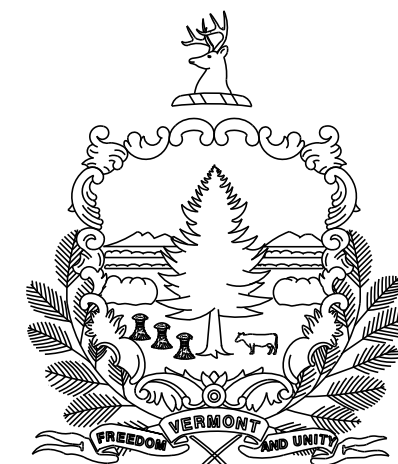


STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF BRAINTREE
COUNTY OF ORANGE

ROUTE NO : VT 12; RURAL MAJOR COLLECTOR BRIDGE NO : 47

PROJECT LOCATION : ON VT 12 APPROXIMATELY 5.1 MILES NORTH OF INTERSECTION WITH VT 66.

PROJECT DESCRIPTION : REPLACEMENT OF EXISTING BRIDGE ALONG WITH RELATED APPROACH ROADWAY
AND CHANNEL WORK.

LENGTH OF STRUCTURE : 33.00 FEET
LENGTH OF ROADWAY : 92.00 FEET
LENGTH OF PROJECT : 125.00 FEET

END PROJECT
STA 40+80.00
MM 0.890

END BRIDGE
STA 40+33.00

BEGIN BRIDGE
STA 40+00.00

BEGIN PROJECT
STA 39+55.00
MM 0.867

AYERS BROOK
FLOW

VT12
TO VT64
BROOKFIELD

VT12
TO VT66/VT12A
RANDOLPH

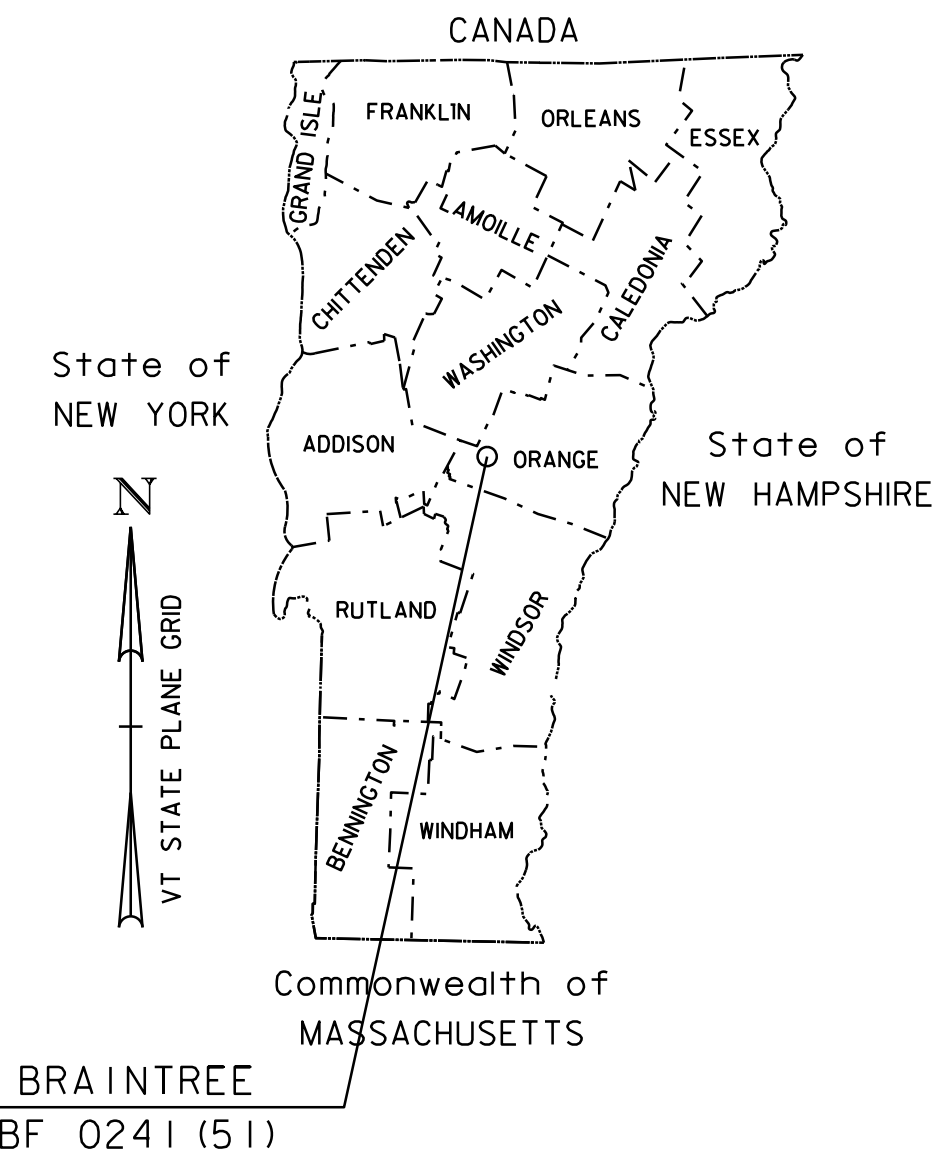
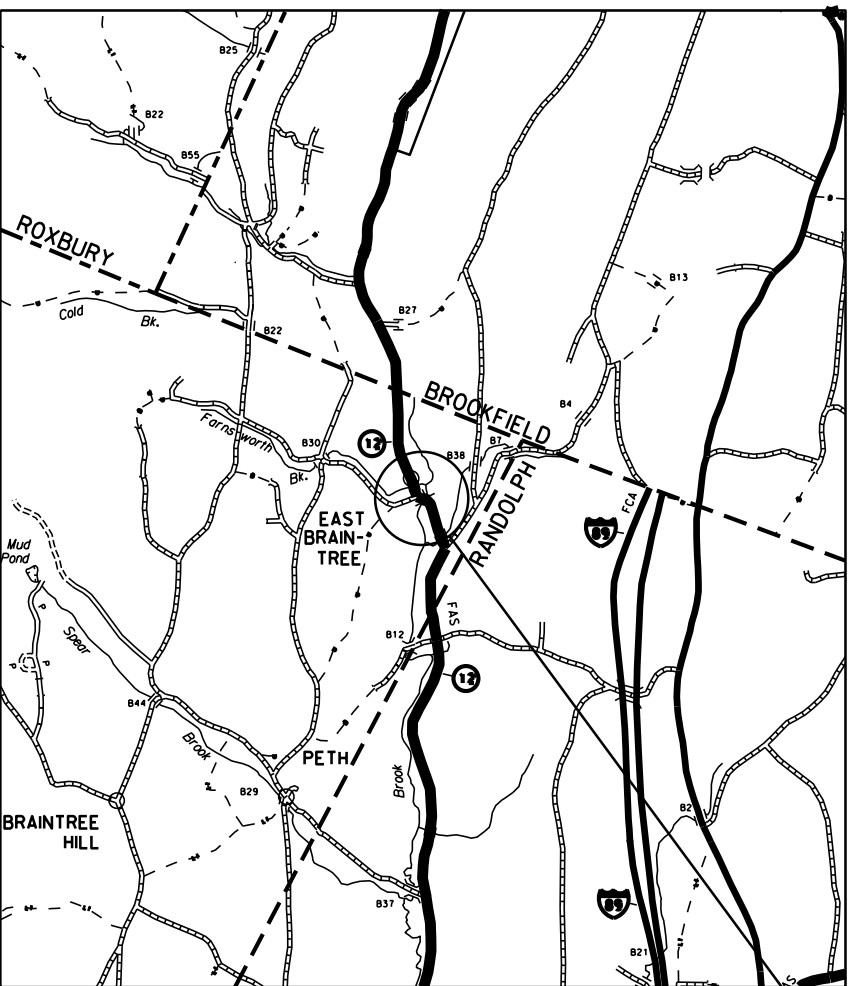
SCALE 1" = 40'-0"
40 0 40

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

QUALITY ASSURANCE PROGRAM : LEVEL 2

SURVEYED BY : R. GILMAN
SURVEYED DATE : 10/10/2018

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 83 (2011)



FINAL PLANS
05-OCT-2021

HIGHWAY DIVISION, CHIEF ENGINEER

APPROVED _____ DATE _____

PROJECT MANAGER : ROBERT S. YOUNG, P.E.

PROJECT NAME : BRAINTREE
PROJECT NUMBER : BF 0241 (51)

SHEET 1 OF 33 SHEETS

Version

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

LRFD

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04-07-2020

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04-07-2020

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04-07-2020

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04-07-2020

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03-10-2017

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02-02-2017

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04-07-2020

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1/5/2018

HSD-621.07A

MGS

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MGS COMPONENTS

4/17/2019

HSD-621.07C

MGS ANCHOR

4/17/2019

HSD-621.07D

MGS ANCHOR COMPONENTS 1

4/17/2019

HSD-621.07E

MGS ANCHOR COMPONENTS 2

4/17/2019

HSD-621.07F

MGS TRANSITION

4/17/2019

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: March 2021

DRAINAGE AREA : 13.0 sq. miles

CHARACTER OF TERRAIN : Moutainous to Hilly

STREAM CHARACTERISTICS : Straight with Narrow Floodplains

NATURE OF STREAMBED : Gravel/Sand/Cobble

PEAK FLOW DATA - ANNUAL EXCEEDANCE PROBABILITY (AEP)

43% = 580 cfs2% = 1700 cfs

10% = 1000 cfs1% = 2000 cfs

4% = 1400 cfs0.2% = 2900 cfs

DATE OF FLOOD OF RECORD : Unknown

ESTIMATED DISCHARGE: Unknown

WATER SURFACE ELEV.: Unknown

NATURAL STREAM VELOCITY : @ 2% AEP = 11.7 fps +/-

ICE CONDITIONS : Unknown

DEBRIS:

DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Unknown

IS ORDINARY RISE RAPID? Unknown

IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No

IF YES, DESCRIBE:

WATERSHED STORAGE: 0.1%HEADWATERS: UNIFORM: XIMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: CGMPA / T-Beam

YEAR BUILT: 1928 reconstructed in 1969

CLEAR SPAN(NORMAL TO STREAM): 25.5 ft*

VERTICAL CLEARANCE ABOVE STREAMBED: 12.7 ft*

WATERWAY OF FULL OPENING: 235 sq. ft. +/-*

DISPOSITION OF STRUCTURE: Replacement**

TYPE OF MATERIAL UNDER SUBSTRUCTURE: See Borings

WATER SURFACE ELEVATIONS AT:

43% AEP = 730.2 ftVELOCITY = 7.4 fps

10% AEP = 731.8 ft" 11.6 fps

4% AEP = 733.8 ft" 14.1 fps

2% AEP = 734.9 ft" 15.4 fps

1% AEP = 736.0 ft" 16.6 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: BrookfieldDISTANCE: 1.75 mi +/-

HIGHWAY #: VT-12STRUCTURE #: BR-51

CLEAR SPAN: 10 ftCLEAR HEIGHT: 4 ft

YEAR BUILT: 1933FULL WATERWAY: 40 ft

STRUCTURE TYPE: RC Box

DOWNSTREAM STRUCTURE

TOWN: BraintreeDISTANCE: 1.3 mi +/-

HIGHWAY #: TH-23STRUCTURE #: BR-12

CLEAR SPAN: 67 ftCLEAR HEIGHT: Unknown

YEAR BUILT: 2010FULL WATERWAY: Unknown

LRFR LOAD RATING FACTORS

LOADING LEVELS

TRUCK

TONNAGE

INVENTORY

POSTING

OPERATING

COMMENTS:

23.

24.

25.

PROPOSED STRUCTURE

STRUCTURE TYPE: CGMPA / Slab Bridge

CLEAR SPAN(NORMAL TO STREAM): 25.5 ft

VERTICAL CLEARANCE ABOVE STREAMBED: 12.7 ft

WATERWAY OF FULL OPENING: 233 sq. ft. +/-

WATER SURFACE ELEVATIONS AT:

43% AEP = 730.3 ftVELOCITY= 7.4 fps

10% AEP = 731.9 ft" 11.7 fps

4% AEP = 733.9 ft" 14.2 fps

2% AEP = 735.1 ft" 15.6 fps

1% AEP = 736.2 ft" 16.8 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: 737.2 ft +/-

FREEBOARD: @ 2% AEP = 2.1 ft

SCOUR:

REQUIRED CHANNEL PROTECTION: 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

*Clear span, vertical clearance, and waterway area reported for CGMPA at the inlet section

**Superstructure replacement of the T-beam bridge portion of the structure

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.

2. TRAFFIC SIGNALS ARE NOT NECESSARY.

3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOADHL-93

2. FUTURE PAVEMENTdp: 0.0 INCH

3. DESIGN SPANL: 33.00 FT

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

5. PRESTRESSING STRANDfy: - - -

6. PRESTRESSED CONCRETE STRENGTHf'c: - - -

7. PRESTRESSED CONCRETE RELEASE STRENGTHf'ci: - - -

8. SP (PERFORMANCE-BASED CONCRETE, CLASS PCD)f'c: 4.0 KSI

9. SP (PERFORMANCE-BASED CONCRETE, CLASS PCS)f'c: 3.5 KSI

10. SP (PERFORMANCE-BASED CONCRETE, CLASS SCC)f'c: 4.0 KSI

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

12. REINFORCING STEELfy: 60 KSI

13. STRUCTURAL STEEL AASHTO M270 (WEATHERING)fy: 50 KSI

14. NOMINAL BEARING RESISTANCE OF SOILqn: - - -

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

16. NOMINAL BEARING RESISTANCE OF ROCKqn: - - -

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

18. PILE RESISTANCE FACTORφ: - - -

19. LATERAL PILE DEFLECTIONΔ: - - -

20. BASIC WIND SPEEDV3s: - - -

21. MINIMUM GROUND SNOW LOADpg: - - -

22. SEISMIC DATAPGA: - - -Ss: - - -S1: - - -

23.

24.

25.

TRAFFIC DATA

YEAR

ADT

DHV

% D

% T

ADTT

20 year ESAL for flexible pavement from 2023 to 2043 : 105000

40 year ESAL for flexible pavement from 2023 to 2063 : 245000

Design Speed : 30 mph

AS BUILT "REBAR" DETAIL

LEVEL I

LEVEL II

LEVEL III

TYPE:

TYPE:

TYPE:

GRADE:

GRADE:

GRADE:

PROJECT NAME: BRAINTREE

PROJECT NUMBER: BF 0241(51)

FILE NAME: sl2c578pi.dgnPLOT DATE: 05-OCT-2021

PROJECT LEADER: R. YOUNG

DRAWN BY: R. PELLETT

DESIGNED BY: C. FRENCH

CHECKED BY: F. BARROWS

PRELIMINARY INFORMATION SHEET

SHEET 2 OF 33

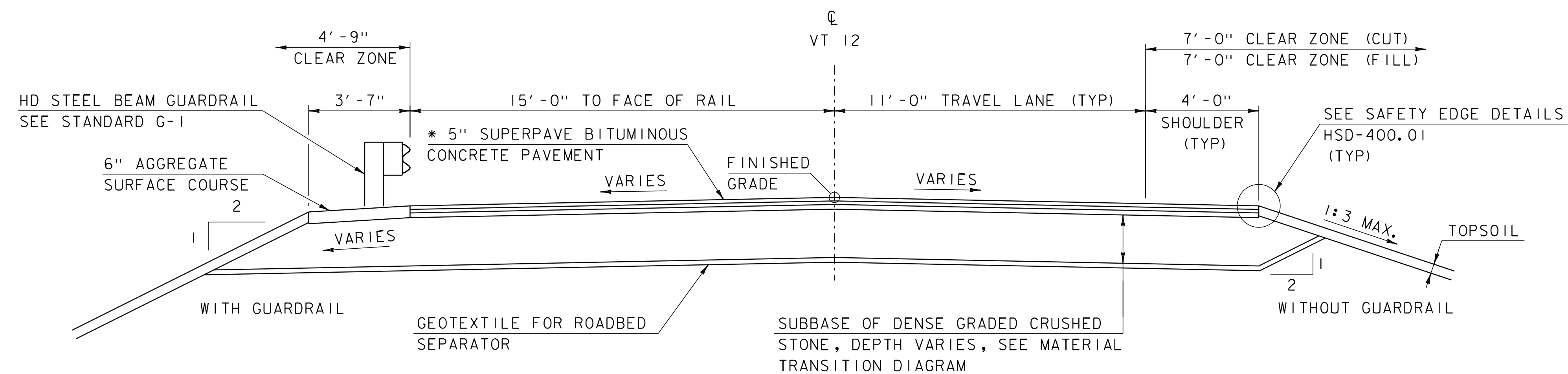
MATERIAL TOLERANCES (IF USED ON PROJECT)

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

EMULSION SHALL BE APPLIED PER THE APPLICATION RATES IN TABLE 406.12A OF THE STANDARD SPECIFICATIONS.

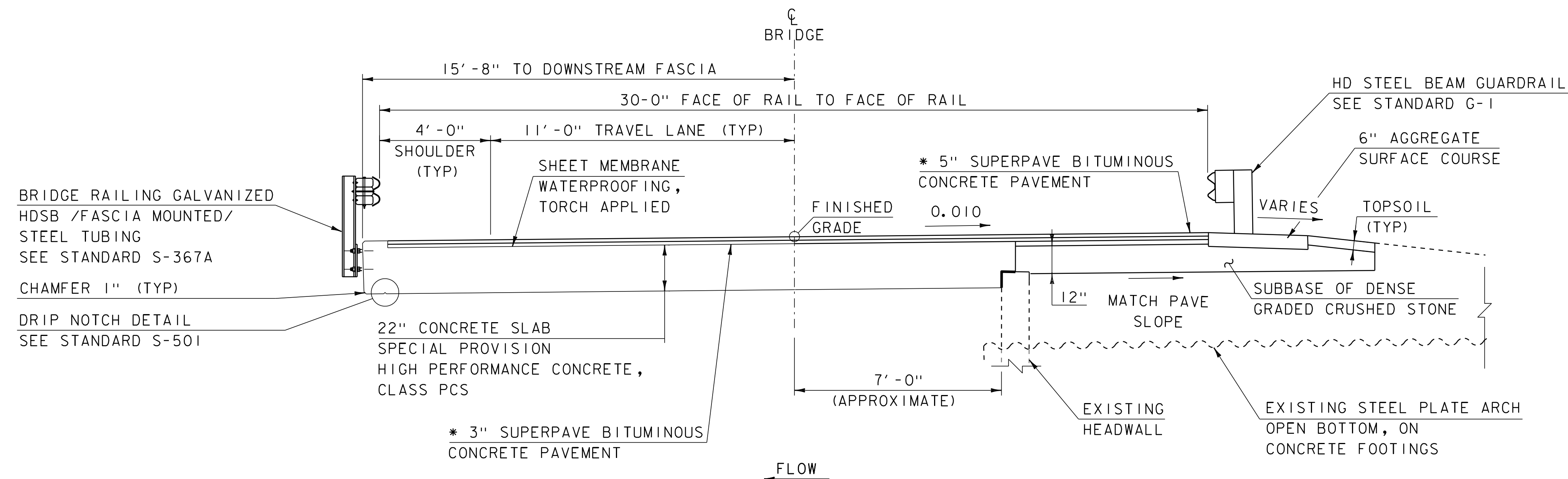
- * SUPERPAVE BITUMINOUS CONCRETE PAVEMENT
(2) LIFTS 1 1/2" BCP TYPE 1VB OVER
(1) LIFT 2" BCP TYPE 111S

** SEE BANKING DIAGRAM



ROADWAY TYPICAL SECTION

SCALE 3/8" = 1'-0"



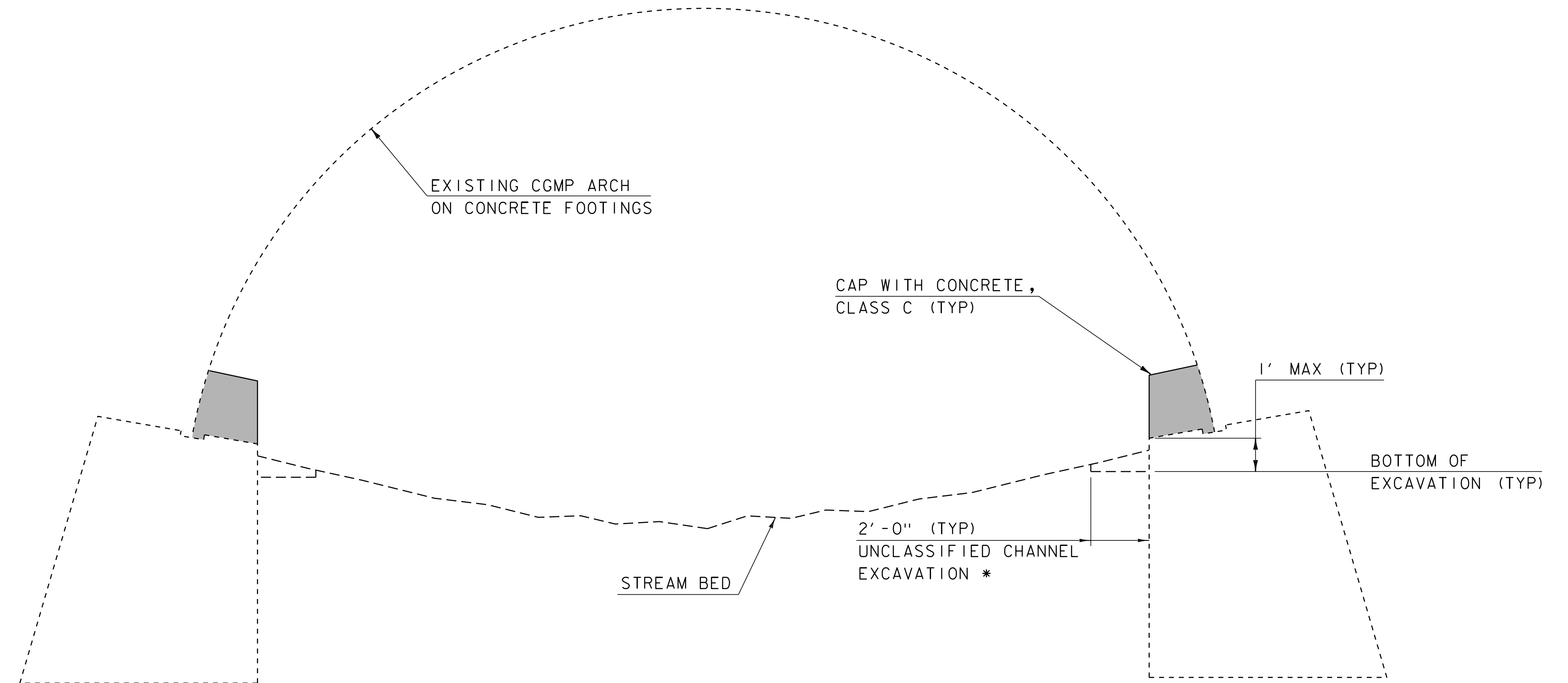
PROPOSED BRIDGE TYPICAL SECTION

SCALE 3/8" = 1'-0"

PROJECT NAME: BRAINTREE
PROJECT NUMBER: BF 0241(51)

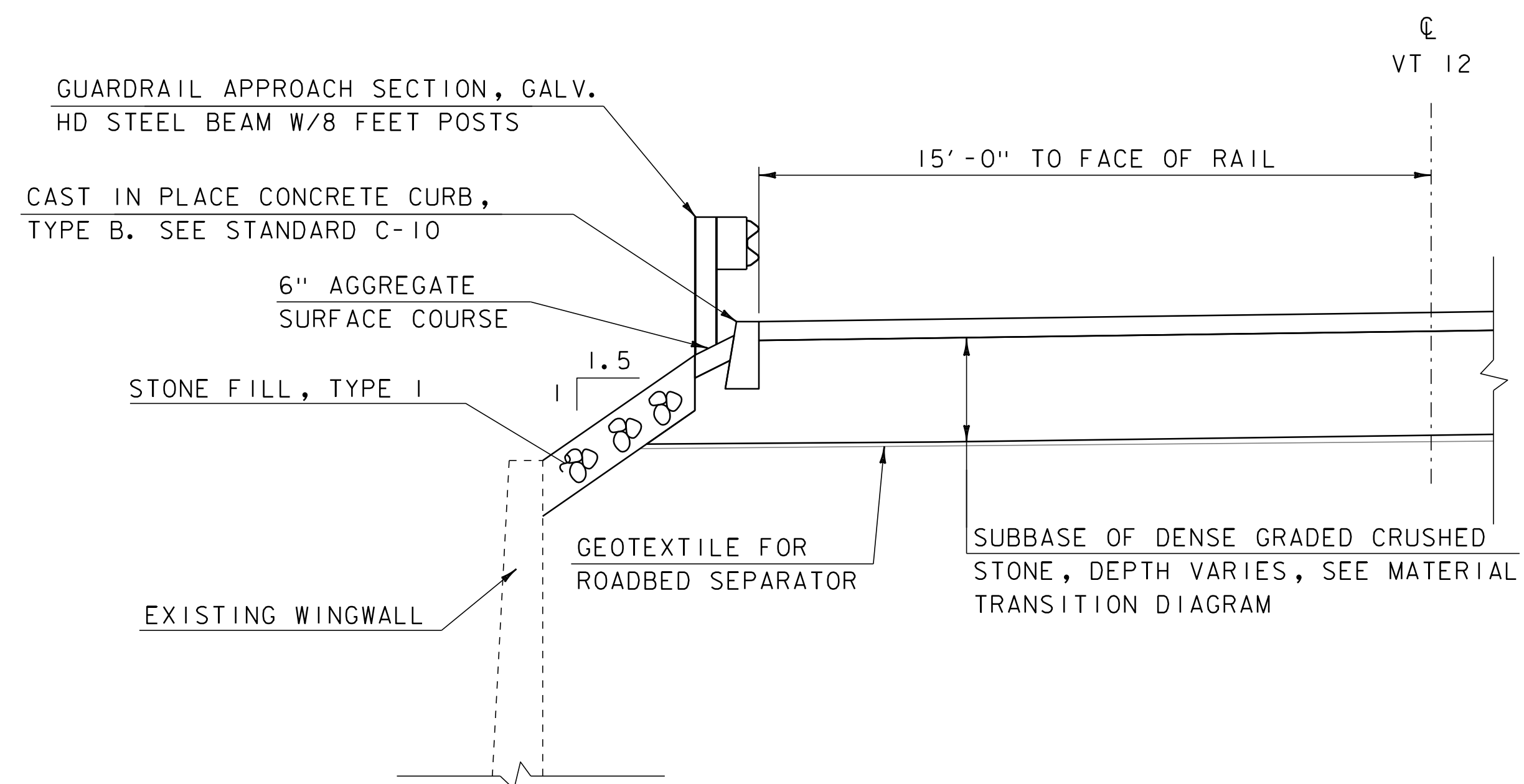
FILE NAME: sl2c578typ.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: F. BARROWS
TYPICAL SECTIONS 1

PLOT DATE: 06-OCT-2021
DRAWN BY: R. PELLETT
CHECKED BY: F. BARROWS
SHEET 3 OF 33



* EXISTING MATERIAL REMOVED SHALL BE
REPLACE, PAYMENT INCIDENTAL TO CHANNEL
EXCAVATION

CAP EXISTING ARCH FOOTINGS (NOT TO SCALE)



TYPICAL SECTION AT CURB

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

PROJECT NAME: BRAINTREE
PROJECT NUMBER: BF 0241(51)

FILE NAME: sl2c578typ.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: F. BARROWS
TYPICAL SECTIONS 2

PLOT DATE: 05-OCT-2021
DRAWN BY: R. PELLETT
CHECKED BY: F. BARROWS
SHEET 4 OF 33

GENERAL

- 1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2018 AND ITS LATEST REVISIONS, THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 9TH EDITION AND ITS LATEST REVISIONS.
- 2. THE EXISTING 2” WATERLINE DRAWN IN THE LAYOUT AND CROSS SECTIONS IS APPROXIMATE BASED ON RECORD PLANS, LOCATION IN FIELD MAY VARY.
- 3. EQUIPMENT THAT COMES IN CONTACT WITH KNOT WEED SHALL BE CLEANED BEFORE LEAVING THE SITE TO AVOID SPREADING OF INVASIVE SPECIES.
- 4. THE DIMENSIONS OF EXISTING MATERIALS GIVEN IN THE PLANS HAVE BEEN ASSUMED. THE ACTUAL DIMENSIONS AND CONDITION OF EXISTING MATERIALS MAY DIFFER FROM THOSE GIVEN IN THE PLANS. IT IS THE CONTRACTOR’S RESPONSIBILITY TO VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS.

EARTHWORK

- 5. THE PARTIAL REMOVAL OF EXISTING STRUCTURE WILL BE PAID UNDER ITEM 529.20, “PARTIAL REMOVAL OF STRUCTURE”. THIS WORK SHALL INCLUDE REMOVAL OF THE EXISTING T-BEAMS AND ANY OTHER REMOVAL REQUESTED BY THE ENGINEER.
- 6. THE CONTRACTOR SHALL MAINTAIN A CLEARANCE OF 10'-0” BETWEEN THE BACK OF THE ABUTMENTS AND HEAVY EQUIPMENT LOADS FROM THE TIME THE SUPERSTRUCTURE IS REMOVED THROUGH WHEN THE NEW DECK IS CURED, WITHOUT FURTHER ANALYSIS.
- 7. THE CONTRACTOR SHALL LIMIT LOADS OVER THE ARCH TO LEGAL ROAD LOADS AND CURRENT COVER SHALL BE MAINTAINED THOUGH OUT PROJECT.

TRAFFIC CONTROL

- 8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF A SITE-SPECIFIC TRAFFIC CONTROL PLAN FOR ALL STAGES OF CONSTRUCTION. THE PLAN SHALL CLEARLY DETAIL HOW TRAFFIC WILL BE MAINTAINED FOR EACH PHASE. THE PLAN SHALL SPECIFY ALL CONSTRUCTION ACTIVITIES FOR EACH PHASE AND SHOW APPROPRIATE TEMPORARY TRAFFIC CONTROL. PLAN SHALL CONFORM TO LATEST EDITION OF THE MUTCD. ALL COSTS WILL BE INCLUDED IN ITEM 641.11, “TRAFFIC CONTROL, ALL-INCLUSIVE”.
- 9. FULL ACCESS TO ALL DRIVES AND SIDE ROADS WITHIN PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. WHEN THE CONTRACTOR MUST TEMPORARILY RESTRICT ACCESS TO THE DRIVES, THE CONTRACTOR SHALL GIVE THE PROPERTY OWNERS 24 HOUR ADVANCE NOTICE. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 641.11, “TRAFFIC CONTROL, ALL-INCLUSIVE”.
- 10. PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE FULLY OPERATIONAL A MINIMUM OF TWO WEEKS PRIOR TO THE BRIDGE CLOSURE PERIOD.

EPSC

- 11. THIS PROJECT WILL UTILIZE THE VT DEC LOW RISK SITE HANDBOOK FOR EPSC. NO SITE-SPECIFIC EPSC PLAN IS INCLUDED. THE CONTRACTOR SHALL SUBMIT A SITE-SPECIFIC EPSC PLAN, IN ACCORDANCE WITH SECTION 653 OF THE STANDARD SPECIFICATIONS, FOR CONSTRUCTION. ESTIMATED QUANTITIES FOR EPSC WORK HAVE BEEN INCLUDED IN THE CONTRACT FOR BIDDING PURPOSES. IF THE CONTRACTOR’S EPSC PLAN REQUIRES ITEMS OF WORK THAT ARE NOT INCLUDED IN THE PLANS, THEY SHALL BE PAID FOR AS PART OF ITEM 653.03, “MAINTENANCE OF EPSC PLAN”.
- 12. THE EXISTING CONDITIONS SHEET HAS BEEN INCLUDED FOR THE CONTRACTOR TO USE FOR SUBMITTALS.

