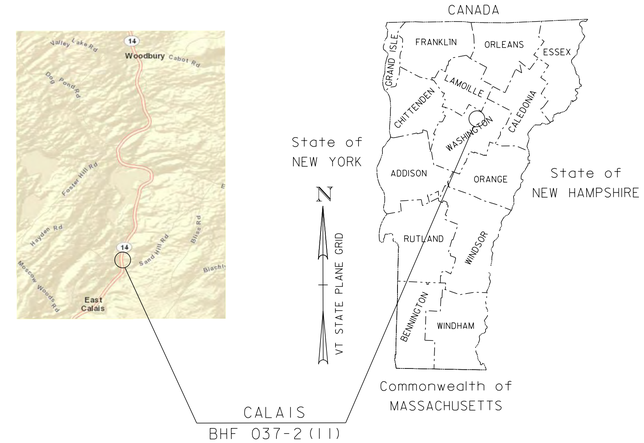
STATE OF VERMONT
AGENCY OF TRANSPORTATION

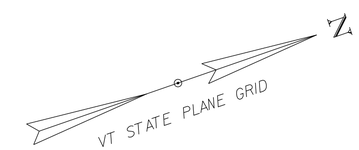


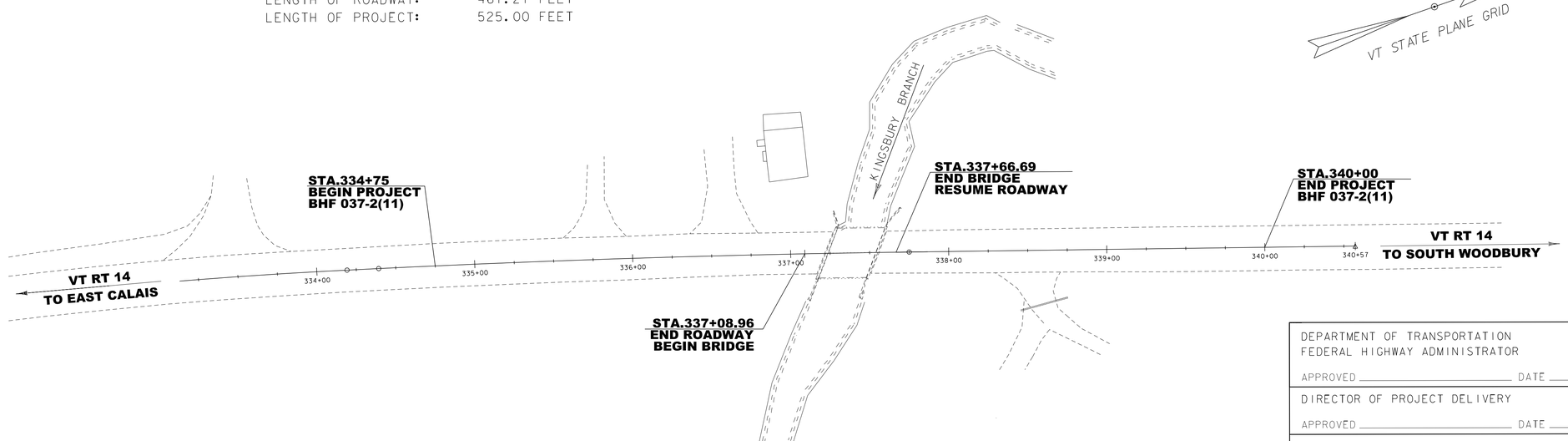
PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF CALAIS
COUNTY OF WASHINGTON
BRIDGE #82
VT ROUTE 14 (RURAL MINOR ARTERIAL)

PROJECT LOCATION: 9.4 MILES NORTH OF JUNCTION WITH US ROUTE 2

PROJECT DESCRIPTION: PHASED REMOVAL OF EXISTING STRUCTURE, AND PHASED REPLACEMENT WITH NEW STRUCTURE

LENGTH OF STRUCTURE: 57.73 FEET
LENGTH OF ROADWAY: 467.27 FEET
LENGTH OF PROJECT: 525.00 FEET





SCALE 1" = 40'-0
40 0 40

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

QUALITY ASSURANCE PROGRAM : LEVEL 2

SURVEYED BY : R. GILMAN
SURVEYED DATE : 04-30-2012

DATUM
VERTICAL NAVD88
HORIZONTAL NAD83 (1992)

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATOR
APPROVED _____ DATE _____

DIRECTOR OF PROJECT DELIVERY
APPROVED _____ DATE _____

PROJECT MANAGER : M. SARGENT

PROJECT NAME : CALAIS
PROJECT NUMBER : BHF 037-2(11)

SHEET 1 OF 32 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version
LRFD

INDEX OF SHEETS

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15 - 16	EPSC FINAL CONDITIONS SITE PLANS
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23	PLAN AND ELEVATION SHEET
24-28	MAINLINE CROSS SECTIONS
29 - 30	BANKING DIAGRAM AND MATERIAL TRANSITION SHEET
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S-364A	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM	04-23-2012
S-364B	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	04-23-2012

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: July 2014

DRAINAGE AREA : 15.1 sq. mi.
CHARACTER OF TERRAIN : Hilly, mostly forested, small ponds
STREAM CHARACTERISTICS : Incised, sinuous, alluvial
NATURE OF STREAMBED : Medium gravel, sand and silt

PEAK FLOW DATA

Q 2.33 =	770 cfs	Q 50 =	2240 cfs
Q 10 =	1375 cfs	Q 100 =	2560 cfs
Q 25 =	1810 cfs	Q 500 =	3360 cfs

DATE OF FLOOD OF RECORD: Unknown
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV.: Unknown
NATURAL STREAM VELOCITY : @ Q50 = 12.0 fps
ICE CONDITIONS : Moderate
DEBRIS: Moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No
IS ORDINARY RISE RAPID? No
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
IF YES, DESCRIBE:

WATERSHED STORAGE: 5%
HEADWATERS:
UNIFORM: X
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single span concrete t-beam bridge
YEAR BUILT: 1919, Reconstructed 1946
CLEAR SPAN(NORMAL TO STREAM): ~30'
VERTICAL CLEARANCE ABOVE STREAMBED: ~6'
WATERWAY OF FULL OPENING: 165 sq. ft.
DISPOSITION OF STRUCTURE: Remove and replace
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See borings

WATER SURFACE ELEVATIONS AT:

Q2.33 =	896.4'	VELOCITY =	8.2 fps
Q10 =	899.5'	"	11.8 fps
Q25 =	901.1'	"	9.4 fps
Q50 =	901.7'	"	10.0 fps
Q100 =	902.1'	"	10.4 fps

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
FREQUENCY: Below Q25
RELIEF ELEVATION: 900.5'
DISCHARGE OVER ROAD @Q100: 760 cfs

UPSTREAM STRUCTURE

TOWN:	Woodbury	DISTANCE:	9150'
HIGHWAY # :	VT 14	STRUCTURE #:	85
CLEAR SPAN:	11'	CLEAR HEIGHT:	
YEAR BUILT:	1947	FULL WATERWAY:	78 sq. ft.
STRUCTURE TYPE:	CGMPPA		

DOWNSTREAM STRUCTURE

TOWN:	Calais	DISTANCE:	4200'
HIGHWAY # :	VT 14	STRUCTURE #:	81
CLEAR SPAN:	32'	CLEAR HEIGHT:	
YEAR BUILT:	1919, reconstructed in 1946	FULL WATERWAY:	
STRUCTURE TYPE:	Concrete t-beam		

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:							

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span concrete NEXT beam bridge

CLEAR SPAN(NORMAL TO STREAM): ~51'
VERTICAL CLEARANCE ABOVE STREAMBED: ~8'
WATERWAY OF FULL OPENING: 350 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	896.6'	VELOCITY=	8.0 fps
Q10 =	897.9'	"	8.8 fps
Q25 =	898.4'	"	11.0 fps
Q50 =	899.5'	"	11.1 fps
Q100 =	901.1'	"	10.6 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
FREQUENCY: Above Q50
RELIEF ELEVATION: 900.6'
DISCHARGE OVER ROAD @Q100: 250 cfs

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 900.2'
VERTICAL CLEARANCE: @ Q50 = 0.7'

SCOUR: Contraction scour calculated at 4.0' @Q100

REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW:	30 cfs	DEPTH OR ELEVATION:
ORDINARY LOW WATER:	15 cfs	~1'
ORDINARY HIGH WATER:	330 cfs	~3'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: None required
CLEAR SPAN (NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:
WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN ONE-WAY TRAFFIC ON THE EXISTING STRUCTURE.
2. INSTALL AND MAINTAIN TRAFFIC SIGNALS.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD		HL-93
2. FUTURE PAVEMENT	d_p:	3.0 INCH
3. DESIGN SPAN	L:	57.73 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	- - -
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	f_y:	270 KSI
6. PRESTRESSED CONCRETE STRENGTH	f'_c:	8.0 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	6.0 KSI
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	f_y:	60 KSI
13. STRUCTURAL STEEL AASHTO M270	f_y:	- - -
14. NOMINAL BEARING RESISTANCE OF SOIL	q_n:	- - -
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	- - -
16. NOMINAL BEARING RESISTANCE OF ROCK	q_n:	- - -
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	- - -
18. PILE RESISTANCE FACTOR	ϕ:	- - -
19. LATERAL PILE DEFLECTION	Δ:	- - -
20. BASIC WIND SPEED	V_{3s}:	- - -
21. MINIMUM GROUND SNOW LOAD	p_g:	- - -
22. SEISMIC DATA PGA: - - -	S_s:	- - -
	S_1:	- - -
23.		
24.		- - -
25.		- - -
26.		- - -

AS BUILT "REBAR" DETAIL

LEVEL I	LEVEL II	LEVEL III
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

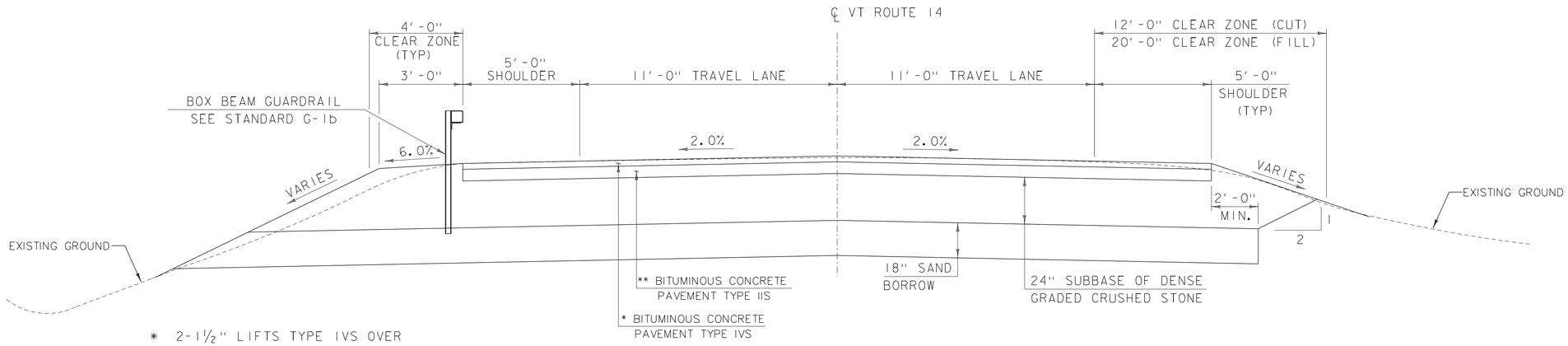
TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2015	2700	320	66	9.1	310
2035	2900	340	66	14.2	510

20 year ESAL for flexible pavement from 2015 to 2035 : 2075000
40 year ESAL for flexible pavement from 2015 to 2055 : 4731000
Design Speed : 50 mph

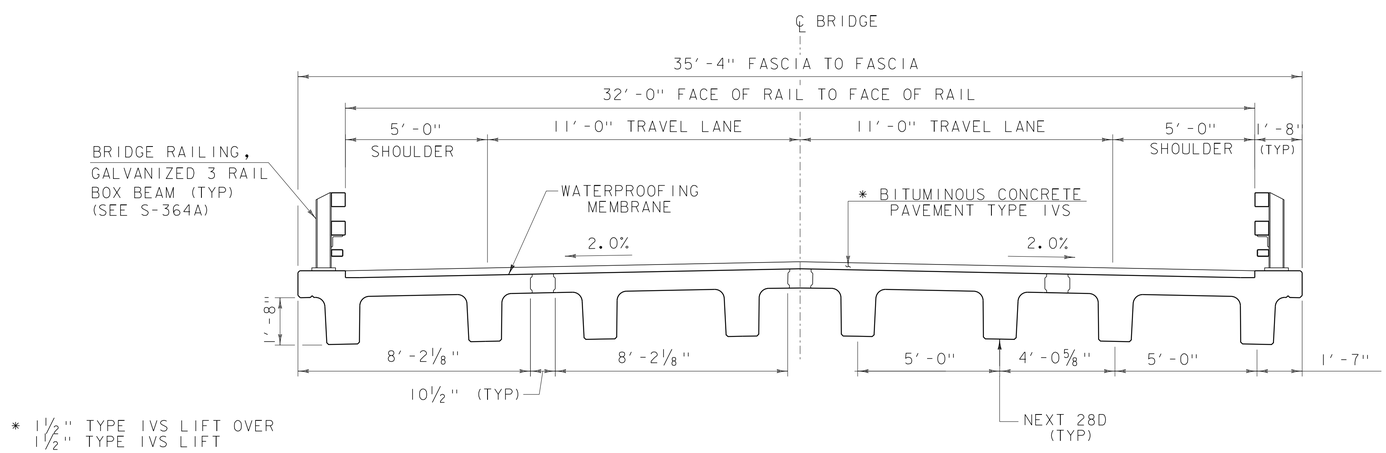
PROJECT NAME: **Calais**
PROJECT NUMBER: **BHF 037-2(11)**

FILE NAME:	z12b146pi.dgn	PLOT DATE:	8/20/2014
PROJECT LEADER:	G.K.DONINGTON	DRAWN BY:	S.BROWN
DESIGNED BY:	S.BROWN	CHECKED BY:	A.STOCKIN
PRELIMINARY INFORMATION SHEET 1		SHEET 2	OF 32



VT 14 TYPICAL SECTION

SCALE ⅜" = 1'-0"



BRIDGE TYPICAL SECTION

SCALE ⅜" = 1'-0"

GENERAL NOTES

MARKER POSTS: TO BE PLACED AS INDICATED BY THE ENGINEER.

SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD SHEET B - 5.

PAY LIMITS OF SAND BORROW: WHEN USED IN CONJUNCTION WITH UNDERDRAIN - SEE STANDARD SHEET D-30.

TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE OF 0.025 GAL/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT AS DIRECTED BY THE ENGINEER.

MATERIAL TOLERANCES

(IF USED ON PROJECT)

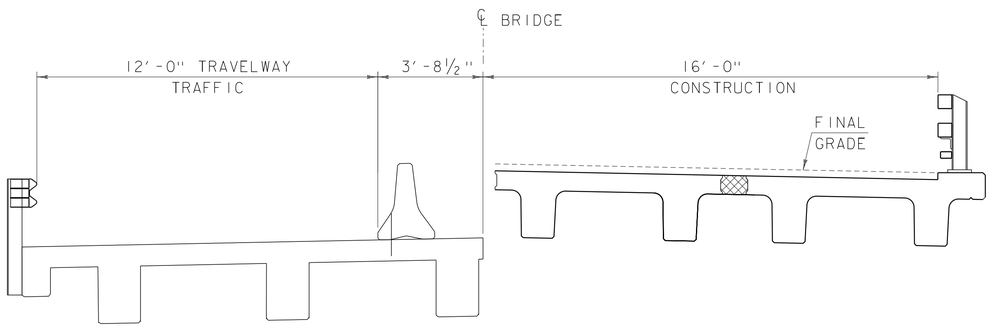
PAVEMENT (TOTAL DEPTH)	+/- ¼"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

PROJECT NAME: CALAIS
PROJECT NUMBER: BHF 037-2(11)

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

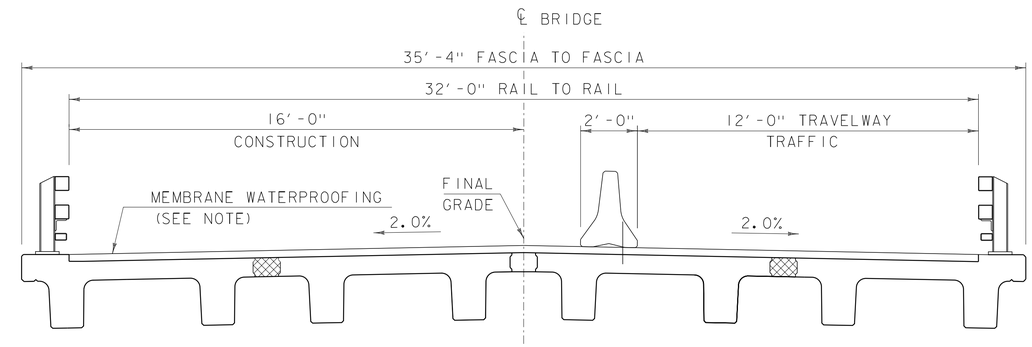
FILE NAME: z12b146typical.dgn
PROJECT LEADER: G.K.DONINGTON
DESIGNED BY: S.BROWN
TYPICAL SECTIONS (1)

PLOT DATE: 19-AUG-2014
DRAWN BY: S.BROWN
CHECKED BY: A.STOCKIN
SHEET 3 OF 32



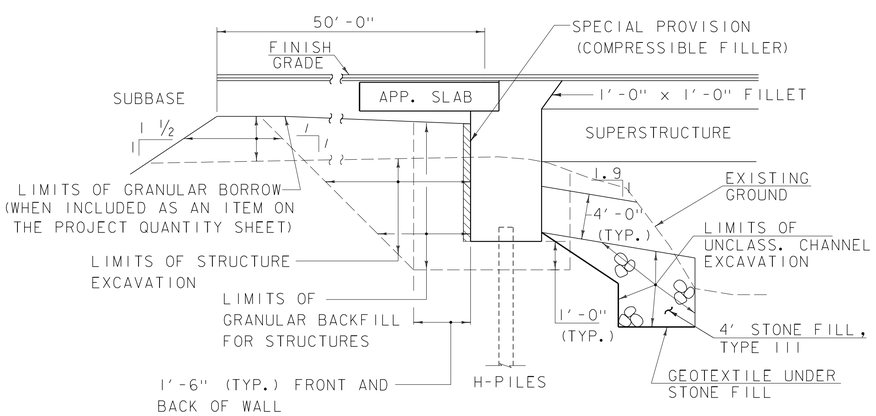
BRIDGE REPLACEMENT PHASE #1 TYPICAL SECTION

SCALE ⅜" = 1'-0"



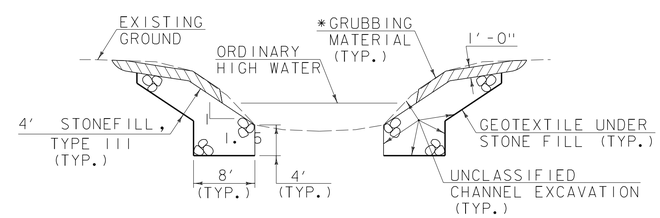
BRIDGE REPLACEMENT PHASE #2 TYPICAL SECTION

SCALE ⅜" = 1'-0"



TYPICAL ABUTMENT SECTION

NOT TO SCALE



TYPICAL CHANNEL SECTION

NOT TO SCALE

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

NOTE: SPRAY APPLIED MEMBRANE SHALL BE USED ON NEW COMPONENTS IF TRAFFIC WILL BE ON THE BARE DECK DURING THE WINTER MONTHS. IF NO SALT IS APPLIED TO THE BARE DECK, NO MEMBRANE IS REQUIRED BETWEEN PHASES, AND THE DECK WILL BE SAND BLASTED AND CLEANED BEFORE MEMBRANE AND PAVEMENT IS INSTALLED.

PROJECT NAME: CALAIS
PROJECT NUMBER: BHF 037-2(11)

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

FILE NAME: z12b146typical.dgn
PROJECT LEADER: G.K.DONINGTON
DESIGNED BY: S.BROWN
TYPICAL SECTIONS (2)

PLOT DATE: 19-AUG-2014
DRAWN BY: S.BROWN
CHECKED BY: A.STOCKIN
SHEET 4 OF 32

GPS CONTROL POINTS

HVCTRL #1

HAP AZ MK

NORTH = 686146.987
EAST = 1661704.252
ELEV. = 893.670

GENERAL LOCATION, CALAIS, VT. TO REACH FROM THE INTERSECTION OF VT ROUTE 14 AND VT ROUTE 214 IN NORTH MONTPELIER GO NORTH ALONG VT ROUTE 14 FOR 4.9 MI (7.9 KM) TO THE INTERSECTION OF MOSCOW WOODS ROAD LEFT IN EAST CALAIS VILLAGE. CONTINUE STRAIGHT AHEAD AND GO NORTH ALONG VT ROUTE 14 FOR 1.3 MI (2.1 KM) TO THE MARK ON THE LEFT. IT IS ABOUT 0.2 MI (0.3 KM) NORTH OF THE INTERSECTION OF VT ROUTE 14 AND BALENTINE ROAD. THE MARK IS SET 5 CM BELOW GROUND SURFACE IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT POURED 1.5 M (4.9 FT) DEEP. IT IS 8.6 M (28.2 FT) WEST OF AND ABOUT 1.5 M (4.9 FT) LOWER THAN THE CENTERLINE OF VT ROUTE 14, 21.4 M (70.2 FT) WEST OF POLE NO.42, 54.4 M (178.5 FT) SOUTHWEST OF POLE NO.43, AND 0.3 M (1.0 FT) EAST OF A FIBERGLASS WITNESS POST.

