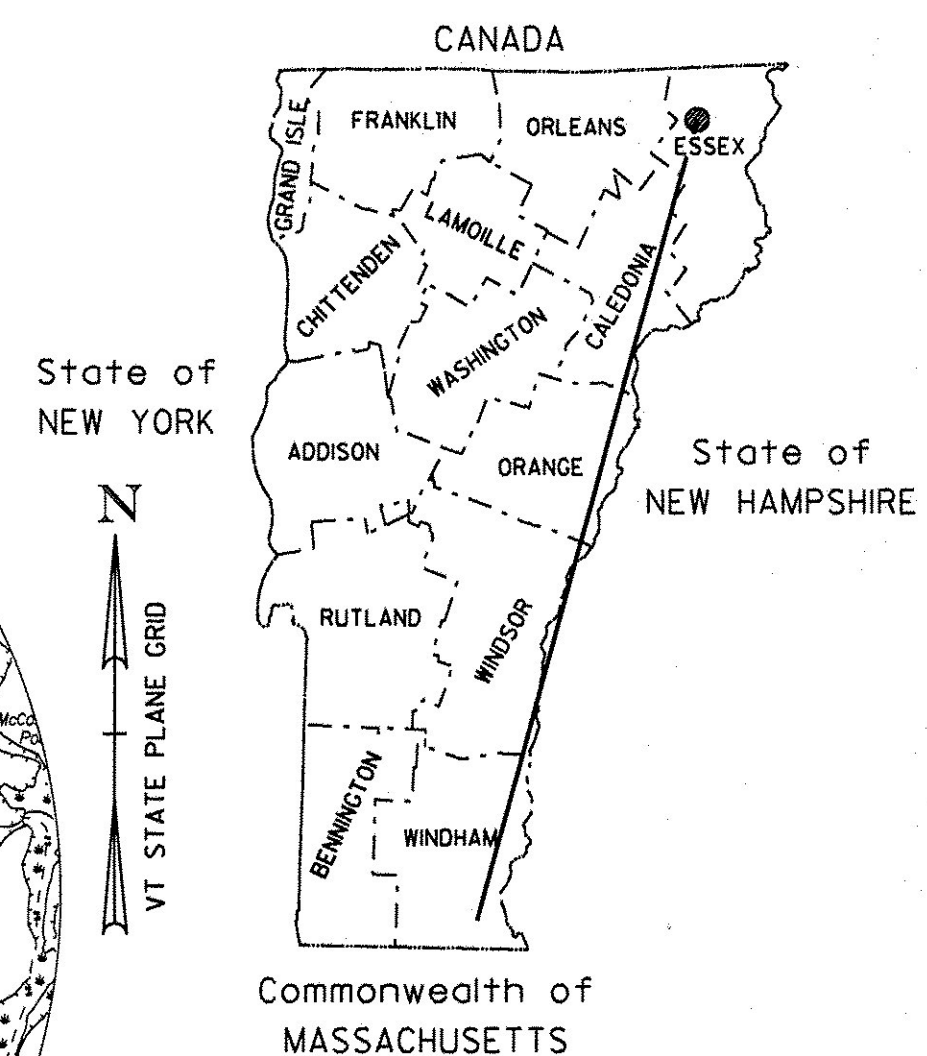
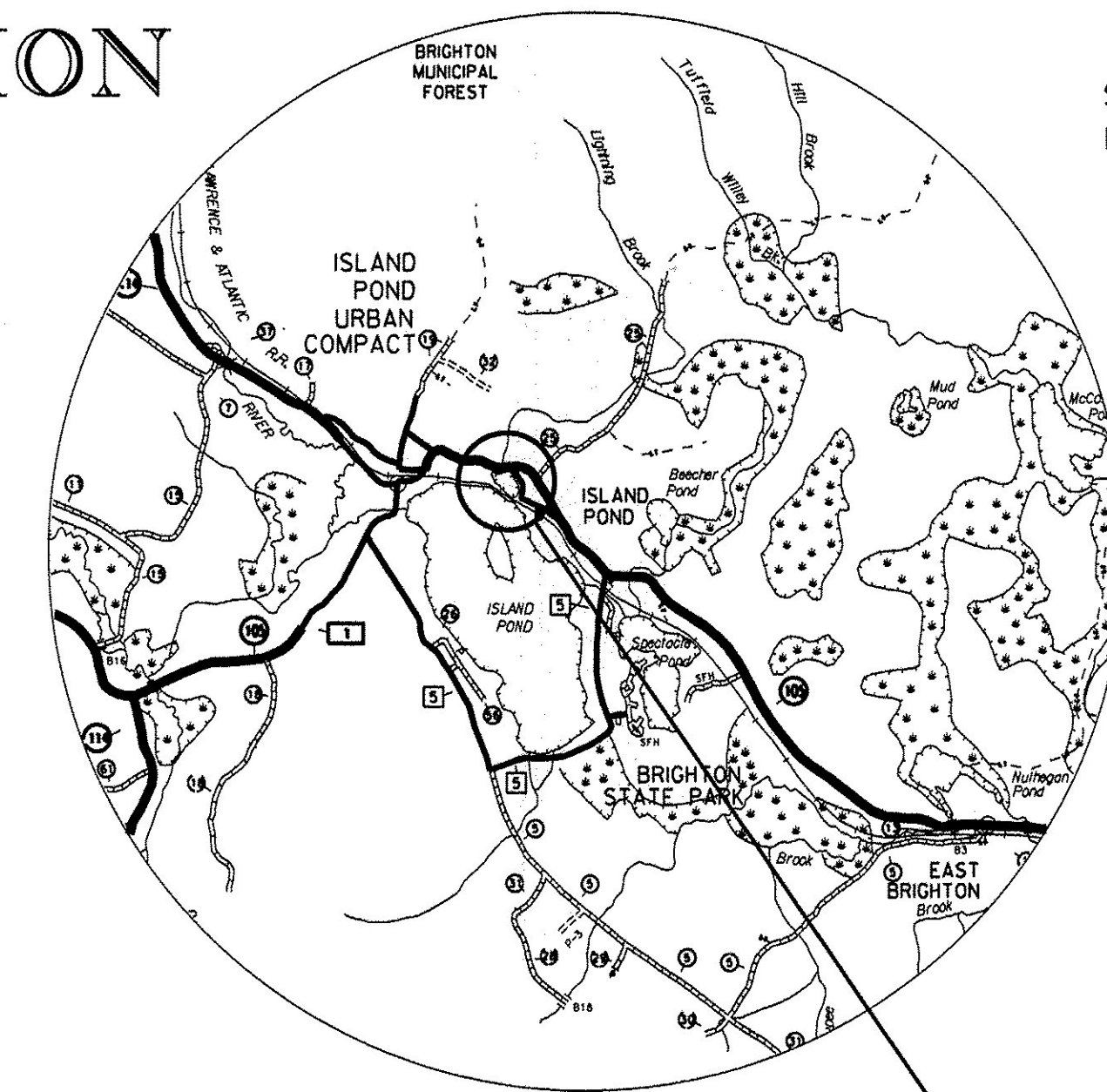


STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF BRIGHTON
COUNTY OF ESSEX
ROUTE NO.: VT 105 BRIDGE NO. 88



RECORD PLANS	
CONTRACTOR:	MORRILL CONSTRUCTION INC.- NORTH HAVERHILL, NH
RESIDENT ENGINEER:	DOUG BUMPS
CONSTRUCTION BEGAN:	AUGUST 28, 2012
CONSTRUCTION COMPLETE:	NOVEMBER 7, 2012
RECORD PLANS BY:	DOUG BUMPS

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

BY *Doug Bumps* RESIDENT ENGINEER
DATE 6/18/13

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.

PROJECT LOCATION: BEGINNING AT A POINT ON VT ROUTE 105 APPROXIMATELY 0.5 MILES EAST OF THE INTERSECTION WITH VT ROUTE 114 TO MM 5.00 (STA 264+00) AND EXTENDING EASTERLY 0.03 MILES TO MM 5.03 (STA 265+50).

PROJECT DESCRIPTION: THIS PROJECT SHALL CONSIST OF THE REPLACEMENT OF THE EXISTING CORRUGATED METAL PLATE PIPE ARCH STRUCTURE WITH A NEW 14' x 7' REINFORCED PRECAST CONCRETE BOX CULVERT WITH RELATED APPROACH AND CHANNEL WORK.

LENGTH OF BRIDGE: 16.00 FEET
LENGTH OF ROADWAY: 134.00 FEET
LENGTH OF PROJECT: 150.00 FEET

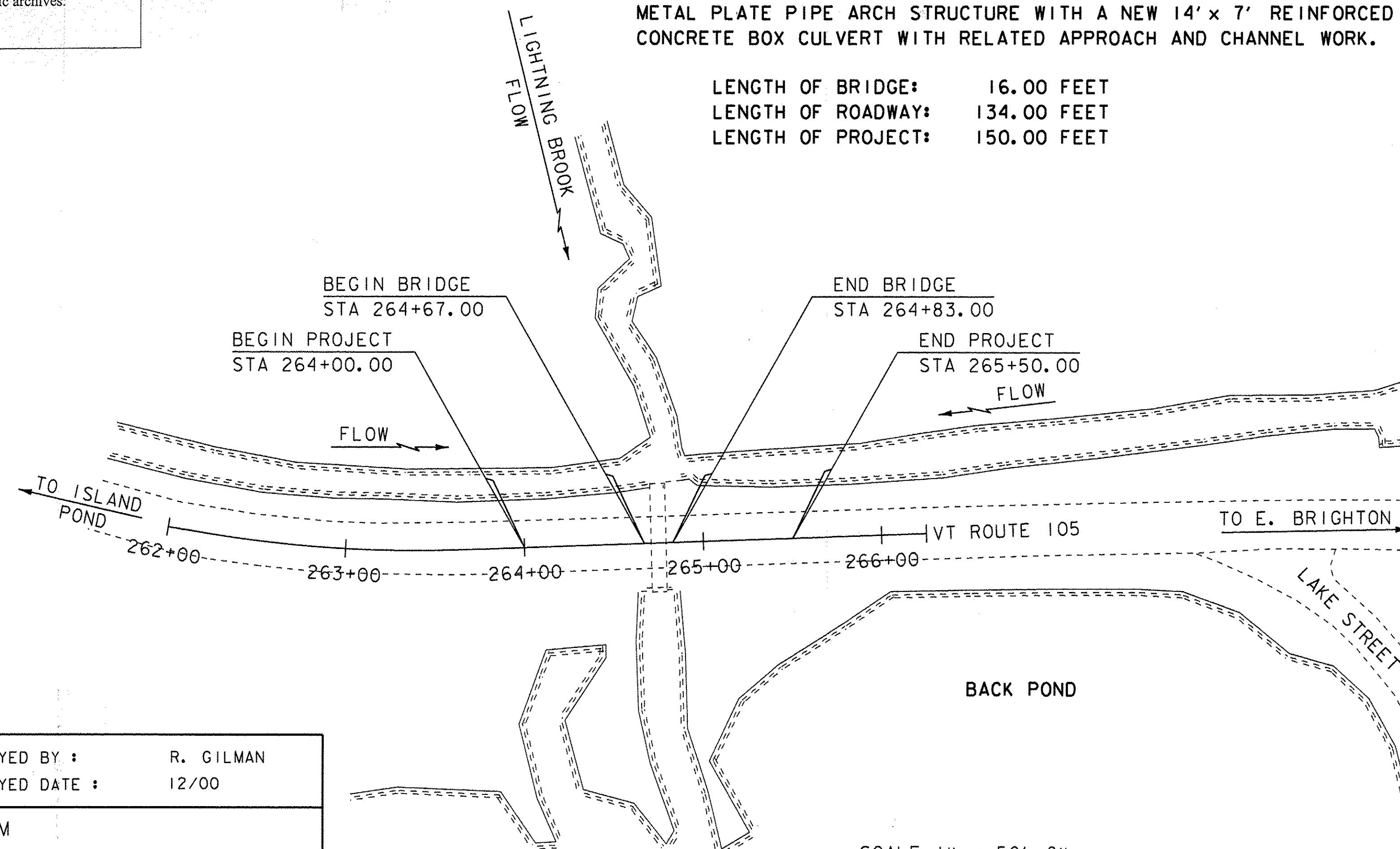
QUALITY ASSURANCE PROGRAM: LEVEL 2

CONVENTIONAL SYMBOLS

COUNTY LINE		COUNTY LINE
TOWN 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 : R. GILMAN
SURVEYED DATE : 12/00

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (96)



SCALE 1" = 50'-0"
50 0 50

BUILT AS DESIGNED

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 <u><i>Rutha Stewart</i></u>	DATE <u>6-12-12</u>
PROJECT MANAGER: KRISTIN HIGGINS	
PROJECT NAME : BRIGHTON	
PROJECT NUMBER : STP 034-3 (21)	
SHEET 1 OF 30 SHEETS	

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (CULVERT)

Version 11.08.15

LRFD

PLAN SHEETS

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2

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GENERAL NOTES

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TYPICAL SECTIONS

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TIE SHEET

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LAYOUT SHEET

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MAINLINE PROFILE

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BORING LAYOUT SHEET

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DETOUR PLAN 1 & 2

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RAIL LAYOUT SHEET

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NESTED HOSS GUARDRAIL DETAILS

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BOX LAYOUT

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PLAN & ELEVATION

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MAINLINE CROSS SECTIONS 1 - 3

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CHANNEL SECTIONS 1 - 3

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ROW LAYOUT SHEET

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ROW DETAIL SHEET

INDEX OF SHEETS

E-100

CONSTRUCTION APPROACH SIGNS

01-02-2004

E-101

CONSTRUCTION SIGN DETAILS

05-30-2003

E-102

CONSTRUCTION SIGN DETAILS

06-30-2003

E-102A

CONSTRUCTION SIGN DETAILS

05-01-2004

E-107

DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS

06-30-2003

E-114

BRIDGE NUMBER PLAQUE

08-08-1985

E-164

SQUARE STEEL SIGN POST

06-05-2009

E-192

PAVEMENT MARKING DETAILS

10-12-2000

G-1

STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)

01-03-2000

G-19

GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS

11-15-2002

STANDARDS LIST

E-100

CONSTRUCTION APPROACH SIGNS

01-02-2004

E-101

CONSTRUCTION SIGN DETAILS

05-30-2003

E-102

CONSTRUCTION SIGN DETAILS

06-30-2003

E-102A

CONSTRUCTION SIGN DETAILS

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10-12-2000

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STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)

01-03-2000

G-19

GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS

11-15-2002

HYDROLOGIC DATA

Date: Sept. 2011

DRAINAGE AREA : 3.7 sq. mi.

CHARACTER OF TERRAIN : Hilly to mountainous uplands to nearly flat at the site

STREAM CHARACTERISTICS : Wetlands and ponded water at the site

NATURE OF STREAMBED : Silt and sand

PEAK FLOW DATA

Q 2.33 = 190 cfs

Q 50 = 590 cfs

Q 10 = 360 cfs

Q 100 = 680 cfs

Q 25 = 475 cfs

Q 500 = 950 cfs

DATE OF FLOOD OF RECORD: Unknown

ESTIMATED DISCHARGE: Unknown

WATER SURFACE ELEV.: Unknown

NATURAL STREAM VELOCITY: @ Q50 = 5.9 fps

ICE CONDITIONS: Slight to moderate

DEBRIS: Slight to moderate except history of beaver dams

DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No

IS ORDINARY RISE RAPID? No

IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Yes

IF YES, DESCRIBE: Water levels are controlled by Island Pond, Back Pond and the downstream railroad structure.

WATERSHED STORAGE: 3% HEADWATERS: UNIFORM: IMMEDIATELY ABOVE SITE: X

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Corrugated metal plate pipe arch

YEAR BUILT: 1959

CLEAR SPAN(NORMAL TO STREAM): 7'-8"

VERTICAL CLEARANCE ABOVE STREAMBED: 5'-5"

WATERWAY OF FULL OPENING: 23 sq. ft.

DISPOSITION OF STRUCTURE: Remove and replace

TYPE OF MATERIAL UNDER SUBSTRUCTURE: Silt and sand

WATER SURFACE ELEVATIONS AT:

Q2.33 = 1177.4'

VELOCITY = 9.5 fps

Q10 = 1180.2'

Q10 = 11.6 fps

Q25 = 1180.6'

Q25 = 11.8 fps

Q50 = 1180.8'

Q50 = 12.0 fps

Q100 = 1181.0'

Q100 = 12.1 fps

LONG TERM STREAMBED CHANGES: None noted.

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes

FREQUENCY: Below Q10

RELIEF ELEVATION: 1179.9'

DISCHARGE OVER ROAD @Q100: 350 cfs

UPSTREAM STRUCTURE

TOWN: Not applicable - stream divides

DISTANCE: HIGHWAY #: STRUCTURE #: CLEAR SPAN: CLEAR HEIGHT: YEAR BUILT: FULL WATERWAY: STRUCTURE TYPE:

DOWNSTREAM STRUCTURE

TOWN: Brighton

DISTANCE: 1200'

HIGHWAY #: R.R. STRUCTURE #: CLEAR SPAN: CLEAR HEIGHT: YEAR BUILT: FULL WATERWAY: STRUCTURE TYPE: Reinforced Concrete Pipe. Note: There may be other structures.

PROPOSED STRUCTURE

STRUCTURE TYPE: Precast concrete box culvert

CLEAR SPAN(NORMAL TO STREAM): 14'

VERTICAL CLEARANCE ABOVE STREAMBED: 6'

WATERWAY OF FULL OPENING: 84 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 = 1174.6'

VELOCITY= 3.7 fps

Q10 = 1176.4'

Q10 = 4.9 fps

Q25 = 1177.4'

Q25 = 5.7 fps

Q50 = 1178.4'

Q50 = 6.9 fps

Q100 = 1179.5'

Q100 = 8.1 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No

FREQUENCY: Above Q100

RELIEF ELEVATION: 1179.9'

DISCHARGE OVER ROAD @Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 1177.0' at inlet, 1176.5' at outlet

VERTICAL CLEARANCE: @ Q50 = 1.4' at inlet (inlet is submerged below Q25)

SCOUR: Not applicable for a box structure

REQUIRED CHANNEL PROTECTION: Stone Fill, Type II

PERMIT INFORMATION

AVERAGE DAILY FLOW: 7 cfs DEPTH OR ELEVATION: ORDINARY LOW WATER: 4 cfs Depth = 0.5' ORDINARY HIGH WATER: 80 cfs Depth = 2.0'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: No temporary bridge.

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

ADDITIONAL INFORMATION

We do not have good information on water levels in Back Pond, at the structure's outlet. Reported hydraulics is based on no tailwater from that pond. Velocities may be lower than reported and water surface elevations may be higher than reported, depending on the downstream water levels.

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 LOAD: HL-93

2. FUTURE PAVEMENT: dp: 3.0 INCH

3. CULVERT OPENING: D: 14.00 FT

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

5. PRESTRESSING STRAND: fy: ---

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

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

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

9. CONCRETE, HIGH PERFORMANCE CLASS A: f'c: 4.0 KSI

10. CONCRETE, HIGH PERFORMANCE CLASS B: f'c: 3.5 KSI

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

12. REINFORCING STEEL: fy: 60 KSI

13. STRUCTURAL STEEL AASHTO M270: fy: ---

14. SOIL UNIT WEIGHT: γ: ---

15. NOMINAL BEARING RESISTANCE OF SOIL: qa: ---

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

17. NOMINAL BEARING RESISTANCE OF ROCK: qa: ---

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

19. NOMINAL AXIAL PILE RESISTANCE: qp: ---

20. PILE YIELD STRENGTH ASTM A572: fy: ---

21. PILE SIZE: ---

22. EST. PILE LENGTH: Lp: ---

23. PILE RESISTANCE FACTOR: φ: ---

24. LATERAL PILE DEFLECTION: δ: ---

25. BASIC WIND SPEED: V3s: ---

26. MINIMUM GROUND SNOWLOAD: ps: ---

27. SEISMIC DATA: PGA: S: ---

LOADING LEVELS

TRUCK

TONNAGE

INVENTORY

POSTING

OPERATING

COMMENTS: TABLE TO BE COMPLETED BY CONTRACTOR'S DESIGNER

TRAFFIC DATA

20 year ESAL for flexible pavement from 2012 to 2032 : 3045000

40 year ESAL for flexible pavement from 2012 to 2052 : 7372000

Design Speed : 50 mph

PROJECT NAME: BRIGHTON

PROJECT NUMBER: STP 034-3(21)

FILE NAME: s00b246pl.xls

PROJECT LEADER: K. HIGGINS

DESIGNED BY: J. SALVATORI

PRELIMINARY INFORMATION SHEET 1

PLOT DATE: 6/11/2012

DRAWN BY: J. SALVATORI

CHECKED BY: W. LAMMER

SHEET 2 OF 30

GENERAL

1.
- THE CONTRACTOR WILL BE ALLOWED TO CLOSE THE BRIDGE FOR ONE WEEKEND (TWO CONSECUTIVE DAYS) BEGINNING ON A FRIDAY AT 6PM AND REOPENING THE FOLLOWING MONDAY AT 6AM, TO A MINIMUM OF ONE-WAY TRAFFIC. DURING THAT TIME THE CONTRACTOR SHALL BE ALLOWED TO WORK 24 HOURS PER DAY. THE CONTRACTOR SHALL SCHEDULE THEIR WORK SUCH THAT THE BRIDGE IS NOT CLOSED DURING HOLIDAY PERIODS. APPROVED CLOSURE DATES ARE SEPTEMBER 14TH-16TH OR SEPTEMBER 21ST-23RD OR SEPTEMBER 28TH-30TH. SEE SPECIAL PROVISIONS FOR FURTHER DETAILS.
2.
- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS, THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR HIGHWAY BRIDGES, FIFTH EDITION, AND ITS LATEST REVISIONS AND THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, THIRD EDITION, AND ITS LATEST REVISIONS.
3.
- ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
4.
- ITEM 529.15 "REMOVAL OF STRUCTURE" SHALL BE USED FOR THE REMOVAL OF THE EXISTING PIPE UNDER VT ROUTE 105.
5.
- THERE ARE WATER LINES AND POWER LINES THAT RUN PARALLEL WITH VT 105. NO PROVISIONS HAVE BEEN MADE TO RELOCATE THESE LINES. THE CONTRACTOR SHALL WORK AROUND AND PROTECT THESE LINES. THERE IS INFORMATION AVAILABLE ON THE WATERLINE FROM THE TOWN. IT WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF THE WATERLINE. . ALL WORK REQUIRED TO ENSURE THAT THESE LINES ARE PROTECTED DURING CONSTRUCTION OF THIS PROJECT WILL BE INCLUDED FOR PAYMENT UNDER CONTRACT ITEM 204.22. ANY DAMAGE DONE TO EXISTING UTILITIES AS A RESULT OF THE CONTRACTOR'S OPERATIONS, AS DETERMINED BY THE ENGINEER, WILL BE REPAIRED AT THE SOLE EXPENSE OF THE CONTRACTOR. SEE UTILITY SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
6.
- EMULSIFIED ASPHALT IS TO BE APPLIED AT A RATE OF 0.025 GAL/SY TO ALL COLD PLANED SURFACES AND BETWEEN SUCCESSIVE COURSES OF PAVEMENT OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL

7.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING THE LOCAL TRAFFIC CONTROL PACKAGE IDENTIFYING THE CONSTRUCTION PROJECT BEFORE, DURING, AND AFTER THE BRIDGE CLOSURE PERIOD. THE CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC CONTROL PLAN TO THE RESIDENT ENGINEER FOR ALL STAGES OF CONSTRUCTION, FOR APPROVAL PER SUBSECTION 105.03. ALL COSTS SHALL BE INCLUDED IN ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE). SEE SPECIAL PROVISIONS.
8.
- ALL SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD. WHERE CONFLICTS EXIST, THE MUTCD SHALL GOVERN. FOR ADDITIONAL SIGNING INSTRUCTIONS SEE THE E SERIES OF THE STANDARDS.
9.
- ALL ITEMS REQUIRED TO IMPLEMENT THE CONTRACTOR'S TRAFFIC CONTROL PLAN, EXCEPT FOR ITEM 630.15 FLAGGERS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED INCLUDED IN THE BID PRICE FOR ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).