CONCRETE

- 13. CONSTRUCTION DRAWINGS, INCLUDING FALSEWORK AND FORM PLANS, SHALL BE SUBMITTED BY THE CONTRACTOR IN ACCORDANCE WITH TIMELINE DEFINED IN SECTION 105. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.608, “SPECIAL PROVISION (PERFORMANCE-BASED CONCRETE, CLASS PCS)”.
- 14. ALL CORNERS OF CONCRETE SHALL BE CHAMFERED 1” UNLESS NOTED OTHERWISE.
- 15. ALL CONCRETE ABOVE THE BRIDGE SEAT ELEVATION, INCLUDING DECK AND UPPER PORTION OF WINGWALLS, SHALL MEET THE REQUIREMENTS FOR AND BE PAID FOR UNDER ITEM 900.608, “SPECIAL PROVISION (PERFORMANCE-BASED CONCRETE, CLASS PCS)”.
- 16. THE DECK SLAB IS TO BE POURED IN ONE CONTINUOUS POUR WITH A MAXIMUM DURATION OF EIGHT HOURS. IF CIRCUMSTANCES BEYOND THE CONTRACTOR’S CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A TRANSVERSE CONSTRUCTION JOINT SHALL BE USED BETWEEN ADJACENT POURS. A MINIMUM 96 HOUR DELAY BETWEEN ADJACENT POURS SHALL BE OBSERVED.
- 17. ITEM 514.10, “WATER REPELLENT, SILANE”, SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON THE BRIDGE SUPERSTRUCTURE, INCLUDING THE DECK, FASCIAS, AND EXISTING SUBSTRUCTURE, WITH THE EXCEPTION OF THE BOTTOM OF THE DECK BETWEEN DRIP NOTCHES.
- 18. CORK BETWEEN THE ABUTMENT CHEEK WALL AND DECK FASCIA ALONG WITH BETWEEN THE NEW SLAB AND EXISTING HEADWALL SHALL BE INCLUDED IN THE UNIT PRICE FOR THE ADJACENT CONCRETE ITEM.
- 19. ITEM 520.20, "SHEET MEMBRANE WATERPROOFING, TORCH APPLIED" SHALL BE APPLIED TO THE BRIDGE DECK AS PER THE MANUFACTURER’S INSTRUCTIONS AND EXTEND 2 INCHES UP VERTICAL STEP IN BRIDGE DECK.
- 20. STATIC LOADS MAY BE APPLIED TO THE DECK FOR BRIDGE RAIL CONSTRUCTION AFTER THE DECK HAS CURED FOR 3 DAYS AND ACHIEVED 85% OF THE COMPRESSIVE STRESS. MAINTAIN DECK CURE REQUIREMENTS DURING THESE ACTIVITIES IN ACCORDANCE WITH THE DECK CURE REQUIREMENTS.
- 21. “REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS 1 & CLASS 2” ARE INCLUDED FOR USE AT THE DESCRESSION OF THE ENGINEER.

REINFORCING STEEL

- 22. REINFORCING STEEL USED IN THE DECK AND HAUNCHES SHALL CONFORM TO ITEM 507.11 “REINFORCING STEEL, LEVEL I (EPOXY COATED)”.
- 23. REINFORCING STEEL USED IN THE ARCH SHALL CONFORM TO ITEM 507.11 “REINFORCING STEEL, LEVEL I”.
- 24. TEST BARS SHALL BE PROVIDED IN ACCORDANCE WITH THE “VERMONT AGENCY OF TRANSPORTATION MATERIAL SAMPLING MANUAL”.
- 25. THE MINIMUM COVER FOR REINFORCING STEEL IN THE STRUCTURE SHALL BE THREE INCHES UNLESS DETAILED OTHERWISE.

PROJECT NAME: BRAINTREE	
PROJECT NUMBER: BF 024I(5I)	
FILE NAME: sl2c578note	PLOT DATE: 05-OCT-2021
PROJECT LEADER: R. YOUNG	DRAWN BY: R. PELLETT
DESIGNED BY: C. FRENCH	CHECKED BY: F. BARROWS
PROJECT NOTES	SHEET 5 OF 33

QUANTITY SHEET 1

PROJECT NAME: BRAINTREE	
PROJECT NUMBER: BF 024I(5I)	
FILE NAME: sl2c578qs.dgn	PLOT DATE: 05-OCT-2021
PROJECT LEADER: R. YOUNG	DRAWN BY: R. PELLET
DESIGNED BY: F. BARROWS	CHECKED BY: F. BARROWS
QUANTITY SHEET 1	SHEET 6 OF 33

QUANTITY SHEET 2

PROJECT NAME:	BRAINTREE
PROJECT NUMBER:	BF 024I(51)
FILE NAME:	sl2c578qs.dgn
PROJECT LEADER:	R. YOUNG
DESIGNED BY:	F. BARROWS
QUANTITY SHEET 2	
PLOT DATE:	05-OCT-2021
DRAWN BY:	R. PELLETT
CHECKED BY:	F. BARROWS
	SHEET 7 OF 33

GENERAL INFORMATION

SYMBOLGY LEGEND NOTE

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

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

POINT	CODE	DESCRIPTION
	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
■	BDNS	BOUND SET
▣	BDNS	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 SYMBOLGY

UNDERGROUND UTILITIES	
— UGU —	UTILITY (GENERIC-UNKNOWN)
— UT —	TELEPHONE
— UE —	ELECTRIC
— UC —	CABLE (TV)
— UEC —	ELECTRIC+CABLE
— UET —	ELECTRIC+TELEPHONE
— UCT —	CABLE+TELEPHONE
— UECT —	ELECTRIC+CABLE+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 SYMBOLGY

