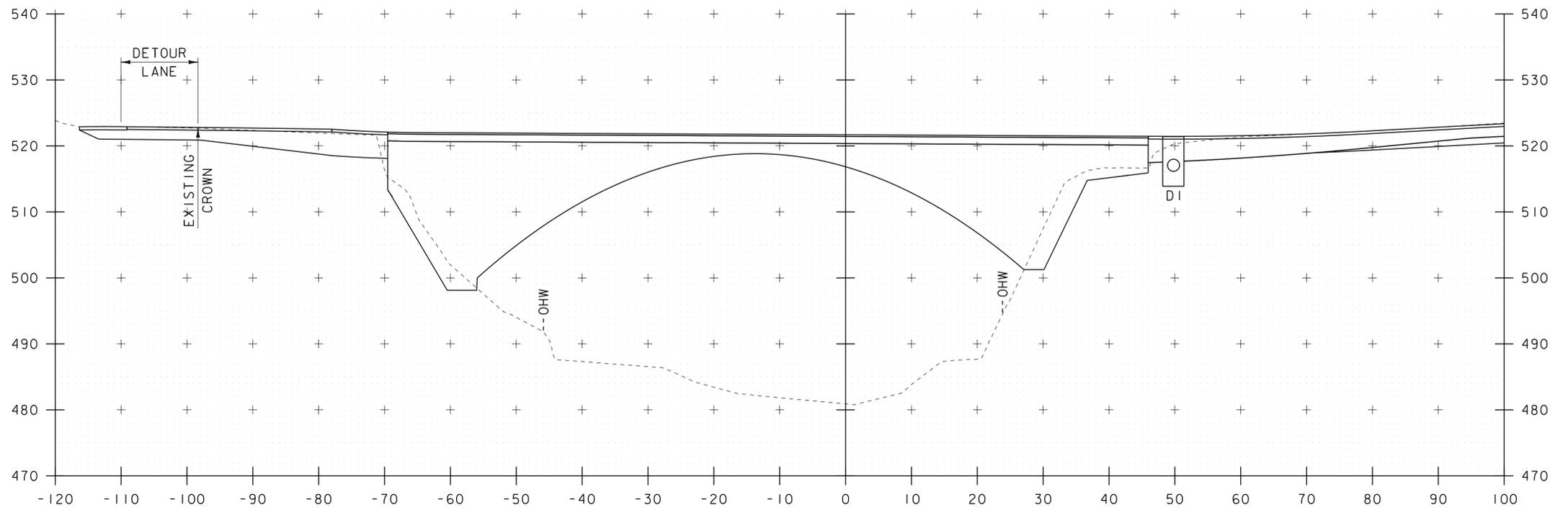
30+90



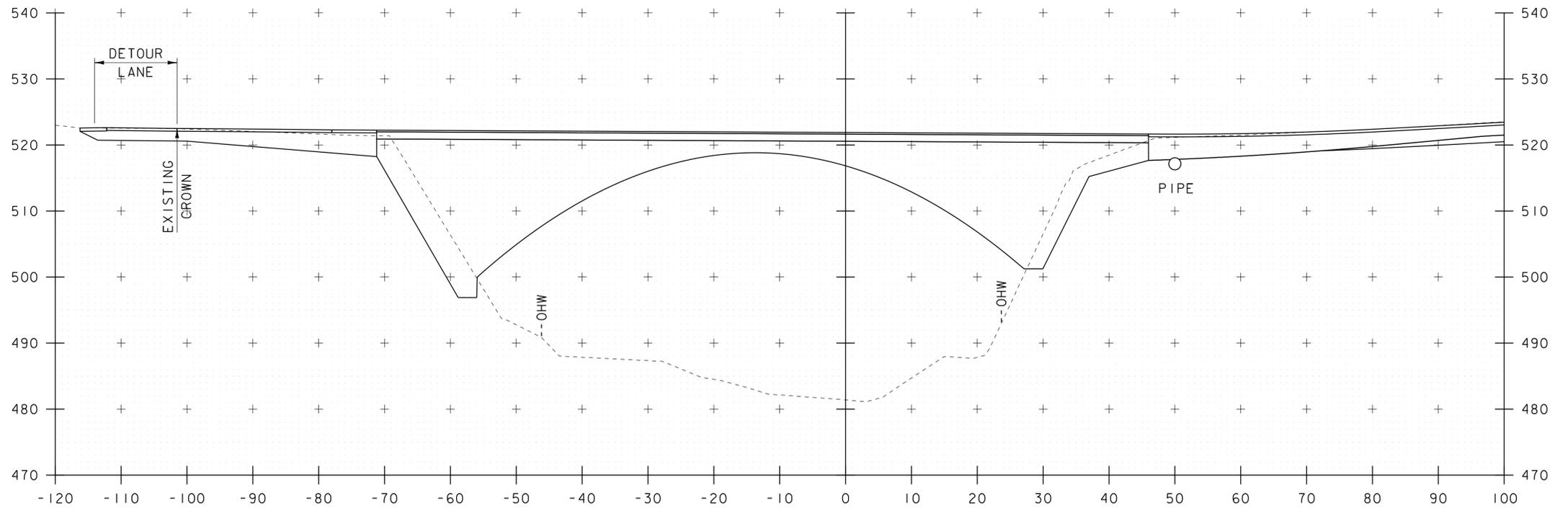
30+80

STA. 30+80 TO STA. 30+90

PROJECT NAME: NEWFANE	
PROJECT NUMBER: BF 0106(6)	
FILE NAME: s13j306xs.dgn	PLOT DATE: 25-JUL-2016
PROJECT LEADER: C.W. CARLSON	DRAWN BY: M. LONGSTREET
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
CHANNEL CROSS SECTIONS 3	SHEET 27 OF 39



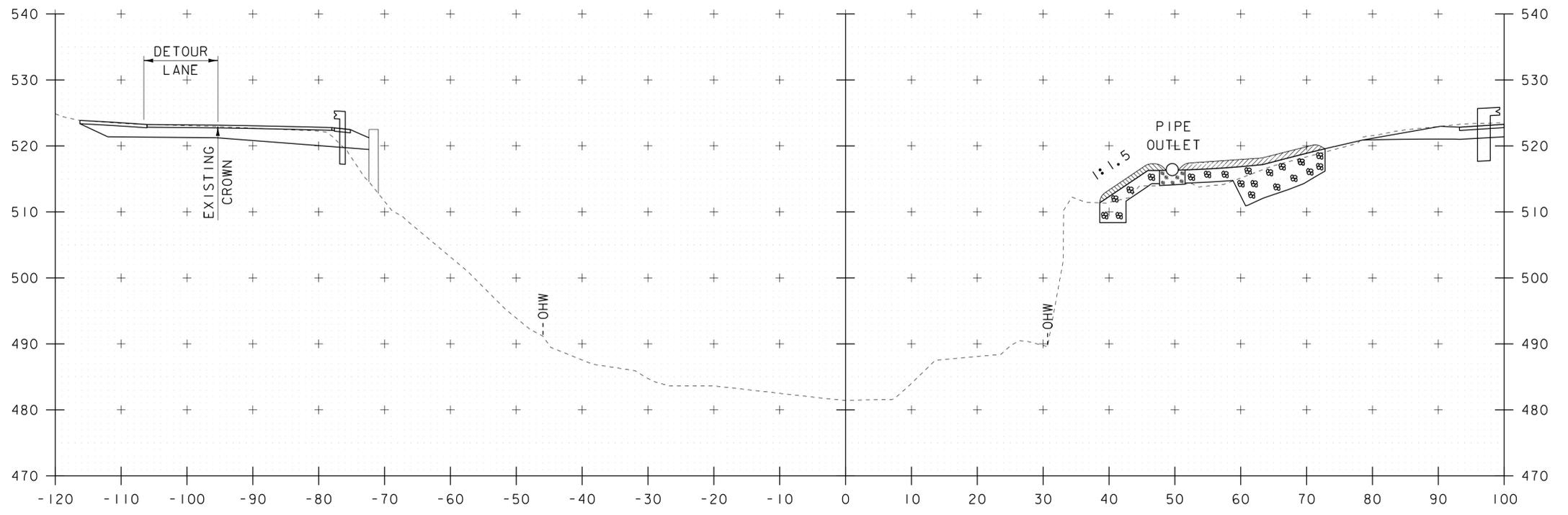
31+10



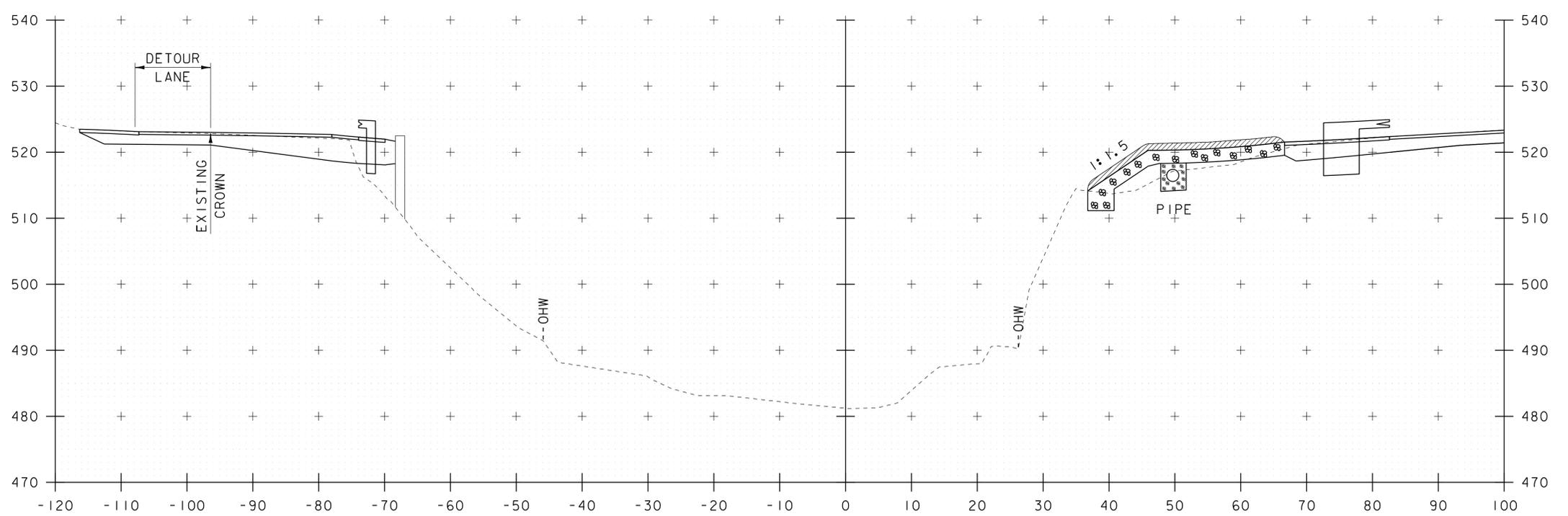
31+00

STA. 31+00 TO STA. 31+10

PROJECT NAME:	NEWFANE	PLOT DATE:	25-JUL-2016
PROJECT NUMBER:	BF 0106(6)	DRAWN BY:	M. LONGSTREET
FILE NAME:	s13j306xs.dgn	DESIGNED BY:	C. BURRALL
PROJECT LEADER:	C.W. CARLSON	CHECKED BY:	C. BURRALL
CHANNEL CROSS SECTIONS 4		SHEET	28 OF 39