CONCRETE

10.
- ITEM 514.10 "WATER REPELLENT, SILANE" SHALL BE APPLIED TO ALL EXPOSED SURFACES OF THE WINGWALLS AND HEADWALLS. WATER REPELLENT, SILANE SHALL BE APPLIED TO THE EXPOSED INSIDE SURFACE OF THE BOX STARTING AT THE OPENING AT EACH END AND EXTENDING 3 FEET INTO THE BOX, INCLUDING THE TOP SURFACE OF THE BOTTOM SLAB AND THE BOTTOM SURFACE OF THE TOP SLAB.
11.
- REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE AS FOLLOWS:

SPACING +/- 1"

CLEARANCE +/- 3/4"
12.
- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1".

PRECAST CONCRETE NOTES

13.
- DESIGN CRITERIA:

A. SOIL UNIT WEIGHT = 140 PCF

B. DESIGN LIVE LOAD = HL-93

C. NOMINAL BEARING RESISTANCE = 6.7 KSF

D. BEARING RESISTANCE FACTOR = 0.45

E. DESIGN FILL OVER BOX = 3 FEET

F. CONCRETE COMPRESSIVE STRENGTH = SEE SUBSECTION 540.05(e)

G. AT A MINIMUM ALL REINFORCING STEEL SHALL BE GRADE 60 BLACK REBAR.
14.
- ALL CONCRETE SHALL BE PRECAST. ITEM 540.10 "PRECAST CONCRETE STRUCTURE" INCLUDES ALL BOX SEGMENTS, HEADWALLS, CUTOFF WALLS AND WINGWALLS. ALL CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR AND SHALL BE CONSIDERED INCIDENTAL TO ITEM 540.10.
15.
- THE PRECAST BOX SECTIONS ARE SHOWN FOR REFERENCE ONLY. THE ACTUAL DIMENSIONS AND SHAPE WILL BE DEPENDENT ON THE FABRICATOR. THE MINIMUM INSIDE DIMENSIONS SHALL BE 7'-0" IN HEIGHT AND 14'-0" IN WIDTH. THE OVERALL LENGTH OF THE BOX SHALL BE 60'-0" ALONG THE STREAMBED GRADE. THE EXPOSED ENDS OF THE FIRST AND LAST UNITS SHALL BE VERTICAL.
16.
- THE EXTERIOR (TOP AND SIDES) OF ALL CONCRETE BOX JOINTS ALONG WITH ALL LIFTING HOLES SHALL BE FILLED WITH MORTAR TYPE IV AFTER BEING SET IN THEIR FINAL POSITION. THIS WORK WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 540.10.
17.
- MEMBRANE WATERPROOFING SHALL BE APPLIED TO THE ENTIRE TOP OF THE CONCRETE BOX. A TWO (2) FOOT WIDE STRIP OF MEMBRANE SHALL BE PLACED AT EACH VERTICAL JOINT (SIDES). MEMBRANE SHALL BE CENTERED ON THE JOINT AND COVER THE FULL HEIGHT. THE SIDES SHALL BE COVERED FIRST AND THE TOP WILL FOLLOW. ANY OVERLAPPING OF MEMBRANE SHALL BE DONE IN A SHINGLE TYPE STYLE TO SHED WATER AND SHALL OVERLAP A MINIMUM OF ONE FOOT. PAYMENT FOR MEMBRANE WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 540.10.
18.
- THE CONTRACTOR SHALL CONSIDER THE PLACEMENT OF THE BOX CULVERT SECTIONS AT THE OUTLET SO AS TO AVOID CONFLICT WITH THE UTILITY LINES. ANY ACCESS ROAD CONSTRUCTED TO THE OUTLET LOCATION MUST STAY WITHIN THE RIGHT OF WAY SHOWN ON THE PLANS.

PROJECT NAME: BRIGHTON
PROJECT NUMBER: STP 034-3(2I)

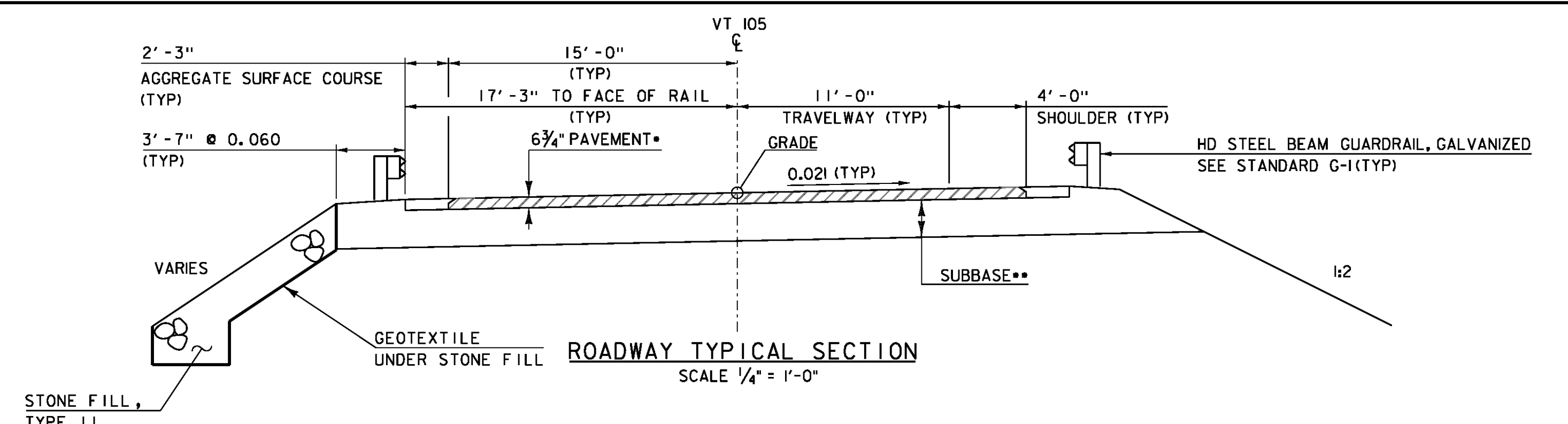
FILE NAME: s00b246gen.dgn	PLOT DATE: 12-JUN-2012
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
GENERAL NOTES	SHEET 3 OF 30

STATE OF VERMONT AGENCY OF TRANSPORTATION												QUANTITY SHEET 1									
SUMMARY OF ESTIMATED QUANTITIES												TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
								ROADWAY	EROSION CONTROL	BRIDGE	FULL C & E ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS	
								1				1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				EARTHWORK SUMMARY	
								450				450		CY	COMMON EXCAVATION	203.15		450 CY		COMMON EXCAVATION (450 * 1.0)	
										325		325		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27		243.75 CY		UNCLASSIFIED CHANNEL EXCAVATION (325 * 0.75)	
								1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22		412.5 CY		STRUCTURE EXCAVATION (550 * 0.75)	
										550		550		CY	STRUCTURE EXCAVATION	204.25		1106.75 CY		SUB TOTAL	
										175		175		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30		3.25 CY		ROUNDING	
								330				330		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10		1110 CY		TOTAL FILL AVAILABLE	
															BEGIN OPTION AA			0 CY		TOTAL FILL REQUIRED	
								400				400		CY	SUBBASE OF GRAVEL	301.15		1110 CY		TOTAL WASTE	
								400				400		CY	SUBBASE OF CRUSHED GRAVEL, COARSE GRADED	301.25				SUPERPAVE BITUMINOUS CONCRETE PAVEMENT	
								400				400		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35		165 TON		TYPE IIS	
															END OPTION AA			85 TON		TYPE IIS	
								25				25		CY	AGGREGATE SURFACE COURSE	401.10		250 TON		TOTAL SUPERPAVE	
								1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50					
										10		10		GAL	WATER REPELLENT, SILANE	514.10					
										1		1		EACH	REMOVAL OF STRUCTURE (7'-8" x 5'-5" x 60'-0" CGMPPA)	529.15					
										1		1		LS	PRECAST CONCRETE STRUCTURE (14' -0" x 7' -0" x 60' -0" BOX)	540.10					
										250		250		CY	STONE FILL, TYPE II	613.11					
								225				225		LF	HD STEEL BEAM GUARDRAIL, GALVANIZED	621.21					
								200				200		LF	HD STEEL BEAM GUARDRAIL, GALVANIZED/NESTED W/8 FEET POSTS	621.217					
								500				500		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80					
										100		100		TON	CRUSHED STONE BEDDING	629.54					
								400				400		HR	FLAGGERS	630.15					
											1	1		LS	FIELD OFFICE, ENGINEERS	631.10					
											1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17					
											2000	2000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26					
								1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11					
								500				500		LF	4 INCH WHITE LINE	646.20					
								500				500		LF	4 INCH YELLOW LINE	646.21					
										300		300		SY	GEOTEXTILE FOR ROADBED SEPARATOR	649.11					
										400		400		SY	GEOTEXTILE UNDER STONE FILL	649.31					
								120				120		SY	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515					
								120				120		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61					
								5				5		LB	SEED	651.15					
								5				5		LB	SEED, WINTER RYE	651.17					
								40				40		LB	FERTILIZER	651.18					
								0.1				0.1		TON	AGRICULTURAL LIMESTONE	651.20					
								0.1				0.1		TON	HAY MULCH	651.25					
								30				30		CY	TOPSOIL	651.35					
								1				1		LS	EPSC PLAN	652.10					
																	PROJECT NAME: BRIGHTON				
																	PROJECT NUMBER: STP 034-3(21)				
																	FILE NAME: s00b246excel.dgn				
																	PLOT DATE: 25-JUN-2012				
																	PROJECT LEADER: K. HIGGINS				
																	DRAWN BY: J. SALVATORI				
																	DESIGNED BY: J. SALVATORI				
																	CHECKED BY: W. LAMMER				
																	QUANTITY SHEET 1				
																	SHEET 4 OF 30				

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

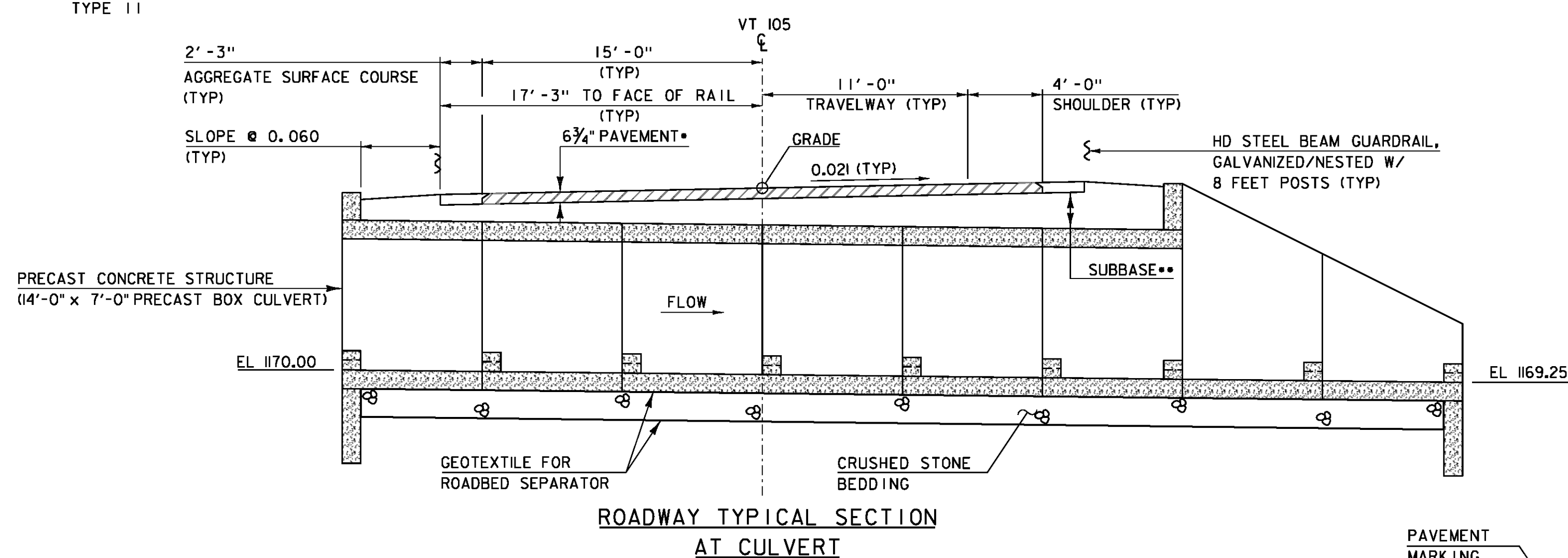
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MATERIAL TOLERANCES

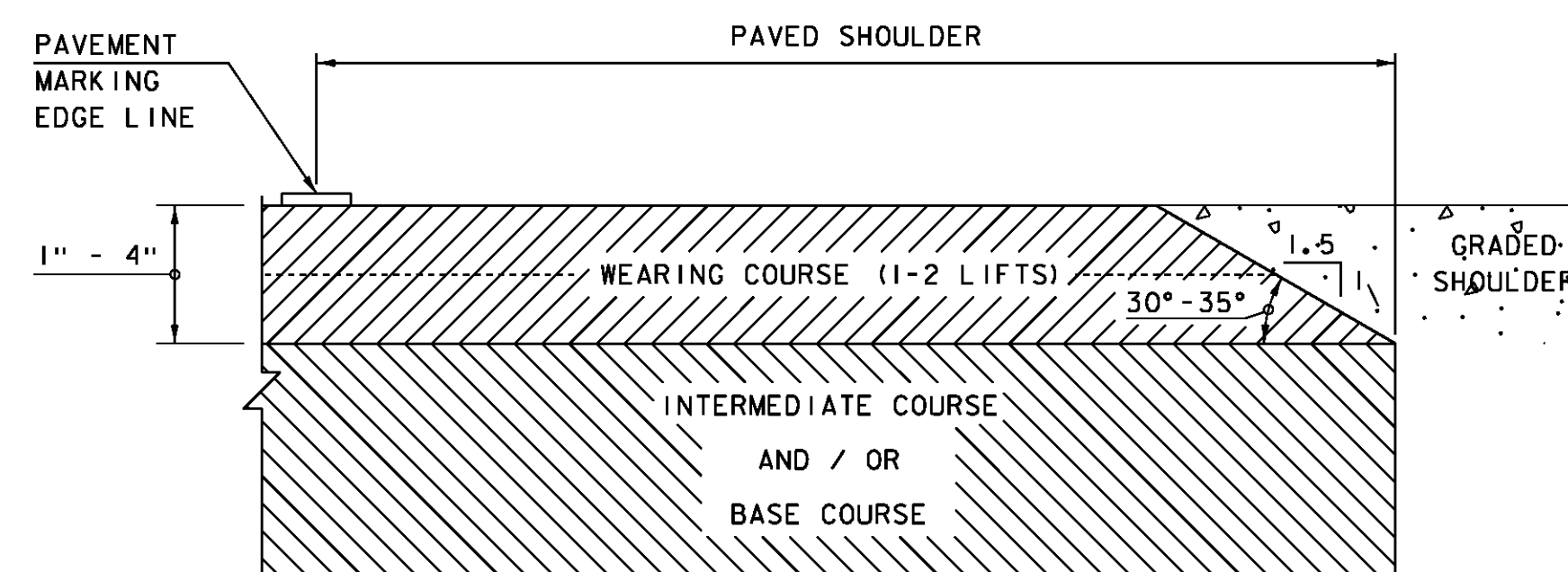
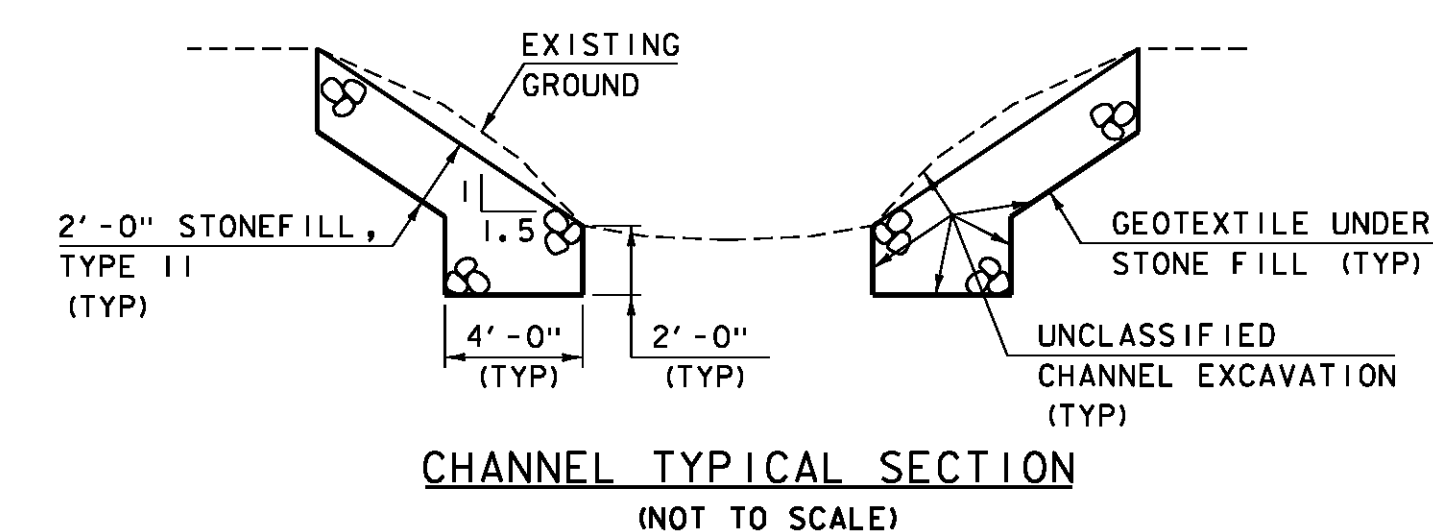
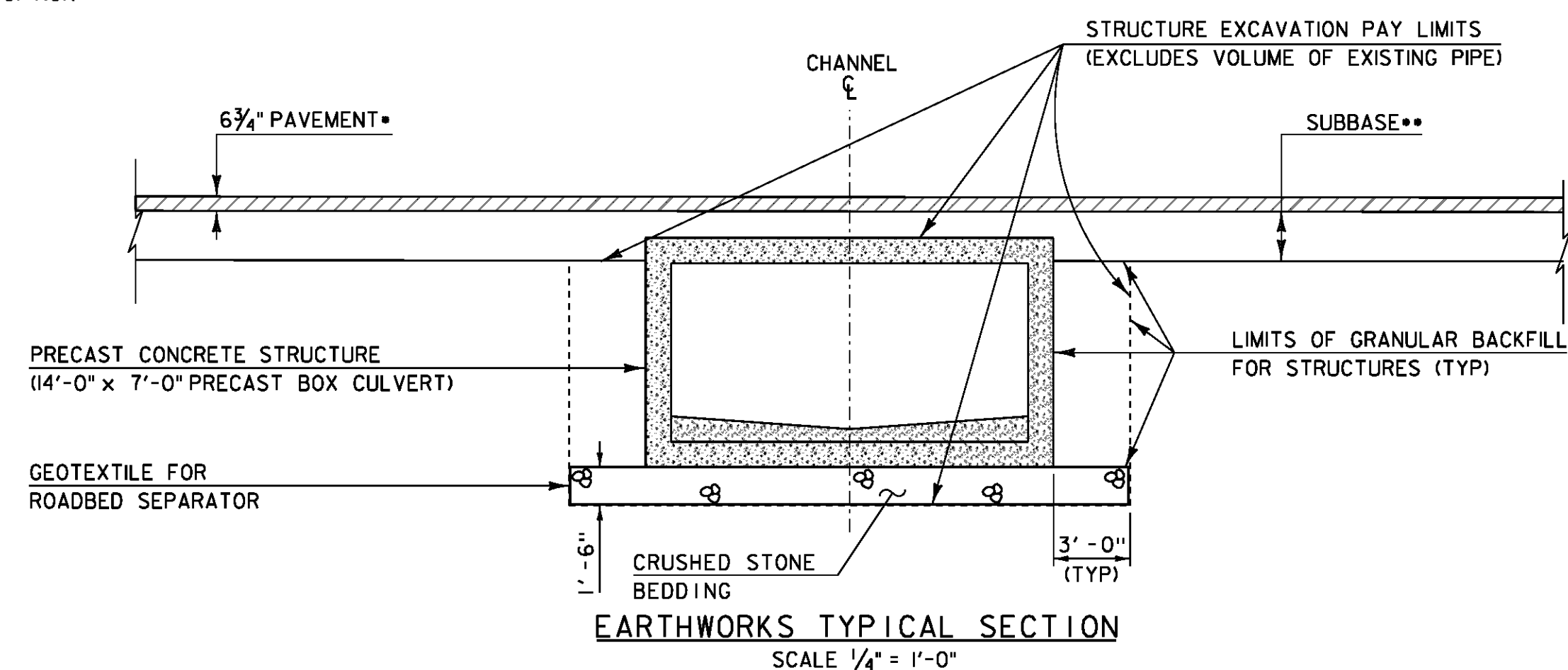
(IF USED ON PROJECT)

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



- 1 3/4" TYPE IVS SUPERPAVE BCP WEARING COURSE, OVER
- 2 1/2" TYPE IIS SUPERPAVE BCP INTERMEDIATE BINDER COURSE
- 2 1/2" TYPE IIS SUPERPAVE BCP BASE COURSE

- 24" SUBBASE OPTION



SAFETY EDGE DETAIL

NOT TO SCALE

NOTE: LEVELING COURSE MAY INCLUDE THE "SAFETY EDGE" AT THE CONTRACTOR'S CHOICE.

PROJECT NAME: BRIGHTON
PROJECT NUMBER: STP 034-3(21)

FILE NAME: s00b2461yp.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
TYPICAL SECTIONS

PLOT DATE: 12-JUN-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 6 OF 30

GPS CONTROL POINTS

HVCTRL #1

ISLE AZ MK 2000
NORTH = 845551.229
EAST = 182332.465
ELEV. = 1182.940

GENERAL LOCATION - ISLAND POND, VT
TO REACH FROM THE INTERSECTION OF VT ROUTES 114 AND 105 IN ISLAND POND GO EAST ALONG VT ROUTE 105 FOR 0.3 MI (0.5 KM) TO THE MARK ON THE LEFT. THE MARK IS LOCATED 2.0 M (6.6 FT) NORTHEAST OF AND ABOUT 0.3 M (1.0 FT) LOWER THAN THE NORTHEAST EDGE OF PAVEMENT OF ROUTE 105, 5.4 M (17.7 FT) SOUTHEAST OF POLE NUMBER 85, 17.2 M (56.4 FT) NORTH NORTHEAST OF POLE NUMBER 8, AND 2.0 M (6.6 FT) SOUTHWEST OF A FIBERGLASS WITNESS POST.

HVCTRL #2

ISLE 2000
NORTH = 844839.754
EAST = 183869.506
ELEV. = 1179.460

GENERAL LOCATION - ISLAND POND, VT
TO REACH FROM THE INTERSECTION OF VT ROUTES 114 AND 105 IN ISLAND POND GO EAST ALONG VT ROUTE 105 FOR 0.6 MI (1.0 KM) TO THE MARK ON THE RIGHT. THE MARK IS LOCATED 2.0 M (6.6 FT) SOUTH SOUTHWEST OF AND ABOUT 0.4 M (1.3 FT) LOWER THAN THE SOUTHWEST EDGE OF PAVEMENT OF ROUTE 105, 12.5 M (41.0 FT) EAST OF POLE NUMBER 14, 89.3 M (293.0 FT) WEST OF POLE NUMBER 3-1/15, AND 2.0 M (6.6 FT) NORTH NORTHEAST OF A FIBERGLASS WITNESS POST.