PROJECT DESIGN & LAYOUT SYMBOLGY	
— -- — CZ — -- —	CLEAR ZONE
—————	PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES	
△ — △ — △ — △	TOP OF CUT SLOPE
○ — ○ — ○ — ○	TOE OF FILL SLOPE
⊗ ⊗ ⊗ ⊗ ⊗ ⊗	STONE FILL
-----	BOTTOM OF DITCH
=====	CULVERT PROPOSED
=====	STRUCTURE SUBSURFACE
PDF ——— PDF ———	PROJECT DEMARCATION FENCE
BF — x — x — x — BF — x — x —	BARRIER FENCE
xxxxxxxxxxxxxxxxxxxxxxxx	TREE PROTECTION ZONE (TPZ)
//////////	STRIPING LINE REMOVAL
~~~~~	SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLGY

BOUNDARY LINES	
————— TOWN LINE ———	TOWN BOUNDARY LINE
————— COUNTY LINE ———	COUNTY BOUNDARY LINE
————— STATE LINE ———	STATE BOUNDARY LINE
—— // ——	PROPOSED STATE R.O.W. (LIMITED ACCESS)
—— — — — —	PROPOSED STATE R.O.W.
—— // ——	STATE ROW (LIMITED ACCESS)
—— — — — —	STATE ROW
—— — — — —	TOWN ROW
— - - - -	PERMANENT EASEMENT LINE (P)
— - - - -	TEMPORARY EASEMENT LINE (T)
+ ——— +	SURVEY LINE
— 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 SYMBOLGY

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

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLGY

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

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

CONVENTIONAL TOPOGRAPHIC SYMBOLGY

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

PROJECT NAME: BRAINTREE	
PROJECT NUMBER: BF 024(51)	
FILE NAME: sl2c578leg.dgn	PLOT DATE: 05-OCT-2021
PROJECT LEADER: R. YOUNG	DRAWN BY: R. PELLETT
DESIGNED BY: F. BARROWS	CHECKED BY: F. BARROWS
SYMBOLGY LEGEND	SHEET 8 OF 33

PRIMARY CONTROL

HVCTRL #1  
SNOWSVILLE AZ MK  
NORTH = 548570.9100  
EAST = 1599865.0000  
ELEV. = NA

TO REACH FROM THE JUNCTION OF VERMONT ROUTE 12 AND VERMONT ROUTE 66 IN RANDOLPH, PROCEED NORTHERLY ALONG ROUTE 12 FOR 5.7 MI (9.2 KM) TO THE MARK ON THE RIGHT. TO REACH FROM THE JUNCTION OF VERMONT ROUTE 12 AND THE ROAD TO WEST BROOKFIELD, PROCEED SOUTH ALONG ROUTE 12 FOR 0.75 MI (1.21 KM) TO THE MARK ON THE LEFT.

THE MARK IS A STATE OF VERMONT SURVEY DISK SET IN THE TOP OF A CONCRETE MONUMENT 30 CM IN DIAMETER, FLUSH WITH THE GROUND SURFACE.

IT IS LOCATED 141 FT (43.0 M) NORTH NORTHEAST OF UTILITY POLE 136/19, 129 FT (39.3 M) SOUTH OF A SIGN (BRAINTREE / BROOKFIELD), 60.5 FT (18.4 M) SOUTH OF A MAILBOX, 22 FT (6.7 M) SOUTHEAST OF THE CENTERLINE OF VERMONT ROUTE 12, AND 3 FT (0.9 M) NORTHWEST OF A FIBERGLASS WITNESS POST.

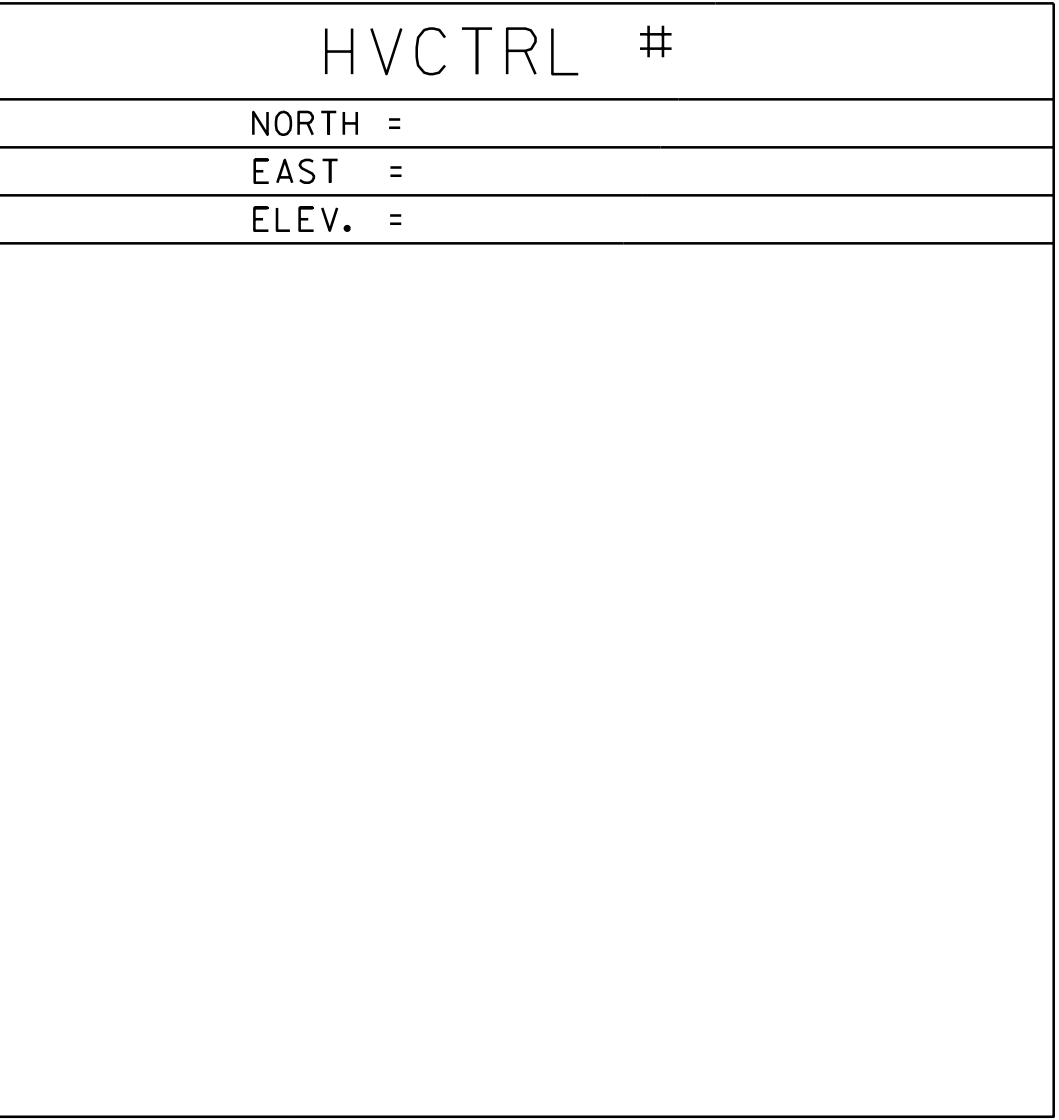
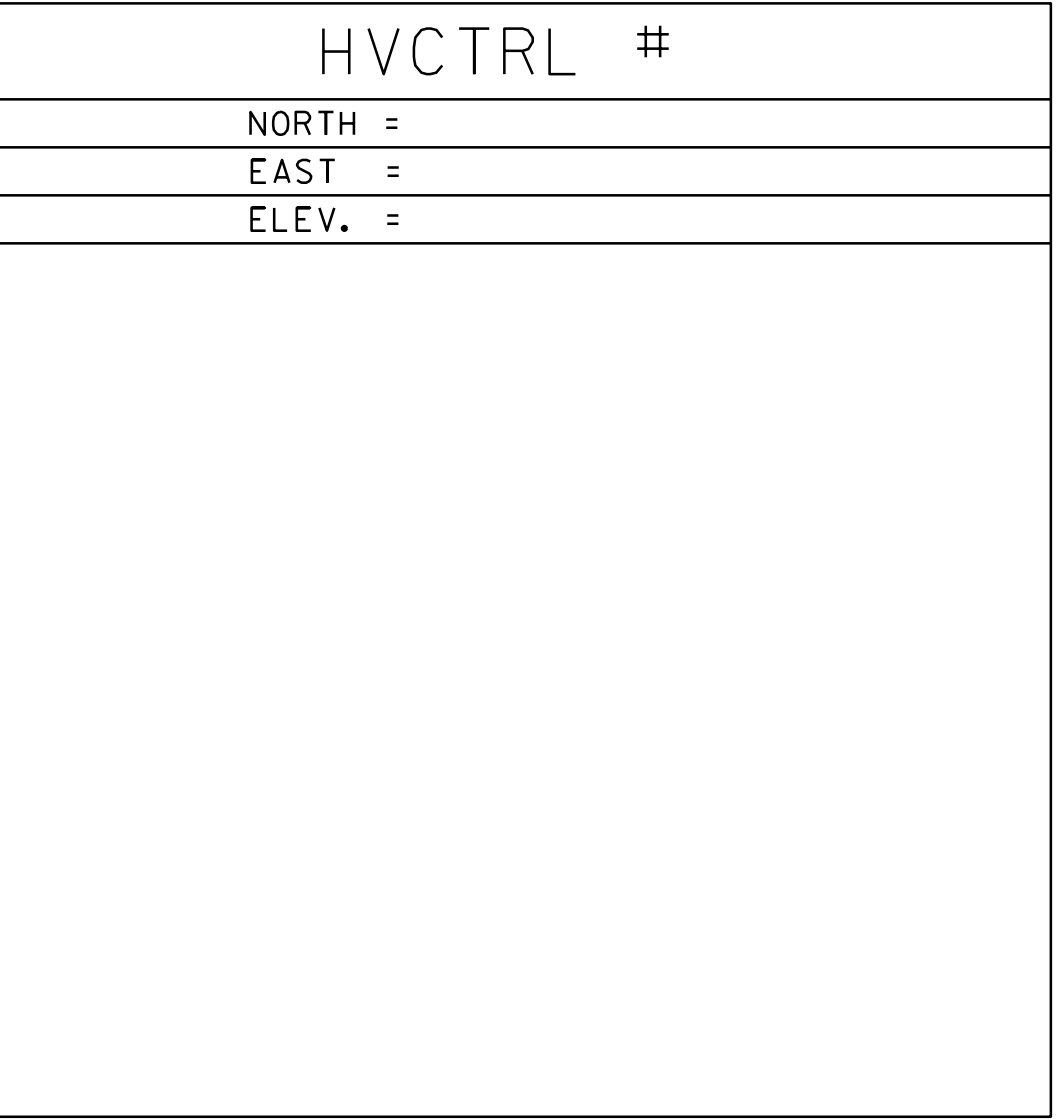
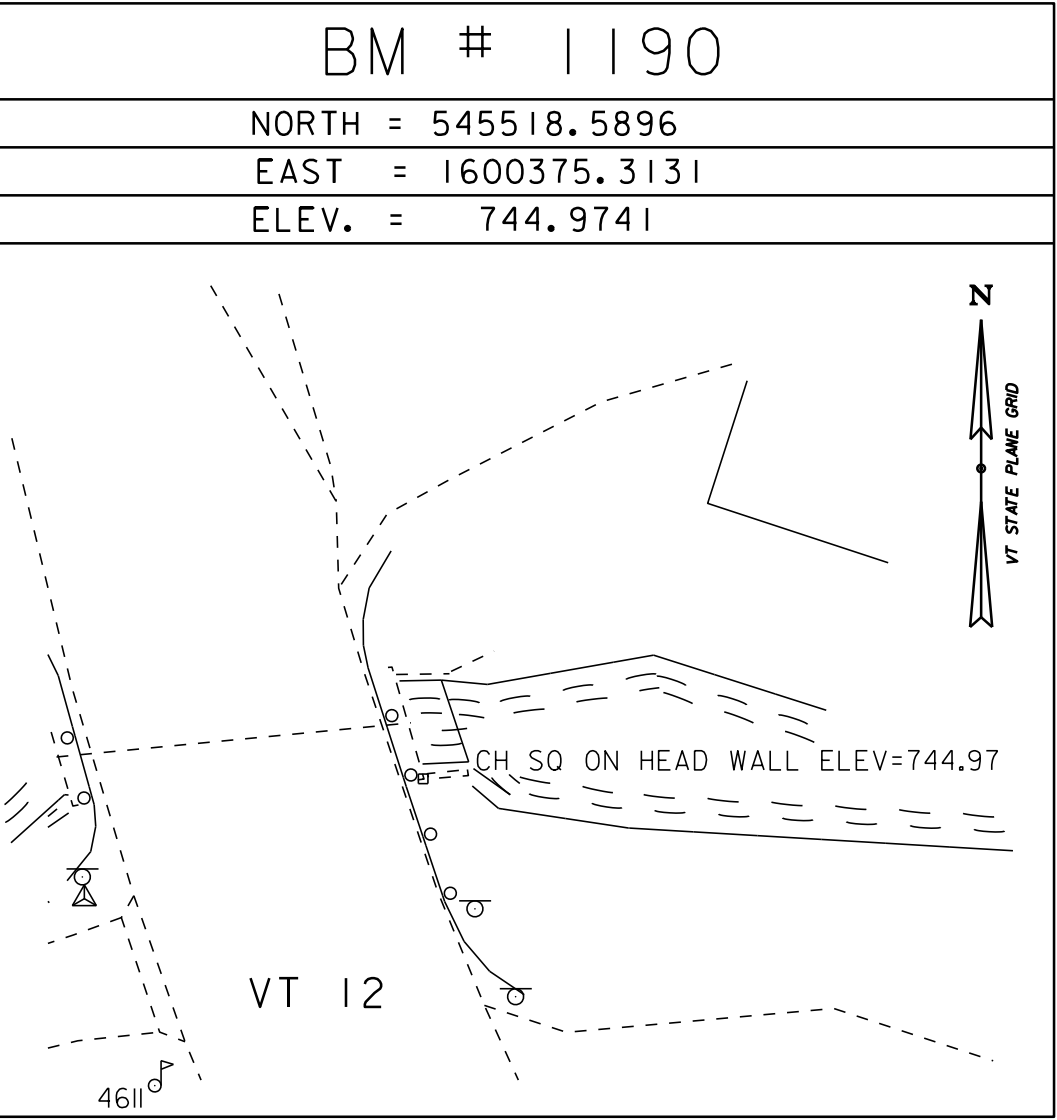
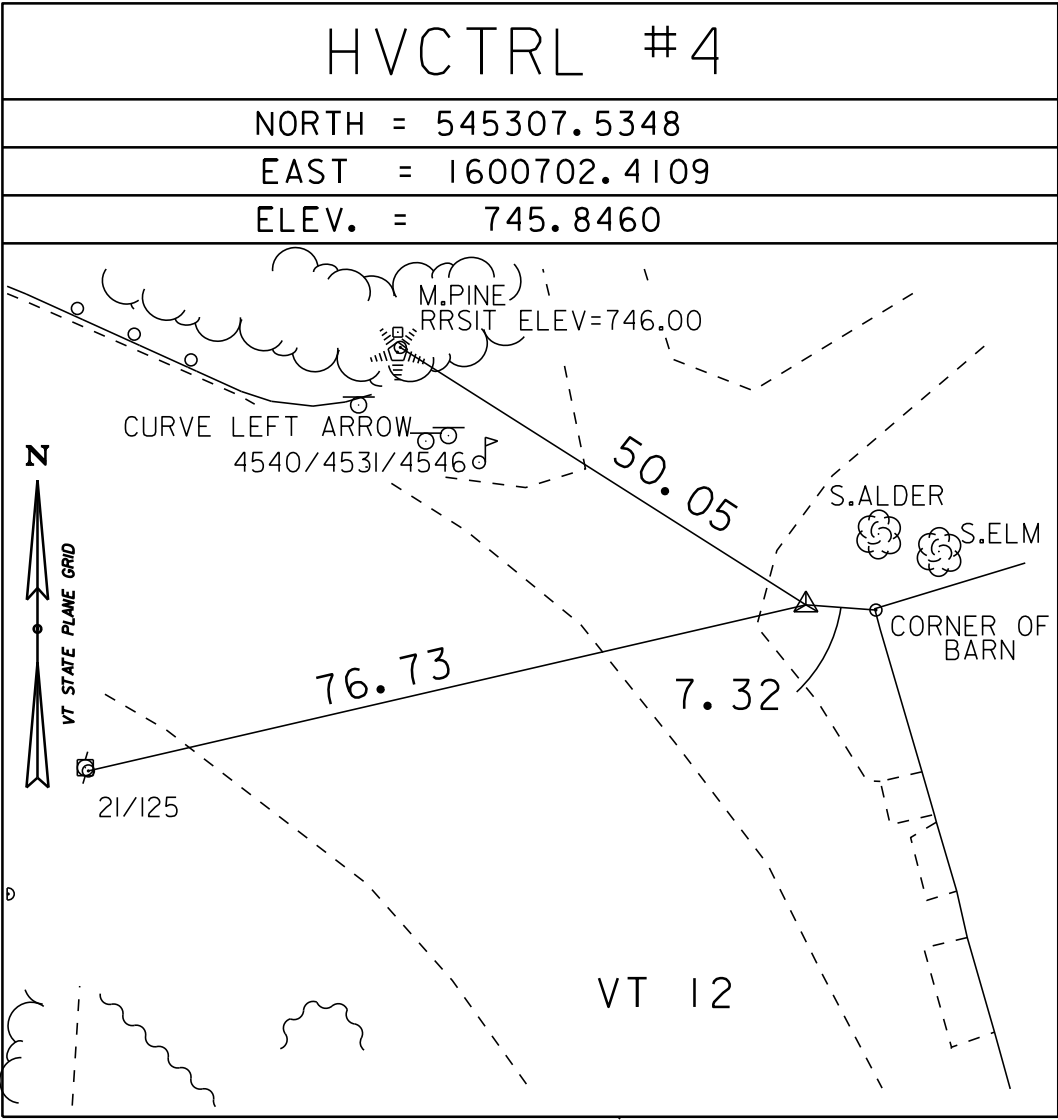
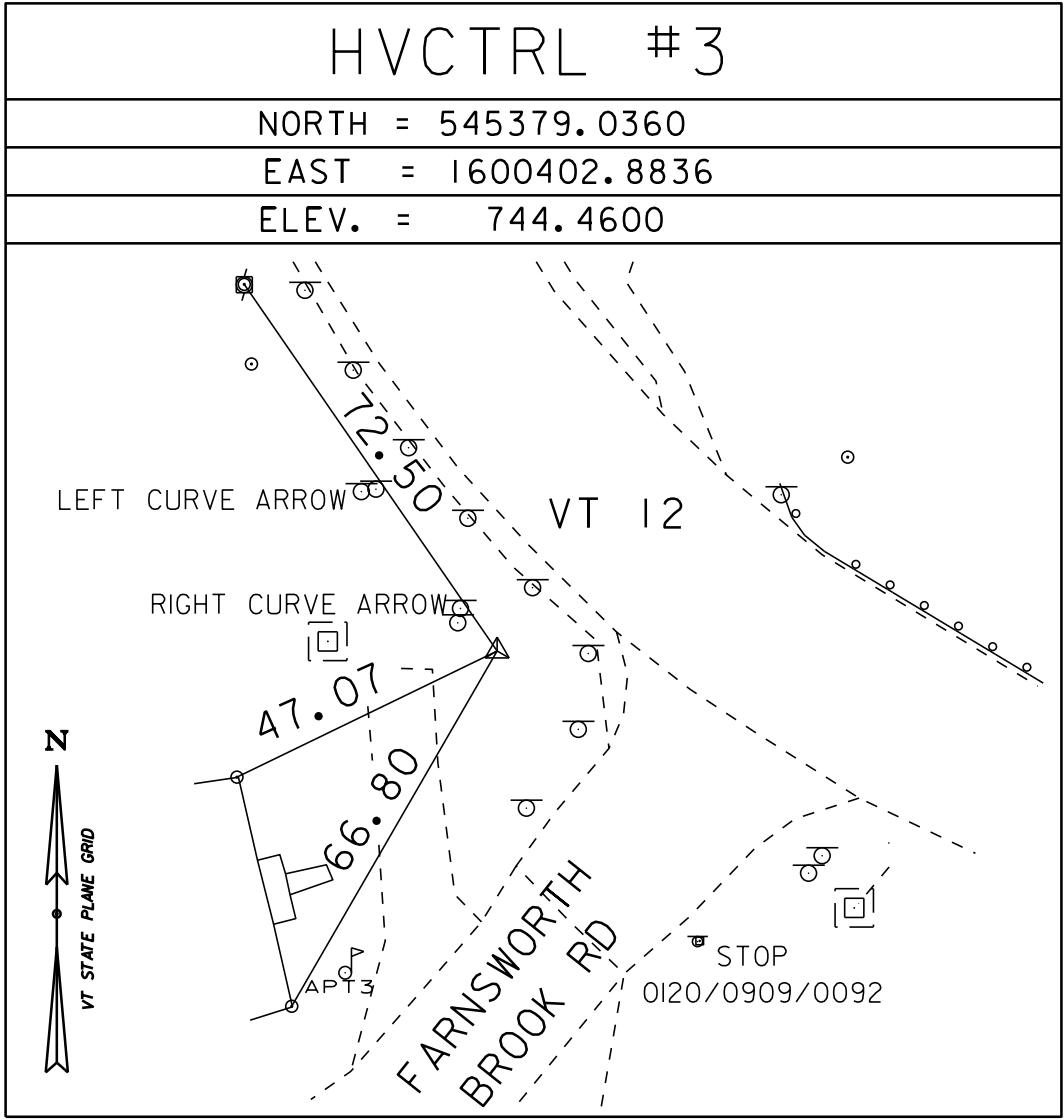
HVCTRL #2  
SNOWSVILLE  
NORTH =546460.5000  
EAST =1600026.4200  
ELEV. =753.7620

TO REACH FROM THE INTERSECTION OF VT ROUTE 12, VT ROUTE 66 AND ELM STREET IN RANDOLPH, GO NORTH ALONG VT ROUTE 12 FOR 0.8 MI (1.3 KM) TO THE INTERSECTION OF WINDOVER ROAD RIGHT. BEAR LEFT AND CONTINUE NORTH ALONG VT ROUTE 12 FOR 1.6 MI (2.6 KM) TO THE INTERSECTION OF PETH ROAD LEFT. CONTINUE STRAIGHT AHEAD AND GO NORTH ALONG VT ROUTE 12 FOR 2.7 MI (4.3 KM) TO THE INTERSECTION OF FARNSWORTH BROOK ROAD LEFT IN EAST BRAINTREE VILLAGE. CONTINUE STRAIGHT AHEAD AND GO NORTH ALONG VT ROUTE 12 FOR 0.2 MI (0.3 KM) TO THE SITE OF THE MARK ON THE RIGHT. IT IS 1.15 MI (1.9 KM) SOUTH OF THE INTERSECTION OF VT ROUTE 12 AND WEST BROOKFIELD ROAD.

THE MARK IS SET FLUSH WITH THE GROUND SURFACE IN THE TOP OF A 30 CM (12 INCH) DIAMETER CONCRETE MONUMENT.

IT IS 5.7 M (18.7 FT) EAST OF AND ABOUT 0.2 M (0.7 FT) LOWER THAN THE CENTERLINE OF VT ROUTE 12, 20.7 M (67.9 FT) SOUTHEAST OF POLE NO 13+1/2/130X, 57.8 M (189.6 FT) NORTH-NORTHEAST OF POLE NUMBER 13/130, 11.5 M (37.7 FT) EAST-SOUTHEAST OF A HIGHWAY SIGN (REDUCED SPEED AHEAD), 21.1 M (69.2 FT) SOUTH OF A CURVE SIGN AND 0.3 M (1.0 FT) WEST OF A FIBERGLASS WITNESS POST.

SECONDARY CONTROL

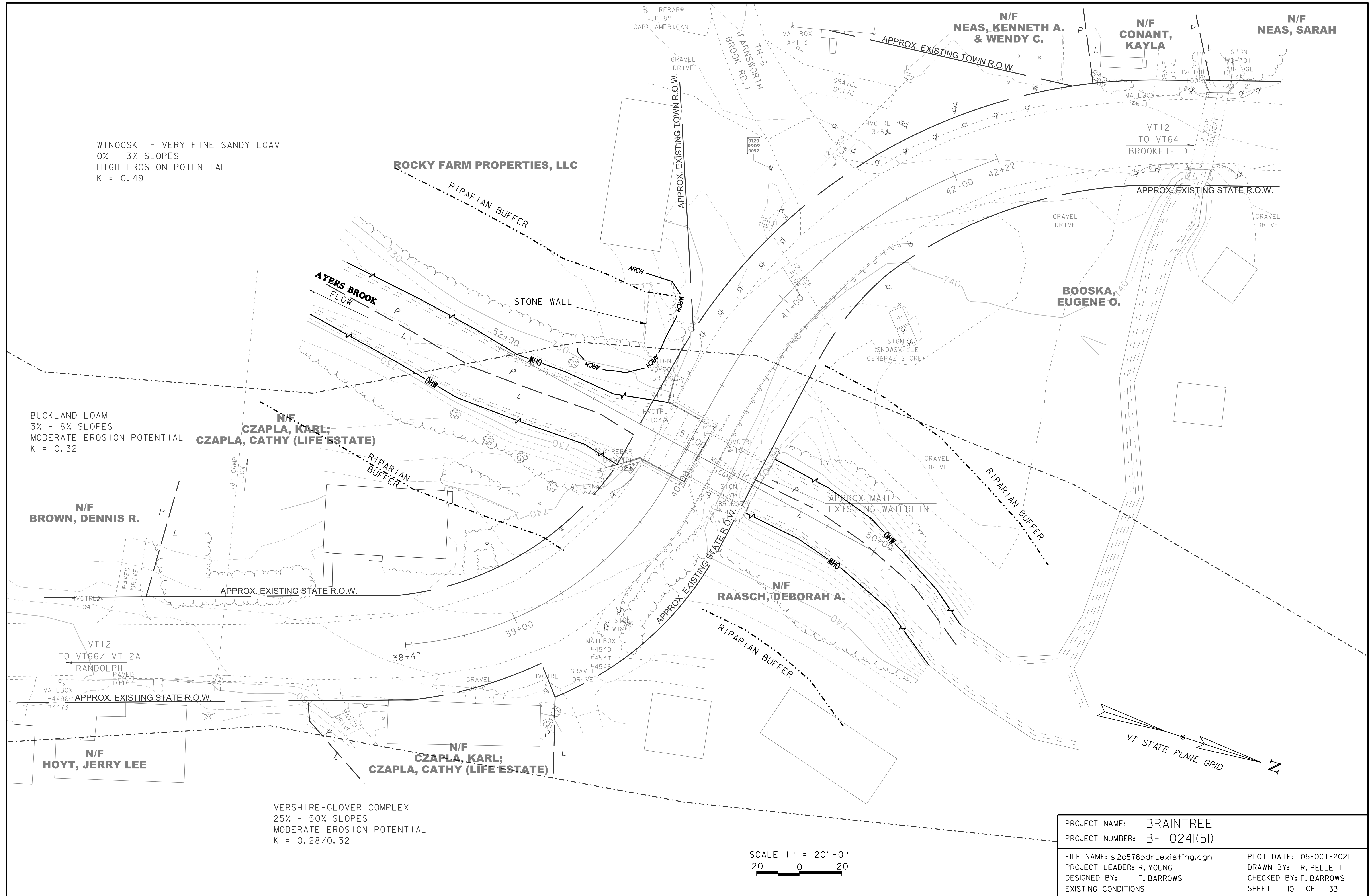


SECONDARY CONTROL

DATUM	
VERTICAL	NAVD88
HORIZONTAL	NAD83(2011)
ADJUSTMENT	COMPASS

*TRAVERSE COMPLETED ON 10/10/2018 BY R.GILMAN, B.HERRING AND H.MCGOWAN

