

REVIEWER NOTES:

1. REPLACEMENT BRIDGE TO BE CONSTRUCTED IN ONE PHASE OFF-LINE TO THE NORTH OF THE EXISTING ROADWAY ALIGNMENT WHILE ONE -WAY ALTERNATING TRAFFIC IS MAINTAINED ON THE EXISTING ROADWAY ALIGNMENT AND SOUTHERN SECTION OF THE EXISTING BRIDGE.
2. DESIGN SPECIFICATIONS: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 8th EDITION, 2017
3. DESIGN BRIDGE LIVE LOAD: HL-93.
4. SUPERSTRUCTURE: CONCRETE BRIDGE DECK SUPPORTED ON CURVED STEEL PLATE GIRDERS.
5. SUBSTRUCTURE: CONCRETE INTEGRAL ABUTMENTS AND SINGLE ROUND CONCRETE COLUMN SUPPORTING AN INTEGRAL CONCRETE PIER CAP.
6. FOUNDATIONS: ANTICIPATED DRIVEN H-PILES AT ABUTMENTS AND DRILLED SHAFT AT PIER.
7. OVERHEAD EXISTING UTILITIES IN THE NORTH SHOULDER OF THE EXISTING ROADWAY WILL BE PERMANENTLY RELOCATED AWAY FROM ACTIVE CONSTRUCTION AREAS PRIOR TO CONSTRUCTION OF THE REPLACEMENT BRIDGE AND REALIGNED ROADWAY.

STATE OF VERMONT

AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT

BRIDGE PROJECT

TOWN OF GRAFTON

COUNTY OF WINDHAM

FAS-0125 (VERMONT ROUTES 35 & 121, TH#1) (MAJOR COLLECTOR) BRIDGE NO. 20

PROJECT LOCATION:

LOCATED IN THE TOWN OF GRAFTON, ON FAS-0125 (VERMONT 35 AND 121, TH#1), BEGINNING FROM A POINT APPROXIMATELY 1.00 MILE EAST OF THE INTERSECTION OF VERMONT 35N AND EXTENDING EASTERLY 1400 FT TO A POINT APPROXIMATELY 1.25 MILES EAST OF THE INTERSECTION OF VERMONT 35N.

PROJECT DESCRIPTION:

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES COMPLETE REPLACEMENT OF THE EXISTING STRUCTURE WITH A NEW STRUCTURE INCLUDING RELATED ROADWAY AND CHANNEL WORK.

LENGTH OF ROADWAY: 1189.69 FEET

LENGTH OF STRUCTURE: 210.31 FEET

LENGTH OF PROJECT: 1400.00 FEET

STA. 102+25.00

(MM 3.198)

BEGIN PROJECT

STA. 11+50.00

END APPROACH TH-38

STA. 107+00.71

BEGIN BRIDGE

STA. 109+11.02

END BRIDGE

STA. 112+25.00

(MM 3.007)

END PROJECT

STA. 115+00.00

(MM 2.955)

END APPROACH

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

QUALITY ASSURANCE PROGRAM : LEVEL 2

SURVEYED BY : VTRANS

SURVEYED DATE : 12/20/2017

DATUM

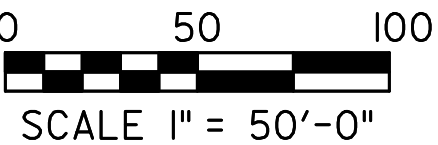
VERTICAL NAVD 88

HORIZONTAL NAD 83 (2011)

STA. 101+00.00

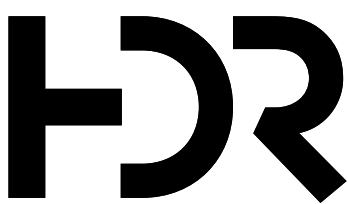
(MM 3.220)

BEGIN APPROACH



PRELIMINARY PLANS

MARCH 16, 2021



HIGHWAY DIVISION, CHIEF ENGINEER

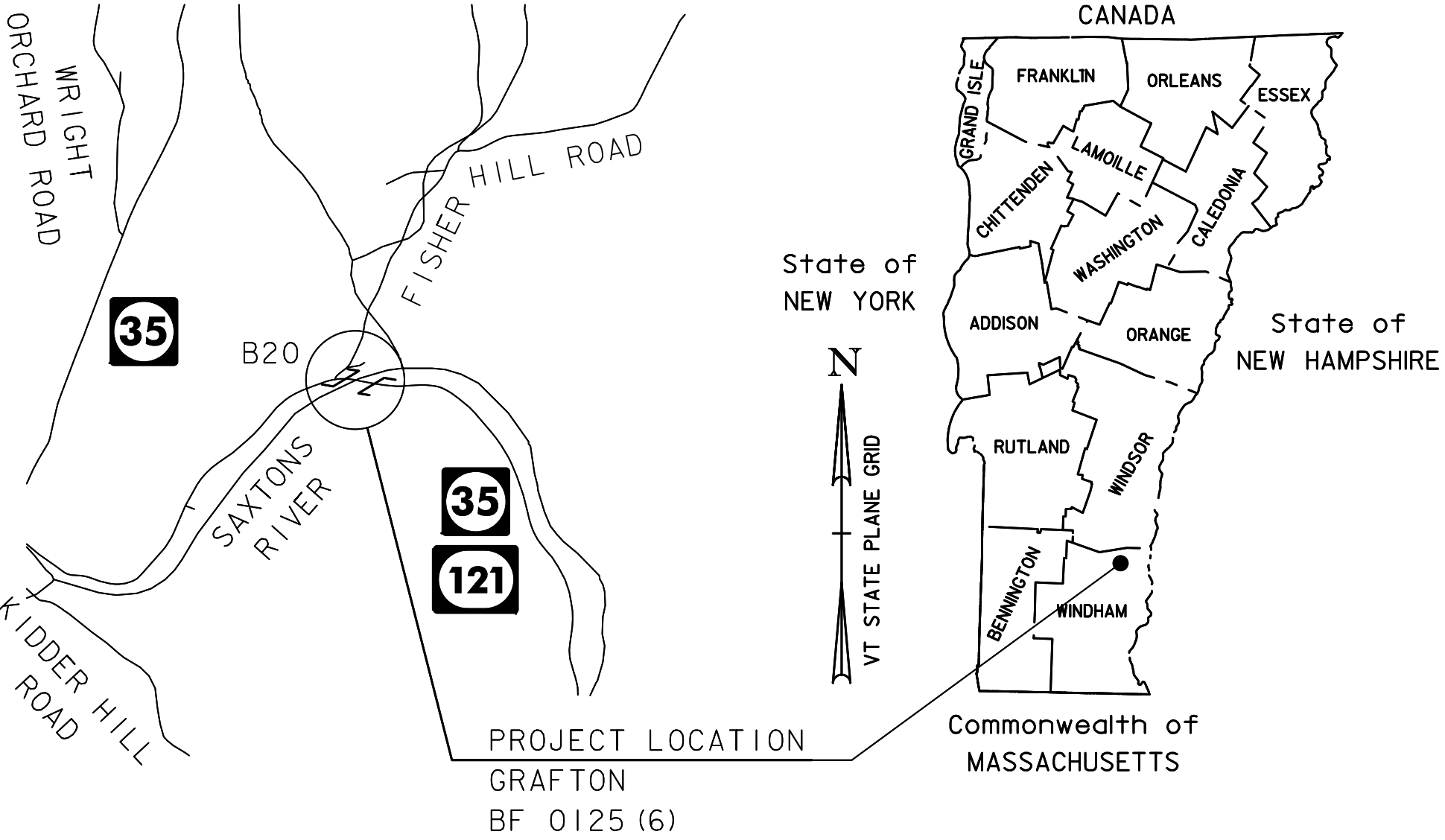
APPROVED _____ DATE _____

PROJECT MANAGER : TODD SUMNER, P.E.

PROJECT NAME : GRAFTON

PROJECT NUMBER : BF 0125 (6)

SHEET 1 OF 68 SHEETS



LOCATION MAP
NOT TO SCALE



STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version

LRFD

INDEX OF SHEETS

PLAN SHEETS

1

TITLE SHEET

2

PRELIMINARY INFORMATION SHEET

3 - 5

BRIDGE AND ROADWAY QUANTITY SHEETS 1-3

6

CONVENTIONAL SYMBOLOLOGY LEGEND SHEET

7 - 9

TYPICAL SECTIONS 1-3

10 - 11

PHASING SECTIONS 1-2

12

TIE SHEET

13 - 15

ROADWAY LAYOUT SHEETS 1-3

16 - 21

TRAFFIC CONTROL PLANS 1-6

22 - 24

PROFILE SHEETS 1-3

25

BANKING DIAGRAM SHEET

26

MATERIAL TRANSITION DETAIL SHEET

27

BORING LAYOUT SHEET

28 - 30

BORING LOGS 1-3

31 - 37

ROADWAY CROSS SECTIONS 1-7

38 - 42

CHANNEL CROSS SECTIONS 1-5

43

BRIDGE PLAN & ELEVATION SHEET

44 - 45

ABUTMENT PLAN & ELEVATION SHEETS 1-2

46

PIER PLAN & ELEVATION SHEET

47

FRAMING PLAN

48 - 50

NETC BRIDGE RAIL SHEETS 1-3

51 - 52

EPSC NARRATIVE 1-2

53 - 55

EPSC EXISTING SITE PLANS 1-3

56 - 64

EPSC CONSTRUCTION SITE PLANS 1-9

65 - 67

EPSC FINAL SITE PLANS 1-3

68

EPSC DETAIL SHEET

STANDARDS LIST

B-71a

STANDARD FOR RESIDENTIAL DRIVES

03-20-2020

E-10

ROLLED EROSION CONTROL PRODUCT, TYPE I

04-07-2020

E-12

STABILIZED CONSTRUCTION ENTRANCE

04-07-2020

E-14

INLET PROTECTION DEVICE, TYPE III

04-07-2020

E-15

SILT FENCE

04-07-2020

E-121

STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD

08-08-1995

G-1

STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)

03-10-2017

G-1D

STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)

03-10-2017

G-19

GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS

10-02-2018

S-360A

BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM

04-07-2020

S-360B

GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM

04-07-2020

S-400

BRIDGE JOINT ASPHALTIC PLUG

04-07-2020

S-500

CONCRETE DETAILS AND NOTES

04-07-2020

S-501

CONCRETE DETAILS AND NOTES

04-07-2020

S-600

STRUCTURAL DETAILS AND NOTES

04-07-2020

S-601

STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES

04-07-2020

T-1

TRAFFIC CONTROL GENERAL NOTES

04-25-2016

T-10

CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING

08-06-2012

T-17

TRAFFIC CONTROL MISCELLANEOUS DETAILS

08-06-2012

T-42

BRIDGE NUMBER PLAQUE

04-09-2014

DETAIL SHEETS

HSD-621.07A

MGS

4/17/2019

HSD-621.07B

MGS COMPONENTS

4/17/2019

HSD-621.07C

MGS ANCHOR

4/17/2019

HSD-621.07D

MGS ANCHOR COMPONENTS

4/17/2019

HSD-621.07E

MGS ANCHOR COMPONENTS

4/17/2019

HSD-621.07F

MGS TRANSITION

4/17/2019

TRAFFIC DATA

YEAR

ADT

DHV

% D

% T

ADTT

20 year ESAL for flexible pavement from 2021 to 2041 : 314000

2021

830

120

59

9.3

70

40 year ESAL for flexible pavement from 2021 to 2061 : 717000

2041

900

130

59

14

120

Design Speed : 40 mph

AS BUILT "REBAR" DETAIL

LEVEL I

TYPE:

GRADE:

LEVEL II

TYPE:

GRADE:

LEVEL III

TYPE:

GRADE:

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: 02/02/2020

DRAINAGE AREA : 35.1 square miles

CHARACTER OF TERRAIN : Hilly to mountainous, mostly forested with some open areas

STREAM CHARACTERISTICS : Sinuous with some floodplain access upstream & downstream

NATURE OF STREAMBED : Sand, gravel, cobbles and small boulders

PEAK FLOW DATA - ANNUAL EXCEEDANCE PROBABILITY (AEP)

43% = 1,500 cfs

2% = 4,300 cfs

10% = 2,700 cfs

1% = 5,100 cfs

4% = 3,600 cfs

0.2% = 7,400 cfs

DATE OF FLOOD OF RECORD: Unknown

ESTIMATED DISCHARGE: Unknown

WATER SURFACE ELEV.: Unknown

NATURAL STREAM VELOCITY: @ 2% AEP = 9.9 fps

ICE CONDITIONS : Unknown

DEBRIS: Unknown

DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Unknown

IS ORDINARY RISE RAPID? No

IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No

IF YES, DESCRIBE:

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: 3 Span Rolled Beam

YEAR BUILT: 1937 (rebuilt in 1972)

CLEAR SPAN(NORMAL TO STREAM): 104 feet

VERTICAL CLEARANCE ABOVE STREAMBED: 8.3 feet

WATERWAY OF FULL OPENING: 1,273 sqaure feet

DISPOSITION OF STRUCTURE: Full Replacement

TYPE OF MATERIAL UNDER SUBSTRUCTURE: Unknown

WATER SURFACE ELEVATIONS AT:

43% AEP = 750.2 feet

VELOCITY = 6.9 fps

10% AEP = 751.2 feet

" 8.9 fps

4% AEP = 751.9 feet

" 10.1 fps

2% AEP = 752.4 feet

" 11.0 fps

1% AEP = 753.0 feet

" 11.9 fps

LONG TERM STREAMBED CHANGES: Unknown

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No

FREQUENCY: N/A

RELIEF ELEVATION: N/A

DISCHARGE OVER ROAD @ 1% AEP: N/A

UPSTREAM STRUCTURE

TOWN: Grafton

DISTANCE: 0.83 miles

HIGHWAY #: TH-52

STRUCTURE #: 52

CLEAR SPAN: 67 feet

CLEAR HEIGHT: Unknown

YEAR BUILT: 1940

FULL WATERWAY: Unknown

STRUCTURE TYPE: Rolled Beam

DOWNSTREAM STRUCTURE

TOWN: Grafton

DISTANCE: 1.2 miles

HIGHWAY #: FAS-0125 (VT-121&35, TH-1)

STRUCTURE #: 19

CLEAR SPAN: 166 feet

CLEAR HEIGHT: Unknown

YEAR BUILT: 1939

FULL WATERWAY: Unknown

STRUCTURE TYPE: 2 Span Rolled Beam

LRFR LOAD RATING FACTORS

LOADING LEVELS

H-20

HL-93

3S2

6 AXLE

3A STR.

4A STR.

5A SEMI

TONNAGE 20 36 36 66 30 34.5 38

INVENTORY

POSTING

OPERATING

COMMENTS:

PROPOSED STRUCTURE

STRUCTURE TYPE: Plate Girder

CLEAR SPAN(NORMAL TO STREAM): 108 feet

VERTICAL CLEARANCE ABOVE STREAMBED: 9.9 feet

WATERWAY OF FULL OPENING: 1,384 square feet

WATER SURFACE ELEVATIONS AT:

43% AEP = 750.3 feet

VELOCITY= 7.1 fps

10% AEP = 751.3 feet

" 8.4 fps

4% AEP = 751.9 feet

" 9.3 fps

2% AEP = 752.4 feet

" 9.9 fps

1% AEP = 753.0 feet

" 10.5 fps

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No

FREQUENCY: N/A

RELIEF ELEVATION: N/A

DISCHARGE OVER ROAD @ 1% AEP: N/A

BRIDGE LOW CHORD ELEVATION: 753.4 feet

FREEBOARD: @ 2% AEP = 1.0 feet

SCOUR: Calculated pier scour depth = 13.8 feet

Calculated abutment scour = 0.0 feet (minimums in Hydraulics Manual apply)

REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV

PERMIT INFORMATION

AVERAGE DAILY FLOW: - DEPTH OR ELEVATION: -

ORDINARY LOW WATER: -

ORDINARY HIGH WATER: -

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE:

CLEAR SPAN (NORMAL TO STREAM):

VERTICAL CLEARANCE ABOVE STREAMBED:

WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN ONE-WAY TRAFFIC ON THE EXISTING STRUCTURE.

2. INSTALL AND MAINTAIN TRAFFIC SIGNALS.

3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD HL-93

2. FUTURE PAVEMENT dp: 0.0 INCH

3. ABUTMENT BEARING TO BEARING LENGTH (TWO SPANS) L: 208.00 FT (104.00 - 104.00) FT

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

5. PRESTRESSING STRAND fy: ---

6. PRESTRESSED CONCRETE STRENGTH f'c: ---

7. PRESTRESSED CONCRETE RELEASE STRENGTH f'ci: ---

8. HIGH PERFORMANCE CONCRETE, CLASS PCD f'c: 4.0 KSI

9. HIGH PERFORMANCE CONCRETE, CLASS PCS f'c: 3.5 KSI

10. CONCRETE HIGH PERFORMANCE, CLASS PSS f'c: 4.0 KSI

11. CONCRETE, CLASS C f'c: 3.0 KSI

12. REINFORCING STEEL fy: 60 KSI

13. STRUCTURAL STEEL AASHTO M270 fy: 50 KSI

14. NOMINAL BEARING RESISTANCE OF SOIL qn: ---

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

16. NOMINAL BEARING RESISTANCE OF ROCK qn: ---

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

18. PILE RESISTANCE FACTOR φ: ---

19. LATERAL PILE DEFLECTION Δ: ---

20. BASIC WIND SPEED V3s: ---

21. MINIMUM GROUND SNOW LOAD pg: ---

22. SEISMIC DATA PGA: --- Ss: --- S1: ---

23.

24.

25.

26.

PROJECT NAME: GRAFTON

PROJECT NUMBER: BF 0125(6)

FILE NAME: z16j177pi.dgn PLOT DATE: 2/11/2021

PROJECT LEADER: T. FRENCH DRAWN BY: N. CARON

DESIGNED BY: N. CARON CHECKED BY: S. BOYINGTON

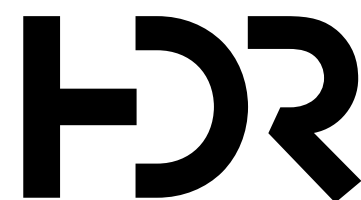
PRELIMINARY INFORMATION SHEET SHEET 2 OF 68

STATE OF VERMONT AGENCY OF TRANSPORTATION														QUANTITY SHEET 1													
SUMMARY OF ESTIMATED QUANTITIES														TOTALS		DESCRIPTIONS						DETAILED SUMMARY OF QUANTITIES					
								ROADWAY		TRAINING		EROSION CONTROL		BRIDGE		FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS		
								1									1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.1				EARTHWORK SUMMARY		
								2039									2039		CY	COMMON EXCAVATION	203.15			2039	CY	203.15 COMMON EXCAVATION	
														310			310		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27			-408	CY	20% WASTE	
																			CY	EARTH BORROW	203.3			1631	CY	TOTAL FILL AVAILABLE	
								1764									1764		CY	SAND BORROW	203.31			469	CY	TOTAL FILL REQUIRED (INCLUDING 1.15 FILL FACTOR)	
								691									691		CY	GRANULAR BORROW	203.32			1162	CY	TOTAL WASTE	
														400			400		CY	STRUCTURE EXCAVATION	204.25						
														160			160		CY	GRANULAR BACKFILL FOR STRUCTURES	204.3						
								1979									1979		SY	COARSE-MILLING, BITUMINOUS PAVEMENT	210.1						
								1527									1527		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35						
								18									18		CY	AGGREGATE SURFACE COURSE	401.1						
								1151									1151		TON	SUPERPAVE BITUMINOUS CONCRETE PAVEMENT	406.35						
														295			295		CY	HIGH PERFORMANCE CONCRETE, CLASS PCD	501.37						
														130			130		CY	HIGH PERFORMANCE CONCRETE, CLASS PCS	501.38						
														1			1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.1						
														450			450		LF	STEEL PILING, HP 12 X 84	505.165						
														2			2		EACH	DYNAMIC PILE LOADING TEST	505.45						
														354830			354830		LB	STRUCTURAL STEEL, CURVED PLATE GIRDER	506.56						
														63020			63020		LB	REINFORCING STEEL, LEVEL II	507.12						
														1			1		LS	SHEAR CONNECTORS (1098 - 8" x 7/8")	508.15						
														22			22		GAL	WATER REPELLENT, SILANE	514.1						
														63			63		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.1						
														60			60		LF	JOINT SEALER, HOT POURED	524.11						
														1			1		EACH	REMOVAL OF STRUCTURE (5730 SQ. FT. - EST)	529.15						
								53									53		LF	18" CPEP	601.0915						
								145									145		LF	24" CPEP	601.092						
														160			160		CY	STONE FILL, TYPE IV	613.13						
								160									160		LF	CAST-IN-PLACE CONCRETE CURB, TYPE B	616.28						
								500									500		LF	STEEL BEAM GUARDRAIL, GALVANIZED	621.2						
								2									2		EACH	MANUFACTURED TERMINAL SECTION, FLARED	621.5						
								2									2		EACH	ANCHOR FOR STEEL BEAM RAIL	621.6						
								195									195		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.8						
								500									500		LF	TEMPORARY TRAFFIC BARRIER	621.9						
								1000									1000		HR	FLAGGERS	630.15						
																1	1		LS	FIELD OFFICE, ENGINEERS	631.1						
																1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16						
																1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17						
																1	1		DL	FIELD OFFICE COMMUNICATIONS (N.A.B.I.)	631.26						
								1									1		EACH	CPM SCHEDULE	633.1						
								1									1		LS	MOBILIZATION/DEMOBILIZATION	635.11						
																								PROJECT NAME: GRAFTON PROJECT NUMBER: BF 0125(6) FILE NAME: i6jl77/zl6jl77qty.dgn PROJECT LEADER: T. FRENCH DESIGNED BY: K. HOWE QUANTITY SHEET 1 PLOT DATE: 3/18/2021 DRAWN BY: N. CARON CHECKED BY: C. DIETRICH SHEET 3 OF 68			

QUANTITY SHEET 2

[illegible]

PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177\ZI6J177q+y.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: N. CARON
DESIGNED BY: K. HOWE	CHECKED BY: C. DIETRICH
QUANTITY SHEET 2	SHEET 4 OF 68



BRIDGE QUANTITY SHEET 1

[illegible]

	PROJECT NAME: GRAFTON	
	PROJECT NUMBER: BF 0125(6)	
	FILE NAME: l6jl77/zl6jl77q+y.dgn PROJECT LEADER: T. FRENCH DESIGNED BY: J. PETERSON BRIDGE QUANTITY SHEET 1	PLOT DATE: 3/18/2021 DRAWN BY: N. CARON CHECKED BY: S. BOYINGTON SHEET 5 OF 68

GENERAL INFORMATION

SYMBOLOLOGY LEGEND NOTE

THE SYMBOLOLOGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLOLOGY. THE SYMBOLOLOGY 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. SYMBOLOLOGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