HVCTRL #2

HAP

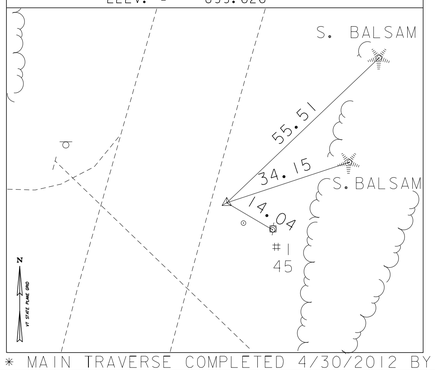
NORTH = 688019.608
EAST = 1662266.525
ELEV. = 926.050

GENERAL LOCATION, CALAIS, VT. OWNERSHIP, HAP AND FLO HARTMAN, ROUTE 14, EAST CALAIS, VT.05650. PHONE 802-456-7467. TO REACH FROM THE INTERSECTION OF VT ROUTE 14 AND VT ROUTE 214 IN NORTH MONTPELIER GO NORTH ALONG VT ROUTE 14 FOR 4.9 MI (7.9 KM) TO THE INTERSECTION OF MOSCOW WOODS ROAD LEFT IN EAST CALAIS VILLAGE. CONTINUE STRAIGHT AHEAD AND GO NORTH ALONG VT ROUTE 14 FOR 1.7 MI (2.7 KM) TO THE MARK ON THE LEFT ON TOP OF A SMALL KNOLL. THE MARK IS SET 3 CM BELOW GROUND SURFACE IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT POURED 1.5 M (4.9 FT) DEEP. IT IS 14.7 M (48.2 FT) WEST OF AND ABOUT 3 M (9.8 FT) HIGHER THAN THE CENTERLINE OF VT ROUTE 14, 30.8 M (101.0 FT) NORTH OF POLE NO.52, 26.8 M (87.9 FT) SOUTH OF POLE NO.1/53, AND 0.3 M (1.0 FT) EAST OF A FIBERGLASS WITNESS POST.

TRAVERSE TIES

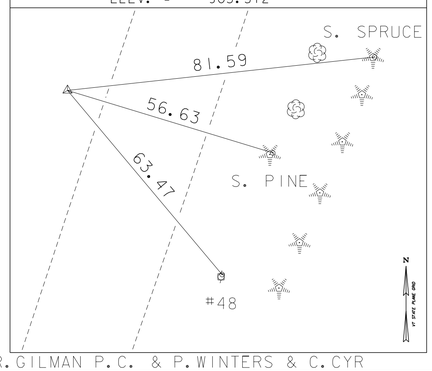
HVCTRL #3

NORTH = 686689.546
EAST = 1661859.106
ELEV. = 899.626



HVCTRL #4

NORTH = 687247.714
EAST = 1661991.095
ELEV. = 903.572



* MAIN TRAVERSE COMPLETED 4/30/2012 BY R.GILMAN P.C. & P.WINTERS & C.CYR

ALIGNMENT TIES

POB 331+75.00

NORTH = 686500.5011
EAST = 1661794.3283
ELEV. =

ALIGNMENT TIES

PC 332+16.09

NORTH = 686540.6033
EAST = 1661803.2680
ELEV. =

PT 334+19.15

NORTH = 686737.2160
EAST = 1661853.9091
ELEV. =

PC 334+39.20

NORTH = 686756.4569
EAST = 1661859.5428
ELEV. =

PT 337+75.00

NORTH = 687076.9900
EAST = 1661959.5792
ELEV. =

POE 340+57.26

NORTH = 687344.9034
EAST = 1662048.4188
ELEV. =

DATUM

VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)
ADJUSTMENT NONE

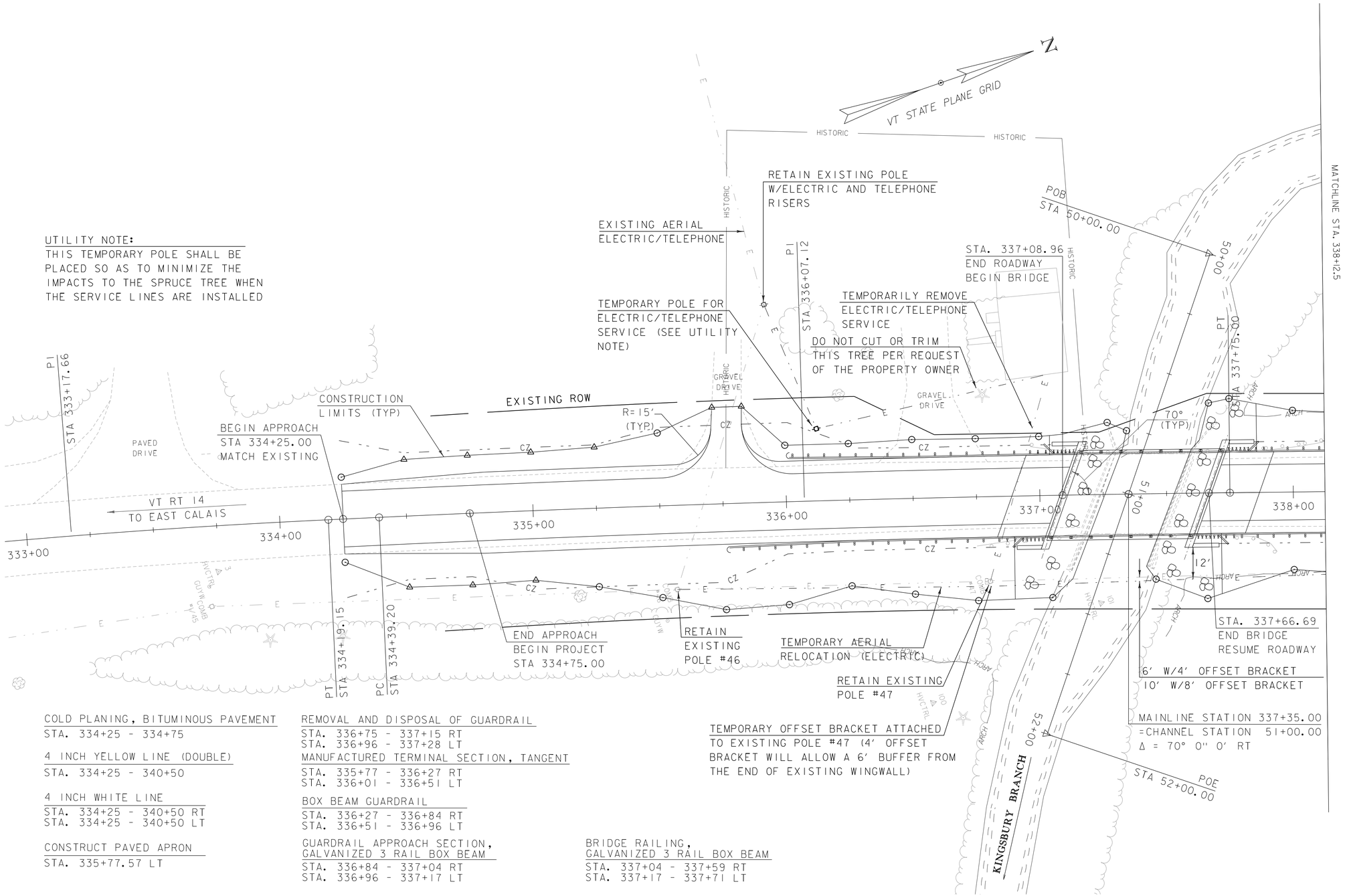
PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

PROJECT NAME: CALAIS
PROJECT NUMBER: BHF 037-2 (II)

FILE NAME: z12bl46ti.dgn
PROJECT LEADER: G.K.DONINGTON
DESIGNED BY: S.BROWN
SURVEY TIE SHEET

PLOT DATE: 19-AUG-2014
DRAWN BY: S.BROWN
CHECKED BY: R.BENJAMIN
SHEET 5 OF 32

VT ROUTE 14
CURVE #1
DELTA = 2°01′30.88″
D = 0°36′11.21″
R = 9500.00′
T = 167.92′
L = 335.80′
E = 1.48′



COLD PLANING, BITUMINOUS PAVEMENT
STA. 334+25 - 334+75

4 INCH YELLOW LINE (DOUBLE)
STA. 334+25 - 340+50

4 INCH WHITE LINE
STA. 334+25 - 340+50 RT
STA. 334+25 - 340+50 LT

CONSTRUCT PAVED APRON
STA. 335+77.57 LT

REMOVAL AND DISPOSAL OF GUARDRAIL
STA. 336+75 - 337+15 RT
STA. 336+96 - 337+28 LT

MANUFACTURED TERMINAL SECTION, TANGENT
STA. 335+77 - 336+27 RT
STA. 336+01 - 336+51 LT

BOX BEAM GUARDRAIL
STA. 336+27 - 336+84 RT
STA. 336+51 - 336+96 LT

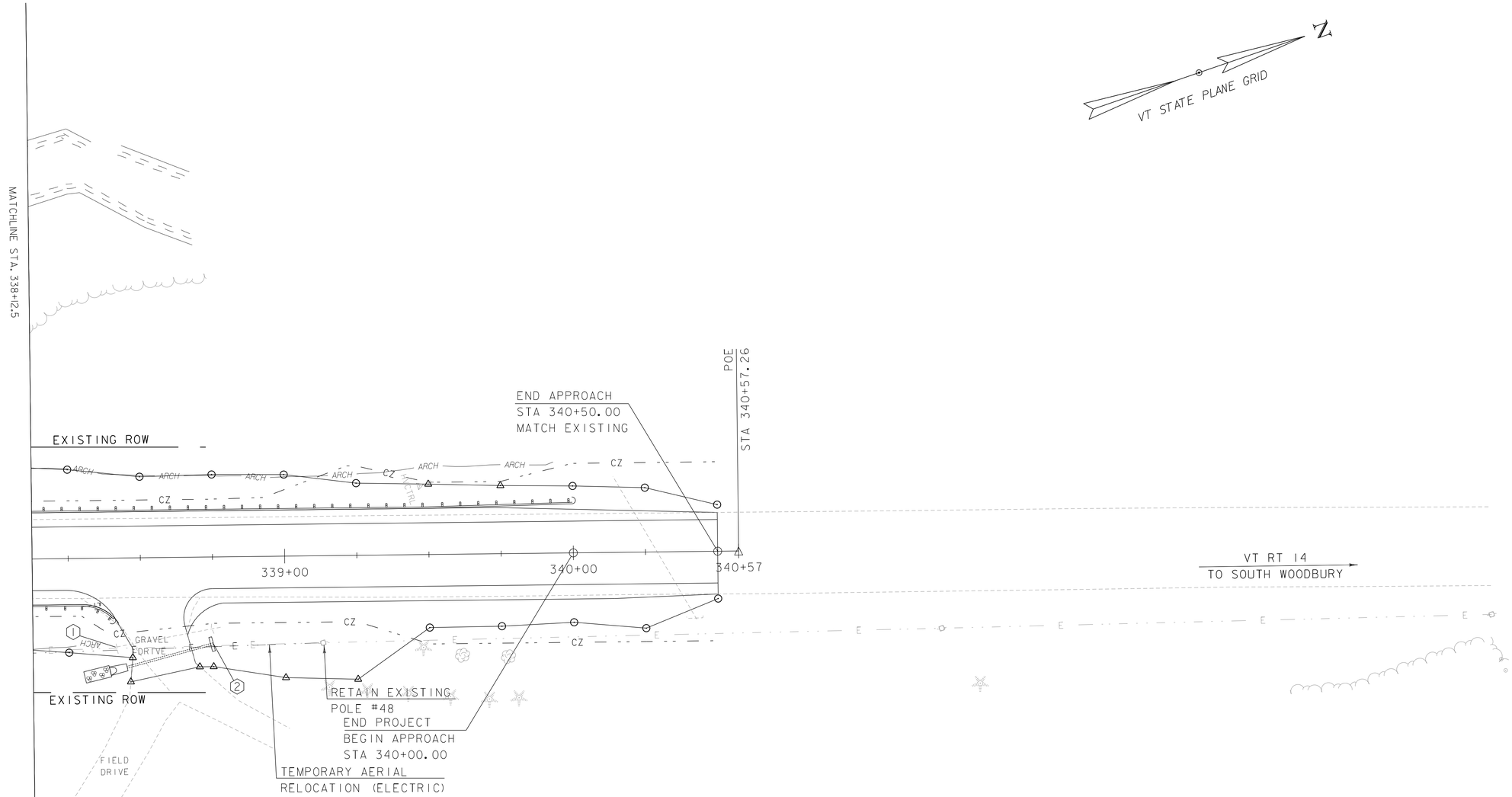
GUARDRAIL APPROACH SECTION,
GALVANIZED 3 RAIL BOX BEAM
STA. 336+84 - 337+04 RT
STA. 336+96 - 337+17 LT

BRIDGE RAILING,
GALVANIZED 3 RAIL BOX BEAM
STA. 337+04 - 337+59 RT
STA. 337+17 - 337+71 LT

SCALE 1″ = 20′-0″
20 0 20

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146bdr1.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: S.BROWN
DESIGNED BY: S.BROWN	CHECKED BY: A.STOCKIN
LAYOUT SHEET (1)	SHEET 6 OF 32



COLD PLANING, BITUMINOUS PAVEMENT
STA. 340+00 - 340+50

REMOVAL AND DISPOSAL OF GUARDRAIL
STA. 337+49 - 337+94 RT
STA. 337+62 - 338+12 LT

GUARDRAIL APPROACH SECTION,
GALVANIZED 3 RAIL BOX BEAM
STA. 337+59 - 337+80 RT
STA. 337+71 - 337+92 LT

BOX BEAM GUARDRAIL
STA. 337+80 - 338+41 RT
STA. 337+92 - 339+50 LT

GUARDRAIL TERMINAL SECTION, TANGENT
STA. 339+50 - 340+00 LT

ANCHOR FOR STEEL BEAM GUARDRAIL
STA. 338+35 RT 16.6'

DRAINAGE NOTES

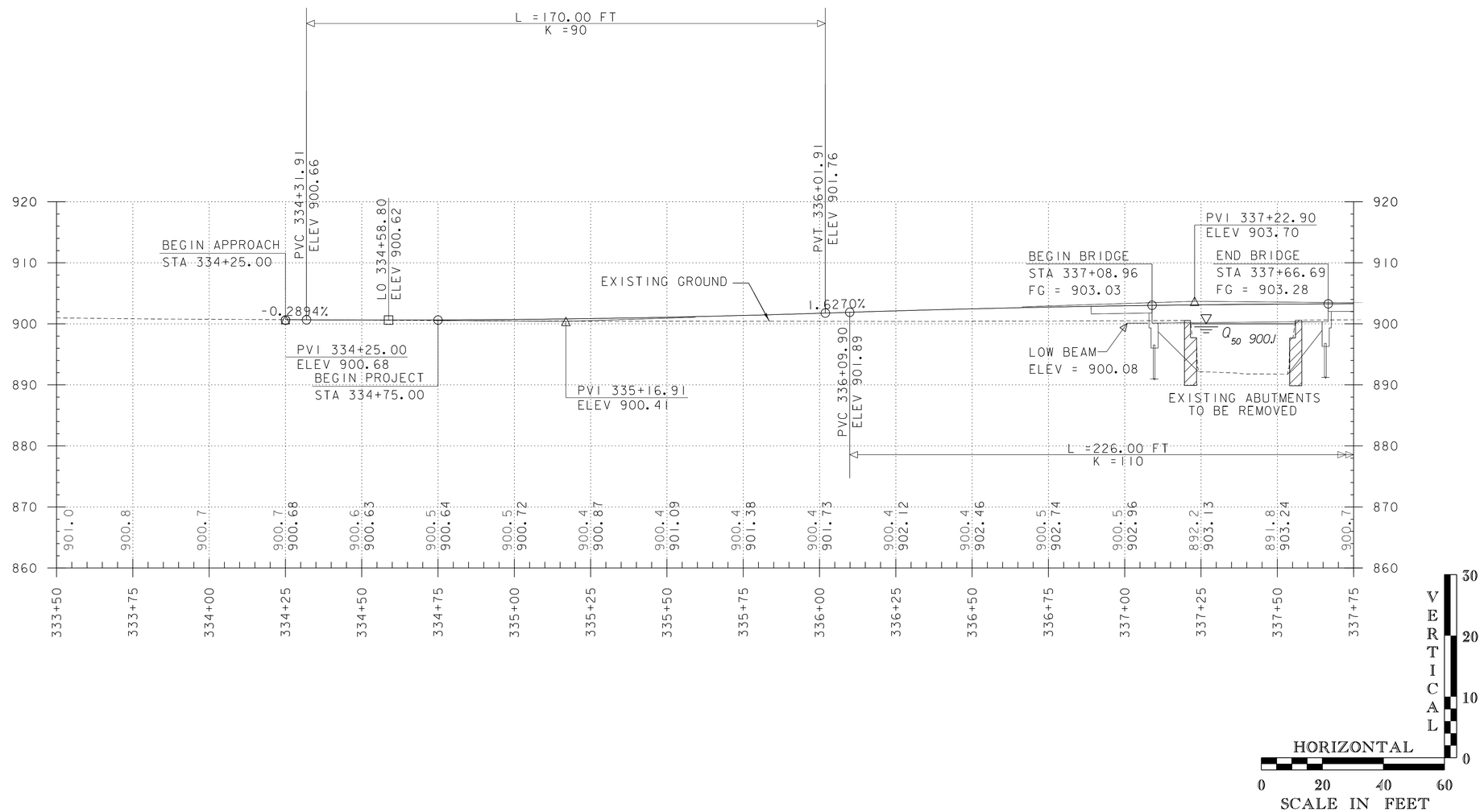
(1) STA 338+41.11 RT 30.87 - STA 338+77.54 RT 24.38
REMOVE EXISTING HEADWALLS AND 15" CSP

(2) STA 338+39.18 RT 39.18 - STA 338+75.00 RT 30.08
CONSTRUCT REINFORCED CONCRETE HEADWALL & PIPE END SECTION
SEE CROSS SECTION FOR INVERTS
CONSTRUCT 31 LF 15" CSP
4'X9' STONE PAD TYPE II AT OUTLET

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

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146bdr1.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: S.BROWN
DESIGNED BY: S.BROWN	CHECKED BY: A.STOCKIN
LAYOUT SHEET (2)	SHEET 7 OF 32

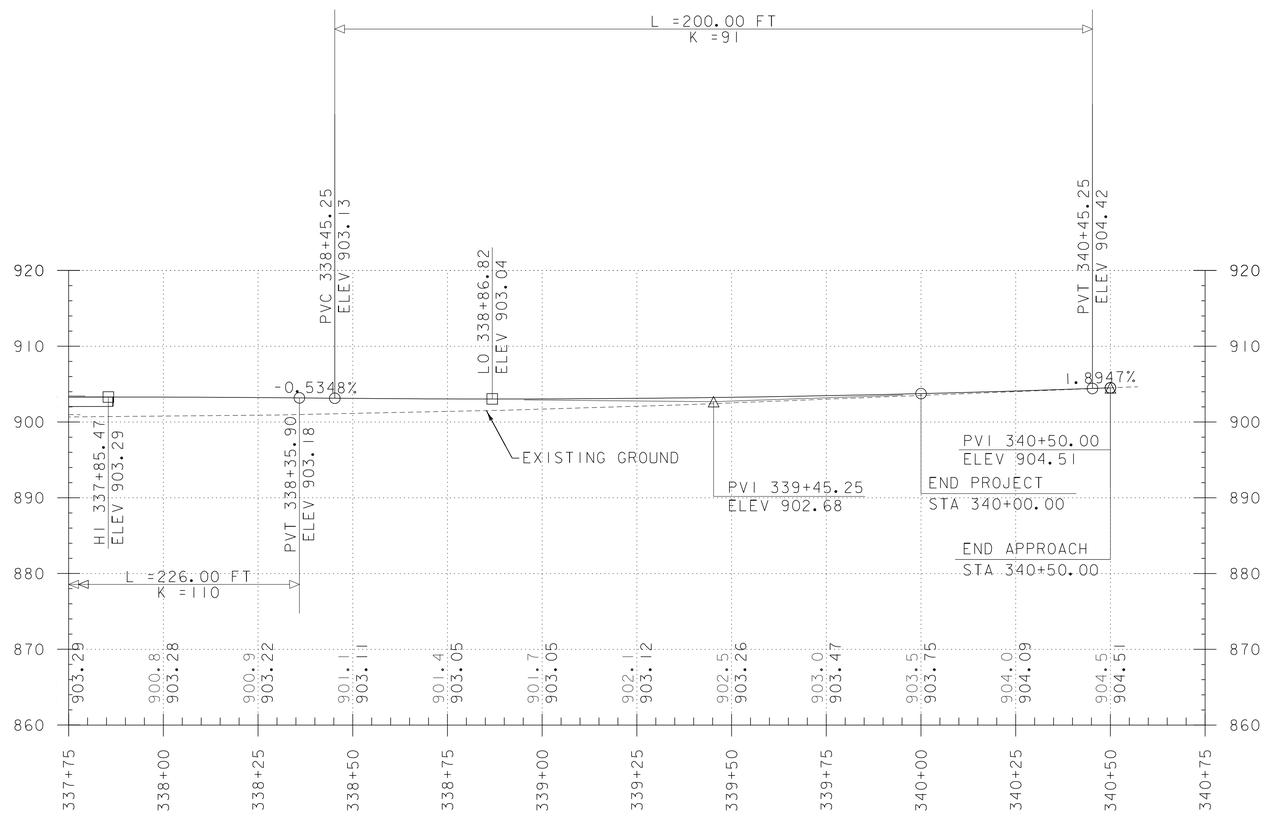


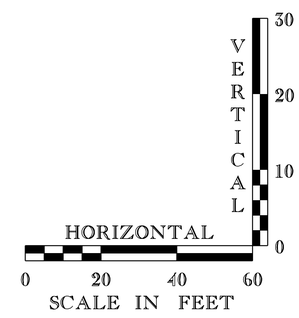
NOTE:

GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG ℄

GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG ℄

PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146profile.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: S.BROWN
DESIGNED BY: J.KHERA	CHECKED BY: R.BENJAMIN
PROFILE SHEET (1)	SHEET 8 OF 32





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GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG ℄

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PROJECT LEADER: G.K.DONINGTON	DRAWN BY: S.BROWN
DESIGNED BY: J.KHERA	CHECKED BY: R.BENJAMIN
PROFILE SHEET (2)	SHEET 9 OF 32

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF A 34' - 1 SPAN CONCRETE T-BEAM BRIDGE. THE BRIDGE WILL BE REPLACED WITH A 57.7' SINGLE SPAN PRESTRESSED CONCRETE NEXT D BEAM BRIDGE OVER KINGSBURY BRANCH. THE BRIDGE IS LOCATED IN THE TOWN OF CALAIS, ON VT ROUTE 14.