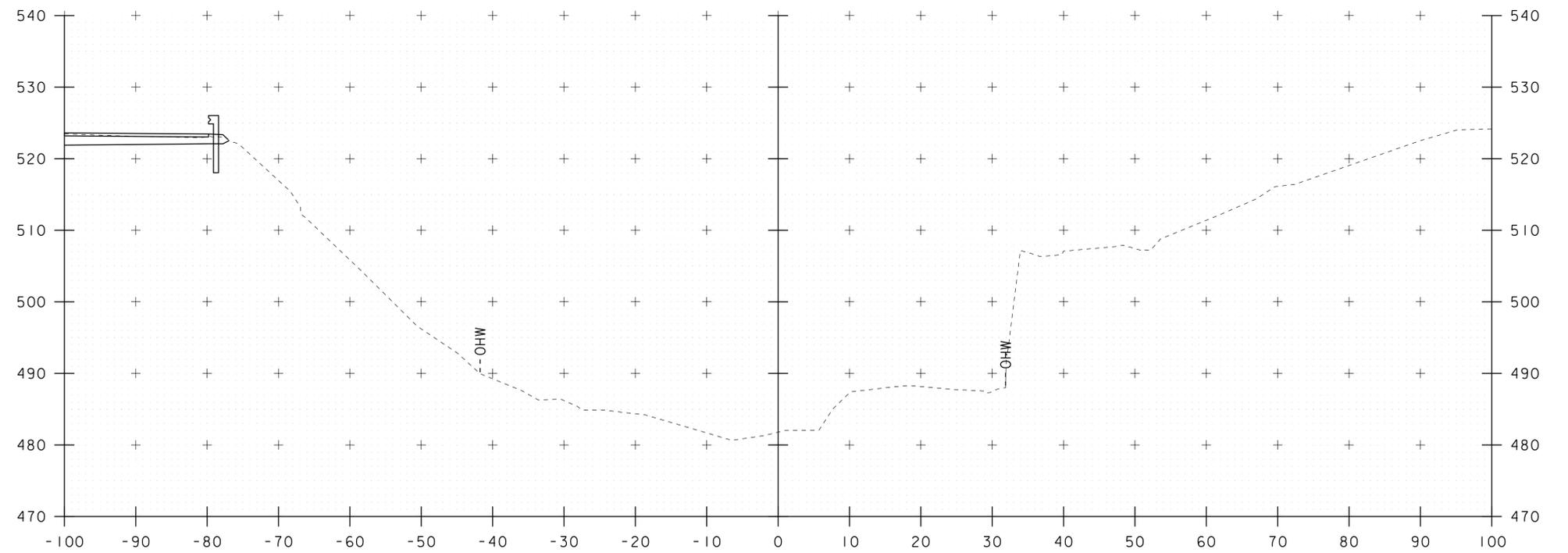
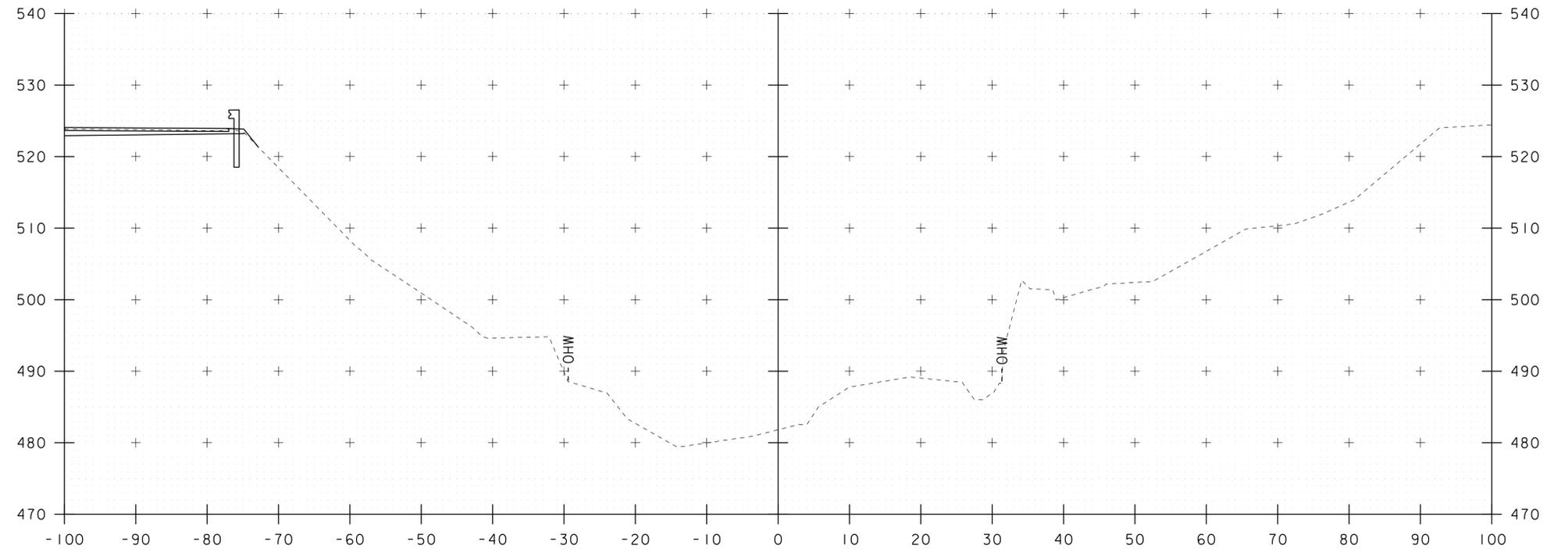
31+20



31+16

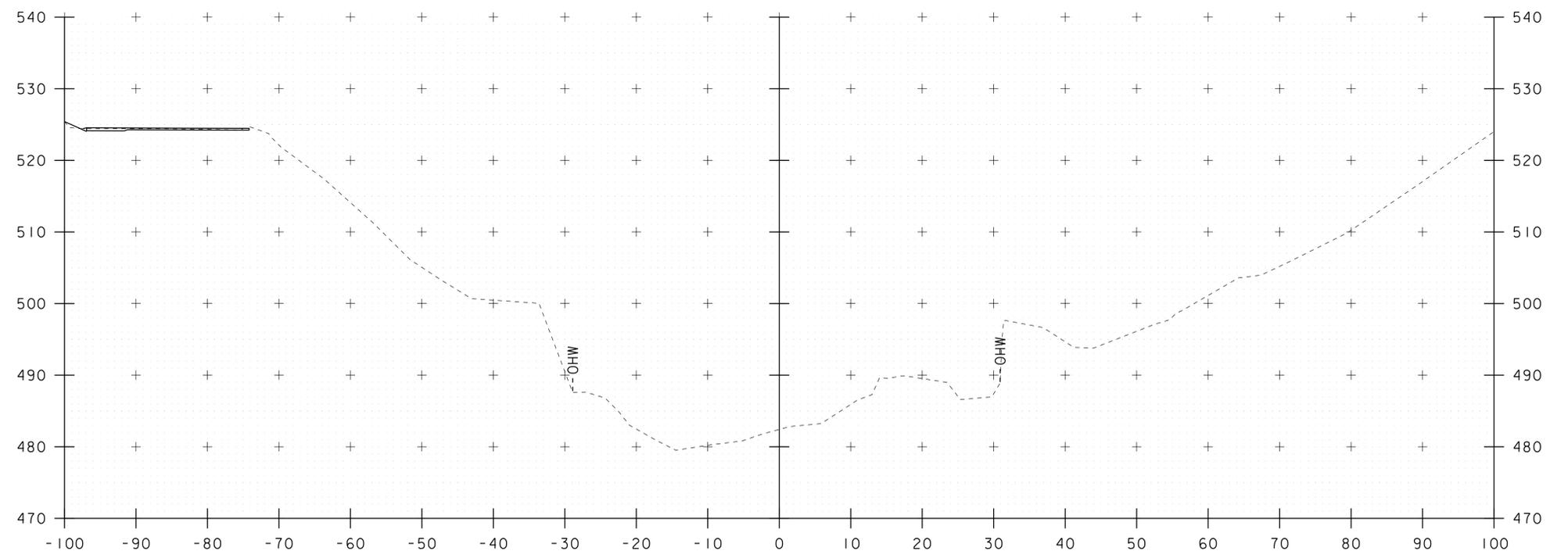
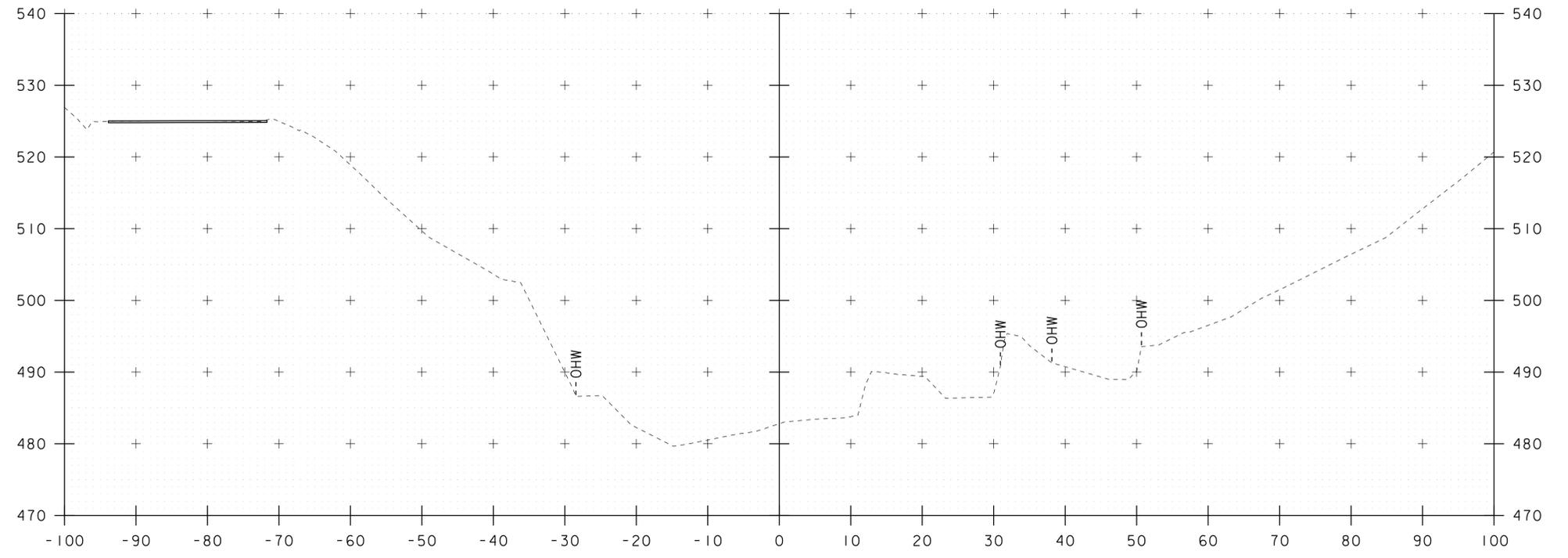
STA. 31+16 TO STA. 31+20

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PROJECT NUMBER: BF 0106(6)	
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PROJECT LEADER: C.W. CARLSON	DRAWN BY: M. LONGSTREET
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
CHANNEL CROSS SECTIONS 5	SHEET 29 OF 39



