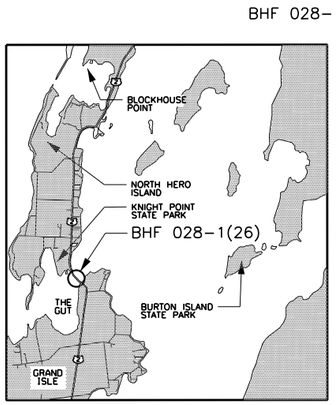
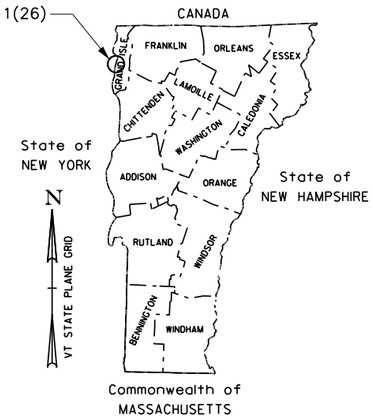
STATE OF VERMONT
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PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF NORTH HERO - GRAND ISLE

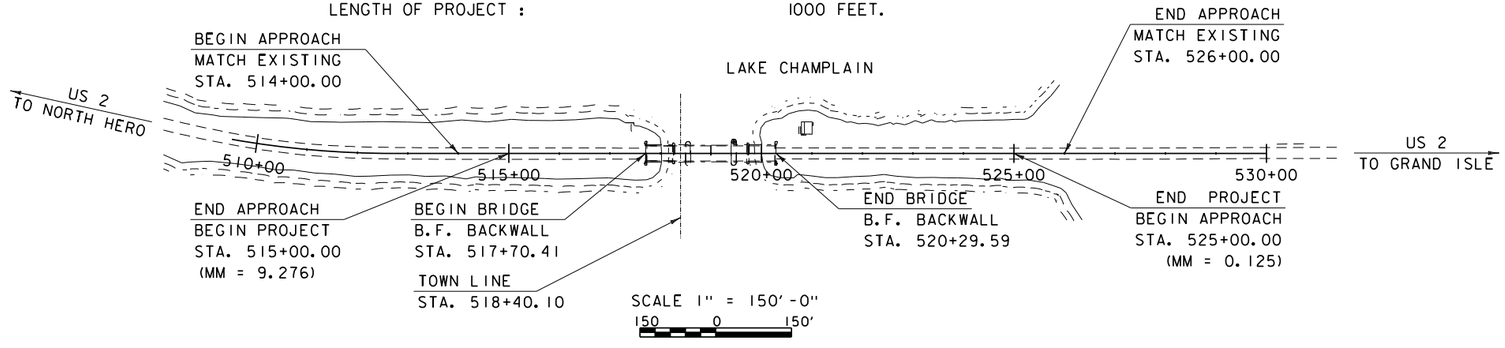
COUNTY OF GRAND ISLE

ROUTE NO : US ROUTE 2 (MINOR ARTERIAL) BRIDGE NO : 8

PROJECT LOCATION : BEGINS AT A POINT IN NORTH HERO 0.064 MI WEST OF THE NORTH HERO/GRAND ISLE TOWN LINE (STA. 518+40.10) AND CONTINUES EASTERLY ON US 2 IN GRAND ISLE FOR 0.125 MI.

PROJECT DESCRIPTION : REPLACEMENT OF EXISTING BASCULE BRIDGE, AND ASSOCIATED ROADWAY IMPROVEMENTS

LENGTH OF STRUCTURE : 259 FEET.
LENGTH OF ROADWAY : 741 FEET.
LENGTH OF PROJECT : 1000 FEET.



CONVENTIONAL SYMBOLS

COUNTY LINE	COUNTY LINE
TOWN LINE	TOWN LINE
LIMITS OF ACCESS	
POINT OF ACCESS	X
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	

QUALITY ASSURANCE PROGRAM : LEVEL

SURVEYED BY: VT SURVEY AND ENG., INC.
SURVEYED DATE: JUNE 17, 2014

DATUM
VERTICAL NAVD88 (GEOID12A)
HORIZONTAL NAD 83 (2011)

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.

DATE: 2/16/2018

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATOR
APPROVED _____ DATE _____

DIRECTOR OF PROJECT DELIVERY
APPROVED _____ DATE _____

PROJECT MANAGER : T. SUMNER

PROJECT NAME : NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER : BHF 028-1(26)

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STATE OF VERMONT
AGENCY OF TRANSPORTATION

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REVISION	DATE	DESCRIPTION	BY
3	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: **NORTH HERO GRAND ISLE BRIDGE**

PROJECT NUMBER: **BHF 028-1(26)**

FILE NAME: **z12b142index.xls**
PROJECT LEADER: **J. GALLANT**
DESIGNED BY: **P. LEFEBVRE**
INDEX OF SHEETS

PLOT DATE: 2/7/2018
DRAWN BY: **P. LEFEBVRE**
CHECKED BY: **T. FRENCH**
SHEET 2 OF 379

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

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SD-502.00	CONCRETE DETAILS AND NOTES	10-10-2012
SD-601.00	STRUCTURAL STEEL DETAILS AND NOTES	06-04-2010
SD-602.00	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES	05-02-2011

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: July 2016

DRAINAGE AREA : -
CHARACTER OF TERRAIN : -
STREAM CHARACTERISTICS : -
NATURE OF STREAMBED : -

PEAK FLOW DATA - ANNUAL EXCEEDANCE PROBABILITY (AEP)

43% =	-	2% =	-
10% =	-	1% =	-
4% =	-	0.2% =	-

DATE OF FLOOD OF RECORD: May 6, 2011
ESTIMATED DISCHARGE: -
WATER SURFACE ELEV.: 103.27' @ Burlington USGS Gage
NATURAL STREAM VELOCITY : -
ICE CONDITIONS : -
DEBRIS: -
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? -
IS ORDINARY RISE RAPID? -
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? -
IF YES, DESCRIBE: -

WATERSHED STORAGE: 0% HEADWATERS:
UNIFORM:
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Twin Leaf Bascule Bridge
YEAR BUILT: 1953
CLEAR SPAN(NORMAL TO STREAM): 80.3'
VERTICAL CLEARANCE ABOVE STREAMBED: 33.3'
WATERWAY OF FULL OPENING: ~4980'
DISPOSITION OF STRUCTURE: Remove and Replace
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See boring logs

WATER SURFACE ELEVATIONS AT:

43% AEP =	-	VELOCITY =	-
10% AEP =	-	"	-
4% AEP =	-	"	-
2% AEP =	-	"	-
1% AEP =	101.5' **	"	-

LONG TERM STREAMBED CHANGES: -

IS THE ROADWAY OVERTOPPED BELOW 1% AEP:
FREQUENCY:
RELIEF ELEVATION:
DISCHARGE OVER ROAD @ 1% AEP:

UPSTREAM STRUCTURE

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

DOWNSTREAM STRUCTURE

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

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE	**20**	**36**	**36**	**66**	**30**	**34.5**	**38**
INVENTORY	2.24	1.31					
POSTING							
OPERATING	2.91	1.71	2.35	1.59	1.63	1.5	2.02
COMMENTS:	APPROACH SPAN EXTERIOR GIRDER CONTROLS, SERVICE II LIMIT STATE						

AS BUILT "REBAR" DETAIL

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

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2018	3000	460	55	2.6	150
2028	3200	490	55	3.4	210

20 year ESAL for flexible pavement from 2018 to 2038 : 1065000
40 year ESAL for flexible pavement from 2018 to 2058 : 0
Design Speed : 50 mph

PROPOSED STRUCTURE

STRUCTURE TYPE: TWN LEAF BASCULE BRIDGE

CLEAR SPAN(NORMAL TO STREAM): 81.0'
VERTICAL CLEARANCE ABOVE STREAMBED: 30.4'
WATERWAY OF FULL OPENING ~ 4100 sq ft

WATER SURFACE ELEVATIONS AT:

43% AEP =	-	VELOCITY=	-
10% AEP =	-	"	-
4% AEP =	-	"	-
2% AEP =	-	"	-
1% AEP =	101.5' **	"	-

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No
FREQUENCY: Above 1% AEP
RELIEF ELEVATION: ~ 118'
DISCHARGE OVER ROAD @ 1% AEP: None

BRIDGE LOW CHORD ELEVATION: 112.4'
FREEBOARD: @ 1% AEP = 10.9'

SCOUR:

REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV

PERMIT INFORMATION

AVERAGE DAILY FLOW:	-	DEPTH OR ELEVATION:	
ORDINARY LOW WATER:	-	-	
ORDINARY HIGH WATER:	-	98.0'	
MEAN WATER LEVEL:	-	95.5'	

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Single Leaf Bascule Bridge
CLEAR SPAN (NORMAL TO STREAM): 40.0'
VERTICAL CLEARANCE ABOVE STREAMBED: 10' (low chord to OHW)
WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

Mean Lake Level at Rouses Point = 94.88' based on "The State Discharge Relationship of Lake Champlain - Richeliea River"
** = Taken from Grand Isle FIS

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TWO-WAY TRAFFIC ON A TEMPORARY BRIDGE.
2. INSTALL AND MAINTAIN TRAFFIC SIGNALS.
3. SIDEWALKS ARE NOT NECESSARY
4. THE APPROACHES FOR THE TEMPORARY BRIDGE SHALL BE PAVED.

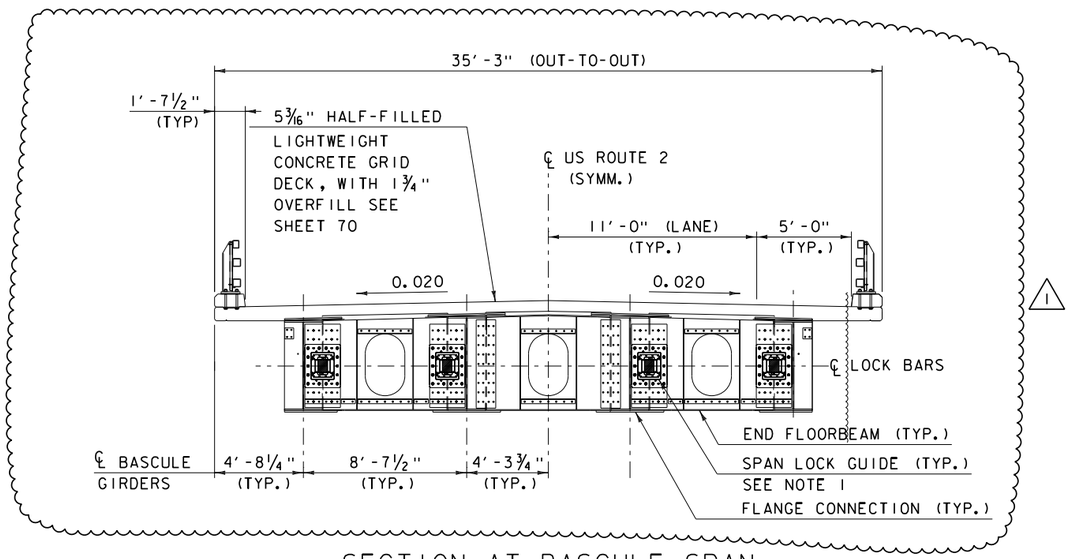
DESIGN VALUES

1.	DESIGN LIVE LOAD		HL-93
2.	FUTURE PAVEMENT	d_p:	0.0 INCH
3.	ABUTMENT BEARING TC BEARING LENGTH (SIX SPANS) (48.00 - 26.50 - 53.10 - 53.10 - 26.50 - 48.00) FT	L:	255.2 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 LW	f'_c:	4.0 KSI
9.	CONCRETE, HIGH PERFORMANCE CLASS A	f'_c:	4.0 KSI
10.	CONCRETE, HIGH PERFORMANCE CLASS B	f'_c:	3.5 KSI
11.	CONCRETE, CLASS C	f'_c:	3.0 KSI
12.	REINFORCING STEEL	f_y:	60 KSI
13.	STRUCTURAL STEEL AASHTO M270	f_y:	50 KSI
14.	NOMINAL BEARING RESISTANCE OF ROCK	q_n:	160.0 KSF
15.	ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	0.45
16.	MICROPILE GEOTECHNICAL RESISTANCE FACTOR (TIP)	ϕ:	0.50
17.	MICROPILE GEOTECHNICAL RESISTANCE FACTOR (SIDE)	ϕ:	0.55
18.	MICROPILE STRUCTURAL RES. FACTOR (CASED,COMPRESSION)	ϕ:	0.75
19.	LATERAL PILE DEFLECTION	Δ:	TBD
20.	BASIC WIND SPEED	V_{3s}:	100 MPH
21.	MINIMUM GROUND SNOW LOAD	p_g:	---
22.	SEISMIC DATA PGA : 0.135g	S_s:	0.259g
		S_1:	0.061g
23.			
24.			---
25.			---
26.			---

PROJECT NAME: **NORTH HERO GRAND ISLE BRIDGE**
PROJECT NUMBER: **BHF 028-1(26)**

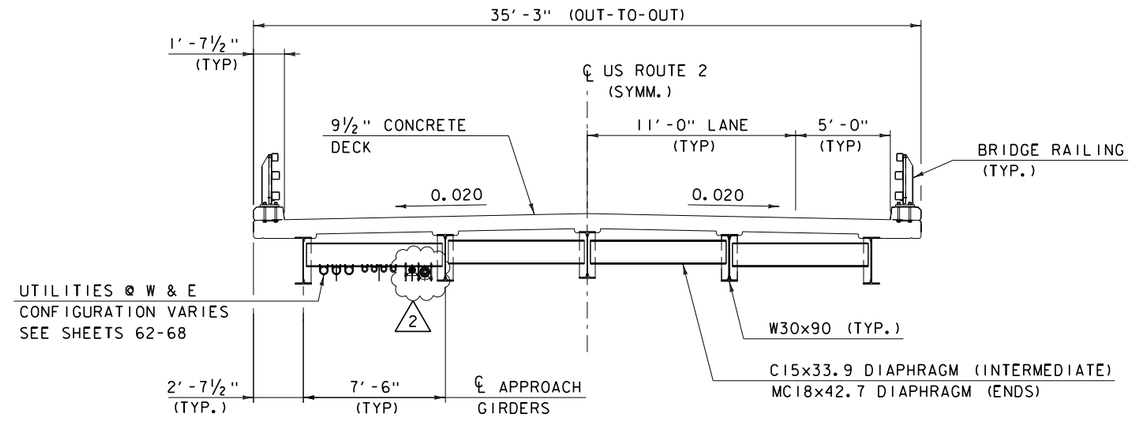
FILE NAME: **z12b142pi.xls**
PROJECT LEADER: **T. FRENCH**
DESIGNED BY: **P.LEFEBVRE**
PRELIMINARY INFORMATION SHEET

PLOT DATE: 2/7/2018
DRAWN BY: **P. LEFEBVRE**
CHECKED BY: **M. MOZER**
SHEET 3 OF 379



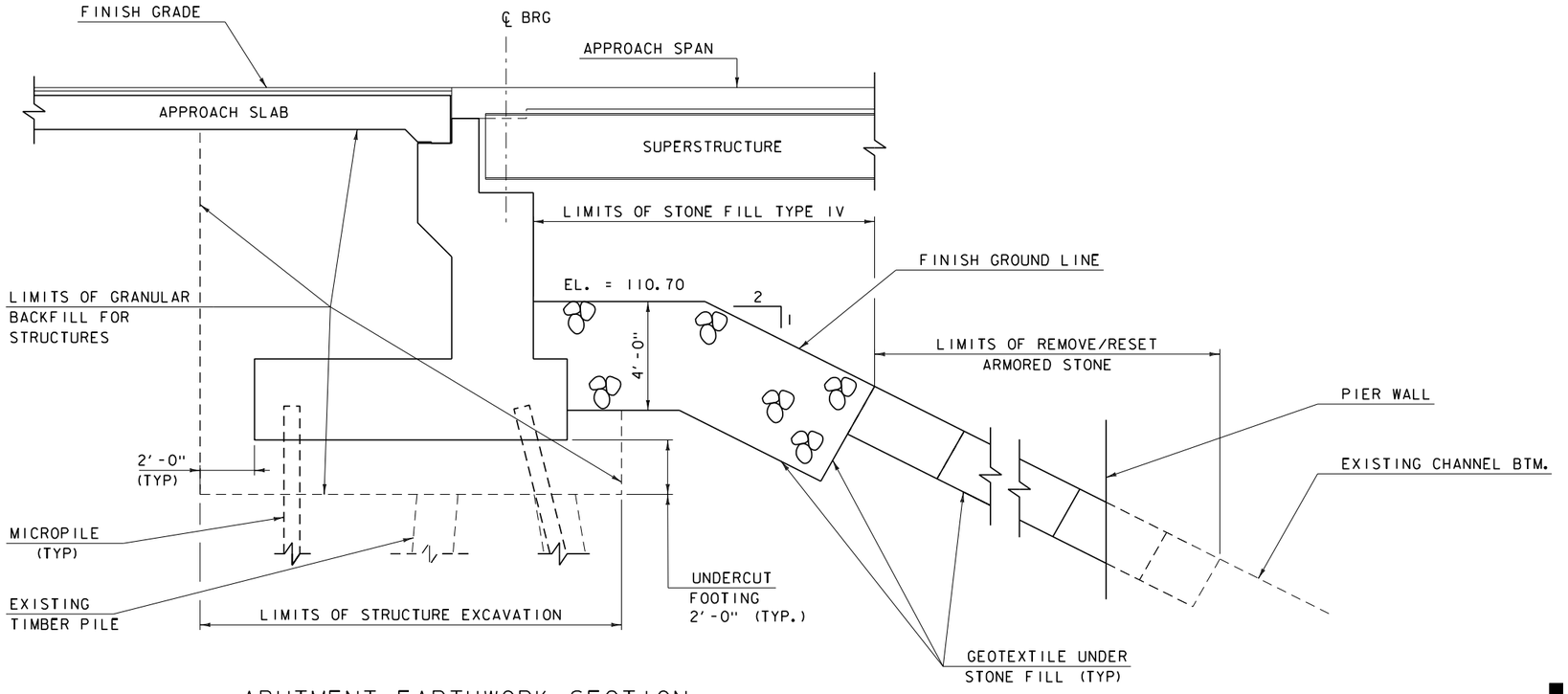
SECTION AT BASCULE SPAN

SCALE ¼" = 1'-0"



SECTION AT APPROACH SPANS

SCALE ¼" = 1'-0"



ABUTMENT EARTHWORK SECTION

(NOT TO SCALE)

NOTES:

1. FOR DETAILS OF SPAN LOCKS AND GUIDE SEE SHEET 226-230.
2. APPROACH SPAN DECKS SHALL RECEIVE TRANSVERSE TURF DRAG FINISH FOLLOWED BY LONGITUDINAL DECK GROOVING.
3. BASCULE SPAN DECKS SHALL RECEIVE BROOM FINISH FOLLOWED BY LONGITUDINAL DECK GROOVING.

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

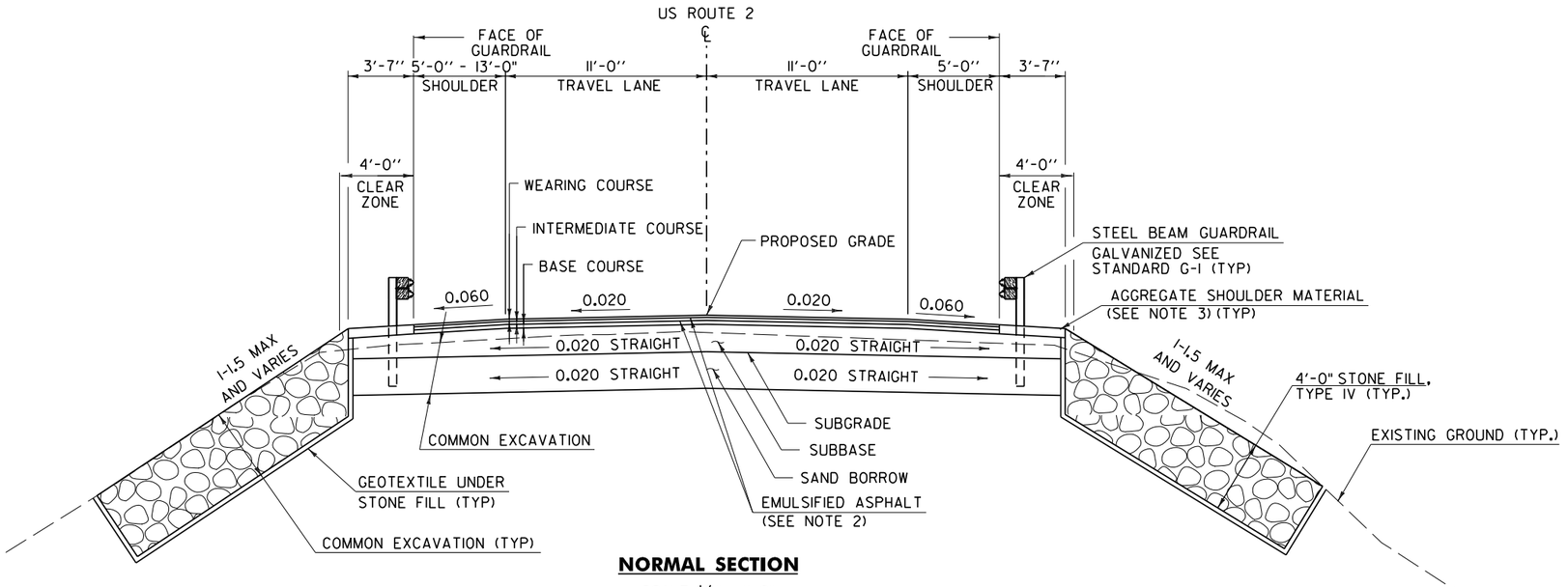
FILE NAME: z12b142typdeck.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BRIDGE TYPICAL SECTIONS

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH

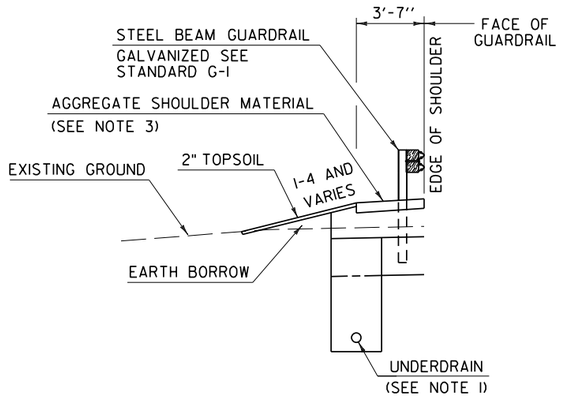
MATERIAL TOLERANCES (IF USED ON PROJECT)	
SURFACE	
- PAVEMENT COURSES (TOTAL DEPTH)	±1/4"
- AGGREGATE SURFACE COURSE	±1/2"
SUBBASE	±1"
SAND BORROW	±1"

TYPICAL ROADWAY SECTION
US ROUTE 2

1½" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (PG 70-28)(SBS POLYMER) TYPE IVS
2" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (PG 70-28)(SBS POLYMER) TYPE IIS
2½" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (PG 70-28)(SBS POLYMER) TYPE IIS
18" SUBBASE OF DENSE GRADED CRUSHED STONE
24" SAND BORROW



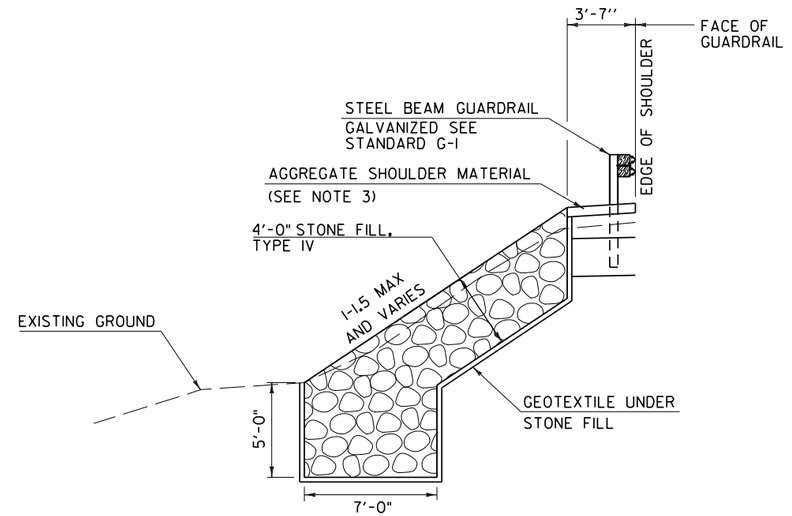
NORMAL SECTION
SCALE: 1/4" = 1'-0"



NOTES:

1. INSTALL 6" UNDERDRAIN AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SEE STD D-30 FOR CONSTRUCTION DETAILS.
2. TACK COAT APPLICATION RATE SHALL BE 0.025 TO 0.040 GAL/SQ.YD OF CRS-1H OR RS-1H.
3. ALL EDGES OF PAVEMENT SHALL BE BACKED UP TO FULL HEIGHT WITH AGGREGATE SHOULDER MATERIAL AS DIRECTED BY THE ENGINEER.