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 1.10 ACRES.

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

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS MOSTLY WELL ESTABLISHED FOREST WITH OCCASIONAL OPEN AREAS. VT ROUTE 14 IS WITHIN THE PROJECT SITE. THERE ARE SEVERAL RESIDENTIAL DWELLINGS WITHIN THE PROPOSED PROJECT LIMITS, AS WELL AS OTHER RESIDENCES WITHIN A GENERAL PROXIMITY ALONG VT ROUTE 14.

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

THE KINGSBURY BRANCH IS THE ONLY OPEN WATER SOURCE ON THIS PROJECT. THE BROOK IS CLASSIFIED AS A GRADUAL, INCISED CHANNEL WITH STEEP BANKS, AND A STREAM BED CONSISTING MOSTLY OF GRAVELLY SAND WITH COBBLES.
VT ROUTE 14 HAS A CROSS PIPE WITHIN THE PROJECT LIMITS, ALONG WITH ONE DRIVEWAY CULVERT.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY THE REPLACEMENT OF THE EXISTING BRIDGE. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE AGENCY OF NATURAL RESOURCES:

WD – WEIDER VERY FINE SANDY LOAM, SLOPES 0 TO 3%, "K FACTOR"=0.32, NOT HIGHLY ERODIBLE.

Ru- RUMNEY FINE SANDY LOAM, SLOPES 0 TO 2%, "K FACTOR"=0.24, NOT HIGHLY ERODIBLE.

SeA- STETSON LOAM, SLOPES 3 TO 8%, "K FACTOR"=0.17, NOT HIGHLY ERODIBLE.

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: EXISTING STRUCTURE NOT HISTORIC, BUT RESIDENCE IMMEDIATELY ADJACENT IS A HISTORIC RESOURCE
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: KINGSBURY BRANCH

1.3 RISK EVALUATION

THIS PROJECT FALLS UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES FOR LOW RISK PROJECTS. ANY MODIFICATIONS TO THE PROJECT THAT INCREASE THE RISK TO ENVIRONMENTAL RESOURCES SHALL BE EVALUATED IN ACCORDANCE WITH THE PERMIT REQUIREMENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

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 SPECIFC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

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

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

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

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

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

1.4.3 SITE ENTRANCE/EXIT STABILIZATION
TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MNIMIZED 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.

SILT FENCE, TURBIDITY FILTER CURTAIN, AND PIPE INLET PROTECTION WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

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

THE PROJECT AREA IS RELATIVELY FLAT. THERFORE IT IS NOT ANTICPIATED 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 EROSIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

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

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.

DEWATERING IS NOT ANTICIPATED FOR THIS PROJECT. IF DEWATERING IS NECESSARY 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.

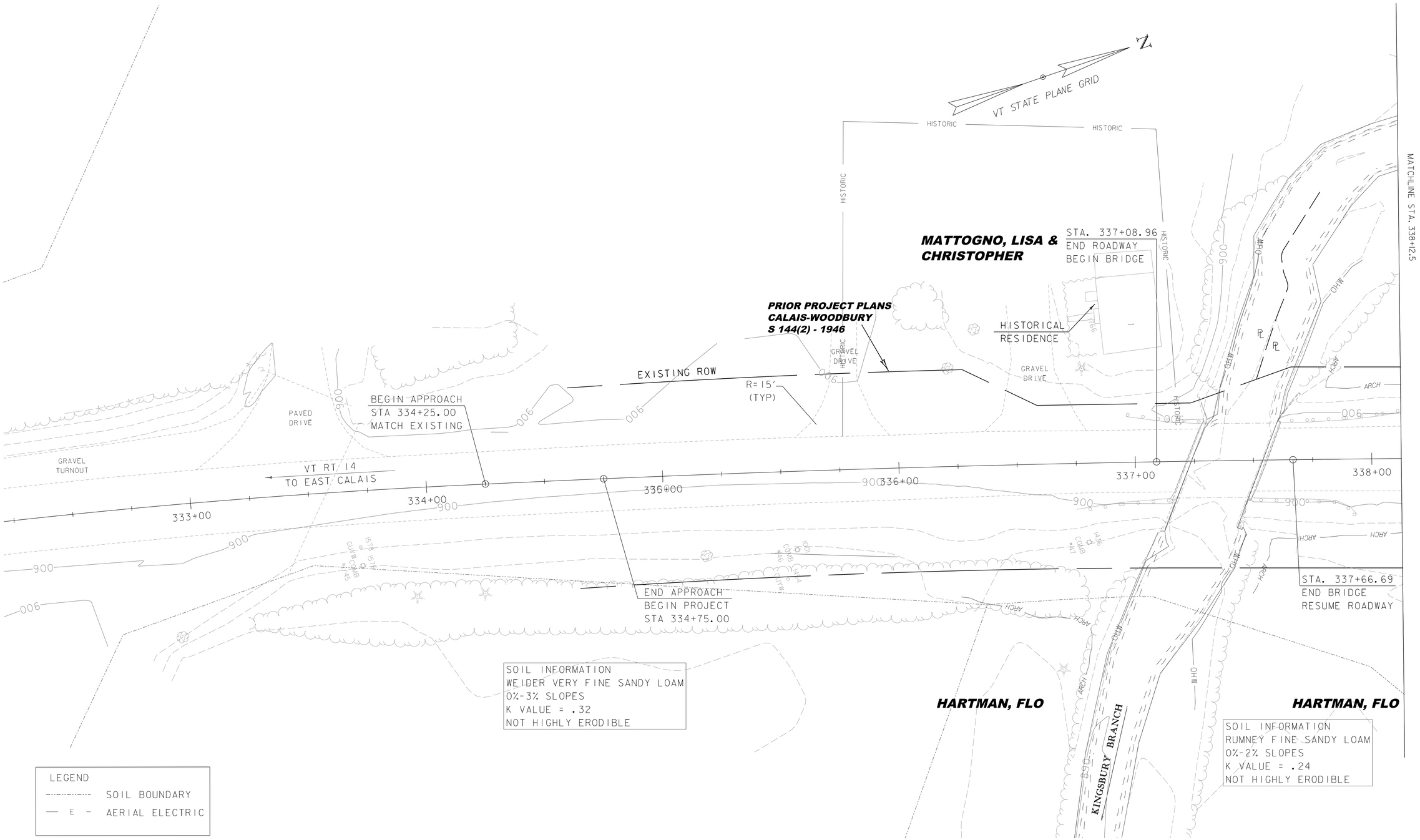
1.5 SEQUENCE AND STAGING

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 SPECIFICATION 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

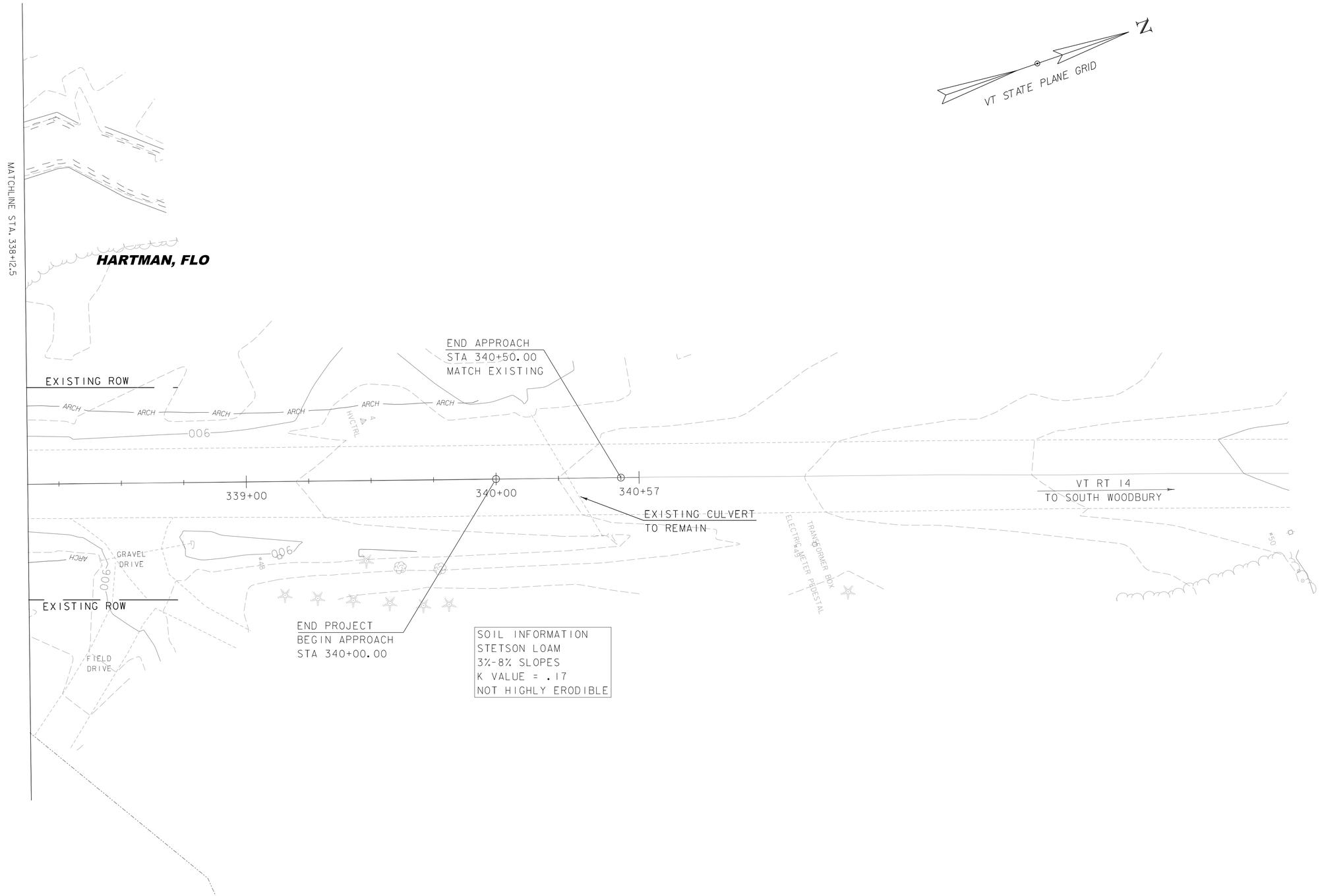
1.5.3 UPDATES



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

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146existsite.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: S.BROWN
DESIGNED BY: S.BROWN	CHECKED BY: A.STOCKIN
EPSC EXISTING CONDITIONS SITE PLAN (1)	SHEET 11 OF 32



LEGEND

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— AER El	AERIAL ELECTRIC

SCALE 1" = 20'-0"

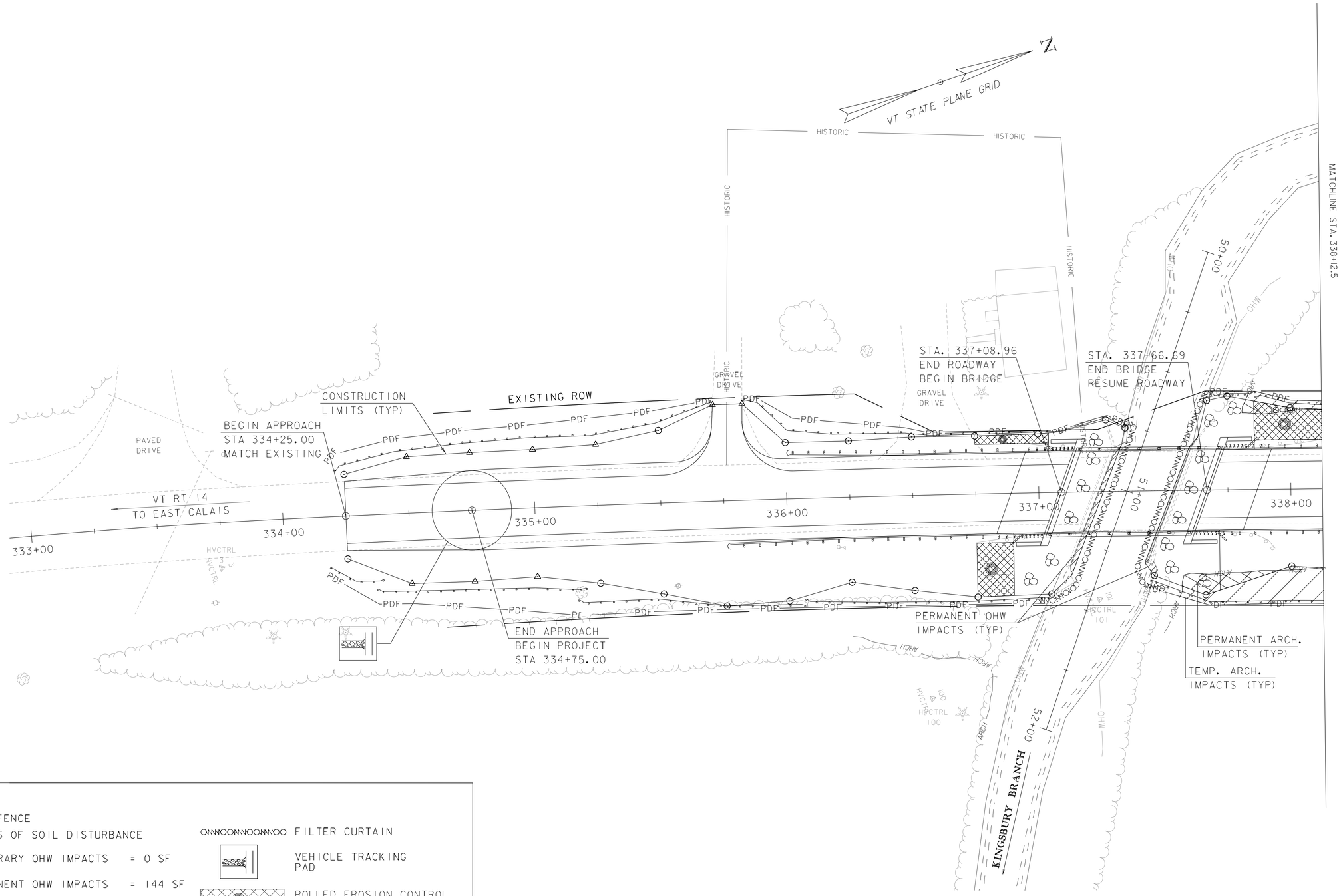
20 0 20

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

PROJECT NAME: CALAIS
PROJECT NUMBER: BHF 037-2(11)

FILE NAME: z12b146existsite.dgn
PROJECT LEADER: G.K.DONINGTON
DESIGNED BY: S.BROWN
EPSC EXISTING CONDITIONS SITE PLAN (2)

PLOT DATE: 19-AUG-2014
DRAWN BY: S.BROWN
CHECKED BY: A.STOCKIN
SHEET 12 OF 32



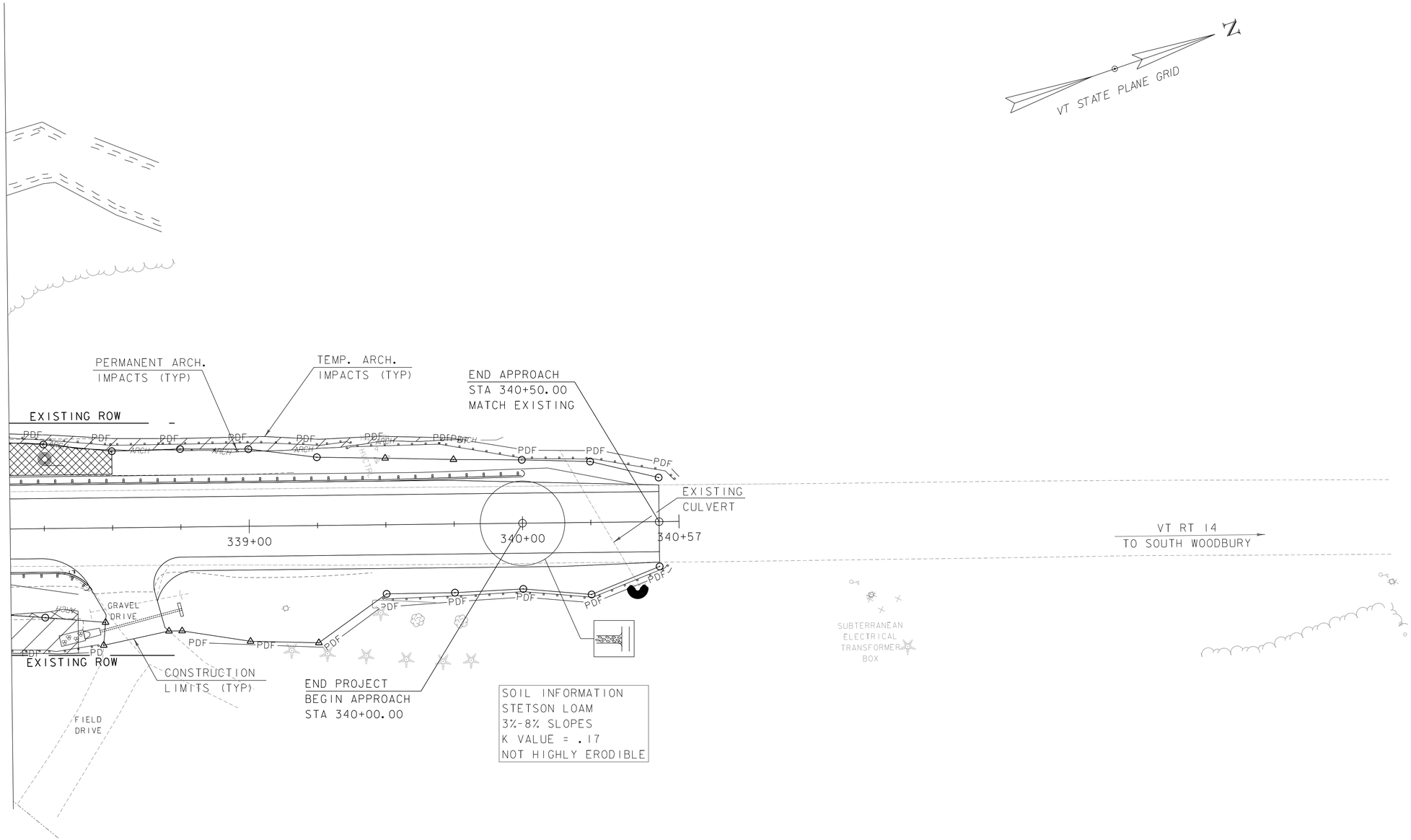
LEGEND

- SILT FENCE
- LIMITS OF SOIL DISTURBANCE
- TEMPORARY OHW IMPACTS = 0 SF
- PERMANENT OHW IMPACTS = 144 SF
- WETLANDS IMPACTS = 0 SF
- PERMANENT ARCHAEOLOGICAL IMPACTS = 334 SF
- TEMPORARY ARCHAEOLOGICAL IMPACTS = 1661 SF
- FILTER CURTAIN
- VEHICLE TRACKING PAD
- ROLLED EROSION CONTROL PRODUCT RECP
- PDF — PDF PROJECT DEMARCATION FENCE
- PIPE INLET PROTECTION

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

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146erobdr.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: S.BROWN
DESIGNED BY: S.BROWN	CHECKED BY: A.STOCKIN
EPSC CONST. CONDITIONS SITE PLAN (1)	SHEET 13 OF 32



