

STATE OF VERMONT  
 AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT  
 TOWN OF WEATHERSFIELD  
 COUNTY OF WINDSOR  
 VT ROUTE 131 (RURAL MAJOR COLLECTOR)  
 BRIDGE NO: 11B

RECORD PLANS

CONTRACTOR: PIKE INDUSTRIES, INC. - BERLIN, VT

RESIDENT ENGINEER: CHRIS BARKER

CONSTRUCTION BEGAN: AUGUST 24, 2013

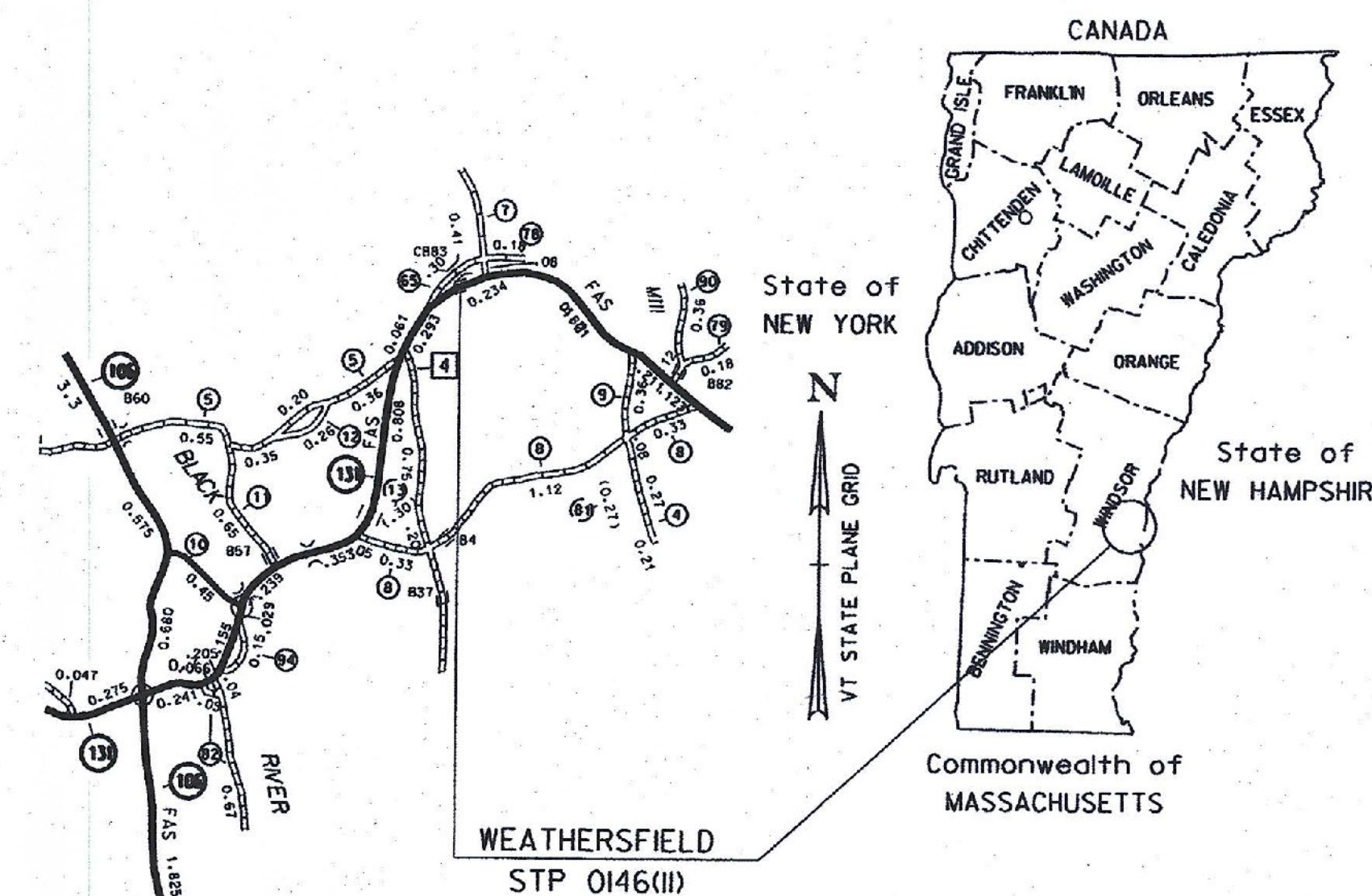
CONSTRUCTION COMPLETE: SEPTEMBER 27, 2013

RECORD PLANS BY: CHRIS BARKER & NICK GARBACIK

I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY *Chris Barker* RESIDENT ENGINEER  
 DATE: 08/04/15

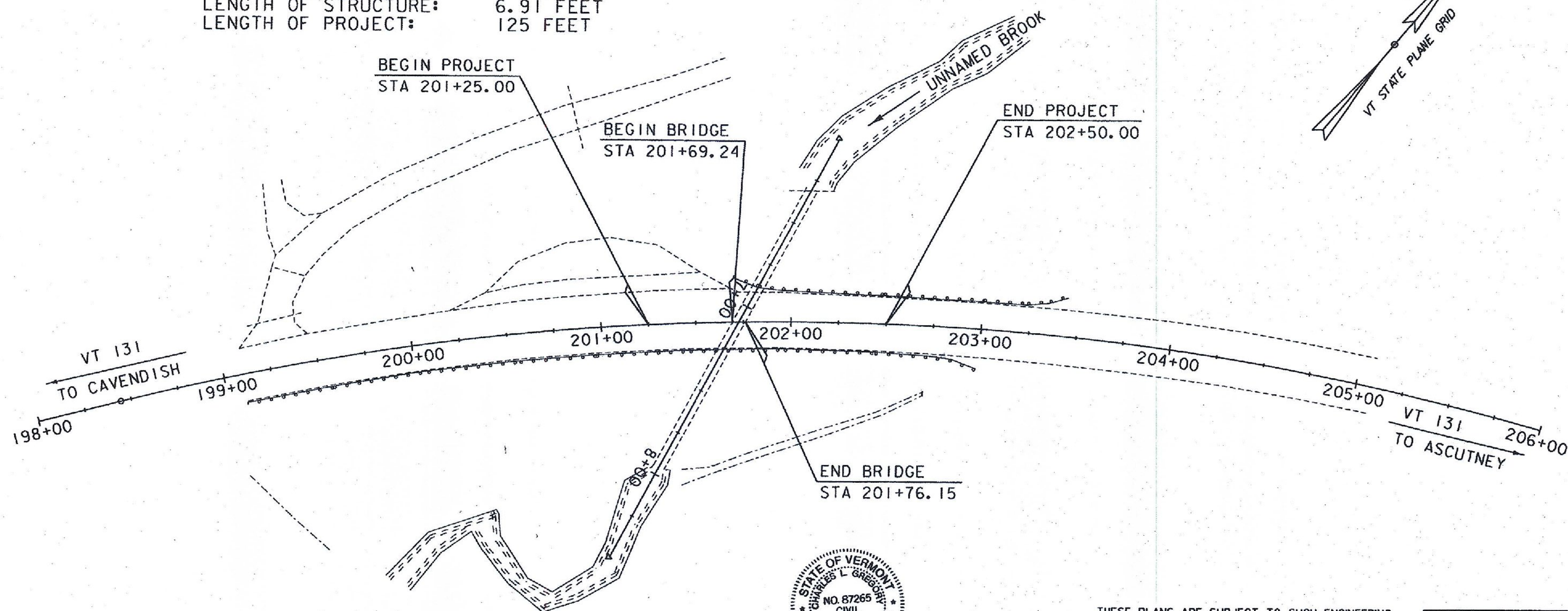
NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found by contacting Virans Records Management.



PROJECT LOCATION: APPROXIMATELY 2.5 MILES EAST OF THE JUNCTION WITH VT 106.

PROJECT DESCRIPTION: THE PROJECT SHALL CONSIST OF LINING THE EXISTING CULVERT WITH A CURED-IN-PLACE PIPE (CIPP) LINER AND MINOR HEADWALL REPAIRS.

LENGTH OF STRUCTURE: 6.91 FEET  
 LENGTH OF PROJECT: 125 FEET



QUALITY ASSURANCE PROGRAM: LEVEL 2

**CONVENTIONAL SYMBOLS**

COUNTY LINE	
TOWN LINE	
LIMITS OF ACCESS	
POINT OF ACCESS	
FENCE LINE	
STONE WALL	
TRAVELED WAY	
GUARD RAIL	
RAILROAD	
SURVEY LINE	
CULVERT	
POWER POLE	
TELEPHONE POLE	
TREES	
CONTROL OF ACCESS	
PROPERTY LINE	
R.O.W. TAKING LINE	
SLOPE RIGHTS	
TOP OF CUT	
TOE OF SLOPE	

SURVEYED BY: VTRANS (R. GILMAN)  
 SURVEYED DATE: 01/25/2001

DATUM  
 VERTICAL NAVD 88  
 HORIZONTAL NAD 83 (1996)

**CONSULTING ENGINEERS** Inc.

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 email: cled@cedengineers.com • www.cedengineers.com  
 Wolfe • New Hampshire • Vermont

STATE OF VERMONT  
 L. GREENE  
 NO. 87265  
 CIVIL

SCALE 1" = 40'-0"

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.

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

DIRECTOR OF PROGRAM DEVELOPMENT  
 APPROVED: *Jennifer Fitch* DATE: 4-2-13

PROJECT MANAGER: JENNIFER FITCH

PROJECT NAME: WEATHERSFIELD  
 PROJECT NUMBER: STP 0146 (111)

SHEET 1 OF 14 SHEETS

# PRELIMINARY INFORMATION SHEET (CULVERT)

**LRFD**

**INDEX OF SHEETS**

**PLAN SHEETS**

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3	TYPICAL SECTIONS AND DETAILS
4	QUANTITY SHEET
5	TIE SHEET
6	LAYOUT SHEET
7	CULVERT PROFILE
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11	PROJECT NOTES
12 - 14	CHANNEL CROSS SECTIONS

**STANDARDS LIST**

E-100	CONSTRUCTION APPROACH SIGNS	2-Jan-04
E-101	CONSTRUCTION SIGN DETAILS	30-May-03
E-102	CONSTRUCTION SIGN DETAILS	30-Jun-03
E-102A	CONSTRUCTION SIGN DETAILS	1-May-04
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION	30-Jun-03
E-107A	BREAKAWAY BARRICADE DETAILS	8-Jun-09
E-108	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS	8-Dec-08
E-110	MAJOR MAINTENANCE OPERATION LANE CLOSURE	8-Aug-95
E-111	MINOR MAINTENANCE OPERATIONS	11-Mar-97
E-142	REGULATORY SIGN DETAILS	20-Sep-95

**FINAL HYDRAULIC REPORT**

**HYDROLOGIC DATA**

Date: Dec. 2012

DRAINAGE AREA : 1.0 sq. mi.  
 CHARACTER OF TERRAIN : Hilly to mountainous. Mostly forested with some open areas.  
 STREAM CHARACTERISTICS : Small, perennial, sinuous, semi-alluvial  
 NATURE OF STREAMBED : Sand, Gravel and boulders

**PEAK FLOW DATA**

Q 2.33 =	80 cfs	Q 50 =	280 cfs
Q 10 =	180 cfs	Q 100 =	330 cfs
Q 25 =	230 cfs	Q 500 =	460 cfs

DATE OF FLOOD OF RECORD : Unknown  
 ESTIMATED DISCHARGE : Unknown  
 WATER SURFACE ELEV. : Unknown  
 NATURAL STREAM VELOCITY : @ Q50 = 8.2 fps  
 ICE CONDITIONS : Moderate  
 DEBRIS : Moderate  
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes  
 IS ORDINARY RISE RAPID? Yes  
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No  
 IF YES, DESCRIBE:

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

**EXISTING STRUCTURE INFORMATION**

STRUCTURE TYPE: Reinforced concrete pipe  
 YEAR BUILT: 1959  
 CLEAR SPAN(NORMAL TO STREAM): 72"  
 VERTICAL CLEARANCE ABOVE STREAMBED: 72"  
 WATERWAY OF FULL OPENING: 28.3 sq. ft.  
 DISPOSITION OF STRUCTURE: Retain and insert new CIPP liner in existing pipe.  
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: Unknown

**WATER SURFACE ELEVATIONS AT:**

Q2.33 =	768.5'	VELOCITY =	13.4 fps
Q10 =	770.5'	"	16.1 fps
Q25 =	771.4'	"	17.0 fps
Q50 =	772.4'	"	17.8 fps
Q100 =	773.5'	"	18.5 fps

LONG TERM STREAMBED CHANGES: None noted.

IS THE ROADWAY OVERTOPPED BELOW Q100: No  
 FREQUENCY: Above Q100  
 RELIEF ELEVATION: 794.8'  
 DISCHARGE OVER ROAD @Q100: None

**UPSTREAM STRUCTURE**

TOWN: Weathersfield DISTANCE: 300'  
 HIGHWAY #: TH 65 STRUCTURE #: CB 83  
 CLEAR SPAN: about 47' CLEAR HEIGHT: about 4'  
 YEAR BUILT: Built 1870 - reconstructed 1986 FULL WATERWAY:  
 STRUCTURE TYPE: Covered bridge

**DOWNSTREAM STRUCTURE**

TOWN: Weathersfield DISTANCE: 6800'  
 HIGHWAY #: TH 8 STRUCTURE #: N/A  
 CLEAR SPAN: N/A CLEAR HEIGHT: N/A  
 YEAR BUILT: N/A FULL WATERWAY: N/A  
 STRUCTURE TYPE: N/A

**LRFR LOAD RATING FACTORS**

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

**CULVERT DESIGN CRITERIA**

- PROPOSED CULVERT IS A LINING.
- CULVERT ENDS ARE NOT SKEWED.
- CULVERT WILL BE SET AT A SLOPE OF 1.96 IN. ON 10 FT.
- CULVERT WILL NOT REQUIRE FISH PASSAGE ACCOMODATIONS.
- CULVERT CONSTRUCTION WILL REQUIRE TEMPORARY RELOCATION OF STREAM FLOW.

**PROPOSED STRUCTURE**

STRUCTURE TYPE: New CIPP Liner in existing pipe  
 CLEAR SPAN(NORMAL TO STREAM): 68" Minimum  
 VERTICAL CLEARANCE ABOVE STREAMBED: 68" Minimum  
 WATERWAY OF FULL OPENING: 25.2 sq. ft.

**WATER SURFACE ELEVATIONS AT:**

Q2.33 =	768.9'	VELOCITY =	14.4 fps
Q10 =	771.2'	"	17.0 fps
Q25 =	772.5'	"	18.0 fps
Q50 =	774.0'	"	18.8 fps
Q100 =	775.9'	"	19.7 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No  
 FREQUENCY: Above Q100  
 RELIEF ELEVATION: 794.8'  
 DISCHARGE OVER ROAD @Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 771.1' - Top of liner at inlet  
 VERTICAL CLEARANCE: @ Q50 = -2.9'; Water is above the top of pipe at Q10.

SCOUR: Not applicable for a pipe.

REQUIRED CHANNEL PROTECTION: Stone Fill, Type II at inlet

**PERMIT INFORMATION**

AVERAGE DAILY FLOW: 2 cfs DEPTH OR ELEVATION:  
 ORDINARY LOW WATER: 1 cfs Depth = 0.5'  
 ORDINARY HIGH WATER: 35 cfs Depth = 2.0'

**TEMPORARY BRIDGE REQUIREMENTS**

STRUCTURE TYPE: No temporary bridge required.  
 CLEAR SPAN (NORMAL TO STREAM):  
 VERTICAL CLEARANCE ABOVE STREAMBED:  
 WATERWAY AREA OF FULL OPENING:

**ADDITIONAL INFORMATION**

**TRAFFIC MAINTENANCE NOTES**

- MAINTAIN TWO-WAY TRAFFIC ON THE EXISTING STRUCTURE.
- TRAFFIC SIGNALS ARE NOT REQUIRED.
- SIDEWALKS ARE NOT REQUIRED

**DESIGN VALUES**

1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	d <sub>p</sub> : 3.0 INCH
3. CULVERT OPENING	D: 5.67 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ: ---
5. PRESTRESSING STRAND	f <sub>y</sub> : ---
6. PRESTRESSED CONCRETE STRENGTH	f' <sub>c</sub> : ---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f' <sub>cr</sub> : ---
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f' <sub>c</sub> : ---
9. CONCRETE, HIGH PERFORMANCE CLASS A	f' <sub>c</sub> : ---
10. CONCRETE, HIGH PERFORMANCE CLASS B	f' <sub>c</sub> : ---
11. CONCRETE, CLASS C	f' <sub>c</sub> : ---
12. REINFORCING STEEL	f <sub>y</sub> : 60 KSI
13. STRUCTURAL STEEL AASHTO M270	f <sub>y</sub> : ---
14. BACKFILL UNIT WEIGHT	γ: ---
15. NOMINAL BEARING RESISTANCE OF SOIL	q <sub>n</sub> : ---
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
17. NOMINAL BEARING RESISTANCE OF ROCK	q <sub>n</sub> : ---
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
19. NOMINAL AXIAL PILE RESISTANCE	q <sub>p</sub> : ---
20. PILE YIELD STRENGTH ASTM A572	f <sub>y</sub> : ---
21. PILE SIZE	---
22. EST. PILE LENGTH	L <sub>p</sub> : ---
23. PILE RESISTANCE FACTOR	φ: ---
24. LATERAL PILE DEFLECTION	Δ: ---
25. BASIC WIND SPEED	V <sub>3s</sub> : ---
26. MINIMUM GROUND SNOW LOAD	p <sub>g</sub> : ---
27. SEISMIC DATA	PGA: --- S: ---