TRAVERSE TIES

HVCTRL #3

NORTH = 844881.995
EAST = 1804472.384
ELEV. = 1183.883

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

ALIGNMENT TIES

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

DATUM

VERTICAL NAVD 88

HORIZONTAL NAD 83 (96)

ADJUSTMENT NONE

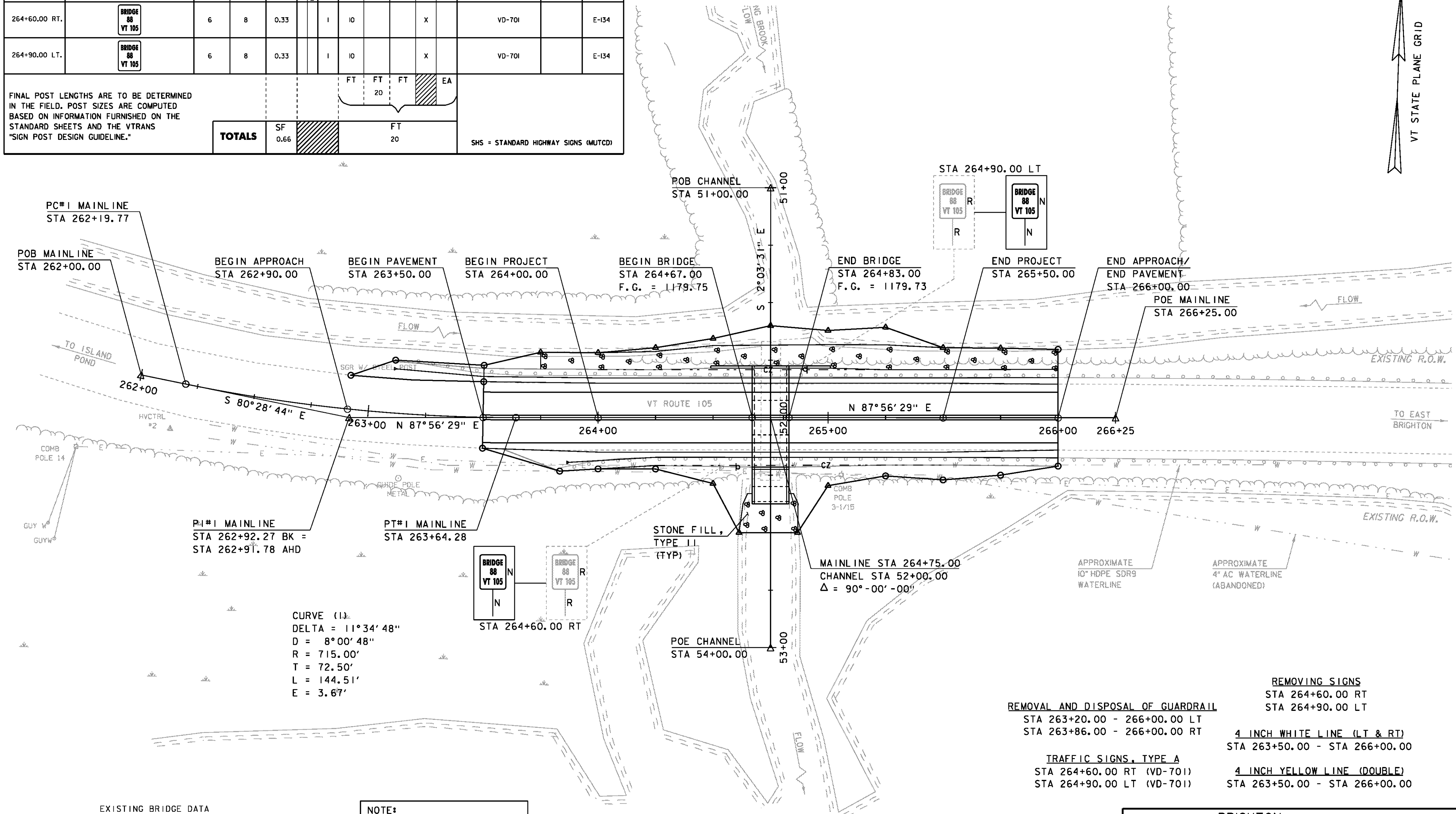
PROJECT NAME: BRIGHTON

PROJECT NUMBER: STP 034-3(21)

FILE NAME: survey\x00b24611.dgn
PROJECT LEADER: K. Higgins
DESIGNED BY:
TIE SHEET

PLOT DATE: 12-JUN-2012
DRAWN BY: R. Bullock
CHECKED BY:
SHEET 7 OF 30

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW SIGN	EXIST POST NO.	NEW SIGN POSTS						REMARKS	SIGN DETAIL			
						SQUARE STEEL							SIGN DETAIL			
		WIDTH (in)	HEIGHT (in)			"A"	R E F L E C T I V E	P R O T E C T I V E	P O S T S	(in)			A L L U R E	S T E E L	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
										2.0	2.0					
							2.16	2.42	3.35							
264+60.00 RT.		6	8	0.33		I	10				X		VD-701	E-134		
264+90.00 LT.		6	8	0.33		I	10				X		VD-701	E-134		
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE VTRANS "SIGN POST DESIGN GUIDELINE."		TOTALS		SF 0.66		FT 20 FT 20 FT 20 EA						SHS = STANDARD HIGHWAY SIGNS (MUTCD)				
						FT 20										



EXISTING BRIDGE DATA
7'-8" x 5'-5" CMPPA
ROAD WIDTH = 36.00 FT RAIL TO RAIL
BUILT IN 1959

NOTE:
ADJUST NEW EDGE LINE TO
MATCH EXISTING EDGE LINE
AT BEGIN/END APPROACH

LAYOUT SHEET

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

REMOVING SIGNS
STA 264+60.00 RT
STA 264+90.00 LT

REMOVAL AND DISPOSAL OF GUARDRAIL
STA 263+20.00 - 266+00.00 LT
STA 263+86.00 - 266+00.00 RT

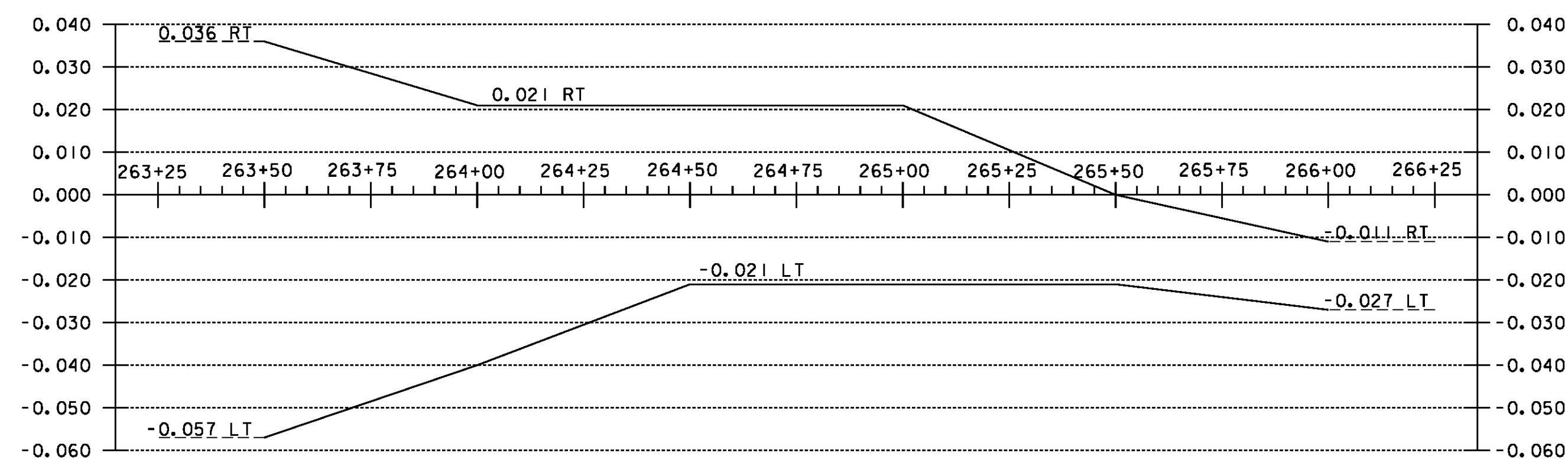
TRAFFIC SIGNS, TYPE A
STA 264+60.00 RT (VD-701)
STA 264+90.00 LT (VD-701)

4 INCH WHITE LINE (LT & RT)
STA 263+50.00 - STA 266+00.00

4 INCH YELLOW LINE (DOUBLE)
STA 263+50.00 - STA 266+00.00

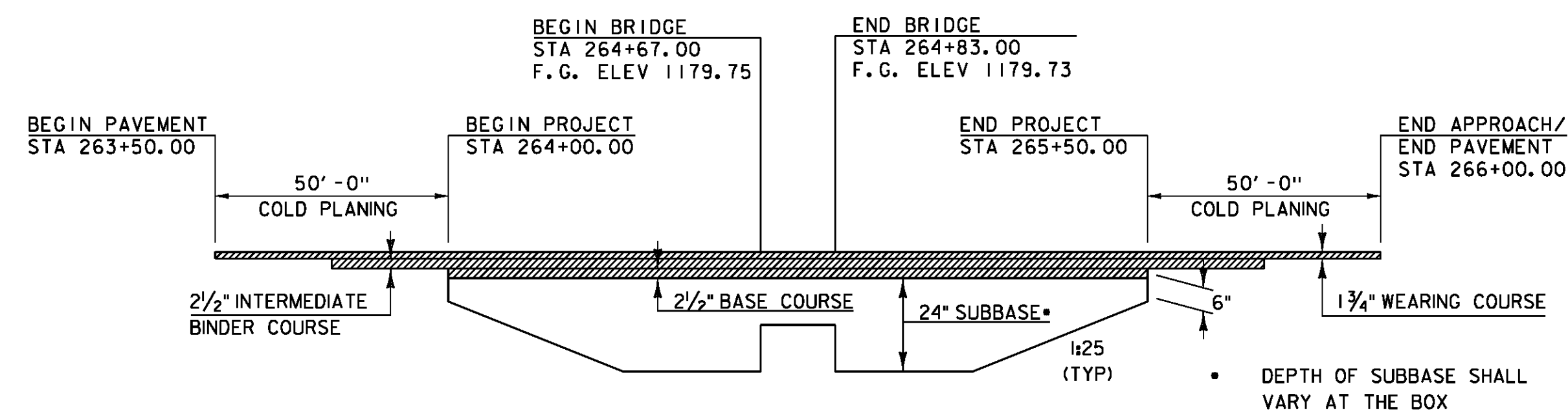
SIGN LEGEND
N = NEW
R = REMOVE

PROJECT NAME: BRIGHTON	PLOT DATE: 12-JUN-2012
PROJECT NUMBER: STP 034-3(21)	DRAWN BY: J. SALVATORI
FILE NAME: s00b246bdr.dgn	CHECKED BY: W. LAMMER
PROJECT LEADER: K. HIGGINS	SHEET 8 OF 30
DESIGNED BY: J. SALVATORI	
LAYOUT SHEET	



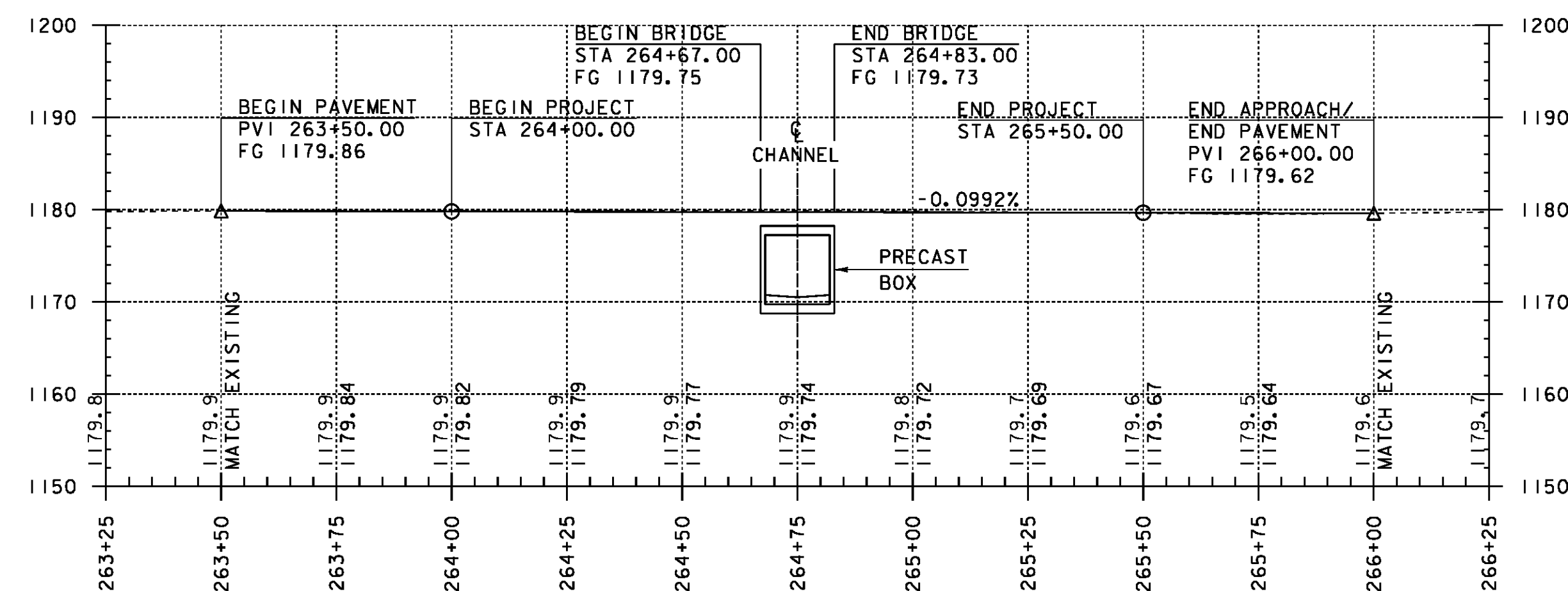
BANKING DIAGRAM

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



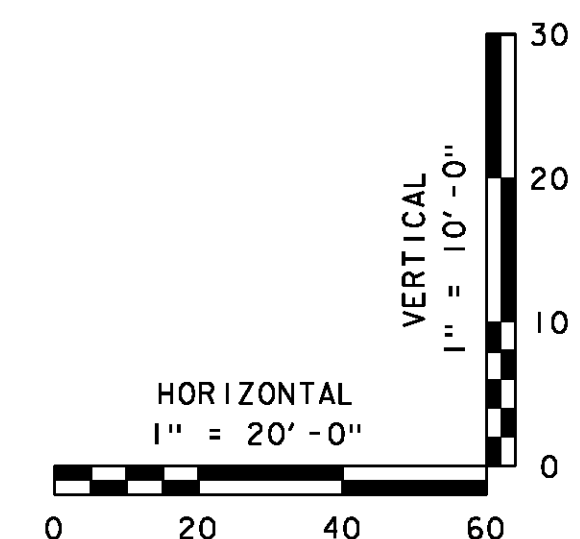
MATERIAL TRANSITION

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



MAINLINE PROFILE

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



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

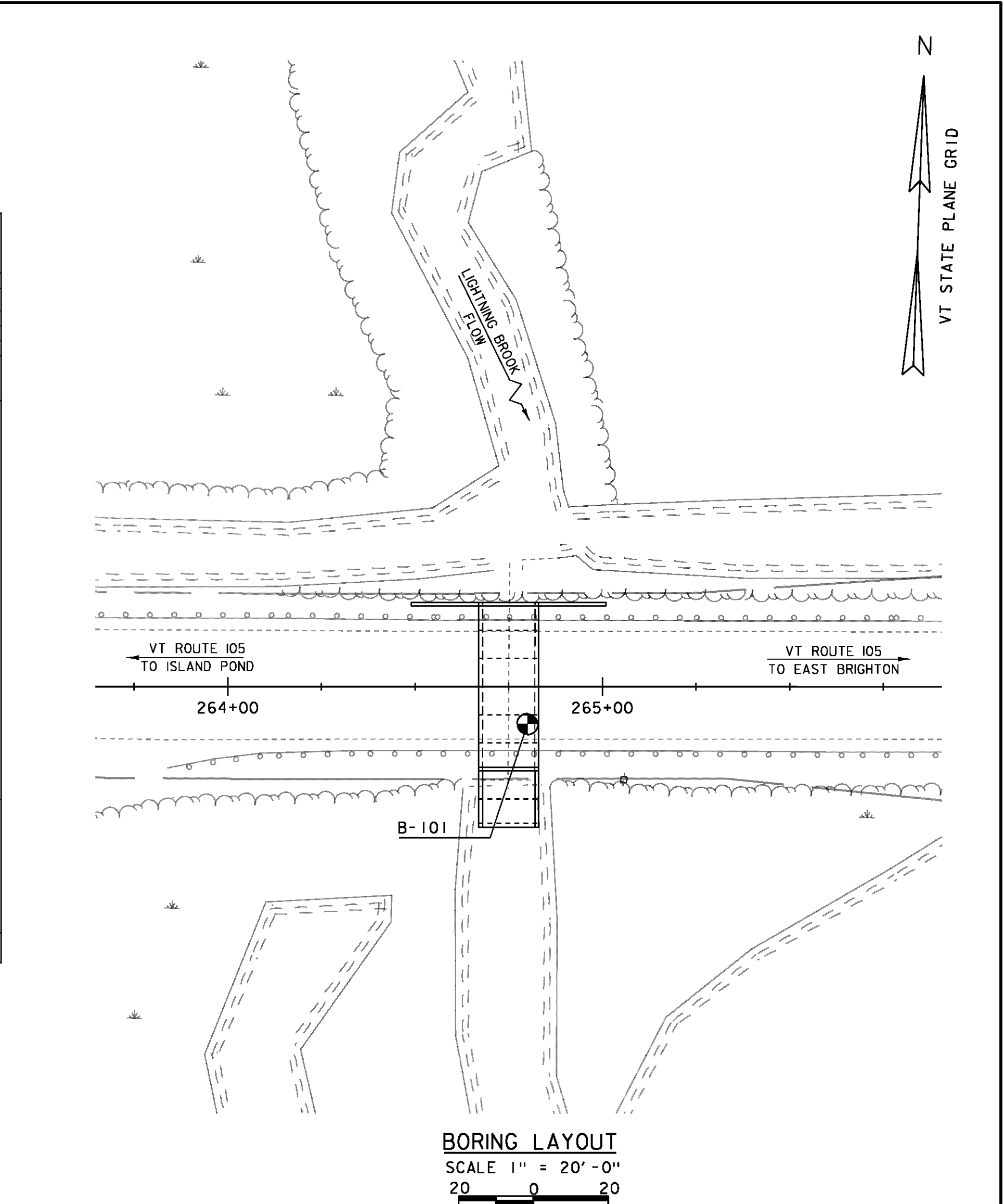
THE GRADES SHOWN TO THE NEAREST HUNDREDTH ARE THE FINISH GRADES ALONG THE PROPOSED ALIGNMENT.

PROJECT NAME: BRIGHTON
PROJECT NUMBER: STP 034-3(21)

FILE NAME: s00b246xs.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
MAINLINE PROFILE
PLOT DATE: 12-JUN-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 9 OF 30

SOIL CLASSIFICATION	
AASHTO	
A1	Gravel and Sand
A3	Fine Sand
A2	Silty or Clayey Gravel and Sand
A4	Silty Soil - Low Compressibility
A5	Silty Soil - Highly Compressible
A6	Clayey Soil - Low Compressibility
A7	Clayey Soil - Highly Compressible
ROCK QUALITY DESIGNATION	
R.O.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent
SHEAR STRENGTH	
UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
>4000	Hard
CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY	
DENSITY (GRANULAR SOILS)	CONSISTENCY (COHESIVE SOILS)
N	DESCRIPTIVE TERM
<5	Very Loose
5-10	Loose
11-24	Med. Dense
25-50	Dense
>50	Very Dense
N	DESCRIPTIVE TERM
<2	Very Soft
2-4	Soft
5-8	Med. Stiff
9-15	Stiff
16-30	Very Stiff
31-60	Hard
>60	Very Hard
COMMONLY USED SYMBOLS	
▼	Water Elevation
⊙	Standard Penetration Boring
⊗	Auger Boring
⊖	Rod Sounding
S	Sample
N	Standard Penetration Test
	Blow Count Per Foot For:
	2" O.D. Sampler
	1 1/8" I.D. Sampler
	Hammer Weight Of 140 Lbs.
	Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blot
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 1 1/4"
BX	Core Size 1 1/2"
NX	Core Size 2 1/8"
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
W	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
SI	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	Top of Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
RQD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)
VTSPG	NAD83 - See Note 7
DEFINITIONS (AASHTO)	
BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.	VARVED - Alternate layers of silt and clay.
BOULDER - A rock fragment with an average dimension > 12 inches.	HARDPAN - Extremely dense soil, cemented layer, not softened when wet.
COBBLE - Rock fragments with an average dimension between 3 and 12 inches.	MUCK - Soft organic soil (containing > 10% organic material).
GRAVEL - Rounded particles of rock < 3" and > 0.075" (#10 sieve).	MOISTURE CONTENT - Weight of water divided by dry weight of soil.
SAND - Particles of rock < 0.075" (#10 sieve) and > 0.0029" (#200 sieve).	FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.
SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.	STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.
CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.	DIP - Inclination of bed with a horizontal plane.

		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG BORING NO. B-101 Page No. 1 of 1 Pin No. 008248 Checked By: JSC	
Boring Crew: PORTER, HUNT, WELTZER				Coiling Sampling	
Date Started: 2/02/12 Date Finished: 2/03/12				Type: WB SS	
VTSPG NO: 8 844864.10 N E 1804154.75 W				Hammer Wt: N.A. 140 lb.	
Station: 264+80 Offset: -10.00				Hammer Fall: N.A. 30 in.	
Ground Elevation: 179.5 ft				Hammer/Feed Type: Auto/Hand	
				Rq: CME 45C 300 CE = 1.35	
CLASSIFICATION OF MATERIALS (Description)				Groundwater Observations	
				Date Depth (ft) Notes	
Asphalt Pavement, 0.0 ft - 0.1 ft				02/03/12 5.5 AM	
Field Note: No Recovery. Appears to be Gravel with small stones.				880.0'	
A-1-Cb, Silty, Gravelly, Wat. Rec. = 0.5 ft. Lab Note: Some broken Concrete was within sample.				26.8 6.4 88.4	
Field Note: Hard drilling. Attempted to core. No Recovery				880.0'	
A-1-G, Silty, gty, Wat. Rec. = 0.5 ft. Lab Note: Some broken Concrete was within sample.				15.5 50.2 42.2	
Field Note: No Recovery. Appears to be silty material.				3'-2'-1'	
A-2-4, So, gty, Wat. Rec. = 1.7 ft. A small layer of dark brown possible organic soil was encountered. Insufficient material for testing.				WB-2-B (15)	
A-2-4, So, gty, Wat. Rec. = 1.2 ft				8'-10'-9' (19)	
A-3, So, gty, Wat. Rec. = 0.8 ft				6'-3'-4' (5)	
A-4, Silty, gty, Wat. Rec. = 2.0 ft				WB-3-B (1)	
A-1-6, So, gty, Wat. Rec. = 0.7 ft				3'-3'-3' (9)	
Notes: 1. Ground Elevation was estimated from plan section. 2. From 0.1 to 11.0 feet appears to be well compacted fill material.				21.8 5.5 91.8	
Notes: 1. Bedrock has material approximately between material from 35 ft to 36 ft. 2. Note that material was not visible in bore hole. (See field notes for testing.)				21.8 5.5 91.8	



The subsurface explorations shown herein were made between 2/2/2012 and 2/3/2012 by the Agency.

Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.

Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.

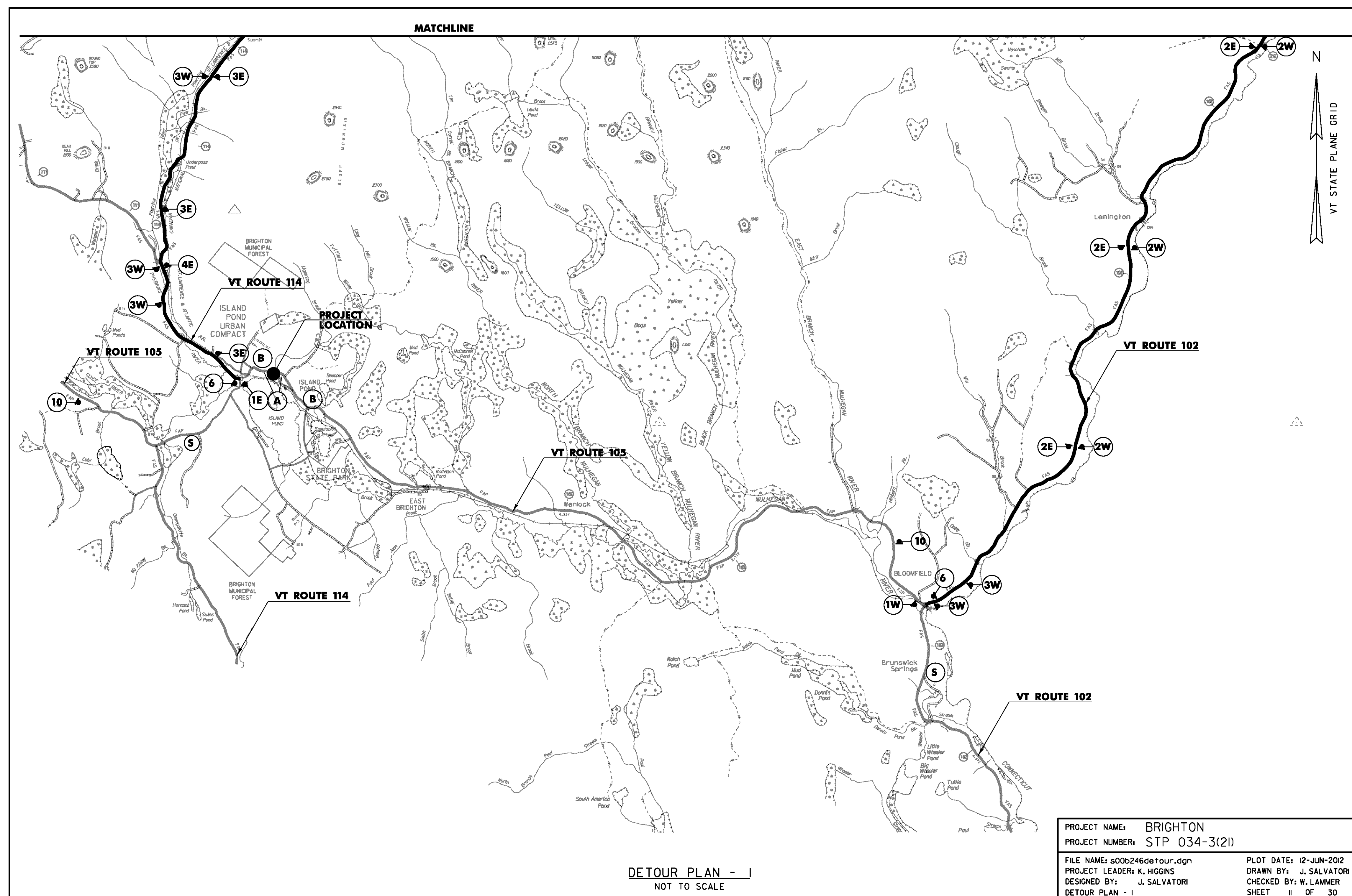
4. Engineering Judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.

5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.

6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.

7. Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

PROJECT NAME: BRIGHTON	PROJECT NUMBER: STP 034-3(21)
FILE NAME: s00B246bor.dgn	PLOT DATE: 12-JUN-2012
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: B. LAMMER
BORING LAYOUT SHEET	SHEET 10 OF 30



V	T	1	0	5	
C	L	O	S	E	

PORTABLE CHANGABLE SIGN - PHASE 1

E	A	S	T	O	F
I	S	L	A	N	D
P	O	N	D		

PORTABLE CHANGABLE SIGN - PHASE 2

*	M	M	M		D	D	-
*	M	M	M		D	D	

PORTABLE CHANGABLE SIGN - PHASE 3

* M=MONTH
D=DAY

5

NOTES:

1. THE PORTABLE CHANGABLE MESSAGE SIGNS SHALL BE FULLY OPERATIONAL A MINIMUM OF TWO WEEKS PRIOR TO THE CLOSURE OF VT 105.
2. DURING ACTUAL CLOSURE, ELIMINATED PHASE 3 ONLY.
3. DETOUR SIGNS SHALL BE LOCATED ADJACENT TO EXISTING INTERSECTION ROUTE MARKER.
4. SEE SPECIAL PROVISIONS FOR FURTHER INFORMATION.

ROAD CLOSED
XX MILES AHEAD
LOCAL TRAFFIC ONLY

10



SIGN MOUNTING ON
TYPE III BARRICADE
(MODIFIED)

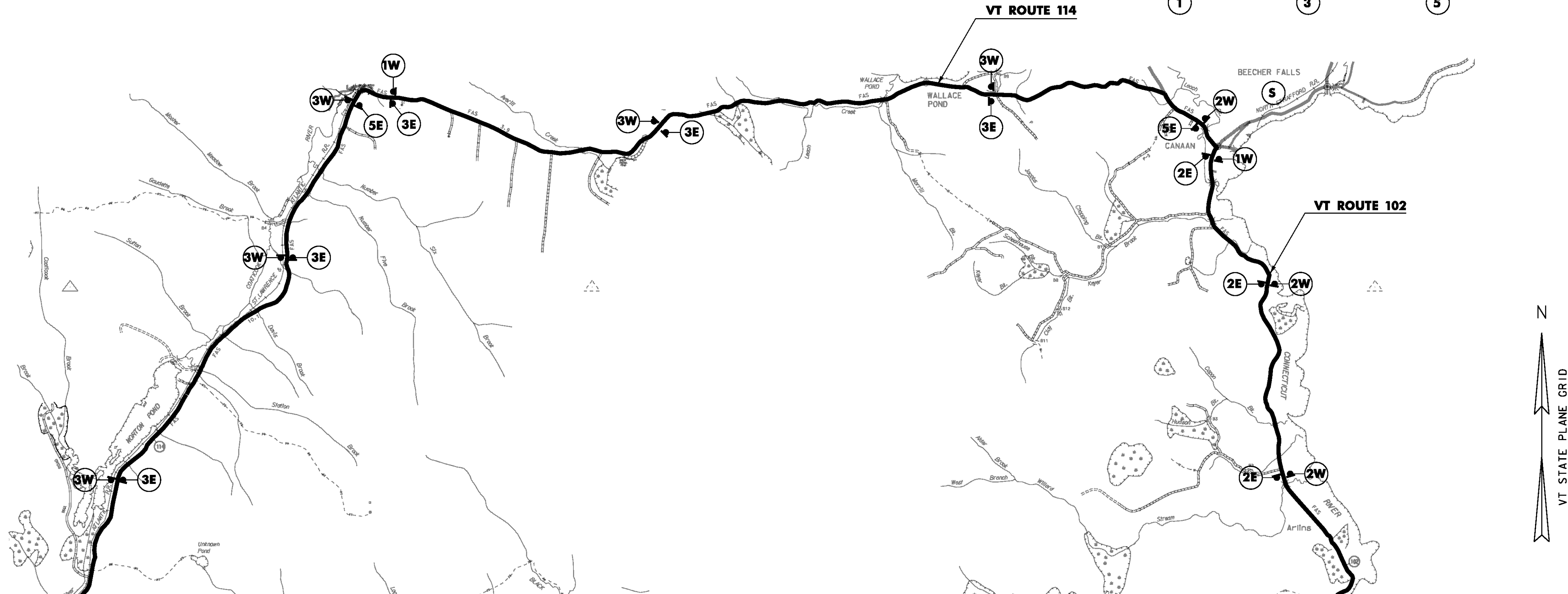
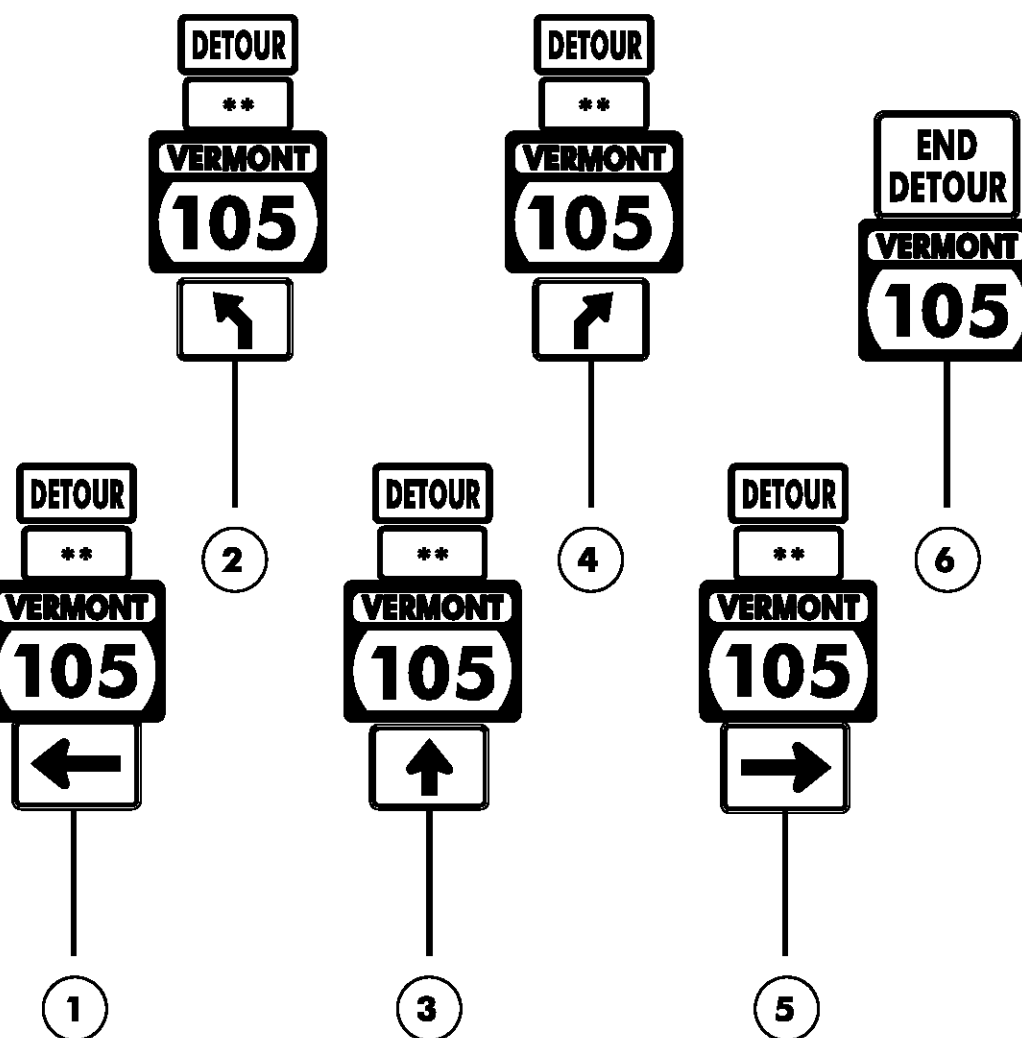
A



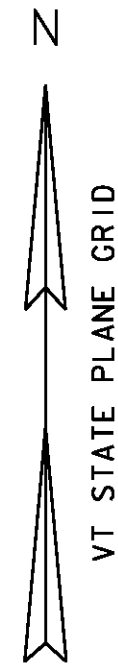
SIGN MOUNTING ON
TYPE III BARRICADE
(MODIFIED)

B

**E= EAST
OR
W= WEST



MATCHLINE

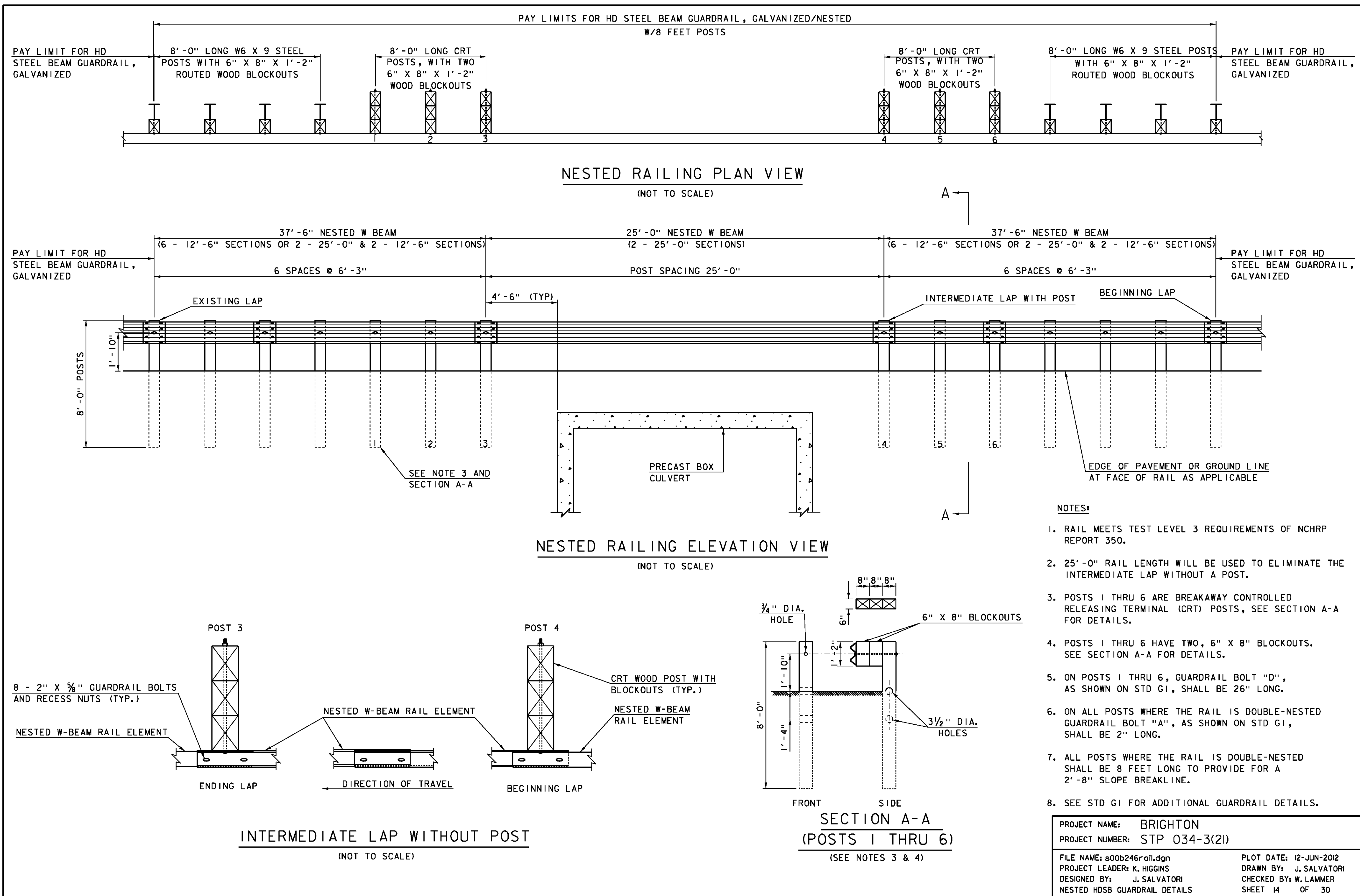


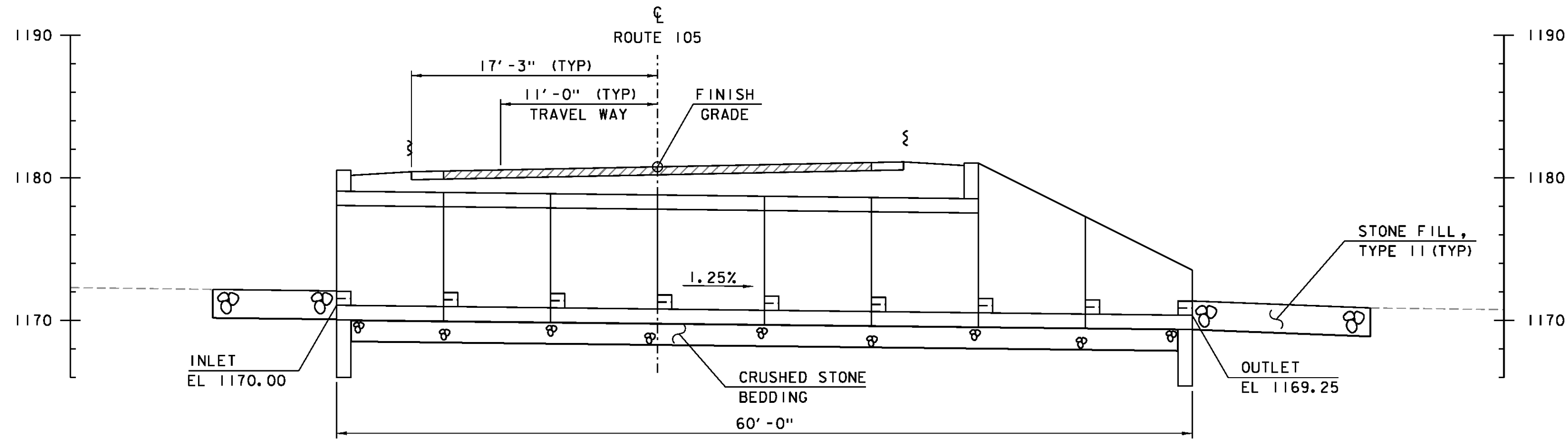
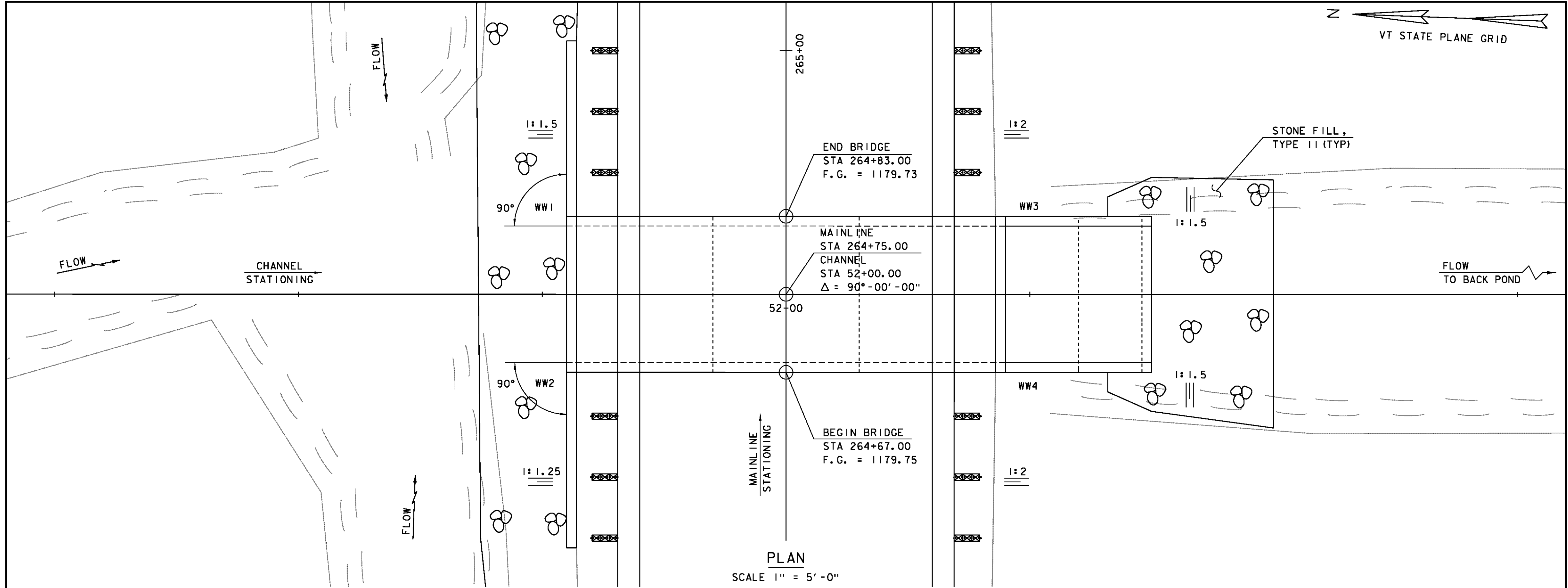
DETOUR PLAN - 2
NOT TO SCALE

PROJECT NAME: BRIGHTON
PROJECT NUMBER: STP 034-3(21)

FILE NAME: s00b246detour.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
DETOUR PLAN - 2

PLOT DATE: 12-JUN-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 12 OF 30





CHANNEL PROFILE ALONG ζ BOX

SCALE 1" = 5'-0"

PROJECT NAME: BRIGHTON
PROJECT NUMBER: STP 034-3(21)

FILE NAME: s00b246pe.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
PLAN & ELEVATION

PLOT DATE: 12-JUN-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 16 OF 30

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT SHALL CONSIST OF THE REPLACEMENT OF THE EXISTING CORRUGATED METAL PLATE PIPE ARCH STRUCTURE WITH A NEW 14" x 7' REINFORCED PRECAST CONCRETE BOX CULVERT WITH RELATED APPROACH AND CHANNEL WORK.

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

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.35 ACRES.

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

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE PROJECT AREA IS NEARLY FLAT WITH WELL ESTABLISHED WETLAND VEGETATION.

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

LIGHTNING BROOK AND TWO UN-NAMED BROOKS CONVERGE AND FLOW THROUGH THE STRUCTURE OUTLETS INTO BACK POND. THERE ARE CLASS II WETLANDS LOCATED WITHIN THE PROJECT AREA.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS MAINLY OF SHRUBS, PLANTS AND WETLAND VEGETATION.

THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING CULVERT. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL, TYPE II AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF ESSEX, VERMONT.

3A-CHARLES SILT LOAM, 0-2% SLOPES, K=0.32

SIE8-WONSQUEAK, PONDICHERRY AND BUCKSPORT MUCKS, 0-2% SLOPES, K=0.32

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: BACK POND
WETLANDS: CLASS II ARE LOCATED THROUGHOUT THE PROJECT AREA.

1.3 RISK EVALUATION

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

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

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

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

1.4.1 MARK SITE BOUNDARIES

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

BARRIER FENCE SHALL BE USED INSTEAD OF PROJECT DEMARCATION FENCE WITHIN 100 FEET OF A WATER RESOURCE (STREAM, BROOK, LAKE, POND, WETLAND, ETC). INSTALL BARRIER FENCE AS SHOWN ON THE PLANS.

1.4.2 LIMIT DISTURBANCE AREA

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

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

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

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

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

1.4.4 INSTALL SEDIMENT BARRIERS

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

INSTALL SILT FENCE AS SHOWN ON THE PLANS.

INSTALL FILTER CURTAIN AS SHOW ON THE PLANS.

