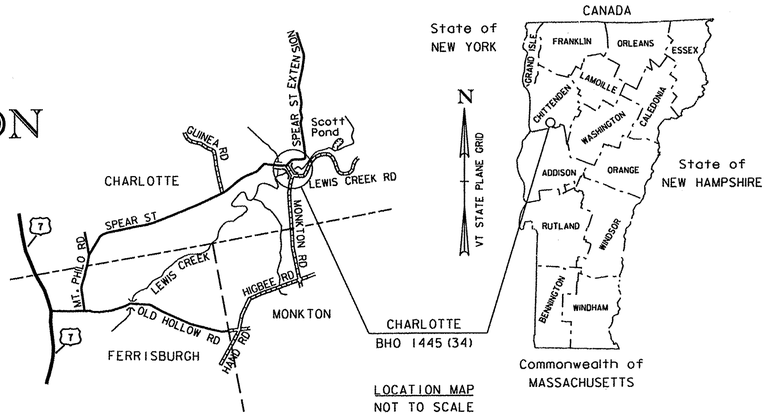
STATE OF VERMONT
AGENCY OF TRANSPORTATION



LOCATION MAP
NOT TO SCALE

RECORD PLANS

CONTRACTOR: WRIGHT CONSTRUCTION CO. INC. – MT. HOLLY, VT

RESIDENT ENGINEER: DALE NORTON

CONSTRUCTION BEGAN: MARCH 4, 2013

CONSTRUCTION COMPLETE: AUGUST 20, 2014

RECORD PLANS BY: DALE NORTON & C. PIERCE

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

BY _____ for RETIRED RESIDENT ENGINEER

DATE 2-20-15

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.

PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF CHARLOTTE
COUNTY OF CHITTENDEN
TH 36 (CLASS III LOCAL ROAD) BRIDGE NO. 29

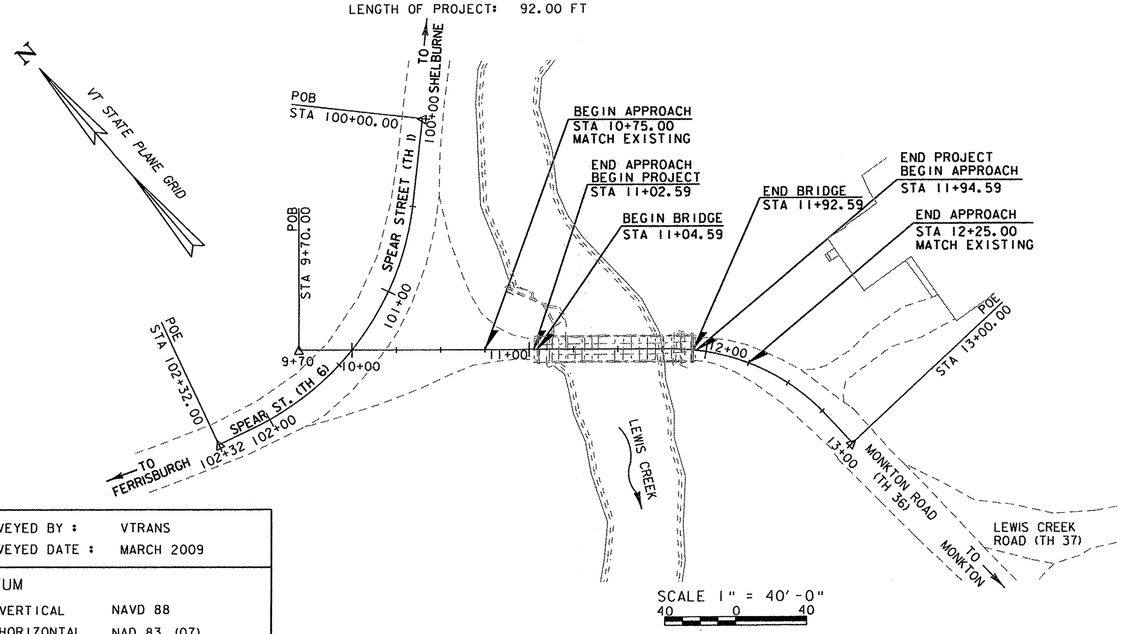
PROJECT LOCATION: LOCATED IN THE COUNTY OF CHITTENDEN, TOWN OF CHARLOTTE, ON MONKTON ROAD (TH 36); BRIDGE 29 OVER LEWIS CREEK, APPROXIMATELY 100 FT SOUTHEAST OF THE INTERSECTION OF SPEAR STREET (TH6) AND MONKTON RD (TH 36).

PROJECT DESCRIPTION: REHABILITATION OF QUINLAN COVERED BRIDGE, RELATED ROADWAY APPROACH WORK, AND BANK ARMORING.

LENGTH OF STRUCTURE: 88.00 FT

LENGTH OF ROADWAY: 4.00 FT

LENGTH OF PROJECT: 92.00 FT



QUALITY ASSURANCE PROGRAM: LEVEL 2

CONVENTIONAL SYMBOLS

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

SURVEYED BY : VTRANS
SURVEYED DATE : MARCH 2009

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (07)

STATE OF VERMONT
BRIAN A. CROWN
63122
CIVIL
LICENSED
PROFESSIONAL ENGINEER
9-13-12

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 Richard Tetreault DATE 10-1-12

PROJECT MANAGER : MARK D. SARGENT

PROJECT NAME : CHARLOTTE
PROJECT NUMBER : BHO 1445 (34)

SHEET 1 OF 55 SHEETS

VHB Vanasse Hangen Brustlin, Inc.

VHB 57348

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version 09.02.03

ASD

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55	CHANNEL CROSS SECTIONS (3 OF 3)

STANDARDS LIST

E-100	CONSTRUCTION APPROACH SIGNS	01-02-2004
E-100A	SIDE ROAD CONSTRUCTION - APPROACH SIGNS	01-02-2004
E-102	CONSTRUCTION SIGN DETAILS	06-30-2003
E-102A	CONSTRUCTION SIGN DETAILS	05-01-2004
E-106	TRAFFIC CONTROL- MISCELLANEOUS DETAILS	03-01-2004
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	06-30-2003
E-107A	BREAKAWAY BARRICADE DETAILS	06-08-2009
E-108	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS	06-08-2009
E-108A	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS FOR PAVING	06-08-2009
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-1995
E-141	REGULATORY SIGN DETAILS	09-20-1995
E-164	SQUARE STEEL SIGN POST	06-08-2009
E-175	POWER DROP STANCHION	06-08-2009
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	01-03-2000
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)	01-03-2000

STRUCTURES DETAILS

SD-602.00	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES	05-02-2011

ABBREVIATIONS:
V.I.F. - VERIFY IN FIELD
U.O.N. - UNLESS OTHERWISE NOTED

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2011	360	70	70	6.2	25
2031	410	75	70	9.6	45

20 year ESAL for flexible pavement from 2011 to 2031 : 39400
40 year ESAL for flexible pavement from 2011 to 2051 : 90600
Design Speed : 25 mph

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: N/A

DRAINAGE AREA : 70.4 sq. mi.
CHARACTER OF TERRAIN : Hilly to mountainous
STREAM CHARACTERISTICS : Meandering, moderate floodplain access
NATURE OF STREAMBED : Gravel, cobbles, boulders and ledge

PEAK FLOW DATA

Q 2.33 =	1,500 cfs	Q 50 =	5700
Q 10 =	3600	Q 100 =	6900
Q 25 =	4700	Q 500 =	9700

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

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single span covered bridge
YEAR BUILT: 1849
CLEAR SPAN(NORMAL TO STREAM): 67'
VERTICAL CLEARANCE ABOVE STREAMBED: 13'
WATERWAY OF FULL OPENING: 724 sq. ft.
DISPOSITION OF STRUCTURE: Rehabilitation
TYPE OF MATERIAL UNDER SUBSTRUCTURE: Unknown

WATER SURFACE ELEVATIONS AT:

Q2.33 =	223.2'	VELOCITY =	7.9 fps
Q10 =	225.9'	"	12.9
Q25 =	227.0'	"	13.7
Q50 =	228.0'	"	13.3
Q100 =	228.6'	"	15.4

LONG TERM STREAMBED CHANGES: Unknown

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes, east approach & TH6
FREQUENCY: Approximately Q10
RELIEF ELEVATION: Approximately 225'
DISCHARGE OVER ROAD @Q100: Unknown

UPSTREAM STRUCTURE

TOWN: CHARLOTTE — DISTANCE: 15,600'
HIGHWAY # : TH 39 (Roscoe Road) — STRUCTURE #: CB28
CLEAR SPAN: 58' — CLEAR HEIGHT: Unknown
YEAR BUILT: 1850 — FULL WATERWAY: Unknown
STRUCTURE TYPE: Single span covered bridge

DOWNSTREAM STRUCTURE

TOWN: Ferrisburgh — DISTANCE: 13,800'
HIGHWAY # : TH -1 (Hollow Road) — STRUCTURE #: B12
CLEAR SPAN: Unknown — CLEAR HEIGHT: Unknown
YEAR BUILT: 2011 — FULL WATERWAY: Unknown
STRUCTURE TYPE: Single span precast bridge

WORKING STRESS LOAD RATING (TONS)

LOADING LEVELS	TRUCK						
	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY	17	---					
POSTING	21						
OPERATING	25	---	---	---	---	---	
COMMENTS:	BOTTOM CHORD CONTROLS THE LOAD RATING.						

VHB Vanasse Hangen Brustlin, Inc.

PROPOSED STRUCTURE

STRUCTURE TYPE: Same as existing

CLEAR SPAN(NORMAL TO STREAM): 67'
VERTICAL CLEARANCE ABOVE STREAMBED: 13'
WATERWAY OF FULL OPENING: 724 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	223.2'	VELOCITY=	7.9 fps
Q10 =	225.9'	"	12.9
Q25 =	227.0'	"	13.7
Q50 =	228.0'	"	13.3
Q100 =	228.6'	"	15.4

IS THE ROADWAY OVERTOPPED BELOW Q100: Unknown
FREQUENCY: --
RELIEF ELEVATION: --
DISCHARGE OVER ROAD @Q100: --

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 228.93'
VERTICAL CLEARANCE: @ Q25 = 1.9 ft

SCOUR: Minor scour under existing northeast wingwall to be repaired with grout bags.

REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW:	Unknown	DEPTH OR ELEVATION:
ORDINARY LOW WATER:	Unknown	--
ORDINARY HIGH WATER:	Unknown	--

TEMPORARY BRIDGE REQUIREMENTS

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

ADDITIONAL INFORMATION

No changes to bridge cross section, so approximate study was used to calculate headwater and velocity information listed above.

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

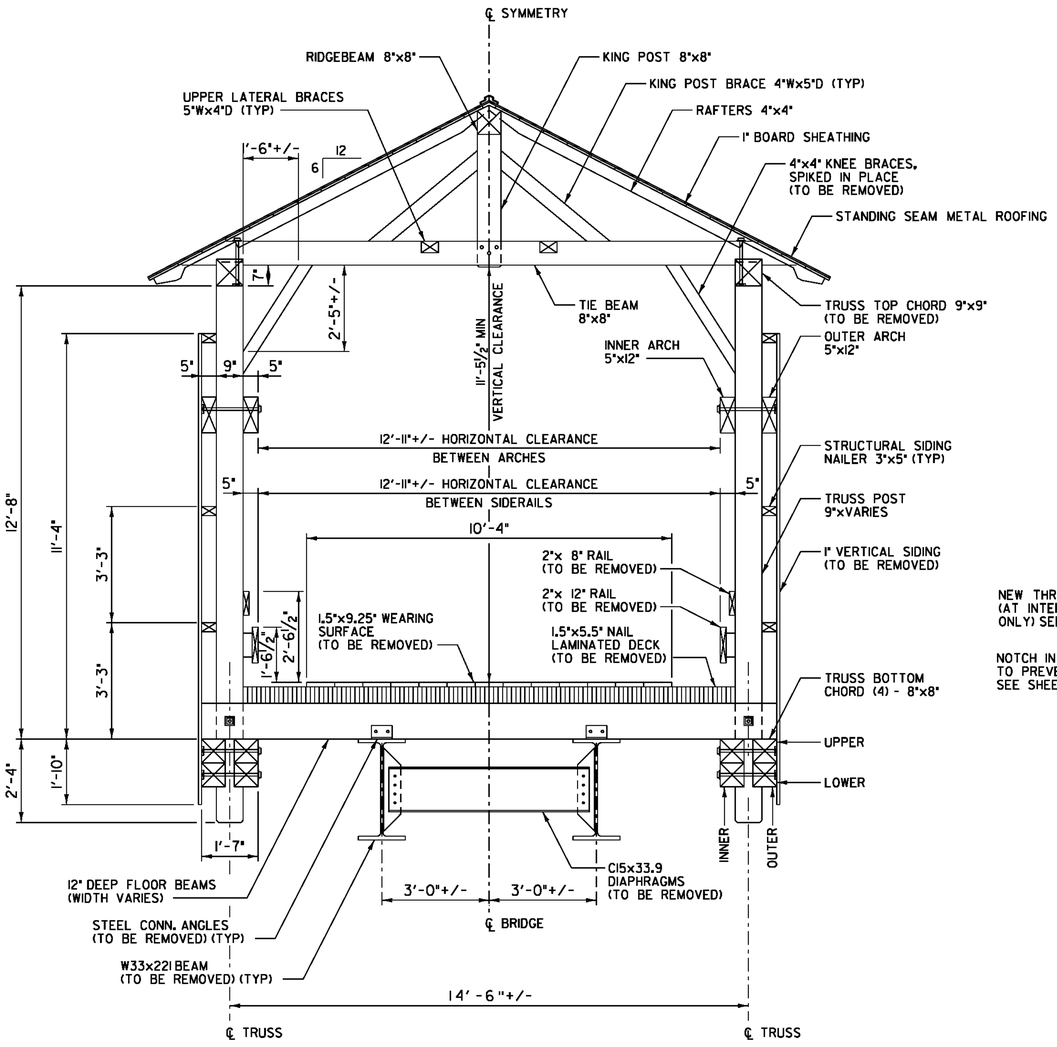
1. DESIGN LIVE LOAD		H-17
2. FUTURE PAVEMENT	d_p:	0.0 INCH
3. DESIGN SPAN	L:	78.70 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	---
5. PRESTRESSING STRAND	f_y:	---
6. PRESTRESSED CONCRETE STRENGTH	f'_c:	---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	---
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f'_c:	---
9. CONCRETE, HIGH PERFORMANCE CLASS A	f'_c:	---
10. CONCRETE, CLASS B	f'_c:	3.5 KSI
11. CONCRETE, CLASS C	f'_c:	---
12. REINFORCING STEEL	f_y:	60 KSI
13. STRUCTURAL STEEL AASHTO M270	f_y:	50 KSI
14. SOIL UNIT WEIGHT	γ:	0.140 KCF
15. NOMINAL BEARING RESISTANCE OF SOIL	q_n:	---
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
17. NOMINAL BEARING RESISTANCE OF ROCK	q_n:	---
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
19. NOMINAL AXIAL PILE RESISTANCE	q_p:	---
20. PILE YIELD STRENGTH ASTM A572	f_y:	---
21. PILE SIZE		---
22. EST. PILE LENGTH	L_p:	
23. PILE RESISTANCE FACTOR	ϕ:	---
24. LATERAL PILE DEFLECTION	Δ:	---
25. BASIC WIND SPEED	V_{3s}:	---
26. MINIMUM GROUND SNOW LOAD	p_g:	40 PSF
27. SEISMIC DATA	PGA: ---	S_s: ---
		S_1: ---

PROJECT NAME: CHARLOTTE
PROJECT NUMBER: BHO 1445(34)

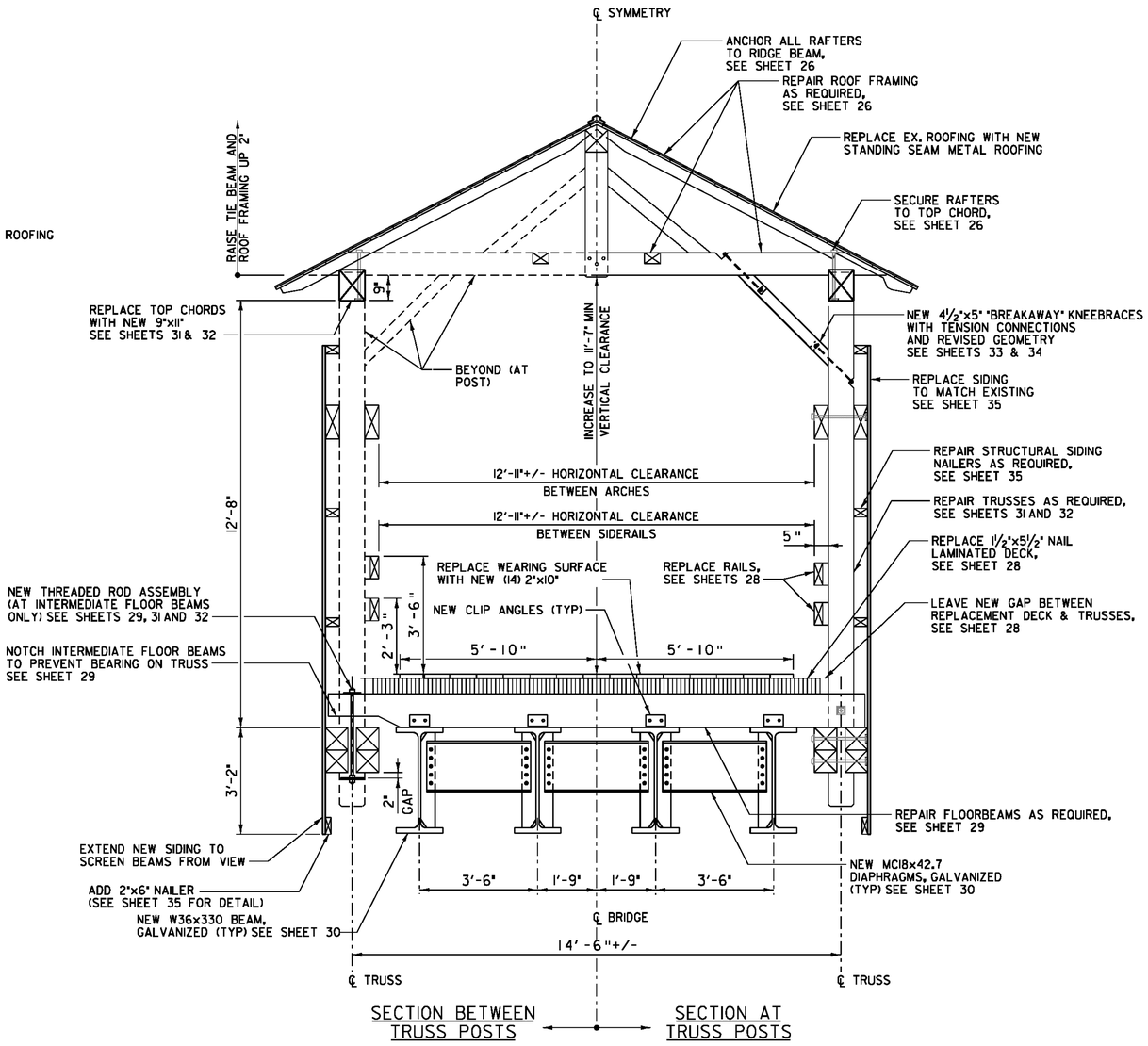
FILE NAME: z06j088pi.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: B.O. CRONIN
PRELIMINARY INFORMATION SHEET

PLOT DATE: 9/11/2012
DRAWN BY: E.A. FIALA
CHECKED BY: K.E. HILL
SHEET 2 OF 55

VHB 57348



EXISTING TYPICAL BRIDGE SECTION
SCALE: ½" = 1'-0"



SECTION BETWEEN TRUSS POSTS — SECTION AT TRUSS POSTS

PROPOSED TYPICAL BRIDGE SECTION
SCALE: ½" = 1'-0"

NOTE:

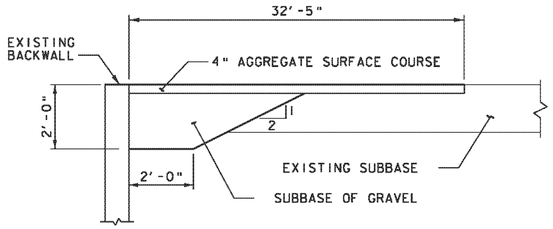
1. SEE ROADWAY TYPICAL SECTIONS AND CROSS SECTIONS FOR INFORMATION NOT SHOWN.
2. SUPERSTRUCTURE IS TO BE RAISED 4" TO MAINTAIN EXISTING HYDRAULIC OPENING WITH THE INCREASED BEAM DEPTH. ROOF FRAMING IS TO BE RAISED AN ADDITIONAL 2" WITH RESPECT TO TOP OF DECK.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)

FILE NAME: z06J088typ.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
TYPICAL SECTIONS	SHEET 3 OF 55

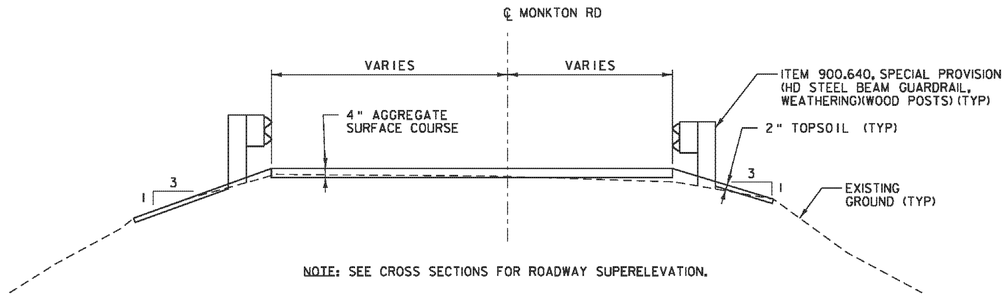
VHB Vanasse Hangen Brustlin, Inc.

VHB 57348



TYPICAL GRAVEL APPROACH SECTION

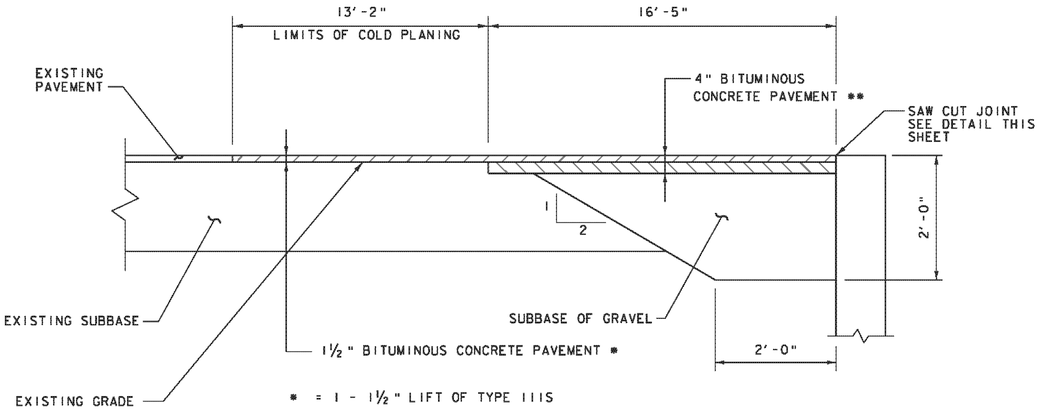
NOT TO SCALE



NOTE: SEE CROSS SECTIONS FOR ROADWAY SUPERELEVATION.

TYPICAL GRAVEL SECTION

SCALE 3/8" = 1'-0"

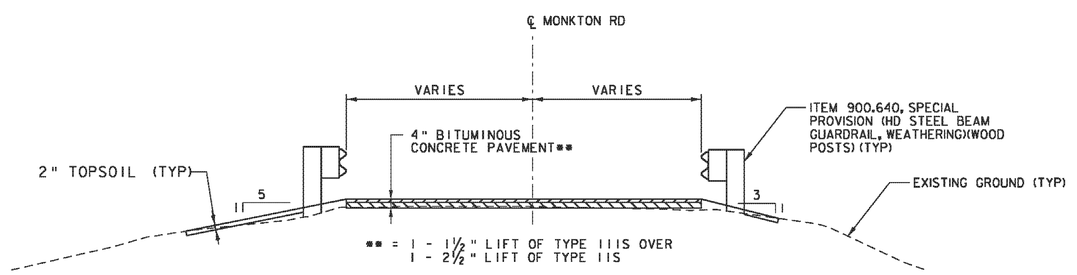


* = 1 - 1½" LIFT OF TYPE IIIS

** = 1 - 1½" LIFT OF TYPE IIIS OVER
1 - 2½" LIFT OF TYPE IIS

TYPICAL PAVED APPROACH SECTION

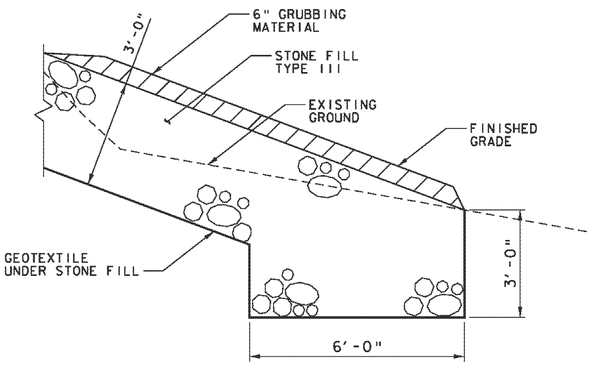
NOT TO SCALE



** = 1 - 1½" LIFT OF TYPE IIIS OVER
1 - 2½" LIFT OF TYPE IIS

TYPICAL PAVED SECTION

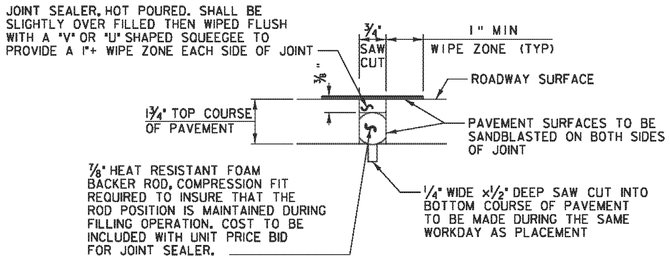
SCALE 3/8" = 1'-0"



STONE FILL, TYPE III

TYPICAL KEY SECTION

SCALE ½" = 1'-0"



SAW CUT JOINT DETAIL

NOT TO SCALE

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z06J088typ.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: B.O. CRONIN	CHECKED BY: S.E. BURBANK
TYPICAL ROADWAY SECTIONS	SHEET 4 OF 55

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
				ROADWAY	EROSION CONTROL	BRIDGE	ALT. A	ALT. B	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				
				25						25		CY	COMMON EXCAVATION	203.15				
				120						120		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27				
				1						1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
					1					1		LS	COFFERDAM (ABUTMENT NO. 1)	208.40				
				35						35		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
				10						10		CY	SUBBASE OF GRAVEL	301.15				
				10						10		CY	AGGREGATE SURFACE COURSE	401.10				
				1						1		CWT	EMULSIFIED ASPHALT	404.65				
				1						1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
						112000				112000		LB	STRUCTURAL STEEL, ROLLED BEAM	506.50				
						800				800		LB	STRUCTURAL STEEL	506.60				
						120				120		LB	REINFORCING STEEL, LEVEL I	507.11				
						28				28		LF	DRILLING AND GROUTING DOWELS	507.16				
						7				7		GAL	WATER REPELLENT, SILANE	514.10				
						10				10		MFBM	STRUCTURAL LUMBER AND TIMBER, UNTREATED	522.20	EST.			
						15				15		MFBM	STRUCTURAL LUMBER AND TIMBER, TREATED	522.25	EST.			
						5				5		MFBM	NONSTRUCTURAL LUMBER, UNTREATED	522.30	EST.			
				14						14		LF	JOINT SEALER, HOT POURED	524.11				
						2				2		CY	CONCRETE, CLASS B	541.25				
						2				2		CY	CONTROLLED DENSITY (FLOWABLE) FILL	541.45				
						5				5		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	580.13	EST.			
						5				5		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	580.14	EST.			
						5				5		CY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III	580.15	EST.			
				1						1		MGAL	DUST CONTROL WITH WATER	609.10				
				25						25		CY	STONE FILL, TYPE I	613.10				
				200						200		CY	STONE FILL, TYPE III	613.12				
				4						4		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60				
				245						245		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
				40						40		HR	FLAGGERS	630.15	EST.			
									1	1		LS	FIELD OFFICE, ENGINEERS	631.10				
									1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16				
									1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
									3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
				1						1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
				1						1		LS	TRAFFIC CONTROL	641.10				
				14						14		DAY	PORTABLE CHANGEABLE MESSAGE SIGN RENTAL	641.17				
				275						275		SY	GEOTEXTILE UNDER STONE FILL	649.31				
					25					25		SY	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515				
					60					60		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61				

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE
PROJECT NUMBER: BHO 1445(34)

FILE NAME: z06j088qs.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: E.A. FIALA
QUANTITY SHEET #1

PLOT DATE: 09/12/2012
DRAWN BY: E.A. FIALA
CHECKED BY: B.O. CRONIN
SHEET 5 OF 55

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES							TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	EROSION CONTROL	BRIDGE	ALT. A	ALT. B	FULL C.E. ITEMS		GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
	10						10		LB	SEED	651.15				
	50						50		LB	FERTILIZER	651.18				
	1						1		TON	AGRICULTURAL LIMESTONE	651.20				
	1						1		TON	HAY MULCH	651.25				
	14						14		CY	TOPSOIL	651.35				
	275						275		SY	GRUBBING MATERIAL	651.40				
	330						330		LF	PROJECT DEMARCATION FENCE	653.55				
4							4		EACH	DECIDUOUS TREES (SORBUS DECORA)(B& B)(3 IN)	656.30				
		1					1		LS	TIMBER PAINTING, ENVIRONMENTAL PROTECTION	660.10				
		1					1		LS	TIMBER PAINTING, FIRE RETARDANT	660.20				
		1					1		LS	TIMBER PAINTING, INSECTICIDE/FUNGICIDE	660.30				
		235					235		SY	METAL ROOFING	661.10				
68							68		SF	TRAFFIC SIGNS, TYPE A	675.20				
180							180		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
7							7		EACH	REMOVING SIGNS	675.50				
1							1		EACH	ERECTING SALVAGED SIGNS	675.60				
		5					5		CY	SPECIAL PROVISION (GROUT BAGS)	900.608				
		8					8		EACH	SPECIAL PROVISION (BEARING DEVICE ASSEMBLY, PREFORMED FABRIC PAD)	900.620				
		10					10		EACH	SPECIAL PROVISION (WOOD EPOXY REPAIRS)	900.620				
240							240		LF	SPECIAL PROVISION (HD STEEL BEAM GUARDRAIL, WEATHERING) (WOOD POSTS)	900.640				
1							1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY)(N.A.B.I.)	900.650				
1							1		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT)(N.A.B.I.)	900.650				
10							10		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				
										BEGIN ALTERNATE A (IN-PLACE REHABILITATION)					
			1				1		LS	SHORING SUPERSTRUCTURE	502.10				
			1				1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20				
			1				1		LS	SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE)	900.645				
										END ALTERNATE A (IN-PLACE REHABILITATION)					
										BEGIN ALTERNATE B (RELOCATED REHABILITATION)					
				1			1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20				
				1			1		LS	SPECIAL PROVISION (HANDLING, TRANSPORT, AND RE-ERECTION OF COVERED BRIDGE SUPERSTRUCTURE)	900.645				
				1			1		LS	SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE)	900.645				
										END ALTERNATE B (RELOCATED REHABILITATION)					

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE
PROJECT NUMBER: BHO 1445(34)

FILE NAME: z06j088qs.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: E.A. FIALA
QUANTITY SHEET #2

PLOT DATE: 09/12/2012
DRAWN BY: E.A. FIALA
CHECKED BY: B.O. CRONIN
SHEET 8 OF 55

VHB 57348

GPS CONTROL POINTS

HVCTRL #1

QUINLAN
NORTH = 647905.441
EAST = 1461436.466
ELEV. = 243.573

GENERAL LOCATION, CHARLOTTE, VT.
TO REACH FROM THE INTERSECTION OF VT FERRY ROAD F-5 (FERRY STREET), US ROUTE 7, AND CHURCH HILL ROAD GO SOUTH ALONG US ROUTE 7 FOR 2.5 MI (4.0 KM) TO THE INTERSECTION OF STATE PARK ROAD LEFT. TURN LEFT AND GO EAST ALONG STATE PARK ROAD FOR 0.6 MI (1.0 KM) TO THE INTERSECTION OF MOUNT PHILO ROAD. TURN RIGHT AND GO SOUTH ALONG MOUNT PHILO ROAD FOR 0.8 MI (1.3 KM) TO THE INTERSECTION OF SPEAR STREET LEFT. TURN LEFT AND GO EAST ALONG SPEAR STREET FOR 2.0 MI (3.2 KM) TO THE INTERSECTION OF MONKTON ROAD RIGHT. TURN RIGHT AND GO SOUTH ALONG MONKTON ROAD, PASSING THROUGH THE QUINLAN COVERED BRIDGE, FOR 0.1 MI (0.2 KM) TO THE SITE OF THE MARK STRAIGHT AHEAD IN A GRASSY TRIANGLE INTERSECTION.
THE MARK IS SET 20 CM (8 INCHES) BELOW GROUND SURFACE IN THE TOP OF A FENO-STYLE MONUMENT. IT IS 11.4 M (37.4 FT) EAST OF AND ABOUT 0.3 M (1.0 FT) HIGHER THAN THE CENTERLINE OF MONKTON ROAD, 4.9 M (16.1 FT) EAST-NORTHEAST OF THE LEWIS CREEK ROAD METAL SIGN POST, 10.6 M (34.8 FT) SOUTHWEST OF THE CENTERLINE OF THE MOST NORTHERLY LEG OF LEWIS CREEK ROAD, 6.7 M (22.0 FT) NORTH OF THE CENTERLINE OF THE MOST SOUTHERLY LEG OF LEWIS CREEK ROAD, 23.3 M (76.4 FT) WEST-NORTHWEST OF POLE NO 34, AND 0.3 M (1.0 FT) NORTH OF A FIBERGLASS WITNESS POST.

HVCTRL #2

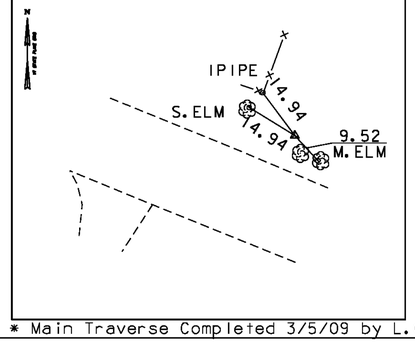
QUINLAN AZ MK
NORTH = 648495.630
EAST = 1459997.246
ELEV. = 291.855

GENERAL LOCATION, CHARLOTTE, VT.
TO REACH FROM THE INTERSECTION OF VT FERRY ROAD F-5 (FERRY STREET), US ROUTE 7, AND CHURCH HILL ROAD GO SOUTH ALONG US ROUTE 7 FOR 2.5 MI (4.0 KM) TO THE INTERSECTION OF STATE PARK ROAD LEFT. TURN LEFT AND GO EAST ALONG STATE PARK ROAD FOR 0.6 MI (1.0 KM) TO THE INTERSECTION OF MOUNT PHILO ROAD. TURN RIGHT AND GO SOUTH ALONG MOUNT PHILO ROAD FOR 0.8 MI (1.3 KM) TO THE INTERSECTION OF SPEAR STREET LEFT. TURN LEFT AND GO EAST ALONG SPEAR STREET FOR 1.8 MI (2.9 KM) TO THE SITE OF THE MARK ON THE RIGHT.
THE MARK IS SET 20 CM (8 INCHES) BELOW GROUND SURFACE IN THE TOP OF A FENO-STYLE MONUMENT. IT IS 7.3 M (24.0 FT) SOUTHEAST OF AND ABOUT 1.0 M (3.3 FT) LOWER THAN THE CENTERLINE OF SPEAR STREET, 14.8 M (48.6 FT) NORTHEAST OF A 25 CM (10 INCHES) CEDAR, 30.8 M (101.0 FT) SOUTHWEST OF AND ACROSS THE ROAD FROM POLE NO 8, 34.0 M (111.5 FT) WEST-SOUTHWEST OF A PLUMB WOODEN FENCE POST, 36.8 M (120.7 FT) SOUTHWEST OF AND ACROSS THE ROAD FROM THE INTERSECTION OF THE DRIVE LEADING TO HOUSE NO 6136, AND 0.2 M (0.7 FT) NORTHWEST OF A FIBERGLASS WITNESS POST.

TRAVERSE TIES

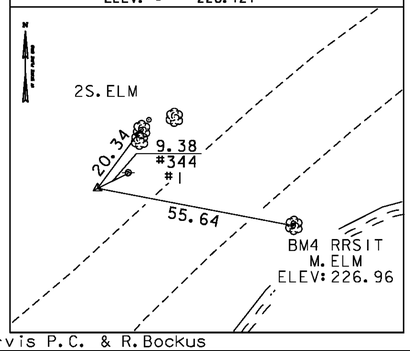
HVCTRL #3

NORTH = 648500.237
EAST = 1460668.949
ELEV. = 230.260



HVCTRL #4

NORTH = 648372.819
EAST = 1461309.693
ELEV. = 226.121



* Main Traverse Completed 3/5/09 by L.Orvis P.C. & R.Bockus

ALIGNMENT CONTROL

Horizontal Alignment Name: Monkton Rd (TH 36)

	STATION	NORTHING	EASTING
Element: Linear			
POB (1)	9+70.00	648304.6731	1461212.5535
PC (2)	11+80.48	648166.7554	1461348.8872
Tangent Direction:	S 49°03'38.35" E		
Tangent Length:	210.48		
Element: Circular			
PC (2)	11+80.48	648166.7554	1461348.8872
PI	12+32.60	648132.5993	1461388.2635
CC (3)		648076.1070	1461270.2560
PT (4)	12+78.83	648080.5082	1461390.1753
Radius:	120.00		
Delta:	46°57'31.59" Right		
Degree of Curvature(Arc):	47°44'47.34"		
Length:	98.35		
Tangent:	52.13		
Chord:	95.62		
Middle Ordinate:	9.94		
External:	10.83		
Tangent Direction:	S 49°03'38.35" E		
Radial Direction:	S 40°56'21.65" W		
Chord Direction:	S 25°34'52.56" E		
Radial Direction:	S 87°53'53.23" W		
Tangent Direction:	S 2°06'06.77" E		
Element: Linear			
PT (4)	12+78.83	648080.5082	1461390.1753
POE (5)	14+00.00	647959.4187	1461394.6194
Tangent Direction:	S 2°06'06.77" E		
Tangent Length:	121.17		

Horizontal Alignment Name: Spear Street/Spear Street Extension (TH6 & TH1)

	STATION	NORTHING	EASTING
Element: Linear			
POB (14)	100+00.00	648357.4336	1461328.1978
PC (15)	100+47.68	648325.1092	1461293.1474
Tangent Direction:	S 47°19'01.21" W		
Tangent Length:	47.68		
Element: Circular			
PC (15)	100+47.68	648325.1092	1461293.1474
PI	101+37.71	648264.0737	1461226.9645
CC (17)		648443.4629	1461183.9988
PT (18)	102+11.86	648288.5034	1461140.3117
Radius:	161.00		
Delta:	58°25'39.06" Right		
Degree of Curvature(Arc):	35°35'14.79"		
Length:	164.18		
Tangent:	90.03		
Chord:	157.16		
Middle Ordinate:	20.48		
External:	23.46		
Tangent Direction:	S 47°19'01.21" W		
Radial Direction:	N 42°40'58.79" W		
Chord Direction:	S 76°31'50.74" W		
Radial Direction:	N 15°44'40.27" E		
Tangent Direction:	N 74°15'19.73" W		
Element: Linear			
PT (18)	102+11.86	648288.5034	1461140.3117
POE (16)	102+32.00	648293.9678	1461120.9293
Tangent Direction:	N 74°15'19.73" W		
Tangent Length:	20.14		

DATUM
VERTICAL: NAVD 88
HORIZONTAL: NAD 83(07)
ADJUSTMENT: COMPASS

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE
PROJECT NUMBER: BHO 1445(34)

FILE NAME: z06J088t1.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: VTRANS
TIE SHEET
PLOT DATE: 9/14/2012
DRAWN BY: R. BULLOCK
CHECKED BY: VTRANS
SHEET 7 OF 55

VHB 57348

N

VT STATE PLANE GRID

REMOVAL AND DISPOSAL OF GUARDRAIL
STA. 10+55.49 - 11+04.97, RT
STA. 10+70.20 - 11+04.66, LT
STA. 11+92.00 - 12+38.76, LT
STA. 11+93.92 - 12+44.16, RT

ITEM 900.640, SPECIAL PROVISION
(HD STEEL BEAM GUARDRAIL, WEATHERING) (WOOD POSTS)
STA. 10+54 - STA. 11+03, RT
STA. 10+70 - STA. 11+03, LT
STA. 11+92 - STA. 12+40, LT
STA. 11+94 - STA. 12+48, RT

ANCHOR FOR STEEL BEAM RAIL
STA. 10+64, RT
STA. 12+29, LT
STA. 12+35, RT

COLD PLANING, BITUMINOUS PAVEMENT
STA. 10+75 - STA. 10+88

NOTES:

1. ONLY TREES IN STONE FILL AREA ON NORTHEAST CORNER ABOVE WINGWALL SHALL BE REMOVED. ALL OTHER TREES TO REMAIN. NEW TREES TO BE PLANTED ON NORTHEAST CORNER SHALL BE 3" SORBUS DECORA (MOUNTAIN ASH).
2. SOME UNDERMINING EXISTS UNDER EXISTING CONCRETE IN STREAM BED IN FRONT OF NORTH ABUTMENT AND WINGWALL ON UPSTREAM SIDE. THESE VOIDS TO BE FILLED USING GROUT BAG REPAIRS. SEE SHEET 46 FOR DETAILS.