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

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

COMMON TOPOGRAPHIC POINT SYMBOLS

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

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

PROPOSED GEOMETRY CODES

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

UTILITY SYMBOLOLOGY

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

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

PROJECT CONSTRUCTION SYMBOLOLOGY	
— -- -- 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 —× —× —× —× —	BARRIER FENCE
xxxxxxxxxxxxxxxxxxxx	TREE PROTECTION ZONE (TPZ)
//////////	STRIPING LINE REMOVAL
~~~~~	SHEET PILES

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

EPSC LAYOUT PLAN SYMBOLOLOGY

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

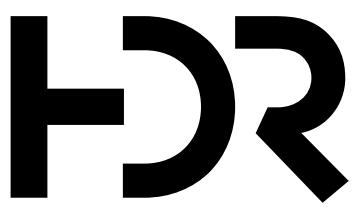
SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLOLOGY

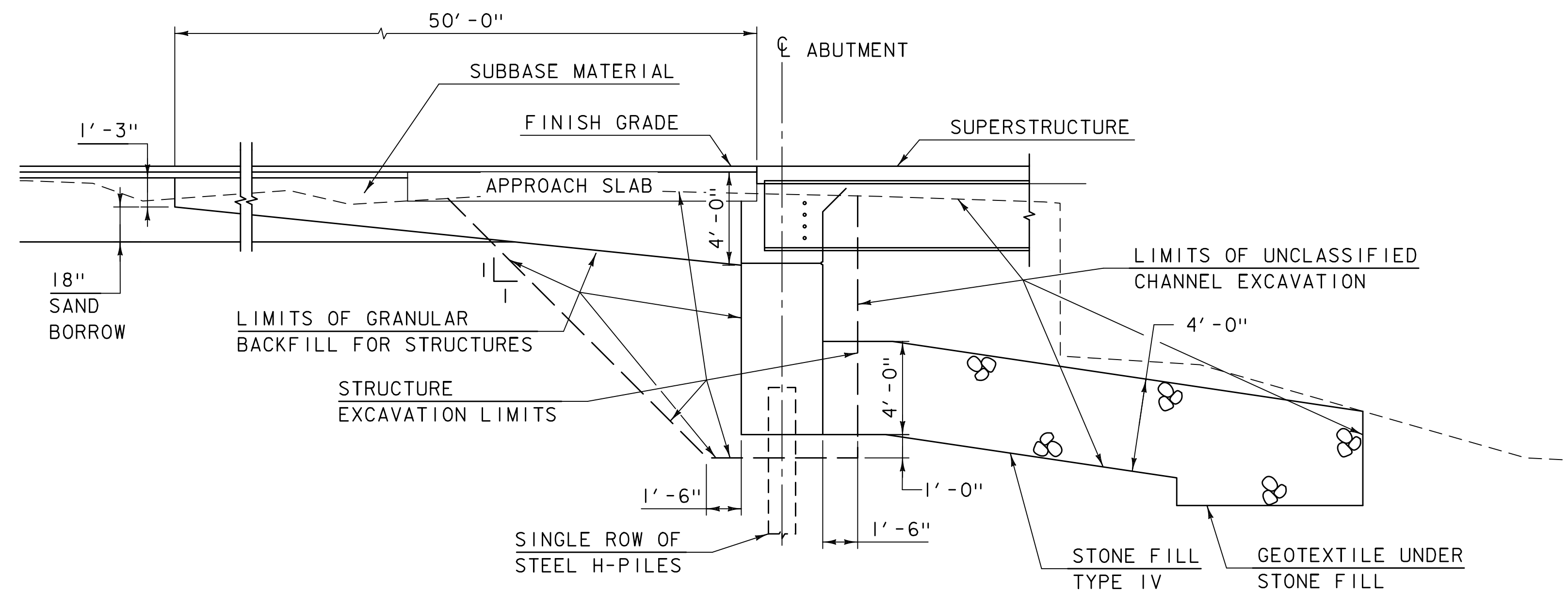
ENVIRONMENTAL RESOURCES	
———▲———	WETLAND BOUNDARY
———-———	RIPARIAN BUFFER ZONE
———-———	WETLAND BUFFER ZONE
———-———	SOIL TYPE BOUNDARY
——— T&E ———	THREATENED & ENDANGERED SPECIES
HAZ ——— HAZ ———	HAZARDOUS WASTE AREA
——— AG ———	AGRICULTURAL LAND
——— HABITAT ———	FISH & WILDLIFE HABITAT
——— FLOOD PLAIN ———	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 SYMBOLOLOGY	
EXISTING FEATURES	
— -- -- —	ROAD EDGE PAVEMENT
— -- -- —	ROAD EDGE GRAVEL
— -- -- —	DRIVEWAY EDGE
— -- -- —	DITCH
———	FOUNDATION
× —× —× —× —	FENCE (EXISTING)
▣ —▣ —▣ —▣ —	FENCE WOOD POST
○ —○ —○ —○ —	FENCE STEEL POST
~~~~~	GARDEN
○ —○ —○ —○ —	ROAD GUARDRAIL
	RAILROAD TRACKS
== == == == ==	CULVERT (EXISTING)
○○○○○○○○○○○○○○○○	STONE WALL
— -- -- —	WALL
~~~~~	WOOD LINE
~~~~~	BRUSH LINE
~~~~~	HEDGE
———	BODY OF WATER EDGE
▣ —▣ —▣ —▣ —	LEDGE EXPOSED

PROJECT NAME:	GRAFTON		
PROJECT NUMBER:	BF 0125(6)		
FILE NAME:	I6J177/z16J177LegendSheet.dgn	PLOT DATE:	3/18/2021
PROJECT LEADER:	T. FRENCH	DRAWN BY:	N. CARON
DESIGNED BY:	VTRANS	CHECKED BY:	S. BOYINGTON
CONVENTIONAL SYMBOLOLOGY - LEGEND		SHEET	6 OF 68

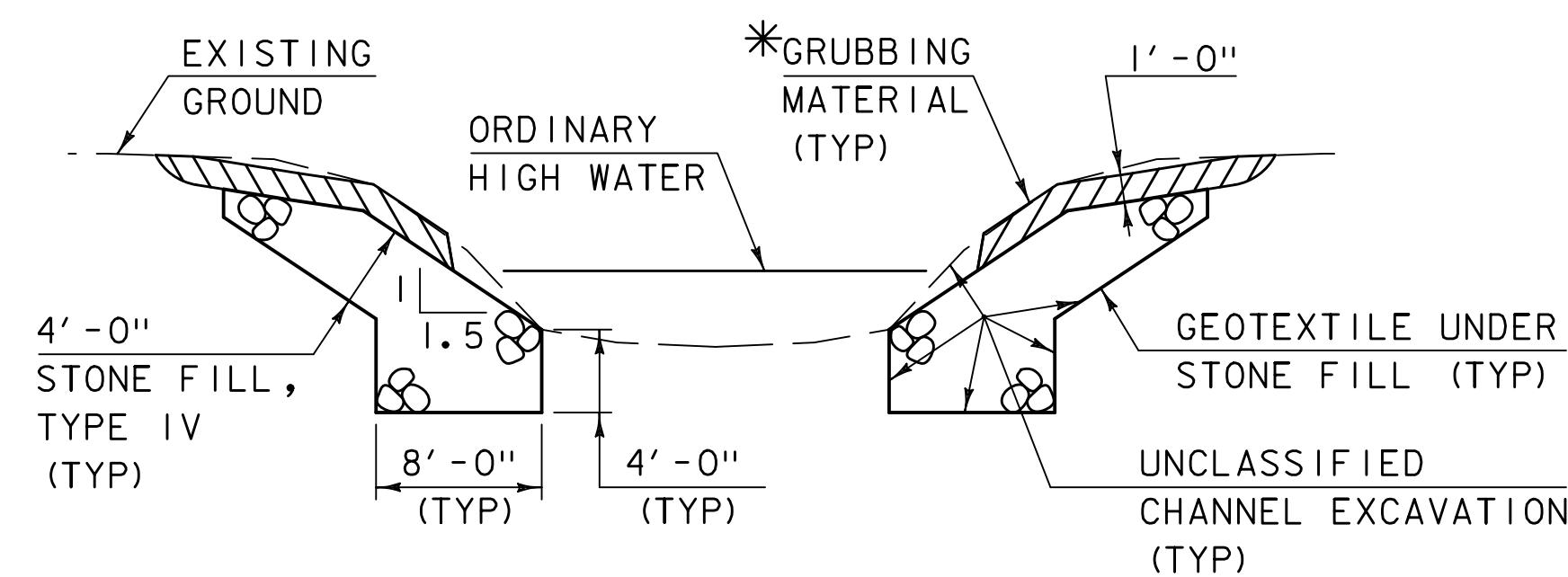




### ABUTMENT EARTHWORKS TYPICAL SECTION

SCALE  $\frac{1}{4}" = 1' - 0"$

NOTE: ACTUAL EXCAVATION LIMITS SHALL BE DETERMINED BY THE CONTRACTOR. HOWEVER ONLY THE EXCAVATION BETWEEN THE LIMITS SHOWN WILL BE PAID FOR UNDER ITEM 204.25, "STRUCTURE EXCAVATION". ALL NECESSARY EXCAVATION OUTSIDE OF THESE LIMITS SHALL BE PAID FOR UNDER ITEM 203.27, "UNCLASSIFIED CHANNEL EXCAVATION".



### TYPICAL CHANNEL SECTION

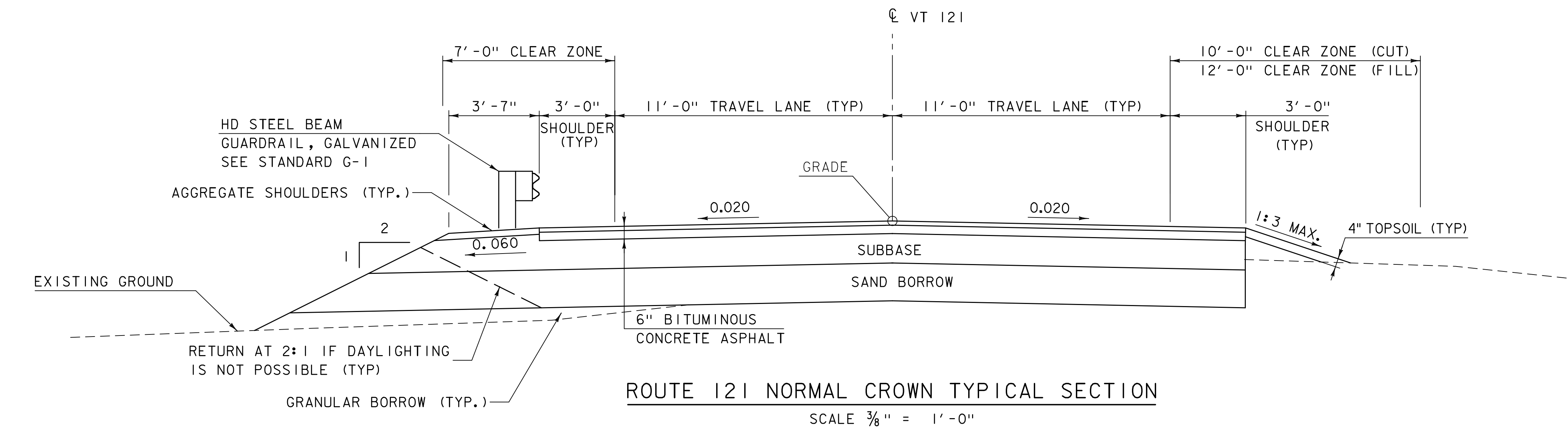
NOT TO SCALE

*GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.

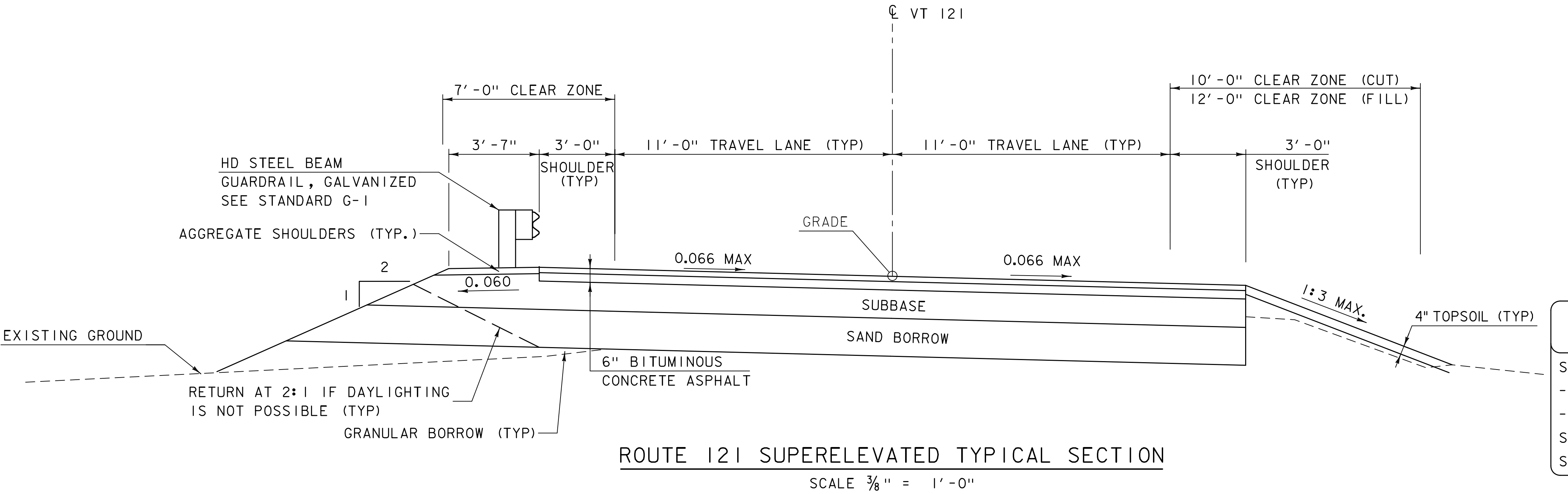
PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME: I6J177/z16J177earthworks.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: J. PETERSON
DESIGNED BY: J. PETERSON	CHECKED BY: N. CARON
TYPICAL EARTHWORK SECTIONS	SHEET 7 OF 68

2" BITUMINOUS CONCRETE PAVEMENT (1-2" LIFT) (TYPE IVS)  
4" BITUMINOUS CONCRETE PAVEMENT (2-2" LIFTS) (TYPE IIS)  
15" SUBBASE OF DENSE GRADED CRUSHED STONE  
18" SAND BORROW OR SUBBASE OF DENSE GRADED CRUSHED STONE  
TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE SPECIFIED  
BY THE ENGINEER



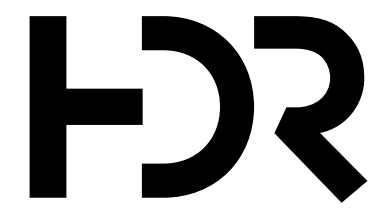
2" BITUMINOUS CONCRETE PAVEMENT (1-2" LIFT) (TYPE IVS)  
4" BITUMINOUS CONCRETE PAVEMENT (2-2" LIFTS) (TYPE IIS)  
15" SUBBASE OF DENSE GRADED CRUSHED STONE  
18" SAND BORROW OR SUBBASE OF DENSE GRADED CRUSHED STONE  
TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE SPECIFIED  
BY THE ENGINEER

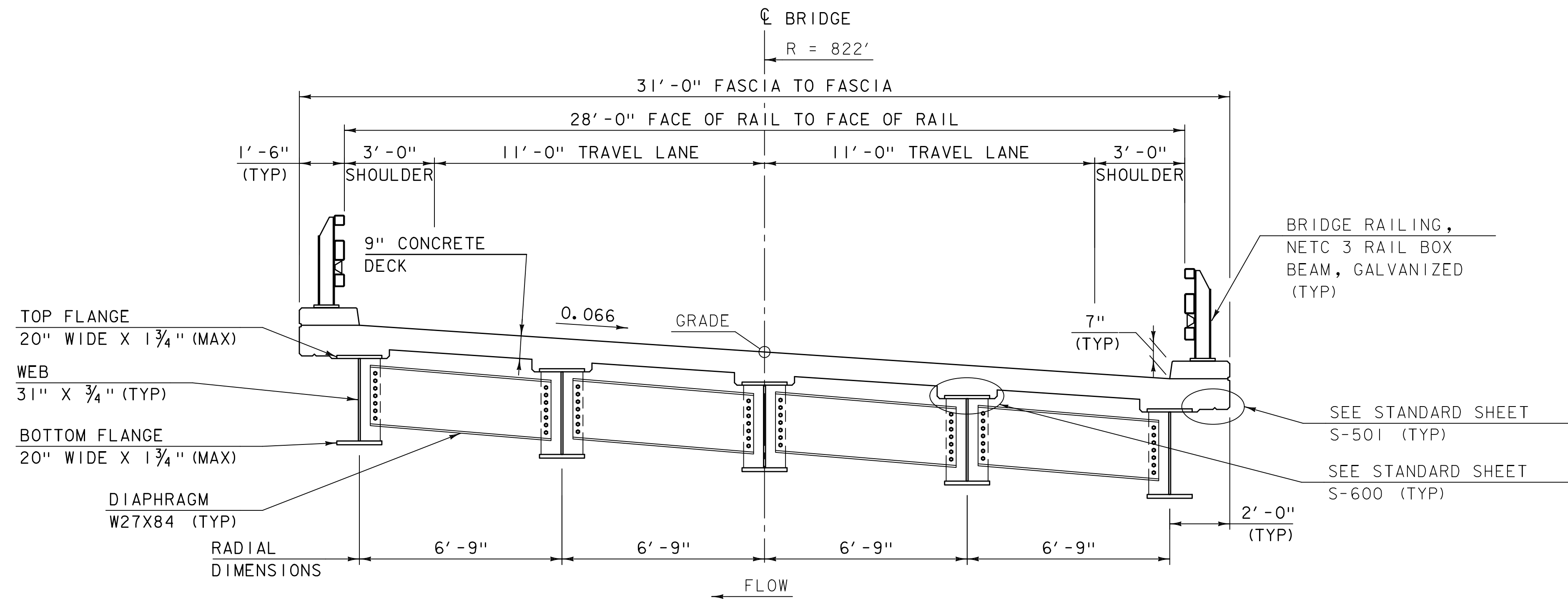


- NOTES:**
- SUBGRADE CROSS SLOPE TO MATCH TRAVEL LANE CROSS SLOPE
  - THE CONTRACTOR MAY SUBSTITUTE SUBBASE MATERIAL FOR SAND BORROW AS SHOWN ON PLANS. THE SUBBASE MATERIAL SHALL BE THE TYPE SPECIFIED IN THE CONTRACT AND SHALL BE PLACED TO MEET THE SUBBASE SPECIFICATIONS. IF SUBBASE IS PLACED IN LIEU OF SAND A GEOTEXTILE MEETING THE REQUIREMENTS OF ITEM 649.11 "GEOTEXTILE FOR ROADBED SEPARATOR" SHALL BE PLACED BETWEEN THE SUBBASE MATERIAL AND THE SUBGRADE. ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING THE GEOTEXTILE SHALL BE INCIDENTAL TO ITEM 203.31 "SAND BORROW"

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

PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/zl6J177typ.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: K. HOWE
DESIGNED BY: K. HOWE	CHECKED BY: R. LAROCHELLE
TYPICAL SECTIONS SHEET 1 OF 2	SHEET 8 OF 68

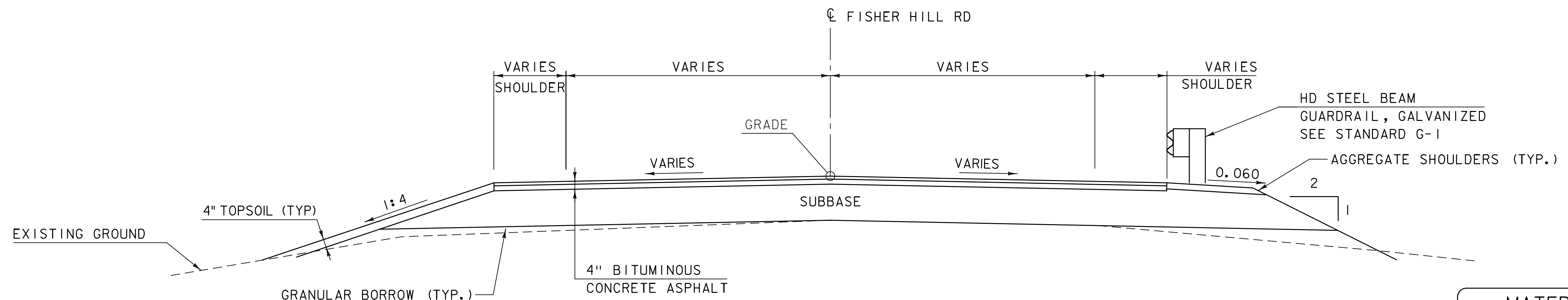




### TYPICAL BRIDGE SECTION

SCALE 3/8" = 1'-0"

2" BITUMINOUS CONCRETE PAVEMENT (1-2" LIFT) (TYPE IVS)  
2" BITUMINOUS CONCRETE PAVEMENT (1-2" LIFT) (TYPE IIS)  
15" SUBBASE OF DENSE GRADED CRUSHED STONE  
TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE SPECIFIED BY THE ENGINEER

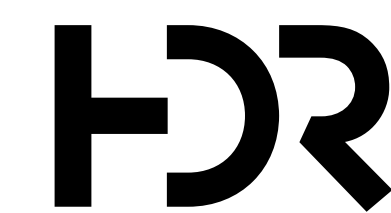


### FISHER HILL ROAD TYPICAL SECTION

SCALE 3/8" = 1'-0"

### MATERIAL TOLERANCES (IF USED ON PROJECT)

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



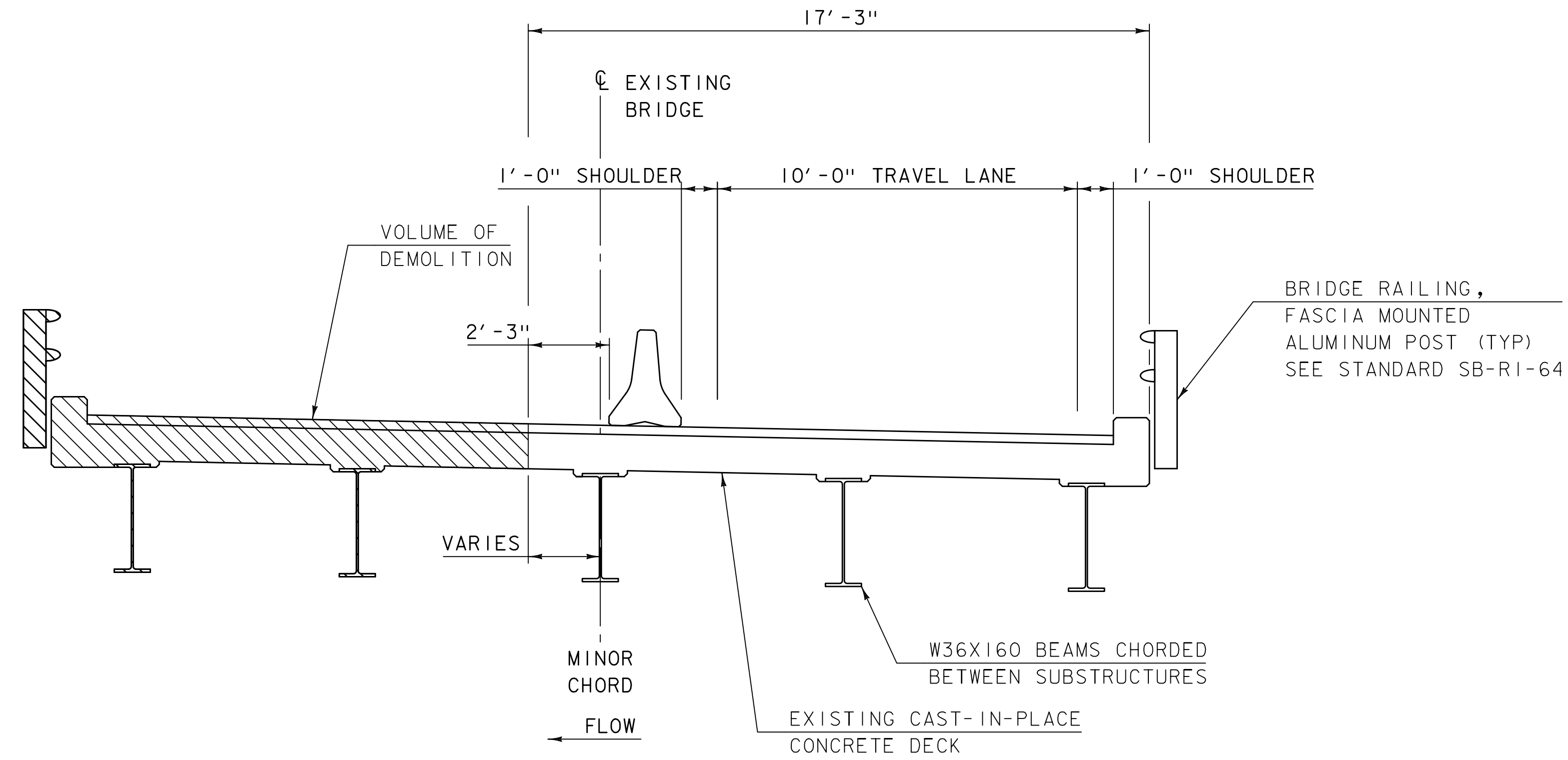
PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME: I6J177/zl6J177typ.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: N. CARON  
TYPICAL SECTIONS SHEET 2 OF 2

PLOT DATE: 3/18/2021  
DRAWN BY: N. CARON  
CHECKED BY: S. BOYINGTON  
SHEET 9 OF 68

PHASE 2 SUGGESTED CONSTRUCTION SEQUENCE

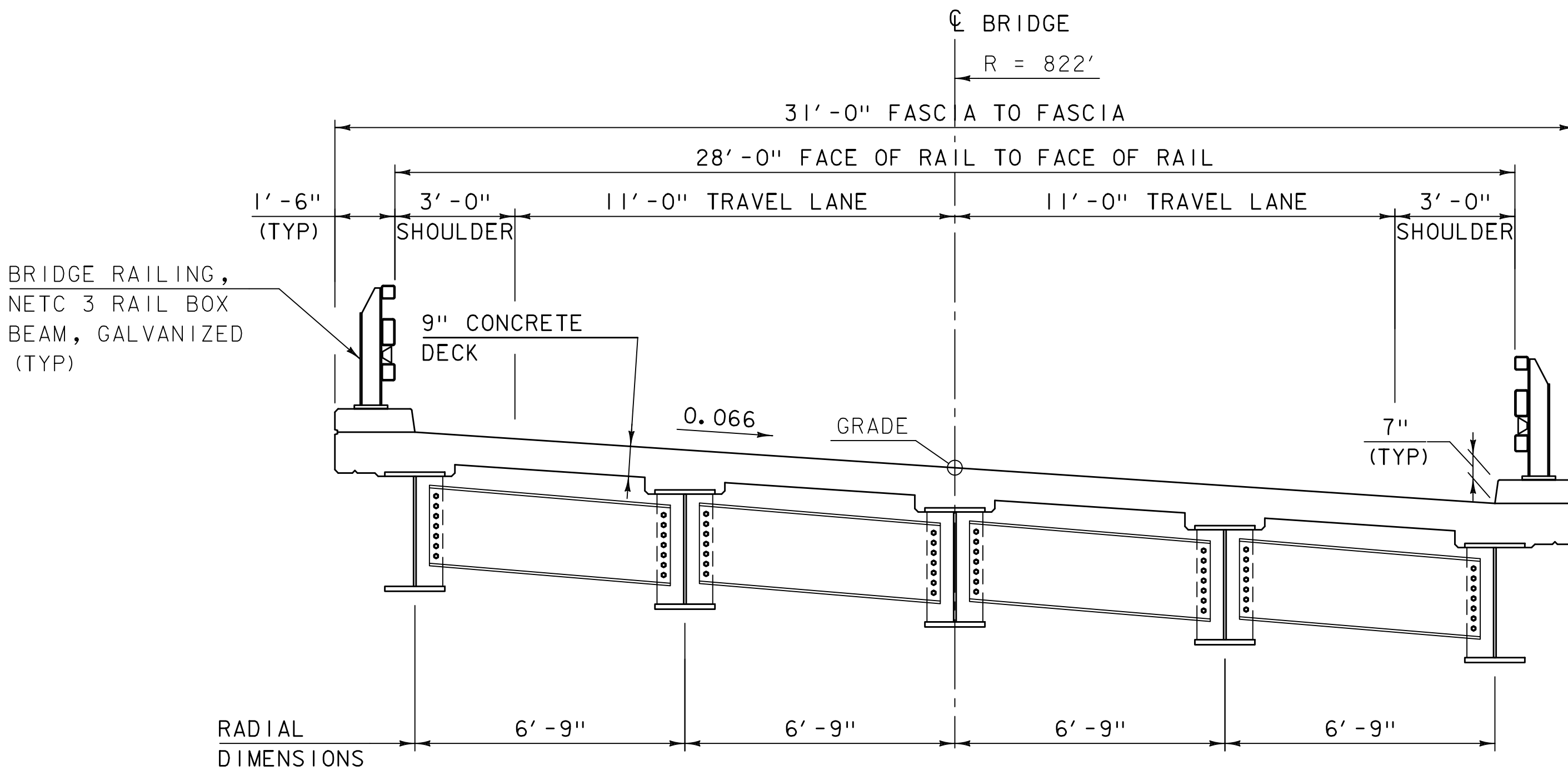
1. CONSTRUCT DRILLED SHAFT AT PIER TO BOTTOM OF PIER CAP ELEVATION.
2. INSTALL PILES AT ABUTMENTS, THEN CONSTRUCT ABUTMENTS TO TEMPORARY GIRDER BEARING SEAT ELEVATION AND ABUTMENT WINGWALLS.
3. ERECT CURVED STEEL GIRDERS, SUPPORTED ON ABUTMENT TEMPORARY SUPPORTS AND TEMPORARY SHORING TOWERS ON TEMPORARY CAUSEWAYS EITHER SIDE OF THE PIER CAP.
4. CONSTRUCT PIER CAP TO TOP OF GIRDERS, MAKING GIRDERS INTEGRAL WITH PIER.
5. POST-TENSION PIER CAP.
6. REMOVE TEMPORARY SHORING TOWERS.
7. POUR POSITIVE MOMENT REGION OF DECK.
8. POUR NEGATIVE MOMENT REGION OF DECK AT PIER.
9. CONSTRUCT CLOSURE POURS AT ABUTMENTS.
10. CONSTRUCT APPROACH SLABS AND DECK COPINGS/BRIDGE RAIL.



PHASE I TYPICAL SECTION

SCALE  $\frac{3}{8}$ " = 1'-0"

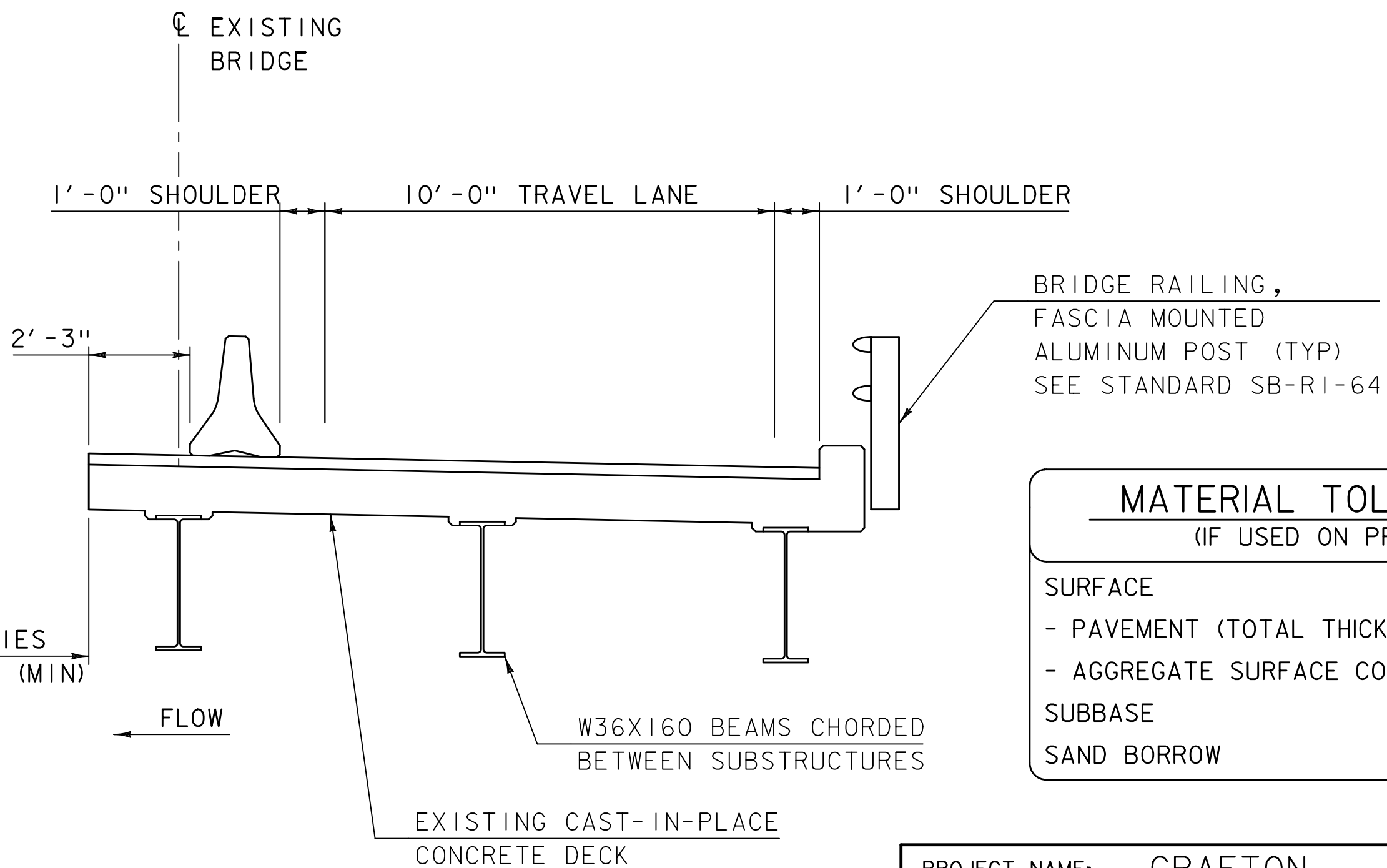
ALL DIMENSIONS RADIAL UNLESS OTHERWISE NOTED



PHASE 2 TYPICAL SECTION

SCALE  $\frac{3}{8}$ " = 1'-0"

ALL DIMENSIONS RADIAL UNLESS OTHERWISE NOTED



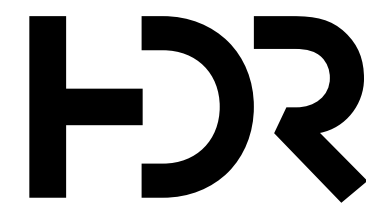
MATERIAL TOLERANCES  
(IF USED ON PROJECT)

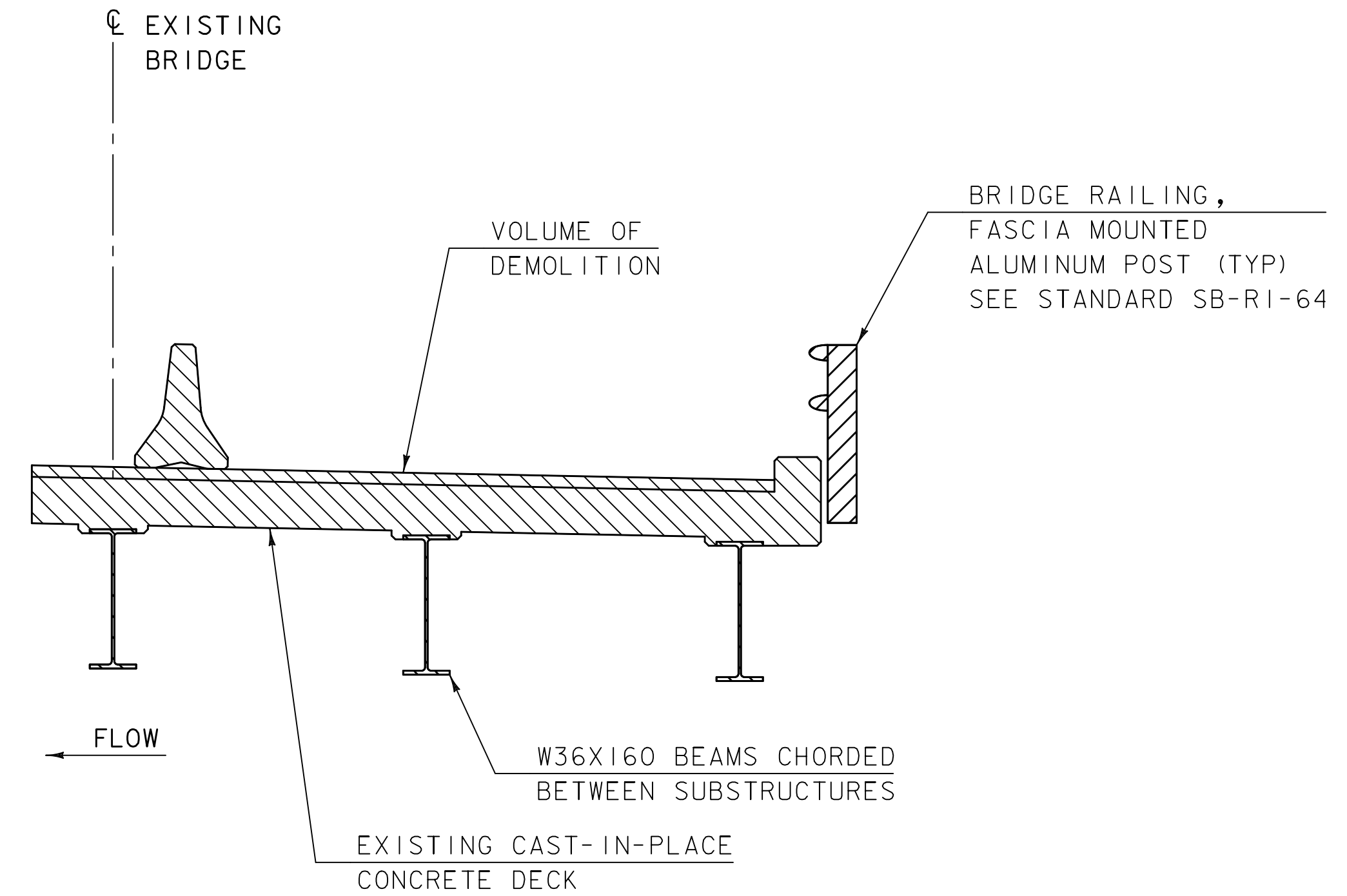
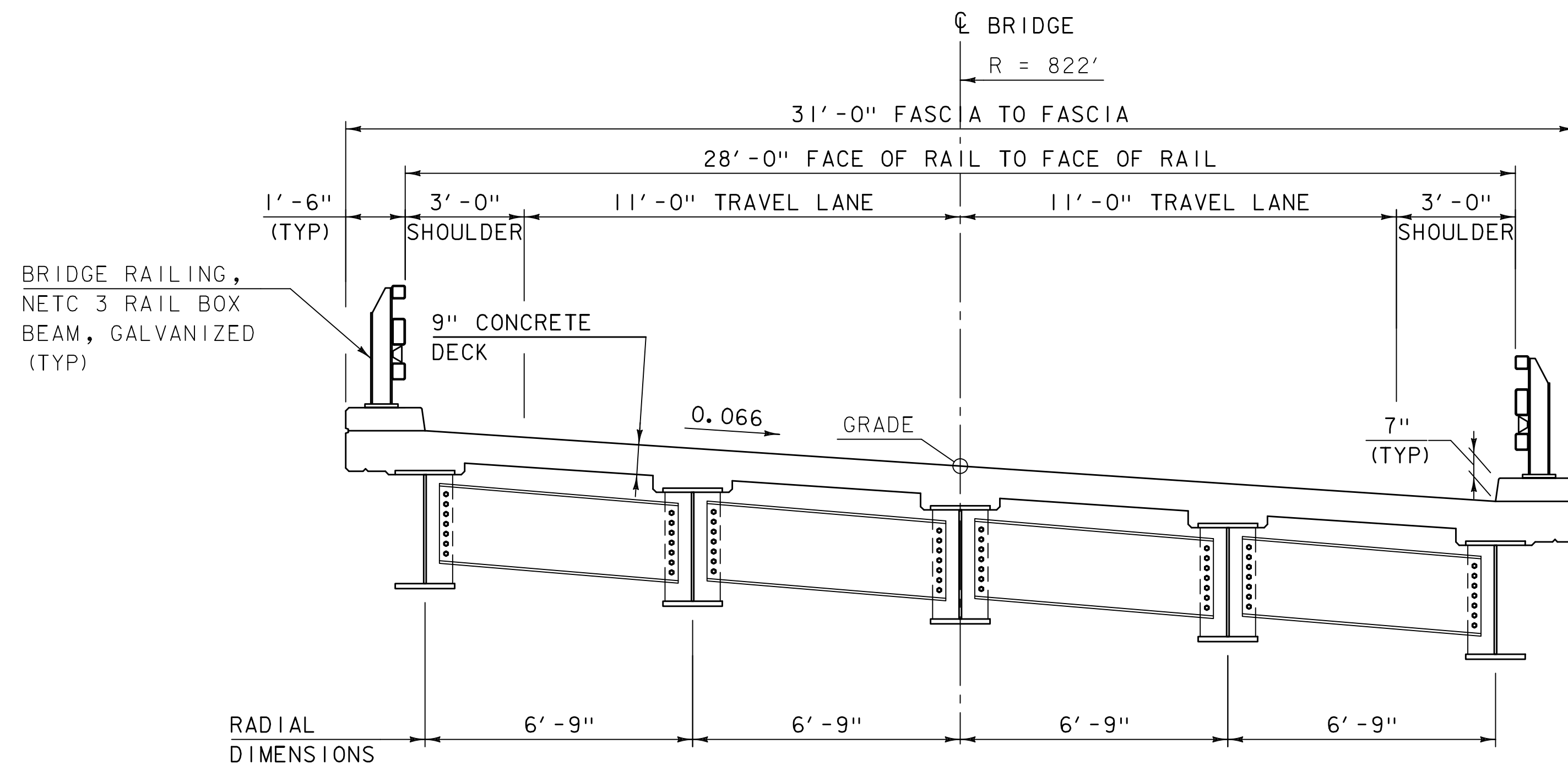
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME: I6J177/z16J177traffic.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: N. CARON  
PHASING TYPICAL SECTIONS (1 OF 2)

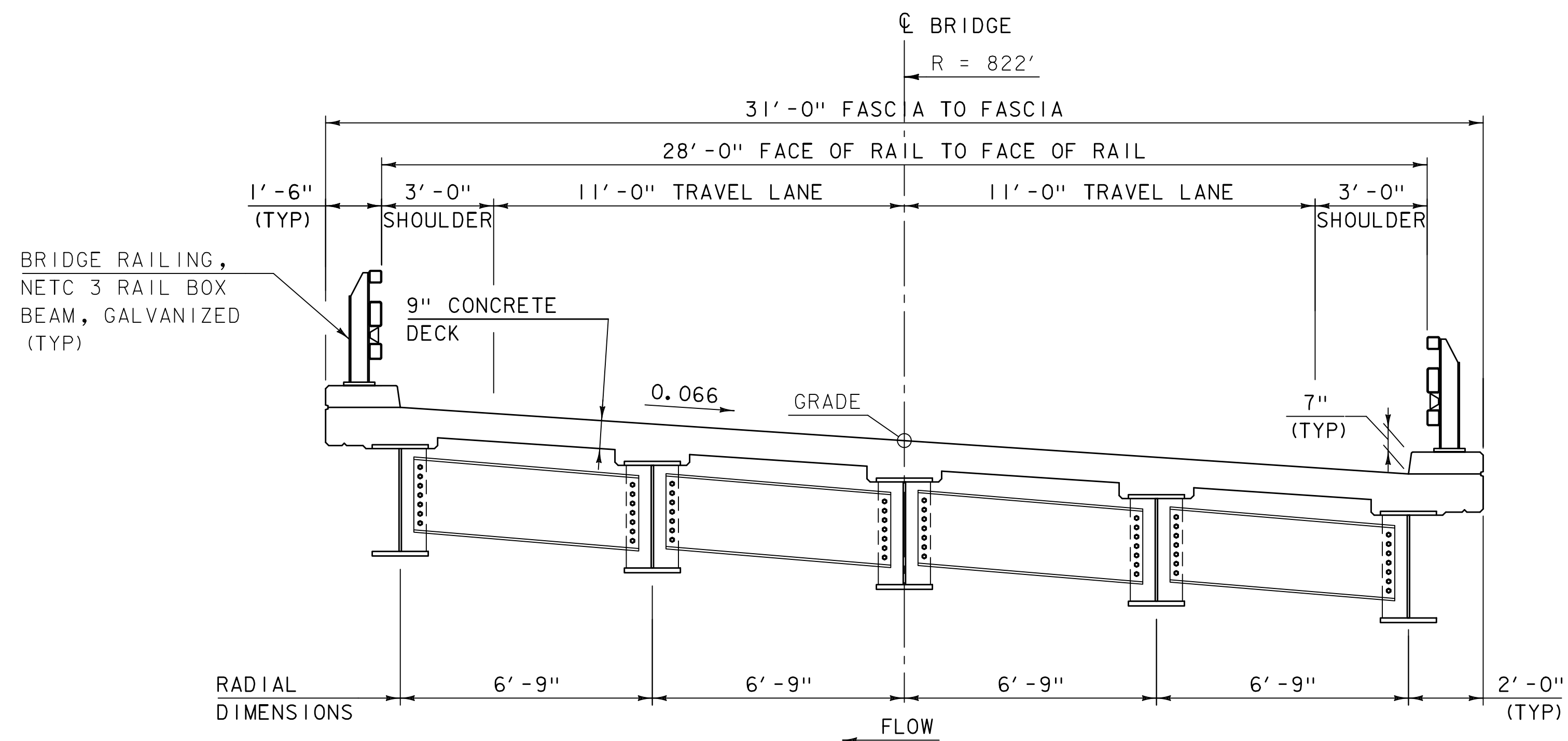
PLOT DATE: 3/18/2021  
DRAWN BY: N. CARON  
CHECKED BY: S. BOYINGTON  
SHEET 10 OF 68





### PHASE 3 TYPICAL SECTION

SCALE  $\frac{3}{8}" = 1'-0"$   
ALL DIMENSIONS RADIAL UNLESS OTHERWISE NOTED



### TYPICAL SECTION IN FINAL CONFIGURATION

SCALE  $\frac{3}{8}" = 1'-0"$   
ALL DIMENSIONS RADIAL UNLESS OTHERWISE NOTED

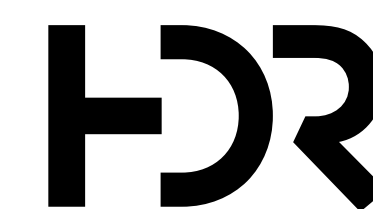
#### MATERIAL TOLERANCES (IF USED ON PROJECT)

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

PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME: I6J177/z16J177traffic.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: N. CARON  
PHASING TYPICAL SECTIONS (2 OF 2)

PLOT DATE: 3/18/2021  
DRAWN BY: N. CARON  
CHECKED BY: S. BOYINGTON  
SHEET 11 OF 68



PRIMARY CONTROL

HVCTRL #1 REBAR  
NORTH = 245905.6690  
EAST = 1618869.2610  
ELEV = 724.1790

GRAFTON 1  
TO REACH FROM THE INTERSECTION OF ROUTES 35 AND 121 IN GRAFTON, GO EAST ALONG ROUTE 121 FOR 1.6 MI (2.6 KM) TO THE SITE OF THE MARK ON THE RIGHT.

THE MARK IS A REBAR WITH RED CAP SET FLUSH WITH THE GROUND SURFACE.

IT IS 15.5 FT (4.7 M) SOUTHWEST OF AND ABOUT 1 FT (0.3 M) LOWER THAN THE CENTERLINE OF ROUTE 121, 99.5 FT (30.3 M) NORTHWEST OF AND ACROSS THE ROAD FROM POLE 374/1-50, 16.0 FT (4.9 M) NORTHEAST OF A FENCE POST AND 54.0 FT (16.5 M) SOUTHEAST OF THE WEST INLET END OF A 36 INCH (91 CM) PLASTIC CULVERT.

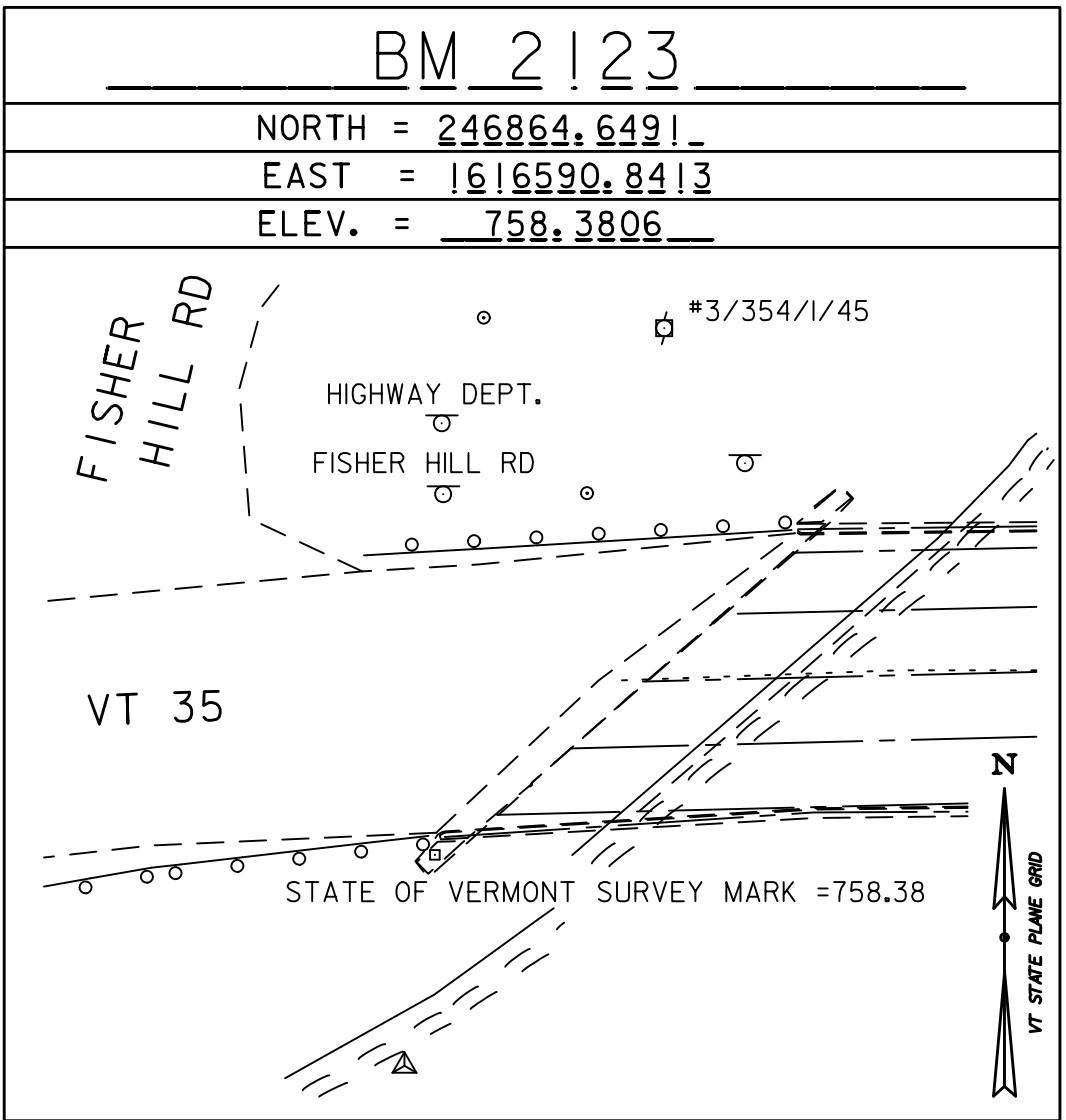
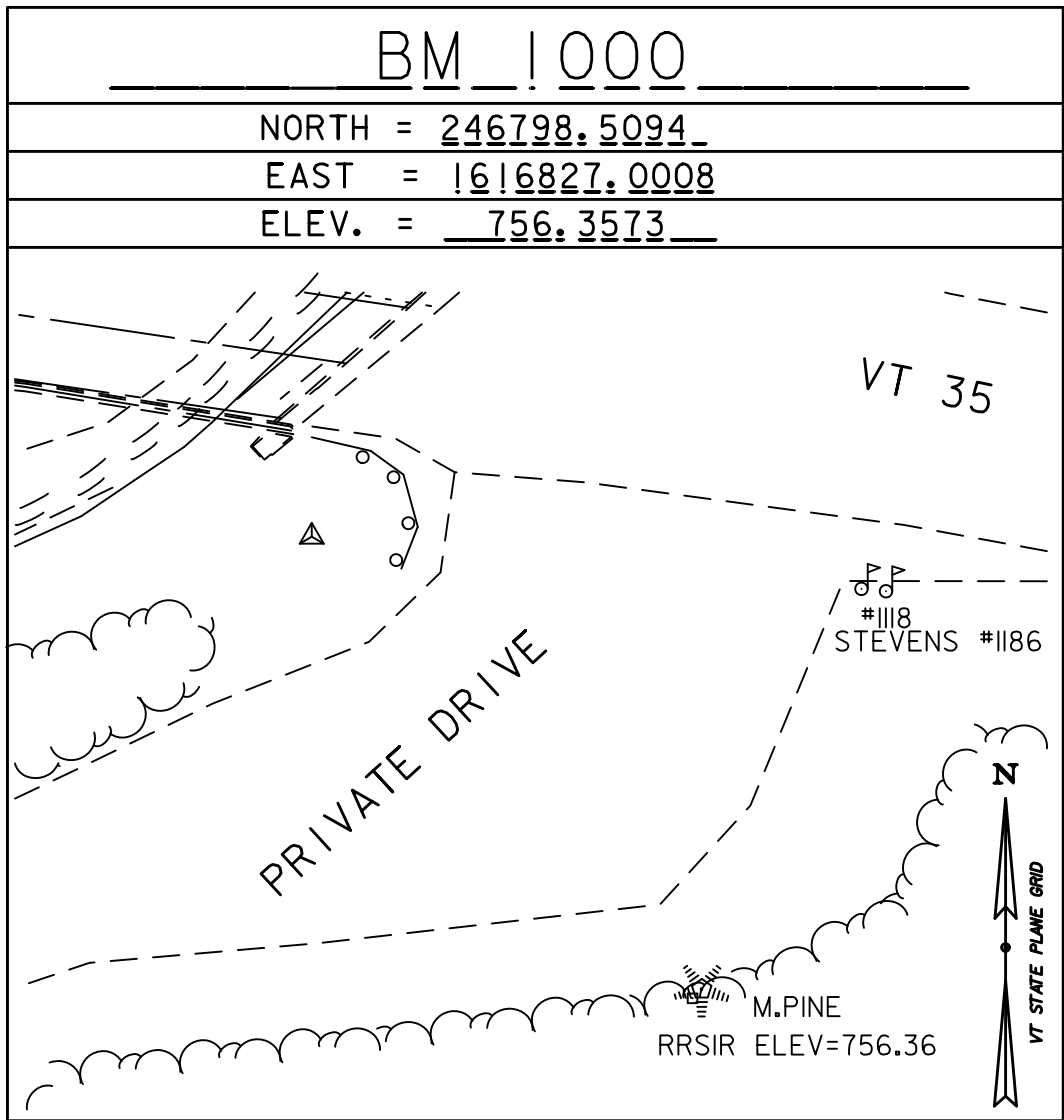
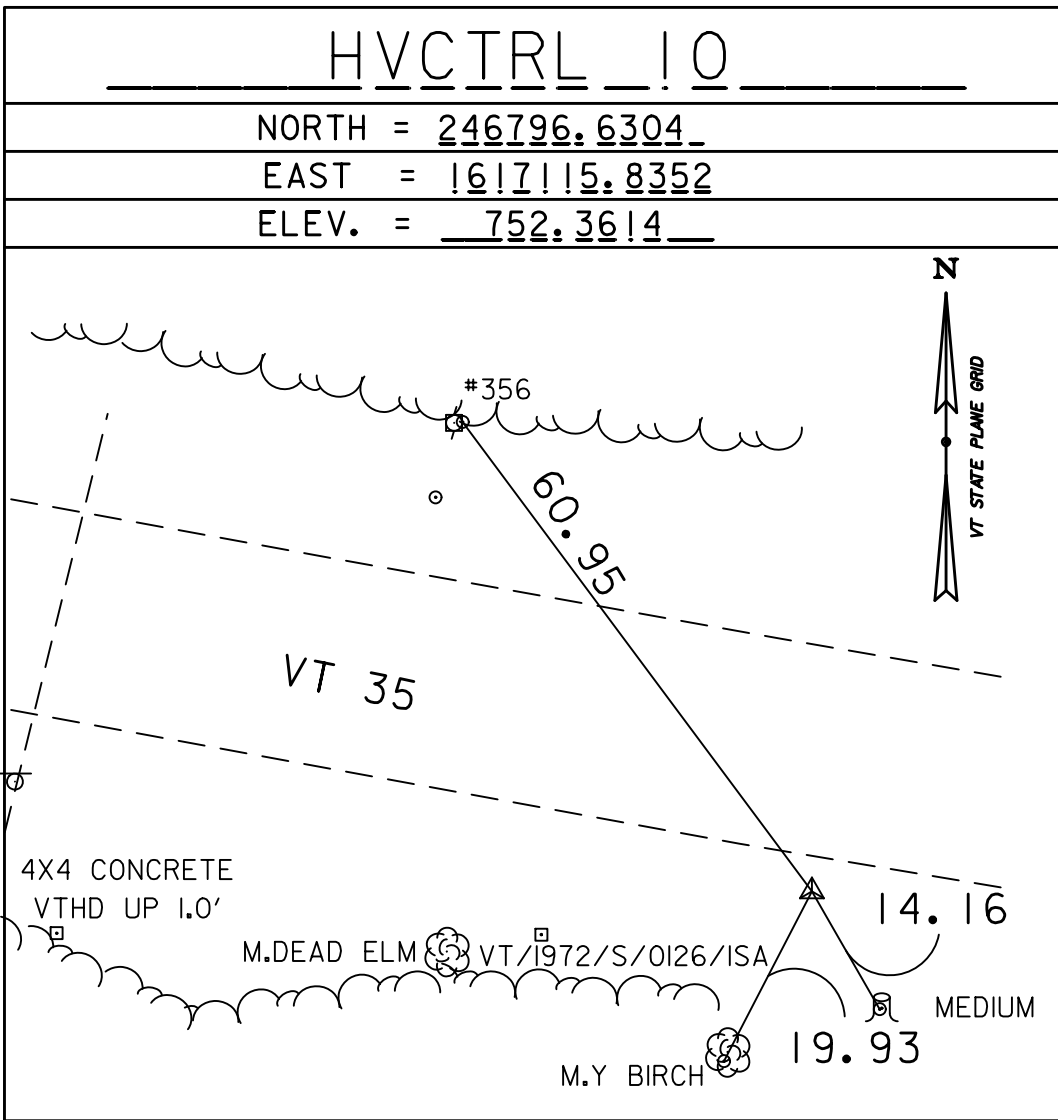
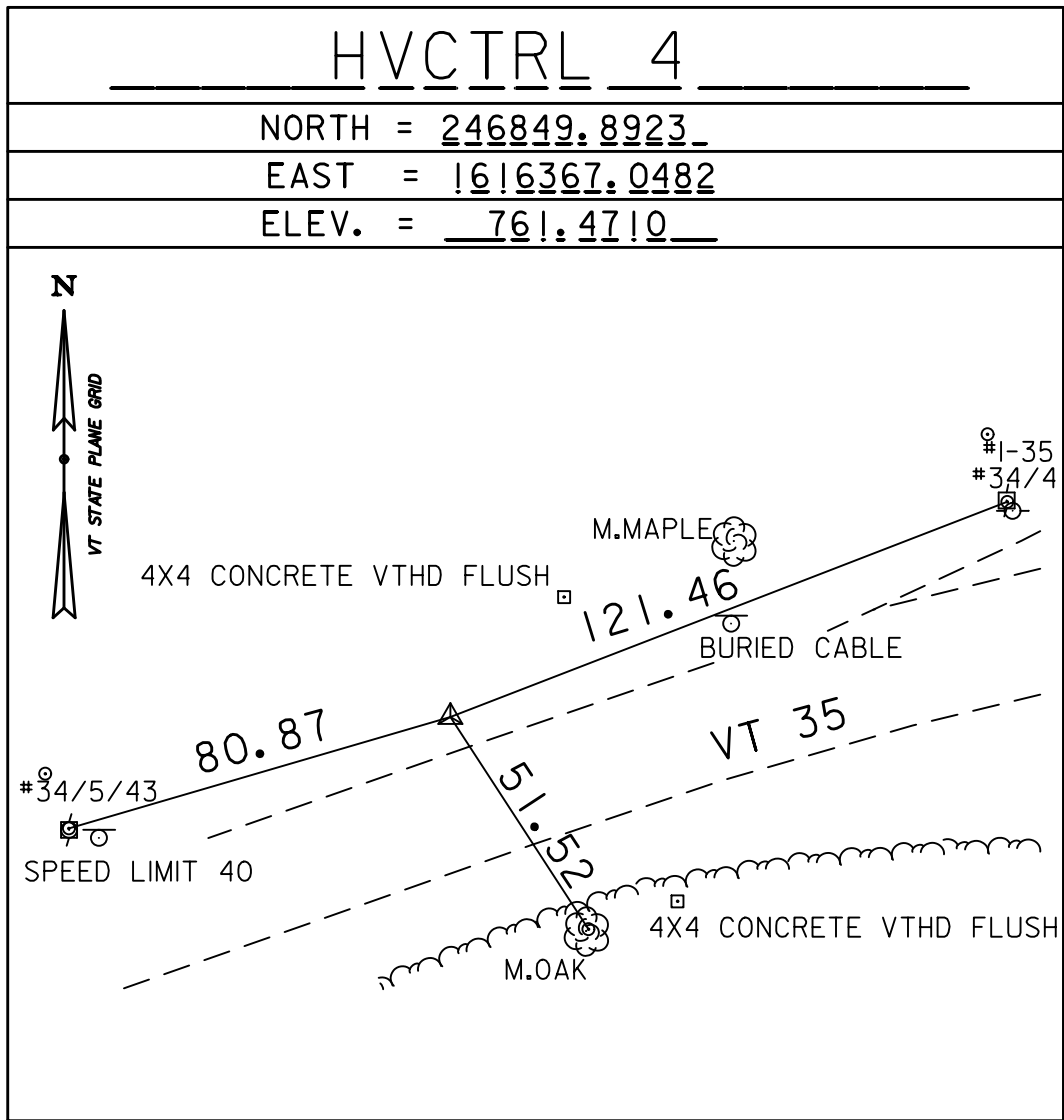
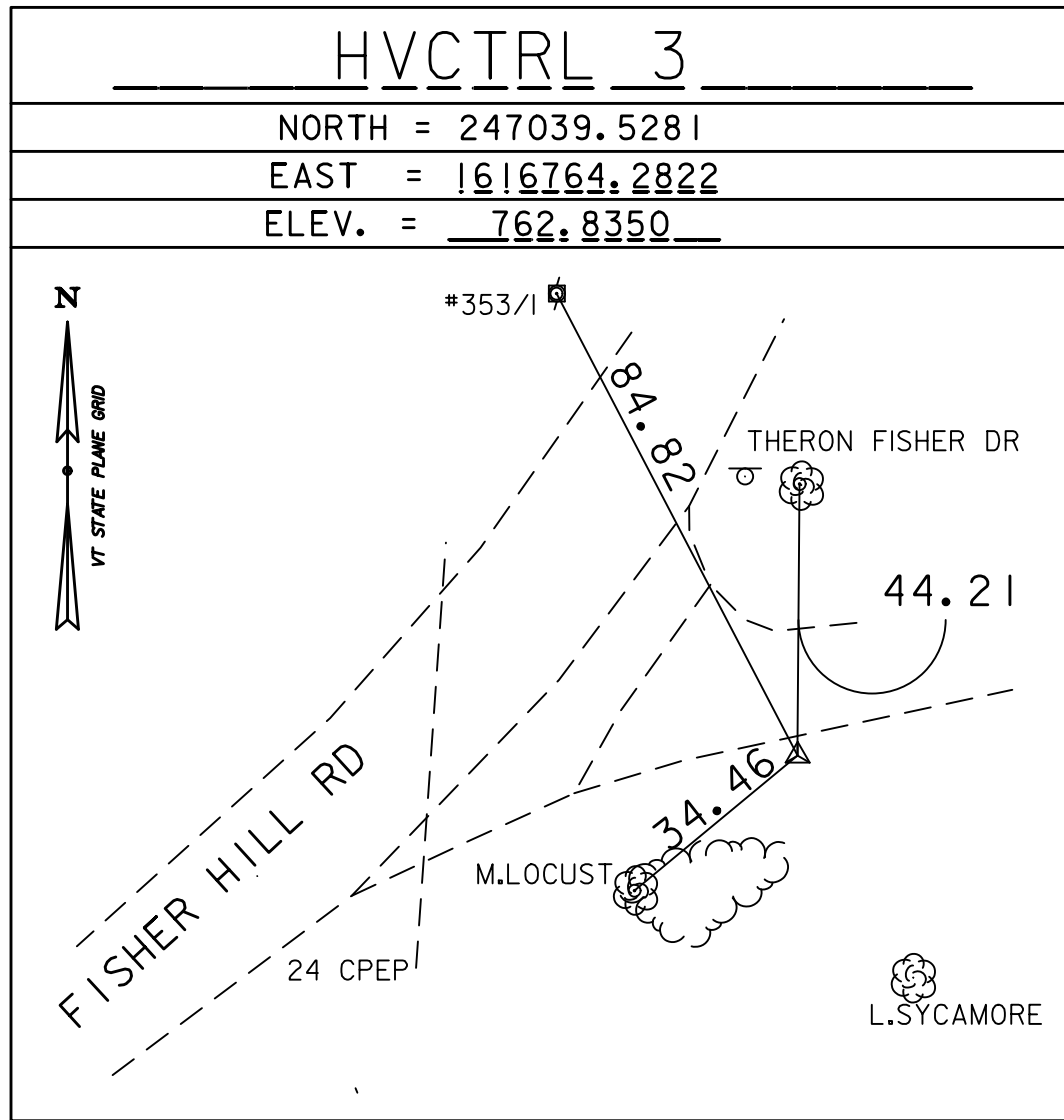
HVCTRL #2 REBAR  
NORTH = 246813.4660  
EAST = 1617771.4980  
ELEV = 741.6510

GRAFTON 2  
TO REACH FROM THE INTERSECTION OF ROUTES 35 AND 121 IN GRAFTON, GO EAST ALONG ROUTE 121 FOR 1.35 MI (2.2 KM) TO THE SITE OF THE MARK ON THE LEFT ACROSS FROM IDYLL ACRES FARM.

THE MARK IS A REBAR WITH RED CAP SET FLUSH WITH THE GROUND SURFACE.

IT IS 15 FT (4.6 M) NORTH OF AND ABOUT LEVEL WITH THE CENTERLINE OF ROUTE 121, 3.5 FT (1.1 M) SOUTH OF A STEEL GUARD RAIL, 87.0 FT (26.5 M) NORTH-NORTHEAST OF AND ACROSS THE ROAD FROM THE NORTHWEST CORNER OF A BARN AND 88.3 FT (26.9 M) NORTHWEST OF AND ACROSS THE ROAD FROM POLE 1-42.

SECONDARY CONTROL



ALIGNMENT TIES

NORTH = _____  
EAST = _____  
ELEV. = _____

NORTH = _____  
EAST = _____  
ELEV. = _____

NORTH = _____  
EAST = _____  
ELEV. = _____

NORTH = _____  
EAST = _____  
ELEV. = _____

NORTH = _____  
EAST = _____  
ELEV. = _____

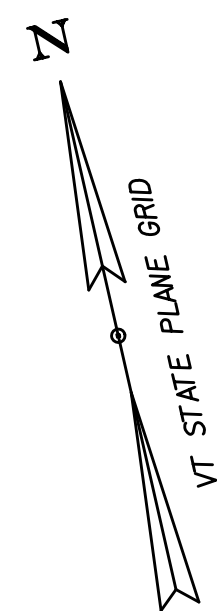
DATUM  
VERTICAL NAVD88  
HORIZONTAL NAD83(2011)  
ADJUSTMENT COMPASS

TRAVERSE COMPLETED BY R. GILMAN B. HERRING AND H. MCGOWAN ON 12/20/2017

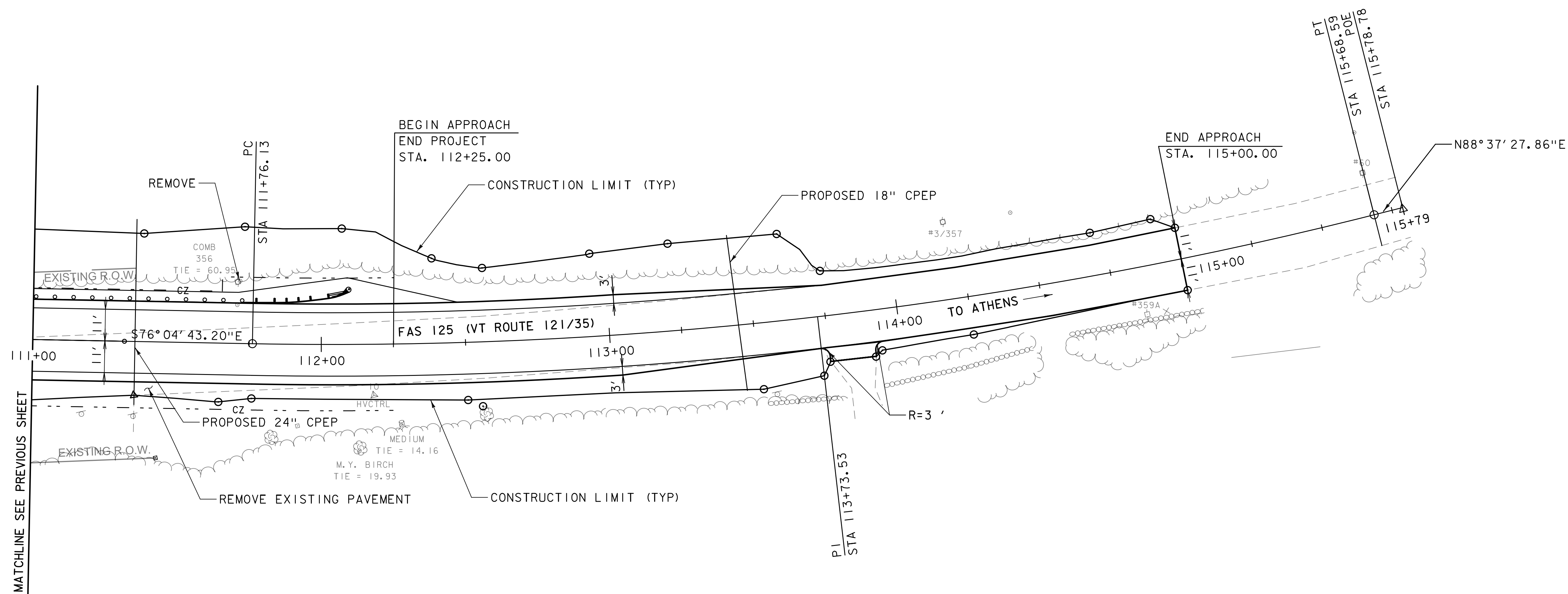
PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)  
FILE NAME: x16J177•+1  
PROJECT LEADER: N.WARK  
DESIGNED BY: VTRANS  
TIE SHEET  
PLOT DATE: 3/18/2021  
DRAWN BY: H.MCGOWAN  
CHECKED BY: L.MACCORMACK  
SHEET 12 OF 68







STEEL BEAM GUARDRAIL, GALVANIZED  
111+00.0 TO 111+72.9 RT  
MANUFACTURED TERMINAL END SECTION, FLARED  
111+72.9 TO 112+10.4 RT  
CONSTRUCT DRIVE WITH 5 FOOT PAVED APRON  
113+83.0 RT (15.9 FT WIDE, FIELD ENTRANCE)  
24" CPEP  
111+35.4 LT TO RT  
18" CPEP  
113+45.0 LT TO RT



FAS 125 (VT ROUTE 121/35)  
CURVE (2)  
DELTA = 15°17'49"  
D = 3°53'52"  
R = 1470.00'  
T = 197.41'  
L = 392.46'  
E = 13.20'

# ROADWAY LAYOUT

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



PROJECT NAME:	GRAFTON	PLOT DATE:	3/18/2021
PROJECT NUMBER:	BF 0125(6)	DRAWN BY:	K. HOWE