UNDERDRAIN SECTION WITH GUARDRAIL
STA 520+50.00 - STA 521+31.50 LT
SCALE: 1/4" = 1'-0"

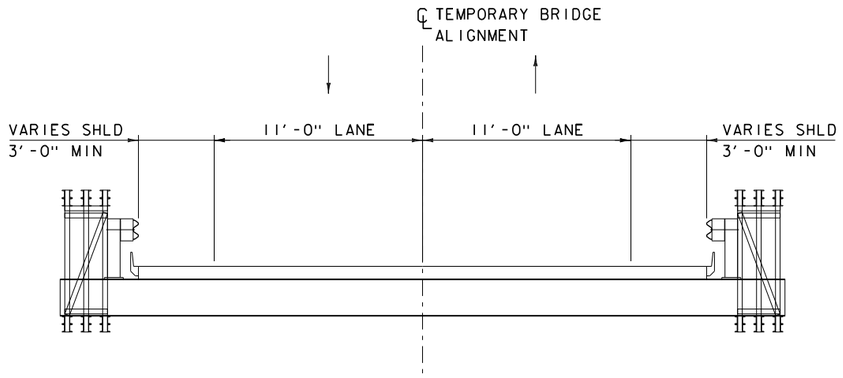


STONE SLOPE WITH STANDARD GUARDRAIL SHELF SECTION
STA 521+02.90 - STA 525+50.00 LT
SCALE: 1/4" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: zl2bl42typ.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
ROADWAY TYPICAL SECTION SHEET	SHEET 5 OF 379

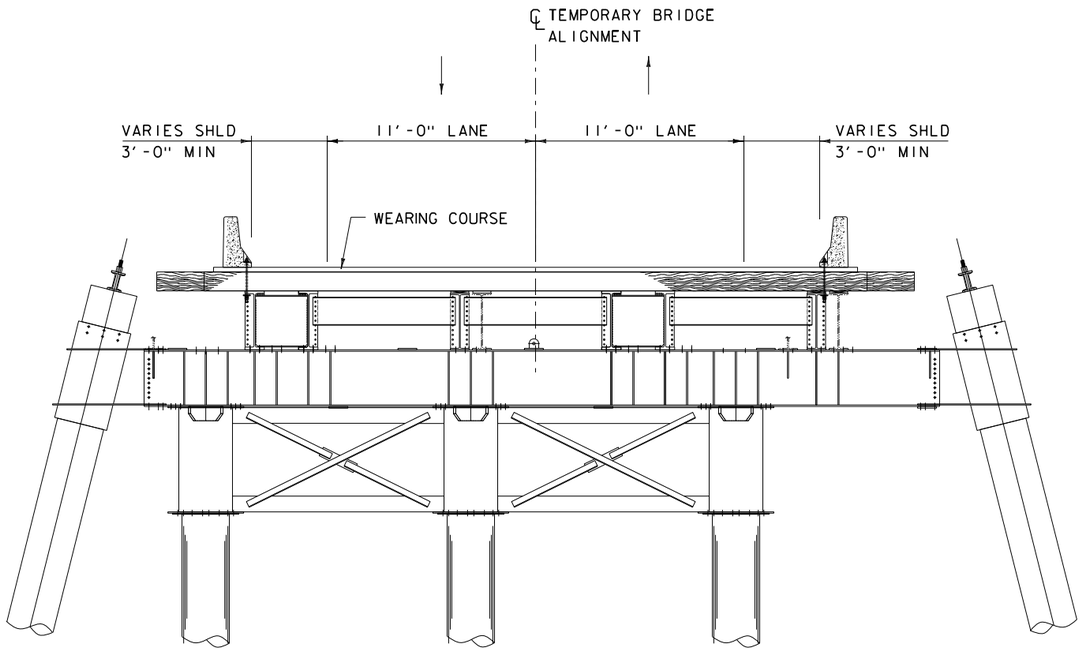
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USER = $NTUSER$



SECTION AT MOVABLE SPAN

SCALE 1/4" = 1'-0"



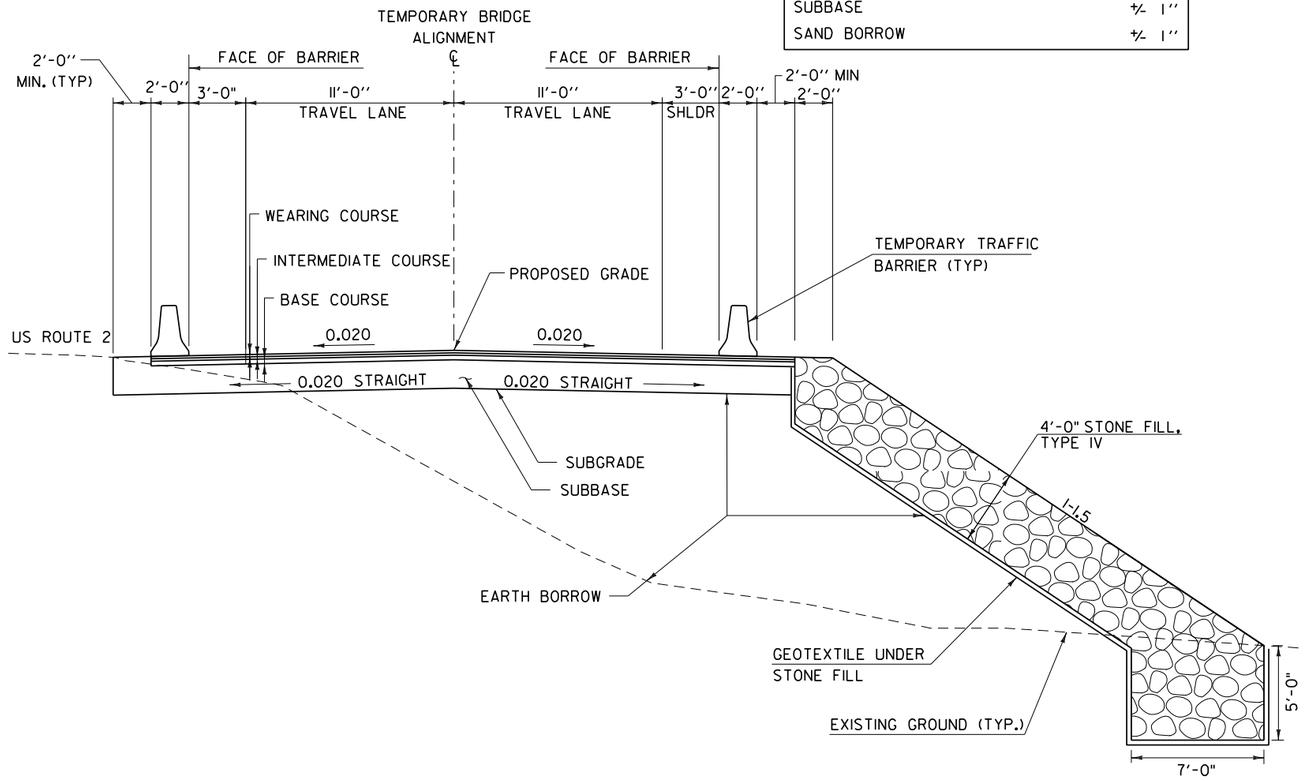
SECTION AT APPROACH SPAN

SCALE 1/4" = 1'-0"

TYPICAL TEMPORARY BRIDGE APPROACH
ROADWAY SECTION
US ROUTE 2

1 1/2" BITUMINOUS CONCRETE PAVEMENT TYPE IVB
1 1/2" BITUMINOUS CONCRETE PAVEMENT TYPE IVB
3" BITUMINOUS CONCRETE PAVEMENT TYPE II
18" SUBBASE OF DENSE GRADED CRUSHED STONE

MATERIAL TOLERANCES (IF USED ON PROJECT)	
SURFACE	
- PAVEMENT COURSES (TOTAL DEPTH)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"



NORMAL SECTION

SCALE 1/4" = 1'-0"

* SEE SPECIAL PROVISION (TEMPORARY MOVABLE BRIDGE) FOR ADDITIONAL DETAILS.

TEMPORARY BRIDGE DESIGN CRITERIA *	
DESIGN SPEED	25 MPH
MIN VERTICAL CLEARANCE (VEHICULAR)	14.5 FT
MIN VERTICAL CLEARANCE (LOW CHORD CLOSED TO OHW)	10 FT
MIN VERTICAL CLEARANCE (WATER DEPTH)	MATCH EXISTING
MIN CLEAR SPAN (MOVABLE SPAN, FENDER TO FENDER)	40 FT
MAX MOVABLE SPAN OPENING/CLOSING TIME (NORMAL COND.)	120 SEC
MIN LIVE LOAD	HS-20 OR HL-93
DESIGN ICE THICKNESS	20 IN.
EFFECTIVE ICE CRUSHING STRENGTH	16 KSF
VESSEL COLLISION FORCE	36T VESSEL @ 3 KNOTS

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142typtemp.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
TEMPORARY BRIDGE TYPICAL SECTIONS

PLOT DATE: 2/6/2018
DRAWN BY: P. LEFEBVRE
CHECKED BY: M. MOZER
SHEET 6 OF 379

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES	BRIDGE QUANTITY	TOTALS ROUND	TOTALS GRAND TOTAL	TOTALS FINAL	DESCRIPTIONS UNIT	DESCRIPTIONS ITEMS	DESCRIPTIONS ITEM NUMBER
			1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10
			8360		CY	COMMON EXCAVATION	203.15
			90		CY	SOLID ROCK EXCAVATION	203.16
			50		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27
			50		CY	EARTH BORROW	203.30
			2400		CY	SAND BORROW	203.31
			120		CY	TRENCH EXCAVATION OF EARTH	204.20
			20		CY	TRENCH EXCAVATION OF ROCK	204.21
			1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22
			1310		CY	STRUCTURE EXCAVATION	204.25
			900		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30
			3650		CY	COFFERDAM EXCAVATION, EARTH	208.30
			1		LS	COFFERDAM (PIER NO. 1)	208.40
			1		LS	COFFERDAM (PIER NO. 2)	208.40
			450		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10
			1750		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35
			220		TON	AGGREGATE SHOULDERS	402.12
			25		CWT	EMULSIFIED ASPHALT	404.65
			1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50
			1050		TON	SUPERPAVE BITUMINOUS CONCRETE PAVEMENT	490.30
			150		CY	CONCRETE, HIGH PERFORMANCE, CLASS A (APPROACH DECK)	501.33
			3530		CY	CONCRETE, HIGH PERFORMANCE, CLASS B (ABUTMTS, PIERS, AND APP. SLABS)	501.34
			1		LS	FURNISHING EQUIPMENT FOR DRIVING PILES (PIPE PILES)	504.10
			53100		LB	STRUCTURAL STEEL, ROLLED BEAM	506.50
			27450		LB	REINFORCING STEEL, LEVEL I	507.11
			10200		LB	REINFORCING STEEL, LEVEL I (EPOXY COATED)	507.11
			754500		LB	REINFORCING STEEL, LEVEL II	507.12
			40650		LB	REINFORCING STEEL, LEVEL III	507.13
			1		LS	SHEAR CONNECTORS (1,136 - 7/8" X 6")	508.15
			1		LS	SHEAR CONNECTORS (980 - 7/8" X 7")	508.15
			910		SY	LONGITUDINAL DECK GROOVING	509.10
			140		GAL	WATER REPELLENT, SILANE	514.10
			0.24		MFBM	STRUCTURAL LUMBER AND TIMBER, UNTREATED	522.20
			1		EACH	REMOVAL OF STRUCTURE (9,000 SF - EST.)	529.15
			20		EACH	BEARING DEVICE ASSEMBLY, STEEL REINF. ELASTOMERIC PAD (EXPANSION)	531.17
			100		CY	CONCRETE CLASS A (COUNTERWEIGHT)	541.22
			2600		CY	CONCRETE CLASS C (TREMIE)	541.30
			85		LF	6 INCH UNDERDRAIN PIPE	605.10
			15		LF	6 INCH UNDERDRAIN CARRIER PIPE	605.20
			1		EA	UNDERDRAIN FLUSHING BASIN	605.95

DETAILED SUMMARY OF QUANTITIES		
QUANTITIES	UNIT	ITEMS

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: **NORTH HERO GRAND ISLE BRIDGE**
PROJECT NUMBER: **BHF 028-1(26)**

FILE NAME: **z12b142qs.xls**
PROJECT MANAGER: **J. GALLANT**
DESIGNED BY: **P. LEFEBVRE**
QUANTITY SHEET #1

PLOT DATE: **5/20/2020**
DRAWN BY: **P. LEFEBVRE**
CHECKED BY: **P. DAVIS**
SHEET **7** OF **379**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES

BRIDGE QUANTITY	TOTALS ROUND	TOTALS GRAND TOTAL	TOTALS FINAL	UNIT	DESCRIPTIONS ITEMS	ITEM NUMBER
		100		HR	POWER BROOM RENTAL, TYPE II	608.31
		200		MGAL	DUST CONTROL WITH WATER	609.10
		5		CY	STONE FILL TYPE I	613.10
		5650		CY	STONE FILL TYPE IV	613.13
		3		EACH	BOLLARDS	619.14
		230		LF	CHAINLINK FENCE, 4 FEET	620.11
		1680		LF	STEEL BEAM GUARDRAIL, GALVANIZED	621.20
		4		EA	ENERGY ABSORPTION ATTENUATOR	621.56
		2		EA	ANCHOR FOR STEEL BEAM RAIL	621.60
		1860		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80
		350		LF	SLEEVES FOR UTILITIES (ELECTRIC)	625.10
		300		LF	DRIVEN OR DRILLED WELL	626.15
		35		LF	WELL CASING PIPE (6 INCH DIAMETER)	626.20
		1		LS	SUBMERSIBLE PUMP SYTEM	627.25
		145		LF	PVC SEWER PIPE (2 INCH DIAMETER)	628.35
		130		LF	PLASTIC WATER PIPE, RIGID (1 INCH DIAMETER)	629.33
		30		LF	PIPE INSULATION (2 INCHES THICK)	629.44
		8000		HR	FLAGGERS	630.15
		1		LS	FIELD OFFICE, ENGINEERS	631.10
		1		LS	TESTING EQUIPMENT, CONCRETE	631.16
		1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17
		8000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26
		2600		HR	EMPLOYEE TRAINEESHIP	634.10
		1		LS	MOBILIZATION/DEMOBILIZATION	635.11
		1		LS	TRAFFIC CONTROL	641.10
		4		EA	PORTABLE CHANGEABLE MESSAGE SIGN	641.15
		2800		LF	DURABLE 4 INCH WHITE LINE, POLYUREA	646.404
		2700		LF	DURABLE 4 INCH YELLOW LINE, POLYUREA	646.414
		25		LF	DURABLE 24 INCH STOP BAR, POLYUREA	646.484
		22		EA	DURABLE LETTER OR SYMBOL, POLYUREA	646.494
		15300		LF	TEMPORARY 4 INCH WHITE LINE, PAINT	646.602
		10150		LF	TEMPORARY 4 INCH YELLOW LINE, PAINT	646.612
		100		LF	TEMPORARY 24 INCH STOP BAR, PAINT	646.682
		88		EA	TEMPORARY LETTER OR SYMBOL, PAINT	646.692
		5150		SF	REMOVAL OF EXISTING PAVEMENT MARKINGS	646.85
		6500		SY	GEOTEXTILE UNDER STONE FILL	649.31
		150		SY	GEOTEXTILE FOR UNDERDRAIN TRENCH LINING	649.41
		1000		SY	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515
		13500		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61
		60		LB	SEED	651.15
		480		LB	FERTILIZER	651.18

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: **NORTH HERO GRAND ISLE BRIDGE**
PROJECT NUMBER: **BHF 028-1(26)**

FILE NAME: **z12b142qs.xls**
PROJECT MANAGER: **J. GALLANT**
DESIGNED BY: **P. LEFEBVRE**
QUANTITY SHEET #2

PLOT DATE: **5/20/2020**
DRAWN BY: **P. LEFEBVRE**
CHECKED BY: **P. DAVIS**
SHEET **8** OF **379**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES	BRIDGE QUANTITY	TOTALS ROUND	TOTALS GRAND TOTAL	TOTALS FINAL	DESCRIPTIONS UNIT	DESCRIPTIONS ITEMS	DESCRIPTIONS ITEM NUMBER
			2		TON	AGRICULTURAL LIMESTONE	651.20
			2		TON	HAY MULCH	651.25
			270		CY	TOPSOIL	651.35
			1		LS	EPSC PLAN	652.10
			700		HR	MONITORING EPSC PLAN	652.20
			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30
			1500		SY	TEMPORARY EROSION MATTING	653.20
			40		CY	VEHICLE TRACKING PAD	653.35
			6		EA	FILTER BAG	653.45
			1950		LF	BARRIER FENCE	653.50
			91		SF	TRAFFIC SIGNS, TYPE A	675.20
			504		LB	TUBULAR STEEL SIGN POST	675.33
			260		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341
			4		EA	FOUNDATION FOR TUBULAR STEEL POST	675.43
			18		EA	REMOVING SIGNS	675.50
			2		EA	DELINEATOR WITH STEEL POST	676.10
			2		EA	FLASHING BEACON, GROUND MOUNTED	678.16
			1		EA	TEMPORARY TRAFFIC SIGNAL SYSTEM	678.40
			1		EA	REMOVAL OF EXISTING TRAFFIC CONTROL SIGNAL SYSTEM	678.45
			1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50
			25000		DL	SPECIAL PROVISION (BRIDGE POWER)	900.615
			20000		DL	SPECIAL PROVISION (CONTINGENCY ITEM) (COFFERDAM ROCK EXC.) (N.A.B.I.)	900.615
			120000		DL	SPECIAL PROVISION (CONTINGENCY ITEM) (LEAD CONT. SOIL DISP.) (N.A.B.I.)	900.615
			40000		DL	SPECIAL PROVISION (UNIFORMED TRAFFIC OFFICERS)	900.615
			4		EACH	SPECIAL PROVISION (BRIDGE RAIL TRANSITION)	900.620
			48		EACH	SPECIAL PROVISION (CPM SCHEDULE)	900.620
			24		EA	SPECIAL PROVISION (UNDERWATER ROCK ANCHOR)	900.620
			10		HR	SPECIAL PROVISION (UNEXPECTED OBSTRUCTION DRILLING)	900.630
			97000		LB	SPECIAL PROVISION (BALANCE BLOCKS - WEIGHT)	900.635
			592		LF	SPECIAL PROVISION (BRIDGE RAILING, STEEL 3-BAR)	900.640
			2210		LF	SPECIAL PROVISION (MICROPILE, CASED) (9.625")	900.640
			408		LF	SPECIAL PROVISION (MICROPILE, UNCASED) (8")	900.640
			2825		LF	SPECIAL PROVISION (TEMPORARY STEEL PILING, PIPE)	900.640
			1		LS	SPECIAL PROVISION (ARCHITECT'L FOR CONTROL HOUSE AND BASCULE PIER)	900.645
			1		LS	SPECIAL PROVISION (AS-BUILT DOCUMENTATION / OP. & MAINT. MANUALS)	900.645
			1		LS	SPECIAL PROVISION (BRIDGE BALANCE)	900.645
			1		LS	SPECIAL PROVISION (BRIDGE CONTROL SYSTEM)	900.645
			1		LS	SPECIAL PROVISION (BRIDGE POWER EQUIPMENT)	900.645
			1		LS	SPECIAL PROVISION (COMMISSIONING & STARTUP)	900.645
			1		LS	SPECIAL PROVISION (FENDER SYSTEM)	900.645

DETAILED SUMMARY OF QUANTITIES		
QUANTITIES	UNIT	ITEMS

HDR

PROJECT NAME: **NORTH HERO GRAND ISLE BRIDGE**
PROJECT NUMBER: **BHF 028-1(26)**

FILE NAME: **z12b142qs.xls**
PROJECT MANAGER: **J. GALLANT**
DESIGNED BY: **P. LEFEBVRE**
QUANTITY SHEET #3

PLOT DATE: **5/20/2020**
DRAWN BY: **P. LEFEBVRE**
CHECKED BY: **P. DAVIS**
SHEET **9** OF **379**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES	TOTALS				DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES		
BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER		QUANTITIES	UNIT	ITEMS
		1		LS	SPECIAL PROVISION (FURNISHING EQUIPMENT FOR INSTALLING MICROPILES)	900.645				
		1		LS	SPECIAL PROVISION (HVAC CONTROL HOUSE AND HVAC TENDER HOUSE)	900.645				
		1		LS	SPECIAL PROVISION (HYDRAULIC CYLINDERS)	900.645				
		1		LS	SPECIAL PROVISION (HYDRAULIC POWER UNITS)	900.645				
		1		LS	SPECIAL PROVISION (INDIRECT COSTS)	900.645				
		1		LS	SPECIAL PROVISION (LIVE LOAD SHOES)	900.645				
		1		LS	SPECIAL PROVISION (MAINTENANCE AND OPERATION)	900.645				
		1		LS	SPECIAL PROVISION (NONSTRUCTURAL STEEL)	900.645				
		1		LS	SPECIAL PROVISION (PLUMBING)	900.645				
		1		LS	SPECIAL PROVISION (SEPTIC SYSTEM)	900.645				
		1		LS	SPECIAL PROVISION (SPAN LOCKS)	900.645				
		1		LS	SPECIAL PROVISION (STRUCTURAL STEEL - BASCULE SPAN)	900.645				
	1	1		LS	SPECIAL PROVISION (STRUCTURAL STEEL - MISCELLANEOUS)	900.645				
		1		LS	SPECIAL PROVISION (TAIL LOCKS)	900.645				
		1		LS	SPECIAL PROVISION (TEMPORARY MOVABLE BRIDGE)	900.645				
		1		LS	SPECIAL PROVISION (TRAFFIC CONTROL EQUIPMENT)	900.645				
		1		LS	SPECIAL PROVISION (TRUNION ASSEMBLIES)	900.645				
		5000		SF	SPECIAL PROVISION (HALF FILLED GRID DECK)	900.670				
	1	12500		SF	SPECIAL PROVISION (REMOVE AND RESET ARMORED STONE)	900.670				
		584		SF	SPECIAL PROVISION (RETAINING WALL)	900.670				
		400		TON	SPECIAL PROVISION (TEMPORARY BITUMINOUS CONCRETE PAVEMENT)	900.680				

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: **NORTH HERO GRAND ISLE BRIDGE**
PROJECT NUMBER: **BHF 028-1(26)**

FILE NAME: **z12b142qs.xls**
PROJECT MANAGER: **J. GALLANT**
DESIGNED BY: **P. LEFEBVRE**
QUANTITY SHEET #4

PLOT DATE: **5/20/2020**
DRAWN BY: **P. LEFEBVRE**
CHECKED BY: **P. DAVIS**
SHEET **10** OF **379**

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND ITS LATEST REVISIONS, THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SEVENTH EDITION, DATED 2014 WITH 2015 INTERIMS, AND THE AASHTO LRFD MOVABLE HIGHWAY BRIDGE DESIGN SPECIFICATIONS SECOND EDITION,DATED 2007 WITH 2015 INTERIMS. CONSTRUCTION OF TENDER HOUSE, CONTROL HOUSE, AND PIERS SHALL CONFORM TO LOCAL BUILDING CODES.