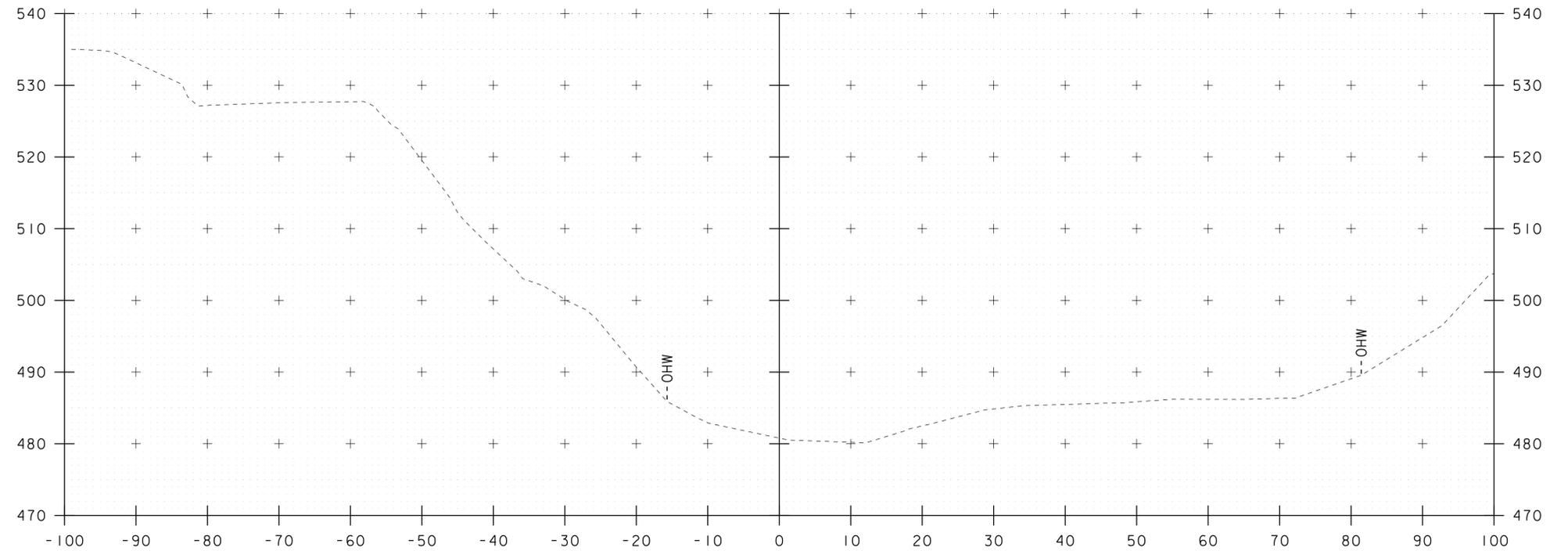
STA. 31+30 TO STA. 31+40

PROJECT NAME:	NEWFANE	PLOT DATE:	25-JUL-2016
PROJECT NUMBER:	BF 0106(6)	DRAWN BY:	M. LONGSTREET
FILE NAME:	s13j306xs.dgn	DESIGNED BY:	C. BURRALL
PROJECT LEADER:	C.W. CARLSON	CHECKED BY:	C. BURRALL
CHANNEL CROSS SECTIONS 6		SHEET	30 OF 39

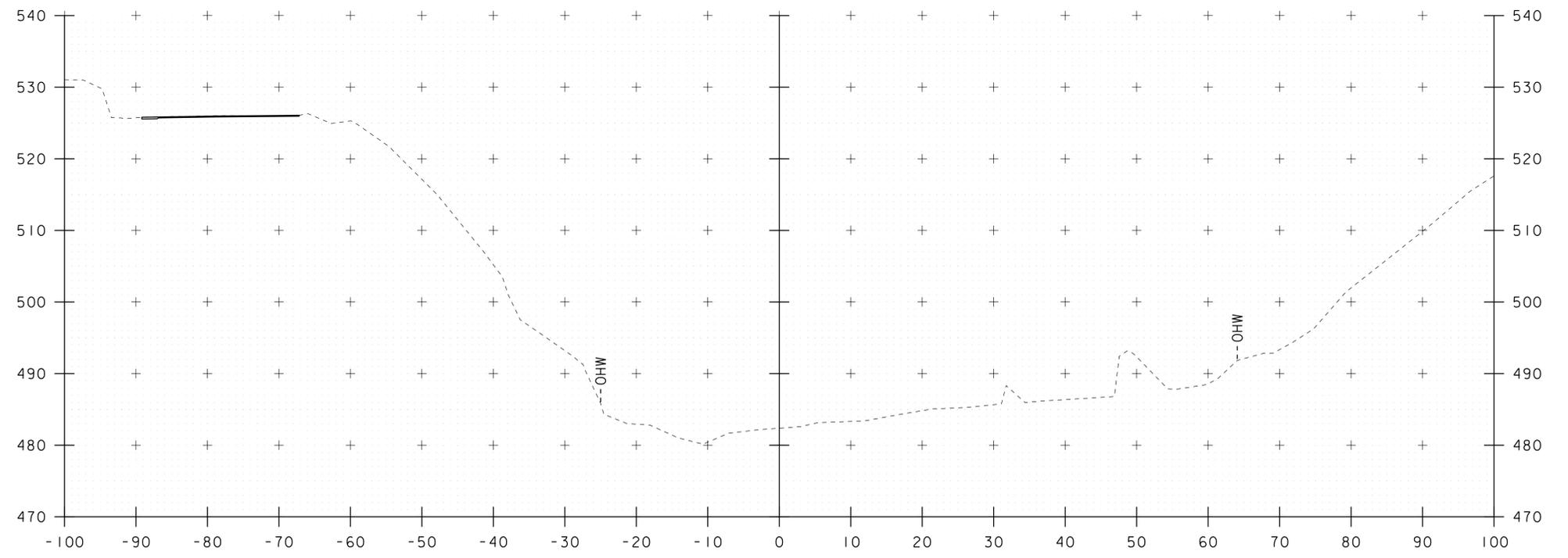


STA. 31+50 TO STA. 31+60

PROJECT NAME:	NEWFANE	PLOT DATE:	25-JUL-2016
PROJECT NUMBER:	BF 0106(6)	DRAWN BY:	M. LONGSTREET
FILE NAME:	s13j306xs.dgn	DESIGNED BY:	C. BURRALL
PROJECT LEADER:	C.W. CARLSON	CHECKED BY:	C. BURRALL
CHANNEL CROSS SECTIONS 7		SHEET	31 OF 39



32+00



31+75

STA. 31+75 TO STA. 32+00

PROJECT NAME:	NEWFANE	PLOT DATE:	25-JUL-2016
PROJECT NUMBER:	BF 0106(6)	DRAWN BY:	M. LONGSTREET
FILE NAME:	s13j306xs.dgn	DESIGNED BY:	C. BURRALL
PROJECT LEADER:	C.W. CARLSON	CHECKED BY:	C. BURRALL
CHANNEL CROSS SECTIONS	8	SHEET	32 OF 39

## **EPSC PLAN NARRATIVE**

### **1.1 PROJECT DESCRIPTION**

THIS PROJECT INVOLVES THE REPLACEMENT OF THE EXISTING BRIDGE ALONG WITH RELATED APPROACH ROADWAY AND CHANNEL WORK. BRIDGE 12 IS A SINGLE SPAN REINFORCED CONCRETE ELLIPTICAL ARCH. THE BRIDGE WILL BE REPLACED WITH A WIDER CAST-IN-PLACE CONCRETE ARCH BRIDGE MATCHING THE ORIGINAL BRIDGE AS CLOSELY AS POSSIBLE TO PRESERVE THE HISTORICAL SIGNIFICANCE. ROADWAY WORK RELATED TO THE BRIDGE REPLACEMENT WILL BE LIMITED TO JUST WHAT IS NECESSARY TO INSTALL THE NEW ARCH AND ADJUST THE APPROACHES. CHANNEL WORK RELATED TO THE BRIDGE WILL BE MINIMAL DUE TO EXPOSED LEDGE AND ROCK FACES. THE NEW ARCH WILL BE BUILT ON ALIGNMENT SPANNING APPROXIMATELY 76FT OVER THE ROCK RIVER AND IS APPROXIMATELY 25 FT ABOVE ORDINARY HIGH WATER AT THE PEAK OF THE ARCH. THE PROJECT SITE IS LOCATED IN THE TOWN OF NEWFANE, AT THE INTERSECTION OF TH 2 (DOVER RD), TH 2 (DEPOT RD), AND TH 5 (GRIMES HILL RD). THE BRIDGE IS APPROXIMATELY 1.9 MILES WESTERLY OF THE INTERSECTION OF TH 2 AND VT 30.

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 0.50 ACRES.

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

### **1.2 SITE INVENTORY**

#### **1.2.1 TOPOGRAPHY**

THE TOPOGRAPHY OF THE AREA IS A SADDLE THAT IS MOSTLY WELL ESTABLISHED FOREST. THERE ARE PAVED AND UNPAVED DRIVEWAYS WITHIN THE PROJECT AREA. THERE IS ONE RESIDENCE ON THE NORTH SIDE OF THE PROJECT AS WELL AS ONE RESIDENCE AND A TOWN GARAGE ON THE SOUTH.

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

THE ROCK RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE RIVER IS CLASSIFIED AS STEADY FLOW, SINUOUS, NARROW, WITH A CONFINED LEDGE AND ROCK CHANNEL BOUNDARY AT THE SITE. THE STREAM BED CONSISTS OF EXPOSED LEDGE, ROCK, AND BOULDERS. DUE TO THE NATURE OF THE SURROUNDING TERRAIN THE PROJECT SITE COULD RECEIVE RUNOFF WATER FROM A FEW NEARBY SLOPES.

#### **1.2.3 VEGETATION**

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING BRIDGE. THE SIDE SLOPES ALONG THE EASTERN CORNER OF THE BRIDGE WILL BE LINED WITH STONE FILL, TYPE II. 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 WINDHAM, VERMONT. SOILS ON THE PROJECT SITE ARE BERKSHIRE / MANADNOCK AND COLTON LOAMY FINE SAND; K FACTORS, SLOPES, AND HYDROLOGICAL SOIL GROUP VARY, AS SHOWN ON THE "EPSC EXISTING LAYOUT" SHEET. THE SOILS RANGE FROM POTENTIALLY HIGHLY ERODIBLE TO HIGHLY ERODIBLE.

**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, PROJECT FEATURES ARE CONSIDERED HISTORICAL, ARCHEOLOGICAL AREA IS LOCATED ON EAST SIDE OF DOVER ROAD.

PRIME AGRICULTURAL LAND: NO

THREATENED AND ENDANGERED SPECIES: THE PROJECT AREA MAY BE A POSSIBLE HABITAT FOR THE NORTHERN LONG-EARED BAT. FURTHER INVESTIGATION WILL BE REQUIRED.

WATER RESOURCE: ROCK RIVER

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.

GEOTEXTILE FOR 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 HAS A STEEP SLOPED HILL THAT COULD POTENTIALLY PRODUCE RUNOFF INTO THE PROJECT AREA AND DIVERSION MEASURES WILL LIKELY BE NEEDED. LOCATION AND TYPE TO BE DETERMINED.

#### **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.

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

#### **1.4.7 CONSTRUCT PERMANENT CONTROLS**

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS. THERE ARE NO PLAN PERMANENT STORMWATER TREATMENT DEVICES

#### **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.

NONE ANTICIPATED.

#### **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.

NONE ANTICIPATED.