PROJECT NAME:	BRAINTREE	PLOT DATE:	05-OCT-2021
PROJECT NUMBER:	BF 0241(51)	DRAWN BY:	H. MCGOWAN
FILE NAME:	sl2c578t1e.dgn	CHECKED BY:	G. HITCHCOCK
PROJECT LEADER:	R. YOUNG	SHEET	9 OF 33
DESIGNED BY:	VTRANS		
TIE SHEET			



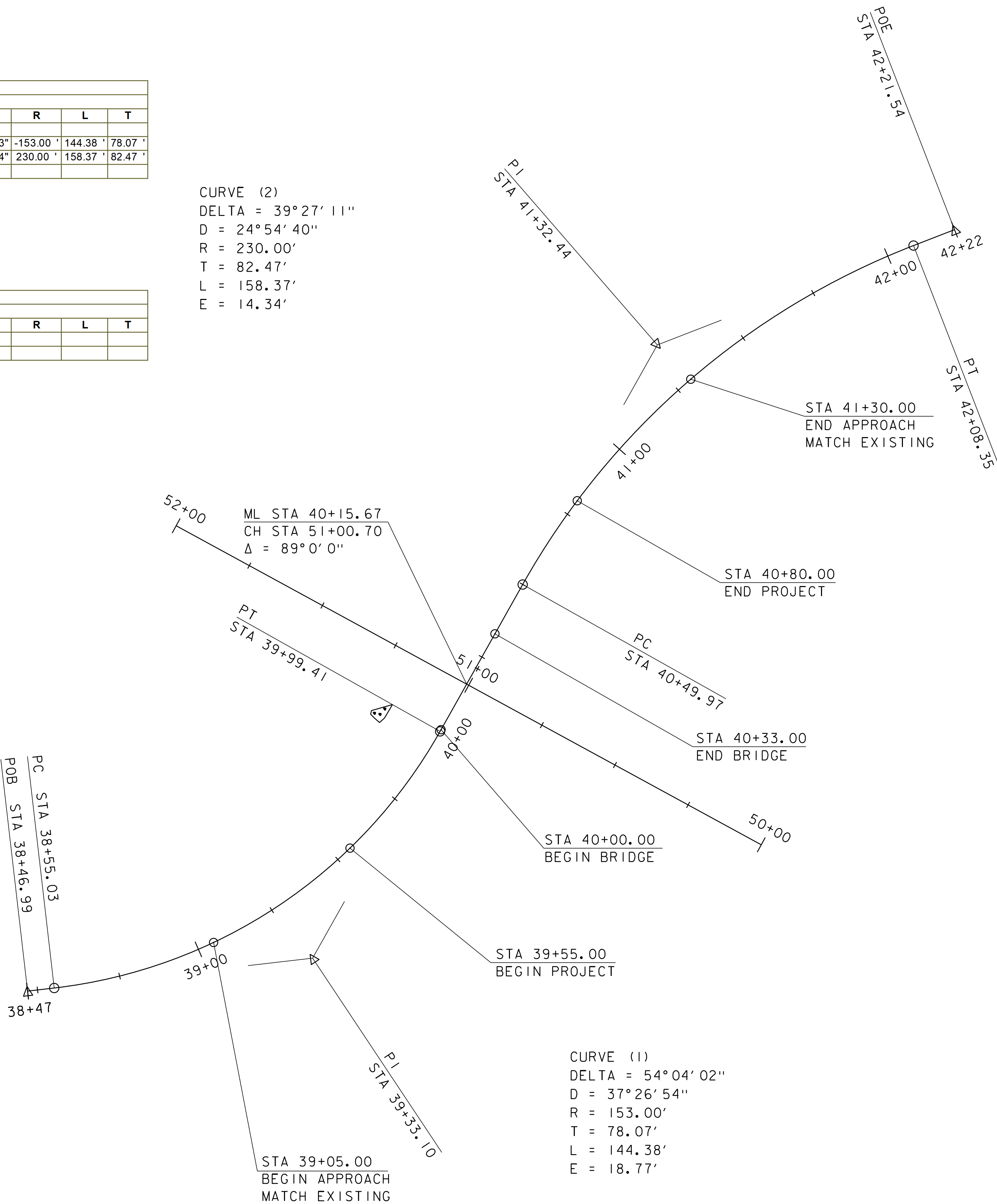
PROJECT NAME:	BRAINTREE	FILE NAME:	sl2c578bdr_existing.dgn	PLOT DATE:	05-OCT-2021
PROJECT NUMBER:	BF 024(51)	PROJECT LEADER:	R. YOUNG	DRAWN BY:	R. PELLETT
		DESIGNED BY:	F. BARROWS	CHECKED BY:	F. BARROWS
		EXISTING CONDITIONS		SHEET	10 OF 33

CONTROL LINE DATA - VT12Prop											
POINT ID	BEARING	DISTANCE (FEET)	NORTHING (Y)	EASTING (X)	PC	PI	PT	DELTA	R	L	T
29	N 24°34'51.92" W	8.04 '	545237.9183	1600702.012		38+46.99					
	N 78°38'53.55" W	128.63 '	545316.2276	1600666.191	38+55.03		39+99.41	54°04'01.63"	-153.00 '	144.38 '	78.07 '
	N 39°11'42.81" W	95.67 '	545357.7793	1600459.219	40+49.97		42+08.35	39°27'10.74"	230.00 '	158.37 '	82.47 '
22			545431.9226	1600398.759		42+21.54					

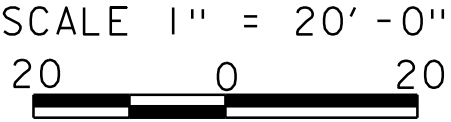
CURVE DATA					
NO.	RADIUS	DELTA	LENGTH	TANGENT	ALIGNMENT
C1	153	54°04'01.63"	144.38	78.07	VT12Prop
C2	230	39°27'10.74"	158.37	82.47	VT12Prop

CONTROL LINE DATA - CHANNEL											
POINT ID	BEARING	DISTANCE (FEET)	NORTHING (Y)	EASTING (X)	PC	PI	PT	DELTA	R	L	T
1	S 10°36'26.42" W	200.00 '	545433.7755	1600592.241		50+00.00					
2			545237.1931	1600555.426		52+00.00					

CURVE (2)  
DELTA = 39°27' 11"  
D = 24°54' 40"  
R = 230.00'  
T = 82.47'  
L = 158.37'  
E = 14.34'



ALIGNMENT LAYOUT



PROJECT NAME: BRAINTREE  
PROJECT NUMBER: BF 0241(51)

FILE NAME: sl2c578bdr_algn.dgn  
PROJECT LEADER: R. YOUNG  
DESIGNED BY: F. BARROWS  
ALIGNMENT LAYOUT

PLOT DATE: 05-OCT-2021  
DRAWN BY: R. PELLETT  
CHECKED BY: F. BARROWS  
SHEET 11 OF 33

621.21 HD STEEL BEAM GUARDRAIL, GALVANIZED  
STA 39+34.81 RT TO 41+64.70 RT  
STA 39+56.93 LT TO 39+69.70 LT  
STA 40+59.62 LT TO 40+87.62 LT

621.60 ANCHOR FOR STEEL BEAM GUARDRAIL  
STA 39+40.26 RT  
STA 39+64.60 LT  
STA 40+81.80 RT  
STA 41+57.62 RT

525.44 BRIDGE RAILING, GALVANIZED  
HDSB/ FASCIA MOUNTED/ STEEL TUBING  
STA 39+97.20 LT TO 40+35.25 LT

621.737 GUARDRAIL APPROACH SECTION,  
GALVANIZED HD STEEL BEAM  
STA 39+69.70 LT TO 39+97.20 LT  
STA 40+35.25 LT TO 40+59.62 LT

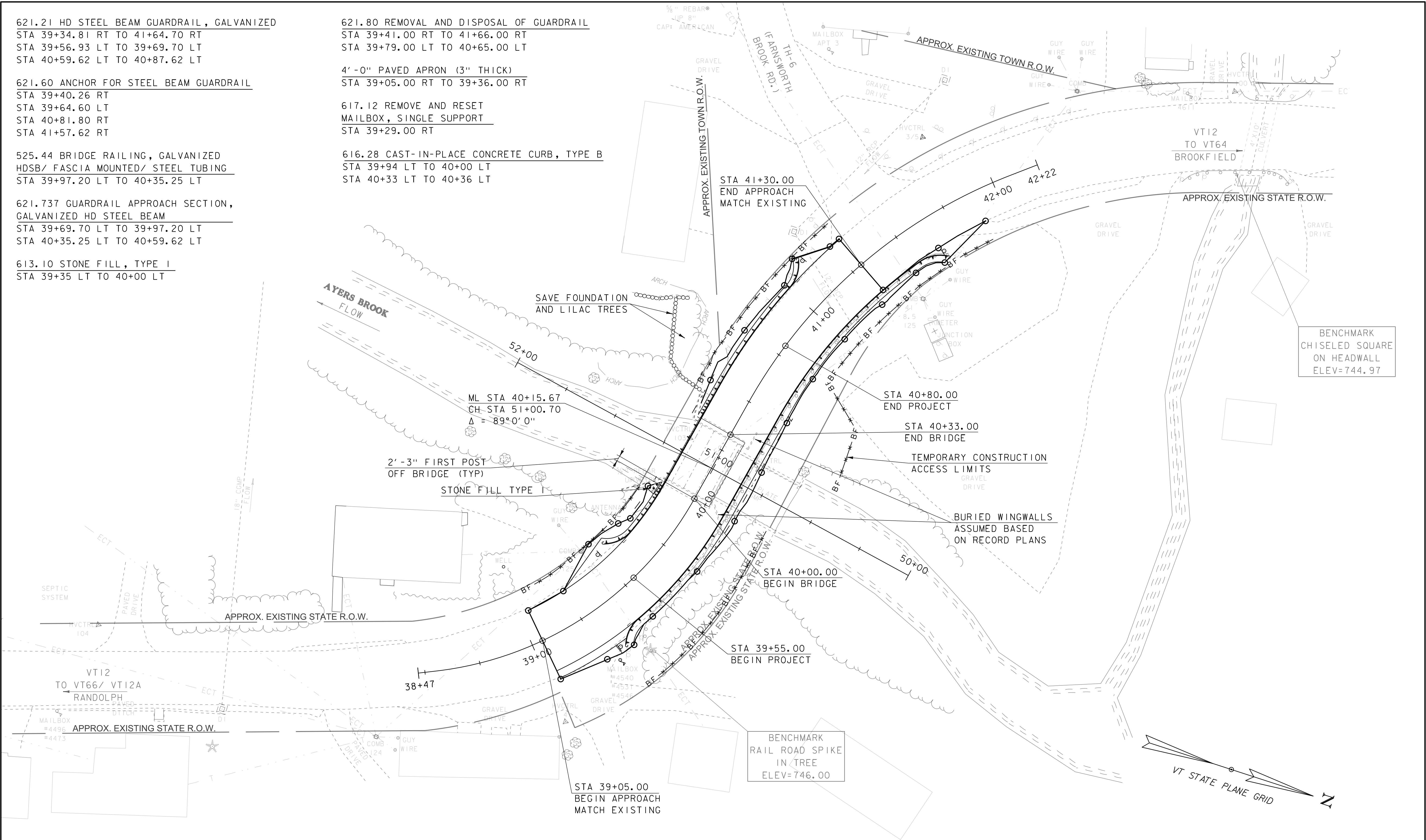
613.10 STONE FILL, TYPE I  
STA 39+35 LT TO 40+00 LT

621.80 REMOVAL AND DISPOSAL OF GUARDRAIL  
STA 39+41.00 RT TO 41+66.00 RT  
STA 39+79.00 LT TO 40+65.00 LT

4'-0" PAVED APRON (3" THICK)  
STA 39+05.00 RT TO 39+36.00 RT

617.12 REMOVE AND RESET  
MAILBOX, SINGLE SUPPORT  
STA 39+29.00 RT

616.28 CAST-IN-PLACE CONCRETE CURB, TYPE B  
STA 39+94 LT TO 40+00 LT  
STA 40+33 LT TO 40+36 LT



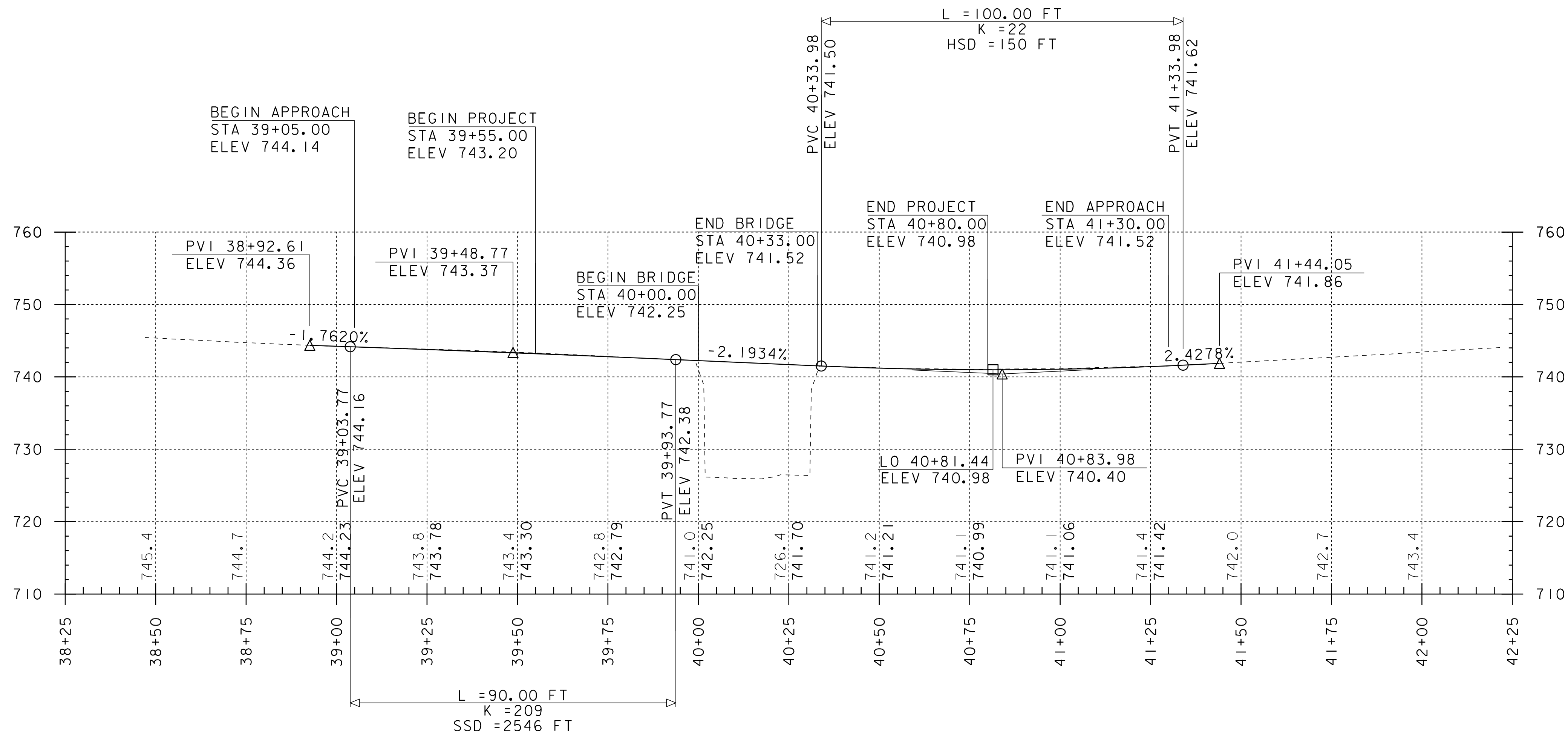
EXISTING BRIDGE INFORMATION  
T-BEAM BRIDGE BUILT 1928  
MULTI PLATE ARCH ADDED 1969  
SPAN LENGTH 33'-0"

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

PROJECT NAME: BRAINTREE  
PROJECT NUMBER: BF 0241(51)

FILE NAME: sl2c578bdr.dgn  
PROJECT LEADER: R. YOUNG  
DESIGNED BY: F. BARROWS  
LAYOUT

PLOT DATE: 05-OCT-2021  
DRAWN BY: R. PELLETT  
CHECKED BY: F. BARROWS  
SHEET 12 OF 33

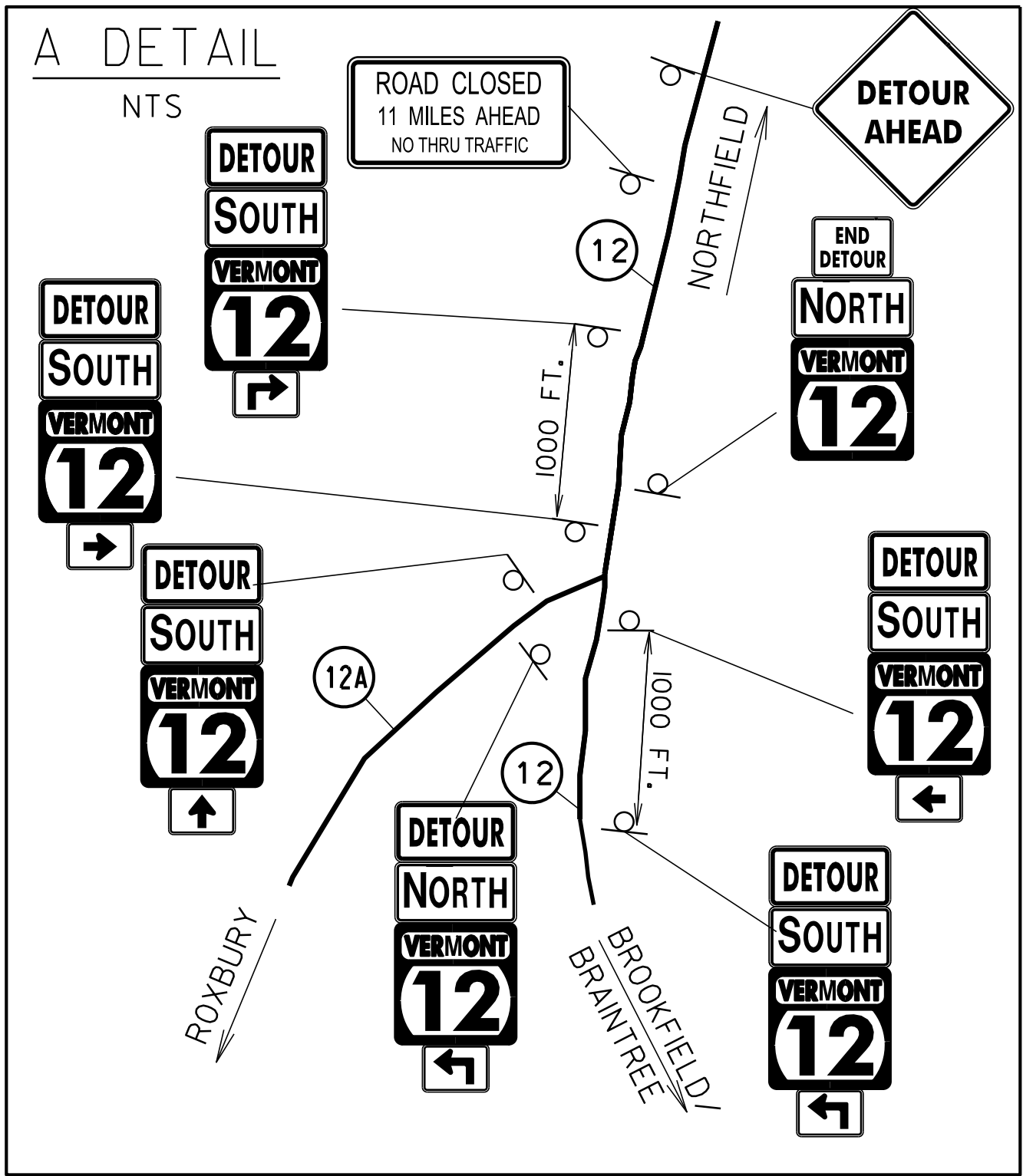


### VT ROUTE 12 PROFILE

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

NOTE:  
GRADES SHOWN TO THE NEAREST  
TENTH ARE EXISTING GROUND ALONG CL  
GRADES SHOWN TO THE NEAREST  
HUNDREDTH ARE FINISH GRADE ALONG CL

PROJECT NAME: BRAINTREE	FILE NAME: sl2c578profile.dgn	PLOT DATE: 05-OCT-2021
PROJECT NUMBER: BF 0241(51)	PROJECT LEADER: R. YOUNG	DRAWN BY: R. PELLETT
	DESIGNED BY: F. BARROWS	CHECKED BY: F. BARROWS
	PROFILE SHEET	SHEET 13 OF 33



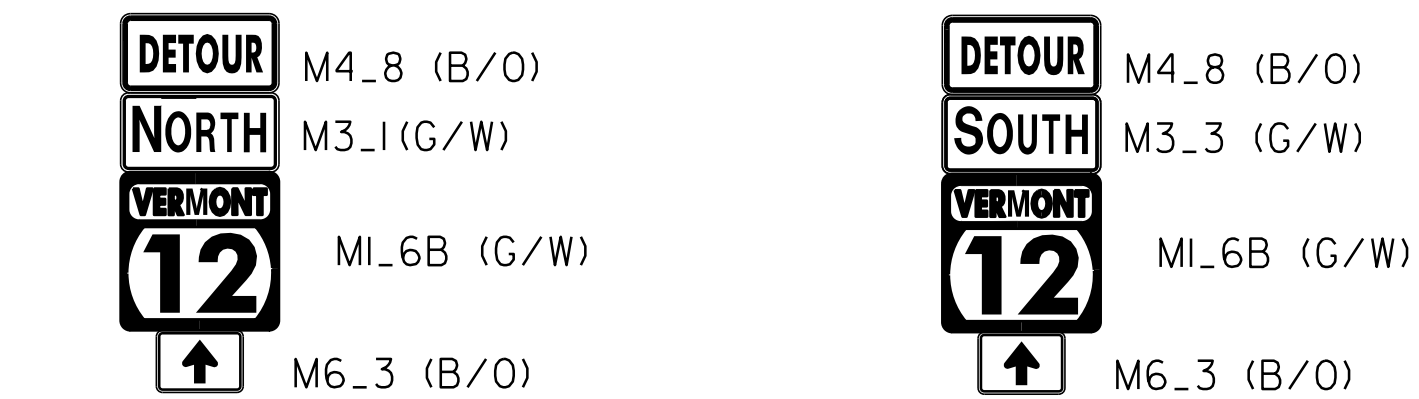
NOTES:

1. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE PLACED OFF THE EDGE OF THE ROADWAY, OUTSIDE THE CLEAR ZONE, BUT SHALL BE VISIBLE FROM THE ROADWAY. ANY VEGETATION THAT INTERFERES WITH VISIBILITY OF THE PCMS SHALL BE REMOVED. REMOVAL OF THE VEGETATION WILL BE INCIDENTAL TO ITEM 641.5, "PORTABLE CHANGEABLE MESSAGE SIGN".