2. DURING CONSTRUCTION, TRAFFIC SHALL BE MAINTAINED ON A TWO-WAY TEMPORARY BRIDGE CONSTRUCTED SOUTH OF THE EXISTING STRUCTURE. CONSTRUCTION OF THE TEMPORARY BRIDGE AND ITS APPROACHES SHALL BE PAID UNDER ITEM 900.645 "SPECIAL PROVISION (TEMPORARY MOVABLE BRIDGE)." THE APPROACHES TO THE TEMPORARY BRIDGE SHALL BE PAVED.

3. FULL ACCESS TO ALL SIDE ROADS AND DRIVES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. THIS WORK SHALL BE PAID UNDER ITEM 641.10, "TRAFFIC CONTROL".

4. FOR ELECTRICAL NOTES, SEE SHEET 236. FOR TRAFFIC CONTROL NOTES, SEE SHEET 27. FOR TRAFFIC SIGNAL NOTES, SEE SHEETS 40-41.

5. FOR INFORMATION REGARDING UTILITIES, SEE SHEETS 15-22, 34-35, AND 238-239.

6. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE CORRECTED TO 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.

7. IN THE CASE OF ANY DISCREPANCY, DETAILS AND DIMENSIONS SHOWN ON PROJECT SPECIFIC PLAN SHEETS SHALL TAKE PRECEDENCE OVER THE "STRUCTURES DETAILS SHEETS" REFERENCED IN THE INDEX OF SHEETS.

EARTHWORK AND RELATED ITEMS

8. EARTHWORK RELATED TO THE CONSTRUCTION OF THE TEMPORARY BRIDGE SHALL BE PAID UNDER ITEM 900.645 "SPECIAL PROVISION (TEMPORARY MOVABLE BRIDGE)."

9. TEMPORARY CONSTRUCTION FILLS SHALL NOT OCCUR WITHIN THE WATERCOURSE BELOW OHW FOR ANY PURPOSE, EXCEPT AS SHOWN IN THE PLANS AND AS STATED IN THE PERMITS.

10. ALL PORTIONS OF THE EXISTING BRIDGE, EXCEPT FOR THE TIMBER PILES INDICATED AND THE PIER CONCRETE KEY BELOW COMPETENT ROCK, SHALL BE COMPLETELY REMOVED. A DIVING INSPECTION PERFORMED IN MAY 2016 WAS UNABLE TO LOCATE THE CONCRETE TIE BEAM BETWEEN PIERS 1 AND 2 ON THE EAST SIDE OF THE EXISTING BRIDGE.

11. ITEM 529.15 "REMOVAL OF STRUCTURE" SHALL BE USED FOR THE REMOVAL OF EXISTING WARNING/BARRIER GATES AND THEIR FOUNDATIONS, EXISTING TRAFFIC CONTROL SIGNALS AND THEIR FOUNDATIONS, EXISTING GENERATOR, EXISTING SUPERSTRUCTURE AND SUBSTRUCTURE, AND EXISTING TENDER HOUSE STAIRS NOT INCLUDED IN:
    - ITEM 203.15 "COMMON EXCAVATION"
    - ITEM 203.16 "SOLID ROCK EXCAVATION"
    - ITEM 204.25 "STRUCTURE EXCAVATION" OR
    - ITEM 208.30 "COFFERDAM EXCAVATION, EARTH".

12. LEAD AND ASBESTOS CONTAINING MATERIALS WERE IDENTIFIED IN SERVERAL LOCATIONS ON THE BRIDGE. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING, WORKING WITH, AND DISPOSING OF THESE MATERIALS. THE REMOVED MATERIALS ARE THE PROPERTY OF THE CONTRACTOR. REFER TO THE NORTH HERO ASBESTOS AND LEAD SURVEY, DATED MAY 22 2017 AND INCLUDED WITH THE CONTRACT DOCUMENTS, FOR MORE INFORMATION.

13. COFFERDAMS ARE REQUIRED FOR THE CONSTRUCTION OF THE NEW PIERS. PAYMENT FOR COFFERDAM EXCAVATION WILL BE MADE ONLY FOR SUCH EXCAVATION WITHIN THE LIMITS SHOWN ON THE PLANS. EXCAVATION WILL OCCUR PRIOR TO COFFEREDAM INSTALLATION.

14. THE ABUTMENTS HAVE BEEN DESIGNED FOR THE ELEVATIONS SHOWN ON THE PLANS. UNDERCUT THE BOTTOM OF FOOTING (BOF) ELEVATION TWO FEET IN ORDER TO REMOVE EXISTING TIMBER PILES TWO FEET BELOW THE PROPOSED BOF.

15. THE PIERS HAVE BEEN DESIGNED FOR THE ELEVATIONS SHOWN ON THE PLANS. USE TREMIE CONCRETE CLASS "C" FROM TOP OF COMPETENT BEDROCK TO BOF. CONTACT THE ENGINEER FOR POSSIBLE REDESIGN IF THE LEDGE PROFILES DIFFER FROM THOSE SHOWN ON THE PLANS. NO FURTHER WORK SHALL BE DONE ON THE FOOTINGS UNTIL A REPLY IS RECEIVED FROM THE STRUCTURES SECTION. A TURN-AROUND TIME OF UP TO FIVE BUSINESS DAYS MAY BE EXPECTED.

16. COMPETENT BEDROCK, FOR THE PURPOSE OF DETERMINING A SURFACE ON WHICH TO POUR TREMIE CONCRETE FOR THE PIERS AND FOR PIER DESIGN, IS DEFINED AS THE SURFACE FROM WHICH NO MORE MATERIAL CAN BE REMOVED BY CONVENTIONAL EXCAVATION METHODS BY AN EXCAVATOR DIGGING BUCKET OR A CRANE MOUNTED CLAM DIGGING BUCKET.

17. THE COST OF COFFERDAM EXCAVATION USING CONVENTIONAL EXCAVATION METHODS SHALL BE PAID UNDER ITEM 208.30 "COFFERDAM EXCAVATION, EARTH". IF LEDGE PROFILES DIFFER FROM THOSE SHOWN ON THE PLANS AND THE ENGINEER DIRECTS THE CONTRACTOR TO REMOVE COMPETENT BEDROCK, THE REMOVAL WOULD BE PAID FOR UNDER ITEM 900.615 "SPECIAL PROVISION (CONTINGENCY ITEM) (COFFERDAM ROCK EXCAVATION) (N.A.B.F.) ALL CONCRETE FROM THE EXISTING PIERS SHALL BE PAID UNDER ITEM 529.15 "REMOVAL OF STRUCTURE".

18. ALL DEBRIS AND LOOSE MATERIALS IN THE COFFERDAM SHALL BE REMOVED. 50% OF THE EXCAVATION BOTTOM WITHIN THE COFFEDAM SHALL HAVE LESS THAN 1 INCH OF SEDIMENT (LOOSE ROCK/SOIL) AND NO MORE THAN 2 INCHES OF SEDIMENT IN ANY LOCATION.

19. ITEM 900.670 SPECIAL PROVISION (REMOVE AND RESET ARMORED STONE) SHALL BE USED FOR THE REMOVAL AND REPLACEMENT OF THE FLAT STONES BLOCKS UNDER THE BRIDGE AND ALONG THE CAUSEWAY. THE CONTRACTOR SHALL REPLACE ALL REMOVED STONES AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

20. "STONE FILL, TYPE IV" SHALL BE USED FOR EROSION CONTROL AS SHOWN IN THE PLANS AND AT THE DISCRETION OF THE RESIDENT ENGINEER. PAYMENT FOR MATERIAL AND PLACEMENT SHALL BE MADE UNDER ITEM 613.13, "STONE FILL, TYPE IV".

21. "ARMORED STONE" AND "STONE FILL, TYPE IV" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE SUPERSTRUCTURE IS SET.

22. "STONE FILL, TYPE I" SHALL BE USED ON THE EMBANKMENT BETWEEN THE TENDER HOUSE AND THE PROPOSED TENDER HOUSE STAIRS. PAYMENT FOR MATERIAL AND PLACEMENT SHALL BE MADE UNDER ITEM 613.10, "STONE FILL, TYPE I".

STRUCTURAL STEEL

23. THE EXISTING STRUCTURAL STEEL IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, CONSULTANTS, AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE REMOVED STRUCTURAL STEEL.

24. UNLESS OTHERWISE NOTED, ALL NEW STRUCTURAL STEEL SHALL CONFORM TO AASHTO M270/M270M GRADE 50.

25. STRUCTURAL STEEL IN THE APPROACH SPAN SHALL BE PAID UNDER ITEM 506.50, "STRUCTURAL STEEL (ROLLED BEAM)".

26. TRUNNION SUPPORT BEAMS AND PLATES, TRUNNION SUPPORT BRACING, REAR ROAD BREAK, FORWARD ROAD BREAK, AND CONTROL HOUSE FRAMING SHALL BE PAID UNDER ITEM 900.645, "SPECIAL PROVISION (STRUCTURAL STEEL - MISCELLANEOUS)".

27. BASCULE SPAN GIRDERS, DIAPHRAGMS, LATERAL BRACING, MAINTENANCE WALKWAY, TROUGH UNDER THE ROAD BREAK AND ITS SUPPORTS, SCUPPERS AND DOWNSPOUTS ON THE BASCULE SPAN, AND COUNTERWEIGHT STEEL SHALL BE PAID UNDER ITEM 900.645, "SPECIAL PROVISION (STRUCTURAL STEEL - BASCULE SPAN)".

28. STEEL GRID IN THE HALF FILLED GRID DECK SHALL BE PAID UNDER ITEM 900.670, "SPECIAL PROVISION (HALF FILLED GRID DECK).

29. HATCHES, BIRD SCREEN SPIKES, PICKET RAILING ON PIER, PIPE RAILING INSIDE PIER, PIPE RAILING AT TENDER HOUSE STAIRS, LADDERS, PLATFORMS ON TRUNNION SUPPORT BEAMS, PLATFORMS AT ELEV 99.8 FOR SUBMARINE CABLE CABINET, FENDER ACCESS STAIRS, AND PIER DRAINS SHALL BE PAID UNDER ITEM 900.645 "SPECIAL PROVISION (NON-STRUCTURAL STEEL)".

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

31. STRUCTURAL STEEL MEMBERS DESIGNATED "CVN" IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01.

32. APPROACH SPAN GIRDERS, BASCULE SPAN GIRDERS, CROSS FRAMES, DIAPHRAGMS, CONNECTION PLATES, BEARING STIFFENERS, AND SOLE PLATES SHALL BE METALIZED. BRIDGE RAIL COMPONENTS AND HAND RAIL COMPONENTS AT THE TOP OF THE PIER SHALL BE GALVANIZED THEN PAINTED. ALL OTHER HAND RAIL COMPONENTS ON THE PROJECT SHALL BE GALVANIZED. METALIZING SHALL BE IN ACCORDANCE WITH SECTION 506 AND SUBSECTION 726.09. GALVANIZING SHALL BE IN ACCORDANCE WITH SECTION 506 AND SUBSECTION 726.08. PAINTING SHALL BE IN ACCORDANCE WITH SECTION 506 AND SUBSECTION 708.03. PAINT COLOR SHALL BE GREEN, COLOR CHIP NUMBER 14062.

33. ALL FIELD CONNECTIONS SHALL BE MADE USING ASTM A325 TYPE 1 BOLTS, 7/8 INCH DIAMETER IN 15/16 INCH DIAMETER HOLES, UNLESS OTHERWISE NOTED. THE COMBINATION OF BOLT, NUT, AND WASHER SHALL BE MECHANICALLY GALVANIZED IN ACCORDANCE WITH SUBSECTION 714.05.

34. CONNECTIONS NOT SHOWN SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE RESIDENT ENGINEER FOR APPROVAL IN ACCORDANCE WITH SECTION 105.

35. IN THE DESIGN OF BOLTED CONNECTIONS, THREADS SHALL BE EXCLUDED FROM THE SHEAR PLANE.

36. AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF THE GIRDERS SHALL BE TAKEN AS DIRECTED BY THE RESIDENT ENGINEER FOR USE IN DETERMINING FINISHED GRADES AND HAUNCH DEPTHS.

37. FLEMING BRACKETS OR SIMILAR FALSEWORK SHALL BE SPACED AS REQUIRED BY DESIGN, BUT SHALL BE LIMITED TO A MAXIMUM SPACING OF 4 FEET. THE DESIGN OF FALSEWORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

38. ANY BOLT HOLES IN THE WEBS OF FASCIA GIRDERS NOT OTHERWISE FILLED SHALL BE FILLED WITH BUTTON HEAD OR HEX HEAD BOLTS. THE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19.

39. ENDS OF GIRDERS ARE TO BE VERTICAL IN FINAL POSITION. GIRDER WEBS AND CROSS FRAMES SHALL BE PLUMB IN FINAL POSITION.

CONCRETE

40. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES, AND SHALL BE PAID UNDER ITEM 514.10, "WATER REPELLANT, SILANE."

41. CONCRETE FOR APPROACH SPAN DECK AND CURB, ABUTMENT BACKWALLS AND IN THE WINGWALLS ABOVE THE TOP CONSTRUCTION JOINT SHALL BE PAID UNDER ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".

42. LIGHTWEIGHT CONCRETE IN THE HALF FILLED GRID DECK AND CURBS SHALL BE PAID UNDER ITEM 900.670, "SPECIAL PROVISION (HALF FILLED GRID DECK). FOR CONCRETE UNIT WEIGHT, SEE SHEET 71.

43. CONCRETE FOR SUBSTRUCTURES (NOT INCLUDED IN NOTE 41), APPROACH SLABS, GENERATOR PADS, AND TENDER HOUSE STAIR CONSTRUCTION SHALL BE PAID UNDER ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B".

44. CONCRETE FOR THE COUNTERWEIGHTS SHALL BE PAID UNDER ITEM 541.22, "CONCRETE CLASS A (COUNTERWEIGHT)". THE UNIT WEIGHT OF COUNTERWEIGHT CONCRETE VARIES BY ELEVATION, SEE SHEET 102 FOR DETAILS.

45. CONCRETE FOR BARRIER GATE AND WARNING GATE FOUNDATIONS SHALL BE PAID UNDER ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL EQUIPMENT).

46. THE TOP SURFACE OF SUBFOOTING POURS SHALL HAVE ¼" TO ½" ROUGHENED SURFACE AFTER LAITANCE REMOVAL TO HELP PREVENT SLIDING AT THE SUBFOOTING/FOOTING INTERFACE.

47. SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL. ALL OTHER AREAS OF BRIDGE SEATS SHALL BE SLOPED ½ INCH PER FOOT. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE GIVEN A FLOAT FINISH.

48. CONCRETE PORTIONS OF ABUTMENTS AND WINGWALLS ABOVE THE BRIDGE SEAT SHALL NOT BE PLACED UNTIL FINISH GRADES HAVE BEEN DETERMINED BY THE RESIDENT ENGINEER.

49. EACH DECK IS TO BE POURED IN ONE CONTINUOUS POUR WITH A MAXIMUM DURATION OF EIGHT HOURS. IF CIRCUMSTANCES BEYOND THE CONTRACTOR'S CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A TRANSVERSE CONSTRUCTION JOINT SHALL BE USED BETWEEN ADJACENT POURS. A MINIMUM 96 HOUR DELAY BETWEEN ADJACENT POURS SHALL BE OBSERVED. CONSTRUCTION JOINT DETAIL SHALL BE AS SHOWN ON STRUCTURES DETAIL SD-501.00, TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS, EXCEPT THAT THE TOP SURFACE OF THE JOINT SHALL BE SEALED WITH AN APPROVED METHACRYLATE CRACK SEALER. ALL DECK POURS SHALL START FROM THE LOW END OF THE SPAN.

50. LOADING ALLOWANCE ON THE NEW DECK SHALL BE IN ACCORDANCE WITH SUBSECTION 501.18(B).

51. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1 INCH X 1 INCH, UNLESS OTHERWISE NOTED.

52. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS SHOWN IN THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.

53. THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT. UPWARD KEYS SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.

CONCRETE NOTES CONTINUE, NEXT SHEET.

CONCRETE, CONT.

54. REINFORCING STEEL IN THE DECK, DECK AND WINGWALL CURBS, AND BACKWALLS ABOVE THE CONSTRUCTION JOINT SHALL BE GRADE 60 WITH LEVEL III CORROSION RESISTANCE IN ACCORDANCE WITH SECTION 507 OF THE GENERAL SPECIAL PROVISIONS, AND SHALL BE PAID UNDER ITEM 507.13, "REINFORCING STEEL, LEVEL III."

55. REINFORCING STEEL IN THE PIERS SHALL BE GRADE 60 WITH LEVEL II CORROSION RESISTANCE AND SHALL BE PAID UNDER ITEM 507.12, "REINFORCING STEEL, LEVEL II." THESE BARS SHALL BE CONTINUOUS HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM-A1094.

56. REINFORCING STEEL IN THE ABUTMENTS (BELOW THE BRIDGE SEAT), GENERATOR PADS AND TENDER HOUSE STAIR CONSTRUCTION SHALL BE GRADE 60 WITH LEVEL I CORROSION RESISTANCE AND SHALL BE PAID UNDER ITEM 507.11, "REINFORCING STEEL, LEVEL I".

57. REINFORCING STEEL IN THE APPROACH SLABS SHALL BE LEVEL 1 EPOXY COATED AND PAID FOR UNDER 507.11.

58. REINFORCING STEEL IN BARRIER GATE AND WARNING GATE FOUNDATIONS SHALL BE GRADE 60 WITH LEVEL I CORROSION RESISTANCE AND SHALL BE PAID UNDER ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL EQUIPMENT).

59. MINIMUM COVER FOR REINFORCING STEEL SHALL BE AS INDICATED IN THE PLANS.

60. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE" AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

TREMIE SEAL CONCRETE NOTES

61. CONCRETE FOR TREMIE SEAL SHALL BE PAID UNDER ITEM 541.30, "CONCRETE, CLASS C". PAYMENT FOR TREMIE SEAL CONCRETE WILL BE MADE ONLY FOR CONCRETE WITHIN THE LIMITS SHOWN ON THE PLANS. UNDERWATER TREMIE CONCRETE POURS SHALL BE IN ACCORDANCE WITH SECTION 541.11.

62. THE SEAL CONCRETE PLACEMENT DIMENSIONS REPRESENT THE MINIMUM SEAL SIZE NECESSARY TO MEET THE DESIGN REQUIREMENTS AND ARE NOT BASED ON THE USE OF ANY PARTICULAR SHEET PILE SECTION.

63. THE PAY LIMITS FOR SEAL CONCRETE SHALL BE TO THE DIMENSIONS SHOWN ON THE PLANS. NO ADDITIONAL PAYMENT WILL BE MADE FOR THE CONCRETE PLACED OUTSIDE OF THESE LIMITS.

64. WHEN SHEET PILING IS USED TO SEAL COFFERDAMS, APPROPRIATE ROLLED CORNERS SHALL BE USED, AND THE INSIDE FACE OF THE SHEET PILING SHALL BE AT OR OUTSIDE OF THE SEAL CONCRETE DIMENSIONS SHOWN.

65. THE DEPTH OF THE SEAL IS SET FOR A WATER ELEVATION OF 97.6 FEET. IF THE WATER ELEVATION AT THE TIME OF CONSTRUCTION IS HIGHER, THE CONTRACTOR SHALL INSTALL ROCK ANCHORS TO RESIST HYDROSTATIC PRESSURE DUE TO ANTICIPATED WATER LEVEL DURING CONSTRUCTION. ALL COSTS FOR THE DESIGN AND INSTALLATION OF ROCK ANCHORS SHALL BE PAID UNDER ITEM 900.620 "SPECIAL PROVISION (UNDERWATER ROCK ANCHORS)". CONTRACTOR SHALL SUBMIT THE TREMIE SEAL CONSTRUCTION DRAWINGS AND ROCK ANCHOR DESIGNS IN ACCORDANCE WITH SECTION 105 FOR APPROVAL BY THE ENGINEER.

MICROPILE FOUNDATIONS

66. MICROPILE CONSTRUCTION AT THE ABUTMENTS, BARRIER GATES AND TRAFFIC SIGNALS SHALL BE PAID UNDER ITEM 900.640 SPECIAL PROVISION (MICROPILE, CASED) AND ITEM 900.640 SPECIAL PROVISION (MICROPILE, UNCASED).

67. EXISTING TIMBER PILES ARE ANTICIPATED IN THE VICINITY OF THE ABUTMENTS. THE CONTACTOR SHALL MAKE PROVISIONS TO MAINTAIN TOLERANCES FOR LOCATION AND BATTER OF THE MICROPILES AS NOTED IN THE FOUNDATION PLANS.

68. THE ABUTMENT MICROPILES ARE DESIGNED TO SUPPORT A MAXIMUM AXIAL LOAD OF 123 KIPS PER PILE IN COMPRESSION AT THE STRENGTH LIMIT STATE. THE NOMINAL AXIAL RESISTANCE IS 756 KIPS PER PILE.

69. THE BARRIER GATE MICROPILES ARE DESIGNED TO SUPPORT A MAXIMUM AXIAL LOAD OF 118 KIPS PER PILE IN COMPRESSION AND 52 KIPS PER PILE IN TENSION AT THE STRENGTH LIMIT STATE. THE NOMINAL AXIAL RESISTANCE IS 183 KIPS PER PILE IN COMPRESSION AND 59 KIPS PER PILE IN TENSION.

70. MINIMUM MICROPILE CASING OUTSIDE DIAMETER = 9.625 INCHES.
    MINIMUM MICROPILE STEEL CASING THICKNESS = 0.472 INCHES.
    MINIMUM UNCASED MICROPILE DIAMETER = 8 INCHES (ROCK SOCKET).

71. EXTEND CASED PORTION OF MICROPILE A MINIMUM OF SIX INCHES BELOW TOP OF COMPETENT BEDROCK. EXTEND UNCASED PORTION (ROCK SOCKET) A MINIMUM OF SIX FEET BELOW THE BOTTOM OF CASING.

72. THE TOPS OF THE PILES AT ABUTMENTS SHALL BE CUT OFF AT ELEVATION 106.95'.

73. ELEVATION FOR TOP OF PILE AT BARRIER GATE FOUNDATIONS IS 1'-3" ABOVE THE BOTTOM OF CONCRETE AND VARIES BY GATE LOCATION. ELEVATIONS SHALL BE DETERMINED FROM THE PROFILE AND CROSS SLOPE.

74. MICROPILES SHALL BE INSTALLED SUCH THAT THE CENTER OF EACH PILE DOES NOT VARY BY MORE THAN 3" FROM THE LOCATIONS SHOWN IN THE PLANS. MICROPILES SHALL NOT VARY FROM THE VERTICAL OR ESTABLISHED BATTER BY MORE THAN ¼" PER FOOT, AS MEASURED ABOVE GROUND.

BEARINGS

75. APPROACH SPAN BEARINGS, INCLUDING SOLE PLATES, ANCHOR BOLTS, NUTS AND WASHERS, AND ALL ASSOCIATED WORK, SHALL BE PAID UNDER ITEM 531.17 "BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD", AND SHALL CONFORM TO APPLICABLE SUBSECTIONS OF SECTIONS 531 AND 731, UNLESS NOTED OTHERWISE.