LEGEND

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- PIPE INLET PROTECTION

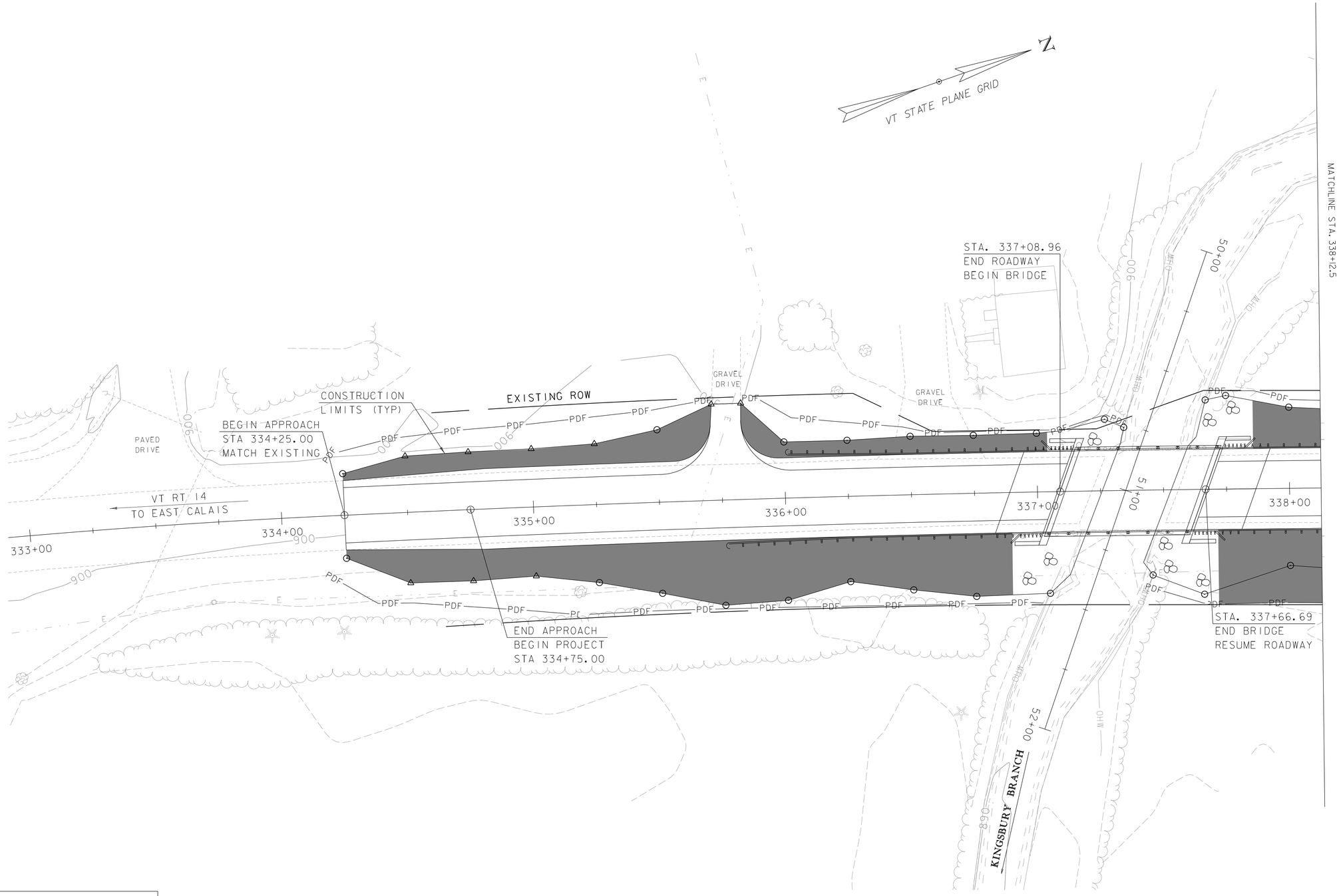
SCALE 1" = 20'-0"
20 0 20

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

PROJECT NAME: CALAIS
PROJECT NUMBER: BHF 037-2(11)

FILE NAME: z12b146erobdr.dgn
PROJECT LEADER: G.K.DONINGTON
DESIGNED BY: S.BROWN
EPSC CONST. CONDITIONS SITE PLAN (2)

PLOT DATE: 19-AUG-2014
DRAWN BY: S.BROWN
CHECKED BY: A.STOCKIN
SHEET 14 OF 32



LEGEND

LIMITS OF SOIL DISTURBANCE

DISTURBED AREAS
REQUIRING RE-VEGETATION

SCALE 1" = 20'-0"
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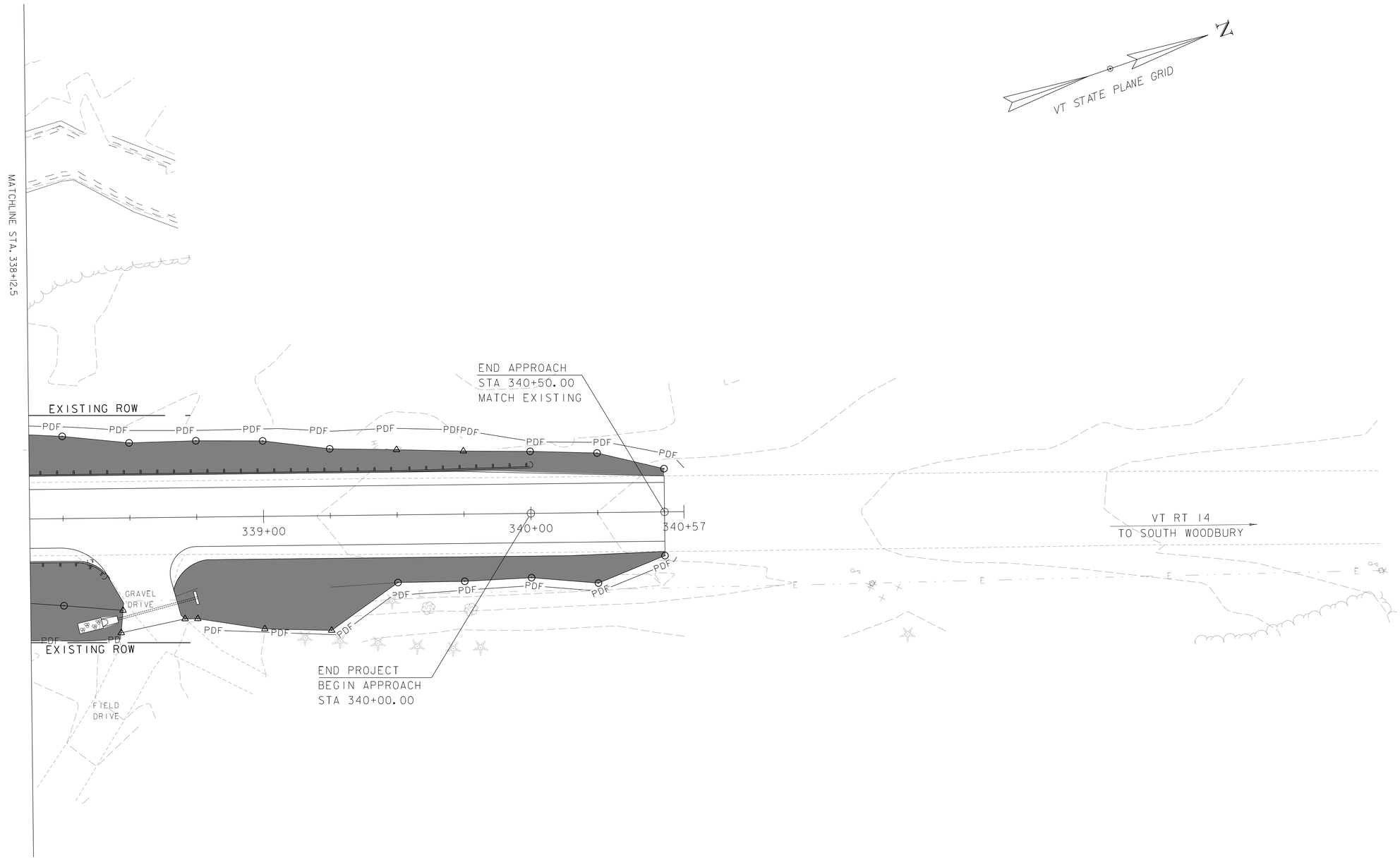
PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12bl46sitebdr.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: S.BROWN
DESIGNED BY: S.BROWN	CHECKED BY: A.STOCKIN
EPSC FINAL CONDITIONS SITE PLAN (1)	SHEET 15 OF 32



LEGEND

LIMITS OF SOIL DISTURBANCE

DISTURBED AREAS REQUIRING RE-VEGETATION

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

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

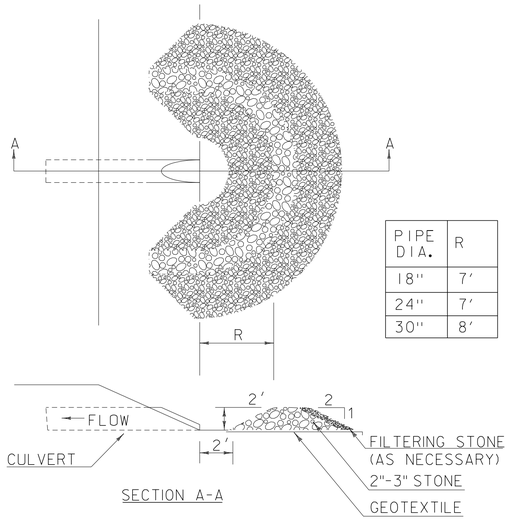
PROJECT NAME: CALAIS
PROJECT NUMBER: BHF 037-2(11)

FILE NAME: z12b146sitebdr.dgn
PROJECT LEADER: G.K.DONINGTON
DESIGNED BY: S.BROWN
EPSC FINAL CONDITIONS SITE PLAN (2)

PLOT DATE: 19-AUG-2014
DRAWN BY: S.BROWN
CHECKED BY: A.STOCKIN
SHEET 16 OF 32

SYMBOL

NOT TO SCALE



PIPE DIA.	R
18"	7'
24"	7'
30"	8'

SECTION A-A

CONSTRUCTION SPECIFICATIONS

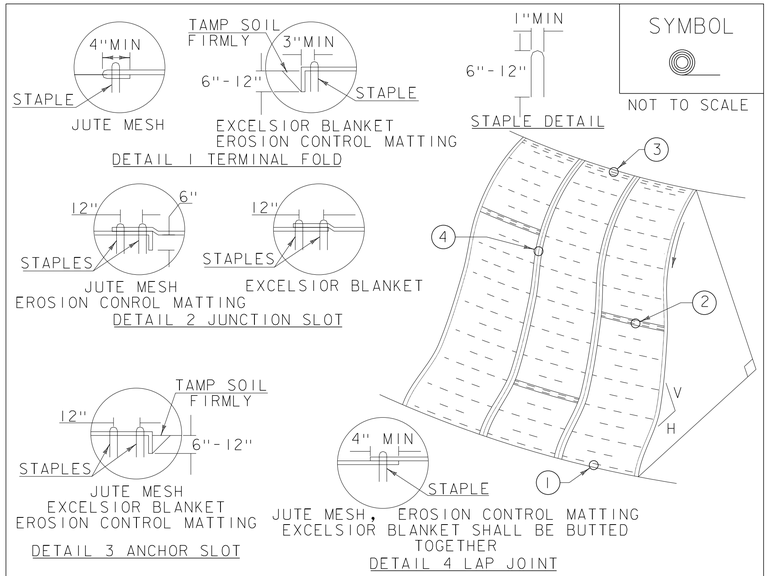
1. USE 2" TO 3" STONE. FILTERING STONE SHALL BE 3/4".
2. PLACE STONE OVER GEOTEXTILE.
3. ONCE THE AREAS UPSTREAM FROM THE CHECK DAM ARE STABILIZED WITH VEGETATION, THE SEDIMENT TRAPPED BEHIND THE DAM SHALL BE DISPOSED OF IN AN APPROVED WASTE AREA.
4. THE CHECK DAM(S) SHALL BE FLATTENED AND GRADED IN A MANNER WHICH PROTECTS THE AREA FROM EROSION AND CHANNEL BLOCKAGE . (GEOTEXTILE MUST BE REMOVED).
5. THE GEOTEXTILE MUST BE DISPOSED OF APPROPRIATELY.
6. THE AREA CONTRIBUTING TO THE CHECK DAM SHALL NOT EXCEED 4 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: ILLINOIS USDA-NRCS
ORIGINALLY DEVELOPED BY USDA-NRCS

PIPE INLET PROTECTION

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR INLET PROTECTION DEVICE, TYPE I (PAY ITEM 653.40).

REVISIONS	
MARCH 6, 2008	WHF
JANUARY 13, 2009	WHF



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

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

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

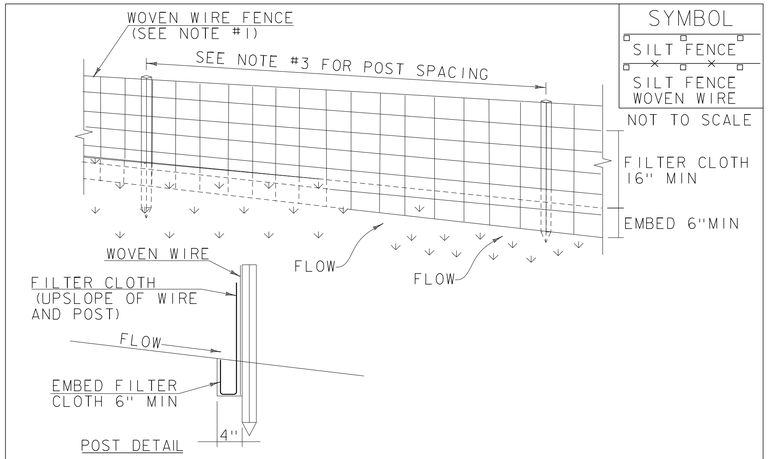
REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF

SYMBOL

SILT FENCE

SILT FENCE WOVEN WIRE

NOT TO SCALE



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, MIRAFI 100X, 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).

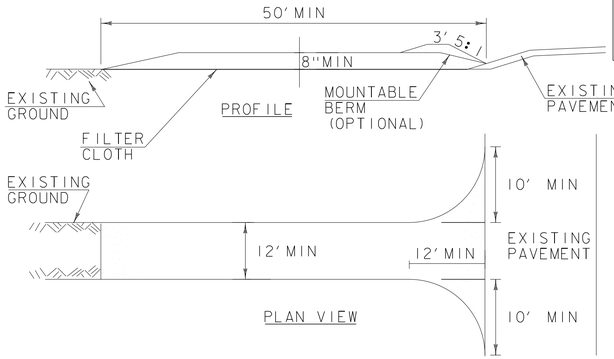
REVISIONS	
MARCH 21, 2008	WHF
DECEMBER 11, 2008	WHF
JANUARY 13, 2009	WHF

PROJECT NAME: CALAIS
PROJECT NUMBER: BHF 037-2(11)

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

FILE NAME: z12b146epscdet.dgn
PROJECT LEADER: G.K.DONINGTON
DESIGNED BY: S.BROWN
EPSC DETAILS (1)

PLOT DATE: 19-AUG-2014
DRAWN BY: S.BROWN
CHECKED BY: A.STOCKIN
SHEET 17 OF 32



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

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

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

STABILIZED CONSTRUCTION ENTRANCE

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

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

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

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*

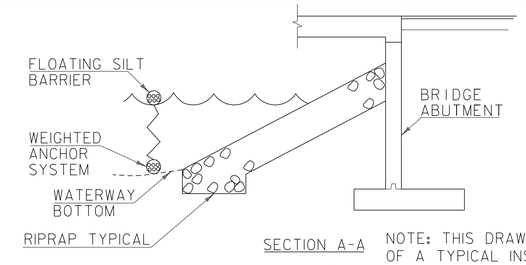
CONSTRUCTION GUIDANCE

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

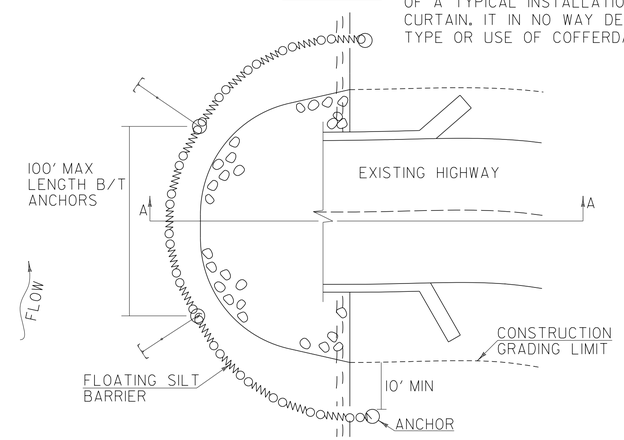


SYMBOL

NOT TO SCALE

SECTION A-A

NOTE: THIS DRAWING IS A DEPICTION OF A TYPICAL INSTALLATION OF FILTER CURTAIN. IT IN NO WAY DEFINES THE TYPE OR USE OF COFFERDAM IF USED.



CONSTRUCTION SPECIFICATIONS

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

FILTER CURTAIN

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.61).

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

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

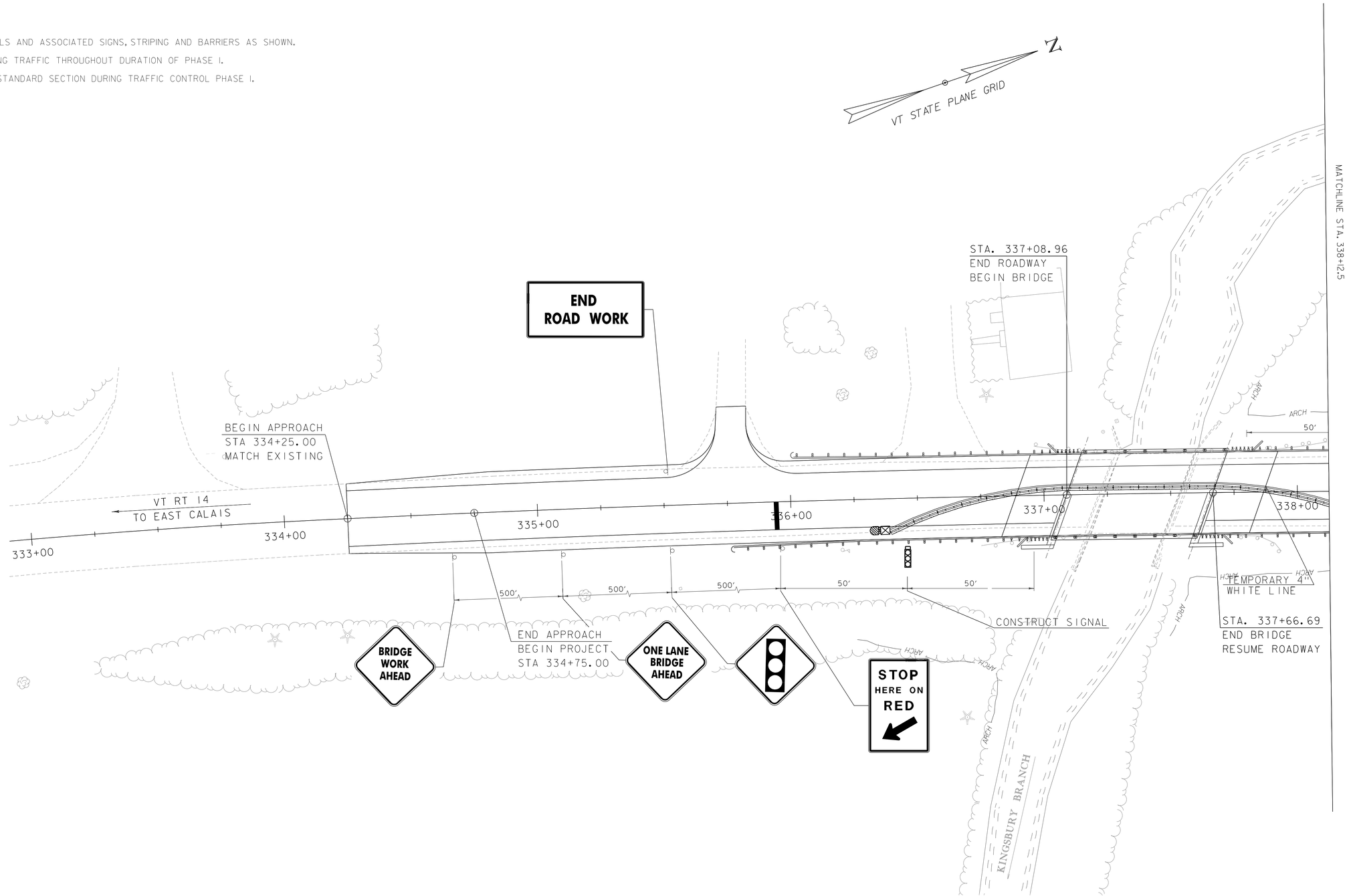
PROJECT NAME: CALAIS
PROJECT NUMBER: BHF 037-2(11)

FILE NAME: z12b146epscdet.dgn
PROJECT LEADER: G.K.DONINGTON
DESIGNED BY: S.BROWN
EPSC DETAILS (2)

PLOT DATE: 19-AUG-2014
DRAWN BY: S.BROWN
CHECKED BY: A.STOCKIN
SHEET 18 OF 32

TRAFFIC CONTROL PHASE 1

1. INSTALL TEMPORARY TRAFFIC SIGNALS AND ASSOCIATED SIGNS, STRIPING AND BARRIERS AS SHOWN.
2. MAINTAIN ONE LANE OF ALTERNATING TRAFFIC THROUGHOUT DURATION OF PHASE 1.
3. SEE TYPICAL SECTIONS (2) FOR A STANDARD SECTION DURING TRAFFIC CONTROL PHASE 1.