2. ORANGE FLAGS SHALL BE USED WITH TEMPORARY DETOUR SIGNS WITH BLACK LETTERING ON WHITE BACKGROUNDS TO HIGHLIGHT INFORMATION FOR THE TRAVELING PUBLIC EXCEPT THOSE ATTACHED TO TYPE 3 BARRICADES.

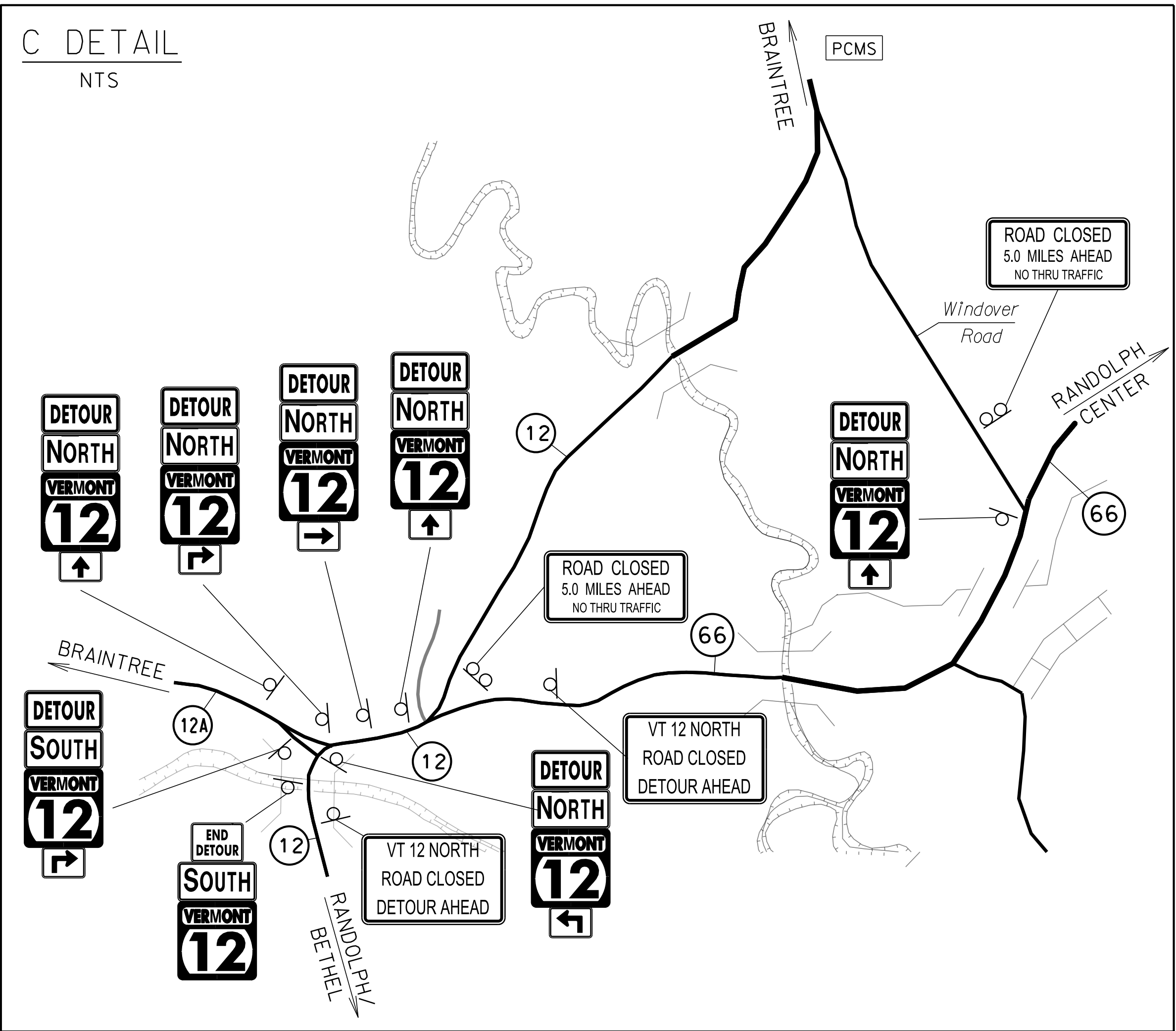
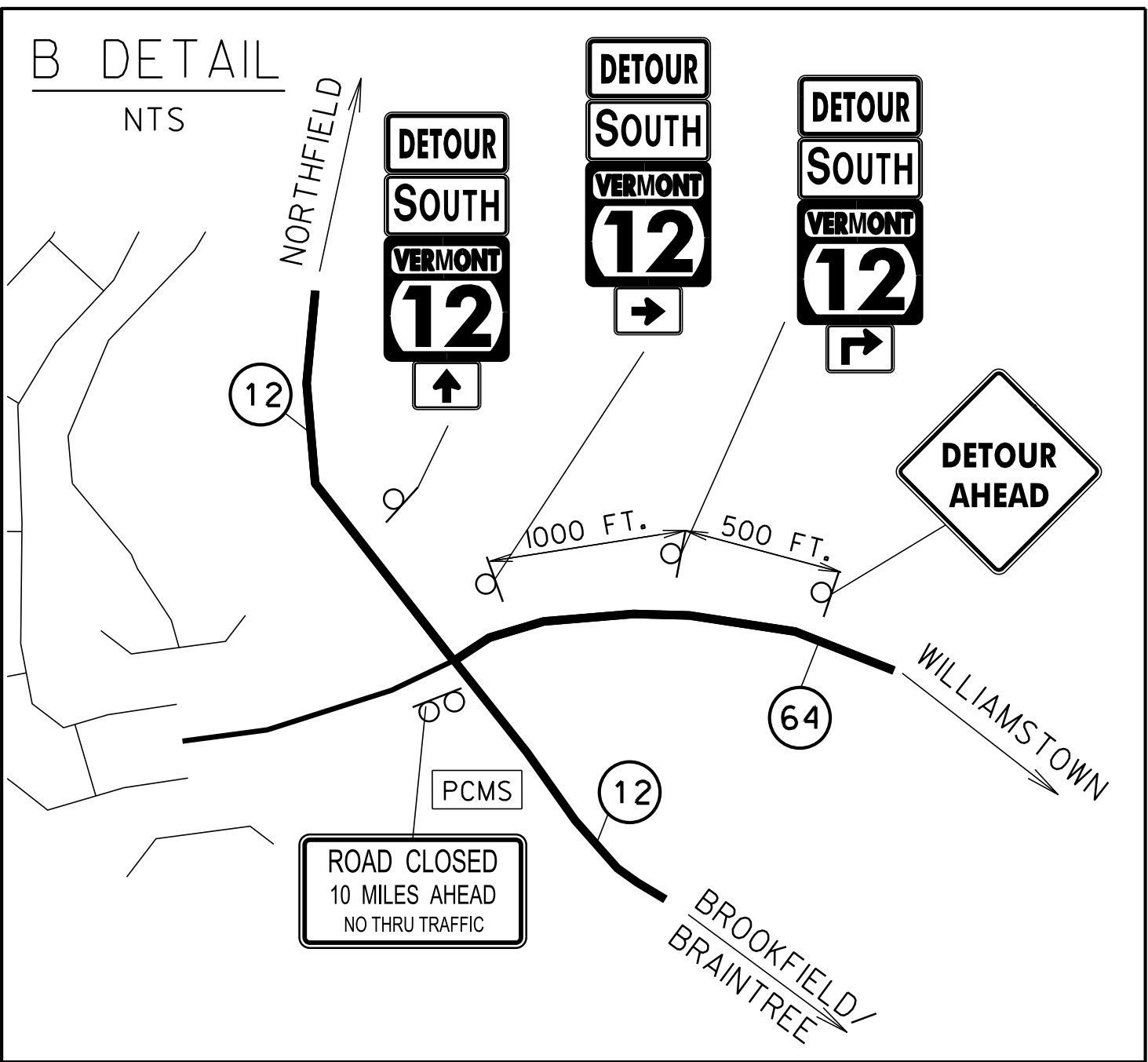
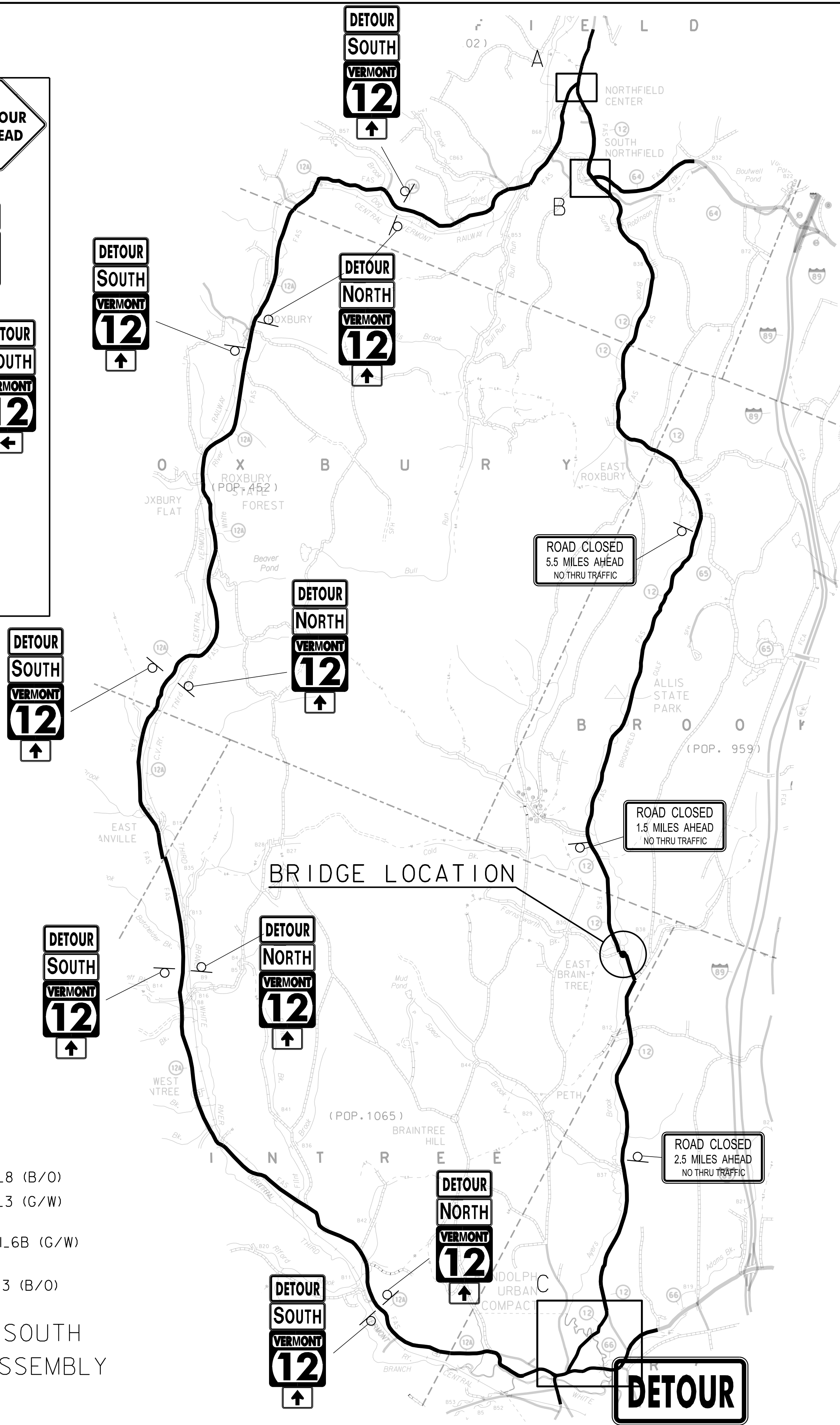
3. SEE CONTRACT DOCUMENTS FOR CLOSURE DATES.

4. COVER ALL SIGNS CONFLICTING WITH DETOUR SIGNS.



TYPICAL NORTH  
DETOUR ASSEMBLY

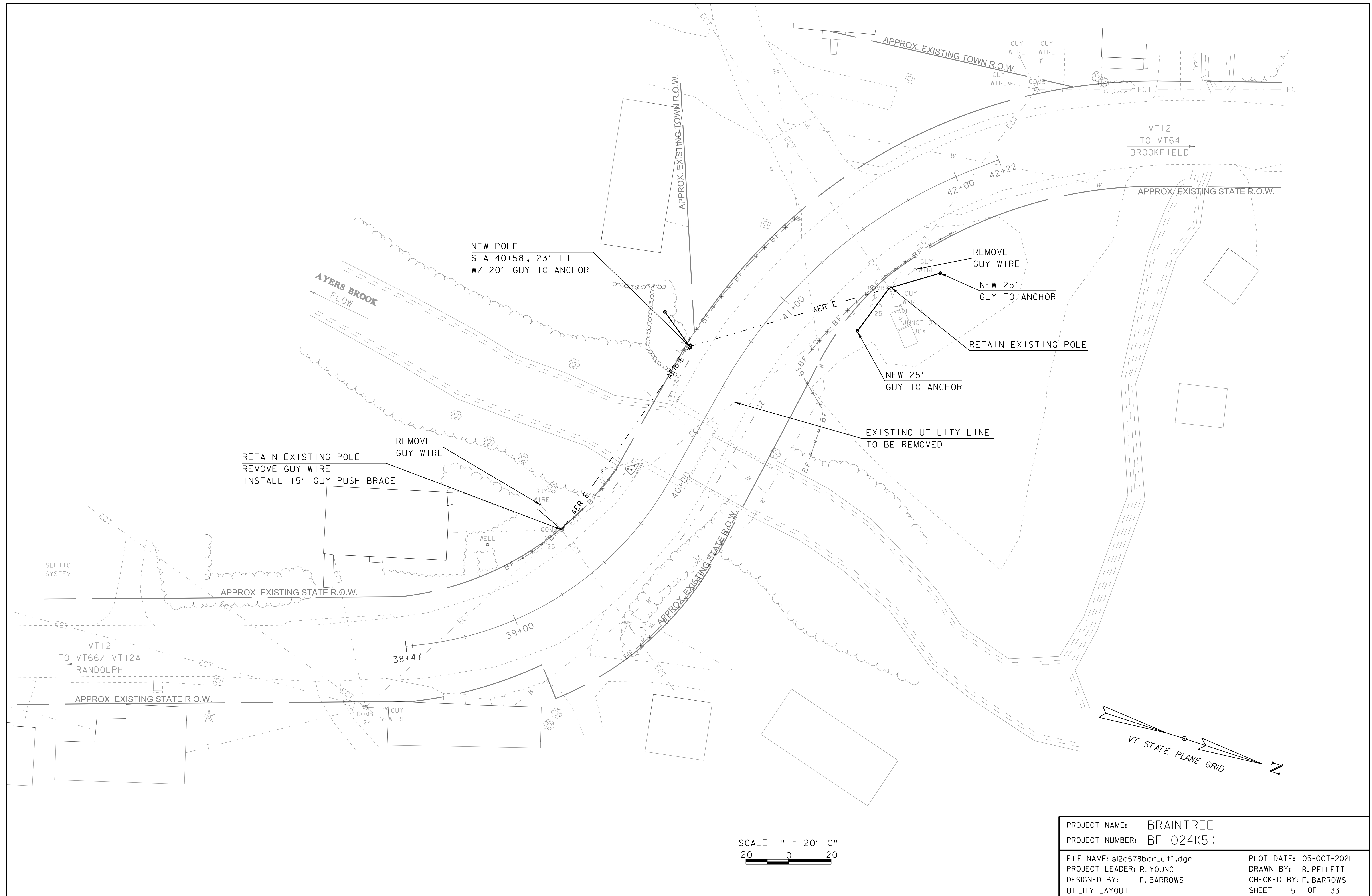
TYPICAL SOUTH  
DETOUR ASSEMBLY



PROJECT NAME: BRAINTREE  
PROJECT NUMBER: BF 0241(51)

FILE NAME: s12c578detour.dgn  
PROJECT LEADER: R. YOUNG  
DESIGNED BY: F. BARROWS  
TRAFFIC CONTROL PLAN

PLOT DATE: 05-OCT-2021  
DRAWN BY: R. PELLETT  
CHECKED BY: F. BARROWS  
SHEET 14 OF 33



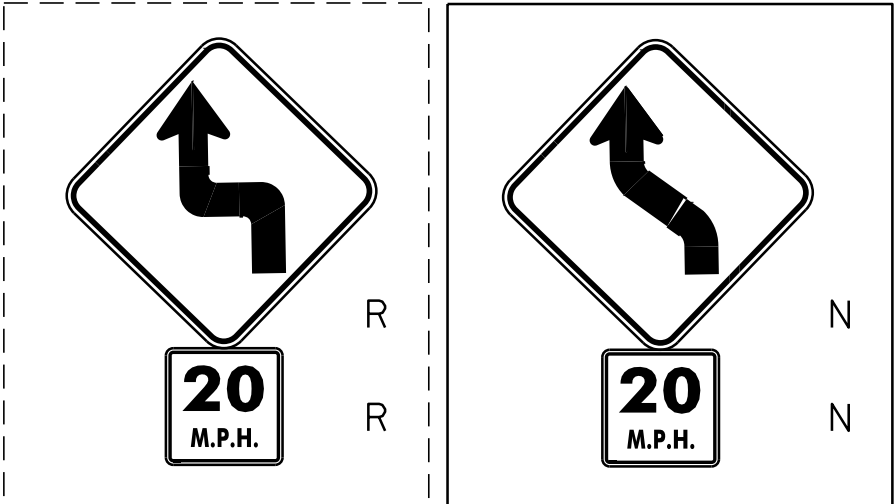
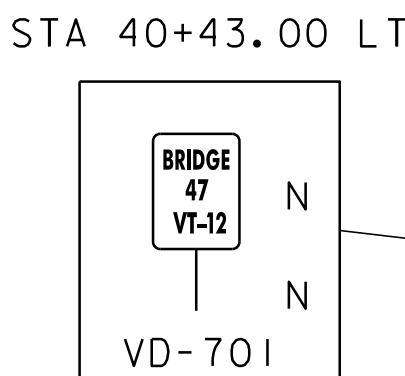
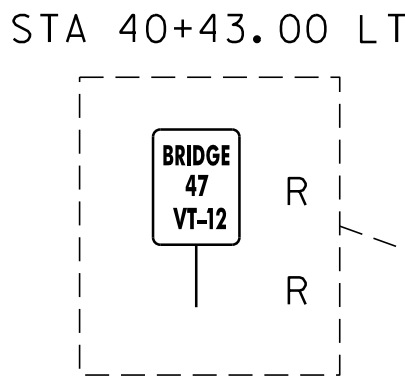
SIGN LEGEND

N = NEW  
R = REMOVE



676.12 REMOVAL OF  
EXISTING DELINEATOR  
STA 39+41.18 RT  
STA 39+76.89 LT  
STA 40+43.13 LT  
STA 40+64.96 LT  
STA 40+77.15 LT  
STA 40+90.43 LT  
STA 41+04.59 LT  
STA 41+18.53 LT

676.10 DELINEATOR WITH STEEL POST  
STA 39+32.00 RT (BLUE)  
STA 39+50.00 LT (GREEN)  
STA 40+90.00 LT (BLUE)  
STA 41+65.00 RT (GREEN)



VT12 MM 0.99

646.21 4 INCH YELLOW LINE (DOUBLE)  
STA 39+05.00 - STA 41+30.00

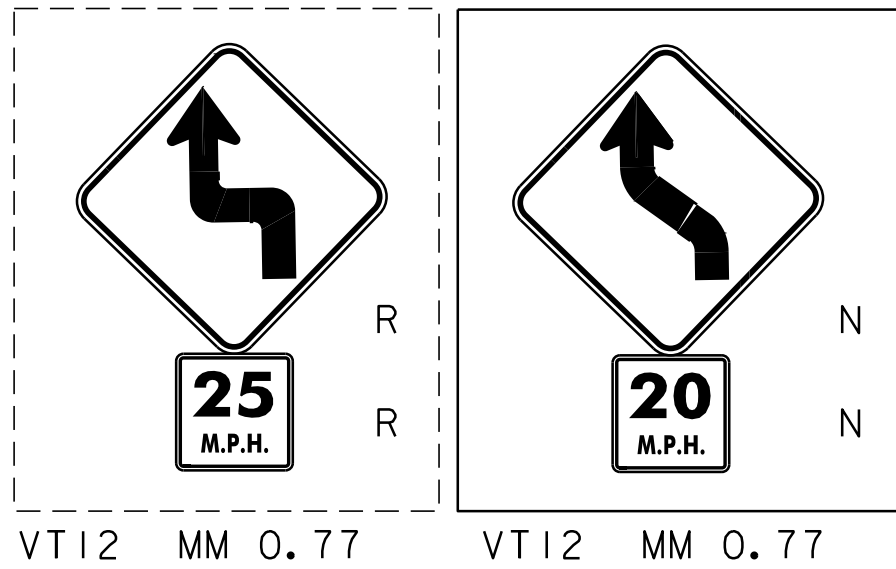
646.20 4 INCH WHITE LINE  
STA 39+05.00 - STA 41+30.00 LT & RT

675.50 REMOVING SIGNS  
STA 39+32.91 RT  
STA 40+02.65 RT  
STA 40+43.13 LT  
VT12 MMO.77  
VT12 MMO.99

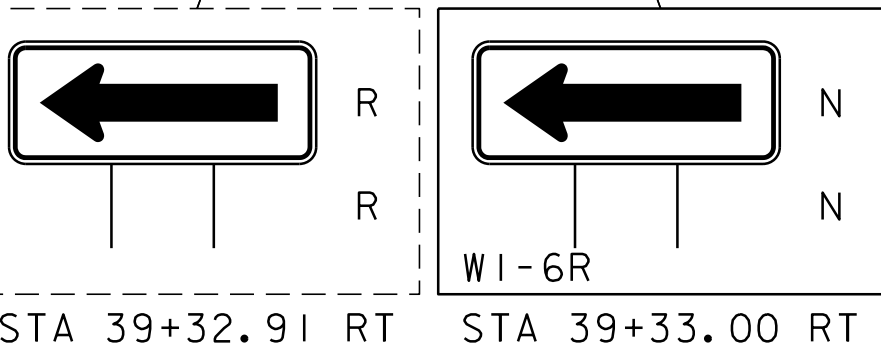
675.20 TRAFFIC SIGNS, TYPE A  
STA 39+33.00 RT  
STA 40+02.00 RT  
STA 40+43.00 LT  
VT12 MMO.77  
VT12 MMO.99

VT12  
TO VT66/ VT12A  
RANDOLPH

APPROX. EXISTING STATE R.O.W.

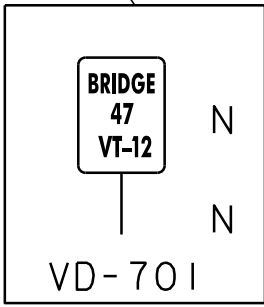


VT12 MM 0.77

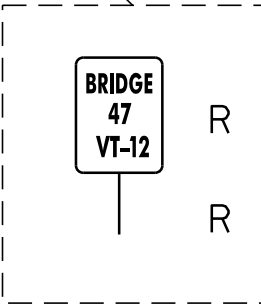


STA 39+32.91 RT

SCALE 1" = 20' - 0"



STA 40+02.00 RT

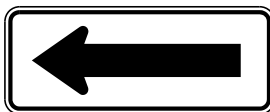
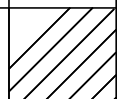
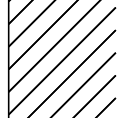


STA 40+02.00 RT

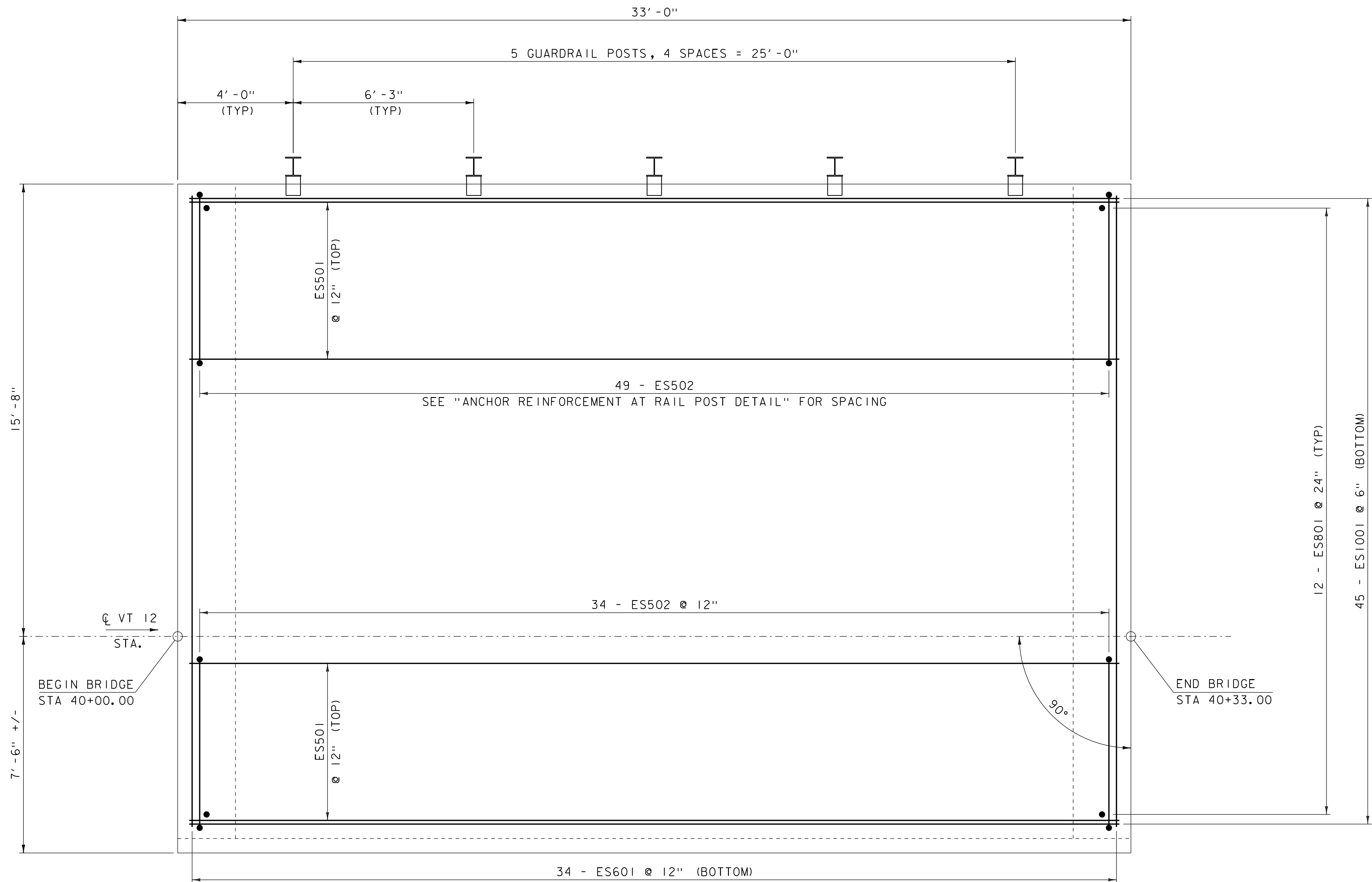
PROJECT NAME: BRAINTREE  
PROJECT NUMBER: BF 024(51)

FILE NAME: sl2c578bdr_sign.dgn  
PROJECT LEADER: R. YOUNG  
DESIGNED BY: F. BARROWS  
SIGNS & LINES LAYOUT

PLOT DATE: 05-OCT-2021  
DRAWN BY: R. PELLETT  
CHECKED BY: F. BARROWS  
SHEET 16 OF 33

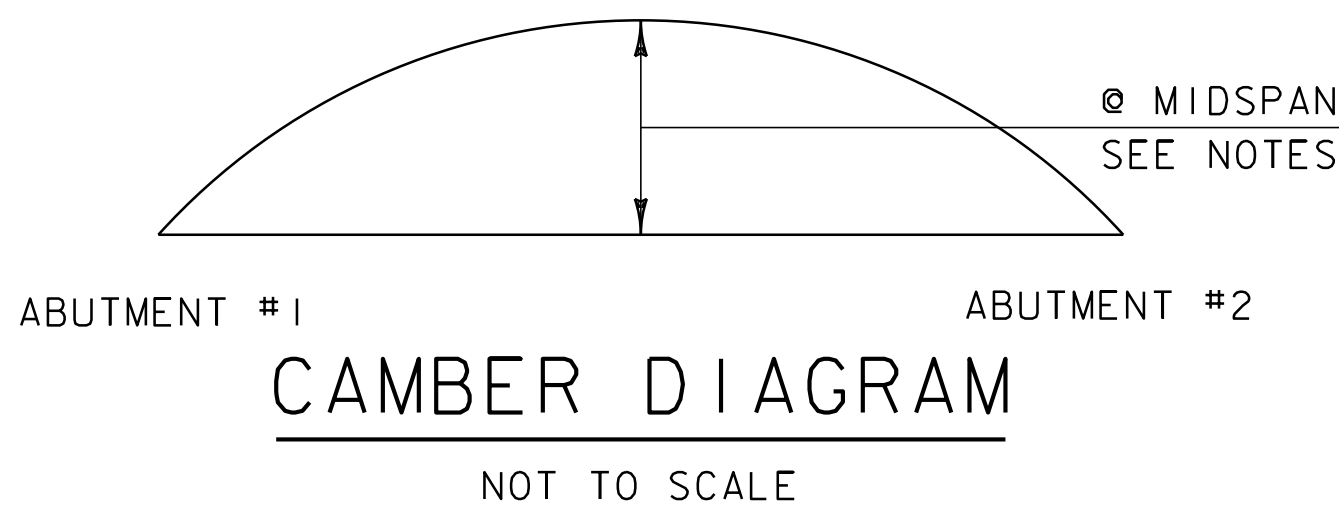
MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW SIGN  "A"	NO. OF P O S T S	NEW SIGN POSTS					REMARKS	SIGN DETAIL	
						SQUARE STEEL (in)			A N C H O R	S L E E V E		DETAIL ON SHEET NUMBER	STANDARD SHEET NUMBER
		WIDTH (in)	HEIGHT (in)			1.75	2.0	2.5					
						1.88	1b/ft 2.42	3.35					
39+33.00 RT		48	24	8.00	2		24		X		W1-6		
40+02.00 RT		6	10	0.42	1	8			X		VD-701		T-42
40+43.00 LT		6	10	0.42	1	8			X		VD-701		T-42
VT12 MM0.77		30 18	30 18	6.25 2.25	1		15		X		W1-4 W13-1P		
VT12 MM0.99		30 18	30 18	6.25 2.25	1		15		X		W1-4 W13-1P		
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS & THE VTRANS "SIGN POST DESIGN GUIDELINE."						FT 16		FT 54	FT		EA		
TOTAL				SF 26.00		FT 70			SHSM = FHWA STANDARD HIGHWAY SIGNS & MARKINGS BOOK				

PROJECT NAME:	BRAINTREE
PROJECT NUMBER:	BF 0241(51)
FILE NAME: sl2c578bdr_sign.dgn	PLOT DATE: 05-OCT-2021
PROJECT LEADER: R. YOUNG	DRAWN BY: R. PELLETT
DESIGNED BY: F. BARROWS	CHECKED BY: F. BARROWS
SIGN SUMMARY	SHEET 17 OF 33



BRIDGE DECK PLAN

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



NOTES:

1. THE SLAB SHALL BE CAMBERED A TOTAL OF 1 5/8" AT MIDSPAN, THIS INITIAL CAMBER SHALL APPROXIMATE A CIRCULAR CURVE.
2. THE CAMBER CONSISTS OF 1" DEAD LOAD CAMBER AND 5/8" RESIDUAL CAMBER.

NOTE:

NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
3" CLEAR, UNLESS OTHERWISE  
SPECIFIED ON THE PLANS.

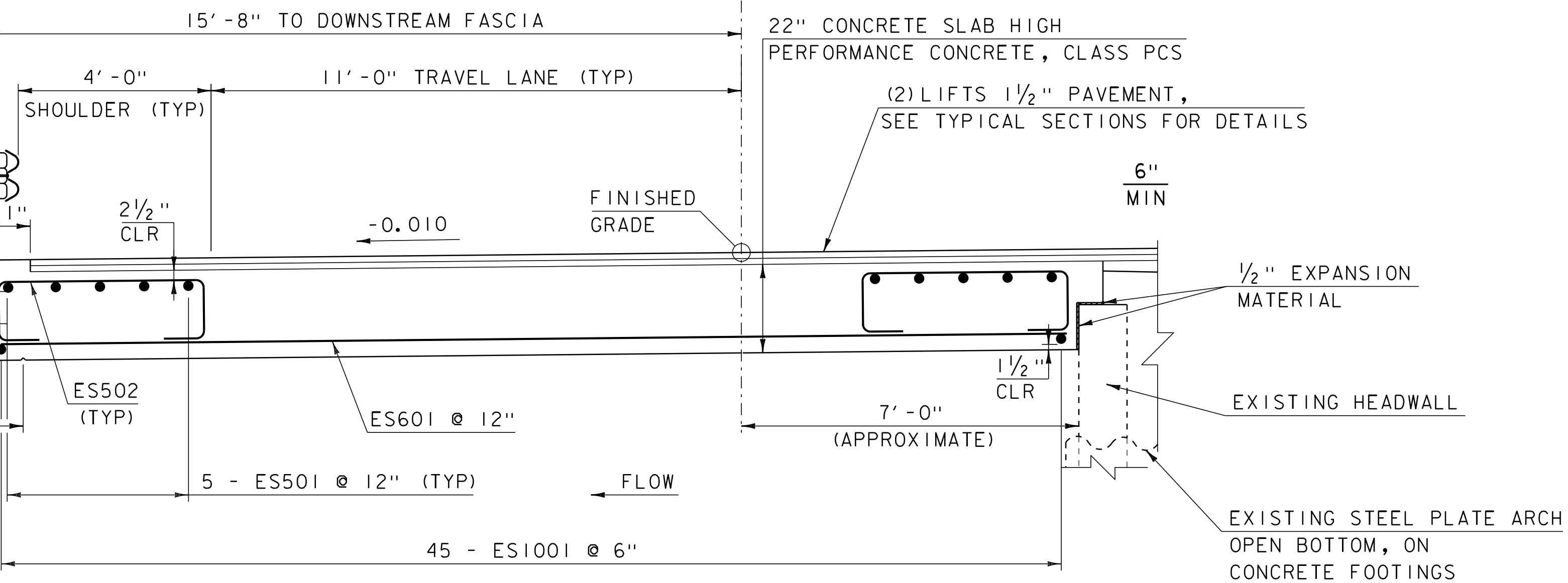
PROJECT NAME: BRAINTREE  
PROJECT NUMBER: BF 0241(51)

FILE NAME: sl2c578super.dgn  
PROJECT LEADER: R. YOUNG  
DESIGNED BY: C. FRENCH  
DECK PLAN

PLOT DATE: 05-OCT-2021  
DRAWN BY: R. PELLETT  