PROJECT NAME: **WEATHERSFIELD**

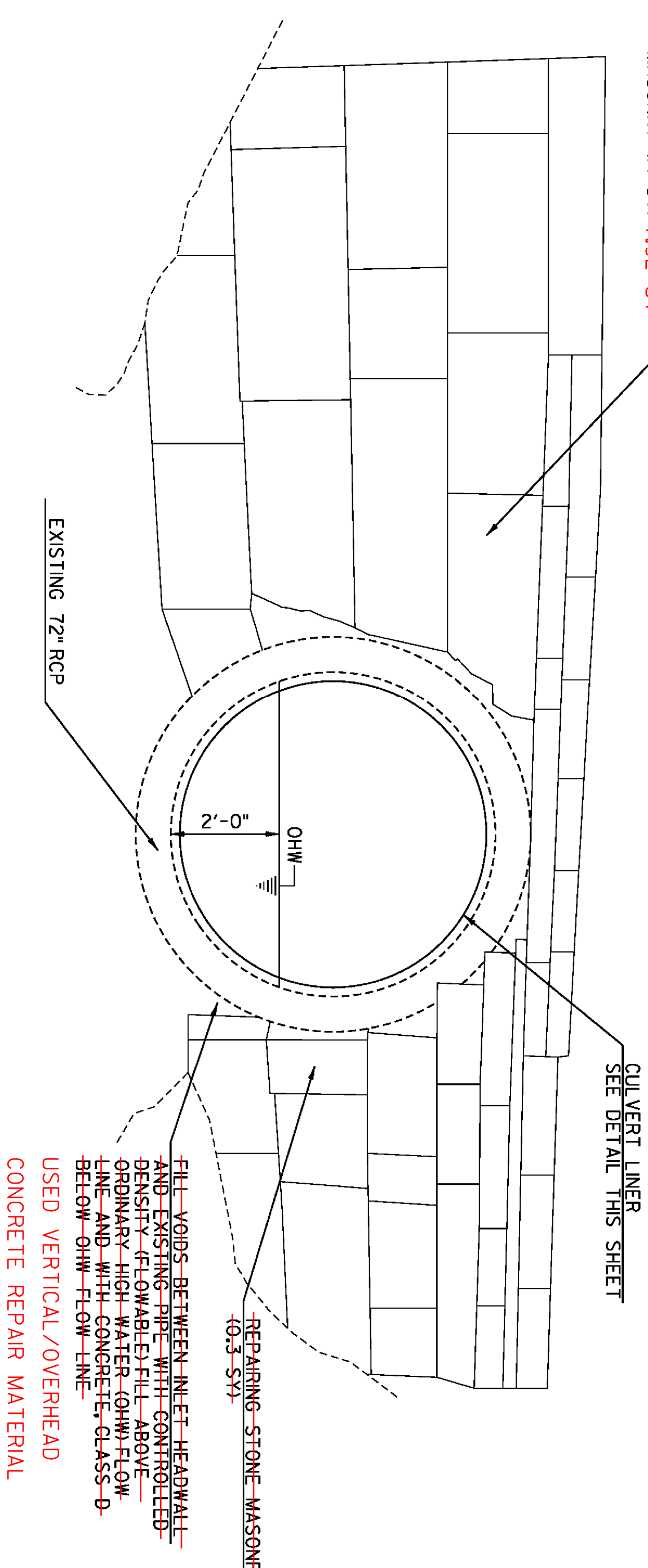
PROJECT NUMBER: **STP 0146(11)**

FILE NAME: z00c268-pi.dgn PLOT DATE: 4/9/2013  
 PROJECT LEADER: J.FITCH DRAWN BY: K.RUTTER  
 DESIGNED BY: K.RUTTER CHECKED BY: C.GREGORY  
**PRELIMINARY INFORMATION SHEET** SHEET 2 OF 14

**TRAFFIC DATA**

YEAR	ADT	DHV	% D	% T	ADTT	
2015	3200	370	57	7.4	320	20 year ESAL for flexible pavement from 2015 to 2035 : 2219000
2035	3400	400	57	9.5	440	40 year ESAL for flexible pavement from 2015 to 2055 : 4884000
						Design Speed : 50 mph

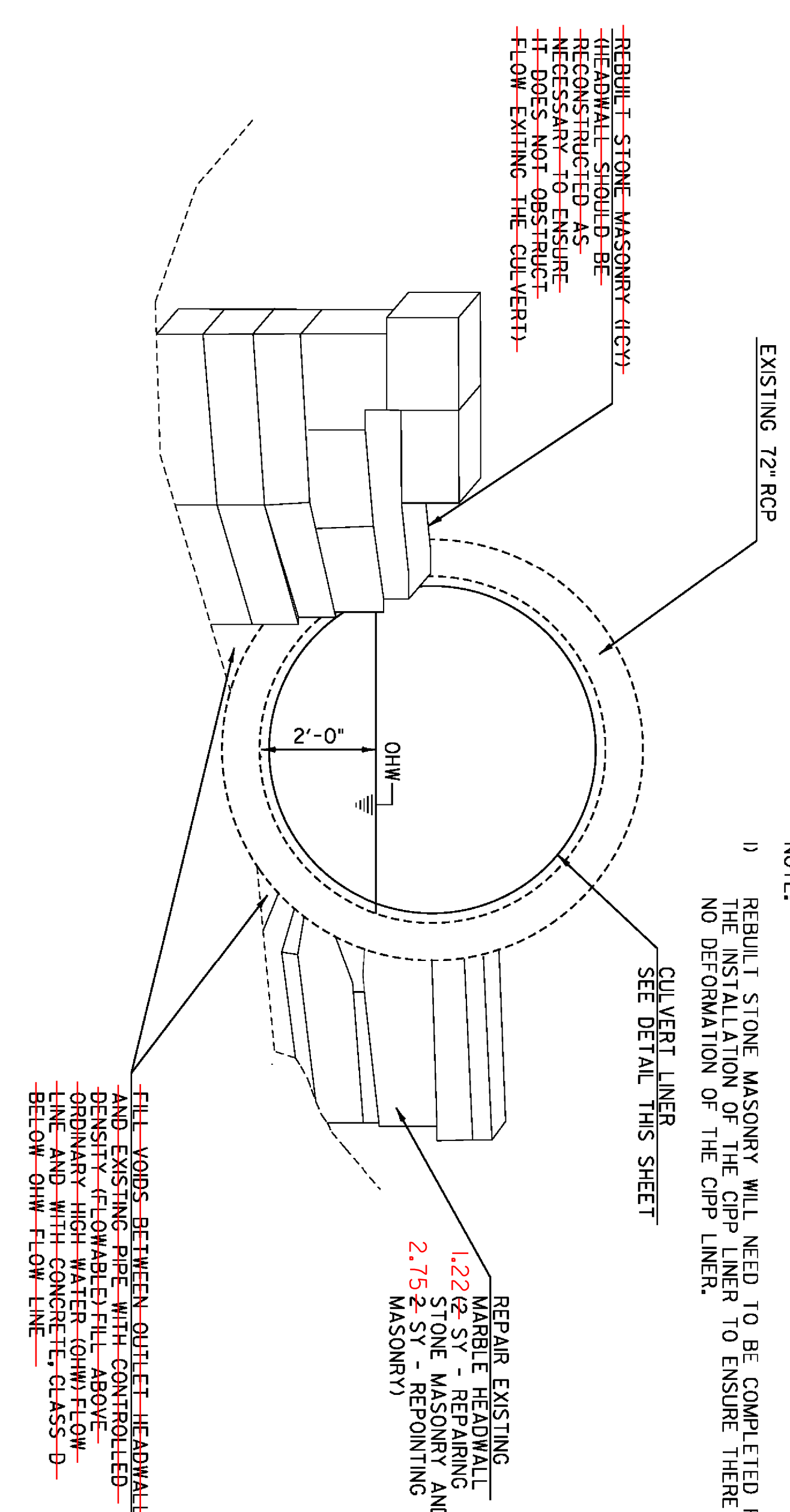
REPOINT EXISTING MARBLE HEADWALL - REPOINTING MASONRY (44-SY) (7.92 SY)



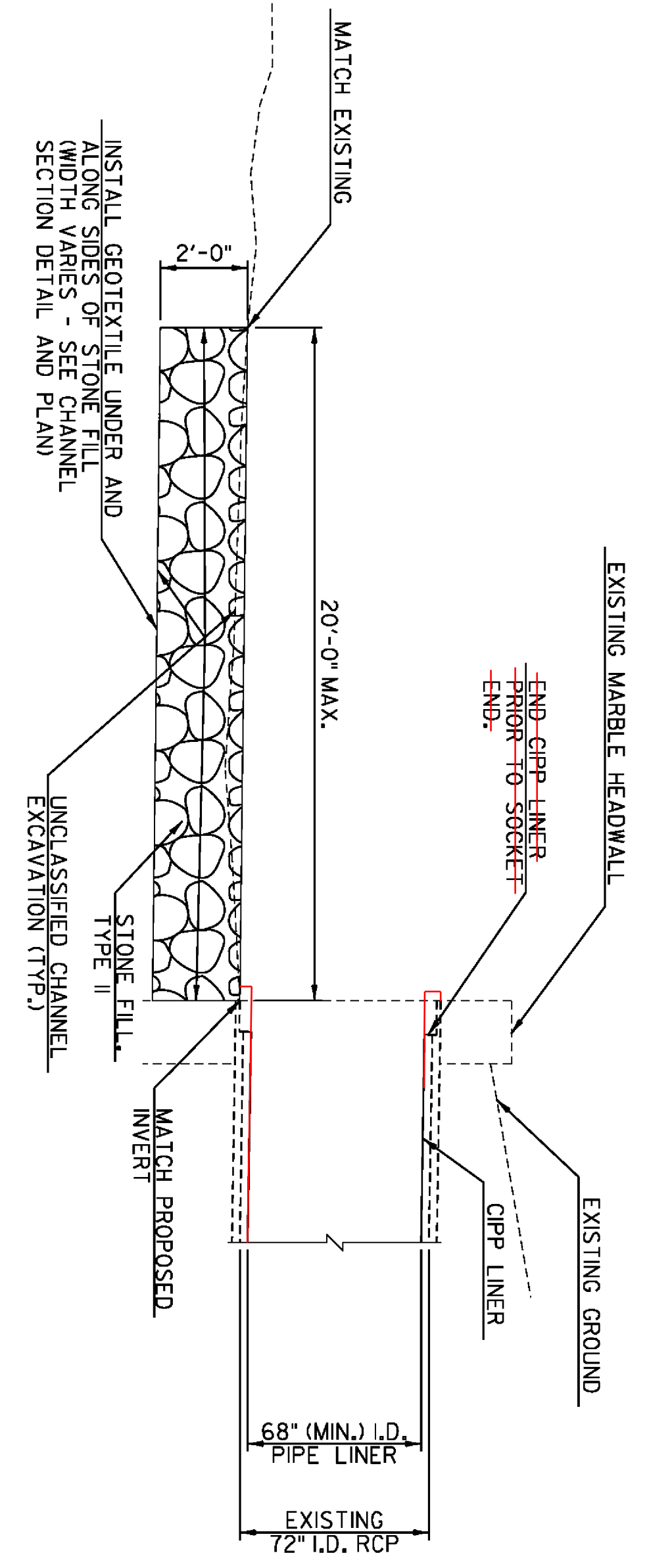
INLET REPAIR DETAIL  
NOT TO SCALE

NOTE:

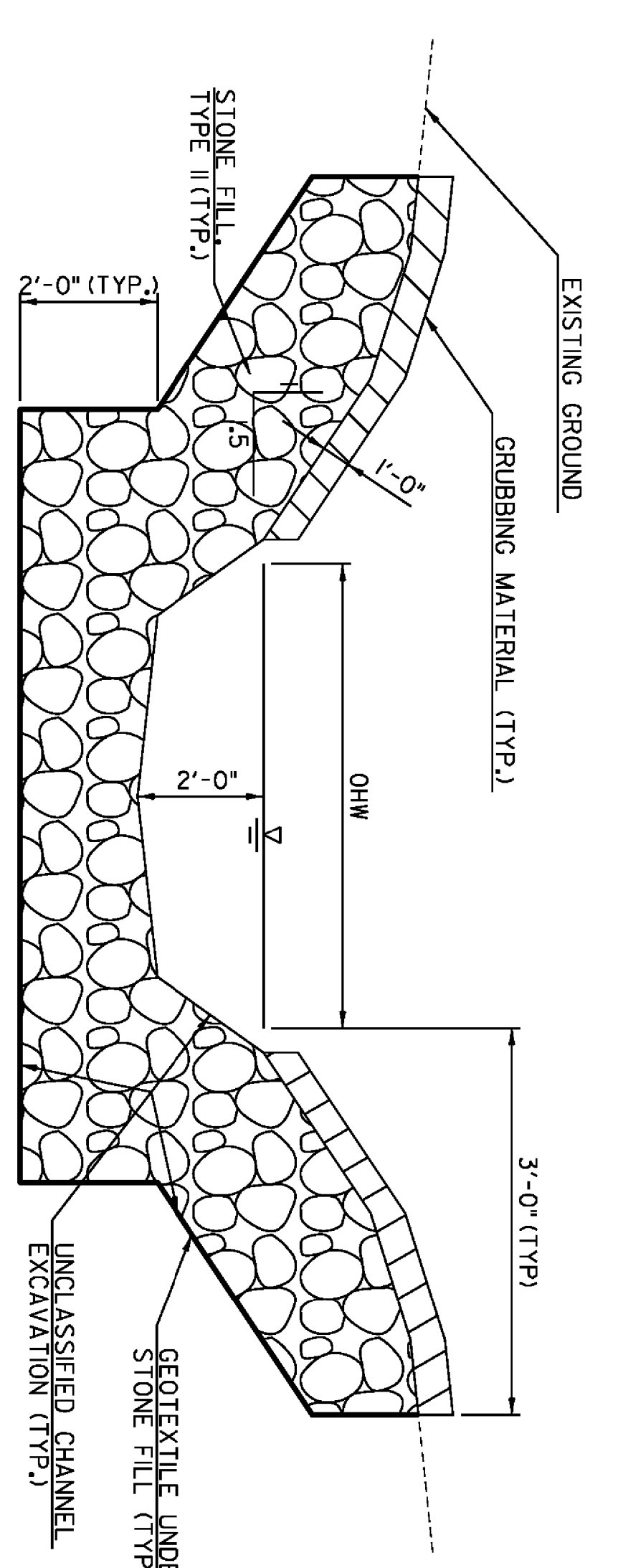
- REBUILD STONE MASONRY WILL NEED TO BE COMPLETED PRIOR TO THE INSTALLATION OF THE CIPP LINER TO ENSURE THERE WILL BE NO DEFORMATION OF THE CIPP LINER.



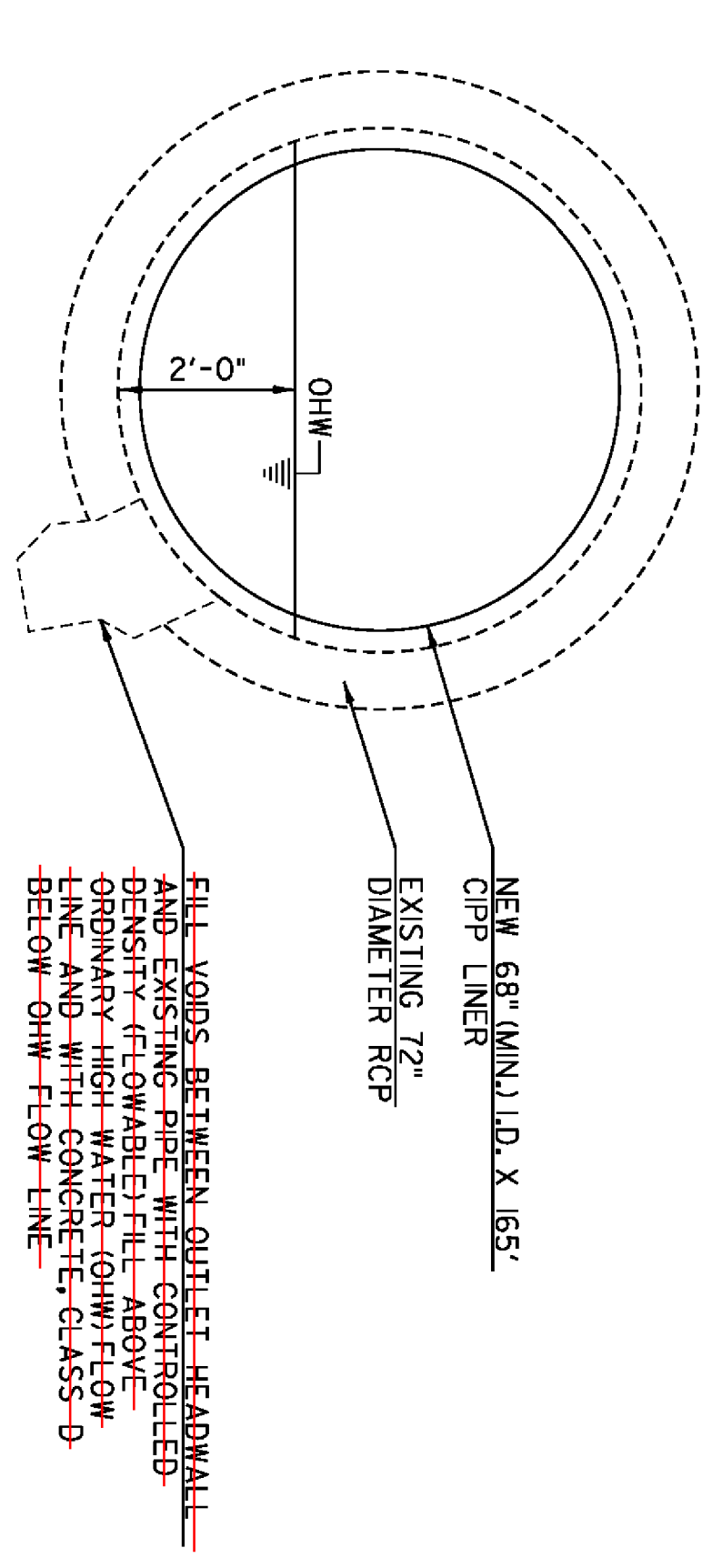
OUTLET REPAIR DETAIL  
NOT TO SCALE



INLET SECTION  
NOT TO SCALE

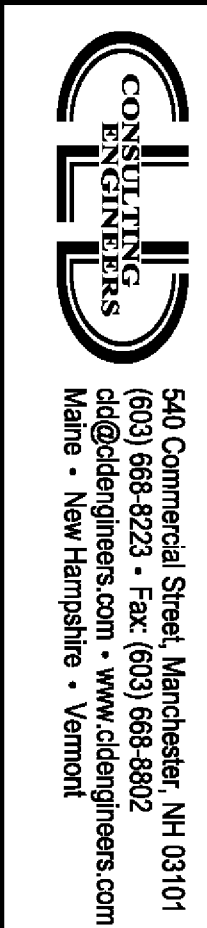


INLET CHANNEL SECTION  
NOT TO SCALE



CULVERT LINING DETAIL  
NOT TO SCALE

USED VERTICAL/OVERHEAD CONCRETE REPAIR MATERIAL



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PROJECT NAME: WEATHERSFIELD  
PROJECT NUMBER: STP 0146(II)  
FILE NAME: z00c268-det.dgn  
PROJECT LEADER: J. FITCH  
DESIGNED BY: K. RUTTER  
TYPICAL SECTIONS AND DETAILS  
PLOT DATE: 4/22/2013  
DRAWN BY: K. RUTTER  
CHECKED BY: C. GREGORY  
SHEET 3 OF 14

# QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES								TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES				
							ROADWAY	EROSION CONTROL	BRIDGE NO. 1	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
							0.2			0.2		ACRE	THINNING AND TRIMMING	201.30	0.04			
									50	50		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27	8			
									1	1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	EST.			
									6	6		GAL	WATER REPELLENT, SILANE	514.10	-			
									10	10		CY	CONCRETE, CLASS D	541.31	0.5			
									5	5		CY	CONTROLLED DENSITY (FLOWABLE) FILL	541.45	EST.			
									16	16		SY	REPOINTING MASONRY	602.30	2			
									1	1		CY	REBUILT STONE MASONRY	602.35	0.3			
									2	2		SY	REPAIRING STONE MASONRY	602.40	0.4			
									50	50		CY	STONE FILL, TYPE II	613.11	8			
							100			100		HR	FLAGGERS	630.15	EST.			
									1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16	-			
							1			1		LS	MOBILIZATION/DEMobilIZATION	635.11	-			
							1			1		LS	TRAFFIC CONTROL	641.10	-			
									70	70		SY	GEOTEXTILE UNDER STONE FILL	649.31	7			
								115		115		SY	GEOTEXTILE FOR SILT FENCE	649.51	6			
							10			10		LB	SEED	651.15	0.5			
							100			100		LB	FERTILIZER	651.18	21			
							1			1		TON	AGRICULTURAL LIMESTONE	651.20	0.7			
							1			1		TON	HAY MULCH	651.25	0.5			
							45			45		CY	TOPSOIL	651.35	2.4			
									20	20		SY	GRUBBING MATERIAL	651.40	4			
							1			1		LS	EPSC PLAN	652.10	-			
							50			50		HR	MONITORING EPSC PLAN	652.20	5			
							1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30	-			
							800			800		SY	TEMPORARY EROSION MATTING	653.20	34			
							315			315		LF	PROJECT DEMARCATION FENCE	653.55	2.2			
									165	165		LF	SPECIAL PROVISION (CURED-IN-PLACE PIPE LINER)(EXISTING 72" PIPE)	900.640	-			
									1	1		LS	SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)	900.645	-			

MODEL: \$MODEL\$



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PROJECT NAME: WEATHERSFIELD

PROJECT NUMBER: STP 0146(II)

FILE NAME: z00c268-qss.dgn  
PROJECT LEADER: J. FITCH  
DESIGNED BY: K.RUTTER  
QUANTITY SHEET #1

PLOT DATE: 4/2/2013  
DRAWN BY: K.RUTTER  
CHECKED BY: C.GREGORY  
SHEET 4 OF 14

GPS CONTROL POINTS

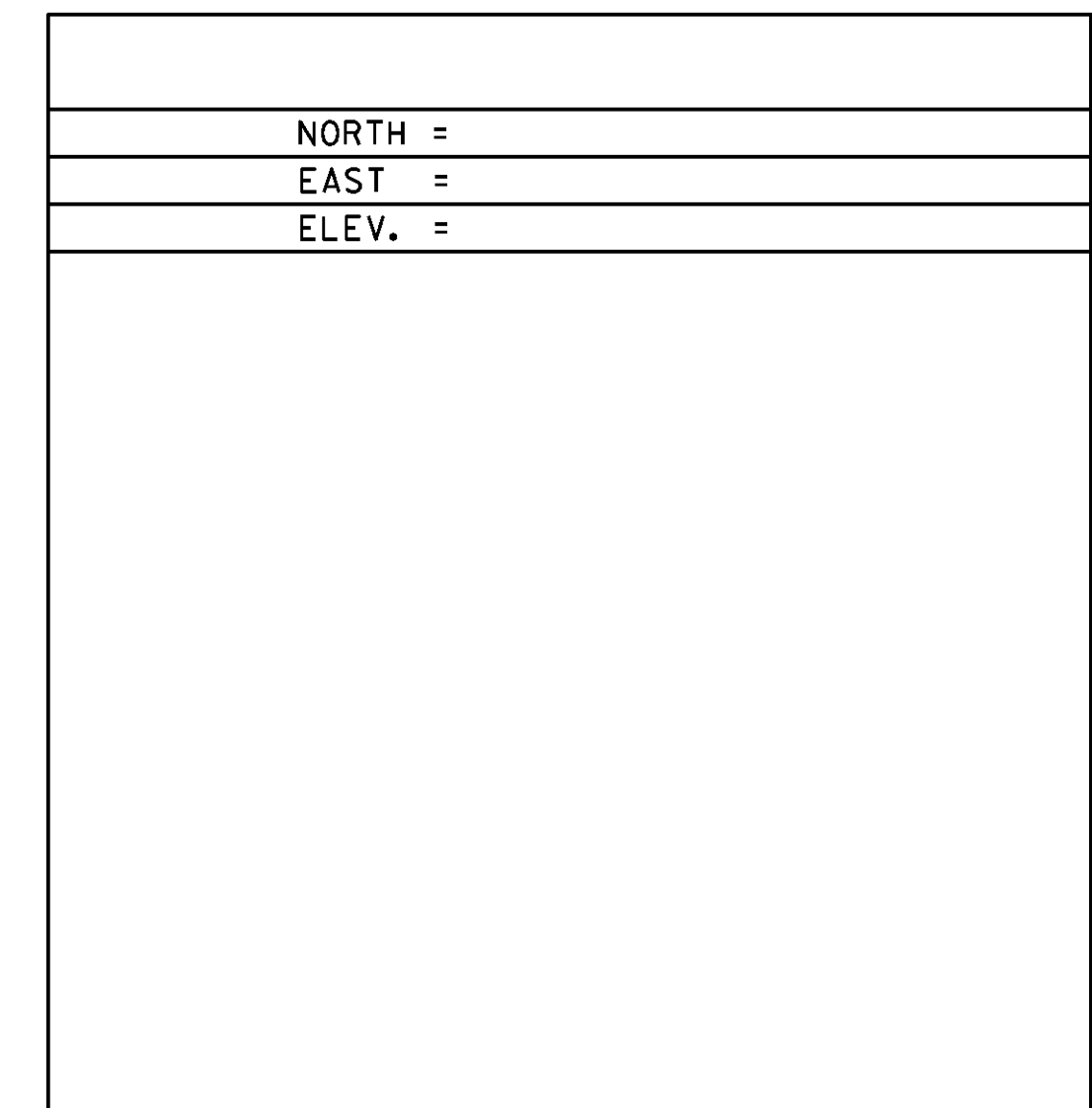
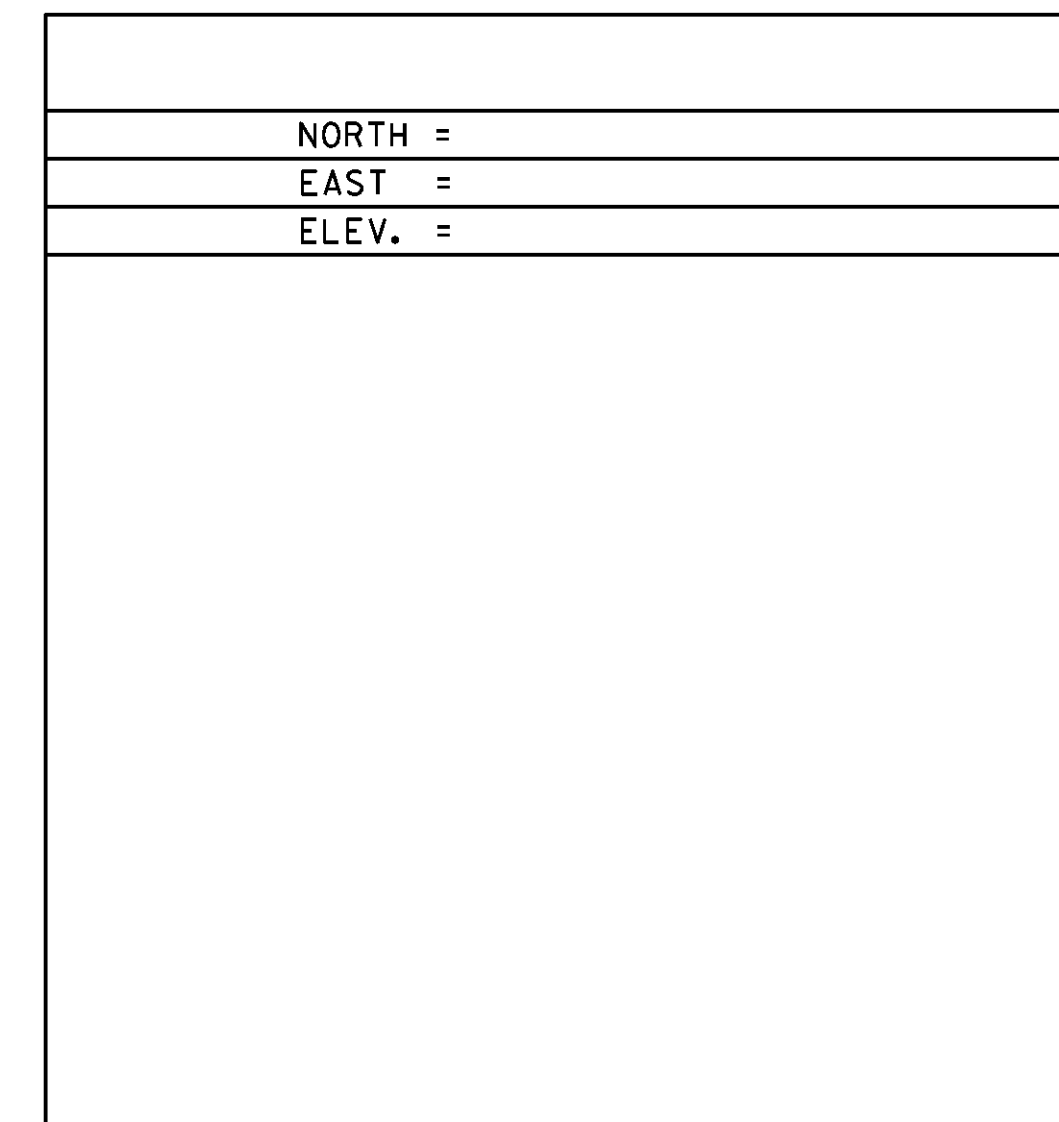
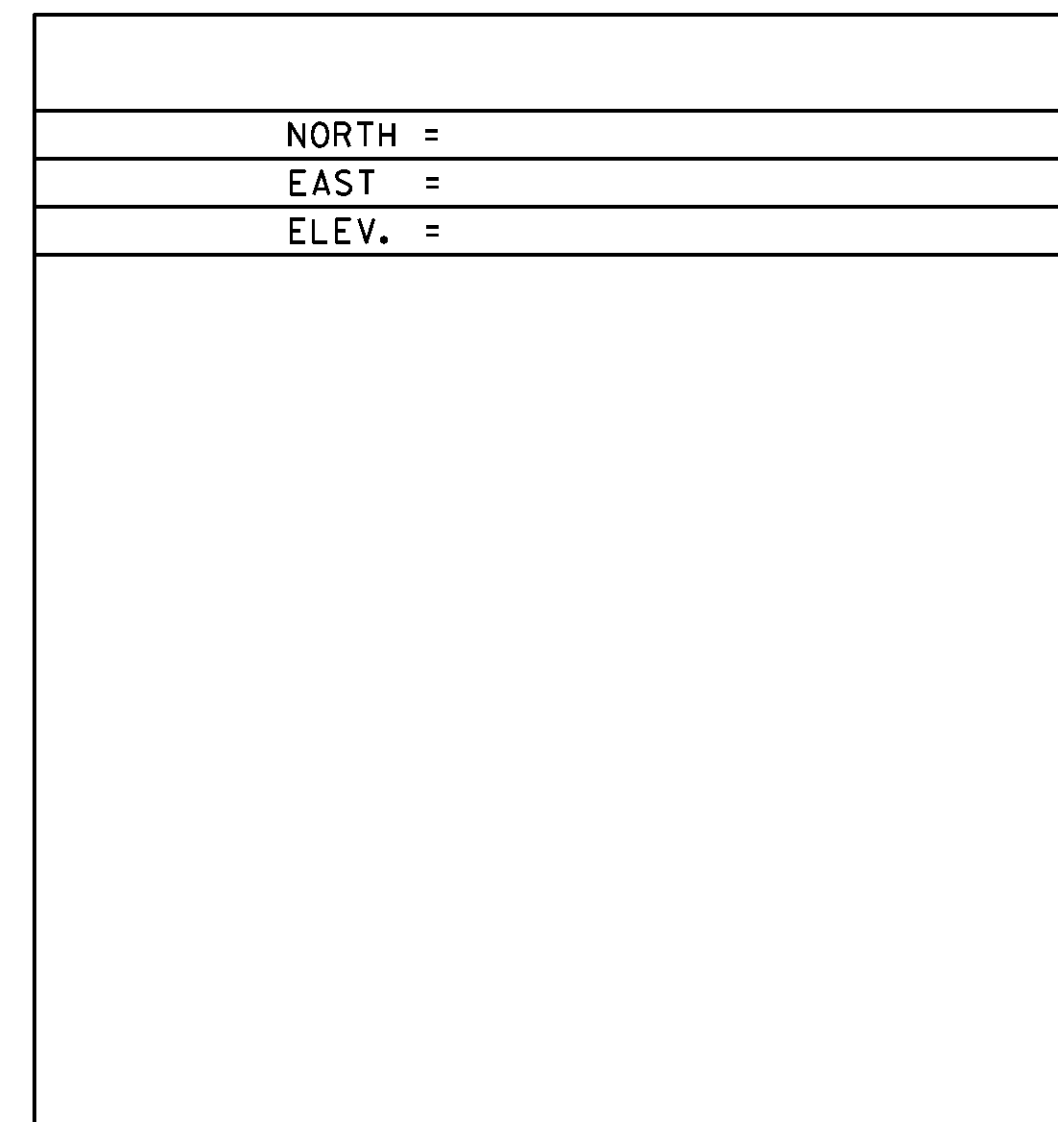
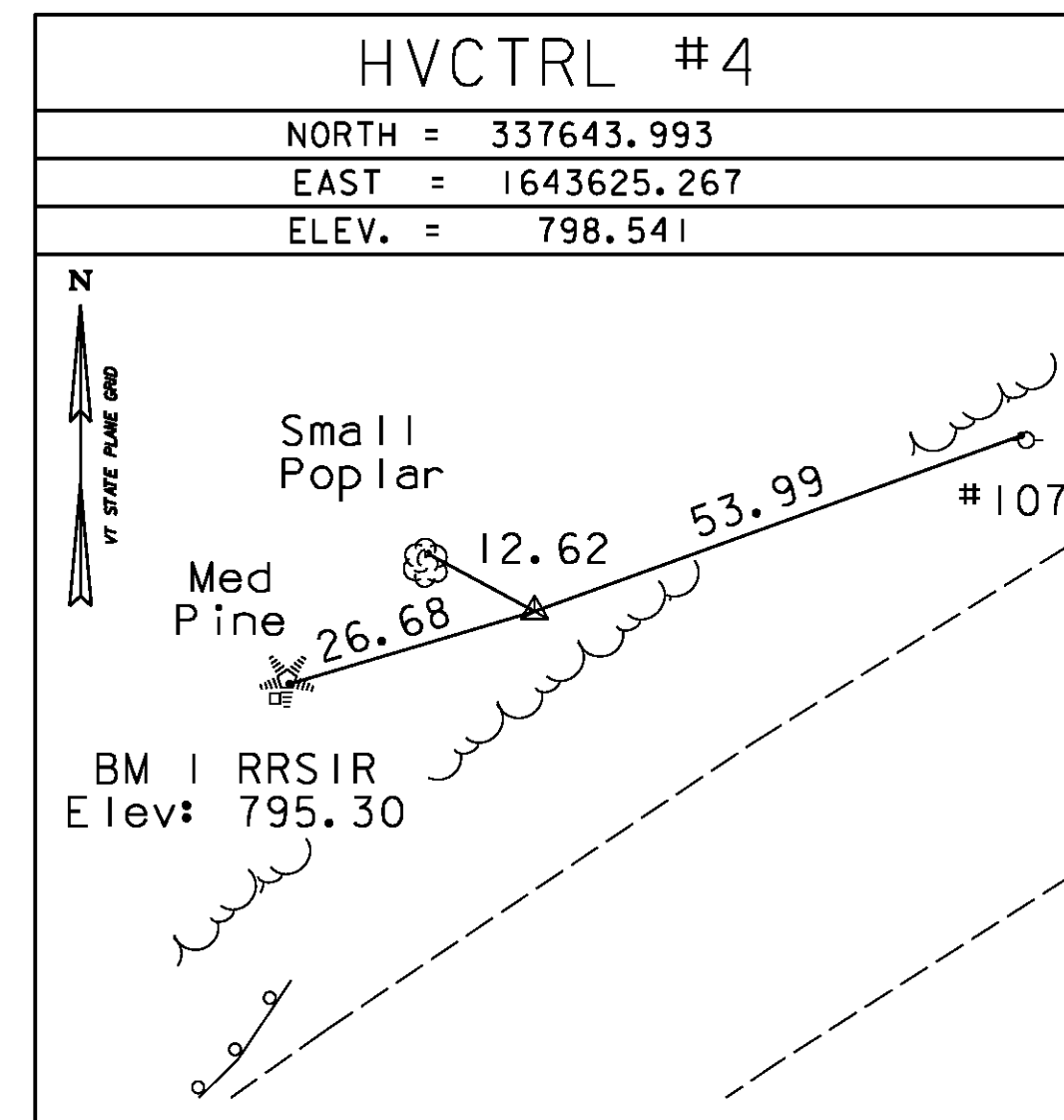
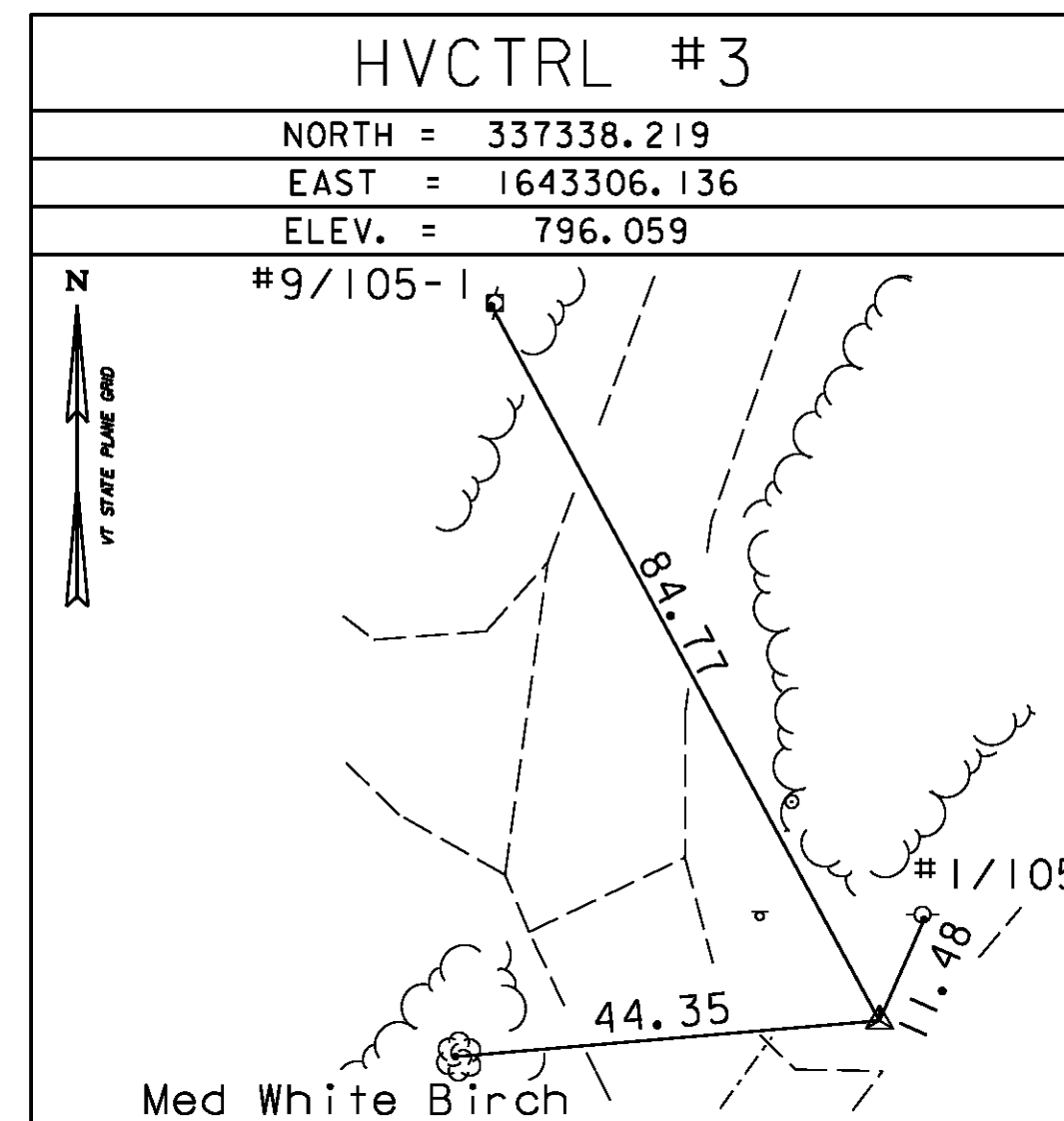
HVCTRL # 1  
 STANDARD DISK STAMPED  
 Roberts Az Mk  
 N = 334726.6170  
 E = 1642200.2260  
 ELEV. = 793.140