LEGEND

- TEMPORARY BARRIER
- BARREL
- ENERGY ABSORPTION ATTENUATOR
- STOP BAR

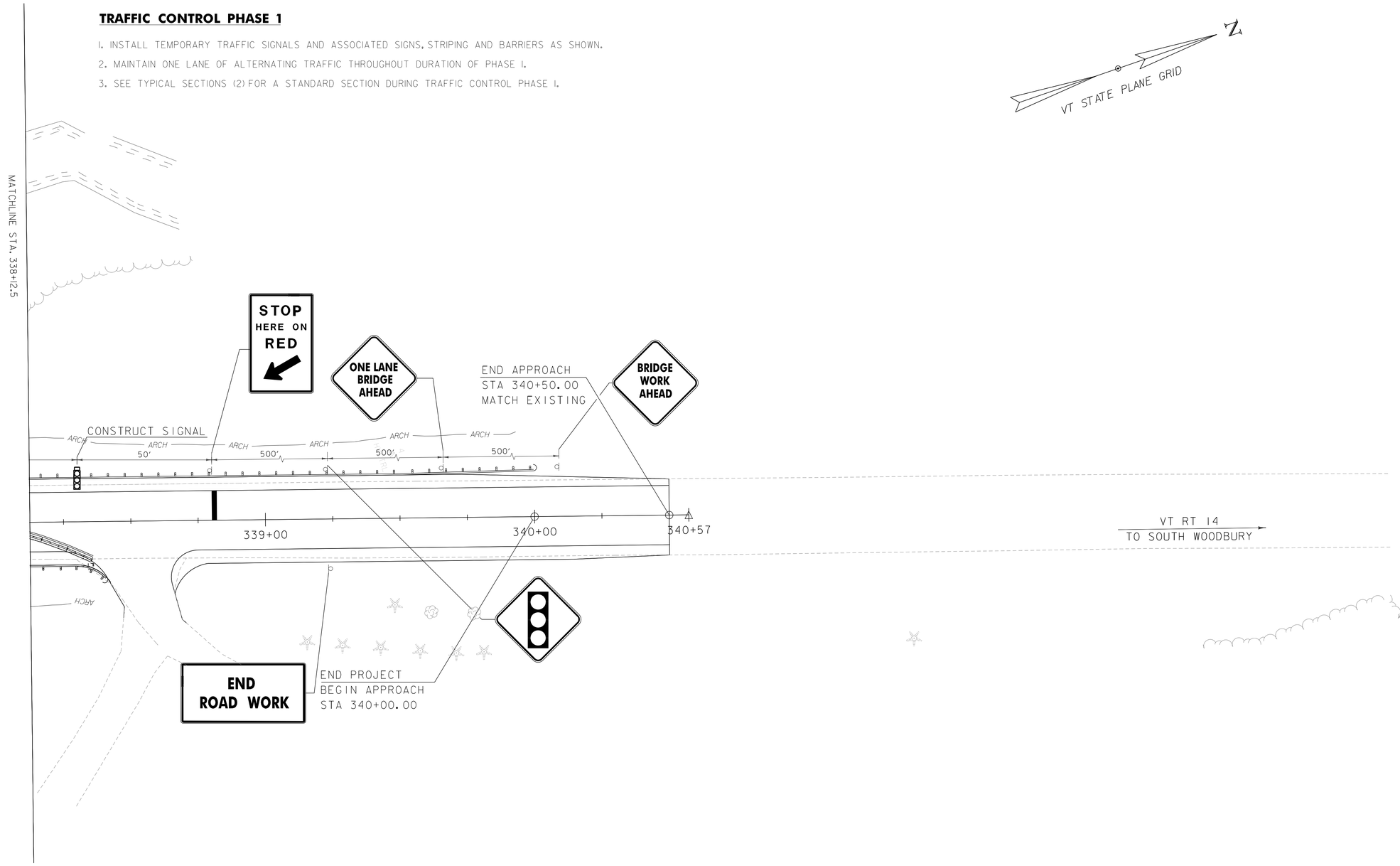
SCALE 1" = 20'-0"
20 0 20

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146tcs.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: S.BROWN
DESIGNED BY: J.KHERA	CHECKED BY: A.STOCKIN
TRAFFIC CONTROL PHASE ONE	SHEET 19 OF 32

TRAFFIC CONTROL PHASE 1

1. INSTALL TEMPORARY TRAFFIC SIGNALS AND ASSOCIATED SIGNS, STRIPING AND BARRIERS AS SHOWN.
2. MAINTAIN ONE LANE OF ALTERNATING TRAFFIC THROUGHOUT DURATION OF PHASE 1.
3. SEE TYPICAL SECTIONS (2) FOR A STANDARD SECTION DURING TRAFFIC CONTROL PHASE 1.



LEGEND

- TEMPORARY BARRIER
- BARREL
- ENERGY ABSORPTION ATTENUATOR
- STOP BAR

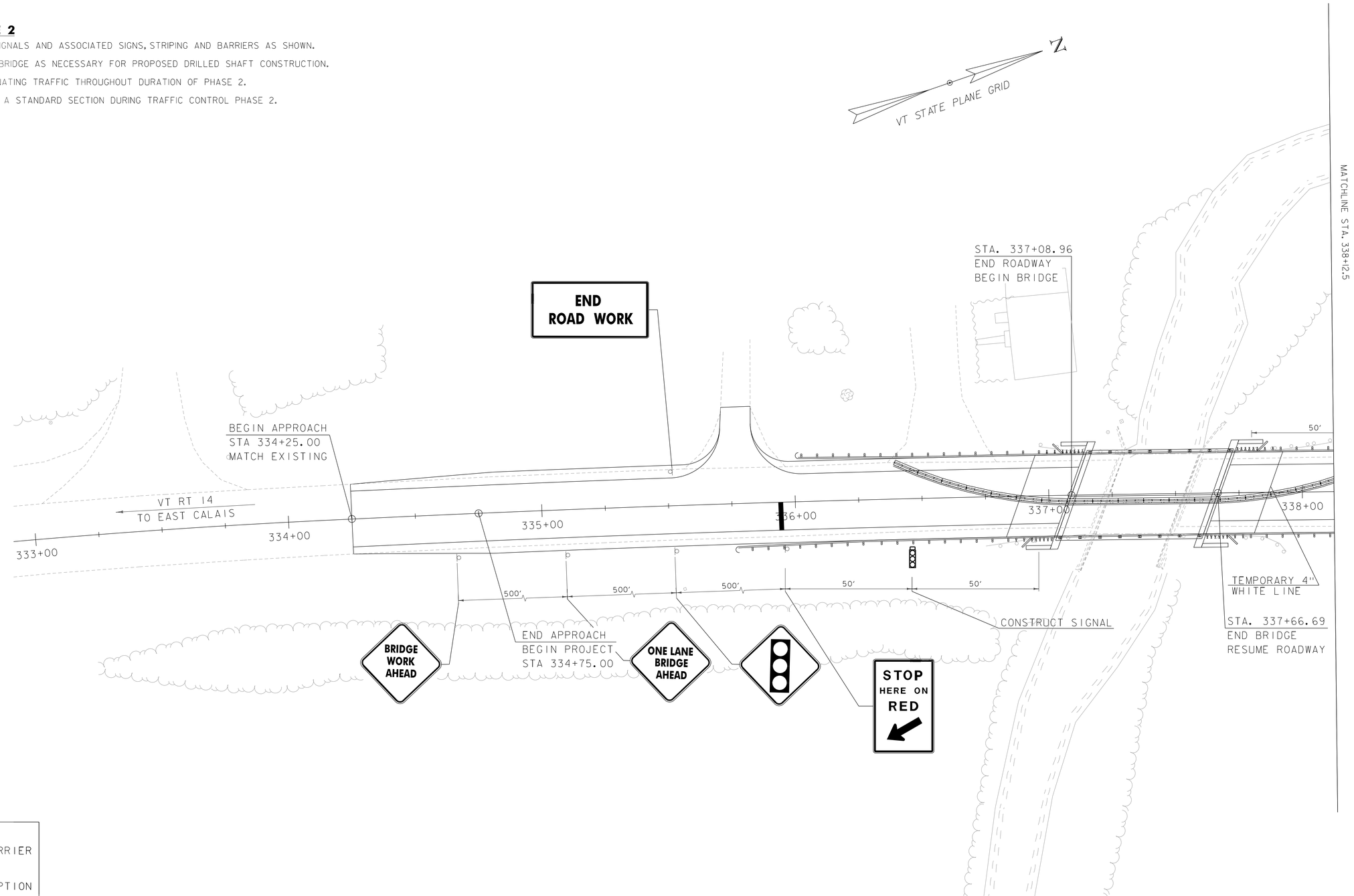
SCALE 1" = 20'-0"
20 0 20

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146tcs.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: S.BROWN
DESIGNED BY: J.KHERA	CHECKED BY: A.STOCKIN
TRAFFIC CONTROL PHASE ONE	SHEET 20 OF 32

TRAFFIC CONTROL PHASE 2

1. INSTALL TEMPORARY TRAFFIC SIGNALS AND ASSOCIATED SIGNS, STRIPING AND BARRIERS AS SHOWN.
2. REMOVE PORTION OF EXISTING BRIDGE AS NECESSARY FOR PROPOSED DRILLED SHAFT CONSTRUCTION.
3. MAINTAIN ONE LANE OF ALTERNATING TRAFFIC THROUGHOUT DURATION OF PHASE 2.
4. SEE TYPICAL SECTIONS (2) FOR A STANDARD SECTION DURING TRAFFIC CONTROL PHASE 2.



LEGEND

- TEMPORARY BARRIER
- BARREL
- ENERGY ABSORPTION ATTENUATOR
- STOP BAR

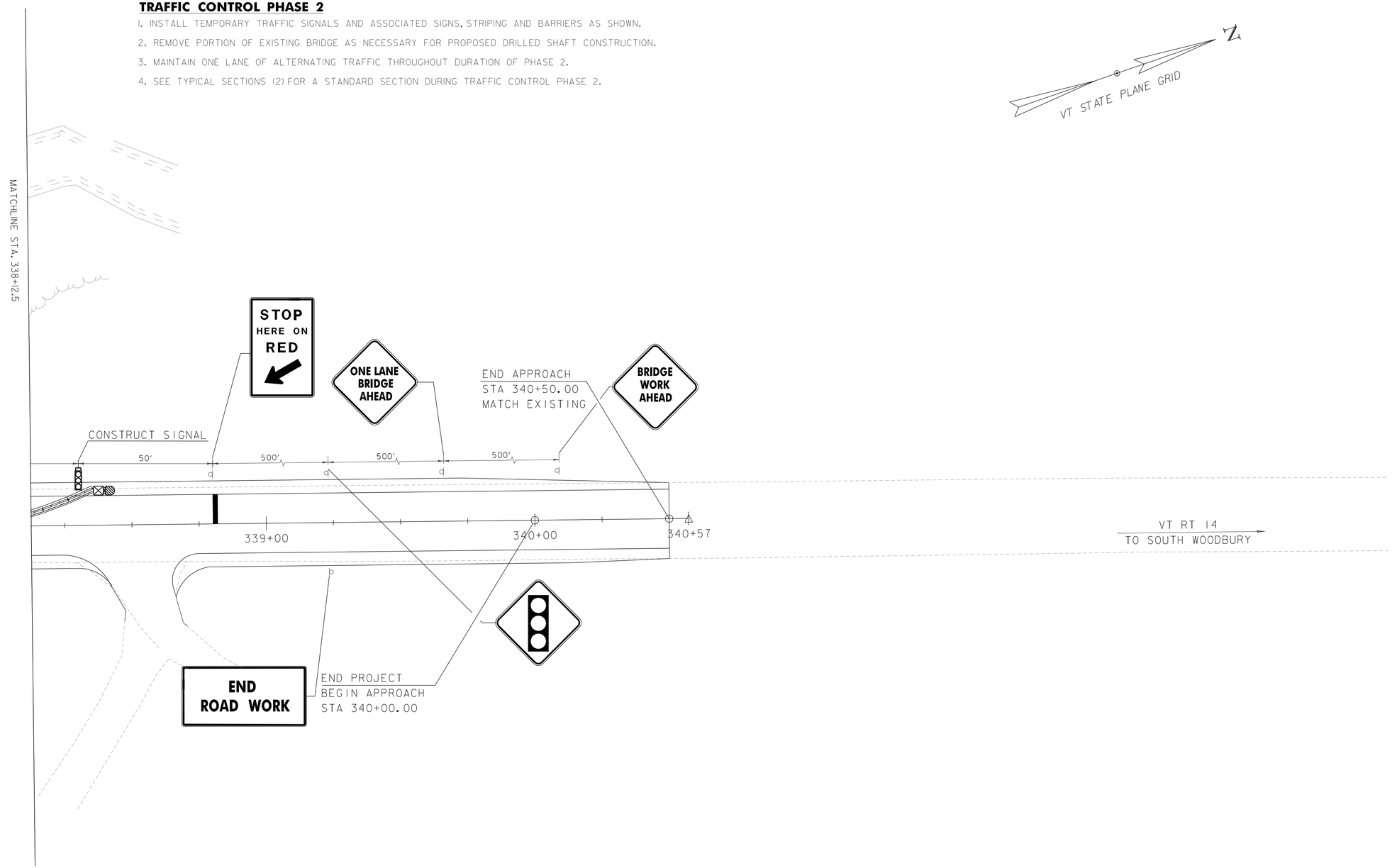
SCALE 1" = 20'-0"
20 0 20

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146tcs.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: S.BROWN
DESIGNED BY: J.KHERA	CHECKED BY: A.STOCKIN
TRAFFIC CONTROL PHASE TWO	SHEET 21 OF 32

TRAFFIC CONTROL PHASE 2

1. INSTALL TEMPORARY TRAFFIC SIGNALS AND ASSOCIATED SIGNS, STRIPING AND BARRIERS AS SHOWN.
2. REMOVE PORTION OF EXISTING BRIDGE AS NECESSARY FOR PROPOSED DRILLED SHAFT CONSTRUCTION.
3. MAINTAIN ONE LANE OF ALTERNATING TRAFFIC THROUGHOUT DURATION OF PHASE 2.
4. SEE TYPICAL SECTIONS (2) FOR A STANDARD SECTION DURING TRAFFIC CONTROL PHASE 2.



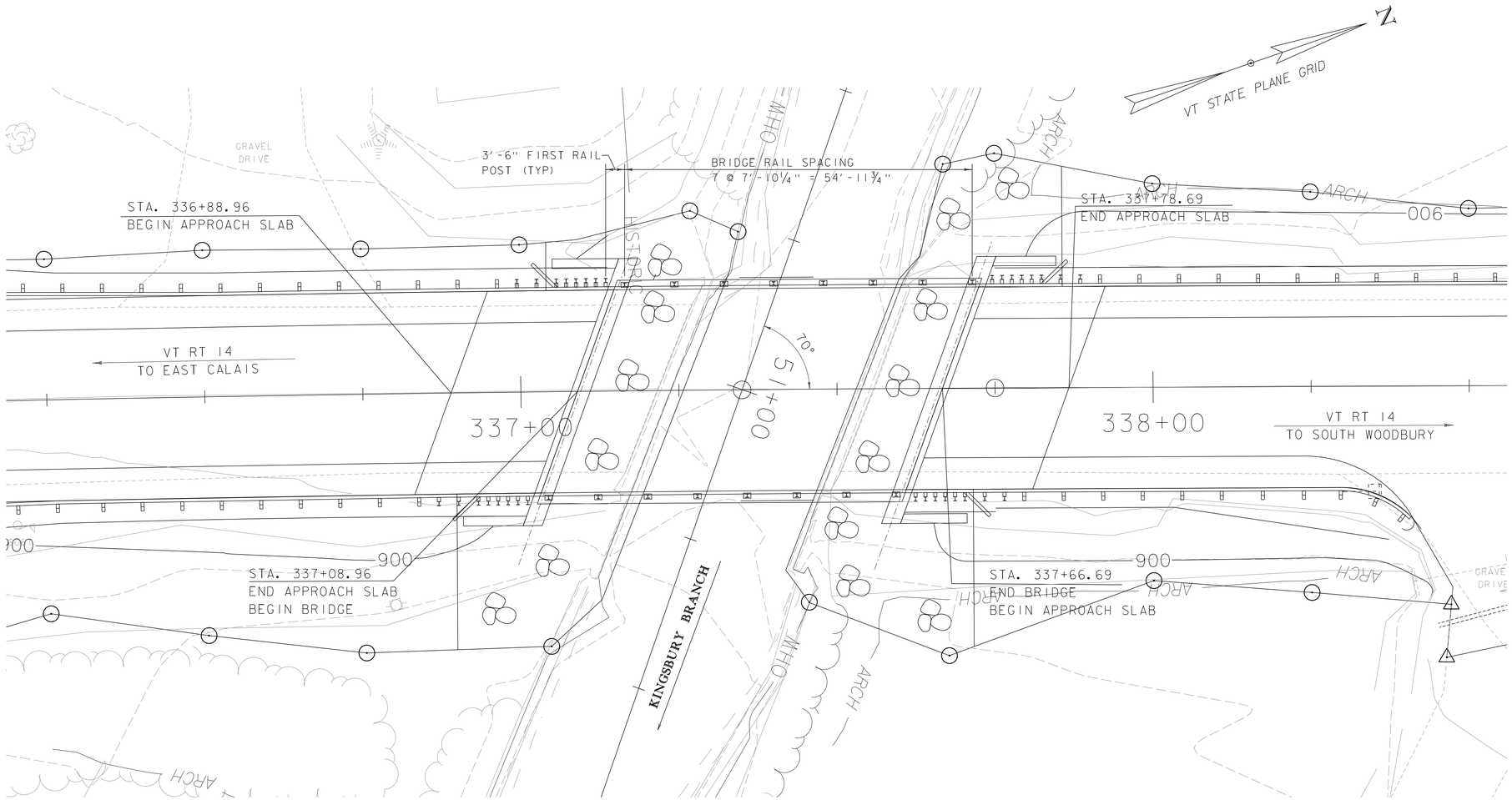
LEGEND

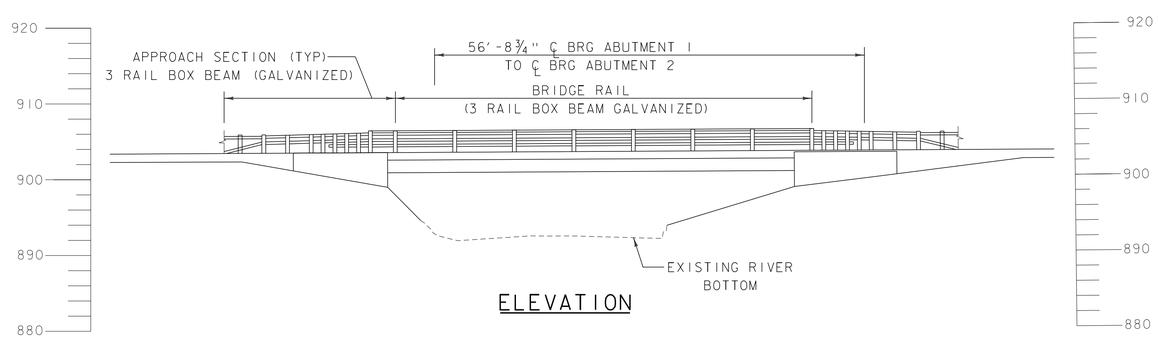
- TEMPORARY BARRIER
- BARREL
- ENERGY ABSORPTION ATTENUATOR
- STOP BAR

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

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146tcs.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: S.BROWN
DESIGNED BY: J.KHERA	CHECKED BY: A.STOCKIN
TRAFFIC CONTROL PHASE TWO	SHEET 22 OF 32



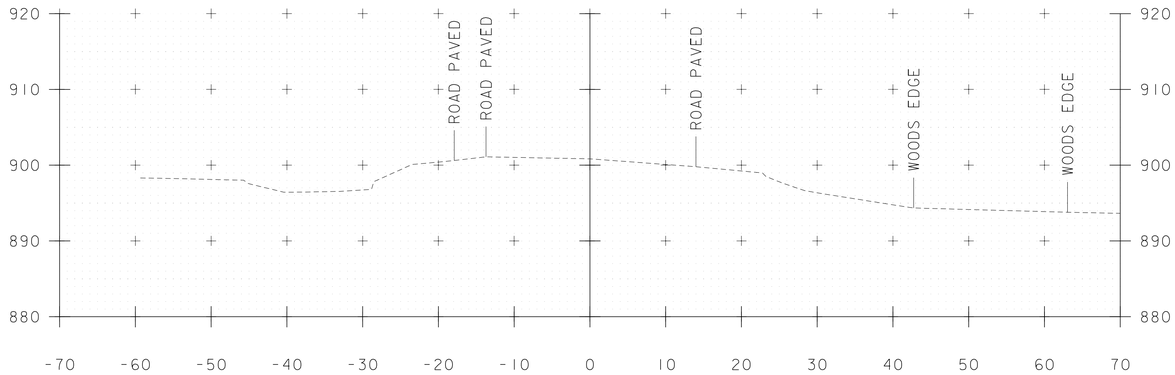


ELEVATION

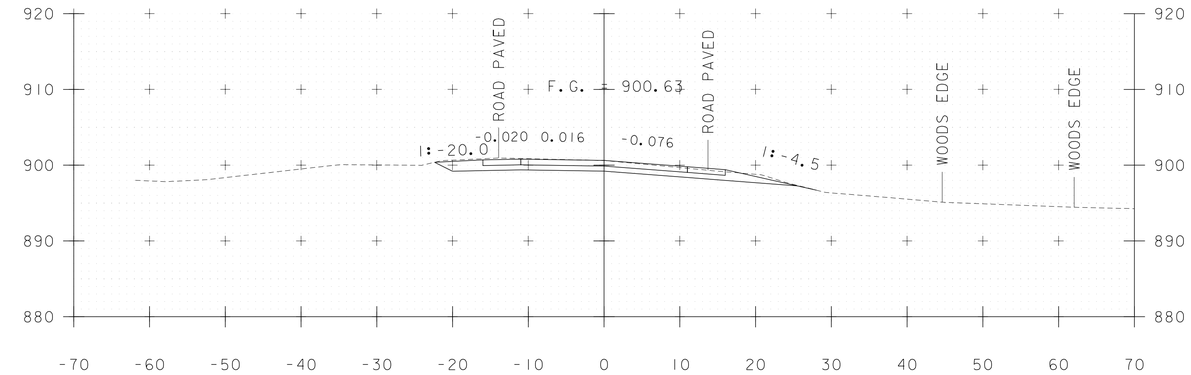
SCALE 1" = 10'-0
10 0 10

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12bl46pe.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: S.BROWN
DESIGNED BY: S.BROWN	CHECKED BY: A.STOCKIN
PLAN AND ELEVATION SHEET	SHEET 23 OF 32