FILE NAME:	I6J177/z16J177border.dgn	CHECKED BY:	R. LAROCHELLE
PROJECT LEADER:	T. FRENCH	SHEET	15 OF 68
DESIGNED BY:	K. HOWE		
LAYOUT SHEET	3 OF 3		

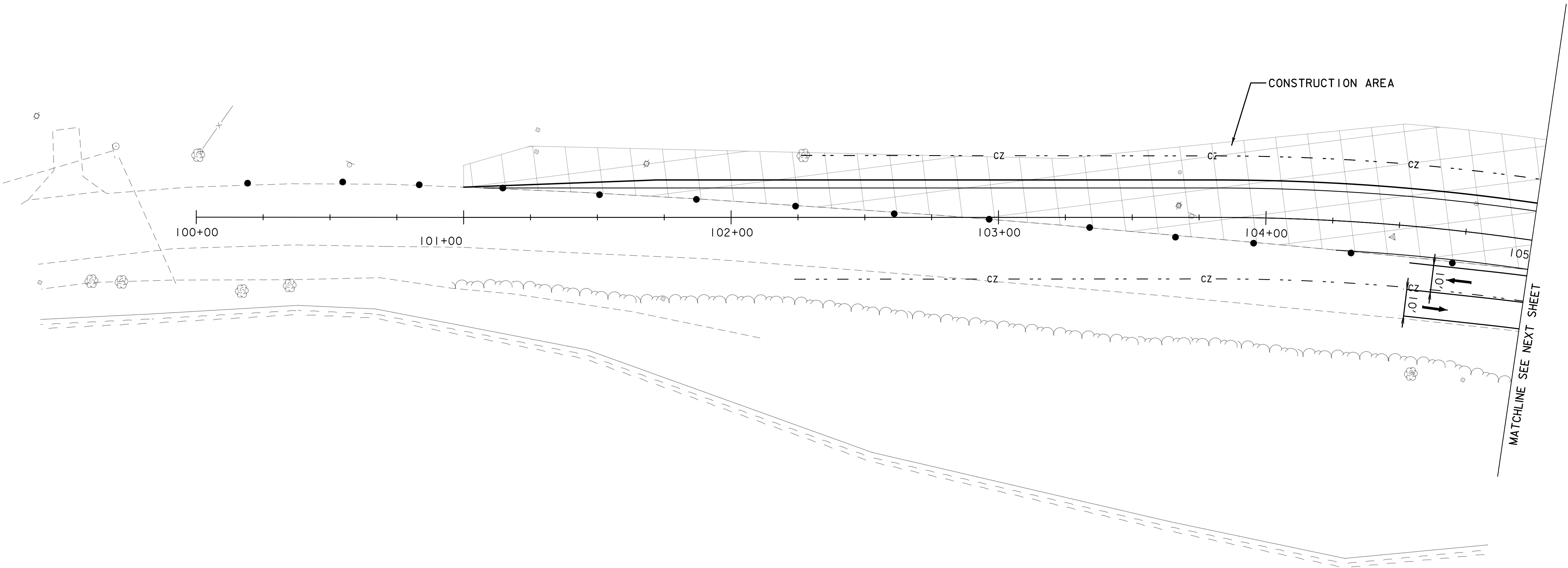
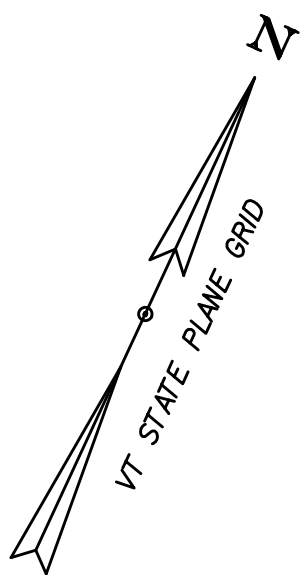
NOTES:

SUGGESTED CONSTRUCTION SEQUENCING  
(Roadway)

- Replace drainage culverts at eastern approach utilizing daily lane closures prior to implementation of Phase I traffic pattern
- Construct portion of proposed Route 121 / 35 by widening off of existing edge of pavement west of Fisher Hill Rd
- Construct portion of proposed western approach and widening of Fisher Hill Rd, between Fisher Hill Rd and new bridge
- Construct portion of proposed eastern approach, widening off of existing edge of pavement

SUGGESTED TRAFFIC SEQUENCING

- Alternating one way traffic accross existing bridge
- Temporary signals for WB and EB on Route 121 / 35
- Temporary signal for Fisher Hill Rd
- EB thru movement and EB left movement phase on Route 121 / 35 is paired with Fisher Hill Rd left and right phase
- WB thru movement is a singular phase with no other phases green at that time

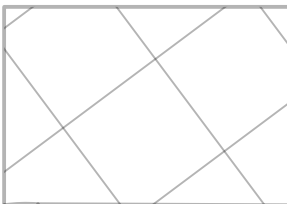


LEGEND

== BARRIER

• BARREL

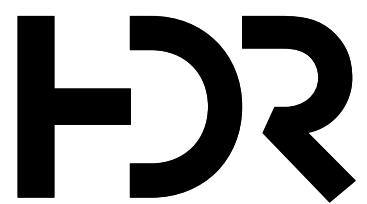
○○○ IMPACT ATTENUATOR



CONSTRUCTION AREA

TCP PHASE 1 & 2

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



PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME: I6J177/zl6J177border.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: K. HOWE  
TCP PHASE 1&2 SHEET 1 OF 3

PLOT DATE: 3/18/2021  
DRAWN BY: K. HOWE  
CHECKED BY: R. LAROCHELLE  
SHEET 16 OF 68

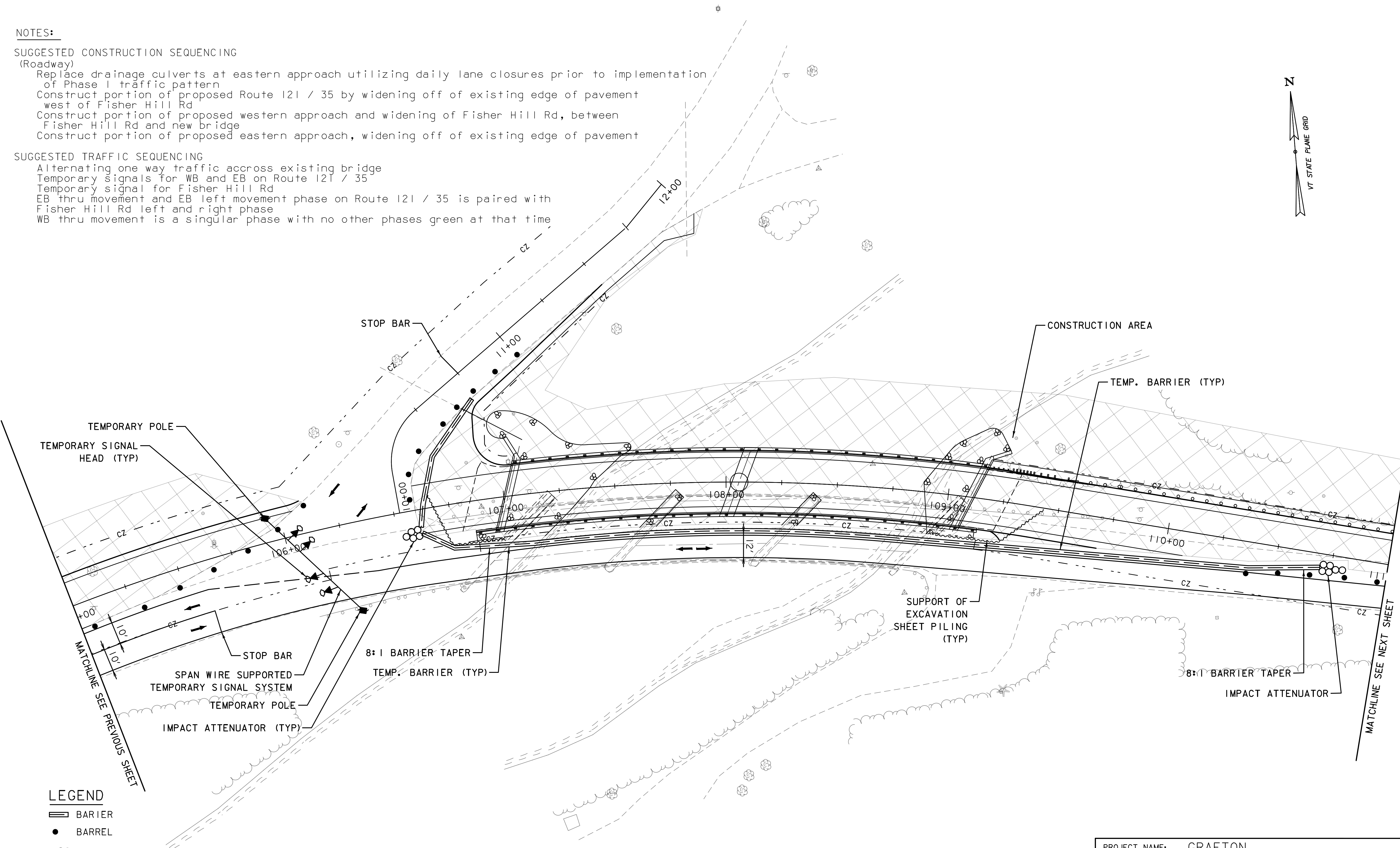
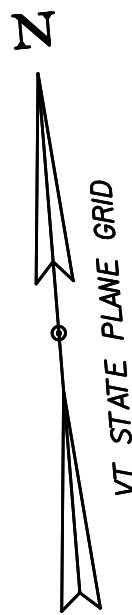
NOTES:

SUGGESTED CONSTRUCTION SEQUENCING  
(Roadway)

- Replace drainage culverts at eastern approach utilizing daily lane closures prior to implementation of Phase 1 traffic pattern
- Construct portion of proposed Route 121 / 35 by widening off of existing edge of pavement west of Fisher Hill Rd
- Construct portion of proposed western approach and widening of Fisher Hill Rd, between Fisher Hill Rd and new bridge
- Construct portion of proposed eastern approach, widening off of existing edge of pavement

SUGGESTED TRAFFIC SEQUENCING

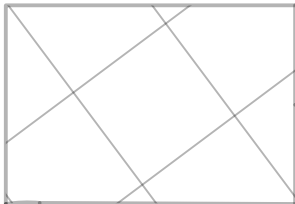
- Alternating one way traffic accross existing bridge
- Temporary signals for WB and EB on Route 121 / 35
- Temporary signal for Fisher Hill Rd
- EB thru movement and EB left movement phase on Route 121 / 35 is paired with Fisher Hill Rd left and right phase
- WB thru movement is a singular phase with no other phases green at that time



LEGEND

- == BARRIER
- BARREL

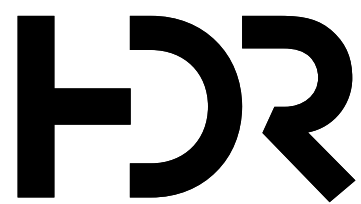
○○○ IMPACT ATENUATOR



CONSTRUCTION AREA

TCP PHASE 1 & 2

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



PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME: I6J177/zl6J177border.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: K. HOWE  
TCP PHASE 1&2 SHEET 2 OF 3

PLOT DATE: 3/18/2021  
DRAWN BY: K. HOWE  
CHECKED BY: R. LAROCHELLE  
SHEET 17 OF 68

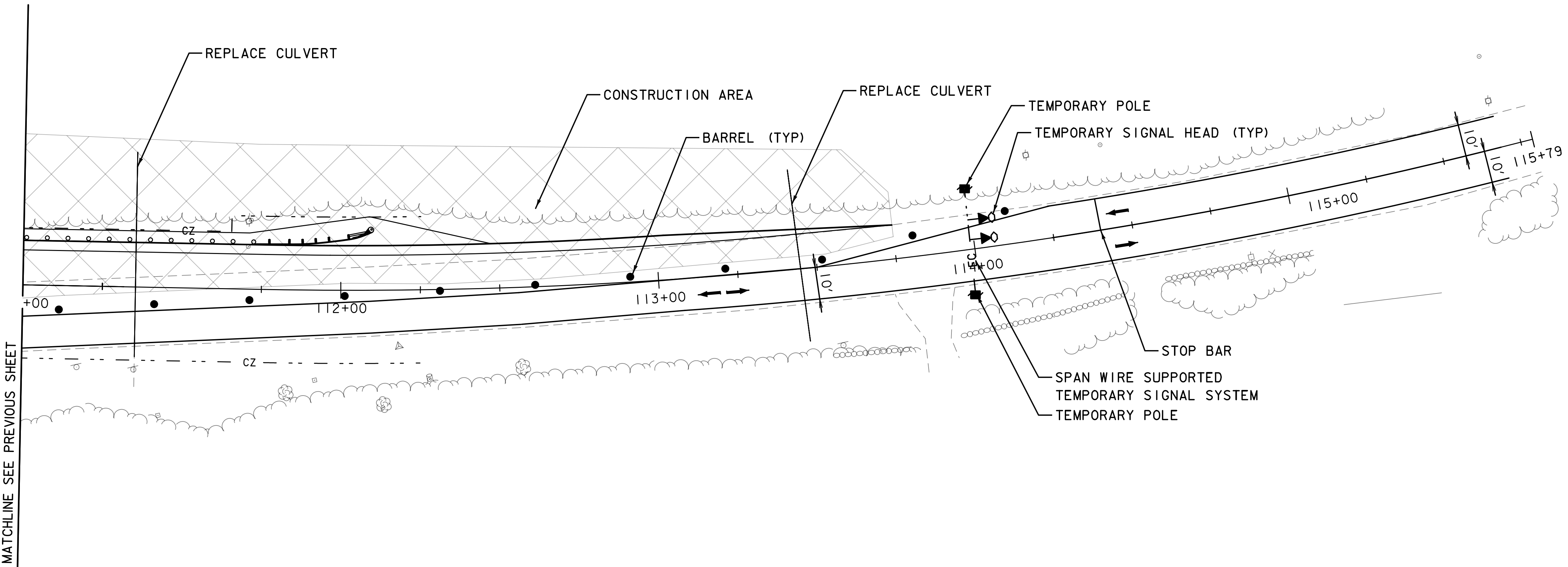
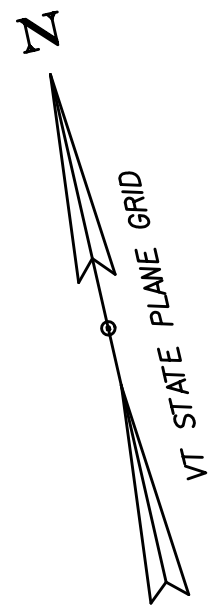
NOTES:

SUGGESTED CONSTRUCTION SEQUENCING

- (Roadway)
- Replace drainage culverts at eastern approach utilizing daily lane closures prior to implementation of Phase 1 traffic pattern
  - Construct portion of proposed Route 121 / 35 by widening off of existing edge of pavement west of Fisher Hill Rd
  - Construct portion of proposed western approach and widening of Fisher Hill Rd, between Fisher Hill Rd and new bridge
  - Construct portion of proposed eastern approach, widening off of existing edge of pavement

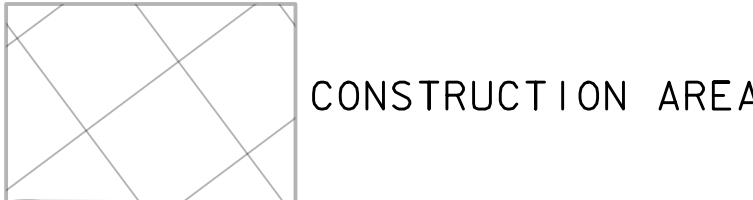
SUGGESTED TRAFFIC SEQUENCING

- Alternating one way traffic accross existing bridge
- Temporary signals for WB and EB on Route 121 / 35
- Temporary signal for Fisher Hill Rd
- EB thru movement and EB left movement phase on Route 121 / 35 is paired with Fisher Hill Rd left and right phase
- WB thru movement is a singular phase with no other phases green at that time



LEGEND

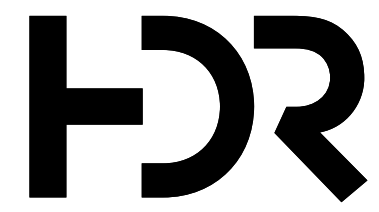
- == BARRIER
- BARREL
- IMPACT ATENUATOR



CONSTRUCTION AREA

TCP PHASE 1 & 2

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



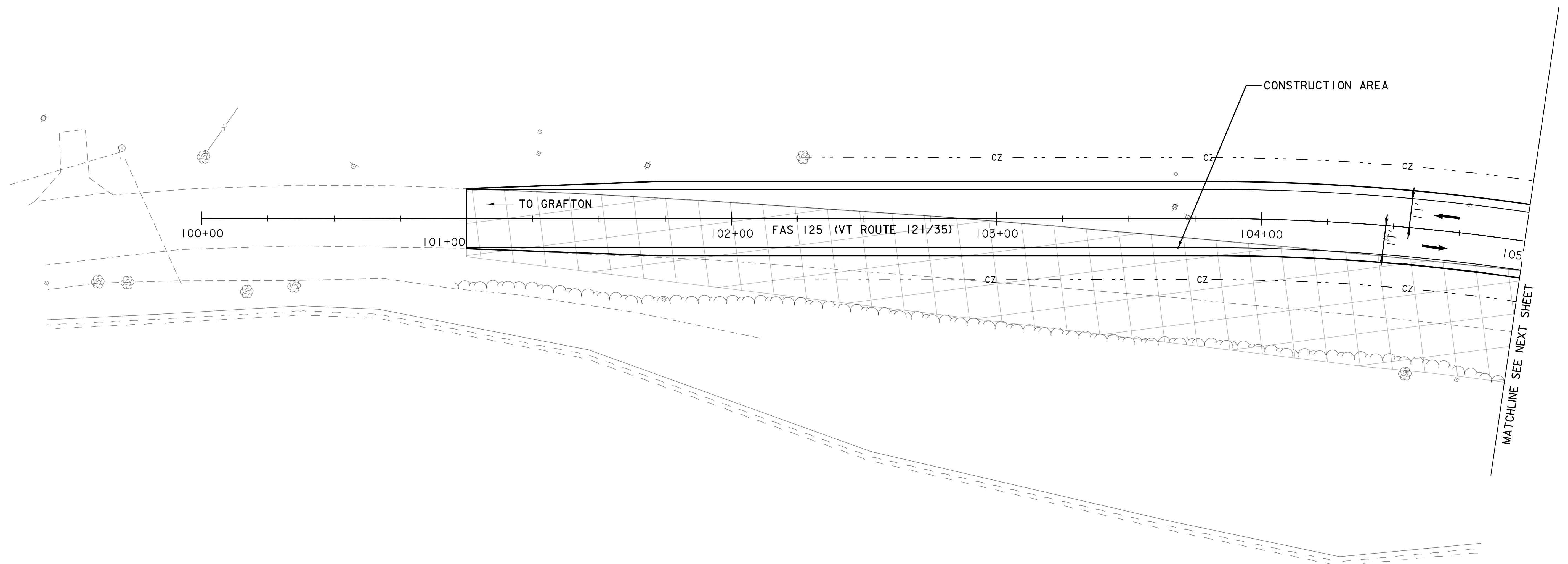
PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME: I6J177/zl6J177border.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: K. HOWE  
TCP PHASE 1&2 SHEET 3 OF 3

PLOT DATE: 3/18/2021  
DRAWN BY: K. HOWE  
CHECKED BY: R. LAROCHELLE  
SHEET 18 OF 68

(Roadway)

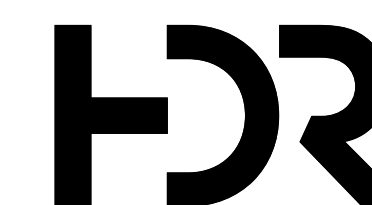
## SUGGESTED TRAFFIC SEQUENCING



IMPACT ATTENUATOR



20 0 20



CHECKED BY: R. LAROCHELLE  
SHEET 19 OF 68

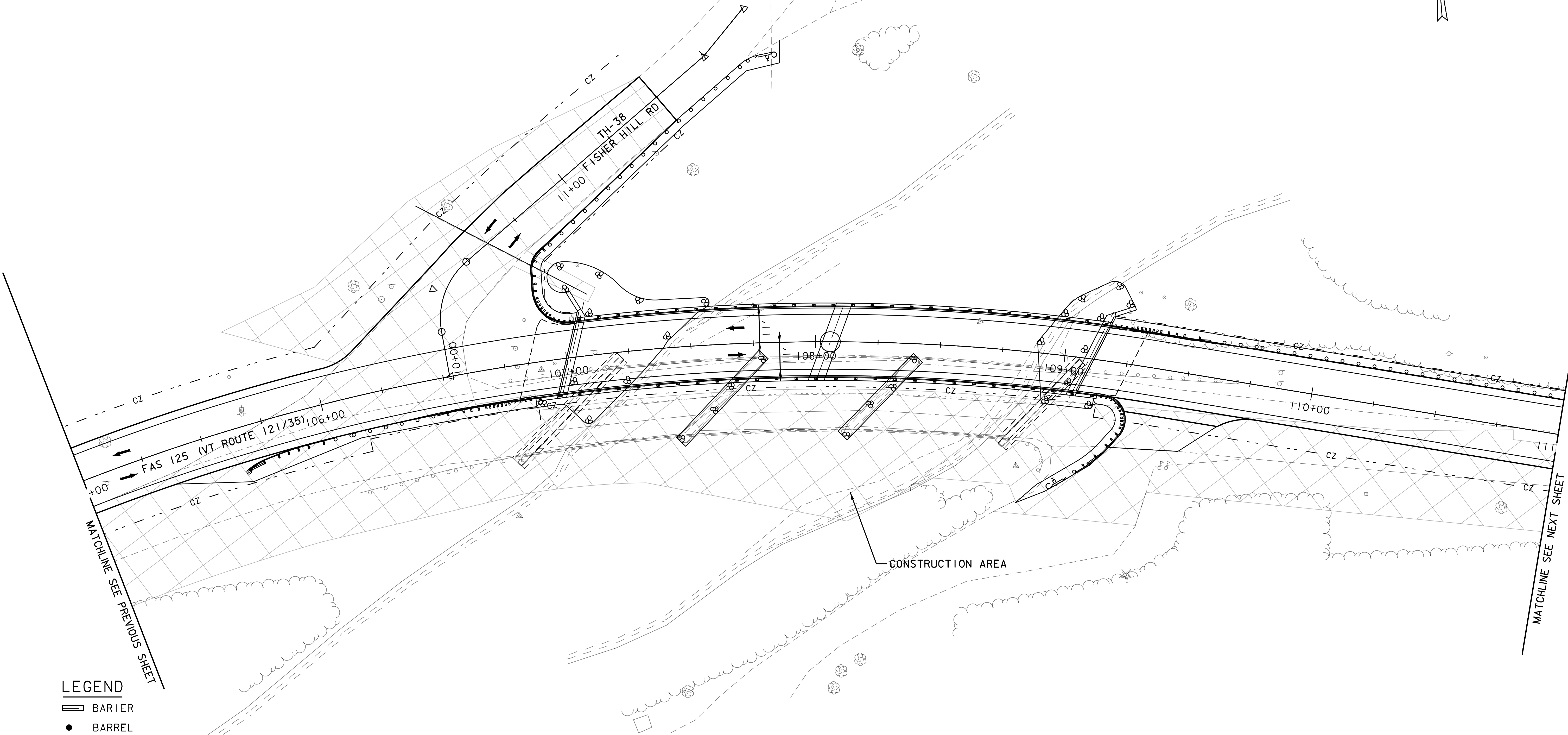
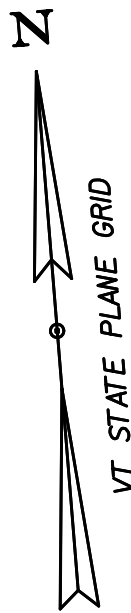
NOTES:

SUGGESTED CONSTRUCTION SEQUENCING

- (Roadway)
- Construct remainder of Route 121 / 35 west of Fisher Hill Rd
  - Construct remainder of western approach and Fisher Hill Rd
  - Construct portion of proposed eastern approach

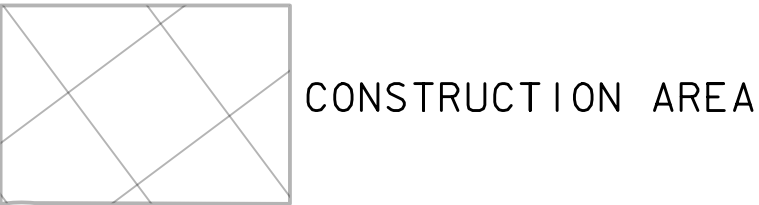
SUGGESTED TRAFFIC SEQUENCING

- Traffic will be in the proposed lane configuration
- Temporary/daily lane closures utilized to construct sliver areas
- Temporary/daily lane closures utilized to complete paving



LEGEND

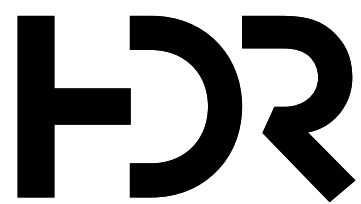
- BARRIER
- BARREL
- IMPACT ATTENUATOR



CONSTRUCTION AREA

TCP PHASE 3

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



PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME: i6j177/zl6j177border.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: K. HOWE  
TCP PHASE 3 SHEET 2 OF 3

PLOT DATE: 3/18/2021  
DRAWN BY: K. HOWE  
CHECKED BY: R. LAROCHELLE  
SHEET 20 OF 68

NOTES:

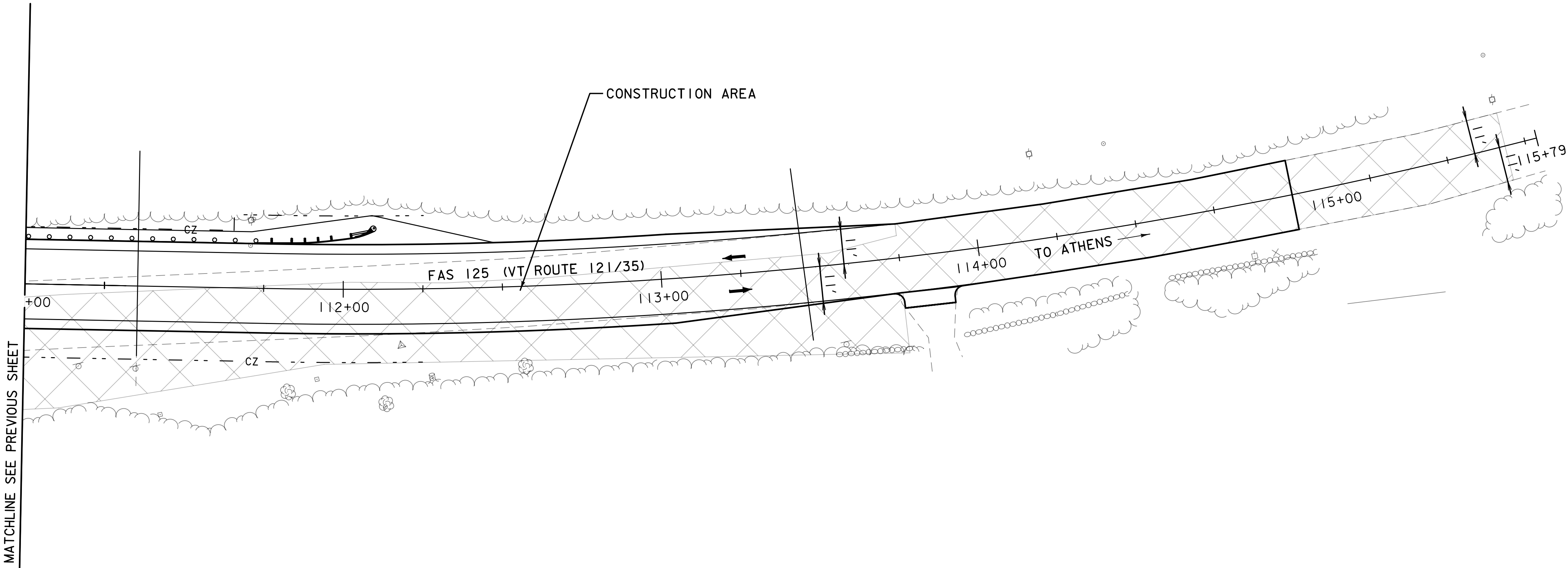
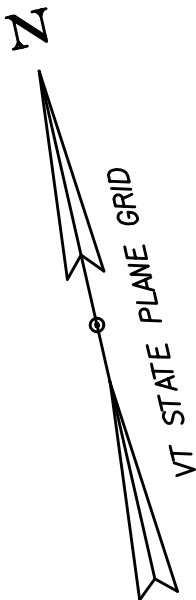
SUGGESTED CONSTRUCTION SEQUENCING

(Roadway)

- Construct remainder of Route 121 / 35 west of Fisher Hill Rd
- Construct remainder of western approach and Fisher Hill Rd
- Construct portion of proposed eastern approach

SUGGESTED TRAFFIC SEQUENCING

- Traffic will be in the proposed lane configuration
- Temporary/daily lane closures utilized to construct sliver areas
- Temporary/daily lane closures utilized to complete paving

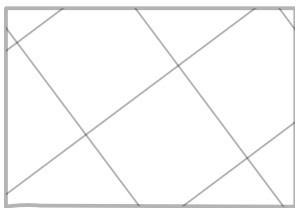


LEGEND

== BARRIER

● BARREL

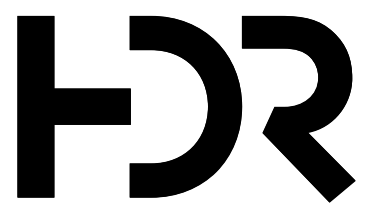
⊙ IMPACT ATENUATOR



CONSTRUCTION AREA

TCP PHASE 3

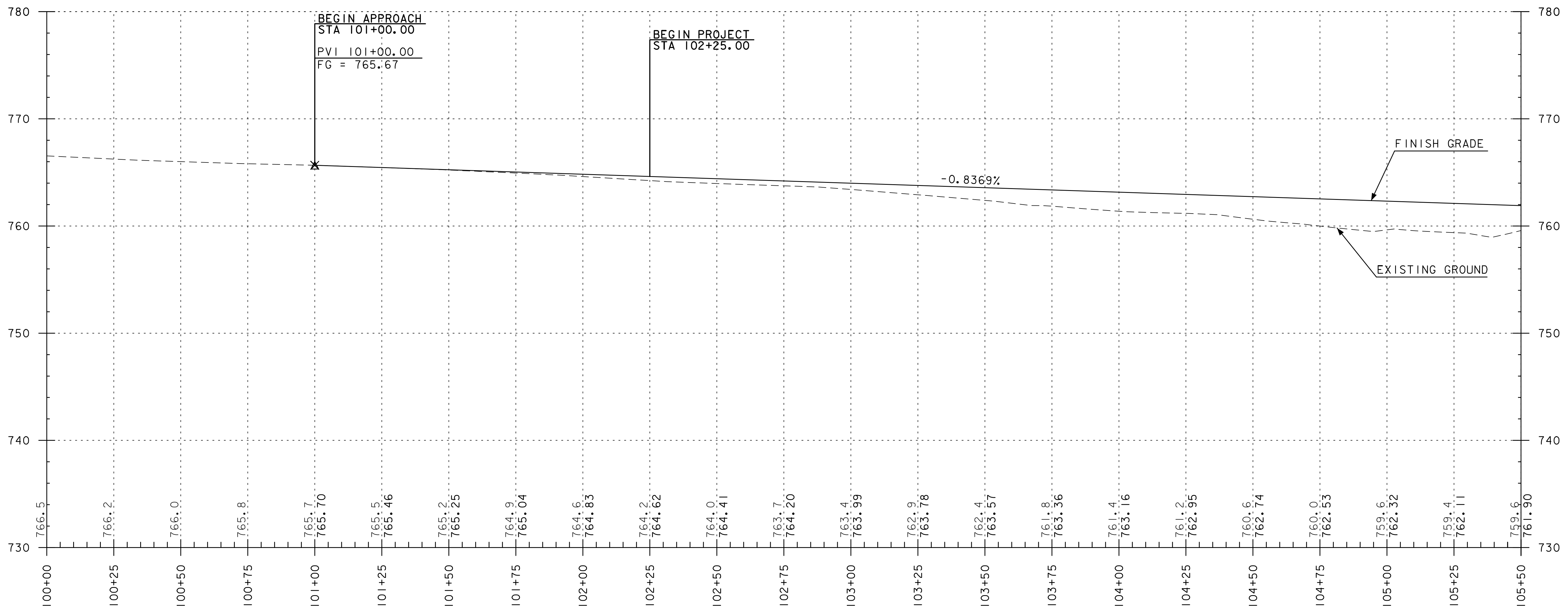
SCALE 1" = 20' - 0"  
20 0 20



PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME: I6J177/z16J177border.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: K. HOWE  
TCP PHASE 3 SHEET 3 OF 3

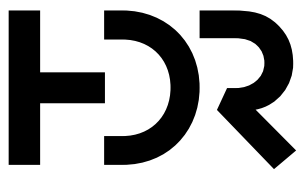
PLOT DATE: 3/18/2021  
DRAWN BY: K. HOWE  
CHECKED BY: R. LAROCHELLE  
SHEET 21 OF 68



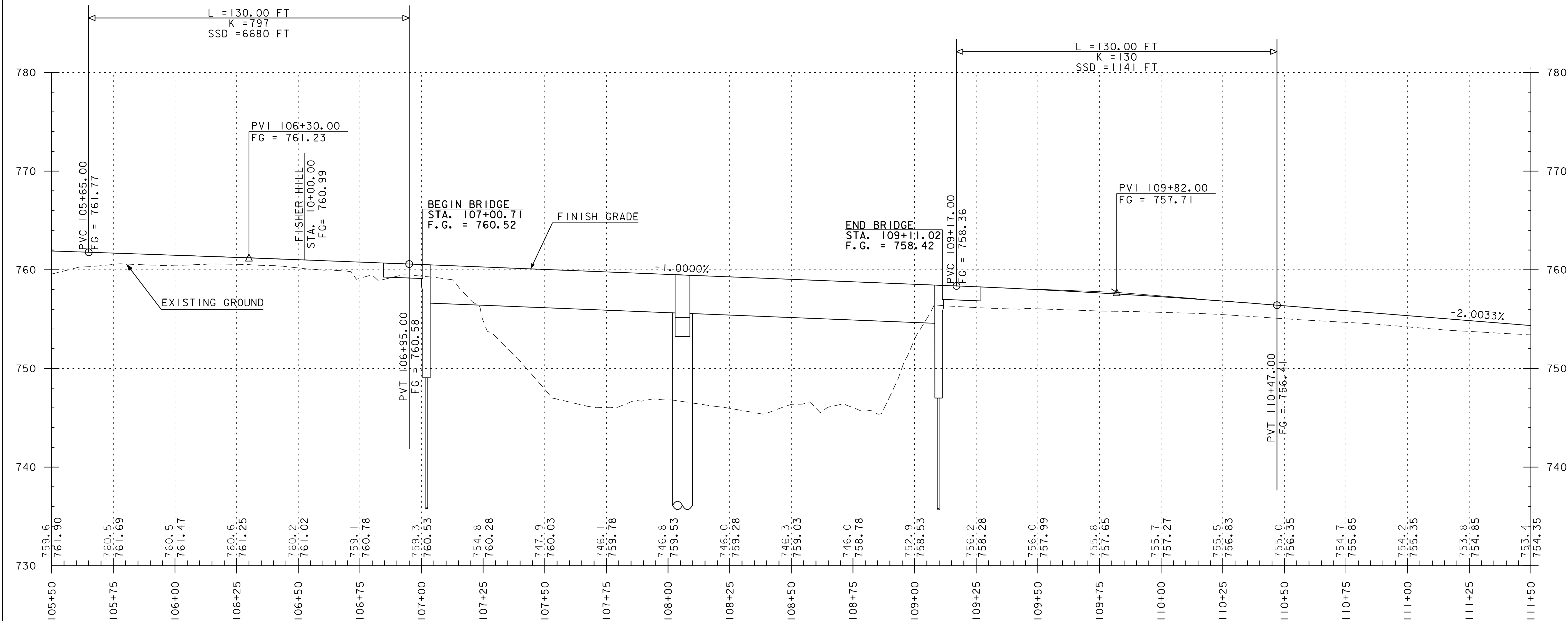
**ROUTE 121 PROFILE**

HOR. SCALE 1" = 20'-0"  
VERT. SCALE 1" = 5'-0"

L I N E	S U R F A C E	O F F S E T
-----	x16j177og	0.00
Scaled	4.0000	Times Ver.
Scaled	1.0000	Times Hor.



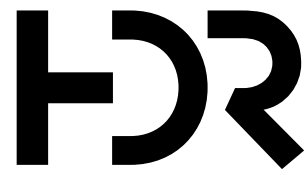
PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: z16j177BDRpro	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: K. HOWE
DESIGNED BY: K. HOWE	CHECKED BY: R. LAROCHELLE
PROFILE SHEET 1 OF 3	SHEET 22 OF 68



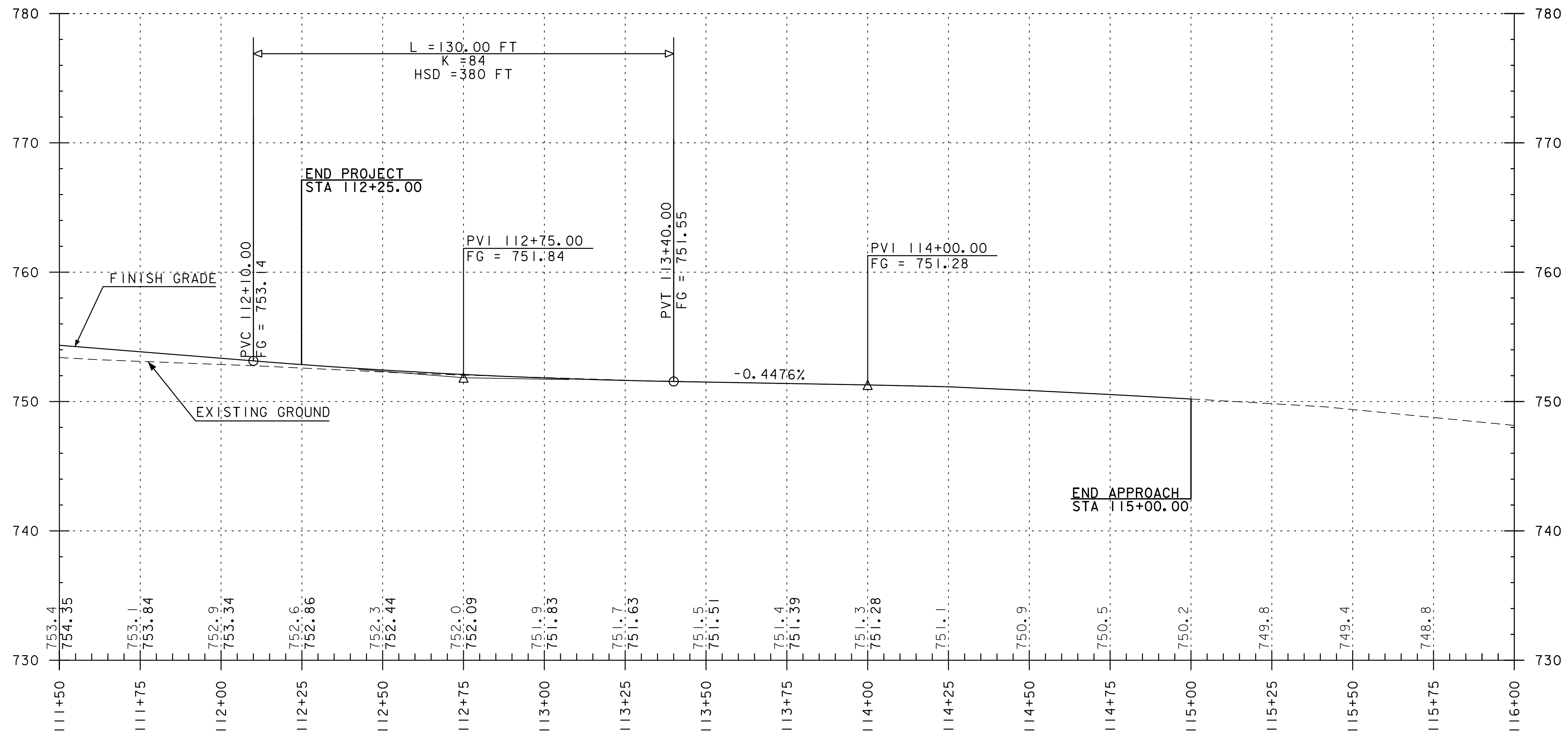
**ROUTE 121 PROFILE**

HOR. SCALE 1" = 20'-0"  
VERT. SCALE 1" = 5'-0"  
20 0 20

L LINE	SURFACE	OFFSET
-----	x16j177og	0.00
Scaled	4.0000	Times Ver.
Scaled	1.0000	Times Hor.



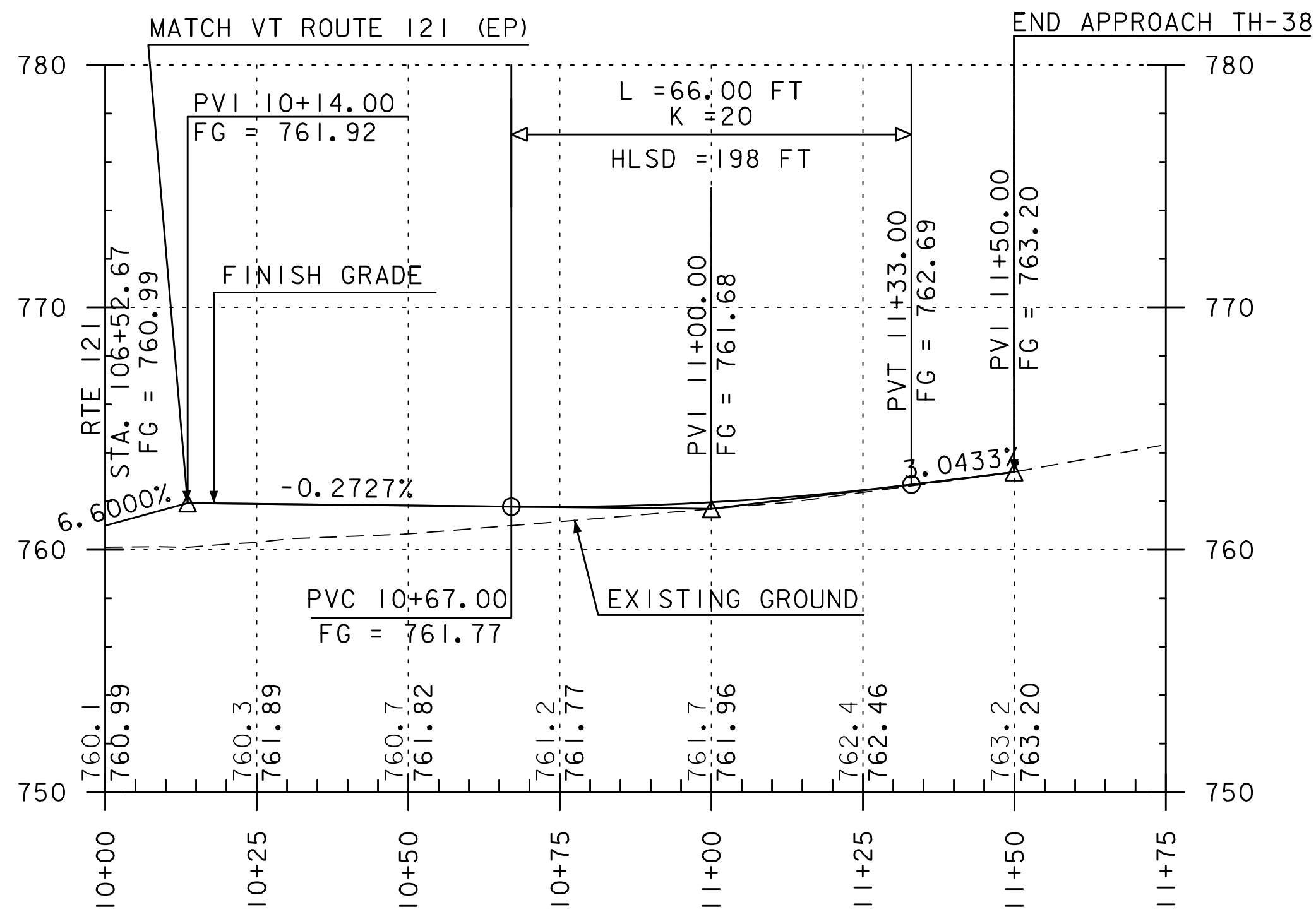
PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: z16j177BDRpro	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: K. HOWE
DESIGNED BY: K. HOWE	CHECKED BY: R. LAROCHELLE
PROFILE SHEET 2 OF 3	SHEET 23 OF 68



**ROUTE 121 PROFILE**

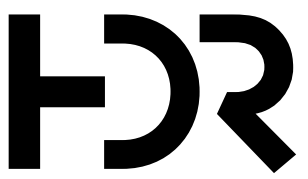
LINE	SURFACE	OFFSET
-----	x16j177og	0.00
Scaled	4.0000	Times Ver.
Scaled	1.0000	Times Hor.

HOR. SCALE 1" = 20'-0"  
 VERT. SCALE 1" = 5'-0"

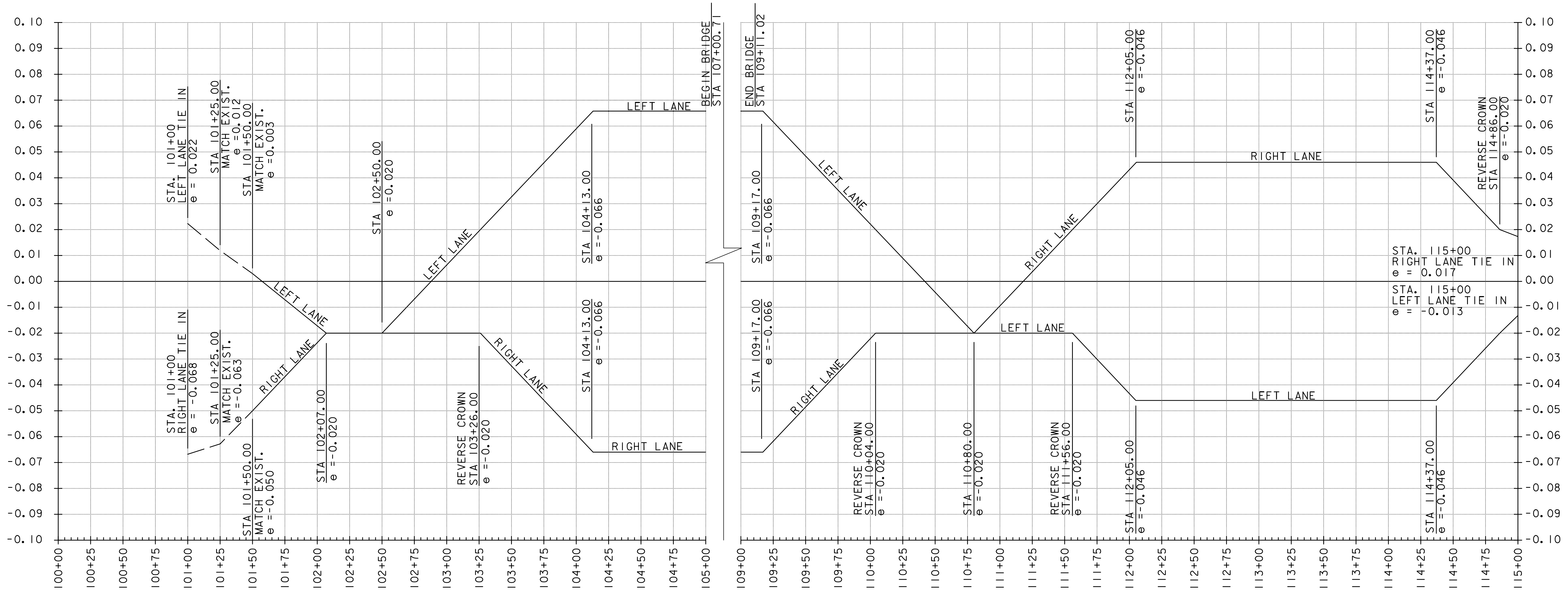


**FISHER HILL ROAD PROFILE**

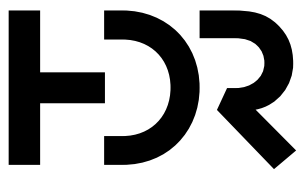
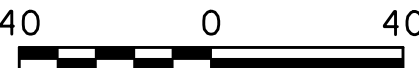
LINE	SURFACE	OFFSET
-----	x16j177og	0.00
Scaled	4.0000	Times Ver.
Scaled	1.0000	Times Hor.



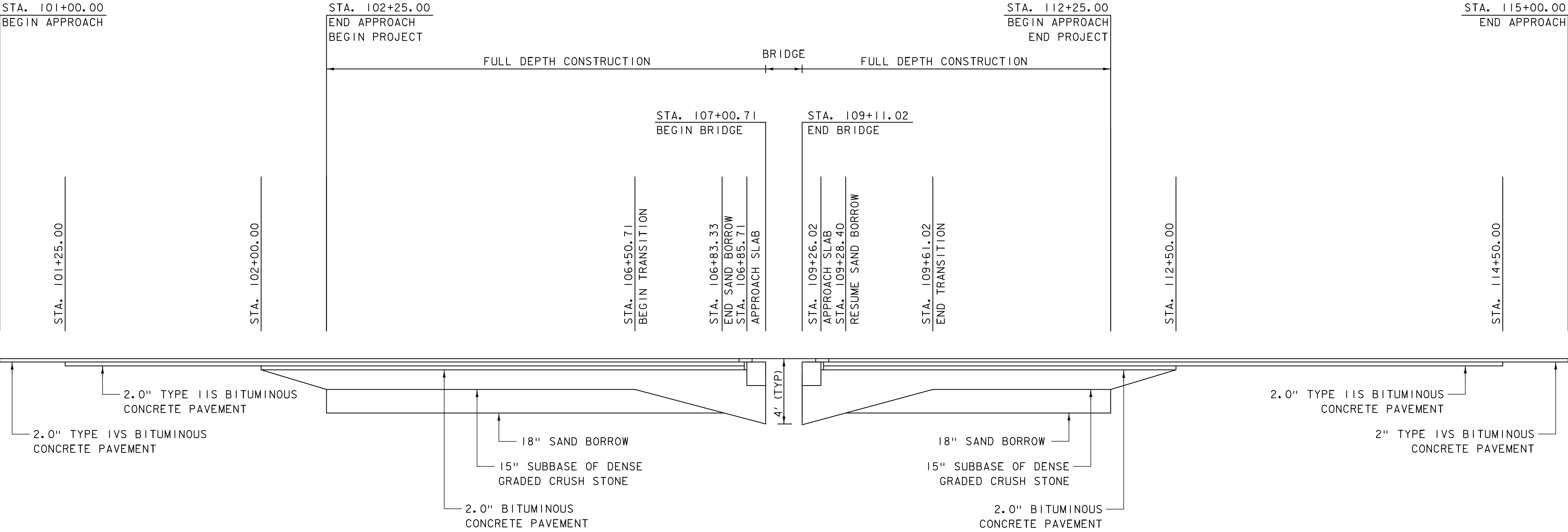
PROJECT NAME:	GRAFTON	PLOT DATE:	3/18/2021
PROJECT NUMBER:	BF 0125(6)	DRAWN BY:	K. HOWE
FILE NAME:	z16j177BDRpro	CHECKED BY:	R. LAROCHELLE
PROJECT LEADER:	T. FRENCH	SHEET	24 OF 68
DESIGNED BY:	K. HOWE		
PROFILE SHEET 3 OF 3			



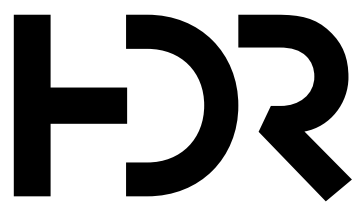
**ROUTE 121 BANKING DIAGRAM**



PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: z16j177BDRpro	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: K. HOWE
DESIGNED BY: K. HOWE	CHECKED BY: R. LAROCHELLE
BANKING DIAGRAM SHEET 1 OF 1	SHEET 25 OF 68



MATERIAL TRANSITION DETAIL  
NOT TO SCALE



PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: z16j177BDRpro	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: K. HOWE
DESIGNED BY: K. HOWE	CHECKED BY: R. LAROCHELLE
MATERIAL TRANSITION DETAIL	SHEET 26 OF 68

SOIL CLASSIFICATION

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

ROCK QUALITY DESIGNATION

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

SHEAR STRENGTH

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

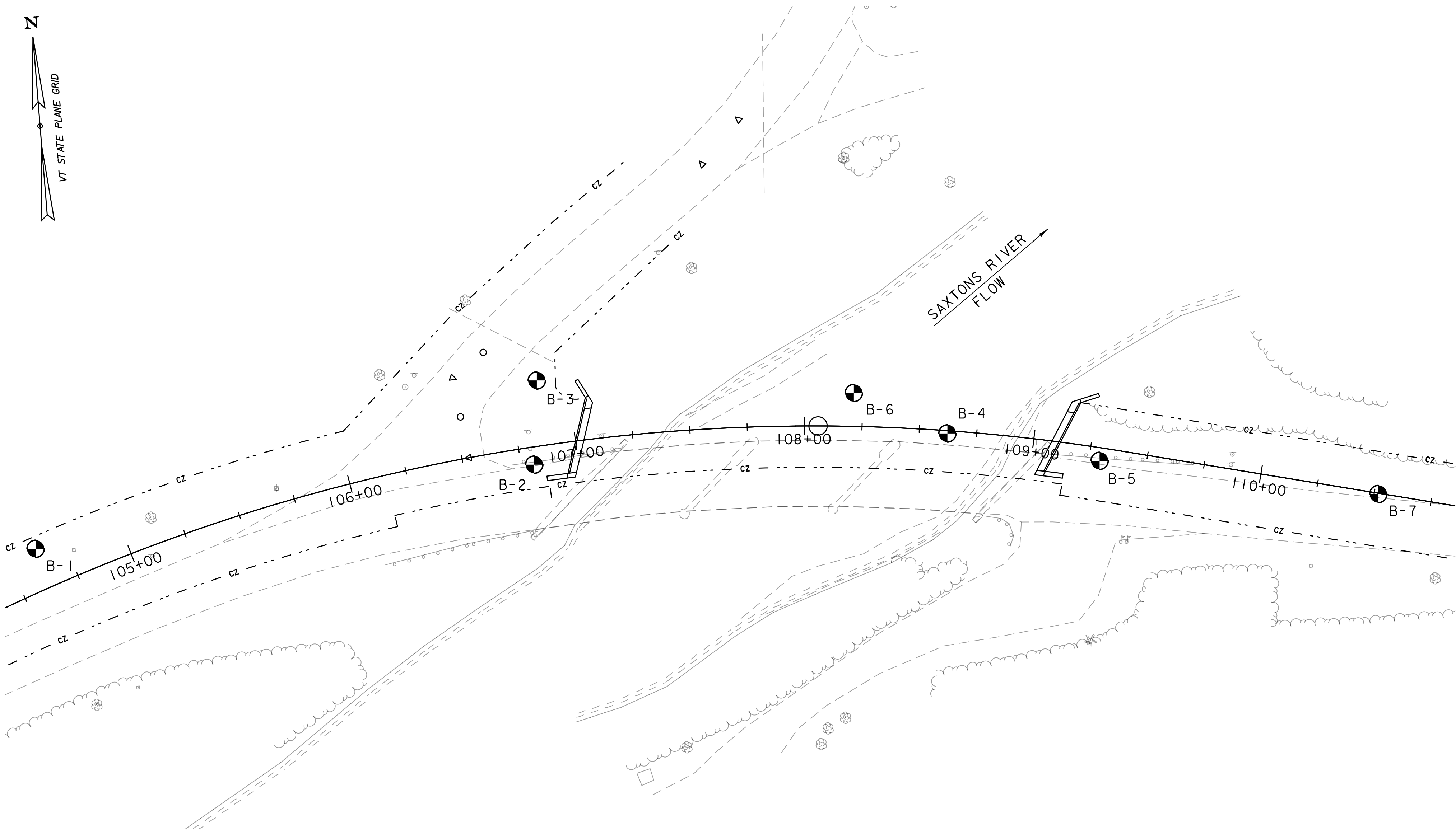
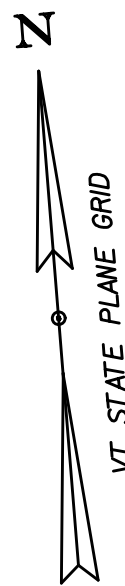
CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

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

COMMONLY USED SYMBOLS

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

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



BORING LAYOUT PLAN

SCALE 1" = 30'-0"  
30 0 30

BORING CHART

HOLE NO.	SURV. STATION	OFFSET	GROUND ELEV.	ELEV. TLOB
B-1	104+62.82	17.94 LT	759.4	-----
B-2	106+80.74	7.64 LT	760.2	706.0
B-3	106+87.09	28.46 LT	756.3	712.0
B-4	108+62.29	1.17 RT	745.3	711.0
B-5	109+29.74	5.63 RT	757.4	704.0
B-6	108+21.12	14.55 LT	746.3	712.0
B-7	110+51.84	0.33 RT	755.0	-----

DEFINITIONS (AASHTO)

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.  
BOULDER - A rock fragment with an average dimension > 12 inches.  
COBBLE - Rock fragments with an average dimension between 3 and 12 inches.  