To reach from the I-91 bridges over VT route 131 at exit 8 in Ascutney go west along route 131 for 4.7 mi. to the intersection of Piper Road left. Continue straight ahead and go southeast along route 131 for 0.25 mi to the site of the mark. on the left at the southwest corner of a large field. The mark is set flush with the ground surface in the top of a 7.9 ft by 6.6 ft rock. It is 40 ft east southeast of and about 1.3 ft lower than the centerline of route 131, 75.5 ft southeast of pole # 4122/27a/1/92/14a, 12.8 ft northwest of a guy anchor, and 13.5 ft northeast of pole #4122/27/14/1 and a fiberglass witness post.

HVCTRL # 2  
 STANDARD DISK STAMPED  
 Roberts  
 N = 335986.7560  
 E = 1642432.6990  
 ELEV. = 811.380

To reach from the I-91 bridges over VT route 131 at exit 8 in Ascutney go west along route 131 for 4.7 mi. to the intersection of Piper Road left and the site of the mark on the left in a field. The mark is set flush with ground surface in the top of a 2 ft by 1.6 ft rock. It is 61 ft southeast of and about 5.2 ft lower than the centerline of route 131, 61.4 ft southwest of the centerline of Piper Road, 53.5 ft west northwest of pole #1aa/97aa, and 44 ft southwest of a load limit sign and a fiberglass witness post.

TRAVERSE TIES

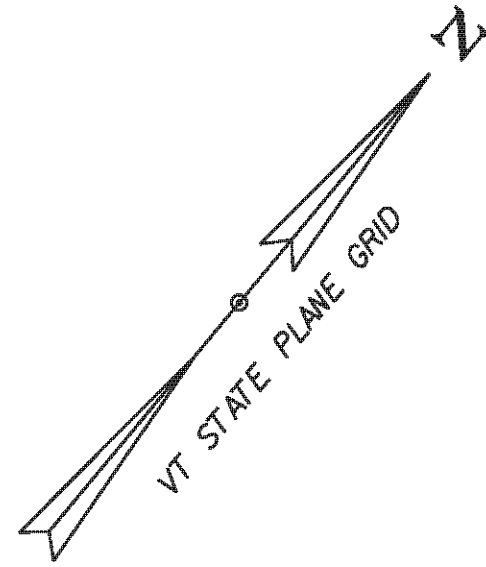


\* MAIN TRAVERSE COMPLETED 01/25/01 by R. Gilman (P.C.) R. Bullock & D. Breer

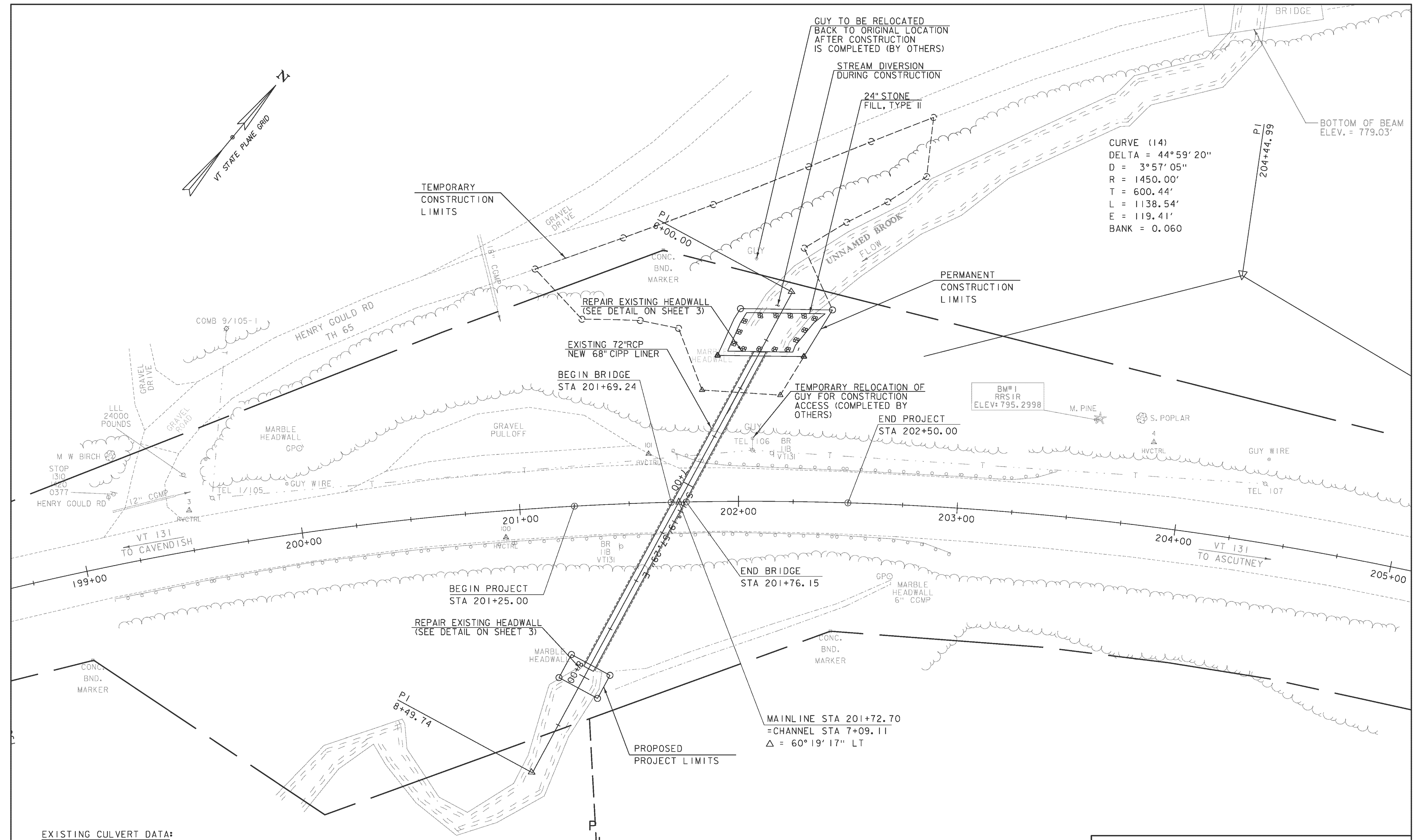
DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83(96)
ADJUSTMENT	NONE

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PROJECT NAME:	WEATHERSFIELD
PROJECT NUMBER:	STP 0146 (II)
FILE NAME:	survey\00c268t1.dgn
PROJECT LEADER:	J. FITCH
DESIGNED BY:	K. RUTTER
TIE SHEET	
PLOT DATE:	4/2/2013
DRAWN BY:	K. RUTTER
CHECKED BY:	C. GREGORY
SHEET	5 OF 16



CURVE (14)  
 DELTA = 44°59'20"  
 D = 3°57'05"  
 R = 1450.00'  
 T = 600.44'  
 L = 1138.54'  
 E = 119.41'  
 BANK = 0.060



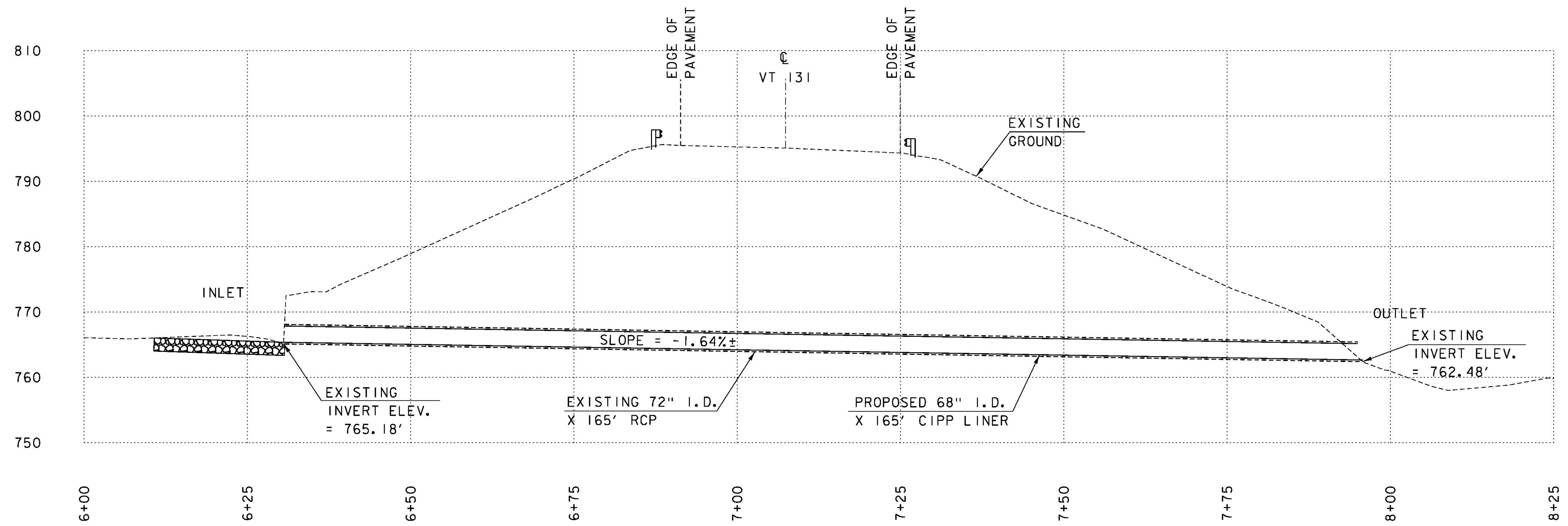
EXISTING CULVERT DATA:  
 72" REINFORCED CONCRETE PIPE  
 APPROXIMATE STRUCTURE LENGTH = 165'  
 BUILT IN 1959

SCALE 1" = 20' - 0  
 20 0 20

**CLD**  
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PROJECT NAME: WEATHERSFIELD	PLOT DATE: 4/2/2013
PROJECT NUMBER: STP 0146(II)	DRAWN BY: K.RUTTER
FILE NAME: z00c268-rdy.dgn	CHECKED BY: C.GREGORY
PROJECT LEADER: J. FITCH	SHEET 6 OF 14
DESIGNED BY: K.RUTTER	
LAYOUT SHEET	

MODEL: \$MODEL\$



**CULVERT PROFILE**  
 HOR. SCALE 1" = 10'-0"  
 VER. SCALE 1" = 10'-0"

MODEL: \$MODEL\$



PROJECT NAME: WEATHERSFIELD	FILE NAME: s00c268-pro.dgn	PLOT DATE: 4/2/2013
PROJECT NUMBER: STP 0146(II)	PROJECT LEADER: J. FITCH	DRAWN BY: K.RUTTER
	DESIGNED BY: K.RUTTER	CHECKED BY: C.GREGORY
	CULVERT PROFILE	SHEET 7 OF 14

## EPSC PLAN NARRATIVE

### 1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES PREVENTATIVE MAINTENANCE TO AN EXISTING CULVERT, INCLUDING THE INSTALLATION OF A CURED-IN-PLACE PIPE LINER, MINOR REPAIRS TO THE EXISTING STONE MASONRY HEADWALLS, AND RELATED CHANNEL WORK. CULVERT 11B IS IN THE TOWN OF WEATHERSFIELD AND CROSSES UNDER VT ROUTE 131, APPROXIMATELY 2.5 MILES EAST OF THE JUNCTION WITH VT ROUTE 106.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLANS IS APPROXIMATELY 0.32 ACRES. THIS AREA IS BASED ON THE TEMPORARY WORK AREA LIMITS AS SHOWN ON THE PLANS.

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

### 1.2 SITE INVENTORY

#### 1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA CONSISTS OF STEEP ROADWAY SIDE SLOPES THAT ARE COVERED IN GRASS/BRUSH AND WOODED AREAS. ROUTE 131 AND THE ROADWAY SIDE SLOPES ARE WITHIN THE PROJECT SITE. THERE ARE NO BUILDINGS NEAR THE PROJECT SITE, BUT THERE ARE OVERHEAD ELECTRIC AND TELEPHONE LINES.

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

AN UNNAMED BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE BROOK PASSES THROUGH THE EXISTING CULVERT. DUE TO THE NATURE OF THE SURROUNDING TERRAIN, THE PROJECT WILL RECEIVE WATER FROM THE NEARBY SLOPES.

#### 1.2.3 VEGETATION

THE VEGETATION OF THE PROJECT CONSISTS OF HARDWOOD AND SOFTWOOD TREES AND UNDERGROWTH. VEGETATION IMPACTS RESULTING FROM THE PROJECT INCLUDE TRIMMING AND THINNING OF VEGETATION ON THE EMBANKMENT SIDE SLOPES BETWEEN THE EXISTING EDGE OF PAVEMENT AND THE LIMIT OF DISTURBANCE OF THE ASSUMED CONSTRUCTION ACCESS AS SHOWN ON THE PLANS; WHERE POSSIBLE, STUMPS AND ROOT SYSTEMS SHOULD BE LEFT IN PLACE. THERE ARE NO PROPOSED TREE REPLACEMENTS AS PART OF THIS PROJECT. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED AS PART OF THIS PROJECT. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE II AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE RE-ESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

#### 1.2.4 SOILS

ALL SOIL DATA IS FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF WINDSOR, VERMONT. SOILS ON THE PROJECT SITE ARE:

BUCKLAND, LOAM, 35% TO 60% SLOPES, "K FACTOR" = 0.37

**NOTE:** K-VALUES GENERALLY INDICATE THE FOLLOWING:  
0.0-0.23 = LOW EROSION POTENTIAL  
0.24-0.36 = MODERATE EROSION POTENTIAL  
0.37 AND HIGHER = HIGH EROSION POTENTIAL

#### 1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO  
HISTORICAL OR ARCHEOLOGICAL AREAS: NO  
PRIME AGRICULTURAL LAND: NO  
THREATENED AND ENDANGERED SPECIES: NO  
WATER RESOURCE: NO  
WETLANDS: NO

### 1.3 RISK EVALUATION

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

### 1.4 EROSION PREVENTION AND SEDIMENT CONTROL

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

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

#### 1.4.1 MARK SITE BOUNDARIES

PROJECT DEMARCATION FENCE SHALL BE USED TO DELINEATE THE LIMITS THE CONTRACTOR CAN ACCESS WITH CONSTRUCTION EQUIPMENT. THE INSTALLATION OF THE PROJECT DEMARCATION FENCE LIMITS THE AREA THAT CAN BE DISTURBED AND EXPOSED TO EROSION.