333+75



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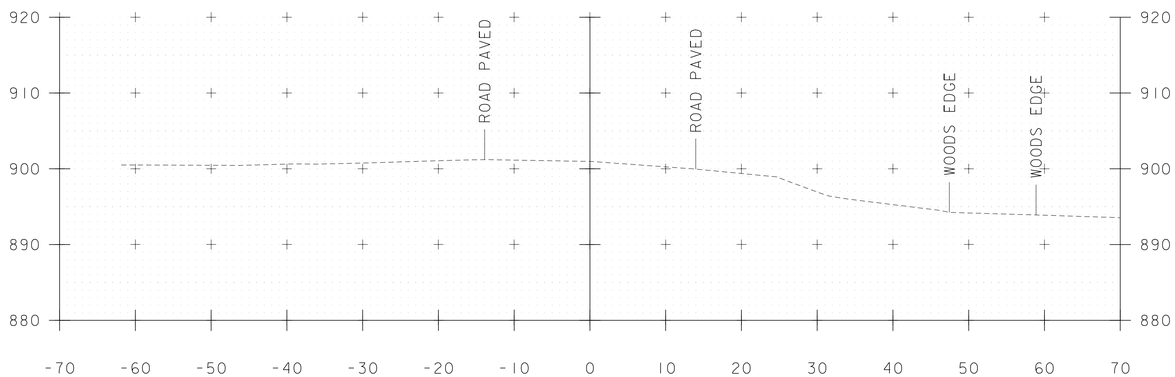
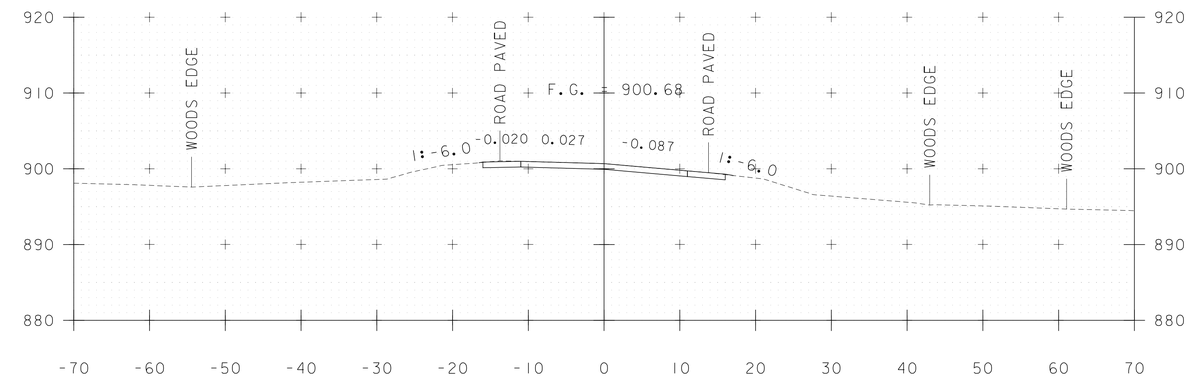
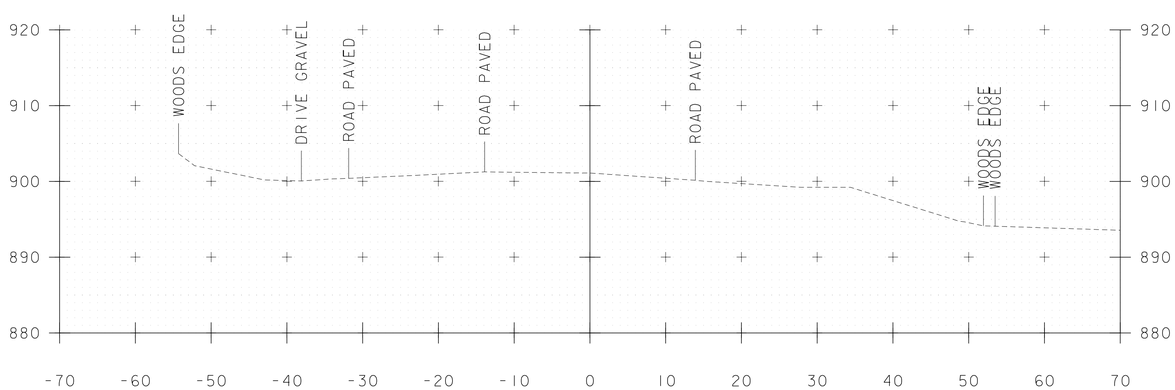


333+50

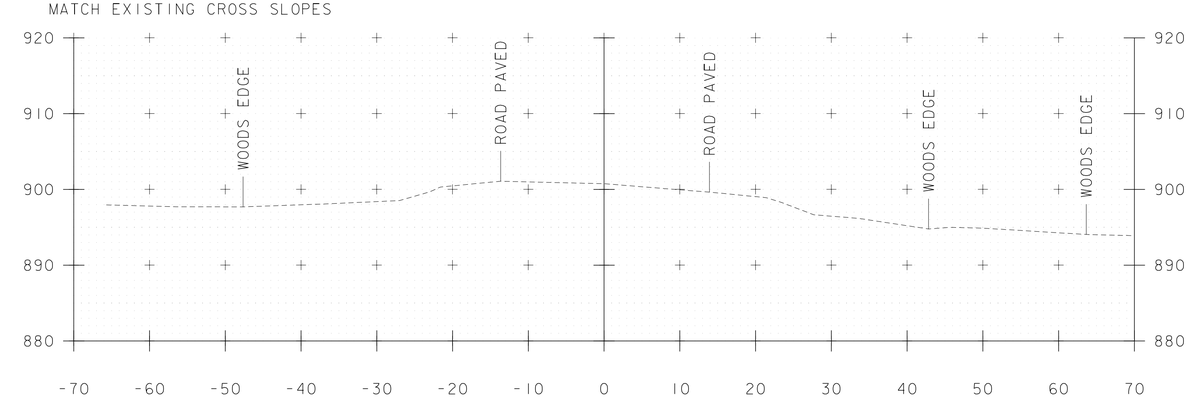


334+25

STA. 334+25.00
BEGIN APPROACH
MATCH EXISTING CROSS SLOPES



333+25

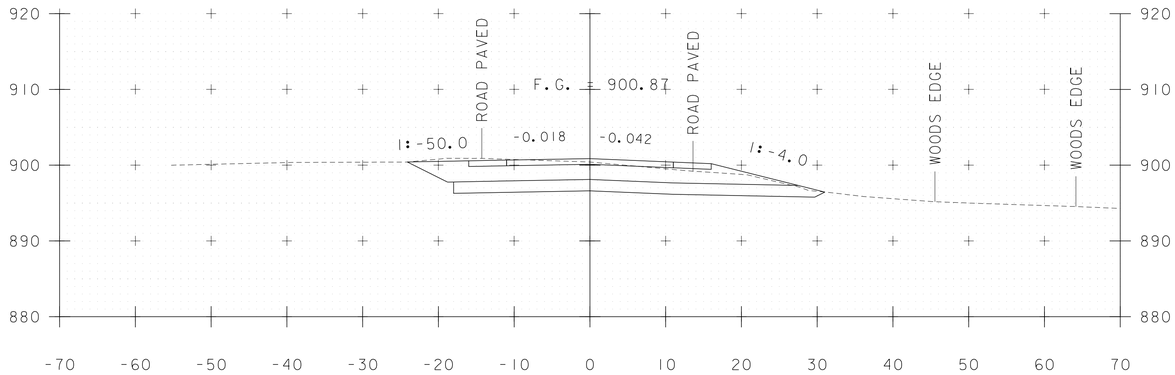


334+00

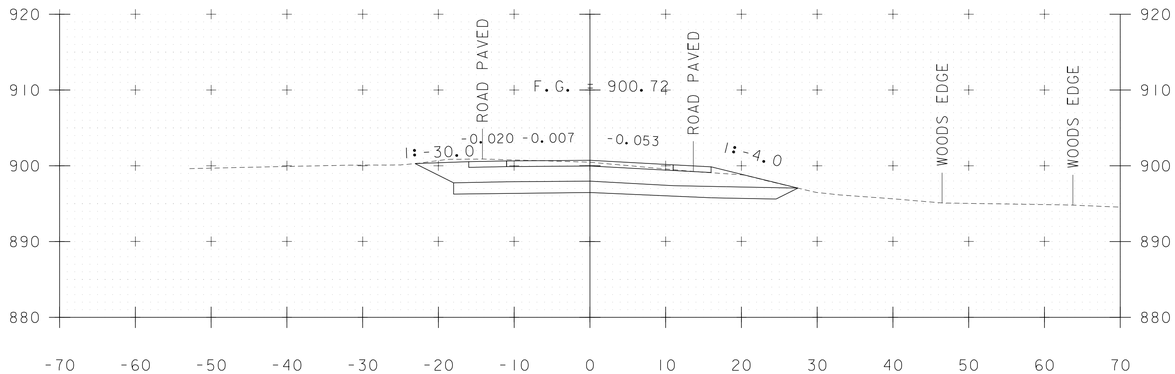
PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

STA. 333+25 TO STA. 334+50

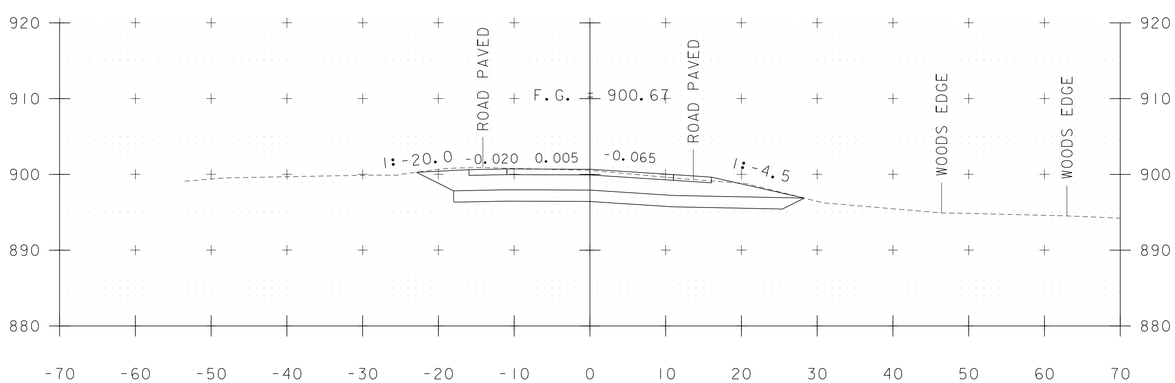
PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146xs.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: J.KHERA
DESIGNED BY: J.KHERA	CHECKED BY: R.BENJAMIN
MAINLINE CROSS SECTIONS	SHEET 24 OF 32



335+25

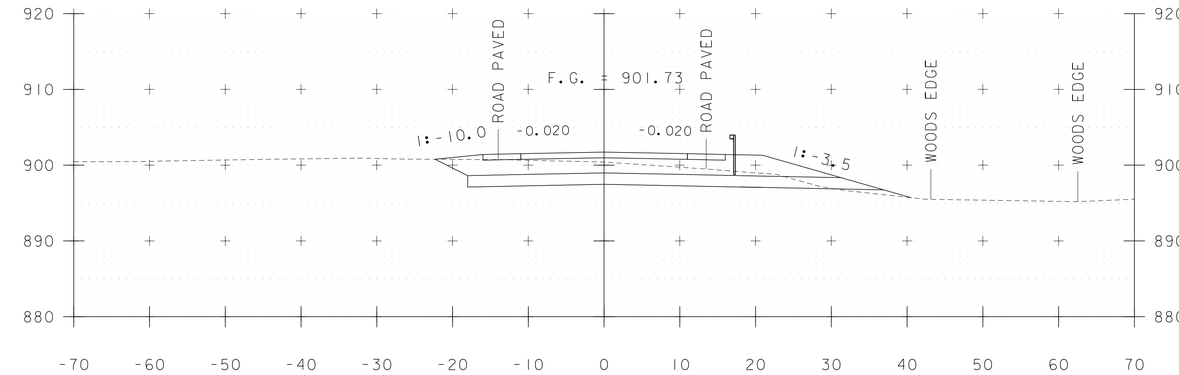


335+00

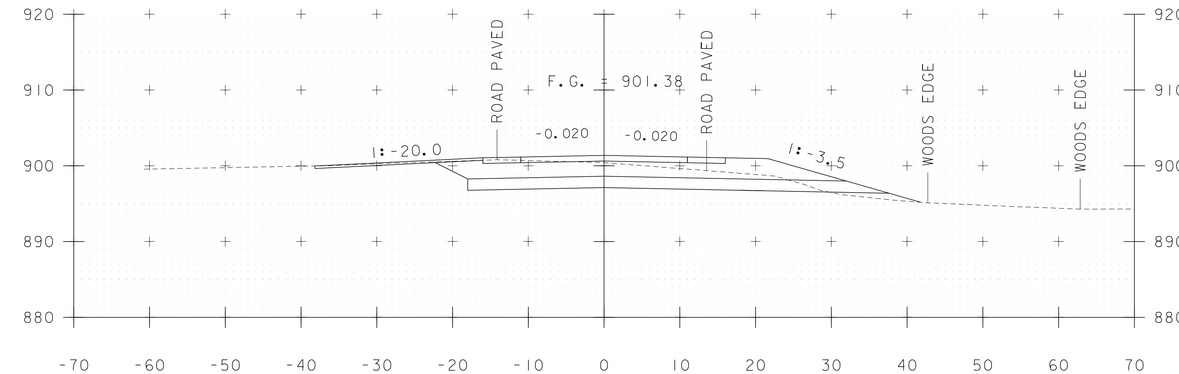


STA. 334+75.00
BEGIN PROJECT

334+75



336+00



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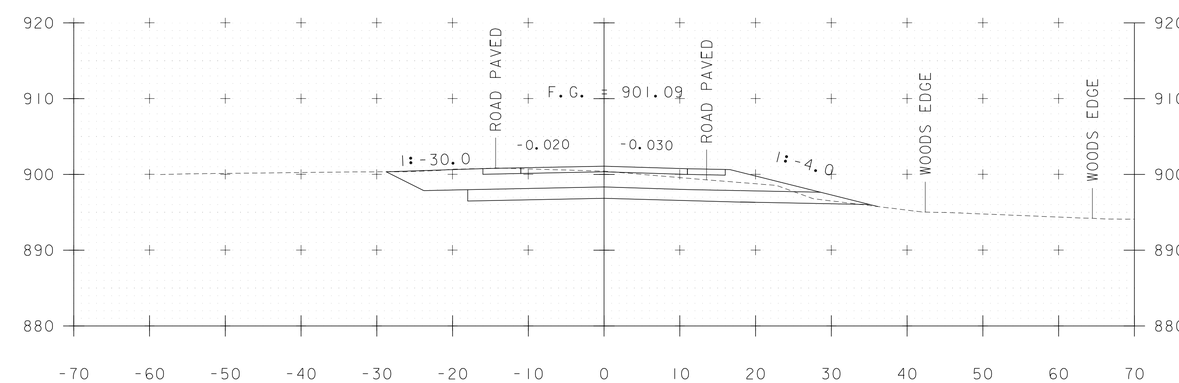
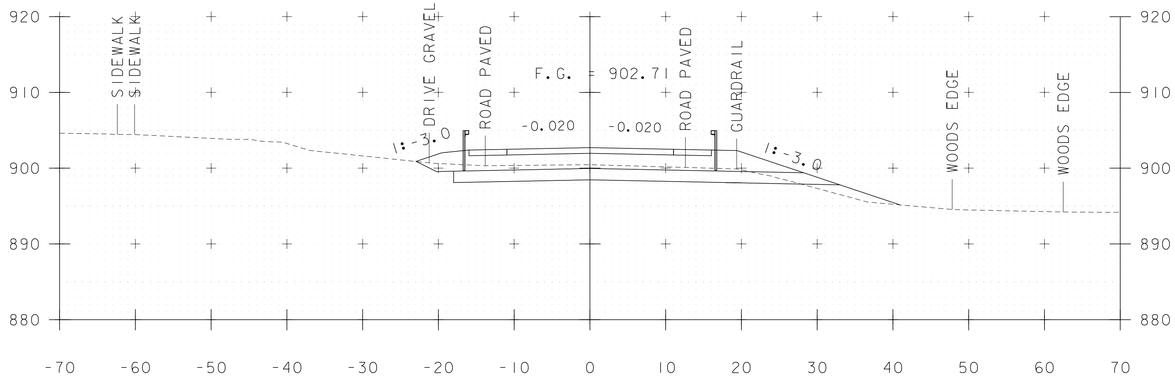


335+50

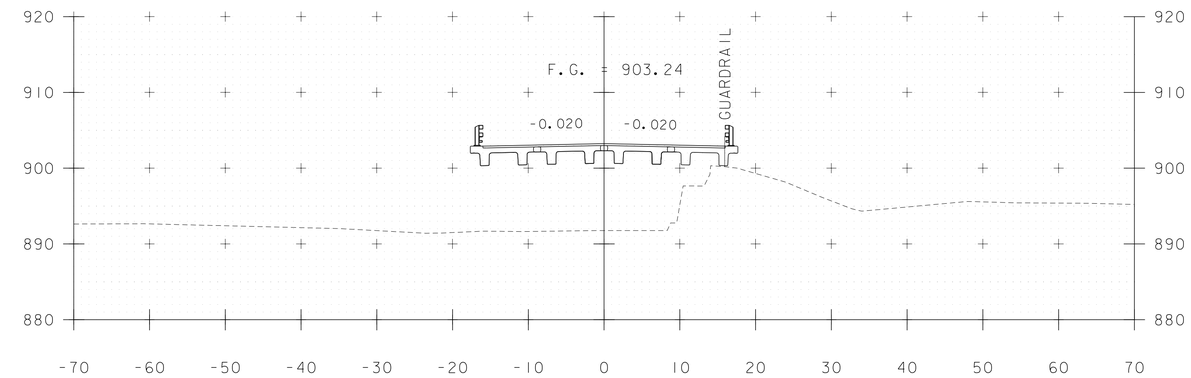
PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

STA. 334+75 TO STA. 336+00

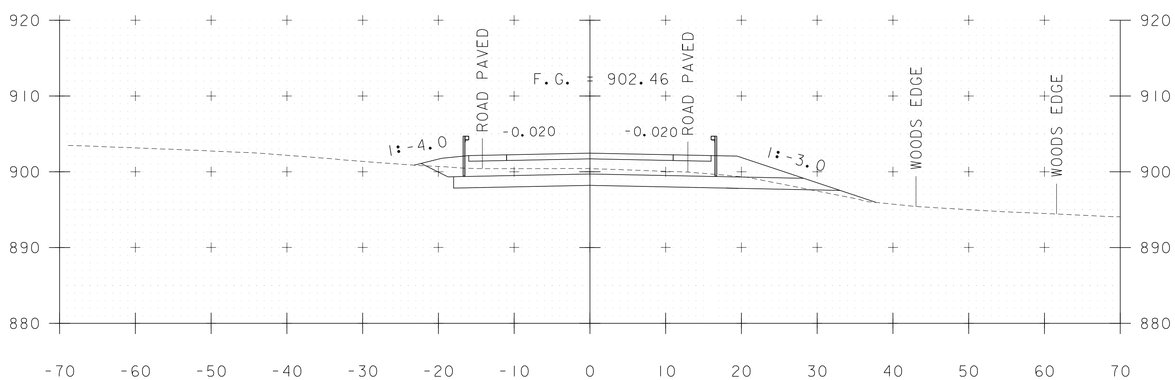
PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146xs.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: J.KHERA
DESIGNED BY: J.KHERA	CHECKED BY: R.BENJAMIN
MAINLINE CROSS SECTIONS	SHEET 25 OF 32



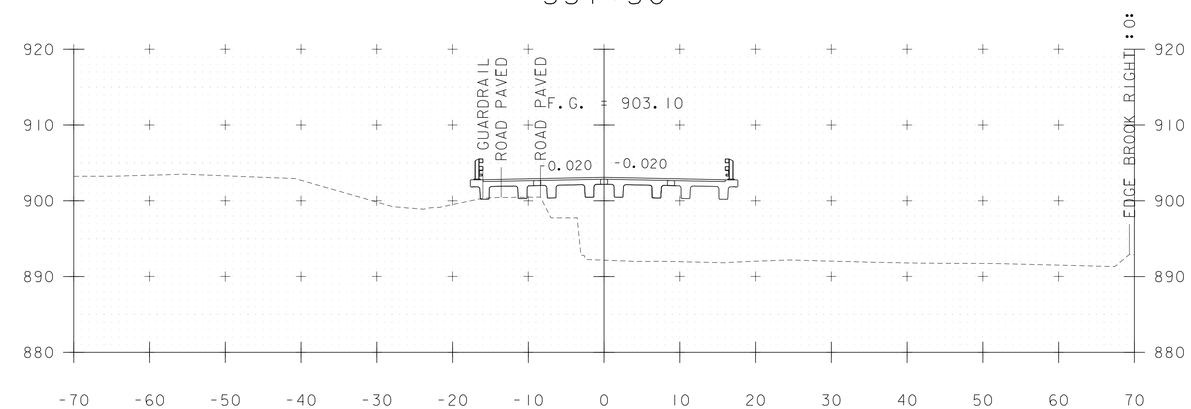
336+75



337+50

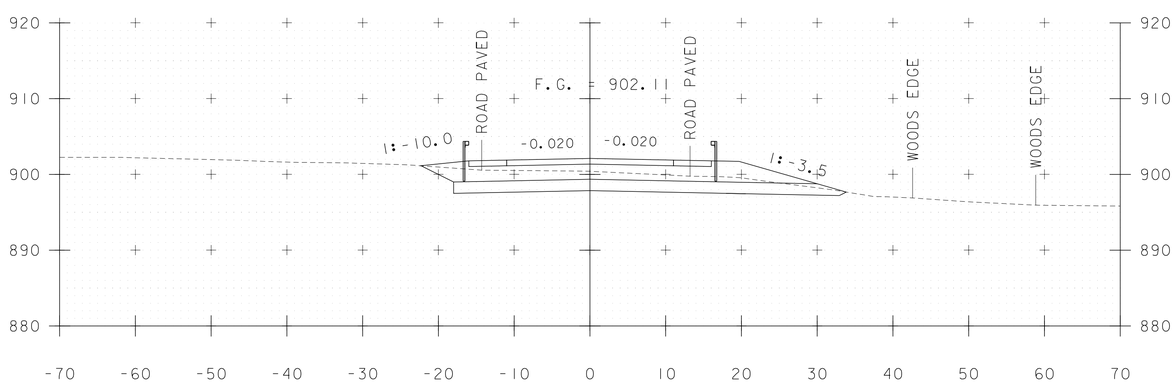


336+50

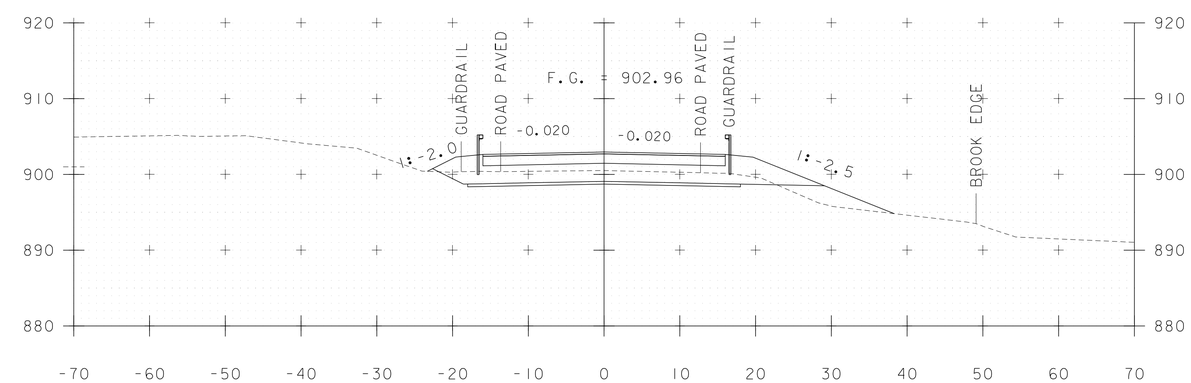


STA. 337+08.96
BEGIN BRIDGE

337+25



336+25

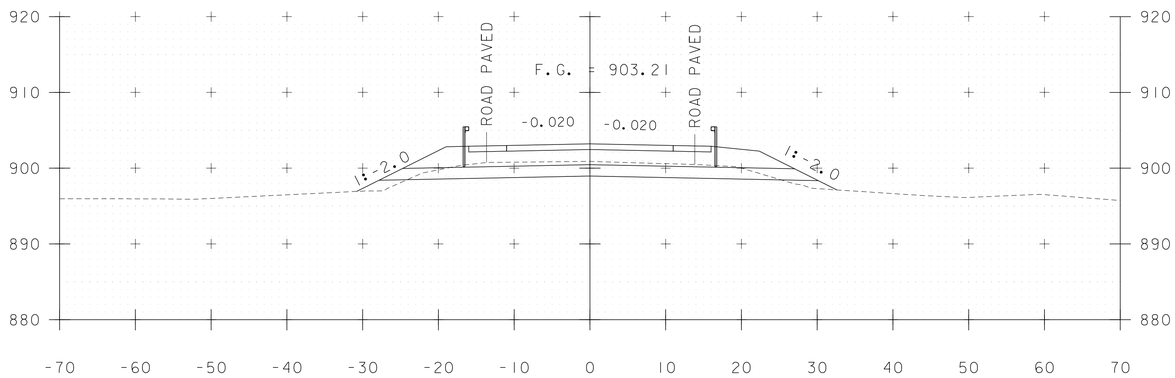


337+00

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

STA. 336+25 TO STA. 337+50

PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146xs.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: J.KHERA
DESIGNED BY: J.KHERA	CHECKED BY: R.BENJAMIN
MAINLINE CROSS SECTIONS	SHEET 26 OF 32