1.4.5 DIVERT UPLAND RUNOFF

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

THE PROJECT AREA IS RELATIVELY FLAT. THEREFORE IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

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. IT IS NOT ANTICIPATED THAT THESE MEASURES WILL BE NECESSARY.

1.4.7 CONSTRUCT PERMANENT CONTROLS

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

INSTALL STONE FILL AS SHOWN ON THE PLANS.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

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

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

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

1.4.9 WINTER STABILIZATION

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

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.

TREATMENT OF DEWATERING ACTIVITIES IS ANTICIPATED. A FILTER BAG LOCATION FOR TREATMENT HAS BEEN PROPOSED AND IS SHOWN ON THE PLANS. HOWEVER THE SPECIFIC MEANS FOR TREATMENT OF DISCHARGE SHALL BE PROVIDED BY THE CONTRACTOR.

1.4.12 INSPECT YOUR SITE

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

1.5 SEQUENCE AND STAGING

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

1.5.1 CONSTRUCTION SEQUENCE

1.5.2 OFF-SITE ACTIVITIES

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

PROJECT NAME:	BRIGHTON
PROJECT NUMBER:	STP 034-3(21)
FILE NAME: s00b246epsc-narrative.dgn	PLOT DATE: 12-JUN-2012
PROJECT LEADER: K.HIGGINS	DRAWN BY: J.SALVATORI
DESIGNED BY: J.SALVATORI	CHECKED BY: W.LAMMER
EPSC NARRATIVE	SHEET 17 OF 30

3A
CHARLES SILT LOAM
0-2% SLOPES
K FACTOR = 0.32

S1E8
WONSQUEAK, PONDICHERRY
AND BUCKSPORT MUCK
0-2% SLOPES
K FACTOR = 0.32

LEGEND

	PROPERTY LINE
	RIGHT-OF-WAY LINE
	SOIL BOUNDARY
	CLASS II WETLANDS



EPSC - EXISTING CONDITIONS

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

PROJECT NAME: BRIGHTON
PROJECT NUMBER: STP 034-3(21)

FILE NAME: s00b246epsc.bdr.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
EPSC - EXISTING CONDITIONS

PLOT DATE: 12-JUN-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 18 OF 30

3A
CHARLES SILT LOAM
0-2% SLOPES
K FACTOR = 0.32

SIEB
WONSQUEAK, PONDICHERRY
AND BUCKSPORT MUCK
0-2% SLOPES
K FACTOR = 0.32

LEGEND			
	FILTER CURTAIN		FILTER BAG
	CUT/FILL LIMITS		ROLLED EROSION CONTROL PRODUCT (RECP)
	SILT FENCE WOVEN WIRE		STONE FILL
	BARRIER FENCE		STABILIZED CONSTRUCTION ENTRANCE

EXISTING CONTOURS SHOWN
SEE CROSS SECTIONS FOR FINAL CONTOURS



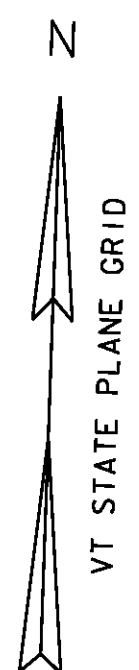
EPSC - DURING CONSTRUCTION

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

PROJECT NAME:	BRIGHTON
PROJECT NUMBER:	STP 034-3(21)
FILE NAME:	s00b246epsc.bdr.dgn
PROJECT LEADER:	K. HIGGINS
DESIGNED BY:	J. SALVATORI
EPSC - DURING CONSTRUCTION	
PLOT DATE:	12-JUN-2012
DRAWN BY:	J. SALVATORI
CHECKED BY:	W. LAMMER
SHEET	19 OF 30

3A
CHARLES SILT LOAM
0-2% SLOPES
K FACTOR = 0.32

AREAS OF EARTH DISTURBANCE
THAT WILL REQUIRE REVEGETATION.



BEGIN APPROACH
STA 262+90.00

BEGIN PAVEMENT
STA 263+50.00

BEGIN PROJECT
STA 264+00.00

BEGIN BRIDGE
STA 264+67.00
F.G. = 1179.75

END BRIDGE
STA 264+83.00
F.G. = 1179.73

END PROJECT
STA 265+50.00

END APPROACH/
END PAVEMENT
STA 266+00.00

SIEB
WONSQUEAK, PONDICHERRY
AND BUCKSPORT MUCK
0-2% SLOPES
K FACTOR = 0.32

WATER

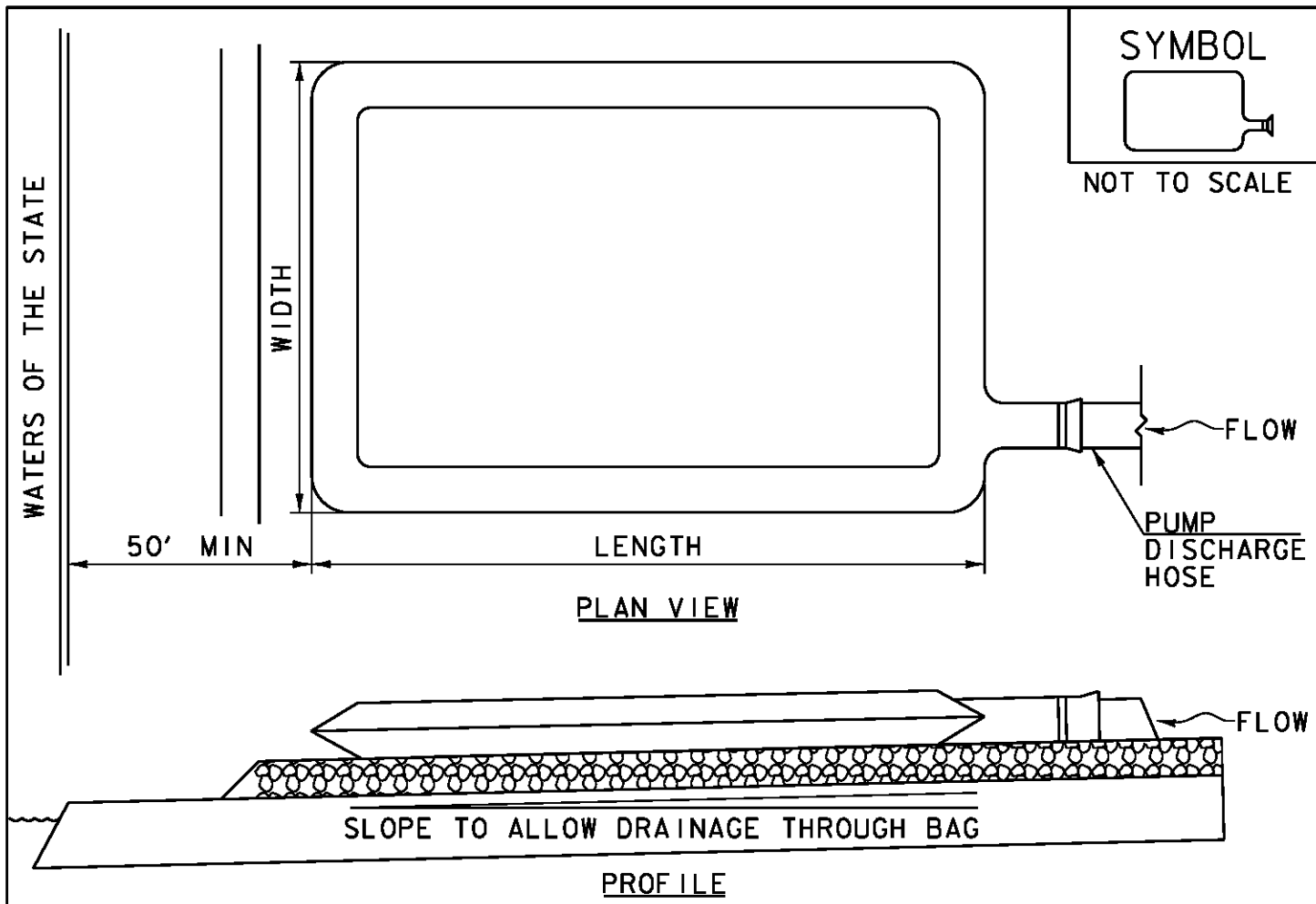
EPSC - FINAL CONDITIONS

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

PROJECT NAME: BRIGHTON
PROJECT NUMBER: STP 034-3(2I)

FILE NAME: s00b246epsc.bdr.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
EPSC - FINAL CONDITIONS

PLOT DATE: 12-JUN-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 20 OF 30



CONSTRUCTION SPECIFICATIONS

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

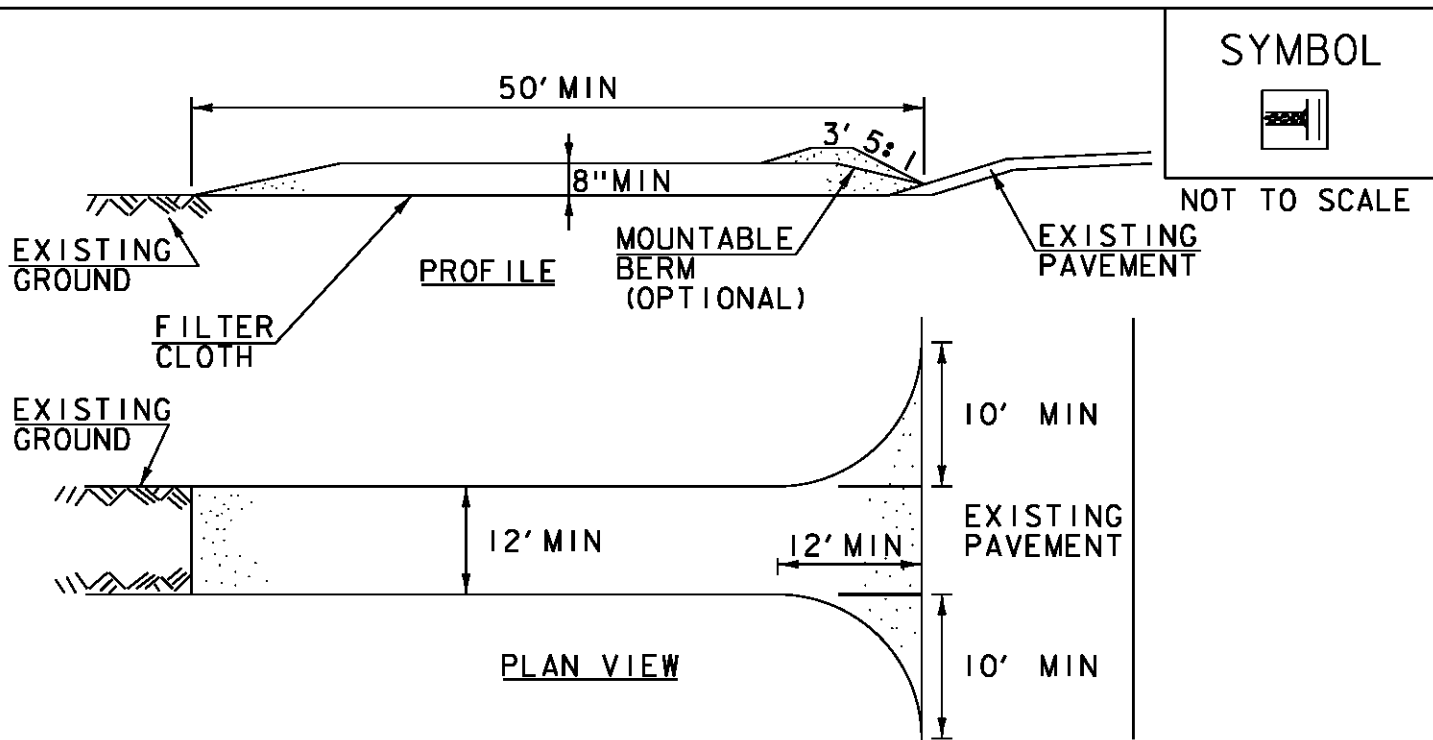
FILTER BAG

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

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

REVISIONS

MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF



CONSTRUCTION SPECIFICATIONS

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

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

STABILIZED
CONSTRUCTION
ENTRANCE

NOTES:

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

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

REVISIONS

MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

VAOT RURAL AREA MIX					
		LBS/AC			
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
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					
		LBS/AC			
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
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

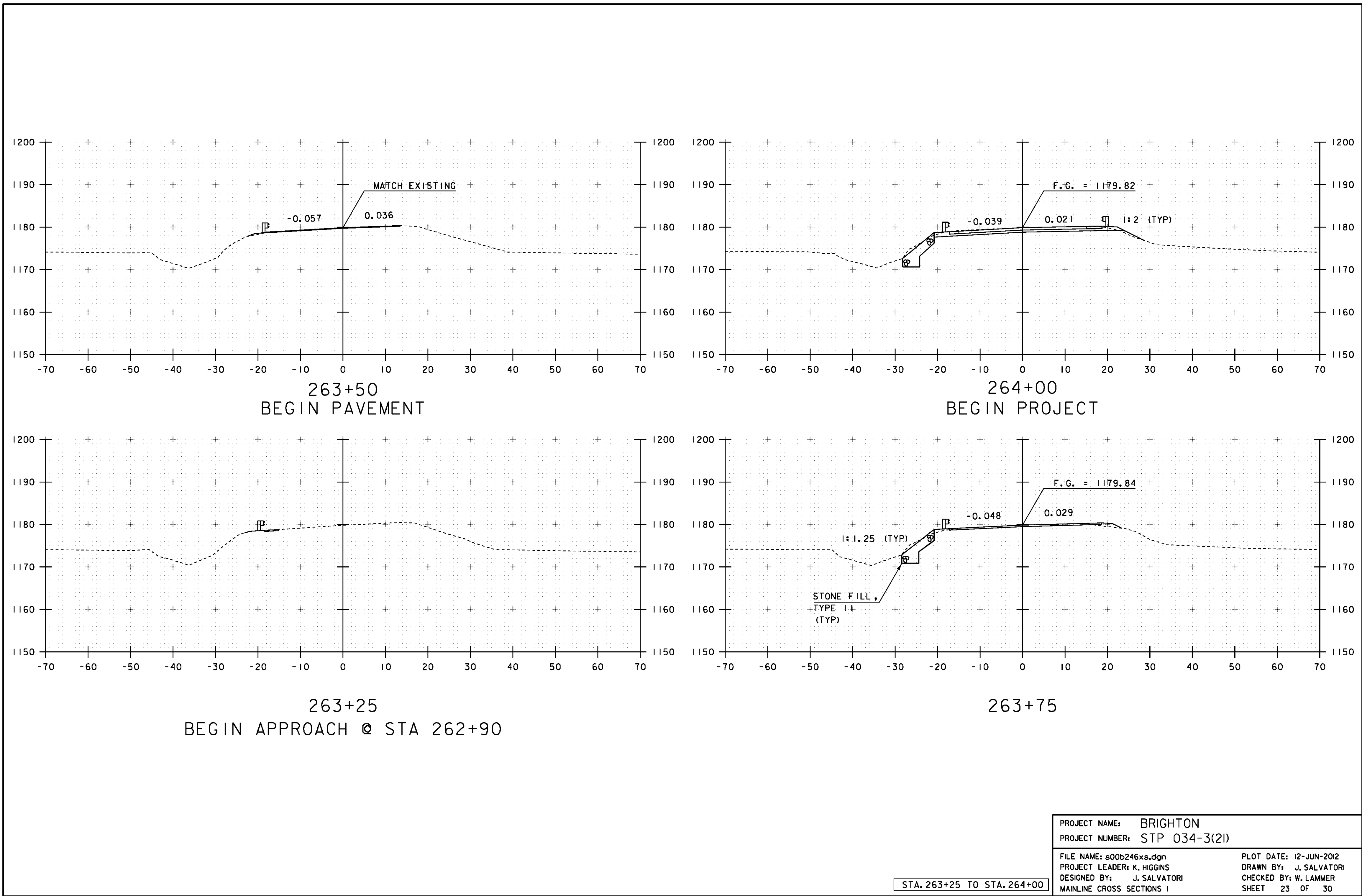
JUNE 23, 2009	WHF
JANUARY 15, 2010	WHF
FEBRUARY 16, 2011	WHF

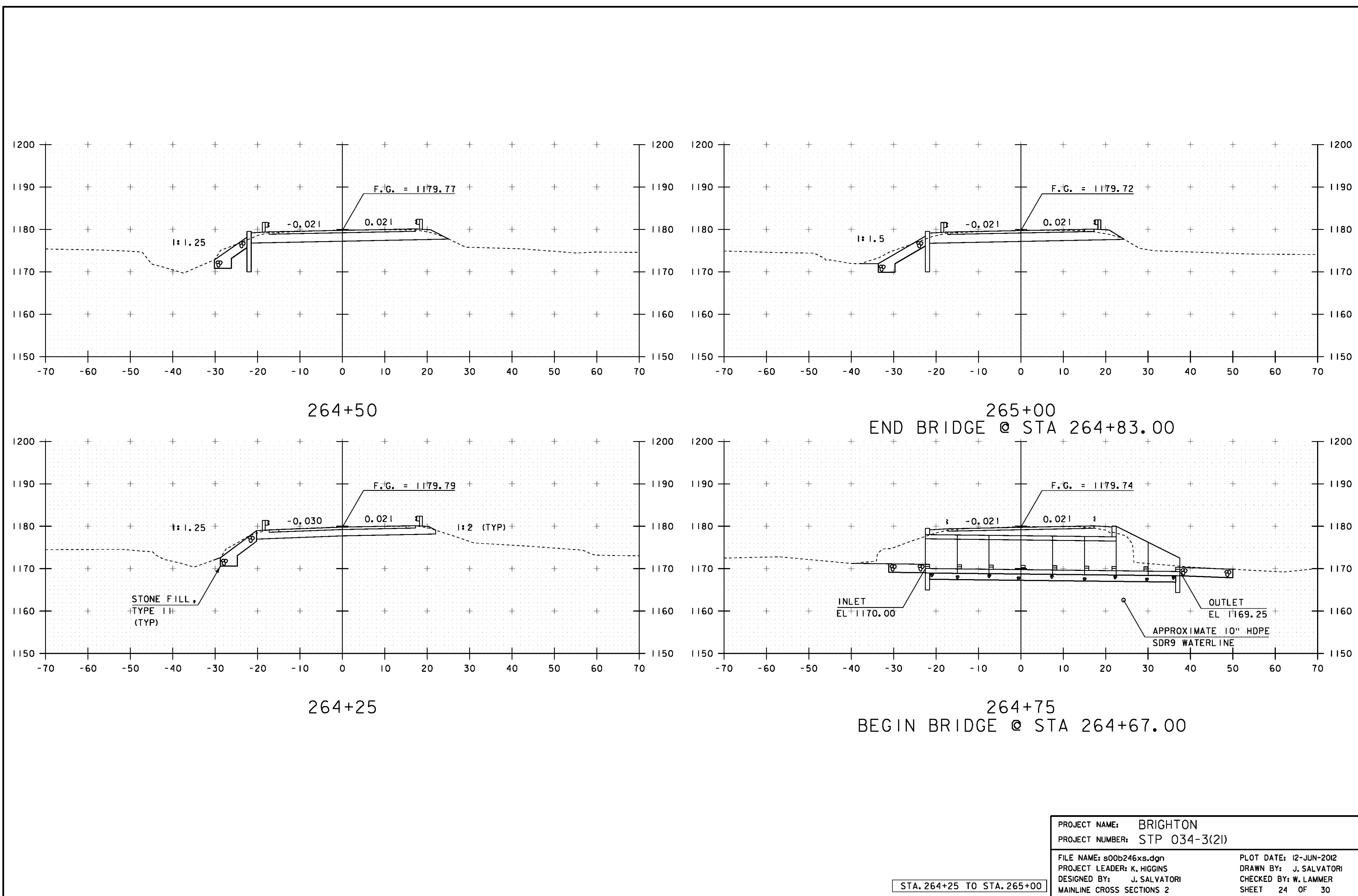
PROJECT NAME: BRIGHTON

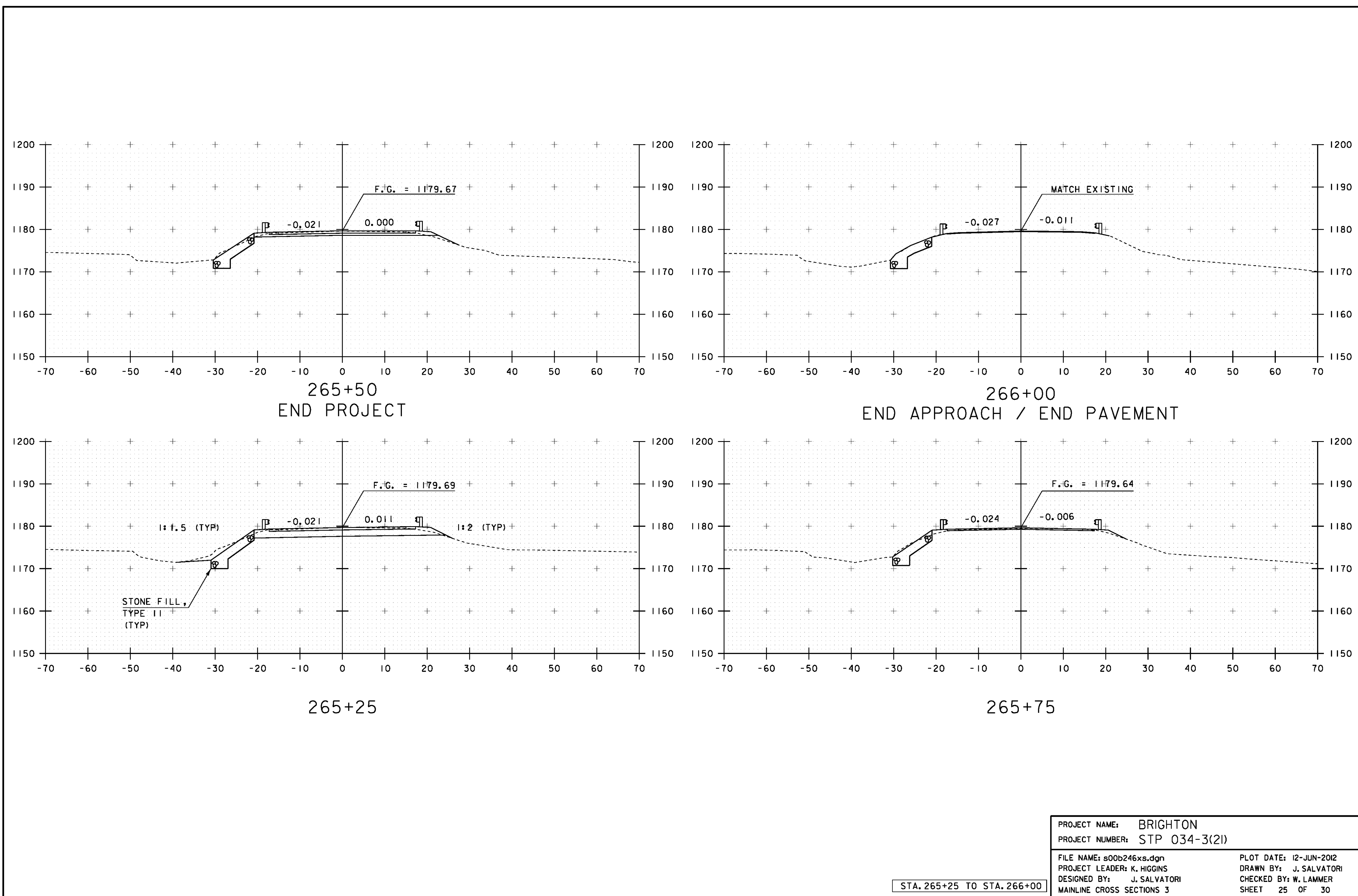
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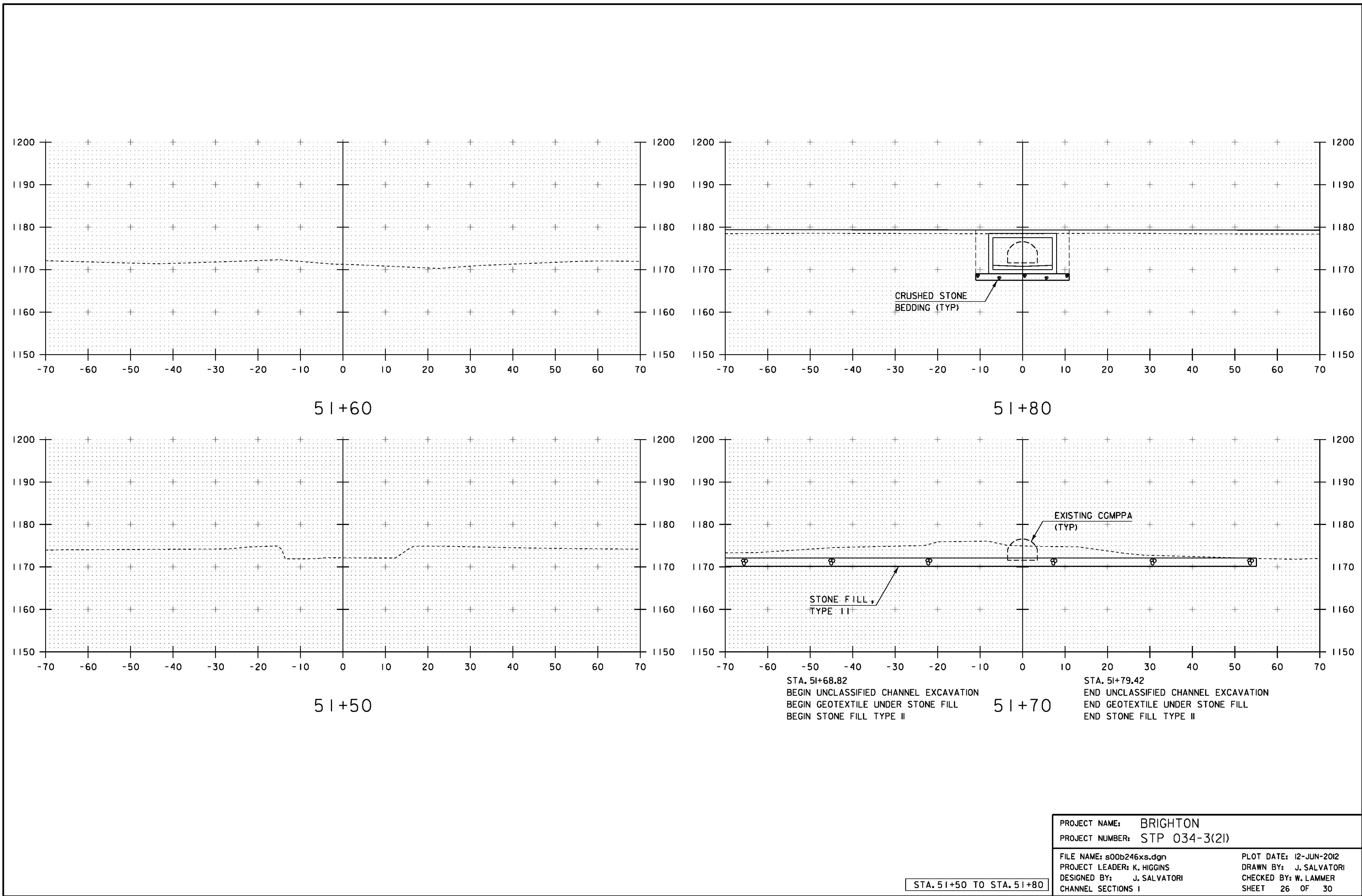
FILE NAME: s00b246epsc.deta1s.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
EPSC DETAILS 2