BENCHMARK#4
RRSIT
MATURE ELM
ELEVATION: 226.96

SPEAR STREET (TH 1)
TO SHELBURNE
15" CPEP

POB STA 50+00.00
50+00
PROPERTY LINE
EXISTING CONCRETE IN STREAM BED (SEE NOTE 2)
MONKTON RD. STA 11+29.65 = CHANNEL STA. 51+60.76
51+00
PROPOSED MOUNTAIN ASH (TYP)
STONE FILL, TYPE I
STONE FILL, TYPE III
R 30'-0"
END BRIDGE STA 11+92.59
73°2'36"
52+00
PC STA 11+80.48
R 54'-9¼"
STONE FILL, TYPE III
PT STA 12+78.83
APPROXIMATE EXISTING TOWN RIGHT OF WAY
POE STA 13+00.00
13+00
TOWN RIGHT OF WAY
MONKTON ROAD (TH 36)
LEWIS CREEK ROAD (TH 37)
TO MONKTON

EXISTING STONEWALL TO REMAIN (TYP)
END PROJECT BEGIN APPROACH STA. 11+94.59
END APPROACH STA 12+25.00 MATCH EXISTING
PI STA 12+32.60
R 84'-5⅜"
TREE TO BE SAVED
12+00

POB STA 100+00.00
100+00
PC STA 100+47.68
BEGIN BRIDGE STA 11+04.59
BEGIN APPROACH STA 10+75.00 MATCH EXISTING
POB STA 9+78.00
9+70
51°8'38"
10+00
101+00
R 528'-8"
11+00
R 88'-9⅛"
STA 101+37.71 PI
PROPERTY LINE
SPEAR ST. EXT. STA: 101+38.91 = MONKTON RD. STA: 10+00.00
END APPROACH BEGIN PROJECT STA 11+02.59
LEWIS CREEK
PROPERTY LINE
POE STA 53+00.00
53+00

POE STA 102+32.00
PT STA 102+11.86
102+00
102+32
APPROXIMATE EXISTING TOWN RIGHT OF WAY
TO FERRISBURGH
SPEAR STREET (TH 6)

EXISTING BRIDGE

COVERED BRIDGE
BURR ARCH TRUSSES
BUILT 1849
REHABILITATED 1983
LISTED IN NATIONAL REGISTER OF HISTORIC PLACES 1974
OVERALL LENGTH 88.00 FT
DECK WIDTH (INSIDE) 13.75'
HORIZ CLEARANCE (INSIDE) 12.92'
VERTICAL CLEARANCE (INSIDE) 11.46'

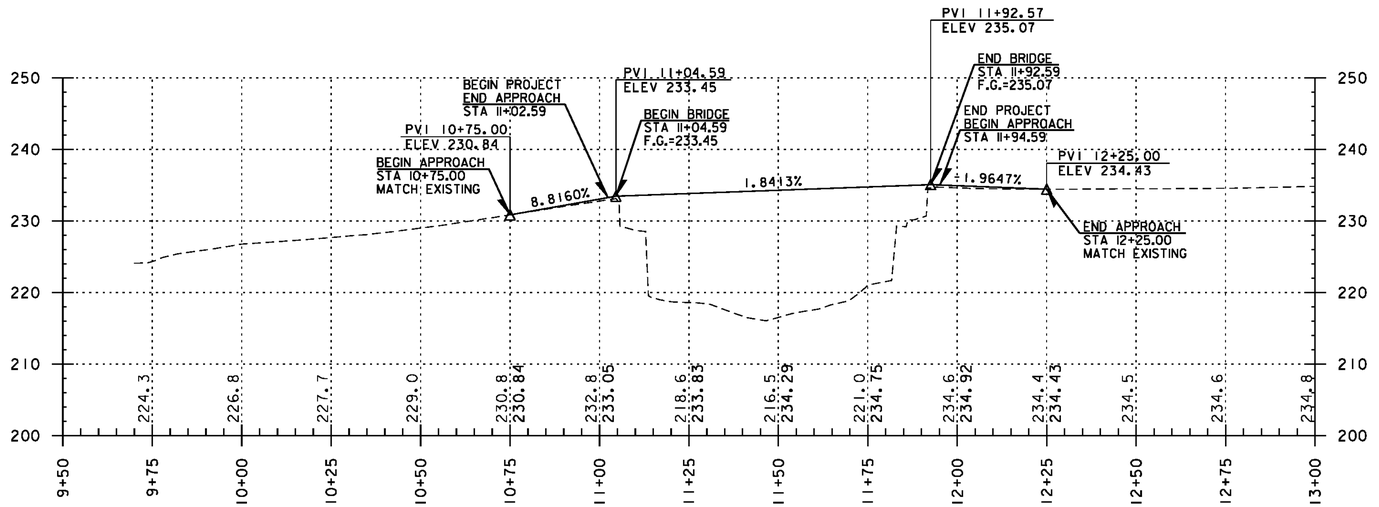
PLAN
SCALE 1" = 20'-0"
20 0 20

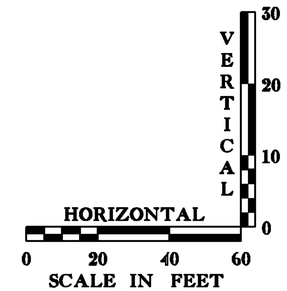
DATUM
VERTICAL: NAVD 88
HORIZONTAL: NAD 83 (07)

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z06J088.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: J.W. GOLEK
DESIGNED BY: J.W. GOLEK	CHECKED BY: K.E. HILL
LAYOUT SHEET	SHEET 8 OF 55

VHB 57348





NOTE:

1. GRADES SHOWN TO THE NEAREST TENTH REPRESENT EXISTING GROUND ELEVATIONS ALONG THE CENTERLINE OF MONKTON RD (TH 36).

   GRADES SHOWN TO THE NEAREST HUNDREDTH REPRESENT FINISH GRADE ELEVATIONS ALONG THE CENTERLINE OF MONKTON RD (TH 36).

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z06J088pro.dgn	PLOT DATE: 9/14/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: B.O. CRONIN	CHECKED BY: S.E. BURBANK
PROFILE	SHEET 9 OF 55

VHB 57348

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REHABILITATION OF THE HISTORIC QUINLAN COVERED BRIDGE (NO. 29) CARRYING MONKTON ROAD (TH 36) OVER LEWIS CREEK IN THE TOWN OF CHARLOTTE, VT. THE BRIDGE IS APPROXIMATELY 88 FT LONG AND 13 FT WIDE BETWEEN THE WOOD TRUSSES. REHABILITATION ALSO INCLUDES ASSOCIATED ROADWAY APPROACH 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 0.12 ACRES. IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

MITIGATION IS NOT REQUIRED FOR ANY "THREATENED & ENDANGERED SPECIES", BUT CAREFUL ATTENTION MUST BE PAID TO THE TIMING OF ANY IN-STREAM WORK INVOLVED WITH THIS PROJECT. THE BRIDGE IS LOCATED HALF-MILE UPSTREAM OF A KNOWN HABITAT OF THE STATE LISTED ENDANGERED FLUTED-SHELL FRESHWATER MUSCLE. AFTER CONSULTING WITH THE VERMONT DEPARTMENT OF FISH AND WILDLIFE (VDF&W) VTRANS WILL REQUIRE THAT IF THERE IS TO BE IN-STREAM WORK THE STATE STREAM ALTERATION ENGINEER WILL NEED TO BE CONTACTED FOR FURTHER GUIDANCE ON THIS ISSUE ONCE THE SCOPE OF PROPOSED IN-STREAM WORK HAS BEEN ESTABLISHED. THE VERMONT DEPARTMENT OF FISH AND WILDLIFE IDENTIFIED A STATE UNCOMMON SPECIES WHICH WAS IDENTIFIED APPROXIMATELY 700 FT UPSTREAM FROM THE BRIDGE. THIS UNCOMMON SPECIES IS AN UNCOMMON FISH, THE ROSY SHINER, BUT IT SHOULD NOT BE AN ISSUE ON THIS PROJECT BECAUSE IT IS MOBILE.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS HILLY TO MOUNTAINOUS WITH WELL ESTABLISHED FORESTS OPENING UP TO FIELDS AROUND THE STREAM AREA. SPEAR STREET (TH 6), SPEAR STREET EXTENSION (TH 1) AND A PRIVATE GRAVEL DRIVE ARE WITHIN THE PROJECT SITE. THERE IS A RESIDENCE ON THE SOUTH EAST SIDE OF THE PROJECT.

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

THE LEWIS CREEK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE STREAMBED CONSISTS OF A SANDY LOAM SUBSTRATE WITH LARGE BOULDERS. BANKS ARE VEGETATED AND WELL-DEFINED AND BORDERED BY SMALL EMERGENT WETLANDS THAT ARE FLOODED IN HIGH FLOWS. THE TRIBUTARY AREA AT THE BRIDGE CROSSING IS 70.4 SQUARE MILES.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD TREES AND UNDERGROWTH AND AGRICULTURAL LAND. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY THE INSTALLATION OF THE NEW WINGWALLS. UPON PROJECT COMPLETION, THE SLOPES WILL BE ARMORED WITH STONE FILL TYPE III 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 CHITTENDEN, VERMONT. SOILS ON THE PROJECT SITE ARE VERSHIRE B AND HADLEY. VERSHIRE B IS A GLOVER ROCKY LOAM, 3% TO 8% SLOPES, "K FACTOR" = 0.49. THE SOIL IS CONSIDERED HIGHLY ERODIBLE. HADLEY IS A VERY FINE SANDY LOAM, 0% TO 3% SLOPES, "K FACTOR" = 0.49. THE SOIL IS CONSIDERED HIGHLY ERODIBLE.

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

AS DISCUSSED ABOVE IN THE "PROJECT DESCRIPTION" SECTION, CAREFUL ATTENTION MUST BE PAID TO ANY IN-STRAEAM WORK DONE ON THIS PROJECT SINCE THIS PROJECT IS UPSTREAM OF THE KNOWN HABITAT OF THE STATE ENDANGERED FRESHWATER FLUTED-SHELL MUSSEL. ANY IN-STREAM WORK THAT IS NEEDED MUST BE CLOSELY COORDINATED WITH THE STREAM ALTERATION ENGINEER.

CRITICAL HABITATS: FLUTED-SHELL FRESH WATER MUSSEL
HISTORICAL OR ARCHEOLOGICAL AREAS: YES, NO ADVERSE EFFECTS FOR SECTION 106
PRIME AGRICULTURAL LAND: HADLEY VERY FINE SANDY LOAM, NO IMPACT PROPOSED FOR THIS PROJECT
THREATENED AND ENDANGERED SPECIES: FLUTED-SHELL AND ROSY SHINER
WATER RESOURCE: LEWIS CREEK
WETLANDS: YES CLASS III

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.

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 MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTOR'S PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES ARE NOT ANTICIPATED FOR THIS PROJECT.

1.4.4 INSTALL SEDIMENT BARRIERS

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

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

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 EROSIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

CHECK STRUCTURES ARE NOT ANTICIPATED FOR THIS PROJECT.

1.4.7 CONSTRUCT PERMANENT CONTROLS

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

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 COFFERDAM IS NOT ANTICIPATED.

1.4.12 INSPECT YOUR SITE

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

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z06J088ero_nar.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: B.O. CRONIN	CHECKED BY: B.O. CRONIN
EPSC NARRATIVE	SHEET 10 OF 55

N

VT STATE PLANE GRID

LEGEND

— T — ·· AERIAL TELEPHONE

RIPARIAN BUFFER ZONE

SOIL CLASSIFICATION

VERSHIRE B
GLOVER ROCKY LOAMS
3% TO 8% SLOPES
"K FACTOR" 0.49
CLASSIFIED HIGH EROSION POTENTIAL

MAP 10 BLOCK 1 LOT 39-11
N/F
JOHNS H. CONGDON &
JOANNE B. CONGDON
VOL. 76 PAGES 419-420

MAP 10 BLOCK 2 LOT 26
N/F
JAMES SHELDON-DEAN
& ABBY SHELDON-DEAN
VOL. 33 PAGE 186

MAP 10 BLOCK 2 LOT 27
N/F
JAMES L. MORSE
& GRETCHEN B. MORSE
VOL. 31 PAGES 165-166

MAP 10 BLOCK 2 LOT 27
N/F
JAMES L. MORSE &
GRETCHEN B. MORSE
VOL. 31 PAGES 165-166

SOIL CLASSIFICATION

HADLEY
VERY FINE SANDY LOAMS
0% TO 3% SLOPES
"K FACTOR" 0.49
CLASSIFIED HIGH EROSION POTENTIAL

WETLAND: CLASS III

WETLAND: CLASS III

15" CPEP

SPEAR STREET (TH 1)

TO SHELBURNE

PROPERTY LINE

WETLAND BUFFER

POB STA 50+00.00

POB STA 100+00.00

PC STA 100+47.68

BEGIN BRIDGE STA 11+04.59

BEGIN APPROACH STA 10+75.00 MATCH EXISTING

POB STA 9+70.00

POE STA 102+32.00

PT STA 102+11.86

51°8'38"

73°2'36"

MONKTON RD. STA 11+29.65 =
CHANNEL STA. 51+60.76

END PROJECT BEGIN APPROACH STA. 11+94.59

END APPROACH STA 12+25.00 MATCH EXISTING

PI STA 12+32.60

END BRIDGE STA 11+92.59

STONE WALL

GRAVEL DRIVE

POE STA 13+00.00

PT STA 12+78.83

PC STA 11+80.48

HARDWOODS

STA 101+37.71

SPEAR ST. EXT. STA: 101+38.91 =
MONKTON RD. STA: 10+00.00

END APPROACH BEGIN PROJECT STA 11+02.59

RIPARIAN BUFFER

WETLAND BUFFER

LEWIS CREEK

POE STA 53+00.00

FIELD

APPROXIMATE EXISTING TOWN RIGHT OF WAY

MONKTON ROAD (TH 36)

LEWIS CREEK ROAD (TH 37)

TO FERRISBURGH

SPEAR STREET (TH 6)

TO MONKTON

MORSE YARD

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

DATUM
VERTICAL: NAVD 88
HORIZONTAL: NAD 83 (07)

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE
PROJECT NUMBER: BHO 1445(34)

FILE NAME: z06J088bdr ero.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: J.W GOLEK
EPSC EXISTING CONDITIONS SITE PLAN

PLOT DATE: 9/14/2012
DRAWN BY: J.W. GOLEK
CHECKED BY: B.O. CRONIN
SHEET 11 OF 55

VHB 57348

N

VT STATE PLANE GRID

LEGEND

- AERIAL TELEPHONE
- FILTER CURTAIN
- SILT FENCE, WOVEN WIRE REINFORCED
- LIMITS OF SOIL DISTURBANCE
- PDF PROJECT DEMARCATION FENCE
- RIPARIAN BUFFER ZONE

SOIL CLASSIFICATION

VERSHIRE B
GLOVER ROCKY LOAMS
3% TO 8% SLOPES
"K FACTOR" 0.49
CLASSIFIED HIGH EROSION POTENTIAL

NOTES:

1. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN, THE CONTRACTOR MUST SUBMIT A TEMPORARY EROSION CONTROL PLAN FOR APPROVAL.
2. TEMPORARY EROSION CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER AND ON SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON SITE COORDINATOR.
4. REFER TO SHEET 14 FOR TEMPORARY EROSION CONTROL DETAILS.
5. WHERE LEDGE IS EXPOSED, GRAVEL BAGS MAY BE USED INSTEAD OF FILTER CURTAIN. PAYMENT FOR THIS ITEM SHALL BE INCIDENTAL TO ITEM 649.61 "GEOTEXTILE FOR FILTER CURTAIN".

MAP 10 BLOCK 1 LOT 39-11
N/F
JOHNS H. CONGDON &
JOANNE B. CONGDON
VOL. 76 PAGES 419-420

MAP 10 BLOCK 2 LOT 26
N/F
JAMES SHELDON-DEAN
& ABBY SHELDON-DEAN
VOL. 33 PAGE 186

MAP 10 BLOCK 2 LOT 27
N/F
JAMES L. MORSE
& GRETCHEN B. MORSE
VOL. 31 PAGES 165-166

MAP 10 BLOCK 2 LOT 27
N/F
JAMES L. MORSE &
GRETCHEN B. MORSE
VOL. 31 PAGES 165-166

SOIL CLASSIFICATION

HADLEY
VERY FINE SANDY LOAMS
0% TO 3% SLOPES
"K FACTOR" 0.49
CLASSIFIED HIGH EROSION POTENTIAL

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

DATUM
VERTICAL: NAVD 88
HORIZONTAL: NAD 83 (07)

Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z06J088bdr ero.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: J.W. GOLEK
DESIGNED BY: J.W. GOLEK	CHECKED BY: B.O. CRONIN
EPSC CONSTRUCTION CONDITIONS SITE PLAN	SHEET 12 OF 55

VHB 57348

N

VT STATE PLANE GRID

LEGEND

- AERIAL TELEPHONE
- DISTURBED AREAS REQUIRING RE-VEGETATION
- LIMITS OF SOIL DISTURBANCE
- RIPARIAN BUFFER ZONE

SOIL CLASSIFICATION

VERSHIRE B
GLOVER ROCKY LOAMS
3% TO 8% SLOPES
"K FACTOR" 0.49
CLASSIFIED HIGH EROSION POTENTIAL

BENCHMARK#4
RRSIT
MATURE ELM
ELEVATION: 226.96

MAP 10 BLOCK 2 LOT 26
N/F
JAMES SHELDON-DEAN
& ABBY SHELDON-DEAN
VOL. 33 PAGE 186

MORSE YARD

MAP 10 BLOCK 1 LOT 39-11
N/F
JOHNS H. CONGDON &
JOANNE B. CONGDON
VOL. 76 PAGES 419-420

MAP 10 BLOCK 2 LOT 27
N/F
JAMES L. MORSE
& GRETCHEN B. MORSE
VOL. 31 PAGES 165-166

WETLAND: CLASS III

WETLAND BUFFER

PROPERTY LINE

15" CPEP

SPEAR STREET (TH 1) TO SHELBURNE

POB STA 50+00.00

POB STA 100+00.00

PC STA 100+47.68

BEGIN BRIDGE STA 11+04.59

BEGIN APPROACH STA 10+75.00 MATCH EXISTING

POB STA 9+79.60

41°-11'

9+70

10+00

51°8'38"

PT STA 102+11.86

POE STA 102+32.00

102+00

102+32

TO FERRISBURGH

SPEAR STREET (TH 6)

HARDWOODS

STA 101+37.71 PT

SPEAR ST. EXT. STA: 101+38.91=
MONKTON RD. STA: 10+00.00

END APPROACH
BEGIN PROJECT
STA 11+02.59

WETLAND: CLASS III

RIPARIAN BUFFER

WETLAND BUFFER

FIELD

STONE FILL, TYPE

MONKTON RD. STA 11+29.65
CHANNEL STA. 51+60.76

EXISTING STONEWALL TO REMAIN (TYP)

END PROJECT
BEGIN APPROACH
STA. 11+94.59

END APPROACH
STA. 12+25.00
MATCH EXISTING

TYPE I
STONE FILL, ~~TYPE III~~

STONE WALL

END BRIDGE
STA 11+92.59

STA 12+32.60 PT

TREE TO BE SAVED

GRAVEL DRIVE

10+00

11+00

12+00

13+00

73°2'36"

51+00

52+00

53+00

PC STA 11+80.48

STONE FILL, TYPE III

STA 12+78.83 PT

HARDWOODS

STONE WALL

POE STA 13+00.00

APPROXIMATE EXISTING TOWN RIGHT OF WAY

MONKTON ROAD (TH 36)

LEWIS CREEK ROAD (TH 37)

TO MONKTON

LEWIS CREEK

PROPERTY LINE

WETLAND BUFFER

RIPARIAN BUFFER

POE STA 93+00.00

MAP 10 BLOCK 2 LOT 27
N/F
JAMES L. MORSE &
GRETCHEN B. MORSE
VOL. 31 PAGES 165-166

SOIL CLASSIFICATION

HADLEY
VERY FINE SANDY LOAMS
0% TO 3% SLOPES
"K FACTOR" 0.49
CLASSIFIED HIGH EROSION POTENTIAL

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

DATUM
VERTICAL: NAVD 88
HORIZONTAL: NAD 83 (07)

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE
PROJECT NUMBER: BHO 1445(34)

FILE NAME: z06J088bdr ero.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: J.W. GOLEK
EPSC FINAL CONDITIONS SITE PLAN

PLOT DATE: 10/4/2012
DRAWN BY: J.W. GOLEK
CHECKED BY: B.O. CRONIN
SHEET 13 OF 55

VHB 57348

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*

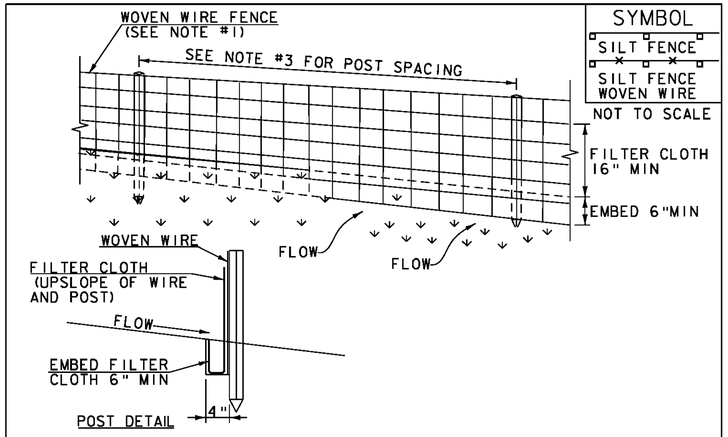
CONSTRUCTION GUIDANCE

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
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, MIRAFI100X, 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.

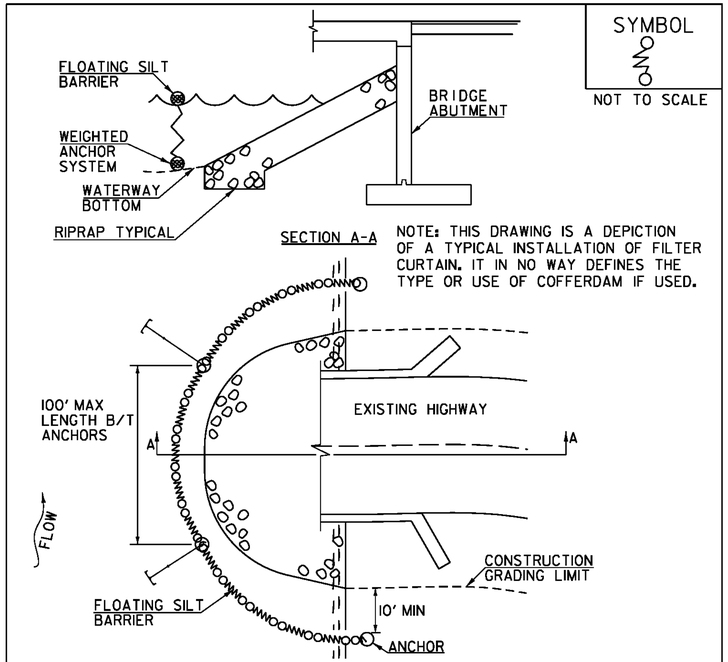
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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



SYMBOL
NOT TO SCALE

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

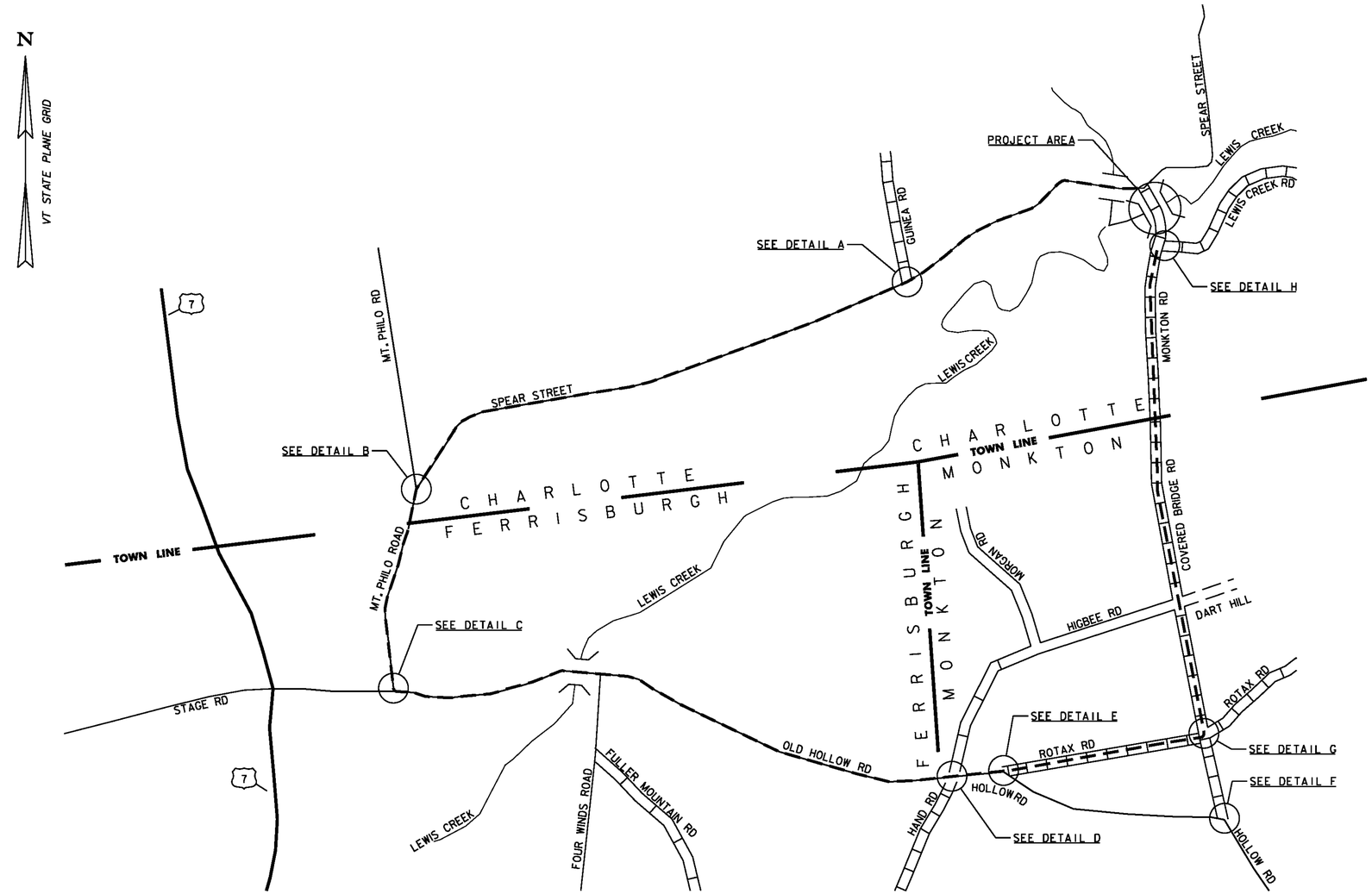
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.61).

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

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z06j088ero details.dgn	PLOT DATE: 9/14/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: J.W. GOLEK
DESIGNED BY: VTRANS	CHECKED BY: B.O. CRONIN
EROSION CONTROL DETAILS	SHEET 14 OF 55

VHB 57348



TRAFFIC CONTROL PLAN

SCALE 1" = 800'

800 0 800

DETOUR SIGNING IS RESPONSIBILITY OF THE TOWN. PROPOSED DETOUR ROUTE AND SIGNAGE SHOWN NOT INCLUDED IN CONTRACT. USE FOR TOWN REFERENCE ONLY.

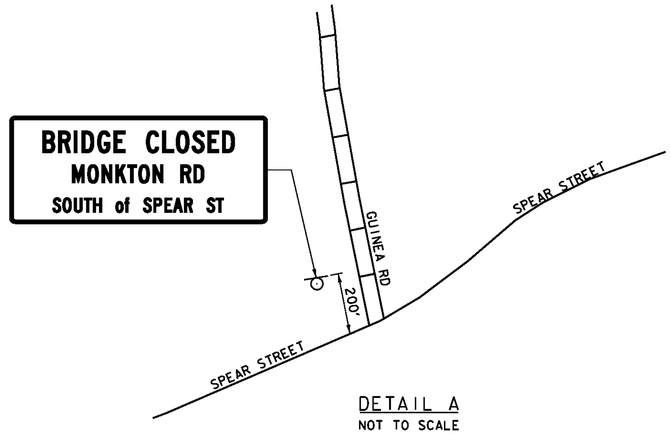
TRAFFIC CONTROL NOTES:

1. ALL SIGNS SHALL BE LOCATED SO THEY ARE VISIBLE AND ABLE TO BE READ BY THE TRAVELING PUBLIC. SIGNS SHALL BE INSTALLED SO AS NOT TO OBSTRUCT EXISTING SIGNS.
2. ALL SIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND THE "STANDARD HIGHWAY SIGNS AND MARKINGS" BOOK (SHSM) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).
3. SOLID SUBSTRATE CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM D 4956) TYPE VII, VIII OR IX REQUIREMENTS, UNLESS OTHERWISE NOTED. SOLID SUBSTRATE REGULATORY SIGNS (WHITE BACKGROUND) SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING ASTM D 4956 TYPE III.
4. SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES, AND UPON COMPLETION OF THE WORK. EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER. SIGNS SHALL BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER.
5. FIXED SIGNS SHALL BE SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST SEVEN FEET ABOVE THE EDGE OF PAVEMENT. THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST SIX FEET OUTSIDE THE SHOULDER POINT OR FOUR FEET OUTSIDE GUARDRAIL.
6. WHERE SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARDRAIL OR OTHER APPROVED TRAFFIC BARRIERS, ALL SIGN STANDS AND POST INSTALLATIONS SHALL BE "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 COMPLIANT. NO SIGN POSTS SHALL EXTEND OVER THE TOP OF THE SIGN INSTALLED ON SAID POST(S). WHEN ANCHORS ARE INSTALLED STUB SHALL NOT BE GREATER THAN FOUR INCHES ABOVE EXISTING GROUND.
7. THE PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE USED IN ACCORDANCE WITH SECTION 6F.60 OF THE MUTCD. SEE SHEET 18 FOR PCMS LOCATIONS.

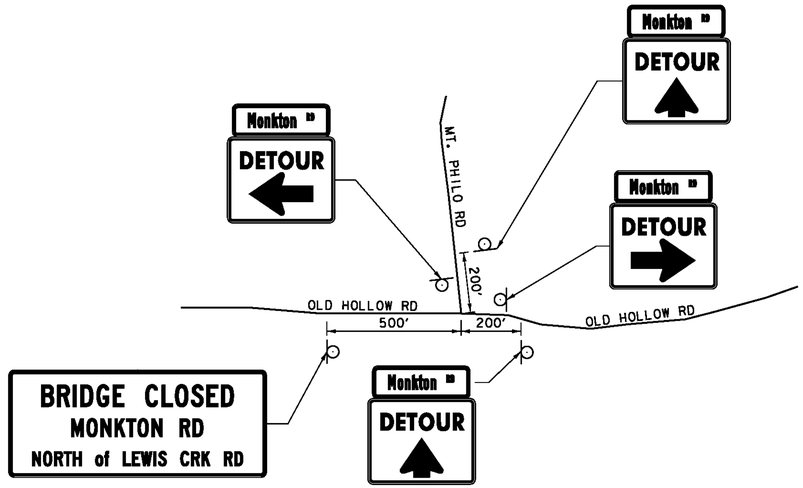
VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z061088detour.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: J.W. GOLEK
DESIGNED BY: K.E. HILL	CHECKED BY: B.O. CRONIN
TRAFFIC CONTROL SHEET (1 OF 5)	SHEET 15 OF 55

VHB 57348



DETAIL A
NOT TO SCALE



DETAIL C
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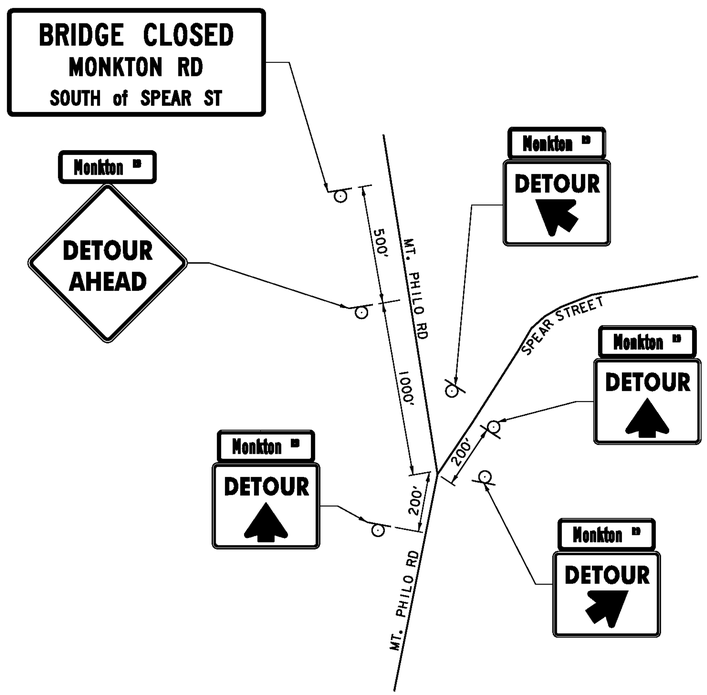

DETAIL B
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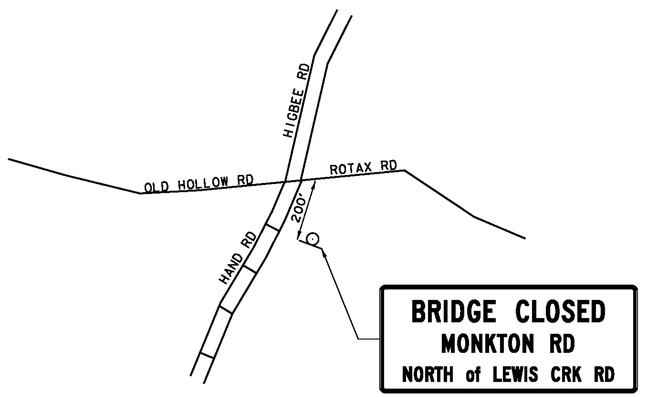


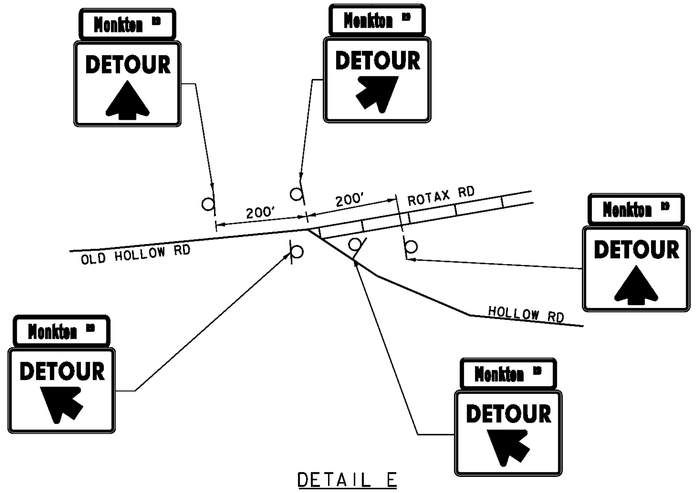
DETAIL D
NOT TO SCALE

DETOUR SIGNING IS RESPONSIBILITY OF THE TOWN. PROPOSED DETOUR ROUTE AND SIGNAGE SHOWN NOT INCLUDED IN CONTRACT. USE FOR TOWN REFERENCE ONLY.

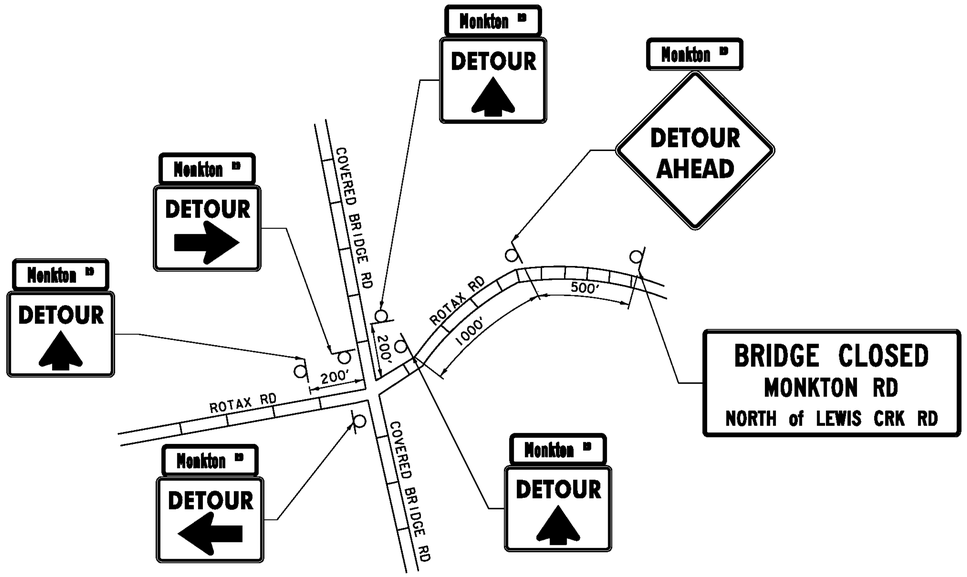
VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z06J088details detour.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: J.W. GOLEK
DESIGNED BY: J.W. GOLEK	CHECKED BY: B.O. CRONIN
TRAFFIC CONTROL SHEET (2 OF 5)	SHEET 16 OF 55

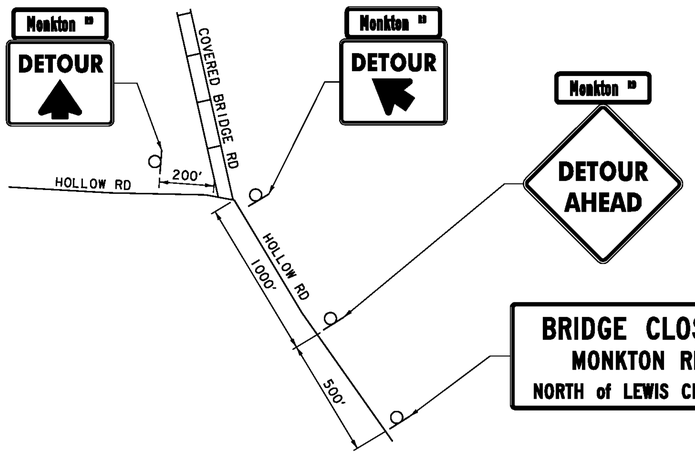
VHB 57348



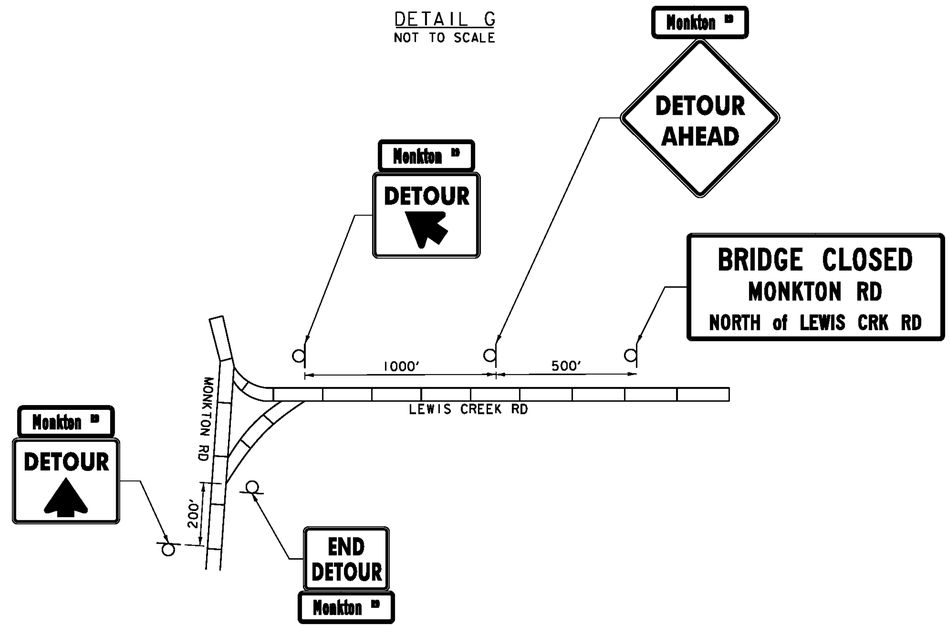
DETAIL E
NOT TO SCALE



DETAIL G
NOT TO SCALE



DETAIL F
NOT TO SCALE



DETAIL H
NOT TO SCALE

DETOUR SIGNING IS RESPONSIBILITY OF THE TOWN. PROPOSED DETOUR ROUTE AND SIGNAGE SHOWN NOT INCLUDED IN CONTRACT. USE FOR TOWN REFERENCE ONLY.