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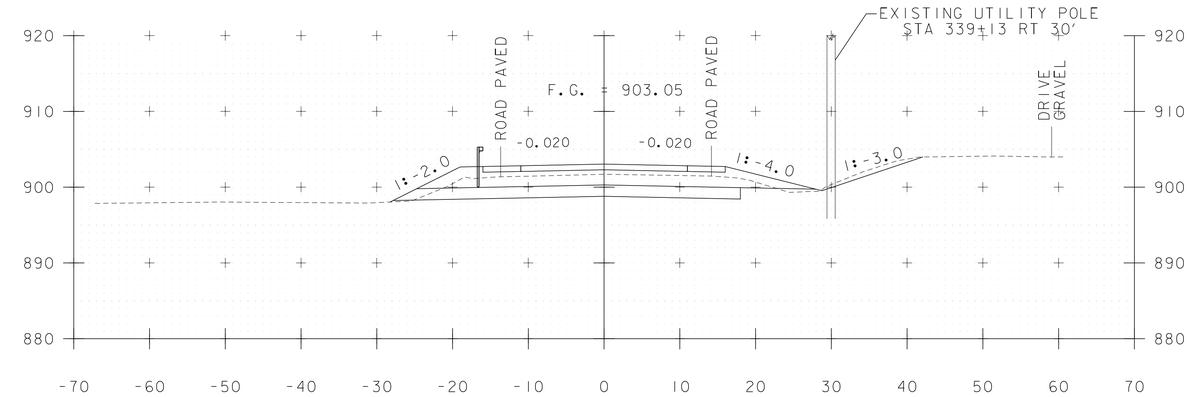
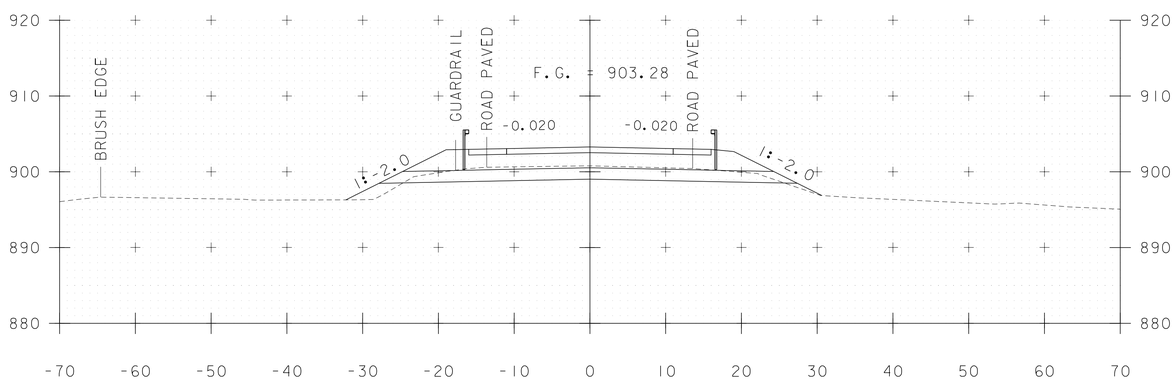


339+00



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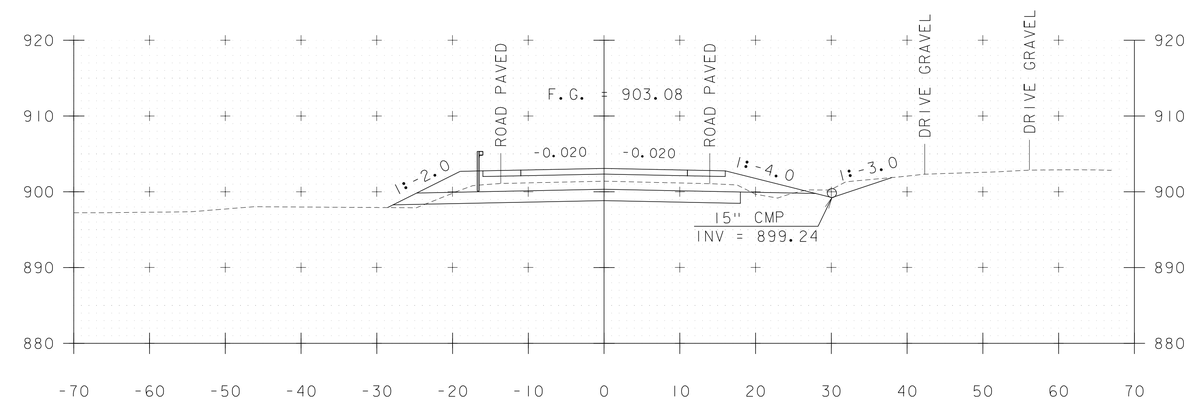
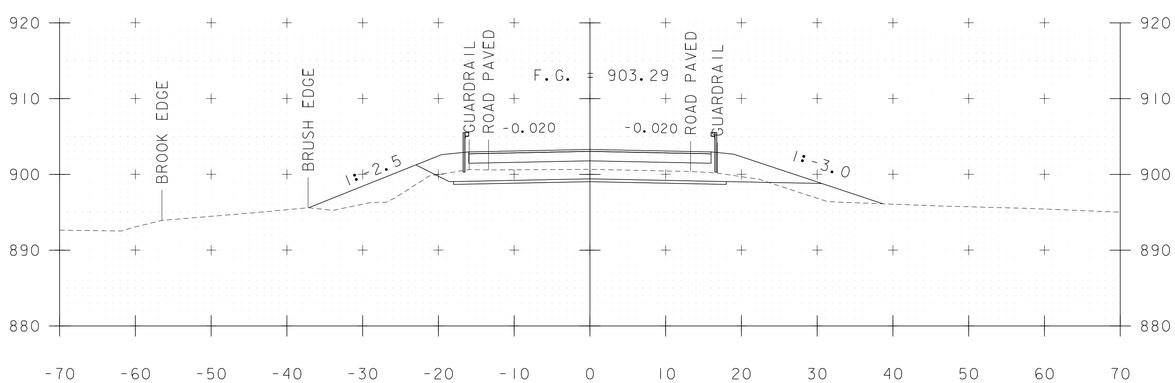
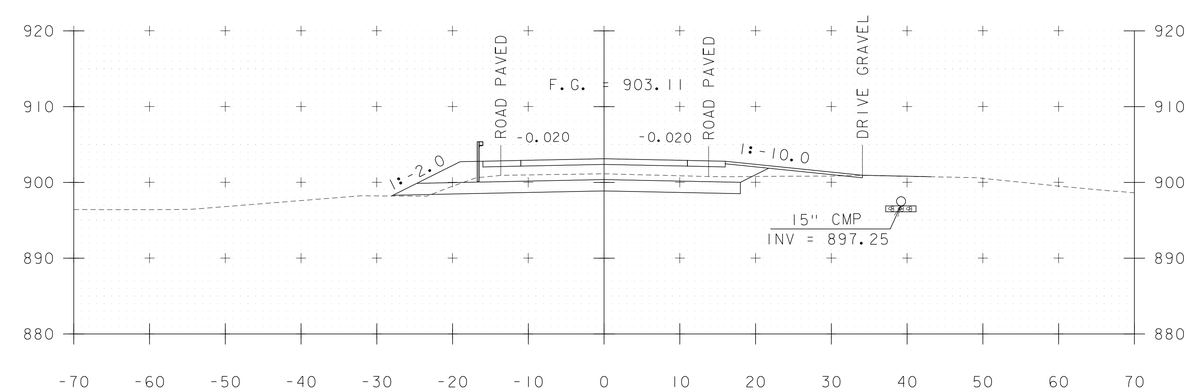


338+75



STA. 337+66.69
END BRIDGE

337+75

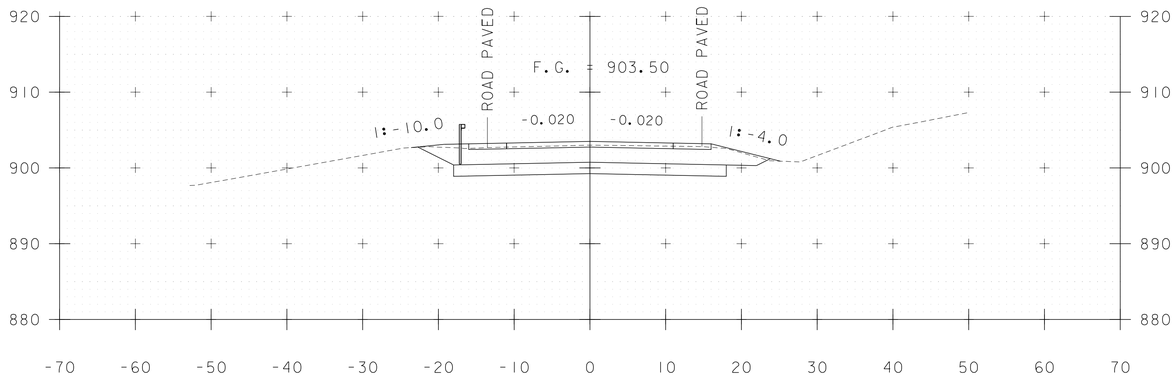


338+50

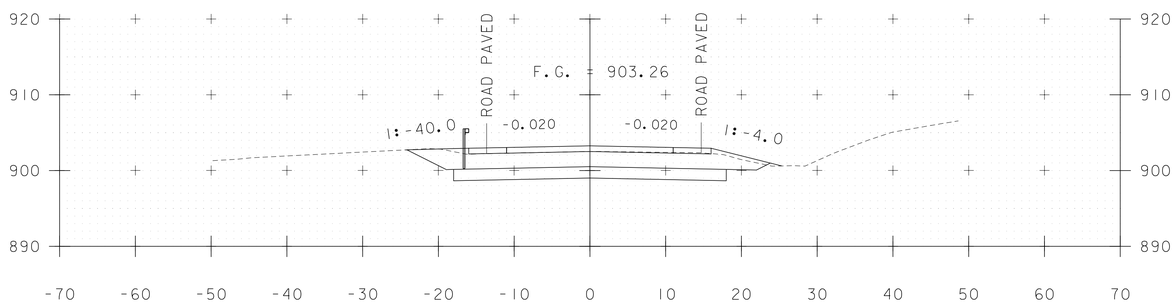
PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

STA. 337+75 TO STA. 339+00

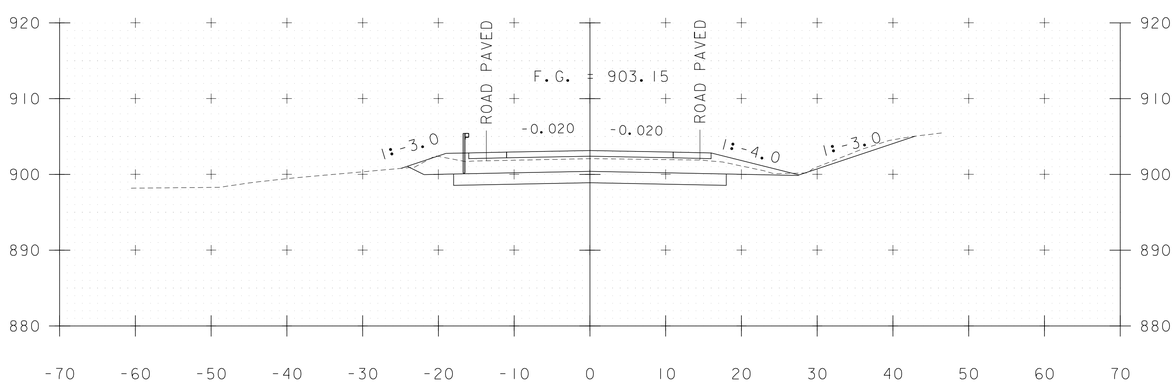
PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146xs.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: J.KHERA
DESIGNED BY: J.KHERA	CHECKED BY: R.BENJAMIN
MAINLINE CROSS SECTIONS	SHEET 27 OF 32



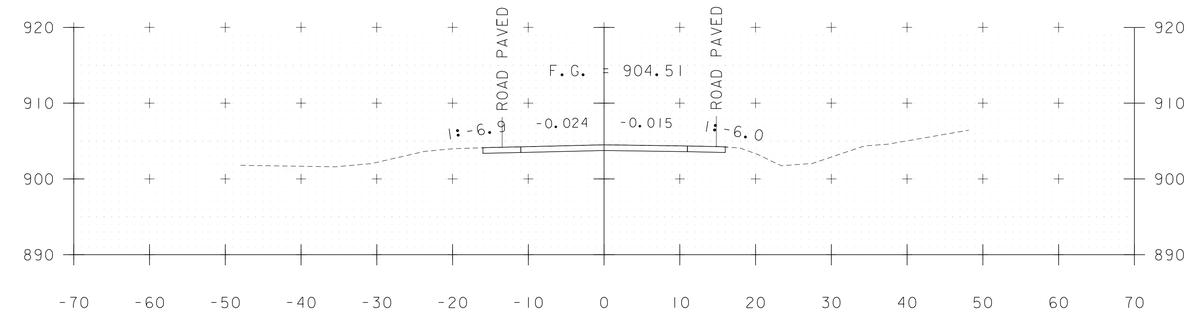
339+75



339+50

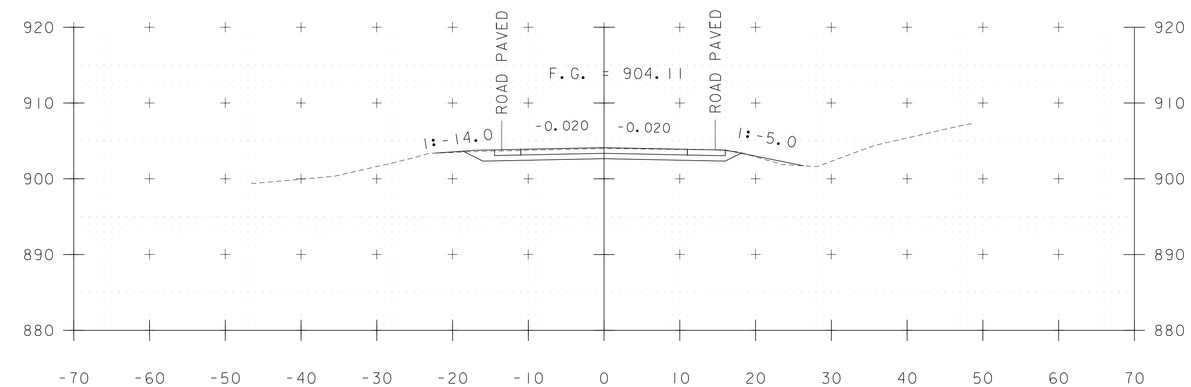


339+25

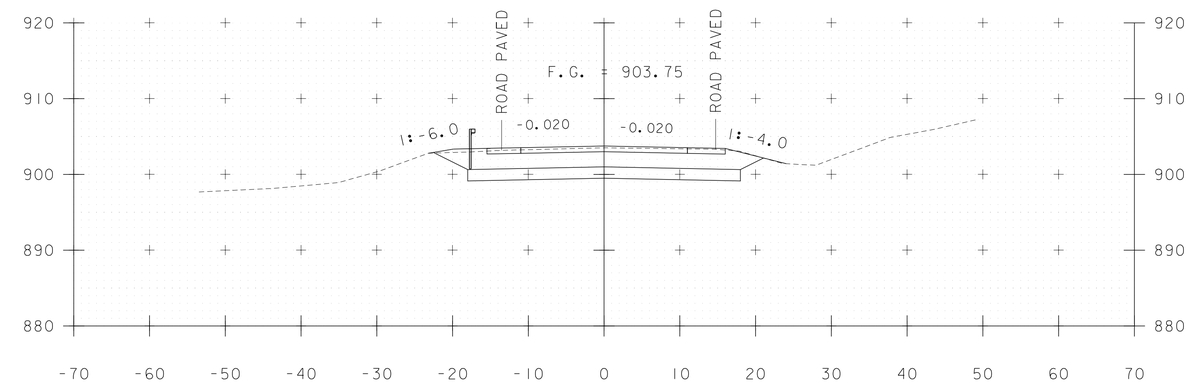


STA. 340+50.0
END APPROACH
MATCH EXISTING CROSS SLOPES

340+50



340+25



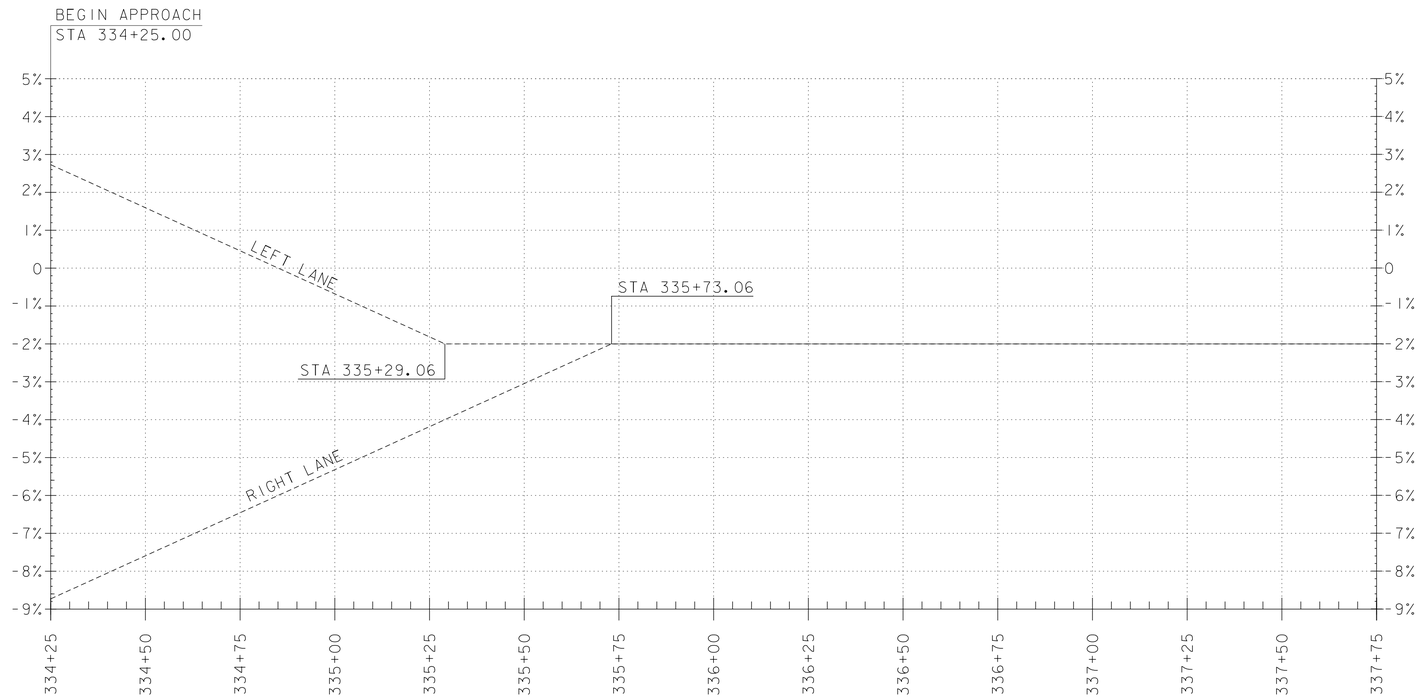
STA. 340+00.00
END PROJECT

340+00

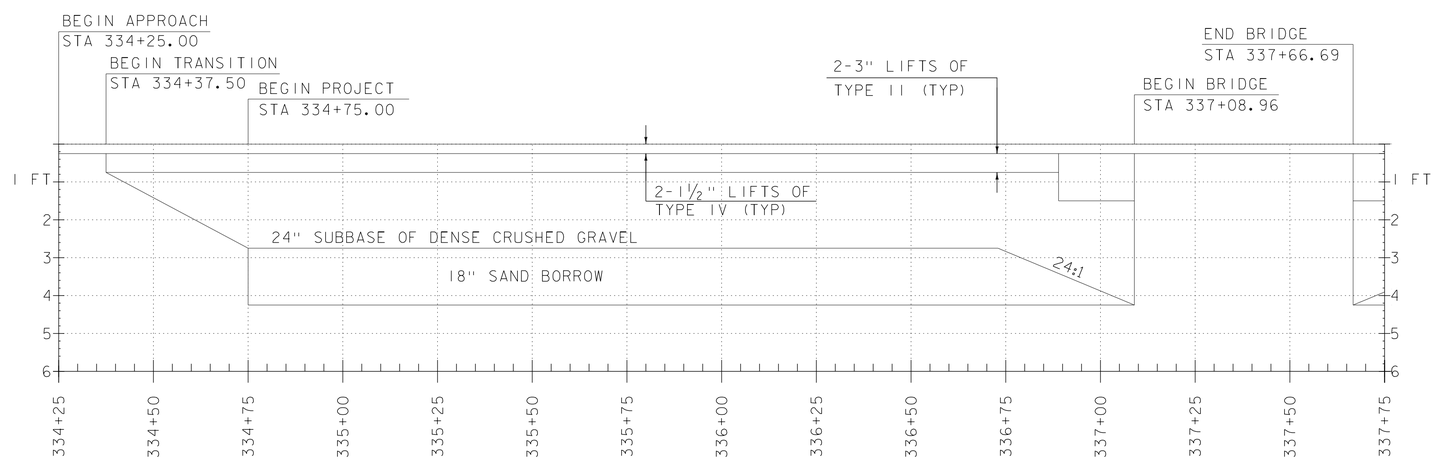
PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