GRAVEL - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).  
SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).  
SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.  
CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

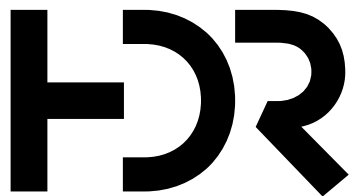
VARVED - Alternate layers of silt and clay.  
HARDPAN - Extremely dense soil, cemented layer, not softened when wet.  
MUCK - Soft organic soil (containing > 10% organic material).  
MOISTURE CONTENT - Weight of water divided by dry weight of soil.  
FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.  
STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.  
DIP - Inclination of bed with a horizontal plane.

GENERAL NOTES

- The subsurface explorations shown herein were made between ----- and ----- by the Agency.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.

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.

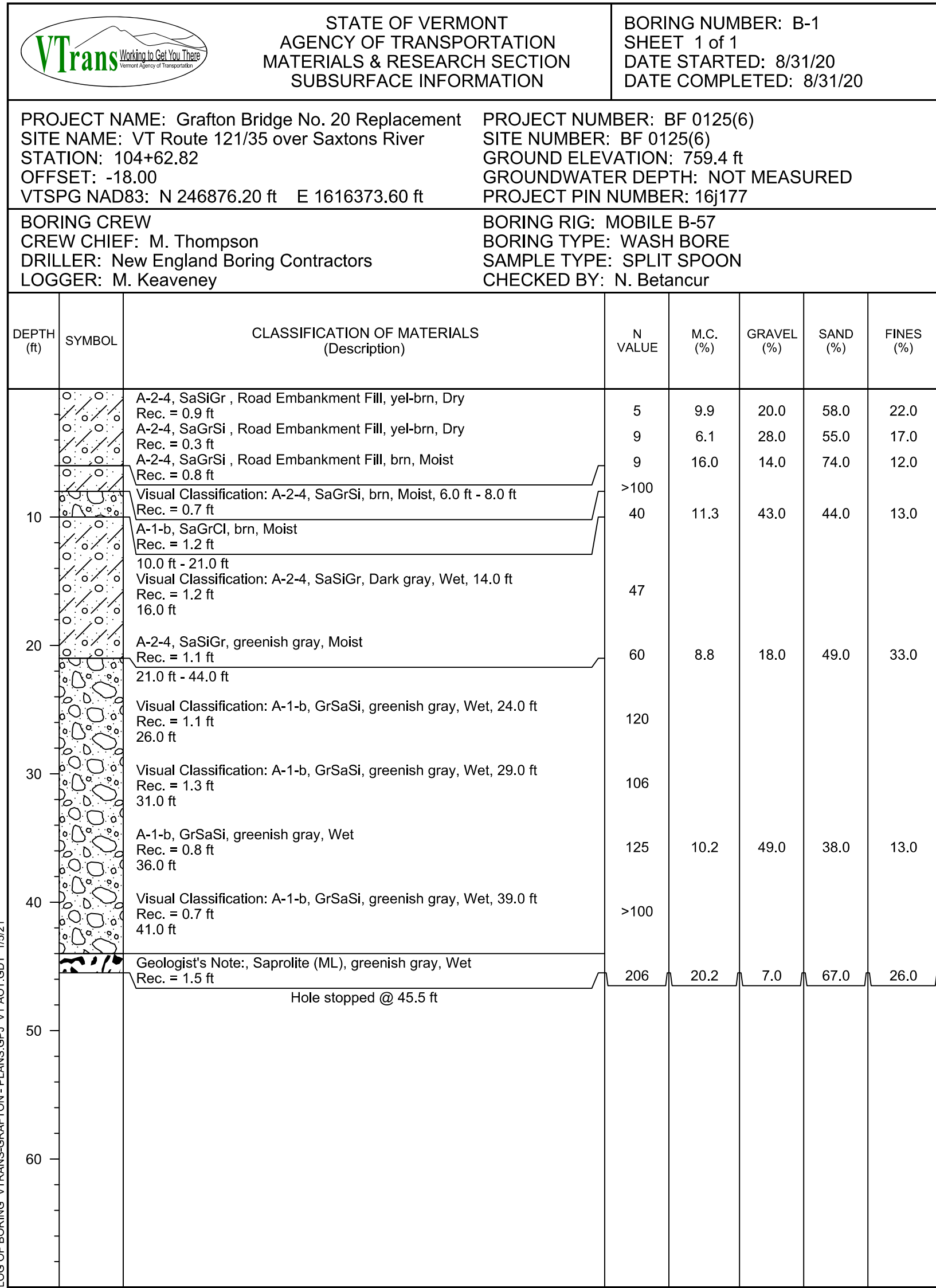
- Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
- Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
- Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.



PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

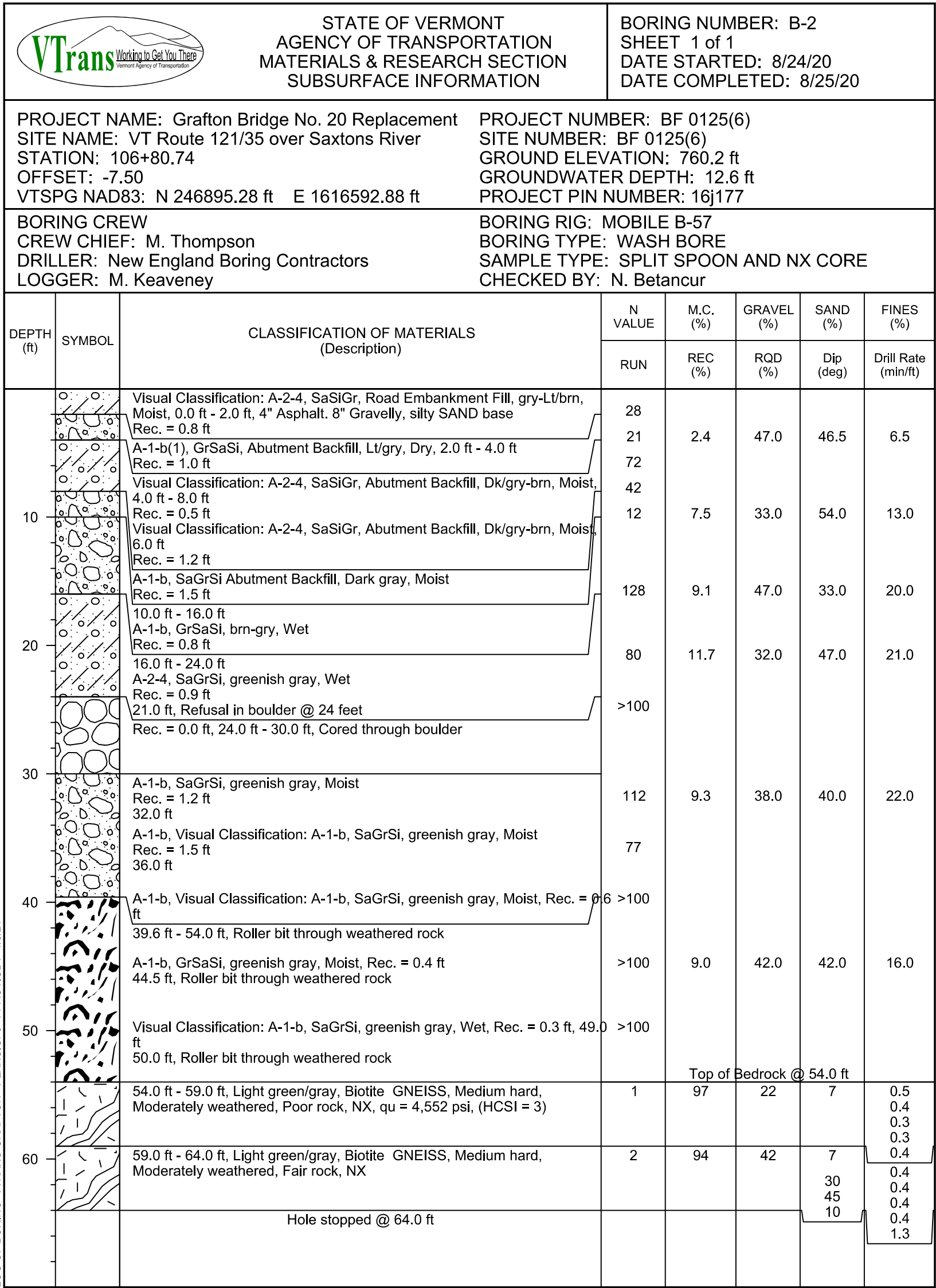
FILE NAME: z16j177bor.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: N. BETANCUR  
BORING INFORMATION SHEET

PLOT DATE: 3/18/2021  
DRAWN BY: N. CARON  
CHECKED BY: -----  
SHEET 27 OF 68



BOTTOM OF  
ABUT. I  
EL. 749.00

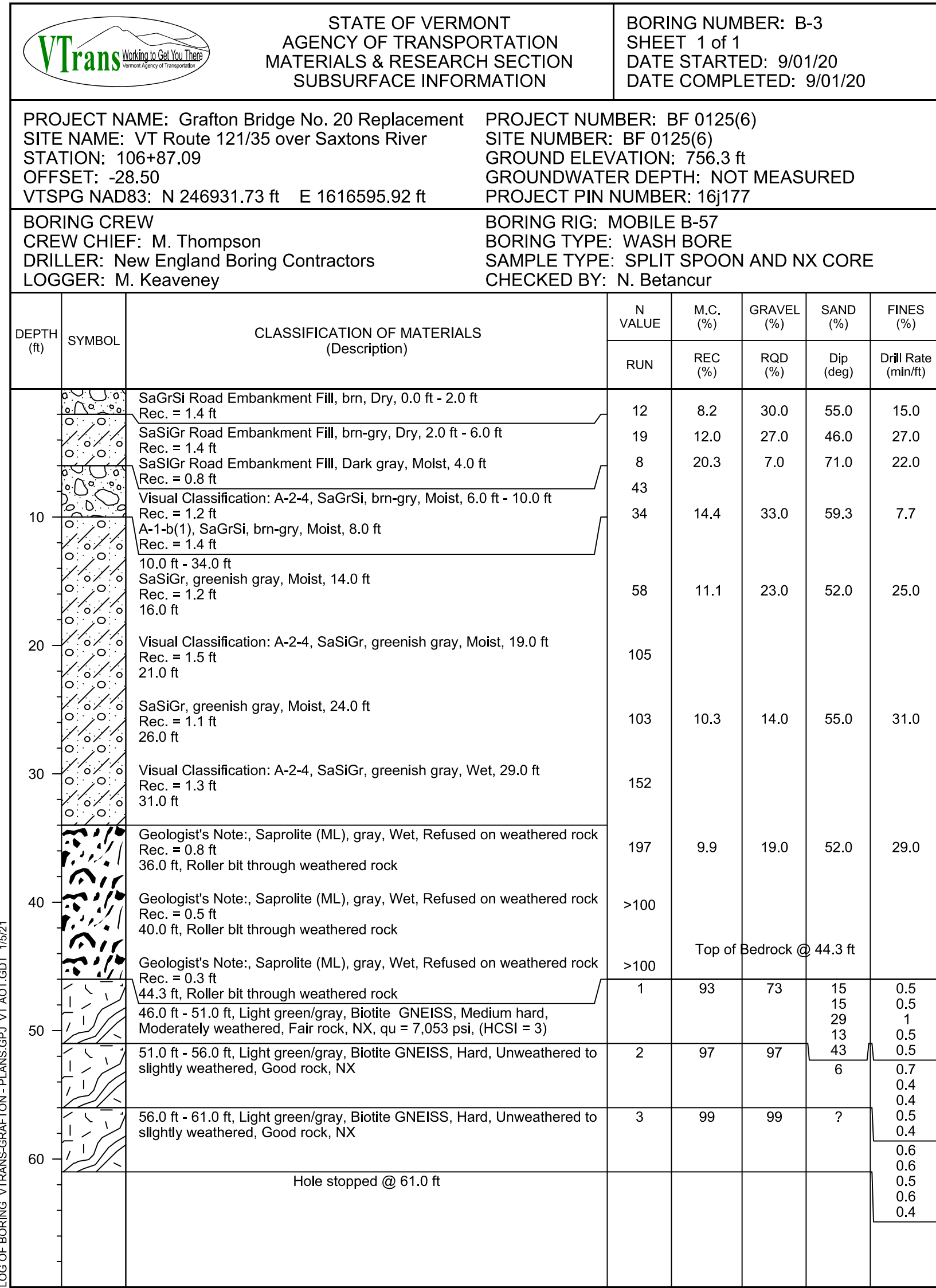
ESTIMATED  
PILE TIP  
EL. 709.00



APPROXIMATE BEDROCK ELEVATION EL. 706.0

BOTTOM OF  
ABUT. I  
EL. 749.00

ESTIMATED  
PILE TIP  
EL. 709.00

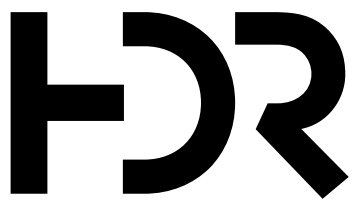


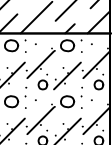
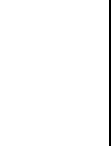
APPROXIMATE BEDROCK ELEVATION EL. 712.0

PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

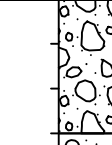
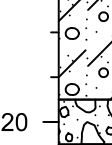
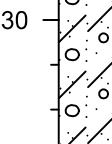
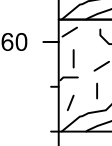
FILE NAME: z16j177bor.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: M. KEANEVEY  
BORING LOGS ( 1 OF 3 )

PLOT DATE: 3/18/2021  
DRAWN BY: N. CARON  
CHECKED BY: N. BETANCUR  
SHEET 28 OF 68

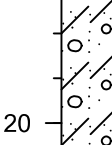
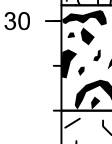
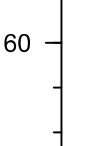


		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION			BORING NUMBER: B-4 SHEET 1 of 1 DATE STARTED: 9/02/20 DATE COMPLETED: 9/03/20		
PROJECT NAME: Grafton Bridge No. 20 Replacement SITE NAME: VT Route 121/35 over Saxtons River STATION: 108+62.29 OFFSET: 1.00 VTSPG NAD83: N 246894.36 ft E 1616773.20 ft		PROJECT NUMBER: BF 0125(6) SITE NUMBER: BF 0125(6) GROUND ELEVATION: 745.3 ft GROUNDWATER DEPTH: 0.5 ft PROJECT PIN NUMBER: 16j177			BORING RIG: MOBILE B-57 BORING TYPE: WASH BORE SAMPLE TYPE: SPLIT SPOON AND NX CORE CHECKED BY: N. Betancur		
BORING CREW CREW CHIEF: M. Thompson DRILLER: New England Boring Contractors LOGGER: M. Keaveney							
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	N VALUE	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
			RUN	REC (%)	RQD (%)	Dip (deg)	Drill Rate (min/ft)
10		A-1-a(1), GrSaSi, brn-gry, Wet, 0.0 ft - 8.0 ft Rec. = 0.6 ft	9	10.8	55.0	39.4	5.6
		A-1-b(1), GrSaSi, Dark gray, Wet, 2.0 ft Rec. = 1.3 ft	19	11.5	47.0	46.5	6.5
		A-1-a, GrSaSi, Dark gray, Wet Rec. = 0.3 ft	66	9.4	62.0	27.0	11.0
		Visual Classification: A-1-a, GrSaSi, Dark gray, Wet, 6.0 ft Rec. = 2.0 ft	45				
		8.0 ft - 14.0 ft A-2-4, SaGrSi A-1-b(1), SaGrSi, Dark gray, Wet Rec. = 1.5 ft	60	11.0	24.0	52.0	24.0
20		A-4, SaSiGr, greenish gray, Wet Rec. = 1.5 ft	97	11.0	9.0	49.0	42.0
		16.0 ft - 29.0 ft A-2-4, SaGrSi, greenish gray, Wet Rec. = 1.2 ft	77	9.7	28.0	49.0	23.0
		Visual Classification: A-2-4, SaGrSi, greenish gray, Wet, 24.0 ft Rec. = 1.3 ft	110				
		26.0 ft					
		A-1-b, SaGrSi, Light gray, Wet, Refused on weathered rock Rec. = 0.4 ft, 29.5 ft - 35.0 ft, Roller bit through weathered rock	163	10.0	38.0	43.0	19.0
30		Geologist's Note: Saprolite (ML), brn, Wet, Rec. = 0.3 ft, Refused on weathered rock	>100				
		34.2 ft, Roller bit through weathered rock	1	20	0	?	1
		35.0 ft - 40.0 ft, Light green/gray, Biotite GNEISS, Soft, Moderately to severely weathered, Very poor rock, NX					1.2
		40.0 ft - 45.0 ft, Light green/gray, Biotite GNEISS, Hard to medium hard, Moderately weathered, Fair rock, NX, qu = 8,525 psi, (HCSI = 3-4)	2	95	80	8	0.7
		45.0 ft - 50.0 ft, Light green/gray, Biotite GNEISS, Medium hard, Moderately severe weathering, Poor rock, NX	3	74	44	25	0.8
40		50.0 ft - 55.0 ft, Light green/gray, Biotite GNEISS, Hard, Moderately to severely weathered, Poor rock, NX, qu = 9,583 psi, (HCSI = 4)	4	91	28	45	0.7
						45	0.6
						45	0.8
						45	0.5
						45	0.6
50		Hole stopped @ 55.0 ft					0.4
						16	0.8
						0	0.5
						0	0.6
						0	0.5
60		Hole stopped @ 55.0 ft					0.4
						16	0.8
						0	0.5
						0	0.6
						0	0.5

APPROXIMATE BEDROCK ELEVATION EL. 711.0

		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION			BORING NUMBER: B-5 SHEET 1 of 1 DATE STARTED: 8/26/20 DATE COMPLETED: 8/26/20		
PROJECT NAME: Grafton Bridge No. 20 Replacement SITE NAME: VT Route 121/35 over Saxtons River STATION: 109+29.74 OFFSET: 5.50 VTSPG NAD83: N 246877.16 ft E 1616838.27 ft		PROJECT NUMBER: BF 0125(6) SITE NUMBER: BF 0125(6) GROUND ELEVATION: 757.4 ft GROUNDWATER DEPTH: 8.4 ft PROJECT PIN NUMBER: 16j177			BORING RIG: MOBILE B-57 BORING TYPE: WASH BORE SAMPLE TYPE: SPLIT SPOON AND NX CORE CHECKED BY: N. Betancur		
BORING CREW CREW CHIEF: M. Thompson DRILLER: New England Boring Contractors LOGGER: M. Keaveney							
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	N VALUE	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
			RUN	REC (%)	RQD (%)	Dip (deg)	Drill Rate (min/ft)
10		A-1-b, SaGrSi, Roadway Embankment Fill, red-brn, Moist, 0.0 ft - 6.0 ft, 4" Asphalt, 8" Gravelly, silty SAND base Rec. = 1.7 ft	27				
		A-1-a, SaGrSi Roadway Embankment Fill, red-brn, Moist Rec. = 0.5 ft	30	7.2	38.0	48.0	14.0
		A-1-a(1), GrSaSi, Roadway Embankment Fill, Dark gray, Moist, 4.0 ft Rec. = 0.7 ft	46	6.9	64.0	26.6	9.4
		Visual Classification: A-2-4, SaSiGr, Dark gray, Moist, 6.0 ft - 7.5 ft, Refused on cobble Rec. = 0.3 ft	>100				
		7.5 ft - 8.0 ft A-2-4, SaSiGr, Dk/gry-brn, Moist Rec. = 1.2 ft	36	14.1	2.0	83.0	15.0
20		A-2-4, SaSiGr, Lt/brn, Wet, 14.0 ft Rec. = 0.9 ft	39				
		Visual Classification: A-2-4, SaSiGr, Lt/brn, Wet, 14.0 ft Rec. = 0.9 ft	46	9.1	48.0	40.0	12.0
		A-1-b, GrSaSi, Dk/gry-brn, Moist Rec. = 1.1 ft					
		21.0 ft - 24.0 ft A-4, SiSaGr, Dk/gry-brn, Wet Rec. = 1.0 ft	41	20.0	1.0	49.0	50.0
		26.0 ft - 44.0 ft Visual Classification: A-2-4, SaSiGr, Lt/brn-gry, Wet, 29.0 ft Rec. = 0.6 ft	70				
30		Visual Classification: A-2-4, SaGrSi, gry-brn, Wet, 34.0 ft Rec. = 1.3 ft	117				
		36.0 ft					
		A-2-4, SaGrSi, Bluish-gray, Wet Rec. = 1.5 ft	164	10.4	27.0	54.0	19.0
		41.0 ft					
		Visual Classification: A-1-b, GrSaSi, Bluish-gray, Wet, 44.0 ft - 49.0 ft Rec. = 1.4 ft	105				
40		Geologist's Note: Saprolite (ML), greenish gray, Wet Rec. = 0.7 ft	36				
		51.0 ft - 54.0 ft, Roller bit through weathered rock. Lower 12 inches appear to be sound rock					
		Top of Bedrock @ 53.0 ft					
		54.0 ft - 59.0 ft, Light green/gray, Biotite GNEISS, Medium to soft, Moderately to severely weathered, Poor rock, NX, qu = 4,041 psi, (HCSI = 2-3)	1	81	38	45	0.5
						0	0.7
50		59.0 ft - 64.0 ft, Light green/gray, Biotite GNEISS, Medium hard, Moderately weathered, Fair rock, NX	2	96	60	30-50	0.6
						10-40	0.5
						10-40	0.5
						45	0.4
						0	0.1
60		Hole stopped @ 64.0 ft					0.4
						45-50	0.4
						0-45	0.4
						0-45	0.2
						0-45	0.2

APPROXIMATE BEDROCK ELEVATION EL. 704.0

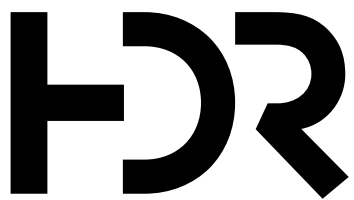
		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION			BORING NUMBER: B-6 SHEET 1 of 1 DATE STARTED: 9/03/20 DATE COMPLETED: 9/04/20		
PROJECT NAME: Grafton Bridge No. 20 Replacement SITE NAME: VT Route 121/35 over Saxtons River STATION: 108+21.12 OFFSET: -14.50 VTSPG NAD83: N 246915.18 ft E 1616734.01 ft		PROJECT NUMBER: BF 0125(6) SITE NUMBER: BF 0125(6) GROUND ELEVATION: 746.3 ft GROUNDWATER DEPTH: 1.0 ft PROJECT PIN NUMBER: 16j177			BORING RIG: MOBILE B-57 BORING TYPE: WASH BORE SAMPLE TYPE: SPLIT SPOON AND NX CORE CHECKED BY: N. Betancur		
BORING CREW CREW CHIEF: M. Thompson DRILLER: New England Boring Contractors LOGGER: M. Keaveney							
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	N VALUE	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
			RUN	REC (%)	RQD (%)	Dip (deg)	Drill Rate (min/ft)
10		A-1-a(1), GrSaSi, brn, Wet, 0.0 ft - 6.0 ft Rec. = 0.6 ft	13	8.9			
		A-1-a(1), GrSaSi, brn, Wet, 2.0 ft Rec. = 0.9 ft	8	12.4	44.0	50.6	5.4
		A-1-a(1), GrSaSi, greenish gray, Wet, 4.0 ft Rec. = 1.3 ft	75	8.8	55.0	34.0	11.0
		Visual Classification: A-2-4, SaSiGr, greenish gray, Wet, 6.0 ft - 29.0 ft Rec. = 2.0 ft	75				
		Visual Classification: A-2-4, SaSiGr, greenish gray, Wet, 8.0 ft Rec. = 1.4 ft	53				
20		A-2-4, SaGrSi, greenish gray, Wet Rec. = 1.2 ft	67	9.0	28.0	47.0	25.0
		16.0 ft					
		A-2-4, SaSiGr, greenish gray, Wet Rec. = 1.4 ft	104	9.3	15.0	57.0	28.0
		21.0 ft					
		A-2-4, SaSiGr, greenish gray, Wet Rec. = 1.3 ft	111	14.6	23.0	47.0	30.0
30		Visual Classification: A-1-b, SaGrSi, brn, Wet, Rec. = 0.3 ft, 29.0 ft - 29.3 ft, Refused on weathered rock	>100				
		29.3 ft - 34.0 ft, Roller bit through weathered rock					
		Top of Bedrock @ 34.0 ft					
		Rec. = 0.0 ft 34.0 ft - 39.0 ft, Light green/gray, Biotite GNEISS, Soft, Moderately weathered, Fair rock, NX, qu = 2,294 psi, (HCSI = 2)	>100	92	76	0-45	0.75
						15-70	0.6
40		39.0 ft - 44.0 ft, Light green/gray, Biotite GNEISS, Hard, Slightly weathered, Fair rock, NX, qu = 9,866 psi, (HCSI = 4)	2	92	73	0	0.5
						60	0.4
						10	0.4
						10	0.4
						10	0.6
50		Hole stopped @ 49.0 ft					0.5
						10	0.6
						10	0.5
						10	0.5
						10	0.5

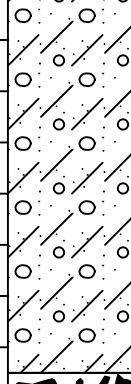
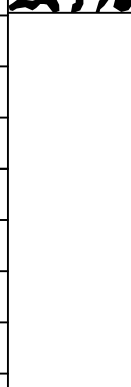
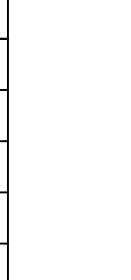
APPROXIMATE BEDROCK ELEVATION EL. 712.00

PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