#### **1.4.12 INSPECT YOUR SITE**

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

### **1.5 SEQUENCE AND STAGING**

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

#### **1.5.1 CONSTRUCTION SEQUENCE**

#### **1.5.2 OFF-SITE ACTIVITIES**

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

PROJECT NAME: NEWFANE

PROJECT NUMBER: BF 0106(6)

FILE NAME: s13j306eroDetails.dgn

PROJECT LEADER: C. CARLSON

DESIGNED BY: C. BURRALL

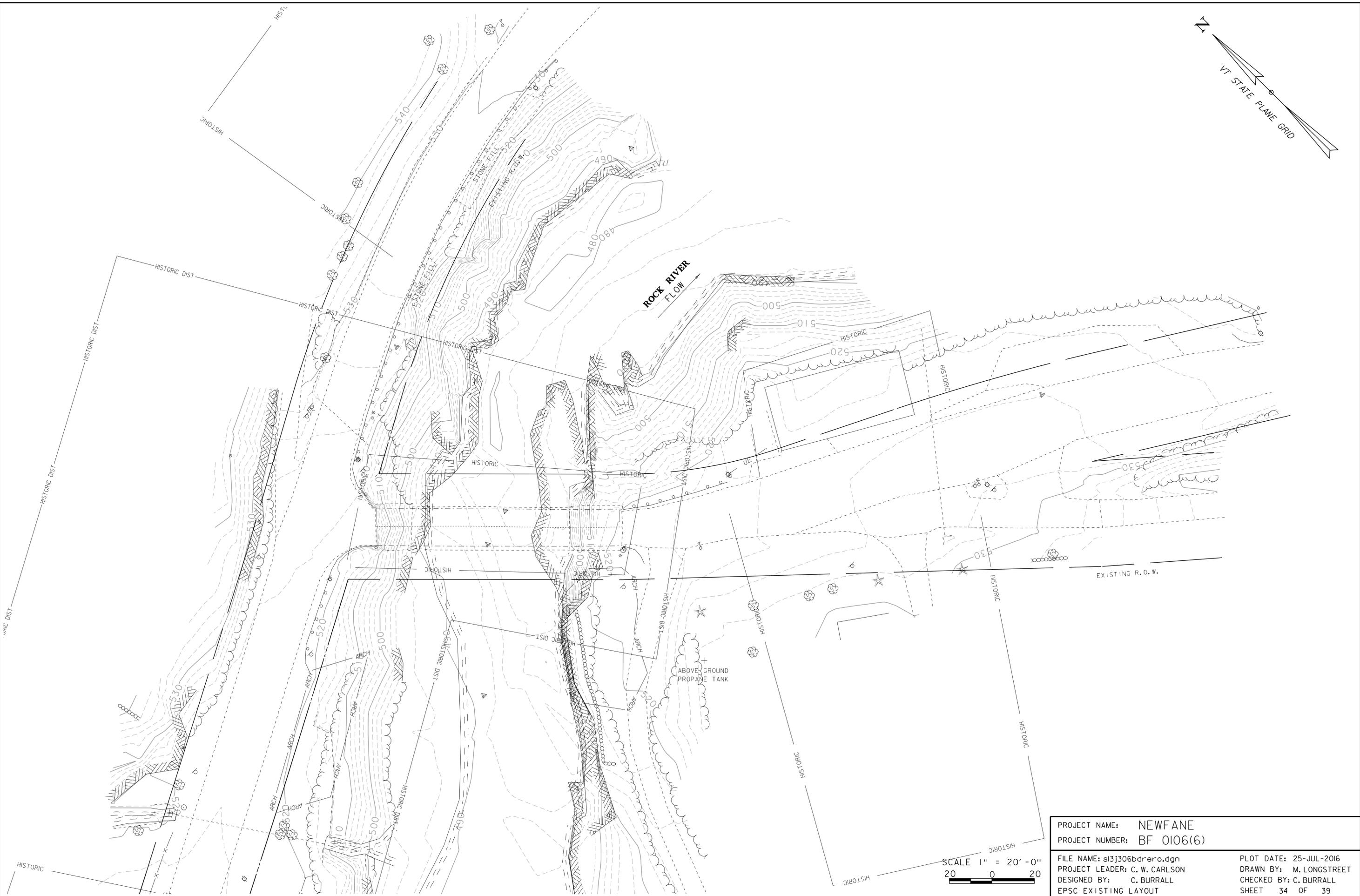
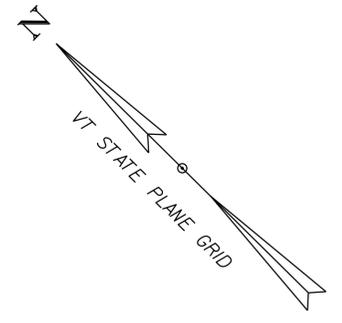
EPSC NARRATIVE

PLOT DATE: 25-JUL-2016

DRAWN BY: M. LONGSTREET

CHECKED BY: C. BURRALL

SHEET 33 OF 39

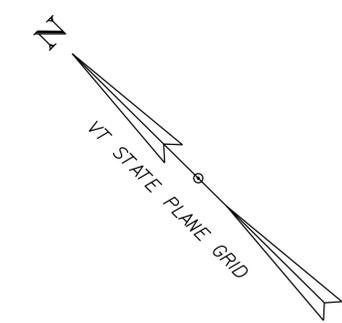


PROJECT NAME: NEWFANE  
PROJECT NUMBER: BF 0106(6)

FILE NAME: s13j306bdrero.dgn  
PROJECT LEADER: C. W. CARLSON  
DESIGNED BY: C. BURRALL  
EPSC EXISTING LAYOUT

PLOT DATE: 25-JUL-2016  
DRAWN BY: M. LONGSTREET  
CHECKED BY: C. BURRALL  
SHEET 34 OF 39

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



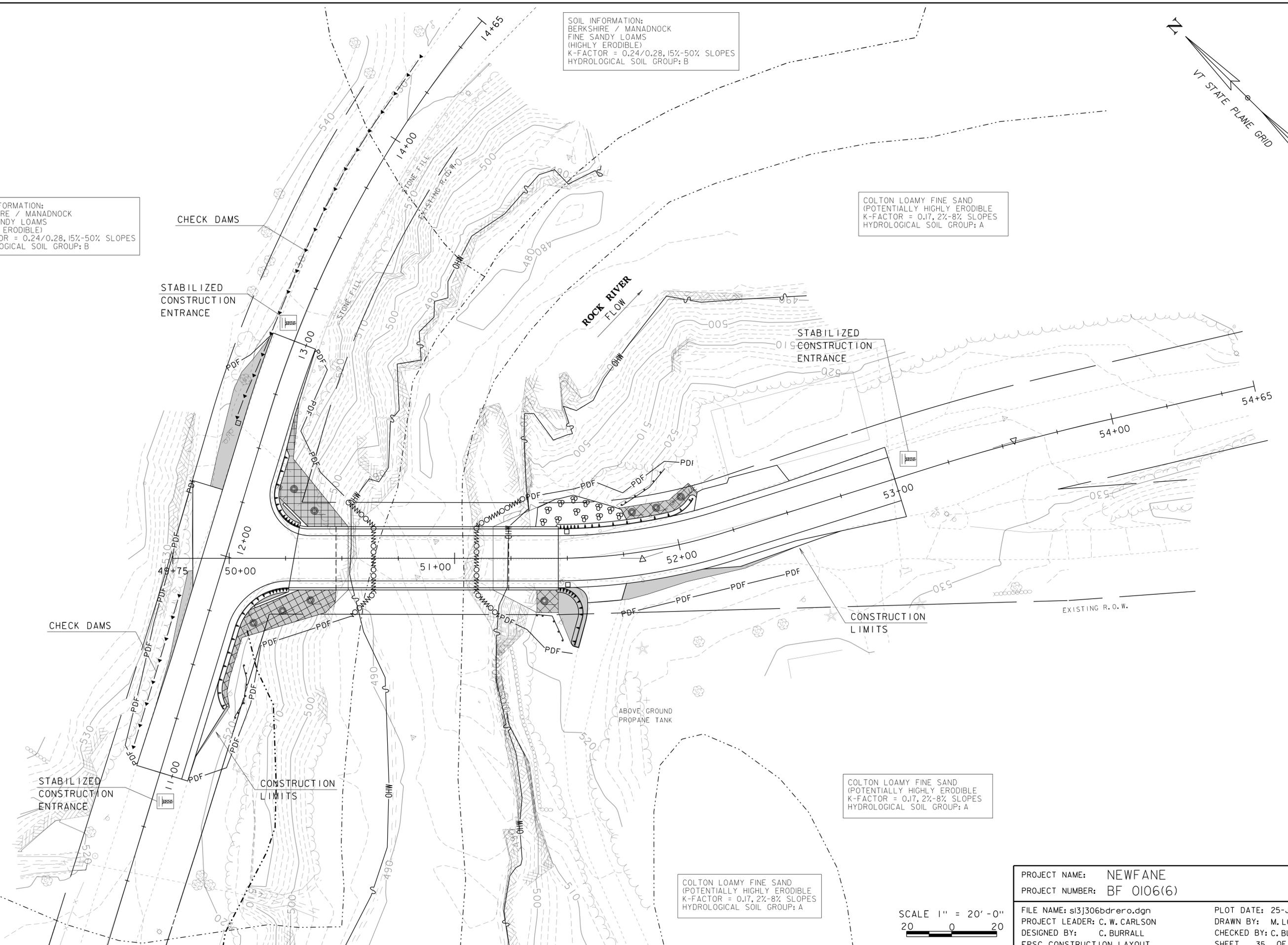
SOIL INFORMATION:  
BERKSHIRE / MANADNOCK  
FINE SANDY LOAMS  
(HIGHLY ERODIBLE)  
K-FACTOR = 0.24/0.28, 15%-50% SLOPES  
HYDROLOGICAL SOIL GROUP: B

SOIL INFORMATION:  
BERKSHIRE / MANADNOCK  
FINE SANDY LOAMS  
(HIGHLY ERODIBLE)  
K-FACTOR = 0.24/0.28, 15%-50% SLOPES  
HYDROLOGICAL SOIL GROUP: B