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z06J088details detour.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: J.W. GOLEK
DESIGNED BY: J.W. GOLEK	CHECKED BY: B.O. CRONIN
TRAFFIC CONTROL SHEET (3 OF 5)	SHEET 17 OF 55

VHB 57348

N

VT STATE PLANE GRID

BRIDGE CLOSED
MONKTON RD
SOUTH of SPEAR ST

Monkton

DETOUR AHEAD

Monkton

DETOUR

1000'

200'

TO SHELBURNE

SPEAR STREET (TH 1)

MOUNT ON TYPE III BARRICADE (MOD.)

MOUNT BELOW R11-2 SIGN ON TYPE III BARRICADE (MOD.)

ROAD CLOSED
DETOUR

Monkton

DETOUR

END ROAD WORK

300'

200'

SPEAR STREET (TH 6)

TO FERRISBURGH

7'-0" MIN

END DETOUR

Monkton

BRIDGE CLOSED
MONTH XX THRU
MONTH XX

BRIDGE CLOSED
MONTH XX THRU
MONTH XX

MORSE RESIDENCE

GRAVEL DRIVE

MOUNT ON TYPE III BARRICADE (MOD.)

ROAD CLOSED TO THRU TRAFFIC

MONKTON ROAD (TH 36) TO MONKTON

LEWIS CREEK ROAD (TH 37)

NOTES:

1. THE NUMBER OF TYPE III BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED ARE TO BE DETERMINED BASED ON INDIVIDUAL ROADWAY CLOSURE REQUIREMENTS.
2. ACCESS TO AND FROM THE MORSE RESIDENCE SHALL BE MAINTAINED AT ALL TIMES.
3. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE PLACED OFF THE EDGE OF THE ROADWAY, OUTSIDE THE CLEAR ZONE, BUT SHALL BE VISIBLE FROM THE ROADWAY. ANY VEGETATION THAT INTERFERES WITH VISIBILITY OF THE PCMS SHALL BE REMOVED. REMOVAL OF THE VEGETATION SHALL BE INCIDENTAL TO ITEM 641.17, "PORTABLE CHANGEABLE MESSAGE SIGN RENTAL".
4. THE PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL DISPLAY THE MESSAGE SHOWN ONE WEEK (7 DAYS) PRIOR TO THE CLOSURE OF THE BRIDGE. THE PCMS SHALL NOT BE A PART OF THE DETOUR AND SHALL BE REMOVED ONCE THE DETOUR IS IMPLEMENTED AND THE BRIDGE IS CLOSED.

MESSAGES FOR PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS)

MESSAGE 1	MESSAGE 2
COVERED	MM / DD
BRIDGE	THRU
CLOSED	MM / DD

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE (MOD.)
- TEMPORARY TRAFFIC BARRIER

PROJECT LOCATION TRAFFIC CONTROL PLAN

NOT TO SCALE

TRAFFIC CONTROL MEASURES:
SIGNS, BARRICADES, AND TEMPORARY TRAFFIC BARRIERS SHOWN ON THIS SHEET (EXCEPT PCMS'S) SHALL BE PAID UNDER ITEM 641.10, "TRAFFIC CONTROL".

VHB Vanasse Hangen Brustlin, Inc.

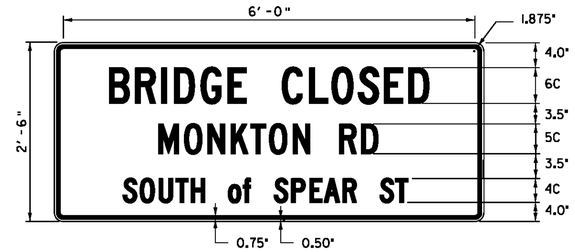
PROJECT NAME: CHARLOTTE
PROJECT NUMBER: BHO 1445(34)

FILE NAME: z061088details detour.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: J.W. GOLEK
TRAFFIC CONTROL SHEET (4 OF 5)

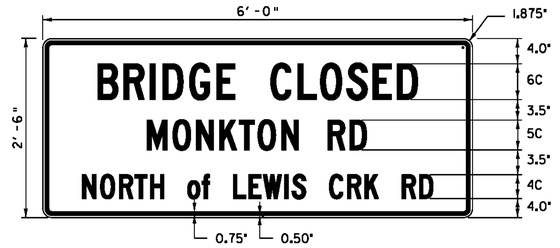
PLOT DATE: 10/4/2012
DRAWN BY: J.W. GOLEK
CHECKED BY: B.O. CRONIN
SHEET 18 OF 55

VHB 57348

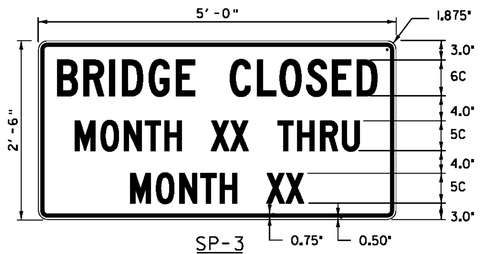
IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH (IN)	SIZE OF SIGN HEIGHT (IN)	TEXT	NUMBER OF SIGNS REQ'D	AREA (SQ FT)	TOTAL AREA (SQ FT)	REMARKS	# OF SIGNS IN CONTRACT
G20-2A	24	48	END ROAD WORK	1	8.00	8.00	---	1
M4-8A	24	18	END DETOUR	2	3.00	6.00	MOUNT ABOVE W16-8	1
M4-9L	30	24	DETOUR ←	2	5.00	10.00	MOUNT BELOW W16-8	0
M4-9R	30	24	DETOUR →	2	5.00	10.00	MOUNT BELOW W16-8	0
M4-9SL	30	24	DETOUR ↖	5	5.00	25.00	MOUNT BELOW W16-8	0
M4-9SR	30	24	DETOUR ↗	2	5.00	10.00	MOUNT BELOW W16-8	0
M4-9U	30	24	DETOUR ↑	13	5.00	65.00	MOUNT BELOW W16-8	2
M4-10R	48	18	DETOUR →	2	6.00	12.00	MOUNT ON TYPE III BARRICADE (MOD.) BELOW R11-3A	2
R11-2	48	30	ROAD CLOSED	2	10.00	20.00	MOUNT ON TYPE III BARRICADE (MOD.)	2
R11-4	60	30	ROAD CLOSED TO THRU TRAFFIC	1	12.50	12.50	MOUNT ON TYPE III BARRICADE (MOD.)	1
SP-1	60	30	BRIDGE CLOSED MONKTON RD SOUTH of SPEAR ST	3	12.50	37.50	MOUNT ON TWO POSTS	1
SP-2	60	30	BRIDGE CLOSED MONKTON RD NORTH of LEWIS CRK RD	5	12.50	62.50	MOUNT ON TWO POSTS	0
SP-3	60	30	BRIDGE CLOSED MONTH XX THRU MONTH XX	2	10.00	20.00	MOUNT ON TWO POSTS. SEE NOTE 4	2
W16-8	30	8	Monkton RD	32	1.667	46.676	---	4
W20-2	48	48	DETOUR AHEAD	5	16.00	80.00	MOUNT BELOW W16-8	1



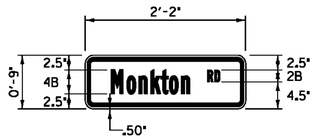
SP-1
NOT TO SCALE



SP-2
NOT TO SCALE



SP-3
NOT TO SCALE



W16-8
NOT TO SCALE

NOTES:

1. COLORS FOR THE SP-1 AND SP-2 SIGNS SHALL BE BLACK TEXT AND BORDER ON RETROREFLECTIVE WHITE BACKGROUND.
2. COLORS FOR THE SP-3 AND W16-8 SIGNS SHALL BE BLACK TEXT AND BORDER ON RETROREFLECTIVE ORANGE BACKGROUND.
3. TWO ORANGE FLAGS (ONE EACH SIDE) SHALL BE PLACED AT THE TOP OF THE SP-1 AND SP-2 SIGNS.
4. SP-3 SHALL DISPLAY THE MESSAGE SHOWN ONE WEEK (7 DAYS) PRIOR TO THE CLOSURE OF THE BRIDGE. SP-3 SHALL NOT BE A PART OF THE DETOUR AND SHALL BE REMOVED ONCE THE DETOUR IS IMPLEMENTED AND THE BRIDGE IS CLOSED.

ONLY SIGNS SHOWN ON SHEET 18 ARE INCLUDED IN CONTRACT. ALL OTHERS ARE FOR REFERENCE ONLY.

SOIL CLASSIFICATION

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

ROCK QUALITY DESIGNATION

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

SHEAR STRENGTH

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

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

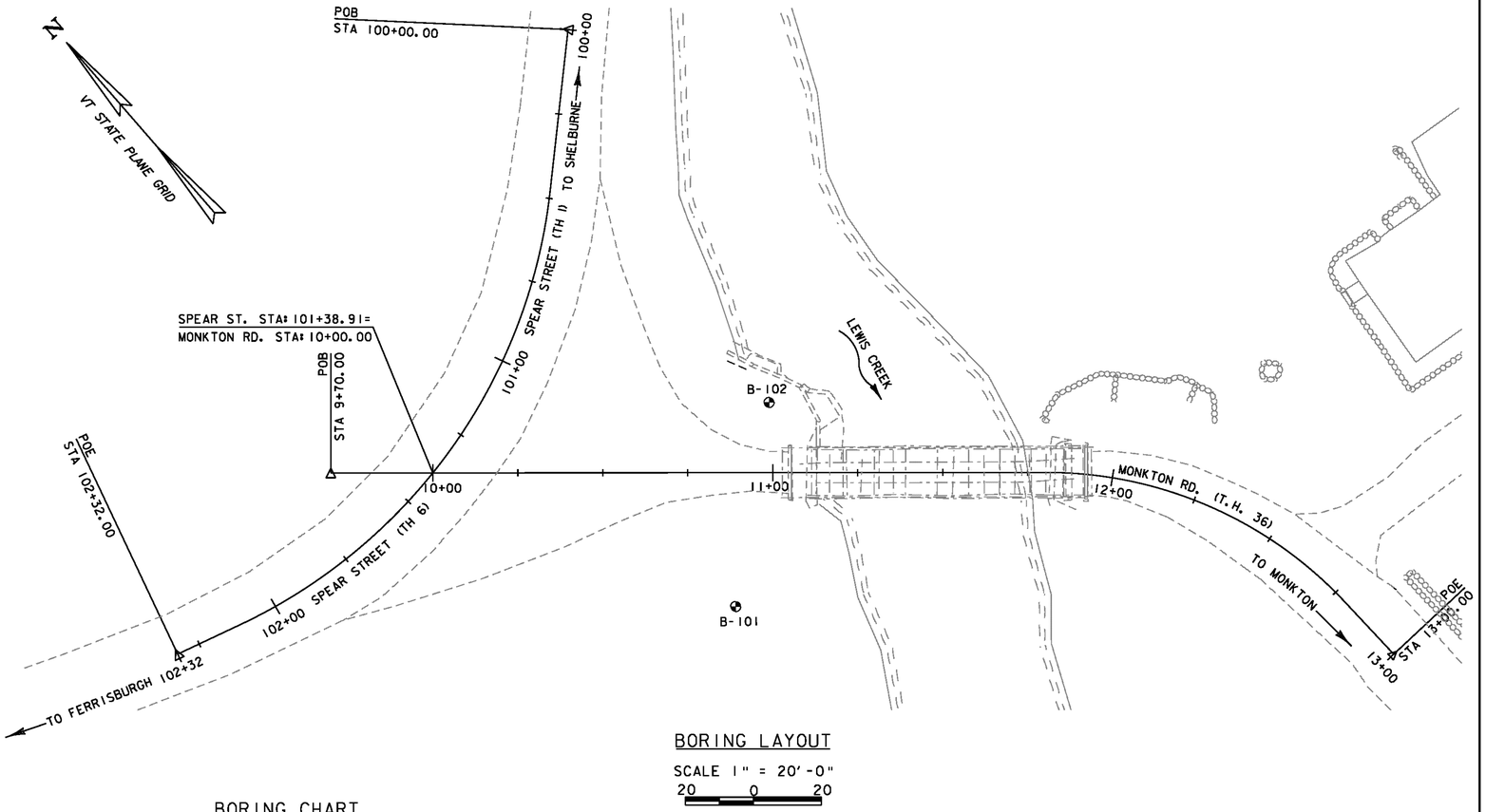
DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

COMMONLY USED SYMBOLS

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

COLOR

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



BORING LAYOUT

SCALE 1" = 20'-0"

20 0 20

BORING CHART

HOLE NO.	SURV. STATION •	OFFSET	GROUND ELEV.	NORTHING	EASTING
B-101	101+23.1	-95.3 LT	224.28	648196.89	1461254.04
B-102	100+79.0	-80.0 LT	231.51	648235.80	1461300.81

• SPEAR STREET STATIONING

DEFINITIONS (AASHTO)

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.

BOULDER - A rock fragment with an average dimension > 12 inches.

COBBLE - Rock fragments with an average dimension between 3 and 12 inches.

GRAVEL - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).

SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).

SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

VARVED - Alternate layers of silt and clay.

HARDPAN - Extremely dense soil, cemented layer, not softened when wet.

MUCK - Soft organic soil (containing > 10% organic material.

MOISTURE CONTENT - Weight of water divided by dry weight of soil.

FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.

STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.

DIP - Inclination of bed with a horizontal plane.

GENERAL NOTES

1. The subsurface explorations shown herein were made between March 16, 2010 and March 26, 2010 by the Agency.
2. 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.
3. 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 survey feet.

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z06J088boring.dgn	PLOT DATE: 9/14/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: J.W. GOLEK
DESIGNED BY: VTRANS	CHECKED BY: VTRANS
BORING INFORMATION SHEET	SHEET 20 OF 55

VHB 57348

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH SECTION
SUBSURFACE INFORMATION

BORING NUMBER: B-101
SHEET 1 of 1
DATE STARTED: 3/16/10
DATE COMPLETED: 3/18/10

PROJECT NAME: CHARLOTTE
SITE NAME: TH-36
STATION: 101+23.1
OFFSET: -95.30
VTSPG NAD83: N 648196.89 ft E 1461254.04 ft

PROJECT NUMBER: BHO 1445(34)
SITE NUMBER: COVERED BRIDGE-29
GROUND ELEVATION: 224.28 ft
GROUNDWATER DEPTH: 3.5 ft 3/18/10
PROJECT PIN NUMBER: 06J088

BORING CREW
CREW CHIEF: GARROW
DRILLER: GARROW
LOGGER: MAHMUTOVIC

BORING RIG: LARGE SKID RIG w/AUTO HAMMER
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: NSM

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
		A-4, SiSa, brn, Moist, Rec. = 1.2 ft	5	24.8	0.0	59.6	40.4
		A-2-4, SiSa, brn, Wet, Rec. = 1.6 ft	WH	29.0	0.2	64.3	35.5
5		A-4, SiSa, brn, Wet, Rec. = 1.5 ft	WH	27.9	0.2	63.1	36.7
		Visual Classification, A-2-4, Sand, brn, Wet, Rec. = 0.2 ft, Insufficient sample for testing.	6				
		Field Note:, BXDC, Cobbles					
10							
		Field Note:, BXDC, Cobbles					
15							
		Field Note:, BXDC, Cobbles					
20							
		Field Note:, BXDC, Cobbles					
25							
		Field Note:, BXDC, Cobbles					
30		Hole stopped @ 30.0 ft					
35		DRILLER'S NOTES: 1. Hole stopped at 30.0 ft. 2. No Ledge to Depth.					
40							
45							

LOG OF BORING CHARLOTTE BHO 1445(34).GPJ VT AOT.GDT 4/8/10

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH SECTION
SUBSURFACE INFORMATION

BORING NUMBER: B-102
SHEET 1 of 1
DATE STARTED: 3/24/10
DATE COMPLETED: 3/26/10

PROJECT NAME: CHARLOTTE
SITE NAME: TH-36
STATION: 100+79
OFFSET: -80.00
VTSPG NAD83: N 648235.80 ft E 1461300.81 ft

PROJECT NUMBER: BHO 1445(34)
SITE NUMBER: COVERED BRIDGE-29
GROUND ELEVATION: 231.51 ft
GROUNDWATER DEPTH: 10.3 ft 3/25/10
PROJECT PIN NUMBER: 06J088

BORING CREW
CREW CHIEF: GARROW
DRILLER: GARROW
LOGGER: MAHMUTOVIC

BORING RIG: LARGE SKID RIG w/AUTO HAMMER
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: NSM

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
		Visual Classification, Si Sa with small roots & broken rock, brn, Moist, Rec. = 0.9 ft, Insufficient sample for testing.	8	11.7			
5		Field Note:, No sample. Appears to be Sa Si	2				
		Field Note:, BXDC, Cobbles					
10		A-2-4, SiGrSa, brn, Wet, Rec. = 0.6 ft, Broken rock was within sample.	8	20.4	22.5	56.2	21.3
		A-1-a, SaGr, brn, Wet, Rec. = 0.9 ft, Broken rock was within sample.	41	10.9	57.5	35.0	7.5
15		A-1-a, SaGr, brn, Wet, Rec. = 0.5 ft, Broken rock was within sample. A-4, SaSi, gry, Wet, Rec. = 0.3 ft	27	14.4 10.3	56.9 14.2	36.3 41.4	6.8 44.4
		Field Note:, BXDC, Boulders					
		A-4, SiSa, gry, MTW, Rec. = 1.9 ft	25	8.6	15.9	44.2	39.9
20		A-2-4, GrSiSa, gry, MTW, Rec. = 1.8 ft	44	7.7	23.4	43.3	33.3
		A-2-4, GrSiSa, gry, Moist, Rec. = 1.2 ft	58	8.0	25.5	41.1	33.4
		A-2-4, SiSaGr, gry, Moist, Rec. = 1.0 ft	R	9.4	43.0	28.9	28.1
25		Field Note:, BXDC, Cleaned out casing					
		A-4, GrSaSi, gry, Moist, Rec. = 1.3 ft	53	9.3	29.3	30.2	40.5
		A-4, SaSi, gry, Moist, Rec. = 1.5 ft	35	10.7	13.0	37.5	49.5
30		A-4, SaSiGr, gry, Moist, Rec. = 1.3 ft	62	9.6	36.3	28.1	35.6
		A-4, GrSaSi, gry, MTW, Rec. = 1.2 ft	68	8.7	31.0	31.5	37.5
35		A-4, SaSi, gry, MTW, Rec. = 1.5 ft	89	11.2	16.0	41.5	42.5
		Hole stopped @ 36.0 ft					
40		DRILLER'S NOTES: 1. Hole stopped at 36.0 ft. 2. No Ledge to Depth.					

LOG OF BORING CHARLOTTE BHO 1445(34).GPJ VT AOT.GDT 4/8/10

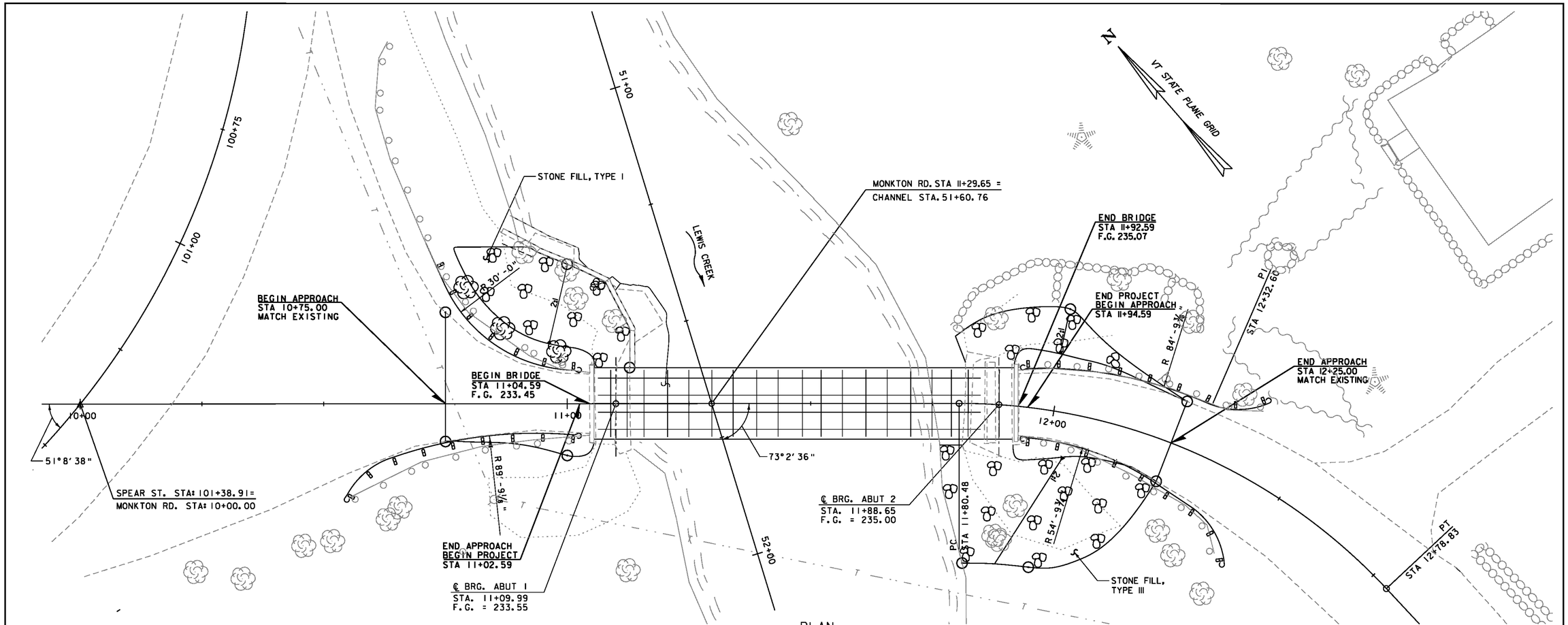
Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE
PROJECT NUMBER: BHO 1445(34)

FILE NAME: z06J088bor logs.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: VTRANS
BORING LOGS

PLOT DATE: 9/14/2012
DRAWN BY: J.W. GOLEK
CHECKED BY: VTRANS
SHEET 21 OF 55

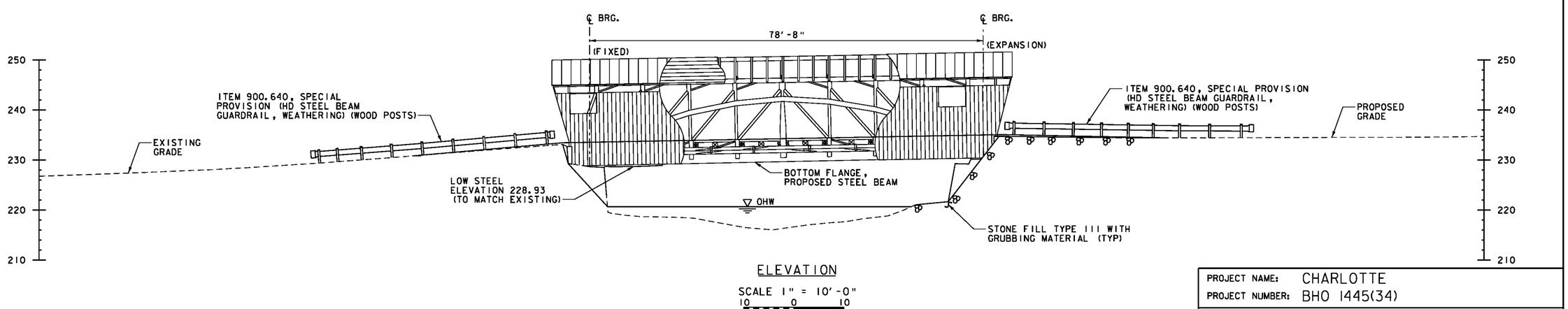
VHB 57348



PLAN

SCALE 1" = 10'-0"

10 0 10



ELEVATION

SCALE 1" = 10'-0"

10 0 10

DATUM
VERTICAL: NAVD 88
HORIZONTAL: NAD 83(07)

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE
PROJECT NUMBER: BHO 1445(34)

FILE NAME: z06J088pe.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: J.W. GOLEK
PLAN AND ELEVATION

PLOT DATE: 10/4/2012
DRAWN BY: E.A. FIALA
CHECKED BY: B.O. CRONIN
SHEET 22 OF 55

VHB 57348

PROJECT NOTES

GENERAL

1. 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 STANDARD SPECIFICATIONS FOR HIGHWAY STRUCTURES, 17TH EDITION, DATED 2002, AND ITS LATEST REVISIONS, AND THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION 2005 AND ITS LATEST REVISIONS.

2. THE BRIDGE IS TO REMAIN POSTED WITH A MAXIMUM WEIGHT LIMIT OF 10,000 POUNDS.

3. DESIGN INTENT FOR THE SUPERSTRUCTURE REHABILITATION:
   IN THE EXISTING BRIDGE, THE STEEL BEAMS AND THE TIMBER TRUSSES WORK TOGETHER TO SPAN FOR DEAD, SNOW, AND LIVE LOADS. THE EXISTING BEAMS HAVE ADEQUATE STRENGTH TO SUPPORT THE TOTAL GRAVITY LOADS ACTING ON THE BRIDGE, HOWEVER THEY ARE TOO FLEXIBLE COMPARED TO THE STIFFNESS OF THE TRUSSES. AS A RESULT, BEAM DEFLECTIONS RESULT IN THE TRANSFER OF LIVE LOADS TO THE TRUSSES, EXCEEDING THE LOAD RATING CAPACITY OF THE TRUSSES, EVEN IF REPAIRED TO SOUND CONDITION.

   THE GOALS OF THE SUPERSTRUCTURE REHABILITATION PROJECT ARE (1) TO REPAIR EXISTING DETERIORATION OF THE LUMBER AND TIMBER MEMBERS, AND (2) TO UPGRADE THE BRIDGE FOR LIVE LOADING IN SUCH A MANNER AS TO PREVENT CONTINUED OVERLOADING OF THE TRUSSES. THE NEW STEEL BEAMS HAVE BEEN SIZED FOR STIFFNESS TO LIMIT THE PORTION OF LIVE LOAD CARRIED BY EACH TRUSS TO NO MORE THAN 15% OF THE AXLE LIVE LOADS. THE FLEXIBILITY OF THE TIMBER FLOOR BEAM SYSTEM HELPS IN LIMITING THE AMOUNT OF LIVE LOAD CARRIED BY EACH TRUSS.

   THE NEW STEEL BEAMS HAVE ADEQUATE STRENGTH TO SUPPORT THE TOTAL GRAVITY LOADS ACTING ON THE BRIDGE, WITHOUT CONTRIBUTION FROM THE TRUSSES AS SPANNING MEMBERS.

   THE REHABILITATED TRUSSES HAVE BEEN DESIGNED TO SUPPORT:
   - A. 100% OF THE DEAD LOAD FROM ROOF, WALLS, AND TRUSS SELF-WEIGHT
   - B. TRIBUTARY DEAD LOAD FROM THE TIMBER FLOOR SYSTEM
   - C. 100% OF THE SNOW LOAD
   - D. 15% OF THE AXLE LIVE LOAD

4. ALL WORK SHALL BE COMPLETED WITHIN THE EXISTING RIGHT-OF-WAY. NO PROVISIONS HAVE BEEN MADE FOR WORK OR ACTIVITIES OUTSIDE THESE RIGHT-OF-WAY LIMITS. SHOULD THE CONTRACTOR REQUIRE ANY ADDITIONAL RIGHT-OF-WAY IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL EASEMENTS, AND BEAR THE COSTS OF SUCH EASEMENTS WITHOUT FURTHER COMPENSATION.

5. IN-STREAM CONSTRUCTION SHALL BE RESTRICTED TO JUNE 1 TO OCTOBER 1, UNLESS THE CONTRACTOR OBTAINS WRITTEN PERMISSION FROM THE AGENCY OF NATURAL RESOURCES TO DO WORK OUTSIDE OF THE TIME FRAME.

6. SALVAGED SIGNS NOT REUSED SHALL REMAIN THE PROPERTY OF THE TOWN OF CHARLOTTE. THE CONTRACTOR SHALL DELIVER THE SIGNS TO THE TOWN.

7. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION, ESPECIALLY THE DISCHARGE OF RAW CONCRETE, INTO ANY BROOK, STREAM, OR RIVER.

8. FEATURES OF THE EXISTING BRIDGE SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM LIMITED FIELD INVESTIGATION AND MAY NOT ACCURATELY REFLECT ACTUAL FIELD CONDITIONS. DETAILS OF THE STONE MASONRY ABUTMENTS THAT ARE ASSUMED TO EXIST BENEATH THE CONCRETE FACING ARE UNKNOWN. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING STRUCTURE COMPONENTS IMPACTED BY THE NEW WORK TO ASSURE CONSISTENCY WITH THE PROPOSED MODIFICATIONS. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER, OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER BEFORE ADVANCING THE WORK.

9. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT UNLESS NOTED OTHERWISE.

10. ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE, SHALL INCLUDE ANY WORK NECESSARY FOR REMOVING AND DISPOSING OF SUPERSTRUCTURE MEMBERS AND PORTIONS OF MEMBERS, AS WELL AS REMOVING AND STOCKPILING MEMBERS AND PORTIONS OF MEMBERS FOR RE-USE, INCLUDING REMOVING AND STOCKPILING MEMBERS AND PORTIONS OF MEMBERS FOR THE CONTRACTOR'S METHODS OF REHABILITATION. PARTIAL REMOVAL OF STRUCTURE ITEM 529.20 SHALL ALSO INCLUDE ALL WORK ASSOCIATED WITH REMOVAL OF EXISTING CONCRETE IN BACKWALLS, REMOVAL OF EXISTING STEEL BEAMS, AND REMOVAL OF TIMBER AND LUMBER AS SPECIFIED IN THE PLANS.

11. NO BURNING OF REMOVED MATERIALS AT THE PROJECT SITE WILL BE ALLOWED. THE EXISTING COVERED BRIDGE TIMBERS AND LUMBER MAY CONTAIN HAZARDOUS WOOD PRESERVATIVES. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS AND EMPLOYEES HARMLESS REGARDING THE CONTRACTOR'S HANDLING OF THESE MATERIALS AND SUBSEQUENT USE, RE-USE, OR DISPOSAL OF THESE MATERIALS.

12. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL BURIED AND AERIAL UTILITIES AND POLES PRIOR TO STARTING WORK. SOME UTILITIES MAY HAVE BEEN RELOCATED SINCE THE PREPARATION OF THESE PLANS AND THE CONTRACTOR WILL NEED TO COORDINATE WITH ALL UTILITY OWNERS TO CONFIRM ACTUAL LOCATIONS PRIOR TO CONSTRUCTION. SEE THE UTILITY SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

13. THE LIMITS OF THE COFFERDAM ARE SHOWN IN THESE PLANS. IF THE CONTRACTOR NEEDS ADDITIONAL SPACE FOR COFFERDAM THE CONTRACTOR WILL BE RESPONSIBLE FOR PERMITTING ADDITIONAL IN STREAM IMPACTS.

14. CONTRACTOR SHALL TAKE SPECIAL CARE TO NOT DAMAGE ANY PORTIONS OF THE EXISTING COVERED BRIDGE THAT ARE TO BE RETAINED DURING THE REHABILITATION PROJECT, AND TO AVOID MOVEMENT OF THE TRUSS THAT COULD RESULT IN DISTORTION OR MISALIGNMENT OF THE TRUSS AND ITS JOINTS. MEMBERS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AS DIRECTED BY THE ENGINEER AT CONTRACTOR'S SOLE EXPENSE.

TRAFFIC MAINTENANCE DURING CONSTRUCTION

1. BRIDGE NO. 29 SHALL REMAIN CLOSED TO VEHICULAR TRAFFIC FOR THE DURATION OF CONSTRUCTION. THE CONTRACTOR SHALL IMPLEMENT THE ROAD CLOSURE, TRAFFIC CONTROL, AND DETOUR AS SHOWN ON THE PLANS.

2. THE CONTRACTOR SHALL NOTIFY THE TOWN A MINIMUM OF TWO (2) WEEKS PRIOR TO CLOSING THE ROAD.

3. UNLESS COVERED UNDER INDIVIDUAL PAY ITEMS OR NOTED OTHERWISE, ALL COSTS FOR WORK SHOWN ON THE TRAFFIC CONTROL SHEETS AND FOR TEMPORARY TRAFFIC CONTROL DEVICES WILL BE CONSIDERED TO BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR ITEM 641.10, "TRAFFIC CONTROL". THIS INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING ITEMS:

   TEMPORARY TRAFFIC BARRIERS
   RETROREFLECTIVE DRUMS
   TEMPORARY CONSTRUCTION SIGNS AND POSTS
   BARRICADES

4. TEMPORARY TRAFFIC BARRIER SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 621.

5. ALL SIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND THE "STANDARD HIGHWAY SIGNS" BOOK (SHS) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).

REMOVAL AND REPAIR NOTES

1. THE CONTRACTOR'S METHODS FOR PARTIAL REMOVAL OF THE EXISTING STRUCTURE SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY REMOVAL WORK.

2. SAWCUTS SHALL BE 1 INCH DEEP AT THE LOCATIONS SHOWN AND ALONG ALL EXPOSED REMOVAL LINES WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE.

3. EXISTING REINFORCING STEEL EXPOSED DURING REMOVAL OPERATIONS, WITHIN THE LIMITS OF THE NEW SUBSTRUCTURE, SHALL BE RETAINED AND INCORPORATED INTO THE NEW SUBSTRUCTURE UNLESS OTHERWISE NOTED. EXISTING REINFORCING STEEL TO BE RETAINED SHALL BE CLEANED OF ALL CONCRETE, DIRT, RUST, PAINT, OIL AND OTHER FOREIGN SUBSTANCES. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE".

4. THE ENGINEER SHALL ORDER REPLACEMENT OF ANY EXISTING SUBSTRUCTURE REINFORCING STEEL THAT IS DETERIORATED (WITH MORE THAN 25% SECTION LOSS) WITH NEW REINFORCING STEEL OF THE SAME SIZE. ALL REINFORCING STEEL SHALL HAVE A MINIMUM 2'-2" LAP SPLICE. ALL NEW SUBSTRUCTURE REINFORCING SHALL BE PAID UNDER ITEM 507.11 REINFORCING STEEL, LEVEL I.

STONE FILL

1. STONE FILL MAY NEED TO BE PLACED STEEPER THAN 2H:1V IN AREAS NEXT TO ABUTMENTS. THIS SHALL BE DONE AS DIRECTED BY THE ENGINEER.

SUBSTRUCTURE REHABILITATION

1. EXISTING ABUTMENTS SHALL BE INSPECTED FOR DETERIORATED CONCRETE JOINTLY BY CONTRACTOR AND RESIDENT ENGINEER. ALL DETERIORATED CONCRETE SHALL BE REMOVED AND PATCHED. THE OUTSIDE LIMITS OF REMOVAL SHALL BE SAW CUT TO A 1" MINIMUM DEPTH TO PROVIDE CLEAN REMOVAL LINES. THE EXISTING CONCRETE SHALL BE BLAST CLEANED PRIOR TO PLACING NEW CONCRETE. ALL REMOVAL AND CLEANING SHALL BE AS SPECIFIED IN SECTION 580 AND PAID FOR UNDER ITEMS 580.13, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I, 580.14, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II, AND 580.15, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III.

2. HOLES DRILLED IN EXISTING CONCRETE SHALL BE DRILLED 1" GREATER IN DIAMETER THAN THE BAR DIAMETER AND GROUTED WITH TYPE IV MORTAR OR OTHER APPROVED MATERIAL. BARS SHALL HAVE A MINIMUM EMBEDMENT LENGTH OF 1'-0" UNLESS NOTED OTHERWISE. ALL COSTS FOR DRILLING AND GROUTING SHALL BE INCLUDED IN ITEM 507.16, DRILLING AND GROUTING OF DOWELS.

CONCRETE

1. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" BY 1".

2. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.

3. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).

4. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:

SPACING	± 1"
CLEARANCE	± ¼"

5. ALL SUBSTRUCTURE CONCRETE SHALL BE CONCRETE, CLASS B, UNLESS OTHERWISE NOTED.

6. SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL. OTHER BRIDGE SEAT AREAS SHALL BE SLOPED ½" PER FOOT TOWARDS MID-SPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE SMOOTH STEEL TROWEL FINISHED.

7. WATER REPELLENT SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES.

8. PER SUBSECTION 501.09, THE CONTRACTOR SHALL SUBMIT A CONCRETE FORMWORK DESIGN FOR THE ABUTMENTS.

REINFORCING NOTES

1. ALL REINFORCING STEEL SHALL BE LEVEL 1 UNCOATED (BLACK, CARBON STEEL).

2. ALL REINFORCEMENT SHALL HAVE A MINIMUM CLEAR COVER OF 2" TO OUTER SURFACES.

STRUCTURAL STEEL

1. ITEM 506.60, STRUCTURAL STEEL SHALL INCLUDE:
   - -THREADED ROD ASSEMBLY (DETAIL 200, SHEET 44).
   - -BEAM TO FLOORBEAM CONNECTION ANGLE(DETAIL 203, SHEET 44).

2. ALL STRUCTURAL STEEL PAID UNDER ITEM 506.60, STRUCTURAL STEEL AND ITEM 506.50, STRUCTURAL STEEL , ROLLED BEAM SHALL CONFORM TO AASHTO M 270M/M 270 GRADE 50.

3. ALL STRUCTURAL STEEL SHALL BE GALVANIZED PER SUBSECTION 726.08. ALL COSTS FOR GALVANIZING SHALL BE PAID UNDER THE APPROPRIATE ITEM 506.60 STRUCTURAL STEEL, OR ITEM 506.50 STRUCTURAL STEEL, ROLLED BEAM.

4. ALL STEEL-TO-STEEL FIELD CONNECTIONS SHALL BE MADE WITH 3/4" DIAMETER HIGH-STRENGTH BOLTS IN 13/16" DIAMETER HOLES, PER SECTION 506.

5. THE FAYING SURFACES ON THE CONNECTION PLATES SHALL BE PREPARED AS CLASS "C". THESE SURFACES SHALL BE PROTECTED FROM DAMAGE AND CORROSION PRIOR TO CONSTRUCTING THE CONNECTION.

6. ANY CONNECTIONS THAT ARE NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.

7. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.10.

8. ALL MEMBERS MARKED (CVN) MUST MEET THE CHARPY V-NOTCH TESTING REQUIREMENTS AS INDICATED IN SUBSECTION 714.01.

9. BEARING STIFFENERS AND BEAM ENDS SHALL BE VERTICAL UNDER FULL DEAD LOAD DEFLECTION.

10. BEAMS AND DIAPHRAGMS SHALL BE FABRICATED SO THAT BEAM WEBS ARE PLUMB UNDER FULL DEAD LOAD.

11. ALL STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).

BEARING NOTES

1. BEARINGS SHALL CONFORM TO AND BE PAID UNDER ITEM 900.620 SPECIAL PROVISION (BEARING DEVICE ASSEMBLY, PREFORMED FABRIC PAD).

2. THE CONCRETE SURFACE UNDER THE BEARING DEVICE SHALL BE LEVEL.

3. ALL STEEL IN BEARING DEVICES (EXCEPT STAINLESS) SHALL BE AASHTO M 270M/M 270 GRADE 345 (GRADE 50).

4. ANCHOR BOLTS SHALL HAVE A MINIMUM EMBEDMENT OF 1'-3" INTO THE CONCRETE AND SHALL CONFORM TO SUBSECTION 714.08.

5. ALL BEARING DEVICES SHALL BE GALVANIZED OR METALIZED AS PER SUBSECTION 531.04(b). REPAIRS DUE TO FIELD WELDING OR HANDLING SHALL BE PAINTED WITH A ZINC RICH PAINT IN ACCORDANCE WITH 900.620 SPECIAL PROVISION (BEARING DEVICE ASSEMBLY, PREFORMED FABRIC PAD).

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z06J088gen.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: B.O. CRONIN	CHECKED BY: K.E. HILL
PROJECT NOTES (1 OF 3)	SHEET 23 OF 55

6. ALL ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. ALL WASHERS SHALL BE 3/8" PLATE (MINIMUM). PAYMENT FOR DRILLING AND GROUTING OF ANCHOR BOLTS SHALL BE INCLUDED IN ITEM 900.620 SPECIAL PROVISION (BEARING DEVICE ASSEMBLY, PREFORMED FABRIC PAD).

7. ALTERNATE BEARING DESIGNS MAY BE SUBMITTED FOR APPROVAL.

8. DESIGN CRITERIA

   a. MINIMUM PREFORMED FABRIC PAD ALLOWABLE DESIGN ROTATION = 0.015 RADIANS
   b. FABRIC PAD DESIGN LOAD PER BEARING AT ABUTMENTS
      R_{DL} = 42.3 KIPS
      R_{LL} = 55.1 KIPS

9. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.

LUMBER AND TIMBER

1. ALL WOOD CONSTRUCTION SHALL COMPLY WITH THE AASHTO SPECIFICATIONS AND THE 2005 NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS).

2. ALL LUMBER AND TIMBER SHALL BE SAWN TO THE ACTUAL DIMENSIONS GIVEN IN THE PLANS, UNLESS OTHERWISE NOTED. SIZES ARE GIVEN AS WxD, WHERE W=WIDTH AND D=DEPTH.