#### 1.4.2 LIMIT DISTURBANCE AREA

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

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

#### 1.4.3 SITE ENTRANCE/EXIT STABILIZATION

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

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

SITE ENTRANCE/EXIT STABILIZATION IS NOT ANTICIPATED ON THIS PROJECT.

#### 1.4.4 INSTALL SEDIMENT BARRIERS

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

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

#### 1.4.5 DIVERT UPLAND RUNOFF

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

EXPOSED SOILS ARE NOT ANTICIPATED ON THIS PROJECT.

#### 1.4.6 SLOW DOWN CHANNELIZED RUNOFF

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

CONCENTRATED FLOW IN CHANNELS IS NOT ANTICIPATED ON THIS PROJECT.

#### 1.4.7 CONSTRUCT PERMANENT CONTROLS

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

TYPE II STONE FOR SLOPE LINING AND CHANNEL PROTECTION, SEED AND MULCH.

#### 1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

EXPOSED SOILS ARE NOT ANTICIPATED ON THIS PROJECT.

#### 1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

#### 1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

#### 1.4.11 DE-WATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

THE USE OF DE-WATERING ACTIVITIES IS NOT ANTICIPATED FOR THIS PROJECT.

#### 1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR PERMIT AUTHORIZATIONS.

### 1.5 SEQUENCE AND STAGING

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

#### 1.5.1 CONSTRUCTION SEQUENCE

#### 1.5.2 OFF-SITE ACTIVITIES

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

PROJECT NAME: WEATHERSFIELD

PROJECT NUMBER: STP 0146(II)

FILE NAME: z00c268-ero.dgn

PROJECT LEADER: J. FITCH

DESIGNED BY: K.RUTTER

EPSC NARRATIVE

PLOT DATE: 4/2/2013

DRAWN BY: K.RUTTER

CHECKED BY: C.GREGORY

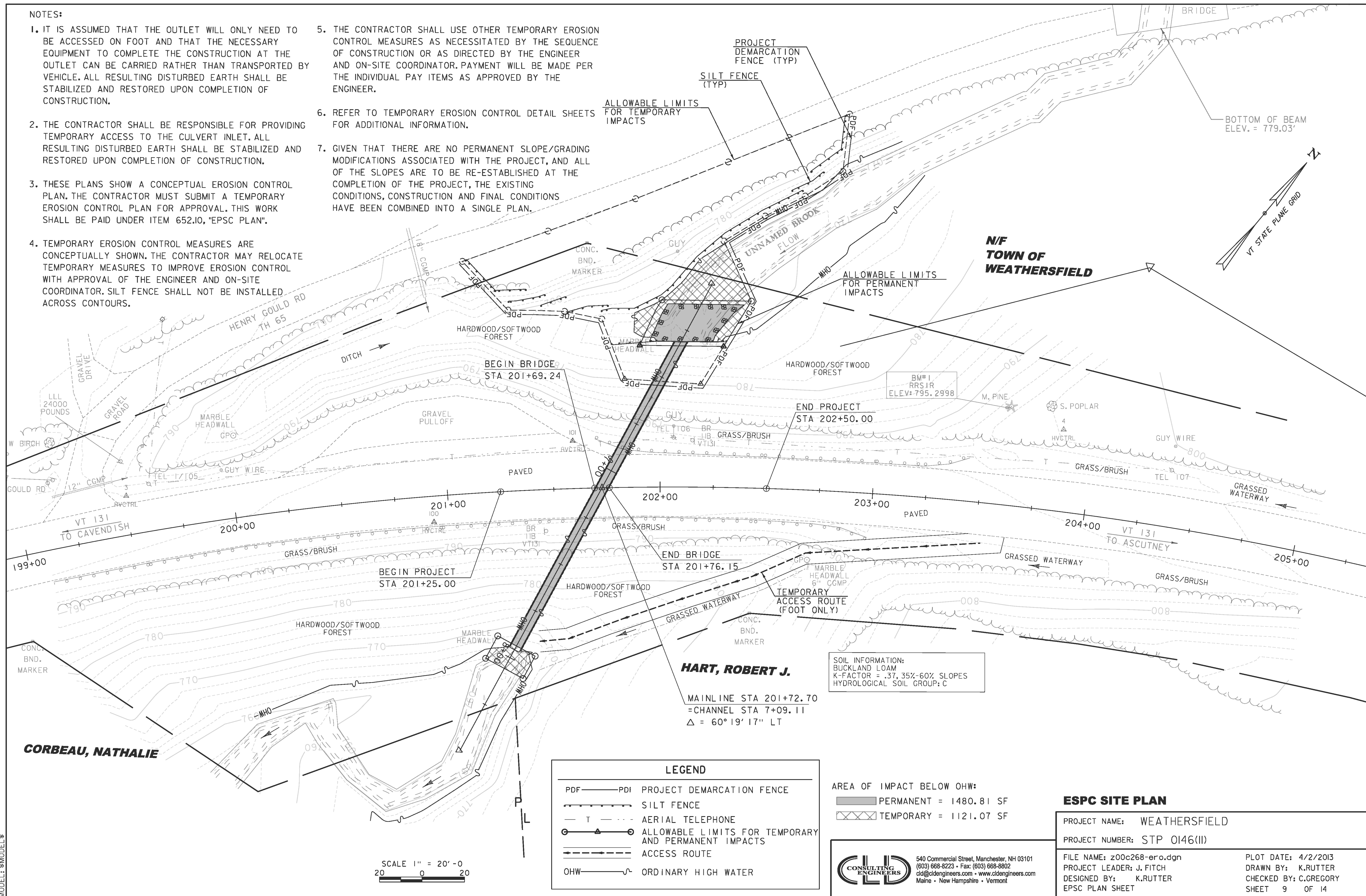
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Maine • New Hampshire • Vermont

**NOTES:**

1. IT IS ASSUMED THAT THE OUTLET WILL ONLY NEED TO BE ACCESSED ON FOOT AND THAT THE NECESSARY EQUIPMENT TO COMPLETE THE CONSTRUCTION AT THE OUTLET CAN BE CARRIED RATHER THAN TRANSPORTED BY VEHICLE. ALL RESULTING DISTURBED EARTH SHALL BE STABILIZED AND RESTORED UPON COMPLETION OF CONSTRUCTION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY ACCESS TO THE CULVERT INLET. ALL RESULTING DISTURBED EARTH SHALL BE STABILIZED AND RESTORED UPON COMPLETION OF CONSTRUCTION.
3. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN. THE CONTRACTOR MUST SUBMIT A TEMPORARY EROSION CONTROL PLAN FOR APPROVAL. THIS WORK SHALL BE PAID UNDER ITEM 652.10, "EPSC PLAN".
4. TEMPORARY EROSION CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION CONTROL WITH APPROVAL OF THE ENGINEER AND ON-SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
5. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE ENGINEER AND ON-SITE COORDINATOR. PAYMENT WILL BE MADE PER THE INDIVIDUAL PAY ITEMS AS APPROVED BY THE ENGINEER.
6. REFER TO TEMPORARY EROSION CONTROL DETAIL SHEETS FOR ADDITIONAL INFORMATION.
7. GIVEN THAT THERE ARE NO PERMANENT SLOPE/GRADING MODIFICATIONS ASSOCIATED WITH THE PROJECT, AND ALL OF THE SLOPES ARE TO BE RE-ESTABLISHED AT THE COMPLETION OF THE PROJECT, THE EXISTING CONDITIONS, CONSTRUCTION AND FINAL CONDITIONS HAVE BEEN COMBINED INTO A SINGLE PLAN.



**CORBEAU, NATHALIE**

**HART, ROBERT J.**

SOIL INFORMATION:  
BUCKLAND LOAM  
K-FACTOR = .37, 35%-60% SLOPES  
HYDROLOGICAL SOIL GROUP: C

MAINLINE STA 201+72.70  
= CHANNEL STA 7+09.11  
Δ = 60° 19' 17" LT

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

LEGEND	
PDF — PDI	PROJECT DEMARCATION FENCE
— T —	SILT FENCE
— T —	AERIAL TELEPHONE
○ — △ — ○	ALLOWABLE LIMITS FOR TEMPORARY AND PERMANENT IMPACTS
— T —	ACCESS ROUTE
OHW —	ORDINARY HIGH WATER

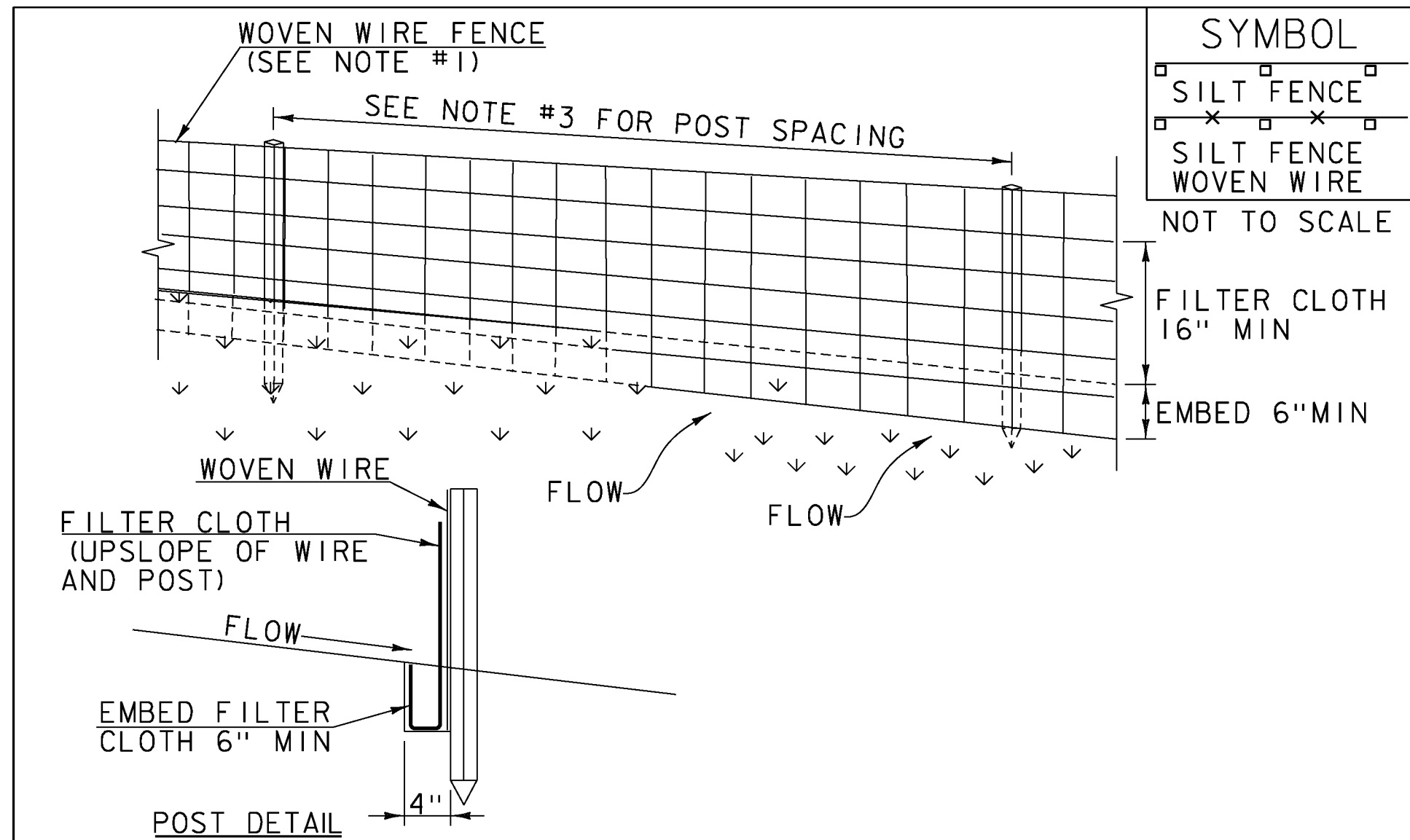
AREA OF IMPACT BELOW OHW:	
■	PERMANENT = 1480.81 SF
▨	TEMPORARY = 1121.07 SF

**ESPC SITE PLAN**

PROJECT NAME:	WEATHERSFIELD
PROJECT NUMBER:	STP 0146(II)
FILE NAME:	z00c268-er.o.dgn
PROJECT LEADER:	J. FITCH
DESIGNED BY:	K. RUTTER
ESPC PLAN SHEET	
PLOT DATE:	4/2/2013
DRAWN BY:	K. RUTTER
CHECKED BY:	C. GREGORY
SHEET	9 OF 14

**CLD CONSULTING ENGINEERS**  
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MODEL: \$MODEL\$



- CONSTRUCTION SPECIFICATIONS**
1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
  2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAF1100X, STABILINKA T140N OR APPROVED EQUIVALENT.
  3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
  4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
  5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
  6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

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

**SILT FENCE**

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

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

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

VAOT RURAL AREA MIX					
% WEIGHT	LBS/AC		NAME	GERM %	PURITY %
	BROADCAST	HYDROSEED			
37.5%	22.5	45	CREEPING RED FESCUE	85%	98%
37.5%	22.5	45	TALL FESCUE	90%	95%
5.0%	3	6	RED TOP	90%	95%
15.0%	9	18	BIRDSFOOT TREFOIL	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	85%	95%
100%	60	120			

VAOT URBAN AREA MIX					
% WEIGHT	LBS/AC		NAME	GERM %	PURITY %
	BROADCAST	HYDROSEED			
42.5%	34	68	CREEPING RED FESCUE	85%	98%
10.0%	8	16	PERENNIAL RYE GRASS	90%	95%
42.5%	34	68	KENTUCKY BLUE GRASS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	85%	95%
100%	80	160			

SOIL AMENDMENT GUIDANCE			
FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10-20-10	FOLLOW	PELLETIZED	FOLLOW
500 LBS/AC	MANUFACTURER	2 TONS/AC	MANUFACTURER

- CONSTRUCTION GUIDANCE**
1. RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
  2. URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN 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. TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
  7. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED.
  8. 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**

REVISIONS	
JUNE 23, 2009	WHF
JANUARY 15, 2010	WHF
FEBRUARY 16, 2011	WHF

MODEL: \$MODEL\$



PROJECT NAME: WEATHERSFIELD  
 PROJECT NUMBER: STP 0146(II)  
 FILE NAME: z00c268-ero.dgn  
 PROJECT LEADER: J. FITCH  
 DESIGNED BY: K. RUTTER  
 EPSC DETAILS

PLOT DATE: 4/2/2013  
 DRAWN BY: K. RUTTER  
 CHECKED BY: C. GREGORY  
 SHEET 10 OF 14

### GENERAL NOTES:

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND THE ASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION, DATED 2002, AND ITS LATEST REVISIONS.
2. ALL WORK AND ANY ASSOCIATED ACTIVITY ON THIS PROJECT SHALL BE PERFORMED WITHIN THE PROPOSED PROJECT LIMITS AS SHOWN ON THE PLANS. ALL WORK TO BE COMPLETED WITHIN THE PROJECT LIMITS, BUT OUTSIDE OF THE RIGHT-OF-WAY SHALL BE DONE SO IN ACCORDANCE WITH TRAFFIC CONTROL NOTE 3 ON THIS SHEET.
3. DIMENSIONS, ANGLES AND ELEVATIONS SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM SURVEY INFORMATION AND LIMITED FIELD INVESTIGATION, AND MAY NOT ACCURATELY REFLECT ACTUAL FIELD CONDITIONS. ACCORDINGLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS FOR ALL STRUCTURE COMPONENTS IMPACTED BY THE WORK (EXISTING OR PROPOSED) TO ASSURE CONSISTENCY WITH THE PROPOSED MODIFICATIONS. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE ADVANCING THE WORK. FABRICATION DRAWINGS REQUIRED FOR VARIOUS ITEMS OF THE WORK SHALL INDICATE THE ACTUAL FIELD MEASUREMENTS AND SHALL BE SO NOTED.
4. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
5. IT IS EXPECTED THAT CULVERT LINING, MASONRY HEADWALL REPAIRS AND STONE FILL WILL BE THE EXTENT OF THE WORK, AS NOTED ON THE PLANS. DURING THE COURSE OF CONSTRUCTION IF THE CONTRACTOR SEES AN AREA OF CONCERN, SUCH AS VOIDS AROUND THE EXISTING CULVERT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE ENGINEER SHALL MAKE A DETERMINATION AS TO THE NEED FOR FURTHER EXPLORATION.
6. THE CONTRACTOR SHALL TAKE MEASURES TO ENSURE THE OVERHEAD UTILITY LINES ARE NOT IMPACTED BY CONSTRUCTION. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL UTILITY INFORMATION AND REQUIREMENTS.