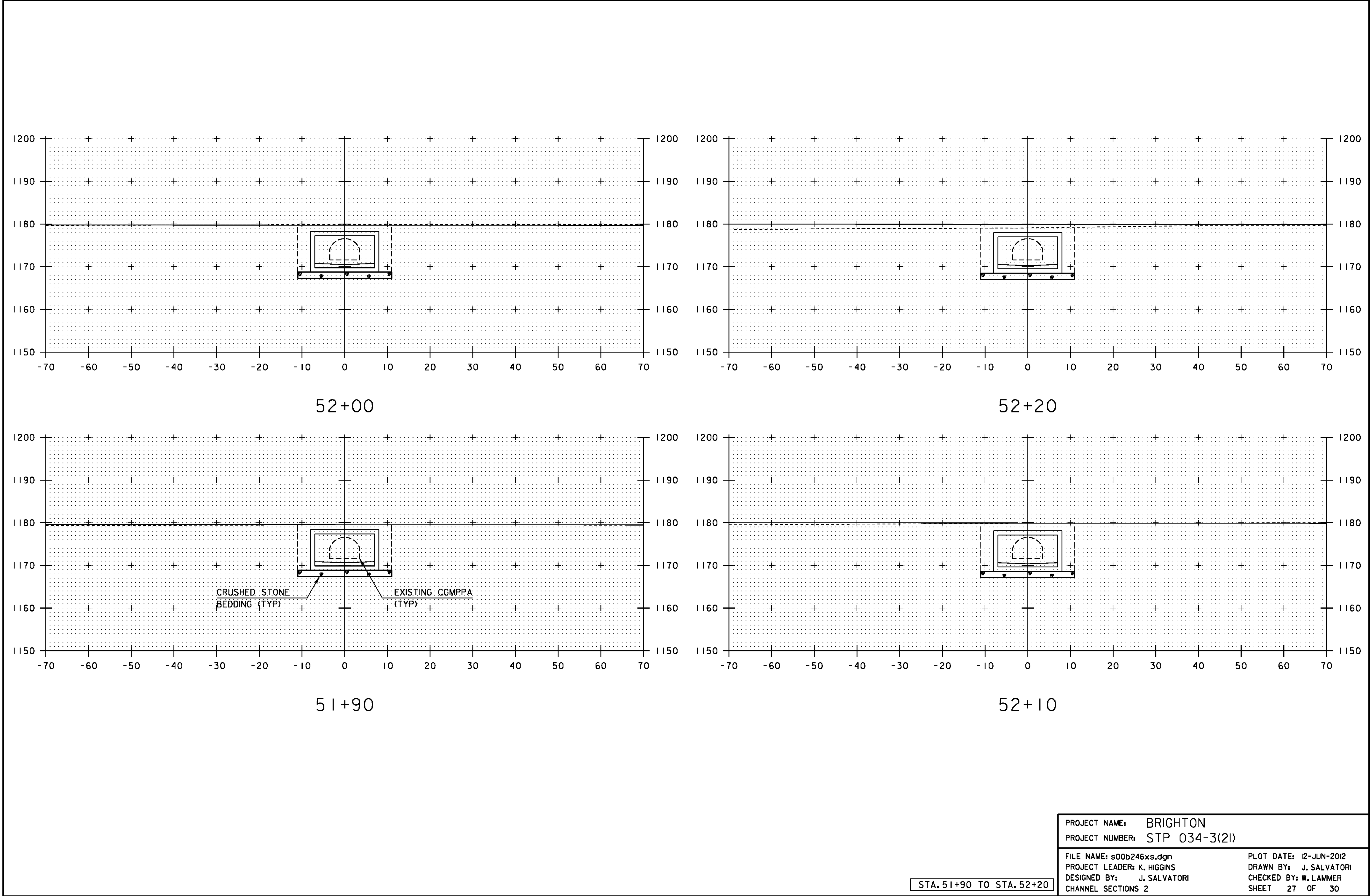
PLOT DATE: 12-JUN-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 22 OF 30



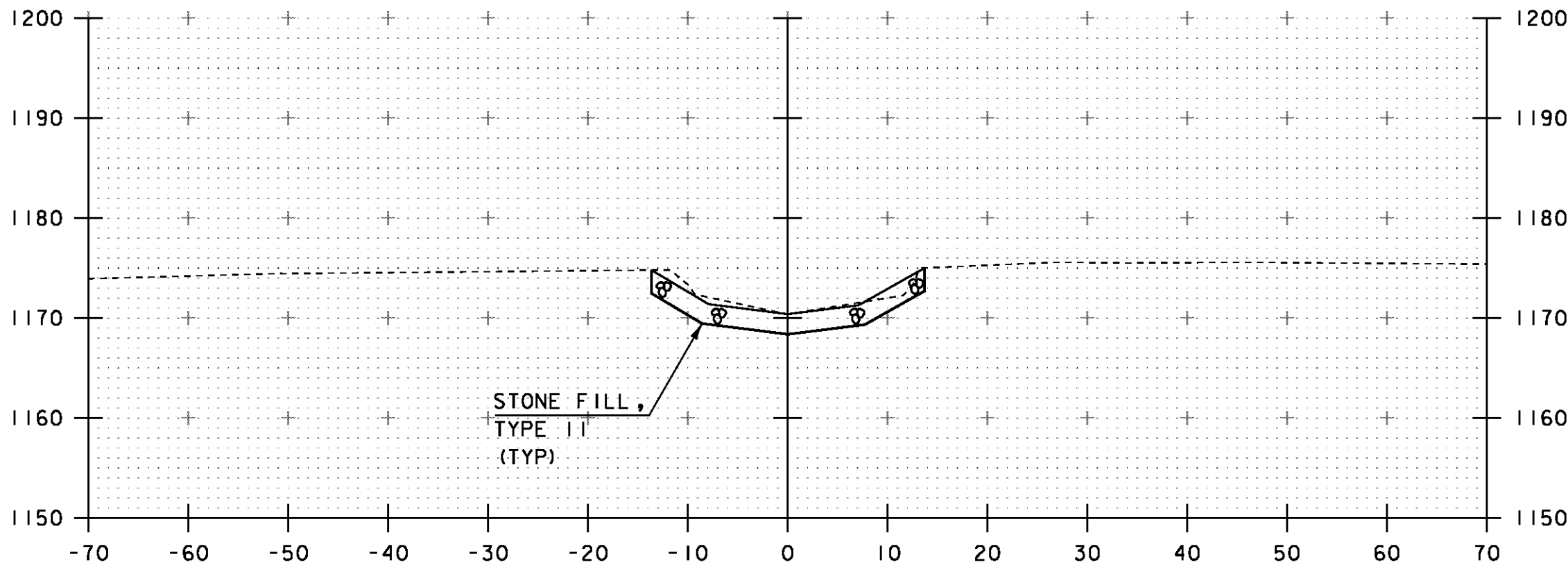




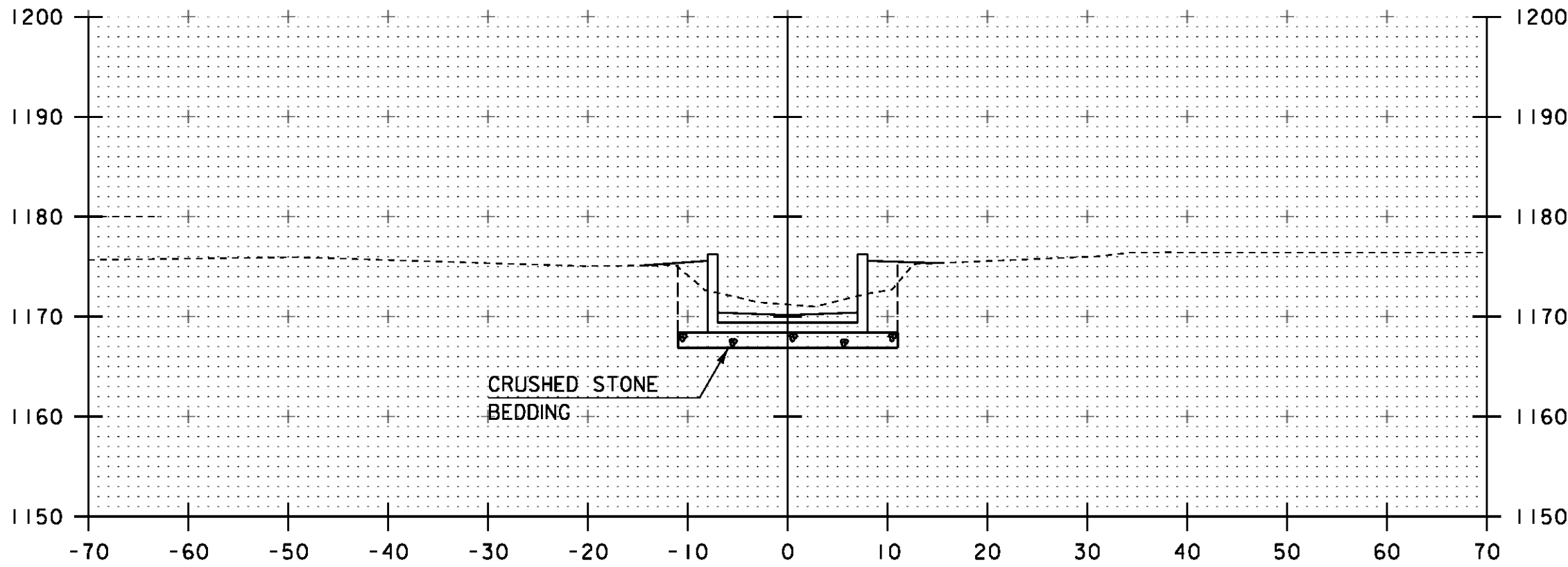




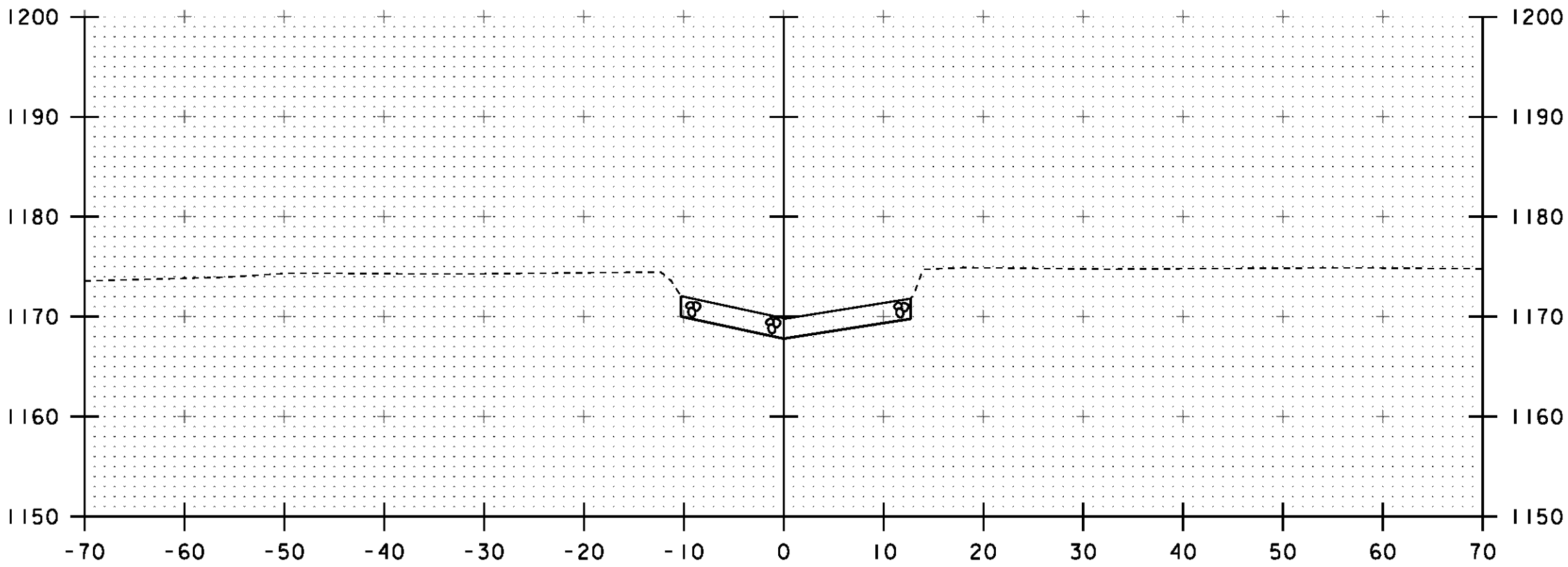
STA. 52+33.00
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE FILL TYPE II



52+40



52+30

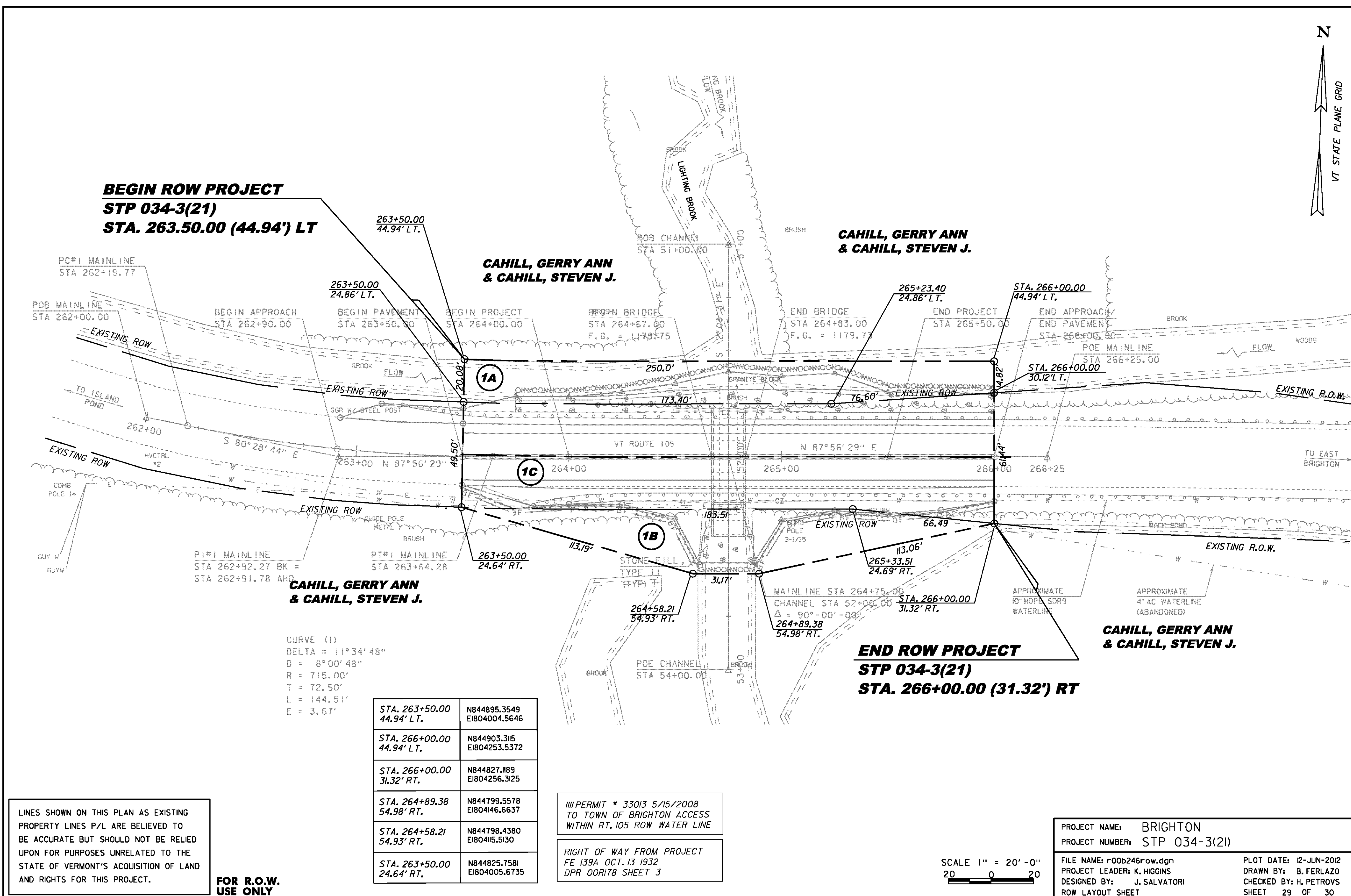


52+50

STA. 52+50.00
END UNCLASSIFIED CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END STONE FILL TYPE II

STA. 52+30 TO STA. 52+50

PROJECT NAME: BRIGHTON	
PROJECT NUMBER: STP 034-3(2)	
FILE NAME: s00b246xs.dgn	PLOT DATE: 12-JUN-2012
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
CHANNEL SECTIONS 3	SHEET 28 OF 30



[illegible]

APPROVED: HARRY PETROVS DATE: 02-22-12
CHIEF, PLANS & TITLES

PROJECT NAME: BRIGHTON			
PROJECT NUMBER: STP 034-3(21)			
FILE NAME: r00b246Detail.xls		PLOT DATE: 12-JUN-2012	
PROJECT LEADER: K. HIGGINS		DRAWN BY: M. TROTTIER	
DESIGNED BY: J. SALVATORI		CHECKED BY: B. FERLAZO	
R.O.W. DETAIL SHEET #1		SHEET 30	OF 30



State of Vermont
PDD/Structures Design Section
National Life Building - Drawer 33
Montpelier, VT 05633-5001
www.aot.state.vt.us

[phone]

802-828-2621

[fax]

802-828-3566

[ttd]

800-253-0191

Agency of Transportation

Concrete Systems, Inc.
9 Commercial Street
Hudson, NH 03051

DATE: August 21, 2012

Project Name: Brighton Project #: STP 034-3(21)

Structure Identification: Box Culvert Details (CSI Job # C21314)

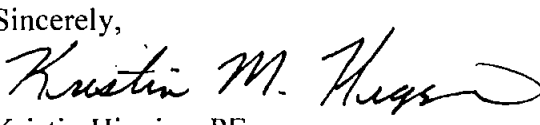
The following Box Culvert Layout and Fabrication details for item 540.10 Precast Concrete Structure (14'-7" x 7'-0" x 60'-0" Box) for the above project have been reviewed and are being returned herewith.

All Sheets are approved

The Calculations have been reviewed and accepted as noted. The depth of the footing is stated as 3.5' in the calculations but is actually 4'-2".