3. UNLESS OTHERWISE NOTED, ALL EXISTING MEMBERS SHOWN TO BE REPLACED ARE TO BE REPLACED "IN-KIND" WITH NEW MEMBERS IDENTICAL IN DIMENSIONS AND CONFIGURATIONS AS THE ORIGINAL MEMBERS (INCLUDING MORTISES, TENONS, HOUSINGS, HOLES, FIT TOLERANCES, SURFACE (DRESSED OR ROUGH), ETC.).

4. SEE TABLE OF "MATERIALS FOR LUMBER AND TIMBER" ON SHEET 25 FOR SPECIES, STRESS GRADE, PRESERVATIVE TREATMENT AND FINISH. SUBSTITUTIONS OF OTHER SPECIES OR GRADE REQUIRE PRIOR APPROVAL BY THE ENGINEER AND MUST MEET OR EXCEED THE MINIMUM DESIGN VALUES GIVEN IN THE TABLE ON SHEET 25 FOR THE SPECIFIED MATERIAL.

5. SIZES GIVEN IN THE PLANS FOR EXISTING TIMBER MEMBERS ARE APPROXIMATE AND VARY FROM MEMBER TO MEMBER, AND ALONG THE LENGTH OF A GIVEN MEMBER. CONTRACTOR SHALL FIELD VERIFY ALL LUMBER AND TIMBER DIMENSIONS AND SIZES REQUIRED FOR REPLACEMENT OF OR CONNECTION TO EXISTING MEMBERS.

6. THE MAXIMUM IN-PLACE MOISTURE CONTENT (MC) OF LUMBER AND TIMBER SHALL BE IN ACCORDANCE WITH SUBSECTION 709.01(b) UNLESS OTHERWISE NOTED.
   A. PEGS AND FREE TENONS: MC ≤ 12%
   B. PATCHES AT EXISTING MEMBERS: MC TO MATCH EXISTING MEMBER WITHIN 3% AT TIME OF REPAIR, BUT NOT TO EXCEED 16%.
   C. WEARING SURFACE TIMBERS MAY BE GREEN OAK.

7. EACH PIECE OF NEW LUMBER AND TIMBER SHALL BE GRADED BY A RECOGNIZED LUMBER GRADING AGENCY. INDIVIDUAL PIECES SHALL NOT BE STAMPED WITH A GRADE STAMP ASIDE FROM WEARING SURFACE BOARDS, WHICH SHALL BE PLACED WITH THE STAMP DOWN. MATERIAL CERTIFICATIONS SHALL BE SUBMITTED FOR ALL WOOD IN ACCORDANCE WITH SECTION 709.

8. ALL FIELD CUTS AND BORINGS OF TREATED WOOD SHALL BE TREATED WITH TWO COATS OF COPPER NAPHTHENATE SOLUTION LIBERALLY APPLIED PER SECTION 522.

9. SPECIES IDENTIFICATION OF A LIMITED NUMBER OF SAMPLES OF EXISTING TIMBERS INDICATED EASTERN SPRUCE FOR THE TRUSS BOTTOM CHORD; EASTERN HEMLOCK FOR THE ARCHES, TRUSS DIAGONALS, TRUSS POSTS AND TRUSS TOP CHORD; AND A MIXTURE OF EASTERN SPRUCE AND EASTERN HEMLOCK AT THE FLOOR BEAMS.

10. CUT MORTISE & TENON JOINTS TO LEAVE 1/4" CLEAR BETWEEN TENON END AND MORTISE BOTTOM TO ALLOW FOR SHRINKAGE. DIMENSION SHOWN ON DRAWINGS IS FOR END OF TENON.

11. TIMBER PAINTING, FIRE RETARDANT SHALL BE CLEAR IN COLOR.

FASTENERS FOR LUMBER AND TIMBER

1. EXCEPT AS SPECIFIED IN THE STRUCTURAL STEEL NOTES, PAYMENT FOR STRUCTURAL LUMBER AND TIMBER AND NON-STRUCTURAL LUMBER QUANTITIES SHALL BE FULL COMPENSATION FOR DETAILING, FURNISHING, TRANSPORTING, HANDLING, PLACING AND INSTALLING NEW AND REUSED TIMBER CONNECTORS AND PEGS WHICH ARE USED TO CONNECT NEW LUMBER AND TIMBER MEMBERS WITH EXISTING LUMBER AND TIMBER MEMBERS.

2. EXCEPT AS SPECIFIED IN THE STRUCTURAL STEEL NOTES, DETAILING, FURNISHING, TRANSPORTING, HANDLING, AND INSTALLING NEW AND REUSED TIMBER CONNECTORS, PEGS, AND SHIMS WHICH ARE USED TO CONNECT EXISTING LUMBER AND TIMBER MEMBERS SHALL BE CONSIDERED INCIDENTAL TO THE WORK REQUIRED FOR ITEM 900.645 SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE).

3. UNLESS OTHERWISE NOTED, ALL JOINERY AND FASTENERS IN MEMBERS TO BE REPLACED SHALL MATCH THE EXISTING JOINERY AND FASTENERS, INCLUDING ALL BOLTS, PEGS, NAILS, SCREWS, MORTISES, TENONS, HOUSINGS, KEYS, ETC.

4. PEGS SHALL BE ROUND WHITE OAK PEGS OF CLEAR MATERIAL WITH SLOPE OF GRAIN NOT GREATER THAN 1:15.

5. KEYS AND WEDGES SHALL BE WHITE OAK OF CLEAR MATERIAL WITH SLOPE OF GRAIN NOT GREATER THAN 1:10.

6. BOLTS SHALL BE ASTM A307 WITH HEX HEADS PER SUBSECTION 714.04.

7. THREADED ROD SHALL BE ASTM A572 GRADE 50.

8. NUTS FOR BOLTS AND THREADED ROD SHALL BE HEX NUTS TO AASHTO M 291 PER SUBSECTION 714.04.

9. WASHERS SHALL BE PROVIDED UNDER ALL BOLT HEADS AND NUTS THAT WOULD OTHERWISE BE IN CONTACT WITH TIMBER. "STANDARD WASHERS" SHALL BE STANDARD FLAT WASHERS TO ASTM F844. "MALLEABLE IRON WASHERS" SHALL HAVE OUTSIDE DIAMETER OF 3" FOR 3/4" BOLTS, 3 1/2" FOR 7/8" BOLTS, AND 4" FOR 1" BOLTS. USE WASHER STYLE INDICATED IN PLANS (MALLEABLE IRON WASHERS, IF STYLE NOT INDICATED).

10. SCREWS SHALL BE SELF-TAPPING STRUCTURAL SCREWS WITH 1.5" MINIMUM THREAD LENGTH, MINIMUM BENDING YIELD STRENGTH (Fyb) OF 160,000 PSI, AND MINIMUM UNTHREADED SHANK DIAMETER AND LENGTH AS INDICATED IN THE DRAWINGS. USE SCREWS WITH COUNTERSINKING STYLE HEADS, UNLESS OTHERWISE NOTED. "FLATHEAD SCREWS" SHALL HAVE A FLAT OR WASHER-STYLE HEAD WITH A MINIMUM DIAMETER OF 0.50". SCREWS SHALL BE GALVANIZED, OR COATED WITH ALTERNATE FINISH WITH DEMONSTRATED CORROSION RESISTANCE AT LEAST EQUIVALENT TO THAT OF GALVANIZED. COUNTERSINKING SCREWS SHALL BE TIMBERLOK BY FASTENMASTER, OR APPROVED EQUAL. FLATHEAD SCREWS SHALL BE HEADLOK BY FASTENMASTER, OR APPROVED EQUAL.

11. NAILS AND SPIKES SHALL BE COMMON NAILS UNLESS NOTED OTHERWISE. PREDRILL LEAD HOLES FOR SPIKES IN ACCORDANCE WITH THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS).

12. LAG SCREWS SHALL BE FULL-BODY DIAMETER LAG SCREWS OF LOW TO MEDIUM CARBON STEEL. PREDRILL LEAD HOLES FOR LAG SCREWS IN ACCORDANCE WITH THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS) FOR LUMBER AND TIMBER CONNECTIONS.

13. STEEL PLATES FOR LUMBER AND TIMBER CONNECTIONS NOT INCLUDED IN ITEM 506.60, STRUCTURAL STEEL, SHALL BE AASHTO M270 GRADE 36.

14. HOLES FOR PEGS SHALL BE BORED WITH A BIT OF THE SAME DIAMETER AS THE PEG TO PROVIDE A FRICTION FIT. PEGS SHALL BE DRIVEN IN A MANNER WHICH AVOIDS SPLITTING THE PEG OR THE CONNECTED MEMBERS. PEGS SHALL BE DIPPED IN BOILED LINSEED OIL, MINERAL OIL, OR AN APPROVED WAX PRIOR TO DRIVING. SAW OFF ALL PEGS FLUSH WITH SURFACE.

15. LAG BOLTS AND NUTS SHALL BE TIGHTENED SNUGLY BUT NOT SO TIGHTLY AS TO CAUSE CRUSHING OF THE WOOD UNDER THE WASHER OR PLATE.

16. UNLESS OTHERWISE NOTED, ALL STEEL CONNECTION HARDWARE AND FABRICATED MATERIALS SHALL BE GALVANIZED IN ACCORDANCE WITH SUBSECTION 709.01(h), EXCEPT THAT STAINLESS STEEL FASTENERS SHALL BE USED TO CONNECT MEMBERS CONTAINING ALKALINE COPPER QUAT (ACQ) PRESERVATIVE. MALLEABLE IRON WASHERS SHALL BE GALVANIZED.

REHABILITATING COVERED BRIDGE SUPERSTRUCTURE

1. CONTRACTOR SHALL HAVE THE OPTION OF SHORING THE SUPERSTRUCTURE IN PLACE UNDER ALTERNATE A IN-PLACE REHABILITATION OR REMOVING AND RESETING THE SUPERSTRUCTURE UNDER ALTERNATE B RELOCATED REHABILITATION. THE CONTRACTOR SHALL BID BOTH ALTERNATES.

2. ITEM 900.645 SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE) SHALL INCLUDE ALL COSTS ASSOCIATED WITH REPAIRS AND ALTERATIONS TO EXISTING MEMBERS; ALL COSTS ASSOCIATED WITH FASTENERS PER NOTE 2 UNDER “FASTENERS FOR LUMBER AND TIMBER” THIS SHEET; TEMPORARY BRACING, SHORING, BLOCKING; ALL LABOR, MATERIALS AND SUBMITTALS REQUIRED FOR THE REHABILITATION WORK (EXCEPT AS SPECIFIED BY OTHER CONTRACT ITEMS); STRAIGHTENING, PLUMBING, AND RE-ALIGNING THE TRUSSES AND RESTORING CAMBER.

3. BOTH TIMBER TRUSSES HAVE EXTENSIVE DETERIORATION THAT REDUCES THEIR SPANNING CAPACITY. THE DOWNSTREAM TRUSS HAS LITTLE TO NO SPANNING CAPACITY, AND IS LIKELY BEING SUPPORTED BY THE FLOOR FRAMING AND EXISTING STEEL BEAMS. THE EXISTING TRUSSES, ROOF FRAMING, TIE BEAMS, UPPER LATERAL BRACING, AND KNEE BRACES SHALL BE REHABILITATED IN ACCORDANCE WITH THE PLANS PRIOR TO REMOVING THE EXISTING STEEL BEAMS, OR ALTERNATE MEANS OF SUPPORTING AND STABILIZING THE TRUSSES SHALL BE PROVIDED DURING BEAM REMOVAL AND INSTALLATION.

4. STRUCTURAL TIMBER AND LUMBER CONSTRUCTION SHALL BE PERFORMED IN A "NO LOAD" CONDITION WHERE PRACTICAL. CONTRACTOR SHALL AVOID UNNECESSARY DISASSEMBLY OF THE TIMBER TRUSSES. DISASSEMBLY SHALL BE LIMITED TO ONLY THOSE JOINTS WHERE NECESSARY TO MAKE THE SPECIFIED REPAIRS.

5. CONTRACTOR AND RESIDENT ENGINEER SHALL JOINTLY INSPECT ALL TIMBER AND LUMBER MEMBERS AT THE TIME OF CONSTRUCTION (INCLUDING HIDDEN SURFACES OF JOINTS AS THEY ARE EXPOSED DURING CONSTRUCTION) TO IDENTIFY ADDITIONAL MEMBERS TO BE REPLACED OR REPAIRED.

6. CONTRACTOR AND RESIDENT ENGINEER SHALL JOINTLY INSPECT ALL EXISTING METAL FASTENERS AND CONNECTIONS FOR CORROSION AND TIGHTNESS TO IDENTIFY ADDITIONAL FASTENERS TO BE REPLACED.

7. CONTRACTOR MAY TEMPORARILY SUPPORT OR BRACE THE TIMBER TRUSSES OFF THE EXISTING OR NEW STEEL BEAMS AND FLOOR FRAMING DURING REHABILITATION OF THE TRUSSES. CONSTRUCTION DRAWINGS OF TEMPORARY SUPPORT DETAILS SHALL BE SUBMITTED TO THE AGENCY FOR APPROVAL IN ACCORDANCE WITH SUBSECTION 105.03. ALL TEMPORARY SUPPORTS SHALL BE REMOVED PRIOR TO OPENING THE BRIDGE TO VEHICULAR TRAFFIC. COST SHALL BE INCLUDED IN ITEM 900.645 SPECIAL PROVISIONS (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE).

8. THE ARCHES SHALL BE REINSTATED AS LOAD BEARING ELEMENTS AFTER THE TRUSSES ARE ALREADY SPANNING AND SUPPORTING THEIR OWN SELF-WEIGHT WITH ALL TRUSS JOINTS IN TIGHT BEARING.

9. EXISTING HOLES, MORTISES, AND HOUSINGS IN MEMBERS TO REMAIN SHALL NOT BE ENLARGED UNLESS SPECIFICALLY NOTED IN THE DRAWINGS. DOWEL HOLES IN EXISTING TIMBERS THAT ARE OVERSIZED OR DISTORTED SHALL BE PLUGGED WITH AN APPROVED WOOD EPOXY AND REDRILLED AS APPROVED BY THE RESIDENT ENGINEER. COST FOR REPAIRS SHALL BE PAID UNDER ITEM 900.620 SPECIAL PROVISION (WOOD EPOXY REPAIRS).

10. ALL ABANDONED BOLT AND PEG HOLES SHALL BE FILLED WITH WOOD PLUGS TREATED WITH COPPER NAPHTHENATE SOLUTION IN ACCORDANCE WITH SUBSECTION 522.13(a)(1). WOOD PLUGS SHALL BE ROUND HARDWOOD DOWELS, MC≤19%, GENTLY DRIVEN TO A FRICTION FIT WITHOUT SPLITTING TIMBER. CUT PROTRUDING PLUGS FLUSH WITH SURFACE. COST SHALL BE INCLUDED UNDER ITEM 900.645 SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE).

11. NEW AND EXISTING COVERED BRIDGE UNTREATED LUMBER AND TIMBER, INCLUDING SIDING, SHALL BE CLEANED AND COATED WITH INSECTICIDE/FUNGICIDE AND A CLEAR FIRE RETARDANT. COST SHALL BE INCLUDED UNDER THE APPROPRIATE ITEM 660.20 TIMBER PAINTING, FIRE RETARDANT OR ITEM 660.30 TIMBER PAINTING, INSECTICIDE/FUNGICIDE.

12. EXISTING TRUSS CAMBER IS APPROXIMATELY 5½”. CAMBER AT REHABILITATED TRUSSES SHALL BE 5½” ± ½”.

METAL ROOFING NOTES

1. DETAILS OF REPLACEMENT METAL ROOFING SHALL MATCH EXISTING METAL ROOFING.

2. REPLACEMENT ROOFING SHALL BE PAID UNDER ITEM 661.10 METAL ROOFING.

SIDING REPLACEMENT NOTES

1. ALL EXISTING SIDING AT PORTALS AND EXTERIOR FASCIA SHALL BE REMOVED FROM THE BRIDGE AND REPLACED IN ITS ENTIRETY. ALL PROTRUDING NAILS REMAINING IN THE SIDING SUPPORT MEMBERS SHALL BE REMOVED PRIOR TO INSTALLATION OF NEW SIDING.

2. NEW SIDING SHALL BE FREE OF LOOSE OR MISSING KNOTS, CUPS, SPLITS, AND BREAKS.

SEQUENCE OF WORK

1. SUBMIT PLANS AND DESIGN CALCULATIONS FOR THE PROPOSED METHOD OF WORK FOUR (4) WEEKS PRIOR TO COMMENCEMENT OF THE WORK IN ACCORDANCE WITH SECTION 105.

2. RECOMMENDED SEQUENCE OF WORK FOR IN-PLACE REHABILITATION

   - REMOVE THE EXISTING ROOFING, SIDING, RAILINGS, AND WEARING SURFACE.
   - INSTALL TEMPORARY SHORING TO SUPPORT THE EXISTING TRUSSES AS NEEDED TO COMPLETE THE TRUSS REHABILITATION.
   - REPLACE/REPAIR TRUSS MEMBERS, ROOF FRAMING, TIE BEAMS, UPPER LATERAL BRACES, KNEE BRACES, AND FLOOR BEAMS AS DETAILED IN THE PLANS. REINSTATE THE ARCHES AS LOAD-BEARING ELEMENTS AFTER THE TRUSSES ARE ALREADY SPANNING AND SUPPORTING THEIR OWN SELF-WEIGHT WITH ALL TRUSS JOINTS IN TIGHT BEARING.
   - JACK AND BRACE THE EXISTING STRUCTURE AS NEEDED TO STRAIGHTEN, RELEASE STRESSES, PLUMB AND RE-ALIGN THE TRUSSES. SHIMMING OF THE EXISTING TRUSSES WITH HARDWOOD SHIMS MAY BE REQUIRED.
   - AFTER COMPLETION OF THE ABOVE REHABILITATION, REMOVE TEMPORARY TRUSS SUPPORTS. SHORE OR MOVE THE SUPERSTRUCTURE AS NEEDED TO REMOVE THE EXISTING STEEL BEAMS AND INSTALL THE NEW STEEL BEAMS.
   - SEAT THE SUPERSTRUCTURE ON TOP OF THE NEW STEEL BEAMS, SHIMMING TO ENSURE FLOOR BEAMS BEAR EVENLY ON BOTH TRUSSES AND ALL BEAMS. REMOVE SHORING.
   - CUT NOTCHES IN UNDERSIDE OF THE INTERMEDIATE FLOOR BEAMS AND INSTALL THE NEW THREADED ROD ASSEMBLIES.
   - COMPLETE REMAINING REPAIRS TO DECKING, SIDING, AND ROOFING.
   - REOPEN BRIDGE TO TRAFFIC.

MATERIALS FOR LUMBER AND TIMBER

MEMBER TYPE	EXISTING SIZE (ACTUAL SIZE)	PROPOSED SIZE (SAWN TO ACTUAL SIZE, UNLESS NOTED OTHERWISE)	PROPOSED SPECIES & STRESS GRADE	PRESERVATIVE PRESSURE TREATMENT	FINISH	PAY ITEM FOR COMPONENT
TRUSS - TOP CHORDS	9"x9"	9"x11"	SOUTHERN PINE SEL. STR. DENSE		ROUGH	522.20 - STRUCTURAL LUMBER AND TIMBER, UNTREATED
TRUSS - BOTTOM CHORDS	(4) 8"x8"	(4) 8"x8"	SOUTHERN PINE NO. 1	TYPE IV	ROUGH	522.25 - STRUCTURAL LUMBER AND TIMBER, TREATED
TRUSS - ARCHES (AT BEARINGS)	(2) 5"x12"	(2) 5"x12"	SOUTHERN PINE NO. 1	TYPE IV	ROUGH	522.25 - STRUCTURAL LUMBER AND TIMBER, TREATED
TRUSS - ARCHES (ALL OTHERS)	(2) 5"x12"	(2) 5"x12"	EASTERN HEMLOCK NO. 1 (TYP)		ROUGH	522.20 - STRUCTURAL LUMBER AND TIMBER, UNTREATED
TRUSS - DIAGONALS	9"x6"	9"x6"	EASTERN HEMLOCK NO. 1		ROUGH	522.20 - STRUCTURAL LUMBER AND TIMBER, UNTREATED
TRUSS - POSTS	9"xVARIES	9"xVARIES (TO MATCH EXISTING)	EASTERN HEMLOCK NO. 1		ROUGH	522.20 - STRUCTURAL LUMBER AND TIMBER, UNTREATED
TRUSS - UPPER CHECK BRACES	8-1/2"x3"	8-1/2"x3"	EASTERN HEMLOCK NO. 1		ROUGH	522.20 - STRUCTURAL LUMBER AND TIMBER, UNTREATED
TRUSS - LOWER CHECK BRACES	8-1/2"x3"	8-1/2"x3" (8-1/2"x4" AT ARCH BEARINGS)	SOUTHERN PINE NO. 1	TYPE IV	ROUGH	522.25 - STRUCTURAL LUMBER AND TIMBER, TREATED
TRUSS - SHEAR KEY (AT BOTTOM CHORD)	TAPERED 5-1/2"x5-1/2" x18" LONG	6"x6"x20", CUT TO MATCH EXISTING SHAPE	WHITE OAK NO KNOTS, SLOPE OF GRAIN ≤ 1:12		ROUGH	522.20 - STRUCTURAL LUMBER AND TIMBER, UNTREATED
RAFTERS	4"x4"	4"x4"	EASTERN SPRUCE NO 1		ROUGH	522.20 - STRUCTURAL LUMBER AND TIMBER, UNTREATED
ROOF SHEATHING	1"xVARIES	1"xVARIES	EASTERN SPRUCE OR EASTERN HEMLOCK NO 1 COMMON		ROUGH	522.30 - NONSTRUCTURAL LUMBER, UNTREATED
TIE BEAMS	8"x8"	8"x8"	EASTERN HEMLOCK NO. 1		ROUGH	522.20 - STRUCTURAL LUMBER AND TIMBER, UNTREATED
UPPER LATERAL BRACES	5"Wx4"D	5"Wx4"D	EASTERN SPRUCE NO 1		ROUGH	522.20 - STRUCTURAL LUMBER AND TIMBER, UNTREATED
KNEE BRACES	4"x4"	4-1/2"Wx5"D	EASTERN HEMLOCK SELECT STRUCTURAL, NO KNOTS		ROUGH	522.20 - STRUCTURAL LUMBER AND TIMBER, UNTREATED
STRUCTURAL SIDING NAILERS	5"Wx3"D	5"Wx3"D	EASTERN SPRUCE NO 1		ROUGH	522.20 - STRUCTURAL LUMBER AND TIMBER, UNTREATED
SIDING	1"xVARIES	1"xVARIES	EASTERN HEMLOCK NO 1 COMMON		ROUGH	522.30 - NONSTRUCTURAL LUMBER, UNTREATED
SIDING TRIM & NAILERS	VARIES	(MATCH EXISTING); 2"x6" FOR NEW BOTTOM NAILER AT SIDING	EASTERN SPRUCE NO 1 COMMON		ROUGH	522.30 - NONSTRUCTURAL LUMBER, UNTREATED
RAILS	2"x8", 2"x12"	3"x8"	EASTERN SPRUCE NO 1		ROUGH	522.20 - STRUCTURAL LUMBER AND TIMBER, UNTREATED
FLOOR BEAMS	12"x12"; 5"x12"+7"x12"	VARIES; SEE FLOOR PLAN SHEET 29	SOUTHERN PINE NO. 1	TYPE IV	ROUGH	522.25 - STRUCTURAL LUMBER AND TIMBER, TREATED
WEARING SURFACE	1-1/2"x9-1/4"	2"x10"	WHITE OAK NO. 1		ROUGH	522.20 - STRUCTURAL LUMBER AND TIMBER, UNTREATED
FLOOR DECKING	1-1/2"x5-1/2" (I.E. NOMINAL 2x6)	DRESSED 2x6 (I.E. 1½"x5½" AFTER SURFACING)	SOUTHERN PINE NO. 1	TYPE IV	DRESSED (S4S)	522.25 - STRUCTURAL LUMBER AND TIMBER, TREATED
CRIBBING	VARIES	6"x6" TO 8"x8" AS NEEDED	SOUTHERN PINE NO. 1	TYPE IV	ROUGH	522.25 - STRUCTURAL LUMBER AND TIMBER, TREATED
BLOCKING	N/A	AS NOTED	EASTERN HEMLOCK NO. 1, UNLESS OTHERWISE NOTED		ROUGH	522.20 - STRUCTURAL LUMBER AND TIMBER, UNTREATED
PATCHES *	N/A	AS NOTED	SPECIES TO MATCH EXISTING MEMBER NO. 1		ROUGH	522.20 - STRUCTURAL LUMBER AND TIMBER, UNTREATED

TYPE IV PRESERVATIVE = CHROMATED COPPER ARSENATE (SUBSECTION 726.01).

*METHOD OF CONSTRUCTION FOR PATCHES:
AT PATCHES CUT PATCH FOR TIGHT FIT ON ALL SIDES 1/32" MAX GAP, PATCH GRAIN ORIENTATION SHALL MATCH THE GRAIN OF THE PATCHED MEMBER. EPOXY ALL SURFACES IN CONTACT AND FASTEN WITH SCREWS AS SPECIFIED IN DETAILS SHOWN IN PLANS. CROSS CUTS SHALL BE CUT PERPENDICULAR TO THE GRAIN UNLESS OTHERWISE NOTED.

MINIMUM DESIGN VALUES
FOR NEW LUMBER & TIMBER

SPECIES	SIZE CLASSIFICATION	GRADE	F_b (PSI)	F_t (PSI)	F_v (PSI)	$F_{c\perp}$ (PSI)	F_c (PSI)	E (PSI)	E_{min} (PSI)
SOUTHERN PINE	TIMBERS	SEL. STR. DENSE	1750	1200	165	440	1100	1,600,000	580,000
SOUTHERN PINE	TIMBERS	NO. 1	1350	900	165	375	825	1,500,000	550,000
SOUTHERN PINE	1.5"x5.5"	NO. 1	1650	900	175	565	1750	1,700,000	620,000
EASTERN HEMLOCK	BEAMS & STRINGERS	NO. 1	1150	775	155	550	800	1,200,000	440,000
EASTERN HEMLOCK	POSTS & TIMBERS	NO. 1	1050	700	155	500	875	1,200,000	440,000
EASTERN HEMLOCK	DIMENSION LUMBER	NO. 1	775	350	170	555	1000	1,100,000	400,000
EASTERN SPRUCE	BEAMS & STRINGERS	NO. 1	900	600	135	390	625	1,400,000	510,000
EASTERN SPRUCE	POSTS & TIMBERS	NO. 1	800	550	135	390	675	1,400,000	510,000
EASTERN SPRUCE	DIMENSION LUMBER	NO. 1/ NO. 2	875	400	135	335	1050	1,200,000	440,000

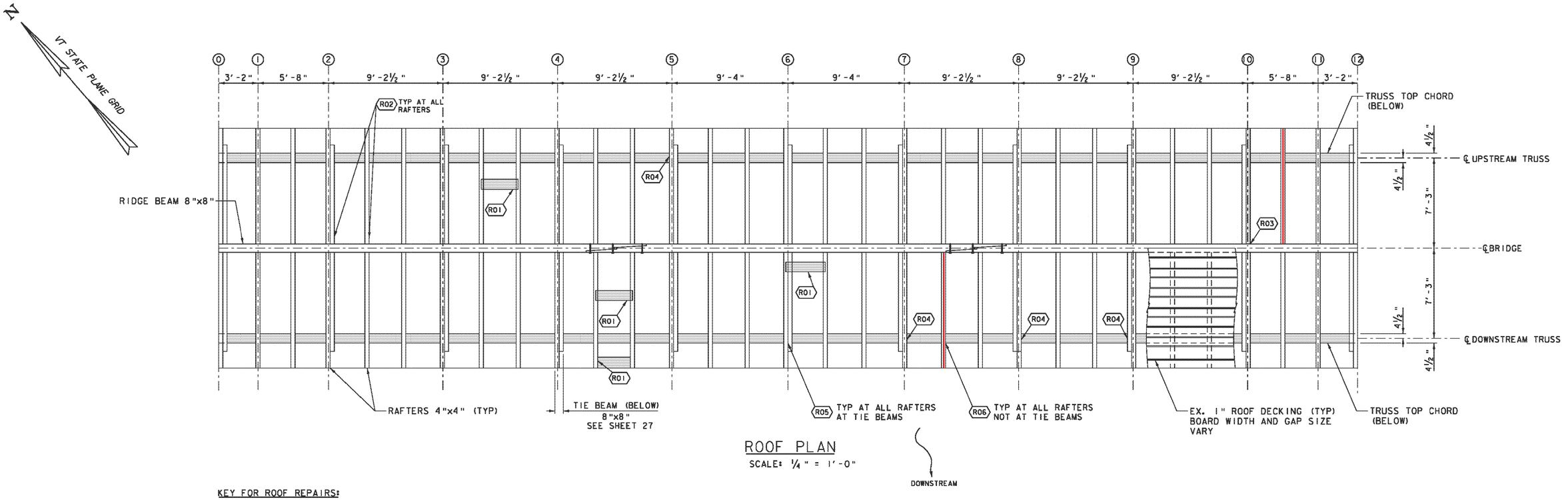
SIZE CLASSIFICATIONS:
"DIMENSION LUMBER" = 2" TO 4" (NOMINAL) THICK
"TIMBERS" = 5"x5" (NOMINAL) AND LARGER
"BEAMS & STRINGERS" = 5" (NOMINAL) OR MORE THICK, WIDTH MORE THAN 2" GREATER THAN THICKNESS
"POSTS & TIMBERS" = 5" (NOMINAL) OR MORE THICK, WIDTH NOT MORE THAN 2" GREATER THAN THICKNESS

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE
PROJECT NUMBER: BHO 1445(34)

FILE NAME: z06J088gen.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: B.O. CRONIN
PROJECT NOTES (3 OF 3)
PLOT DATE: 10/4/2012
DRAWN BY: E.A. FIALA
CHECKED BY: K.E. HILL
SHEET 25 OF 55

VHB 57348



ROOF PLAN

SCALE: ¼" = 1'-0"

KEY FOR ROOF REPAIRS:

- R01 REPLACE DAMAGED ROOF SHEATHING TO MATCH EXISTING.
- R02 SEE DETAIL 100, SHEET 42, TO FASTEN RAFTERS TO RIDGE BEAM.
- R03 REUSE EXISTING MORTISE FOR NEW RAFTER. SEE DETAIL 101, SHEET 42
- R04 SEE DETAIL 102, SHEET 42, TO REPAIR FAILED RAFTER SEAT AT TIE BEAM
- R05 SEE DETAIL 103, SHEET 42 TO FASTEN RAFTERS TO TIE BEAM
- R06 SEE DETAIL 104, SHEET 42, TO FASTEN RAFTERS TO TRUSS TOP CHORD

ROOF NOTES:

1. REPLACEMENT SHEATHING BOARDS SHALL GENERALLY BE CONTINUOUS OVER THREE SPANS MINIMUM WITH STAGGERED JOINTS LOCATED OVER SUPPORTS. SINGLE-SPAN REPLACEMENT PATCHES MAY BE USED WHERE INDICATED IN THE ROOF PLAN.
2. ALL EXISTING AND REPLACEMENT ROOF SHEATHING SHALL BE FASTENED WITH A MINIMUM OF (3) SOUND 8D COMMON NAILS AT EACH SUPPORT. SEE NOTES 1 AND 2 FOR "FASTENERS FOR LUMBER AND TIMBER" ON SHEET 24 FOR PAYMENT OF ADDED FASTENERS.

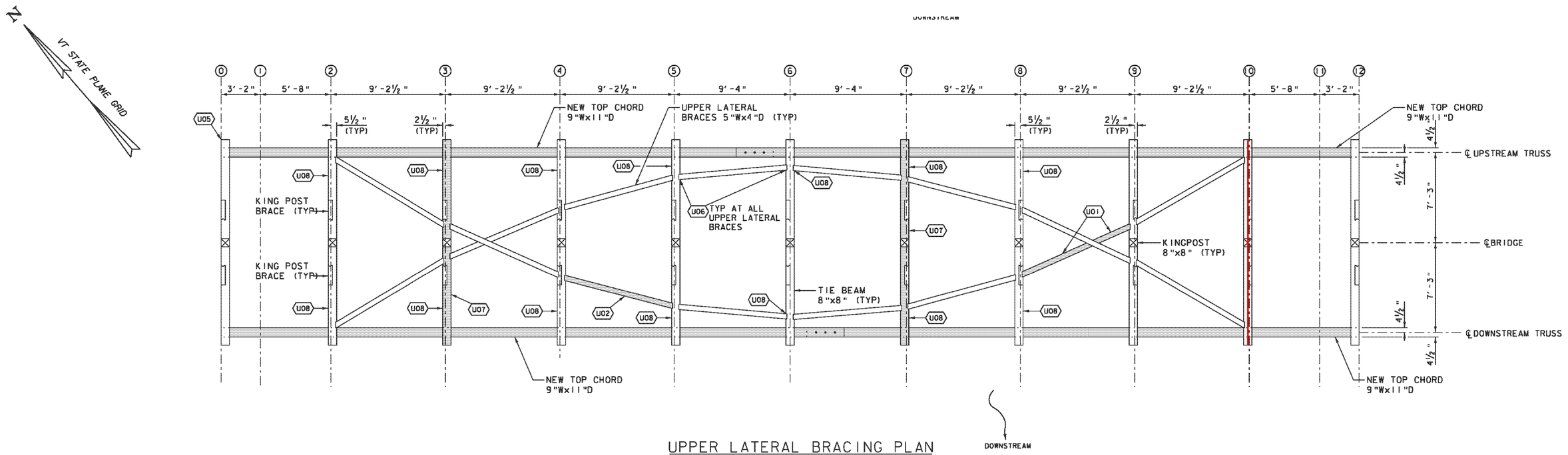
LEGEND

- PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)
- PREDETERMINED PORTION OF EXISTING MEMBER TO BE REPLACED (MATCH SIZE OF EXISTING)
- ADDED MEMBER
- EXISTING MEMBER TO BE REMOVED
- R## ROOF REPAIR KEY NUMBER

Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z06j088details_truss.dgn	PLOT DATE: 9/14/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
ROOF PLAN	SHEET 26 OF 55

VHB 57348



UPPER LATERAL BRACING PLAN

(RAFTER HOUSINGS NOT SHOWN)
SCALE: ¼" = 1'-0"

KEY FOR UPPER LATERAL BRACING REPAIRS

- ⟨U01⟩ REPLACE TWO EXISTING PARTIAL LENGTH BRACES WITH ONE 5"Wx4"D, CONTINUOUS FROM GRID 8 TO GRID 9. REUSE EXISTING HOUSINGS AT TIE BEAMS. SEE DETAIL 105, SHEET 42, FOR LAP WITH EXISTING BRACE.
- ⟨U02⟩ REPLACE POORLY INSTALLED REPLACEMENT MEMBER WITH NEW 5"Wx4"D. REUSE EXISTING HOUSINGS AT TIE BEAMS. MATCH JOINERY DETAILS FROM OTHER SIMILAR UPPER LATERAL BRACES.
- ⟨U03⟩ (NOT USED)
- ⟨U04⟩ (NOT USED)
- ⟨U05⟩ REPAIR SPLIT TIE BEAM PER DETAIL 107, SHEET 42.
- ⟨U06⟩ SHIM GAPS AT BRACE HOUSINGS PER DETAIL 108, SHEET 42.
- ⟨U07⟩ REPLACE EXISTING SPLIT AND/OR ROTTEN TIE BEAM.
- ⟨U08⟩ REPLACE MISSING/EXISTING KNEEBRACE PER DETAIL 110, SHEET 43.

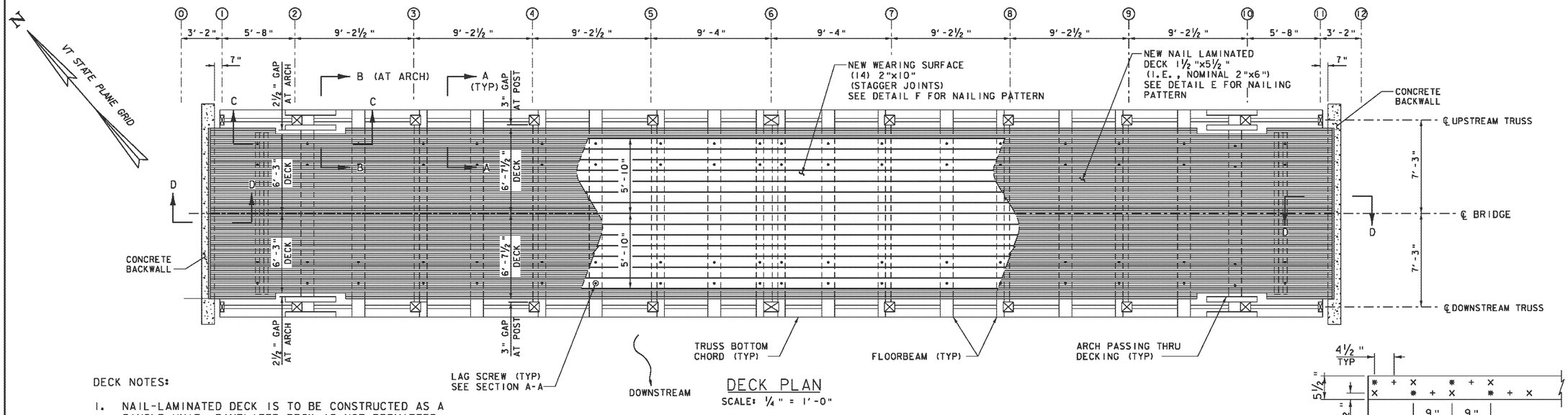
LEGEND

- PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)
- PREDETERMINED PORTION OF EXISTING MEMBER TO BE REPLACED (MATCH SIZE OF EXISTING)
- ADDED MEMBER
- EXISTING MEMBER TO BE REMOVED
- ⟨U##⟩ UPPER LATERAL REPAIR BRACING KEY NUMBER

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z06j088details_truss.dgn	PLOT DATE: 9/14/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
UPPER LATERAL BRACING PLAN	SHEET 27 OF 55

VHB 57348

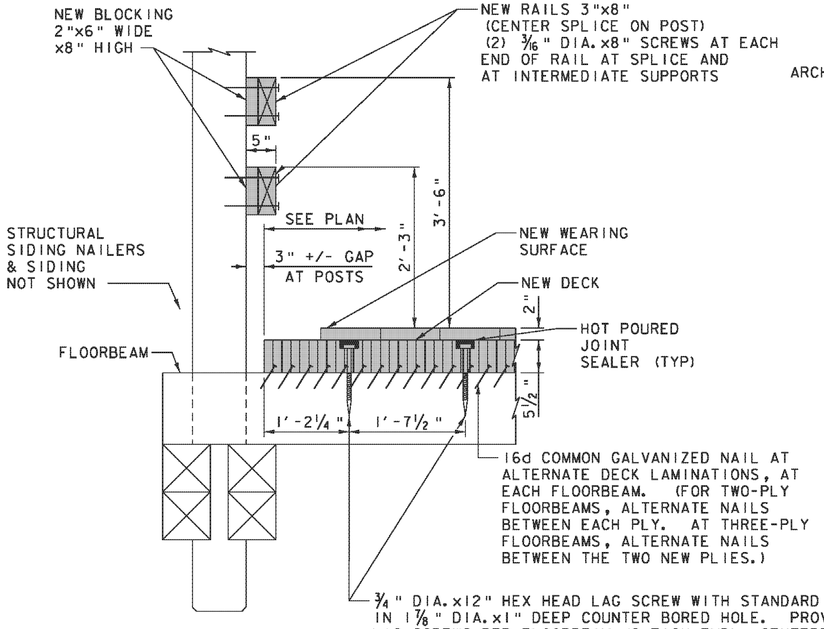


DECK PLAN

SCALE: ¼" = 1'-0"

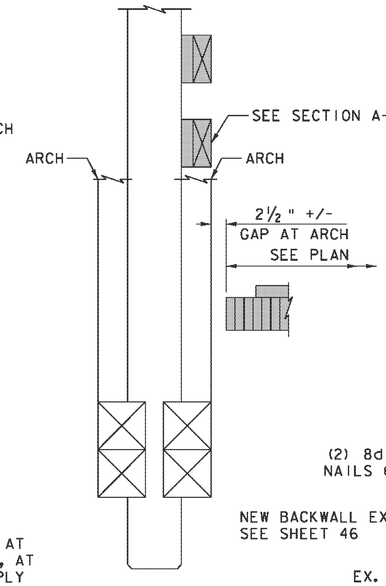
DECK NOTES:

1. NAIL-LAMINATED DECK IS TO BE CONSTRUCTED AS A SINGLE UNIT; PANELIZED DECK IS NOT PERMITTED.
2. ALL 2x6'S SHALL BE CONTINUOUS OVER AT LEAST 3 SPANS. STAGGER BUTT JOINTS, AND LOCATE BUTT JOINTS OVER FLOORBEAMS.