76. ELASTOMERIC BEARINGS WERE DESIGNED USING AASHTO METHOD "A" WITH THE FOLLOWING ASSUMPTIONS. LOADS ARE PER BEARING.
    UNFACTORED DEAD LOAD = 35 KIPS
    UNFACTORED LIVE LOAD (NO IMPACT) = 57 KIPS
    THERMAL MOVEMENT RANGE = 0.22IN

77. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE BEARING LOCATION ON THE BRIDGE AND A DIRECTION ARROW THAT INDICATES UPSTATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.

78. BEARINGS SHOULD BE INSTALLED AT TEMPERATURES BETWEEN 20°F AND 70°F. INSTALLATION TEMPERATURES OUTSIDE OF THIS RANGE WILL REQUIRE ADJUSTMENT.

79. ELASTOMER MATERIAL SHALL HAVE A SHEAR MODULUS OF 165 PSI +/- 15%.

80. STEEL REINFORCED ELASTOMERIC BEARINGS SHALL HAVE A MINIMUM 1/4 IN EDGE SEAL OF ELASTOMER INTEGRAL WITH BEARING OVER ALL INTERNAL PLATES, UNLESS OTHERWISE NOTED.

81. ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF SUBSECTION 714.08, EXCEPT THAT ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GRADE 55. THE COMBINATION OF ANCHOR BOLT, NUT, AND WASHER SHALL BE MECHANICALLY GALVANIZED IN ACCORDANCE WITH SUBSECTION 714.05. GALVANIZING THAT HAS BEEN DAMAGED SHALL BE REPAIRED IN ACCORDANCE WITH SUBSECTION 726.08.

82. ANCHOR BOLT INSTALLATION SHALL CONFORM TO SUBSECTION 531.05.

83. SOLE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M270 GRADE 50. SOLE PLATES SHALL BE VULCANIZED TO THE ELASTOMERIC PAD. SOLE PLATES SHALL BE BLAST CLEANED AFTER THE VULCANIZATION PROCEDURE.

84. FOR SOLE PLATE FINISHING, SEE STRUCTURAL STEEL NOTES. WELDING AREA SHALL BE MASKED OFF. AFTER WELDING TO THE GIRDER FLANGE, CLEAN AND APPLY FINISH COATS TO THE UNFINISHED AREA IN ACCORDANCE WITH SUBSECTION 726.08. THIS WORK SHALL BE PAID UNDER ITEM 531.17.

HDR

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12bl42notes2.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P. LEFEBVRE
DESIGNED BY: P. LEFEBVRE	CHECKED BY: M. MOZER
GENERAL NOTES 2	SHEET 12 OF 379

GPS/NGS CONTROL POINTS

ST ALBANS CORS ARP

PID DJ8959
N = 842210.20
E = 1489218.57
ELLIP HT = 385.75

STATION IS A GPS CONTINOUSLY OPERATING REFERENCE STATION. STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA. THE ANTENNA IS MOUNTED ON THE ROOF OF 12-20 ACADEMY DRIVE, ST ALBANS CITY. THE MONUMENT IS ATTACHED TO A TWO STORY CONCRETE/BRICK BUILDING WITH A 10 FT CONCRETE FOUNDATION BUILT IN THE MID 1960'S. THE MAST IS A 1.75" DIA GALV PIPE THAT IS 108 INCHES LONG. THE MAST IS ATTACHED TO A STEEL MOUNTING FRAME WITH THREE ATTACHMENTS CONSISTING OF 3/8 INCH SS THROUGH BOLTS. THE MOUNTING FRAME IS ATTACHED TO THE BUILDING USING 8 ATTACHMENT POINTS. THE TOP 4 ARE 1/2 INCH SS BOLTS SECURED TO THE BRICK OR CONC WITH LEAD ANCHORS. THE BOTTOM 4 ATTACHMENTS ARE TROUGH BOLTED AND CONSIST OF 1/2 INCH SS THREADED ROD AND NUTS.

BEN

PID VT0168 (VSE #10)
N = 823448.52
E = 1436140.59
ELEV. = 167.14

GENERAL LOCATION, 16 MI (25.7 KM) NORTH OF BURLINGTON, 11 MI (17.7 KM) SOUTHWEST OF ST. ALBANS. TO REACH, FROM THE JUNCTION OF US ROUTE 2 AND VT ROUTE 314 IN GRAND ISLE, PROCEED NORTH ON ROUTE 2 FOR 3.8 MI (6.1 KM) TO THE MARK ON THE RIGHT AND EAST. THE MARK IS LOCATED 10.3 M (33.8 FT) NORTH OF UTILITY POLE NUMBER 57, 6.8 M (22.3 FT) EAST OF THE CENTERLINE OF ROUTE 2, AND 2.3 M (7.5 FT) WEST OF A FIBERGLASS WITNESS POST.

RESET 1950

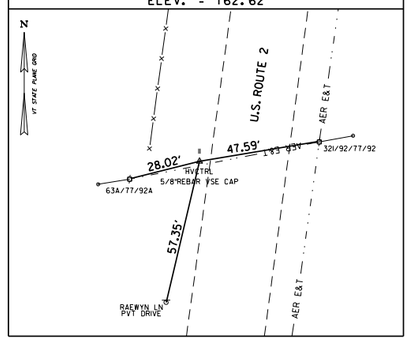
PID GS0572
N = 826911.46
E = 1435360.83
ELEV. = 117.03

GENERAL LOCATION, NORTH HERO, VT. 3.1 MI (5.0 KM) NORTH OF GRAND ISLE, IN SOUTHEAST CORNER OF BRIDGE OVER HERO BAY.

TRAVERSE TIES

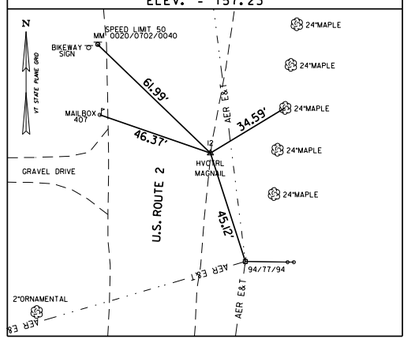
HVCTRL #11 — 5/8" REBAR WITH VSE CONTROL CAP

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ELEV. = 162.62



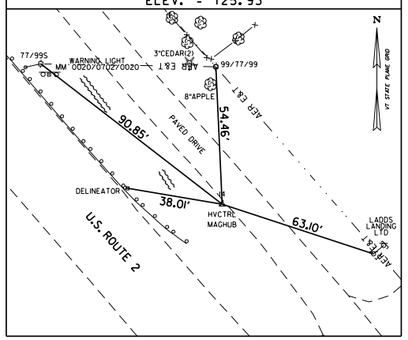
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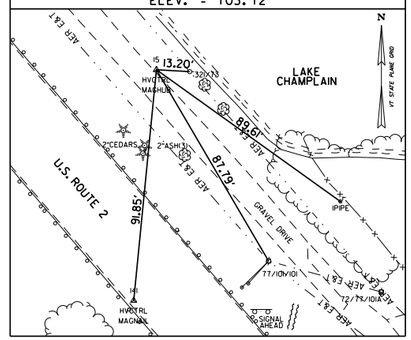
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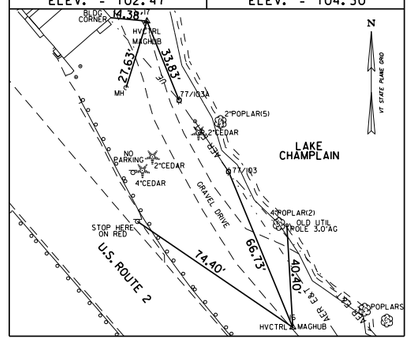
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HVCTRL #16 — HVCTRL #17

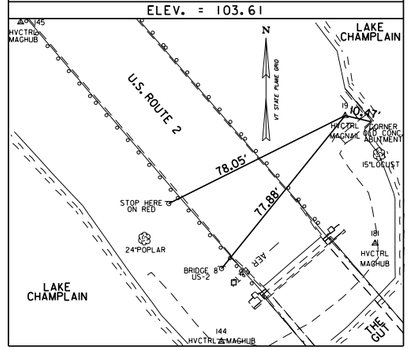
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NORTH = 826762.07	NORTH = 826883.29
EAST = 1435508.69	EAST = 1435450.99
ELEV. = 102.47	ELEV. = 104.30



* SURVEY COMPLETED: AUGUST 14, 2014 BY VSE, M. HUDSON-PC, S. HOUSTON

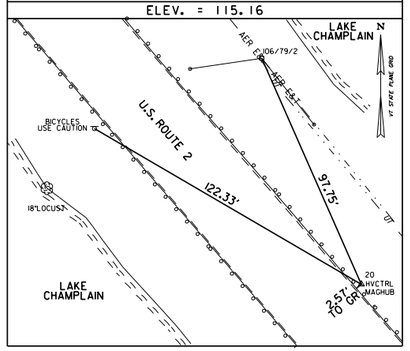
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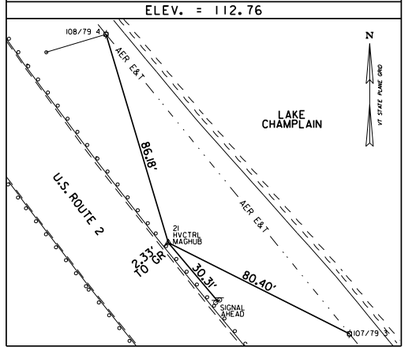
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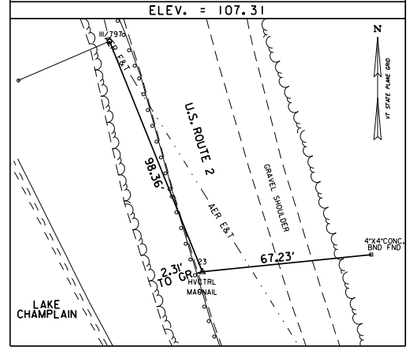
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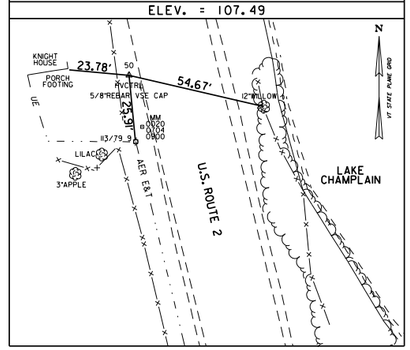
HVCTRL #23 — MAGNAIL

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ELEV. = 107.31



HVCTRL #50 — 5/8" REBAR WITH VSE CONTROL CAP

NORTH = 828641.10
EAST = 1434335.97
ELEV. = 107.49



DATUM	
VERTICAL	NAVD 88(GEOID12A) FT
HORIZONTAL	NAD 83(2011) sFT
ADJUSTMENT	LSQ

VERMONT SURVEY AND ENGINEERING

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: VSE
SURVEY TIE SHEET

PLOT DATE: 2/6/2018
DRAWN BY: VSE
CHECKED BY: VSE
SHEET 13 OF 379

GENERAL INFORMATION

SYMBOLOGY LEGEND NOTE

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

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

POINT	CODE	DESCRIPTION
	CH	CHANNEL EASEMENT
	CONST	CONSTRUCTION EASEMENT
	CUL	CULVERT EASEMENT
	D&C	DISCONNECT & CONNECT
	DIT	DITCH EASEMENT
	DR	DRAINAGE EASEMENT
	DRIVE	DRIVEWAY EASEMENT
	EC	EROSION CONTROL
	HWY	HIGHWAY EASEMENT
	I&M	INSTALL & MAINTAIN EASEMENT
	LAND	LANDSCAPE EASEMENT
	R&RES	REMOVE & RESET
	R&REP	REMOVE & REPLACE
	SR	SLOPE RIGHT
	UE	UTILITY EASEMENT
	(P)	PERMANENT EASEMENT
	(T)	TEMPORARY EASEMENT
■	BNDNS	BOUND SET
⊡	BNDNS	BOUND TO BE SET
●	IPNS	IRON PIN SET
◎	IPNS	IRON PIN TO BE SET
⊠	CALC	EXISTING ROW POINT
○	PROW	PROPOSED ROW POINT
[LENGTH]		LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT	CODE	DESCRIPTION
	APL	BOUND APPARENT LOCATION
	BM	BENCHMARK
	BND	BOUND
	CB	CATCH BASIN
	COMB	COMBINATION POLE
	DITHR	DROP INLET THROATED DNC
	EL	ELECTRIC POWER POLE
	FPOLE	FLAGPOLE
	GASFIL	GAS FILLER
	GP	GUIDE POST
	GSO	GAS SHUT OFF
	GUY	GUY POLE
	GUYW	GUY WIRE
	GV	GATE VALUE
	H	TREE HARDWOOD
	HCTRL	CONTROL HORIZONTAL
	HVCTRL	CONTROL HORIZ. & VERTICAL
	HYD	HYDRANT
	IP	IRON PIN
	IPIPE	IRON PIPE
	LI	LIGHT - STREET OR YARD
	MB	MAILBOX
	MH	MANHOLE (MH)
	MM	MILE MARKER
	PM	PARKING METER
	PMK	PROJECT MARKER
	POST	POST STONE/WOOD
	RRSIG	RAILROAD SIGNAL
	RRSL	RAILROAD SWITCH LEVER
	S	TREE SOFTWOOD
	SAT	SATELLITE DISH
	SHRUB	SHRUB
	SIGN	SIGN
	STUMP	STUMP
	TEL	TELEPHONE POLE
	TIE	TIE
	TSIGN	SIGN W/DOUBLE POST
	VCTRL	CONTROL VERTICAL
	WELL	WELL
	WSO	WATER SHUT OFF

THESE ARE COMMON VTRANS SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADUIS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE

UTILITY SYMBOLOGY

UNDERGROUND UTILITIES

- UGU — UTILITY (GENERIC-UNKNOWN)
- UT — TELEPHONE
- UE — ELECTRIC
- UC — CABLE (TV)
- UEC — ELECTRIC+CABLE
- UET — ELECTRIC+TELEPHONE
- UCT — CABLE+TELEPHONE
- UECT — ELECTRIC+CABLE+TELEP.
- G — GAS LINE
- W — WATER LINE
- S — SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)

- AGU — UTILITY (GENERIC-UNKNOWN)
- T — TELEPHONE
- E — ELECTRIC
- C — CABLE (TV)
- EC — ELECTRIC+CABLE
- ET — ELECTRIC+TELEPHONE
- AER E&T — ELECTRIC+TELEPHONE
- CT — CABLE+TELEPHONE
- ECT — ELECTRIC+CABLE+TELEP.
- UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOGY

- CZ — CLEAR ZONE
- PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

- TOP OF CUT SLOPE
- TOE OF FILL SLOPE
- STONE FILL
- BOTTOM OF DITCH ℄
- CULVERT PROPOSED
- STRUCTURE SUBSURFACE
- PDF — PDF — PROJECT DEMARCATION FENCE
- BF — BF — BARRIER FENCE
- TREE PROTECTION ZONE (TPZ)
- STRIPING LINE REMOVAL
- SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLOGY

BOUNDARY LINES

- TOWN LINE — TOWN BOUNDARY LINE
- COUNTY LINE — COUNTY BOUNDARY LINE
- STATE LINE — STATE BOUNDARY LINE
- PROPOSED STATE R.O.W. (LIMITED ACCESS)
- PROPOSED STATE R.O.W.
- STATE ROW (LIMITED ACCESS)
- STATE ROW
- TOWN ROW
- PERMANENT EASEMENT LINE (P)
- TEMPORARY EASEMENT LINE (T)
- SURVEY LINE
- P/L — PROPERTY LINE (P/L)
- SR SR SR — SLOPE RIGHTS
- 6f — 6f — 6F PROPERTY BOUNDARY
- 4f — 4f — 4F PROPERTY BOUNDARY
- HAZ — HAZ — HAZARDOUS WASTE

EPSC LAYOUT PLAN SYMBOLOGY

EPSC MEASURES

- FILTER CURTAIN
- SILT FENCE
- SILT FENCE WOVEN WIRE
- CHECK DAM
- DISTURBED AREAS REQUIRING RE-VEGETATION
- EROSION MATTING

ENVIRONMENTAL RESOURCES

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

ARCHEOLOGICAL & HISTORIC

- ARCH — ARCHEOLOGICAL BOUNDARY
- HISTORIC DIST — HISTORIC DISTRICT BOUNDARY
- HISTORIC — HISTORIC AREA
- Ⓗ HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

EXISTING FEATURES

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

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: zl2bl42leg.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
CONVENTIONAL SYMBOLOGY LEGEND SHEET

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 14 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 03:33:14 PM
USER = $NTUSER$

N

VT STATE PLANE GRID

EXISTING R.O.W.

UTILITY POLE
TO REMAIN

US ROUTE 2
TO NORTH HERO

AER E&T

US ROUTE 2

WESTBOUND
EASTBOUND

MATCH LINE, SEE NEXT SHEET

EXISTING R.O.W.

UTILITY POLE
TO REMAIN

THE GUT

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

CHA

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: zl2bl42bdr.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
ROADWAY LAYOUT SHEET 1	SHEET 15 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 03:33:23 PM
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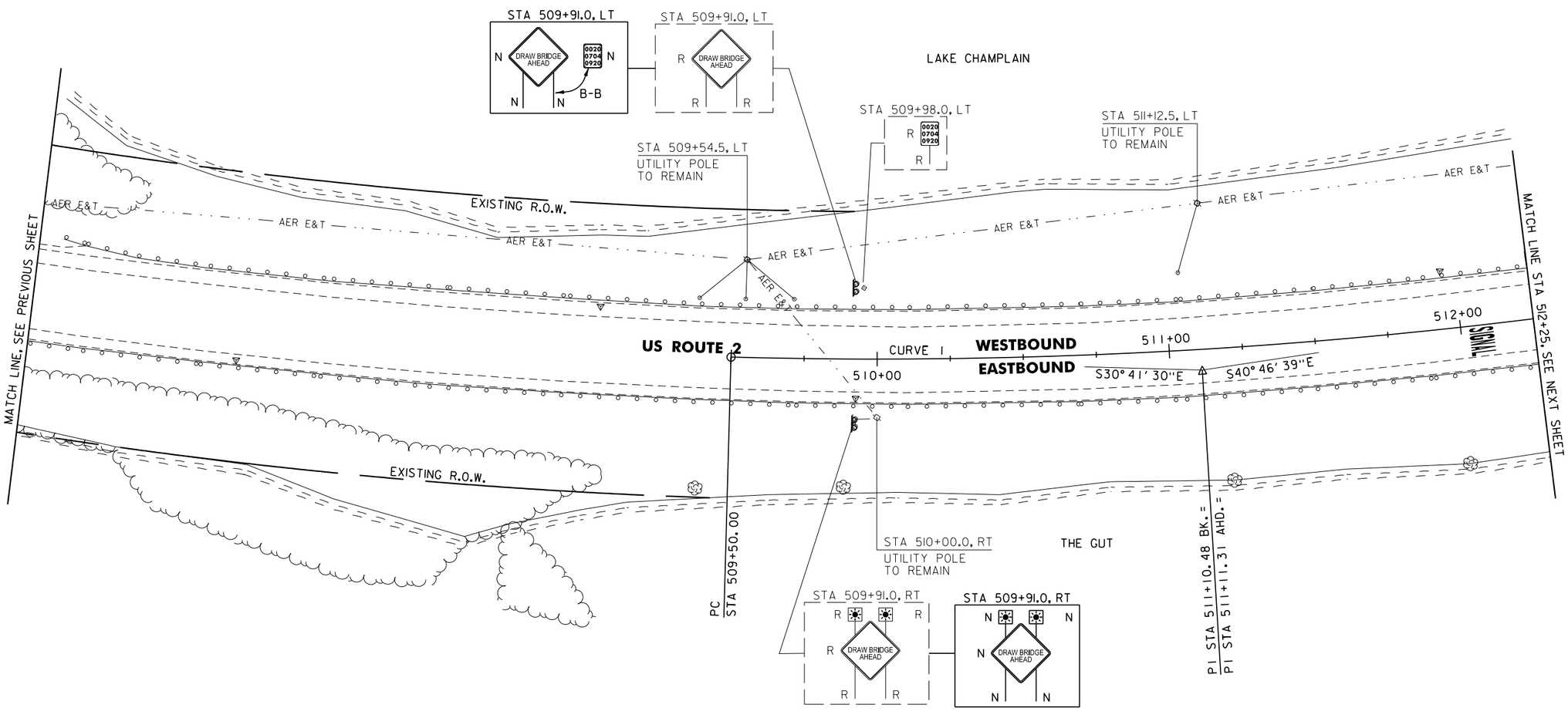
REMOVAL OF EXISTING PAVEMENT MARKINGS
STA 512+07.00 "S,I,G,N,A,L" RT

DURABLE LETTER OR SYMBOL, POLYUREA
STA 512+07.00 RT, "S,I,G,N,A,L" (6 EA)

REMOVING SIGNS
AS SHOWN - 3

FLASHING BEACON, GROUND MOUNTED
STA 509+91.0 RT (1EA)

N
VT STATE PLANE GRID



CURVE 1
DELTA = 10° 05' 10" LT
D = 3° 08' 04"
R = 1828.00'
T = 161.31'
L = 321.79'
E = 7.10'

SIGN LEGEND
R = REMOVE
S = SALVAGE
N = NEW
RET = RETAIN
B-B = BACK TO BACK
EXISTING = — — —
NEW = ————

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

CHA

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE	
PROJECT NUMBER: BHF 028-1(26)	
FILE NAME: z12b142bdr.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
ROADWAY LAYOUT SHEET 2	SHEET 16 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 03:33:27 PM
USER = $NTUSER$

STEEL BEAM GUARDRAIL, GALVANIZED
STA 513+93.9 - STA 516+50.0 LT
STA 513+93.9 - STA 516+50.0 RT

REMOVAL AND DISPOSAL OF GUARDRAIL
STA 513+94.9 - STA 516+50.0 LT
STA 513+94.9 - STA 516+50.0 RT

DURABLE 24 INCH STOP BAR, POLYUREA
AND TEMPORARY 24 INCH STOP BAR, PAINT
STA 515+50.00 RT

DURABLE 4 INCH WHITE LINE, POLYUREA
AND TEMPORARY 4 INCH WHITE LINE, PAINT
(ALL LINES WILL INCLUDE EDGE LINE BREAKS AND
RADIUS FOR TOWN HIGHWAYS)
STA 512+50.00 - STA 516+50.00 EDGE LINE LT & RT

DURABLE 4 INCH YELLOW LINE, POLYUREA
AND TEMPORARY 4 INCH YELLOW LINE, PAINT
(ALL LINES WILL INCLUDE C/L BREAKS
FOR TOWN HIGHWAYS)
S = SOLID, D = DASHED LT ℄ RT
STA 512+50.00 - STA 516+50.00 S - S