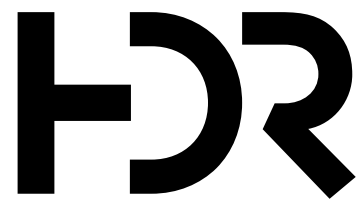
FILE NAME: z16j177bor.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: M. KEANEVEY  
BORING LOGS ( 2 OF 3 )

PLOT DATE: 3/18/2021  
DRAWN BY: N. CARON  
CHECKED BY: N. BETANCUR  
SHEET 29 OF 68

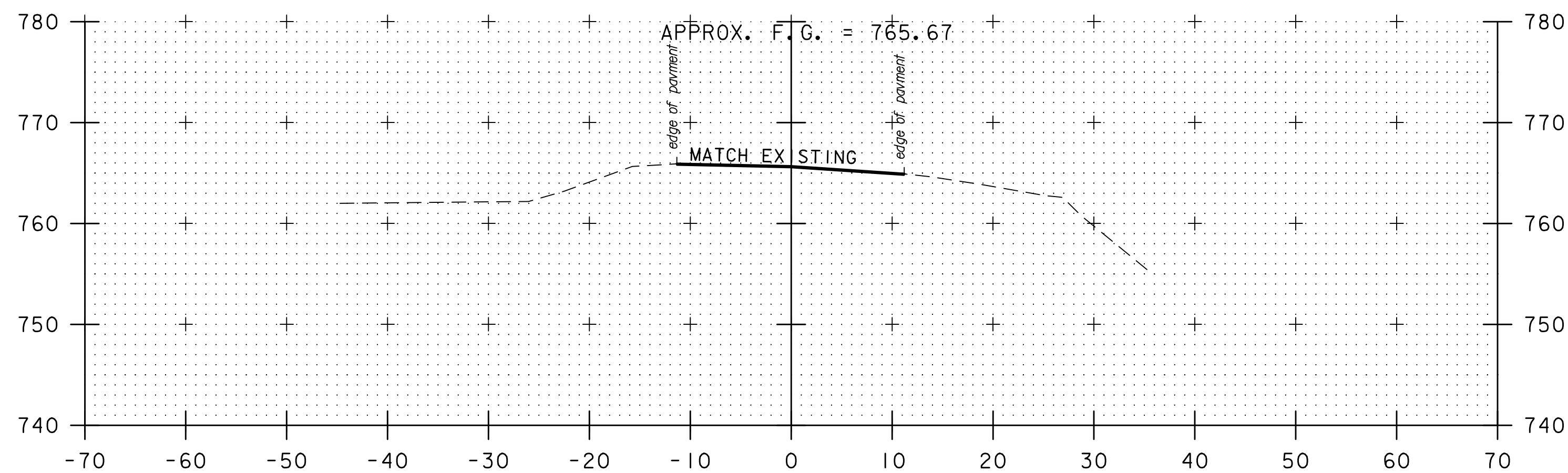


				STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION				BORING NUMBER: B-7 SHEET 1 of 1 DATE STARTED: 8/27/20 DATE COMPLETED: 8/28/20							
PROJECT NAME: Grafton Bridge No. 20 Replacement SITE NAME: VT Route 121/35 over Saxtons River STATION: 110+51.84 OFFSET: 0.50 VTSPG NAD83: N 246852.98 ft E 1616958.01 ft								PROJECT NUMBER: BF 0125(6) SITE NUMBER: BF 0125(6) GROUND ELEVATION: 755.0 ft GROUNDWATER DEPTH: NOT MEASURED PROJECT PIN NUMBER: 16j177							
BORING CREW CREW CHIEF: M. Thompson DRILLER: New England Boring Contractors LOGGER: M. Keaveney								BORING RIG: MOBILE B-57 BORING TYPE: WASH BORE SAMPLE TYPE: SPLIT SPOON CHECKED BY: N. Betancur							
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)						N VALUE	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)	
10		A-1-b, SaGrSi Roadway Embankment Fill, brn, Dry Rec. = 1.0 ft	15	9.6											
		A-1-b(1), SaGrSi, Roadway Embankment Fill, brn, Dry, 2.0 ft Rec. = 0.6 ft	28	13.1	33.0	58.1	8.9								
		A-1-b(1), SaGrSi, Roadway Embankment Fill, brn-gry, Moist, 4.0 ft	23	7.0	37.0	53.7	9.3								
		Rec. = 1.1 ft	106												
		Visual Classification: A-2-4, SaGrSi, gry-brn, Moist, 6.0 ft - 16.5 ft	23	8.1	47.0	42.0	11.0								
20		Rec. = 1.7 ft													
		A-1-b, SaGrSi, gry, Moist Rec. = 0.8 ft													
		10.0 ft													
		Visual Classification: A-1-b, SaGrSi, Lt/brn, Wet, 14.5 ft Rec. = 1.0 ft	76												
		16.5 ft - 21.0 ft													
30		Visual Classification: A-4(1), SiSaGr, Dark gray, Wet, 19.0 ft A-4, Rec. = 1.4 ft	27	13.0	6.0	32.0	62.0	20	7						
		21.0 ft - 26.0 ft													
		A-1-b, SaGrSi, greenish gray, Wet Rec. = 1.3 ft	132	10.2	37.0	43.0	20.0								
		26.0 ft - 43.0 ft													
		Visual Classification: A-2-4, SaSiGr, gry, Wet, 29.0 ft Rec. = 1.3 ft	71												
40		31.0 ft													
		Visual Classification: A-2-4, SaSiGr, gry, Wet, 34.0 ft Rec. = 1.4 ft	135												
		36.0 ft													
		Visual Classification: A-2-4, SaSiGr, Lt/brn, Wet, 39.0 ft Rec. = 1.6 ft	150												
		41.0 ft													
50		Geologist's Note: Saprolite (Schist), black, Wet Rec. = 1.0 ft	>100												
		Hole stopped @ 43.8 ft													
60															

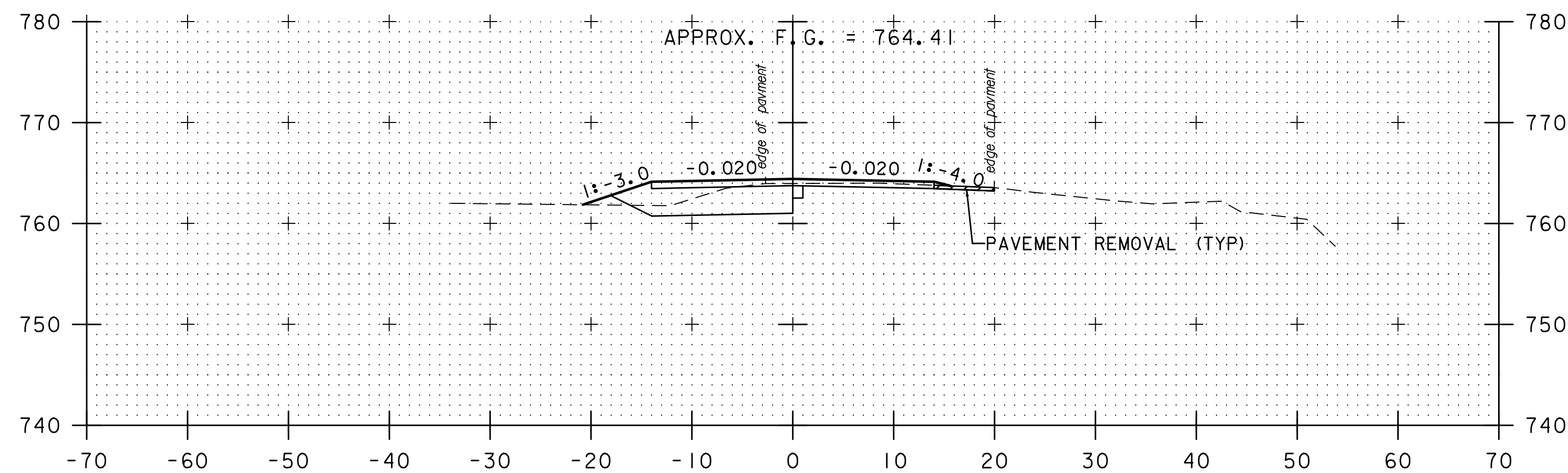
LOG OF BORING VTTRANS-GRAFTON-PLANS.GPJ VT AOT.GDT 1/9/21



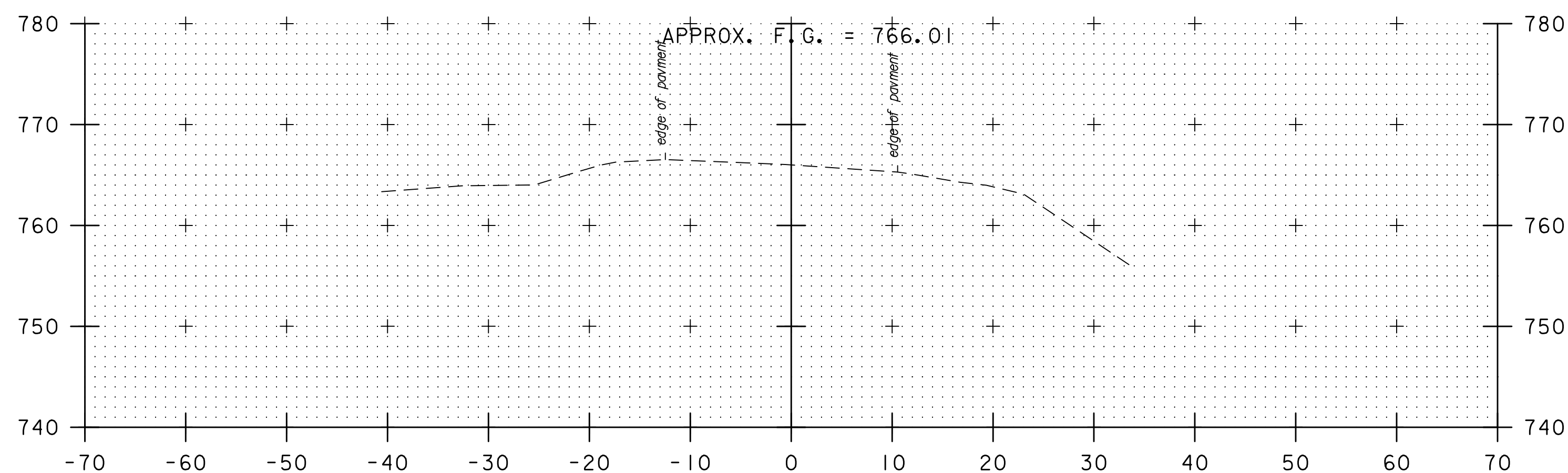
PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: z16j177bor.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: N. CARON
DESIGNED BY: M. KEANEVEY	CHECKED BY: N. BETANCUR
BORING LOGS ( 3 OF 3 )	SHEET 30 OF 68



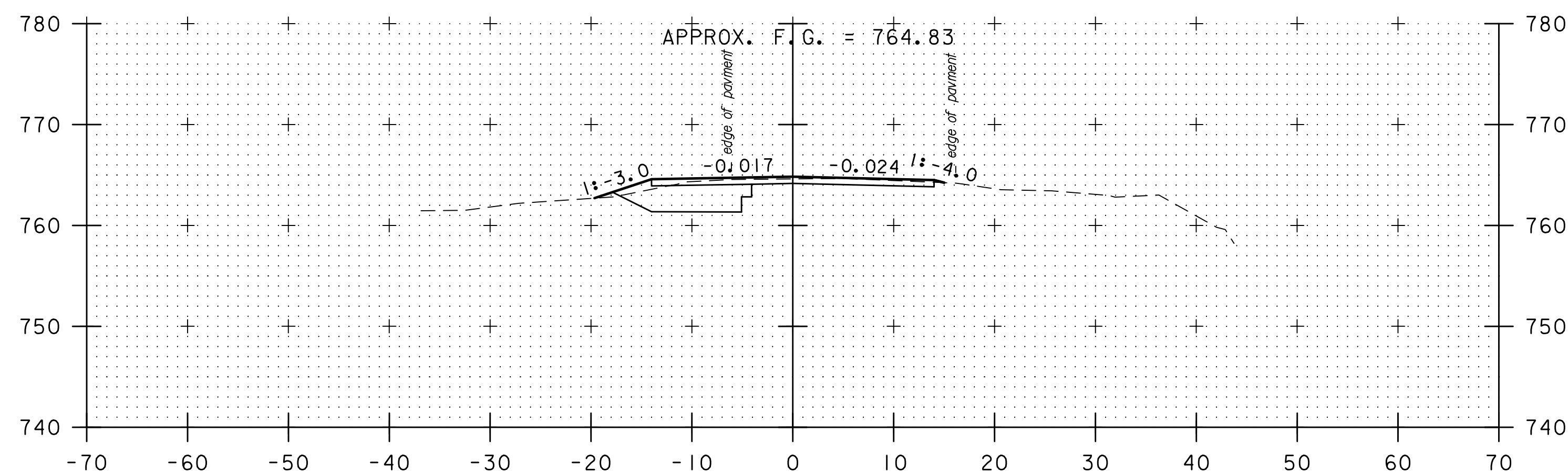
101+00



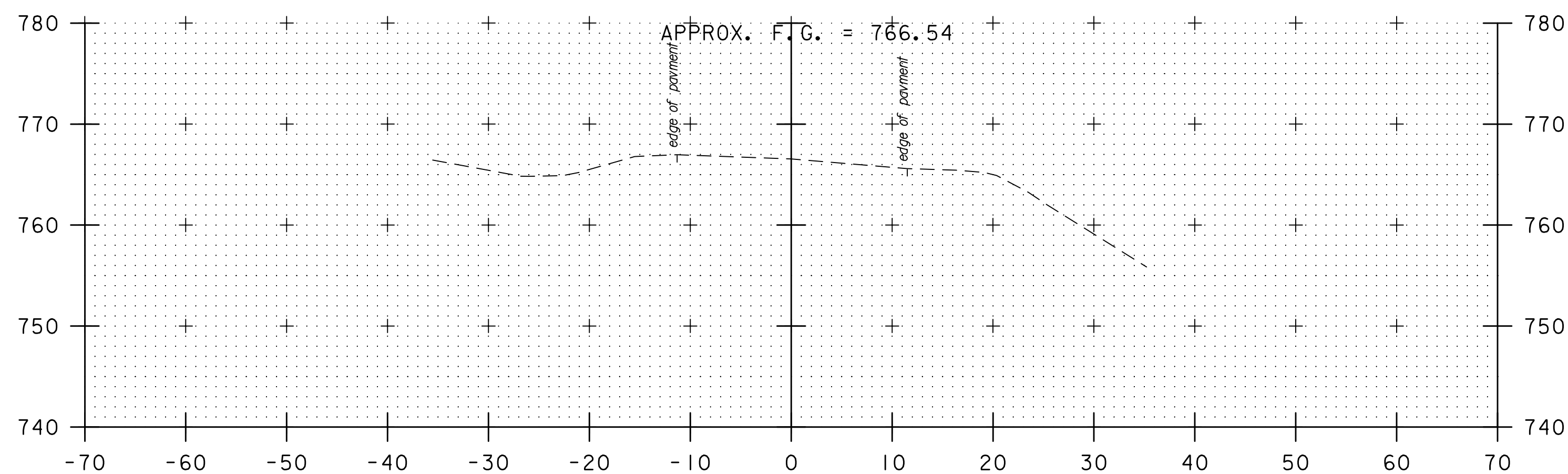
102+50



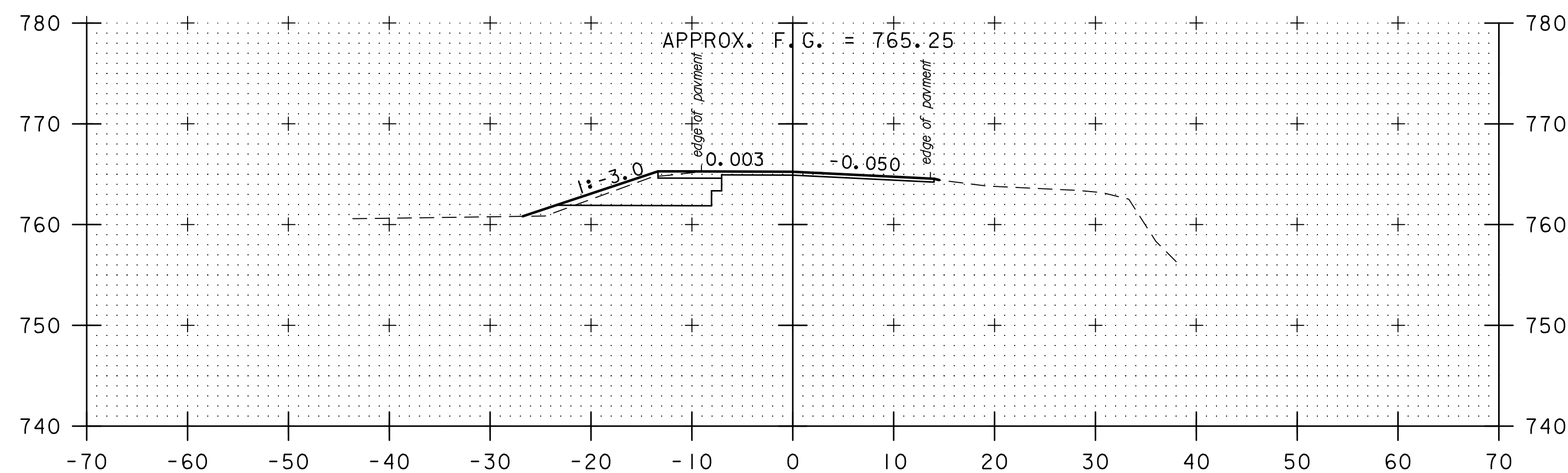
100+50



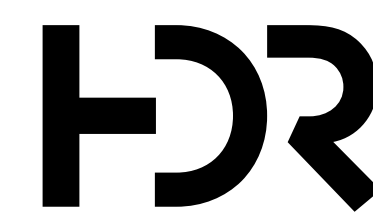
102+00



100+00

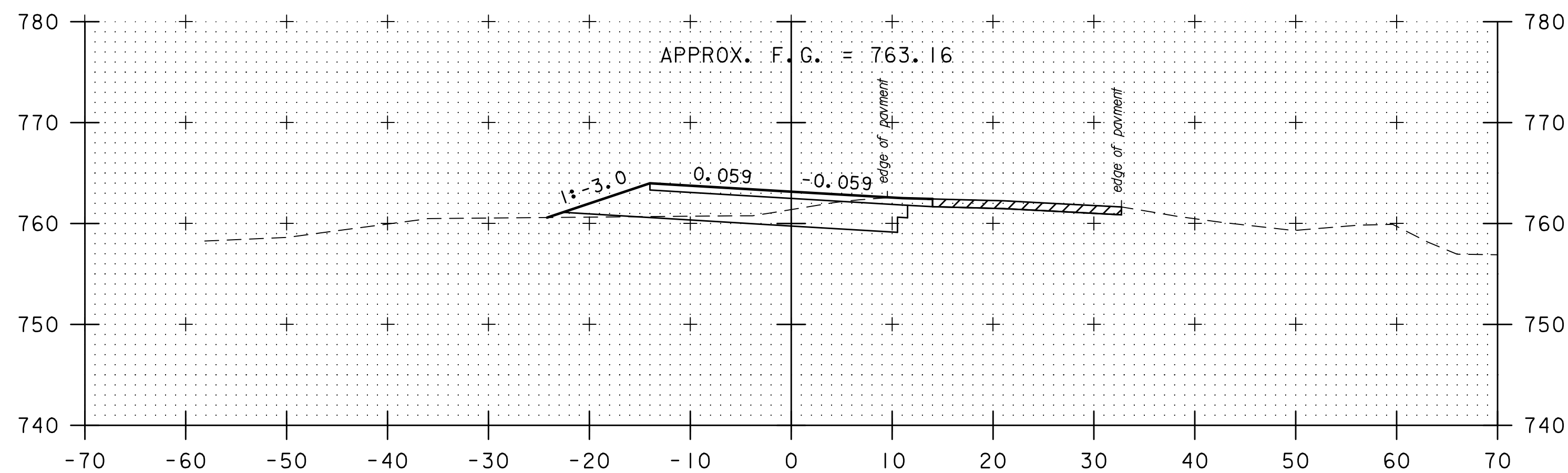


101+50

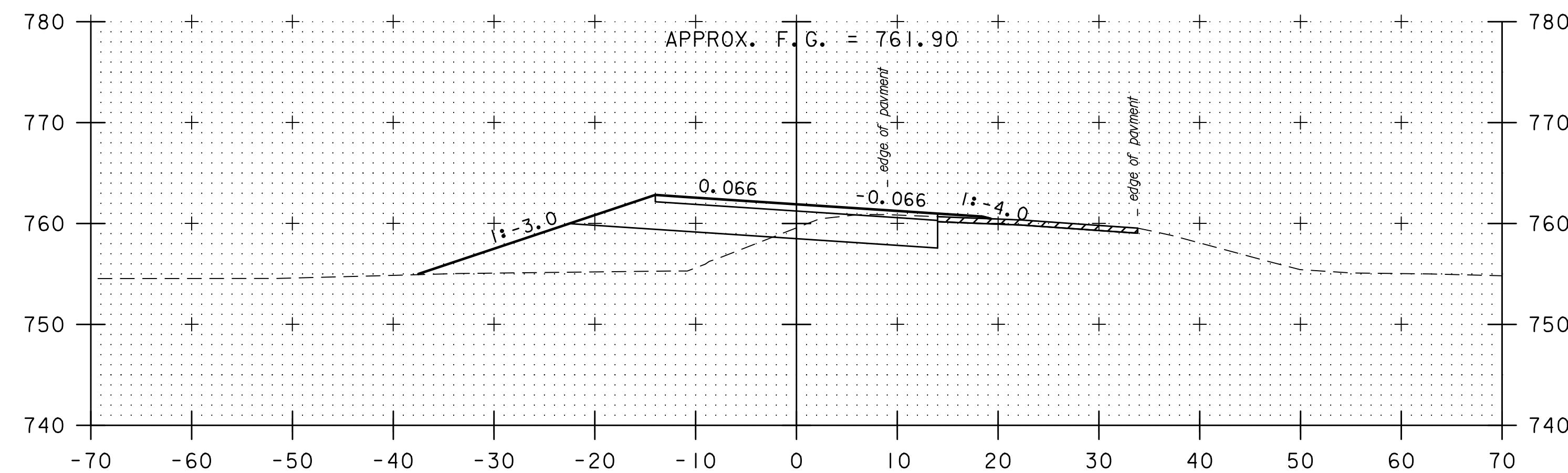


STA. 100+00 TO STA. 102+50

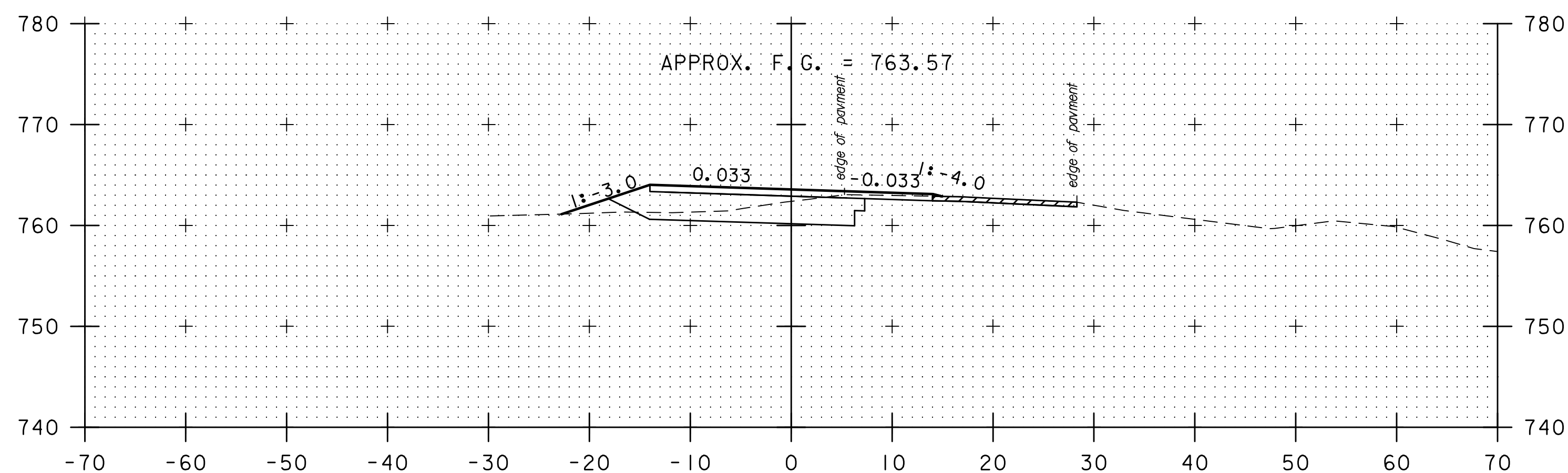
PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME:	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: K. HOWE
DESIGNED BY: K. HOWE	CHECKED BY: R. LAROCHELLE
VT ROUTE 121/35 CROSS SECTIONS	SHEET 31 OF 68



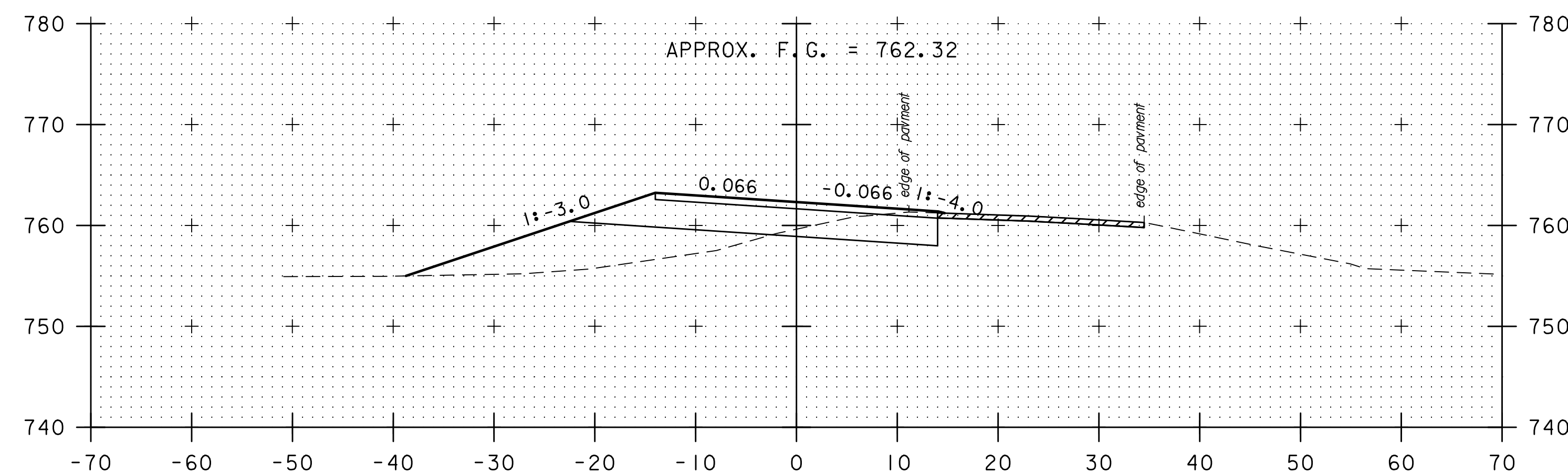
104+00



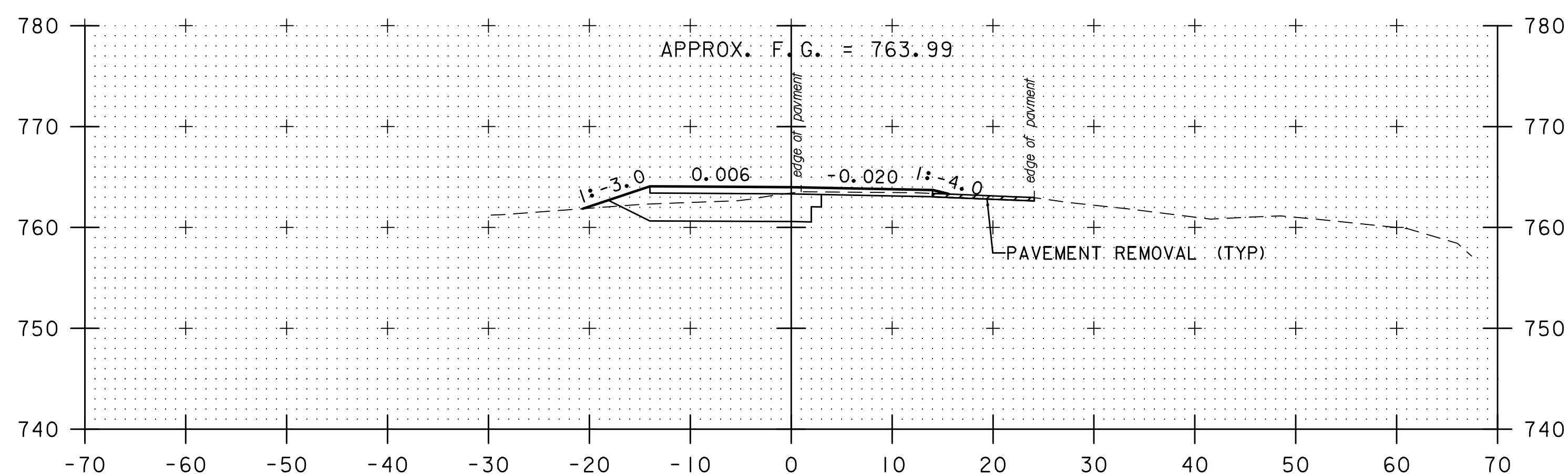
105+50



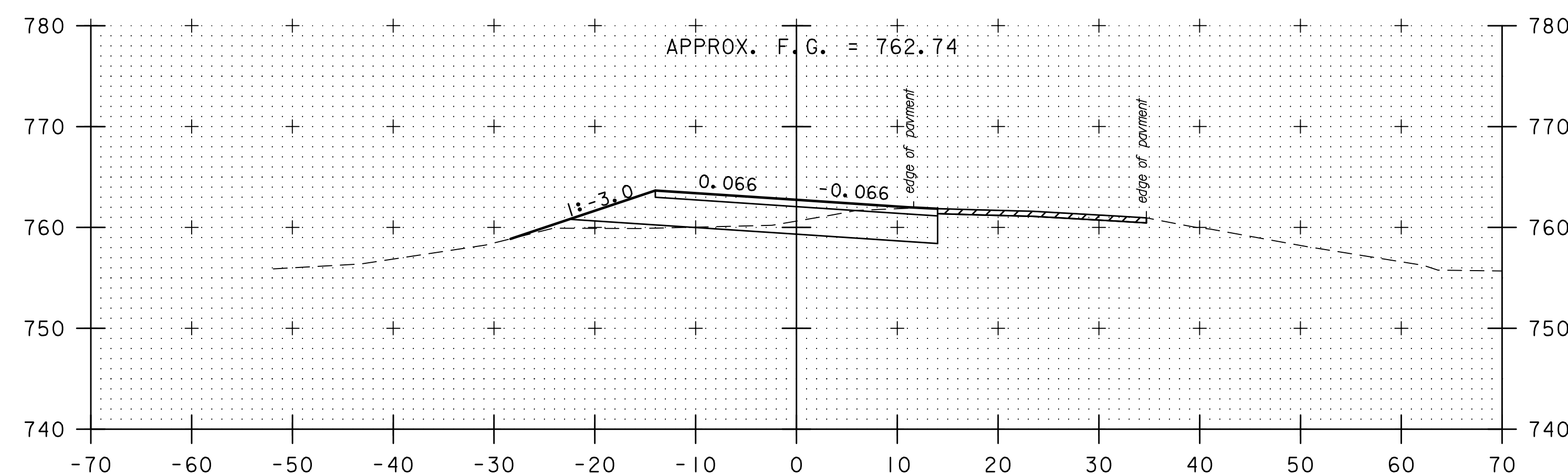
103+50



105+00



103+00

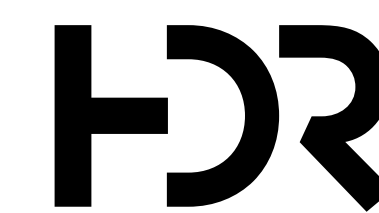
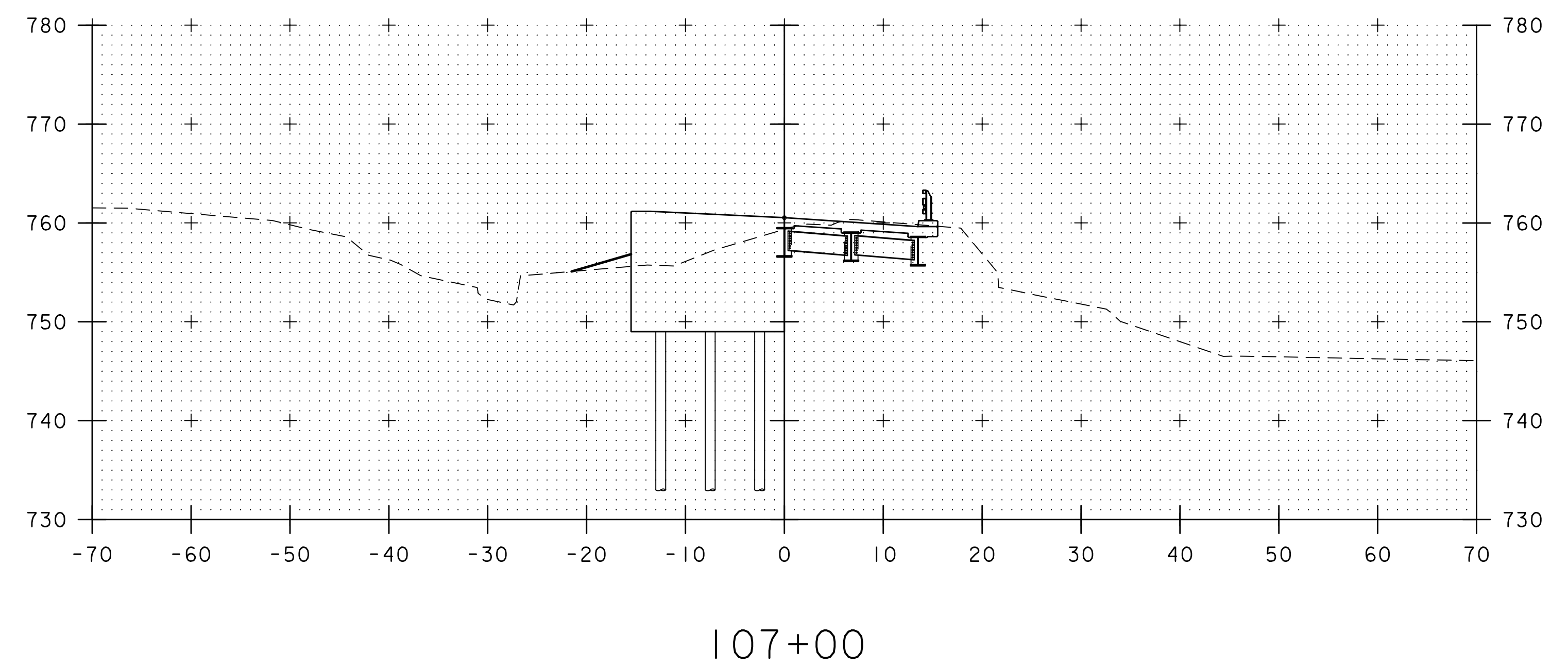
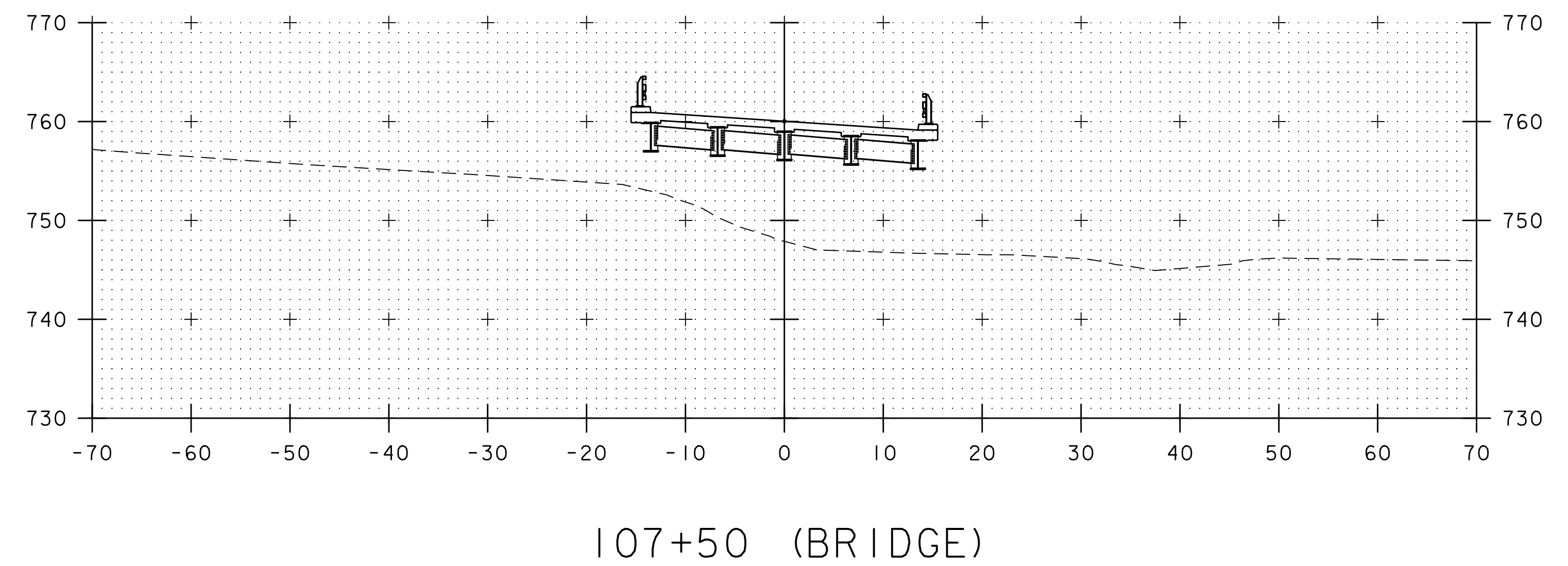
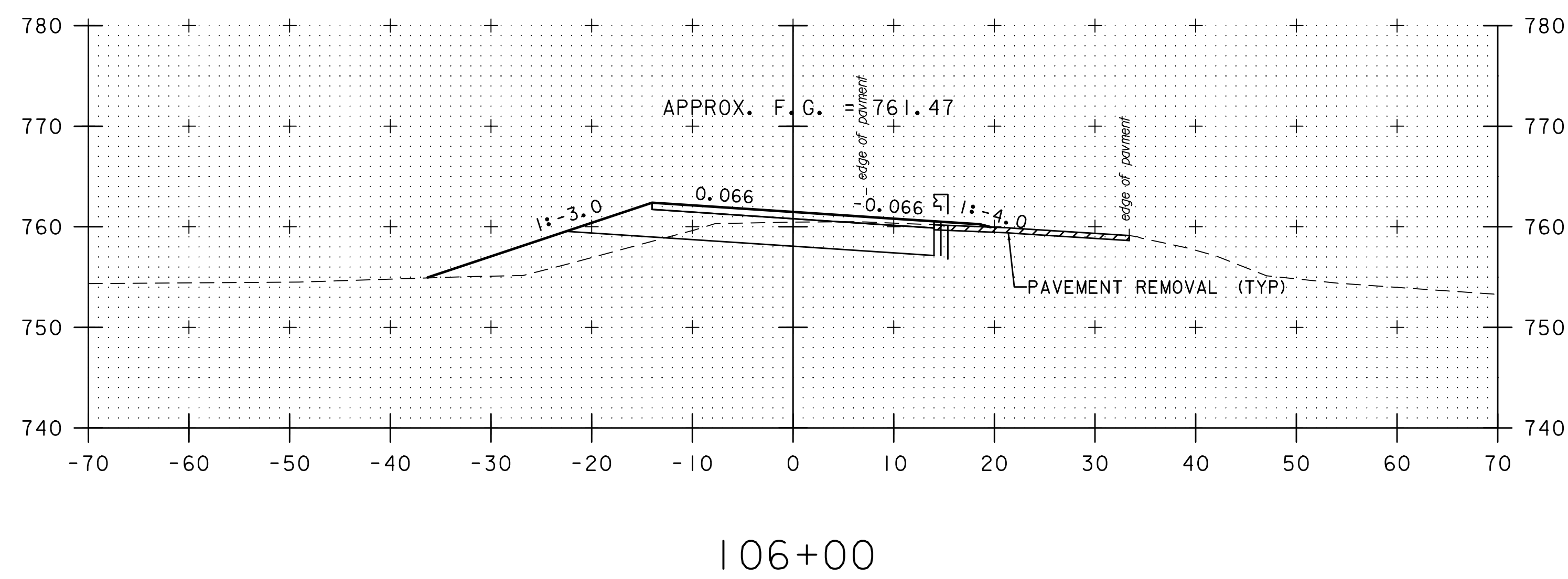
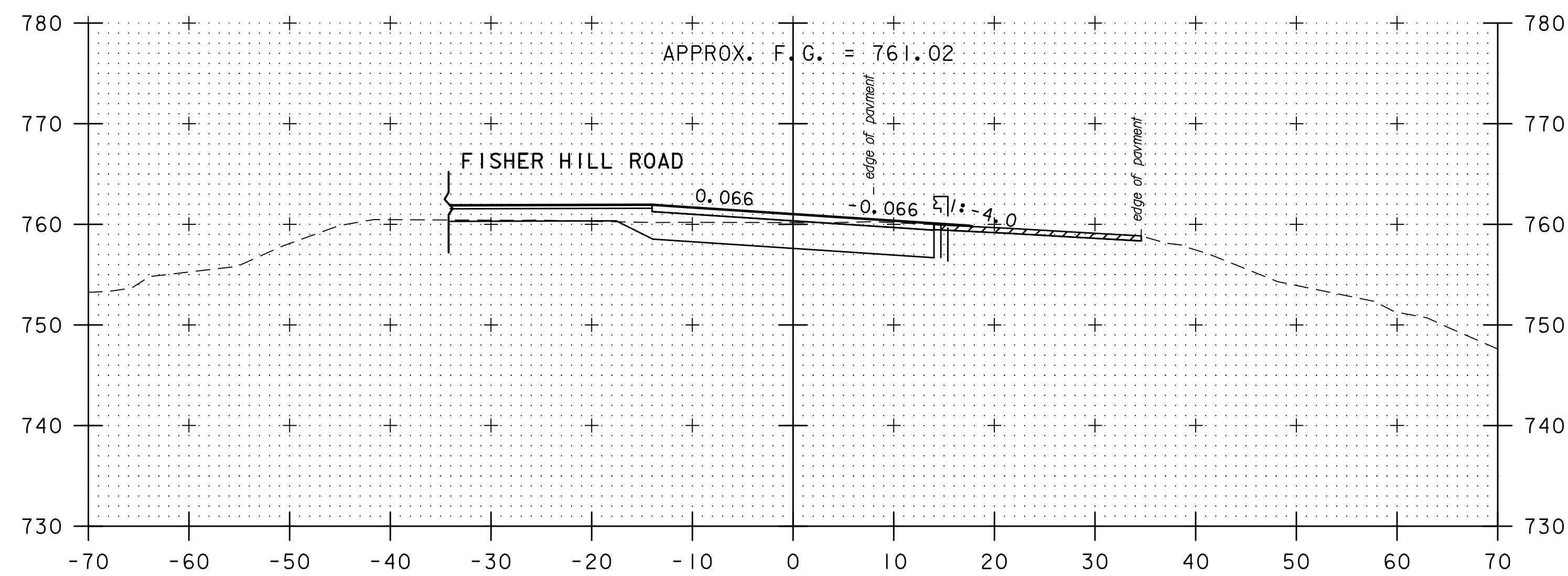


104+50



STA. 103+00 TO STA. 105+50

PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME:	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: K. HOWE
DESIGNED BY: K. HOWE	CHECKED BY: R. LAROCHELLE
VT ROUTE 121/35 CROSS SECTIONS	SHEET 32 OF 68

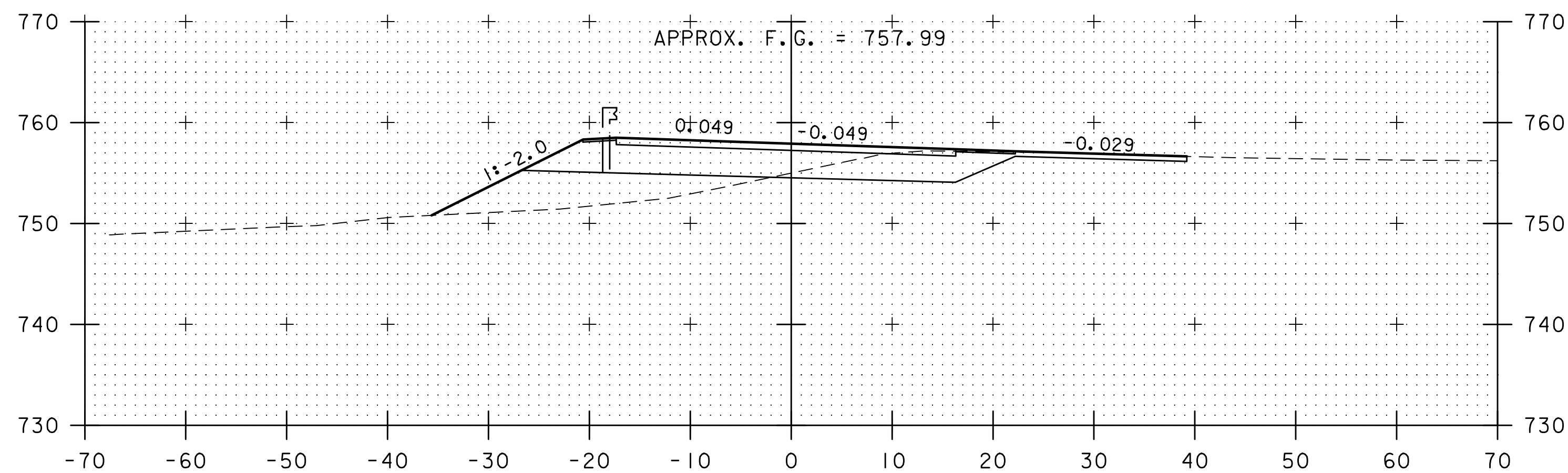


STA. 106+00 TO STA. 107+50

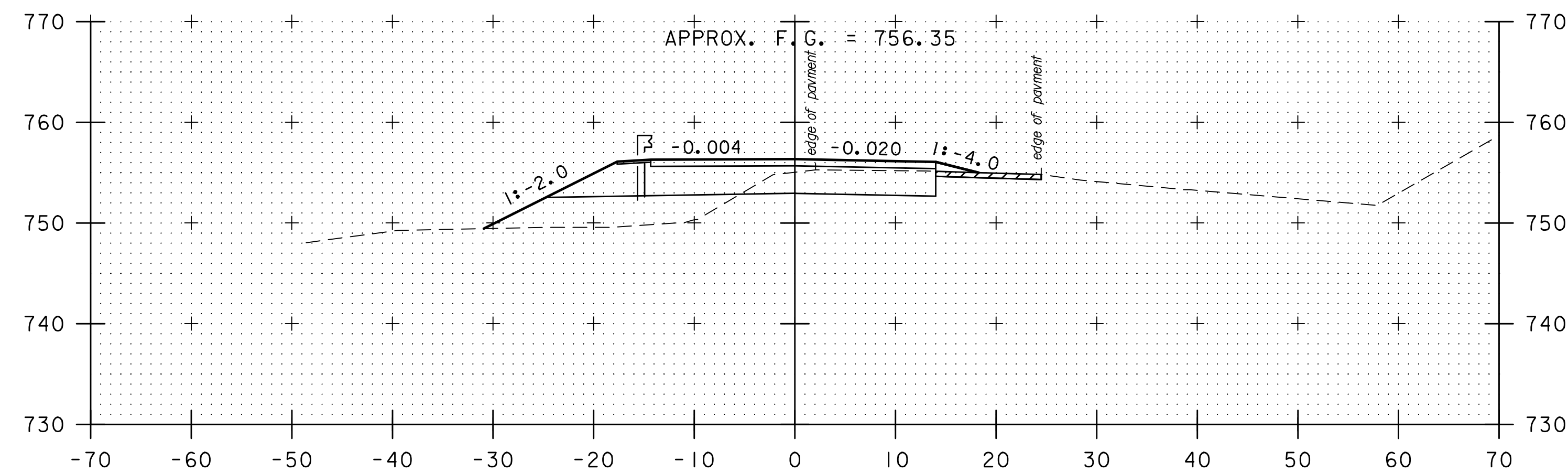
PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME:  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: K. HOWE  
VT ROUTE 121/35 CROSS SECTIONS

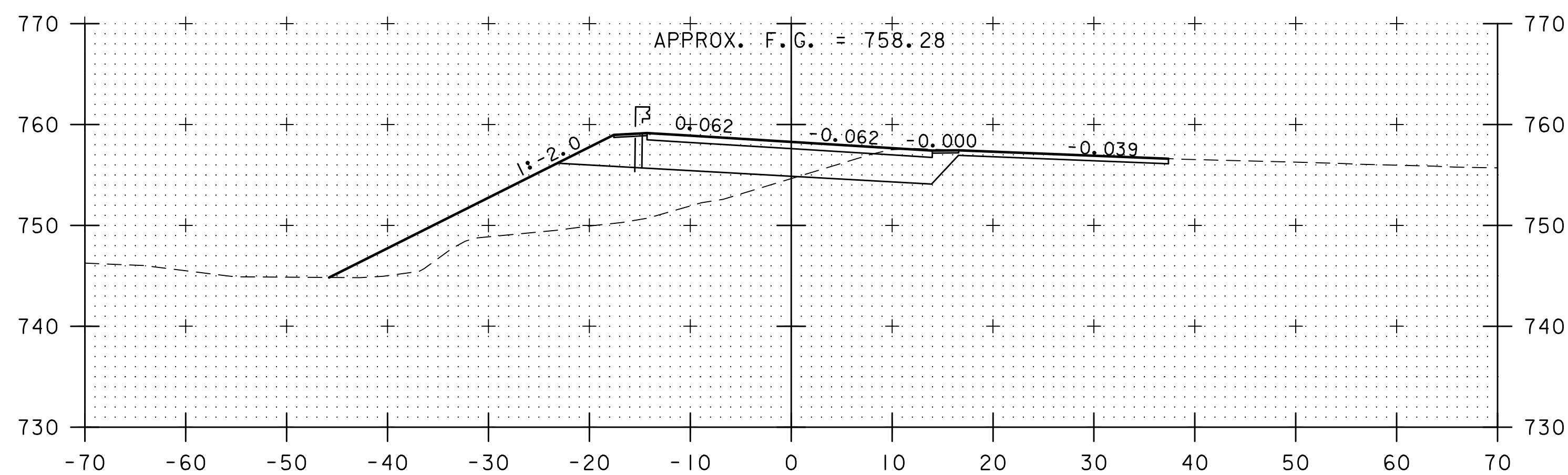
PLOT DATE: 3/18/2021  
DRAWN BY: K. HOWE  
CHECKED BY: R. LAROCHELLE  
SHEET 33 OF 68



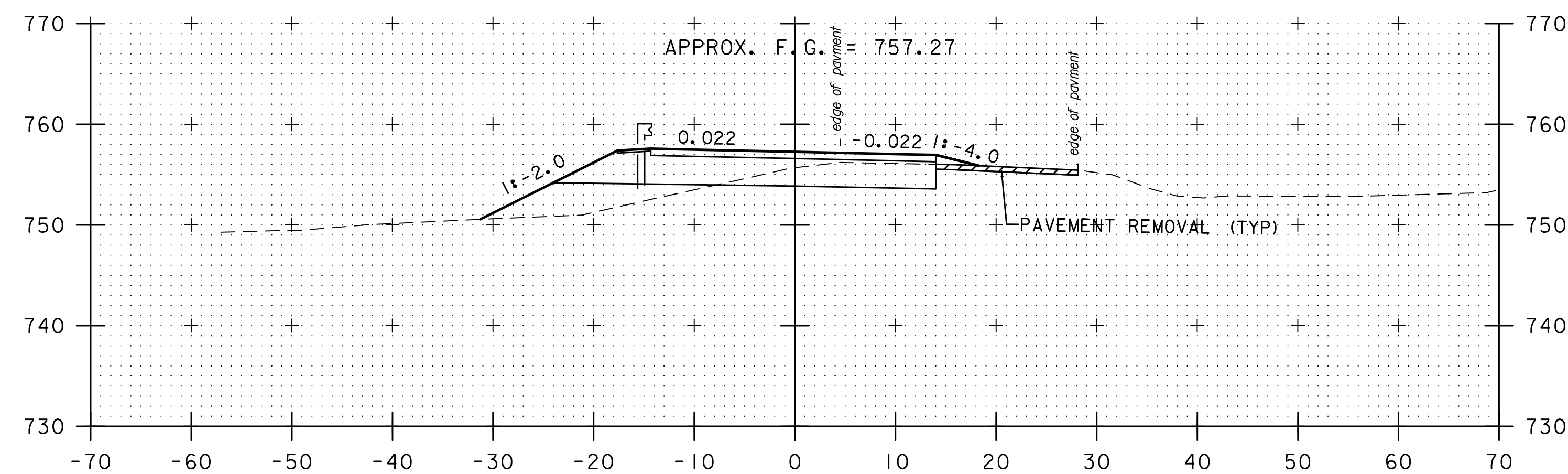
109+50 (SKewed) (DRIVE RT)



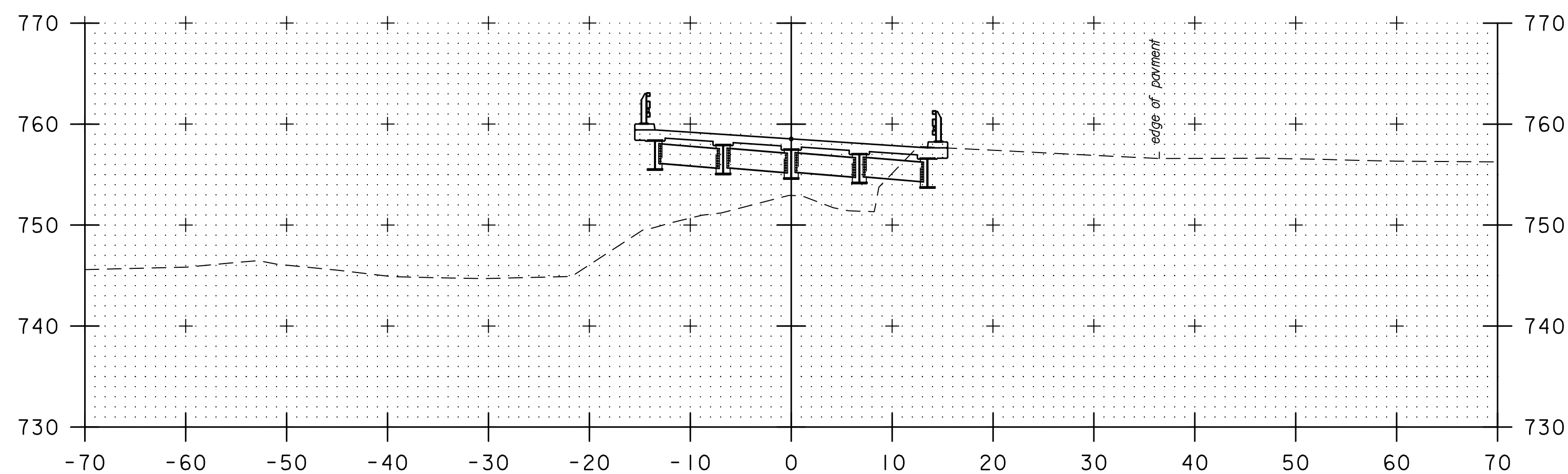
110+50



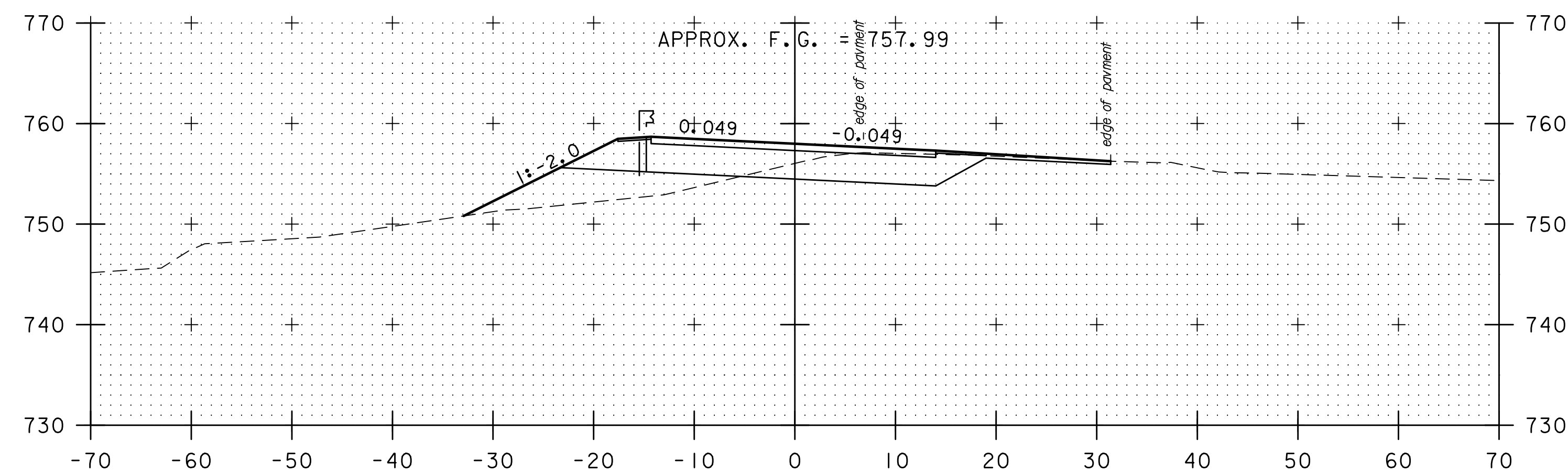
109+25



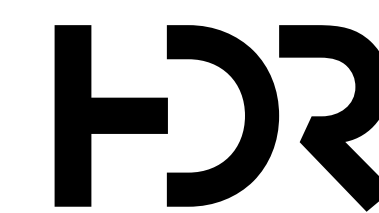
110+00



109+00 (BRIDGE)



109+50 (DRIVE RT)

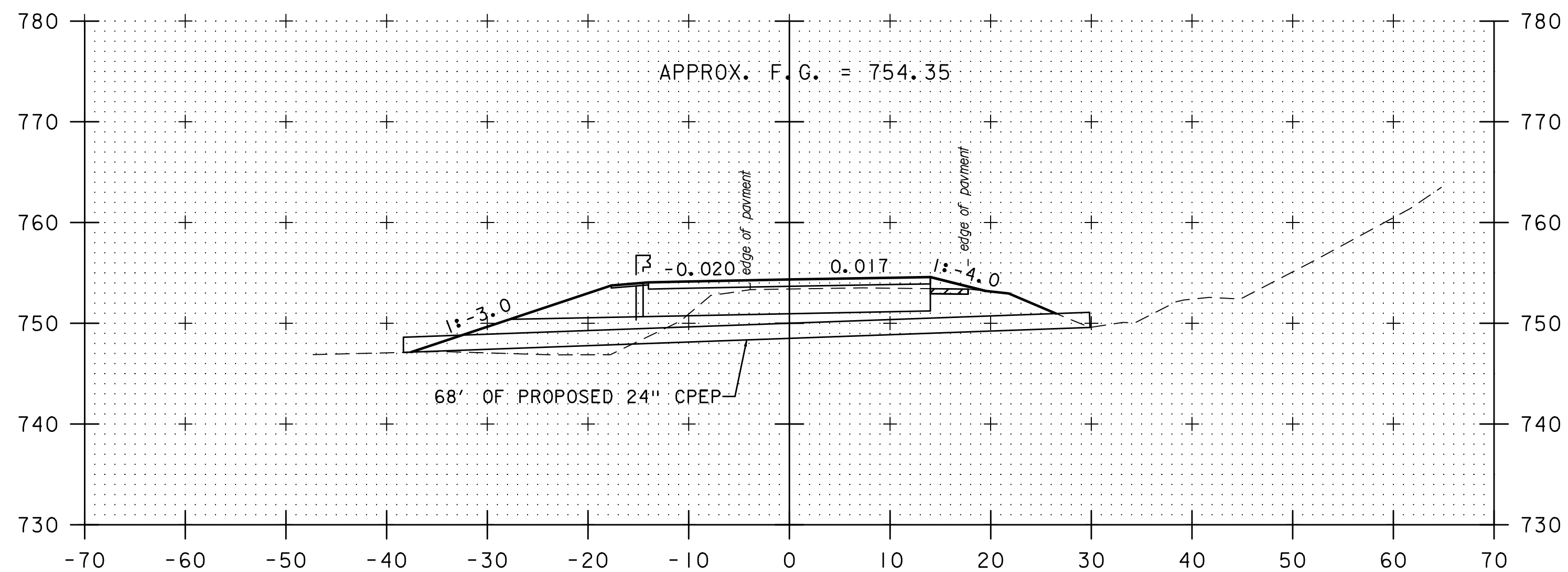


STA. 108+00 TO STA. 110+50

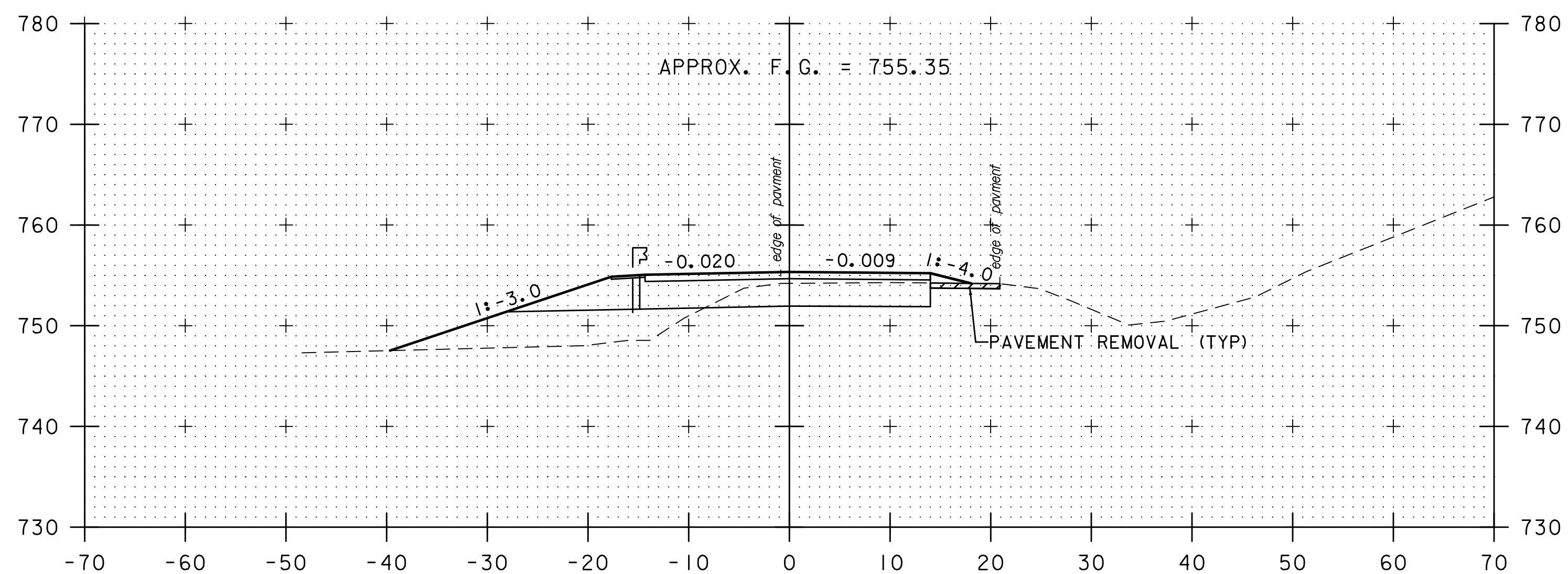
PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME:  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: K. HOWE  
VT ROUTE 121/35 CROSS SECTIONS

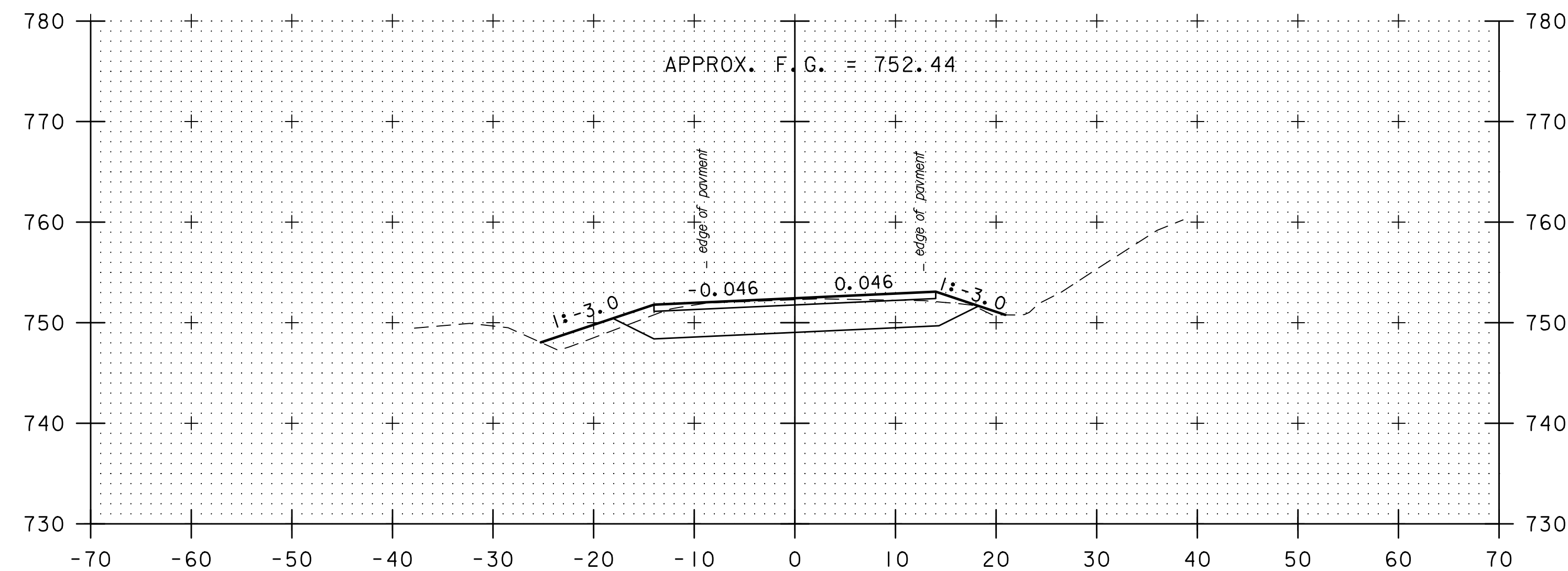
PLOT DATE: 3/18/2021  
DRAWN BY: K. HOWE  
CHECKED BY: R. LAROCHELLE  
SHEET 34 OF 68



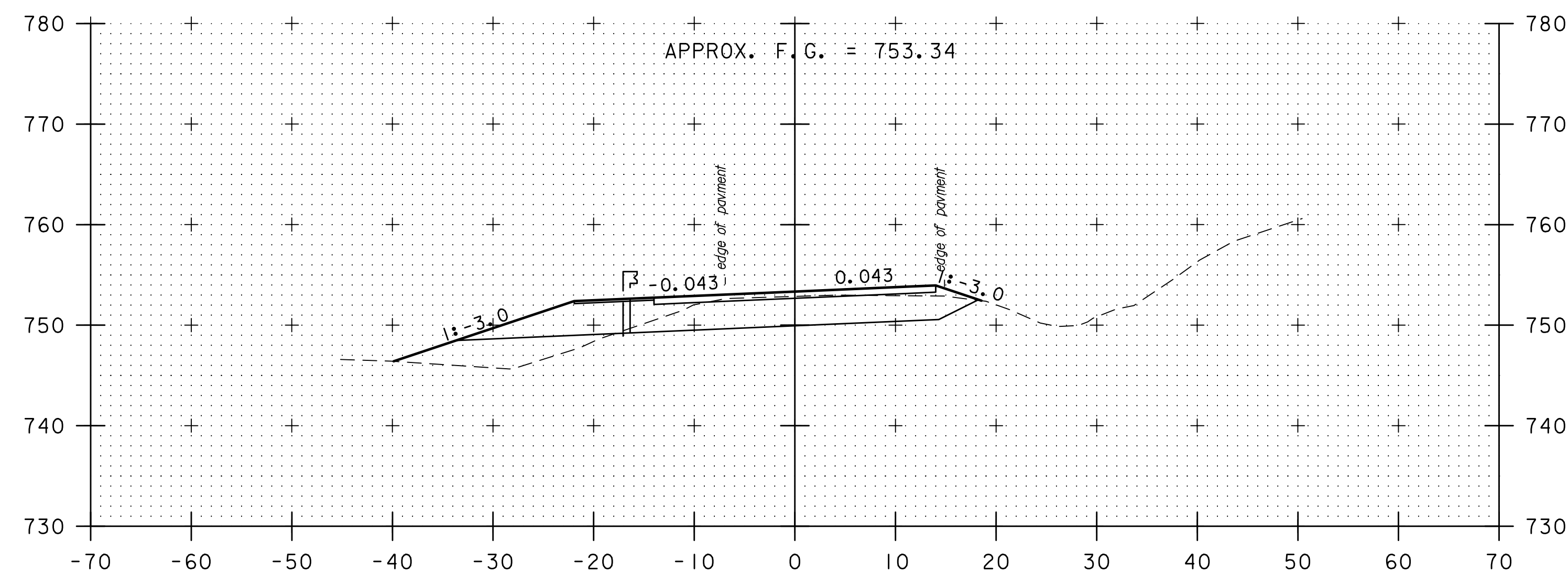
111+50



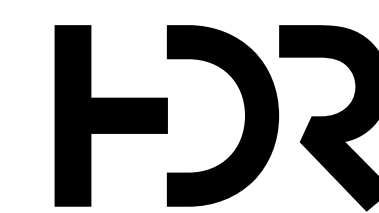
111+00



112+50

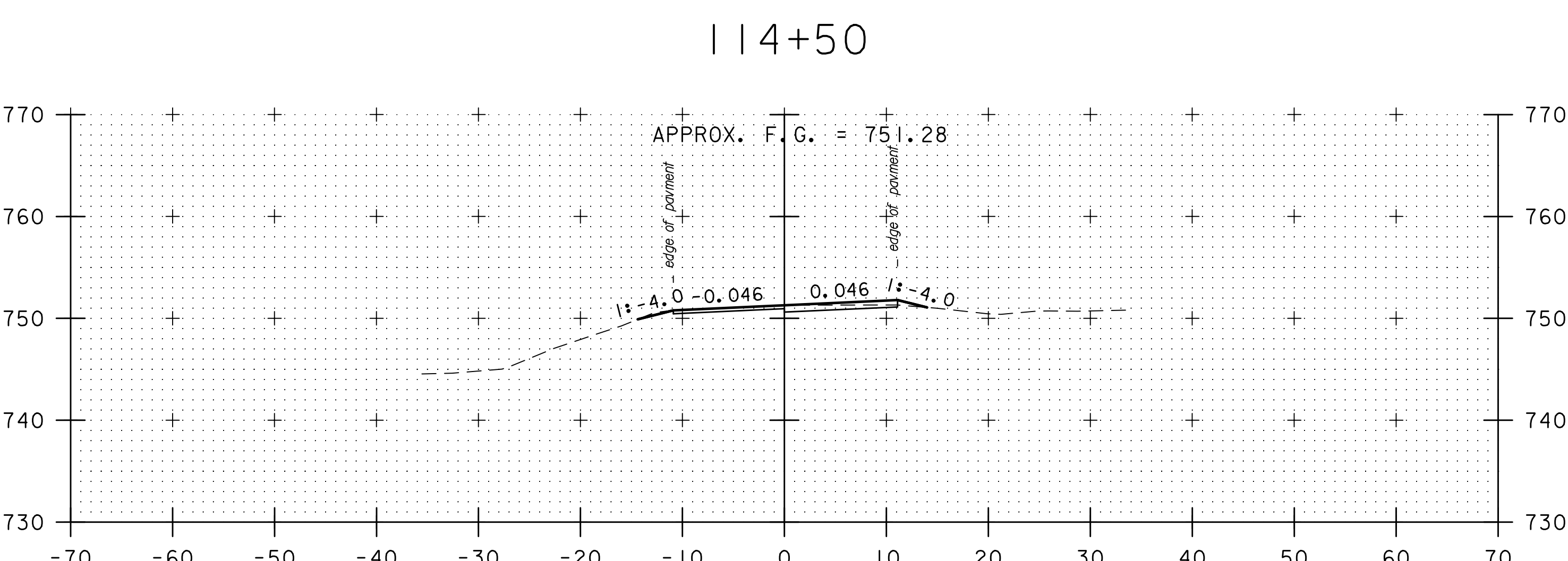
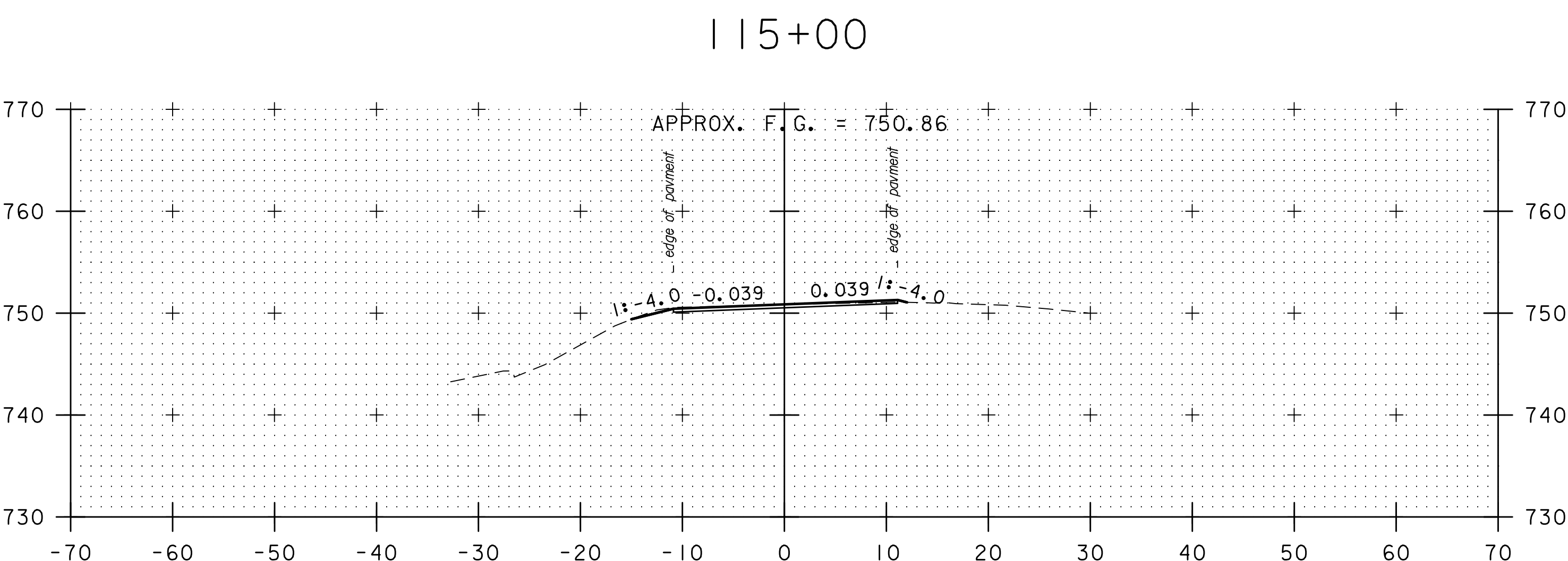
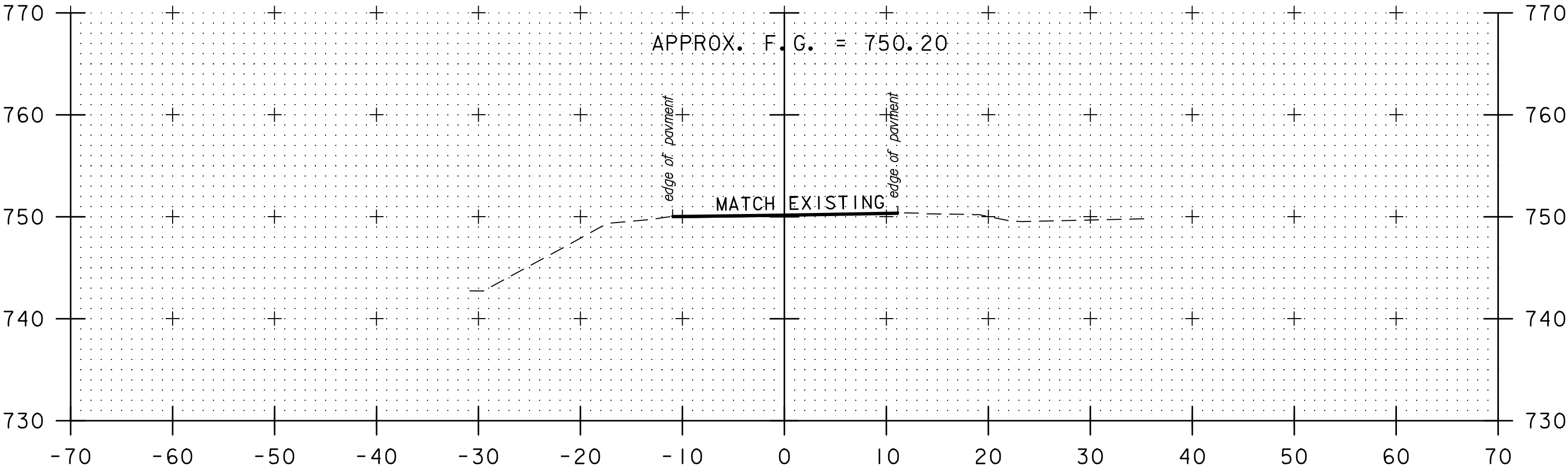


112+00



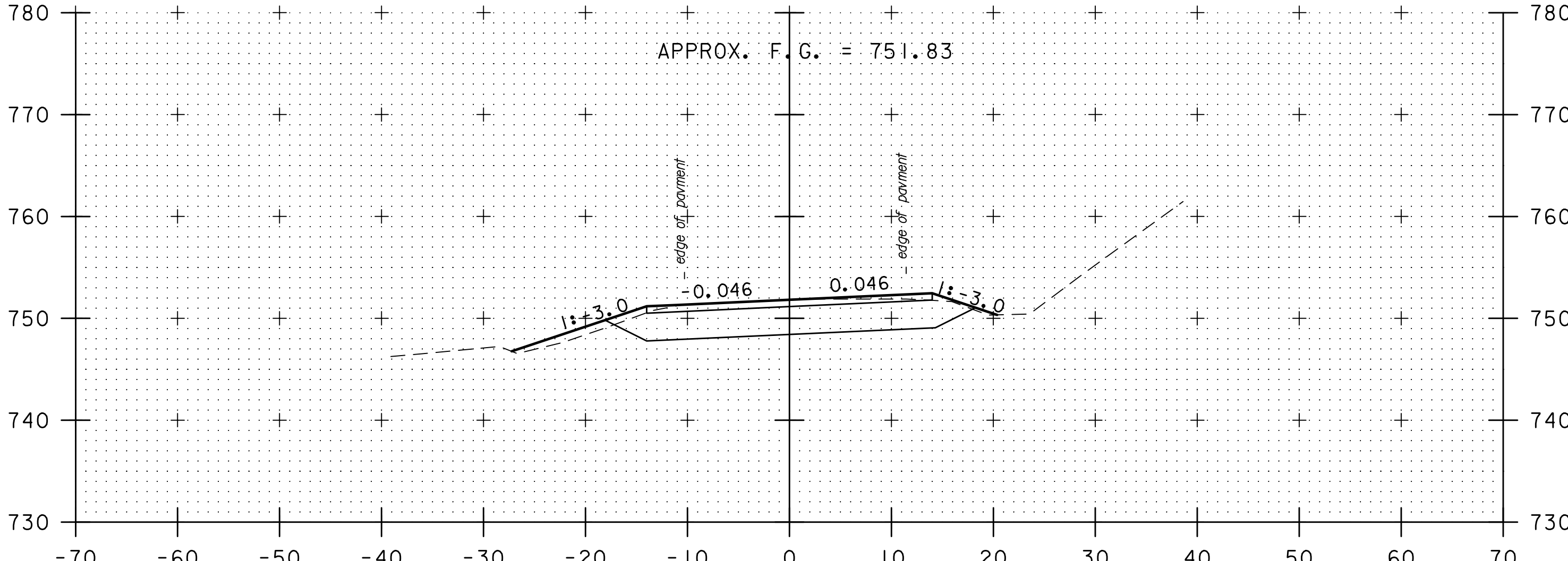
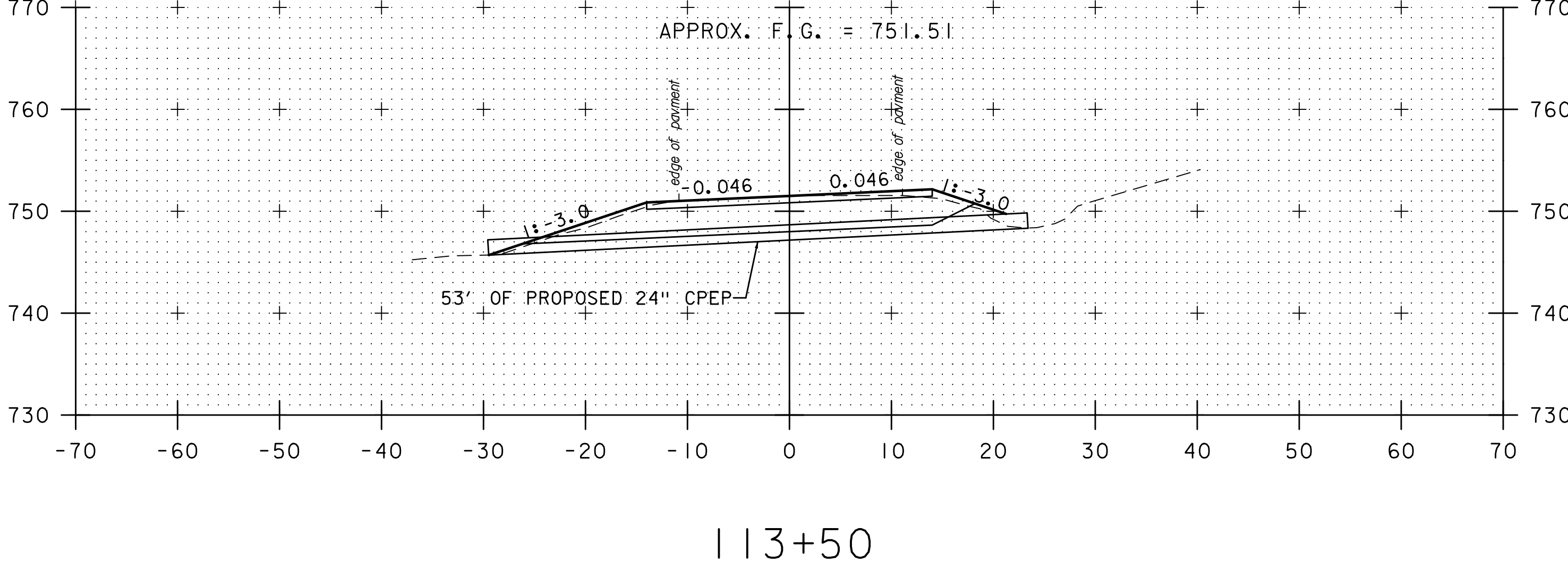
STA. 111+00 TO STA. 112+50

PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME:	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: K. HOWE
DESIGNED BY: K. HOWE	CHECKED BY: R. LAROCHELLE
VT ROUTE 121/35 CROSS SECTIONS	SHEET 35 OF 68



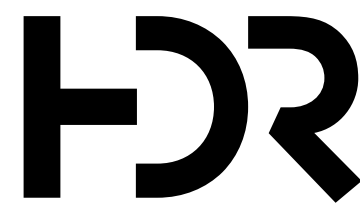
114+00

PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME:	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: K. HOWE
DESIGNED BY: K. HOWE	CHECKED BY: R. LAROCHELLE
VT ROUTE 121/35 CROSS SECTIONS	
SHEET 36 OF 68	

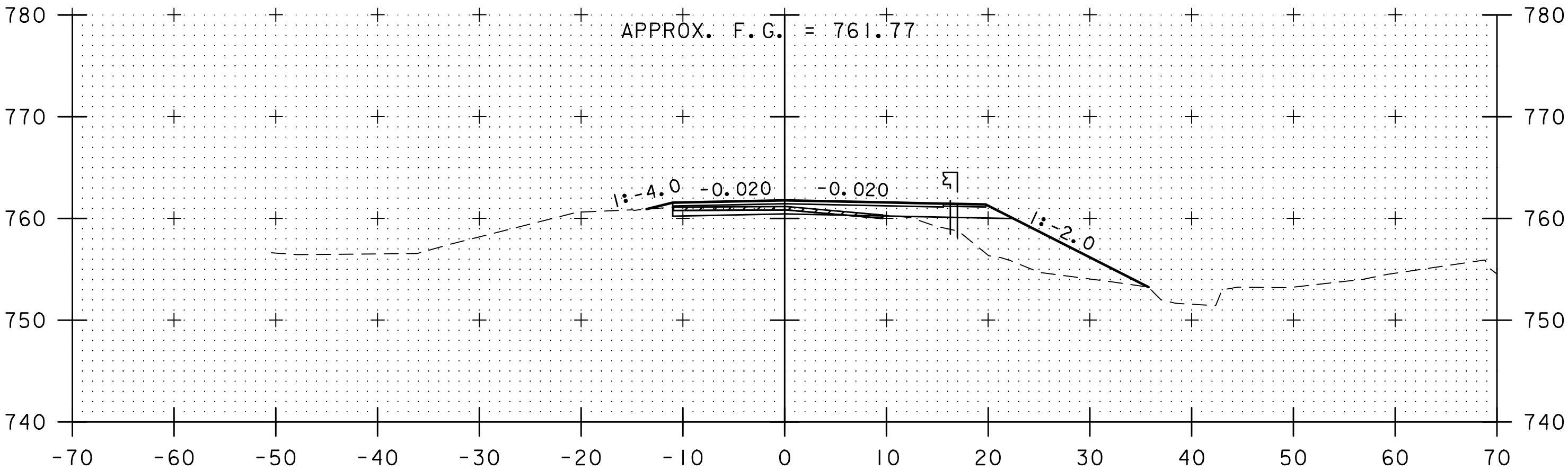


113+00

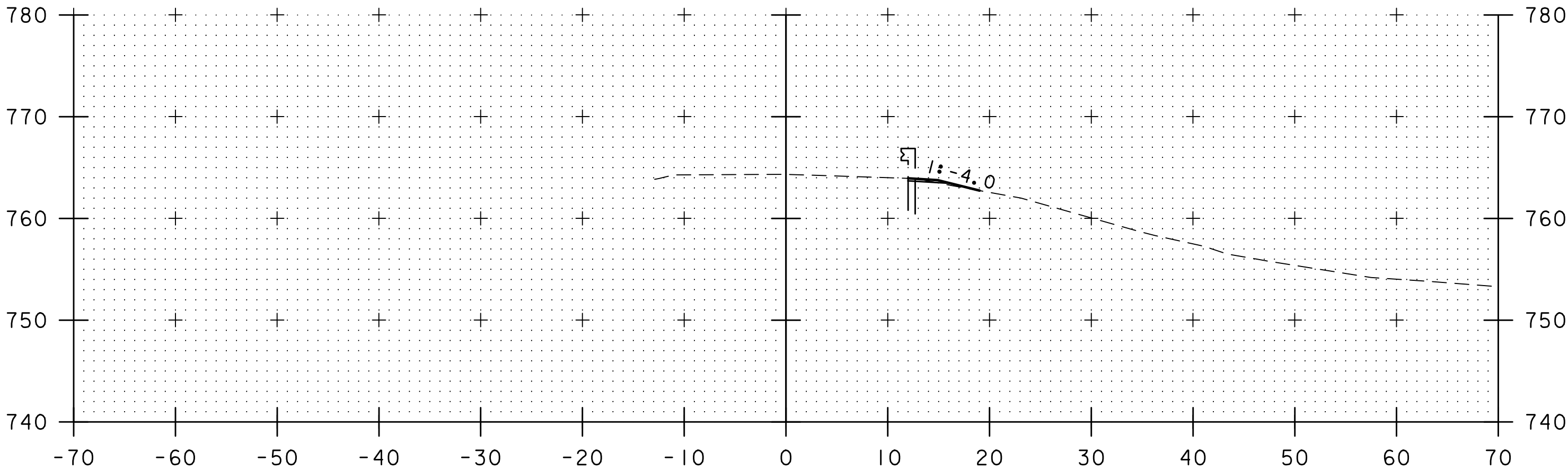
PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME:	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: K. HOWE
DESIGNED BY: K. HOWE	CHECKED BY: R. LAROCHELLE
VT ROUTE 121/35 CROSS SECTIONS	
SHEET 36 OF 68	



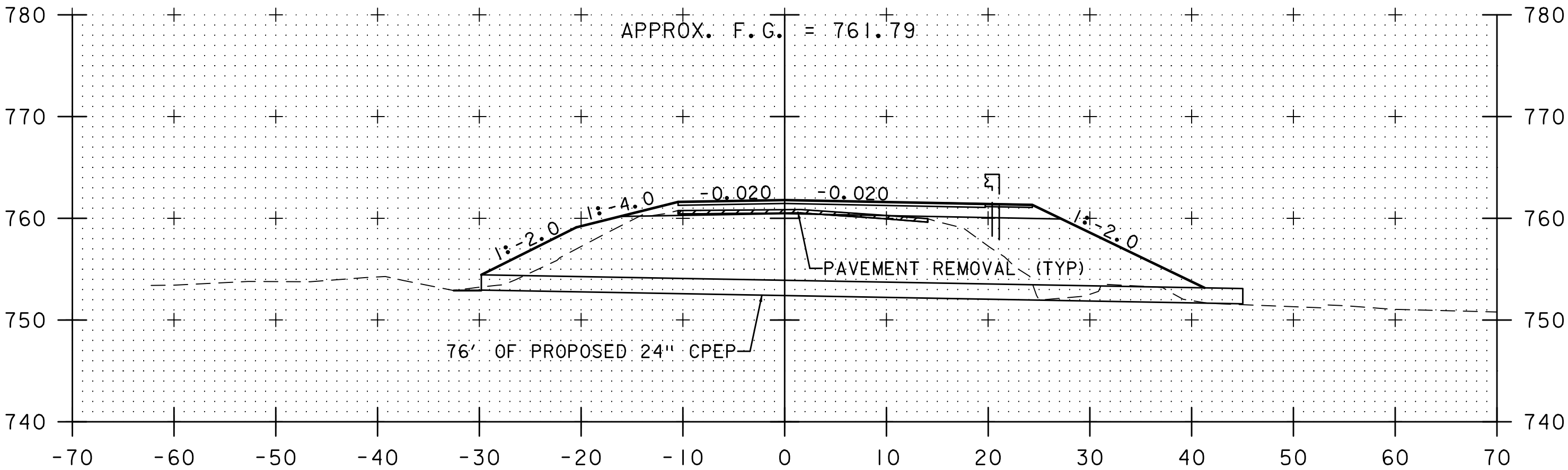
STA. 113+00 TO STA. 115+00



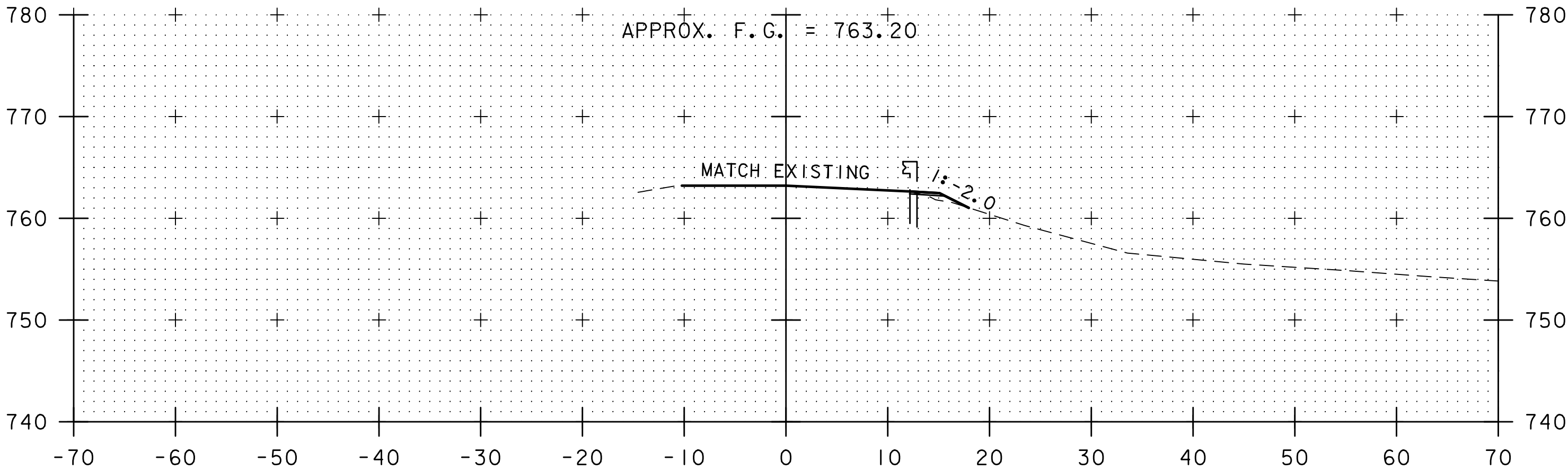
10+75



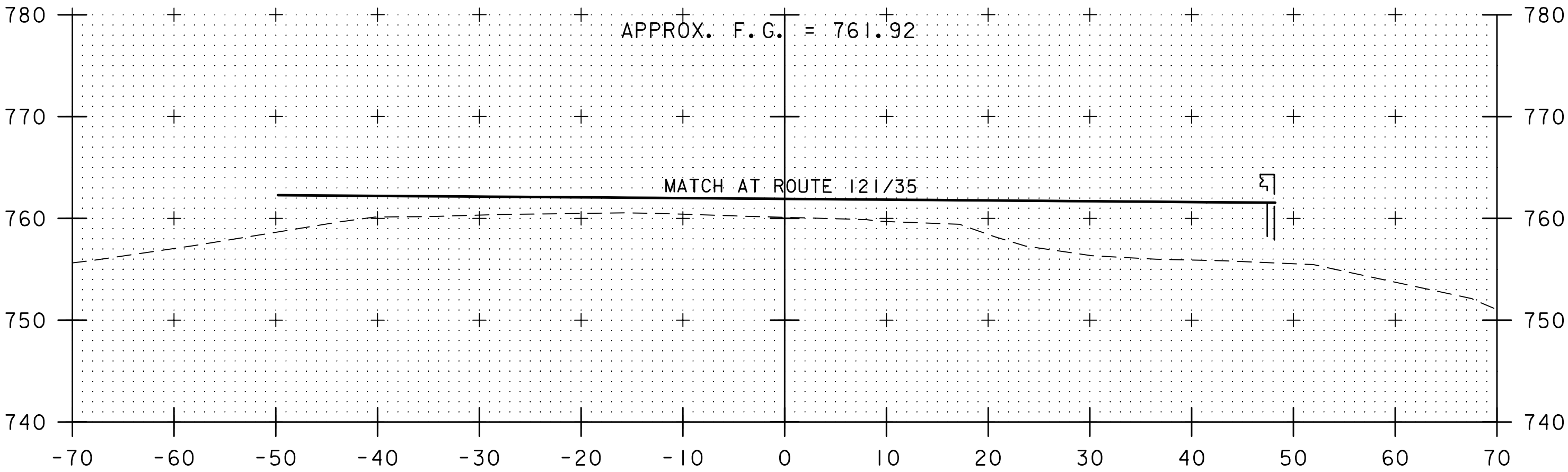
11+75



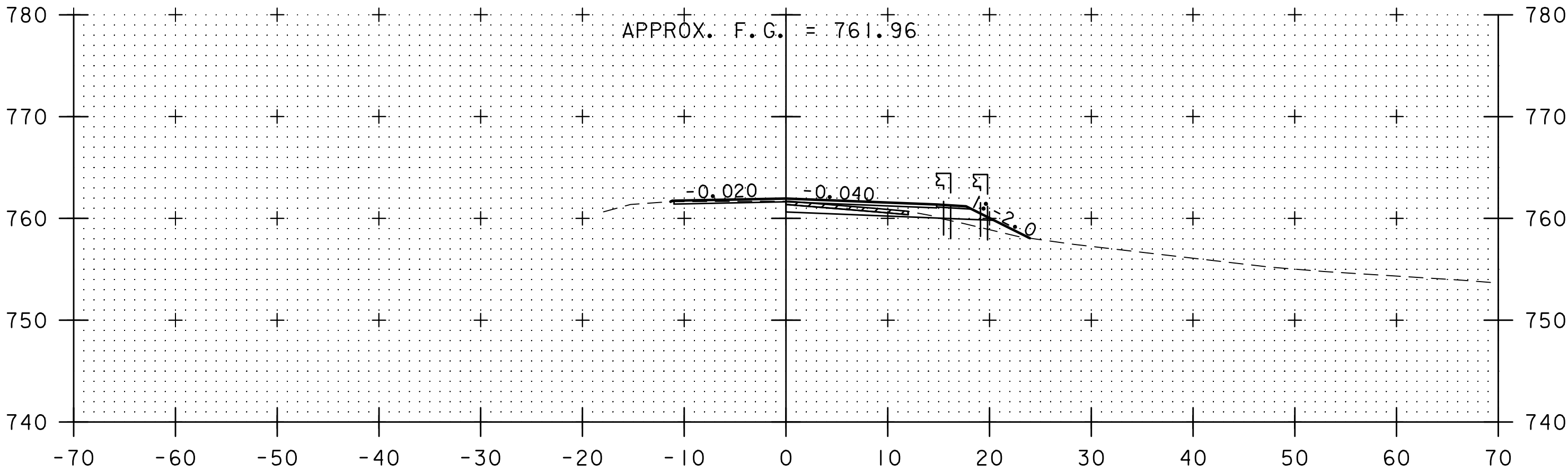
10+60



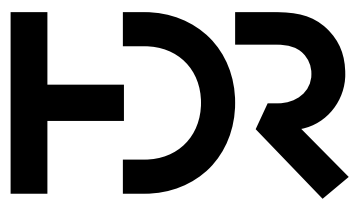
11+50



10+14

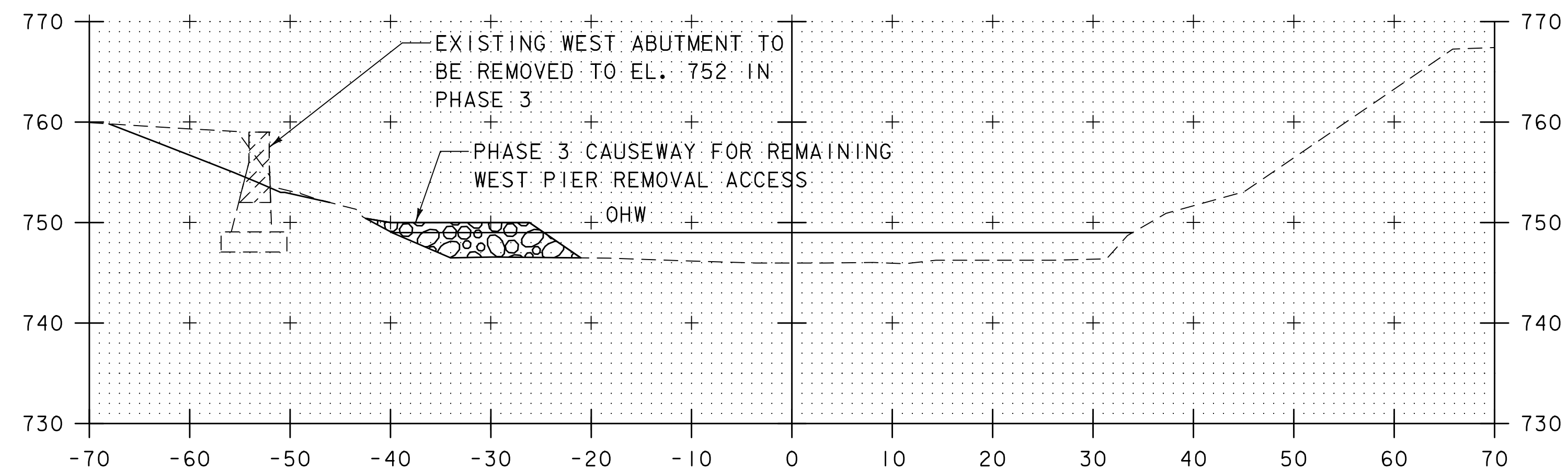


11+00

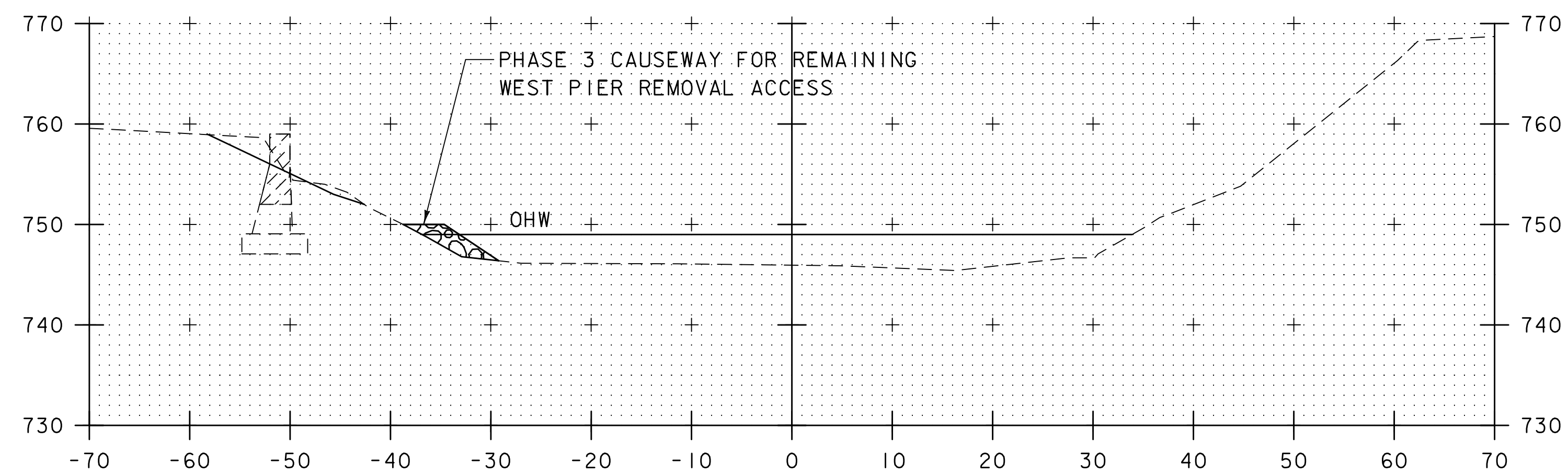


STA. 10+14 TO STA. 11+75

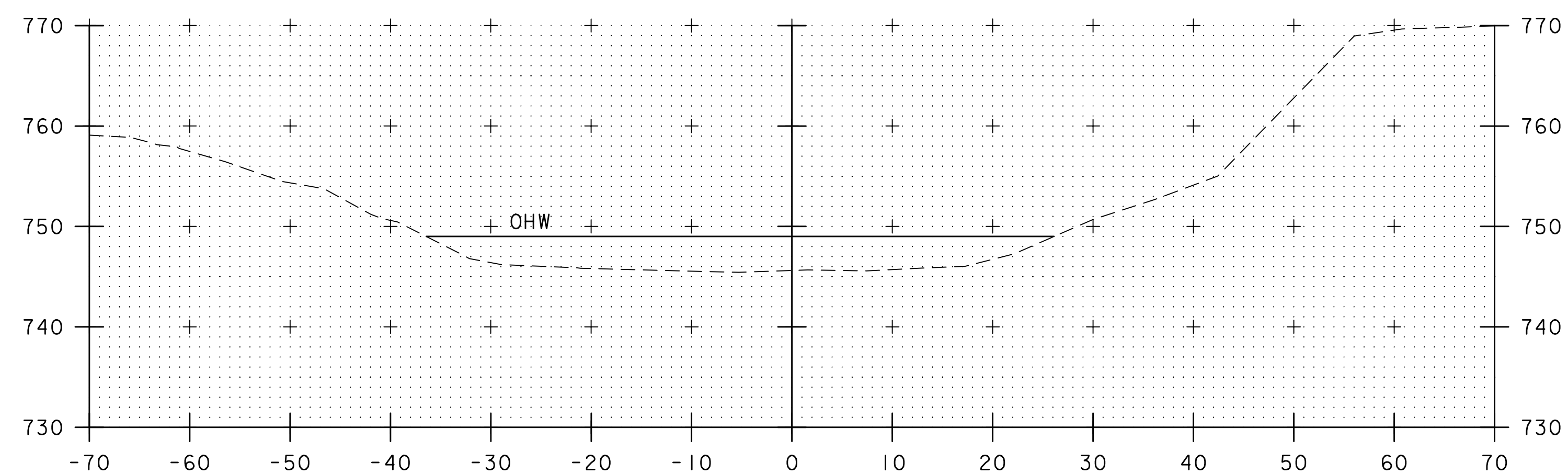
PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME:	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: K. HOWE
DESIGNED BY: K. HOWE	CHECKED BY: R. LAROCHELLE
FISHER HILL CROSS SECTIONS	SHEET 37 OF 68



50+40



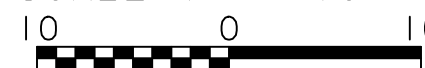
50+25



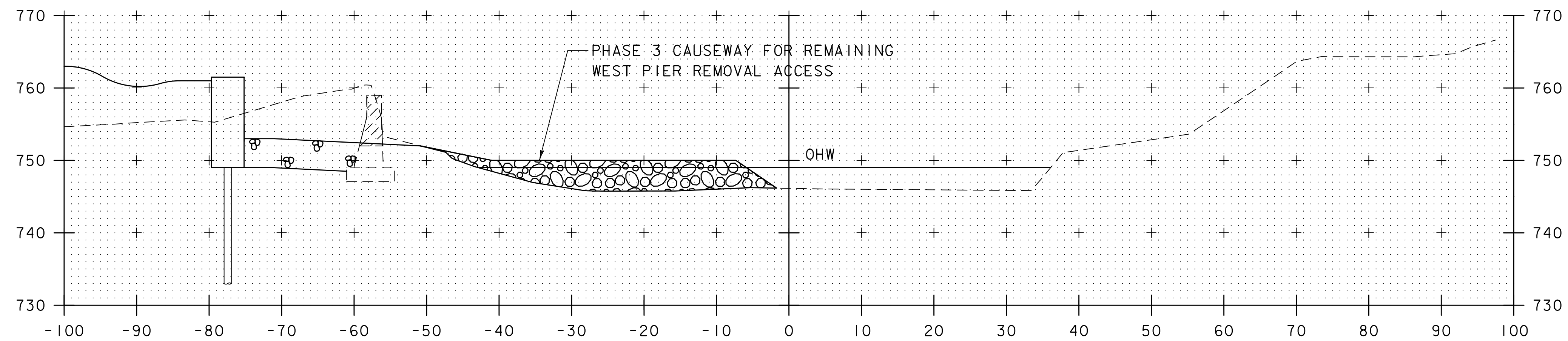
50+00

STA. 50+00 TO STA. 50+40

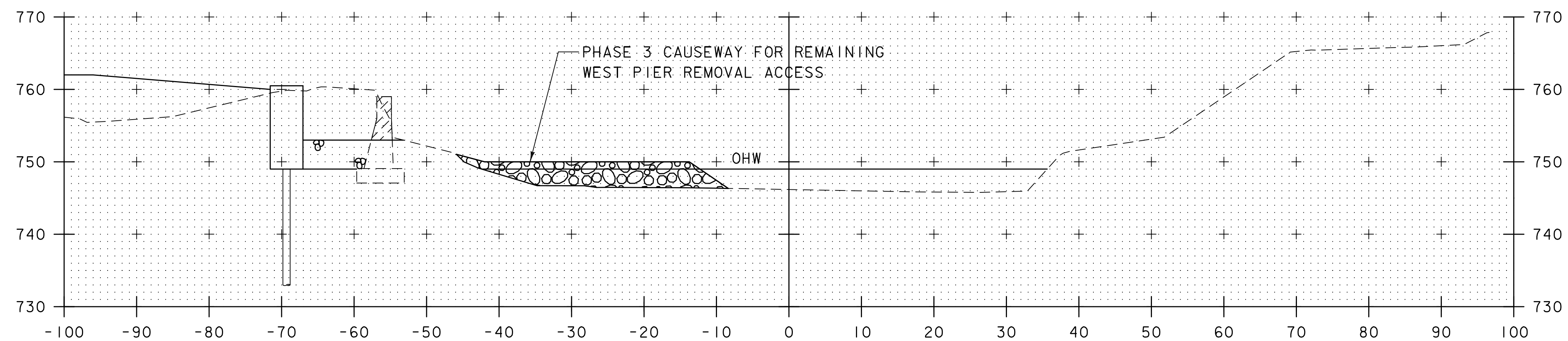
SCALE 1" = 10'-0"



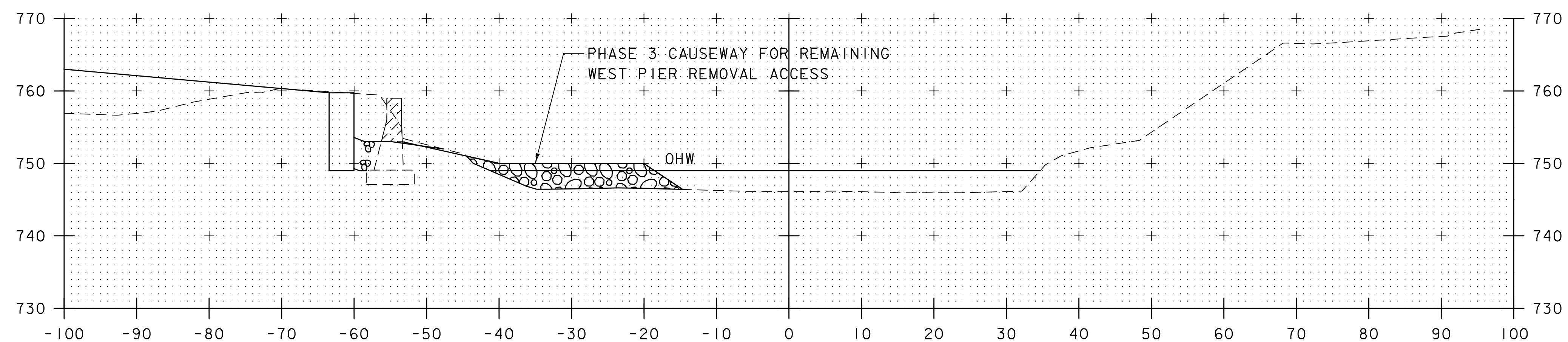
PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/z16J177xschl.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: N. CARON
DESIGNED BY: N. CARON	CHECKED BY: S. BOYINGTON
CHANNEL CROSS SECTIONS (1 OF 5)	SHEET 38 OF 68



50+70



50+60



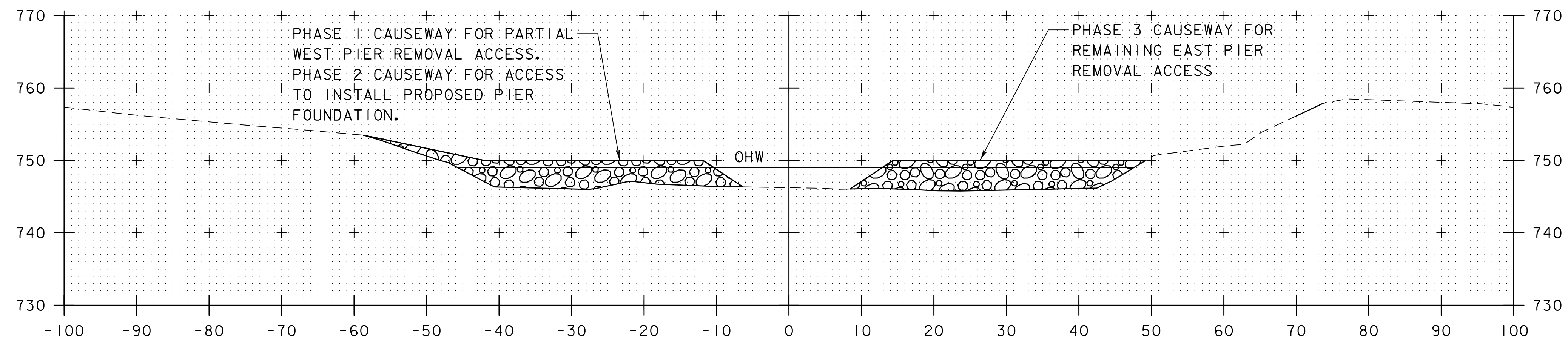
50+50

STA. 50+50 TO STA. 50+70

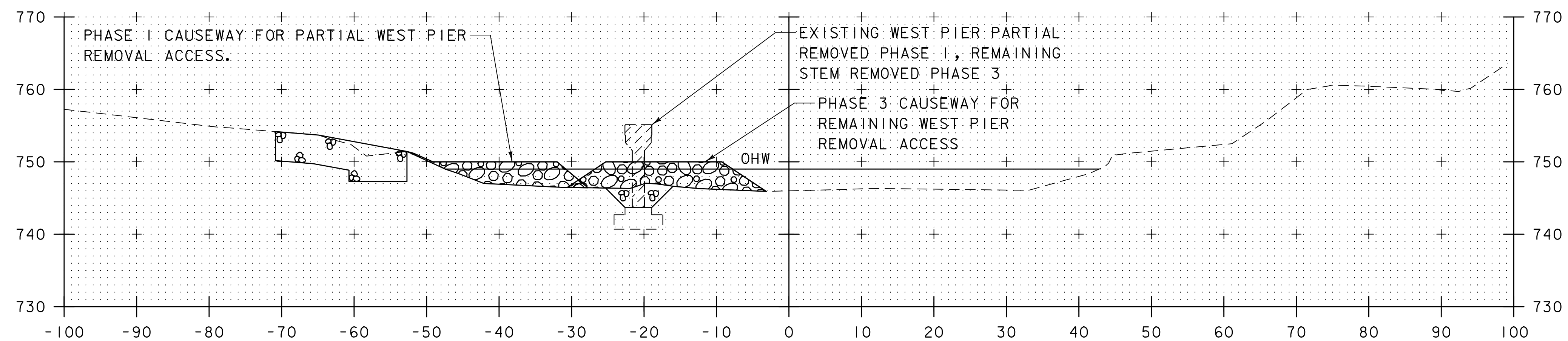
SCALE 1" = 10'-0"  
10 0 10



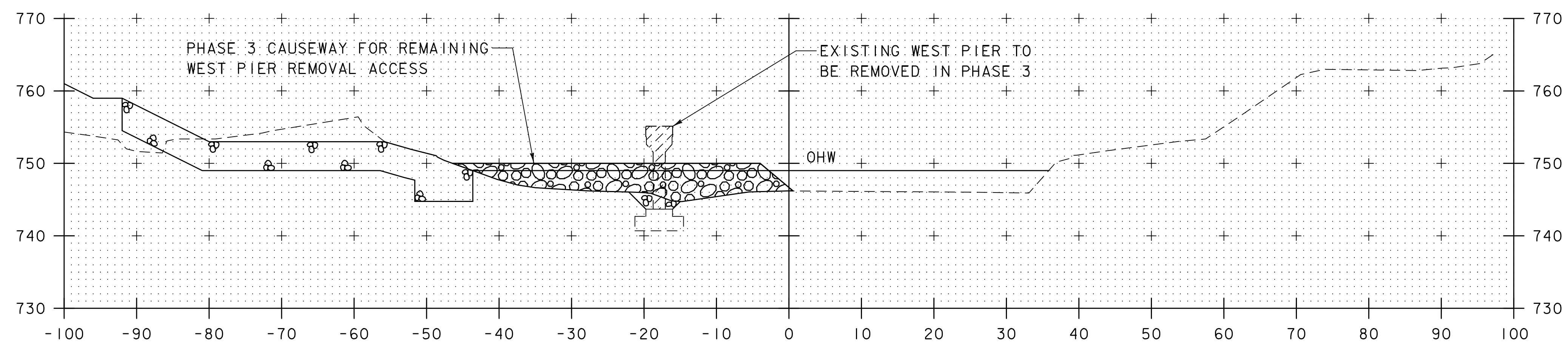
PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/z16J177xschl.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: N. CARON
DESIGNED BY: N. CARON	CHECKED BY: S. BOYINGTON
CHANNEL CROSS SECTIONS (2 OF 5)	SHEET 39 OF 68



51+25



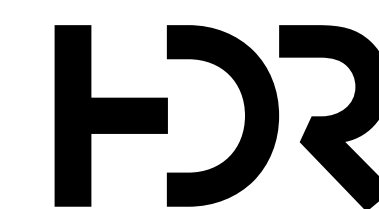
51+00



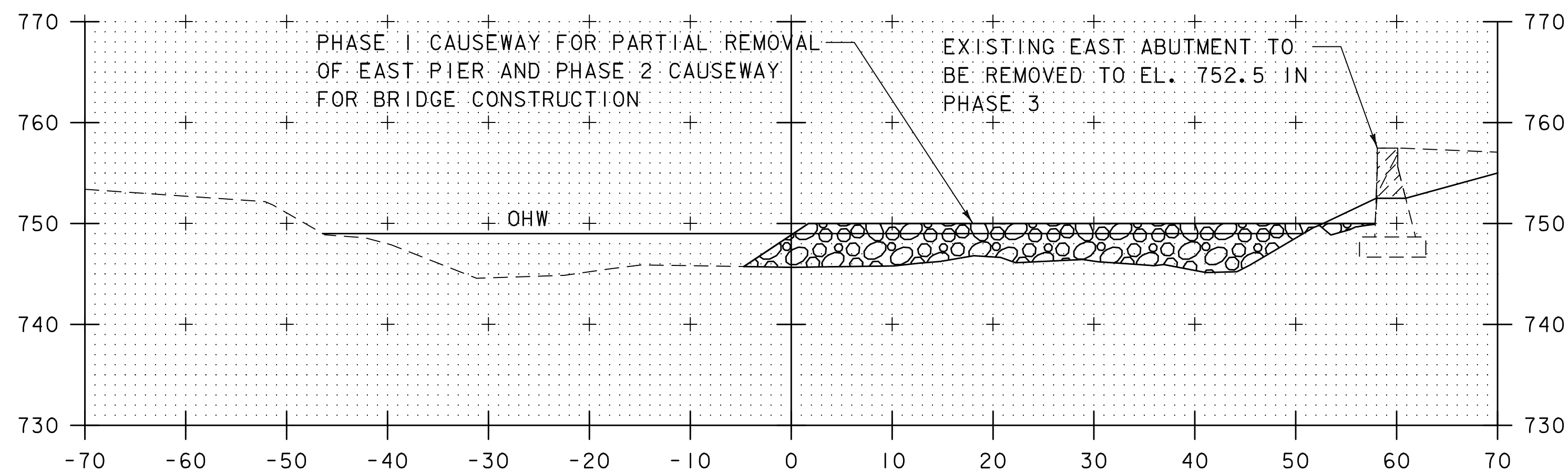
50+80

STA. 50+80 TO STA. 51+25

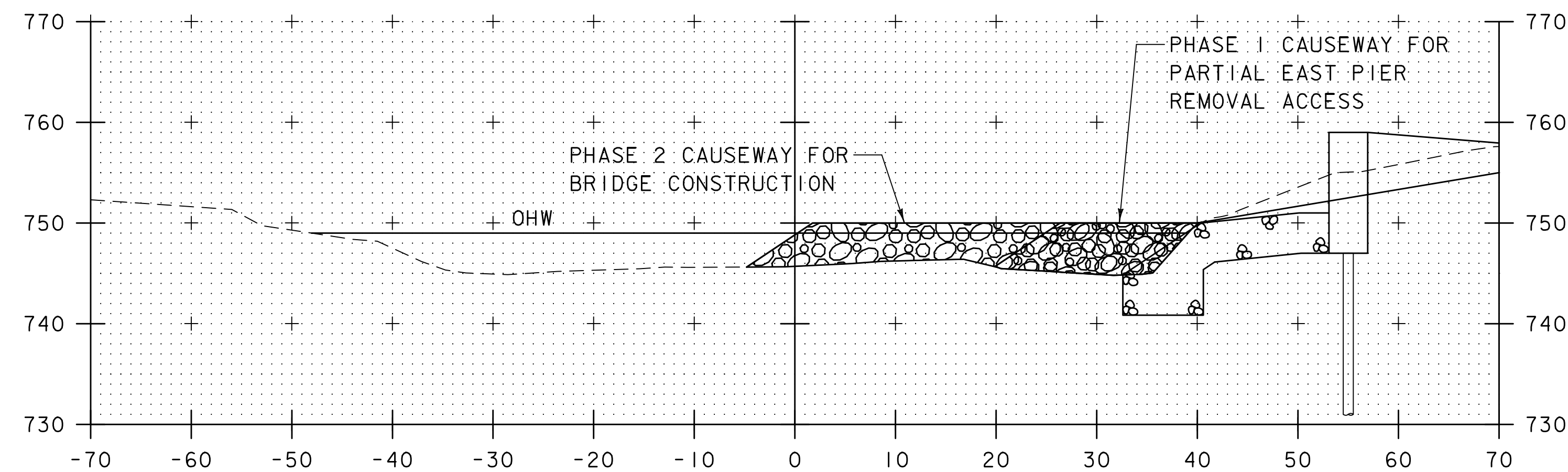
SCALE 1" = 10'-0"  
10 0 10



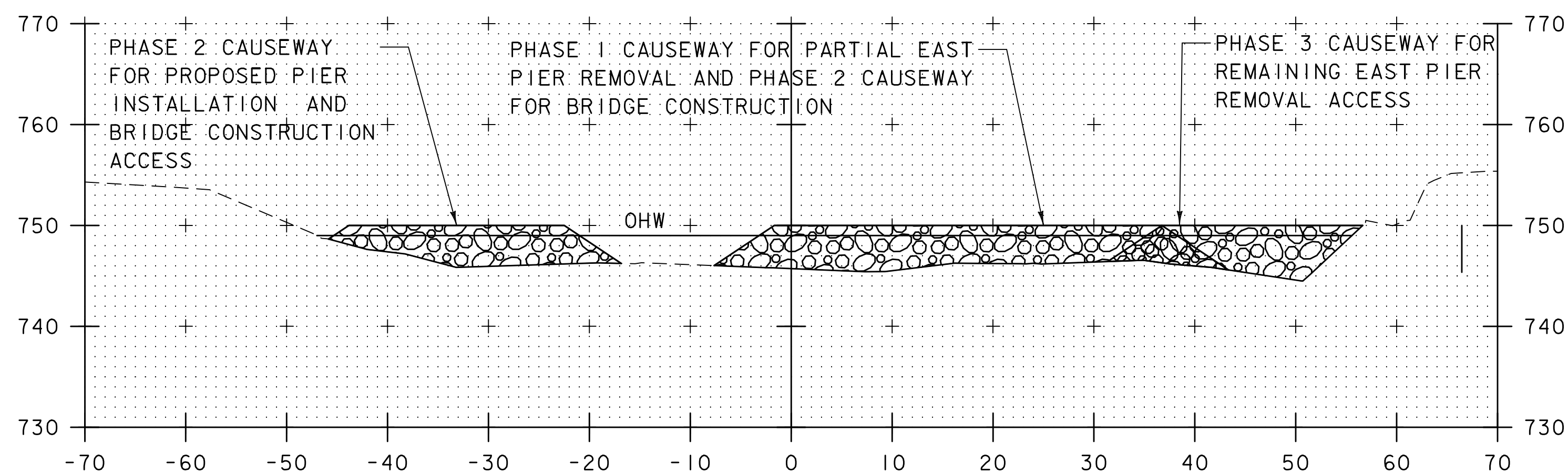
PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/z16J177xschl.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: N. CARON
DESIGNED BY: N. CARON	CHECKED BY: S. BOYINGTON
CHANNEL CROSS SECTIONS (3 OF 5)	SHEET 40 OF 68



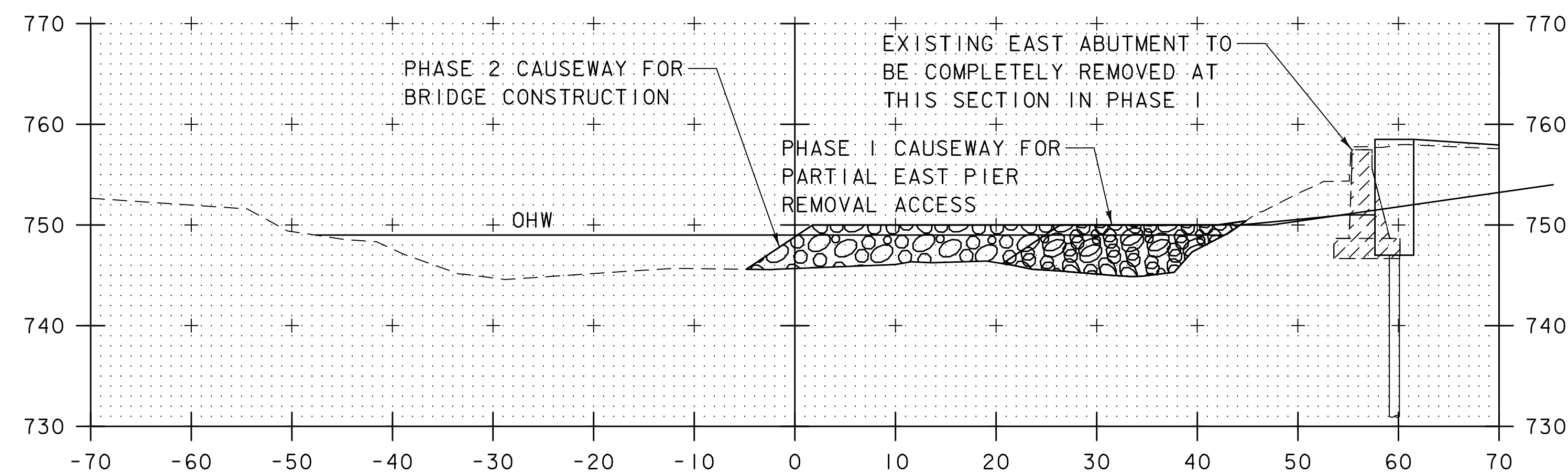
52+00



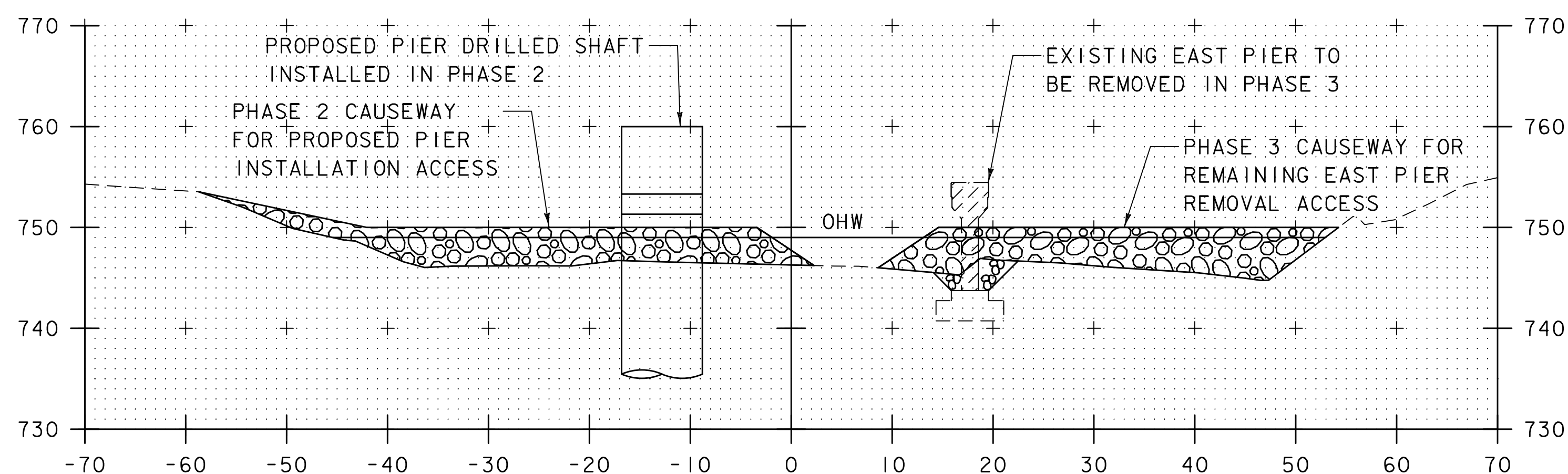
52+30



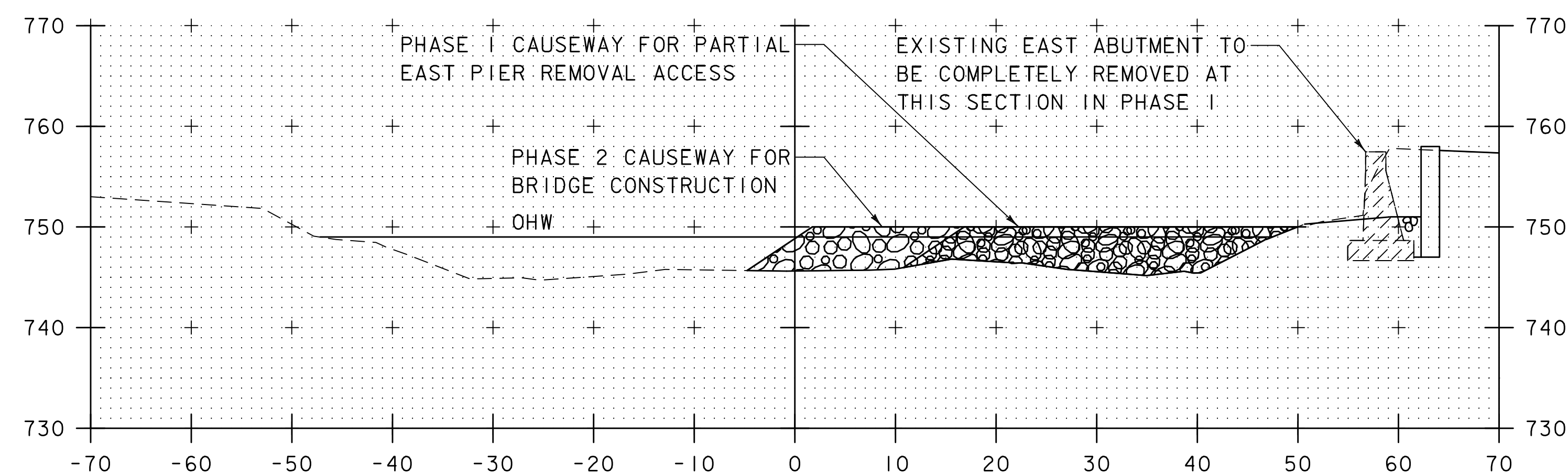
51+75



52+20



51+50



52+10

STA. 51+50 TO STA. 52+30

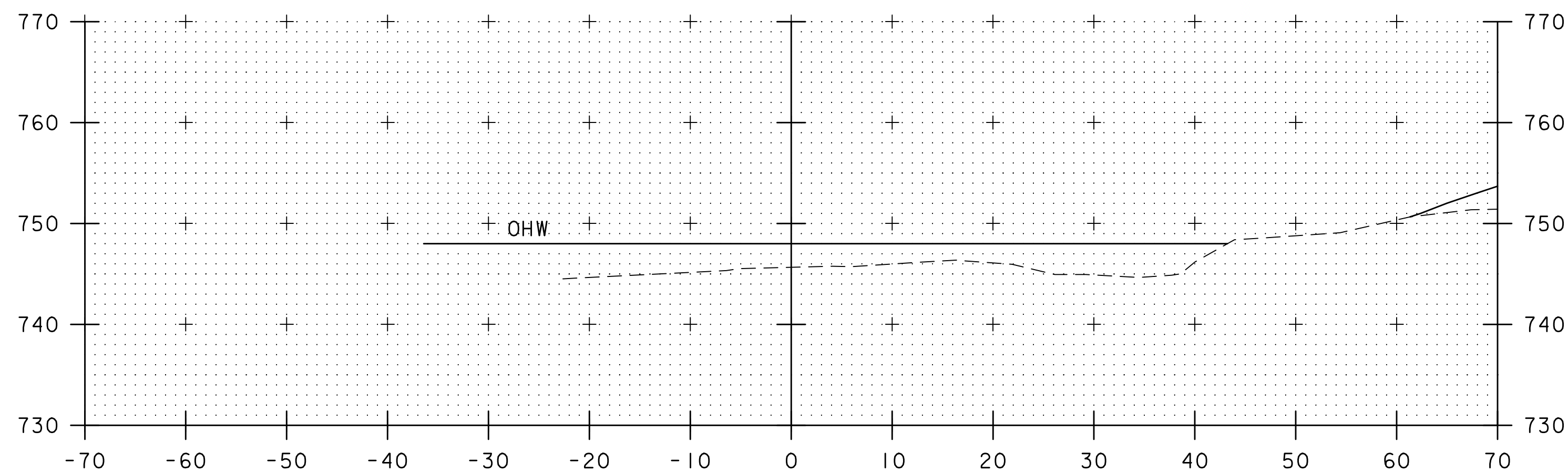
SCALE 1" = 10'-0"



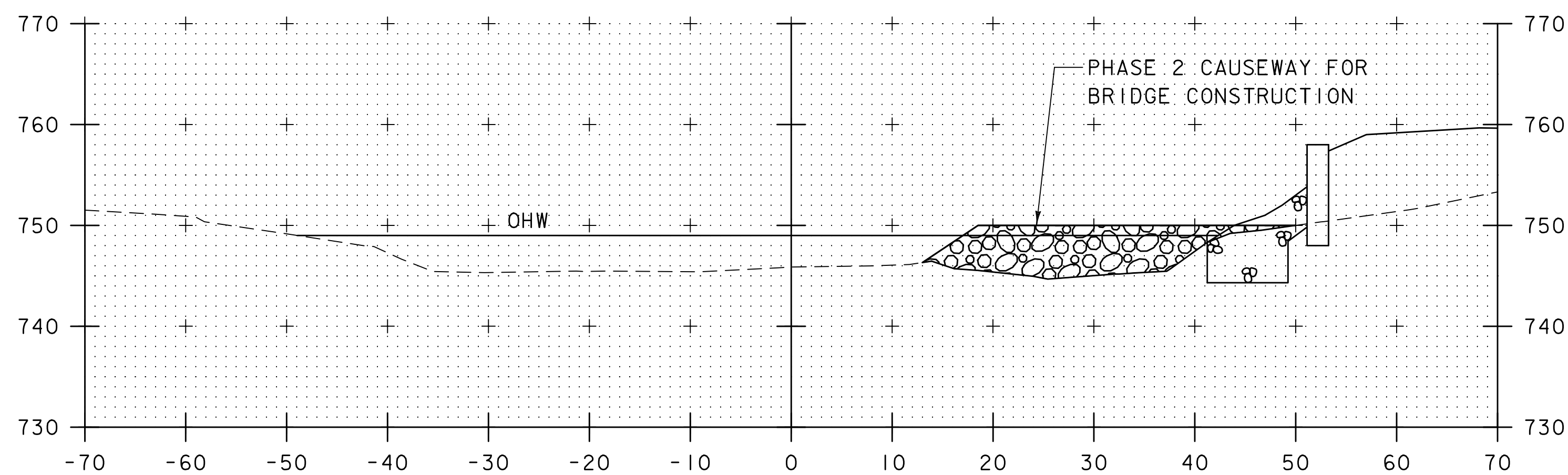
PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME: I6J177/z16J177xschl.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: N. CARON  
CHANNEL CROSS SECTIONS (4 OF 5)

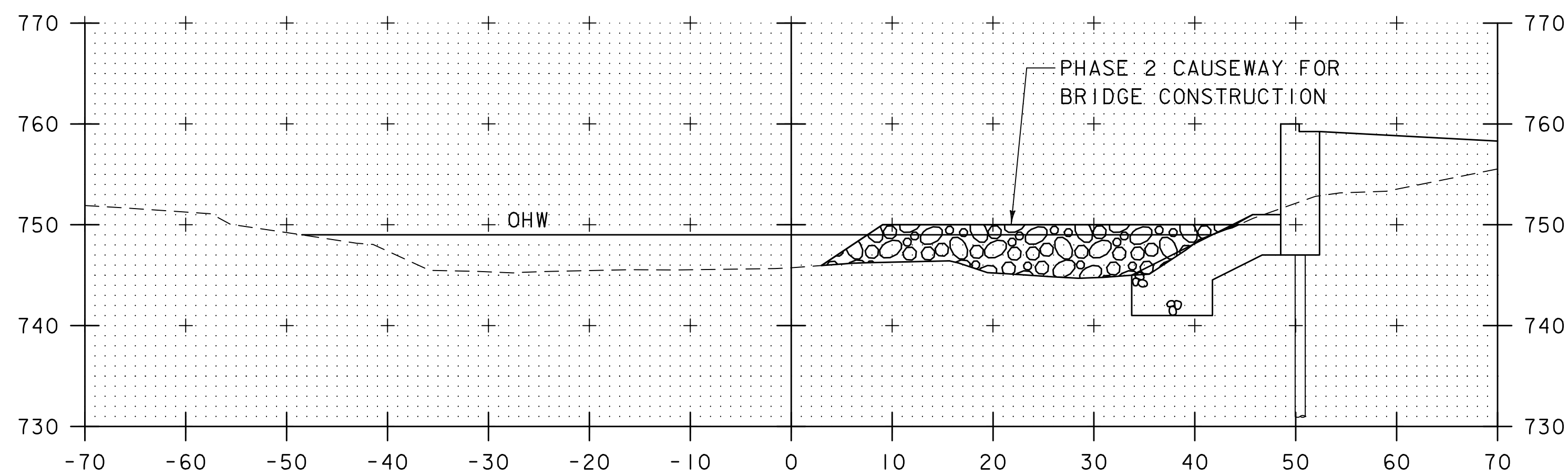
PLOT DATE: 3/18/2021  
DRAWN BY: N. CARON  
CHECKED BY: S. BOYINGTON  
SHEET 41 OF 68



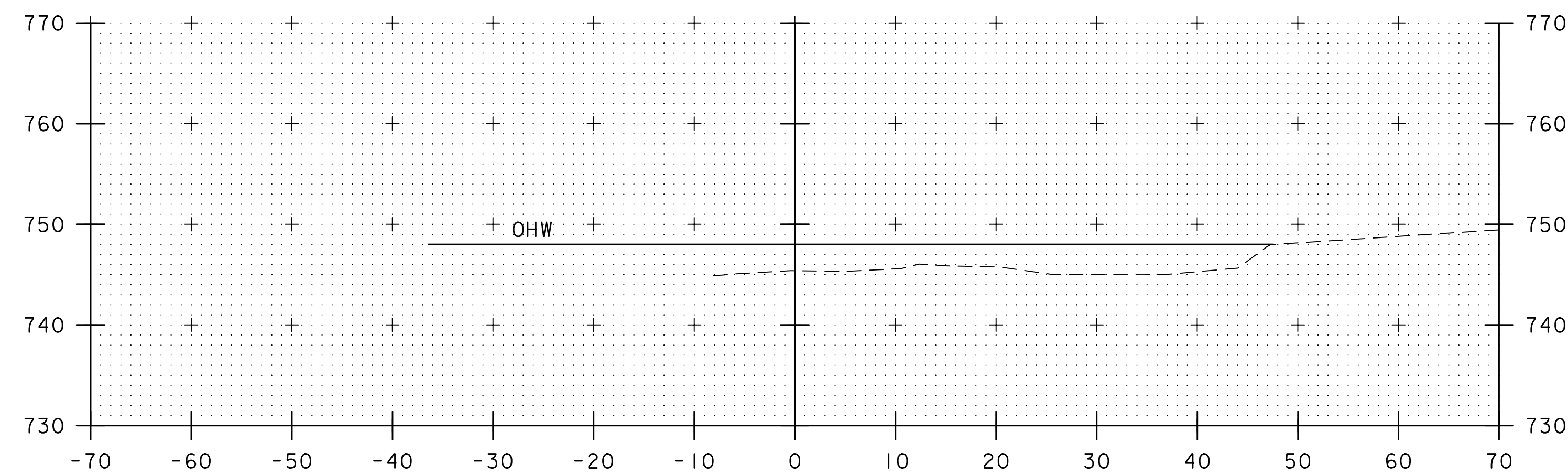
52+75



52+50



52+40



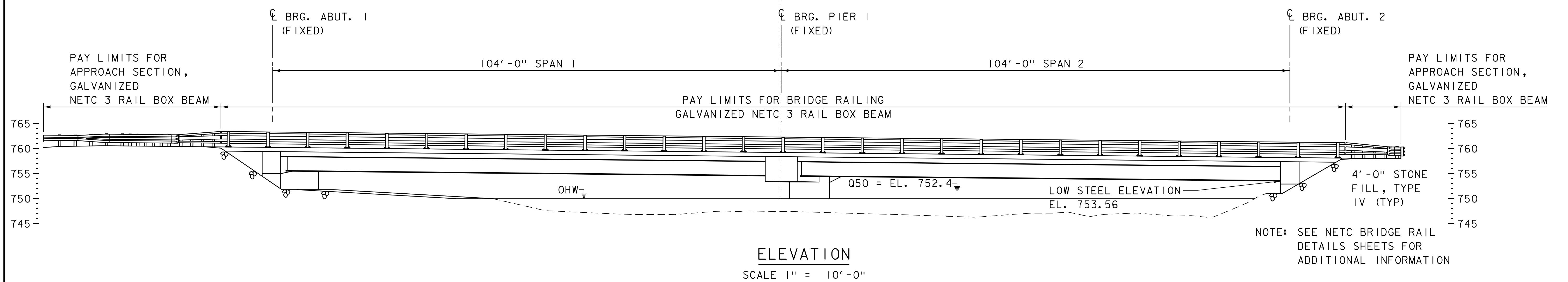
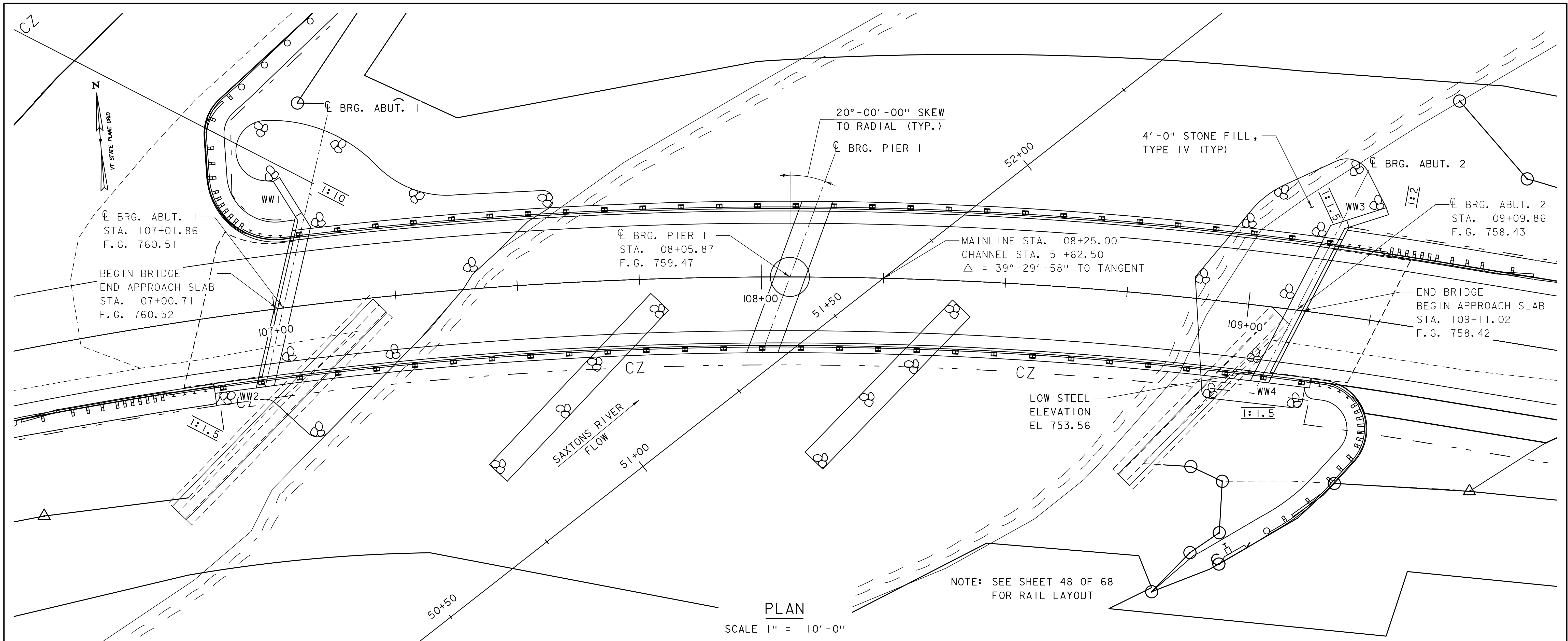
53+00

STA. 52+40 TO STA. 53+00

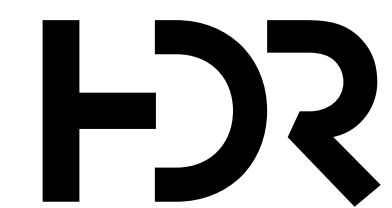
SCALE 1" = 10'-0"  
10 0 10

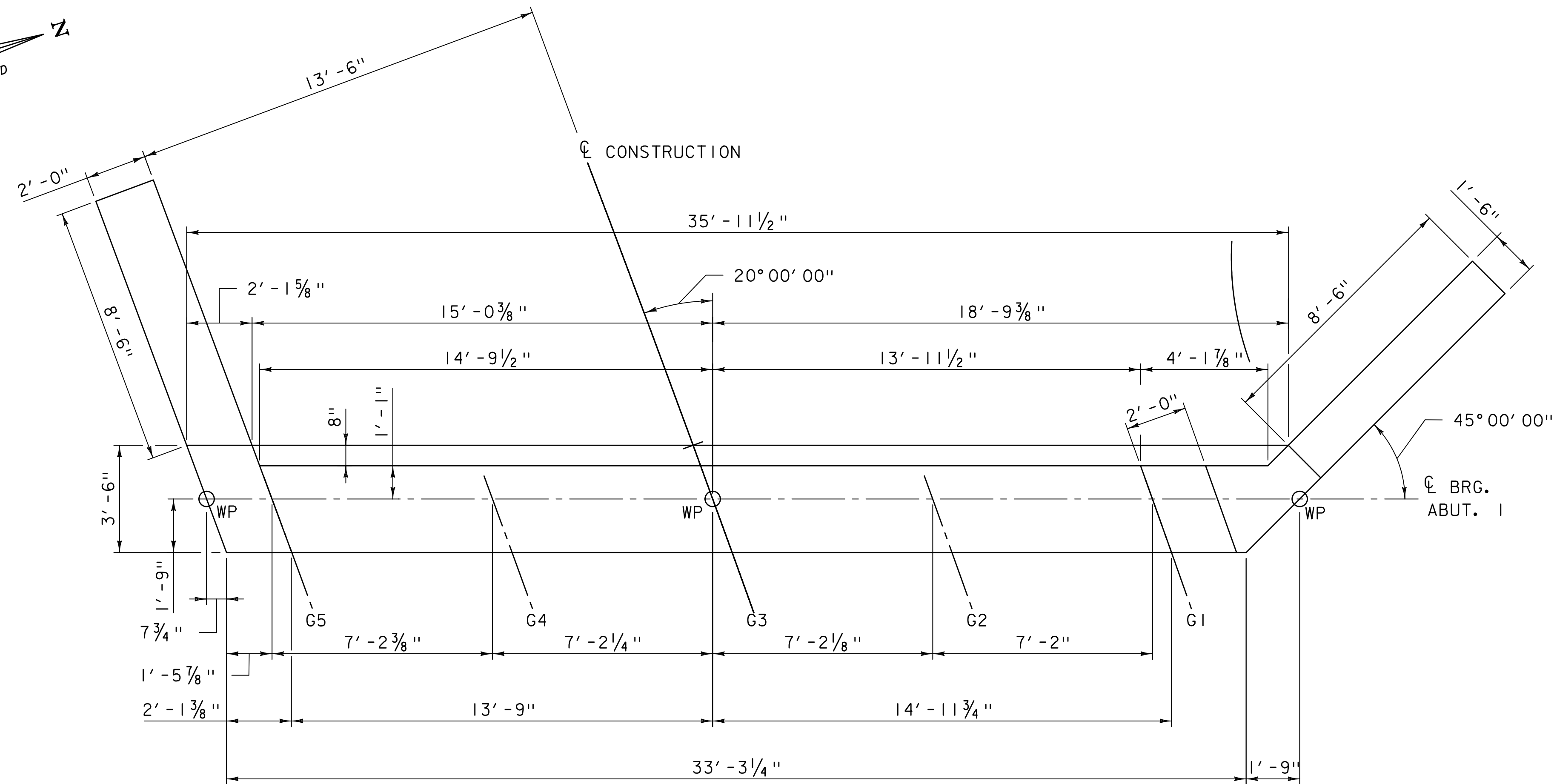
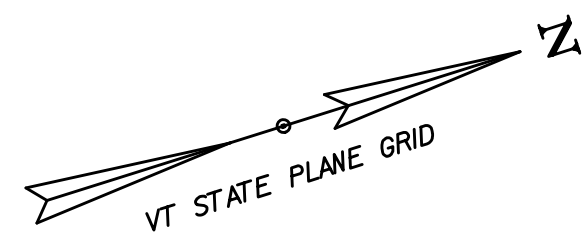


PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/zl6J177xschl.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: N. CARON
DESIGNED BY: N. CARON	CHECKED BY: S. BOYINGTON
CHANNEL CROSS SECTIONS (5 OF 5)	SHEET 42 OF 68



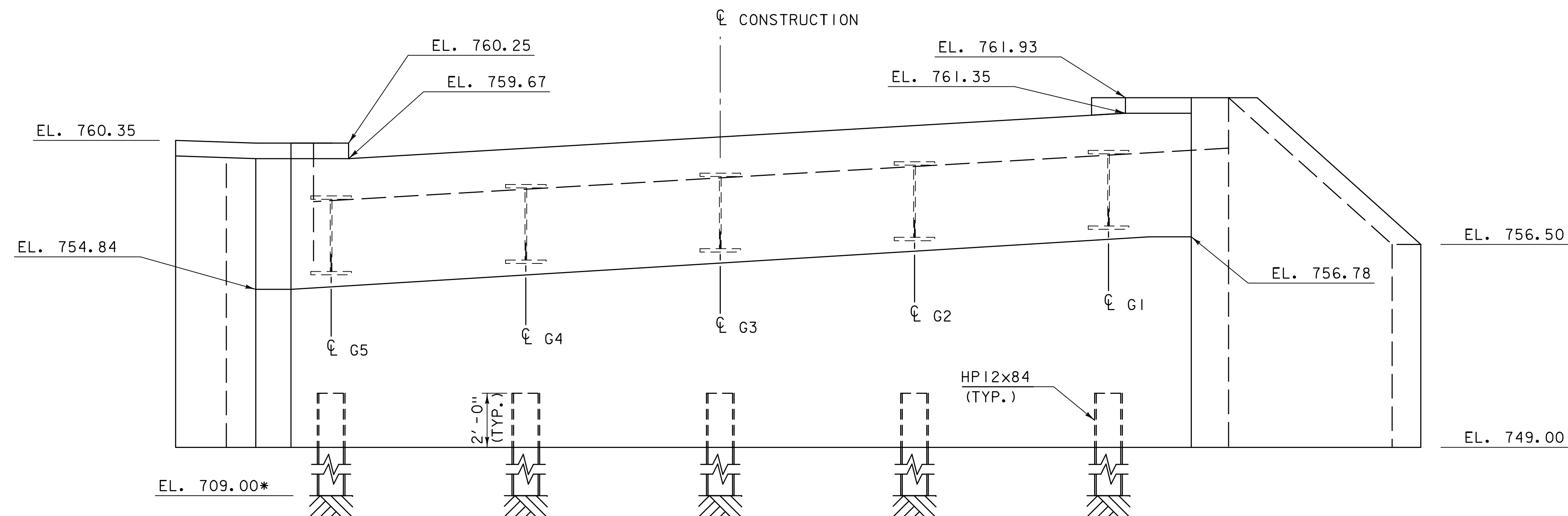
PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/z16J177pe.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: J. PETERSON
DESIGNED BY: N. CARON	CHECKED BY: S. BOYINGTON
PLAN AND ELEVATION SHEET	SHEET 43 OF 68





ABUTMENT I PLAN

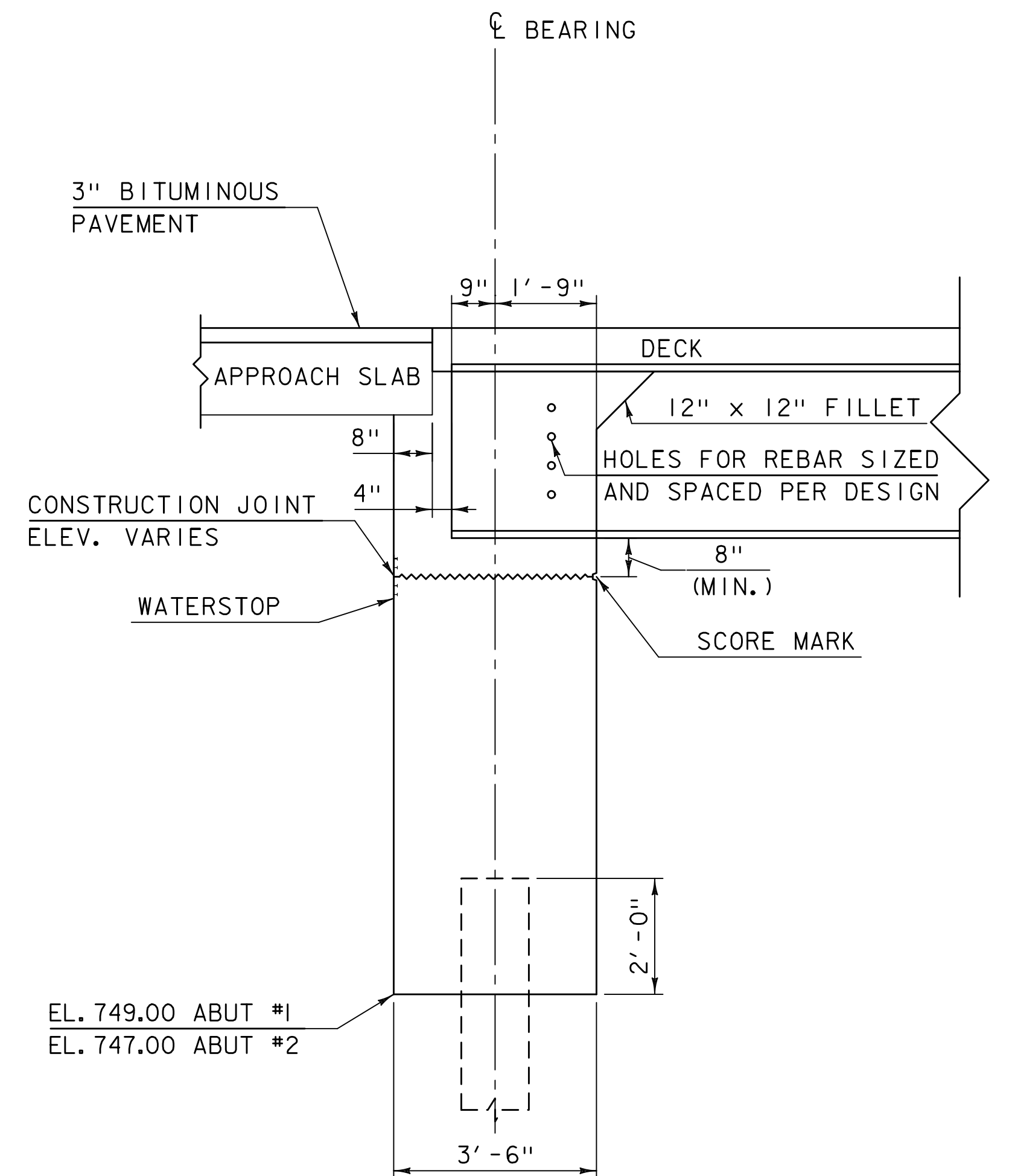
SCALE  $\frac{3}{8}$ " = 1'-0"



ABUTMENT I ELEVATION

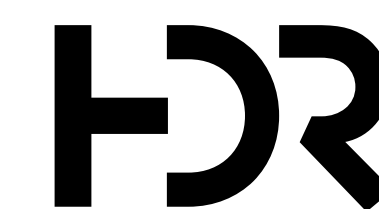
SCALE  $\frac{3}{8}$ " = 1'-0"

* LEDGE ELEVATION IS APPROXIMATE  
AND WILL BE REVISED TO MATCH  
FINAL GEOTECHNICAL REPORT

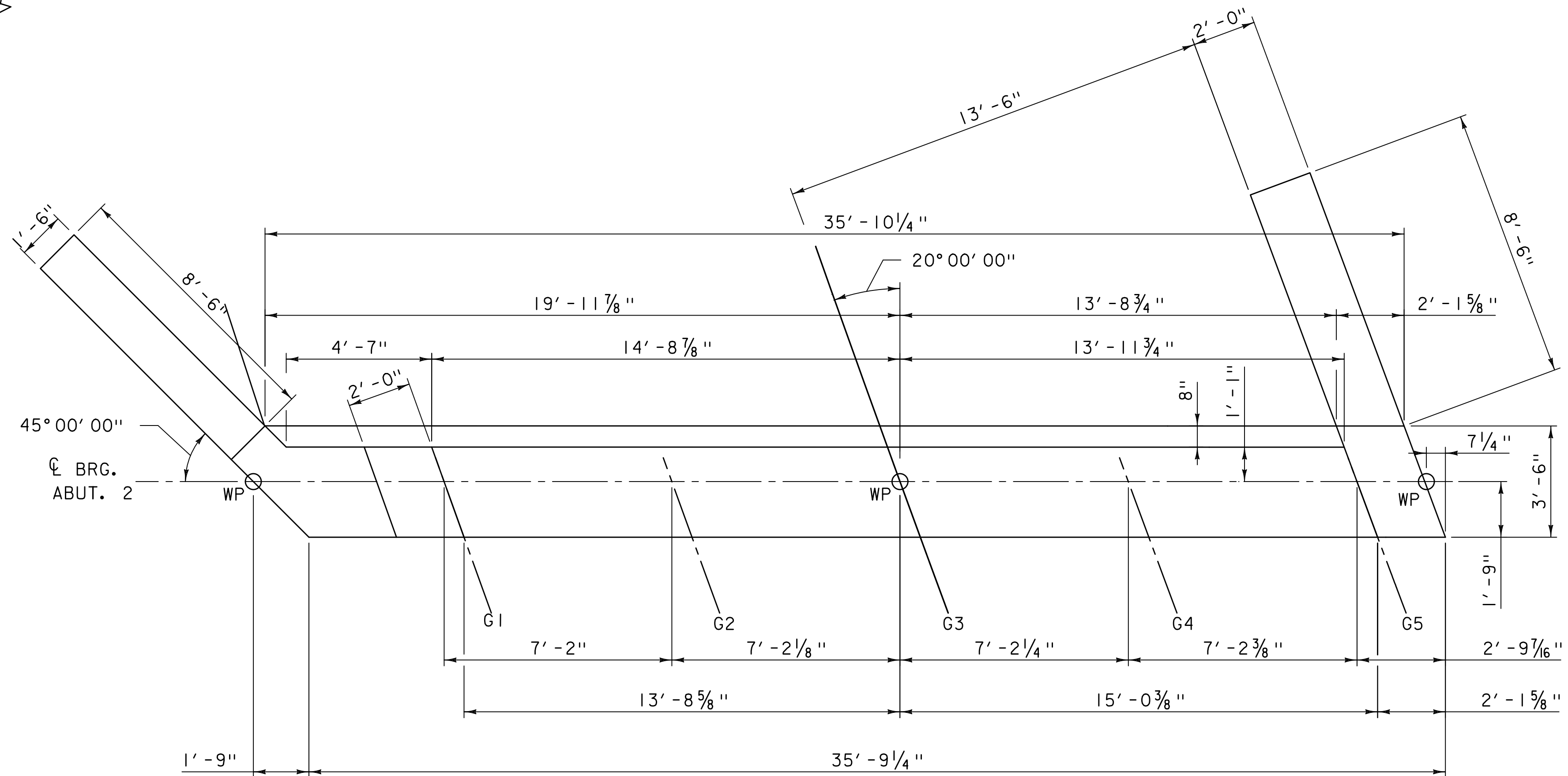
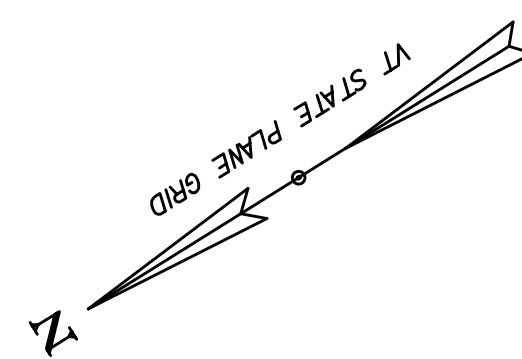


ABUTMENT SECTION

SCALE  $\frac{1}{2}$ " = 1'-0"

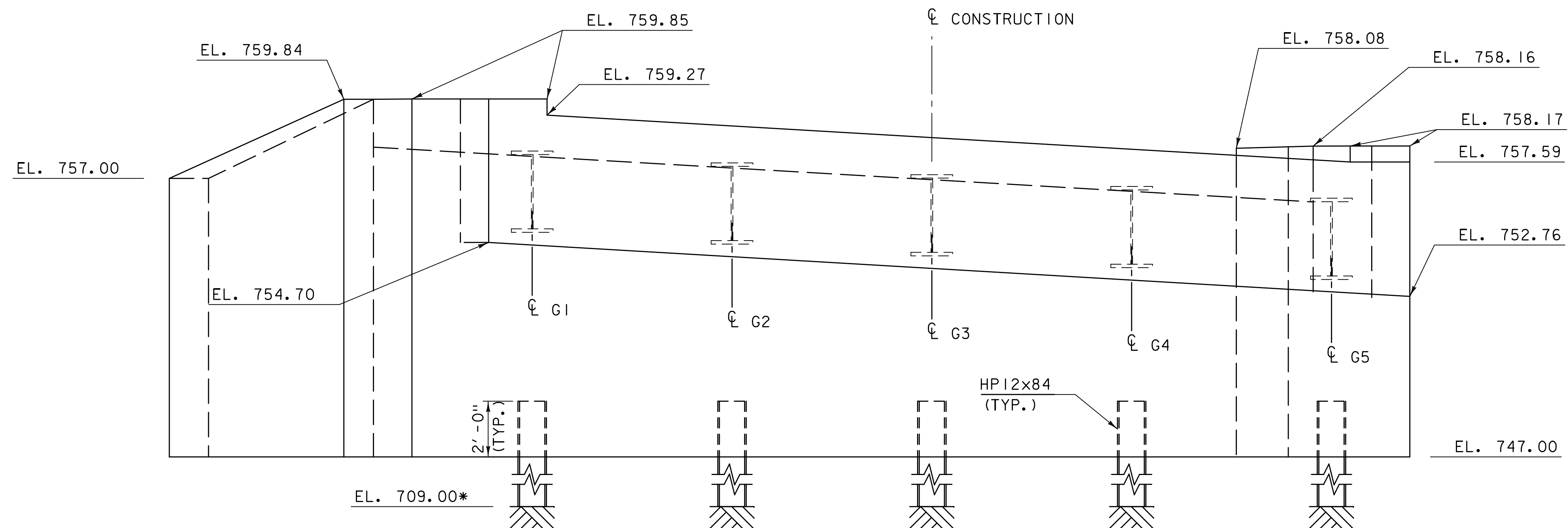