COLTON LOAMY FINE SAND  
(POTENTIALLY HIGHLY ERODIBLE)  
K-FACTOR = 0.17, 2%-8% SLOPES  
HYDROLOGICAL SOIL GROUP: A

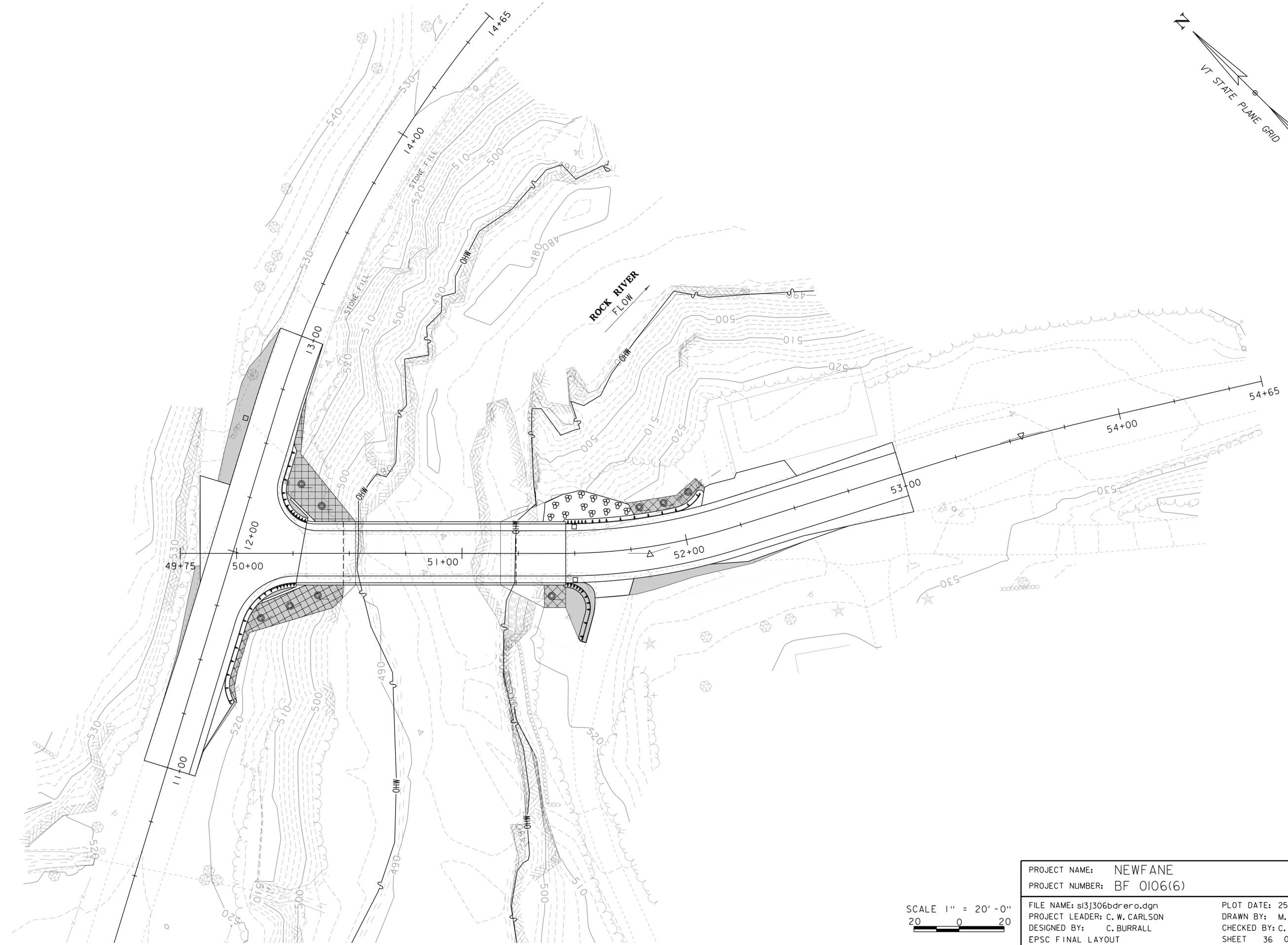
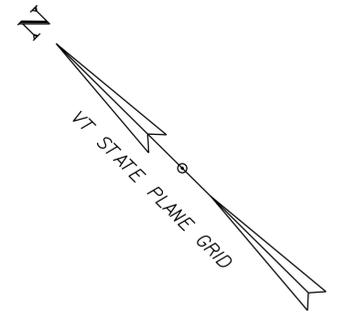
COLTON LOAMY FINE SAND  
(POTENTIALLY HIGHLY ERODIBLE)  
K-FACTOR = 0.17, 2%-8% SLOPES  
HYDROLOGICAL SOIL GROUP: A

COLTON LOAMY FINE SAND  
(POTENTIALLY HIGHLY ERODIBLE)  
K-FACTOR = 0.17, 2%-8% SLOPES  
HYDROLOGICAL SOIL GROUP: A



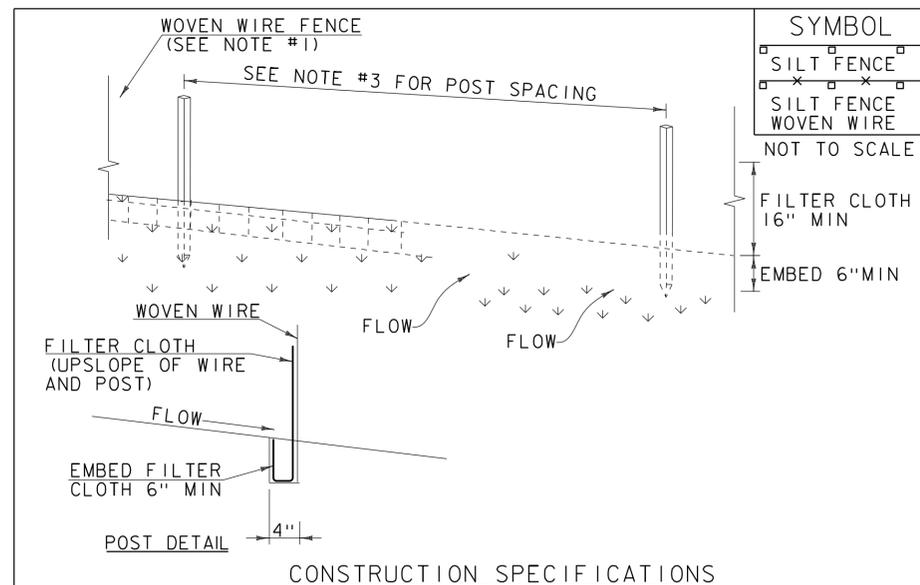
SCALE 1" = 20' - 0"  
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PROJECT NAME:	NEWFANE	PLOT DATE:	25-JUL-2016
PROJECT NUMBER:	BF 0106(6)	DRAWN BY:	M. LONGSTREET
FILE NAME:	s13j306bdrero.dgn	CHECKED BY:	C. BURRALL
PROJECT LEADER:	C. W. CARLSON	EPSC CONSTRUCTION LAYOUT	SHEET 35 OF 39
DESIGNED BY:	C. BURRALL		



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

PROJECT NAME: NEWFANE	PLOT DATE: 25-JUL-2016
PROJECT NUMBER: BF 0106(6)	DRAWN BY: M. LONGSTREET
FILE NAME: s13j306bdrero.dgn	CHECKED BY: C. BURRALL
PROJECT LEADER: C. W. CARLSON	SHEET 36 OF 39
DESIGNED BY: C. BURRALL	
EPSC FINAL LAYOUT	



SYMBOL	
	SILT FENCE
	SILT FENCE WOVEN WIRE

**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, MIRAF1100X, 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.

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

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

VAOT LOW GROW/FINE FESCUE MIX						
WEIGHT	LBS/AC		NAME	LATIN NAME	GERM	PURITY
	BROADCAST	HYDROSEED				
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	LBS/AC		NAME	LATIN NAME	GERM	PURITY
	BROADCAST	HYDROSEED				
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**

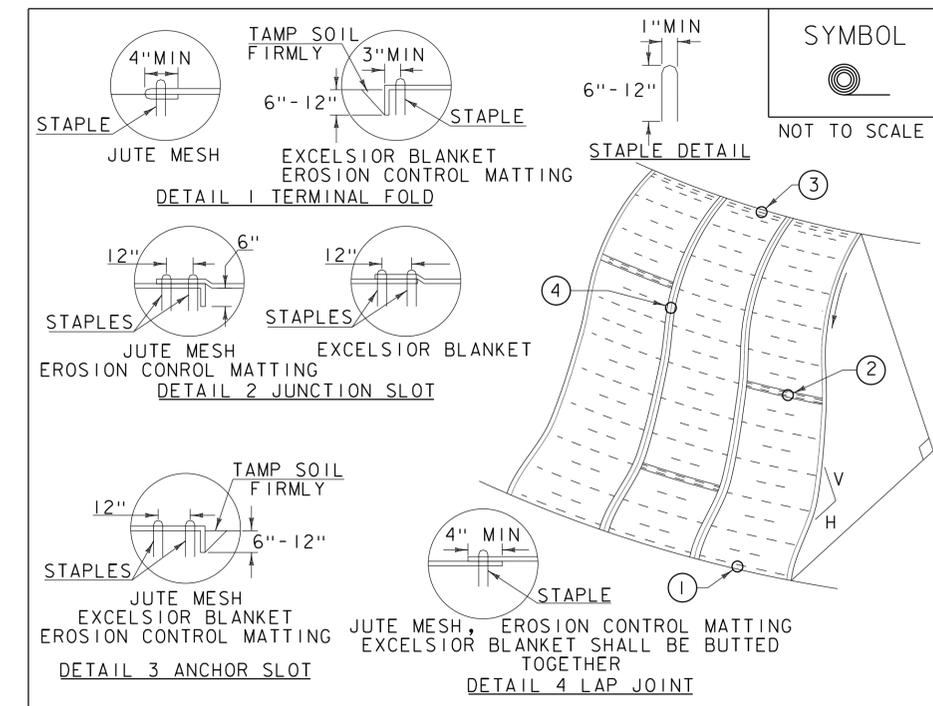
- SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
- SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
- ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND 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 VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

**TURF ESTABLISHMENT**

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR SEED (PAY ITEM 651.5)

REVISIONS	
JANUARY 12, 2015	WHF



SYMBOL	
	NOT TO SCALE

**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' X 225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4' X 150' 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.

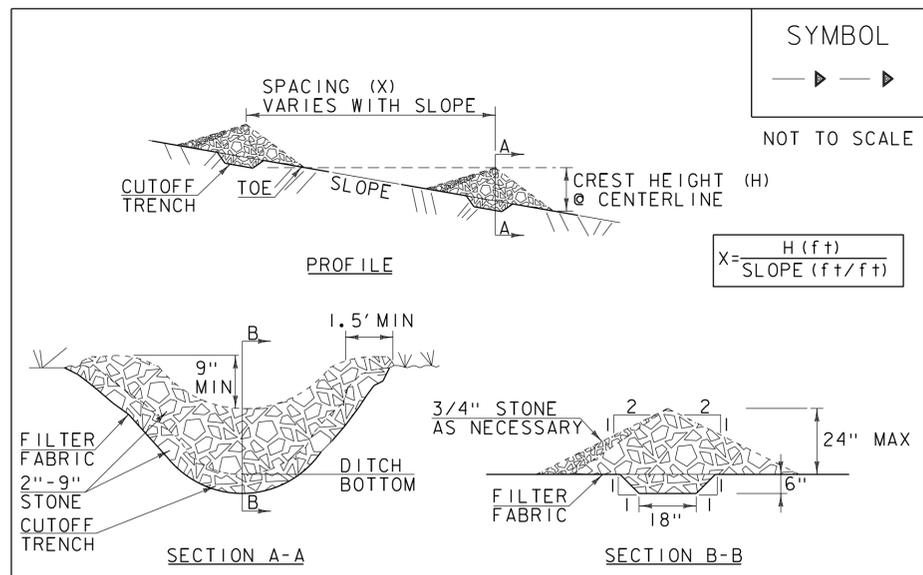
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**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

PROJECT NAME: NEWFANE	PLOT DATE: 25-JUL-2016
PROJECT NUMBER: BF 0106(6)	DRAWN BY: M. LONGSTREET
FILE NAME: s13j306eroDetails.dgn	DESIGNED BY: C. BURRALL
PROJECT LEADER: C. CARLSON	CHECKED BY: C. BURRALL
EPSC DETAIL SHEET 1	SHEET 37 OF 39