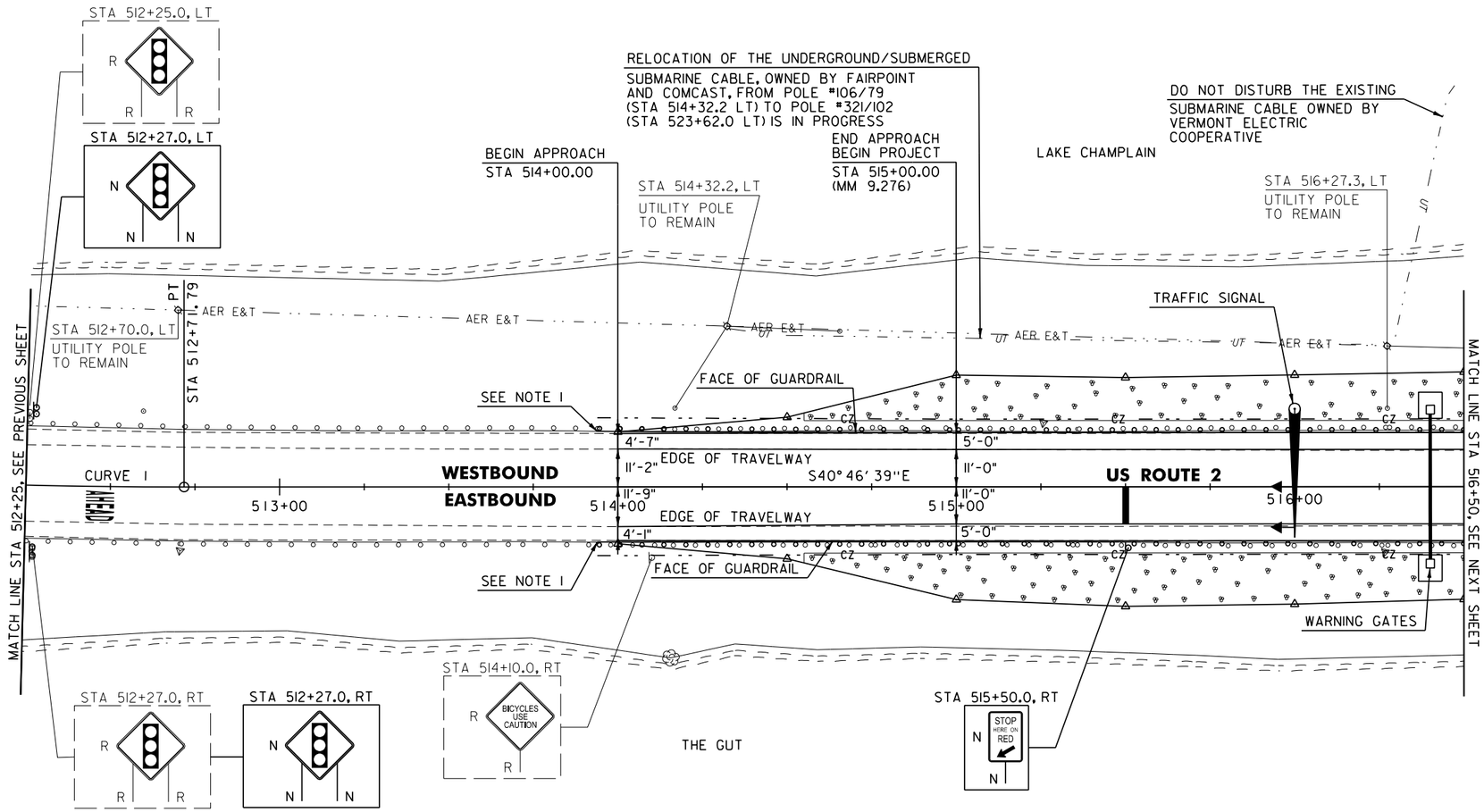
REMOVAL OF EXISTING PAVEMENT MARKINGS
STA 512+47.00 "A,H,E,A,D" RT

DURABLE LETTER OR SYMBOL, POLYUREA
STA 512+47.00 RT, "A,H,E,A,D" (5 EA)

STONE FILL, TYPE IV
STA 514+55.0 - STA 516+50.0 LT
STA 514+55.0 - STA 516+50.0 RT

REMOVING SIGNS
AS SHOWN - 3

GEOTEXTILE UNDER STONE FILL
STA 514+55.0 - STA 516+50.0 LT
STA 514+55.0 - STA 516+50.0 RT



CURVE 1
DELTA = 10° 05' 10" LT
D = 3° 08' 04"
R = 1828.00'
T = 161.31'
L = 321.79'
E = 7.10'

SIGN LEGEND
R = REMOVE
S = SALVAGE
N = NEW
RET = RETAIN
B-B = BACK TO BACK
EXISTING = — — —
NEW = ————

NOTE:

1. THE CONTRACTOR SHALL SPLICE THE EXISTING GUARDRAIL AND CONNECT PROPOSED GUARDRAIL TO REMAINING EXISTING GUARDRAIL.

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

CHA

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE	
PROJECT NUMBER: BHF 028-1(26)	
FILE NAME: z12b142bdr.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
ROADWAY LAYOUT SHEET 3	SHEET 17 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 03:33:28 PM
USER = $NTUSER$

STEEL BEAM GUARDRAIL, GALVANIZED
STA 516+50.0 - STA 517+18.9 LT
STA 516+50.0 - STA 517+18.9 RT
STA 520+83.3 - STA 521+07.6 LT
STA 520+83.3 - STA 522+25.0 RT
STA 521+14.5 - STA 522+25.0 LT

REMOVAL AND DISPOSAL OF GUARDRAIL
STA 516+50.0 - STA 517+69.8 LT
STA 516+50.0 - STA 517+69.8 RT
STA 520+29.9 - STA 522+25.0 RT
STA 520+30.1 - STA 520+63.5 LT
STA 521+15.8 - STA 522+25.0 LT

ANCHOR FOR STEEL BEAM RAIL
STA 520+99.2 LT
STA 521+22.8 LT

DELINEATOR WITH STEEL POST
STA 521+07.6 LT
STA 521+14.5 LT

DURABLE 4 INCH WHITE LINE, POLYUREA AND TEMPORARY 4 INCH WHITE LINE, PAINT
(ALL LINES WILL INCLUDE EDGE LINE BREAKS AND RADIUS FOR TOWN HIGHWAYS)
STA 516+50.00 - STA 522+25.00 EDGE LINE LT & RT
STA 521+10.00 - STA 521+50.00 PARKING SPACE EDGE LINES LT

DURABLE 4 INCH YELLOW LINE, POLYUREA AND TEMPORARY 4 INCH YELLOW LINE, PAINT
(ALL LINES WILL INCLUDE C/L BREAKS FOR TOWN HIGHWAYS)
S = SOLID, D = DASHED LT ℄ RT
STA 516+50.00 - STA 522+25.00 S - S

REMOVAL OF EXISTING TRAFFIC CONTROL SIGNAL SYSTEM
STA 517+60.0 RT
STA 520+41.4 LT

6 INCH UNDERDRAIN PIPE
STA 520+50.0 - STA 521+31.5 LT

6 INCH UNDERDRAIN CARRIER PIPE
STA 521+31.5 - STA 521+38.9 LT

UNDERDRAIN FLUSHING BASIN
STA 520+50.0 LT

GEOTEXTILE FOR UNDERDRAIN TRENCH LINING
STA 520+50.0 - STA 521+31.5 LT

STONE FILL, TYPE IV
STA 516+50.0 - STA 517+70.4 LT
STA 516+50.0 - STA 517+70.4 RT
STA 520+29.6 - STA 522+25.0 RT
STA 520+29.6 - STA 520+72.8 LT
STA 521+02.9 - STA 522+25.0 LT

GEOTEXTILE UNDER STONE FILL
STA 516+50.0 - STA 517+70.4 LT
STA 516+50.0 - STA 517+70.4 RT
STA 520+29.6 - STA 522+25.0 RT
STA 520+29.6 - STA 520+72.8 LT
STA 521+02.9 - STA 522+25.0 LT

REMOVING SIGNS
AS SHOWN - 6

NORTH
VT STATE PLANE GRID

DO NOT DISTURB THE EXISTING SUBMARINE CABLE OWNED BY VERMONT ELECTRIC COOPERATIVE

STA 520+50.0, LT
N BRIDGE 8 US-2 N

TEMPORARY IMPACTS FOR SHEET PILE BULKHEAD

STA 521+43.0, LT
UTILITY POLE TO REMAIN

STA 521+53.0, LT
R ANY TIME R R

STA 521+77.0, LT
UTILITY POLE TO REMAIN

STA 521+38.9 LT
UNDERDRAIN OUTLET
INV. = 110.50

PROPOSED OUTDOOR GENERATOR PAD

END BRIDGE
STA 520+29.59

STA 520+41.4, LT
SIGNAL TO BE REMOVED

STA 521+69.0, LT
R STOP HERE ON RED R

TEMPORARY IMPACTS FOR SHEET PILE BULKHEAD

PROPOSED OUTDOOR GENERATOR PAD

BEGIN BRIDGE
STA 517+70.41

BARRIER GATE

FACE OF GUARDRAIL

EDGE OF TRAVELWAY

US ROUTE 2

NORTH HERO — GRAND ISLE TOWN LINE

LAKE CHAMPLAIN

2+00

STATION EQUALITY
STA 519+00.00
US ROUTE 2 =
STA 1+00.00
CHANNEL ALIGNMENT
DELTA = 90° 00' 00" LT

1+00

WESTBOUND
EASTBOUND

519+00

517+00

518+00

520+00

521+00

522+00

S40° 46' 39"E

N49° 13' 21"E

0+00

5'-0" 11'-0" 11'-0" 5'-0" 8'-0" 20'-0" 20'-0" 8'-0" 5'-0" 11'-0" 11'-0" 5'-0"

MATCH LINE STA 516+50, SEE PREVIOUS SHEET

MATCH LINE STA 522+25, SEE NEXT SHEET

STA 517+19.0, RT
R STOP HERE ON RED R

STA 517+60.0, RT
SIGNAL TO BE REMOVED

BRIDGE RAILING LAYOUT
SCALE ⅛" = 1'-0"

STA 518+18.0, RT
R GRAND ISLE NORTH HERO R

STA 517+25.0, RT
N BRIDGE 8 US-2 N

STA 518+40.0, RT
N GRAND ISLE NORTH HERO N N

CONSTRUCTION LIMIT FOR REMOVAL & INSTALLATION OF PIER

CONSTRUCTION LIMIT FOR REMOVAL & INSTALLATION OF PIER

BARRIER GATE

WARNING GATES

SIGN LEGEND
R = REMOVE
S = SALVAGE
N = NEW
RET = RETAIN
B-B = BACK TO BACK
EXISTING = — — —
NEW = ————

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

CHA

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142bdr.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
ROADWAY LAYOUT SHEET 4
PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 18 OF 379

FILE NAME = $FILE$
DATE/TIME = Monday, May 18, 2020 04:01:18 PM
USER = $NTUSER$

STEEL BEAM GUARDRAIL, GALVANIZED
STA 522+25.0 - STA 526+02.5 LT
STA 522+25.0 - STA 525+93.6 RT

REMOVAL AND DISPOSAL OF GUARDRAIL
STA 522+25.0 - STA 526+01.5 LT
STA 522+25.0 - STA 525+92.6 RT

DURABLE 4 INCH WHITE LINE, POLYUREA AND TEMPORARY 4 INCH WHITE LINE, PAINT
(ALL LINES WILL INCLUDE EDGE LINE BREAKS AND RADIUS FOR TOWN HIGHWAYS)
STA 522+25.00 - STA 526+00.00 EDGE LINE LT & RT

DURABLE 4 INCH YELLOW LINE, POLYUREA AND TEMPORARY 4 INCH YELLOW LINE, PAINT
(ALL LINES WILL INCLUDE C/L BREAKS FOR TOWN HIGHWAYS)
S = SOLID, D = DASHED LT C RT
STA 522+25.00 - STA 526+00.00 S - S

DURABLE 24 INCH STOP BAR, POLYUREA AND TEMPORARY 24 INCH STOP BAR, PAINT
STA 523+00.00 LT

DURABLE LETTER OR SYMBOL, POLYUREA
STA 525+51.00 LT, "A,H,E,A,D" (5 EA)
STA 525+91.00 LT, "S,I,G,N,A,L" (6 EA)

TEMPORARY LETTER OR SYMBOL, PAINT
STA 525+51.00 LT, "A,H,E,A,D" (10 EA)
STA 525+91.00 LT, "S,I,G,N,A,L" (12 EA)

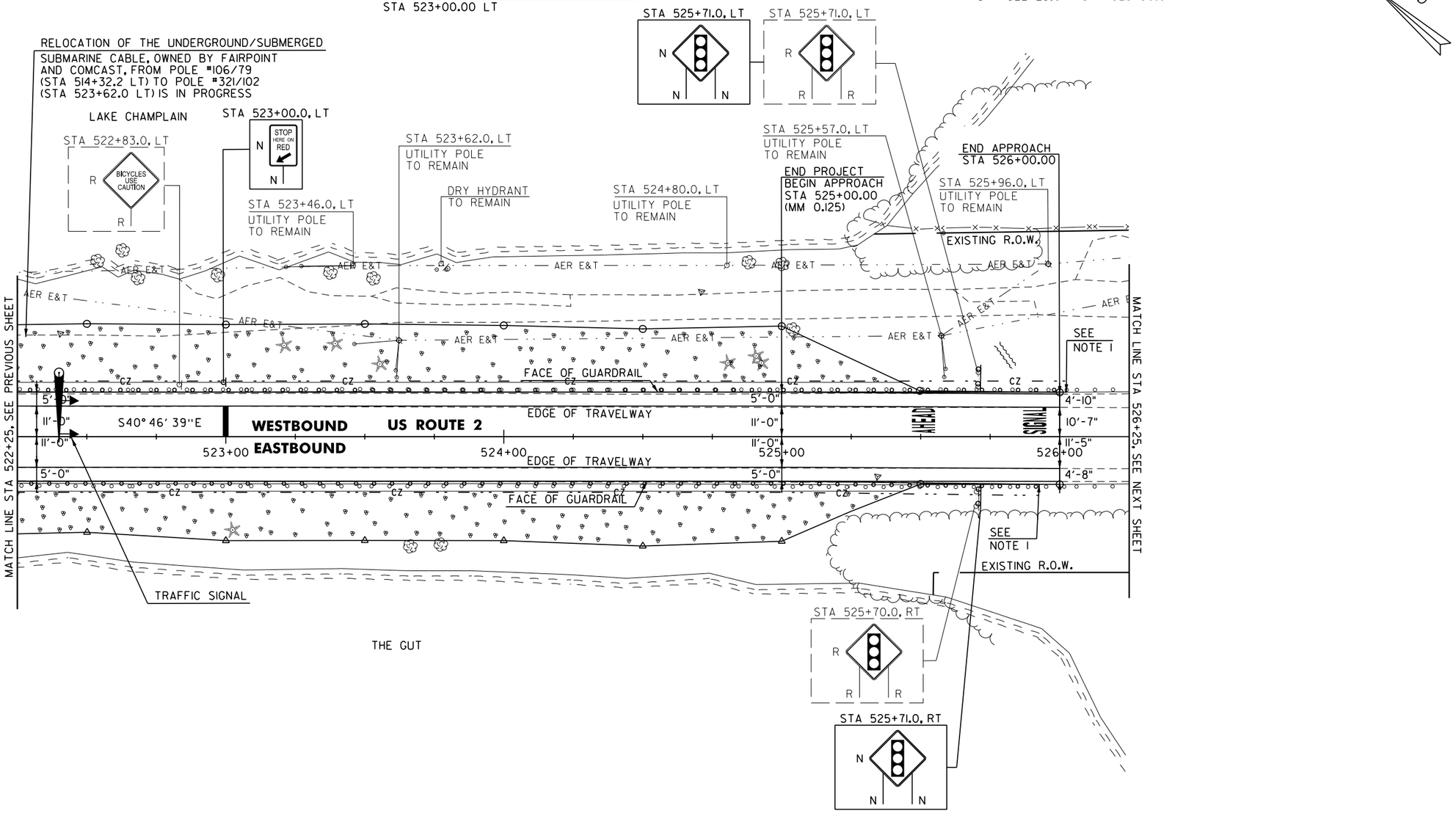
REMOVING SIGNS
AS SHOWN - 3

STONE FILL, TYPE IV
STA 522+25.0 - STA 525+50.0 LT
STA 522+25.0 - STA 525+50.0 RT

GEOTEXTILE UNDER STONE FILL
STA 522+25.0 - STA 525+50.0 LT
STA 522+25.0 - STA 525+50.0 RT

N
VT STATE PLANE GRID

RELOCATION OF THE UNDERGROUND/SUBMERGED SUBMARINE CABLE, OWNED BY FAIRPOINT AND COMCAST, FROM POLE #106/79 (STA 514+32.2 LT) TO POLE #321/102 (STA 523+62.0 LT) IS IN PROGRESS



NOTE:

1. THE CONTRACTOR SHALL SPLICE THE EXISTING GUARDRAIL AND CONNECT PROPOSED GUARDRAIL TO REMAINING EXISTING GUARDRAIL.

SIGN LEGEND
R = REMOVE
S = SALVAGE
N = NEW
RET = RETAIN
B-B = BACK TO BACK
EXISTING = — — —
NEW = ————

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

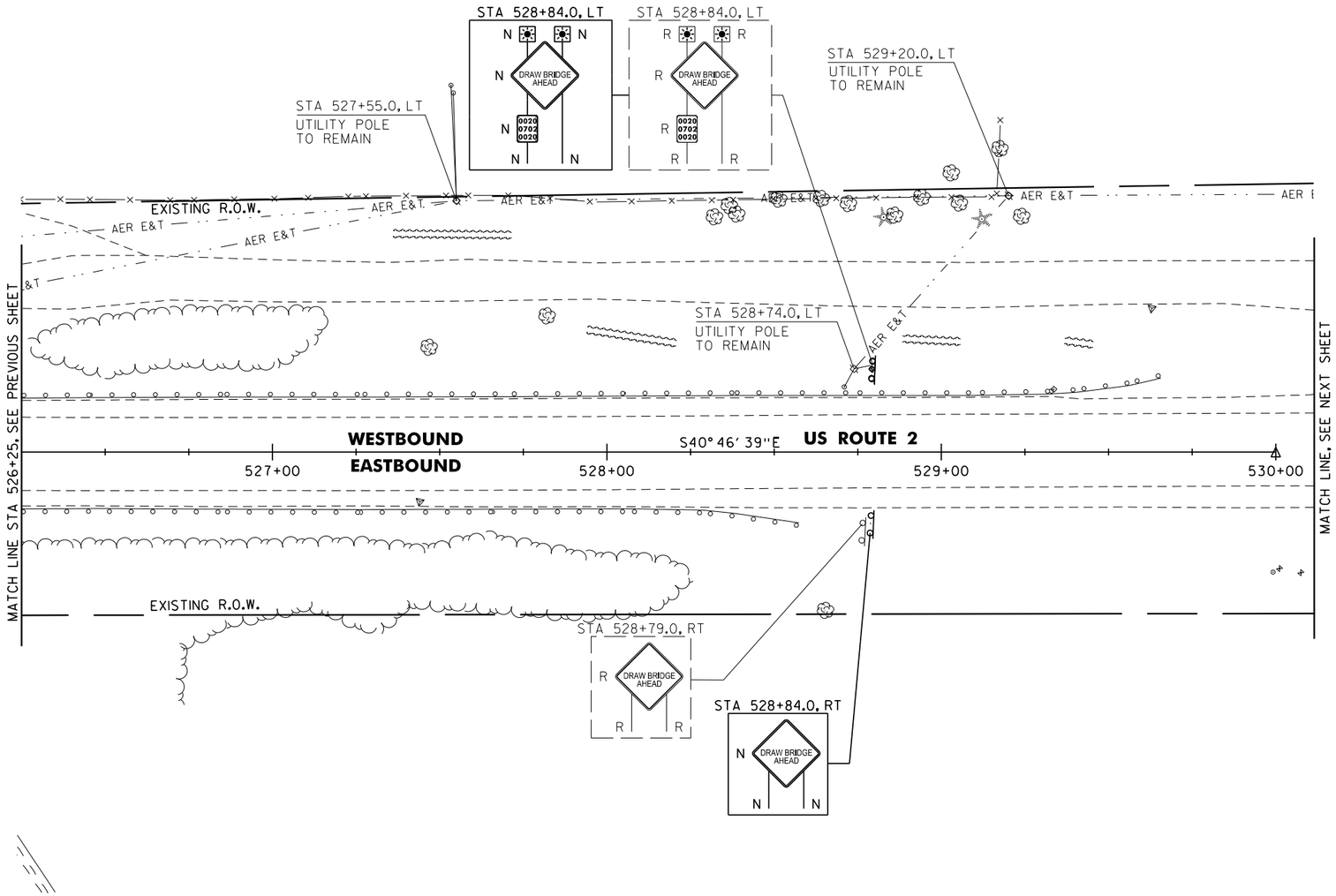
CHA

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: zl2bl42bdr.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
ROADWAY LAYOUT SHEET 5	SHEET 19 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 03:33:36 PM
USER = $NTUSER$

REMOVING SIGNS
AS SHOWN - 3

FLASHING BEACON, GROUND MOUNTED
STA 528+84.0 LT (1EA)



SIGN LEGEND
R = REMOVE
S = SALVAGE
N = NEW
RET = RETAIN
B-B = BACK TO BACK
EXISTING = — — —
NEW = ———

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

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE	
PROJECT NUMBER: BHF 028-1(26)	
FILE NAME: z12b142bdr.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. COZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
ROADWAY LAYOUT SHEET 6	SHEET 20 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 03:33:38 PM
USER = $NTUSER$

N

VT STATE PLANE GRID

P L

UTILITY POLE TO REMAIN

UTILITY POLE TO REMAIN

UTILITY POLE TO REMAIN

LANDING LANE

AER E&T

AER E&T

AER E&T

AER E&T

AER E&T

AER E&T

AER E&T

EXISTING R.O.W.

MATCH LINE, SEE PREVIOUS SHEET

US ROUTE 2

WESTBOUND

EASTBOUND

AER E&T

EXISTING R.O.W.