PROJECT NAME:	GRAFTON	FILE NAME:	I6J177/zl6J177sub-abut1.dgn	PLOT DATE:	3/18/2021
PROJECT NUMBER:	BF 0125(6)	PROJECT LEADER:	T. FRENCH	DRAWN BY:	J. PETERSON
		DESIGNED BY:	N. CARON	CHECKED BY:	S. BOYINGTON
		ABUTMENT I PLAN SHEET		SHEET	44 OF 68



ABUTMENT 2 PLAN

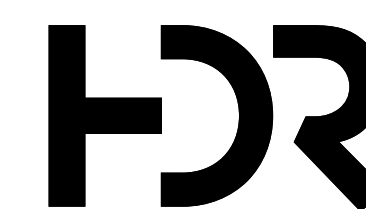
SCALE  $\frac{3}{8}$ " = 1'-0"



* LEDGE ELEVATION IS APPROXIMATE  
AND WILL BE REVISED TO MATCH  
FINAL GEOTECHNICAL REPORT

ABUTMENT 2 ELEVATION

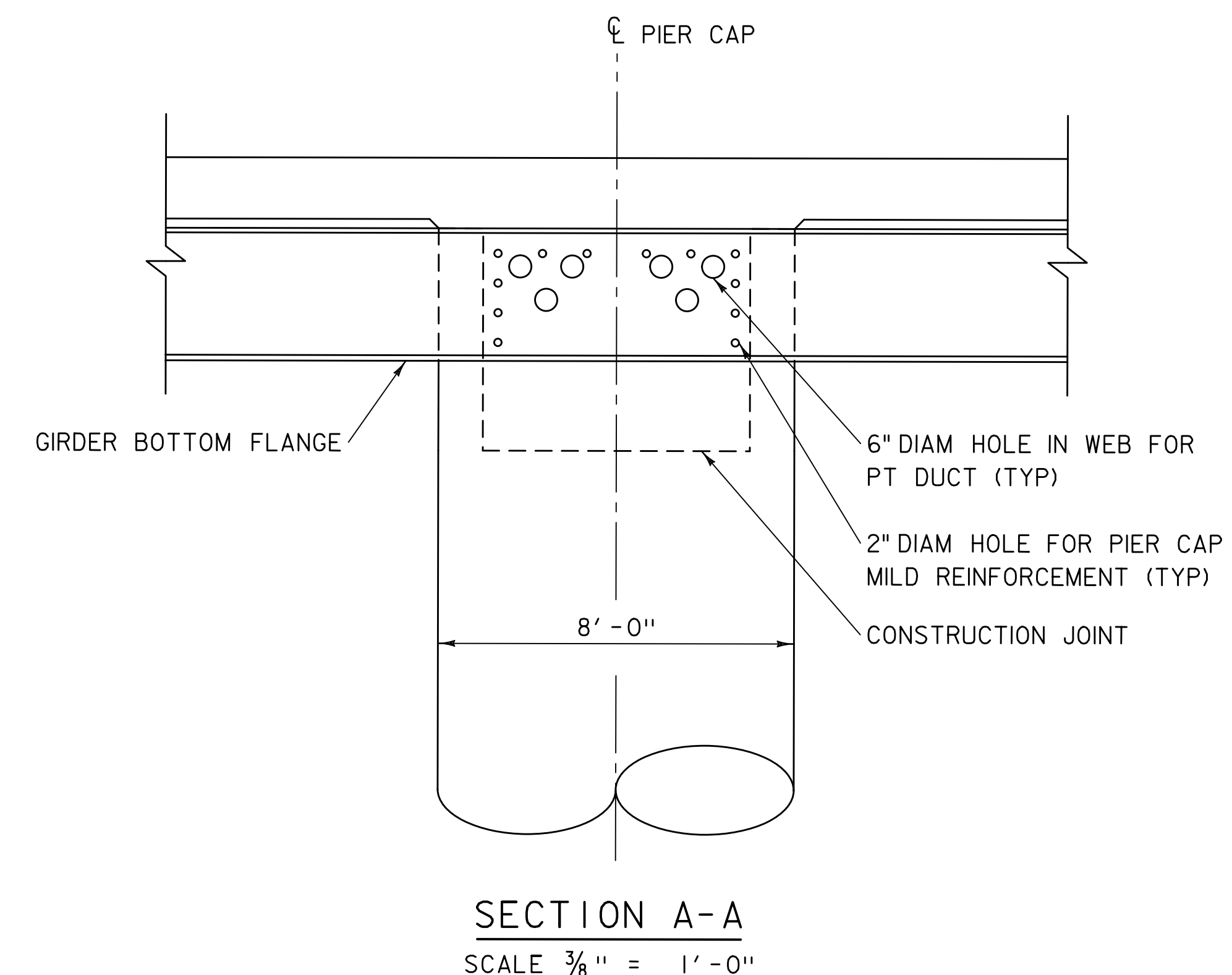
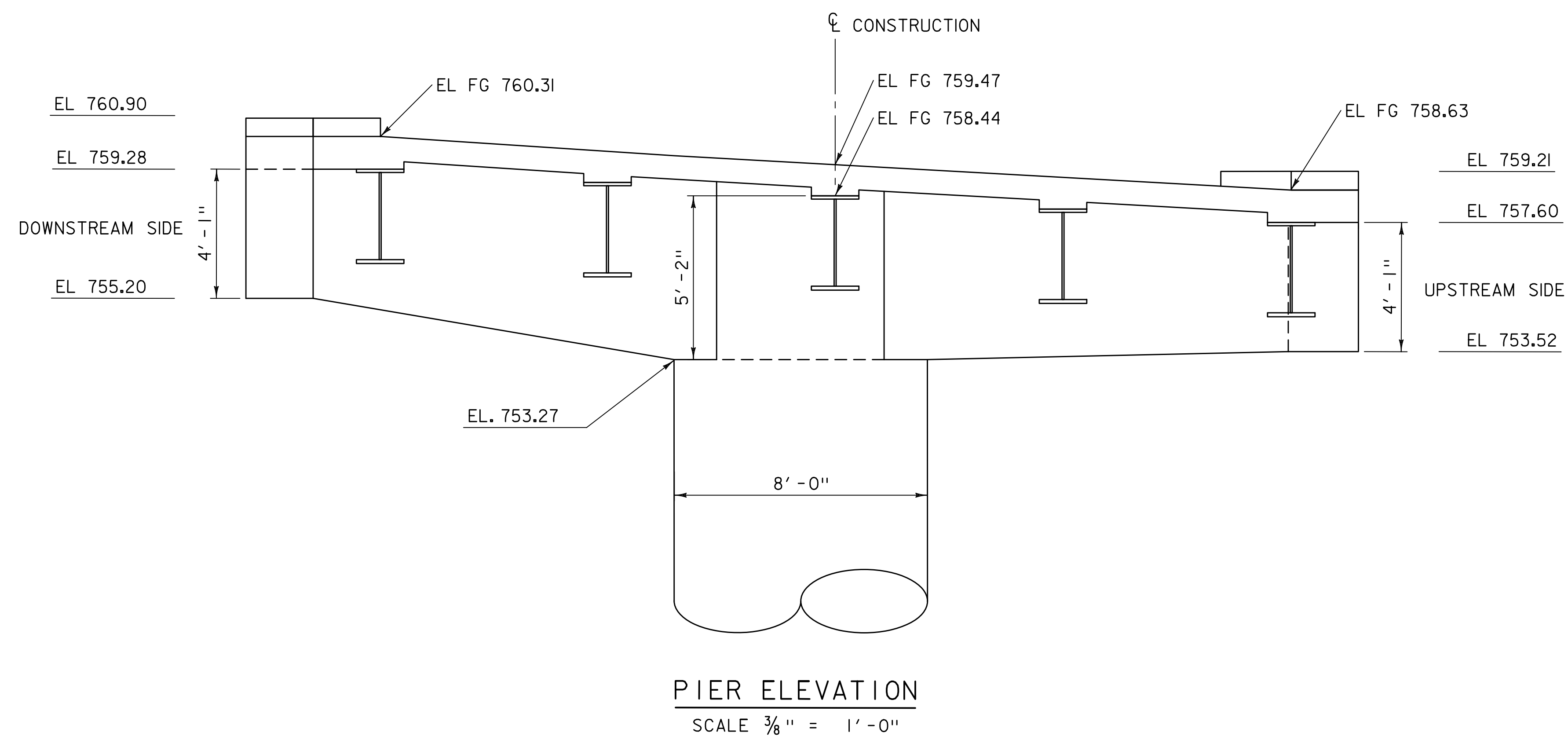
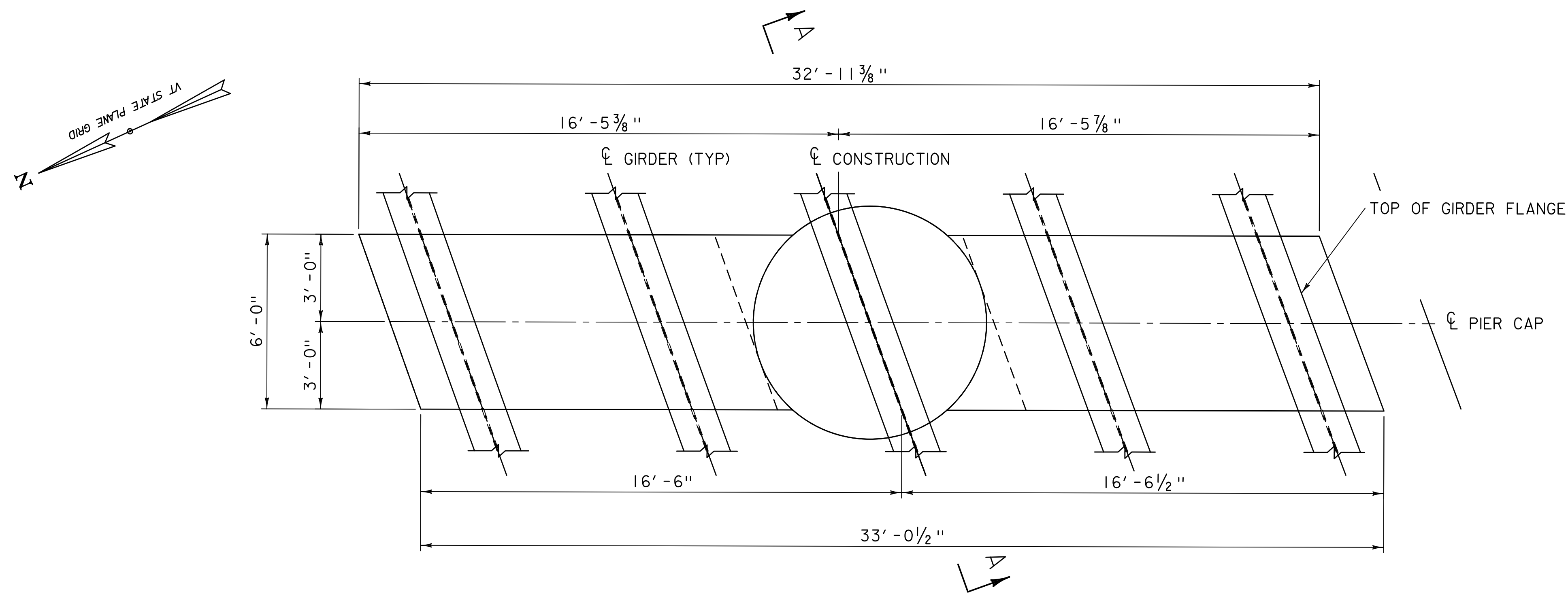
SCALE  $\frac{3}{8}$ " = 1'-0"



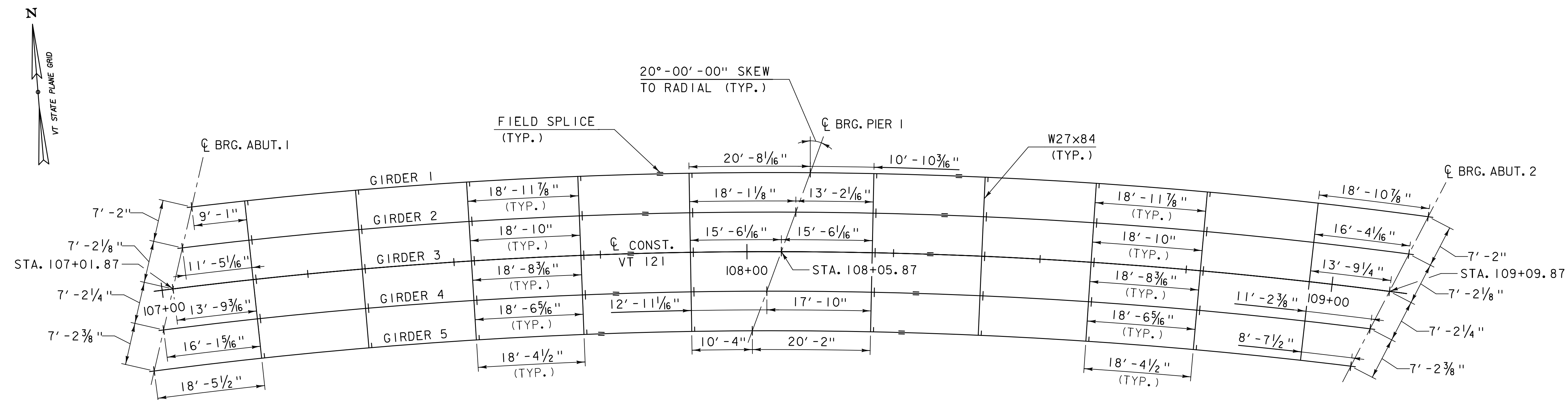
PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME: I6J177/zl6J177sub_abut2.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: N. CARON  
ABUTMENT 2 SHEET

PLOT DATE: 3/18/2021  
DRAWN BY: J. PETERSON  
CHECKED BY: S. BOYINGTON  
SHEET 45 OF 68



PROJECT NAME:	GRAFTON	FILE NAME:	I6J177/z16J177sub_pier.dgn	PLOT DATE:	3/18/2021
PROJECT NUMBER:	BF 0125(6)	PROJECT LEADER:	T. FRENCH	DRAWN BY:	J. PETERSON
		DESIGNED BY:	N. CARON	CHECKED BY:	S. BOYINGTON
		PIER SHEET		SHEET	46 OF 68



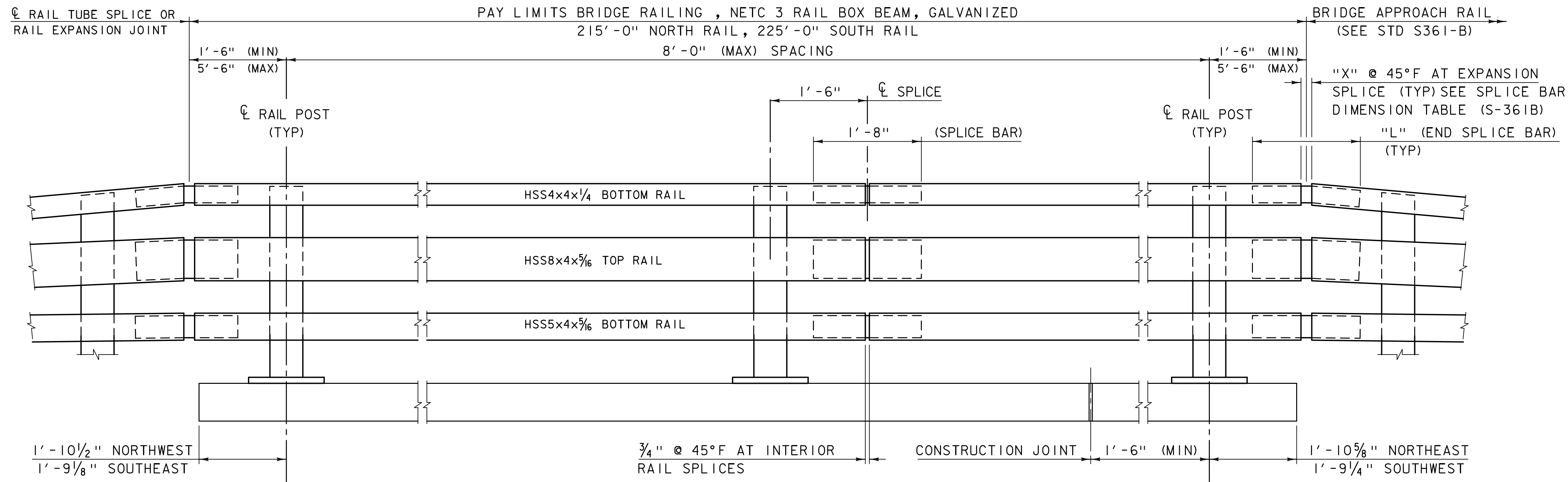
FRAMING PLAN  
SCALE 1" = 10'-0"



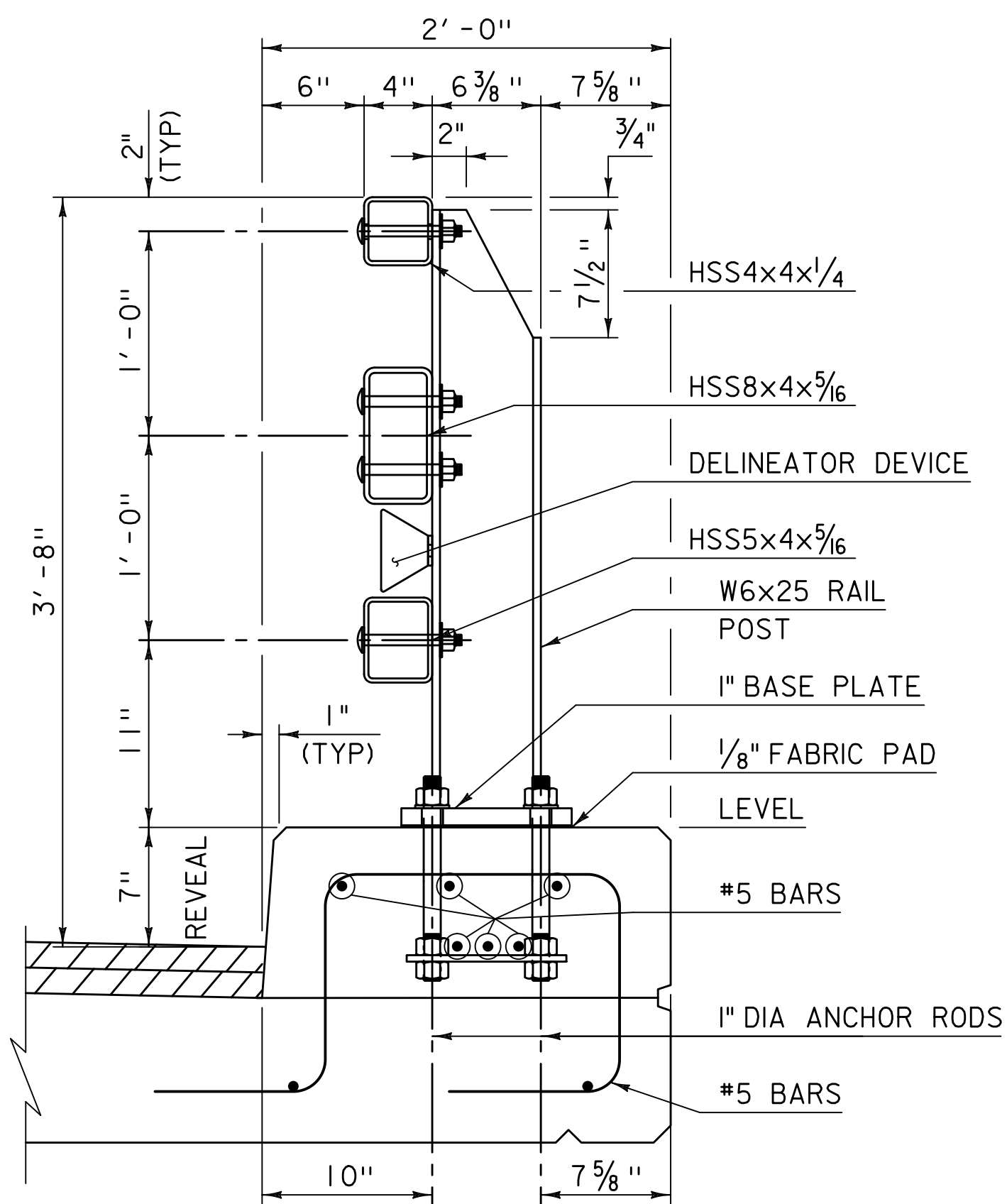
PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME: I6J177/z16J177super.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: N. CARON  
FRAMING PLAN SHEET

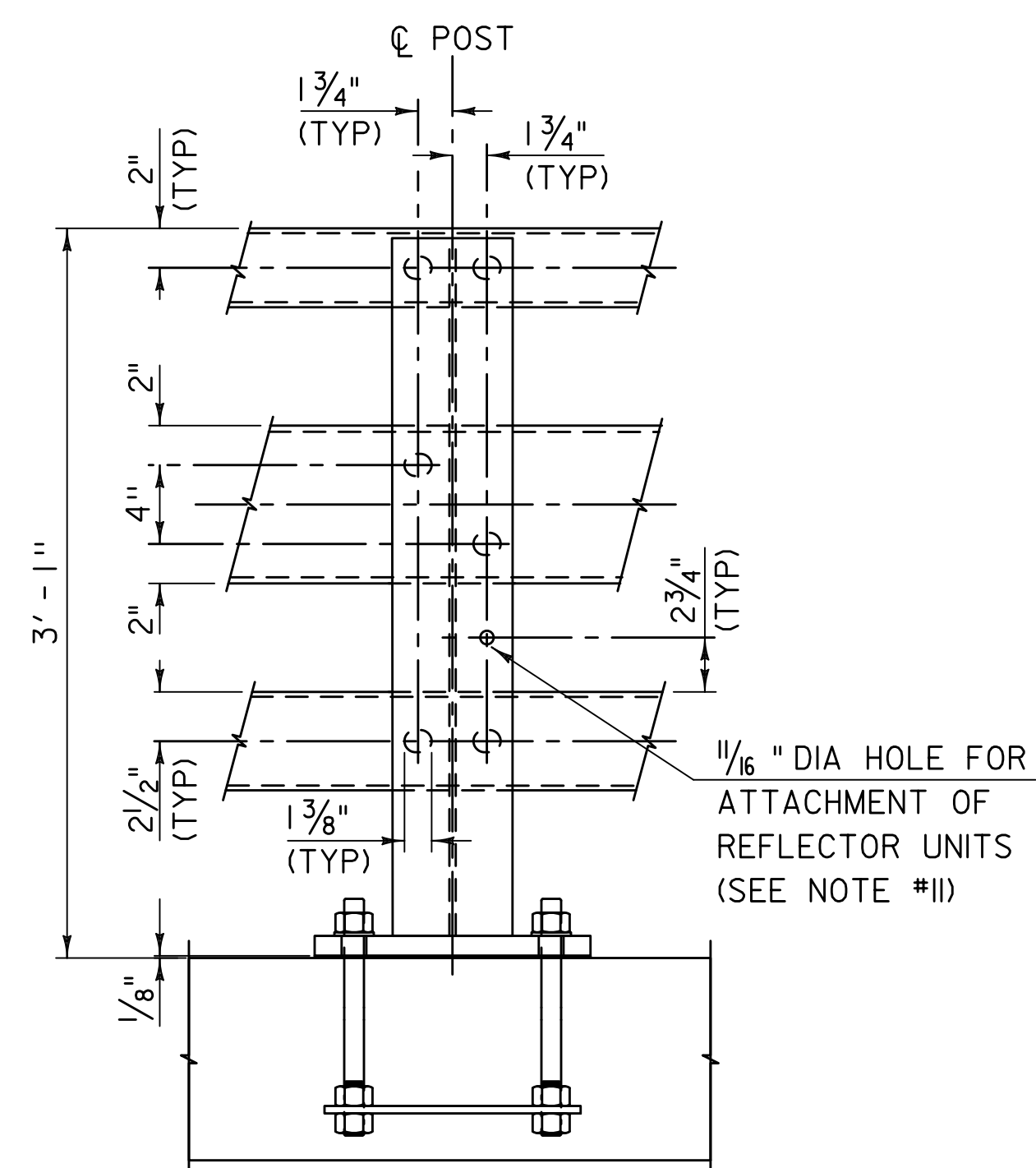
PLOT DATE: 3/18/2021  
DRAWN BY: N. CARON  
CHECKED BY: S. BOYINGTON  
SHEET 47 OF 68



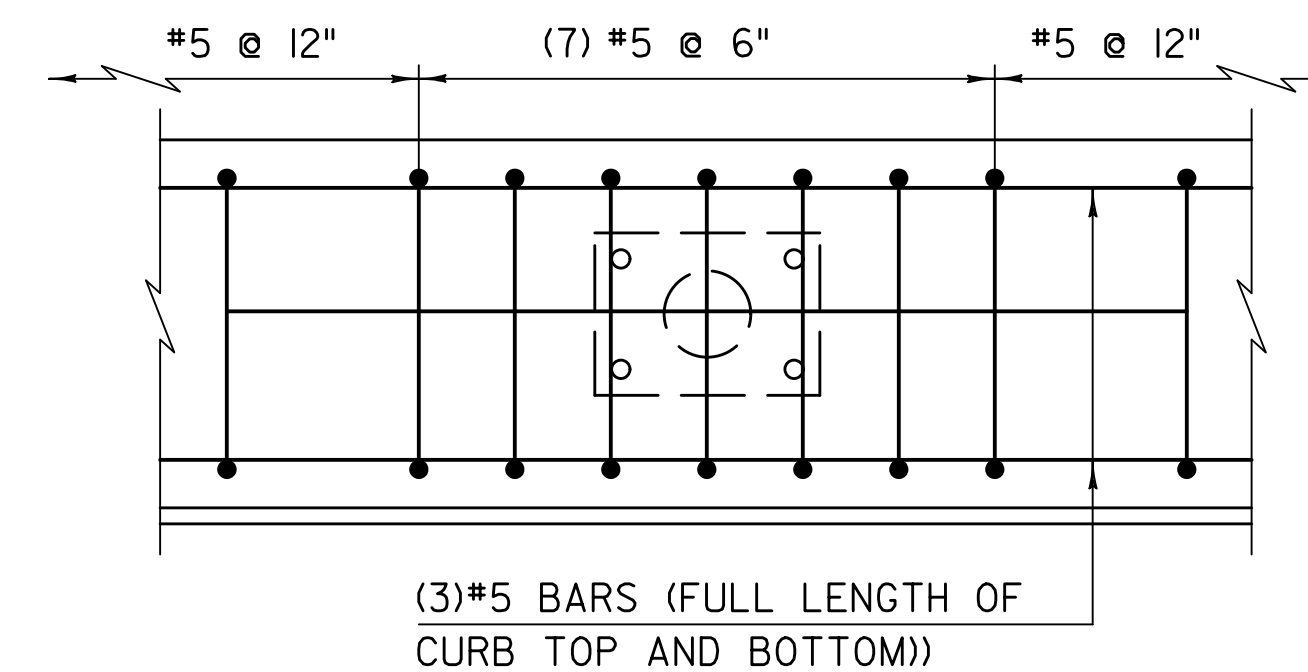
BRIDGE RAILING ELEVATION



SECTION VIEW



ELEVATION



CURB REINFORCING PLAN

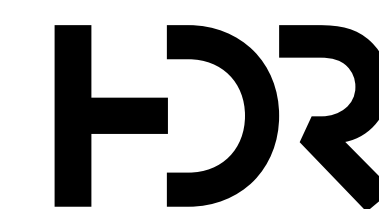
NOTES:

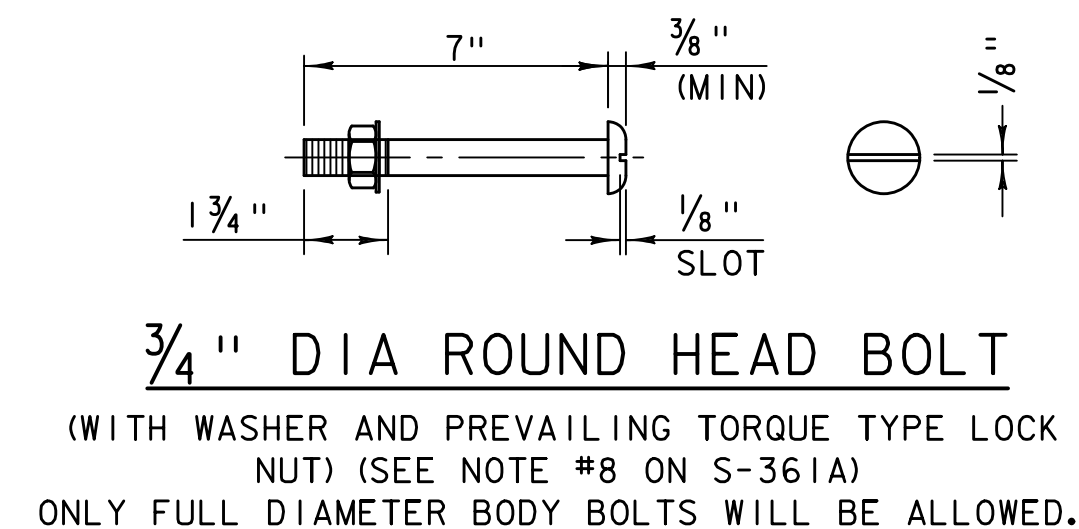
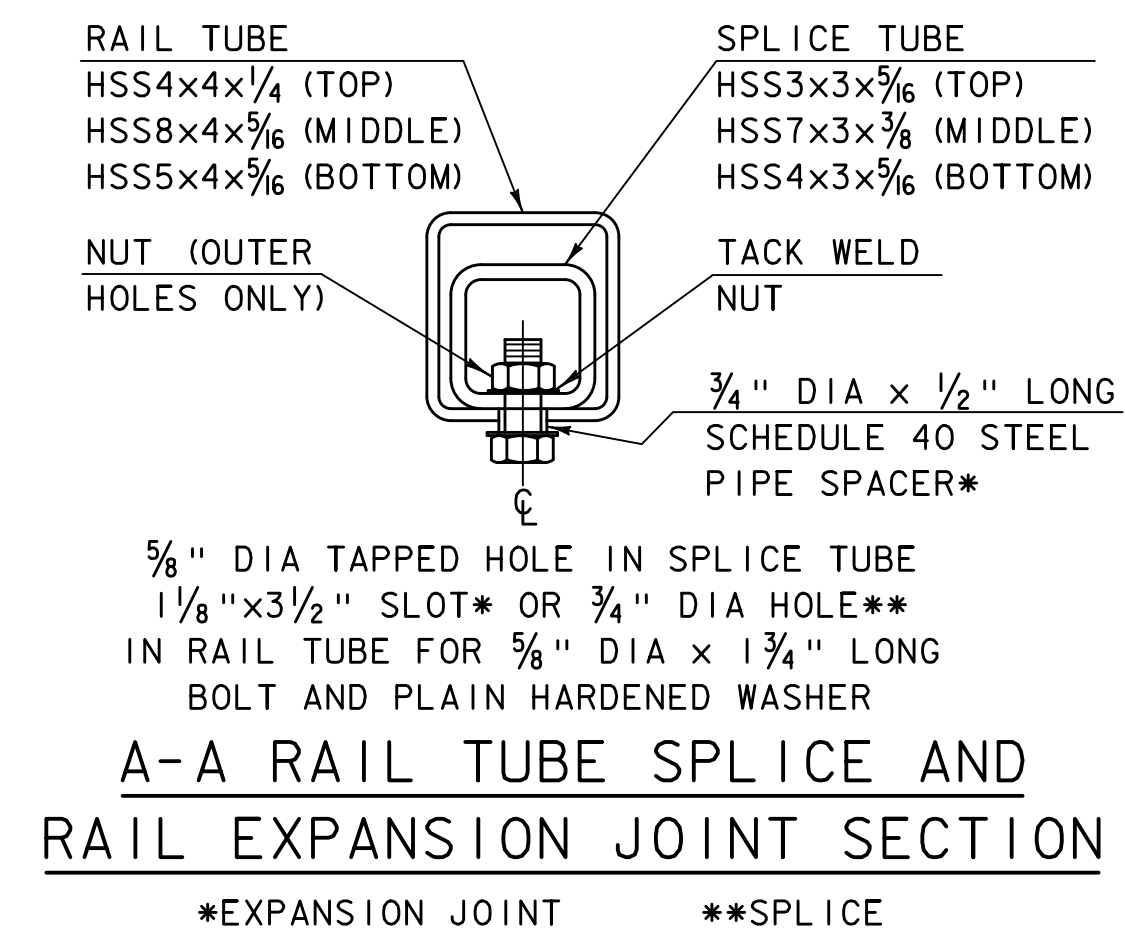
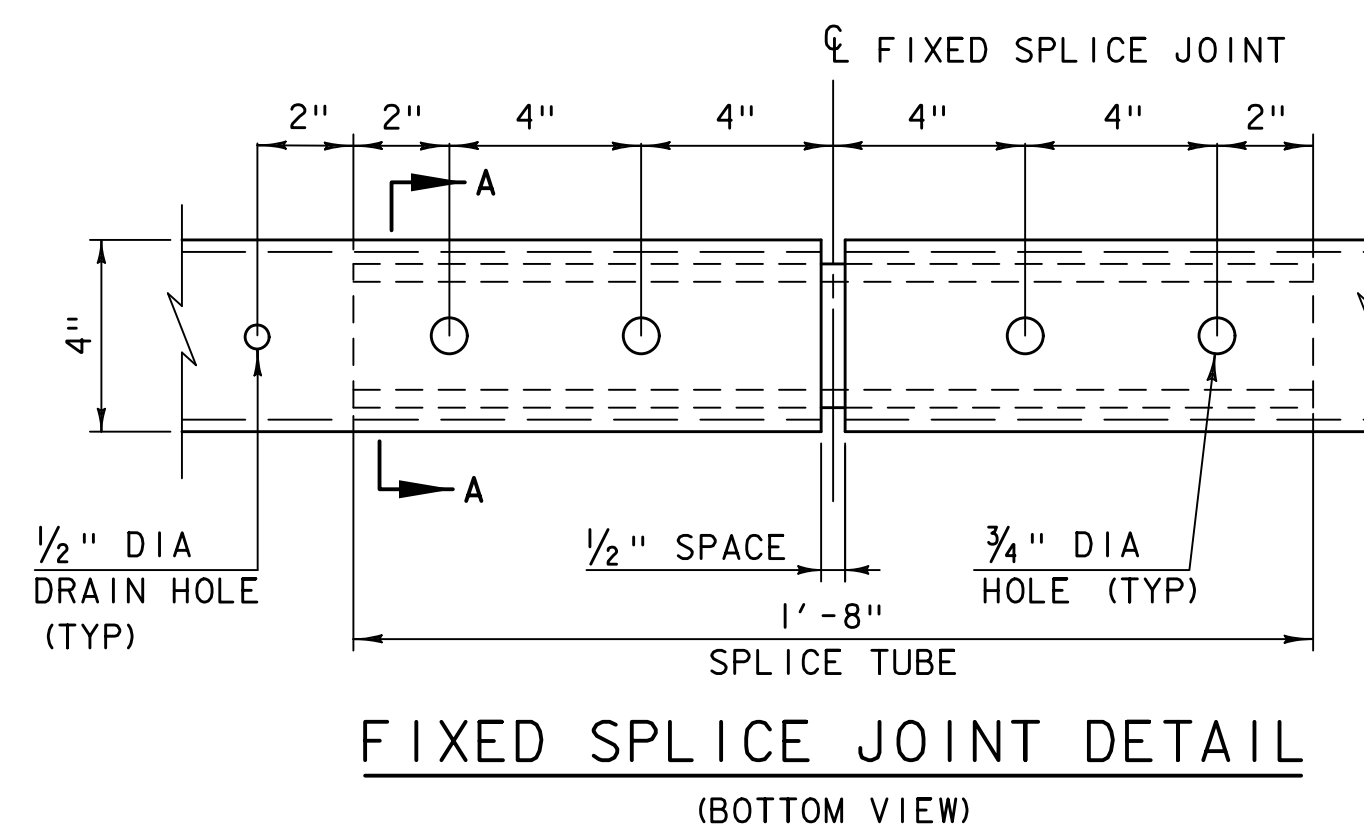
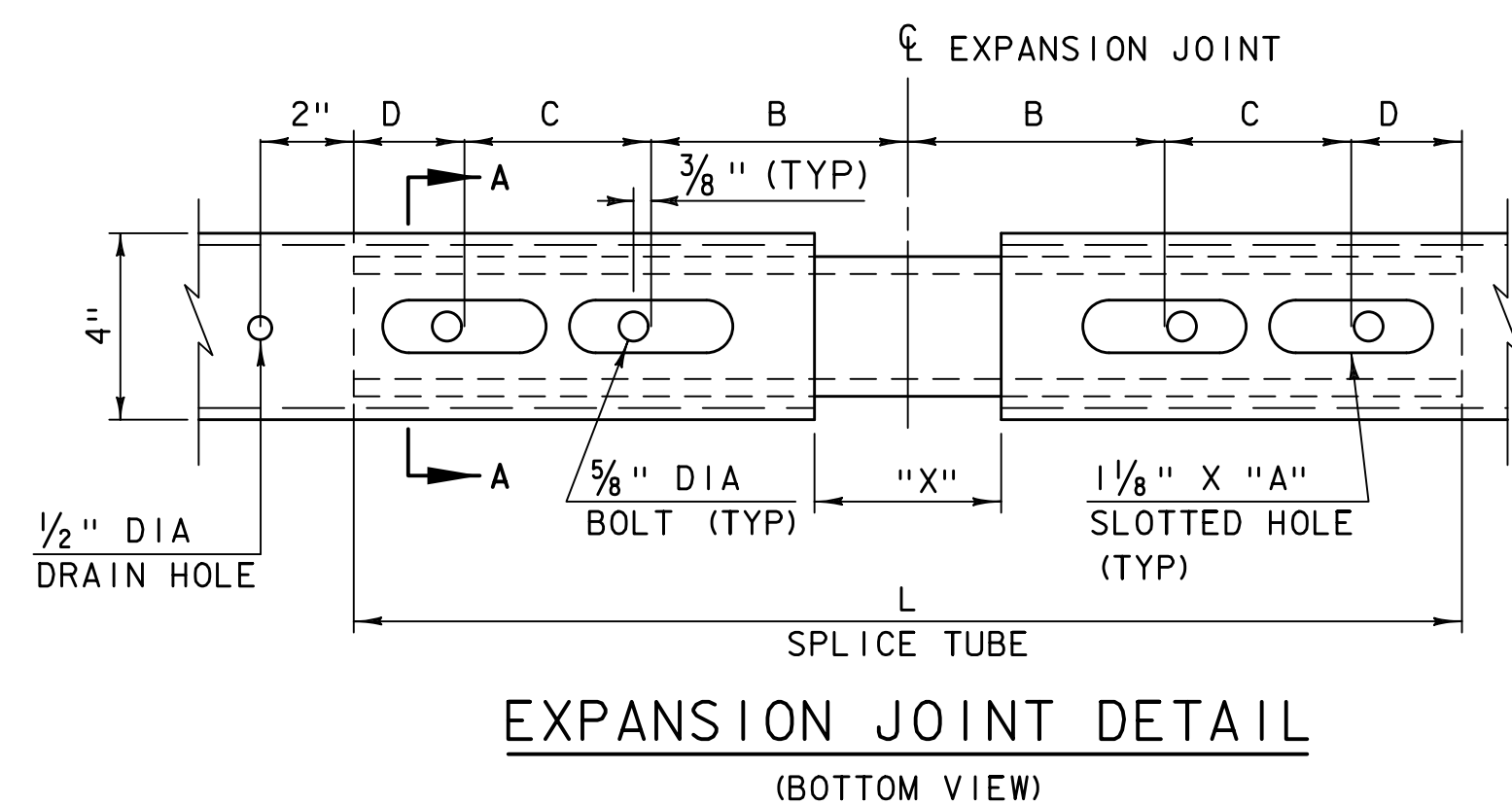
1. ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525.
2. PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM RADIUS OF 1/16".
3. ALL POSTS SHALL BE SET NORMAL TO GRADE.
4. SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO BRIDGE RAIL POSTS AND PREFERABLY TO AT LEAST FOUR POSTS.
5. RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING THE END OF AN INTEGRAL ABUTMENT BRIDGE AND AT ALL SUPERSTRUCTURE EXPANSION JOINTS. EXPANSION JOINT WIDTH SHALL BE 4" AT 68°F AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
6. HOLES IN RAILS FOR RAIL TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
7. RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
8. RAIL TUBES SHALL BE ATTACHED USING 3/4" ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE TUBE. HOLES IN POSTS SHALL BE 1/16" LARGER THAN THE BOLT SIZE.
9. ANY BENDING OF RAIL SHALL BE DONE AT A FABRICATION PLANT ACCORDING TO A PROCEDURE PROVIDED BY THE FABRICATOR.
10. THE MINIMUM DISTANCE FROM THE POST TO AN EXPANSION JOINT SHALL BE DETERMINED BY THE MINIMUM EDGE DISTANCE OF 5" FROM ANY ANCHOR STUD TO THE END OF THE SLAB, OR TO THE EXPANSION JOINT RECESS POUR, IF ONE IS USED.
11. SEE STANDARD DRAWING G-1 FOR DETAILS OF DELINEATORS. A DELINEATOR SHALL BE INSTALLED AT 30 FOOT SPACING OR THE NEAREST POST. WHITE IS TO BE INSTALLED ON THE DRIVER'S RIGHT. FOR ONE WAY BRIDGES, YELLOW IS TO BE INSTALLED ON THE DRIVER'S LEFT. PAYMENT SHALL BE INCIDENTAL TO OTHER ITEMS.
12. THIS RAILING MEETS THE REQUIREMENTS FOR A MASH TL-4 SERVICE LEVEL.

PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME: z16j177rail.NETC3-l.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: NETC  
NETC-3 BRIDGE RAIL DETAILS SHEET (1 OF 3) SHEET

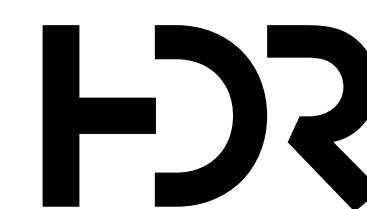
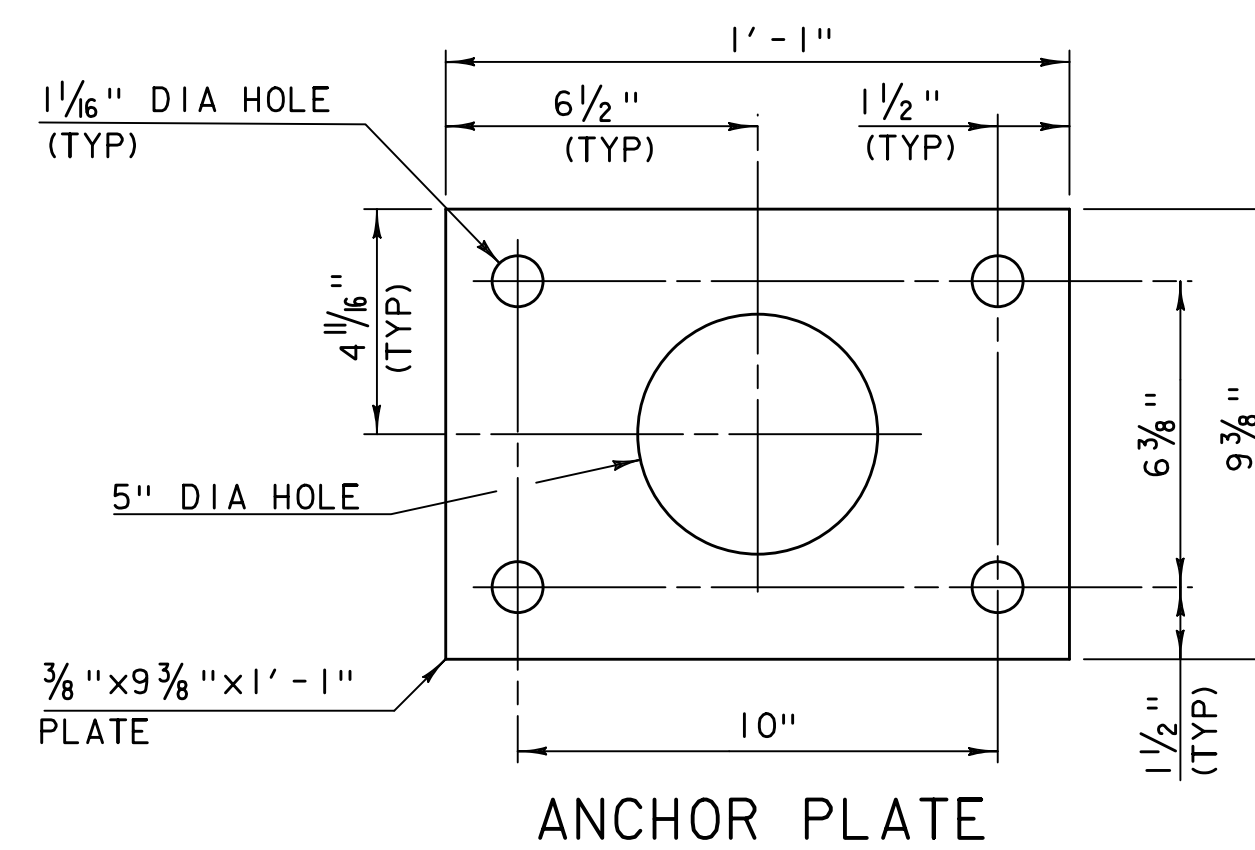
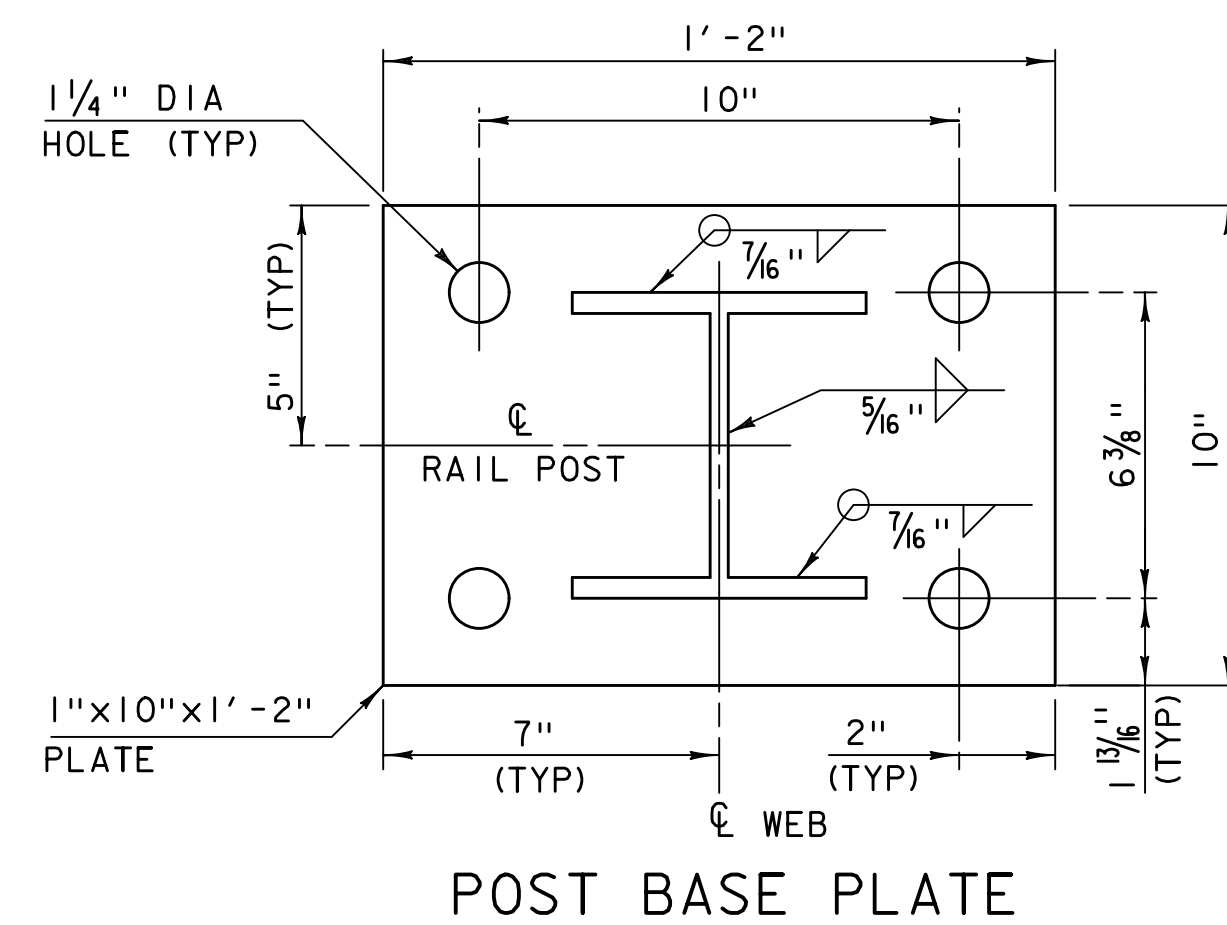
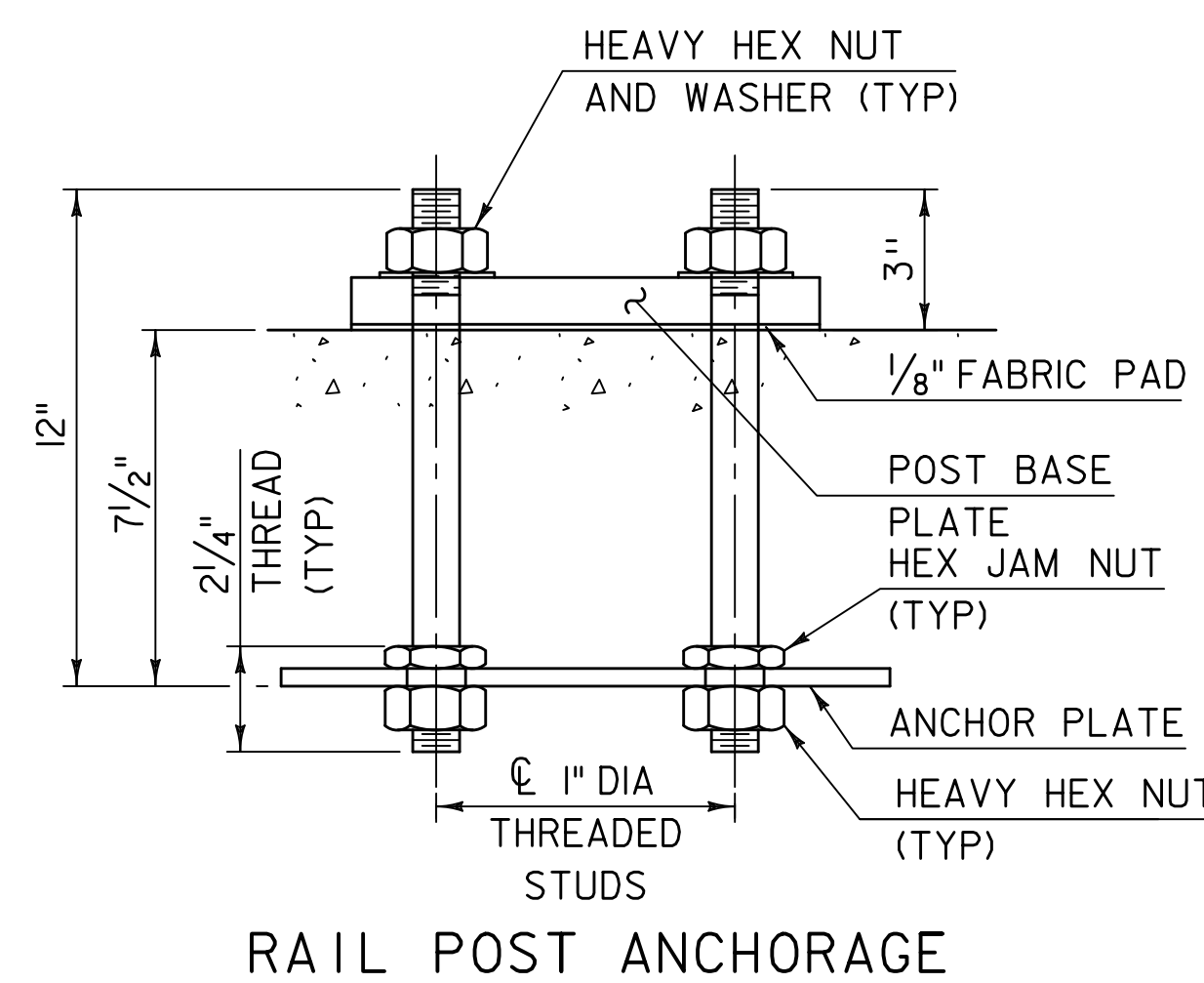
PLOT DATE: 3/18/2021  
DRAWN BY: J. PETERSON  
CHECKED BY: S. BOYINGTON  
48 OF 68



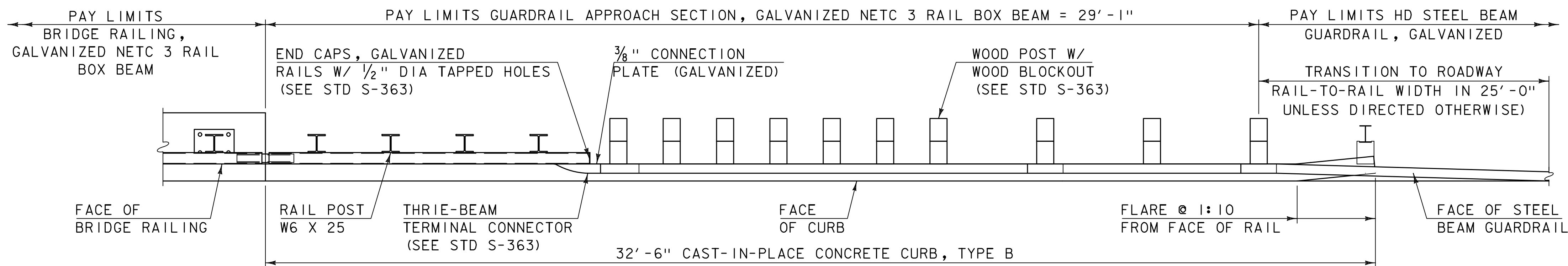


SPLICE BAR DIMENSION TABLE						
T	A	B	C	D	X	L
INTERIOR	2 1/2"	4"	4"	2"	3/4"	1'-8"
** < 3 1/4"	2 1/2"	4"	4"	2"	2"	1'-8"
** 3 1/4" < T < 5 1/4"	3 1/2"	5"	5"	2 1/2"	3"	2'-1"

T = TOTAL MOVEMENT  
** = END SPLICE BAR

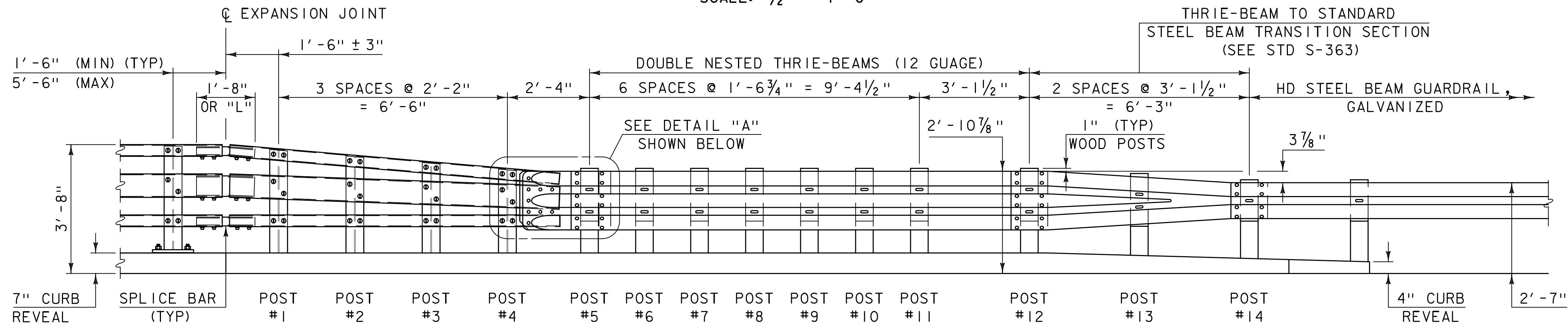


PROJECT NAME:	GRAFTON
PROJECT NUMBER:	BF 0125(6)
FILE NAME:	z16j177rail_NETC3-2.dgn
PROJECT LEADER:	T. FRENCH
DESIGNED BY:	NETC
NETC-3 BRIDGE RAIL DETAILS SHEET (2 OF 3) SHEET	49 OF 68
PLOT DATE:	3/18/2021
DRAWN BY:	J. PETERSON
CHECKED BY:	S. BOYINGTON



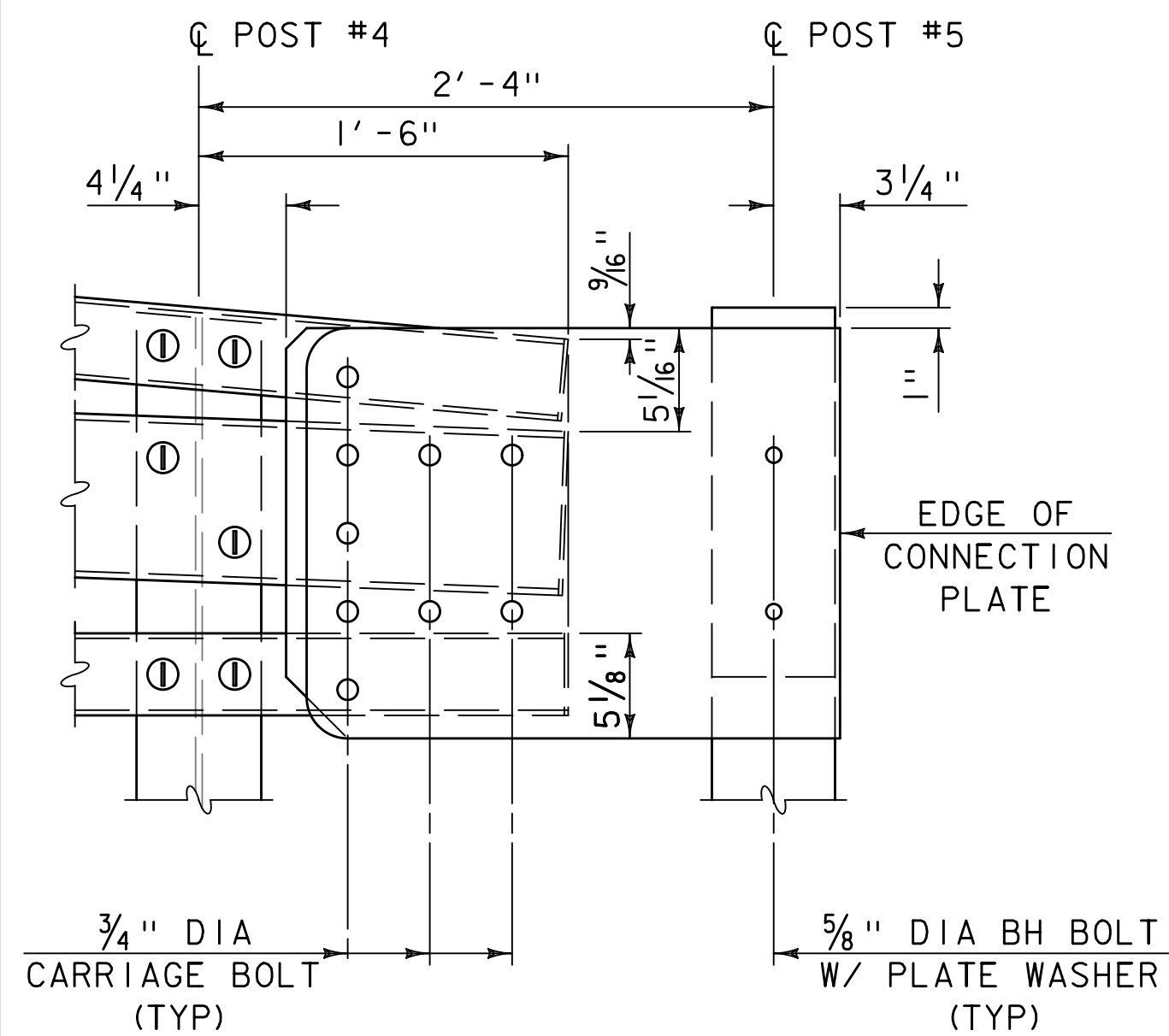
RAILING TRANSITION PLAN

SCALE: 1/2" = 1'-0"



RAILING TRANSITION ELEVATION

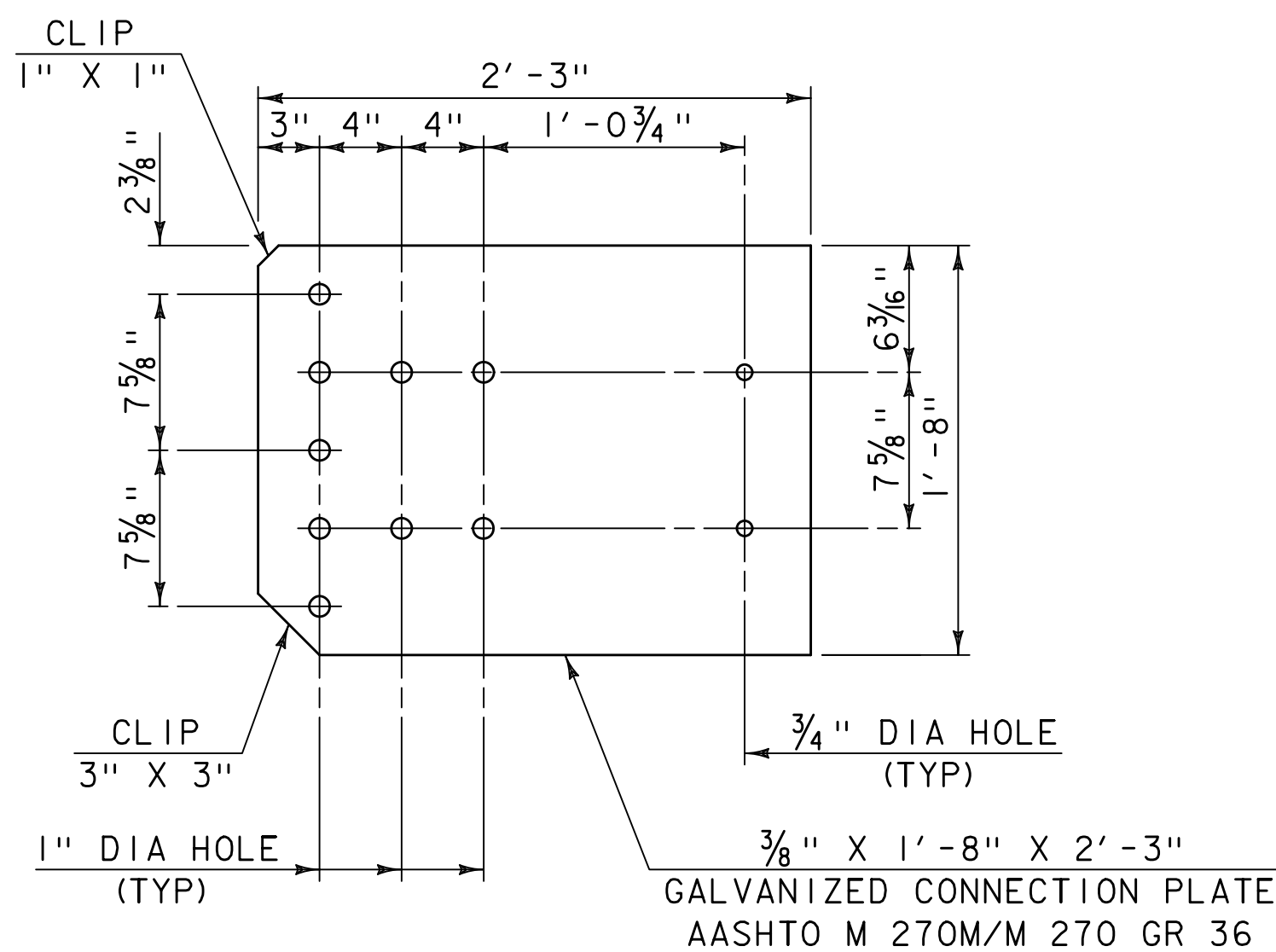
SCALE: 1/2" = 1'-0"



DETAIL "A"

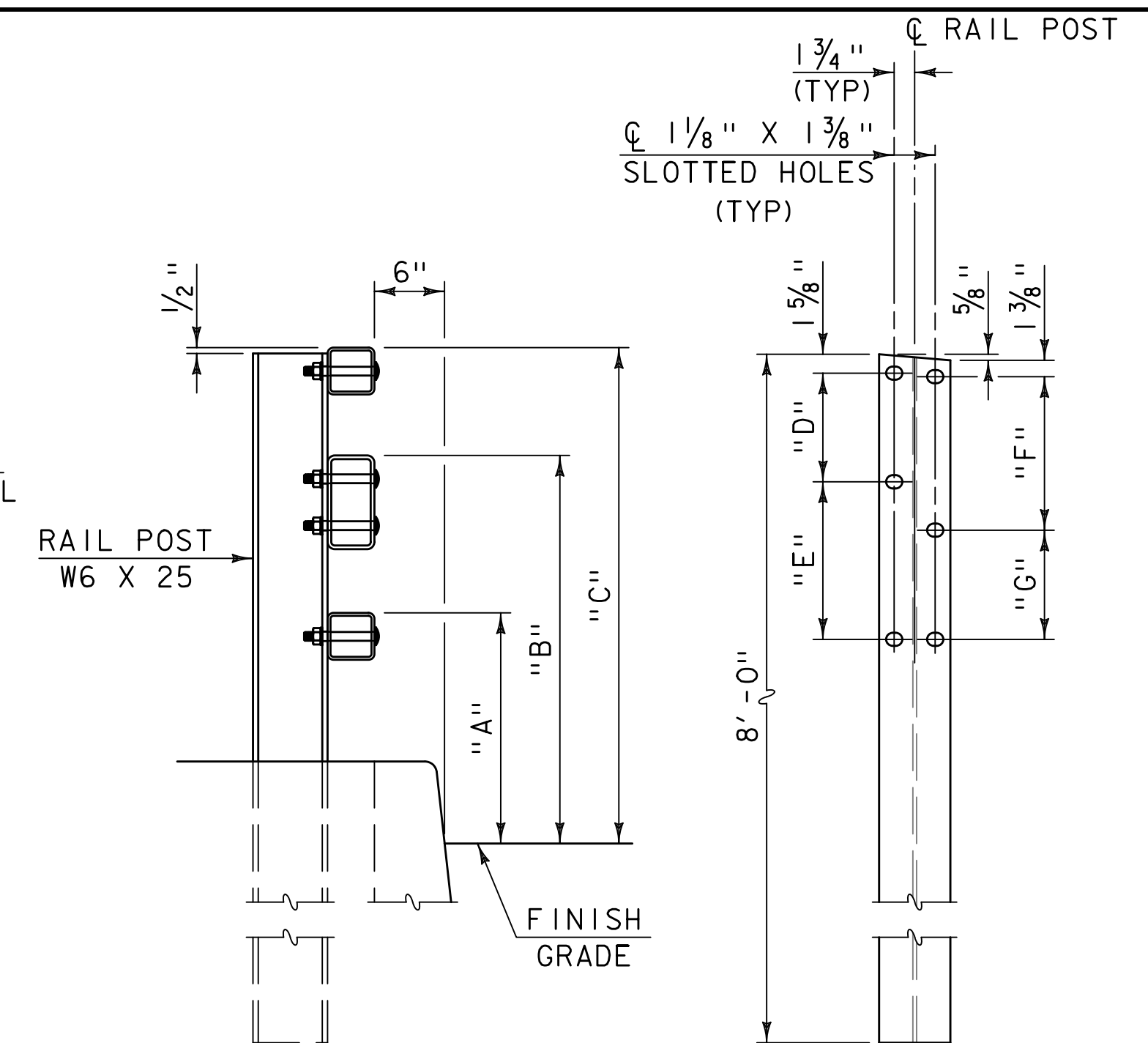
SCALE: 1 1/2" = 1'-0"

NOTE:  
THRIE-BEAM TERMINAL CONNECTOR  
NOT SHOWN FOR CLARITY.



CONNECTION PLATE

SCALE: 1 1/2" = 1'-0"



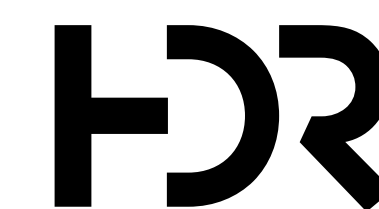
SIDE VIEW

FRONT VIEW

RAIL POST DETAIL

SCALE: 1" = 1'-0"

POST NO.	APPROACH RAIL DIMENSIONS						
	"A"	"B"	"C"	"D"	"E"	"F"	"G"
1	1' - 8"	2' - 9 3/8"	3' - 6 1/16"	9 1/4"	1' - 1 7/16"	1' - 1 1/8"	9 5/16"
2	1' - 8"	2' - 8 7/16"	3' - 3 7/8"	8"	1' - 0 1/2"	11 13/16"	8 3/8"
3	1' - 8"	2' - 7 7/16"	3' - 1 5/8"	6 3/4"	11 1/2"	10 9/16"	7 3/8"
4	1' - 8"	2' - 6 1/2"	2' - 11 3/8"	5 7/16"	10 9/16"	9 5/16"	6 7/16"



PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME: z16j17rail.NETC3-3  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: NETC  
NETC-3 BRIDGE RAIL DETAILS SHEET (3 OF 3) SHEET

PLOT DATE: 3/18/2021  
DRAWN BY: J. PETERSON  
CHECKED BY: S. BOYINGTON  
50 OF 68

EPSC PLAN NARRATIVE

1. PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF EXISTING GRAFTON BRIDGE 20 WITH A TWO-SPAN STEEL GIRDER BRIDGE WITH STEEL PILE SUPPORTED INTEGRAL CONCRETE ABUTMENTS AND AN INTEGRAL CONCRETE PIER SUPPORTED BY A SINGLE DRILLED SHAFT. THE REPLACEMENT BRIDGE IS APPROXIMATELY 212 FEET LONG, SPANNING SAXTONS RIVER, AND IS APPROXIMATELY 20’ OFFLINE OF THE EXISTING BRIDGE, WHICH IS TO BE REMOVED TO BELOW FINISHED GRADE. VERMONT ROUTES 35 & 121 (TOWN HIGHWAY #1) WILL BE REALIGNED TO THE NORTH FOR APPROXIMATELY 1200 FEET, AND THE INTERSECTION WITH FISHER HILL ROAD WILL BE IMPROVED.

IT IS ANTICIPATED THAT CONSTRUCTION WILL LAST ONE CONSTRUCTION SEASON.

2. AMOUNT OF DISTURBANCE & RISK EVALUATION

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 1.57 ACRES. THE MAXIMUM CONCURRENT EARTH DISTURBANCE USED TO SCORE THIS PROJECT IN APPENDIX A RISK ASSESSMENT IS 2.0 ACRES.

THIS PROJECT REQUIRES COVERAGE UNDER GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES FOR LOW RISK PROJECTS.

ANY MODIFICATIONS TO THE PROJECT THAT INCREASE THE RISK TO ENVIRONMENTAL RESOURCES SHALL BE EVALUATED IN ACCORDANCE WITH THE PERMIT REQUIREMENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

3. MAJOR COMPONENTS & SEQUENCING

THE CONTRACTOR SHALL SEQUENCE CONSTRUCTION ACTIVITIES TO MINIMIZE THE EXTENT OF DISTURBED SOILS LEFT OPEN TO EROSION AT ANY GIVEN TIME.

4. SITE DESCRIPTION  
4.1 VEGETATED BUFFERS

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

THIS PROJECT HAS IDENTIFIED VEGETATED BUFFERS AS A MITIGATING RISK FACTOR. THE BUFFER(S) IS LOCATED FROM APPROXIMATELY PROPOSED STATION 102+50 TO 105+50 SOUTH OF THE EXISITNG ROADWAY AND FROM APPROXIMATELY PROPOSED STATION 110+50 TO THE EAST END OF THE PROJECT NORTH OF THE EXISTING ROADWAY AND IS AN UNDISTURBED AREA WITH A NATURALLY VEGETATED GROUND SURFACE.

THIS PROJECT INVOLVES DISTURBANCE WITHIN THE LIMITS OF THE 50’ RIPARIAN BUFFER AS DETAILED ON THE PLANS.

4.2 STREAM CROSSINGS

THIS PROJECT INCLUDES ONE STREAM CROSSING, AS DESCRIBED IN SECTION 5.1 BELOW. WORK WITHIN THE WATER IS BEING AUTHORIZED THROUGH THE VANR DEC RIVER MANAGEMENT PROGRAM AND THE US ARMY CORPS OF ENGINEERS.

4.3 WETLANDS

THE PROJECT INVOLVES APPROXIMATELY 5000 SF OF WETLAND DISTURBANCE AND APPROXIMATELY 30000 SF OF WETLAND BUFFER DISTURBANCE. THIS WORK WITHIN THESE AREAS IS BEING AUTHORIZED THROUGH THE VANR WETLANDS OFFICE AND/OR THE US ARMY CORPS OF ENGINEERS.

4.4 TOPOGRAPHY

THE TOPOGRAPHY OF THE PROJECT AREA IS GENERALLY RIPARIAN, ALONG THE BANKS OF THE SAXTONS RIVER. ADJOINING LANDS ARE LOW FORESTED HILLSIDES AND OPEN AGRICULTURAL FIELDS. VT ROUTE 35/121 (TOWN HIGHWAY #1), FISHER HILL ROAD, AND A PAVED DRIVEWAY ARE WITHIN THE PROJECT SITE. THERE IS A RESIDENCE SOUTHEAST OF THE EXISTING AND PROPOSED BRIDGE, AND A RESIDENCE/FARM APPROXIMATELY 300 FEET UP FISHER HILL ROAD FROM THE INTERSECTION WITH TOWN HIGHWAY #1.

4.5 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF OPEN AGRICULTURAL FIELDS, WOODED HILLSIDES AND RIVERBANKS VEGETATED WITH BRUSH AND TREES, AS WELL AS VEGETATED CLASS II AND CLASS II/CLASS III WETLANDS. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY THE PROJECT. UPON COMPLETION, THE DISTURBED NON-WETLAND VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES AS DESCRIBED IN THE TURF ESTABLISHMENT DETAIL, UNLESS NOTED OTHERWISE. A BOTANICAL SURVEY IS REQUIRED TO LOCATE NORTHEASTERN BULRUSH PLANTS IN WETLAND IMPACT AREAS PRIOR TO THE START OF CONSTRUCTION. DISTURBED WETLAND VEGETATION AND WETLAND BUFFER VEGETATION WILL BE REESTABLISHED TO MATCH EXISTING CONDITION WITH INPUT FROM VANR.

4.6 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE. SOILS ON THE PROJECT SITE INCLUDE: ADAMS LOAMY SAND, 3 TO 8 PERCENT SLOPES, “K FACTOR” = 0.15. ADAMS LOAMY SAND, 8 TO 15 PERCENT SLOPES, “K FACTOR” = 0.15. THE SOIL HAS LOW EROSION POTENTIAL DUE TO GRADUAL SLOPES. 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

4.7 OTHER SENSITIVE RESOURCES

CRITICAL HABITATS: NO; THE RIPARIAN AREA OF SAXTONS RIVER IS A QUALITY WILDLIFE HABITAT. HISTORICAL OR ARCHEOLOGICAL AREAS: TWO ARCHEAOLOGICAL SENSITIVE AREAS HAVE BEEN IDENTIFED IN THE NORTHWEST QUADRANT. PRIME AGRICULTURAL LAND: NO; THE PROJECT AREA IS CONSIDERED STATEWIDE SIGNIFICANT AGRICULTURAL SOILS. THREATENED AND ENDANGERED SPECIES: NO; THE ONLY LISTED SPECIES IN THE AREA IS THE FEDERALLY THREATENED NORTHERN LONG-EARED BAT. NO BAT HABITAT HAS BEEN IDENTIFIED AT THE EXISTING BRIDGE OR WORK AREA. IF TREE CLEARING IS PROPOSED BETWEEN APRIL 15 AND SEPTEMBER 30, A HABITAT ASSESSMENT AND ACOUSTIC MONITORING SURVEY WILL BE REQUIRED TO AVOID IMPACTS TO THIS SPECIES OF BAT. WATER RESOURCE: SAXTONS RIVER; AN UNNAMED TRIBUTARY NORTH OF THE PROJECT LIMITS AT THE EAST END OF THE PROJECT.