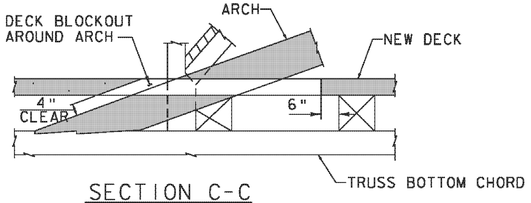
SECTION A-A

SCALE: 1" = 1'-0"



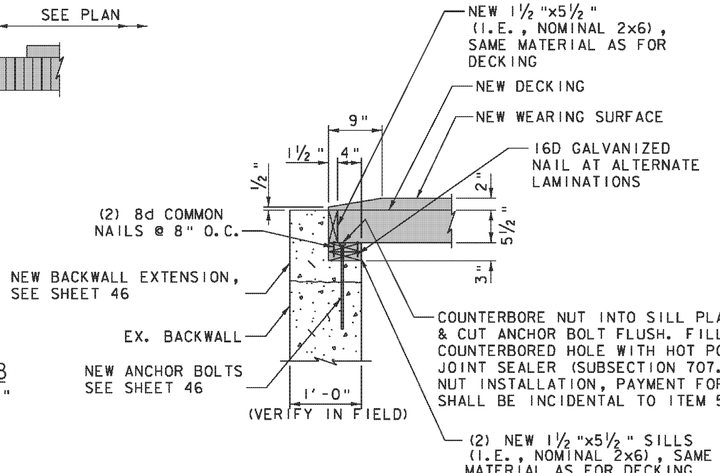
SECTION B-B

SCALE: 1" = 1'-0"



SECTION C-C

SCALE: ½" = 1'-0"



SECTION D-D

SCALE: 1" = 1'-0"

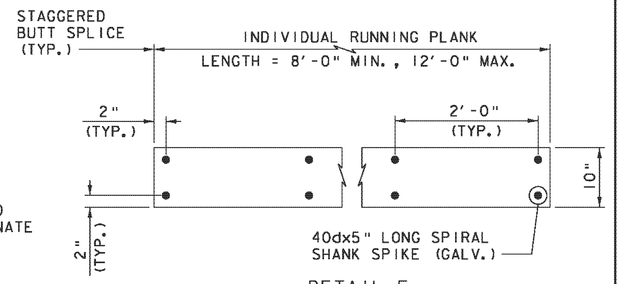
20d COMMON GALVANIZED SPIKES

* INDICATES NAILS IN FIRST LAMINATION
x INDICATES NAILS IN SECOND LAMINATION
\+ INDICATES NAILS IN THIRD LAMINATION

DETAIL E

NAILING PATTERN FOR NAIL-LAMINATED DECK (SIDE VIEW)

SCALE: 1" = 1'-0"



DETAIL F

NAILING PATTERN FOR WEARING SURFACE (PLAN VIEW)

SCALE: 1" = 1'-0"

LEGEND FOR DECK DETAILS:

PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z06J088details_truss.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: J.W. GOLEK
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
DECK PLAN	SHEET 28 OF 55

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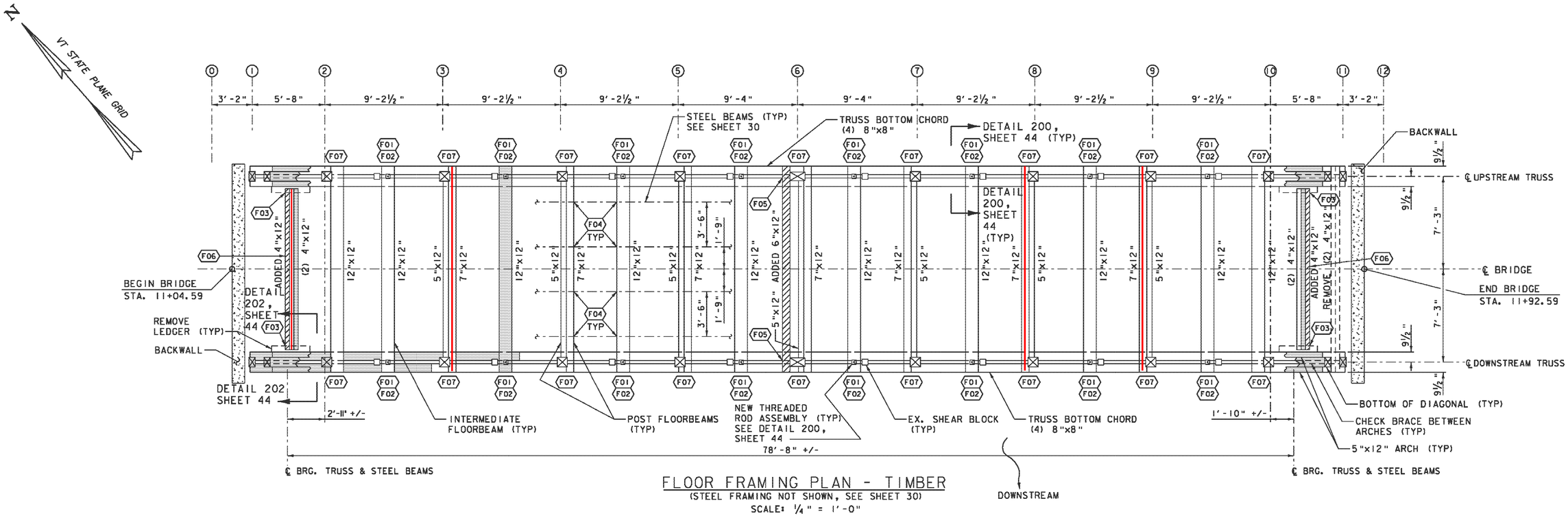


FLOOR FRAMING PLAN - TIMBER

(STEEL FRAMING NOT SHOWN, SEE SHEET 30)
SCALE: ¼" = 1'-0"

KEY FOR FLOOR FRAMING REPAIRS:

(F01) NOTCH BOTTOM OF INTERMEDIATE FLOORBEAM TO PREVENT BEARING ON TRUSS. SEE DETAIL 200, SHEET 44.

(F02) ADD NEW THREADED ROD ASSEMBLY. SEE DETAIL 200, SHEET 44.

(F03) REMOVE EXISTING LEDGER FROM SIDE OF TRUSS BOTTOM CHORD. SEE DETAIL 202, SHEET 44, FOR TERMINATION OF FLOOR JOISTS.

(F04) CONNECT EXISTING FLOORBEAMS TO NEW BEAMS AND SHIM GAPS (IF ANY) BETWEEN FLOORBEAMS AND BEAMS SEE DETAIL 203, SHEET 44.

(F05) CONNECT NEW FLOORBEAM TO EXISTING POST PER DETAIL 204, SHEET 44.

(F06) STITCH TRIPLE-PLY FLOORBEAM TOGETHER PER DETAIL 205, SHEET 44.

(F07) SHIM GAPS (IF ANY) BETWEEN BOTTOM OF FLOORBEAM AND TOP OF TRUSS BOTTOM CHORD WITH SOUTHERN PINE SHIMS (TYPE IV PRESERVATIVE TREATMENT), COST INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE). SECURE SHIMS WITH SCREWS OR NAILS.

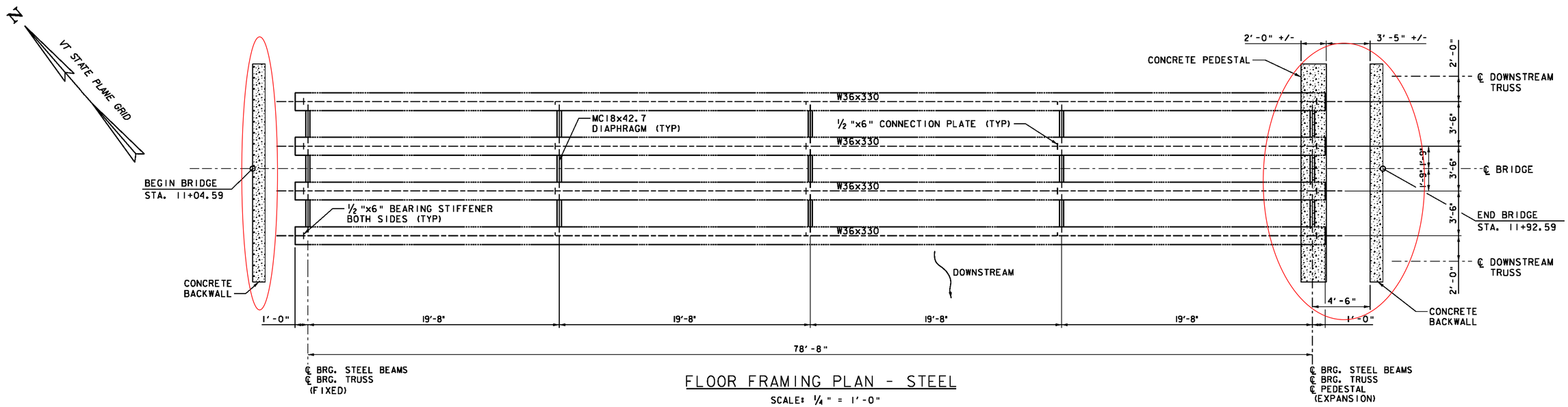
LEGEND

- PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)
- PREDETERMINED PORTION OF EXISTING MEMBER TO BE REPLACED (MATCH SIZE OF EXISTING)
- ADDED MEMBER
- EXISTING MEMBER TO BE REMOVED
- (F##) FLOOR FRAMING REPAIR KEY NUMBER

Vanasse Hangen Brustlin, Inc.

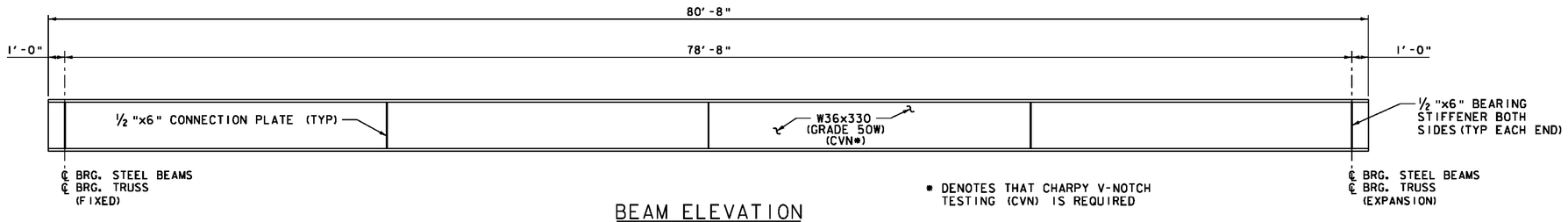
PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z06j088details_truss.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
FLOOR FRAMING PLAN - TIMBER	SHEET 29 OF 55

VHB 57348



FLOOR FRAMING PLAN - STEEL

SCALE: ¼" = 1'-0"



* DENOTES THAT CHARPY V-NOTCH TESTING (CVN) IS REQUIRED

BEAM ELEVATION

SCALE: ¼" = 1'-0"

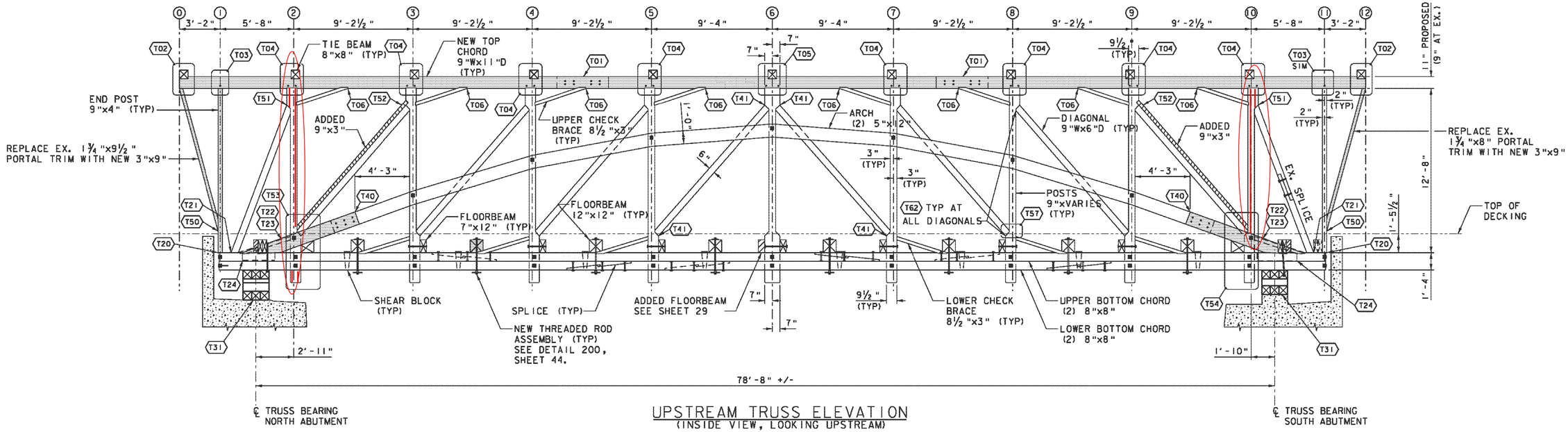
NOTES:

1. SEE VTRANS STRUCTURES DETAIL SD-602.00 FOR CONNECTION PLATE, BEARING STIFFENER, AND DIAPHRAGM DETAILS.
2. ROLLED BEAMS SHALL BE CAMBERED 6⅛" TOTAL (½" FOR DEAD LOAD DEFLECTION DUE TO GIBEAMELF-WEIGHT, ⅛" FOR DEAD LOAD DEFLECTION DUE TO TRIBUTARY LOAD FROM DECK AND FLOORBEAMS, AND 5½" FOR RESIDUAL CAMBER).

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z06j088details_truss.dgn	PLOT DATE: 9/14/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
FLOOR FRAMING PLAN - STEEL	SHEET 30 OF 55

VHB 57348



UPSTREAM TRUSS ELEVATION
(INSIDE VIEW, LOOKING UPSTREAM)

SCALE: ¼" = 1'-0"

KEY FOR REPAIRS (UPSTREAM AND DOWNSTREAM TRUSSES):

TOP CHORD

T01 SEE DETAIL 1, SHEET 37 FOR NEW TOP CHORD SPLICE.

T02 TOP CHORD JOINERY AT TIE BEAM TO MATCH EXISTING, END OF TOP CHORD RECONFIGURED FOR NEW POST CONNECTION. SEE DETAIL 2, SHEET 37.

T03 JOINERY AT NEW TOP CHORD TO MATCH EXISTING, SEE DETAIL 3, SHEET 37.

T04 JOINERY AT NEW TOP CHORD TO MATCH EXISTING, SEE DETAIL 4, SHEET 37.

T05 JOINERY AT NEW TOP CHORD TO MATCH EXISTING, SEE DETAIL 5, SHEET 37.

T06 JOINERY AT NEW TOP CHORD TO MATCH EXISTING. ADD FASTENERS AT EXISTING CHECK BRACES. SEE DETAIL 6, SHEET 37.

BOTTOM CHORD

T20 SEE DETAIL 7B, SHEET 38, FOR CONNECTION OF NEW POST TO BOTTOM CHORD.

T21 SEE DETAIL 7B, SHEET 38, FOR REINFORCEMENT OF DIAGONAL-TO-CHORD CONNECTION.

T22 REPLACE BOTTOM END OF BOTH INNER AND OUTER ARCH SEGMENTS, AND REINFORCE ARCH BEARING JOINT AT BOTTOM CHORD. SEE DETAIL 7A, SHEET 38.

T23 REPLACE CHECK BRACE BETWEEN ARCH SEGMENTS, AND REINFORCE CHECK BRACE BEARING AT BOTTOM CHORD AND POST. SEE DETAIL 7B, SHEET 38.

T24 REMOVE EXISTING LEDGER FROM SIDE OF UPPER INNER BOTTOM CHORD.

T25 (NOT USED).

T26 REPLACE EXISTING BOTTOM CHORD FROM BACKWALL TO EXISTING SPLICE, MATCH ALL EXISTING JOINERY UNLESS NOTED OTHERWISE. SEE DETAIL 8, SHEET 39, FOR REUSE OF EXISTING SPLICE.

T27 REPLACE EXISTING BOTTOM CHORD FROM BACKWALL TO EXISTING SPLICE; MATCH ALL EXISTING JOINERY UNLESS NOTED OTHERWISE. SEE DETAIL 9, SHEET 39, FOR REUSE OF EXISTING SPLICE.

T28 (NOT USED).

T29 (NOT USED).

T30 REPAIR SPLIT CHORD AT SPLICE PER DETAIL 10, SHEET 39.

T31 REBUILD EX. CRIBBING IN SAME LOCATION FOR NEW BEARING ELEVATION OF TRUSS. EXISTING CRIBBING IN SOUND CONDITION MAY BE REUSED SUBJECT TO APPROVAL BY RESIDENT ENGINEER. (SEE NOTE 1 THIS SHEET)

ARCH

T40 NEW ARCH SPLICE, SEE DETAIL 11, SHEET 39.

T41 SECURE DIAGONAL TO POST WITH (2) ⅜"x10" SCREWS.

POSTS AND DIAGONALS

T50 SEE DETAIL 7B, SHEET 38, FOR CONNECTION OF NEW PORTAL TRIM TO END POST.

T51 SEE DETAIL 13, SHEET 40, FOR REINFORCEMENT OF DIAGONAL BEARING CONNECTION

T52 SEE DETAIL 14, SHEET 40, FOR SISTERED DIAGONAL.

T53 ADD SISTERING TO DIAGONAL AND REPAIR SPLIT POST PER DETAIL 15, SHEET 40.

T54 ADD SISTERING TO DIAGONAL, REPAIR SPLIT POST, AND REPAIR ROT AT POST AND DIAGONAL PER DETAIL 16, SHEET 40.

T55 ADD SISTERING TO DIAGONAL AND REPAIR ROT AT POST AND DIAGONAL PER DETAIL 17, SHEET 40.

T56 ADD SISTERING TO DIAGONAL, REPAIR ROT AT DIAGONAL, AND REPLACE POST PER DETAIL 18, SHEET 40.

T57 REPAIR ROT AT POST AND DIAGONAL PER DETAIL 19, SHEET 41.

T58 REPAIR ROT AT POST AND DIAGONAL PER DETAIL 20, SHEET 41.

T59 REPAIR ROT AT POST AND SPLIT DIAGONAL PER DETAIL 21, SHEET 41.

T60 REPAIR ROTTEN POST TENON, FRACTURED ARCH BOLT, AND SPLIT POST PER DETAIL 22, SHEET 41.

T61 SEE DETAIL 23, SHEET 41, FOR REPAIR OF SPLIT DIAGONAL.

T62 AFTER REALIGNMENT OF TRUSSES, VERIFY THAT ALL DIAGONAL JOINTS ARE IN SOUND BEARING. IF NOT, SHIM TIGHT AND SECURE SHIMS IN PLACE. SHIMS SHALL BE INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE).

T63 SEE DETAIL 24, SHEET 41, FOR REPAIR OF SPLIT DIAGONAL.

T64 PATCH GOUGE PER DETAIL 25, SHEET 41.

NOTE:

1. RAISE BRIDGE 4" TO ACCOMMODATE DEEPER STEEL BEAMS AND INCREASE HEIGHT OF CRIBBING TO MATCH. SEE MONKTON RD (TH 36) PROFILE, SHEET 9, FOR PROPOSED ELEVATIONS AND GRADES.

LEGEND

- PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)
- PREDETERMINED PORTION OF EXISTING MEMBER TO BE REPLACED (MATCH SIZE OF EXISTING)
- ADDED MEMBER
- EXISTING MEMBER TO BE REMOVED
- T## TRUSS REPAIR KEY NUMBER

Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z06j088details_truss.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
UPSTREAM TRUSS ELEVATION	SHEET 31 OF 55

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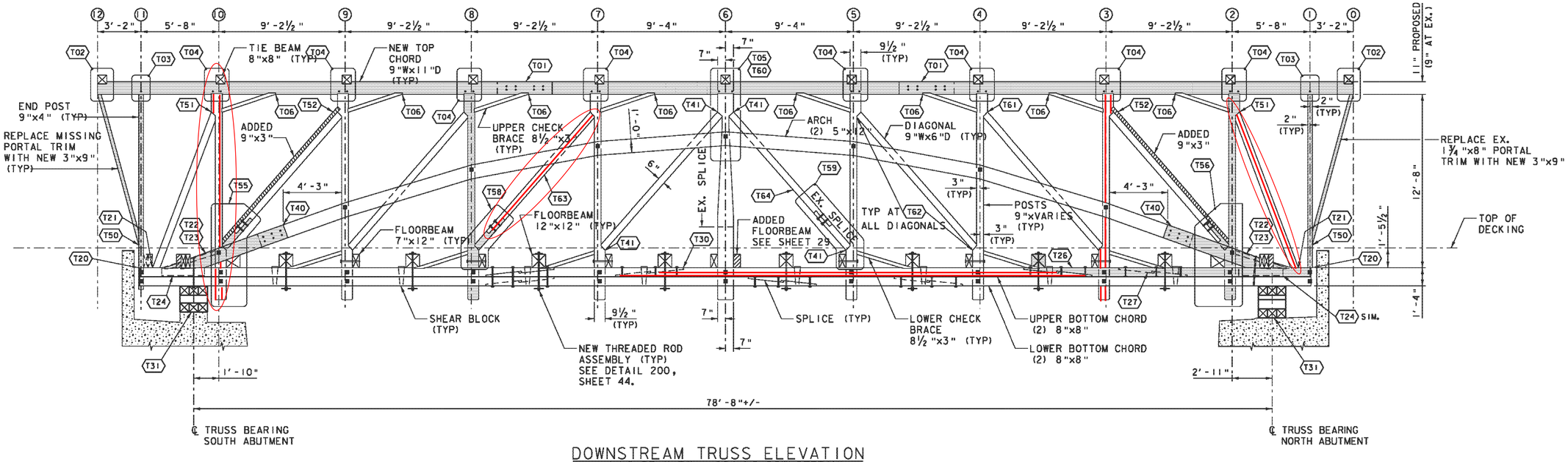
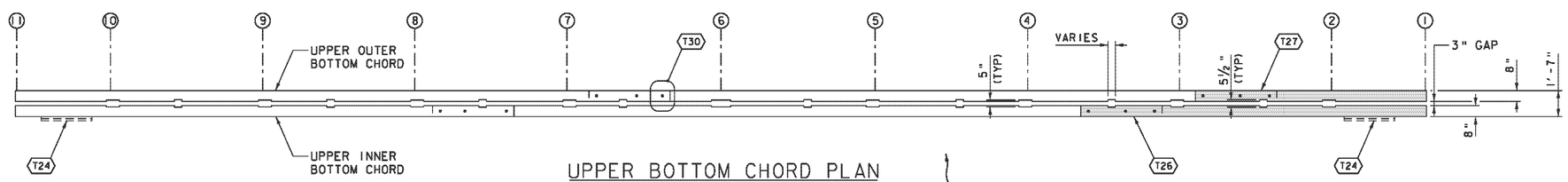


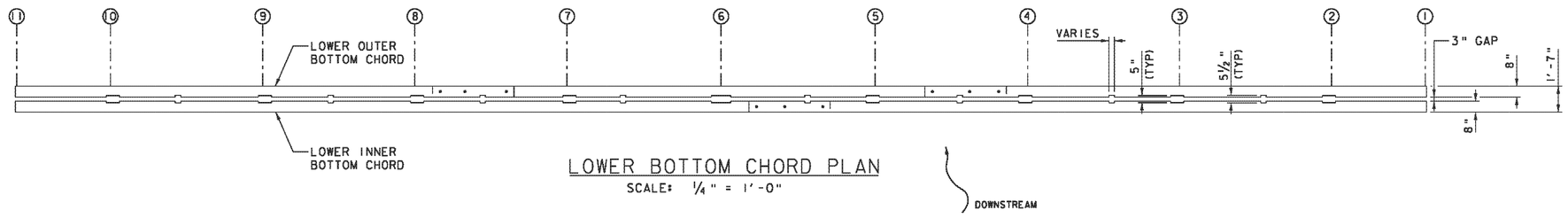
DOWNSTREAM TRUSS ELEVATION
(INSIDE VIEW, LOOKING DOWNSTREAM)

SCALE: ¼" = 1'-0"



UPPER BOTTOM CHORD PLAN
(CHECK BRACE HOUSINGS NOT SHOWN)

SCALE: ¼" = 1'-0"



LOWER BOTTOM CHORD PLAN
SCALE: ¼" = 1'-0"

NOTE:

1. SEE UPSTREAM TRUSS ELEVATION ON SHEET 31 FOR TRUSS REPAIR KEY.

LEGEND

- PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)
- PREDETERMINED PORTION OF EXISTING MEMBER TO BE REPLACED (MATCH SIZE OF EXISTING)
- ADDED MEMBER
- EXISTING MEMBER TO BE REMOVED
- T## TRUSS REPAIR KEY NUMBER

Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z06j088details_truss.dgn	PLOT DATE: 9/14/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
DOWNSTREAM TRUSS ELEVATION	SHEET 32 OF 55

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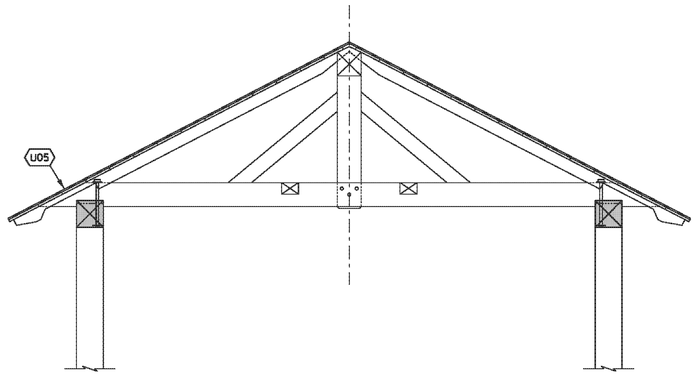
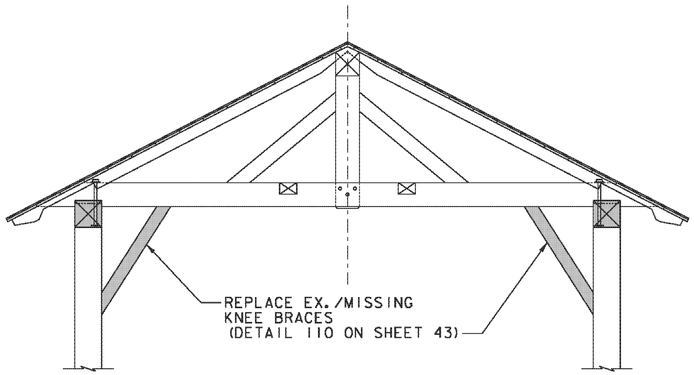
UPSTREAM

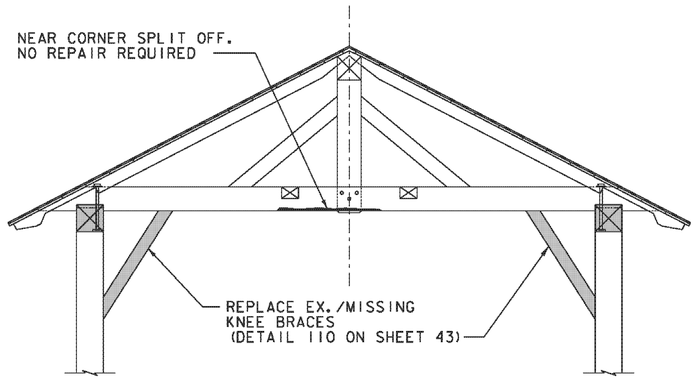


GRID 0

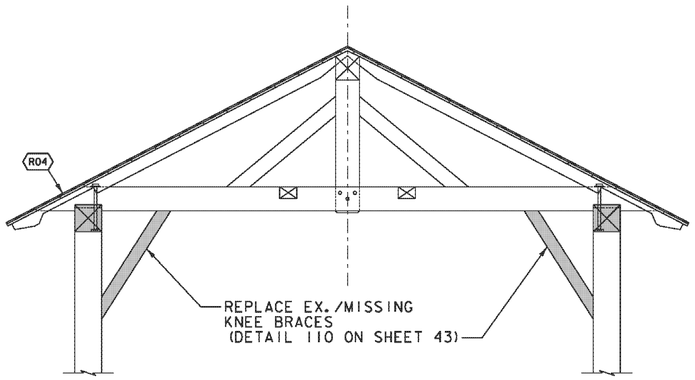
DOWNSTREAM



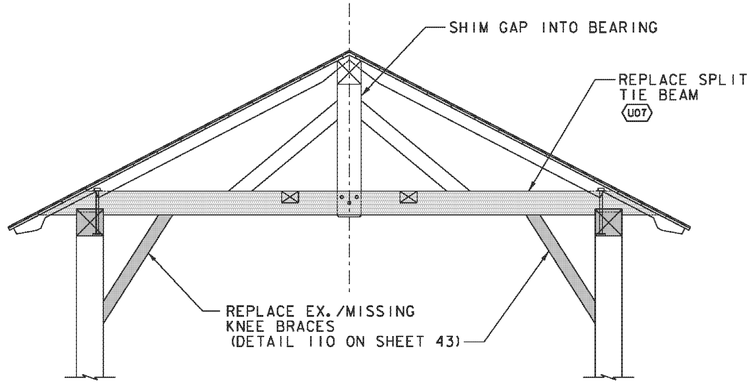
GRID 4



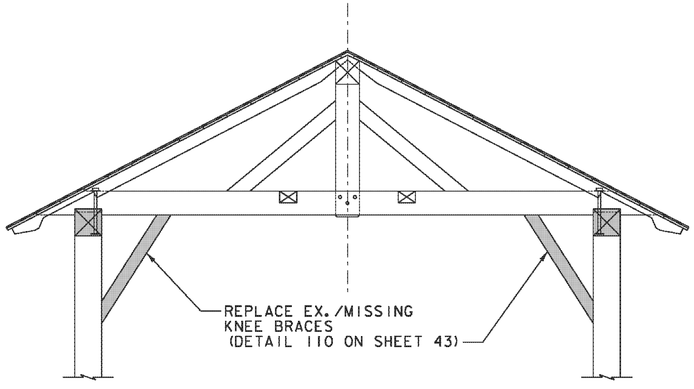
GRID 2



GRID 5



GRID 3



GRID 6

LEGEND:

- PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)
- PREDETERMINED PORTION OF EXISTING MEMBER TO BE REPLACED (MATCH SIZE OF EXISTING)
- ADDED MEMBER
- EXISTING MEMBER TO BE REMOVED
- REPAIR KEY NUMBER

NOTES:

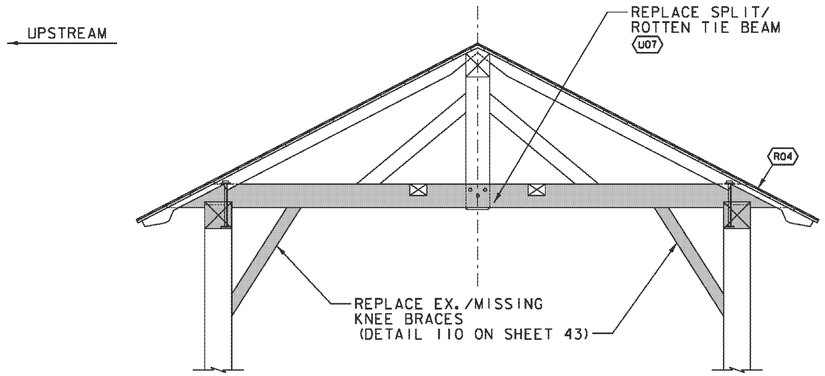
1. SCALE IS ½" = 1'-0".
2. SEE SHEET 27 FOR UXX REPAIRS.
3. SEE SHEET 26 FOR RXX REPAIRS.

Vanasse Hangen Brustlin, Inc.

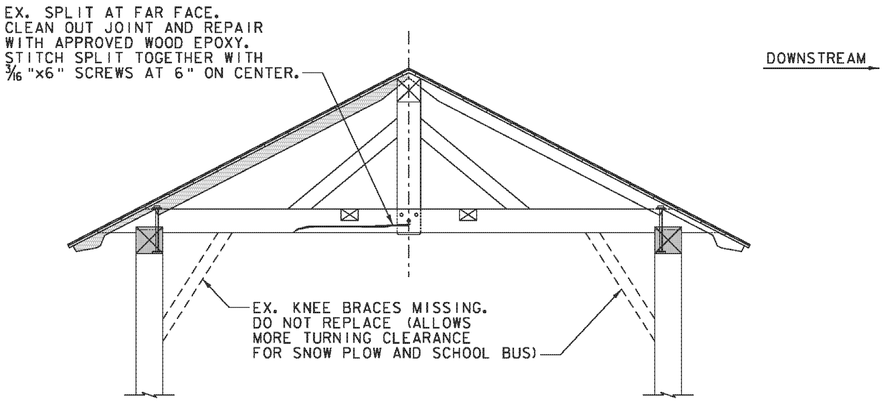
PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)

FILE NAME: z061088knee_brace.dgn	PLOT DATE: 9/14/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
TIE BEAM ELEVATIONS (1 OF 2)	SHEET 33 OF 55

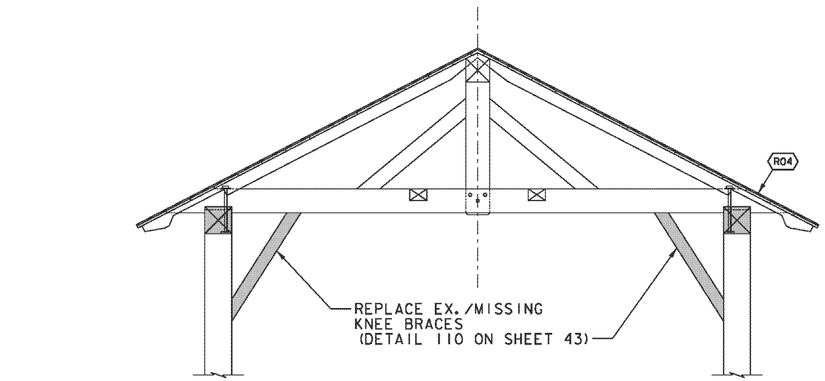
VHB 57348



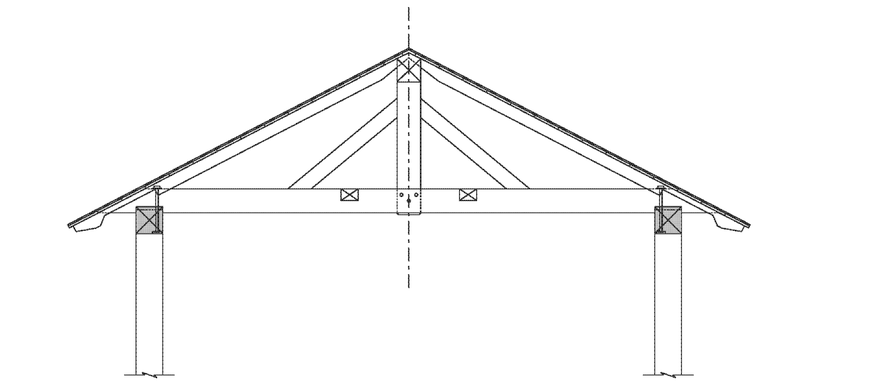
GRID 7



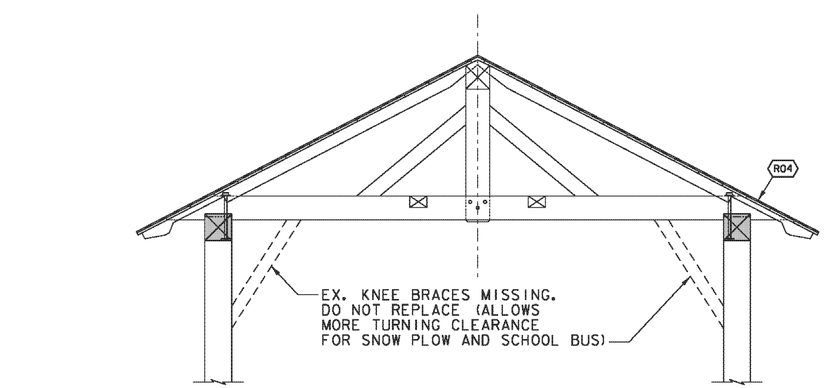
GRID 10



GRID 8



GRID 12



GRID 9

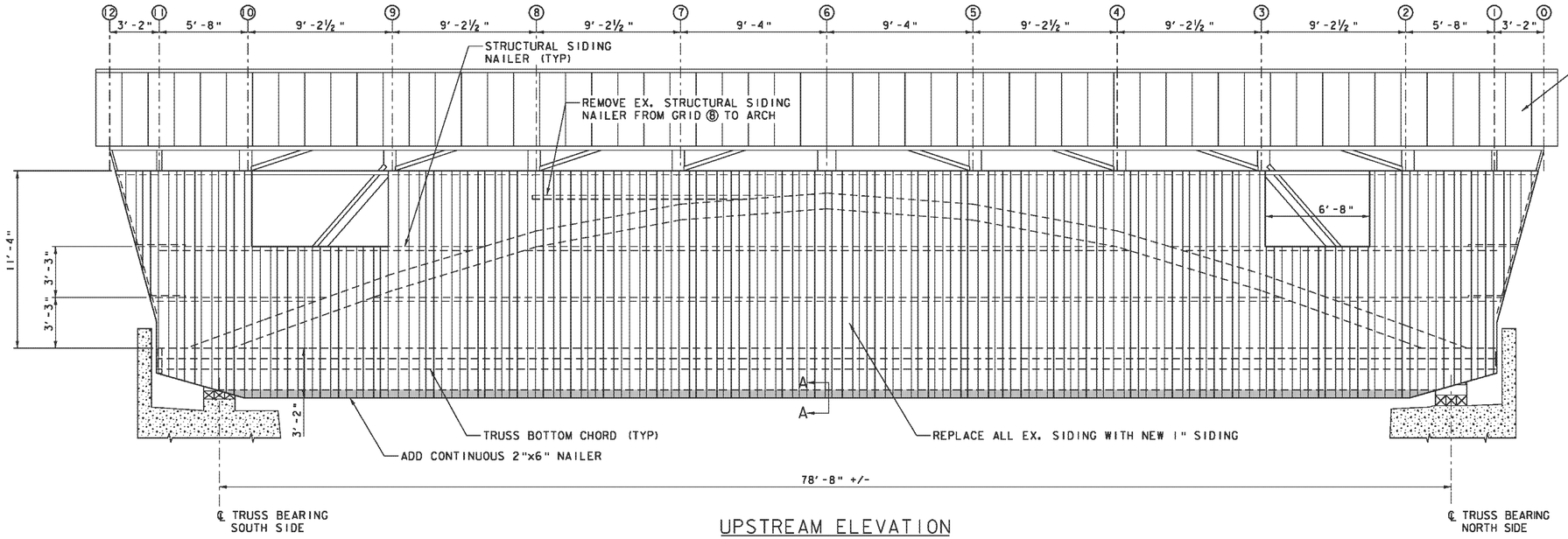
NOTES:

1. SEE SHEET 33 FOR LEGEND AND NOTES

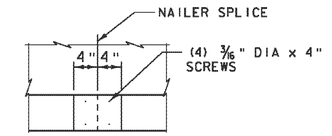
VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z06J088knee_brace.dgn	PLOT DATE: 9/14/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
TIE BEAM ELEVATIONS (2 OF 2)	SHEET 34 OF 55

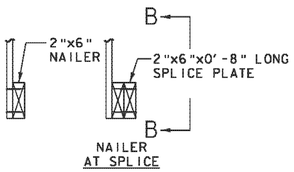
VHB 57348



UPSTREAM ELEVATION
(LOOKING DOWNSTREAM)
SCALE: 1/4" = 1'-0"

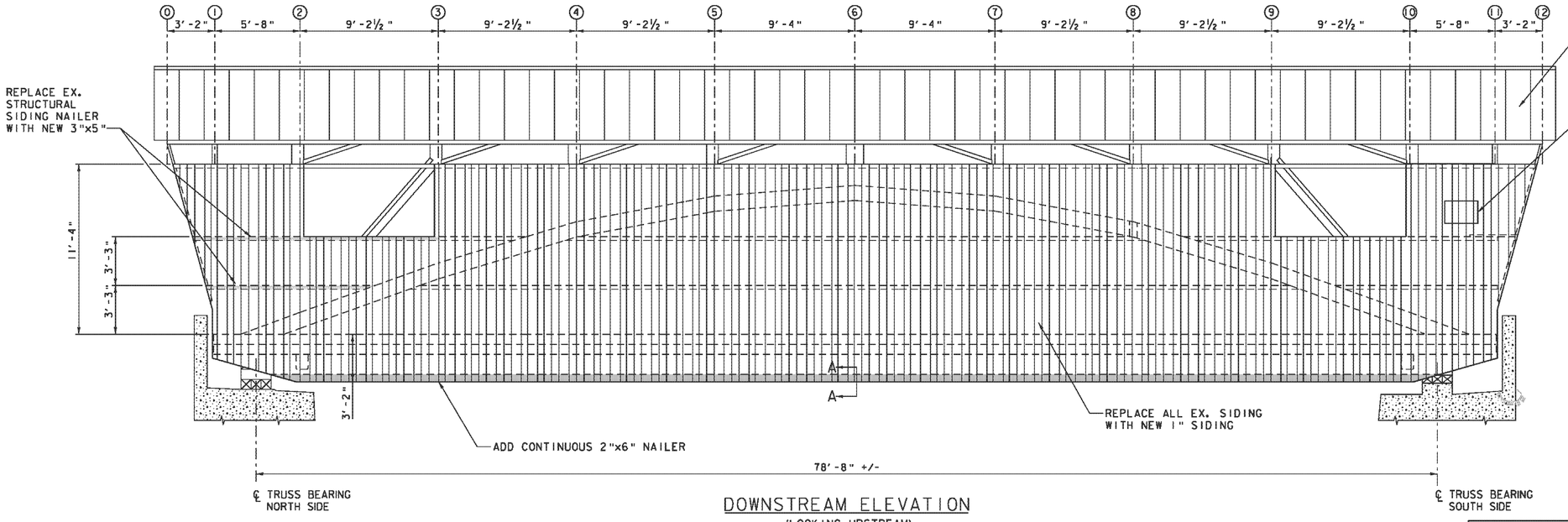


SECTION B-B
SCALE 1" = 1'-0"



SECTION A-A
SCALE 1" = 1'-0"

NOTE: MINIMUM NAILER SEGMENT LENGTH SHALL BE 12'-0".