ASPHALT DRIVEWAY

MATCH LINE, SEE NEXT SHEET

DRAWBRIDGE LANE

UTILITY POLE TO REMAIN

P L

P L

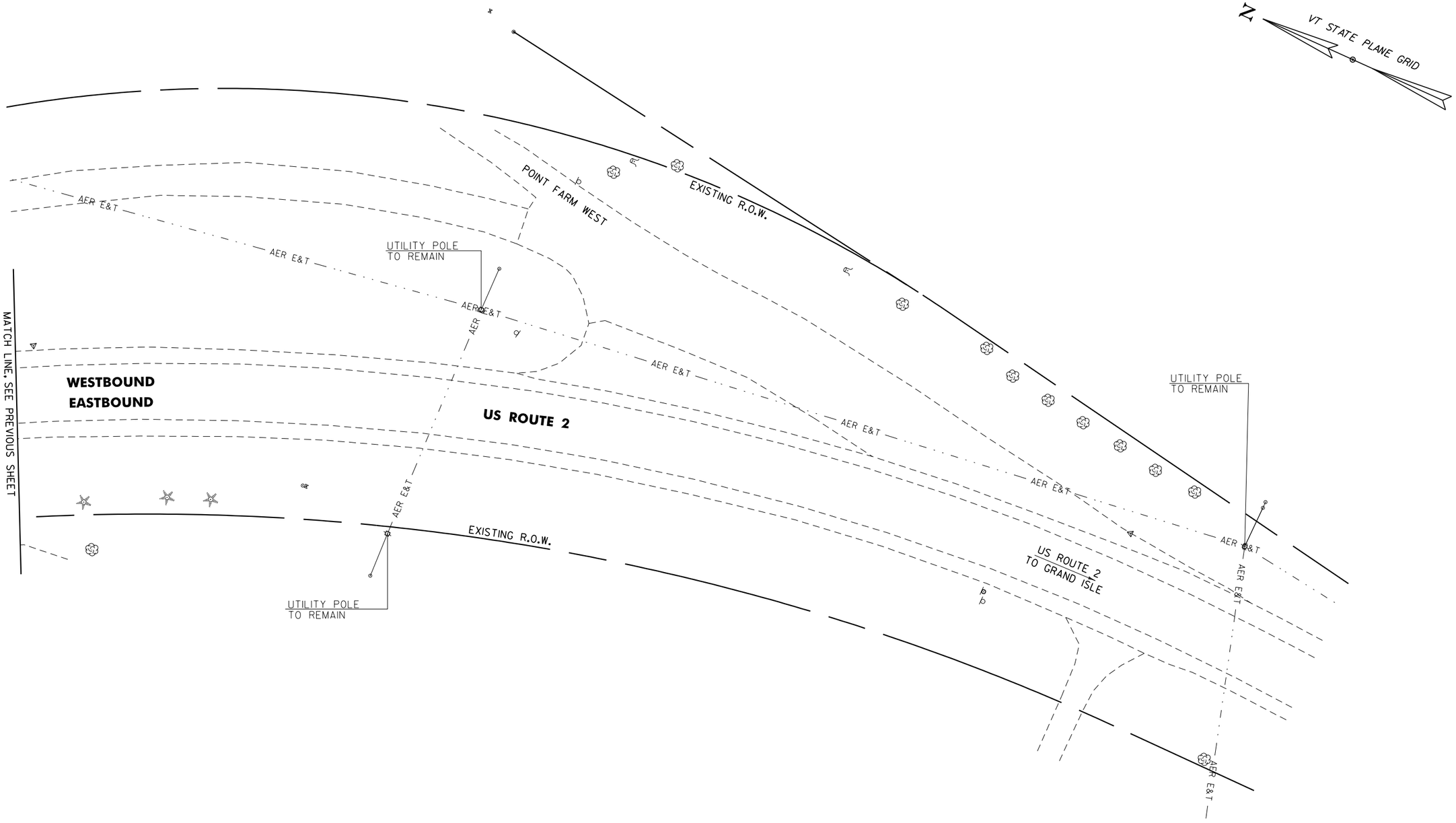
SCALE 1" = 20'-0"

20 0 20

CHA

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142bdr.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
ROADWAY LAYOUT SHEET 7	SHEET 21 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 03:33:39 PM
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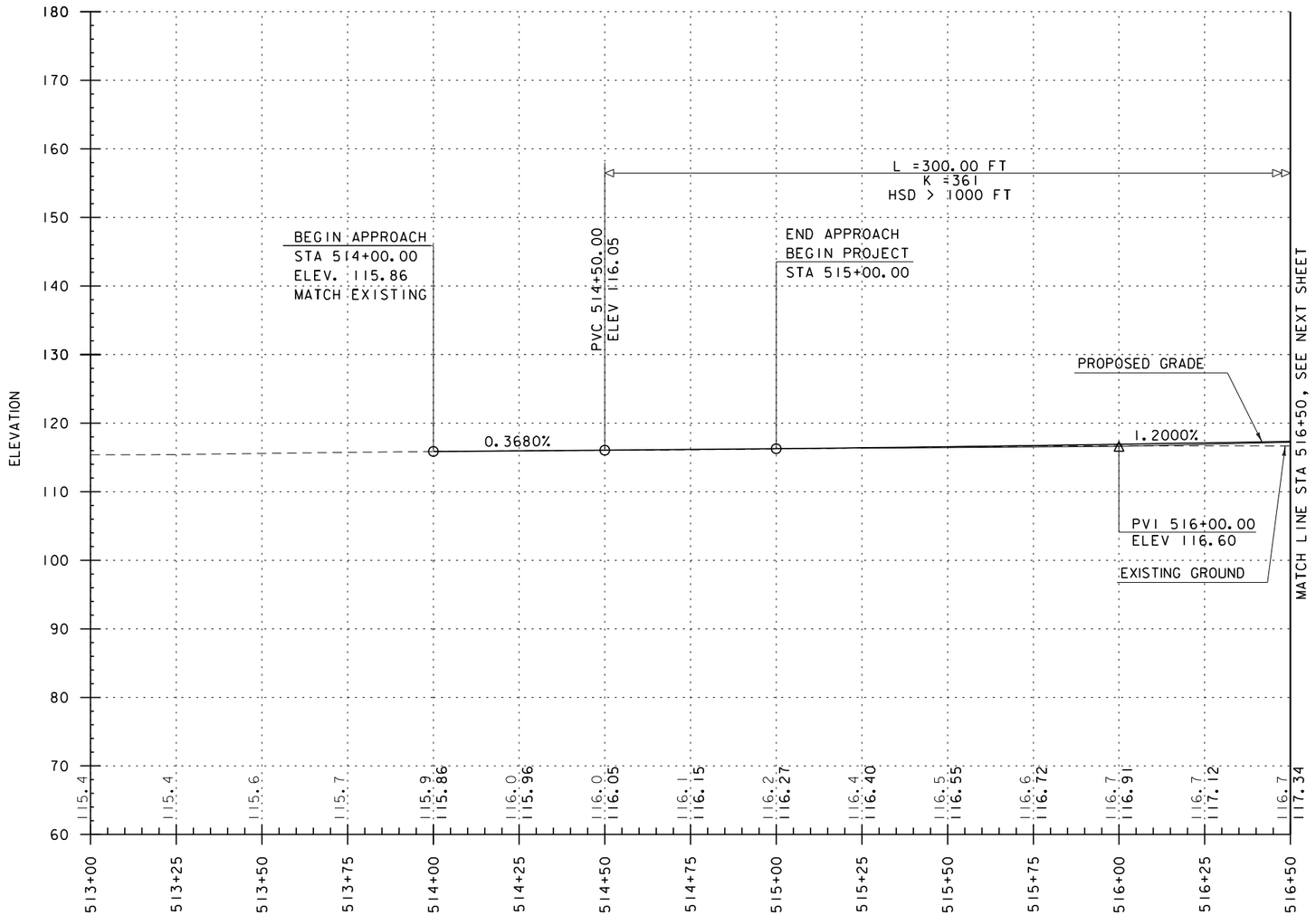


SCALE 1" = 20'-0"
20 0 20

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142bdr.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
ROADWAY LAYOUT SHEET 8	SHEET 22 OF 379

CHA

FILE NAME = $FILE$
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PROFILE - US ROUTE 2

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

NOTE:

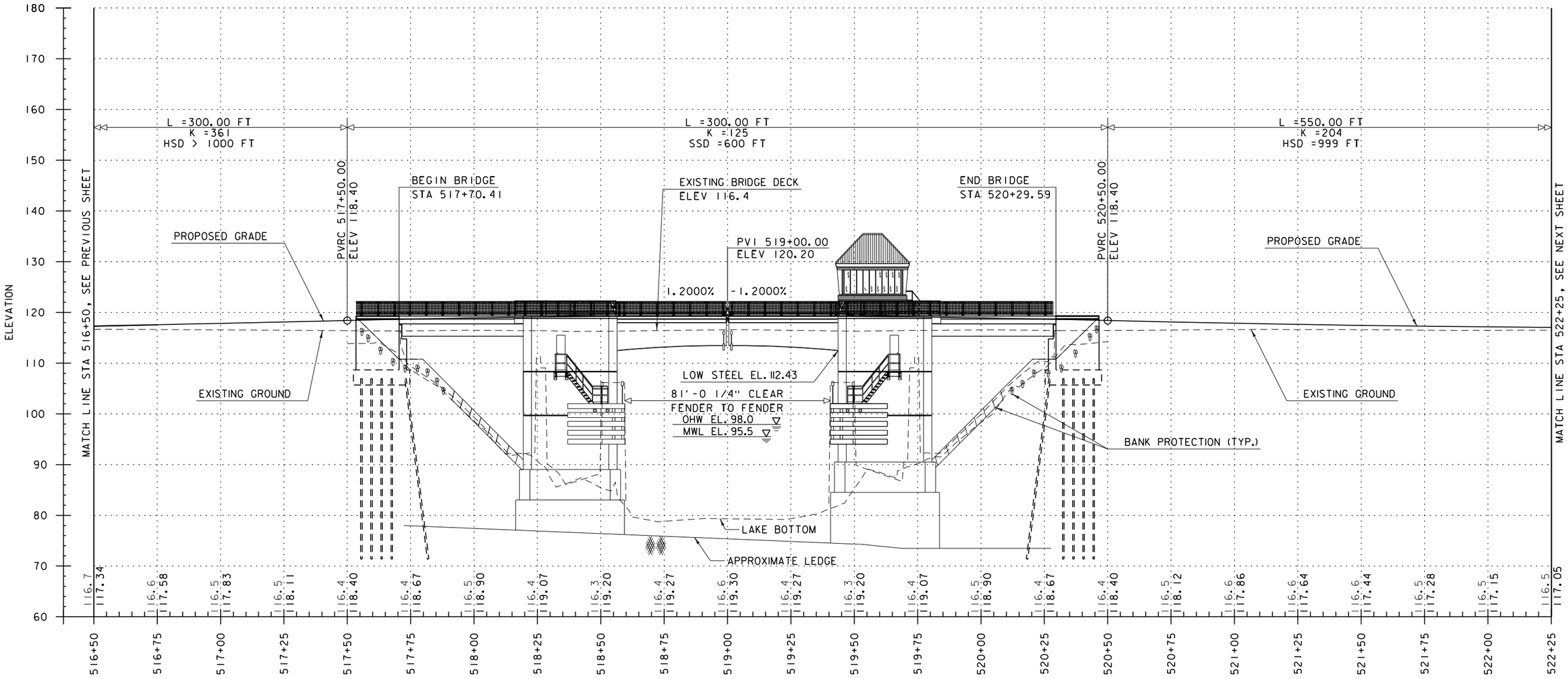
1. THE GRADES SHOWN TO THE NEAREST TENTH ARE THE EXISTING GROUND ELEVATIONS ALONG THE CENTERLINE. THE GRADES SHOWN TO THE NEAREST HUNDRETH ARE THE PROPOSED GRADES ALONG THE CENTERLINE.

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USER = $NTUSER$

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42pro.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
PROFILE SHEET 1

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 23 OF 379



PROFILE - US ROUTE 2

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

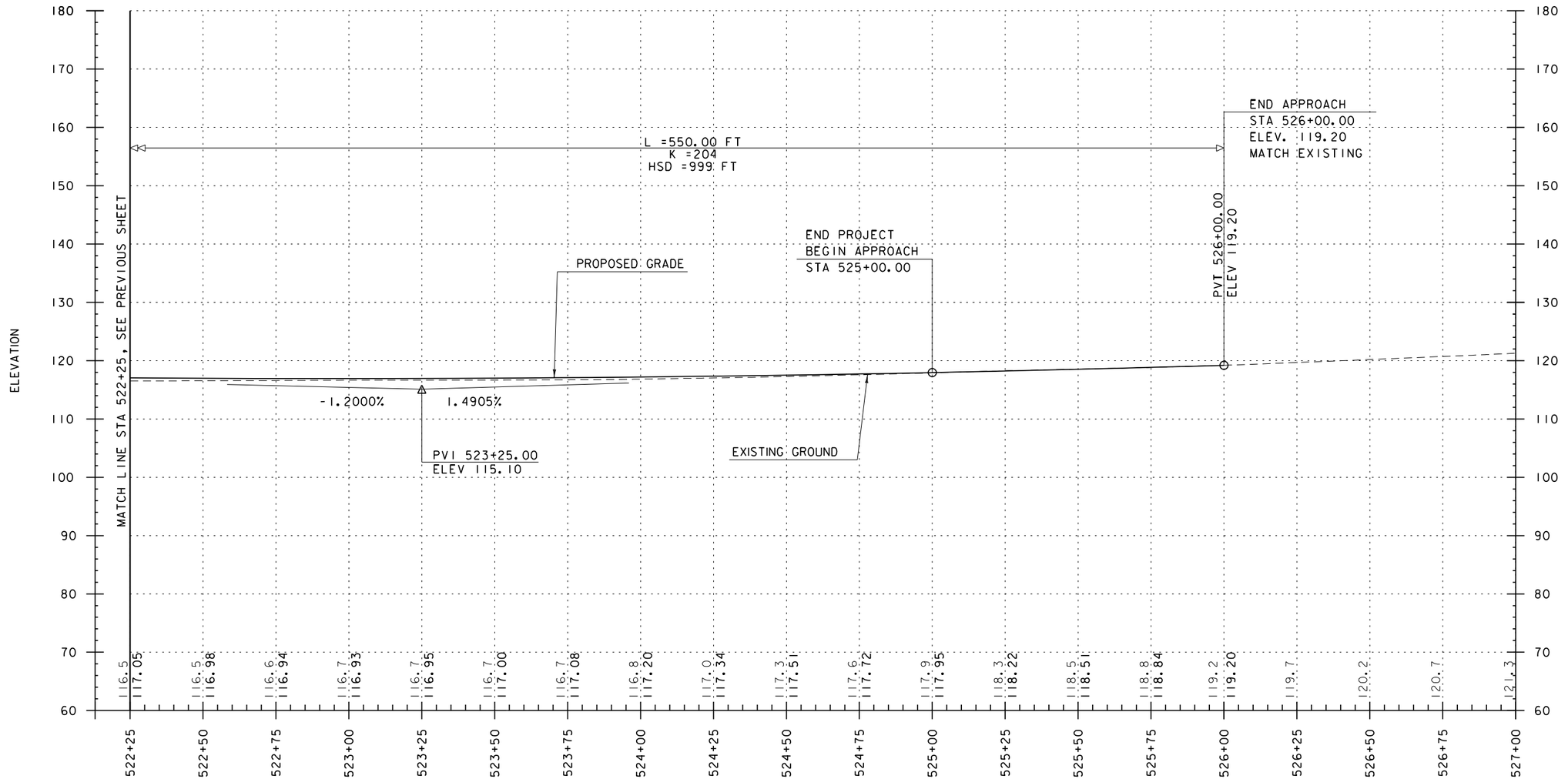
NOTE:

1. THE GRADES SHOWN TO THE NEAREST TENTH ARE THE EXISTING GROUND ELEVATIONS ALONG THE CENTERLINE. THE GRADES SHOWN TO THE NEAREST HUNDRETH ARE THE PROPOSED GRADES ALONG THE CENTERLINE.

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PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142pro.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
PROFILE SHEET 2	SHEET 24 OF 379

CHA



PROFILE - US ROUTE 2

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

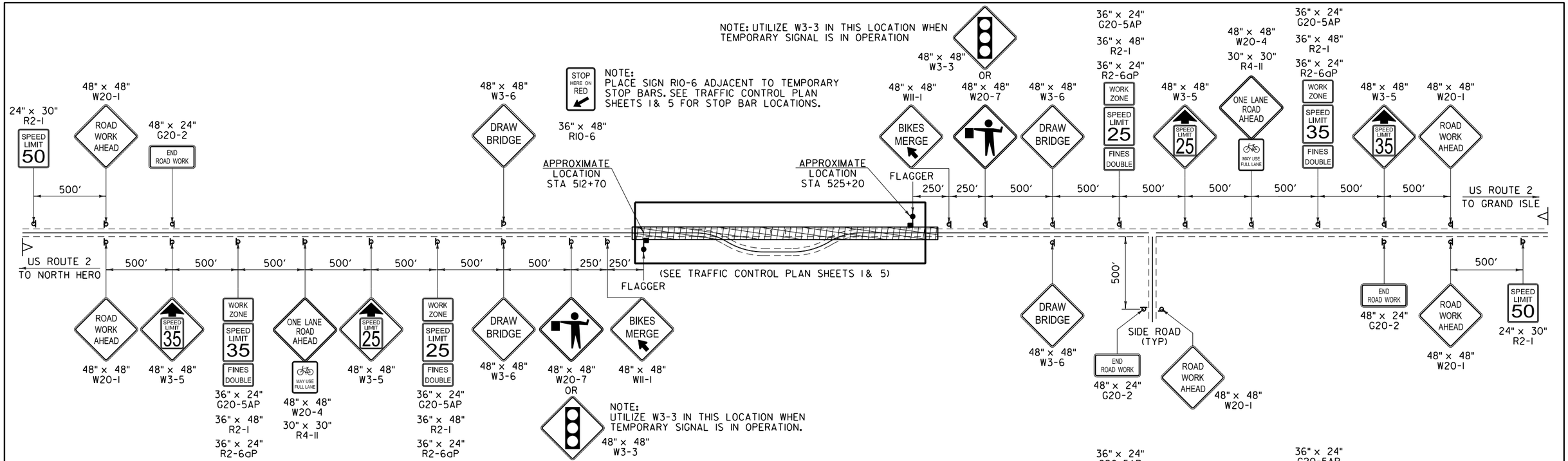
NOTE:

1. THE GRADES SHOWN TO THE NEAREST TENTH ARE THE EXISTING GROUND ELEVATIONS ALONG THE CENTERLINE. THE GRADES SHOWN TO THE NEAREST HUNDRETH ARE THE PROPOSED GRADES ALONG THE CENTERLINE.

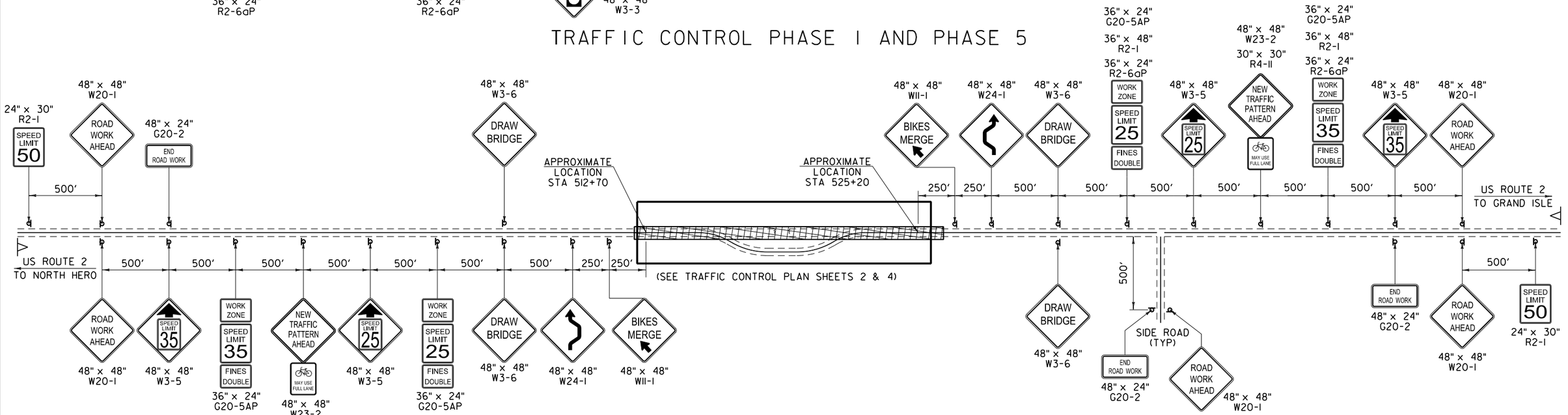
PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142pro.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
PROFILE SHEET 3	SHEET 25 OF 379

CHA

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 03:33:46 PM
USER = $NTUSER$



TRAFFIC CONTROL PHASE 1 AND PHASE 5



TRAFFIC CONTROL PHASE 2 AND PHASE 4

LEGEND

d PROPOSED CONSTRUCTION SIGN AND POSTS	RESISTANCE/WARNING GATES
PORTABLE CHANGEABLE MESSAGE SIGN	TRAFFIC SIGNAL
TEMPORARY TRAFFIC BARRIER	PROJECT AREA
TYPE 3 BARRICADE	

NOT TO SCALE

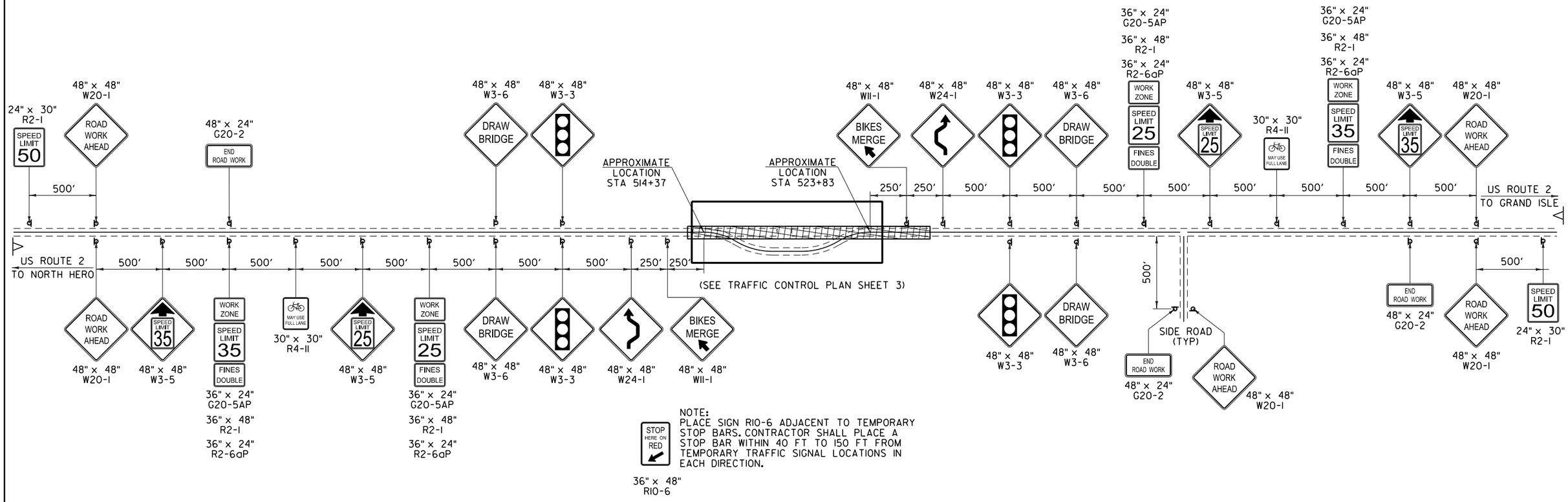
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PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42cnul.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
TRAFFIC MANAGEMENT PLAN SHEET 1

PLOT DATE: 2/6/2018
DRAWN BY: K. HOWE
CHECKED BY: J. SHIELDS
SHEET 26 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 03:48:57 PM
USER = $NTUSER$



NOTE:
PLACE SIGN R10-6 ADJACENT TO TEMPORARY STOP BARS. CONTRACTOR SHALL PLACE A STOP BAR WITHIN 40 FT TO 150 FT FROM TEMPORARY TRAFFIC SIGNAL LOCATIONS IN EACH DIRECTION.

TRAFFIC CONTROL PHASE 3

NOTES:

1. ALL DISTANCES SHOWN ARE DESIRABLE MINIMUMS. FIELD CONDITIONS SHALL CONTROL THE ACTUAL PLACEMENT OF CONSTRUCTION SIGNS. SEE VTRANS STD. T-10 FOR ADDITIONAL SIGN PLACEMENT DETAILS. PROPOSED CONSTRUCTION SIGNS SHALL NOT INTERFERE WITH THE SIGHT LINES TO EXISTING SIGNS. PROPOSED SIGNS SHALL BE LOCATED A MINIMUM OF 200 FEET FROM THE NEAREST EXISTING OR PROPOSED SIGN. EXACT SIGN LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
2. CONSTRUCTION SIGNING AND ALL TEMPORARY TRAFFIC CONTROL MEASURES SHALL BE IN ACCORDANCE WITH SECTION 6 OF THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND ITS REVISIONS.
3. ALL SOLID SUBSTRATE CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING THE "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE VIII OR IX REQUIREMENTS UNLESS OTHERWISE NOTED.
4. THE CONTRACTOR SHALL COVER OR REMOVE ANY SIGNS THAT CONTRADICT TEMPORARY TRAFFIC CONTROL SIGNS. ALL SIGNS REMOVED OR COVERED BY THE CONTRACTOR SHALL BE REPLACED OR UNCOVERED BY THE CONTRACTOR WHEN THE TRAFFIC CONTROL PLAN IS DISASSEMBLED. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 641.10 TRAFFIC CONTROL. ANY DAMAGE TO EXISTING SIGNS BY THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.
5. TEMPORARY TRAFFIC BARRIER SHALL BE USED FOR THE WORK ZONE AS INDICATED ON THIS TRAFFIC CONTROL PLAN OR AS DIRECTED BY THE ENGINEER. THE BARRIER SHALL BE DELINEATED TO MATCH THE CORRESPONDING TEMPORARY PAVEMENT MARKING COLORS AND THE ENDS OF THE TEMPORARY TRAFFIC BARRIER SHALL BE TIED INTO THE EXISTING GUARDRAIL AND NEW TEMPORARY BRIDGE RAIL DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR BOTH PROVIDING ACCESS TO AND PROTECTING THE WORK ZONE AT ALL TIMES. IT IS ANTICIPATED THAT THESE EFFORTS MAY INCLUDE REMOVING TEMPORARY TRAFFIC BARRIER TO ALLOW ACCESS FOR EQUIPMENT, WORKERS OR MATERIALS AND REPLACING THE TEMPORARY TRAFFIC BARRIER WHEN ACCESS IS NO LONGER NEEDED. IT IS ALSO ANTICIPATED THAT THE CONTRACTOR WILL INCORPORATE PROVISIONS FOR ACCESS WHILE PREVENTING INTRUSIONS FROM ERRANT VEHICLES, BICYCLISTS OR PEDESTRIANS. IT IS ANTICIPATED THAT THE COST OF THE TEMPORARY TRAFFIC BARRIER, AS WELL AS ANY INTERIM REMOVING AND SETTING OF THE TEMPORARY TRAFFIC BARRIER, WILL BE CONSIDERED INCIDENTAL TO ITEM 641.10 TRAFFIC CONTROL.
6. PORTABLE CHANGEABLE MESSAGE SIGN LOCATIONS AND MESSAGES ARE TO BE APPROVED BY THE ENGINEER, TWO ADDITIONAL PORTABLE CHANGEABLE MESSAGE SIGNS HAVE BEEN INCLUDED IN THE QUANTITIES TO BE USED AT THE ENGINEER'S DISCRETION.
7. TEMPORARY RESISTANCE GATES, WARNING GATES AND TRAFFIC SIGNAL LOCATIONS ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL LOCATIONS SHALL BE DESIGNED BY THE CONTRACTOR AND CONSIDERED INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (TEMPORARY MOVABLE BRIDGE).
8. THE CONTRACTOR SHALL AVOID MAKING SIGNIFICANT TRAFFIC PATTERN CHANGES DURING HEAVY TRAFFIC VOLUMES UNLESS DIRECTED OTHERWISE BY THE ENGINEER. UNIFORMED TRAFFIC OFFICERS WILL BE UTILIZED DURING ALL TRAFFIC PATTERN CHANGES.