5. DRAINAGE  
5.1 RECEIVING WATERS

SAXTONS RIVER IS THE MAIN WATERWAY IN THE PROJECT AREA, RUNNING WEST TO EAST. THE RIVER CHANNEL IS SINUOUS IN THE WORK AREA. THE BRIDGE CROSSING IS JUST DOWNSTREAM OF A NORTHWARD TURN IN THE RIVER AND JUST UPSTREAM OF A TURN BACK TOWARD THE EAST. THERE ARE GRAVEL/COBBLE ISLANDS IN THE STREAMBED AT THE BRIDGE CROSSING THAT SPLIT THE CHANNEL AT LOW FLOWS. INSPECTION PHOTOS INDICATE THAT AT MODERATE FLOWS THE RIVER CHANNEL IS FULL ACROSS ITS ENTIRE WIDTH UPSTREAM OF THE BRIDGE. THE EXISTING CLEAR DISTANCE BETWEEN RIVER BANKS OF 105’ MEETS THE MINIMUM REQUIRED BANKFULL WIDTH OF 62’. THE CHANNEL IS WELL-DEFINED WITH STABLE RIVER BANKS AT THE EXISTING BRIDGE CROSSING AND THE PROPOSED REALIGNED CROSSING. THE STREAM BED CONSISTS OF GRAVEL, COBBLES AND BOULDERS. THE TRIBUTARY AREA AT THE BRIDGE CROSSING IS ESTIMATED AT 35.0 MILES². THERE IS AN UNNAMED TRIBUTARY TO THE SAXTONS RIVER ENTERING THE RIVER AT ITS NORTH BANK NEAR THE EAST END OF THE PROJECT. BOTH OF THESE WATERCOURSES ARE FEDERALLY AND STATE REGULATED.

5.2 DISCHARGE POINTS

DUE TO THE NATURE OF A BRIDGE PROJECT BEING LOCATED DIRECTLY OVER THE RECEIVING WATER, THERE ARE NO DISCRETE DISCHARGE POINTS. ALL WATER FROM THE PROJECT AREA DRAINS TOWARD THE RIVER AND ENTERS THE RECEIVING WATER IN MULTIPLE LOCATIONS IN THE AREAS DIRECTLY ADJACENT TO THE BRIDGE.

5.3 CONVEYANCE/FLOW PATH FROM PROJECT TO WATERS

THE MAJORITY OF THE PROJECT IS NOT CURBED AND RUNOFF DRAINS OVERLAND ACROSS ADJACENT VEGETATED SIDE SLOPES BEFORE REACHING THE SAXTONS RIVER. THERE IS ONE 24” DRAINAGE PIPE BENEATH FISHER HILL ROAD THAT COLLECTS RUNOFF FROM ADJACENT FIELD AND AREA ROADWAYS AND DRAINS TO A STONE-LINED DITCH THAT EXTENDS TO THE ARMORED STREAMBANK.

6. EROSION PREVENTION AND SEDIMENT CONTROL MEASURES

THE MEASURES INCLUDED IN THIS PLAN ARE PROVIDED AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. IT IS EXPECTED THAT THE CONTRACTOR MAY USE THIS PLAN, WITH ADJUSTMENTS AS NECESSARY, BASED ON THEIR SPECIFIC MEANS AND METHODS OF CONSTRUCTION.

APPLYING THESE MEASURES THROUGHOUT CONSTRUCTION IS CRITICAL TO THEIR SUCCESS IN MINIMIZING SEDIMENT TRANSPORT TO THE RECEIVING WATERS. REFER TO THE DETAILS INCLUDED IN THESE PLANS AND THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION’S VERMONT STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL FOR SPECIFIC GUIDANCE.

6.1 IDENTIFY LIMITS OF DISTURBANCE

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

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES. BARRIER FENCE SHALL BE USED INSTEAD OF PROJECT DEMARCATION FENCE WITHIN 100 FEET OF A WATER RESOURCE (STREAM, BROOK, LAKE, POND, WETLAND, ETC). BARRIER FENCE SHALL BE CONSTRUCTED OF SILT FENCE, TYPE II.

6.2 LIMIT CONCURRENT DISTURBANCE

LIMITING THE AMOUNT OF SOIL EXPOSED AT ONE TIME REDUCES THE POTENTIAL EROSION ON SITE. CONCURRENT EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY AND EMPLOYING STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE.

6.3 STABILIZE DISTURBED AREAS  
6.3.1 ACCESS POINTS/ENTRANCE/EXITS

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 ARE ANTICIPATED ON THIS PROJECT AND SHALL BE LOCATED AS SHOWN ON THIS EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

6.3.2 TEMPORARY MEASURES FOR EXPOSED AREAS DURING CONSTRUCTION

ALL AREAS OF EARTH DISTURBANCE MUST HAVE STABILIZATION IN PLACE WITHIN 14 DAYS OF INITIAL DISTURBANCE. AFTER THIS TIME, DISTURBED AREAS MUST BE STABILIZED IN ADVANCE OF ANY RUNOFF PRODUCING EVENT.

THERE ARE WORK AREAS BELOW THE TOP OF BANK/OHW OF THE SAXTONS RIVER THAT MUST BE ACCESSED BY CONSTRUCTION EQUIPMENT. THIS WILL BE ACHIEVED BY THE CONSTRUCTION OF STONE CAUSEWAYS. GEOTEXTILE BELOW STONE FILL SHALL BE INSTALLED BELOW ALL STONE CAUSEWAY AREAS AND WILL BE USED TO WRAP THE TOE OF THE CAUSEWAYS IN THE CHANNEL, TO SEGREGATE THE EXISTING RIVER BED MATERIAL FROM TEMPORARY STONE CAUSEWAY MATERIAL AND TO ALLOW FOR REESTABLISHMENT OF THE EXISTING RIVERBED TO REMAIN AS UNCHANGED AS POSSIBLE AFTER REMOVAL OF TEMPORARY CAUSEWAYS.

SURFACE ROUGHENING OF EXPOSED SLOPES, SEEDING OF TEMPORARY SLOPES AND STOCKPILES, AND STANDARD MULCHING PRACTICES DESCRIBED IN SPECIFICATION SECTION 653.07 SHALL BE UTILIZED TO TEMPORARILY STABILIZE DISTURBED AREAS.

6.3.3 PERMANENT STABILIZATION 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, ROLLED EROSION CONTROL PRODUCT, TYPE I SHALL BE USED INSTEAD OF MULCH.

STONE FILL TYPE IV SHALL BE USED AS SHOWN ON THE PLANS TO STABILIZE THE RIVER BANKS ADJACENT TO CONSTRUCTION THAT ARE STEEPER THAN 1:2 OR THAT ARE BETWEEN THE NEW ABUTMENTS AND THE RIVER CHANNEL. IN ADDITION, STONE FILL TYPE IV SHALL BE INSTALLED TO FILL GAPS IN THE STREAMBED OPENED UP DURING REMOVAL OF EXISTING PIER STRUCTURES.

PROJECT NAME:	GRAFTON
PROJECT NUMBER:	BF 0125(6)
FILE NAME: I6J177/zl6J177ero.narrative.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: P. LEFEBVRE
DESIGNED BY: S. BOYINGTON	CHECKED BY: N. HENKE
EPSC NARRATIVE SHEET 1 OF 2	SHEET 51 OF 68

EPSC PLAN NARRATIVE (CONT.)

6.4 DIVERT UPLAND RUNOFF

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

THE PROJECT AREA IS RELATIVELY FLAT; NO SIGNIFICANT RUNOFF FROOM THE ROADWAY ON EITHER APPROACH IS EXPECTED TO TRAVEL TOWARD THE PROJECT SITE.

DIVERSIONARY MEASURES SHALL BE USED TO DIVERT THE FLOW OF THE SAXTONS RIVER AROUND ACTIVE WORK AREAS IN THE CHANNEL DURING PHASED CONSTRUCTION OF THE REPLACEMENT BRIDGE AND REMOVAL OF THE EXISTING BRIDGE. THE WATER DIVERSION STRUCTURES WILL DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE WORK IS PERFORMED WITHIN THE CHANNEL LIMITS.

6.5 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED ON THE DOWNHILL SIDE OF CONSTRUCTION ACTIVITIES, PRIOR TO ANY UP-SLOPE WORK.

SILT FENCE WILL BE INSTALLED ALONG THE CONTOURS AND AS PROPOSED ON THE EPSC PLAN. WOVEN WIRE REINFORCED SILT FENCE SHALL BE USED INSTEAD OF SILT FENCE WITHIN 100 FEET UPSLOPE OF RECEIVING WATERS.

6.6 SLOW DOWN CHANNELIZED RUNOFF

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

TEMPORARY STONE CHECK DAMS MAY BE REQUIRED AT TEMPORARY ACCESS ROADS CONSTRUCTED TO GAIN ACCESS TO THE RIVER CHANNEL FOR EQUIPMENT.

7. CONSTRUCT PERMANENT CONTROLS

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

PERMANENT STORMWATER TREATMENT DEVICES ARE NOT ANTICIPATED TO BE NEEDED AS DESIGNED.

8. DEWATERING

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. DEWATERED STORMWATER OR GROUNDWATER MUST BE FILTERED AND ROUTED IN A MANNER THAT DOES NOT RESULT IN VISIBLY TURBID DISCHARGES TO WATERS.

CONSTRUCTION ACTIVITIES THAT INVOLVE DISCHARGE OF WATER DUE TO DEWATERING INCLUDE CONSTRUCTION OF ABUTMENT 1 WITHIN THE ABUTMENT 1 COFFERDAM, CONSTRUCTION OF ABUTMENT 2 WITHIN THE ABUTMENT 2 COFFERDAM AND CONSTRUCTION OF THE DRILLED SHAFT AT THE PIER. DISCHARGES FROM DEWATERING DURING THESE ACTIVITIES WILL BE TREATED USING FILTER BAGS.

THE FILTER BAG DETAIL AND PAY ITEM HAVE BEEN INCLUDED AS A POTENTIAL TREATMENT MEASURE FOR THIS PURPOSE, HOWEVER THE SPECIFIC MEANS FOR TREATMENT OF DISCHARGE SHALL BE PROVIDED BY THE CONTRACTOR. ALL COSTS FOR TREATMENT OF DISCHARGE SHALL BE PAID FOR UNDER CONTRACT ITEM 653.45.

9. OFF-SITE AREAS

OFF-SITE WASTE AND BORROW AREAS HAVE NOT BEEN IDENTIFIED FOR THIS PROJECT. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PERMIT, AS NECESSARY, ANY OFF-SITE AREAS THAT ARE NEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 105.25 - 105.28. ALL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES NECESSARY FOR WASTE, BORROW, AND STAGING AREAS OUTSIDE THE PROJECT LIMITS SHALL BE PAID FOR PER 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

VEHICLE AND EQUIPMENT STORAGE AREAS OR AREAS ADJACENT TO CONSTRUCTION TRAILERS OR OTHER HIGH TRAFFIC AREAS SHALL BE COVERED WITH GEOTEXTILE FABRIC AND 12" OF GRAVEL. FOLLOWING COMPLETION OF CONSTRUCTION, ALL NON-NATIVE MATERIALS SHALL BE REMOVED FROM THE STAGING AREA. COMPACTED, RUTTED, OR OTHERWISE DISTURBED SOILS SHALL BE TILLED, RAKED, SEEDED AND MULCHED.

ERODIBLE MATERIALS STOCKPILED WITHIN THE MATERIAL STORAGE AREAS SHALL BE ISOLATED WITH SILT FENCE OR OTHER ACCEPTABLE SEDIMENT BARRIER. SOIL STOCKPILED ON THE SITE SHALL BE SEEDED AND MULCHED.

10. WINTER CONSTRUCTION

CONSTRUCTION ACTIVITIES MAY CONTINUE INTO THE WINTER CONSTRUCTION SEASON, DEPENDING ON ACTUAL FIELD AND WEATHER CONDITIONS. IF ACTIVITIES ARE ON-GOING BETWEEN OCTOBER 15 AND APRIL 15, THE CONTRACTOR SHALL FOLLOW REQUIREMENTS FOR WINTER CONSTRUCTION, AS DEFINED IN SPECIFIC PERMIT CONDITIONS AND AS FOLLOWS:

- ENLARGED ACCESS POINTS, STABILIZED TO PROVIDE FOR SNOW STOCKPILING.
- LIMITS OF DISTURBANCE MOVED OR REPLACED TO REFLECT BOUNDARY OF WINTER WORK.
- DEVELOPMENT OF A SNOW MANAGEMENT PLAN THAT INCLUDES:
  - ADEQUATE STORAGE AND CONTROL OF MELT-WATER
  - STORAGE OF CLEARED SNOW TO BE PLACED DOWN SLOPE OF DISTURBED AREAS AND OUT OF STORMWATER TREATMENT STRUCTURES
- AREAS OF DISTURBANCE WITHIN 100 FT OF A WATERBODY MUST HAVE REINFORCED (WOVEN WIRE) SILT FENCE INSTALLED ACROSS THE SLOPE, DOWNGRADIENT OF THE EARTH DISTURBANCE. ALTERNATIVELY, REGULAR, NON-WOVEN WIRE SILT FENCE MAY BE USED IF COMBINED WITH EROSION CONTROL BERM, EROSION LOG, OR STRAW WATTLE.
- DRAINAGE STRUCTURES MUST BE KEPT OPEN AND FREE OF SNOW AND ICEDAMS.
- SILT FENCE AND OTHER PRACTICES REQUIRING EARTH DISTURBANCE MUST BE INSTALLED AHEAD OF FROZEN GROUND.
- MULCH TO BE APPLIED AT A MINIMUM OF 2 INCHES DEPTH WITH 80-90% COVERAGE.
- AREAS OF DISTURBED SOILS MUST BE STABILIZED PRIOR TO ANY RUNOFF-PRODUCING EVENT, WITH THE FOLLOWING EXCEPTION:
  - STABILIZATION IS NOT REQUIRED IF THE WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION WITH NO OUTLET AND A DEPTH OF 2 FT OR GREATER (OPEN UTILITY TRENCHES), PROVIDED THAT ANY DEWATERING, IF NECESSARY, IS CONDUCTED AS REQUIRED.
- PRIOR TO STABILIZATION, SNOW OR ICE MUST BE REMOVED TO LESS THAN 1" THICKNESS.
- USE STONE TO STABILIZE AREAS WHERE CONSTRUCTION VEHICLE TRAFFIC IS ANTICIPATED.

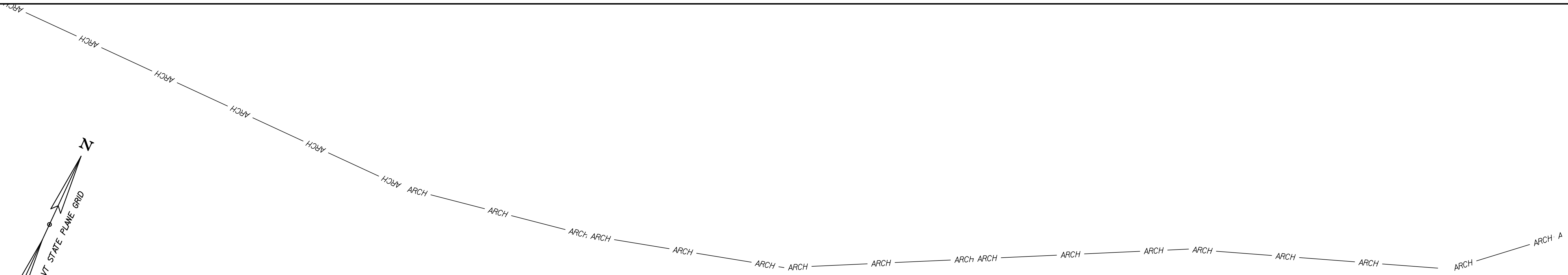
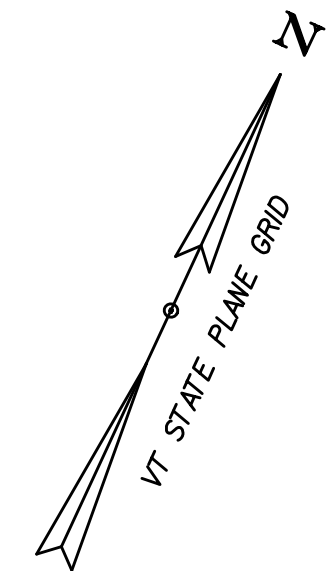
11. INSPECTION & MAINTENANCE