CHECKED BY: C. FRENCH  
SHEET 18 OF 33

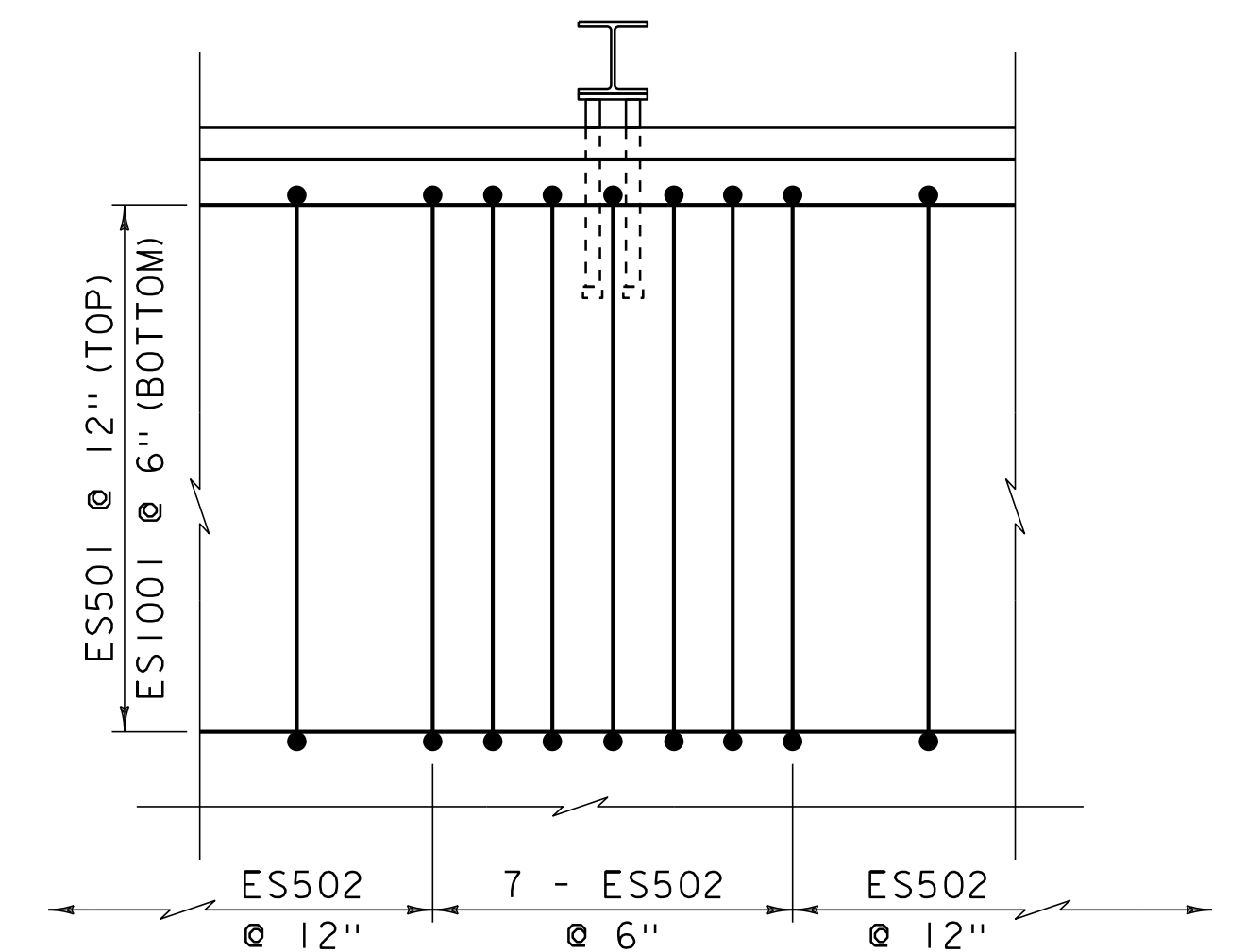
BRIDGE RAILING GALVANIZED  
HDSB /FASCIA MOUNTED/  
STEEL TUBING  
SEE STANDARD S-367A

DRIP NOTCH  
SEE STANDARD S-502

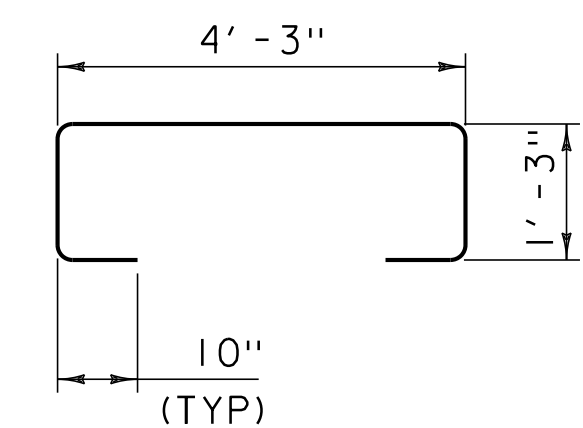


## BRIDGE TYPICAL

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

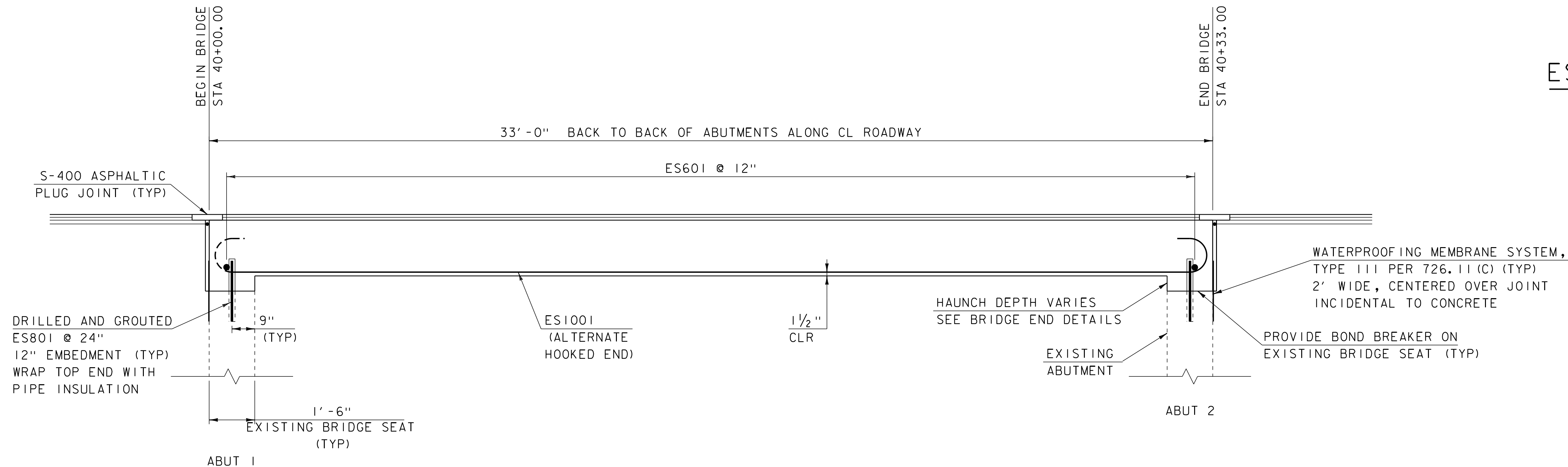


## ANCHOR REINFORCEMENT AT RAIL POST DETAIL



## ES502 BEND DETAIL

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



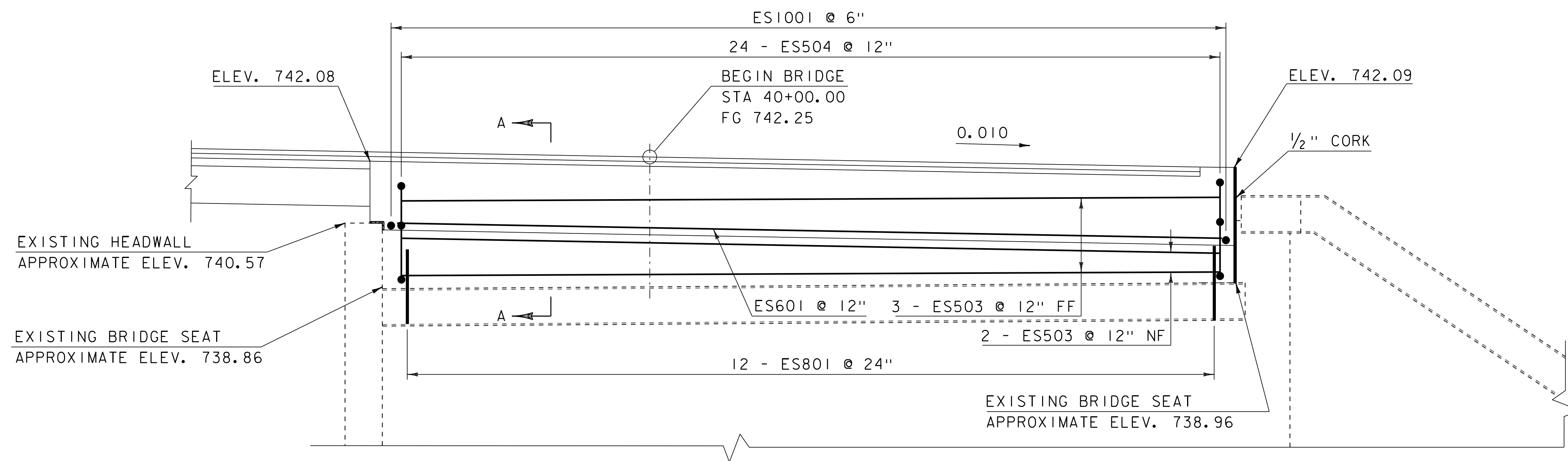
### NOTE:

NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
3" CLEAR, UNLESS OTHERWISE  
SPECIFIED ON THE PLANS.

PROJECT NAME: BRAINTREE  
PROJECT NUMBER: BF 0241(51)

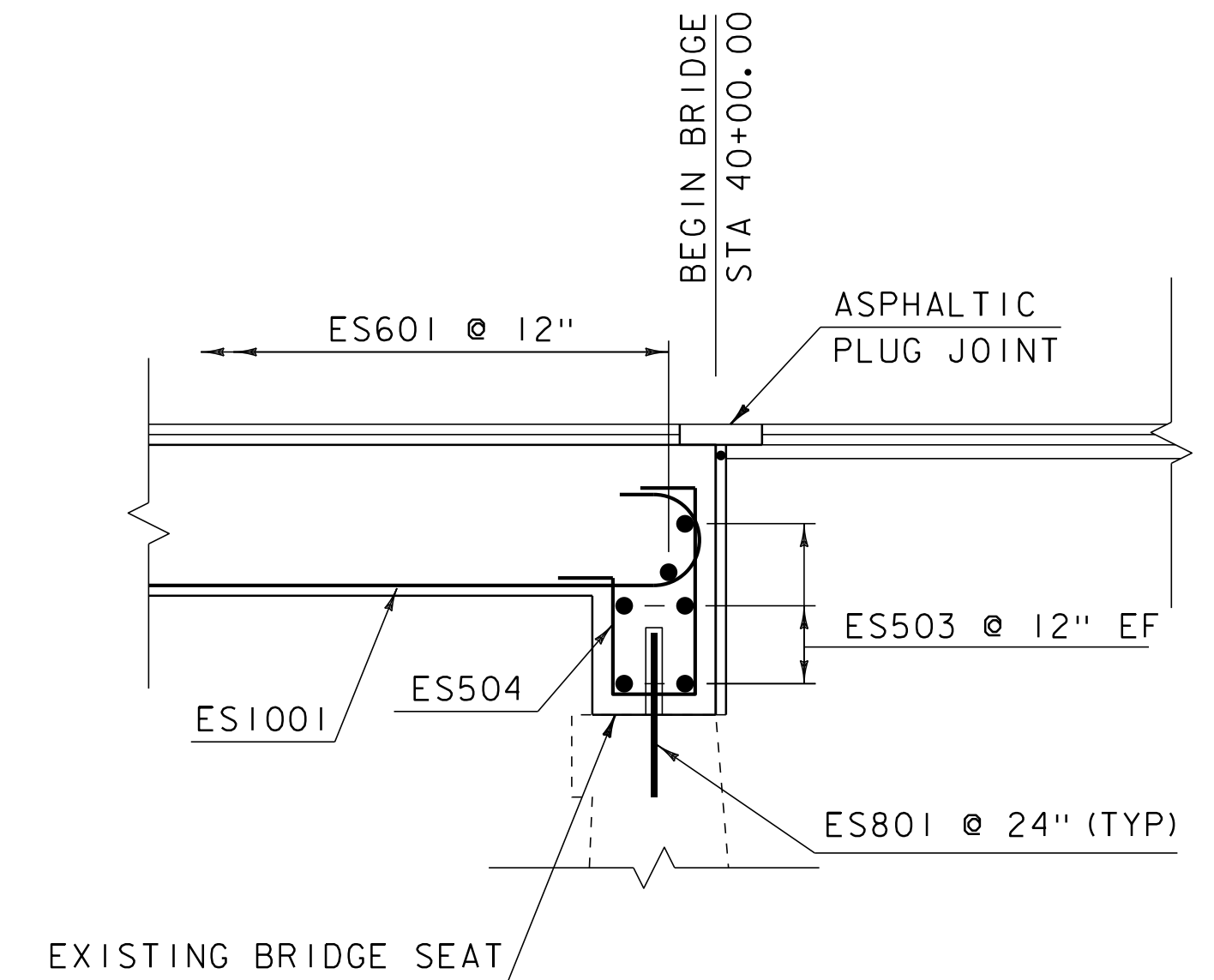
FILE NAME: sl2c578super.dgn  
PROJECT LEADER: R. YOUNG  
DESIGNED BY: F. BARROWS  
DECK SECTIONS

PLOT DATE: 05-OCT-2021  
DRAWN BY: R. PELLETT  
CHECKED BY: C. FRENCH  
SHEET 19 OF 33



## ABUTMENT I ELEVATION

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



## SECTION A-A

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

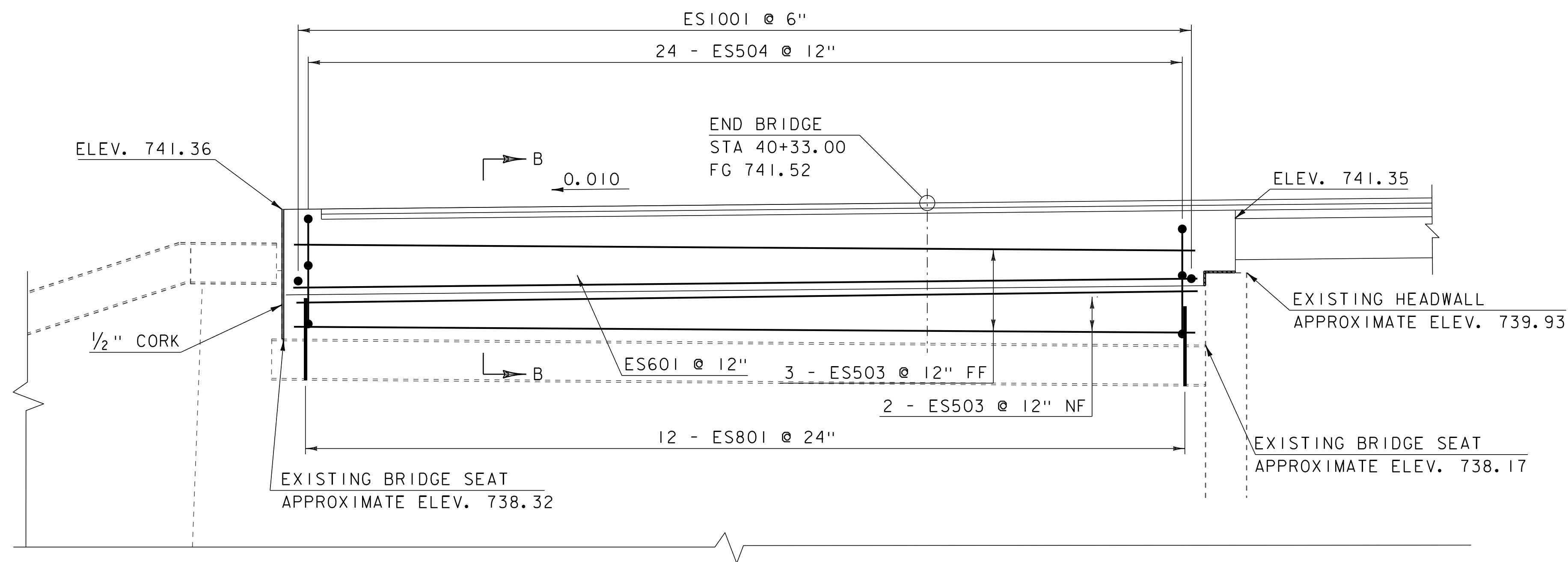
### NOTE:

NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
3" CLEAR, UNLESS OTHERWISE  
SPECIFIED ON THE PLANS.

PROJECT NAME: BRAINTREE  
PROJECT NUMBER: BF 0241(51)

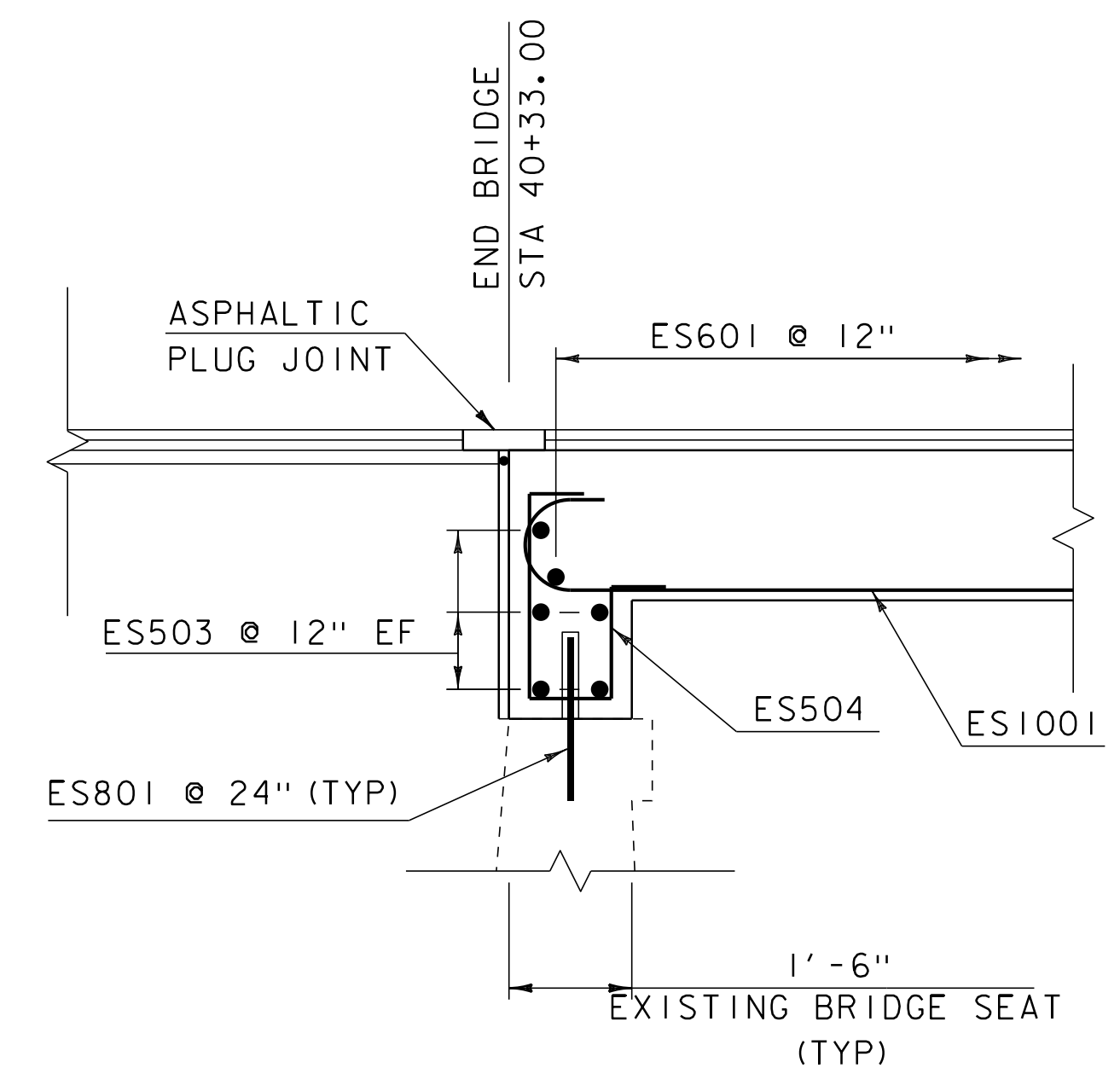
FILE NAME: sl2c578super.dgn  
PROJECT LEADER: R. YOUNG  
DESIGNED BY: F. BARROWS  
BRIDGE END DETAILS ABUTMENT I

PLOT DATE: 05-OCT-2021  
DRAWN BY: F. BARROWS  
CHECKED BY: C. FRENCH  
SHEET 20 OF 33



## ABUTMENT 2 ELEVATION

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



## SECTION B-B

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

### NOTE:

NF = NEAR FACE  
 FF = FAR FACE  
 EF = EACH FACE  
 ▲ = CUT TO FIT IN FIELD  
 3" CLEAR, UNLESS OTHERWISE  
 SPECIFIED ON THE PLANS.

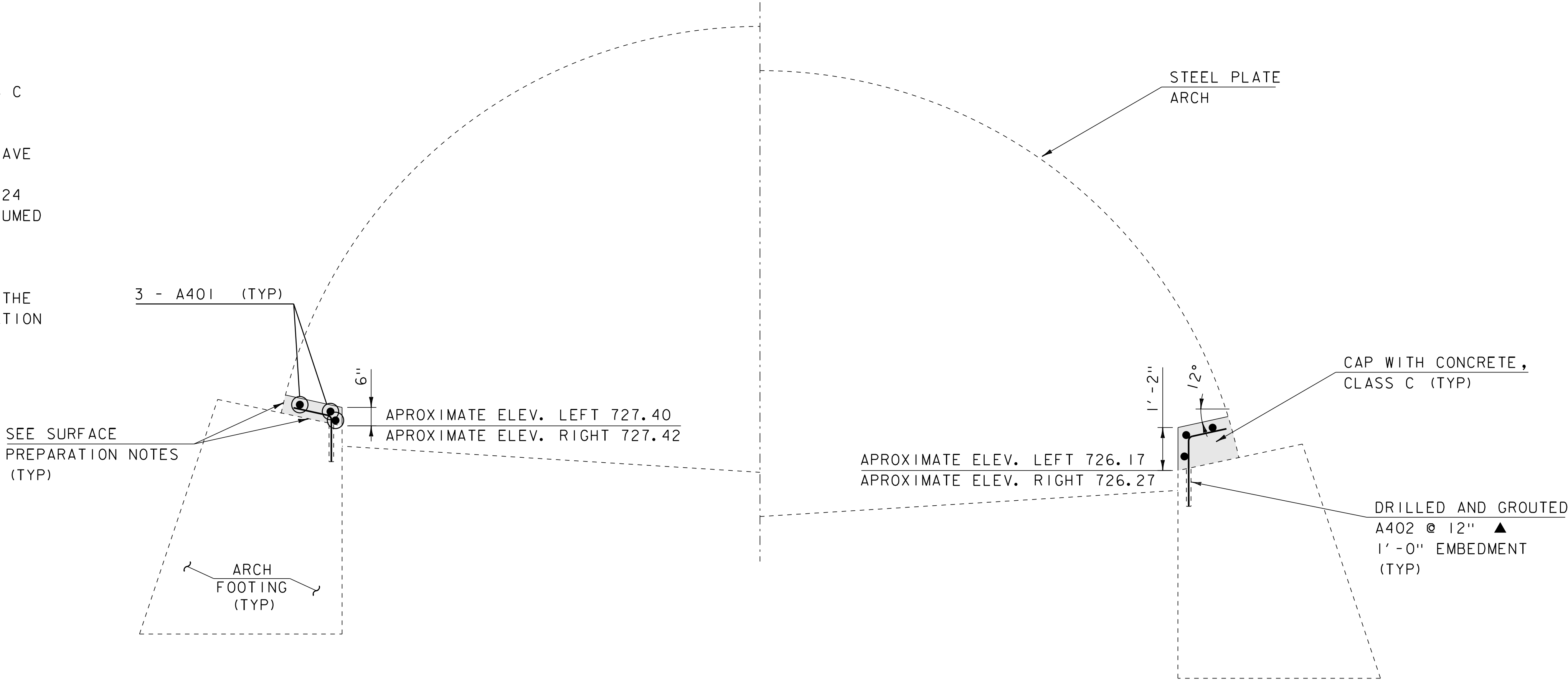
PROJECT NAME: BRAINTREE  
 PROJECT NUMBER: BF 0241(51)

FILE NAME: sl2c578super.dgn  
 PROJECT LEADER: R. YOUNG  
 DESIGNED BY: F. BARROWS  
 BRIDGE END DETAILS ABUTMENT 2

PLOT DATE: 05-OCT-2021  
 DRAWN BY: F. BARROWS  
 CHECKED BY: C. FRENCH  
 SHEET 21 OF 33

SURFACE PREPARATION NOTES:

1. ALL SUFACE PREPARATION REQUIRED FOR PLACING CONCRETE, CLASS C CAP SHALL BE INCIDENTAL TO ITEM 541.30, CONCRETE, CLASS C.
2. THE ENTIRE AREA OF EXISTING CONCRETE AND EXPOSED STEEL TO HAVE NEW CONCRETE PLACED AGAINST OR AROUND IT, SHALL BE ABRASIVE BLAST-CLEANED TO REMOVE CONTAMINANTS AND LAITANCE A MAXIMUM OF 24 HOURS PRIOR TO PLACING THE NEW CONCRETE. THE AREA SHALL BE VACUUMED OR FLUSHED USING HIGH-PRESSURE AIR OR WATER TO REMOVE ALL LOOSE PARTICLES, DUST, AND DEBRIS.
3. AN EPOXY BONDING COMPOUND, PER 719.02, SHALL BE APPLIED TO THE EXISTING CONCRETE SURFACE, FOLLOWING ADDITIONAL SURFACE PREPARATION PER MANUFACTURERS RECOMMENDATION.

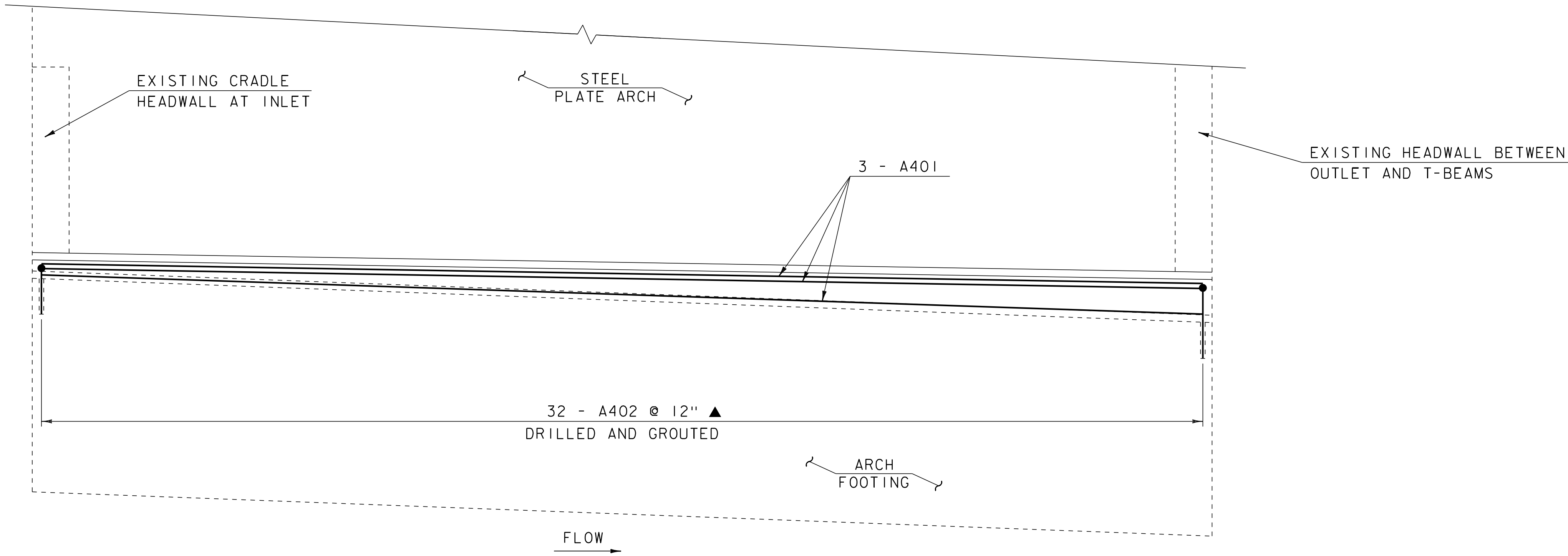


INLET ARCH TYPICAL

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

OUTLET ARCH TYPICAL

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



ARCH FOOTING ELEVATION

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

NOTE:  
NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
3" CLEAR, UNLESS OTHERWISE  
SPECIFIED ON THE PLANS.  
2'-2" BAR LAP UNLESS OTHERWISE  
SPECIFIED ON THE PLANS.

PROJECT NAME:	BRAINTREE	PLOT DATE:	05-OCT-2021
PROJECT NUMBER:	BF 0241(51)	DRAWN BY:	F. BARROWS
FILE NAME:	sl2c578sub.dgn	CHECKED BY:	C. FRENCH
PROJECT LEADER:	R. YOUNG	SHEET	22 OF 33
DESIGNED BY:	F. BARROWS		
ARCH FOOTING CAP			

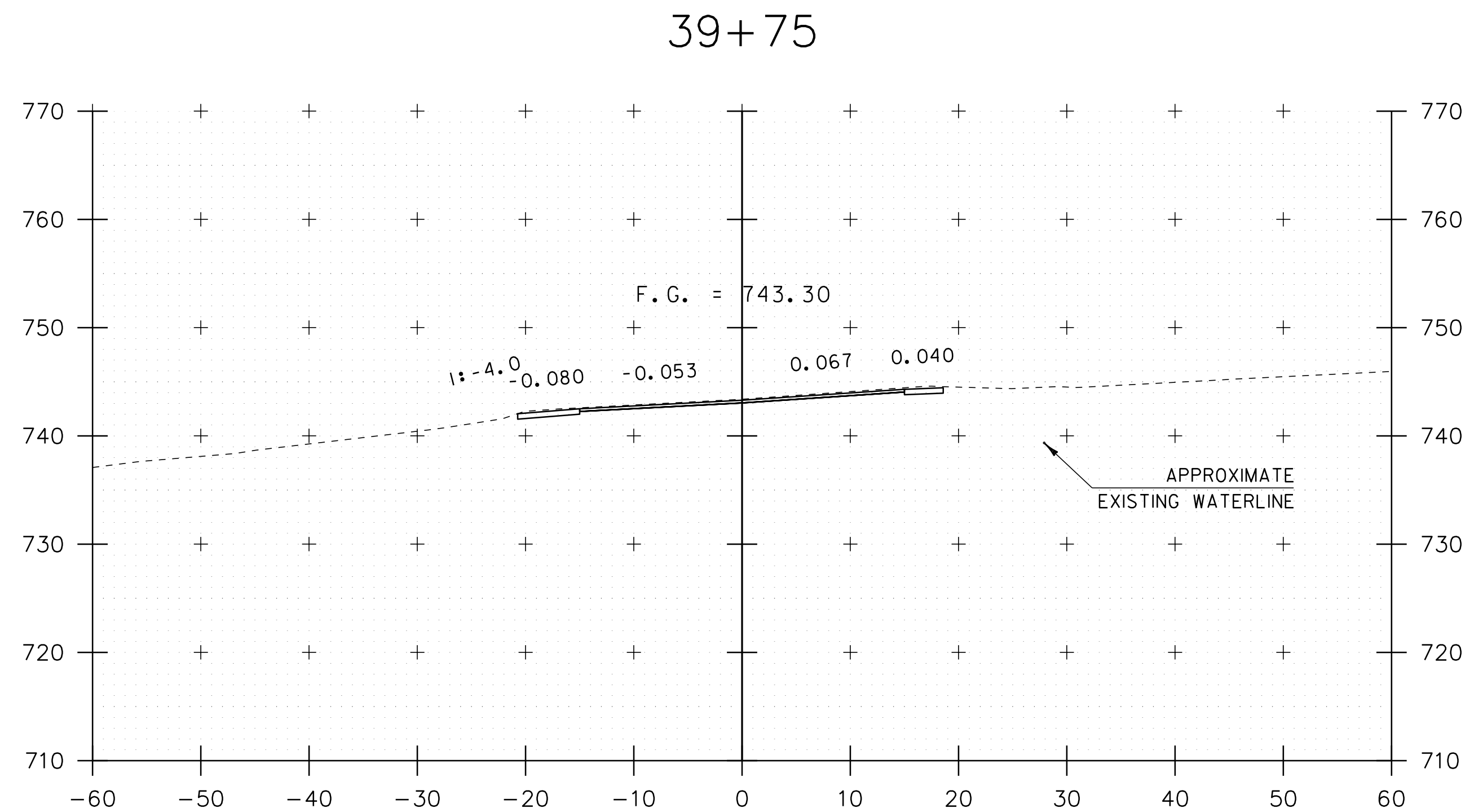
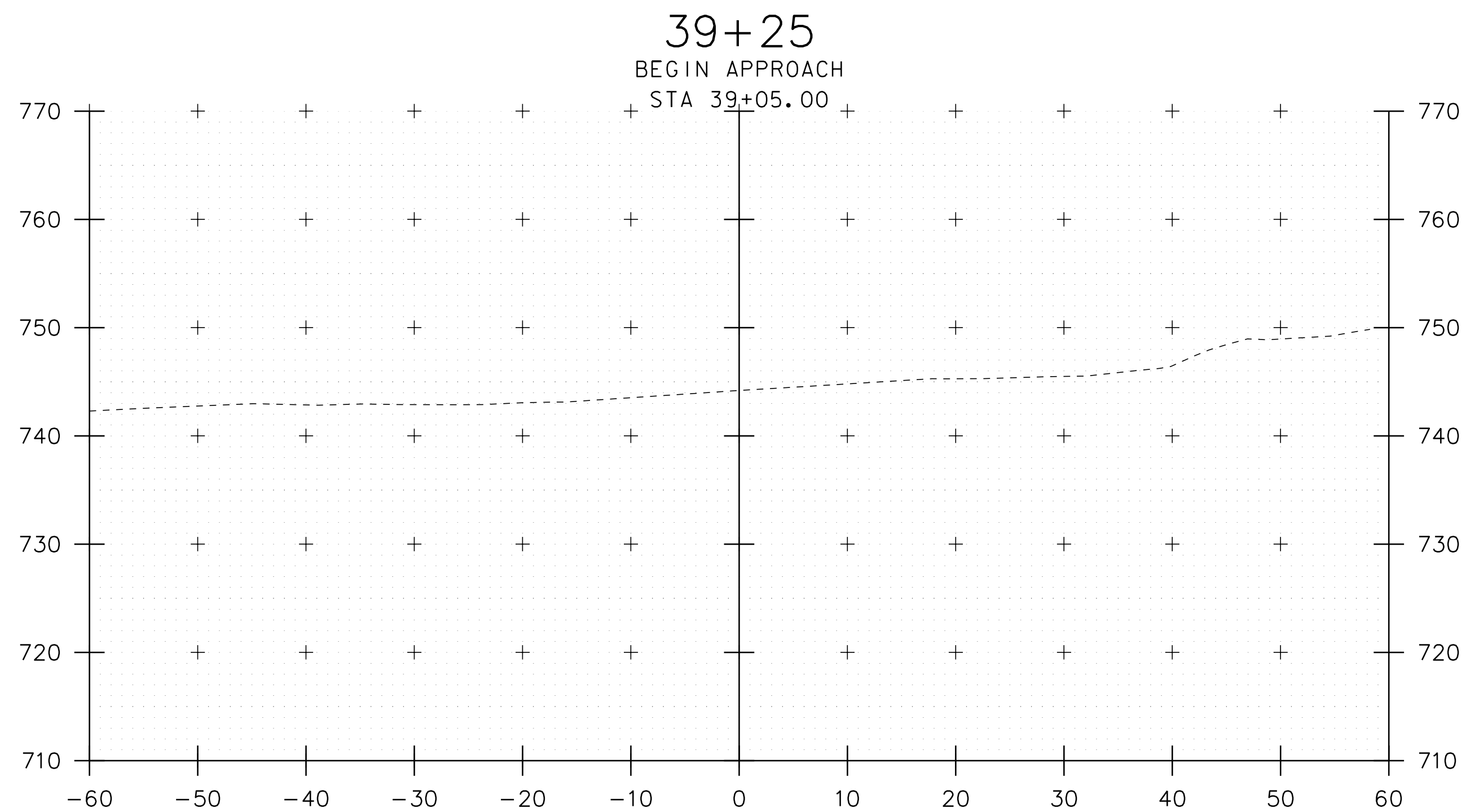
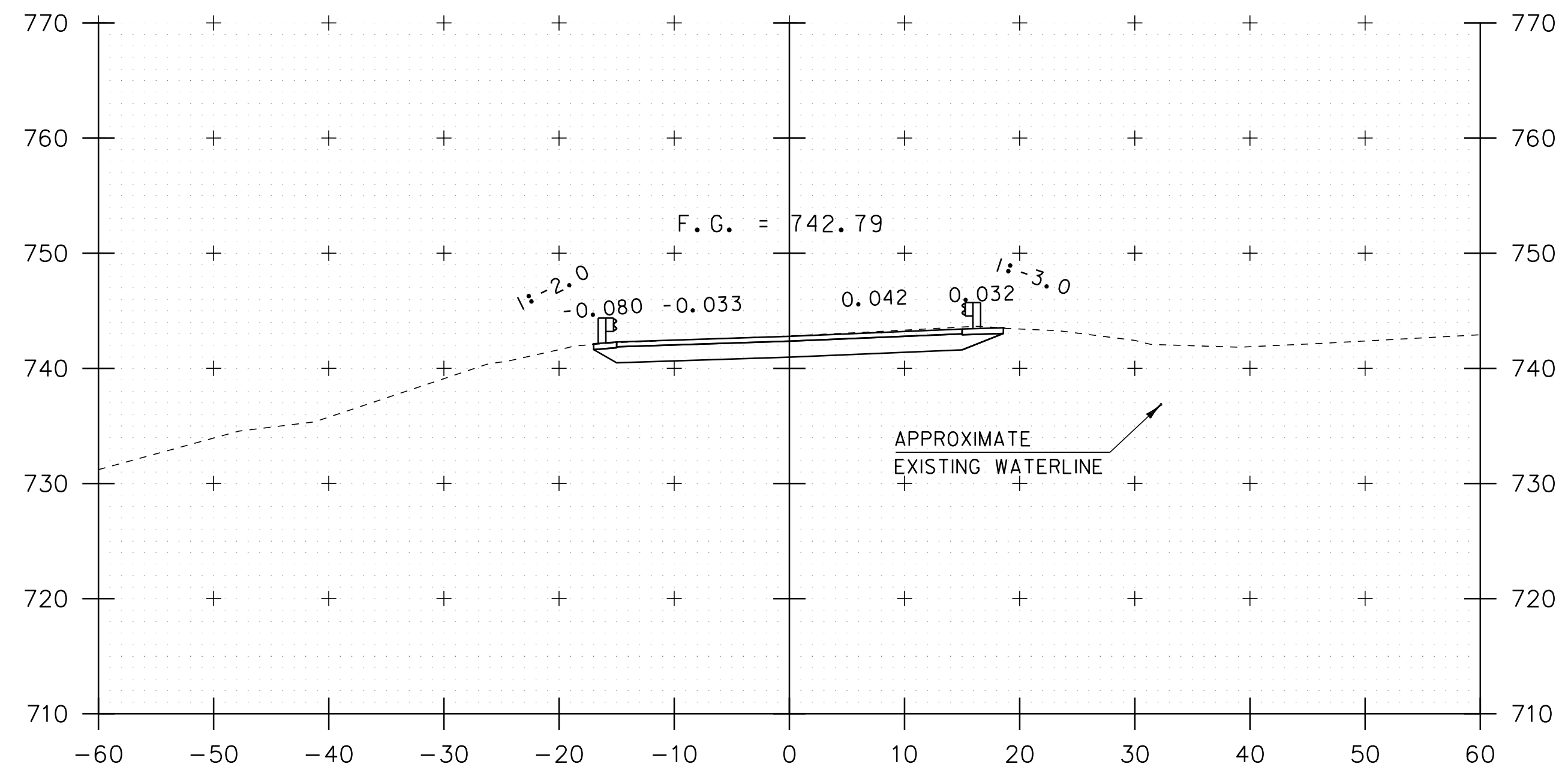
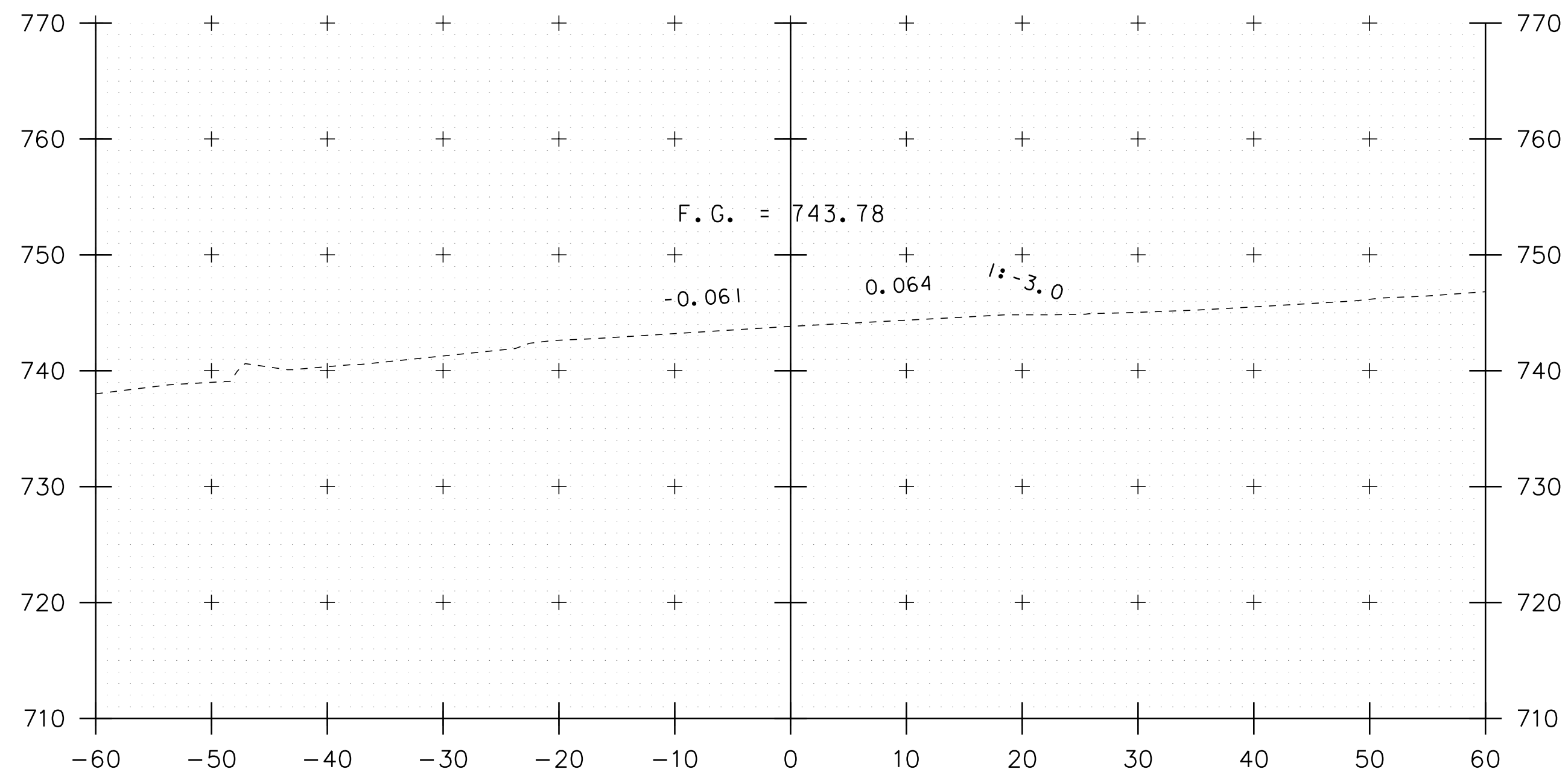
# REINFORCING STEEL SCHEDULE

[illegible]

**~ REINFORCING STEEL CORROSION RESISTANCE LEVEL ~**

THE REINFORCING STEEL MARKS IN THIS SCHEDULE INDICATE THE REQUIRED BAR CORROSION RESISTANCE LEVEL. CORROSION RESISTANCE LEVEL IS DENOTED WITH A .2 FOR LEVEL TWO SUFFIX OR .3 FOR LEVEL THREE SUFFIX. .1 FOR LEVEL ONE IS TO BE OMITTED. THE BAR MATERIAL TYPE AND BAR STEEL GRADE PROVIDED FOR EACH CORROSION LEVEL WILL BE RECORDED ON THE PLAN SET PI SHEET FOR AS-BUILT RECORD PLAN ARCHIVES.