### CONCRETE NOTES:

1. CONCRETE PAYMENT AND CLASSIFICATION WILL BE AS FOLLOWS:
  - A. FILLING VOIDS BELOW PIPE OHW FLOW LINE: ITEM 541.31, CONCRETE CLASS D
  - B. FILLING VOIDS ABOVE PIPE OHW FLOW LINE: ITEM 541.45, CONTROLLED DENSITY (FLOWABLE) FILL
2. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1 INCH BY 1 INCH, UNLESS OTHERWISE NOTED.
3. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED IN THE PLANS OR AS DIRECTED BY THE ENGINEER.
4. WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES. PAYMENT WILL BE MADE UNDER ITEM 541.0, "WATER REPELLENT", SILANE". APPLICATION RATE OF "WATER REPELLENT", SILANE" SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.  
**REPLACED CONCRETE, CLASS D AND CONTROLLED DENSITY (FLOWABLE FILL) WAS REPLACED WITH OVERHEAD/VERTICAL REPAIR MATERIAL.**

### PIPE REHABILITATION NOTES:

1. TREE REMOVAL AND TRIMMING AND TRIMMING OF TREES MUST BE COORDINATED WITH THE TOWN OF WEATHERSFIELD.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR ANY DAMAGE THAT OCCURS TO THE SIDE SLOPES OR TOWN HIGHWAY AS A RESULT OF CONSTRUCTION ACTIVITIES.
3. THE EXISTING CULVERT SHALL REMAIN UNDISTURBED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION OF THE EXISTING PIPE TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL REMOVE SEDIMENT, LARGE STONES, AND/OR DEBRIS FROM THE INSIDE OF THE EXISTING CULVERT PRIOR TO INSTALLING THE NEW LINER. PAYMENT FOR THIS WORK WILL BE MADE UNDER CONTRACT ITEM 900.640, "SPECIAL PROVISION (CURED-IN-PLACE PIPE LINER) (EXISTING 72" PIPE)".
4. THE CONTRACTOR SHALL FILL ANY VOIDS BELOW THE ORDINARY HIGH WATER MARK IN THE CULVERT FROM WITHIN THE CULVERT BEFORE INSTALLING THE LINER. PAYMENT FOR THIS WORK WILL BE MADE UNDER ITEM 541.31, "CONCRETE, CLASS D".
5. **USED OVERHEAD/VERTICAL REPAIR MATERIAL.**  
THE CONTRACTOR SHALL FILL ANY VOIDS ABOVE THE ORDINARY HIGH WATER MARK IN THE CULVERT FROM WITHIN THE CULVERT BEFORE INSTALLING THE LINER. PAYMENT FOR THIS WORK SHALL BE MADE UNDER ITEM 541.45, "CONTROLLED DENSITY (FLOWABLE) FILL".
6. **USED OVERHEAD/VERTICAL REPAIR MATERIAL.**  
THE EXISTING MARBLE HEADWALLS SHALL BE RETAINED AT EACH END OF THE CULVERT. REPAIRS TO THE EXISTING HEADWALLS SHALL BE COMPLETED AS SHOWN IN THE PLANS. DURING THE COURSE OF CONSTRUCTION IF THE CONTRACTOR SEES ADDITIONAL REPAIRS THAT SHOULD BE MADE TO THE EXISTING HEADWALLS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE ENGINEER WILL MAKE A DETERMINATION IF THE ADDITIONAL REPAIRS SHALL BE MADE. THIS WORK SHALL BE PAID UNDER ITEM 602.40, "REPAIRING STONE MASONRY". ITEM 602.35, "REBUILT STONE MASONRY" OR ITEM 602.30, "POINTING MASONRY".
7. VOIDS LOCATED BETWEEN THE EXISTING HEADWALLS AND PIPE SHALL BE FILLED WITH FLOWABLE FILL AND/OR CONCRETE AS SHOWN ON THE PLANS. IF ADDITIONAL VOIDS ARE FOUND DURING CONSTRUCTION, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE ENGINEER WILL DETERMINE IF THE VOIDS ARE REQUIRED TO BE FILLED. THIS WORK SHALL BE PAID UNDER ITEM 541.45, "CONTROLLED DENSITY (FLOWABLE) FILL" OR ITEM 541.31, "CONCRETE, CLASS D". DEPENDING UPON THE LOCATION RELATIVE TO THE OHW.

### TEMPORARY RELOCATION OF STREAM NOTES:

1. ITEM 900.645, "SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)". SHALL BE USED TO DIVERT THE UNNAMED BROOK FLOW AROUND THE CONSTRUCTION AREA. THE CONTRACTOR SHALL SUBMIT A PLAN SHOWING THE PROPOSED METHOD FOR DIVERTING THE BROOK AND ALLOWING THE REPAIRS TO THE EXISTING HEADWALLS. THE INSTALLATION OF THE CIP LINER AND STONE FILL TO BE PERFORMED IN THE DRY. ANY METHOD USED SHALL BE PAID UNDER ITEM 900.645, "SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)" AND SHALL INCLUDE, BUT NOT BE LIMITED TO:
  - A. THE TEMPORARY PIPE HARDWARE, PUMP RENTALS AND MONITORING OF THE PUMP DIVERSION.
  - B. ANY EXCAVATION, IMPACTS OR EROSION CONTROL MEASURES NEEDED TO INSTALL THE TEMPORARY DIVERSION AND REMOVE THE TEMPORARY DIVERSION OUTSIDE THE IMPACTS SHOWN ON THE PLANS.
  - C. INCIDENTALS USED WHILE DIVERTING THE WATER TO THE TEMPORARY DIVERSION (SANDBAGS, PUMPS, ETC.)
2. THE UNNAMED BROOK SHALL BE DIVERTED DURING LOW FLOW CONDITIONS ONLY.

### TRAFFIC CONTROL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY ACCESS TO THE CULVERT REHABILITATION SITE. ALL RESULTING DISTURBED EARTH SHALL BE STABILIZED AND RESTORED UPON COMPLETION OF CONSTRUCTION. IT HAS BEEN ASSUMED THAT A TEMPORARY ACCESS ROAD WILL NOT BE REQUIRED. THE INLET SIDE OF CULVERT SHALL BE ACCESSED UTILIZING THE EXISTING TOWN HIGHWAY AND THE OUTLET SHALL ONLY BE ACCESSED BY WORKERS ON FOOT.
2. THE AGENCY HAS OBTAINED RIGHTS FROM THE TOWN OF WEATHERSFIELD FOR TEMPORARY CONSTRUCTION ACCESS UTILIZING THE EXISTING TOWN HIGHWAY. TH 65. THE CONTRACTOR SHALL NOT GO OUTSIDE THE TEMPORARY CONSTRUCTION LIMITS DEPICTED ON THE PLANS WITHOUT PRIOR APPROVAL FROM THE TOWN OF WEATHERSFIELD.
3. THE TOWN ROAD, TH 65, MAY BE CLOSED TO TWO-WAY TRAFFIC FOR UP TO A 72-HOUR DURATION. THE CONTRACTOR SHALL COORDINATE THE CLOSURE WITH THE TOWN MANAGER AND ADJACENT PROPERTY OWNERS A MINIMUM OF THREE WEEKS PRIOR TO THE ROAD CLOSURE. COORDINATION SHALL BE SUBSIDIARY TO ITEM 641.0 "TRAFFIC CONTROL".  
JIM MULLEN, TOWN MANAGER      PHONE: (603) 674-2626  
TOWN OF WEATHERSFIELD  
P.O. BOX 550  
ASCUTNEY, VT 05030
4. FOR ALL OTHER CONSTRUCTION ACTIVITIES ON TH 65 AND VT ROUTE 131:
  - A. WORK WILL NEED TO BE COMPLETED MAINTAINING TWO-WAY ALTERNATING TRAFFIC
  - B. TEMPORARY LANE AND/OR SHOULDER CLOSURES WILL BE ALLOWED DURING WORKING HOURS ONLY.
  - C. THE HIGHWAY SHALL BE RESTORED TO FULL CAPACITY AT THE CLOSE OF DAILY CONSTRUCTION ACTIVITIES.
5. ACCESS TO ALL DRIVES SHALL BE MAINTAINED DURING CONSTRUCTION.
6. ALL TRAFFIC CONTROL MEASURES FOR THIS PROJECT SHALL BE INSTALLED IN ACCORDANCE WITH TYPICAL APPLICATIONS TA-1, TA-3, AND TA-10 OF THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE REFERENCED VTRANS STANDARD DRAWINGS. CONFLICTS BETWEEN THE MUTCD AND THE VTRANS STANDARD DRAWINGS SHALL DEFER TO THE MUTCD.
7. THE CONTRACTOR SHALL SUBMIT A SPECIFIC TRAFFIC CONTROL PLAN FOR THE CONSTRUCTION SITE TO THE ENGINEER FOR APPROVAL PER SUBSECTIONS 104.04 AND 105.03. THIS WORK SHALL BE SUBSIDIARY TO ITEM 641.0, "TRAFFIC CONTROL".
8. TEMPORARY BARRIER, IF USED, SHALL MEET THE REQUIREMENTS OF SECTION 621, BARRIER ENDS FACING ONGOING TRAFFIC SHALL BE TAPERED BEYOND THE CLEAR ZONE. IF NECESSARY, PAYMENT FOR FURNISHING, INSTALLING, RESETTING, AND REMOVING ANY TEMPORARY TRAFFIC BARRIER WILL BE CONSIDERED INCIDENTAL TO ITEM 641.0, "TRAFFIC CONTROL".
9. ENERGY ABSORPTION ATTENUATORS, IF USED, SHALL MEET THE REQUIREMENTS OF SECTION 621, PAYMENT FOR INSTALLING AND REMOVING ANY ENERGY ABSORPTION ATTENUATORS WILL BE CONSIDERED INCIDENTAL TO ITEM 641.0, "TRAFFIC CONTROL".
10. SIGNS, BARRICADES, AND TRAFFIC CONTROL DEVICES SHALL BE CLEANED WEEKLY AND THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 641.40, "TRAFFIC CONTROL".
11. TEMPORARY SIGNS LOCATED BEHIND GUARDRAIL SHALL BE INSTALLED PER STANDARDS AND SUCH THAT THE BOTTOM OF THE SIGN IS ABOVE THE HEIGHT OF THE GUARDRAIL. ALL CONSTRUCTION RELATED SIGNS SHALL BE PLACED SUCH THAT THEY DO NOT OBSTRUCT VISIBILITY OF EXISTING SIGNS.
12. PENDING THE APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY REMOVE EXISTING GUARDRAIL FOR CONSTRUCTION ACCESS. IF EXISTING GUARDRAIL IS REMOVED, TRAFFIC SHALL BE PROTECTED BY TEMPORARY BARRIER. PAYMENT FOR REMOVING AND RESETTING GUARDRAIL, FURNISHING, INSTALLING, RESETTING, AND REMOVING ANY TEMPORARY TRAFFIC BARRIER OR OTHER MATERIALS REQUIRED TO PROVIDE PROTECTION SHALL BE INCIDENTAL TO ITEM 641.40, "TRAFFIC CONTROL". THE CONTRACTOR SHALL PLACE TEMPORARY BARRIER IN A MANNER SUCH THAT IT PROTECTS TRAFFIC FROM EXPOSED ENDS OF THE BARRIER AND GUARDRAIL.
13. THE CONTRACTOR SHALL COORDINATE ANY PROPOSED TRAFFIC CONTROL MEASURES WITH ADJUTING CONSTRUCTION PROJECTS.

PROJECT NAME: WEATHERSFIELD

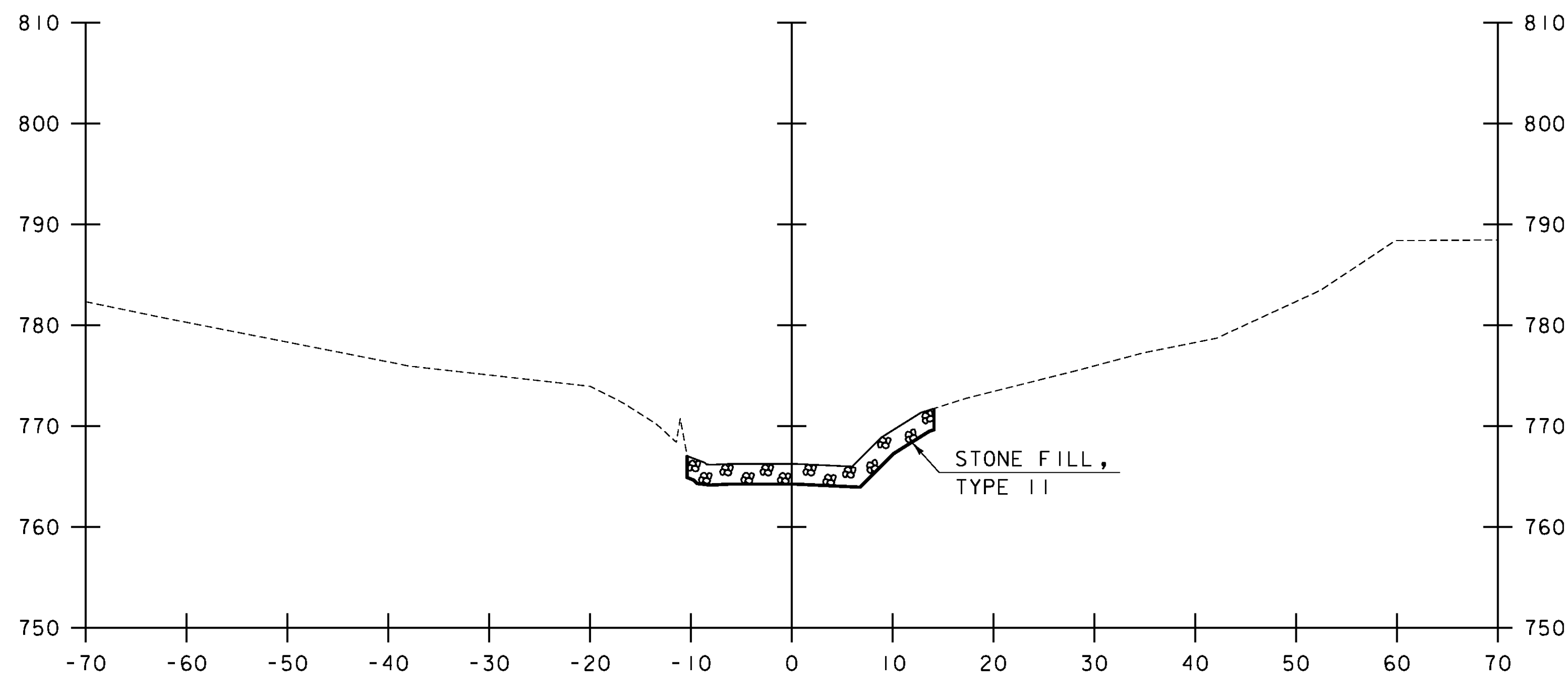
PROJECT NUMBER: STP 0146(II)

FILE NAME: z00d268-notes.dgn  
PROJECT LEADER: J. FITCH  
DESIGNED BY: K. RUTTER  
PROJECT NOTES

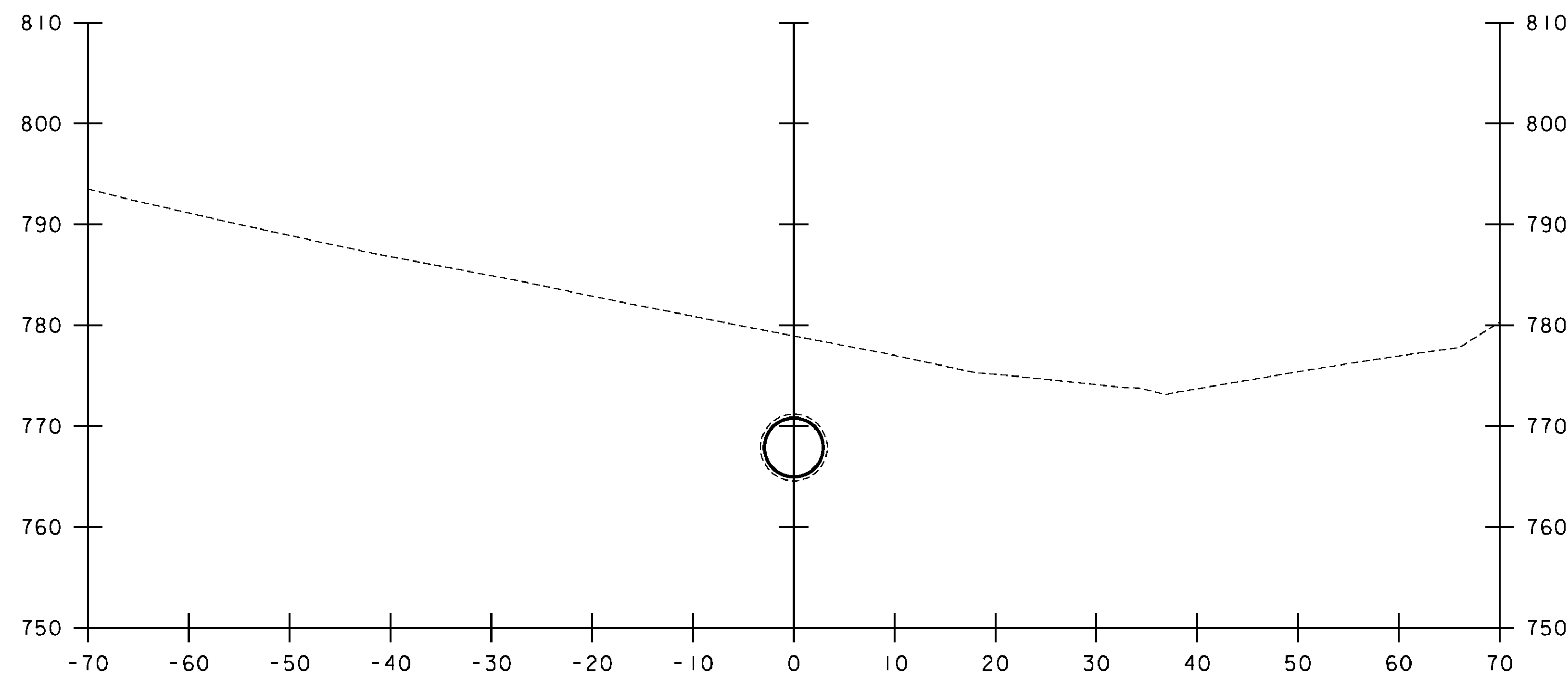
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DRAWN BY: K. RUTTER  
CHECKED BY: C. GREGORY  
SHEET II OF 14