LEGEND	
q	PROPOSED CONSTRUCTION SIGN AND POSTS
	PORTABLE CHANGEABLE MESSAGE SIGN
	TEMPORARY TRAFFIC BARRIER
	TYPE 3 BARRICADE
	RESISTANCE/WARNING GATES
	TRAFFIC SIGNAL
	PROJECT AREA

NOT TO SCALE

CHA

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cnul.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: K. HOWE
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
TRAFFIC MANAGEMENT PLAN SHEET 2	SHEET 27 OF 379

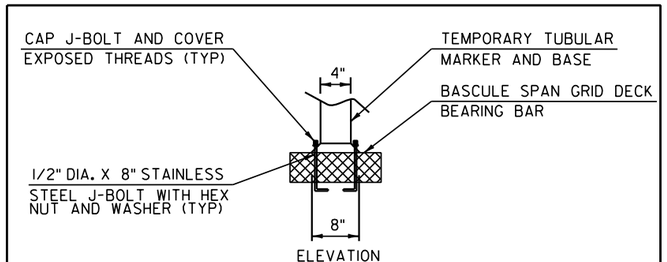
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TRAFFIC CONTROL PLAN PHASE I

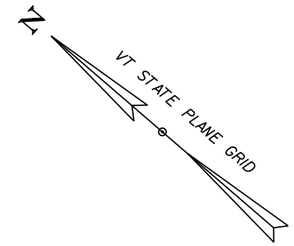
INSTALL TRAFFIC CONTROL BARRIER AND DEVICES. INSTALL TEMPORARY PAVEMENT MARKINGS AND SHIFT TRAFFIC TO THE WESTBOUND LANE UTILIZING ONE-LANE TWO-WAY TRAFFIC.

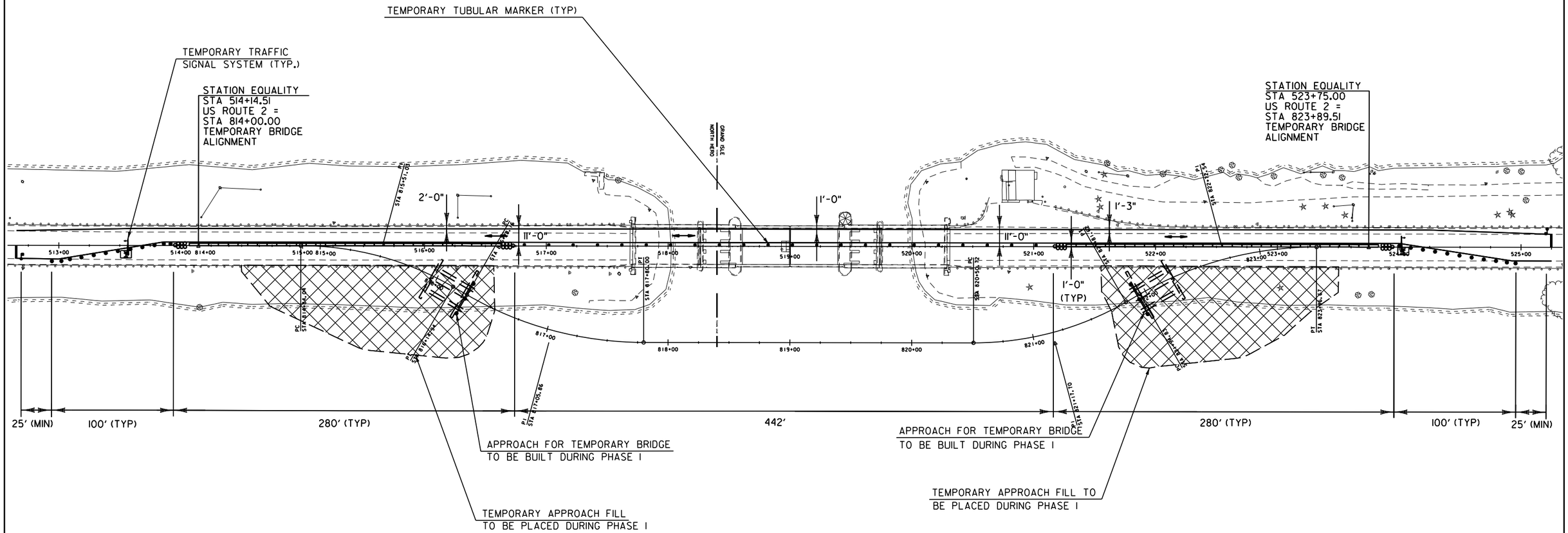
CONSTRUCT TEMPORARY BRIDGE APPROACH FILL

CONSTRUCT APPROACH FOR TEMPORARY BRIDGE



TUBULAR MARKER DETAIL





LEGEND

- PROPOSED CONSTRUCTION SIGN AND POSTS
- PORTABLE CHANGEABLE MESSAGE SIGN
- TEMPORARY TRAFFIC BARRIER
- TYPE 3 BARRICADE
- RESISTANCE/WARNING GATES
- TRAFFIC SIGNAL
- FLAGGER
- TRAFFIC CONE & DRUM
- PROJECT AREA
- ENERGY ABSORPTION DEVICE

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

TRAFFIC CONTROL PHASE 1

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142tcbdr1.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
TRAFFIC CONTROL PLAN SHEET 1

PLOT DATE: 2/6/2018
DRAWN BY: K. HOWE
CHECKED BY: J. SHIELDS
SHEET 28 OF 379

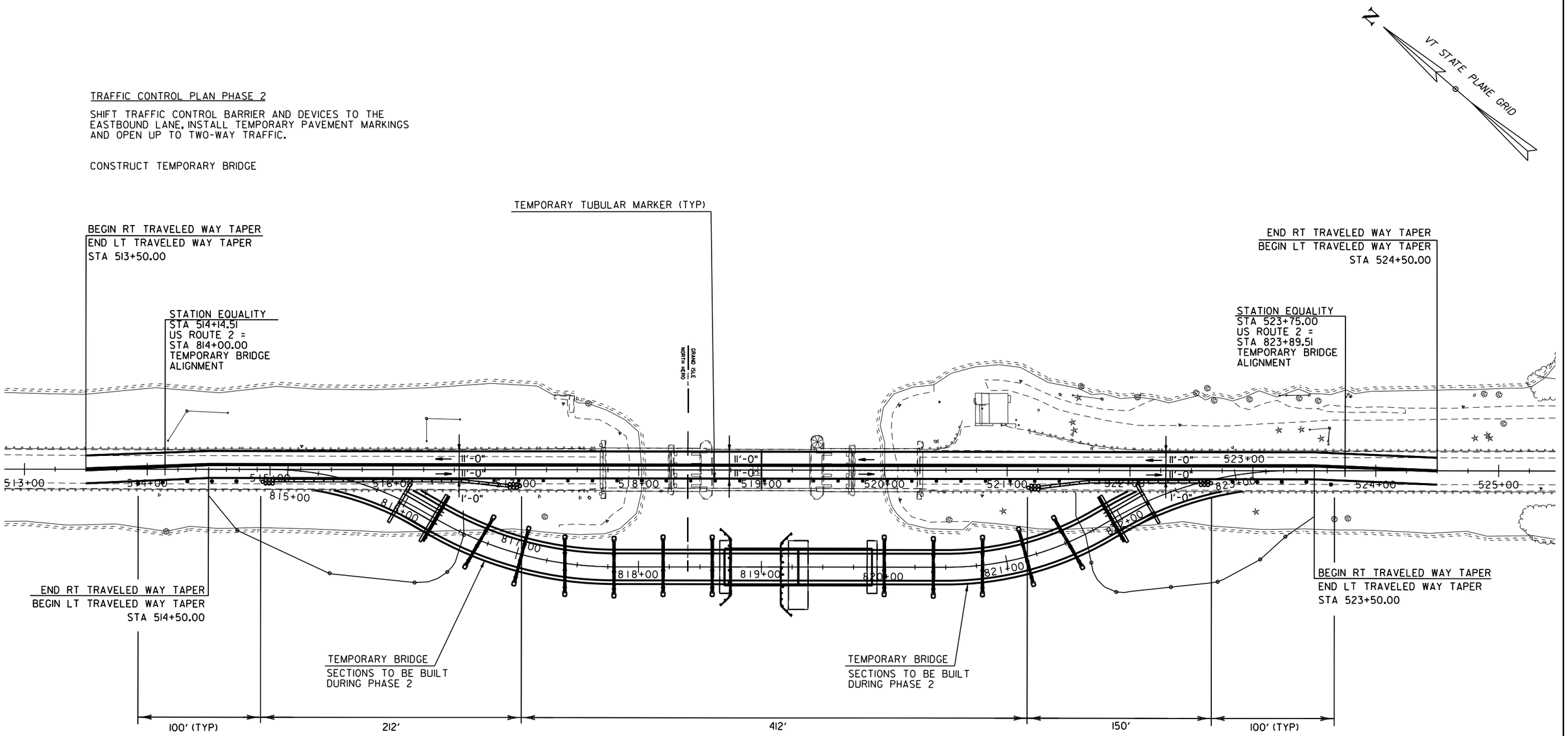
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TRAFFIC CONTROL PLAN PHASE 2

SHIFT TRAFFIC CONTROL BARRIER AND DEVICES TO THE EASTBOUND LANE, INSTALL TEMPORARY PAVEMENT MARKINGS AND OPEN UP TO TWO-WAY TRAFFIC.

CONSTRUCT TEMPORARY BRIDGE



LEGEND

- PROPOSED CONSTRUCTION SIGN AND POSTS
- PORTABLE CHANGEABLE MESSAGE SIGN
- TEMPORARY TRAFFIC BARRIER
- TYPE 3 BARRICADE
- RESISTANCE/WARNING GATES
- TRAFFIC SIGNAL
- FLAGGER
- TRAFFIC CONE & DRUM
- PROJECT AREA
- ENERGY ABSORPTION DEVICE

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

TRAFFIC CONTROL PHASE 2

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: zl2bl42tcbdr2.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
TRAFFIC CONTROL PLAN SHEET 2

PLOT DATE: 2/6/2018
DRAWN BY: K. HOWE
CHECKED BY: J. SHIELDS
SHEET 29 OF 379

CHA

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TRAFFIC CONTROL PLAN PHASE 3

INSTALL TEMPORARY PAVEMENT MARKINGS

SHIFT TRAFFIC TO TEMPORARY BRIDGE

CONSTRUCT PROPOSED BRIDGE

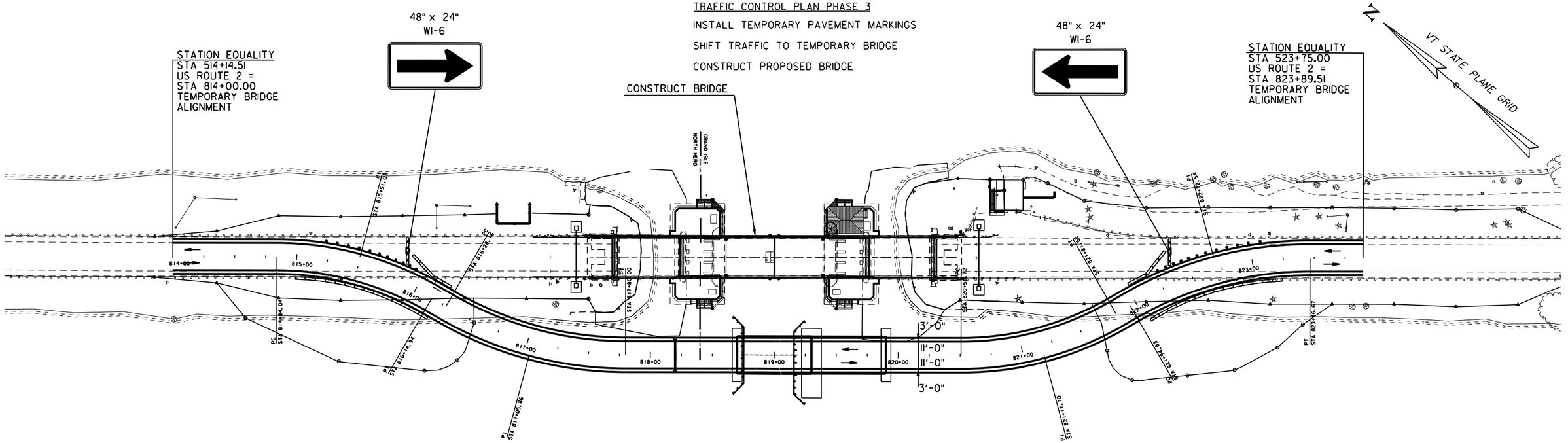
CONSTRUCT BRIDGE

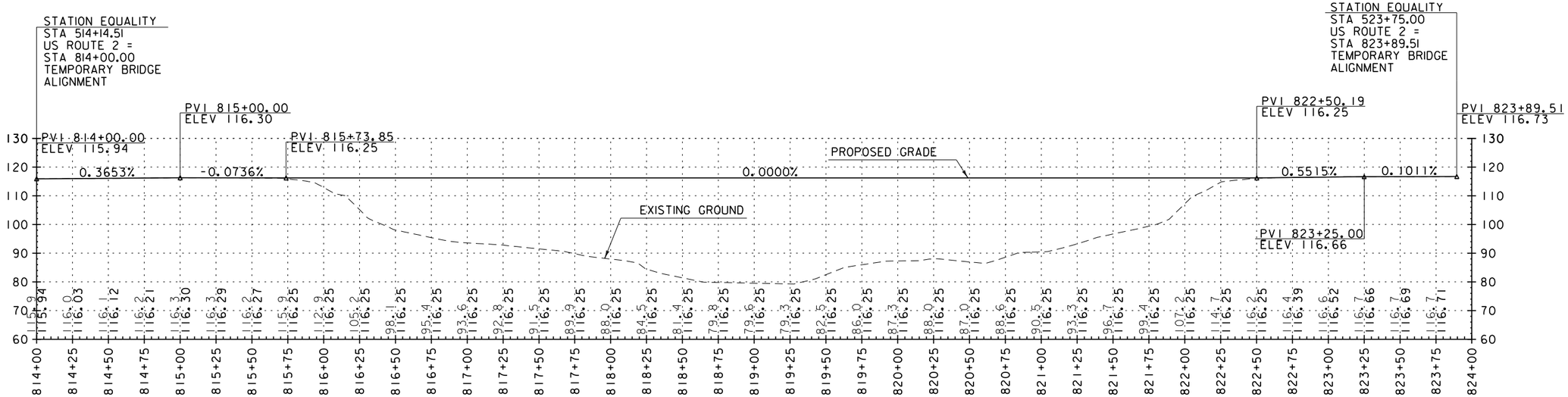
48" x 24"
W1-6

48" x 24"
W1-6

STATION EQUALITY
STA 514+14.51
US ROUTE 2 =
STA 814+00.00
TEMPORARY BRIDGE
ALIGNMENT

STATION EQUALITY
STA 523+75.00
US ROUTE 2 =
STA 823+89.51
TEMPORARY BRIDGE
ALIGNMENT





LEGEND

- PROPOSED CONSTRUCTION SIGN AND POSTS
- PORTABLE CHANGEABLE MESSAGE SIGN
- TEMPORARY TRAFFIC BARRIER
- TYPE 3 BARRICADE
- RESISTANCE/WARNING GATES
- TRAFFIC SIGNAL
- FLAGGER
- TRAFFIC CONE & DRUM
- PROJECT AREA
- ENERGY ABSORPTION DEVICE

PROFILE - TEMPORARY BRIDGE

SCALE: HORIZONTAL 1" = 40'
VERTICAL 1" = 20'

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

TRAFFIC CONTROL PHASE 3

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: zl2bl42tcbdr3.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
TRAFFIC CONTROL PLAN SHEET 3

PLOT DATE: 2/6/2018
DRAWN BY: K. HOWE
CHECKED BY: J. SHIELDS
SHEET 30 OF 379

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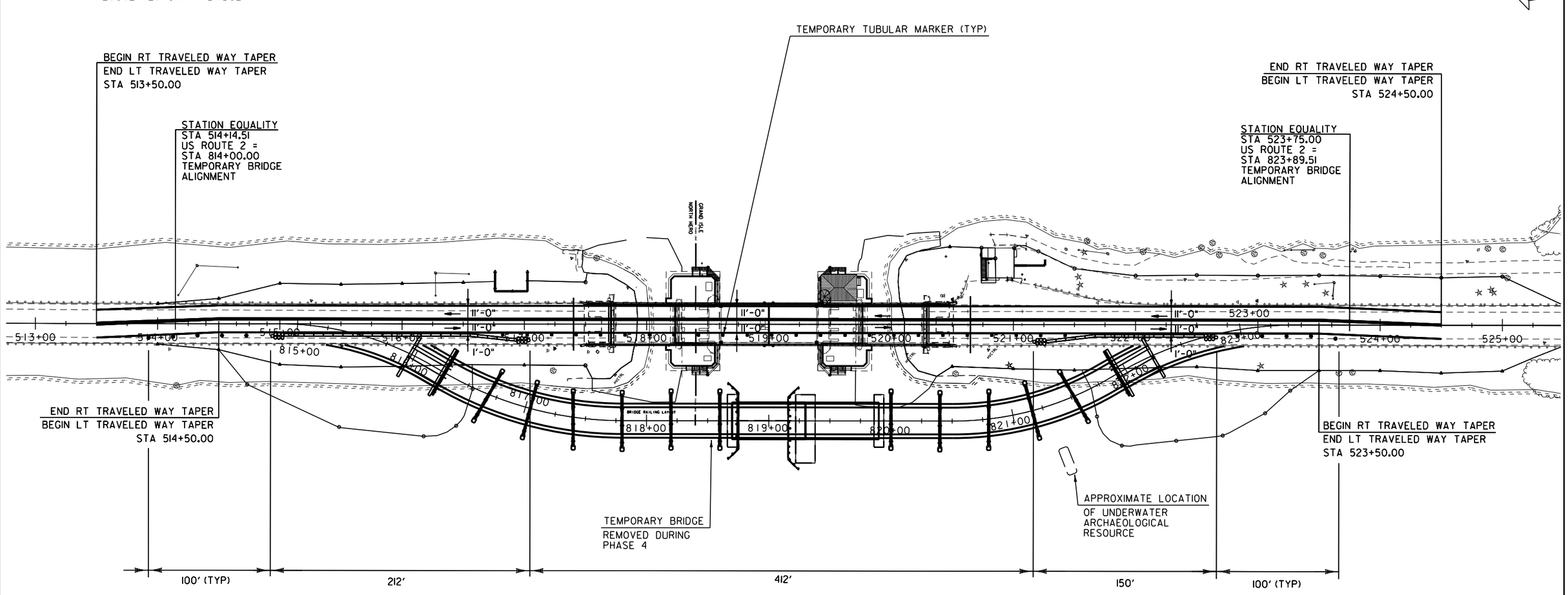
TRAFFIC CONTROL PLAN PHASE 4

SHIFT TRAFFIC CONTROL BARRIER AND DEVICES TO THE EASTBOUND LANE. INSTALL TEMPORARY PAVEMENT MARKINGS AND OPEN UP TO TWO-WAY TRAFFIC.

REMOVE TEMPORARY BRIDGE

N

VT STATE PLANE GRID



LEGEND

	PROPOSED CONSTRUCTION SIGN AND POSTS
	PORTABLE CHANGEABLE MESSAGE SIGN
	TEMPORARY TRAFFIC BARRIER
	TYPE 3 BARRICADE
	RESISTANCE/WARNING GATES
	TRAFFIC SIGNAL
	FLAGGER
	TRAFFIC CONE & DRUM
	PROJECT AREA
	ENERGY ABSORPTION DEVICE

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

TRAFFIC CONTROL PHASE 4

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142tcbdr4.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
TRAFFIC CONTROL PLAN SHEET 4

PLOT DATE: 2/6/2018
DRAWN BY: K. HOWE
CHECKED BY: J. SHIELDS
SHEET 31 OF 379

CHA

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TRAFFIC CONTROL PLAN PHASE 5

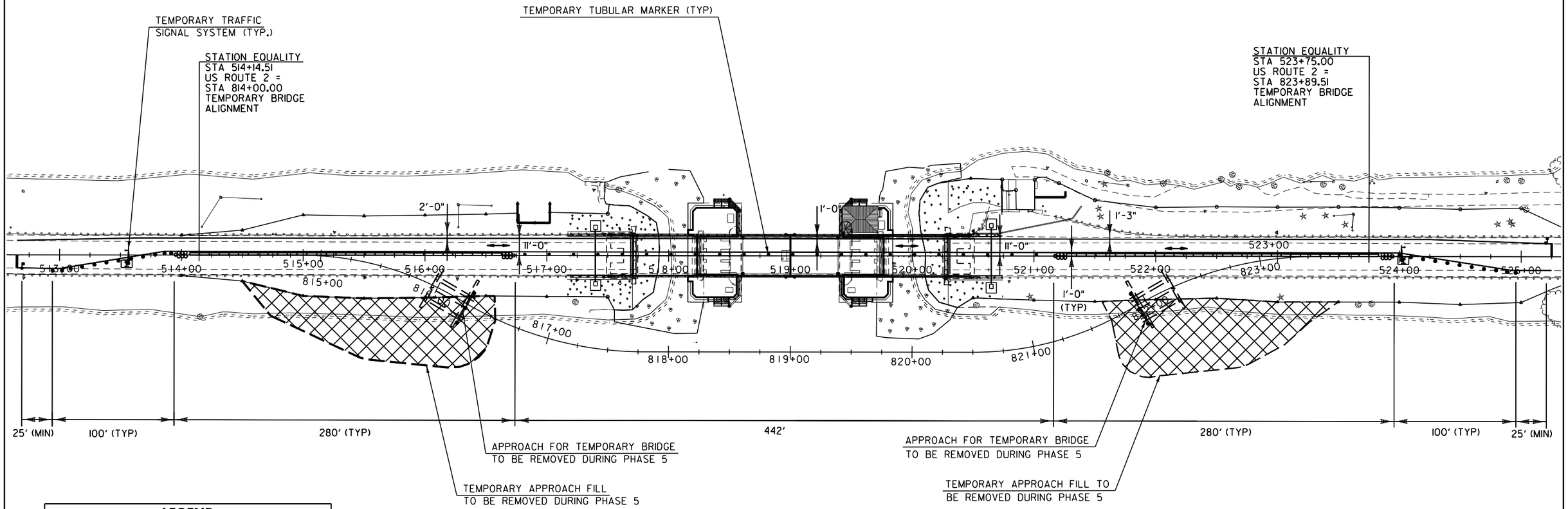
INSTALL TRAFFIC CONTROL BARRIER AND DEVICES. INSTALL TEMPORARY PAVEMENT MARKINGS AND SHIFT TRAFFIC TO THE WESTBOUND LANE UTILIZING ONE-LANE TWO-WAY TRAFFIC.