DOWNSTREAM ELEVATION
(LOOKING UPSTREAM)
SCALE: 1/4" = 1'-0"

SIDING NOTES:

1. SIDING BOARDS SHALL BE SINGLE VERTICAL PIECES FOR FULL HEIGHT SHOWN. HORIZONTAL JOINTS ARE NOT PERMITTED.
2. USE RANDOM MIX OF 5", 6", AND 8" WIDE BOARDS.
3. FASTEN SIDING TO EACH SUPPORTING STRUCTURAL SIDING NAILER, NAILER, CHORD, AND ARCH WITH (2) 10d SPIRAL NAILS, WITH 1" MIN EDGE DISTANCE.
4. REPLACE ALL EX. 2x "REPLACEMENT" STRUCTURAL SIDING NAILERS WITH NEW 3"x5" STRUCTURAL SIDING NAILERS TO MATCH THE OLDER EXISTING STRUCTURAL SIDING NAILERS. INCLUDE ALLOWANCE FOR 60 LINEAR FEET OF REPLACED STRUCTURAL SIDING NAILERS, IN ADDITION TO SPECIFIC MEMBERS WHERE REPLACEMENT IS INDICATED.

LEGEND

PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z061088details_truss.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
SIDING ELEVATIONS	SHEET 35 OF 55

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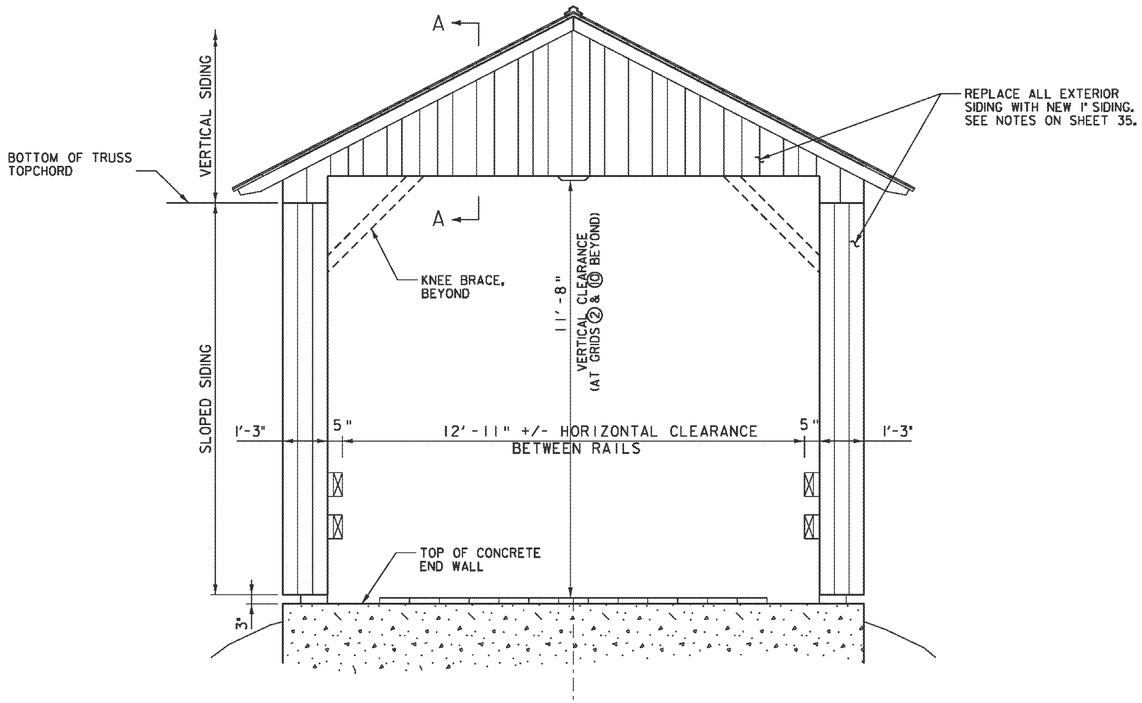
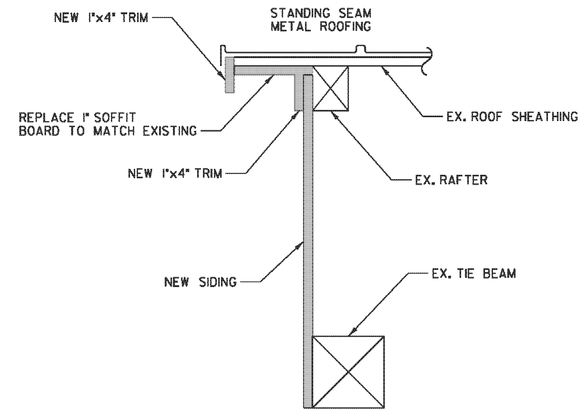


PROPOSED PORTAL SECTION
(BOTH ENDS SIMILAR)
SCALE: 1/2" = 1'-0"



SECTION A-A

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

LEGEND

PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)

NOTE:

1. SEE ROADWAY TYPICAL SECTIONS AND CROSS SECTIONS FOR INFORMATION NOT SHOWN.

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z06J088typ.dgn	PLOT DATE: 9/14/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
PORTAL SECTION	SHEET 36 OF 55

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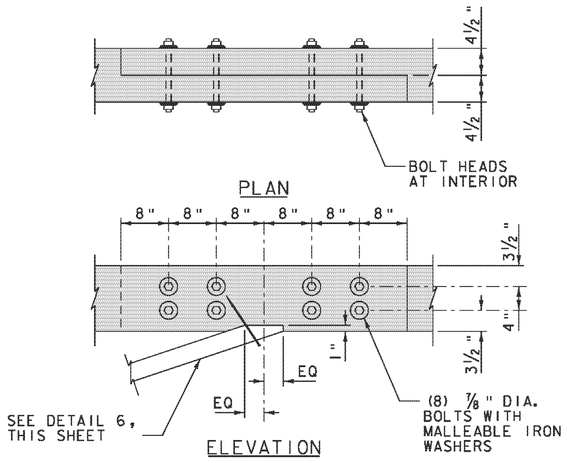
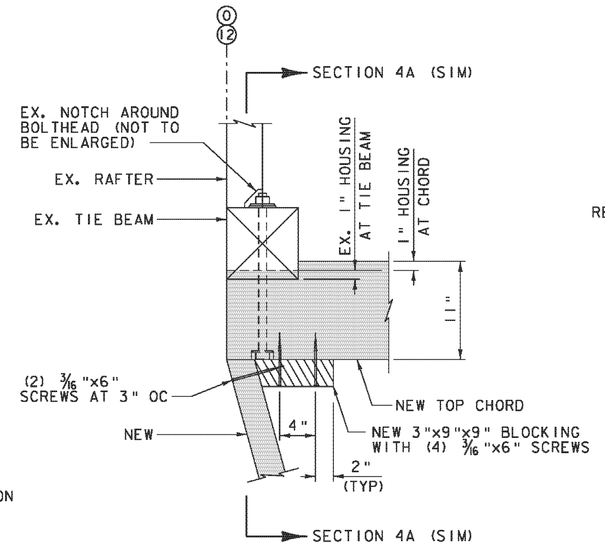
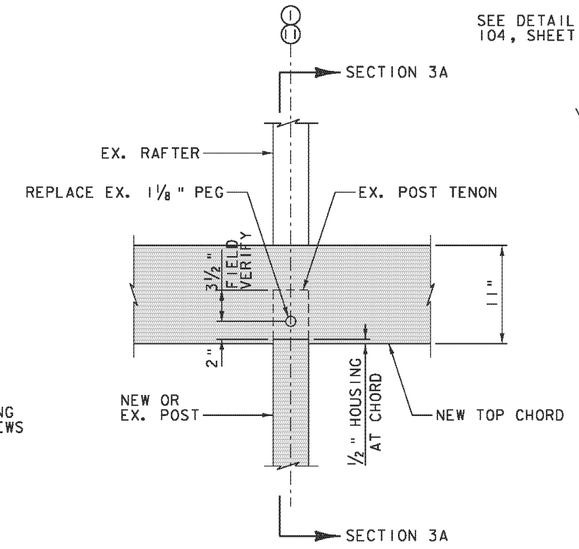


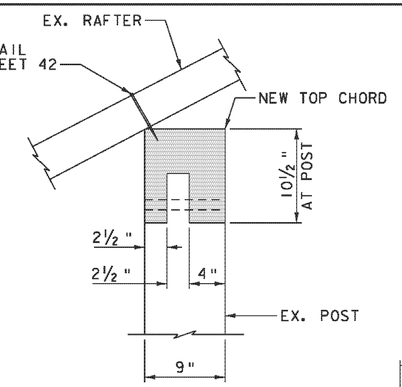
DETAIL 1
TOP CHORD SPLICE
(REF: T01)
SCALE: 1" = 1'-0"



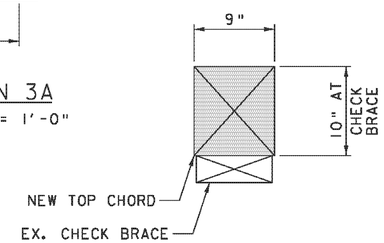
DETAIL 2
TOP CHORD ELEVATION
(REF: T02)
SCALE: 1½" = 1'-0"



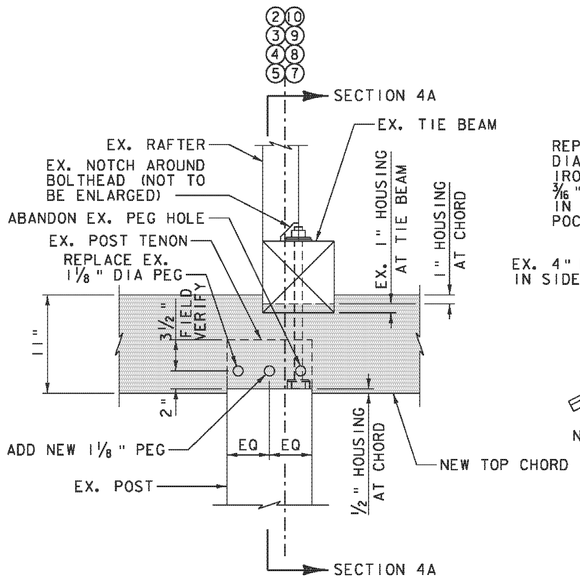
DETAIL 3
TOP CHORD ELEVATION
(REF: T03)
SCALE: 1½" = 1'-0"



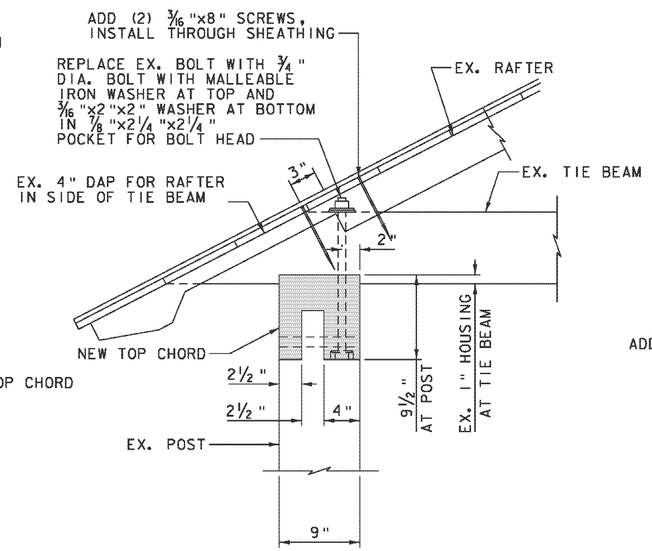
SECTION 3A
SCALE: 1½" = 1'-0"



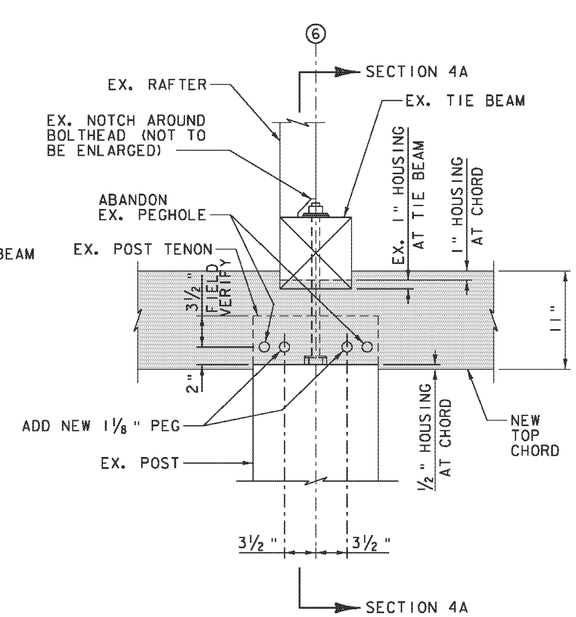
SECTION 6A
SCALE: 1½" = 1'-0"



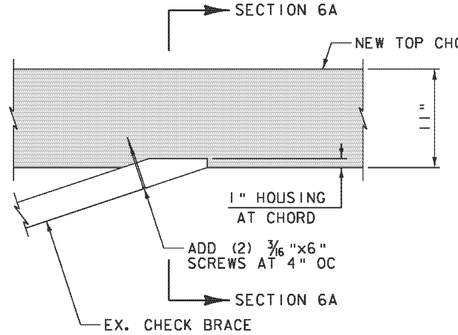
DETAIL 4
TOP CHORD ELEVATION
(REF: T04)
SCALE: 1½" = 1'-0"



SECTION 4A
SCALE: 1½" = 1'-0"



DETAIL 5
TOP CHORD ELEVATION
(REF: T05)
SCALE: 1½" = 1'-0"



DETAIL 6
TOP CHORD ELEVATION
(REF: T06)
SCALE: 1½" = 1'-0"

LEGEND FOR DETAILS

- PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)
- PREDETERMINED PORTION OF EXISTING MEMBER TO BE REPLACED (MATCH SIZE OF EXISTING)
- ADDED MEMBER

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z06j088details bridge.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
BRIDGE DETAILS (1 OF 8)	SHEET 37 OF 55

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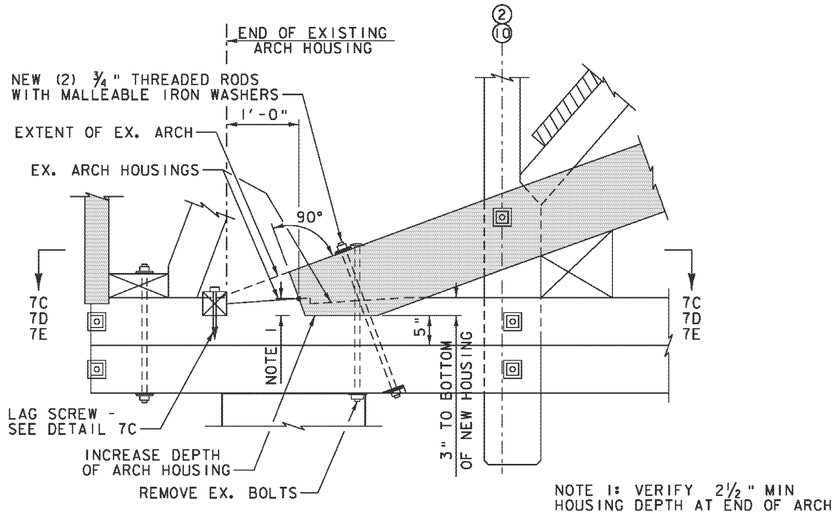
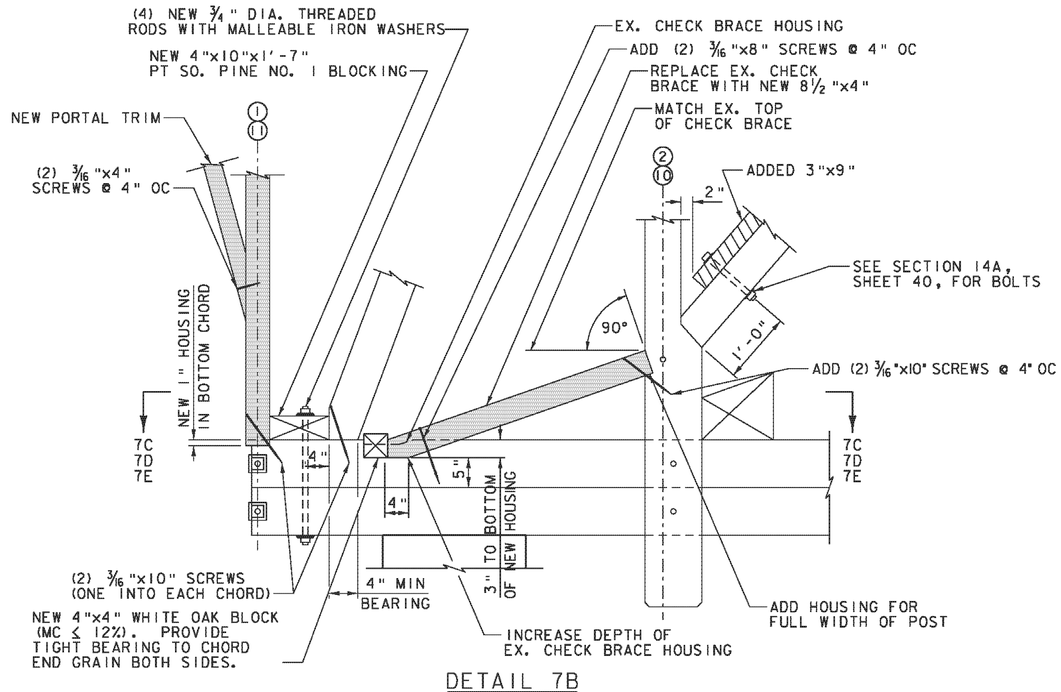
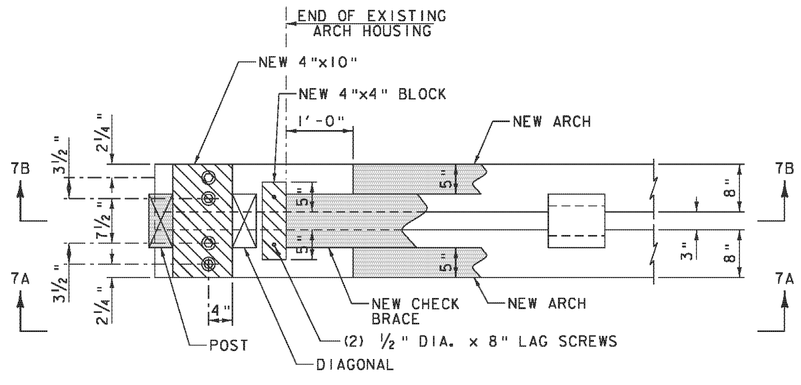


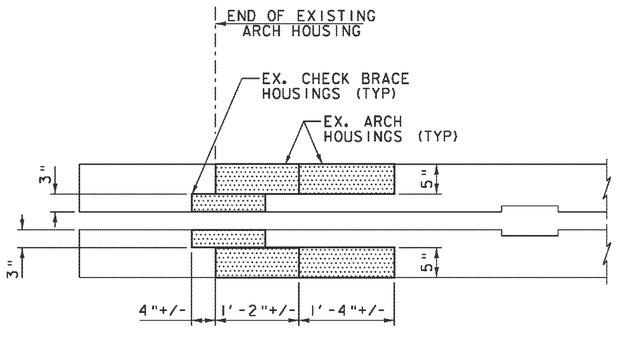
DETAIL 7A
BOTTOM CHORD ELEVATION
(CHECK BRACE NOT SHOWN FOR CLARITY)
(REF: T22)
SCALE: 1" = 1'-0"



DETAIL 7B
BOTTOM CHORD ELEVATION
(ARCH NOT SHOWN FOR CLARITY)
(REF: T23)
SCALE: 1" = 1'-0"

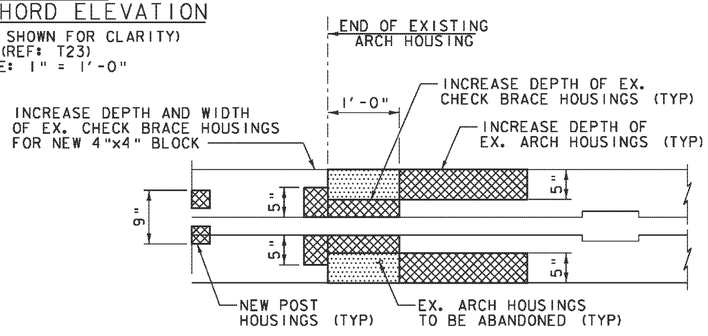


DETAIL 7C
PART PLAN AT ARCH BEARING
SCALE: 1" = 1'-0"



EXISTING HOUSINGS VARY FROM 0" TO 1" DEEP

DETAIL 7D
PART PLAN OF BOTTOM CHORD HOUSINGS (EXISTING)
SCALE: 1" = 1'-0"



DETAIL 7E
PART PLAN OF BOTTOM CHORD HOUSINGS (PROPOSED)
SCALE: 1" = 1'-0"

LEGEND FOR DETAILS

- PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)
- PREDETERMINED PORTION OF EXISTING MEMBER TO BE REPLACED (MATCH SIZE OF EXISTING)
- ADDED MEMBER
- EXTENT OF EXISTING HOUSING
- EXTENT OF NEW HOUSING

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z06J088details bridge.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
BRIDGE DETAILS (2 OF 8)	SHEET 38 OF 55

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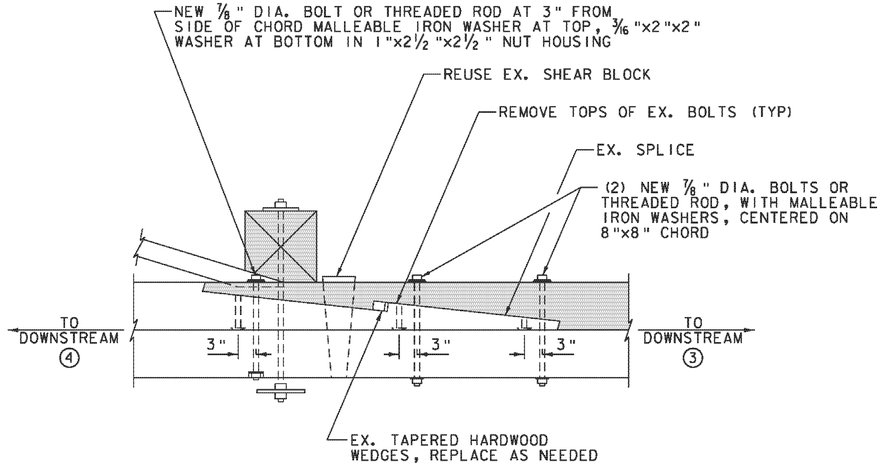
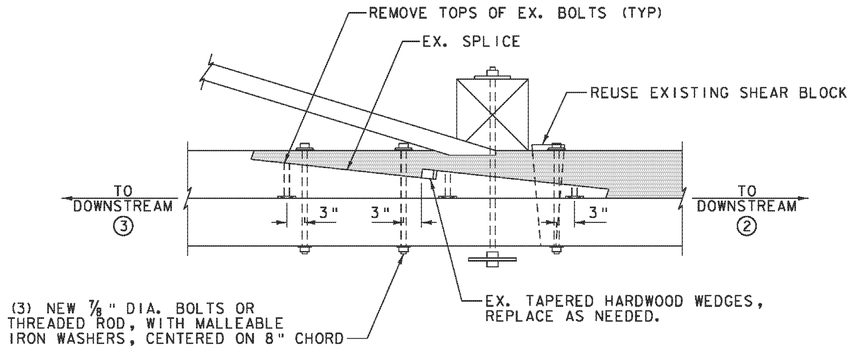


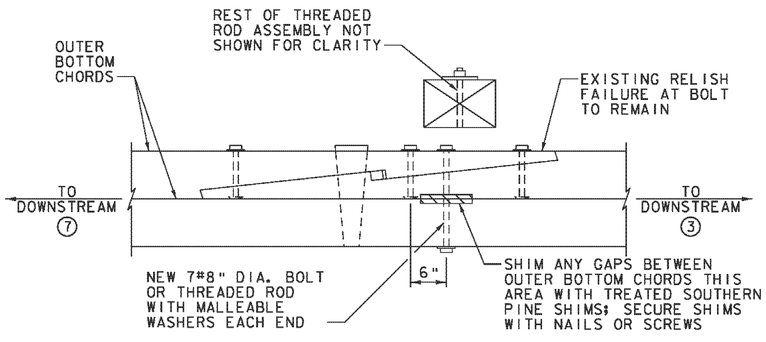
DETAIL 8
INNER BOTTOM CHORD SPLICE

(REF: T26)
SCALE: 1" = 1'-0"



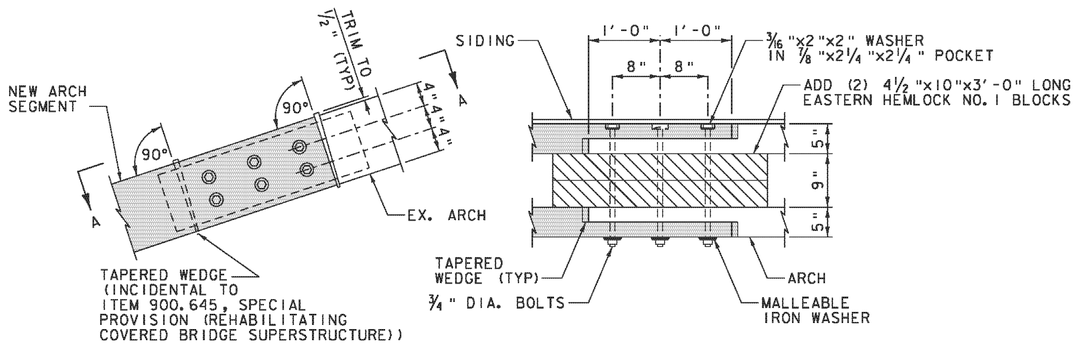
DETAIL 9
OUTER BOTTOM CHORD SPLICE

(REF: T27)
SCALE: 1" = 1'-0"



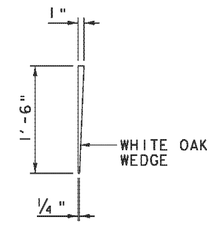
DETAIL 10
BOTTOM CHORD SPLICE REPAIR

(REF: T30)
SCALE: 1" = 1'-0"



DETAIL 11
NEW ARCH SPLICE

(REF: T40)
SCALE: 1" = 1'-0"



TAPERED WEDGE

LEGEND FOR DETAILS

- PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)
- PREDETERMINED PORTION OF EXISTING MEMBER TO BE REPLACED (MATCH SIZE OF EXISTING)
- ADDED MEMBER

PROJECT NAME: CHARLOTTE
PROJECT NUMBER: BHO 1445(34)

FILE NAME: z061088details bridge.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: K.E. HILL
BRIDGE DETAILS (3 OF 8)

PLOT DATE: 10/4/2012
DRAWN BY: K.D. WENTWORTH
CHECKED BY: M.A. COLGAN
SHEET 39 OF 55

VHB Vanasse Hangen Brustlin, Inc.

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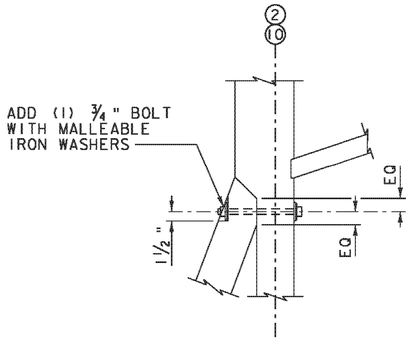
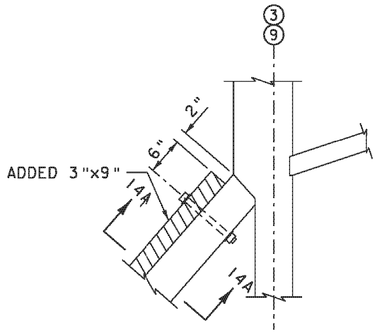
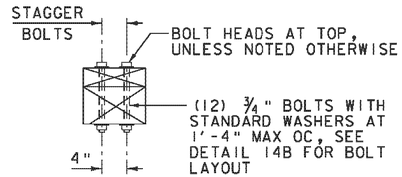


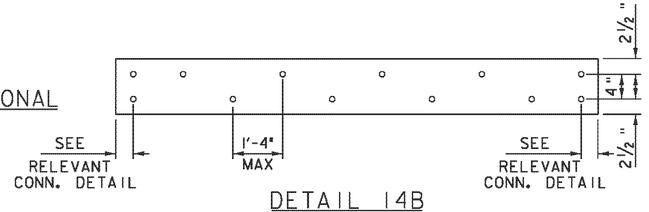
DETAIL 13
DIAGONAL REPAIRS
(REF: T51)
SCALE: 1" = 1'-0"



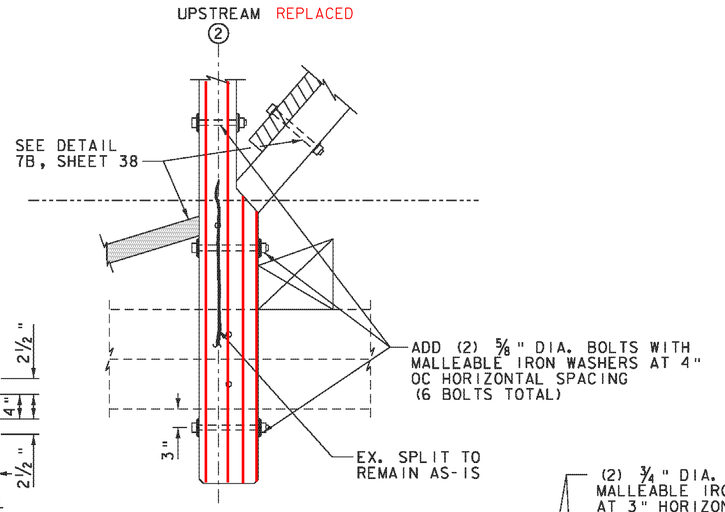
DETAIL 14
SISTERING OF DIAGONAL
(REF: T52)
SCALE: 1" = 1'-0"



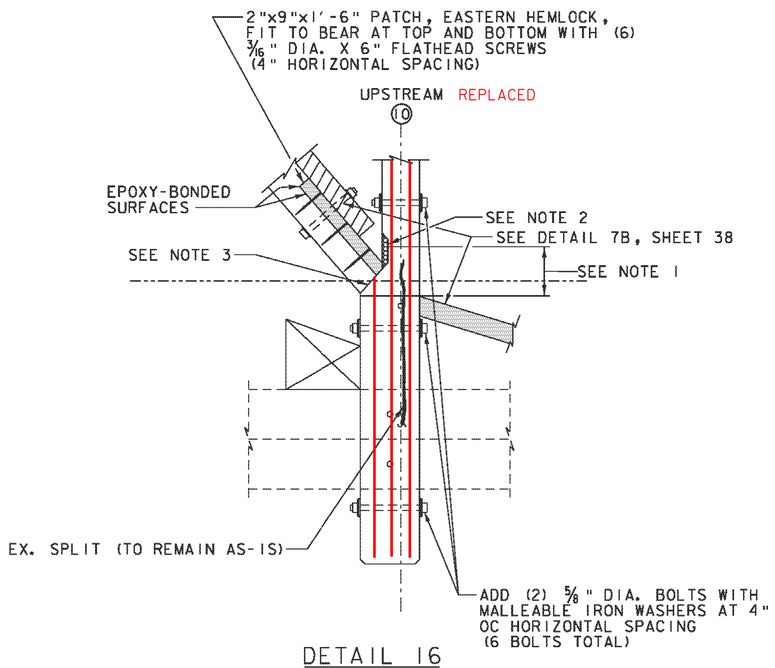
SECTION 14A



DETAIL 14B
BOLT LAYOUT AT SISTERING
SCALE: 1" = 1'-0"



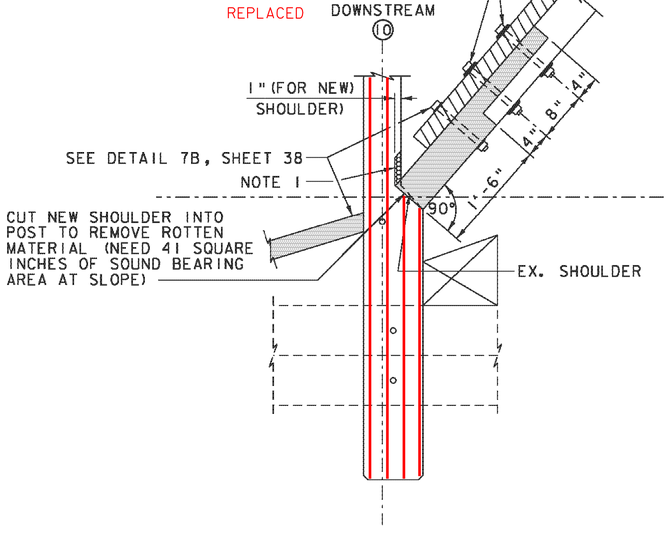
DETAIL 15
POST AND DIAGONAL REPAIRS
(ARCH NOT SHOWN FOR CLARITY)
(REF: T53)
SCALE: 1" = 1'-0"



DETAIL 16
POST AND DIAGONAL REPAIRS
(ARCH NOT SHOWN FOR CLARITY)
(REF: T54)
SCALE: 1" = 1'-0"

NOTES:

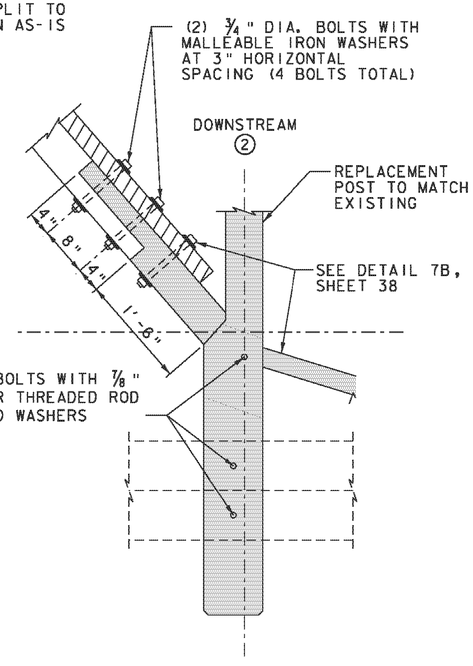
1. REMOVE PUNKY MATERIAL FROM NEAR FACE OF POST (DO NOT REMOVE MORE THAN ¾" DEPTH FROM FACE WITHOUT PRIOR APPROVAL OF RESIDENT ENGINEER). SAND SMOOTH, WITH CURVED TRANSITIONS TO UNDISTURBED SURFACES.
2. REMOVE ROTTEN AND PUNKY MATERIAL FROM LEFT FACE OF POST (DO NOT REMOVE MORE THAN ¾" DEPTH FROM FACE WITHOUT PRIOR APPROVAL OF RESIDENT ENGINEER). SAND SMOOTH, WITH CURVED TRANSITIONS TO UNDISTURBED SURFACES.
3. RESIDENT ENGINEER TO VERIFY MINIMUM OF 41 SQUARE INCHES OF SOUND BEARING REMAINING BETWEEN PATCHED DIAGONAL AND SLOPED SHOULDER.



DETAIL 17
POST AND DIAGONAL REPAIRS
(ARCH NOT SHOWN FOR CLARITY)
(REF: T55)
SCALE: 1" = 1'-0"

NOTE:

1. REMOVE ROTTEN AND PUNKY MATERIAL FROM RIGHT FACE OF POST (DO NOT REMOVE MORE THAN 1" DEPTH FROM FACE WITHOUT PRIOR APPROVAL OF RESIDENT ENGINEER). SAND SMOOTH, WITH CURVED TRANSITIONS TO UNDISTURBED SURFACES.



DETAIL 18
POST AND DIAGONAL REPAIRS
(ARCH NOT SHOWN FOR CLARITY)
(REF: T56)
SCALE: 1" = 1'-0"

LEGEND FOR DETAILS

- PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)
- PREDETERMINED PORTION OF EXISTING MEMBER TO BE REPLACED (MATCH SIZE OF EXISTING)
- ADDED MEMBER
- UNSOUND MATERIAL TO BE REMOVED

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z06J088details bridge.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
BRIDGE DETAILS (4 OF 8)	SHEET 40 OF 55

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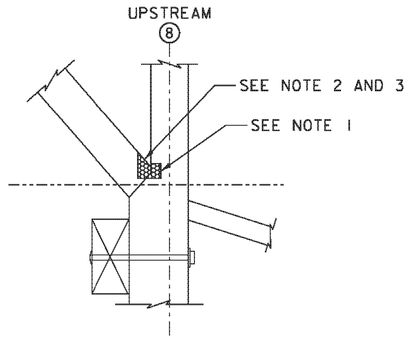
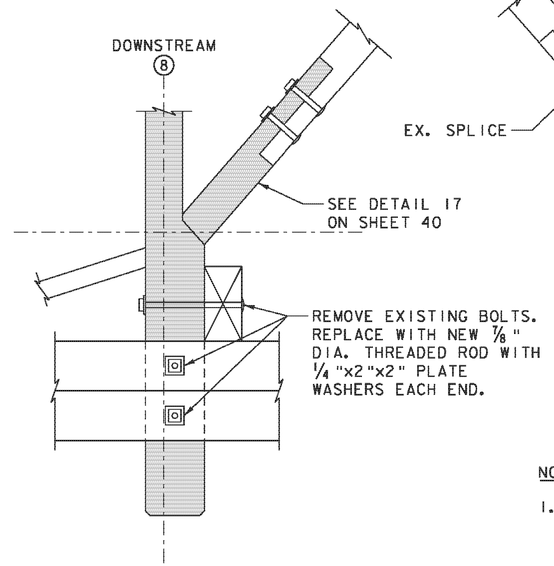


NOTES:

1. REMOVE UNSOUND MATERIAL AT NEAR LEFT CORNER OF POST (DO NOT REMOVE MORE THAN 1" DEPTH FROM FACE WITHOUT PRIOR APPROVAL OF RESIDENT ENGINEER). SAND SMOOTH, WITH CURVED TRANSITIONS TO UNDISTURBED SURFACES.
2. REMOVE UNSOUND MATERIAL AT END OF DIAGONAL. RESIDENT ENGINEER TO VERIFY MINIMUM OF 30 SQUARE INCHES OF SOUND BEARING REMAINS BETWEEN DIAGONAL AND POST AT SLOPED SURFACE.
3. PATCH END OF DIAGONAL SIMILAR TO DETAIL 16 ON SHEET 40. PATCH CONFIGURATION TO BE FIELD VERIFIED BY RESIDENT ENGINEER BEFORE INSTALLATION.

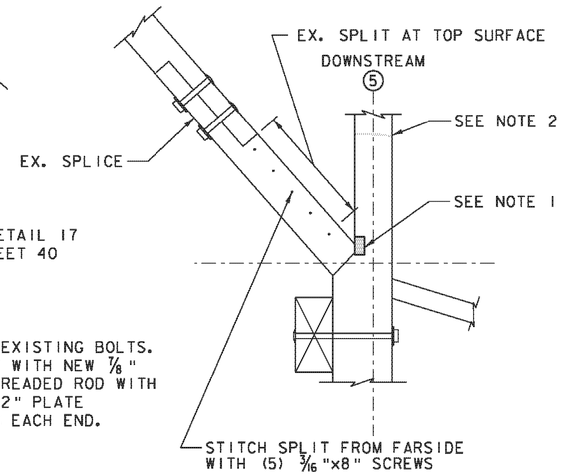
DETAIL 19
POST AND DIAGONAL REPAIRS

(REF: T57)
SCALE: 1" = 1'-0"



DETAIL 20
POST AND DIAGONAL REPAIRS

(REF: T58)
SCALE: 1" = 1'-0"



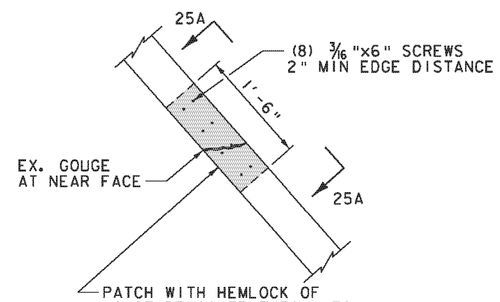
NOTES:

1. REMOVE UNSOUND MATERIAL AT NEAR LEFT CORNER OF POST (DO NOT REMOVE MORE THAN 1" DEPTH FROM LEFT FACE OR MORE THAN 1/2" DEPTH FROM NEAR FACE WITHOUT PRIOR APPROVAL OF RESIDENT ENGINEER). SAND SMOOTH, WITH CURVED TRANSITIONS TO UNDISTURBED SURFACES.
2. EX. 1" DEEP GASH AT NEAR FACE. REMOVE DAMAGED MATERIAL (DO NOT REMOVE MORE THAN 1 1/2" DEPTH FROM NEAR FACE WITHOUT PRIOR APPROVAL FROM RESIDENT ENGINEER). SAND SMOOTH, WITH CURVED TRANSITIONS TO UNDISTURBED SURFACES.