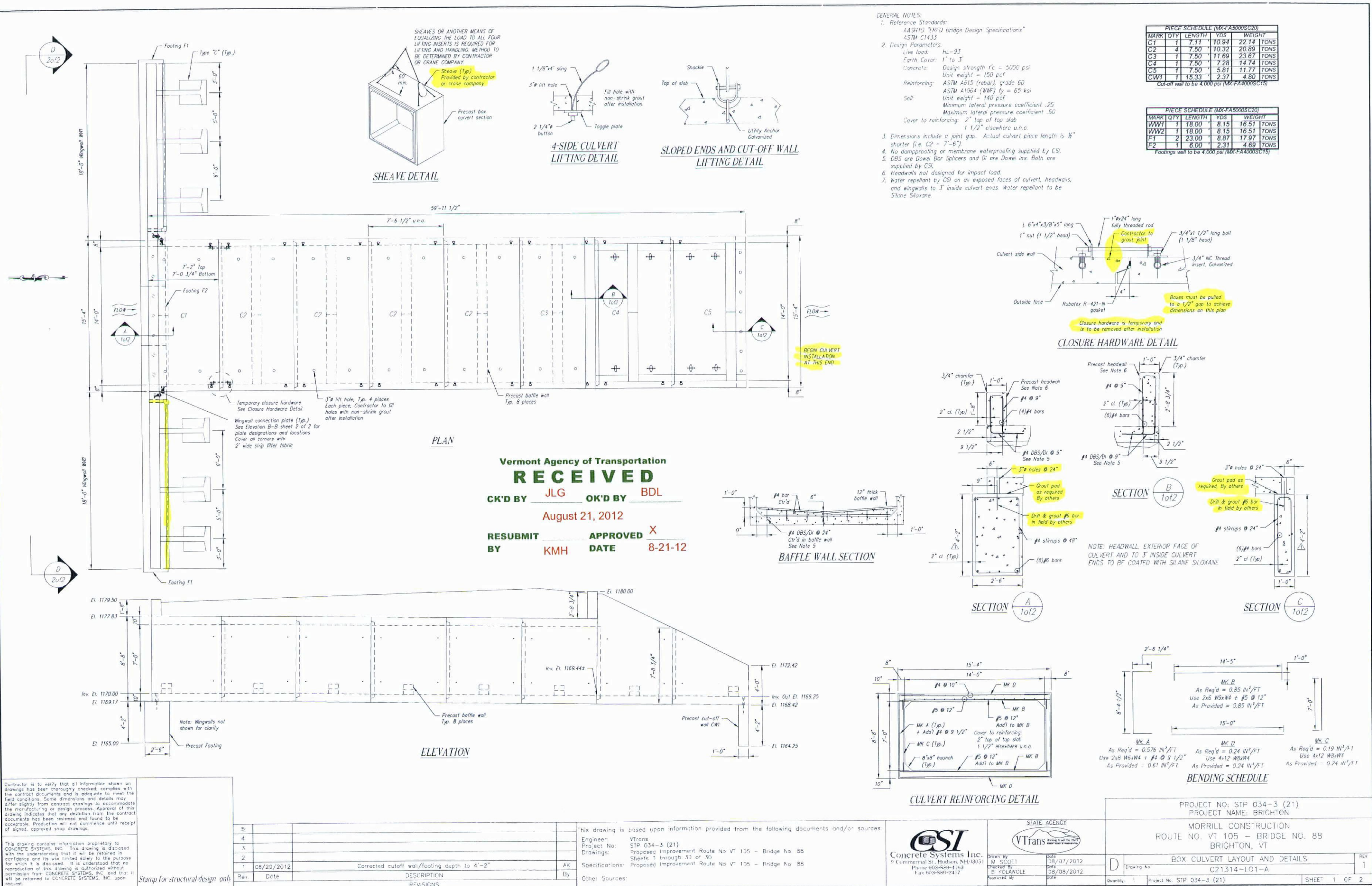
You must provide notice to Jim Wild, Structural Concrete Engineer, as to the date fabrication represented by these drawings will begin. That notice must be received and acknowledged at least seven days prior to that date, as per Specification 540. Jim may be contacted by phone at (802)828-6931 or email at jim_wild@state.vt.us. Any material fabricated prior to the notification date is subject to rejection without further cause.

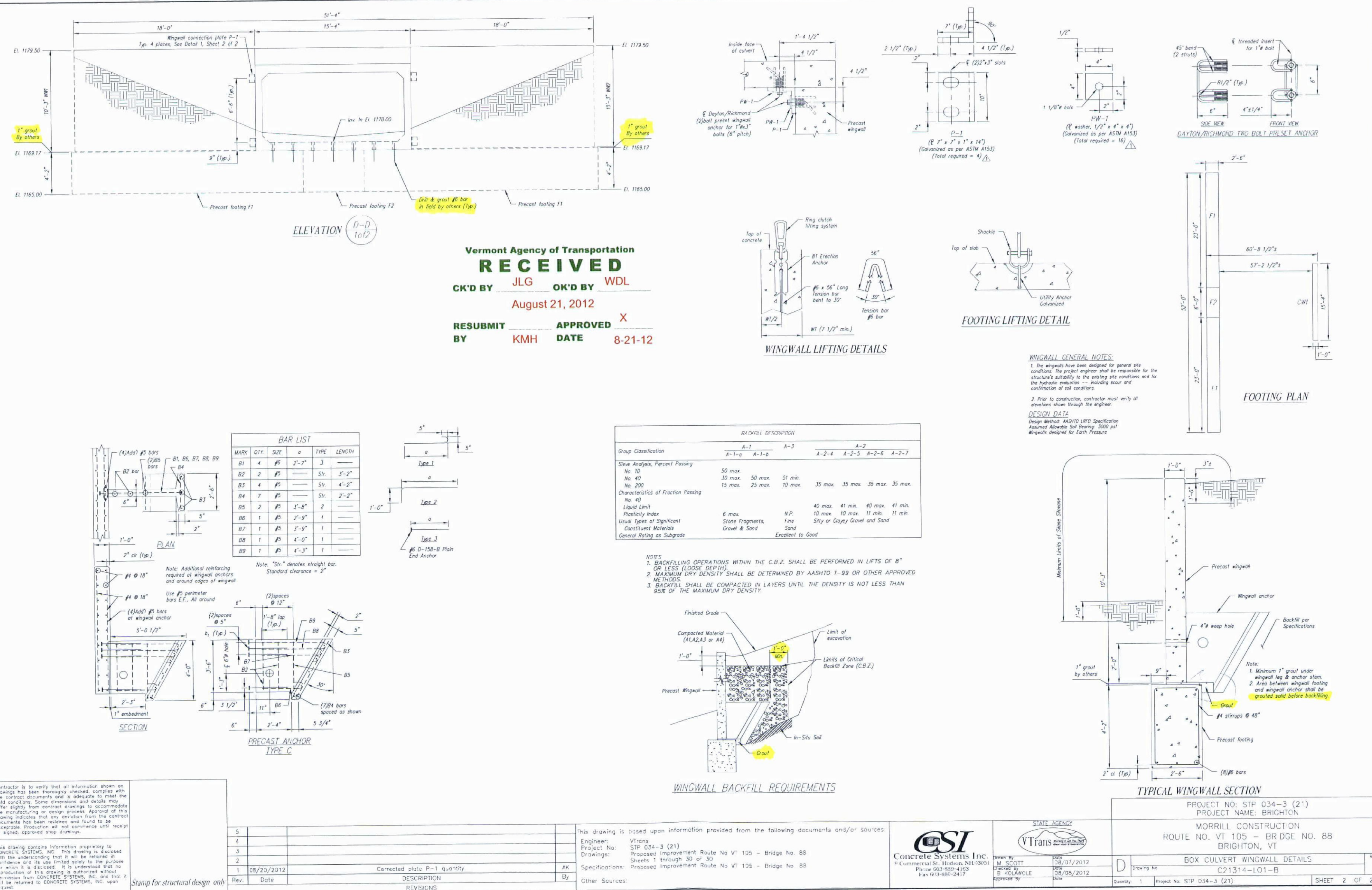
If you have any questions you can contact me at 802-828-0053.

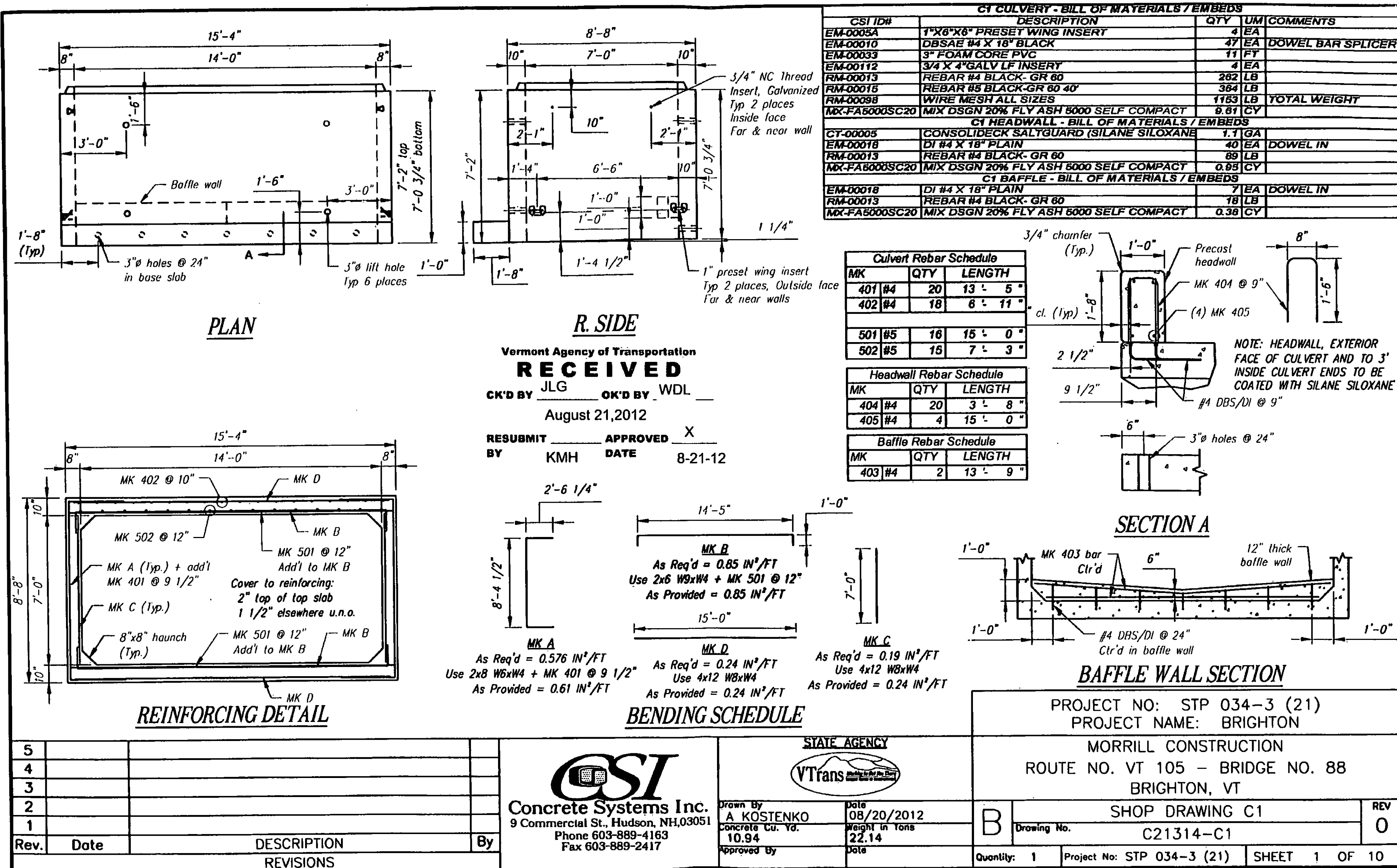
Sincerely,

Kristin Higgins, PE
Project Engineer

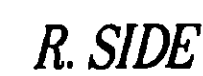
Attachments
cc: [X] Resident Engineer w/prints Doug Bumps
[X] Concrete Engineer w/prints Jim Wild
[X] Contractor w/prints Morrill Construction
[X] Construction Divison – letter only
[X] Materials & Research Section (C&IA Unit) – letter only
[X] Files (Structures)









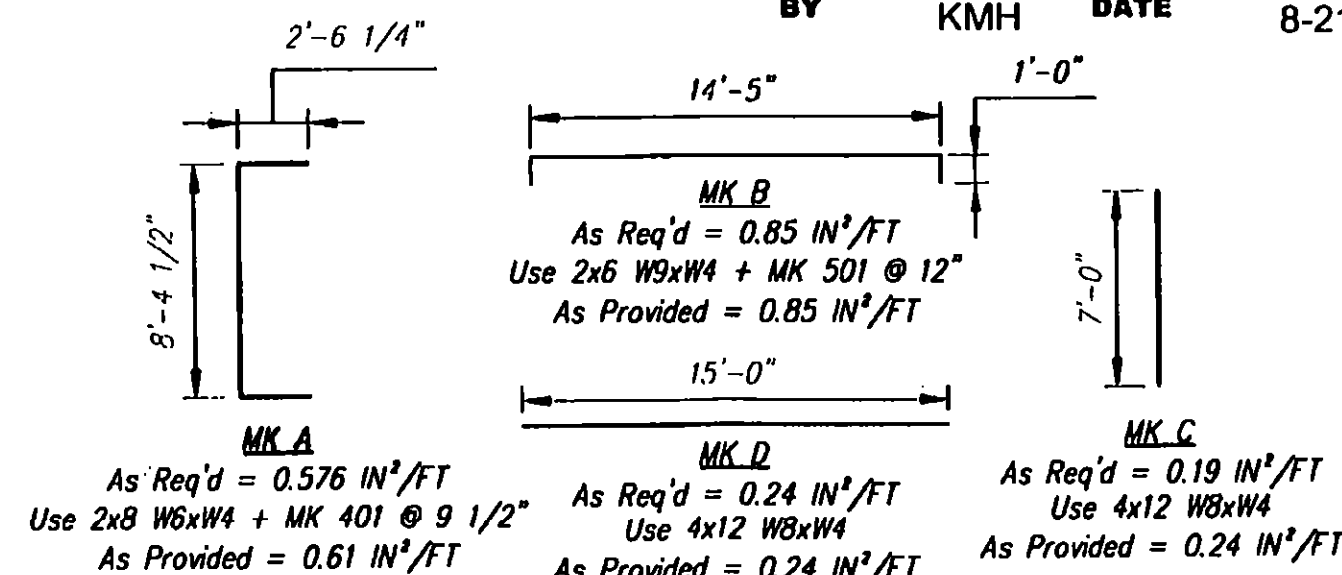


Culvert Rebar Schedule				
MK		QTY	LENGTH	
401	#4	20	13 ' 5 "	
402	#4	18	7 ' 3 "	
501	#5	16	15 ' 0 "	
502	#5	15	7 ' 3 "	

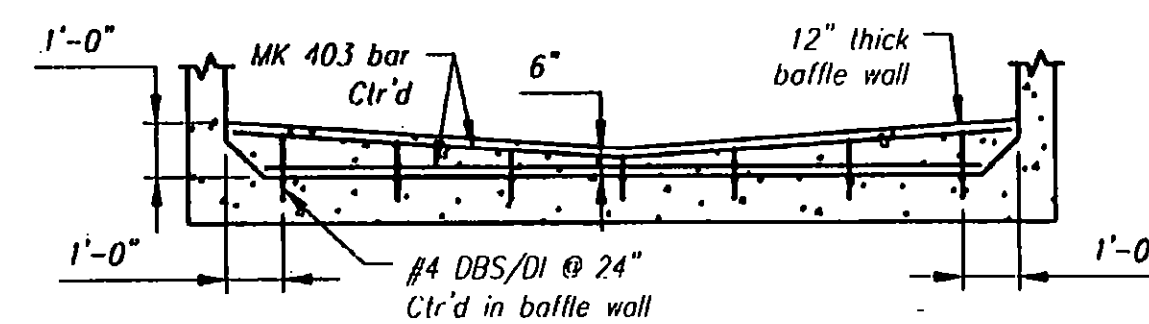
Baffle Rebar Schedule			
MK		QTY	LENGTH
403	#4	2	13' - 9"

Figure 10 is a plan view of a rectangular slab. The overall dimensions are 15'-4" in length and 8'-8" in width. The central rectangular area has dimensions of 14'-0" in length and 7'-0" in width. The slab is reinforced with MK 402 @ 10" along the top edge, MK 502 @ 12" along the bottom edge, and MK 501 @ 12" along the sides. The top edge also includes MK A (Typ.) + add'l MK 401 @ 9 1/2". A 1 1/2" top of top slab is shown, with a 1 1/2" elsewhere u.n.o. (unless otherwise noted). A 8" x 8" haunch (Typ.) is indicated at the corners.