SYMBOL  
  
 NOT TO SCALE

$$X = \frac{H(f+t)}{\text{SLOPE}(f+t/f+t)}$$

**CONSTRUCTION SPECIFICATIONS**

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

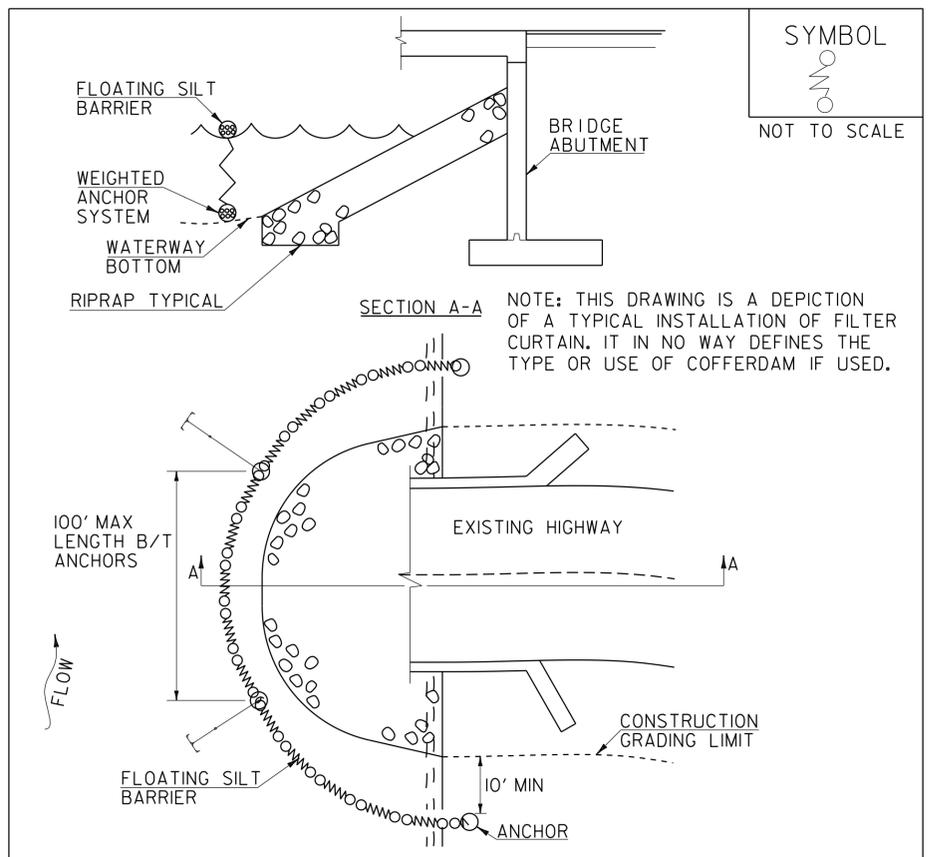
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
 ORIGINALLY DEVELOPED BY USDA-NRCS  
 VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**CHECK DAM**

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

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

REVISIONS	
MARCH 21, 2008	WHF
JANUARY 8, 2009	WHF



SYMBOL  
  
 NOT TO SCALE

**CONSTRUCTION SPECIFICATIONS**

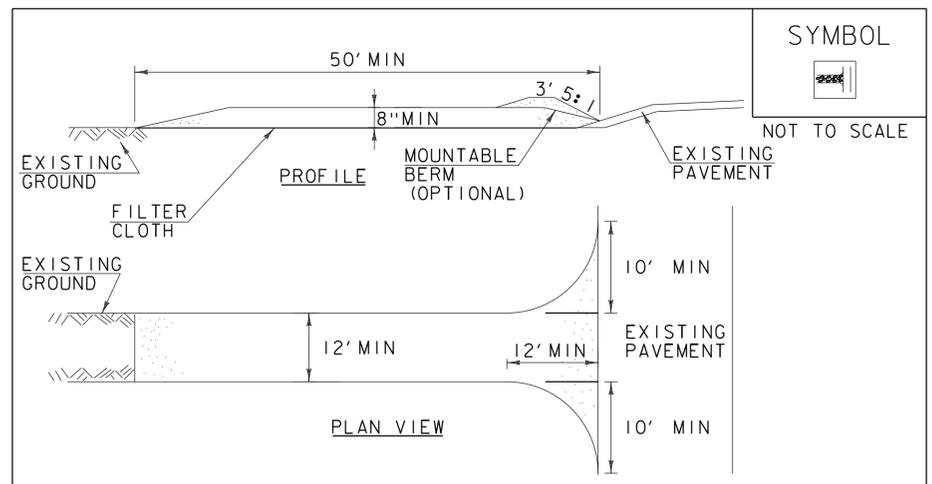
1. FILTER CURTAIN SHALL NOT BE PLACED ACROSS A FLOWING WATERWAY, OR IN A WATERWAY WITH STREAM VELOCITIES GREATER THAN 1.5 FEET/SECOND.
2. MAXIMUM 100' LENGTH BETWEEN ANCHORS.
3. LAST SECTION SHALL TERMINATE A MINIMUM OF 10' BEYOND LIMIT OF DISTURBANCE.
4. THE WEIGHTED ANCHOR SYSTEM SHALL BE A TYPE WHICH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

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

**FILTER CURTAIN**

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.6).

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



SYMBOL  
  
 NOT TO SCALE

**CONSTRUCTION SPECIFICATIONS**

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

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

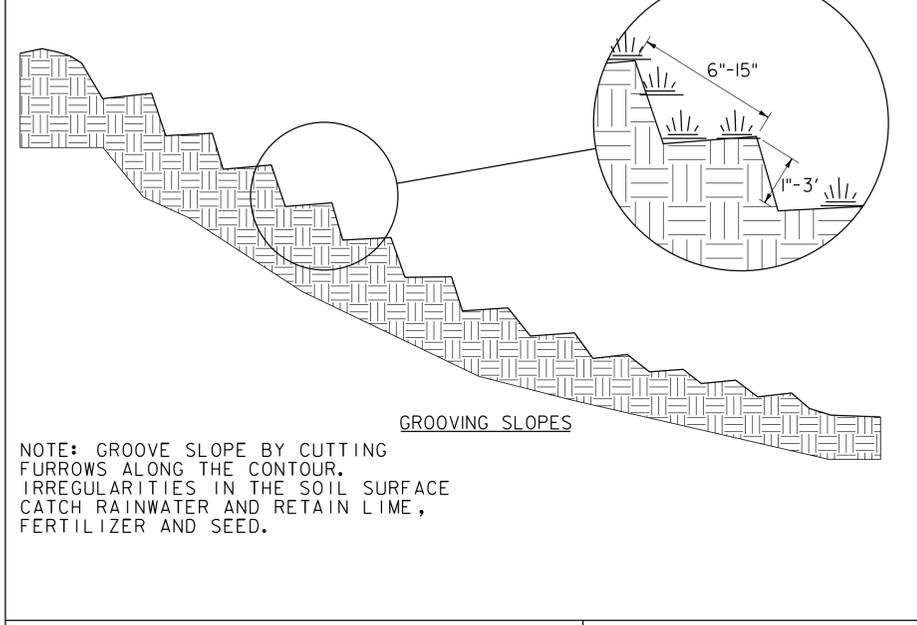
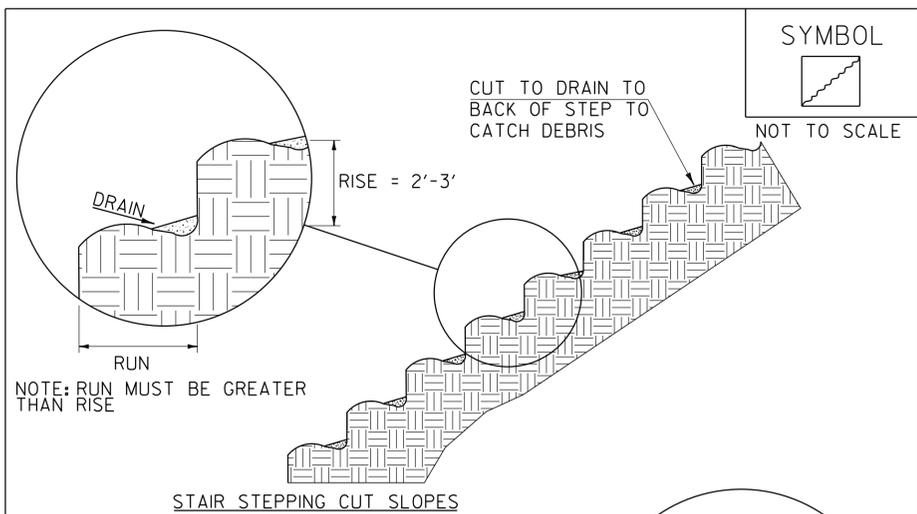
**STABILIZED CONSTRUCTION ENTRANCE**

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

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

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

PROJECT NAME: NEWFANE	PLOT DATE: 25-JUL-2016
PROJECT NUMBER: BF 0106(6)	DRAWN BY: M. LONGSTREET
FILE NAME: s13j306eroDetails.dgn	CHECKED BY: C. BURRALL
PROJECT LEADER: C. CARLSON	SHEET 38 OF 39
DESIGNED BY: C. BURRALL	
EPSC DETAIL SHEET 2	



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: NEWFANE	PLOT DATE: 25-JUL-2016
PROJECT NUMBER: BF 0106(6)	DRAWN BY: M. LONGSTREET
FILE NAME: s13j306eroDetails.dgn	CHECKED BY: C. BURRALL
PROJECT LEADER: C. CARLSON	SHEET 39 OF 39
DESIGNED BY: C. BURRALL	
EPSC DETAIL SHEET 3	

**STATE OF VERMONT  
AGENCY OF TRANSPORTATION**

**Traffic Management Plan**

**FOR**

**Newfane BF 0106(6)**

**FAS ROUTE 106 (TOWN HIGHWAY 2), BRIDGE 12 OVER THE ROCK  
RIVER**

July 25, 2016



**This document shall be provided to the Resident Engineer prior to the preconstruction meeting.**

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## 1.0 Project Description

### ▪ Project Location

- Town of Newfane in Windham County on FAS Route 106 over the Rock River. The bridge is located approximately 1.9 miles west of the intersection of FAS Route 106 and VT Route 30.

### ▪ Work zone limits

- Station 50+12 (Begin Project) to Station 53+00 (End Approach).
- Station 11+00 (Begin Sideline Approach) to Station 13+00 (End Sideline Approach).

### ▪ Project background information.

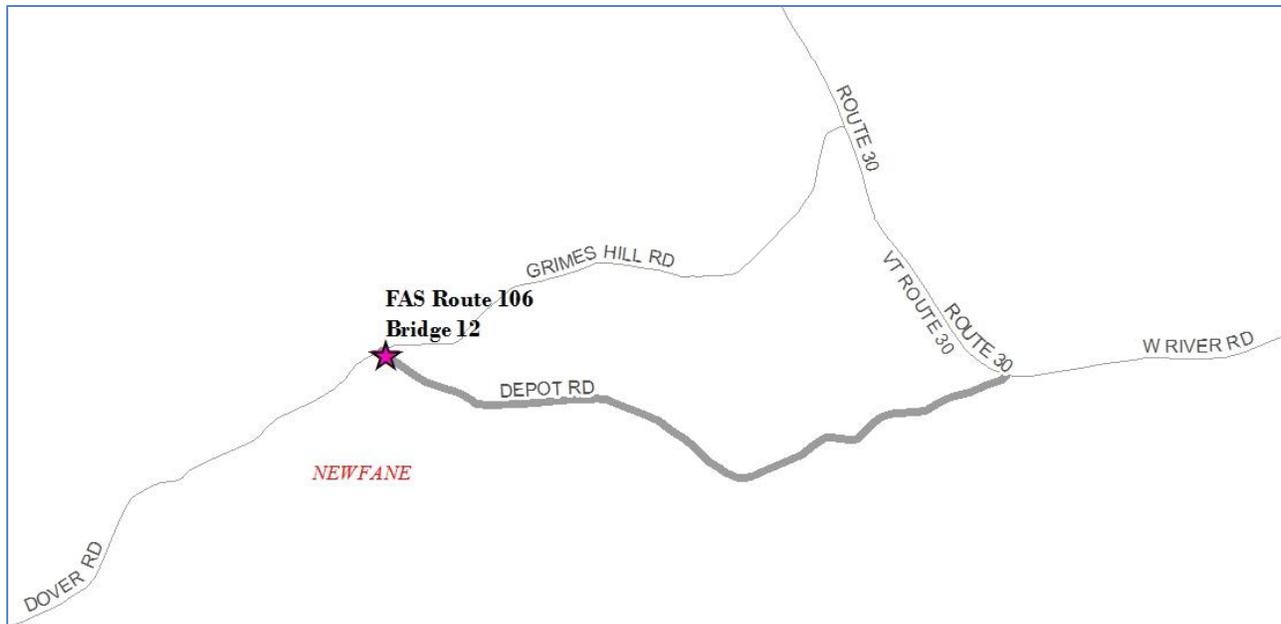
- The Newfane, VT Bridge 12 project will replace the existing arch, which is in poor condition and considered structurally deficient. The existing arch, which has a substandard vertical alignment and bridge railing, will be replaced with a new bridge that meets current design standards. The existing bridge is a historic Reinforced Concrete Closed Spandrel Elliptical Arch constructed in 1908. The existing bridge is approximately 100-feet long (providing a 76.5-foot clearspan) and 18-feet wide.
- The new structure will either be a functioning reinforced concrete arch similar to the original structure, or a prefabricated steel beam bridge with a concrete arch façade. With either option, the structure will have the appearance of a closed spandrel elliptical arch, similar to the existing with a major axis length of 76.5-feet and a minor axis length of 31.0-feet. This clearspan meets the hydraulic standard of passing the Q50 storm event with at least 1.0-foot of freeboard, and meets bank full width requirements. The lines and concrete details of the original spandrel walls will be replicated as close as possible. Additionally, all dimensions and proportions of the original arch will be maintained where possible. The bridge will remain a one-lane bridge, but will be widened to accommodate two-way traffic in the future or for emergency situations. The new bridge will have a single 12-foot travel lane with 7-foot shoulders on either side.