DETAIL 21
POST AND DIAGONAL REPAIRS

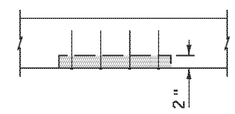
(REF: T59)
SCALE: 1" = 1'-0"

DIAGONAL 5-6
DOWNSTREAM



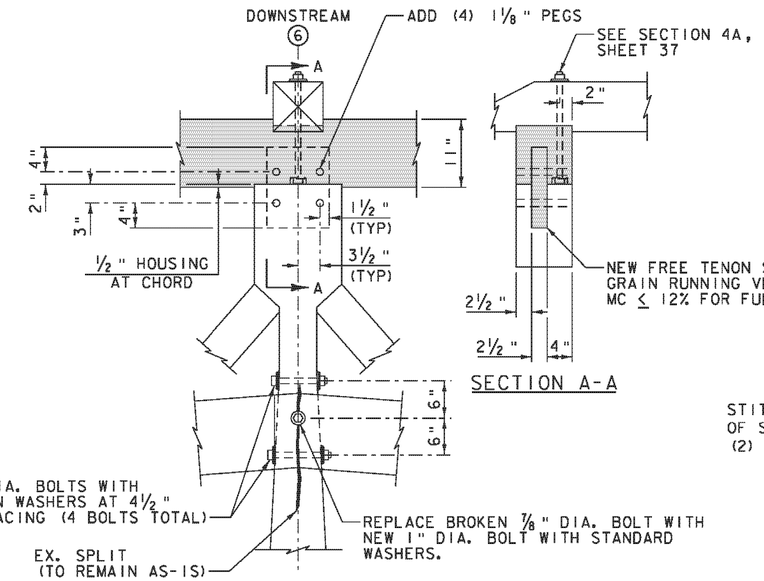
DETAIL 25
DIAGONAL REPAIR

(REF: T64)
SCALE: 1" = 1'-0"



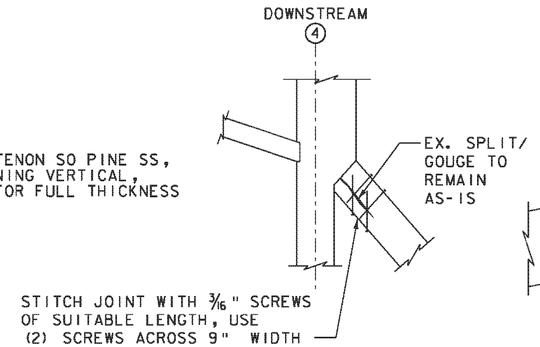
DETAIL 25A
PLAN VIEW

SCALE: 1" = 1'-0"



DETAIL 22
POST REPAIRS

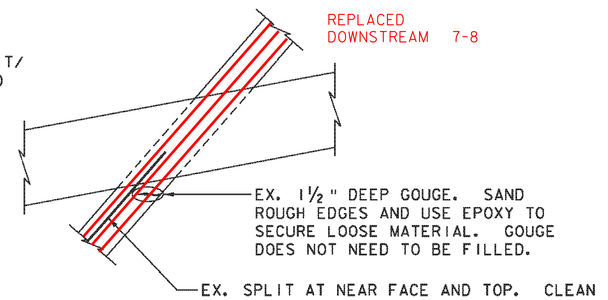
(REF: T60)
SCALE: 1" = 1'-0"



DETAIL 23
DIAGONAL REPAIR

(REF: T61)
SCALE: 1" = 1'-0"

REPLACED
DOWNSTREAM 7-8



DETAIL 24
DIAGONAL REPAIR

(REF: T63)
SCALE: 1" = 1'-0"

LEGEND FOR DETAILS

- PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)
- PREDETERMINED PORTION OF EXISTING MEMBER TO BE REPLACED (MATCH SIZE OF EXISTING)
- ADDED MEMBER
- UNSOUND MATERIAL TO BE REMOVED

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z061088details bridge.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
BRIDGE DETAILS (5 OF 8)	SHEET 41 OF 55

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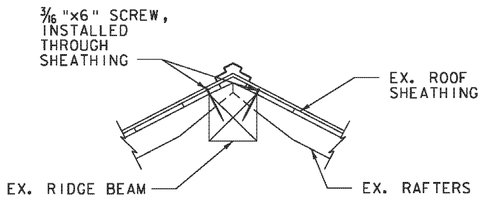
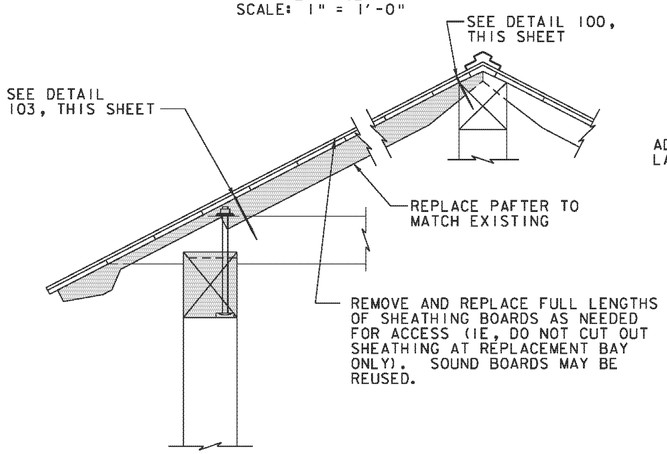


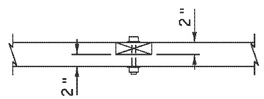
DETAIL 100
RAFTER TO RIDGE BEAM CONNECTION

(REF: R02)
SCALE: 1" = 1'-0"

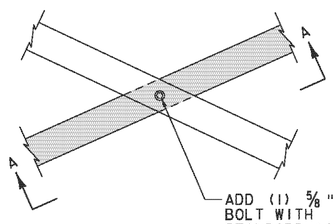


DETAIL 101
REPLACEMENT RAFTER

(REF: R03)
SCALE: 1" = 1'-0"



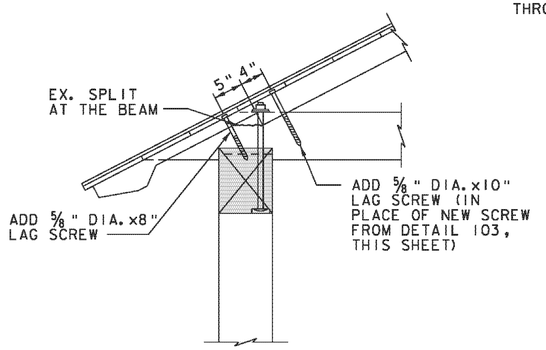
SECTION A-A



PLAN VIEW

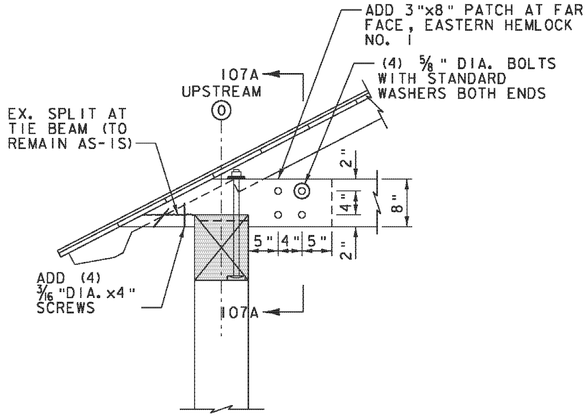
DETAIL 105
INTERSECTION OF UPPER LATERAL BRACES

(REF: U01)
SCALE: 1" = 1'-0"



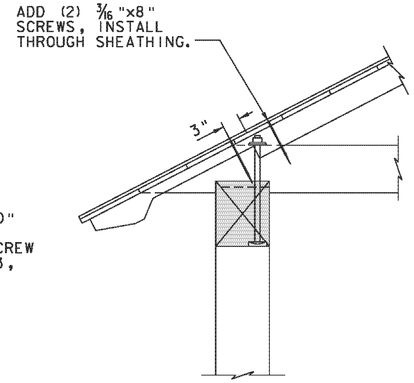
DETAIL 102
REPAIR OF RAFTER SEAT

(REF: R04)
SCALE: 1" = 1'-0"



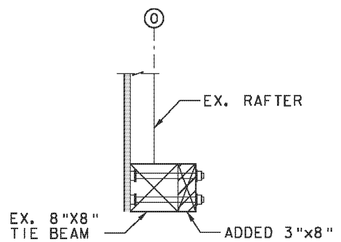
DETAIL 107
TIE BEAM REPAIR

(REF: U05)
SCALE: 1" = 1'-0"



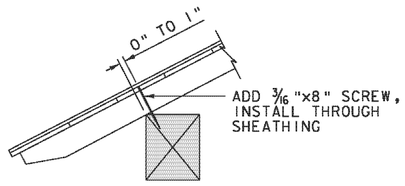
DETAIL 103
RAFTER TO TIE BEAM CONNECTION

(REF: R05)
SCALE: 1" = 1'-0"



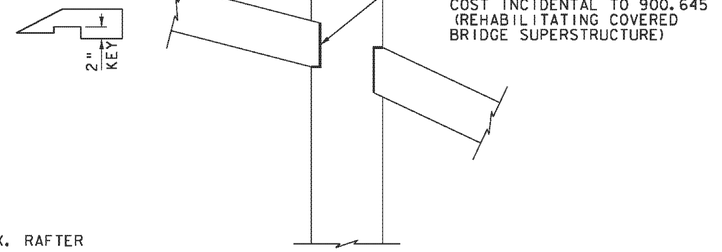
DETAIL 107A

(REF: U05)
SCALE: 1" = 1'-0"



DETAIL 104
RAFTER TO TOP CHORD CONNECTION

(REF: R06)
SCALE: 1" = 1'-0"



DETAIL 108
UPPER LATERAL REPAIR

(REF: U06)
SCALE: 1½" = 1'-0"

LEGEND FOR DETAILS

- PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)
- PREDETERMINED PORTION OF EXISTING MEMBER TO BE REPLACED (MATCH SIZE OF EXISTING)
- ADDED MEMBER

PROJECT NAME: CHARLOTTE
PROJECT NUMBER: BHO 1445(34)

FILE NAME: z061088details bridge.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: K.E. HILL
BRIDGE DETAILS (6 OF 8)

PLOT DATE: 10/4/2012
DRAWN BY: K.D. WENTWORTH
CHECKED BY: M.A. COLGAN
SHEET 42 OF 55

VHB Vanasse Hangen Brustlin, Inc.

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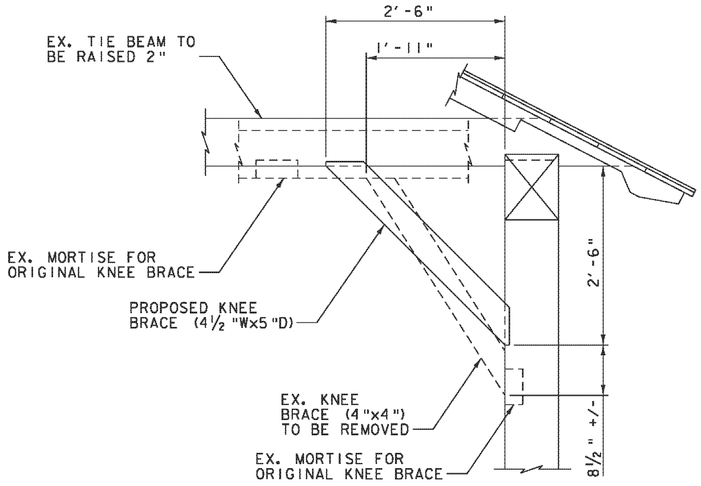
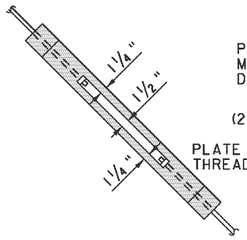
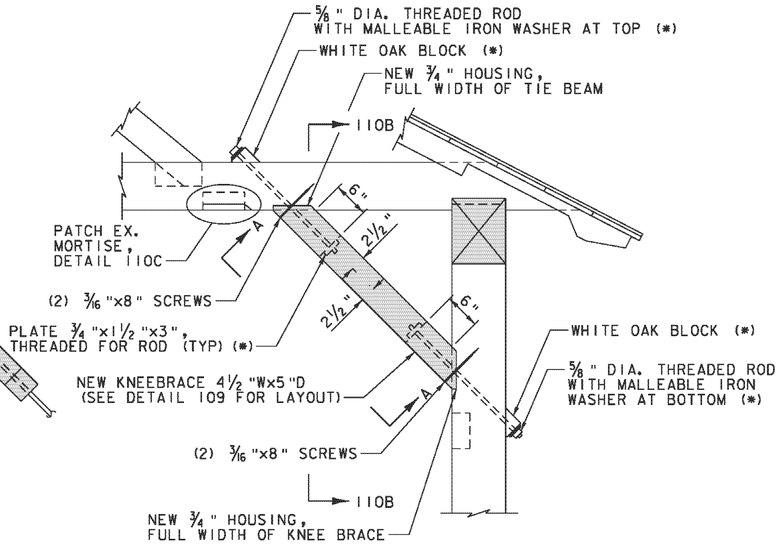


DETAIL 109
KNEE BRACE GEOMETRY COMPARISON
SCALE: 1" = 1'-0"



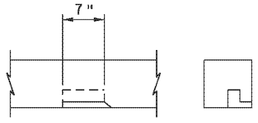
SECTION A-A



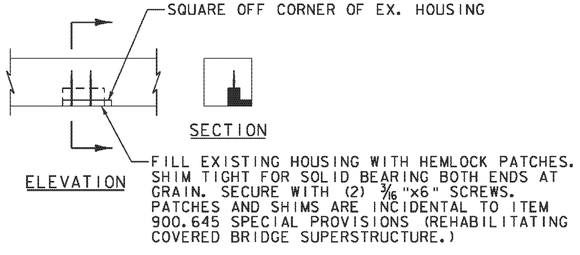
DETAIL 110
NEW KNEE BRACE
SCALE: 1" = 1'-0"

NOTES:

1. DESIGN INTENT IS FOR NEW KNEE BRACE TO BREAK UPON IMPACT TO MINIMIZE DAMAGE TO EXISTING TIE BEAM AND POST.
2. SUPPLY (14) EXTRA KNEE BRACES 3'-10" LONG (SLOTTED AND DRILLED, BUT WITHOUT END CUTS). SUPPLY (4) EXTRA THREADED ROD ASSEMBLIES (ONE ROD + PLATE + WASHER + NUT).
3. * = INCIDENTAL TO ITEM 522.20, STRUCTURAL LUMBER AND TIMBER, UNTREATED.

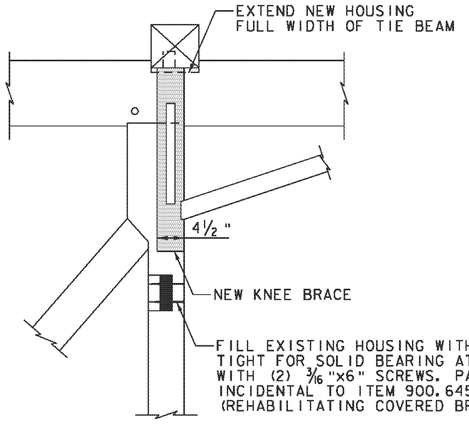


EXISTING CONDITION



PROPOSED

DETAIL 110C
MORTISE PATCH
SCALE: 1" = 1'-0"



LEGEND FOR DETAILS

- PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)
- PREDETERMINED PORTION OF EXISTING MEMBER TO BE REPLACED (MATCH SIZE OF EXISTING)
- ADDED MEMBER
- EXISTING HOUSING TO BE PATCHED

DETAIL 110B
NEW KNEE BRACE
SCALE: 1" = 1'-0"

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z061088details bridge.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
BRIDGE DETAILS (7 OF 8)	SHEET 43 OF 55

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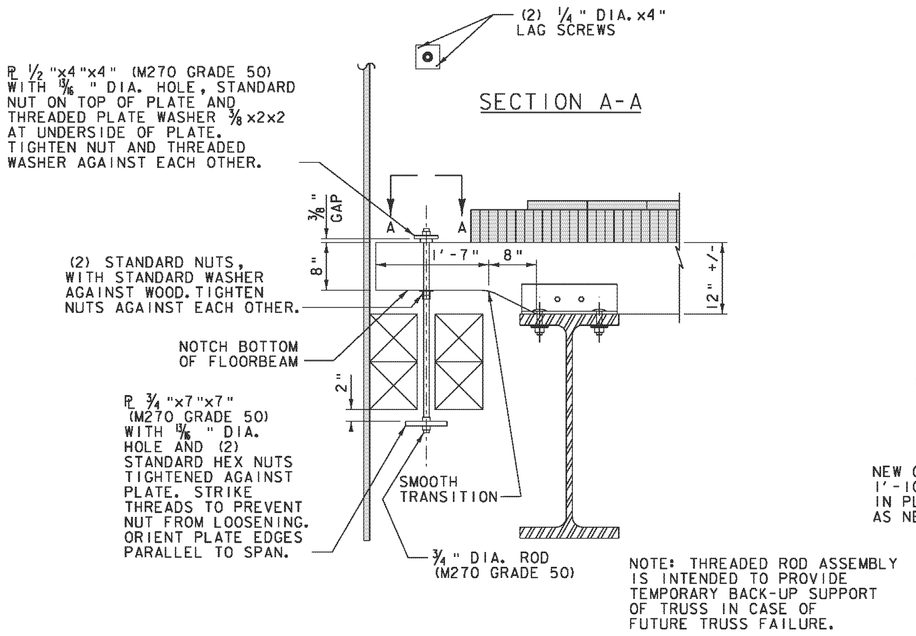
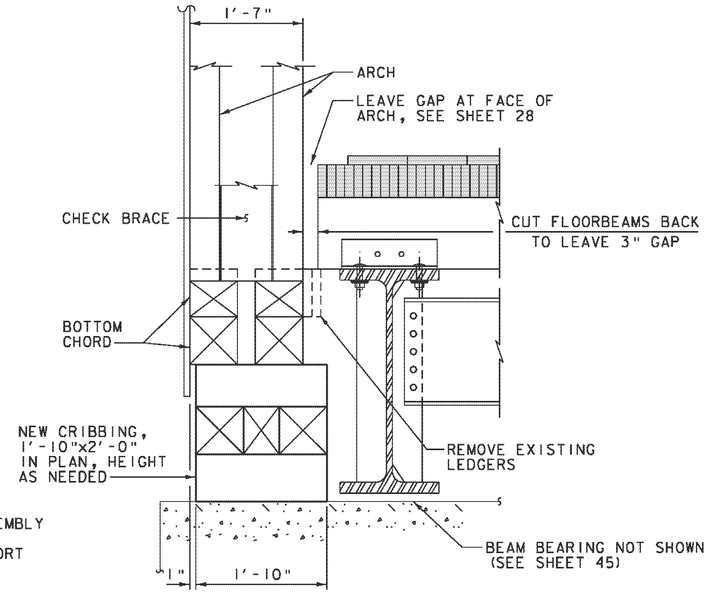


NOTE: THREADED ROD ASSEMBLY IS INTENDED TO PROVIDE TEMPORARY BACK-UP SUPPORT OF TRUSS IN CASE OF FUTURE TRUSS FAILURE.

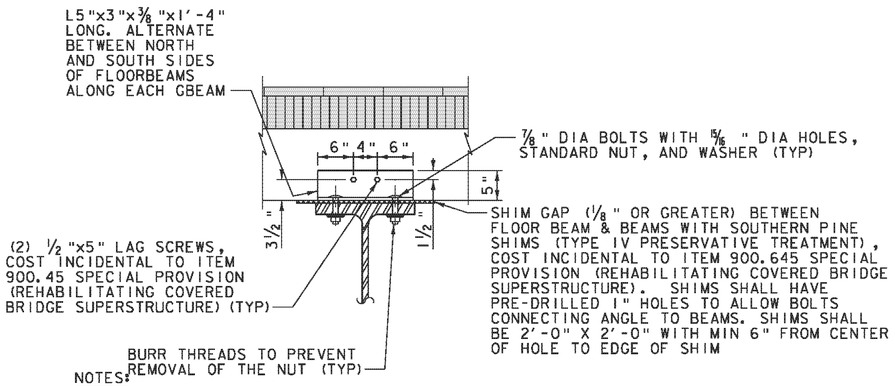
DETAIL 200 - SECTION AT INTERMEDIATE FLOORBEAMS

(REF: F01 AND F02)
SCALE: 1" = 1'-0"



DETAIL 202 - SECTION AT TRUSS BEARINGS

(REF: F03)
SCALE: 1" = 1'-0"

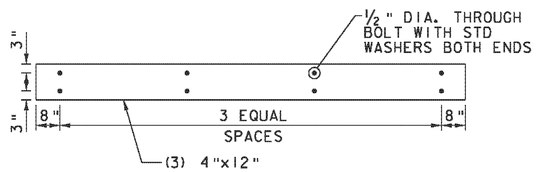


NOTES:

1. ALL HOLES FOR ANGLE CONNECTIONS TO FLOORBEAMS AND BEAMS SHALL BE FIELD DRILLED. BEAM AND ANGLE GALVANIZING SHALL BE REPAIRED AS PER SUBSECTION 726.08.
2. THERE ARE FOUR BEAMS AND 18 FLOORBEAMS FOR A TOTAL OF 72 CONNECTIONS. CONNECTIONS SHALL BE ALTERNATED BETWEEN SIDES OF FLOORBEAMS FOR A NET RESULT OF APPROXIMATELY 50% DISTRIBUTION BETWEEN NORTH AND SOUTH FACES.

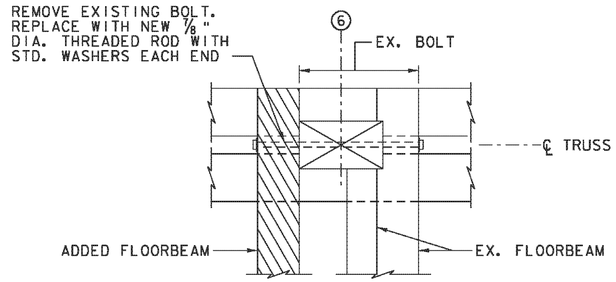
DETAIL 203 FLOORBEAM TO BEAM CONNECTION

(REF: F04)
SCALE: 1" = 1'-0"



DETAIL 205 - BOLTS FOR TRIPLE PLY FLOORBEAM (ELEVATION)

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



DETAIL 204 FLOORBEAM TO POST CONNECTION

(REF: F05)
SCALE: 1" = 1'-0"

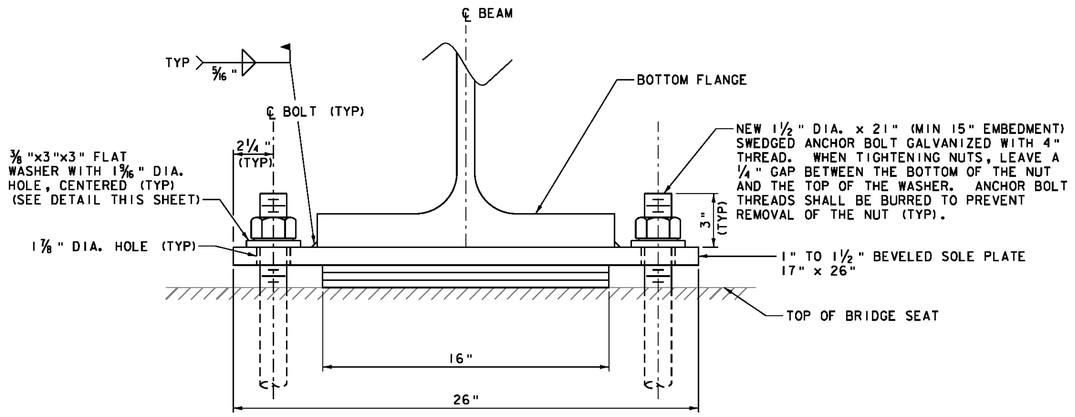
LEGEND FOR DETAILS

- PREDETERMINED MEMBERS TO BE REPLACED (SIZE TO MATCH EXISTING, UNLESS OTHERWISE NOTED)
- PREDETERMINED PORTION OF EXISTING MEMBER TO BE REPLACED (MATCH SIZE OF EXISTING)
- ADDED MEMBER

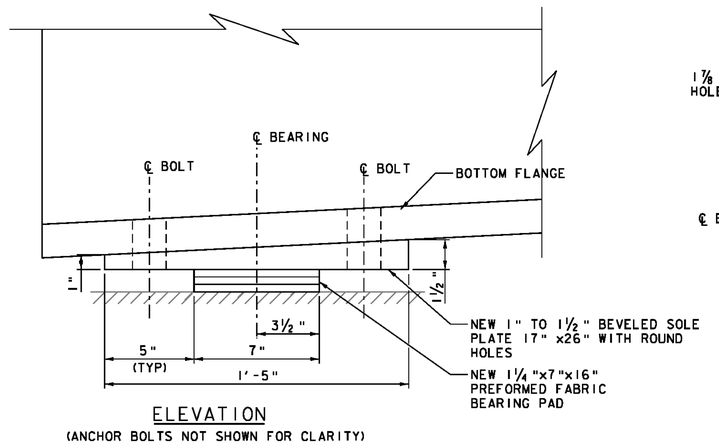
PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z061088details bridge.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: K.E. HILL	CHECKED BY: M.A. COLGAN
BRIDGE DETAILS (8 OF 8)	SHEET 44 OF 55

VHB Vanasse Hangen Brustlin, Inc.

VHB 57348

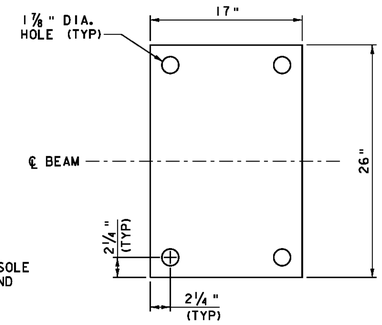


SECTION



ELEVATION

(ANCHOR BOLTS NOT SHOWN FOR CLARITY)



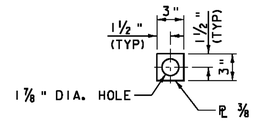
FIXED SOLE PLATE

NOT TO SCALE

TYPICAL PROPOSED FIXED BEARING

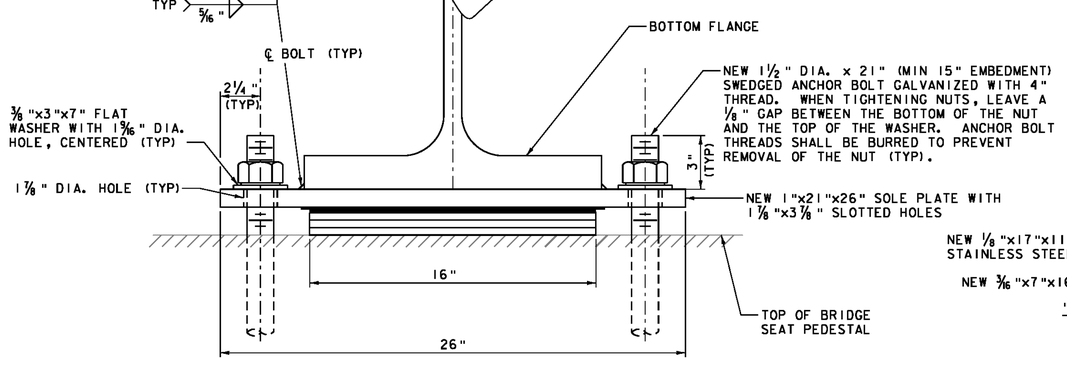
NOT TO SCALE

(NORTH ABUTMENT)

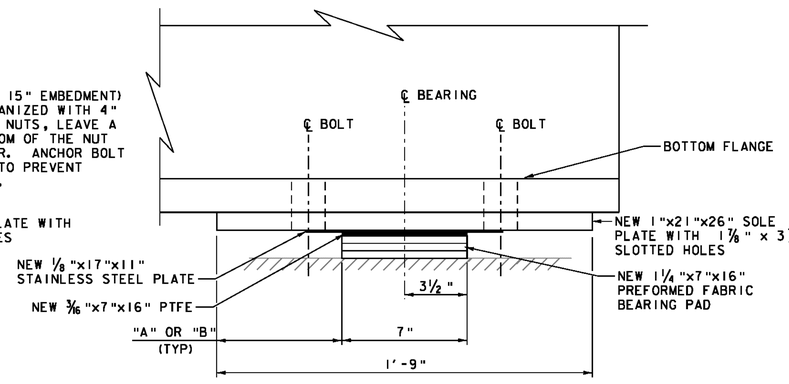


FIXED PLATE WASHER

NOT TO SCALE



SECTION



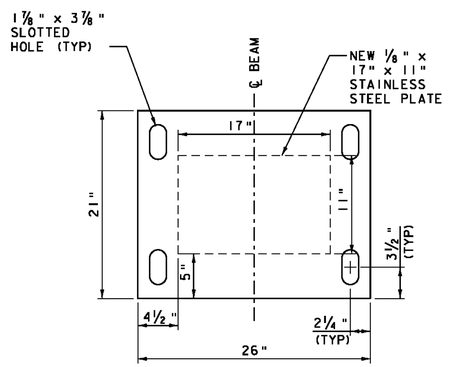
ELEVATION

(ANCHOR BOLTS NOT SHOWN FOR CLARITY)

TYPICAL PROPOSED EXPANSION BEARING

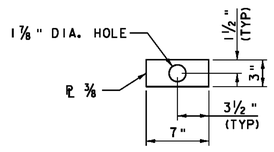
NOT TO SCALE

(SOUTH ABUTMENT)



EXPANSION SOLE PLATE

NOT TO SCALE



EXPANSION PLATE WASHER

NOT TO SCALE

NOTES:

1. SOLE PLATES SHALL BE INSTALLED WITH LARGER THICKNESS ON THE SIDE OF INCREASING ROADWAY STATIONING.

TEMPERATURE ADJUSTMENT TABLE

TEMPERATURE	"A"	"B"
0° F	7 3/16"	7 1/8"
15° F	7 1/8"	7 1/16"
30° F	7 1/16"	7"
45° F	7"	6 15/16"
60° F	6 15/16"	6 7/8"
75° F	6 7/8"	6 13/16"
90° F	6 13/16"	6 3/4"

"A" IS THE SETTING FOR ALL DEAD LOAD INCLUDING BEAMS AND COVERED BRIDGE.

"B" IS THE SETTING WITH ONLY DEAD LOAD OF BEAM.

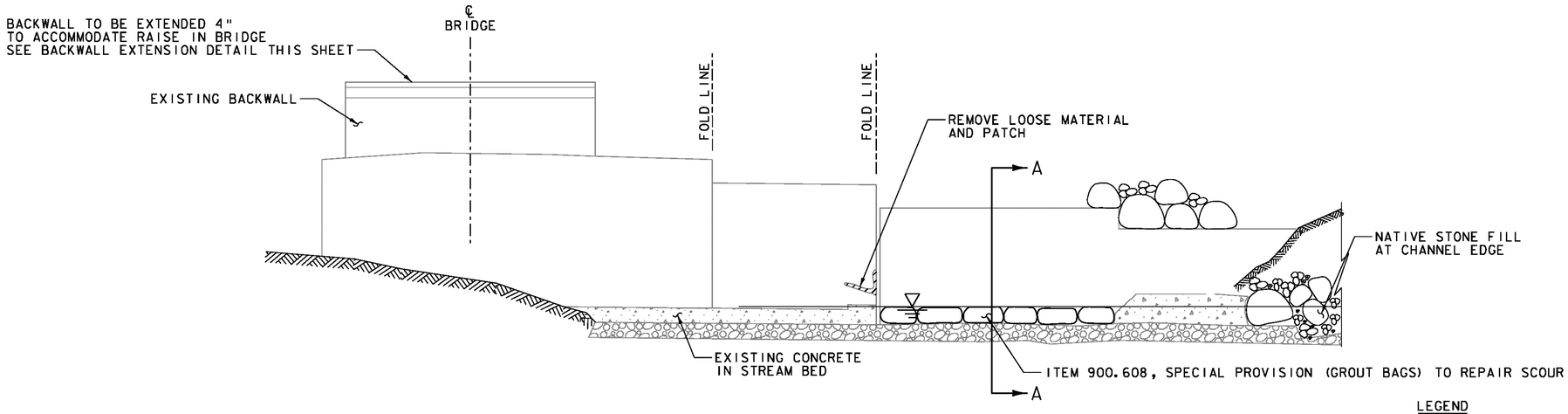
PROJECT NAME: CHARLOTTE
PROJECT NUMBER: BHO 1445(34)

FILE NAME: z06j088details_truss.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: E.A. FIALA
BEARING DETAILS

PLOT DATE: 10/4/2012
DRAWN BY: E.A. FIALA
CHECKED BY: B.O. CRONIN
SHEET 45 OF 55

VHB Vanasse Hangen Brustlin, Inc.

VHB 57348

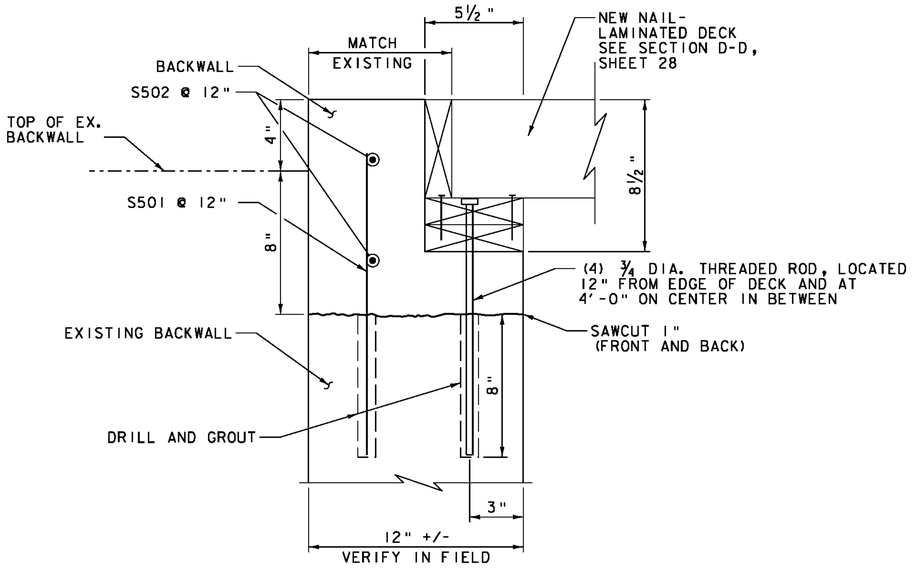


NORTH ABUTMENT & WINGWALLS - DEVELOPED ELEVATION

SCALE 1/4" = 1'-0"

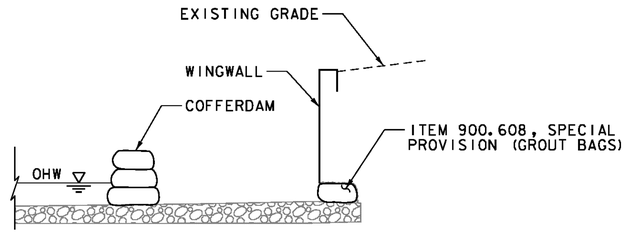
LEGEND

AREAS ANTICIPATED TO REQUIRE ITEM 580.14, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II



BACKWALL EXTENSION

SCALE 3" = 1'-0"



SECTION A-A

SCALE 1/4" = 1'-0"

REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE
	32	5	1'-3"	S501	STR
	4	5	15'-6"	S502	STR

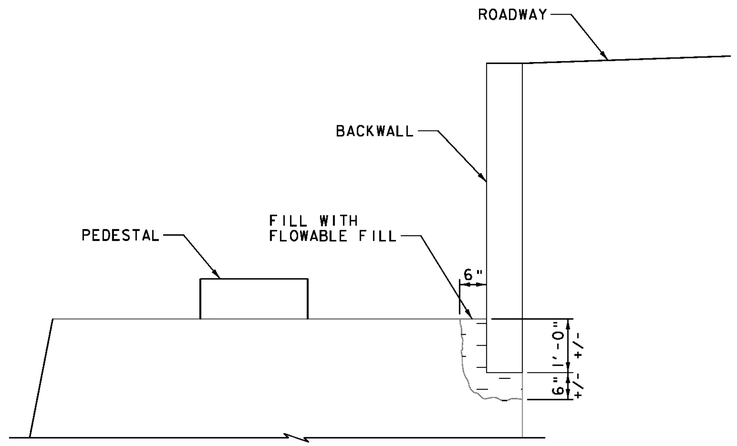
NOTE:

3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.

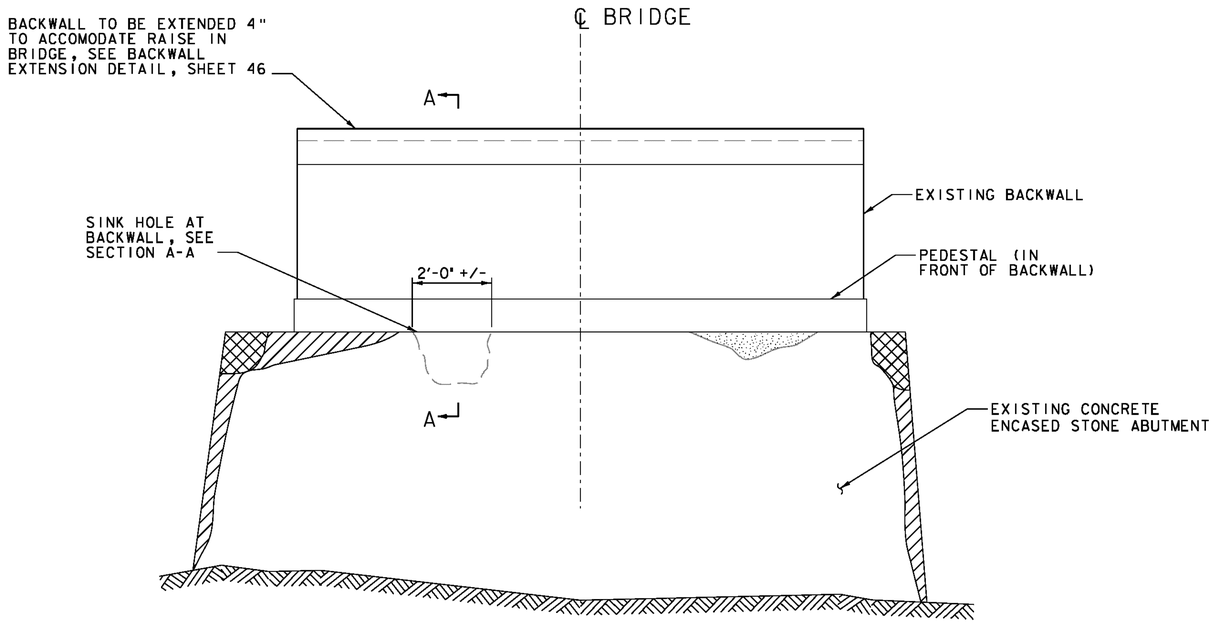
VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z061088sub_abut_elev.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: J.W. GOLEK
DESIGNED BY: K.E. HILL	CHECKED BY: B.O. CRONIN
ABUTMENT REPAIR SHEET (1 OF 2)	SHEET 46 OF 55

VHB 57348



SECTION A-A
SCALE 3/4" = 1'-0"



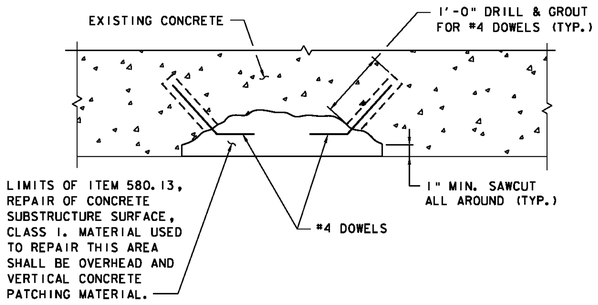
SOUTH ABUTMENT ELEVATION
SCALE 1/2" = 1'-0"

LEGEND:

- FLOWABLE FILL
- AREAS ANTICIPATED TO REQUIRE ITEM 580.15, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III
- AREAS ANTICIPATED TO REQUIRE ITEM 580.14, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II
- AREAS ANTICIPATED TO REQUIRE ITEM 580.13, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z061088sub_abut_elev.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: B.O. CRONIN	CHECKED BY: K.E. HILL
ABUTMENT REPAIR SHEET (2 OF 2)	SHEET 47 OF 55

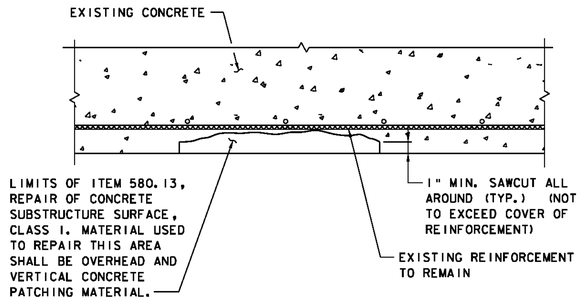


DEPTH OF REPAIR LESS THAN 4"

(CLASS I REPAIR)

REPAIR DETAILS FOR UNREINFORCED CONCRETE

NOT TO SCALE

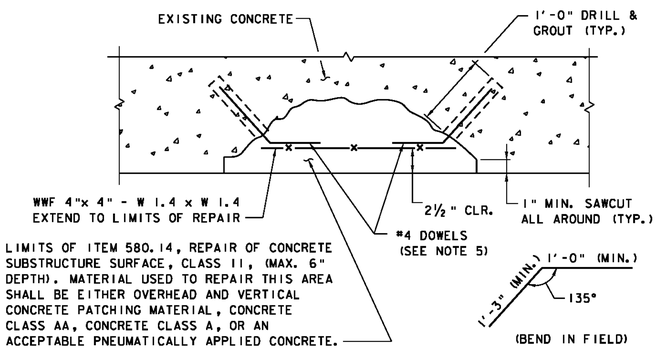


DEPTH OF REPAIR LESS THAN 4"

(CLASS I REPAIR)

REPAIR DETAILS FOR REINFORCED CONCRETE

NOT TO SCALE

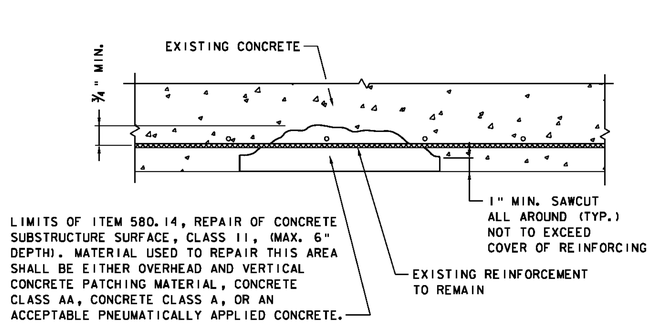


DEPTH OF REPAIR 4" TO 6"

(CLASS II REPAIR)

REPAIR DETAILS FOR UNREINFORCED CONCRETE

NOT TO SCALE



DEPTH OF REPAIR 4" TO 6"

(CLASS II REPAIR)

REPAIR DETAILS FOR REINFORCED CONCRETE

NOT TO SCALE

CONCRETE REPAIR NOTES:

1. ABUTMENT CONCRETE REPAIRS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 580. THE REPAIR AREAS INDICATED ARE SCHEMATIC ONLY AND ARE NOT INTENDED TO SHOW THE ACTUAL LIMITS OF NEEDED REPAIR.
2. A COOPERATIVE INSPECTION BY THE ENGINEER AND THE CONTRACTOR WILL BE MADE OF ALL SUBSTRUCTURE AREAS AT THE TIME OF CONSTRUCTION. AREAS OF CONCRETE FOUND TO HAVE SPALLED, DELAMINATED OR TO BE OTHERWISE UNSOUND, AS DETERMINED BY THE ENGINEER, WILL BE REPAIRED. THE COST OF THE INSPECTION SHALL BE INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.
3. AN ESTIMATED QUANTITY OF ITEMS 580.13, 580.14, AND 580.15, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I, II, AND III HAVE BEEN INCLUDED IN THE CONTRACT FOR POTENTIAL ABUTMENT REPAIRS.
4. REMOVE AND DISPOSE OF ALL DELAMINATED, SPALLED OR UNSOUND CONCRETE WITHIN THE REPAIR AREAS.
5. CLEAN AND PREPARE EXISTING SURFACE FOR BONDING TO PATCHING MATERIAL.
6. DOWELS SHALL BE SPACED AND ORIENTED AS DIRECTED BY THE ENGINEER.
7. REINFORCEMENT FOR CONCRETE REPAIRS SHALL BE GENERALLY CONFIGURED AS SHOWN ON THIS SHEET, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
8. WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 713.05.
9. THE ENGINEER SHALL ORDER REPLACEMENT OF ANY EXISTING SUBSTRUCTURE REINFORCING STEEL THAT IS DETERIORATED (WITH MORE THAN 25% SECTION LOSS) WITH NEW REINFORCING STEEL OF THE SAME SIZE. ALL REINFORCING STEEL SHALL HAVE A MINIMUM 2'-0" LAP SPLICE. REINFORCING STEEL SHALL BE PAID UNDER ITEM 507.11, REINFORCING STEEL, LEVEL I.
10. WELDED WIRE FABRIC AND DRILLING AND GROUTING DOWELS SHALL BE PAID UNDER ITEM 507.11, REINFORCING STEEL, LEVEL I.
11. REMOVAL OF EXISTING CONCRETE TO A DEPTH GREATER THAN SPECIFIED FOR ITEM 580.14 SHALL BE PAID UNDER ITEM 580.15, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z061088typ_dt.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.J. MASSE
DESIGNED BY: L.S. GARDNER	CHECKED BY: B.O. CRONIN
TYPICAL DETAILS	SHEET 48 OF 55

VHB Vanasse Hangen Brustlin, Inc.