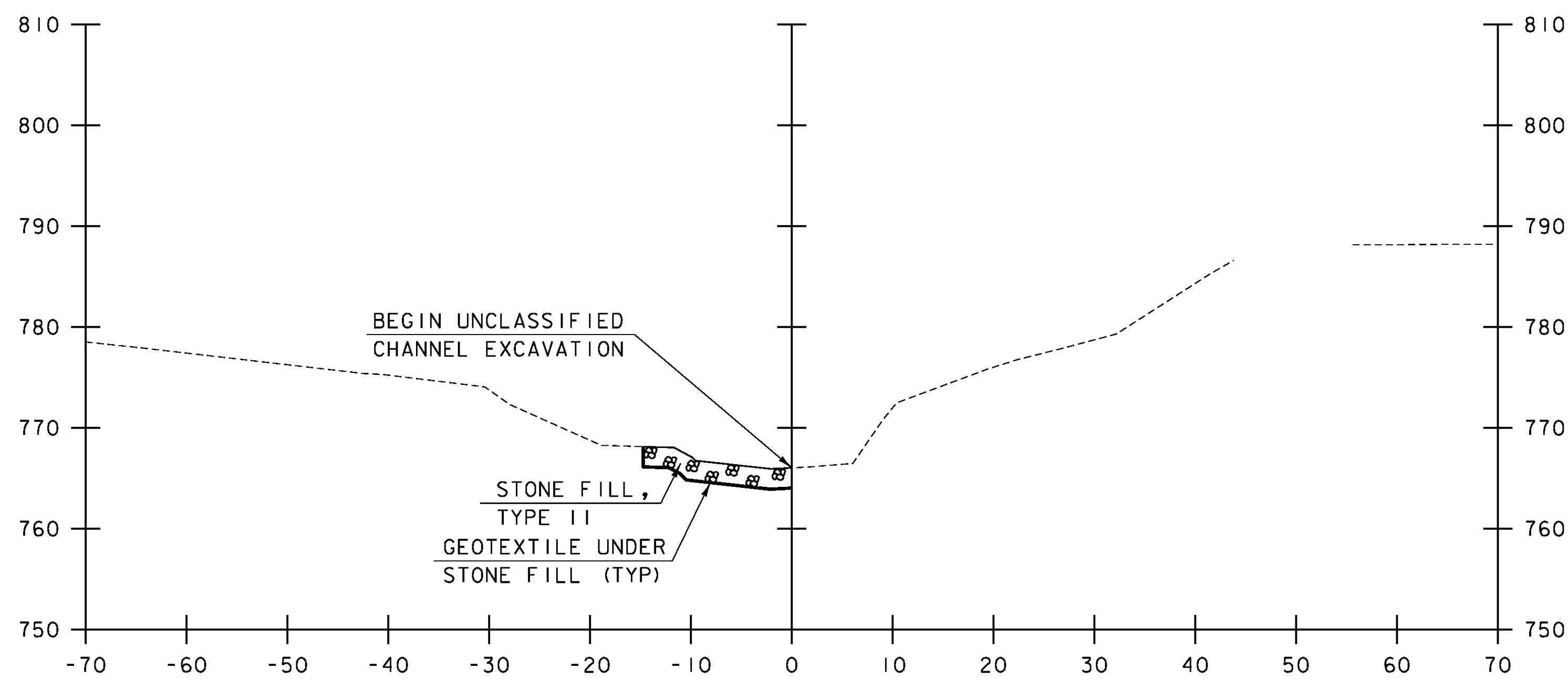
540 Commercial Street, Manchester, NH 03101  
(603) 868-8223 - Fax: (603) 668-8802  
cd@cdengineers.com - www.cdengineers.com  
Name - New Hampshire - Vermont



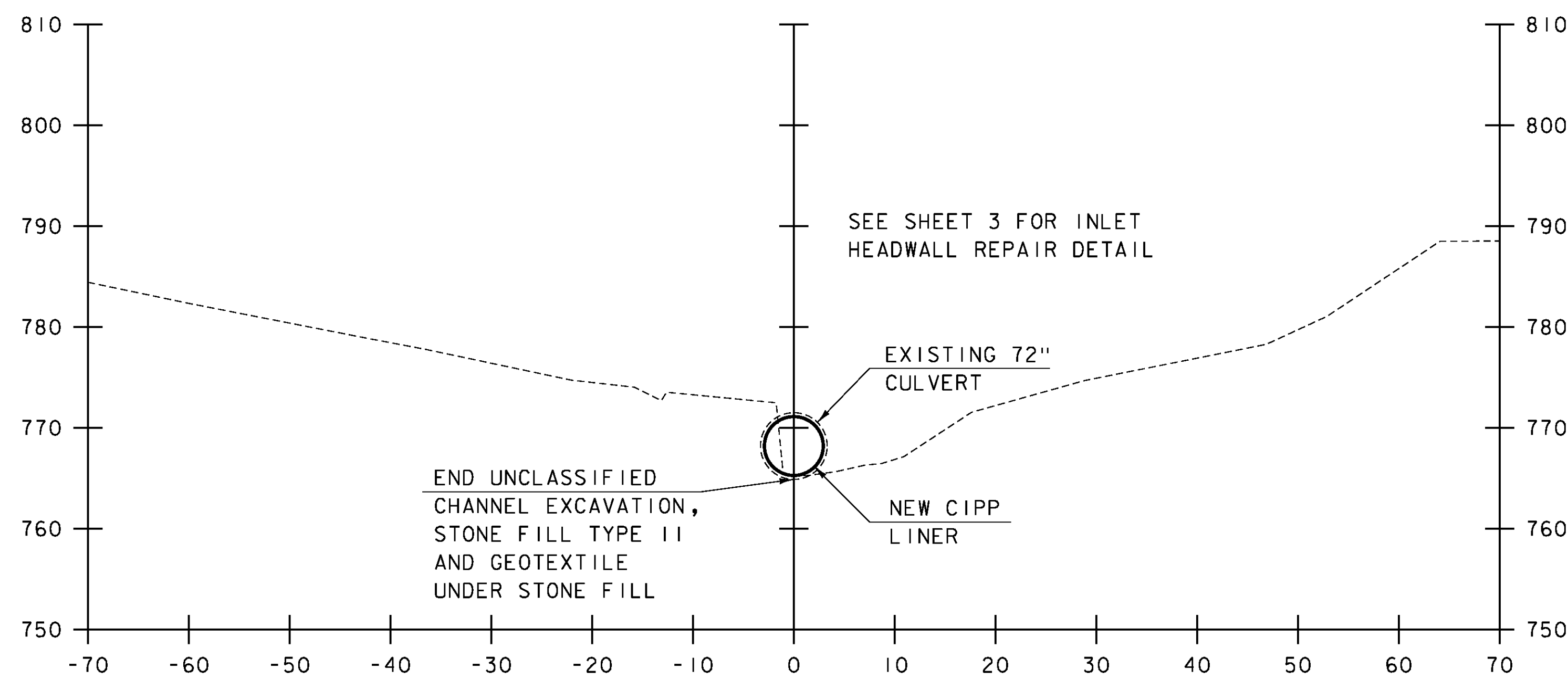
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6+50



6+10

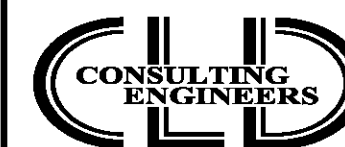


6+30

SCALE 1" = 10' - 0"



STA. 6+11 TO STA. 6+50

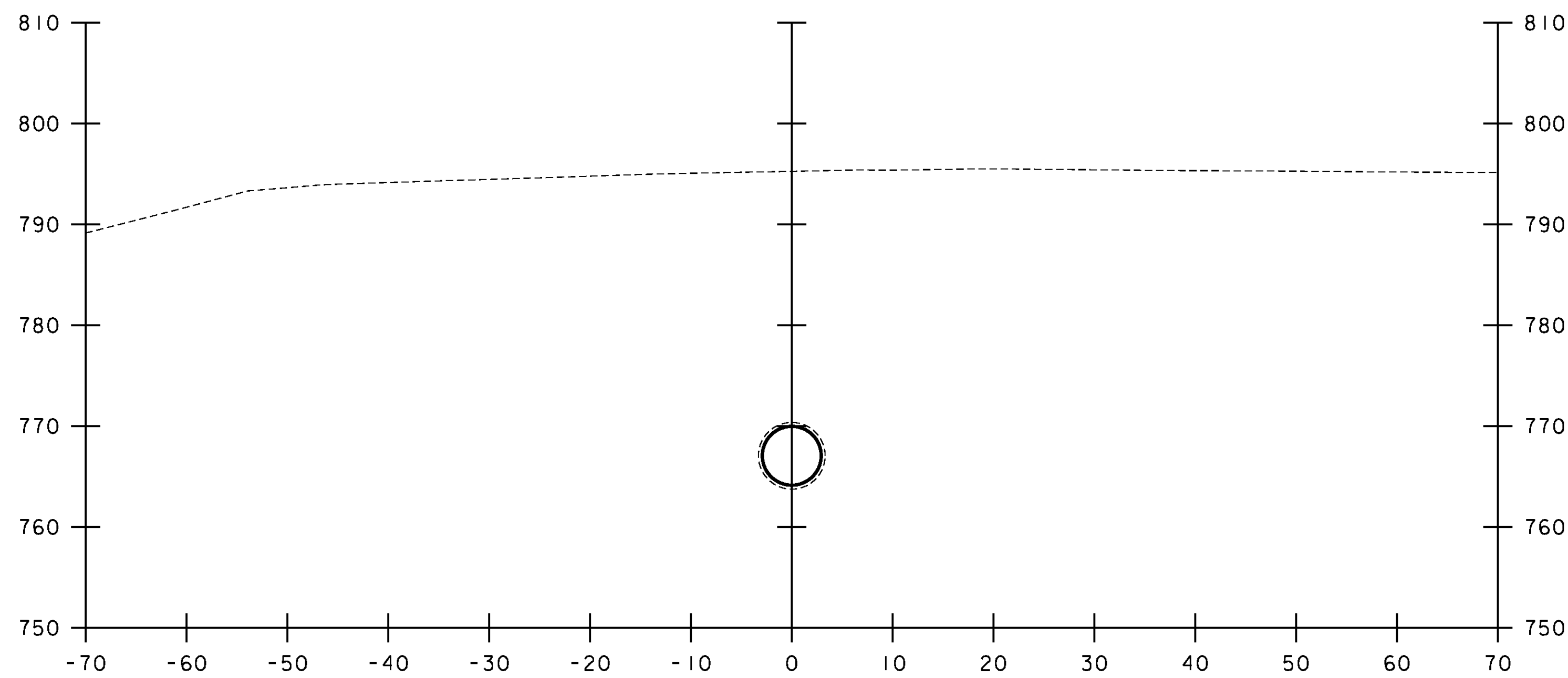


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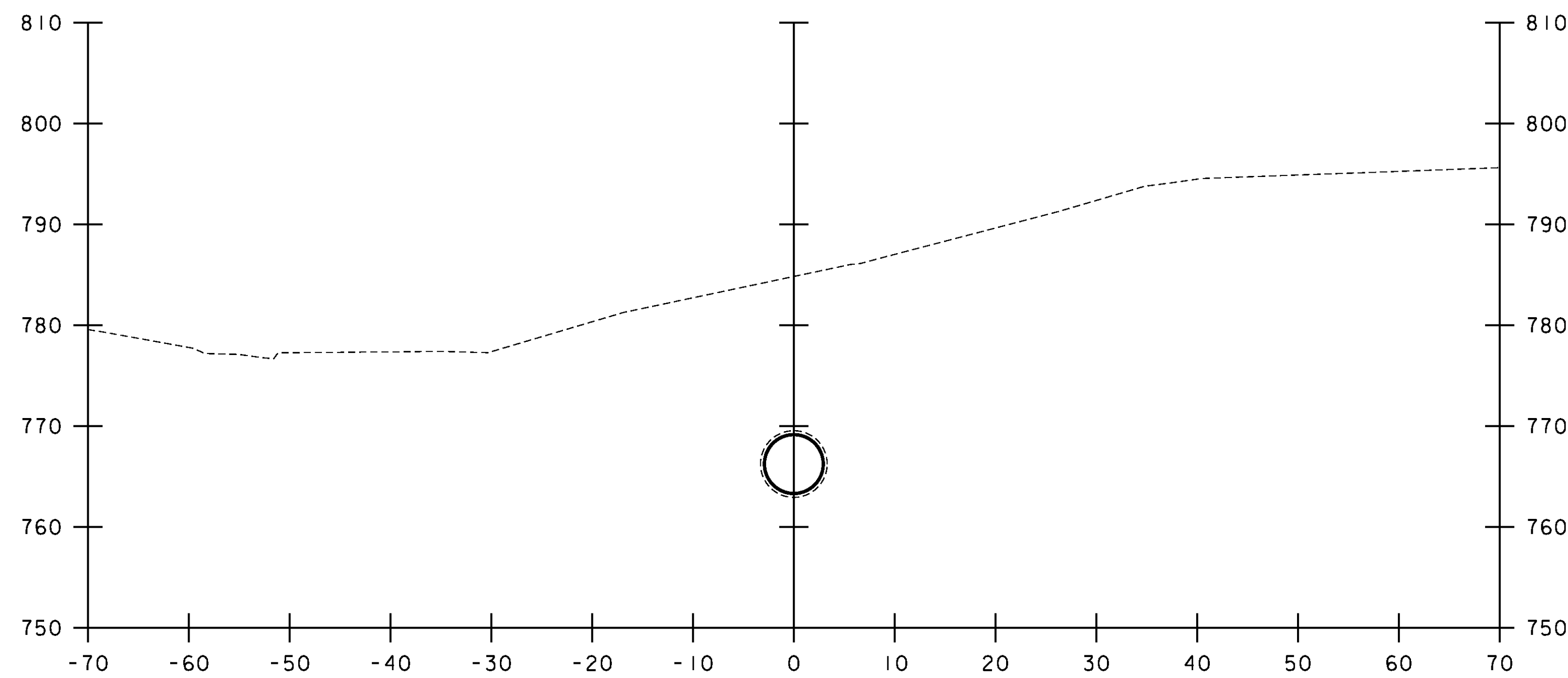
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 PROJECT LEADER: J. FITCH  
 DESIGNED BY: K. RUTTER  
 CHANNEL CROSS SECTIONS I

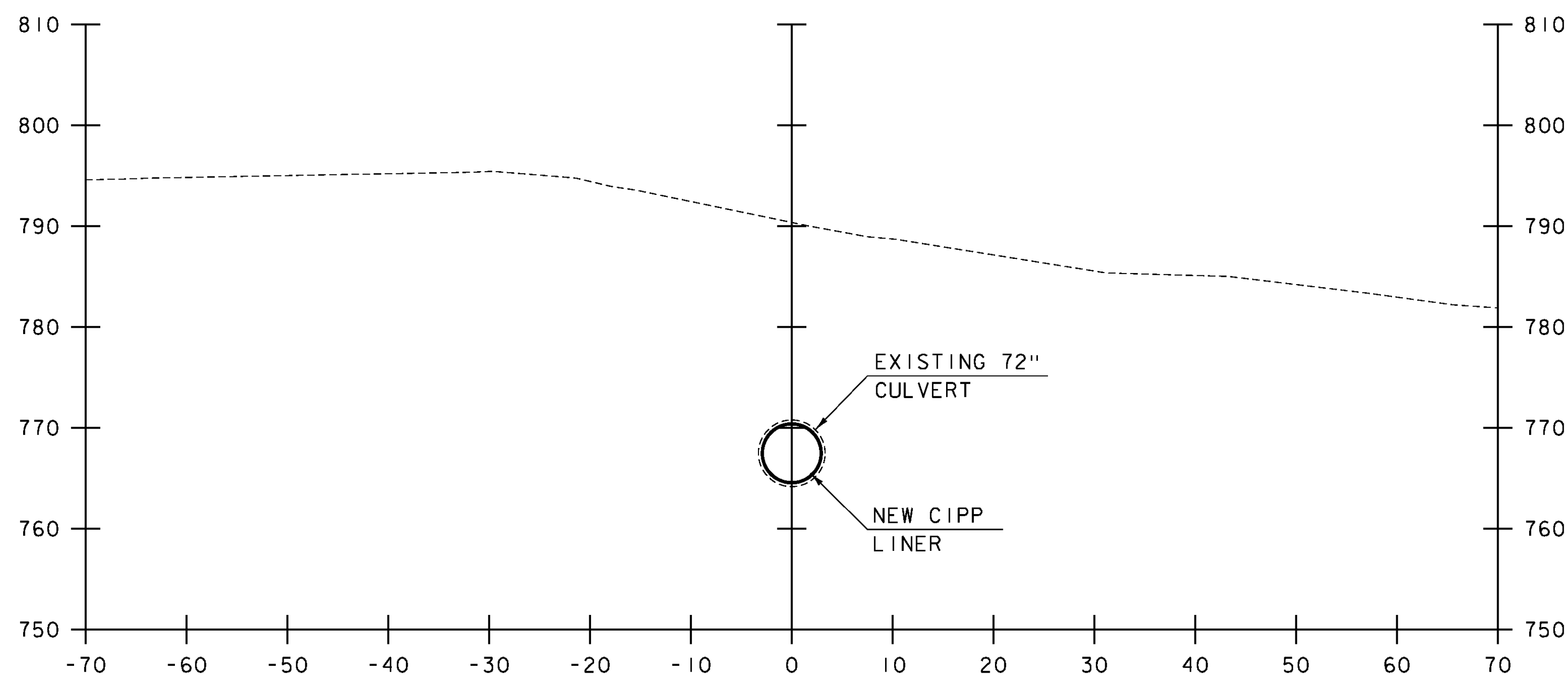
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 DRAWN BY: K. RUTTER  
 CHECKED BY: C. GREGORY  
 SHEET 12 OF 14