REINFORCING DETAIL

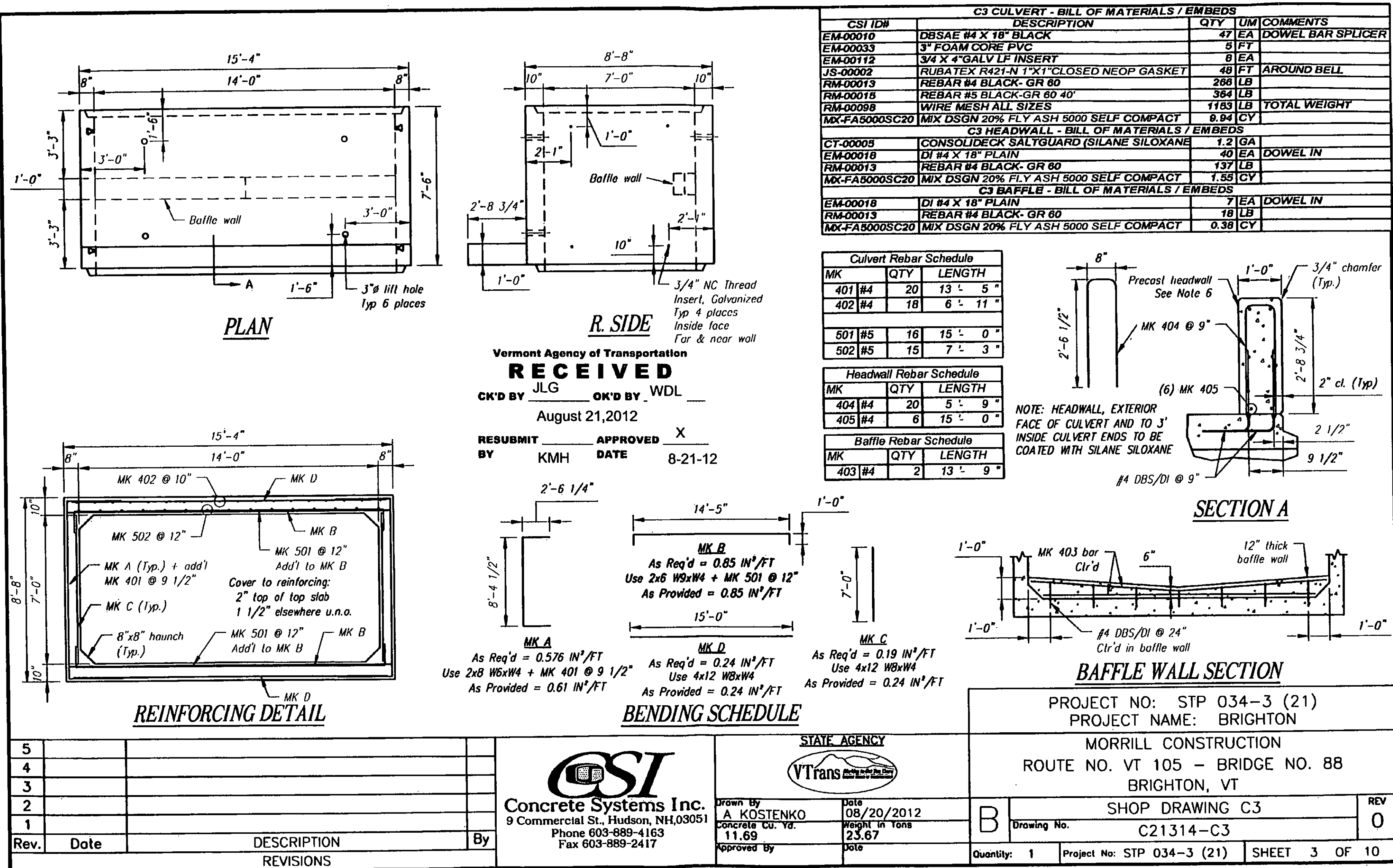


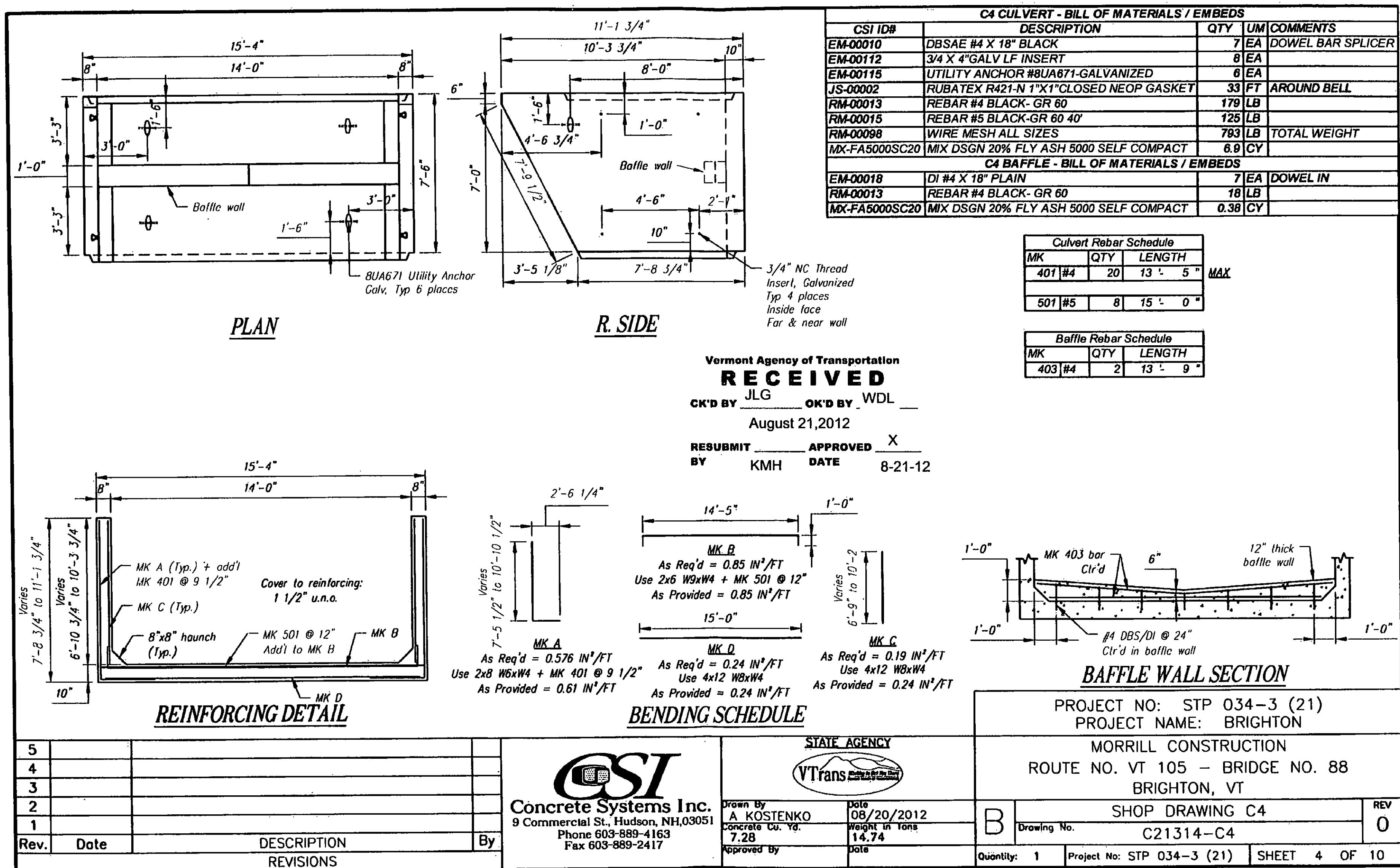
BENDING SCHEDULE

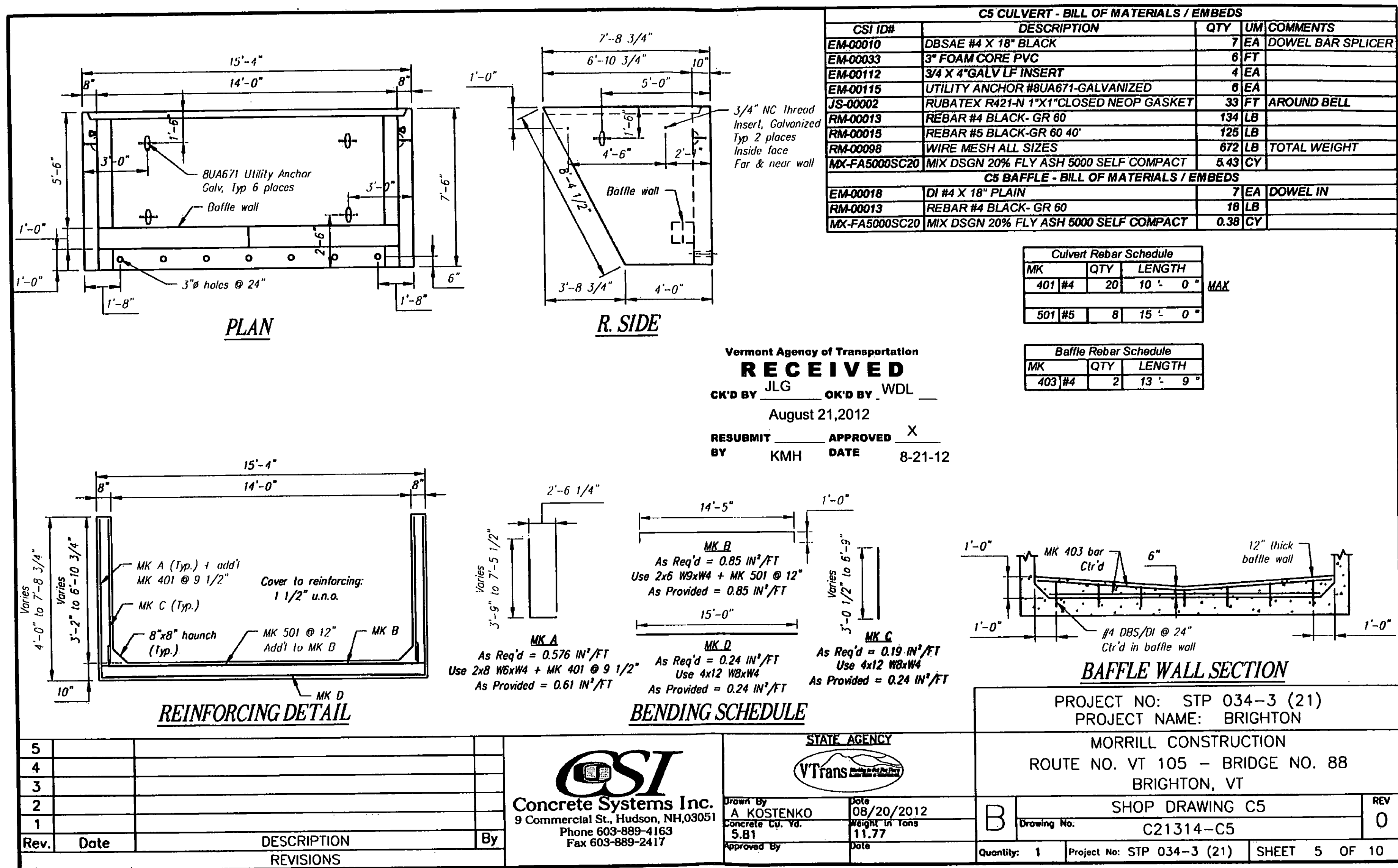


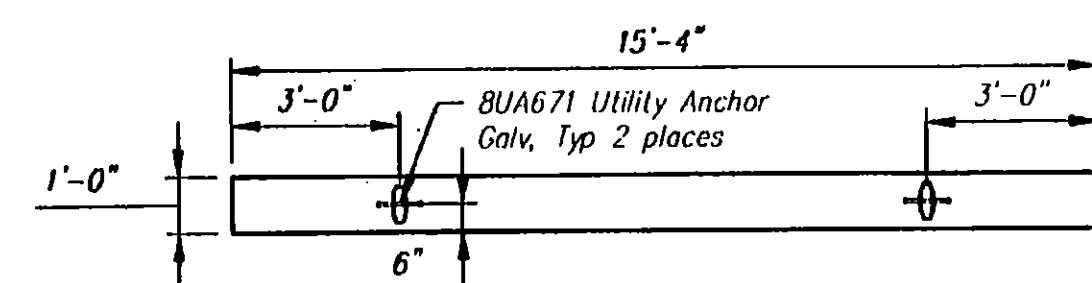
BAFFLE WALL SECTION

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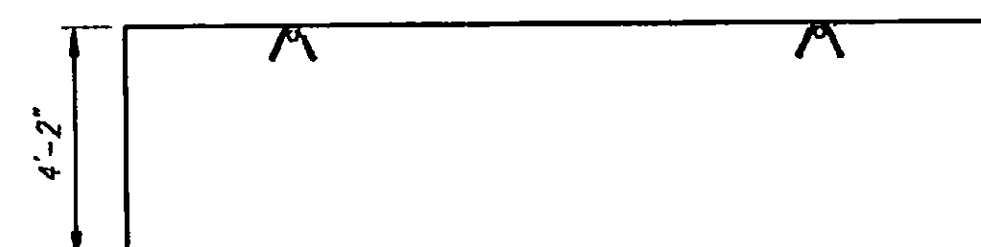




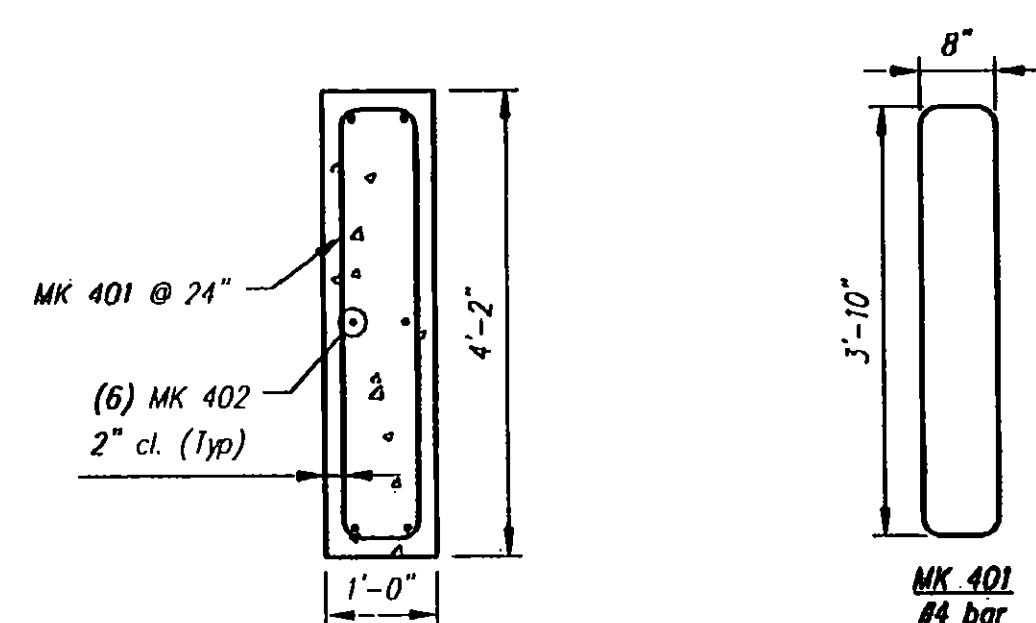




PLAN



ELEVATION



REINFORCING DETAIL

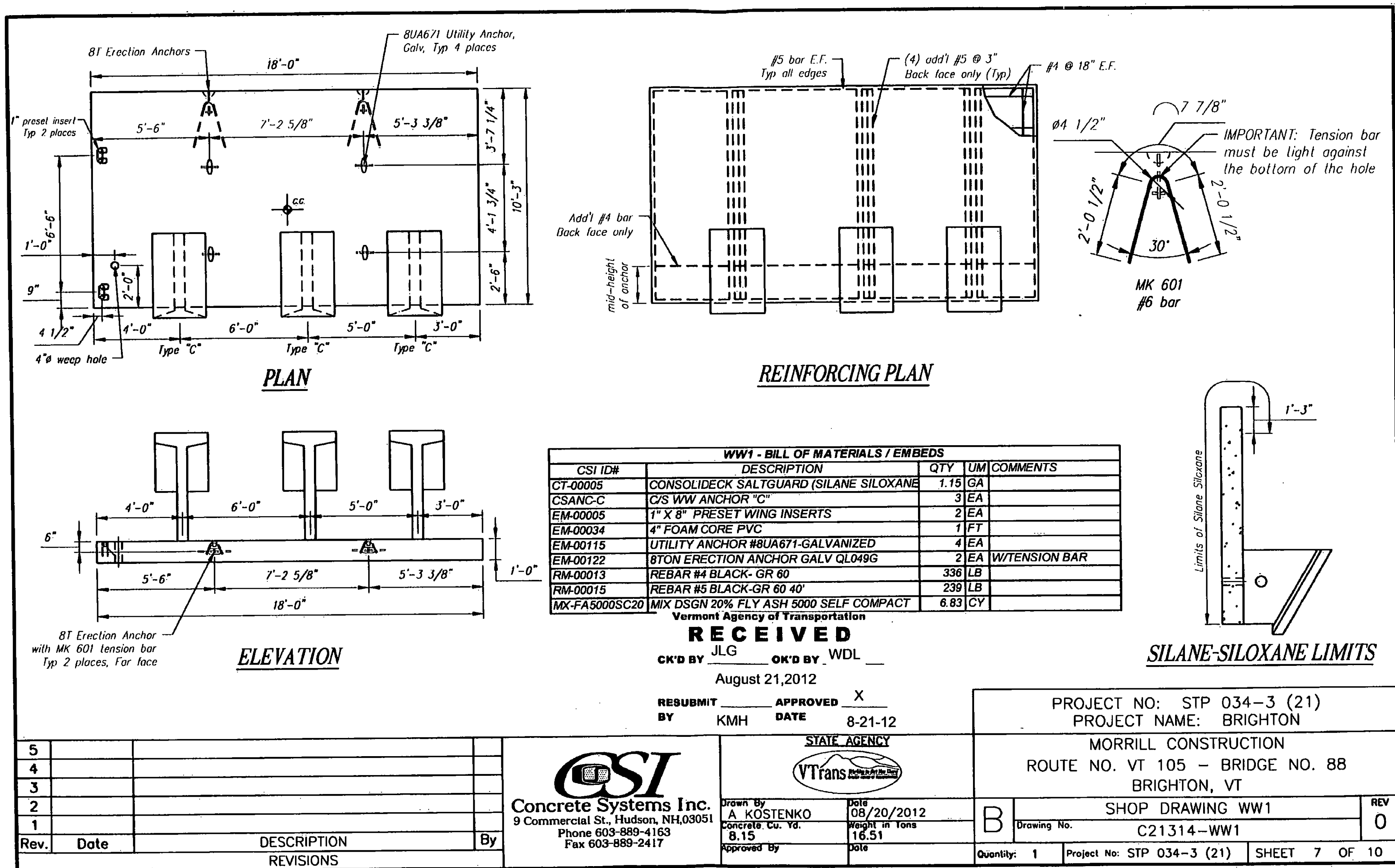
CW1 - BILL OF MATERIALS / EMBEDS				
CSI ID#	DESCRIPTION	QTY	UM	COMMENTS
EM-00115	UTILITY ANCHOR #8UA671-GALVANIZED	2	EA	
RM-00013	REBAR #4 BLACK- GR 60	120	LB	
MX-FA4000SC15	MIX DSGN 15% FLY ASH 4000 SELF COMPACT	2.37	CY	

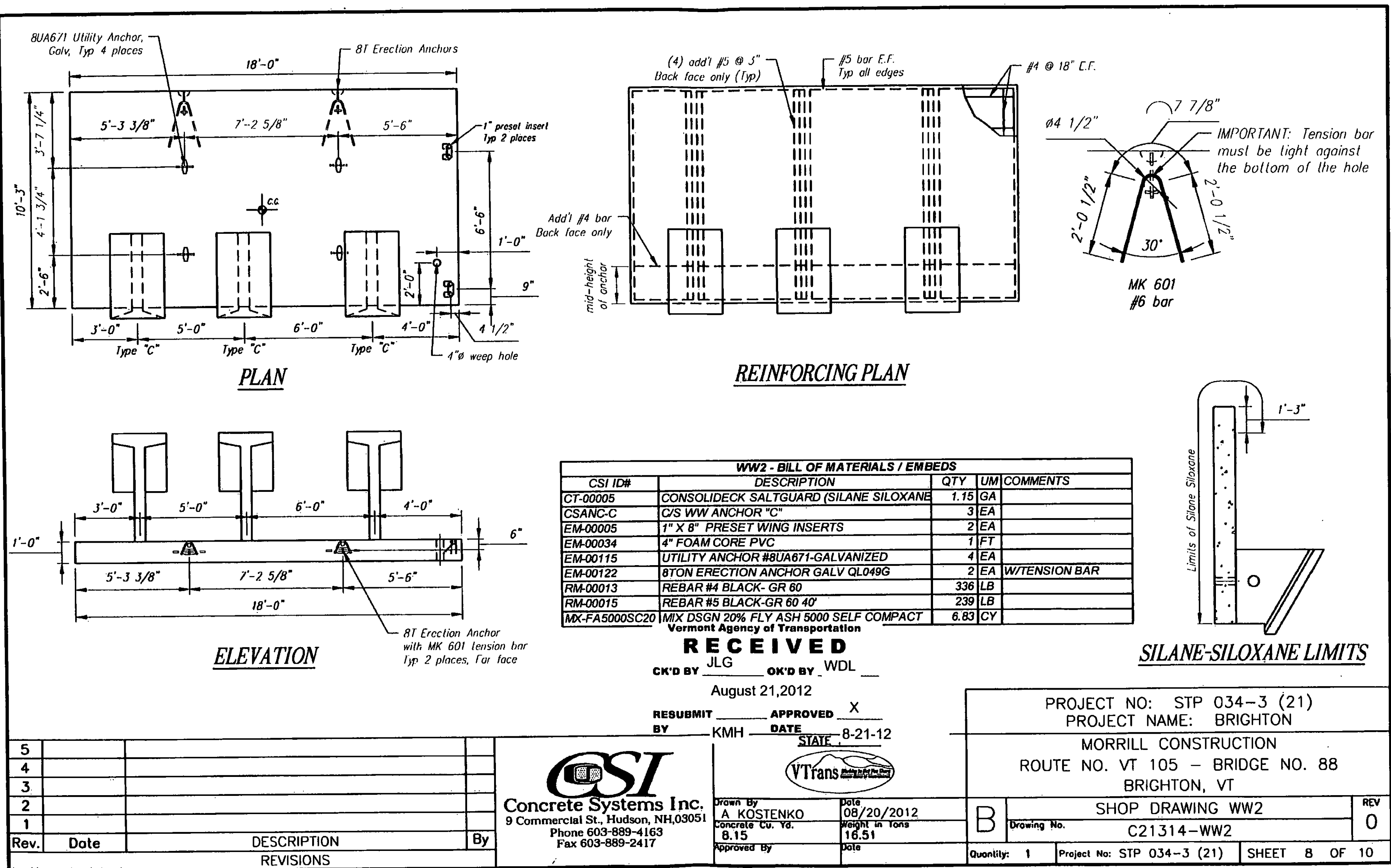
Rebar Schedule		
MK	QTY	LENGTH
401 #4	9	10' 0"
402 #4	6	15' 0"

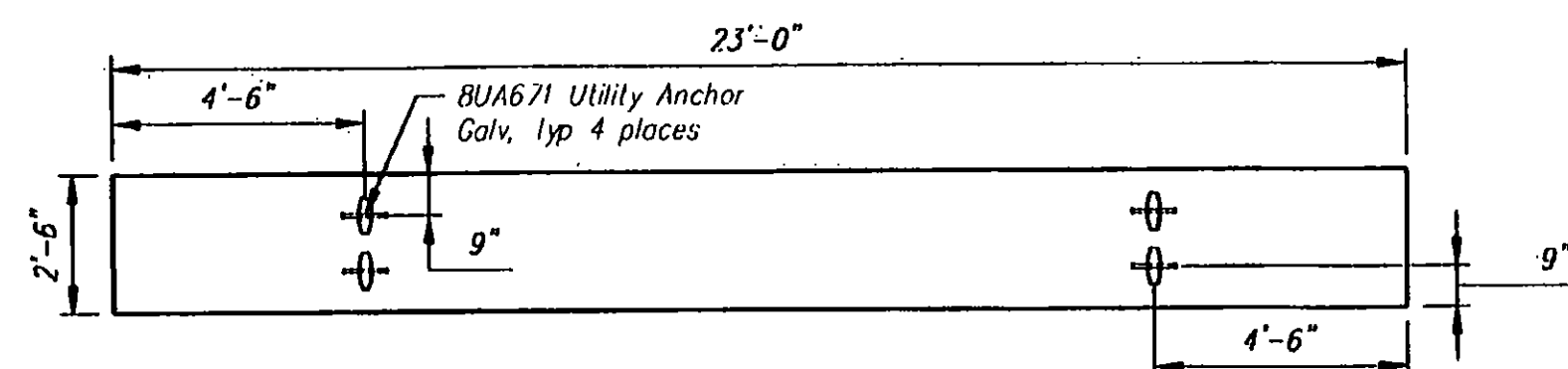
Vermont Agency of Transportation
RECEIVED
 CK'D BY JLG OK'D BY WDL
 August 21, 2012
 RESUBMIT _____ APPROVED X
 BY KMH DATE 8-21-12

5			
4			
3			
2			
1			
Rev.	Date	DESCRIPTION	By
REVISIONS			

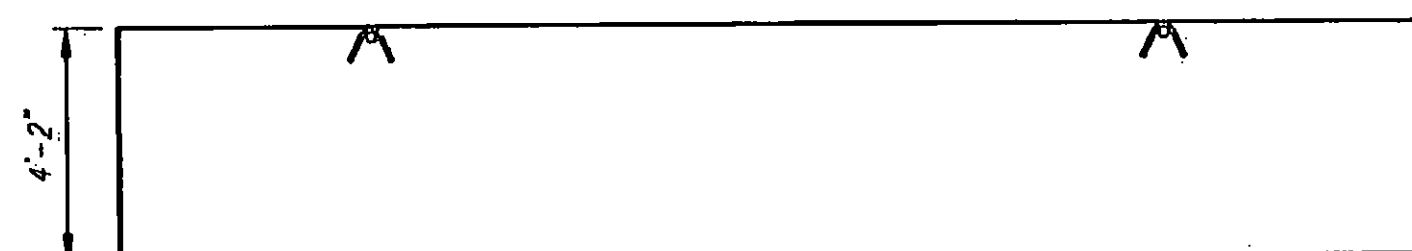
Concrete Systems Inc. 9 Commercial St., Hudson, NH 03051 Phone 603-889-4163 Fax 603-889-2417		STATE AGENCY 	PROJECT NO: STP 034-3 (21) PROJECT NAME: BRIGHTON MORRILL CONSTRUCTION ROUTE NO. VT 105 - BRIDGE NO. 88 BRIGHTON, VT
Drawn By A KOSTENKO Concrete Cu. Yd. 2.37 Approved By	Date 08/20/2012 Weight in Tons 4.80 Date	B Drawing No. C21314-CW1	REV 0
Quantity: 1		Project No: STP 034-3 (21)	SHEET 6 OF 10



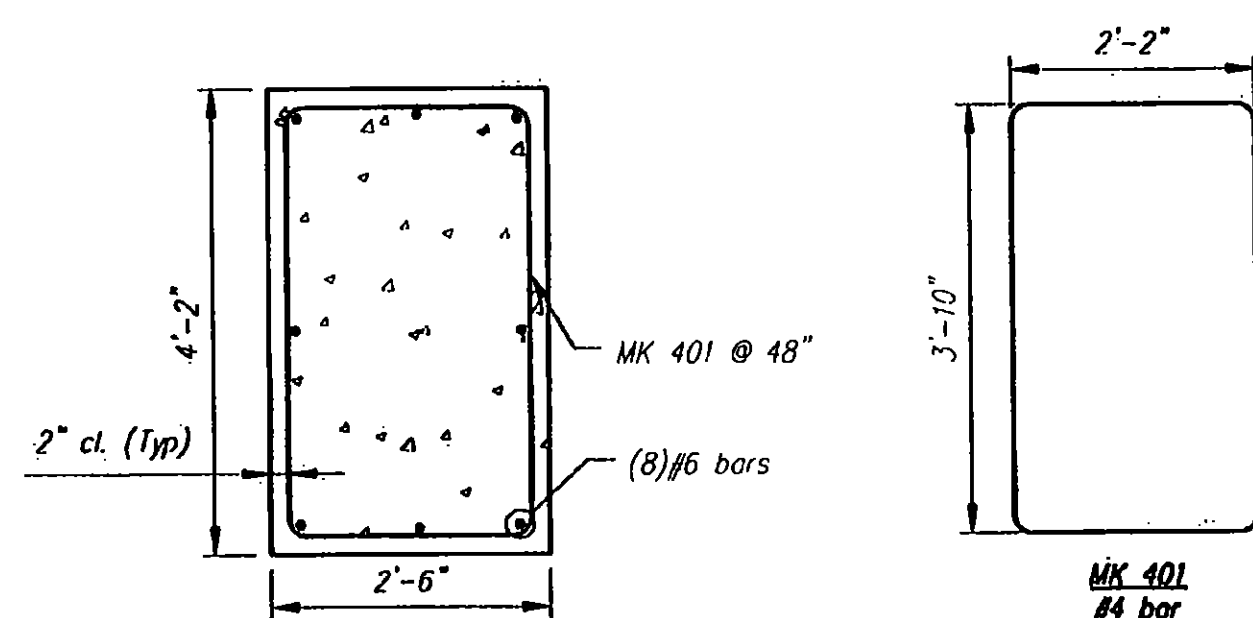




PLAN



ELEVATION



REINFORCING DETAIL

F1 - BILL OF MATERIALS / EMBEDS				
CSI ID#	DESCRIPTION	QTY	UM	COMMENTS
EM-00115	UTILITY ANCHOR #8UA671-GALVANIZED	4	EA	
RM-00013	REBAR #4 BLACK- GR 60	61	LB	
RM-00017	REBAR #6 BLACK-GR 60 40'	272	LB	
MX-FA4000SC15	MIX DSGN 15% FLY ASH 4000 SELF COMPACT	8.87	CY	

Vermont Agency of Transportation
RECEIVED
 CK'D BY JLG OK'D BY WDL
 August 21, 2012
 RESUBMIT _____ APPROVED X
 BY KMH DATE 8-21-12

5			
4			
3			
2			
1			
Rev.	Date	DESCRIPTION	By
REVISIONS			

CSI
 Concrete Systems Inc.
 9 Commercial St., Hudson, NH, 03051
 Phone 603-889-4163
 Fax 603-889-2417

STATE AGENCY
VTrans
 Drawn By A. KOSTENKO
 Date 08/20/2012
 Concrete Cu. Yd. 8.87
 Weight in Tons 17.97
 Approved By _____ Date _____

PROJECT NO: STP 034-3 (21)	
PROJECT NAME: BRIGHTON	
MORRILL CONSTRUCTION	
ROUTE NO. VT 105 - BRIDGE NO. 88	
BRIGHTON, VT	
B	SHOP DRAWING F1
	C21314-F1
Quantity: 2	Project No: STP 034-3 (21)
SHEET 9	OF 10

REV
0

**Vermont Agency of Transportation**

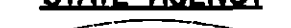
RECEIVED

CK'D BY JLG OK'D BY WDL

August 21, 2012

RESUBMIT _____ APPROVED X

BY KMH DATE 8-21-12

5			 Concrete Systems Inc. 9 Commercial St., Hudson, NH, 03051 Phone 603-889-4163 Fax 603-889-2417	STATE AGENCY 		MORRILL CONSTRUCTION ROUTE NO. VT 105 - BRIDGE NO. 88 BRIGHTON, VT			
4				Drawn By A. KOSTENKO	Date 08/20/2012	B	SHOP DRAWING F2		REV 0
3				Concrete Co. Yd. 2.31	Weight in tons 4.69		Drawing No. C21314-F2		
2				Approved By	Date		Quantity: 1	Project No: STP 034-3 (21)	SHEET 10 OF 10
1									
Rev.	Date	DESCRIPTION	By						
REVISIONS									