VHB 57348

N

VT STATE PLANE GRID

TRAFFIC SIGN, TYPE A

STA. 10+25, RT (2)
STA. 10+75, RT (2)
STA. 11+02, RT
STA. 11+02, LT
STA. 11+93, LT
STA. 11+95, RT
STA. 12+25, LT (2)
STA. 13+16, LT (2)

REMOVING SIGNS

STA. 10+99.00, 8.68 LT (2)
STA. 11+91.00, 6.63 RT
STA. 12+19.83, 12.02 LT (2)
STA. 13+17.83, 15.55 LT (2)

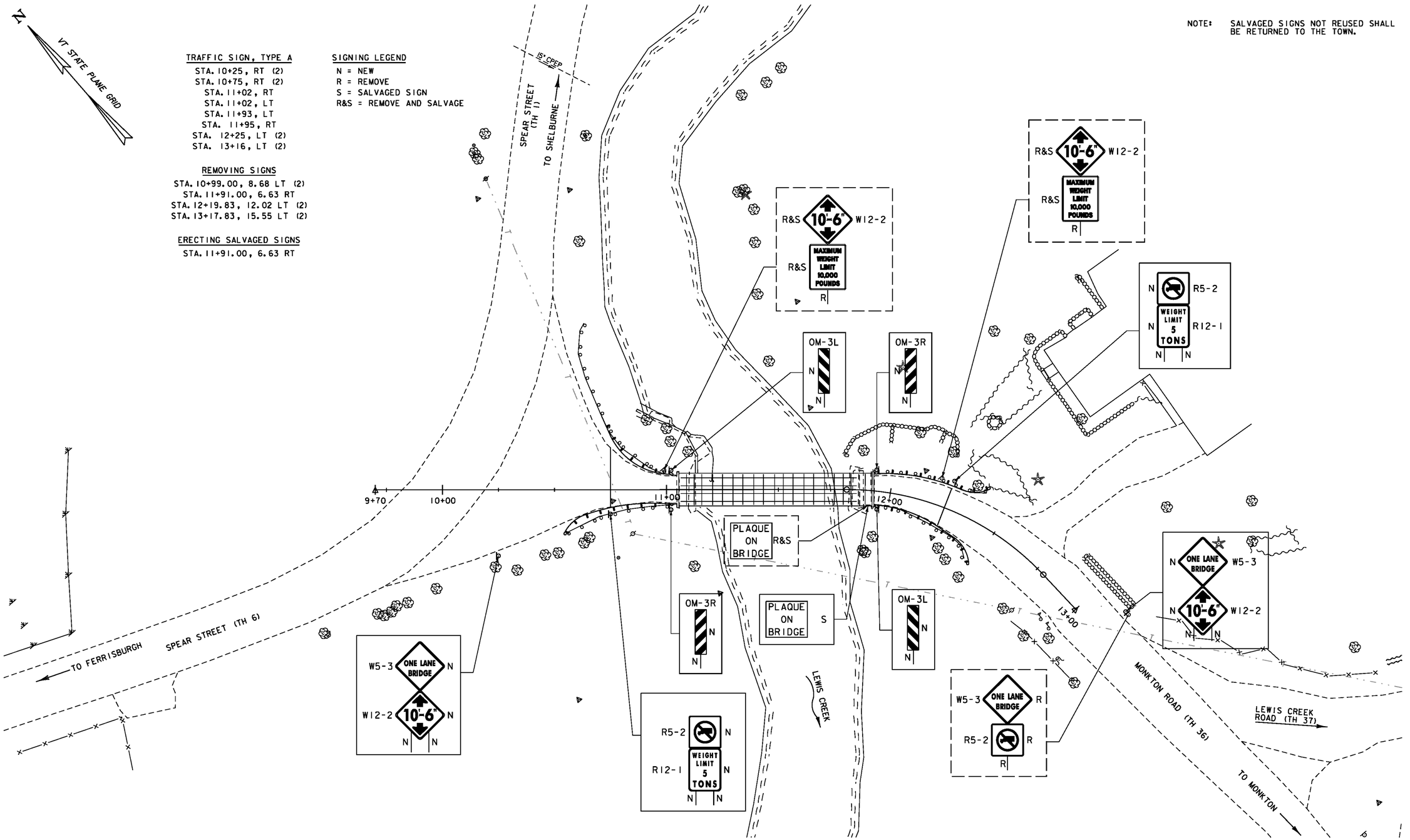
ERECTING SALVAGED SIGNS

STA. 11+91.00, 6.63 RT

SIGNING LEGEND

N = NEW
R = REMOVE
S = SALVAGED SIGN
R&S = REMOVE AND SALVAGE

NOTE: SALVAGED SIGNS NOT REUSED SHALL BE RETURNED TO THE TOWN.



SCALE 1" = 20'-0
20 0 20

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z061088tsl.dgn	PLOT DATE: 9/14/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: B.O. CRONIN	CHECKED BY: S.E. BURBANK
TRAFFIC SIGNS	SHEET 49 OF 55

VHB 57348

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

MILE MARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS EA	WIDTH (IN)	HEIGHT (IN)	NEW & SALVAGED SIGNS "A"	"B"	SALV SIGN	SALV TIS	EXIST POST RETAIN	SALVAGE	NEW SIGN POSTS NO. OF POSTS	FLANGED CHANNEL LB/FT 1.12	2.0	3.0	SQUARE STEEL (IN) 1.75	2.0	2.5	ANCHOR	SLEEVE	TUBULAR ALUMINUM Ø (IN) 3.0	4.0	4.0 MOD	FOUNDATION	TUBULAR STEEL Ø (IN) 3.0	3.5	4.0	5.0	W-SHAPE STEEL FTG. SIZE 24"	30"	WEIGHT	POST SIZE	SIGN REFRAMED	REMARKS	SIGN DETAIL DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
											OPTION ITEMS	LB/FT			LB/FT					LB/FT				LB/FT												
MONKTON RD (TH 36)																																			
10+25, RT 13+16, LT		2 2	36 36	36 36	18.00 18.00						4				1.88	X 2.42		X 3.35		1.3	1.7	1.7		7.6	9.0	10.8	14.6						W5-3 W12-2		SHS SHS
10+75, RT 12+25, LT		2 2	24 24	24 36	8.00 12.00						4					X X		X X														R5-2 R12-1		SHS SHS
11+02, RT 11+93, LT		2	12	36	6.00						2					X		X														OM-3R		SHS
11+02, LT 11+95, RT		2	12	36	6.00						2					X		X														OM-3L		SHS
11+91, RT	PLAQUE ON BRIDGE	1	-	-			1																									COVERED BRIDGE INFORMATION SIGN. CONTRACTOR TO SALVAGE AND RESET IN EXISTING LOCATION. HARDWARE FOR MOUNTING SIGN SHALL BE INCIDENTAL TO CONTRACT ITEMS		
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."												FT	FT	FT	FT	FT 180	FT		EA	LB	LB	LB		LB	LB	LB	LB								
	TOTALS				SF 68.00	SF	EA. 1	SF				FT			FT 180					LB			EA.	LB				EA.	EA.	LB						

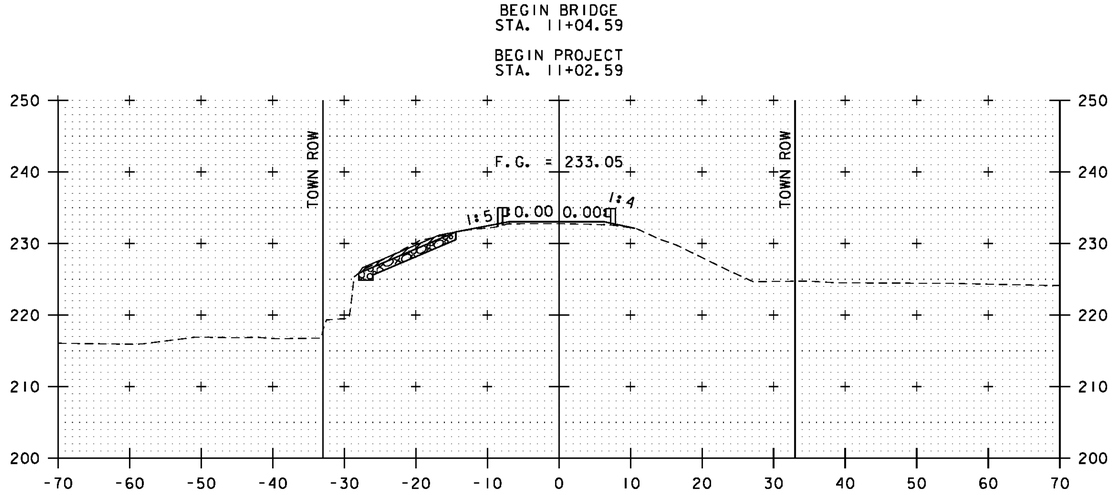
PROJECT NAME: CHARLOTTE
PROJECT NUMBER: BHO 1445(34)

FILE NAME: z06J088tss.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: B.O. CRONIN
TRAFFIC SIGN SUMMARY SHEET

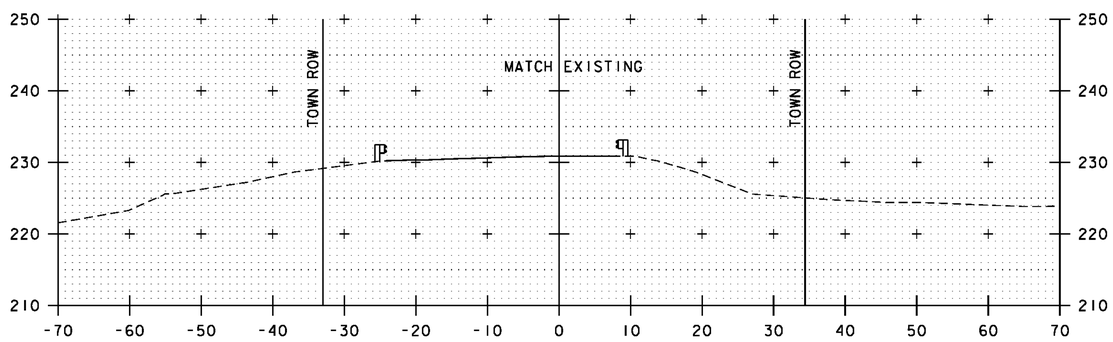
PLOT DATE: 10/5/2012
DRAWN BY: E.A. FIALA
CHECKED BY: S.E. BURBANK
SHEET 50 OF 55

VHB Vanasse Hangen Brustlin, Inc.

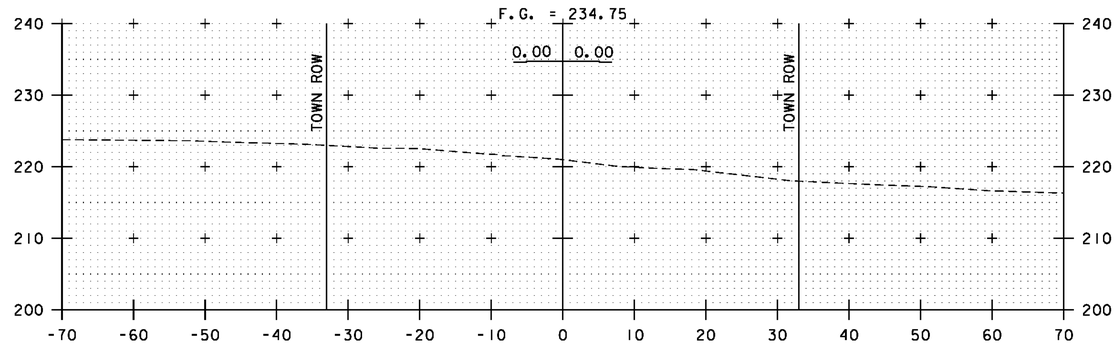
VHB 57348



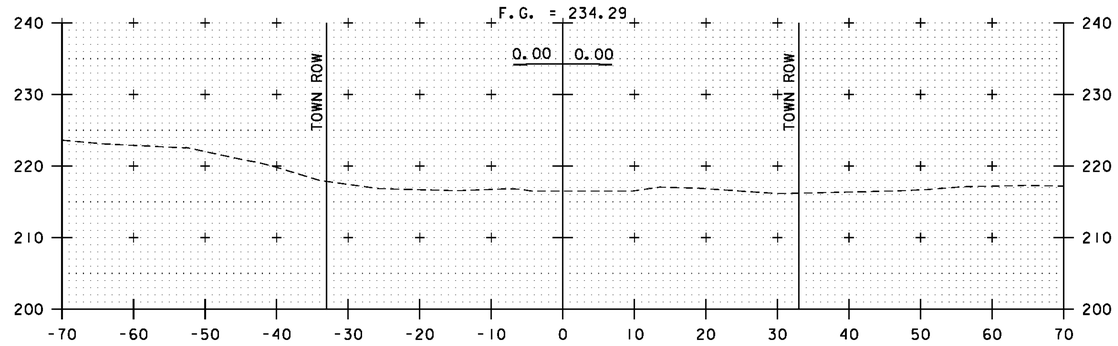
11+00



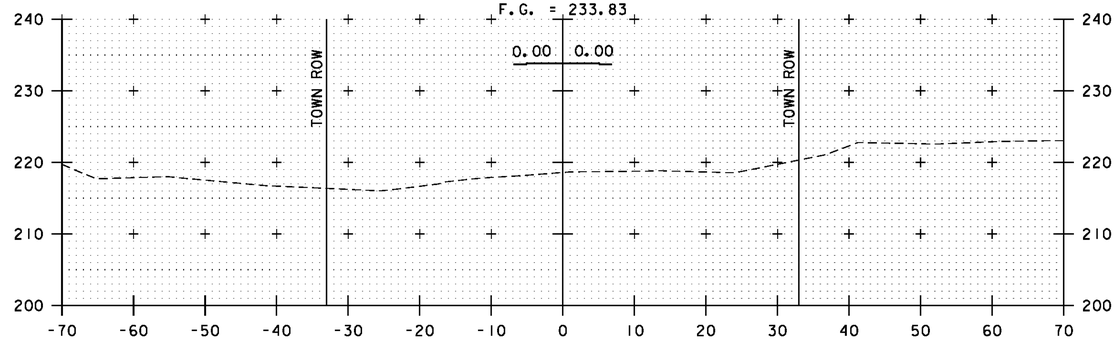
10+75
BEGIN APPROACH



11+75



11+50



11+25

ROADWAY CROSS SECTIONS

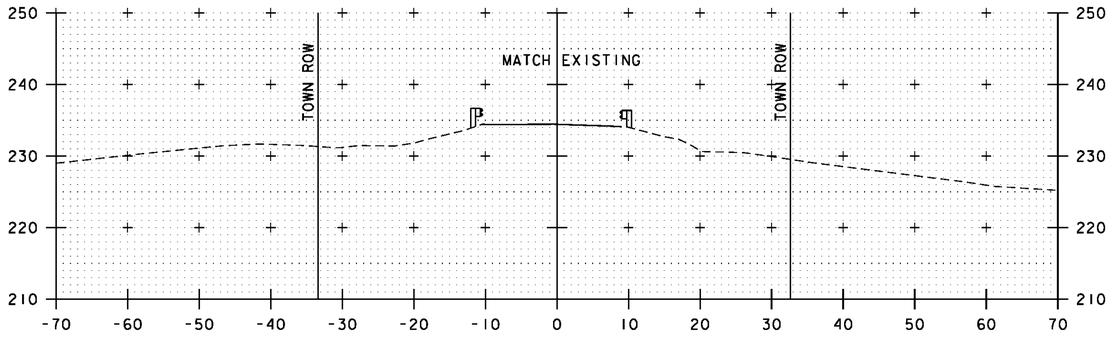
SCALE 1" = 10'-0"

STA. 10+75 - STA. 11+75

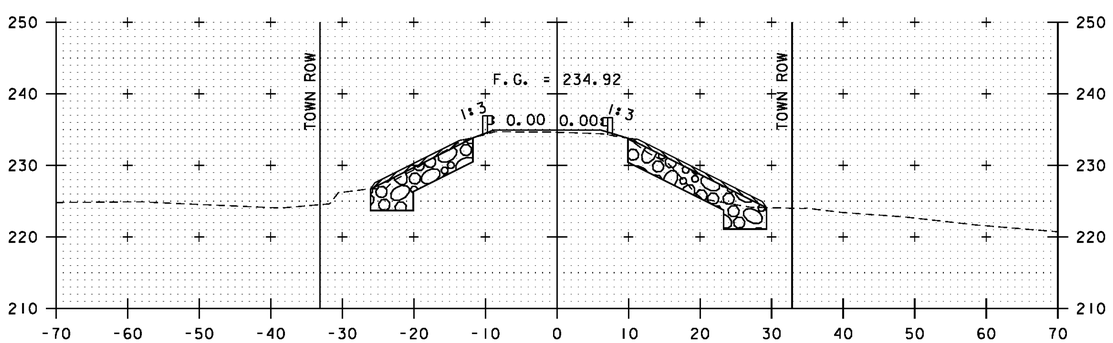
Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z06J088xs.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: B.O. CRONIN	CHECKED BY: S.E. BURBANK
ROADWAY CROSS SECTIONS (1 OF 2)	SHEET 51 OF 55

VHB 57348



12+25
END APPROACH



12+00
END PROJECT
STA. 11+94.59

END BRIDGE
STA. 11+92.59

ROADWAY CROSS SECTIONS

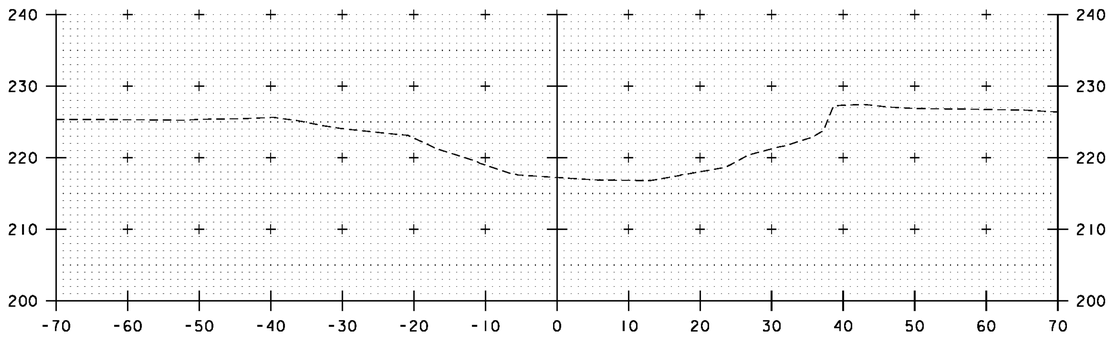
SCALE 1" = 10'-0"

STA. 12+00 - STA. 12+25

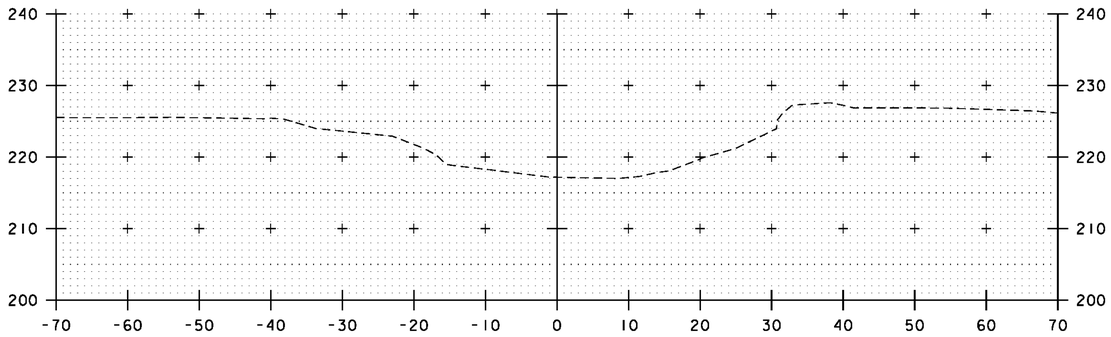
Vanasse Hangen Brustlin, Inc.

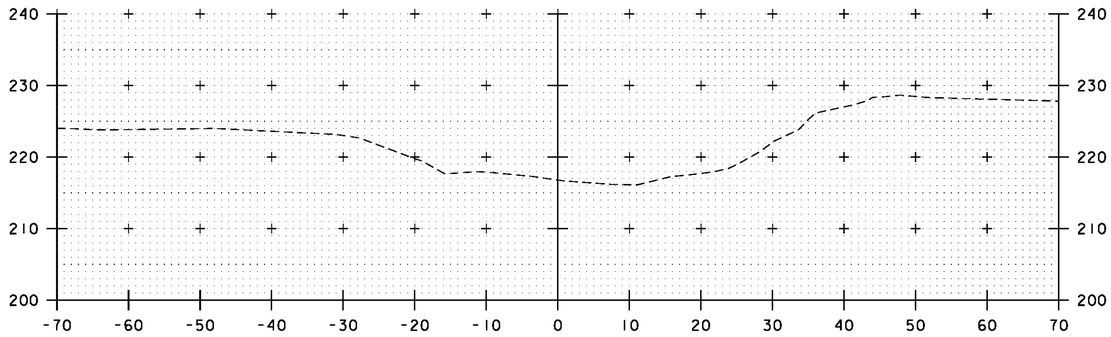
PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z06j088xs.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: B.O. CRONIN	CHECKED BY: S.E. BURBANK
ROADWAY CROSS SECTIONS (2 OF 2)	SHEET 52 OF 55

VHB 57348



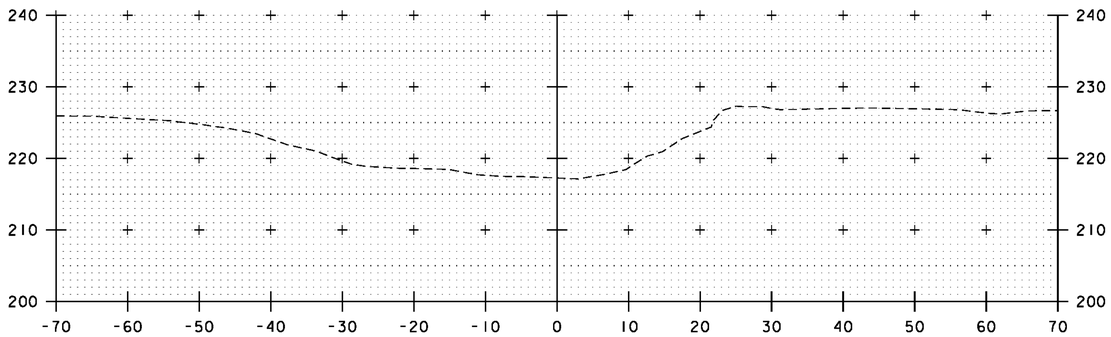
50+50

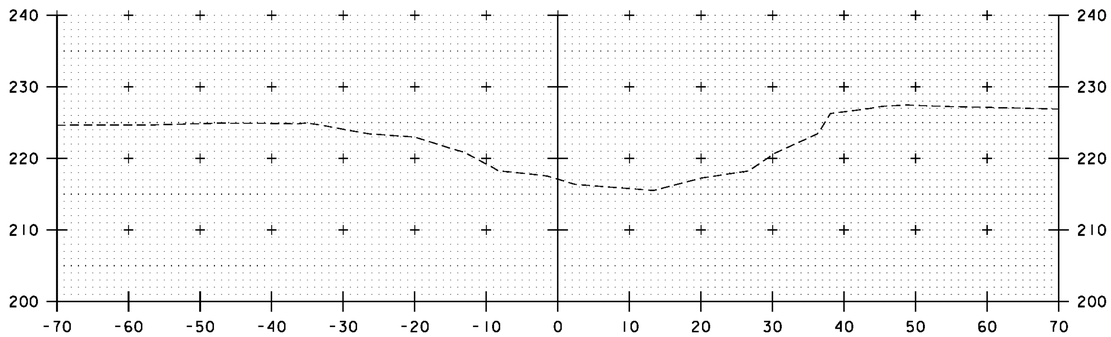




50+25

51+00





50+00

50+75

CHANNEL CROSS SECTIONS

SCALE 1" = 10'-0"

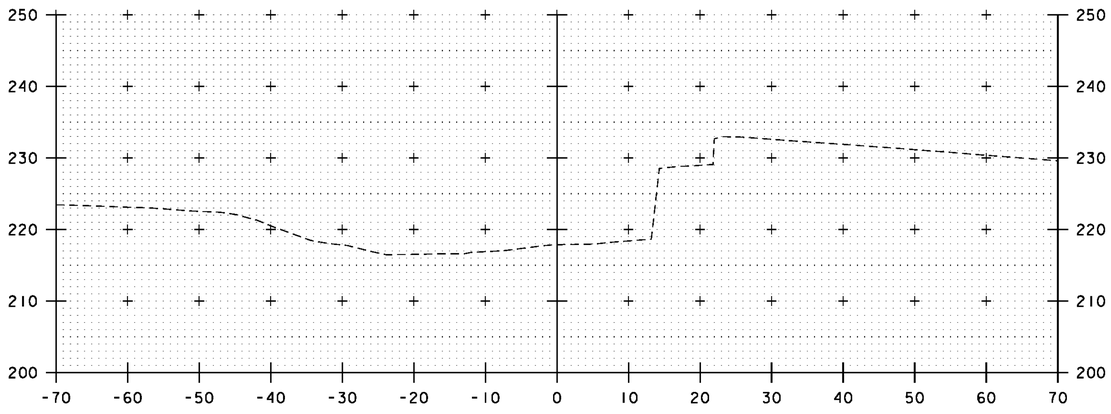
STA. 50+00 - STA. 51+00

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: CHARLOTTE	
PROJECT NUMBER: BHO 1445(34)	
FILE NAME: z06J088xs.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: E.A. FIALA	CHECKED BY: B.O. CRONIN
CHANNEL CROSS SECTIONS (1 OF 3)	SHEET 53 OF 55

VHB 57348

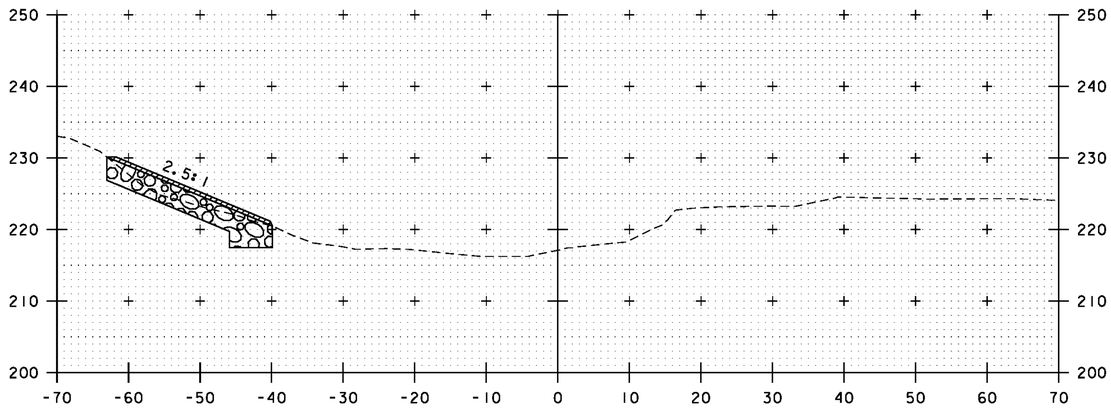
STA. 51+60.24 - 51+70.52 LT
BEGIN/END STONE FILL, TYPE III
UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL



STA. 51+48.79 RT
END STONE FILL, TYPE I
UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL

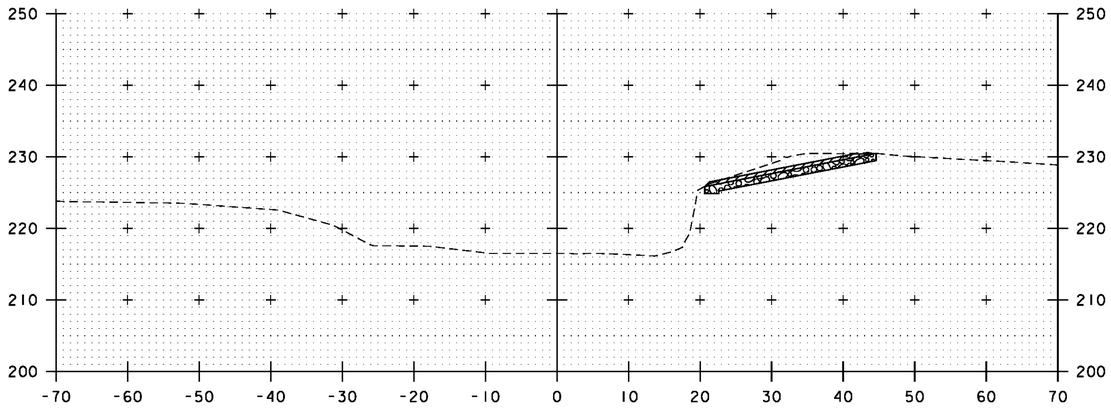
51+50

STA. 52+13.47 LT
END STONE FILL, TYPE III
UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL



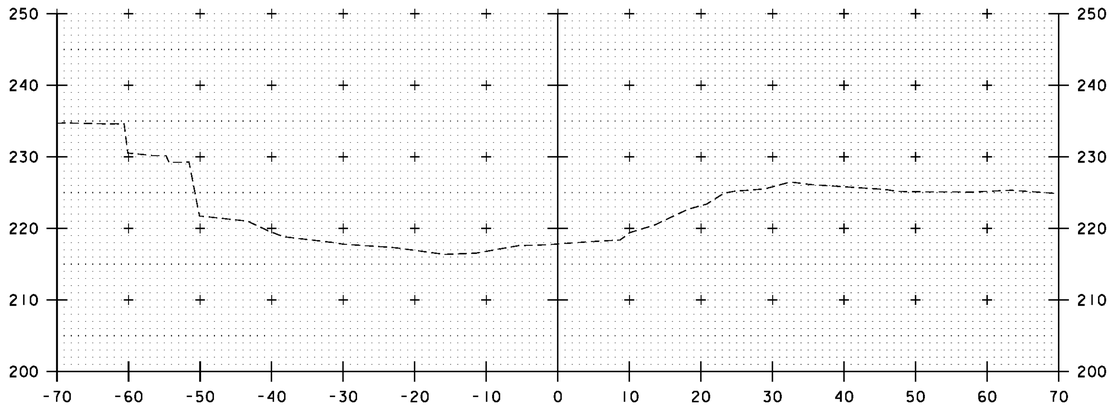
STA. 51+82.60 LT
BEGIN STONE FILL, TYPE III
UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL

52+00



STA. 51+14.67 RT
BEGIN STONE FILL, TYPE I
UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL

51+25



51+75

CHANNEL CROSS SECTIONS

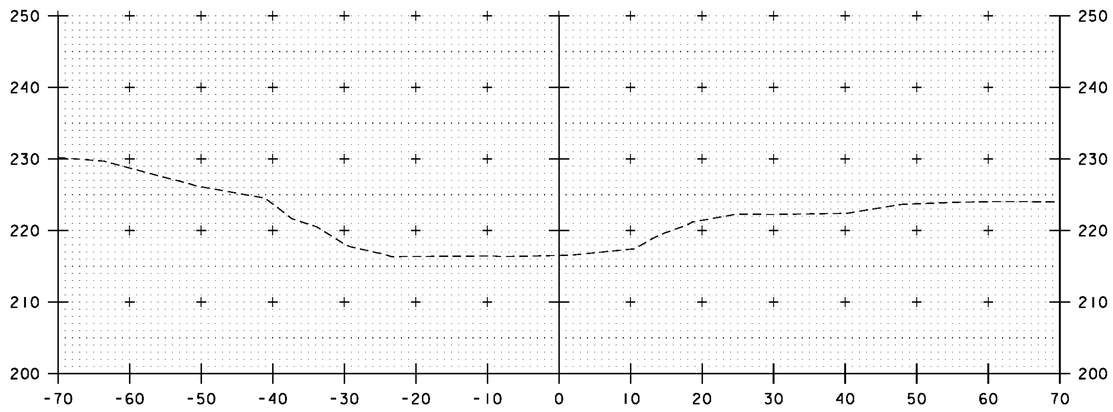
SCALE 1" = 10'-0"

STA. 51+25 - STA. 52+00

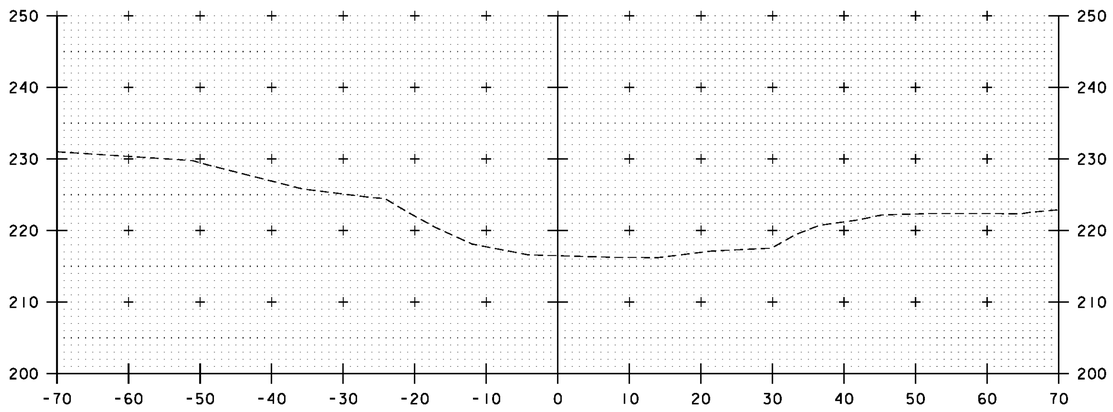
Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(24)
FILE NAME: z06J088xs.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: E.A. FIALA	CHECKED BY: B.O. CRONIN
CHANNEL CROSS SECTIONS (2 OF 3)	SHEET 54 OF 55

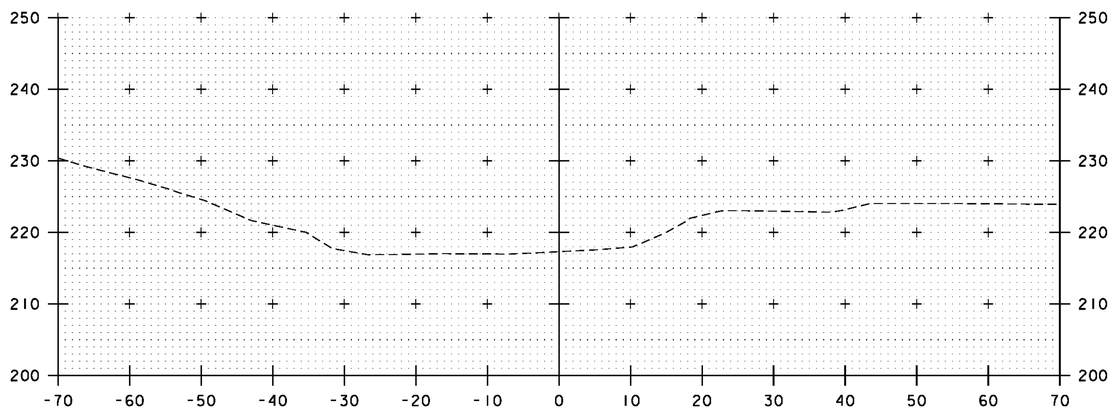
VHB 57348



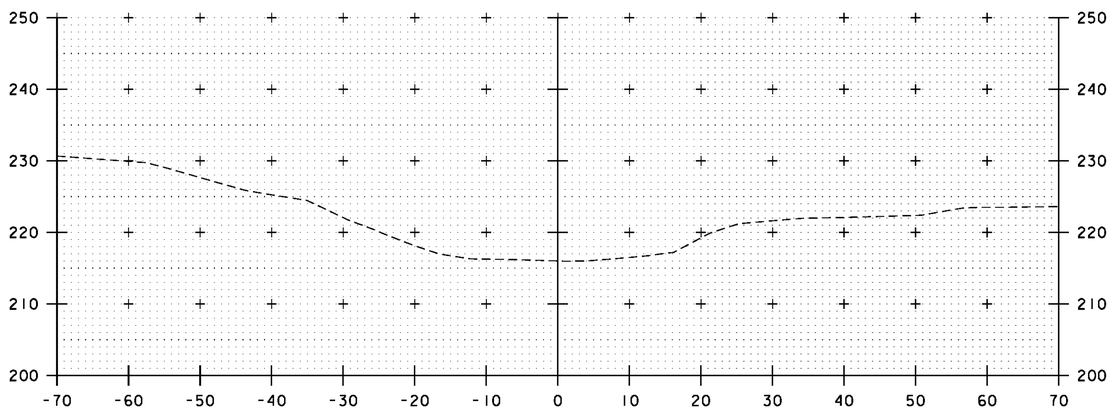
52+50



53+00



52+25



52+75

CHANNEL CROSS SECTIONS

SCALE 1" = 10'-0"

STA. 52+25 - STA. 53+00

Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	CHARLOTTE
PROJECT NUMBER:	BHO 1445(34)
FILE NAME: z06J088xs.dgn	PLOT DATE: 10/4/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: E.A. FIALA	CHECKED BY: B.O. CRONIN
CHANNEL CROSS SECTIONS (3 OF 3)	SHEET 55 OF 55

VHB 57348