STA. 339+25 TO STA. 340+50

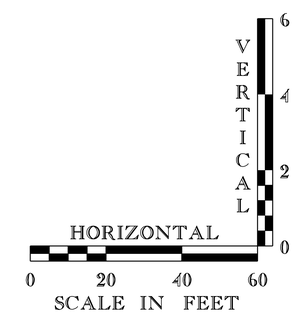
PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146xs.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: J.KHERA
DESIGNED BY: J.KHERA	CHECKED BY: R.BENJAMIN
MAINLINE CROSS SECTIONS	SHEET 28 OF 32



BANKING DIAGRAM

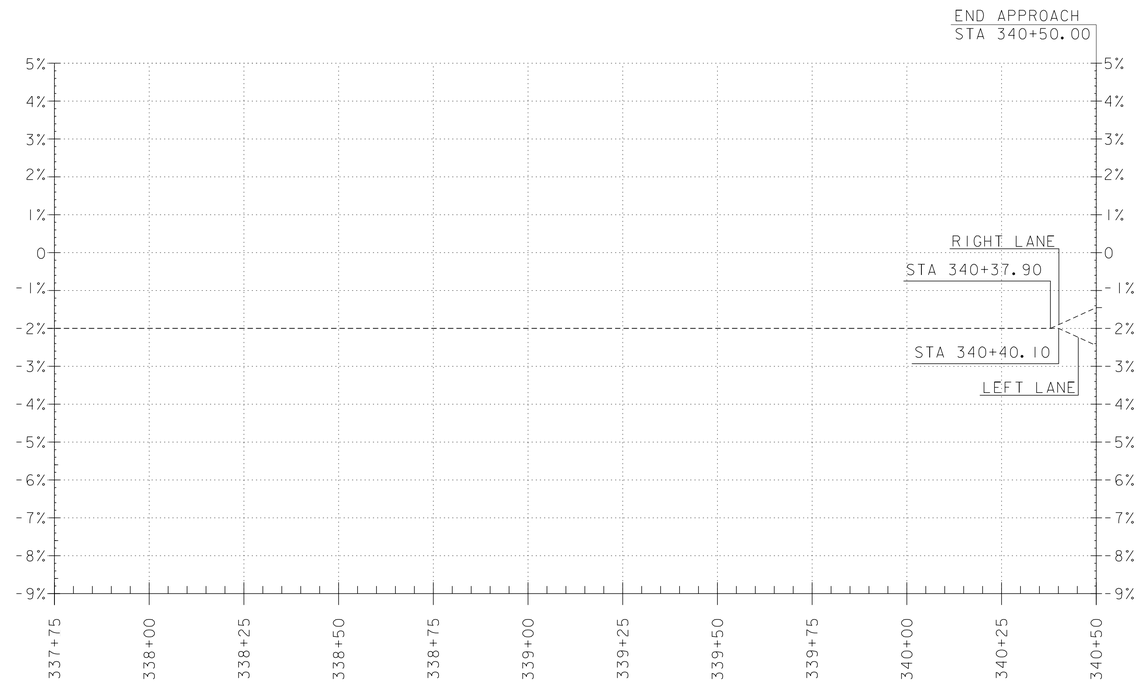


MATERIAL TRANSITIONS

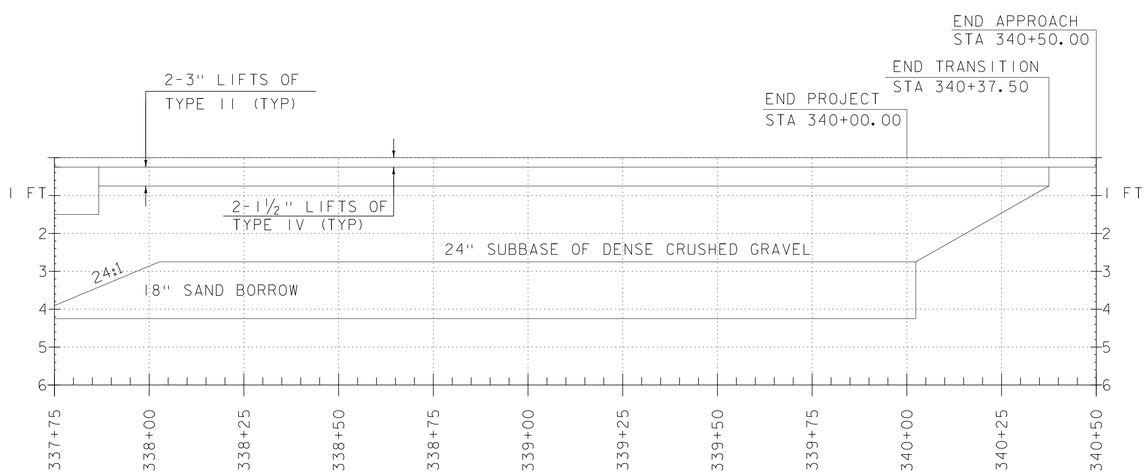


PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

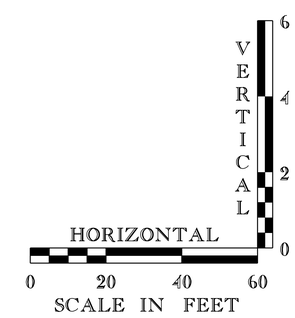
PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(II)	
FILE NAME: z12bl46xs2.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: J.KHERA
DESIGNED BY: J.KHERA	CHECKED BY: R.BENJAMIN
MATERIAL TRANSITION AND BANKING SHEET (I)	SHEET 29 OF 32



BANKING DIAGRAM

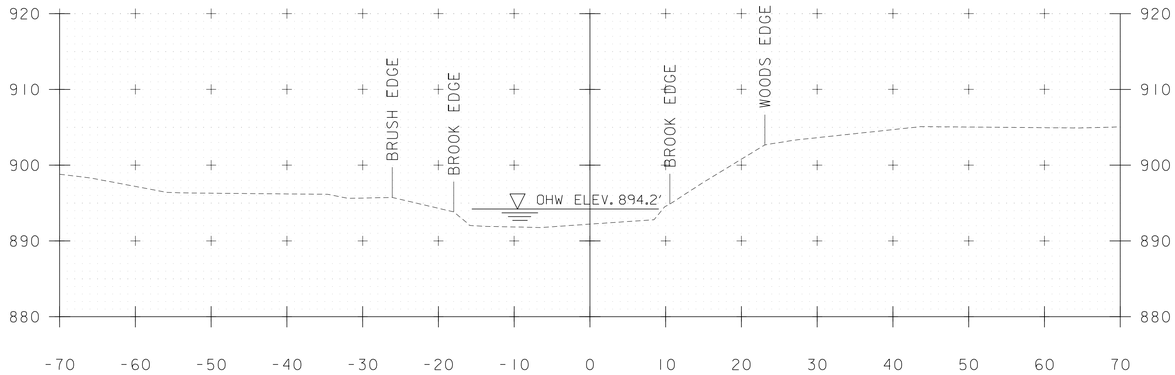


MATERIAL TRANSITIONS



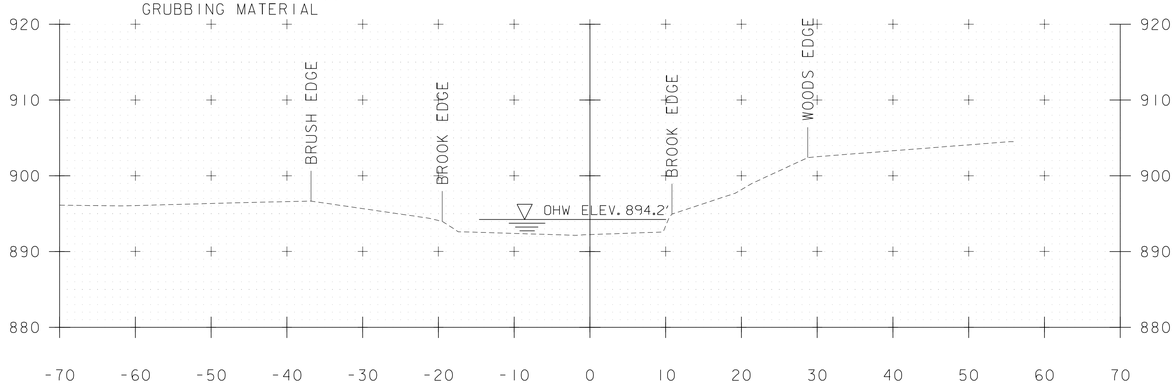
PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146xs2.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: J.KHERA
DESIGNED BY: J.KHERA	CHECKED BY: R.BENJAMIN
MATERIAL TRANSITION AND BANKING SHEET (2)	SHEET 30 OF 32

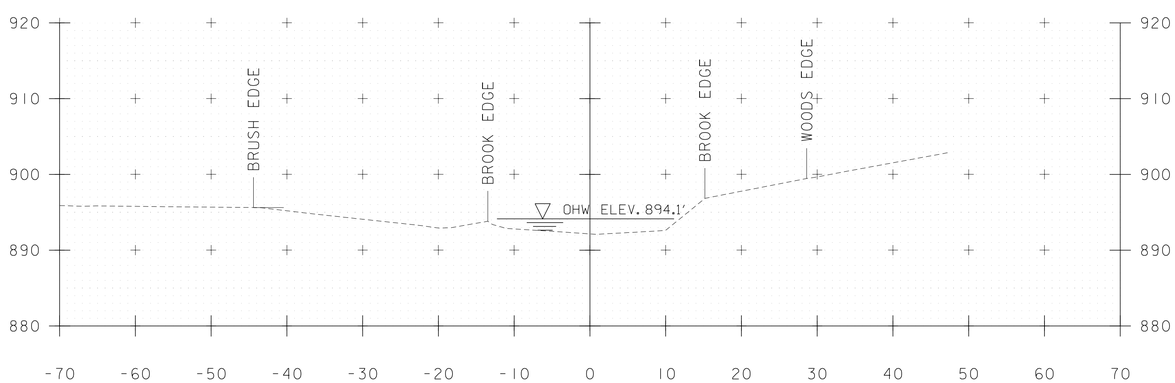


STA. 51+50.00 LT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
STONE FILL TYPE III
GRUBBING MATERIAL

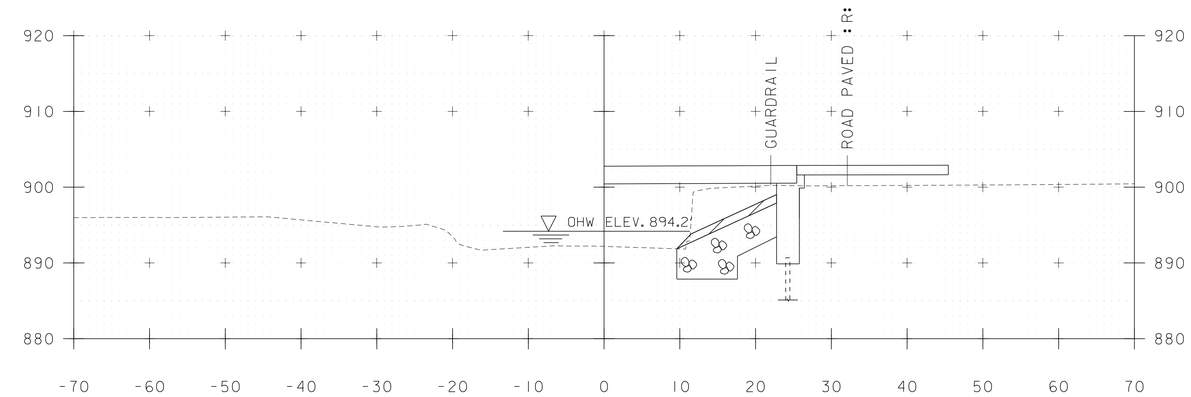
50+50



50+25



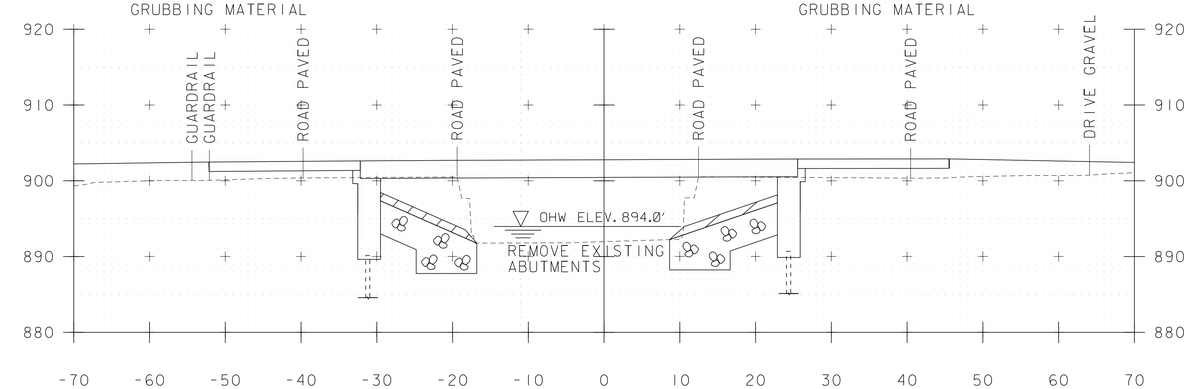
50+00



STA. 51+25.00 LT
END UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
STONE FILL TYPE III
GRUBBING MATERIAL

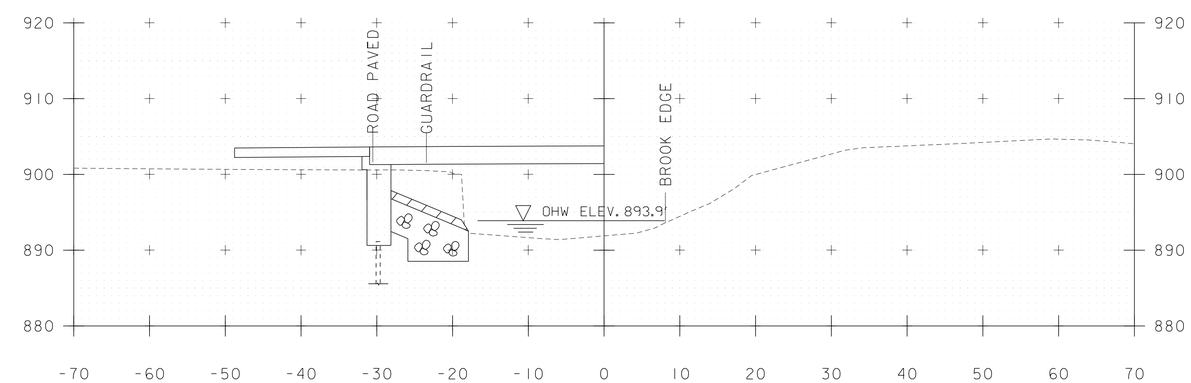
51+25

STA. 51+25.00 RT
END UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
STONE FILL TYPE III
GRUBBING MATERIAL



STA. 51+13.00 LT
BEGIN GRUBBING MATERIAL

51+00



STA. 50+71.00 LT
END GRUBBING MATERIAL

50+75

STA. 51+50.00 RT
START UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
STONE FILL TYPE III
GRUBBING MATERIAL

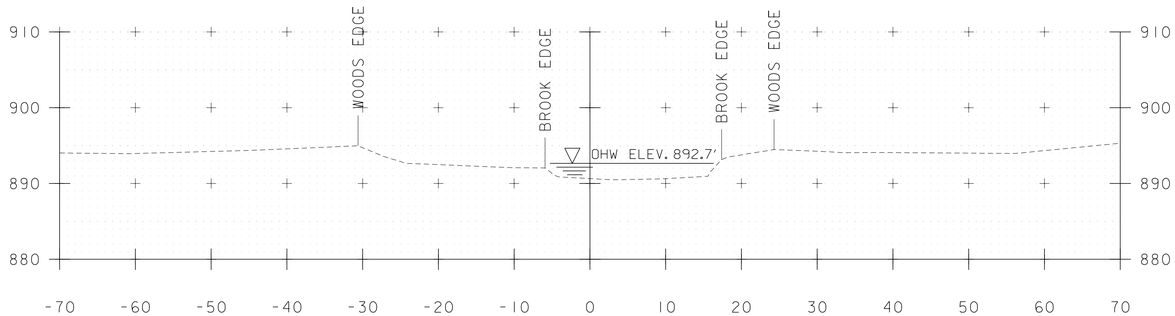
PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

STA. 50+00 TO STA. 51+25

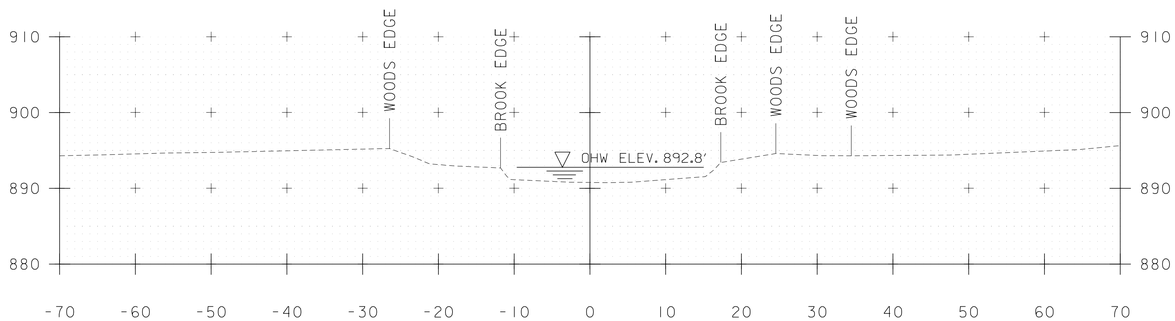
PROJECT NAME: CALAIS
PROJECT NUMBER: BHF 037-2(11)

FILE NAME: z12b146xs.dgn
PROJECT LEADER: G.K.DONINGTON
DESIGNED BY: J.KHERA
CHANNEL CROSS SECTIONS

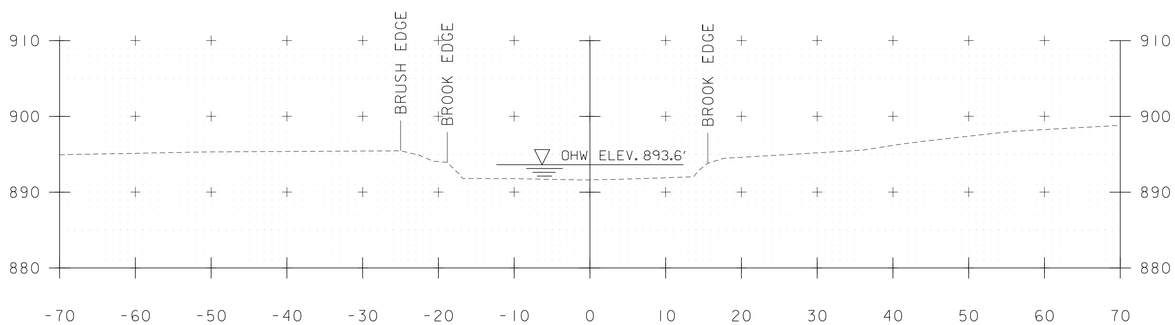
PLOT DATE: 19-AUG-2014
DRAWN BY: J.KHERA
CHECKED BY: R.BENJAMIN
SHEET 31 OF 32



52+00



51+75



51+50

PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

STA. 51+50 TO STA. 52+00

PROJECT NAME: CALAIS	
PROJECT NUMBER: BHF 037-2(11)	
FILE NAME: z12b146xs.dgn	PLOT DATE: 19-AUG-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: J.KHERA
DESIGNED BY: J.KHERA	CHECKED BY: R.BENJAMIN
CHANNEL CROSS SECTIONS	SHEET 32 OF 32