### ▪ Specific traffic restrictions expected on major roadways during the work

- There will be an approximate 20-week bridge closure on Depot Road with temporary single lane closures two weeks prior to and following the bridge closure period. Thru traffic on Dover Road/ Grimes Hill Road will need to be maintained during construction.

### ▪ Specific roadways that will be directly affected by the project work zones

- See Bridge Location Map on following page.
  - Detour Route to be chosen and signed by the Town of Newfane



- **Regional projects that may impact each other**
  - None known of at this time.
  
- **Project schedule**
  - Target Construction Schedule: Construction activities will likely take place beginning in April 2020 and last one construction season.
  - Traffic Maintenance: The bridge will be closed for approximately 20 weeks, and traffic will be maintained on an offsite detour. The detour will be signed and maintained by the Town of Newfane. Thru traffic on Dover Road/ Grimes Hill Road will need to be maintained during construction. No special access will be provided for bicyclists or pedestrians during the project.

## 2.0 TMP Team—Contact Information

Defining roles and responsibilities from the initial stages of a project helps to coordinate all the activities related to TMP development and implementation. This section includes contact information and roles and responsibilities for major personnel involved in the project.

- **TMP Development Managers**—Personnel with the primary responsibility for developing the TMP.
- **TMP Implementation Managers**—Personnel primarily responsible for implementing the TMP.
- **Emergency Contacts**— Public or semi-public agencies (e.g., hospitals, schools, fire, police, select board/town administrator, road foremen) that need to be kept informed about work zone activities, especially in case of a road closures.

Contact information and roles and responsibilities of major personnel involved in the project.

TMP Development Managers	
Agency of Transportation (AOT) DPM	Town of Newfane
Name/Title: Carolyn Carlson, PE/Project Manager Unit: Structures Phone: 802-828-0048 Email: Carolyn.carlson@vermont.gov	Name/Title: Unit: Phone: Email:
<b>Roles and Responsibilities:</b> Development of the Traffic Management Plan. AOT will be responsible for developing the TMP related to the area within the project construction limits. The Town will be responsible for developing the TMP related to the detour route.	
TMP Implementation/Monitoring Managers	
AOT Resident Engineer	Town of Newfane
Name/Title: Unit: Phone: Email:	Name/Title: Unit: Phone: Email:
<b>Roles and Responsibilities:</b> Implementing the Traffic Management Plan. AOT will be responsible for implementing the TMP related to the area within the project construction limits. The Town will be responsible for implementing the TMP related to the detour route.	
Other Important Agency Contacts	
AOT Regional Engineer	AOT Construction and Materials Bureau Director
Name/Title: Ann Gammell / Southeast Regional Construction Engineer Unit: Construction and Materials Phone: 802-281-5000 Email: ann.gammell@vermont.gov	Name/Title: David Hoyne/Director Unit: Construction and Materials Phone: 802-828-2593 (main desk) Email: david.hoyne@vermont.gov
<b>Roles and Responsibilities:</b>	
Emergency Service Contacts	
Southwestern New Hampshire District Fire Mutual Aid	Ambulance Service – Rescue, Inc. Brattleboro
Name/Title: Address: 32 Vernon Street, Keene, NH Phone: 603-352-1100 Email:	Name/Title: Address: 541 Canal Street, PO Box 593 Brattleboro, VT 05302 Phone: 802-254-2010 Email: office@rescueinc.org

Police Services	Ambulance Service – Grace Cottage Hospital, Townshend
Name/Title: Windham County Sheriff, Newfane Address: 11 Jail Street, PO Box 266, Newfane, VT 05345 Phone: 802-365-4942 Email:	Name/Title: Address: 185 Grafton Road, Townsend VT 05353 Phone: 802-365-7676 Email:
<b>Roles and Responsibilities:</b>	
Contractor	
Contractor	Superintendent
Name/Title: Address: Phone: Email:	Name/Title: Unit: Phone: Email:
<b>Roles and Responsibilities:</b>	
Contractors Competent Person	Contractors Safety Officer
Name/Title: Unit: Phone: Email:	Name/Title: Unit: Phone: Email:
<b>Roles and Responsibilities:</b>	

### 3.0 Preliminary Work Zone Impact Assessment

This preliminary assessment of work zone impacts should be developed in the early planning stages of the project to help identify issues or uncover problem areas that should be considered during project development.

#### Preliminary assessment of work zone impacts questionnaire:

Does the project include a long-term closure and/or an extended weekend closure? If Yes, what is/are the applicable type of facility(ies) being used to accommodate traffic?

- Yes, this project includes an approximate 20-week bridge closure on a Local Road. The AADT on Depot Road is 1,500 vehicles/day. There are no sidewalks leading up to or on the existing bridge.

Can traffic be detoured?

- The shortest available detour route for the town to choose is as follows:

- Depot Road (TH2), to Grimes Hill Road (TH5), to VT Route 30, back to Depot Road (4.5 mi end-to-end)

- Early coordination with the police and fire departments will result in the greatest success of the project closure.

Is the existing shoulder sufficient to support traffic during construction?

- The existing bridge is a one lane bridge. This is not wide enough to support a moving lane of traffic through a construction zone while maintaining traffic along the corridor. A minimum of 14-feet is required.

Is additional width required on culverts or bridges to maintain traffic?

- The additional width that would be needed to maintain a lane of traffic on this bridge during construction would widen the bridge superstructure and substructures beyond standards and is not recommended.

Is there a pedestrian/bicycle facility that must be maintained?

- There are no sidewalks on the existing or the proposed bridge, so pedestrian traffic will not need to be maintained during construction.

Would a temporary structure(s) be required?

- From a constructability standpoint, a temporary bridge could be placed on either the upstream or downstream side of the existing bridge. A downstream temporary bridge would have temporary impacts to the gravel drive located before the bridge, and would potentially affect the hazardous waste site located on the downstream side of Town Highway 2. An upstream bridge would have impacts to archeologically sensitive areas, and would require an archeological assessment. Both an upstream and downstream temporary bridge would also require additional rights from adjacent property owners.
- A one-way temporary bridge would be required based on the daily traffic volumes. The Town of Newfane decided at an early stage that they wish to pursue an off-site detour for traffic control during construction. As such, a temporary bridge was not considered.

Would a median crossover be needed?

- N/A

Would there be a need to maintain railroad traffic?

- N/A

Could maintenance of traffic have an impact on existing or proposed utilities?

- There are aerial utilities located in the project area. However, regardless of the maintenance of traffic (MOT), these utilities will have to be moved. Placement of a temporary bridge could impact where utilities are relocated.

Does it appear that maintenance of traffic will require additional Right-of-Way?

- No, detouring traffic will not require additional Right-of-Way. If a temporary bridge were constructed, additional Right-of-Way would be necessary.

Can the contractor restrict the roadway during the time periods listed?

- a.m. peak hours, one direction - Yes, an AADT of 1,500 would support one way alternating traffic with a minimal drop in Level of Service (LOS)
- p.m. peak hours, one direction - Yes, an AADT of 1,500 would support one way alternating traffic with a minimal drop in Level of Service (LOS)
- a.m. peak hours, both directions - only during the 20-week closure period

- p.m. peak hours, both directions - only during the 20-week closure period
- Overnight - only during the 20-week closure period
- Local celebrations - only during the 20-week closure period
- Holidays or weekends - only during the 20-week closure period
- Sporting events/other special events - only during the 20-week closure period

Will project timing (for example, start or end date) be affected by special events:

- School closings or openings: The bridge closure should not take place while school is in session.
- Holidays: No special consideration for holidays
- Special events: None noted

Are there any projects to be considered along the corridor or in the region?

- None known at this time
- Roadwork in the immediate area that may affect traffic or the contractor's operations?
  - None known of at this time
- Roadwork on other roads that may affect the use of alternate routes?
  - None known of at this time

Are there other maintenance of traffic issues? If so, specify.

- None known at this time

## 4.0 Existing Conditions

This section provides an overview of the existing conditions within the project area, and includes:

- Roadway characteristics (history, roadway classification, number of lanes, geometrics, urban/suburban/rural).
  - Roadway Classification: Rural Major Collector (Class 2 Town Highway)
  - Roadway Lane/Shoulder Widths and Bridge Lane/Shoulder Widths: 9'/2' (22') roadway, bridge is one lane with 3.8'/10' typical
- Historical traffic data (volumes, speed, capacity, volume/capacity, percent trucks, queue length, peak traffic hours).
  - A traffic study of this site was performed by the Vermont Agency of Transportation. The traffic volumes are projected for the years 2017 and 2037.

TRAFFIC DATA	2017	2037
AADT	1,500	1,600
DHV	170	180
ADTT	65	110
%T	3.9	6.0
%D	70	70

- Design Speed: 25 mph

- Traffic operations (signal timing, traffic controls).
  - The bridge is located at a 3-way intersection with a single stop sign at the intersection for traffic traveling west on Grimes Hill Road.
- Crash data.
  - There are no recorded crashes in the project area.
- Pedestrian/bicycle facilities.
  - There are no pedestrian or bicycle facilities through the project area.
- Transit facilities.
  - There is currently no public transit route scheduled through the project area.
- Truck routes.
  - Trucks have difficulty turning onto and off of the bridge due to the narrowness.
- Local community and business concerns/issues.
  - Comments/concerns regarding traffic operations, delays, access/egress, etc., that have been received from community, business representatives, and stakeholders during the planning and design stages of the project development:
    - Rock River Artists' Tour in July in South Newfane/ Williamsville
    - Rock River Revival Parade in August in Williamsville
  - Specific concerns on pedestrian, bicycle, transit, facilities, etc.:
    - None

## 5.0 Work Zone Impact Management Strategies

This section provides an overview of various strategies to be deployed to improve the safety and mobility of the work zone and reduce the work zone impacts on the road users, community, and businesses.

The strategies are grouped according to the following three categories.

1. Temporary Traffic Control (TTC).
2. Transportation Operations (TO).
3. Public Information and Outreach (PI&O).

### 5.1. Temporary Traffic Control (TTC)

A TTC plan describes temporary traffic control measures to be used for facilitating road users through a work zone or an incident area. The TTC plan plays a vital role in providing continuity of reasonably safe and efficient road user flow and highway worker safety when a work zone, incident, or other event temporarily disrupts normal road user flow. The TTC plan shall be consistent with the provisions of the MUTCD and AASHTO Roadside Design Guide.