<b>PROJECT NAME:</b> BRAINTREE	
<b>PROJECT NUMBER:</b> BF 024I(51)	
<b>FILE NAME:</b> sl2c578r.ss.dgn	<b>PLOT DATE:</b> 05-OCT-2021
<b>PROJECT LEADER:</b> R. YOUNG	<b>DRAWN BY:</b> F. BARROWS
<b>DESIGNED BY:</b> F. BARROWS	<b>CHECKED BY:</b> C. FRENCH
<b>REINFORCING STEEL SCHEDULE</b>	<b>SHEET      23      OF      33</b>



39+00

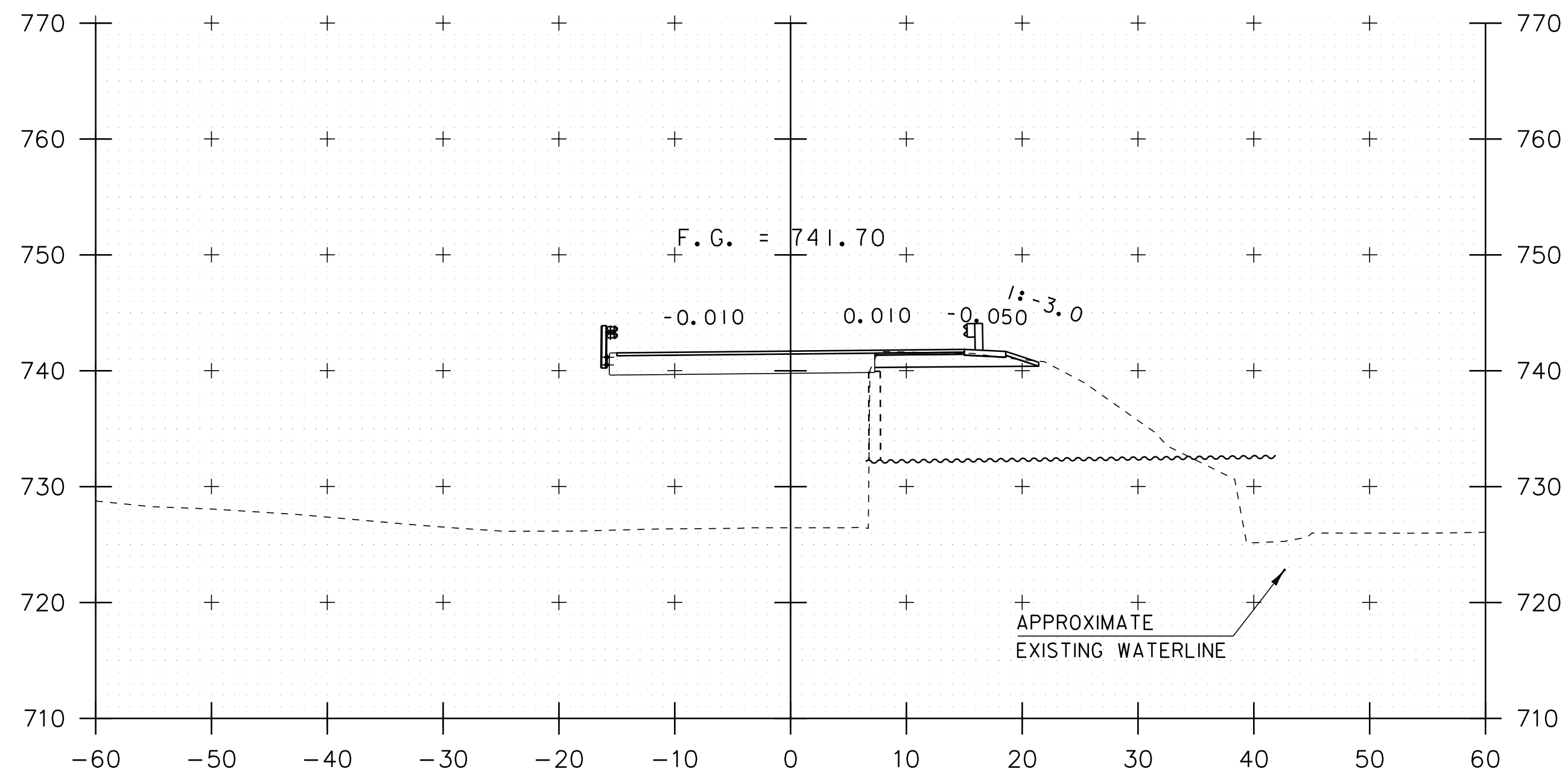
39+50  
BEGIN PROJECT

STA. 39+00 TO STA. 39+75

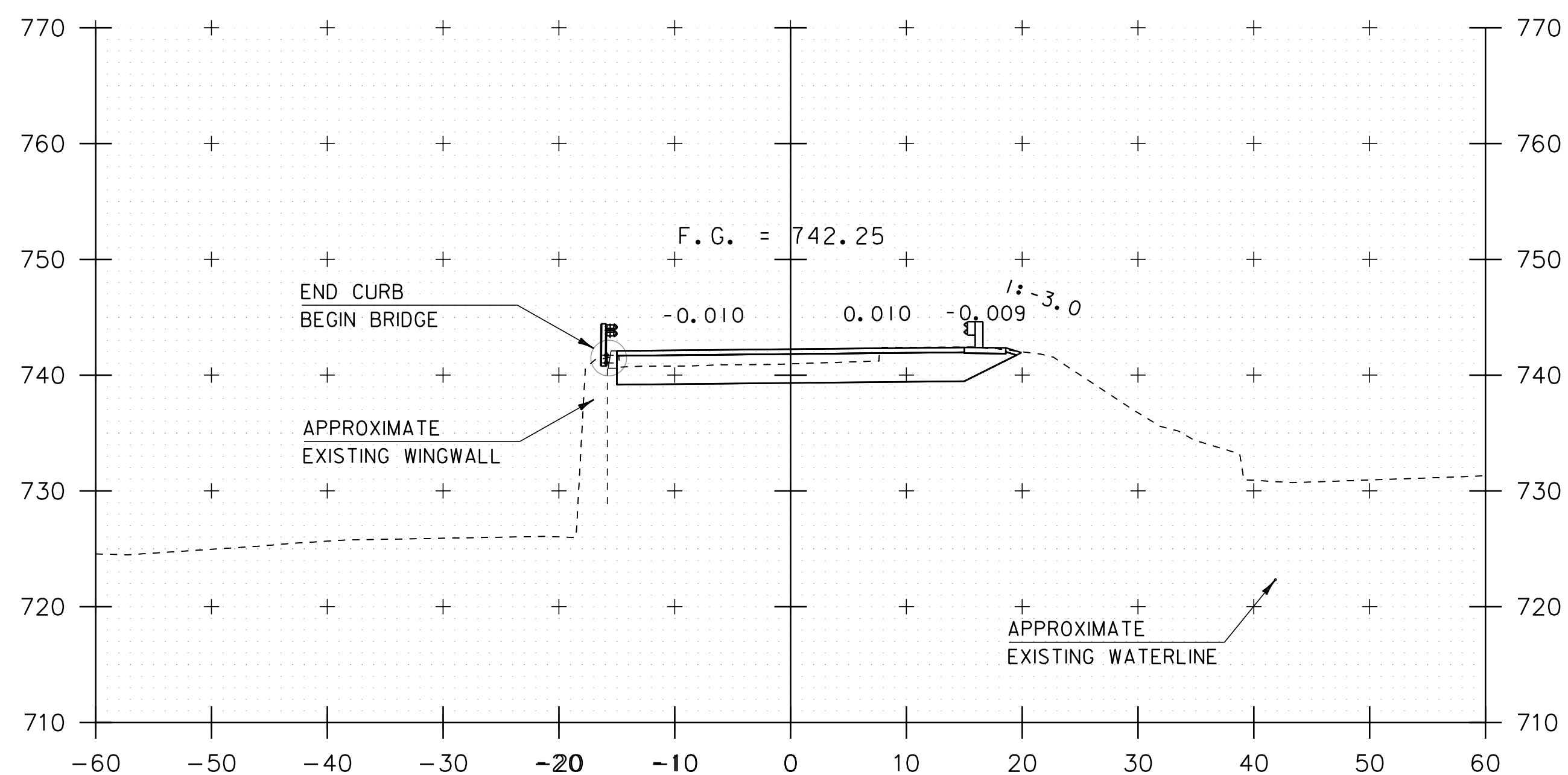
PROJECT NAME: BRAINTREE  
PROJECT NUMBER: BF 024I(5I)

FILE NAME: sl2c578xs.dgn  
PROJECT LEADER: R. YOUNG  
DESIGNED BY: F. BARROWS  
VT RT 12 CROSS SECTIONS I

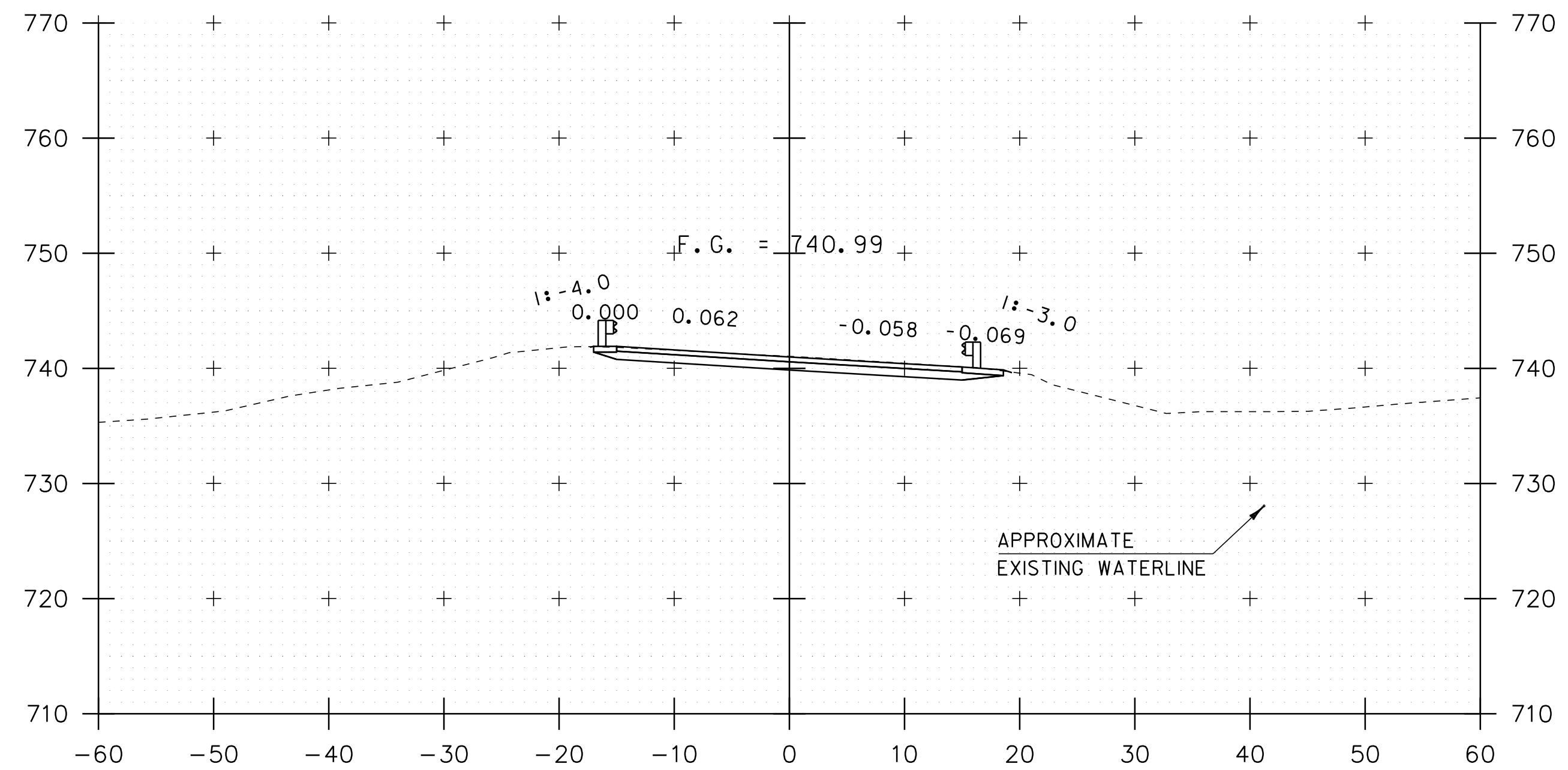
PLOT DATE: 05-OCT-2021  
DRAWN BY: R. PELLETT  
CHECKED BY: F. BARROWS  
SHEET 24 OF 33



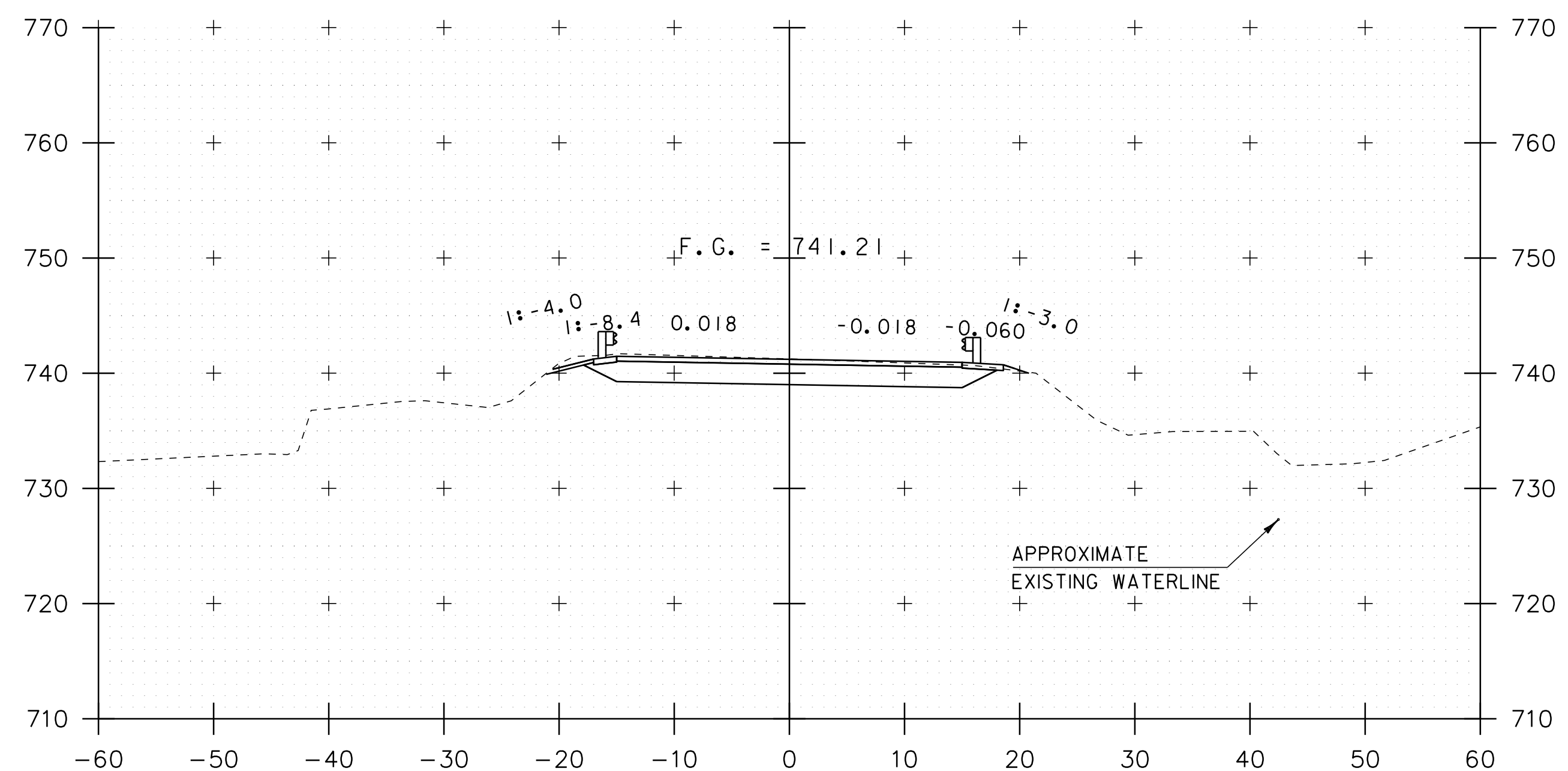
40+25



40+00  
BEGIN BRIDGE



40+75



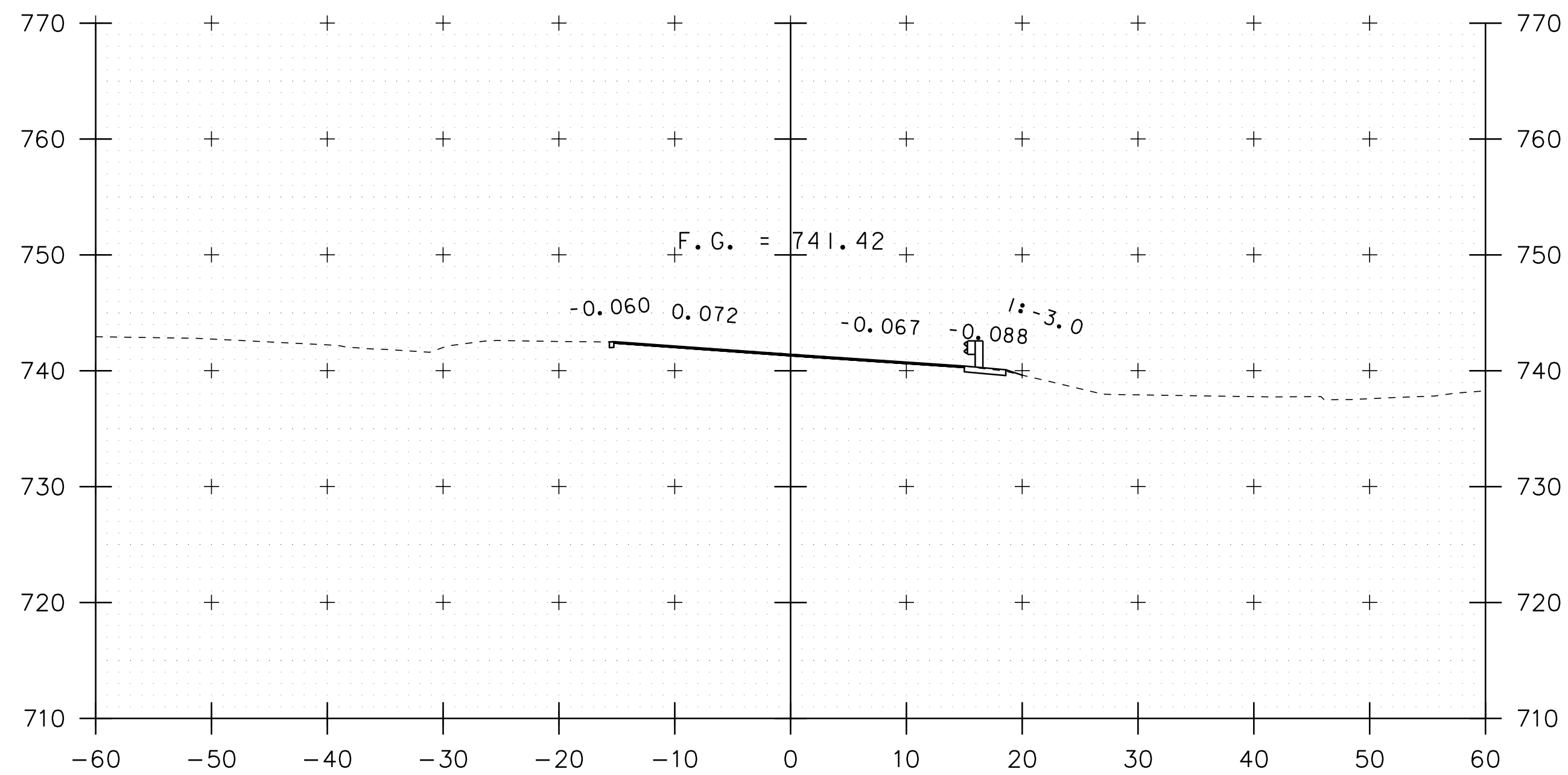
40+50  
END BRIDGE  
STA 40+33.00

STA. 40+00 TO STA. 40+75

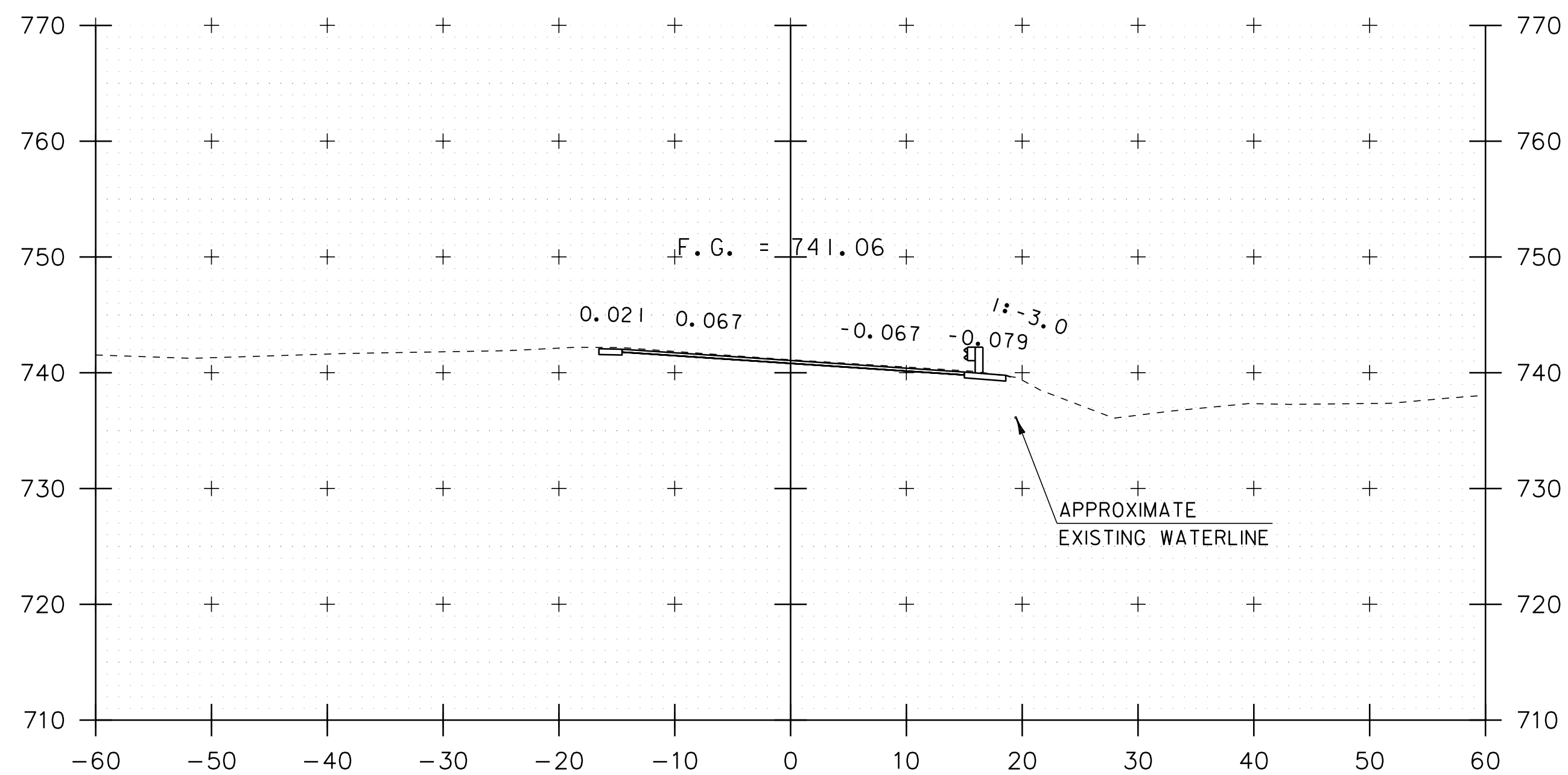
PROJECT NAME: BRAINTREE  
PROJECT NUMBER: BF 0241(51)

FILE NAME: sl2c578xs.dgn  
PROJECT LEADER: R. YOUNG  
DESIGNED BY: F. BARROWS  
VT RT 12 CROSS SECTIONS 2

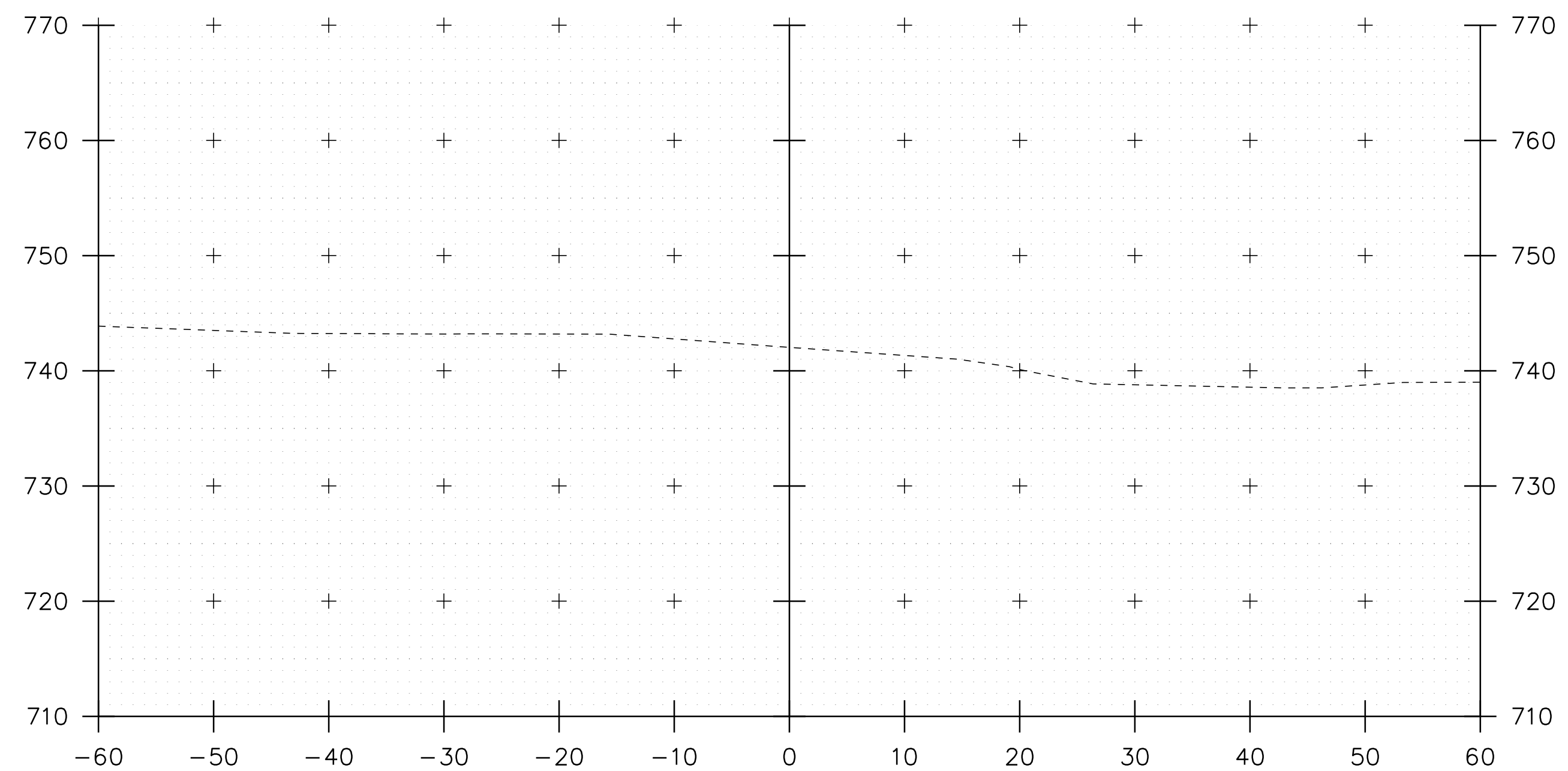
PLOT DATE: 05-OCT-2021  
DRAWN BY: R. PELLETT  
CHECKED BY: F. BARROWS  
SHEET 25 OF 33



41+25



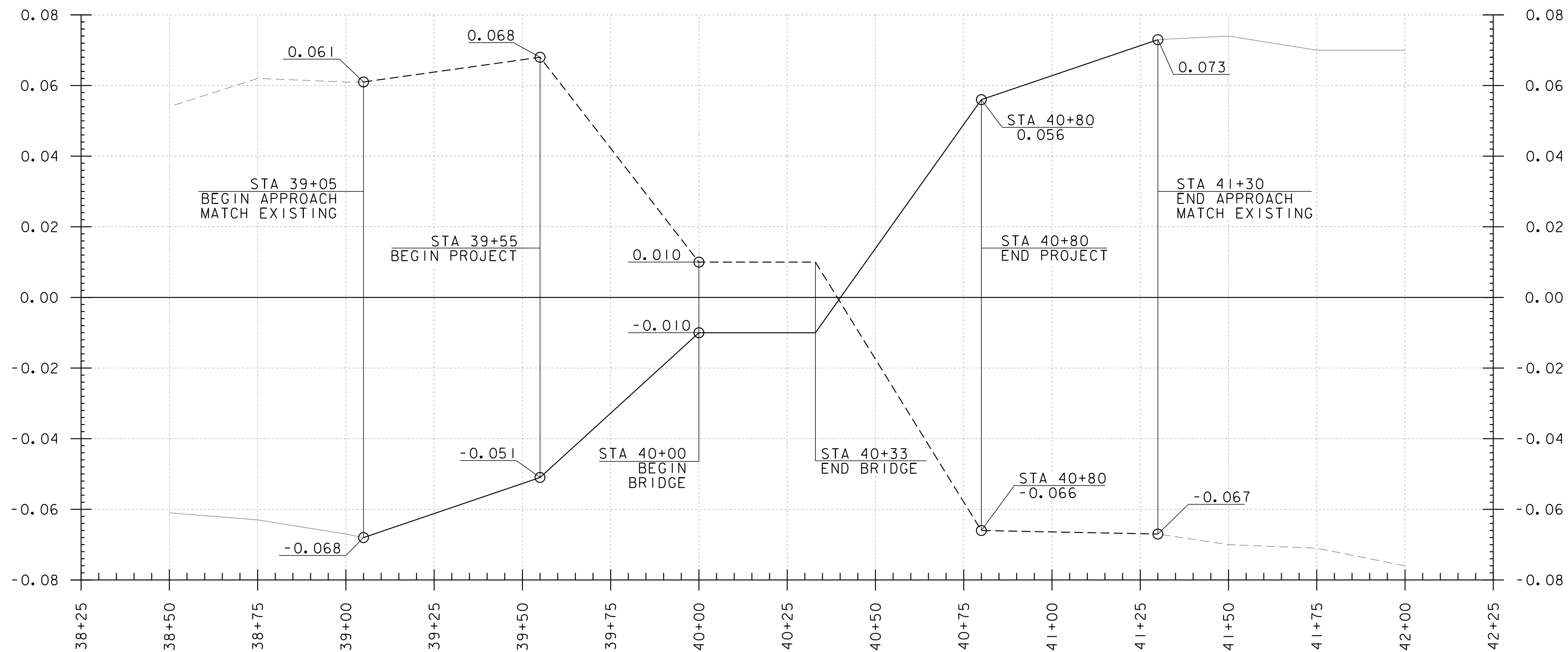
41+00  
END PROJECT  
STA 40+80.00



41+50  
END APPROACH  
STA 41+30.00

STA. 41+00 TO STA. 41+50

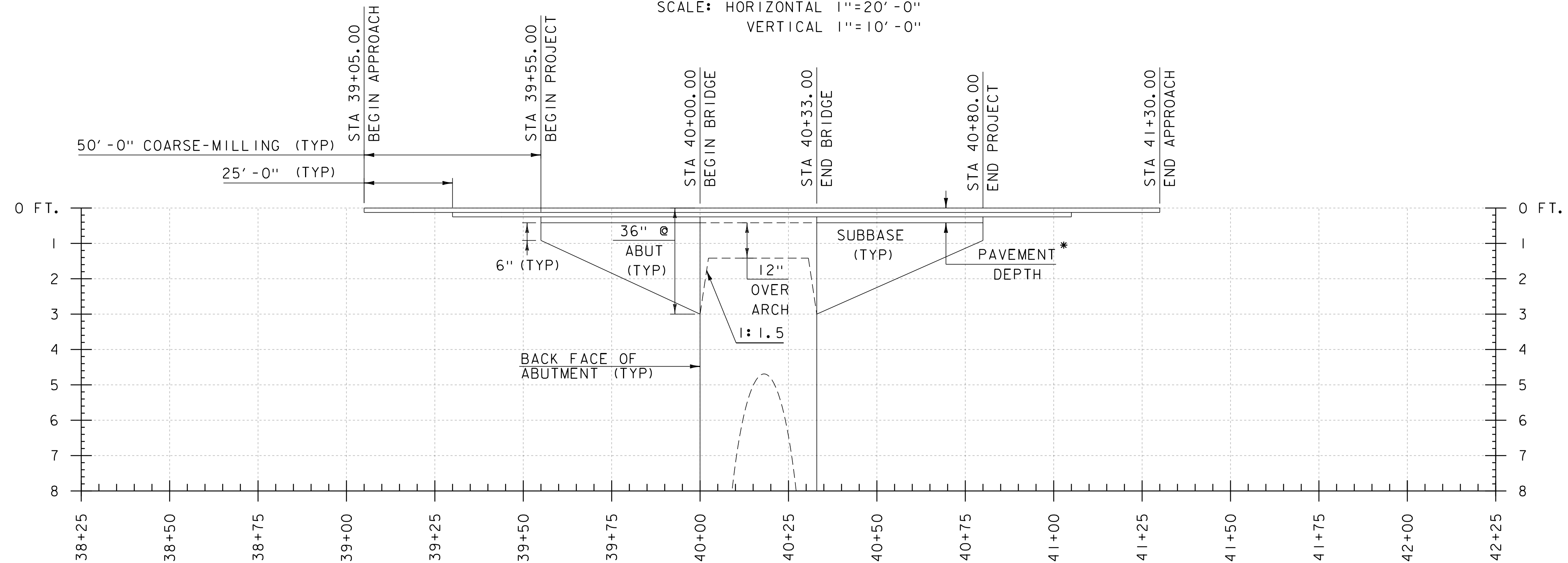
PROJECT NAME: BRAINTREE	
PROJECT NUMBER: BF 0241(51)	
FILE NAME: sl2c578xs.dgn	PLOT DATE: 05-OCT-2021
PROJECT LEADER: R. YOUNG	DRAWN BY: R. PELLETT
DESIGNED BY: F. BARROWS	CHECKED BY: F. BARROWS
VT RT 12 CROSS SECTIONS 3	SHEET 26 OF 33



### VT 12 BANKING DIAGRAM

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

—— LEFT  
----- RIGHT



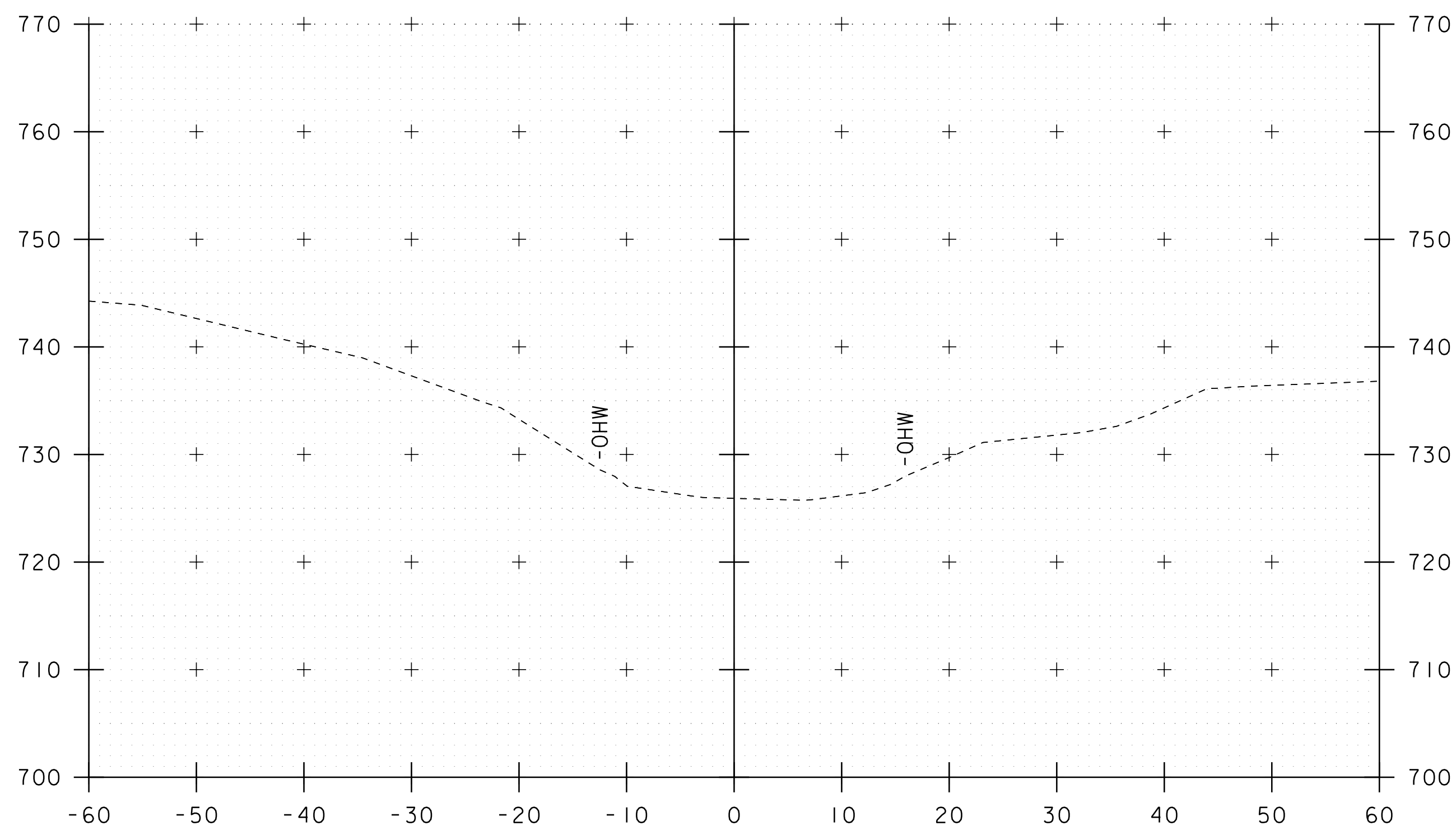
### MATERIAL TRANSITION DIAGRAM

SCALE: HORIZONTAL 1"=20' -0"  
VERTICAL 1"=2' -0"

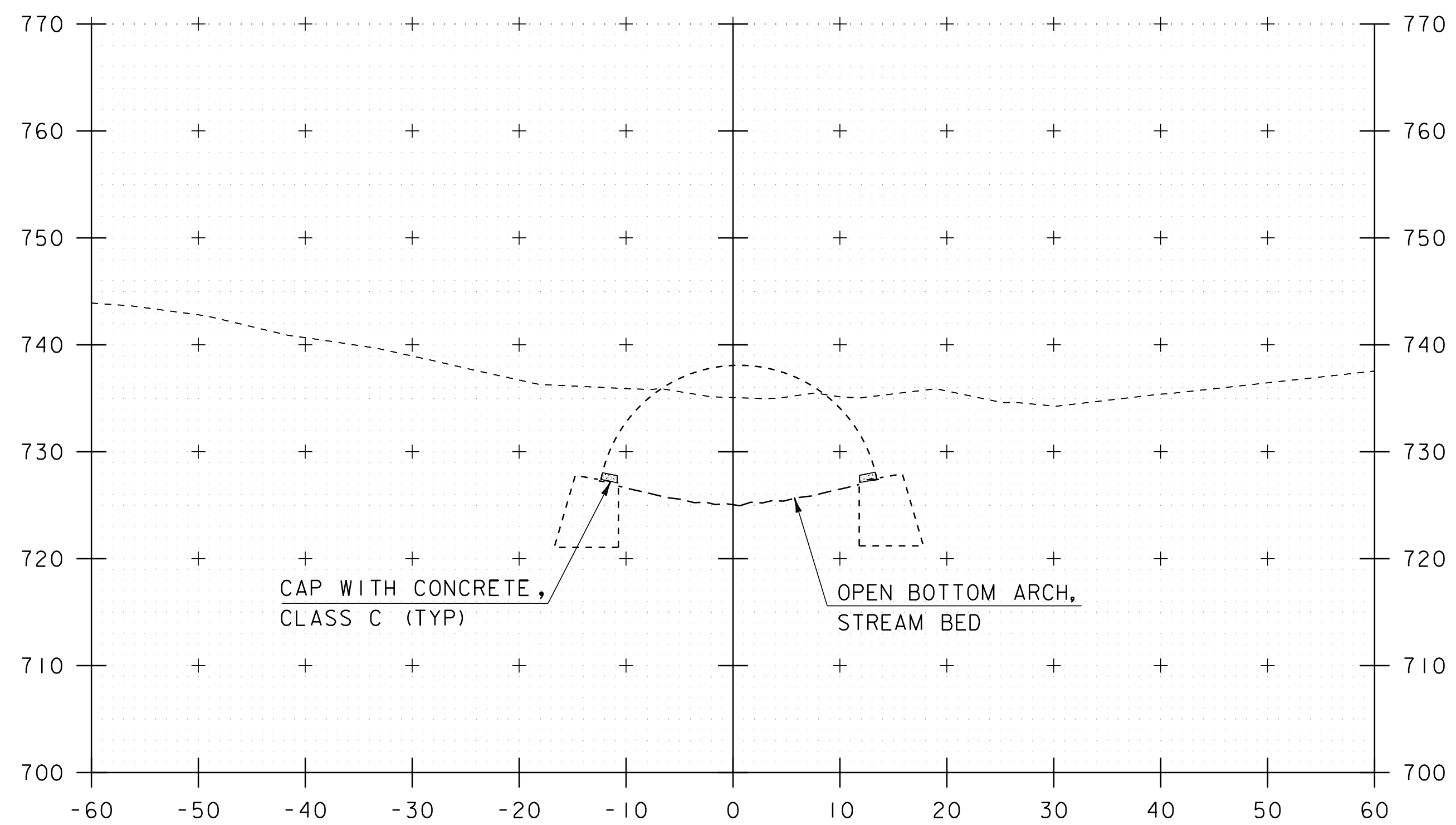
* PAVEMENT:  
SEE TYPICAL DETAILS

PROJECT NAME: BRAINTREE  
PROJECT NUMBER: BF 024(51)

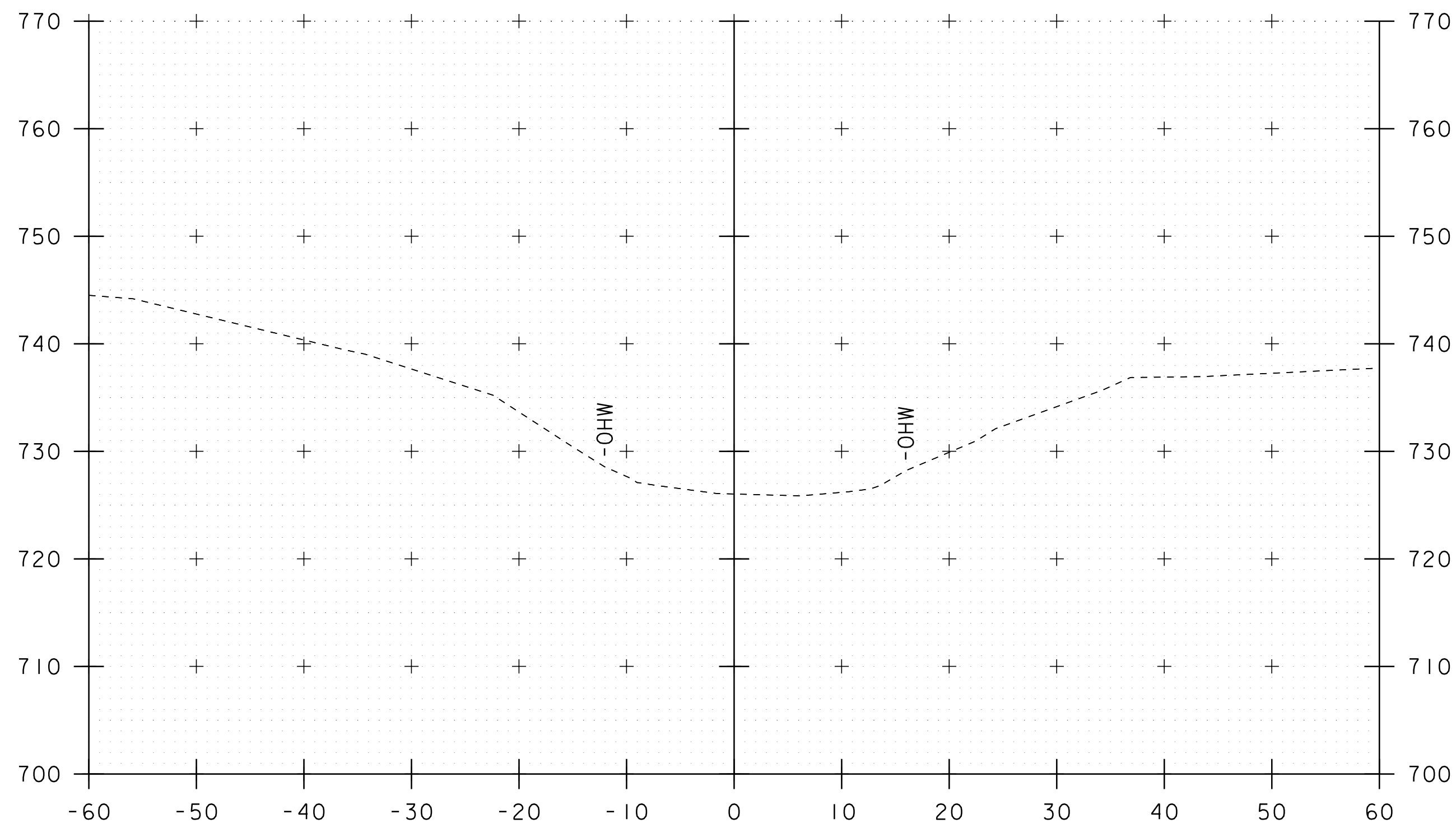
FILE NAME: sl2c578mat_bank.dgn	PLOT DATE: 05-OCT-2021
PROJECT LEADER: R. YOUNG	DRAWN BY: R. PELLETT
DESIGNED BY: F. BARROWS	CHECKED BY: F. BARROWS
MATERIAL TRANSITION & BANKING DIAGRAM	SHEET 27 OF 33



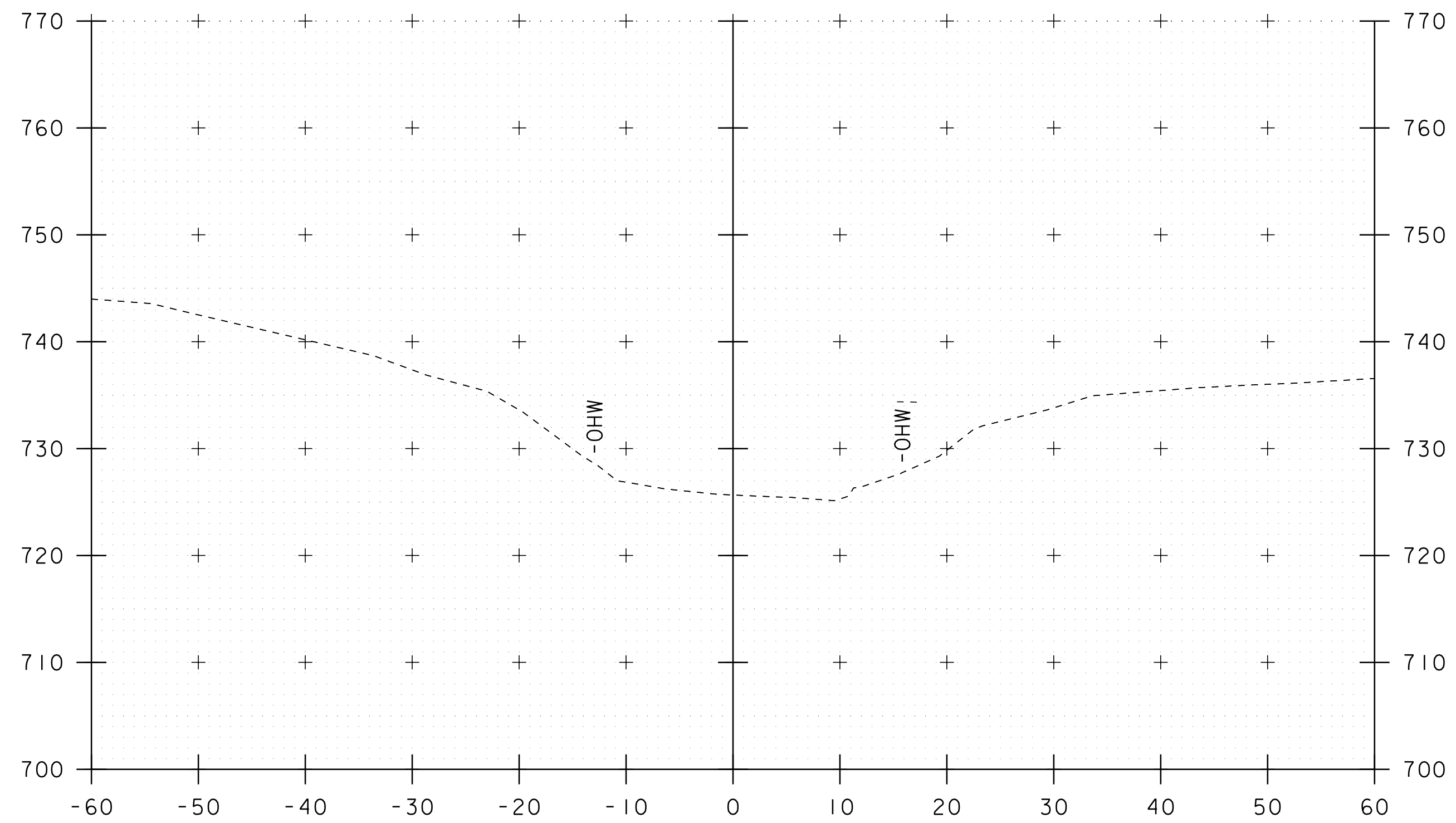
50+50



50+70



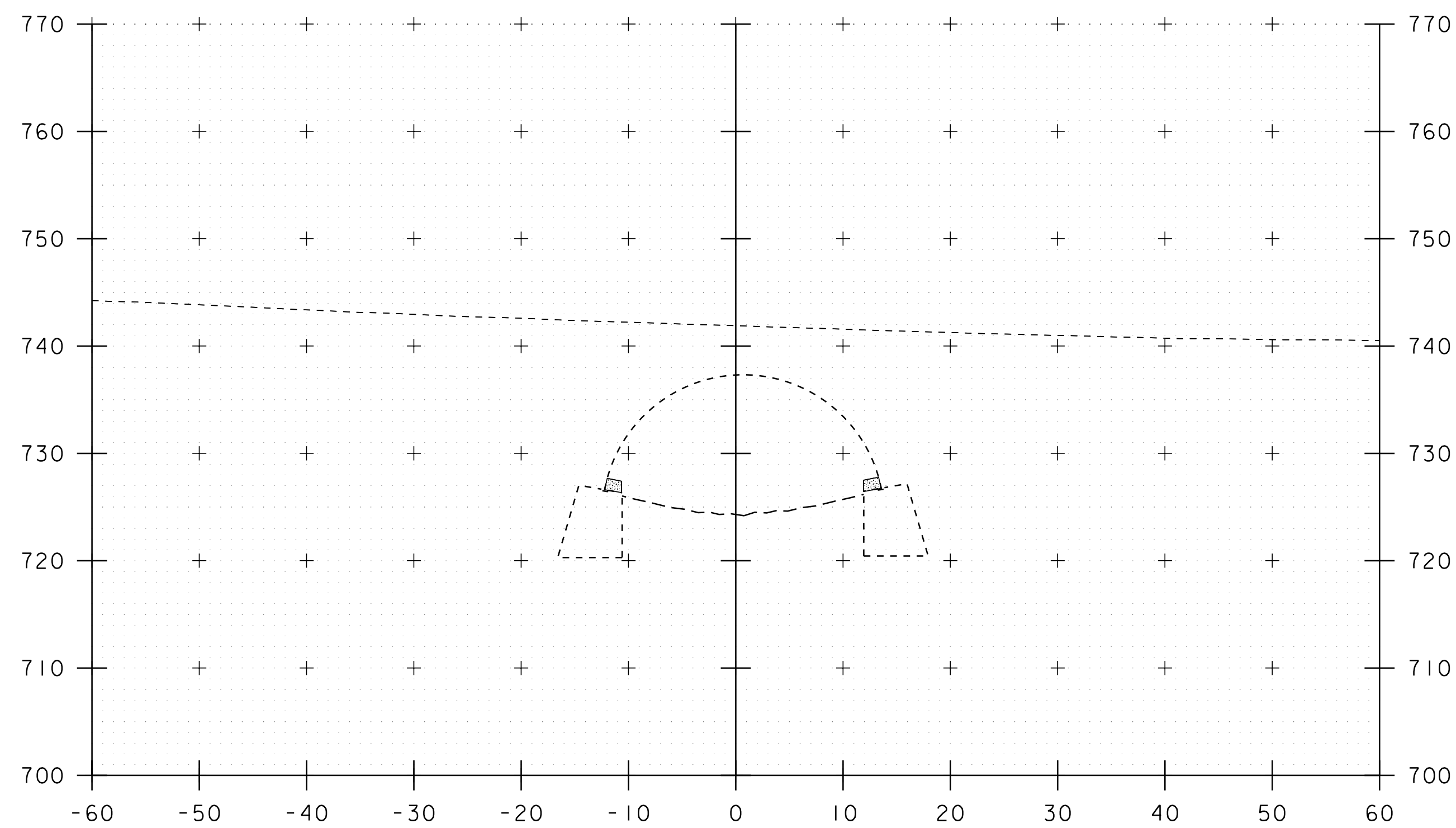
50+40



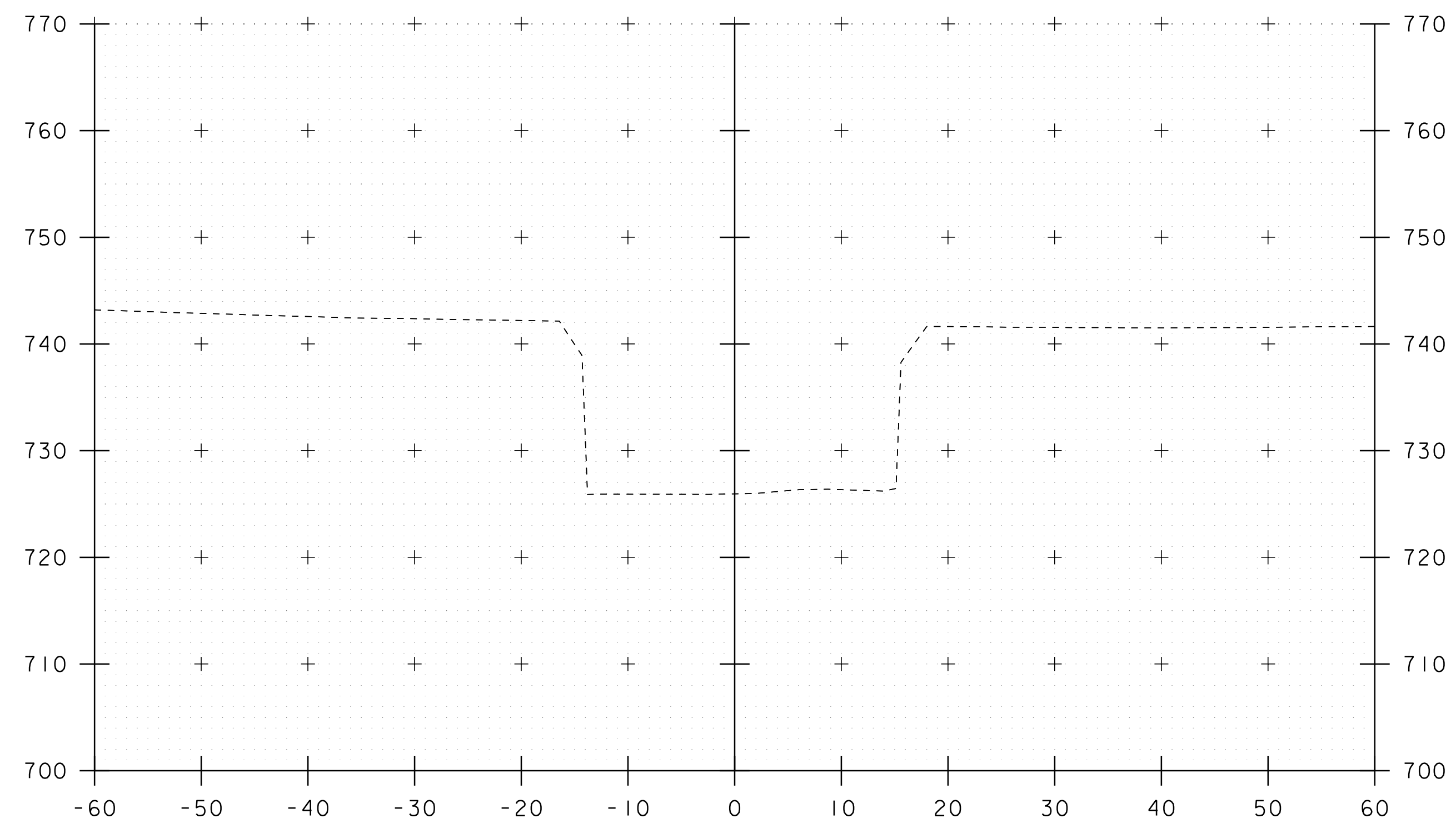
50+60

STA. 50+40 TO STA. 50+70

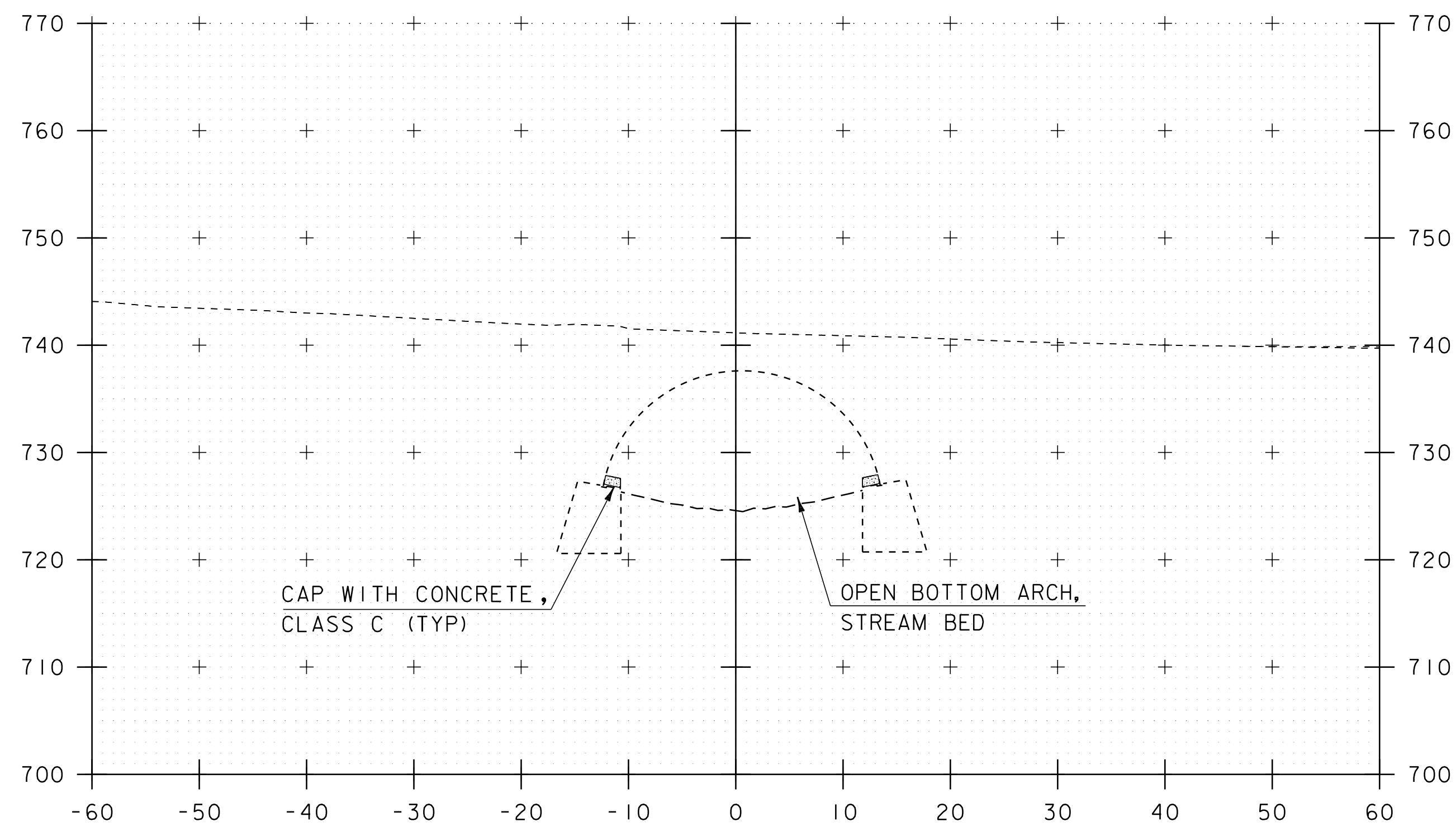
PROJECT NAME: BRAINTREE	
PROJECT NUMBER: BF 024(51)	
FILE NAME: sl2c578xs.dgn	PLOT DATE: 05-OCT-2021
PROJECT LEADER: R. YOUNG	DRAWN BY: R. PELLETT
DESIGNED BY: F. BARROWS	CHECKED BY: F. BARROWS
CHANNEL CROSS SECTIONS I	SHEET 28 OF 33



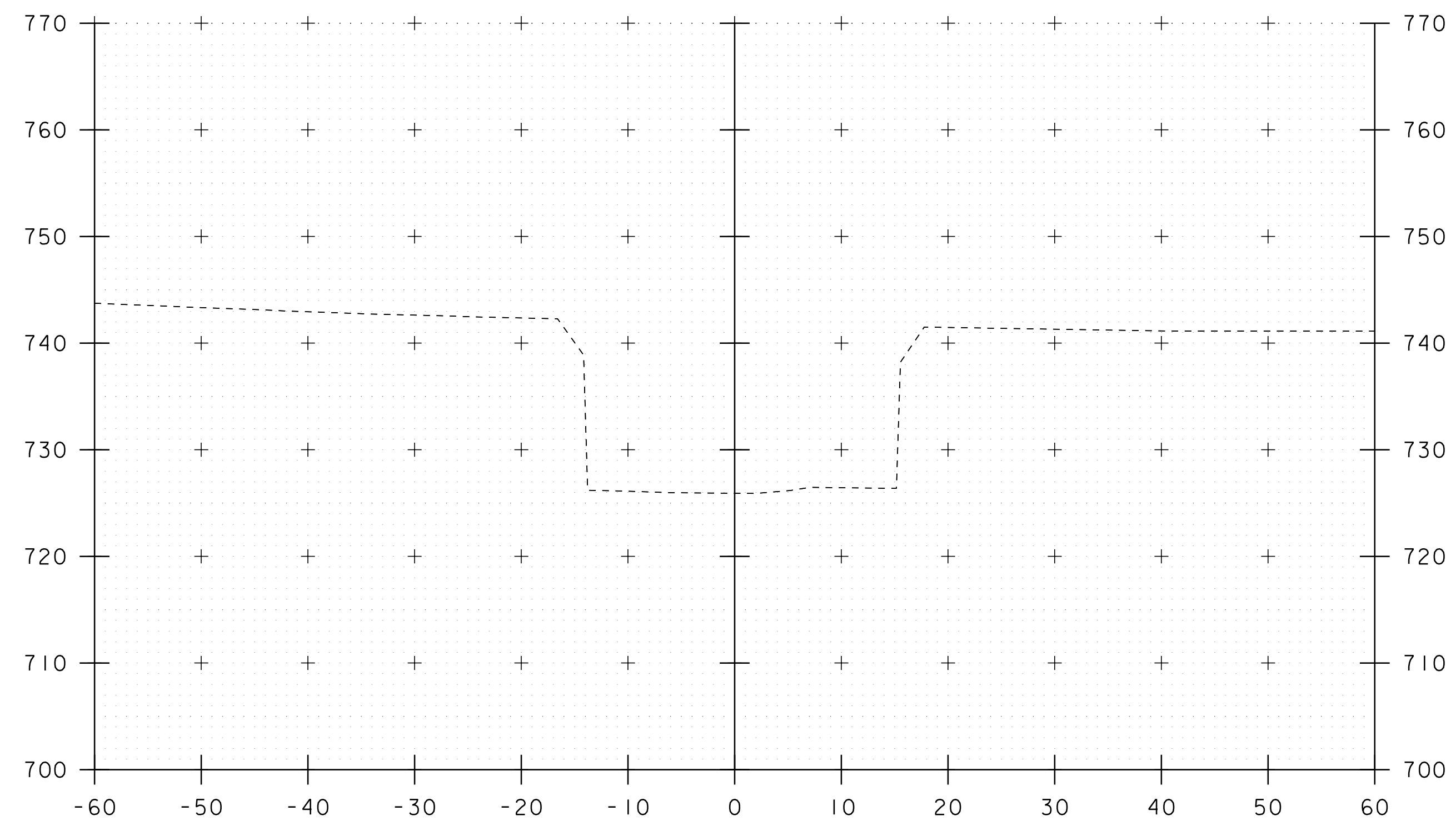
50+90



51+10



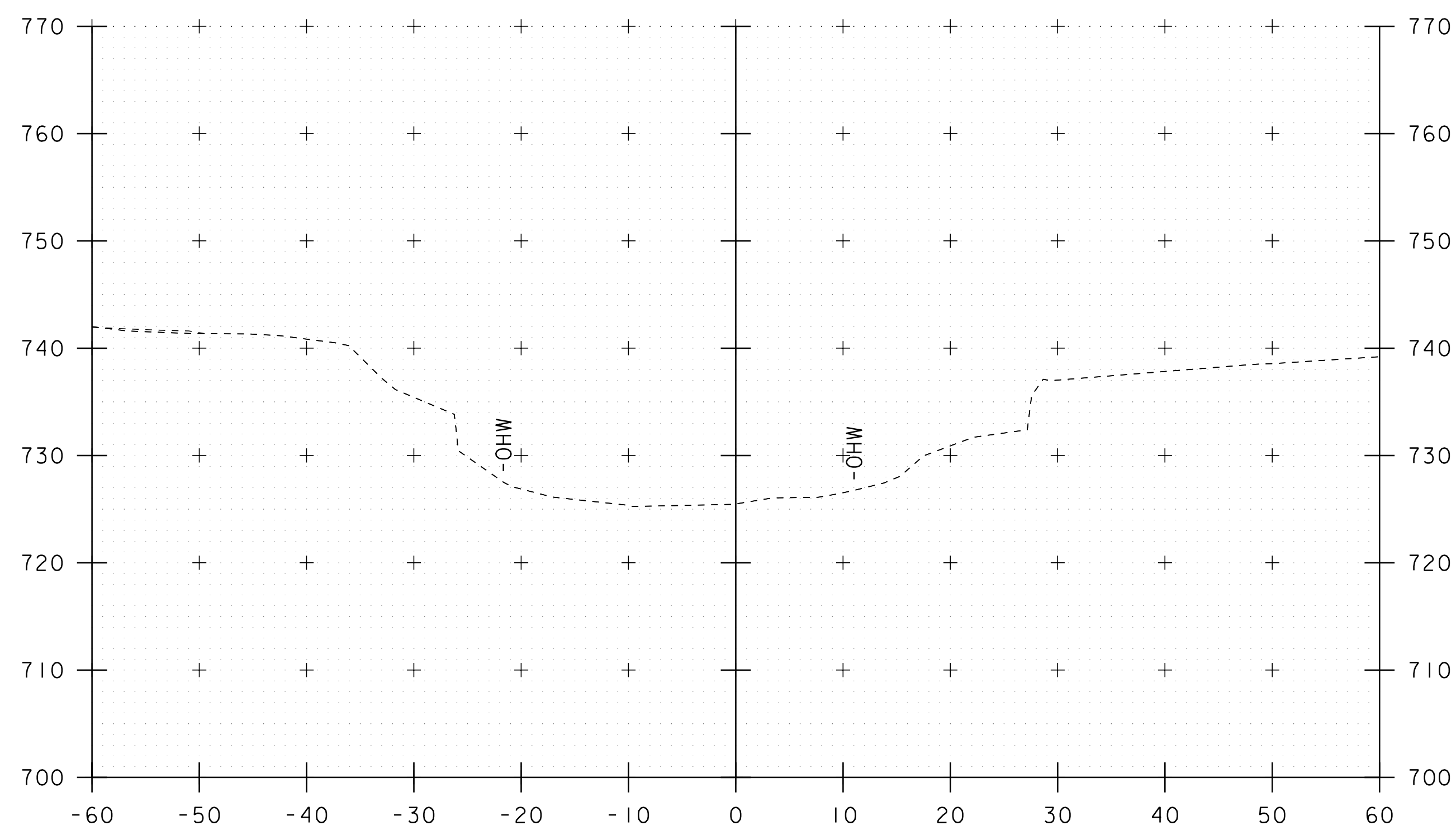
50+80



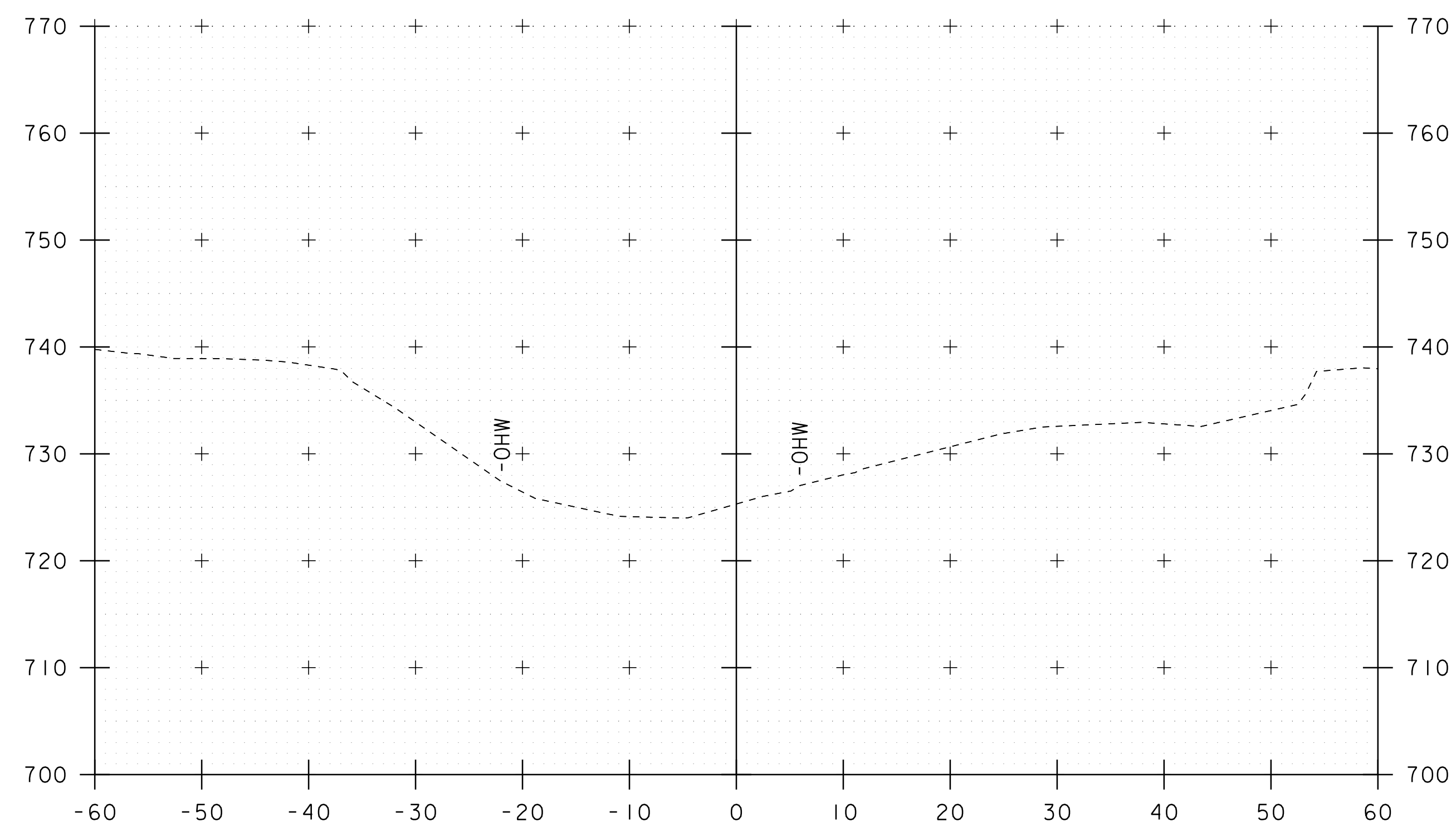
51+00

STA. 50+80 TO STA. 51+10

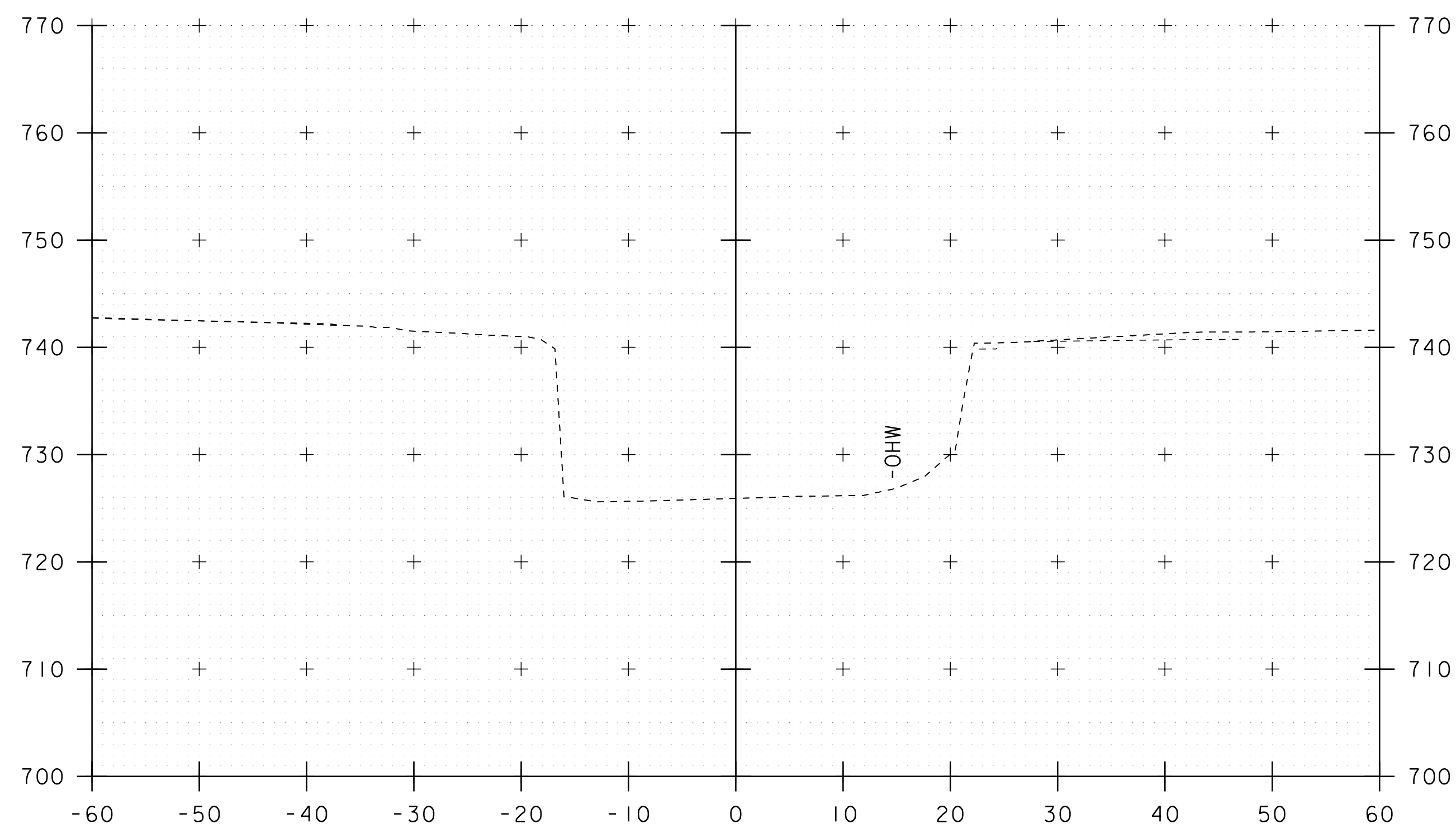
PROJECT NAME: BRAINTREE	
PROJECT NUMBER: BF 024(51)	
FILE NAME: sl2c578xs.dgn	PLOT DATE: 05-OCT-2021
PROJECT LEADER: R. YOUNG	DRAWN BY: R. PELLETT
DESIGNED BY: F. BARROWS	CHECKED BY: F. BARROWS
CHANNEL CROSS SECTIONS 2	SHEET 29 OF 33



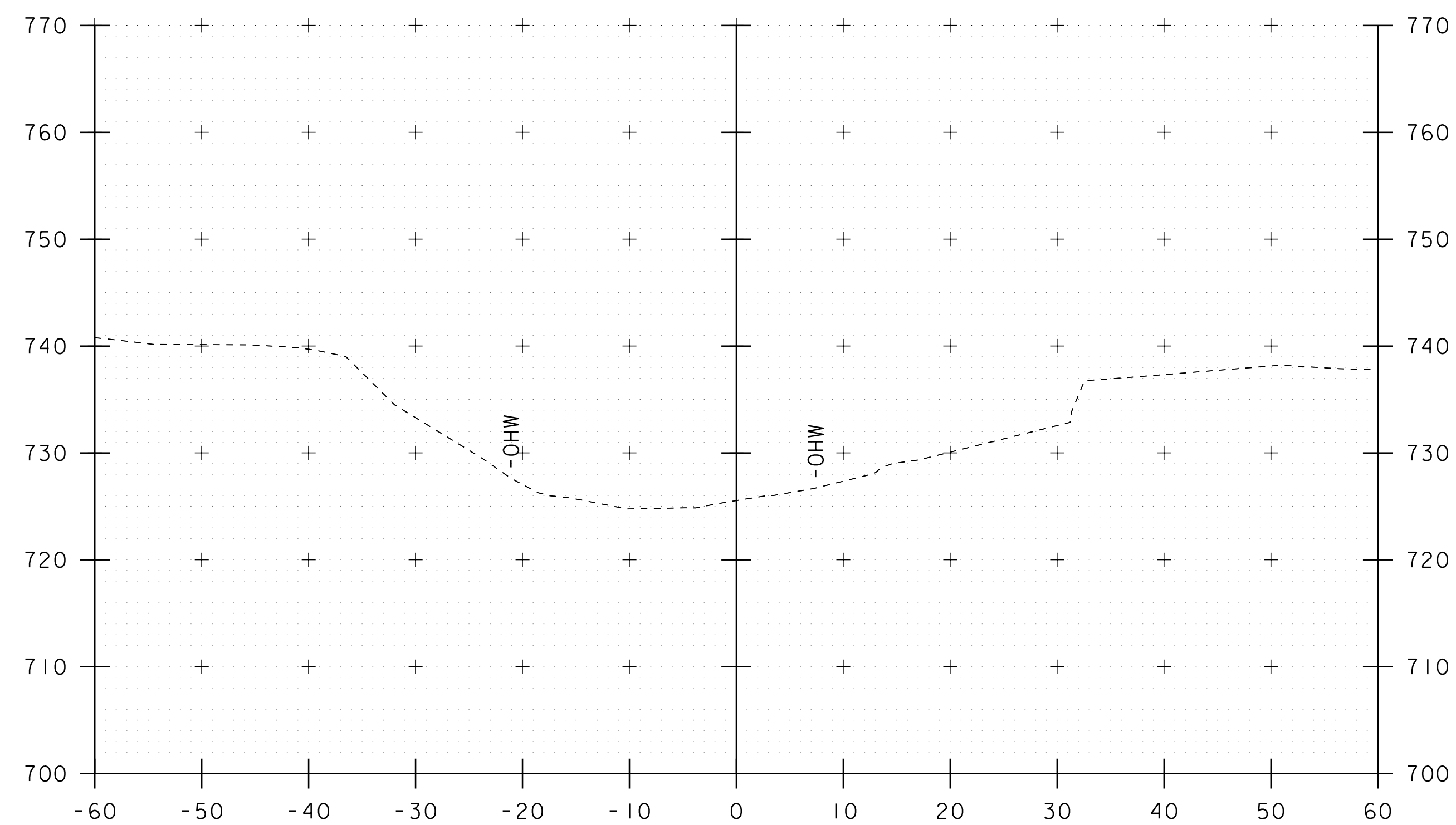
51+30



51+50



51+20



51+40

STA. 51+20 TO STA. 51+50

PROJECT NAME: BRAINTREE	
PROJECT NUMBER: BF 024(51)	
FILE NAME: sl2c578xs.dgn	PLOT DATE: 05-OCT-2021
PROJECT LEADER: R. YOUNG	DRAWN BY: R. PELLETT
DESIGNED BY: F. BARROWS	CHECKED BY: F. BARROWS
CHANNEL CROSS SECTIONS 3	SHEET 30 OF 33

VAOT LOW GROW/FINE FESCUE MIX						
LBS/AC						
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
38%	57	95	CREEPING RED FESCUE	FESTUCA RUBRA VAR. RUBRA	90%	98%
29%	43.5	72.5	HARD FESCUE	FESTUCA LONGIFOLIA	85%	95%