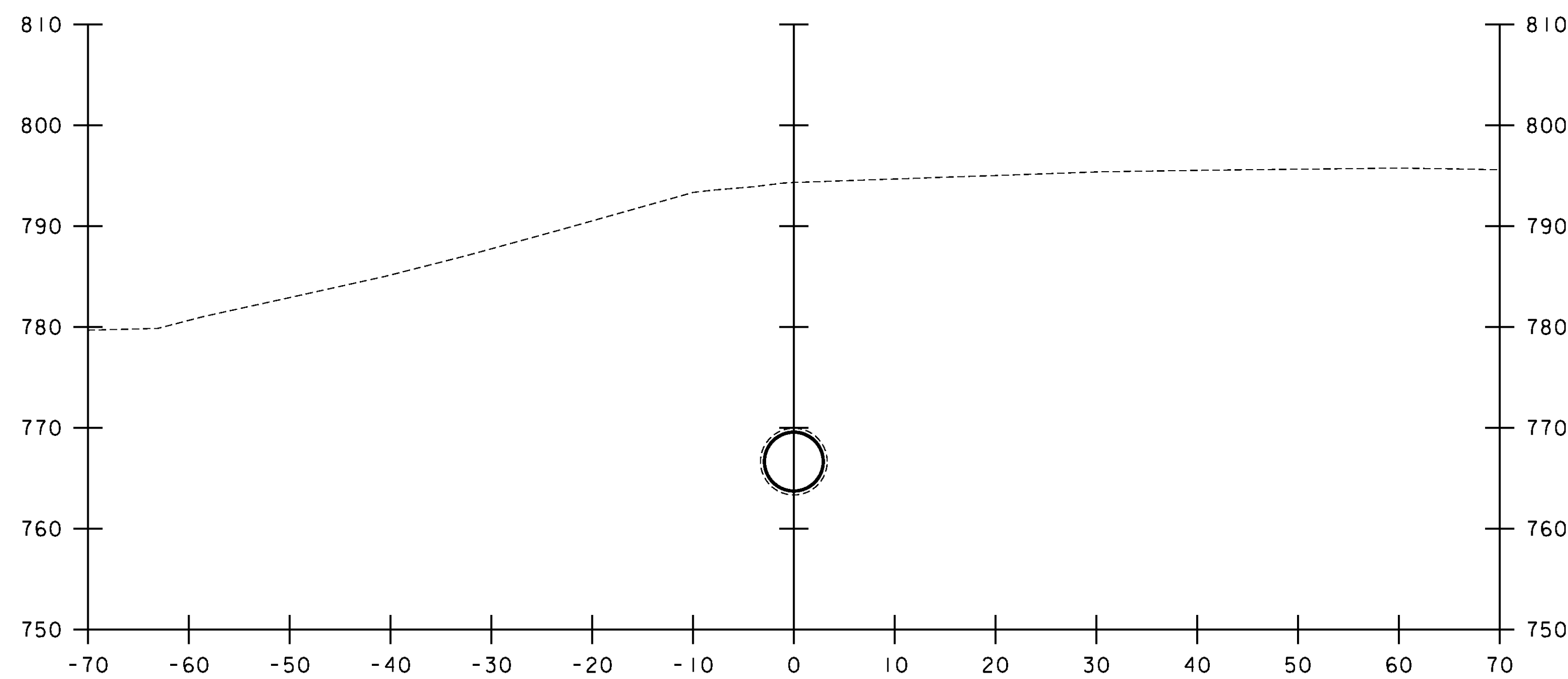
7+00



7+50



6+75



7+25

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

STA. 6+75 TO STA. 7+50

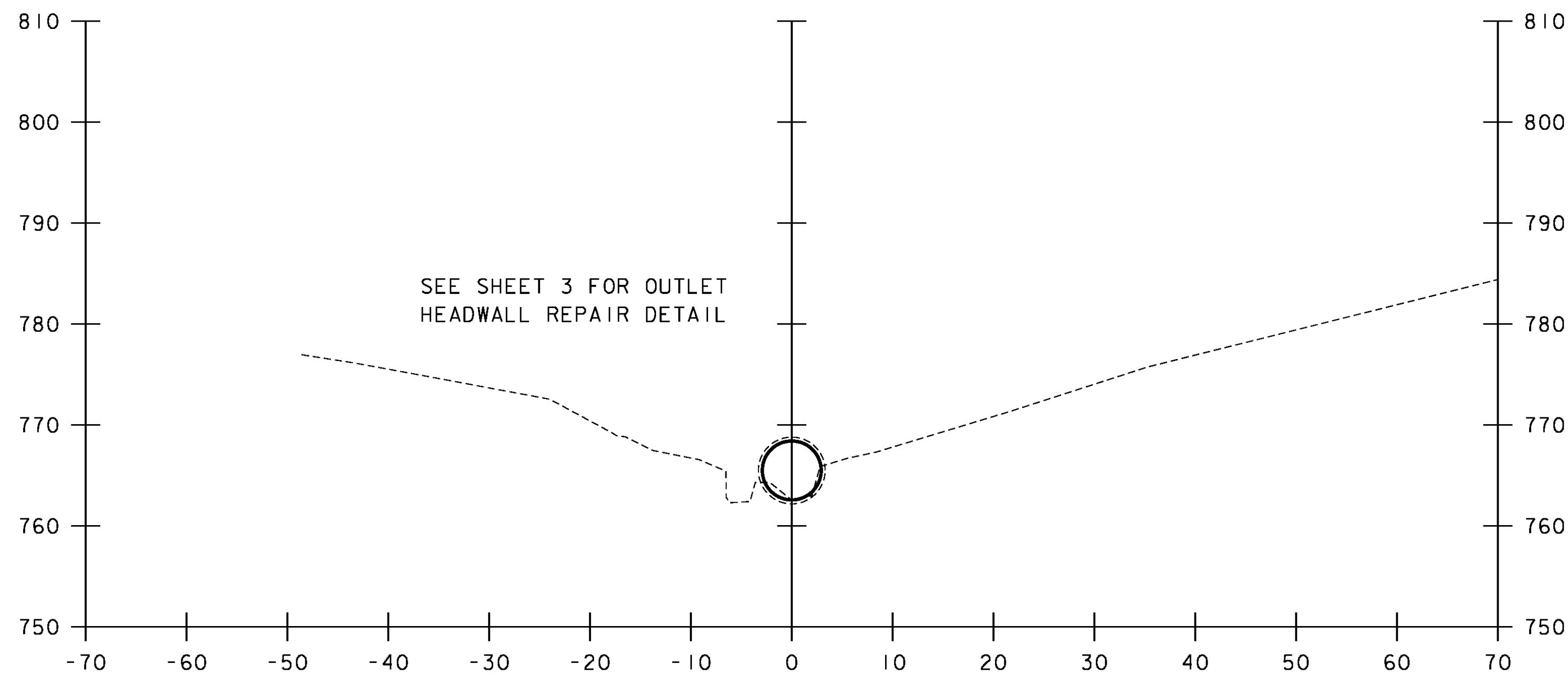


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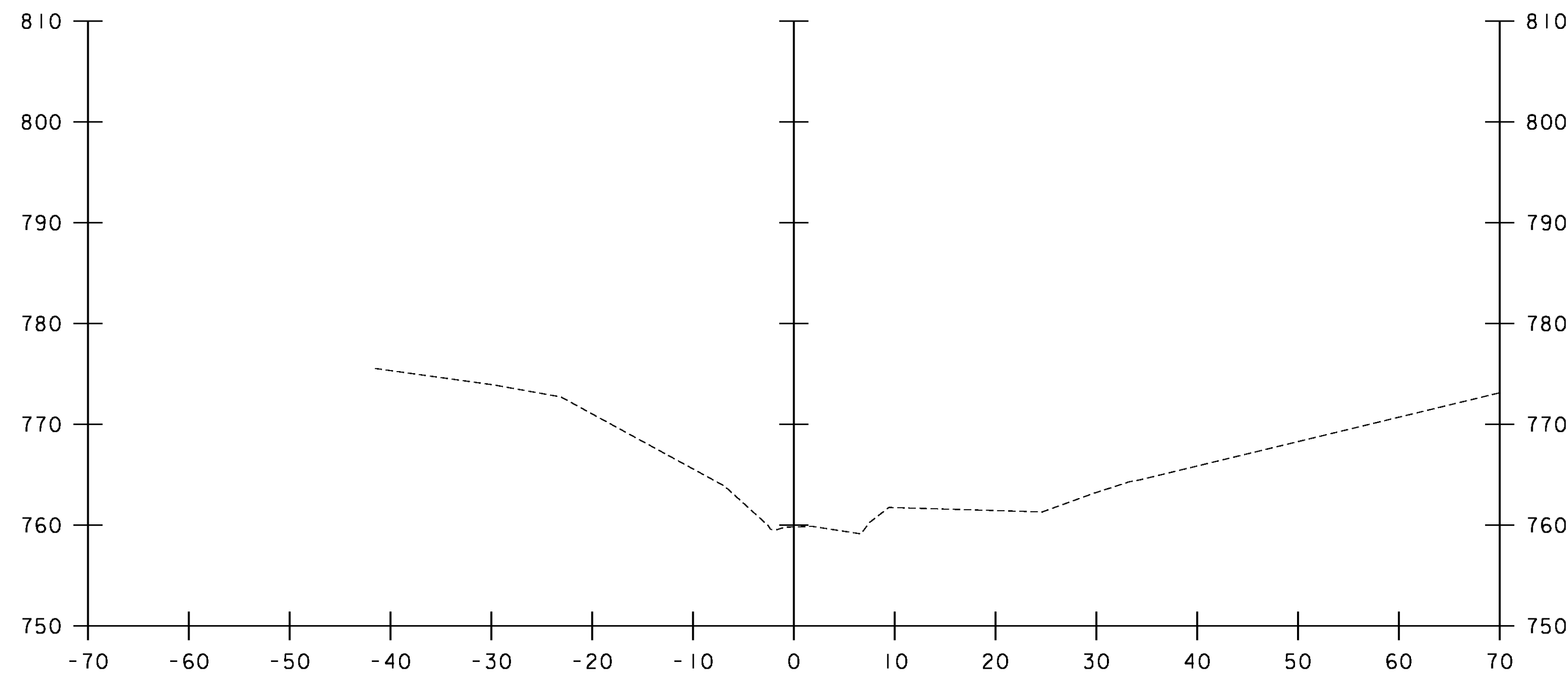
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PROJECT NUMBER: STP 0146(II)

FILE NAME: 00c268\s00c268xs.dgn  
PROJECT LEADER: J. FITCH  
DESIGNED BY: K. RUTTER  
CHANNEL CROSS SECTIONS 2

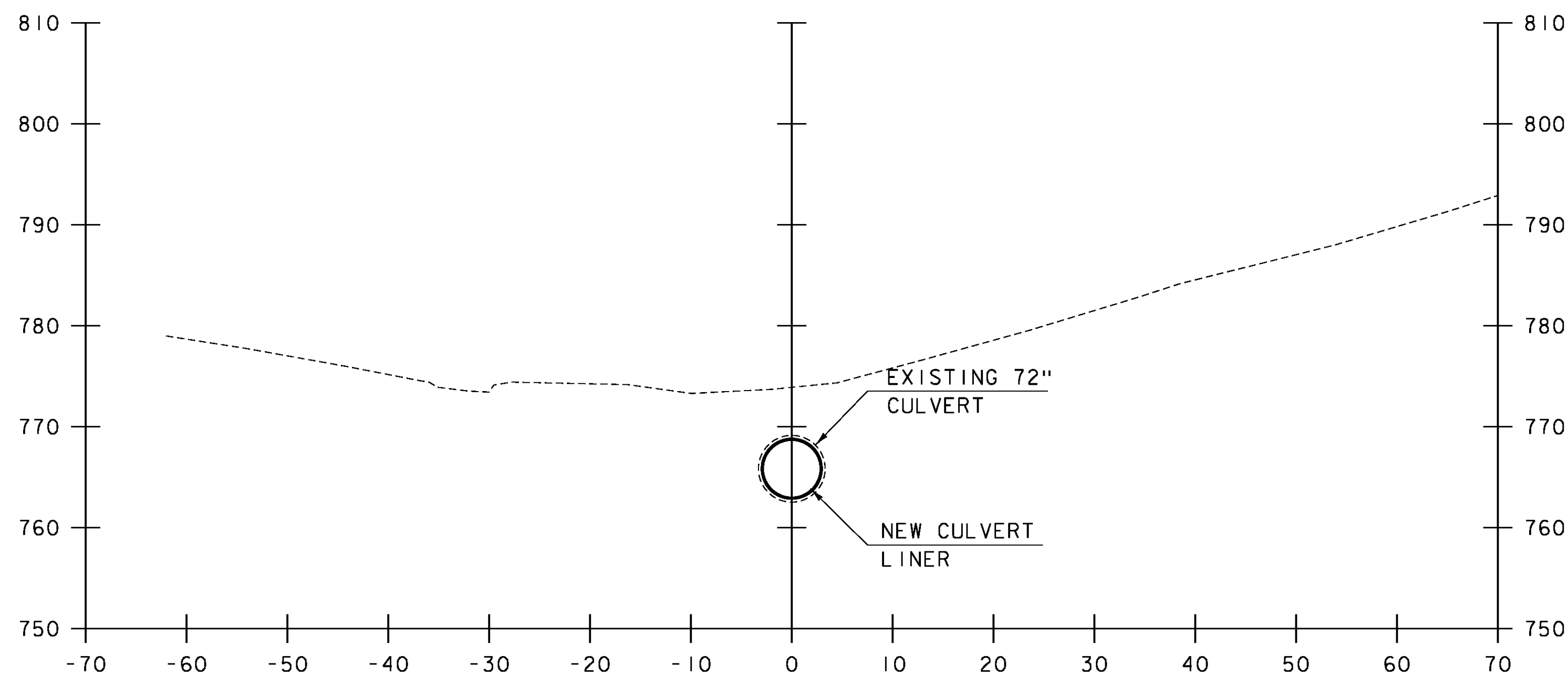
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DRAWN BY: K. RUTTER  
CHECKED BY: C. GREGORY  
SHEET 13 OF 14



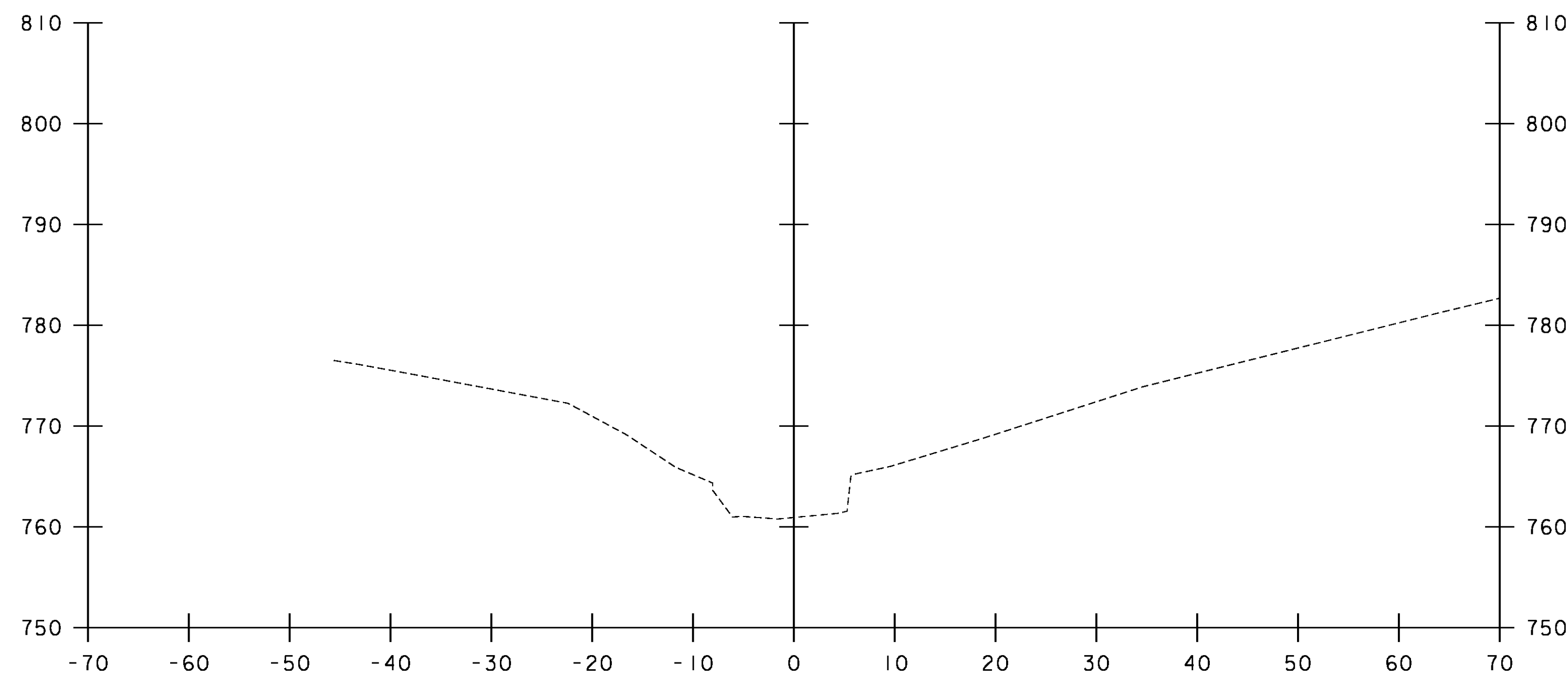
7+96




8+25



7+75



8+00

SCALE 1" = 10' - 0"  


STA. 7+75 TO STA. 8+25



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PROJECT NAME: WEATHERSFIELD  
 PROJECT NUMBER: STP 0146(II)

FILE NAME: 00c268\s00c268xs.dgn  
 PROJECT LEADER: J. FITCH  
 DESIGNED BY: K. RUTTER  
 CHANNEL CROSS SECTIONS 3

PLOT DATE: 4/2/2013  
 DRAWN BY: K. RUTTER  
 CHECKED BY: C. GREGORY  
 SHEET 14 OF 14