Temporary Traffic Control (TTC)	Check if recommended for use
<b>Control Strategies</b>	
1. Construction phasing/staging	
2. Full roadway closures	<b>X</b>

3. Lane shifts or closures	X
4. One-lane, two-way controlled operation	X
5. Two-way, one-lane traffic/reversible lanes	
6. Night work	
7. Weekend work	X
8. Work hour restrictions for peak travel	
9. Pedestrian/bicycle access improvements	
10. Business access improvements	
11. Off-site detours/use of alternate routes	X
<b>Traffic Control Devices</b>	
12. Temporary signs	X
13. Arrow boards	
14. Portable changeable message signs	X
15. Channelizing devices	
16. Temporary pavement markings	X
17. Flaggers and uniformed traffic control officers	X
18. Automated Flagger Assistant Devices	
19. Temporary traffic signals	
20. Lighting devices	
21. Truck attenuators	
<b>Project Coordination Strategies</b>	
22. Other area projects	X
23. Utilities	X
24. Right-of-Way	
25. Other transportation infrastructure	
<b>Innovative or Accelerated Construction Techniques</b>	
26. Prefabricated/precast elements	X
27. Rapid cure materials	

## 5.2. Transportation Operations (TO)

The TO component shall include the identification of strategies to mitigate impacts of the work zone on the operation of the transportation system within the work zone impact area. The work zone impact area consists of the immediate work zone as well as affects to the surrounding roadways and communities. Additional information can be acquired from the [“Workzone Safety and Mobility Guidelines”](#) (WSMG) and [“Appendix A”](#) in the WSMG document.

Transportation Operations (TO)	Check if recommended for use
<b>Demand Management Strategies</b>	
1. Shuttle services for pedestrian traffic	
<b>Corridor/Network Management Strategies</b>	
2. Signal timing/coordination improvements	
3. Temporary traffic signals	X
4. Street/intersection improvements	
5. Bus turnouts	
6. Turn restrictions	
7. Parking restrictions	
8. Truck/heavy vehicle restrictions	X
9. Reversible lanes	
10. Dynamic lane closure system	
<b>Work Zone Safety Management Strategies</b>	
11. Speed limit reduction/variable speed limits	
12. Temporary traffic signals	X
13. Temporary traffic barrier	X
14. Movable traffic barrier systems	X
15. Crash cushions	X
16. Project task force/committee	
17. Construction safety supervisors/inspectors	X
18. Road safety audits	
19. TMP monitor/inspection team	X
<b>Incident Management and Enforcement Strategies</b>	
20. Media coordination	X
21. Local detour routes	X
22. Contract support for incident management	
23. Incident/Emergency management coordination	X
24. Incident/Emergency response plan	X
25. Dedicated (paid) police enforcement	
26. Cooperative police enforcement	

### Contingency/Incident Management Plans—

It is best to develop the Contingency/Incident Management plan as a collaborative effort with the emergency response and the public safety community. Development of such a plan is crucial in the early phases to properly integrate the concerns of the first responder personnel.

## 5.3. Public Information and Outreach (PI&O)

The PI component shall include communication strategies that seek to inform the general public of work zone impacts and the changing condition of the project. The general public may include road users, area residences and businesses, and other public entities. Examples of communications strategies that may be used to satisfy the PI component may be found at:

[http://www.ops.fhwa.AOT.gov/wz/rule_guide/sec6.htm#sec63](http://www.ops.fhwa.AOT.gov/wz/rule_guide/sec6.htm#sec63).

Public Information and Outreach can be important for the success of bridge closure projects. This project will create a short term impact to travelers, businesses, residents, and truckers. Properly informing these stakeholders of what to expect during construction will ensure proper public support and reduce problems during construction. The following measures can be used:

- Factsheets
  - A project factsheet can be used to show the detour routes, describe the project and why and when it is taking place.
- Business concerns/issues
- Public Input and Surveys
- Social Media to inform the public

Public Information and Outreach (PI&O)	Check if recommended for use
<b>Public Awareness Strategies</b>	
1. Brochures and mailers	
2. Press releases/media alerts	<b>X</b>
3. Telephone hotline	
4. Planned lane closure website	
5. Project website	
6. Public meetings/hearings, workshops	<b>X</b>
7. Community task forces	
8. Coordination with media/schools/business/emergency services	<b>X</b>
9. Email alerts	
<b>Motorist Information Strategies</b>	
10. Changeable message signs	<b>X</b>
11. Temporary motorist information signs	<b>X</b>
12. Dynamic speed message sign	
13. Project information hotline	

## 6.0 Notes

*Any additional notes on selected strategies, the TMP in general, or any item requiring special attention for the project can be provided in this section.*

*This section should include meeting notes or conversation notes where decisions pertaining to the TMP are made.*

## 7.0 TMP Summary

This summary should include a brief description of the traffic management strategies selected for use on the project as well as important contact information. This summary should be included in the contract documents.

### TMP Summary

- The following temporary traffic control (TTC) measures have been identified for use though the construction area.
  - Control Strategies: There will be an approximate 20-week closure with weekend work allowed. The selection and signing of the detour is the responsibility of the Town of Newfane.
  - Traffic Control Devices: Traffic Barriers and “Road Closed” signs will be deployed during the closure to protect cars from driving into the construction site. Channelizing devices, temporary pavement markings, and temporary traffic signals may be used if necessary to maintain traffic on Dover Road (TH2) and Grimes Hill Road (TH5).
  - Project Coordination Strategies: Utilities relocation, and coordination with any projects identified at a later stage that will affect this project should be planned for during the design phase.
  - Innovative or Accelerated Construction Techniques: Prefabricated elements may be used in order to reduce the closure duration.
- The following transportation operations (TO) measures have been identified for use for mitigation of impacts to the work zone and the surrounding roadway network
  - Work Zone Safety Management Strategies: Since construction workers and the traveling public will be in close proximity to each other, several safety management strategies should be utilized including: a speed limit reduction through the construction zone, temporary traffic barriers, moveable traffic barrier systems, a safety supervisor, and TMP monitoring.
  - Incident Management and Enforcement Strategies: Media should be coordinated with to inform the public of delays that occur due to unexpected incidents, Emergency response should be aware of local routes available in case of emergency, and an Incident/Emergency response plan should be drafted and coordinated with emergency personnel.

### Public Information and Outreach Summary

The following measures are recommended to warn the public of the possible impacts to them:

- Public meetings prior to the closure should be held in order to notify the public what to expect during the closure, and to hear concerns.
- Factsheets
- Public Input and Surveys
- Social Media to inform the public of upcoming impacts and changes in traffic patterns

**Contacts**

Design Project Manager: Carolyn Carlson, 802-828-0048

Resident Engineer: TBD

Regional Engineer: Ann Gammell, 802-281-5000

Public Information Officer: TBD

Fire Mutual Aid: 603-352-1100

Police Services: 802-365-4942

Ambulance Service: Rescue, Inc. Brattleboro, 802-254-2010

Ambulance Service: Grace Cottage Hospital, Townshend, 802-365-7676

Contractor: TBD

Superintendent: TBD

Contractors Competent Person: TBD

Contractor Safety Officer: TBD

**8.0 TMP Review/Approvals**

TMPs, and changes to TMPs, can be submitted for review by the Transportation Systems Management & Operations (TSMO) section at AOT before they are implemented. Review of the TMP by AOT prior to implementation is not mandatory, but is highly encouraged.

**TSMO Contacts**

AOT - Transportation Systems Management & Operations (TSMO)

Name/Title: Amy Gamble, PE\Traffic Operations Engineer

Address: 1 National Life Drive, Montpelier, VT 05633-5001

Phone: 802-477-3251

Email: amy.gamble@vermont.gov

**Roles and Responsibilities:** Review of Traffic Management Plans

The approval of the TMP should be based on conformance of the TMP with the Work Zone Safety and Mobility Guide.

Regional Construction Engineer			Traffic Operations Engineer			Project Manager		
<b>All approvals must be obtained prior to the start of work</b>								
Signature:			Signature:			Signature:		
Name:			Name:			Name:		
Date:			Date:			Date:		
Revision#	Initials	Date	Revision #	Initials	Date	Revision#	Initials	Date
1			1			1		
2			2			2		

## 9.0 Appendices

Future appendices could include:

- Traffic Counts
- Temporary Traffic Control Plans
- Public Information and Outreach Plan
- TMP Review Notes
- Project Monitoring Form or Post-Project Evaluation Form.

LEVEL 1 - RISK REGISTER				Project Name: Newfane BF 0106(6), FAS Route 106 TH 2, Bridge 12 over Rock River			Full Bridge Replacement ON Alignment with an Offsite Detour		Project Manager	Carolyn Carlson			
Risk Identification						Risk Rating		Risk Response					
Status	ID #	Type	Category	Title	Risk Statement	Current status/assumptions	Priority Rating	Rationale for Rating	Strategy	Response Actions	Risk Owner	Updated	
Active	1	Threat	Design	Bedrock Stability	If the bedrock is unstable, then the abutments may need to be moved back	This could impact historic permitting	Low	There is no evidence that bedrock is unsound			C. Carlson	7/25/2016	
Active	2	Threat	Construction	Traffic Congestion	If traffic is detoured, then traffic congestion could occur at intersections along the detour	Traffic will be detoured for approximately 20 weeks	Low				C. Carlson	7/25/2016	
Active	3	Threat	Construction	Reopening Bridge Late	If the bridge is not opened on time, then construction could last a second season increasing the overall cost of the project	Contact agreement will include deadlines	Medium				C. Carlson	7/25/2016	
Active	4	Threat	ROW	Right-of-Way	If the ROW process is lengthy, then Project Development time could be effected		Low	5 year Project Development should leave ample time for ROW Process			C. Carlson	7/25/2016	
Active	5	Threat	Environmental	Historic Resource Mitigation	If section 106 and section 4(f) permits are difficult to obtain, then Project Development time could be effected		Medium				C. Carlson	7/25/2016	
Active	6	Threat	Environmental	Hazardous Site	If the hazardous waste garage is impacted, then it could be costly for the town to remediate	Garage is outside of anticipated project Limits	Low				C. Carlson	7/25/2016	
Active	7	Threat	Environmental	Historic Resource Mitigation	If the existing arch characteristics are not documented properly, then replicating the structure will be difficult	Field measurements and record plans will be used to ensure new arch replicates historic arch as closely as possible	Medium				C. Carlson	7/25/2016	
Active	8	Threat	Environmental	Archaeological Resources	If construction goes outside the conceptual limits, then arhaeologically sensitive resources could be impacted which could be costly	Barrier fence will confine the construction within the project limits	Low				C. Carlson	7/25/2016	
Active	9	Threat	Construction	Subsurface Conditions	If bedrock is present, then there could be unknown bedrock and substructure profiles causing delays in project schdule	A good bedrock profile will be obtained prior to construction	Low				C. Carlson	7/25/2016	
Active	10	Threat	Construction	Emergency Response During Closure	If the bridge is closed, Emergency response time could be lengthened	Coordination with Emergency Services to mitigate this risk is encouraged	Low				C. Carlson	7/25/2016	
Active	11	Opportunity	Design	Intersection Improvement	If the insection of FAS 106 with Grimes Hill Rd/Dover Rd is reconstructed, then the turning radius onto and off of the bridge can be increased for safety and mobility through the intersection.		Low				C. Carlson	7/25/2016	
Active	12	Threat	Design	Drainage	If drainage details are not proerly designed, then there could be ponding water on the structure	Drop inlets will need to be utilized due to the grades and the curbs on the project	Low				C. Carlson	7/25/2016	
Active	13	Threat	PM	Project Advertisement	If the project is not advertised on time, then construction year could be delayed		Low	5 year Project Development should leave ample time for ROW Process			C. Carlson	7/25/2016	