15%	22.5	37.5	CHEWINGS FESCUE	FESTUCA RUBRA VAR. COMMUTATA	87%	95%
15%	22.5	37.5	ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	90%	95%
3%	4.5	7.5	INERTS			
100%	150	250				

VAOT RURAL AREA MIX						
LBS/AC						
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
37.5%	22.5	45	CREEPING RED FESCUE	FESTUCA RUBRA VAR. RUBRA	85%	98%
37.5%	22.5	45	TALL FESCUE	FESTUCA ARUNDINACEA	90%	95%
5.0%	3	6	RED TOP	AGROSTIS GIGANTEA	90%	95%
15.0%	9	18	WHITE FIELD CLOVER	TRIFOLIUM REPENS	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	LOLIUM MULTIFLORUM	85%	95%
100%	60	120				

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

CONSTRUCTION GUIDANCE

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

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

PROJECT NAME: BRAINTREE	
PROJECT NUMBER: BF 0241(51)	
FILE NAME: sl2c578epscdet.dgn	PLOT DATE: 05-OCT-2021
PROJECT LEADER: R. YOUNG	DRAWN BY: R. PELLETT
DESIGNED BY: F. BARROWS	CHECKED BY: F. BARROWS
EPSC DETAILS	SHEET 31 OF 33

621.21 HD STEEL BEAM GUARDRAIL, GALVANIZED  
STA 39+34.81 RT TO 41+64.70 RT  
STA 39+56.93 LT TO 39+69.70 LT  
STA 40+59.62 LT TO 40+87.62 LT

621.60 ANCHOR FOR STEEL BEAM GUARDRAIL  
STA 39+40.26 RT  
STA 39+64.60 LT  
STA 40+81.80 RT  
STA 41+57.62 RT

525.44 BRIDGE RAILING, GALVANIZED  
HDSB/ FASCIA MOUNTED/ STEEL TUBING  
STA 39+97.20 LT TO 40+35.25 LT

621.737 GUARDRAIL APPROACH SECTION,  
GALVANIZED HD STEEL BEAM  
STA 39+69.70 LT TO 39+97.20 LT  
STA 40+35.25 LT TO 40+59.62 LT

613.10 STONE FILL, TYPE I  
STA 39+35 LT TO 40+00 LT

621.80 REMOVAL AND DISPOSAL OF GUARDRAIL  
STA 39+41.00 RT TO 41+66.00 RT  
STA 39+79.00 LT TO 40+65.00 LT

4'-0" PAVED APRON (3" THICK)  
STA 39+05.00 RT TO 39+36.00 RT

617.12 REMOVE AND RESET  
MAILBOX, SINGLE SUPPORT  
STA 39+29.00 RT

616.28 CAST-IN-PLACE CONCRETE CURB, TYPE B  
STA 39+94 LT TO 40+00 LT  
STA 40+33 LT TO 40+36 LT

ROCKY FARM PROPERTIES, LLC

BEGIN R.O.W. PROJECT  
BRAINTREE BF 0241(51)  
STA. 40+10.26, 42.45' LT

N/F  
CZAPLA, KARL;  
CZAPLA, CATHY (LIFE ESTATE)

EXISTING UTILITY EASEMENT  
BK:27 PG:442  
BRAINTREE LAND RECORDS;  
RIGHT TO CLEAR BRUSH/TREES: 25' OFF CENTER  
RIGHT TO KEEP CLEAR OF STRUCTURES: 10' OFF CENTER

N/F  
BROWN, DENNIS R.

SEPTIC  
SYSTEM

PAVED  
DRIVE

VT12  
TO VT66/ VT12A  
RANDOLPH

APPROX. EXISTING STATE R.O.W.

N/F  
HOYT, JERRY LEE

N=545228.15  
E=1600680.66  
STA. 38+47.53, 23.48' LT

N=545248.74  
E=1600725.68  
STA. 38+47.53, 26.02' RT

N=545301.27  
E=1600690.49  
STA. 39+02.92, 25.17' RT

S49°48'37"  
L=17.19'

N/F  
CZAPLA, KARL;  
CZAPLA, CATHY (LIFE ESTATE)

N=545312.37  
E=1600703.62  
STA. 39+02.29, 42.35' RT

N/F  
RAASCH, DEBORAH A.

N=545367.64  
E=1600593.25  
STA. 40+02.97, 36.05' RT

N=545381.30  
E=1600514.50  
STA. 40+88.21, 31.20' RT

END R.O.W. PROJECT  
BRAINTREE BF 0241(51)  
STA. 40+74, 33.20' LT

EXISTING CHANNEL EASEMENT  
BK:27 PG:408  
BRAINTREE LAND RECORDS

BOOSKA,  
EUGENE O.

EXISTING UTILITY EASEMENTS  
BK:29 PG:197 & BK:27 PG:444  
BRAINTREE LAND RECORDS;  
RIGHT TO CLEAR BRUSH/TREES: 25' OFF CENTER  
RIGHT TO KEEP CLEAR OF STRUCTURES: 10' OFF CENTER

BENCHMARK  
CHISELED SQUARE  
ON HEADWALL  
ELEV=744.97

LINES SHOWN ON THIS PLAN AS EXISTING  
PROPERTY LINES P/L ARE BELIEVED TO  
BE ACCURATE BUT SHOULD NOT BE RELIED  
UPON FOR PURPOSES UNRELATED TO THE  
STATE OF VERMONT'S ACQUISITION OF LAND  
AND RIGHTS FOR THIS PROJECT.

FOR R.O.W.  
USE ONLY

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

PROJECT NAME: BRAINTREE  
PROJECT NUMBER: BF 0241(51)

FILE NAME: r12c578lay.dgn  
PROJECT LEADER: R. YOUNG  
DESIGNED BY: F. BARROWS  
R.O.W. LAYOUT SHEET I

PLOT DATE: 05-OCT-2021  
DRAWN BY: E. WILDER  
CHECKED BY: A. PROULX  
SHEET 32 OF 33

# RIGHT - OF - WAY DETAIL SHEET

[illegible][illegible]

PROJECT NAME:	BRAINTREE
PROJECT NUMBER:	BF 0241(51)

FILE NAME: r12c578detail.dgn  
PROJECT LEADER: R. YOUNG  
DESIGNED BY: E. WILDER  
R.O.W. DETAIL SHEET I

PLOT DATE: 05-OCT-2021  
DRAWN BY: M. TROTTIER  
CHECKED BY: A. PROULX  
SHEET 33 OF 33