INSPECTION AND MONITORING OF THE PROJECT'S EPSC MEASURES SHALL BE CONDUCTED IN ACCORDANCE WITH STANDARD SPECIFICATION 653.04 MONITORING EROSION PREVENTION AND SEDIMENT CONTROL PLAN, ALONG WITH PERMIT SPECIFIC INSPECTION REQUIREMENTS.

THE CONTRACTOR SHALL PROVIDE A COPY OF THEIR INSPECTION FORM AS PART OF THEIR EPSC PLAN.

ALL EPSC 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.

PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/z16J177ero.narrative.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: P. LEFEBVRE
DESIGNED BY: S. BOYINGTON	CHECKED BY: N. HENKE
EPSC NARRATIVE SHEET 2 OF 2	SHEET 52 OF 68



SOIL INFORMATION:  
ADAMS LOAMY SAND  
K = 0.15, LOW ERODIBILITY  
HYDROLOGIC SOIL GROUP A

50' WETLAND BUFFER ZONE (TYP)

CLASS II WETLAND

#34/7

#42

50' RIPARIAN  
BUFFER

← TO GRAFTON

FAS 125 (VT ROUTE 121/35)

GUY  
WIRE

COMB  
34/5/43  
TIE = 80.87

EXISTING R.O.W.

M.OAK  
TIE = 51.52

EXISTING R.O.W.

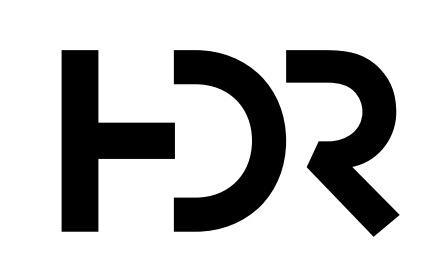
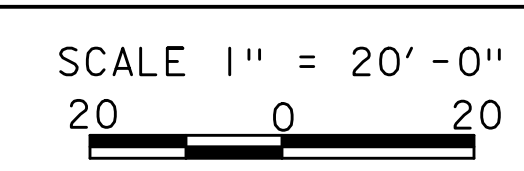
MATCHLINE SEE NEXT SHEET

NOTE  
SEE CONVENTIONAL SYMBOLGY LEGEND SHEET  
FOR EPSC LAYOUT PLAN SYMBOLGY

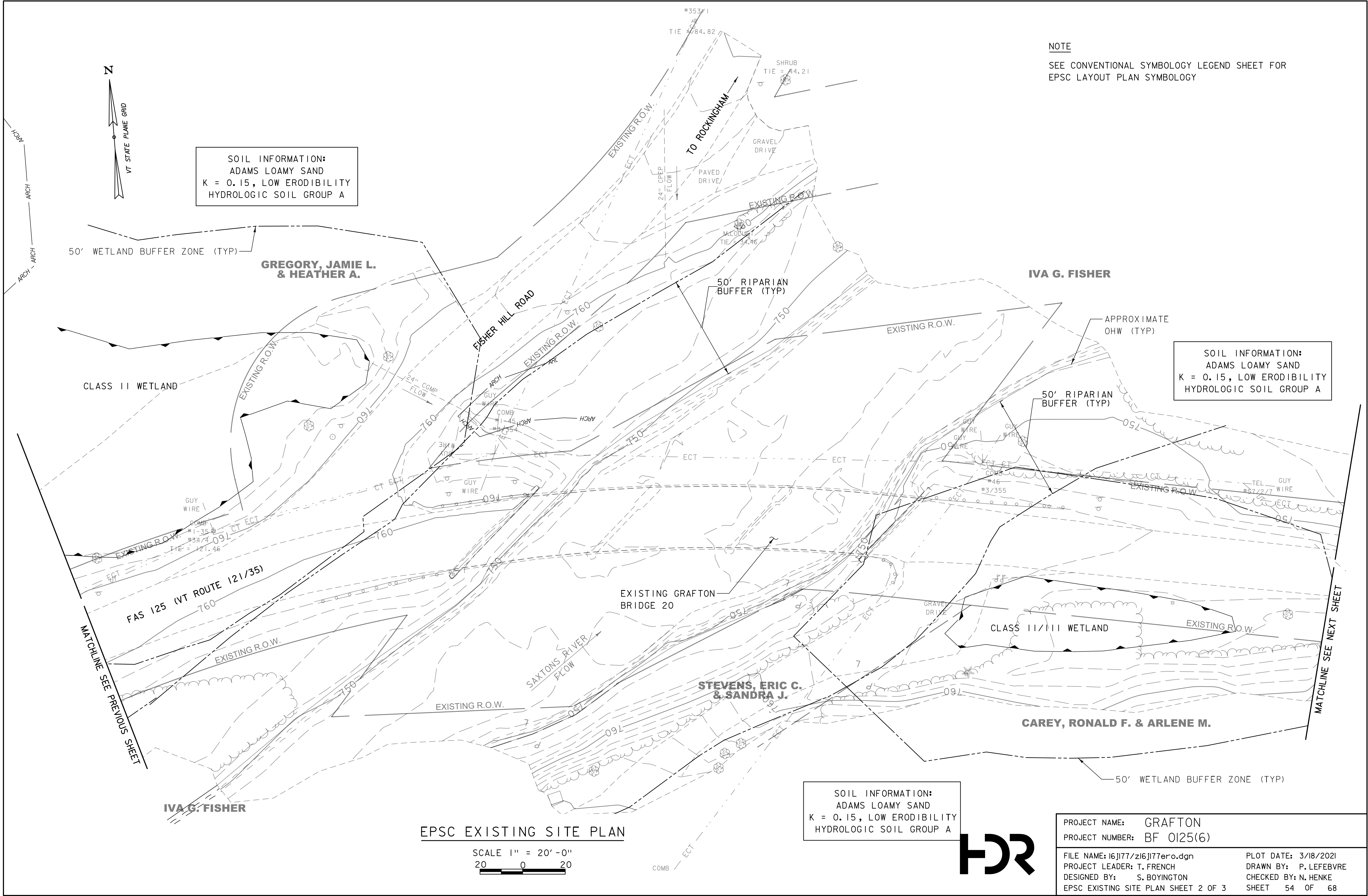
APPROXIMATE  
OHW (TYP)

SOIL INFORMATION:  
ADAMS LOAMY SAND  
K = 0.15, LOW ERODIBILITY  
HYDROLOGIC SOIL GROUP A

# EPSC EXISTING SITE PLAN



PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/z16J177ero.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: P. LEFEBVRE
DESIGNED BY: S. BOYINGTON	CHECKED BY: N. HENKE
EPSC EXISTING SITE PLAN 1 OF 3	SHEET 53 OF 68

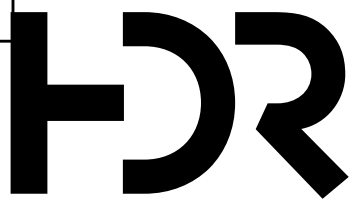


NOTE  
SEE CONVENTIONAL SYMBOLOGY LEGEND SHEET FOR  
EPSC LAYOUT PLAN SYMBOLOGY

SOIL INFORMATION:  
ADAMS LOAMY SAND  
K = 0.15, LOW ERODIBILITY  
HYDROLOGIC SOIL GROUP A

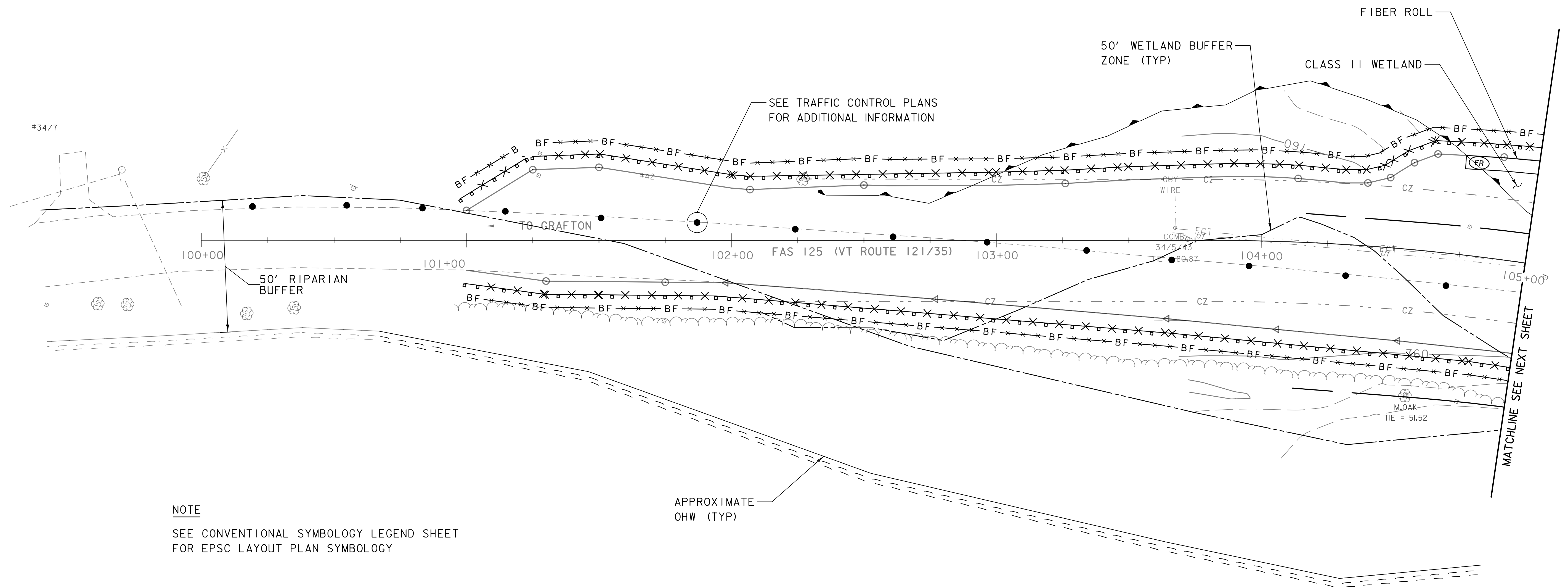
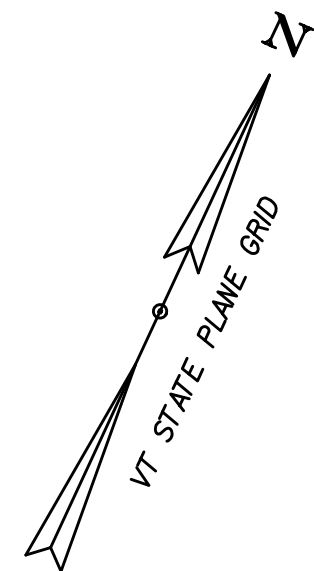
SOIL INFORMATION:  
ADAMS LOAMY SAND  
K = 0.15, LOW ERODIBILITY  
HYDROLOGIC SOIL GROUP A

SOIL INFORMATION:  
ADAMS LOAMY SAND  
K = 0.15, LOW ERODIBILITY  
HYDROLOGIC SOIL GROUP A



PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/z16J177ero.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: P. LEFEBVRE
DESIGNED BY: S. BOYINGTON	CHECKED BY: N. HENKE
EPSC EXISTING SITE PLAN SHEET 2 OF 3	SHEET 54 OF 68

PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/zl6J177ero.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: P. LEFEBVRE
DESIGNED BY: S. BOYINGTON	CHECKED BY: N. HENKE
EPSC EXISTING SITE PLAN SHEET 3 OF 3	SHEET 55 OF 68

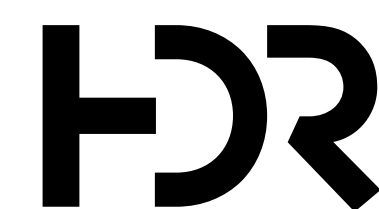


**NOTE**

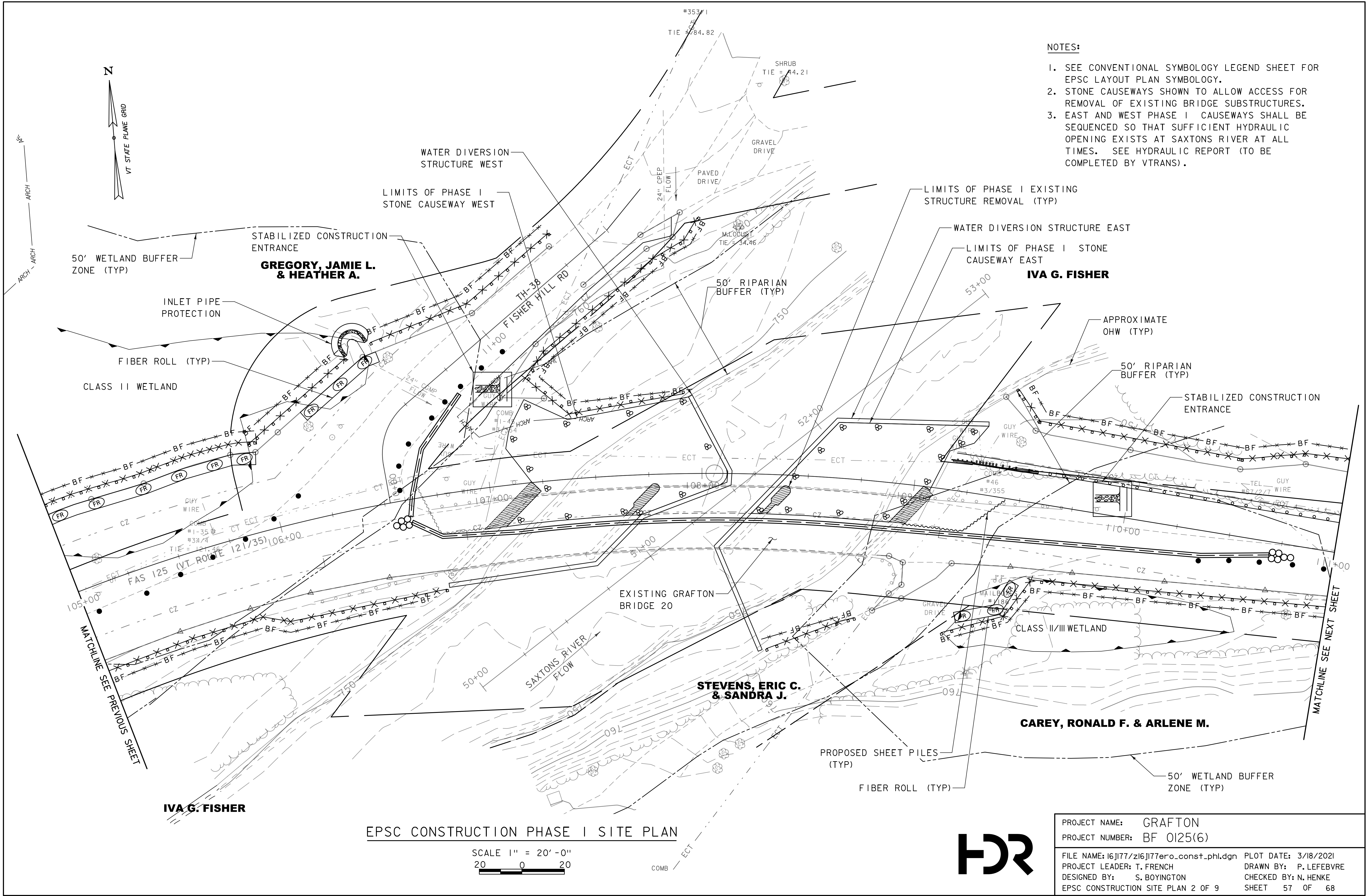
SEE CONVENTIONAL SYMBOLOGY LEGEND SHEET  
FOR EPSC LAYOUT PLAN SYMBOLOGY

**EPSC CONSTRUCTION PHASE I SITE PLAN**

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



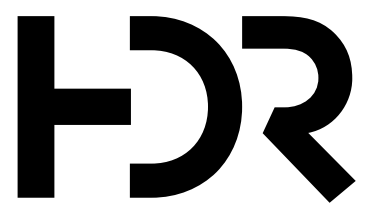
PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/z16J177ero.const_ph1.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: P. LEFEBVRE
DESIGNED BY: S. BOYINGTON	CHECKED BY: N. HENKE
EPSC CONSTRUCTION SITE PLAN 1 OF 9	SHEET 56 OF 68



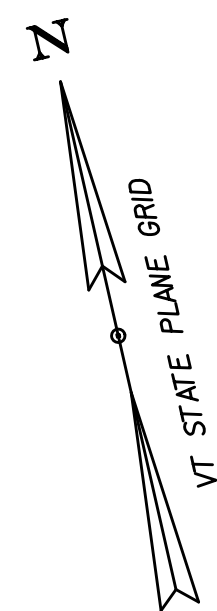
- NOTES:
1. SEE CONVENTIONAL SYMBOLLOGY LEGEND SHEET FOR EPSC LAYOUT PLAN SYMBOLLOGY.
  2. STONE CAUSEWAYS SHOWN TO ALLOW ACCESS FOR REMOVAL OF EXISTING BRIDGE SUBSTRUCTURES.
  3. EAST AND WEST PHASE I CAUSEWAYS SHALL BE SEQUENCED SO THAT SUFFICIENT HYDRAULIC OPENING EXISTS AT SAXTONS RIVER AT ALL TIMES. SEE HYDRAULIC REPORT (TO BE COMPLETED BY VTRANS).

EPSC CONSTRUCTION PHASE I SITE PLAN

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

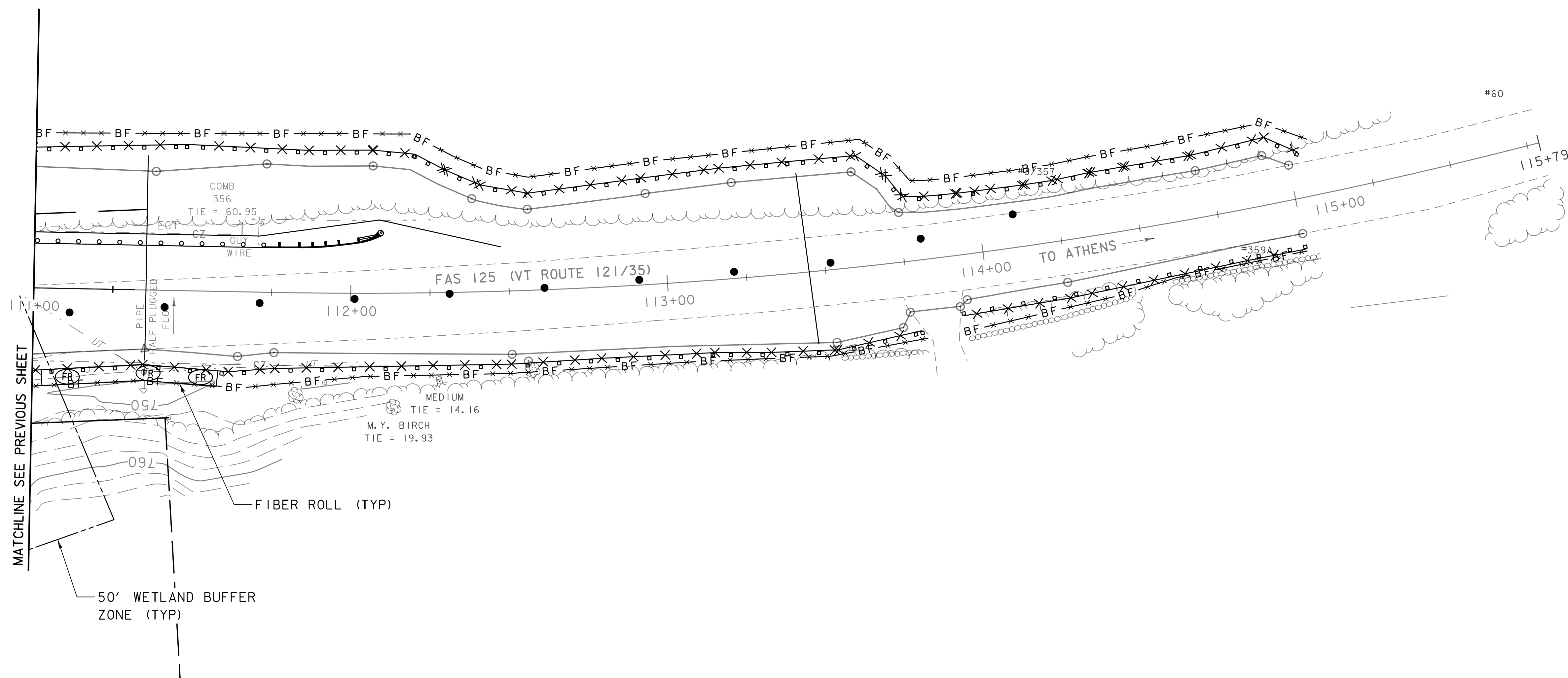


PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/z16J177ero_const_ph1.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: P. LEFEBVRE
DESIGNED BY: S. BOYINGTON	CHECKED BY: N. HENKE
EPSC CONSTRUCTION SITE PLAN 2 OF 9	SHEET 57 OF 68



NOTE

SEE CONVENTIONAL SYMBOLGY LEGEND SHEET  
FOR EPSC LAYOUT PLAN SYMBOLGY

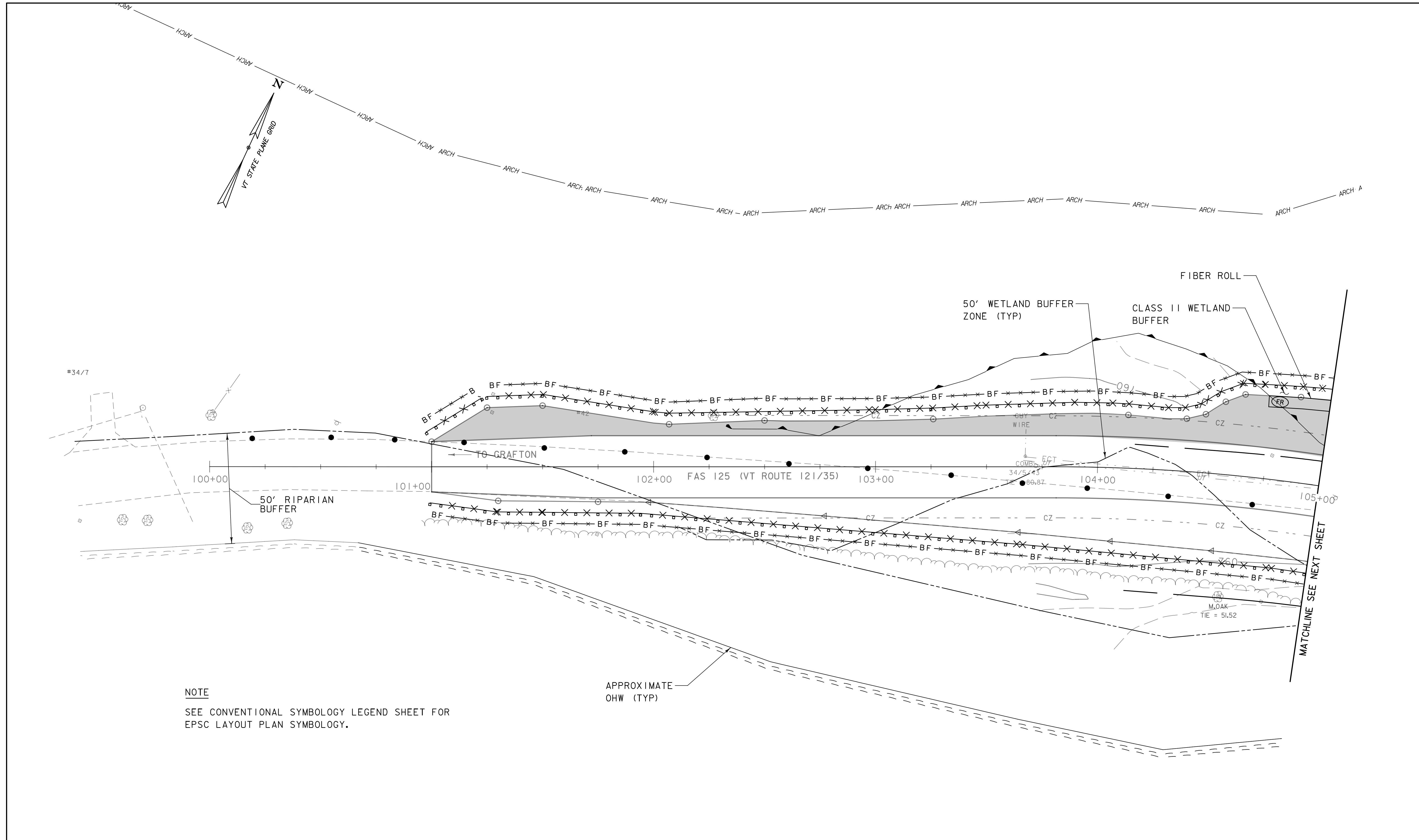


EPSC CONSTRUCTION PHASE I SITE PLAN

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



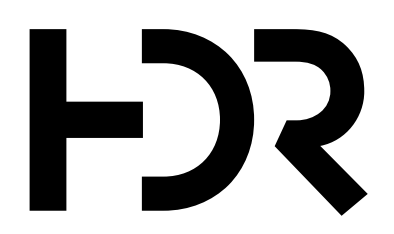
PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/z16J177ero_const_ph1.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: P. LEFEBVRE
DESIGNED BY: S. BOYINGTON	CHECKED BY: N. HENKE
EPSC CONSTRUCTION PLAN 3 OF 9	SHEET 58 OF 68



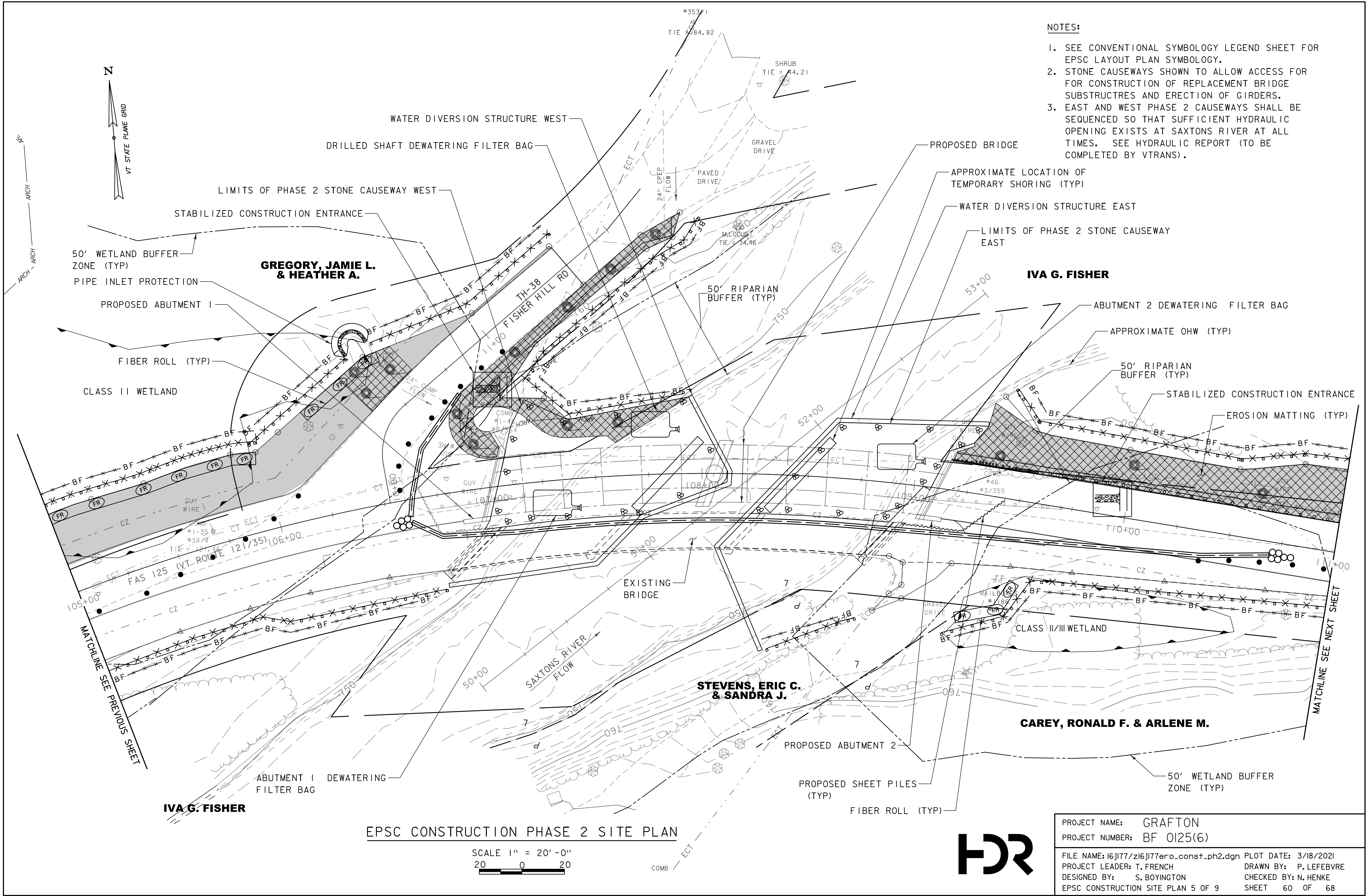
NOTE  
SEE CONVENTIONAL SYMBOLOGY LEGEND SHEET FOR  
EPSC LAYOUT PLAN SYMBOLOGY.

EPSC CONSTRUCTION PHASE 2 SITE PLAN

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

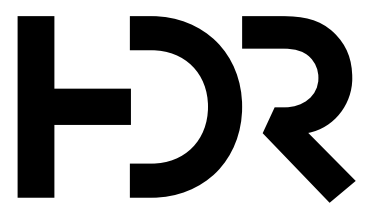


PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/z16J177ero_const_ph2.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: P. LEFEBVRE
DESIGNED BY: S. BOYINGTON	CHECKED BY: N. HENKE
EPSC CONSTRUCTION SITE PLAN 4 OF 9	SHEET 59 OF 68

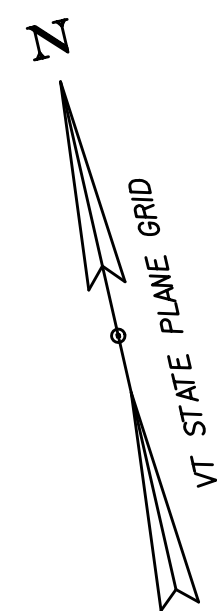


EPSC CONSTRUCTION PHASE 2 SITE PLAN

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

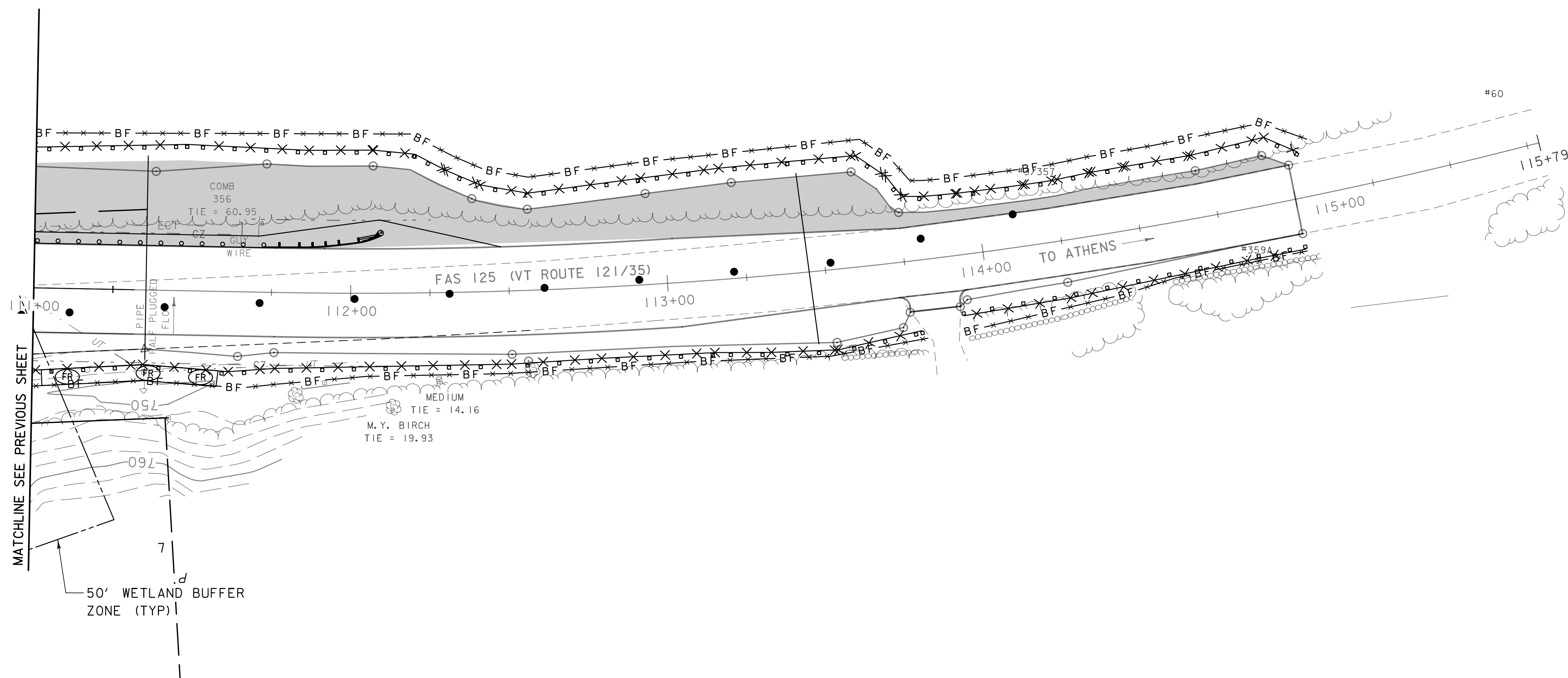


PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/z16J177ero_const_ph2.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: P. LEFEBVRE
DESIGNED BY: S. BOYINGTON	CHECKED BY: N. HENKE
EPSC CONSTRUCTION SITE PLAN 5 OF 9	SHEET 60 OF 68



NOTE

SEE CONVENTIONAL SYMBOLGY LEGEND SHEET FOR  
EPSC LAYOUT PLAN SYMBOLGY.

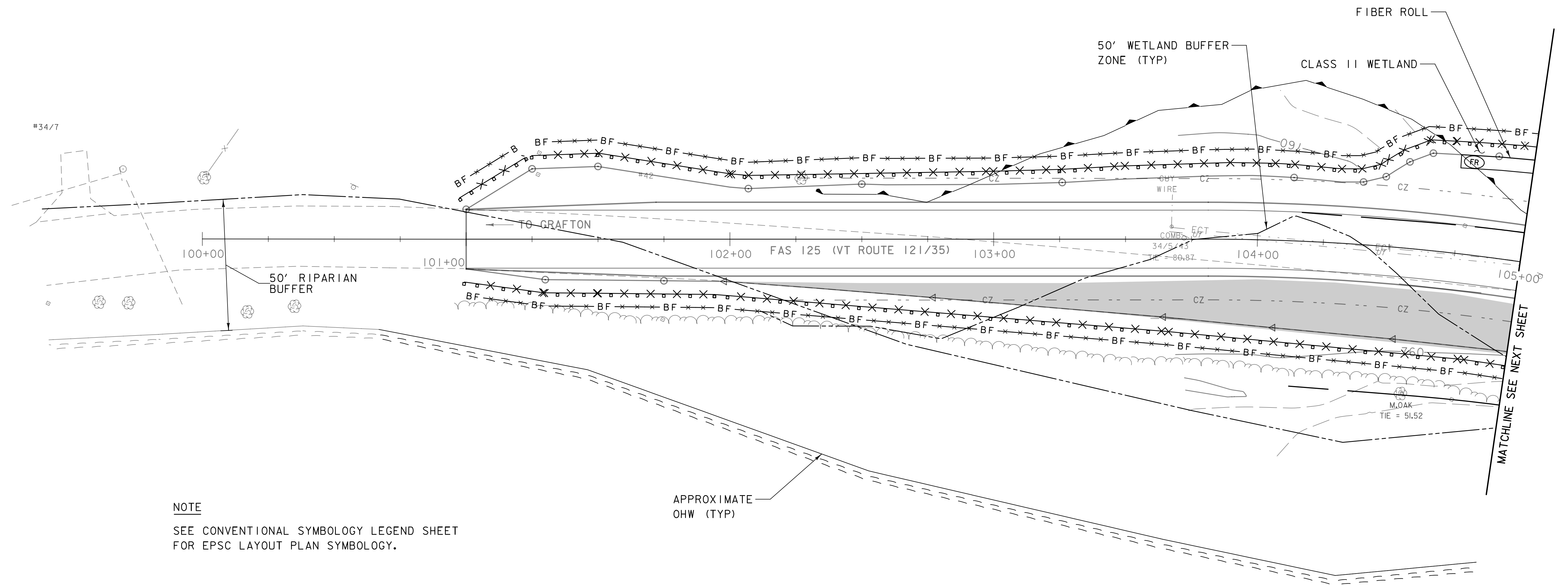
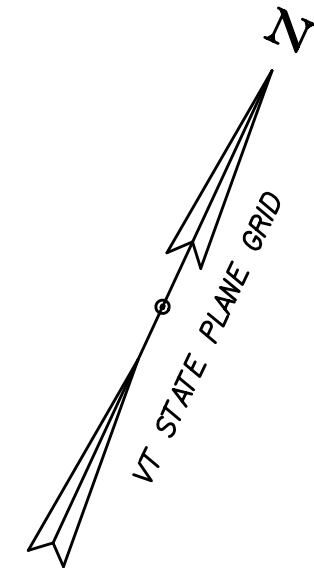


EPSC CONSTRUCTION PHASE 2 SITE PLAN

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



PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/z16J177ero_const_ph2.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: P. LEFEBVRE
DESIGNED BY: S. BOYINGTON	CHECKED BY: N. HENKE
EPSC CONSTRUCTION PLAN 6 OF 9	SHEET 61 OF 68



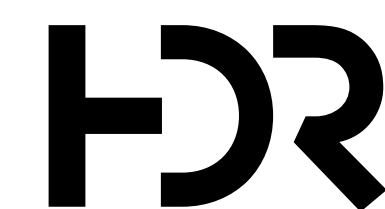
**NOTE**

SEE CONVENTIONAL SYMBOLOGY LEGEND SHEET  
FOR EPSC LAYOUT PLAN SYMBOLOGY.

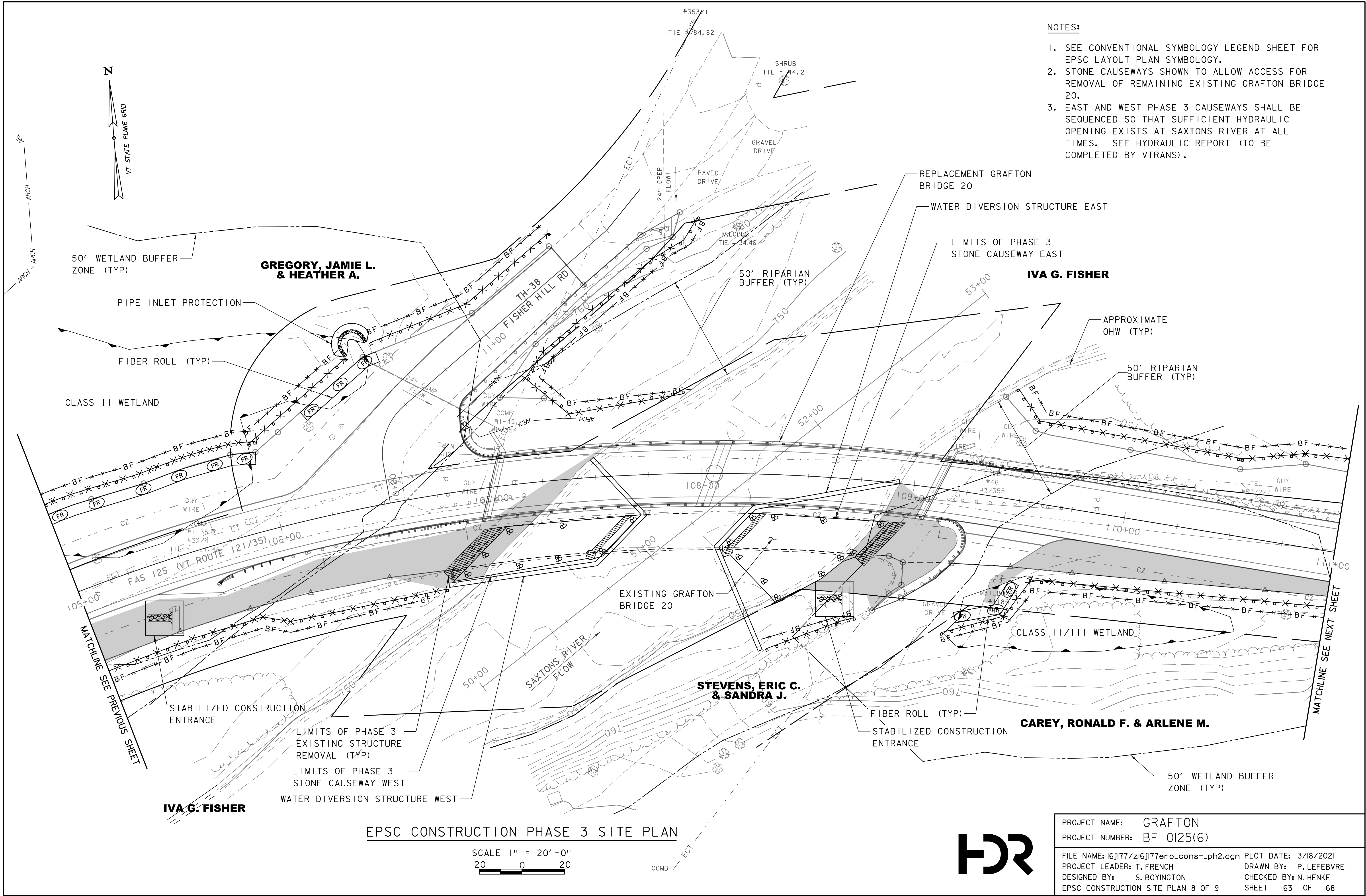
APPROXIMATE  
OHW (TYP)

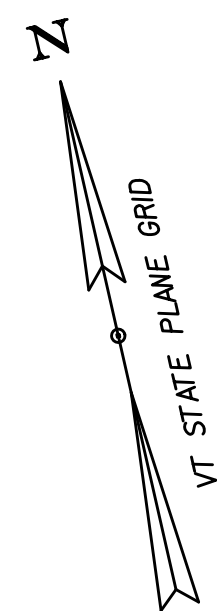
**EPSC CONSTRUCTION PHASE 3 SITE PLAN**

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



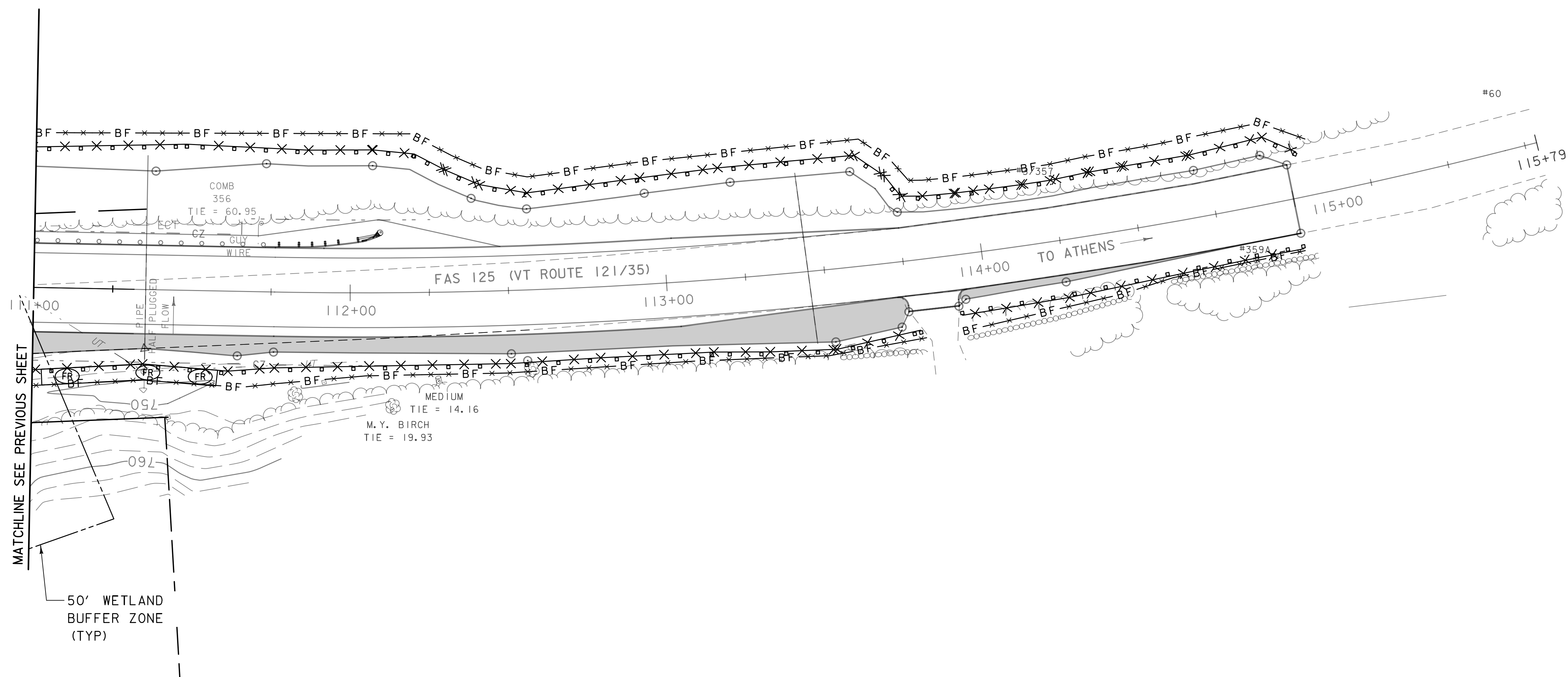
PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/z16J177ero_phase3.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: P. LEFEBVRE
DESIGNED BY: S. BOYINGTON	CHECKED BY: N. HENKE
EPSC CONSTRUCTION SITE PLAN 7 OF 9	SHEET 62 OF 68





NOTE

SEE CONVENTIONAL SYMBOLGY LEGEND SHEET FOR  
EPSC LAYOUT PLAN SYMBOLGY.



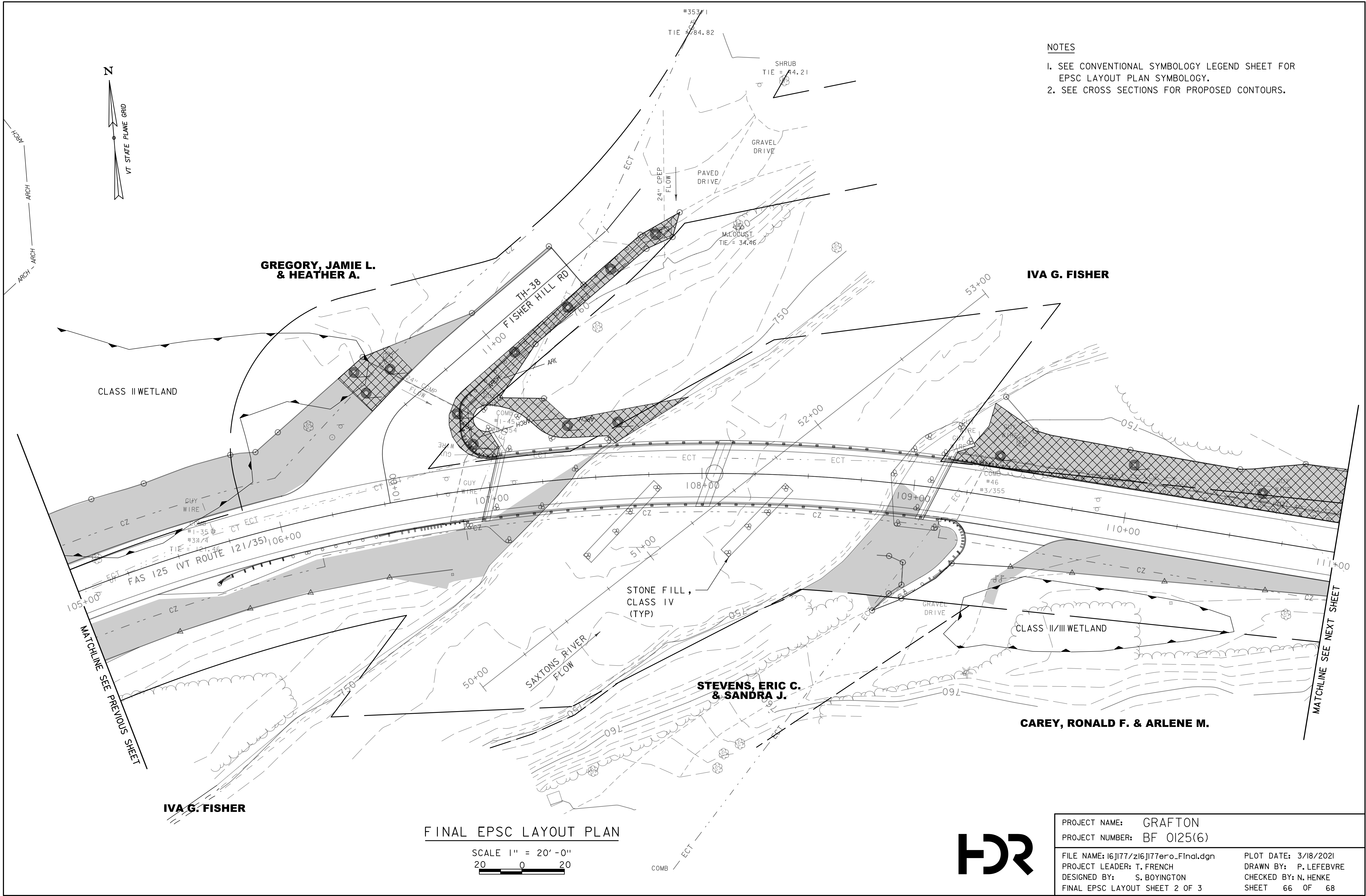
EPSC CONSTRUCTION PHASE 3 SITE PLAN

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



PROJECT NAME: GRAFTON	
PROJECT NUMBER: BF 0125(6)	
FILE NAME: I6J177/z16J177ero_const_ph2.dgn	PLOT DATE: 3/18/2021
PROJECT LEADER: T. FRENCH	DRAWN BY: P. LEFEBVRE
DESIGNED BY: S. BOYINGTON	CHECKED BY: N. HENKE
EPSC CONSTRUCTION PLAN 9 OF 9	SHEET 64 OF 68



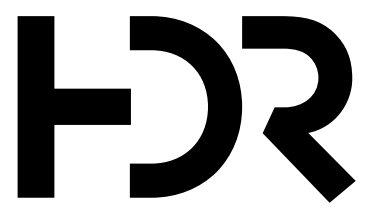


NOTES

1. SEE CONVENTIONAL SYMBOLOGY LEGEND SHEET FOR EPSC LAYOUT PLAN SYMBOLOGY.
2. SEE CROSS SECTIONS FOR PROPOSED CONTOURS.

FINAL EPSC LAYOUT PLAN

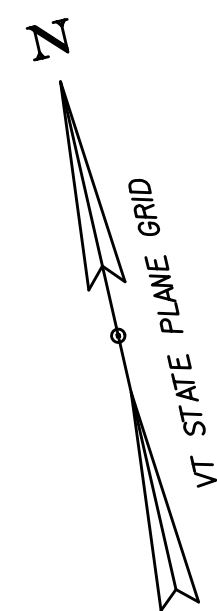
SCALE 1" = 20' - 0"  
20 0 20



PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

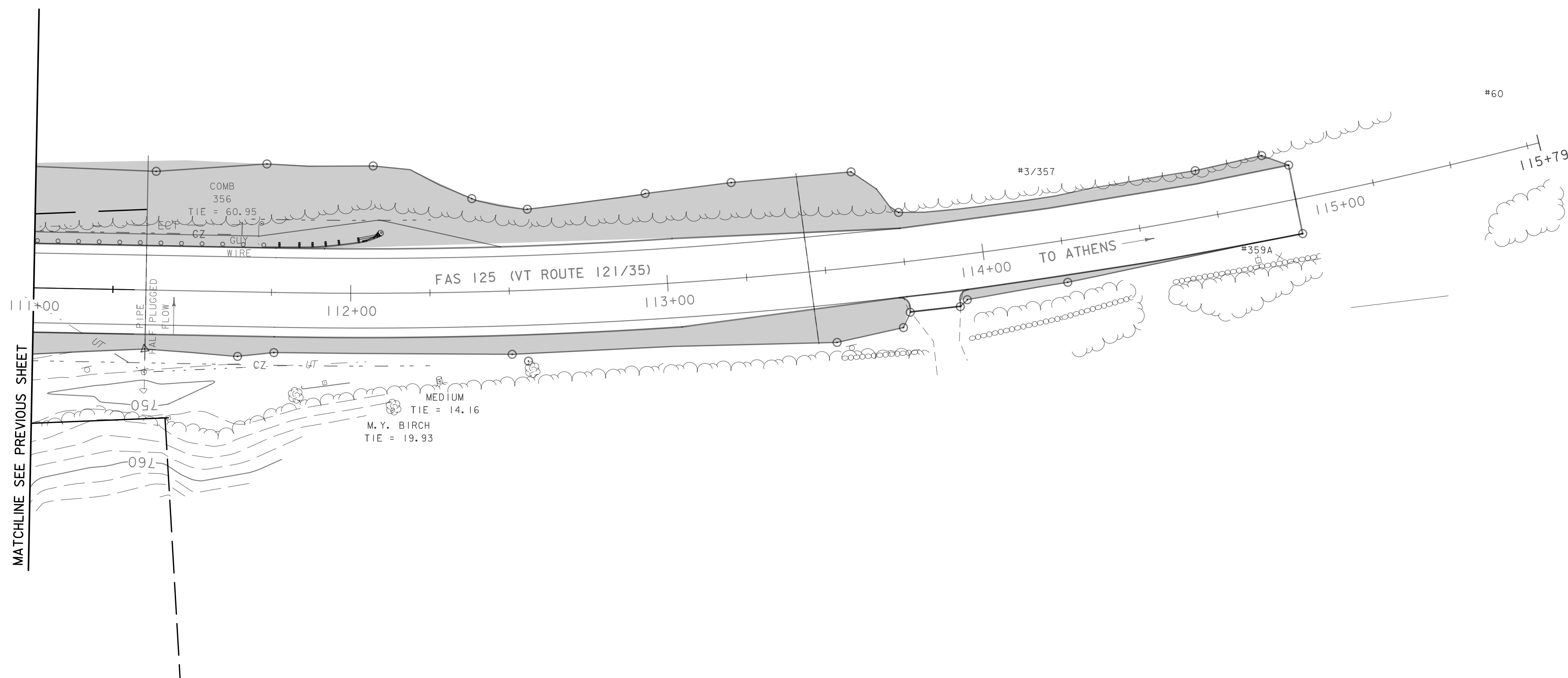
FILE NAME: I6J177/z16J177ero_Final.dgn  
PROJECT LEADER: T. FRENCH  
DESIGNED BY: S. BOYINGTON  
FINAL EPSC LAYOUT SHEET 2 OF 3

PLOT DATE: 3/18/2021  
DRAWN BY: P. LEFEBVRE  
CHECKED BY: N. HENKE  
SHEET 66 OF 68



NOTES

1. SEE CONVENTIONAL SYMBOLLOGY LEGEND SHEET FOR EPSC LAYOUT PLAN SYMBOLLOGY.
2. SEE CROSS SECTIONS FOR PROPOSED CONTOURS.



FINAL EPSC LAYOUT PLAN

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



PROJECT NAME:	GRAFTON	PLOT DATE:	3/18/2021
PROJECT NUMBER:	BF 0125(6)	DRAWN BY:	P. LEFEBVRE
FILE NAME:	I6J177/z16J177ero_Final.dgn	CHECKED BY:	N. HENKE
PROJECT LEADER:	T. FRENCH	SHEET	67 OF 68
DESIGNED BY:	S. BOYINGTON		
FINAL EPSC LAYOUT SHEET	3 OF 3		

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

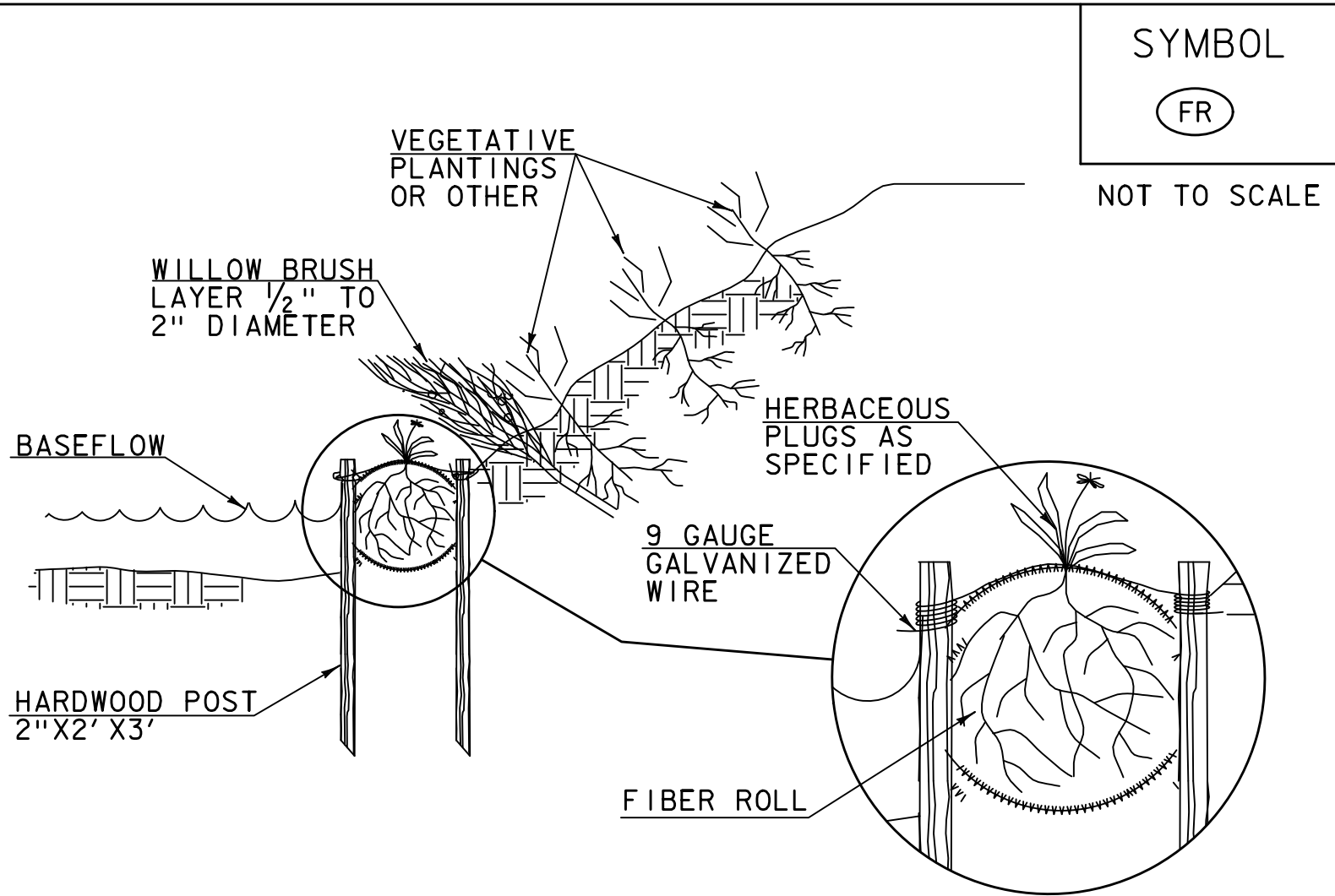
VAOT RURAL AREA MIX					
LBS/AC			NAME	LATIN NAME	GERM
WEIGHT	BROADCAST	HYDROSEED			
37.5%	22.5	45	CREEPING RED FESCUE	FESTUCA RUBRA VAR. RUBRA	85%
37.5%	22.5	45	TALL FESCUE	FESTUCA ARUNDINACEA	90%
5.0%	3	6	RED TOP	AGROSTIS GIGANTEA	90%
15.0%	9	18	WHITE FIELD CLOVER	TRIFOLIUM REPENS	85%
5.0%	3	6	ANNUAL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

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

#### CONSTRUCTION GUIDANCE

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

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES	TURF ESTABLISHMENT
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR SEED (PAY ITEM 651.15)	REVISIONS
	JANUARY 12, 2015 WHF



#### CONSTRUCTION SPECIFICATIONS

1. EXCAVATE A SHALLOW TRENCH SLIGHTLY BELOW BASEFLOW OR A 4" TRENCH ON SLOPE CONTOURS
2. PLACE THE ROLL IN THE TRENCH AND ANCHOR WITH 2"X2" POSTS PLACED ON BOTH SIDES OF THE ROLL AND SPACED Laterally ON 2' TO 4' CENTERS. TRIM THE TOP OF THE POSTS EVEN WITH THE EDGE OF THE ROLL, IF NECESSARY.
3. NOTCH THE POSTS AND TIE TOGETHER, ACROSS THE ROLL, WITH 9 GAUGE GALVANIZED WIRE OR 1/8" DIAMETER BRAIDED NYLON ROPE.
4. PLACE SOIL EXCAVATED FROM THE TRENCH BEHIND THE ROLL AND HAND TAMP. PLANT WITH SUITABLE HERBACEOUS OR WOODY VEGETATION AS SPECIFIED ELSEWHERE IN THE CONTRACT DOCUMENTS. VEGETATION SHALL BE PLACED IMMEDIATELY ADJACENT TO THE ROLL TO PROMOTE ROOT GROWTH INTO THE FIBER. HERBACEOUS VEGETATION, IF SPECIFIED, SHALL BE PLANTED INTO THE FIBER ROLL.

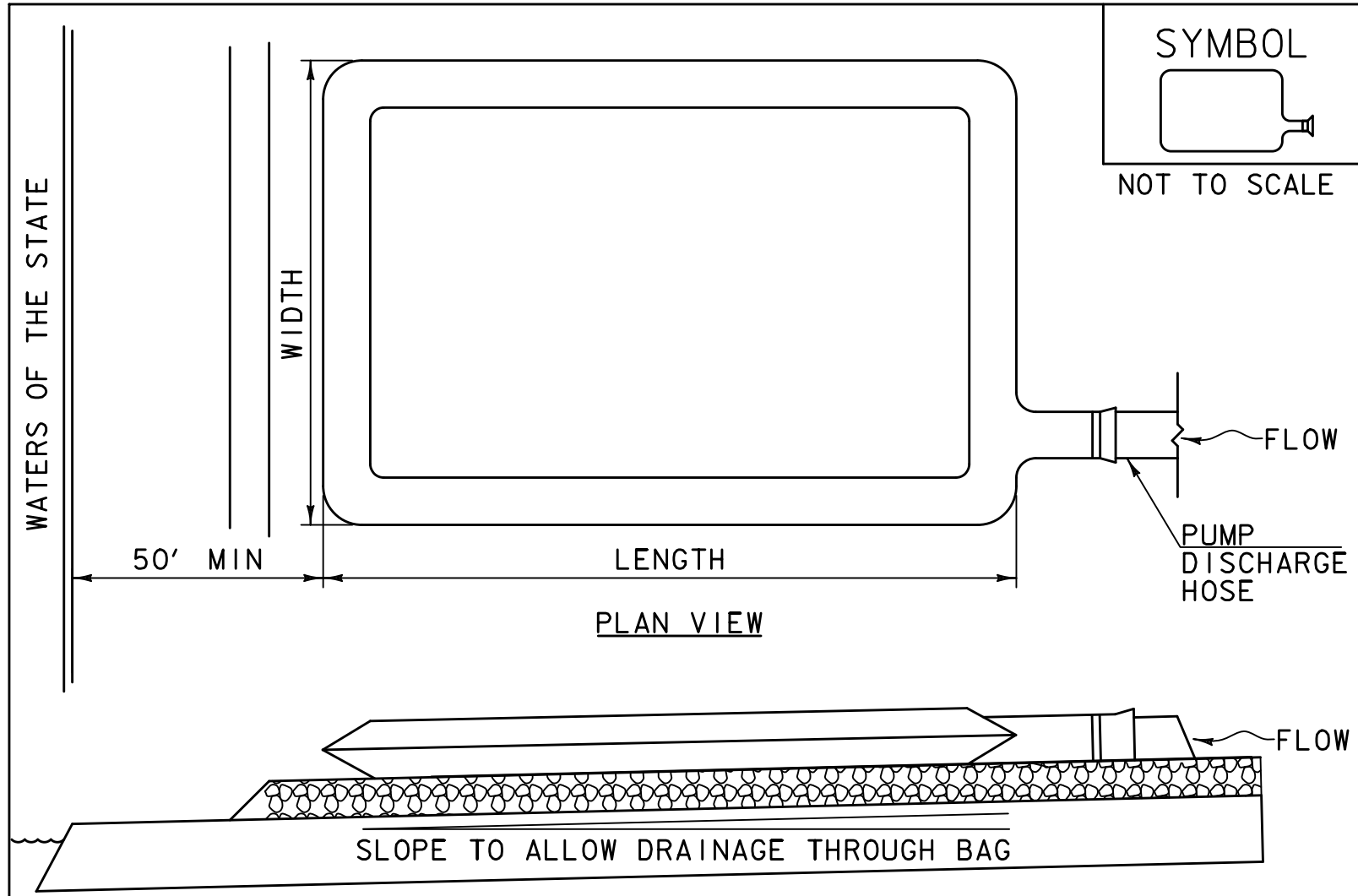
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIBER ROLL  
(EROSION LOG)

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 EROSION LOG (PAY ITEM 653.60)

REVISIONS	
MARCH 21, 2008	WHF
JANUARY 13, 2009	WHF



#### CONSTRUCTION SPECIFICATIONS

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

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

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

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

PROJECT NAME: GRAFTON  
PROJECT NUMBER: BF 0125(6)

FILE NAME: I6J177/z16J177ero_details.dgn PLOT DATE: 3/18/2021  
PROJECT LEADER: T. FRENCH DRAWN BY: P. LEFEBVRE  
DESIGNED BY: S. BOYINGTON CHECKED BY: J. STOCKTON  
EPSC DETAILS SHEET 68 OF 68