REMOVE APPROACH FOR TEMPORARY BRIDGE

REMOVE TEMPORARY APPROACH FILL

N

VT STATE PLANE GRID



LEGEND

- PROPOSED CONSTRUCTION SIGN AND POSTS
- PORTABLE CHANGEABLE MESSAGE SIGN
- TEMPORARY TRAFFIC BARRIER
- TYPE 3 BARRICADE
- RESISTANCE/WARNING GATES
- TRAFFIC SIGNAL
- FLAGGER
- TRAFFIC CONE & DRUM
- PROJECT AREA
- ENERGY ABSORPTION DEVICE

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

TRAFFIC CONTROL PHASE 5

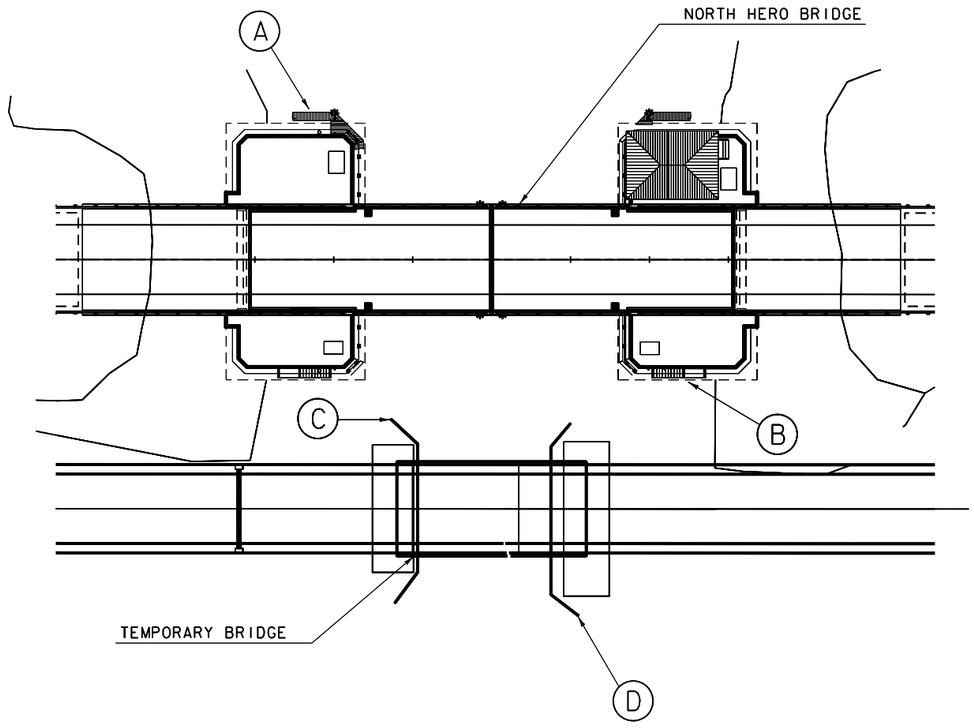
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

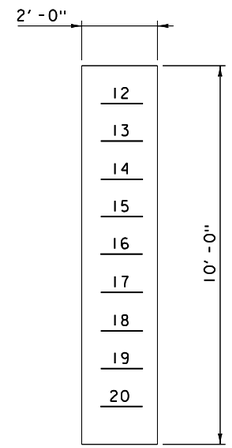
FILE NAME: zl2bl42tcbdr5.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
TRAFFIC CONTROL PLAN SHEET 5

PLOT DATE: 2/6/2018
DRAWN BY: K. HOWE
CHECKED BY: J. SHIELDS
SHEET 32 OF 379

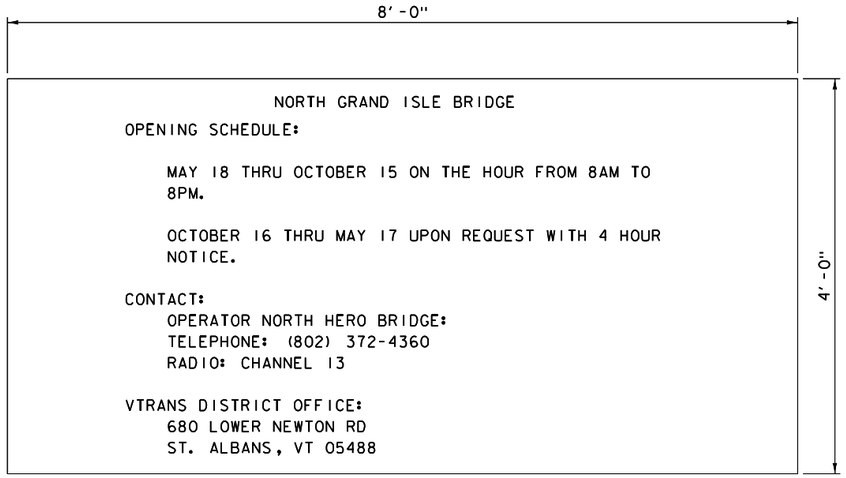
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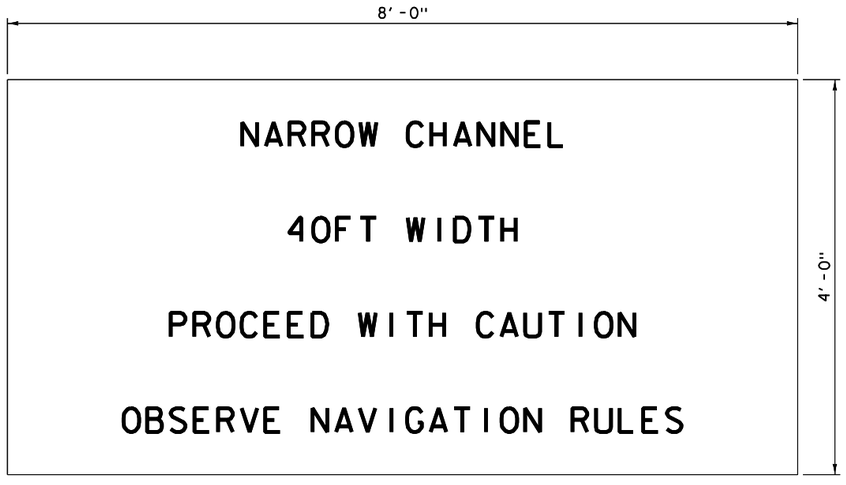




CLEARANCE SIGN (CS)



INFORMATION (NI)



NAVIGATION RESTRICTIONS (NR)

CONSTRUCT PHASE	A		B		C		D	
	INSTALL	REMOVE	INSTALL	REMOVE	INSTALL	REMOVE	INSTALL	REMOVE
1								
2 INSTALL TEMPORARY BRIDGE	NR				NR		NR CS NI	
3 DEMO EXISTING BRIDGE					NI CS			
4 CONSTRUCT NEW BRIDGE	NI CS NR		NI CS NR					
5 REMOVE TEMPORARY BRIDGE		NR	NI CS	NR		NR NI CS		NR CS NI

INSTALLATION/ REMOVAL SCHEDULE

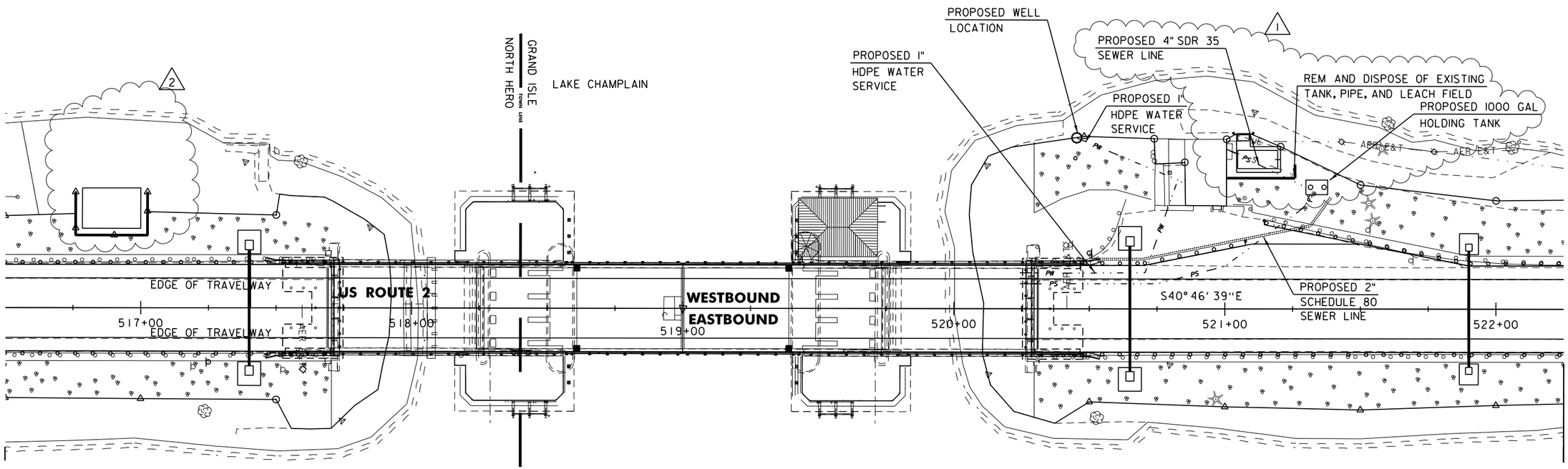
NOTES:

1. NAVIGATION SIGNS TO BE INSTALLED PRIOR TO BRIDGE ERECTION.
2. ALL SIGNS TO BE ILLUMINATED.

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142navs.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: P. DAVIS
NAVIGATION SIGNS

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: P. DAVIS
SHEET 33 OF 379



REQUIRED TESTS FOR WATERLINES:

1. THE FOLLOWING TESTS ARE REQUIRED TO BE PERFORMED AFTER THE PIPE HAS BEEN INSTALLED AND PRIOR TO FINAL ACCEPTANCE:
   A. PRESSURE TEST.
   B. LEAKAGE TEST.

2. PRESUMPTIVE HYDROSTATIC TESTS MAY BE PERFORMED WHEN THE SYSTEM IS PARTIALLY BACKFILLED TO "CHECK" THE WORK, BUT FINAL ACCEPTANCE SHALL BE BASED ON HYDROSTATIC TESTS PERFORMED ON THE FINISHED SYSTEM AFTER IT IS COMPLETELY BACKFILLED.

3. ALL TESTING SHALL CONFORM TO AWWA C600, SECTION 4, UNLESS OTHERWISE SPECIFIED HEREIN.

4. PRIOR TO MAKING THE TESTS, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A SCHEDULE OF HIS TESTING PROCEDURES INDICATING THE SEQUENCE IN WHICH PIPE SECTIONS WILL BE TESTED AND A DESCRIPTION OF METHODS AND EQUIPMENT HE PROPOSES TO USE.

5. PRESSURE TEST:
   A. PIPING SHALL BE TESTED TO 1.5 TIMES THE PIPE WORKING PRESSURE, OR 150 PSI, WHICHEVER IS GREATER. TEST PRESSURES SHALL BE MEASURED AT THE LOWEST POINT IN THE PIPE SECTION BEING TESTED, AND CORRECTED TO THE ELEVATION OF THE GAUGE.
   B. PROVISIONS SHALL BE MADE TO RELIEVE TRAPPED AIR AT THE SECTION HIGH POINTS THROUGH HYDRANTS, OR TAPS INSTALLED FOR THIS PURPOSE, PROVIDED TEMPORARY INSTALLATIONS ARE REMOVED AND PLUGGED AFTER ACCEPTANCE.
   C. MAINTAIN THE TEST PRESSURE FOR A PERIOD OF TWO (2) HOURS WITH A MAXIMUM PRESSURE VARIATION OF FIVE PSI.

6. LEAKAGE TEST:
   A. THE LEAKAGE TEST SHALL BE CONDUCTED CONCURRENTLY WITH THE PRESSURE TEST.
   B. NO PIPE INSTALLATION SHALL BE ACCEPTED IF THE LEAKAGE IS GREATER THAN THAT DETERMINED BY THE FOLLOWING FORMULA:

$$L = \frac{N \times D \times P^{1/2}}{7400}$$

   WHERE L = ALLOWABLE LEAKAGE, IN GPH
   WHERE N = NUMBER OF JOINTS IN TEST SECTION
   WHERE D = NOMINAL PIPE DIAMETER, IN INCHES
   WHERE P = AVERAGE TEST PRESSURE, IN PSIG

7. ACCEPTANCE SHALL BE DETERMINED ON THE BASIS OF ALLOWABLE LEAKAGE. IF ANY PIPE SECTION DISCLOSES LEAKAGE GREATER THAN THAT SPECIFIED, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, LOCATE, MAKE NECESSARY REPAIRS, AND RETEST UNTIL THE LEAKAGE IS WITHIN THE LIMITS SPECIFIED.

8. ALL VISIBLE LEAKS SHALL BE MADE TIGHT REGARDLESS OF THE AMOUNT OF LEAKAGE, AND IF THE LINES DO NOT MEET THE ABOVE LEAKAGE TEST, THEY SHALL BE REPAIRED AND RETESTED AS NECESSARY UNTIL THE LEAKAGE REQUIREMENT IS MET. ALL WORK FOUND DEFECTIVE SHALL BE REPAIRED OR REPLACED AT THE EXPENSE OF THE CONTRACTOR.

DISINFECTION OF POTABLE WATER MAINS:

1. DISINFECTION SHALL CONFORM TO AWWA C651, EXCEPT THAT THE PLACEMENT OF CHLORINE POWDER OR TABLETS INSIDE THE PIPE DURING INSTALLATION SHALL NOT BE ALLOWED. DISINFECT WATER MAINS AFTER THE PIPING HAS PASSED THE PRESSURE AND LEAKAGE TESTS.

2. PRIOR TO DISINFECTION, THE PIPING SHALL BE FLUSHED WITH WATER AT A MINIMUM VELOCITY OF 2.5 FPS.

3. DISINFECTION SHALL BE ACCOMPLISHED BY APPLYING A CHLORINE SOLUTION WITH A CONCENTRATION BETWEEN FIFTY AND ONE HUNDRED PPM. THE CHLORINE SOLUTION SHALL REMAIN IN THE PIPING FOR A MINIMUM OF 24 HOURS. THE CONCENTRATION AT THE END OF THIS PERIOD SHALL BE AT LEAST 25 PPM IN ALL SECTIONS OF THE MAIN. IF THE RESIDUAL IS LESS THAN 25 PPM, THE PROCEDURE SHALL BE REPEATED.
   A. WHILE THE CHLORINATED WATER IS BEING ADDED, ALL APPURTENANCES (VALVES, HYDRANTS, ETC.) SHALL BE OPERATED SO AS TO COMPLETELY DISINFECT THE NEW WORK.
   B. DURING THE APPLICATION OF THE CHLORINE, VALVES SHALL BE POSITIONED SO THAT THE CHLORINE SOLUTION IN THE SECTION BEING DISINFECTED WILL NOT FLOW INTO WATER MAINS IN ACTIVE SERVICE.
   C. CHLORINE RESIDUAL SAMPLES SHALL BE TAKEN AS DIRECTED BY THE ENGINEER.

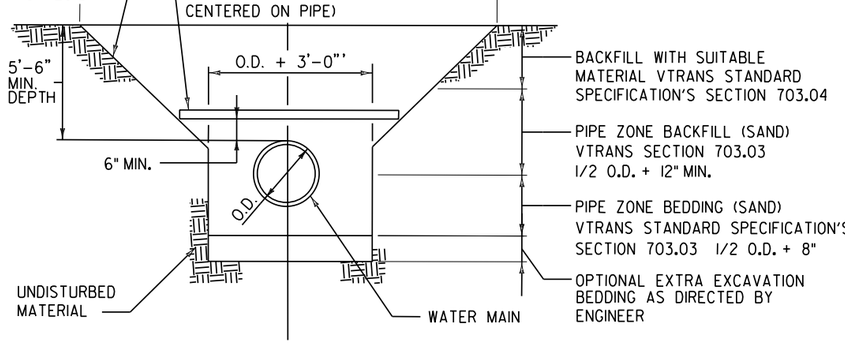
4. AFTER THE 24-HOUR RETENTION PERIOD, THE HEAVILY CHLORINATED WATER SHALL BE FLUSHED FROM THE MAIN UNTIL RESIDUAL TESTING INDICATES THAT THE CHLORINE CONCENTRATION IS APPROXIMATELY THAT OF THE NEIGHBORING SERVICE AREA.
   A. THE CONTRACTOR SHALL DISPOSE OF THE HEAVILY CHLORINATED WATER INTO A TANK TRUCK.
   B. IN NO INSTANCE SHALL THIS WATER BE EMPTIED ONTO ROADWAYS, OR INTO DITCHES, CULVERTS, STREAMS OR WETLANDS.

5. AFTER DISINFECTION AND FINAL FLUSHING, AND PRIOR TO PLACING THE LINES IN SERVICE, THE CONTRACTOR SHALL TAKE BACTERIOLOGICAL SAMPLES. THE NUMBER OF SAMPLES AND THEIR COLLECTION POINTS SHALL BE AS DIRECTED BY THE ENGINEER AND LOCAL AUTHORITIES HAVING JURISDICTION.
   A. THE TESTING LABORATORY PERFORMING THE BACTERIOLOGICAL ANALYSIS SHALL BE ACCEPTABLE TO THE ENGINEER.
   B. THE CONTRACTOR SHALL SUBMIT THREE (3) COPIES OF THE LABORATORY ANALYSIS TO THE ENGINEER.
   C. SHOULD SAFE RESULTS NOT OCCUR AFTER THE LABORATORY TESTS, THE CONTRACTOR SHALL, AT HIS EXPENSE, REPEAT THE DISINFECTION PROCEDURE UNTIL SAFE RESULTS ARE OBTAINED.

6. ALL PRECAUTIONS SHALL BE TAKEN TO MAINTAIN DRY AND SANITARY CONDITIONS AND TO PREVENT CONTAMINATION OF ANY PIPING, AT THE CONTRACTOR'S EXPENSE.

7. IF, IN THE OPINION OF THE ENGINEER, CONTAMINATION HAS OCCURRED, THE CONTRACTOR SHALL REPEAT THE DISINFECTION AND TESTING AT HIS COST AND EXPENSE.

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



TYPICAL TRENCH DETAIL
N.T.S.

REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG
1	4-29-2020	POST-AWARD RFI'S 037-114	JLG

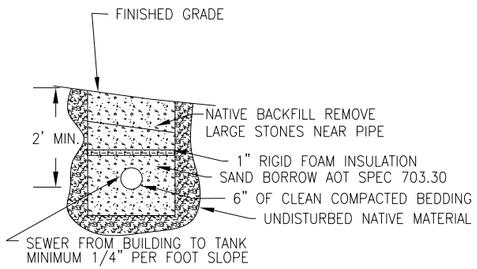
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42utilbdr.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
WATER LINE AND SEWER LAYOUT

PLOT DATE: 2/20/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 34 OF 379

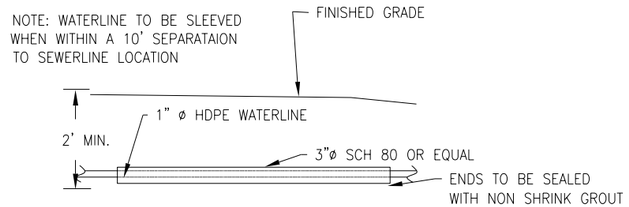
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SEWER LINE TO TANK DETAIL
NOT TO SCALE

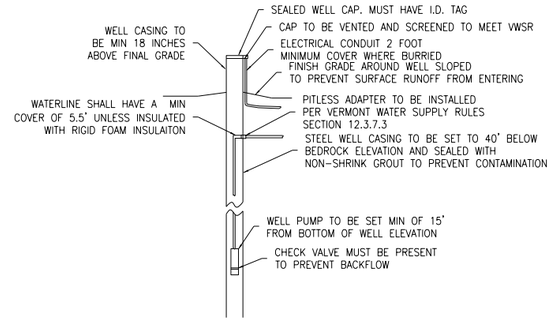
NOTE: SPECIAL CARE SHOULD BE TAKEN, TO REMOVE ANY LARGE STONES WHEN BACKFILLING THIS IS TO ENSURE EXISTING PIPING REMAINS INTACT
NOTE: PIPES MAY BE BEDED IN CLEAN SAND BORROW AOT MATERIAL SPECIFICATION 703.3



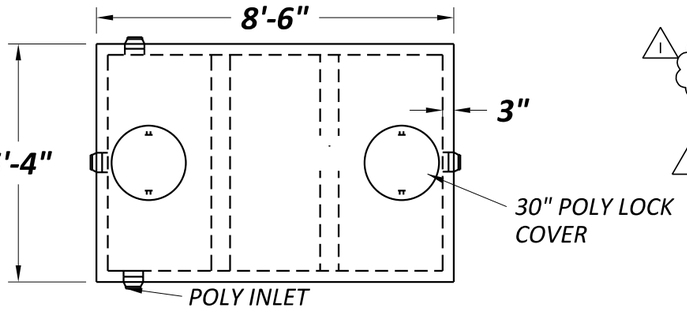
WATERLINE SLEEVE DETAIL
NOT TO SCALE

NOTE: AFTER SLEEVES ARE INSTALLED, DETERMINE FIELD TIES TO THE SLEEVE ENDS FOR FUTURE REFERENCE AND MARK ON RECORD PLANS.

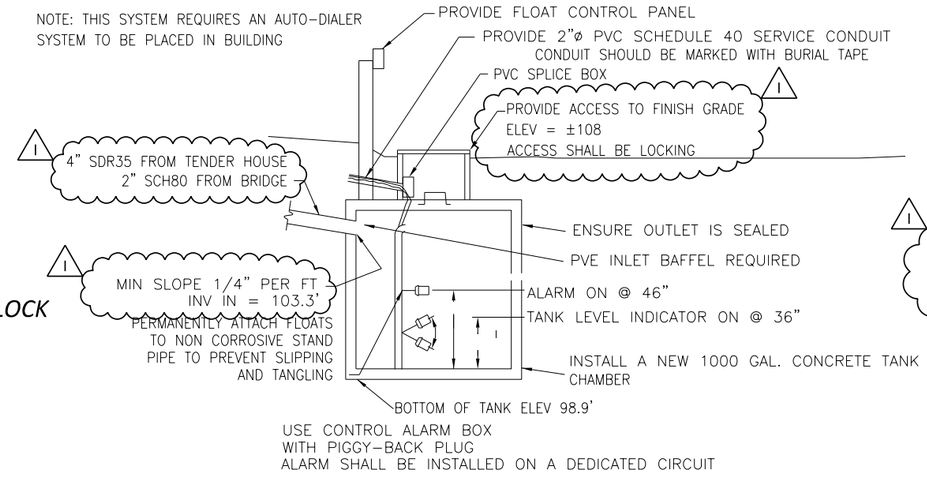
NOTE: WELL PUMP SHALL PROVIDE A MIN OF 5 GPM. IT SHALL BE SIZED BY THE WELL INSTALLER AT TIME OF DRILLING.
WELL PUMP SHALL BE CONNECTED TO 1" HDPE WATERLINE

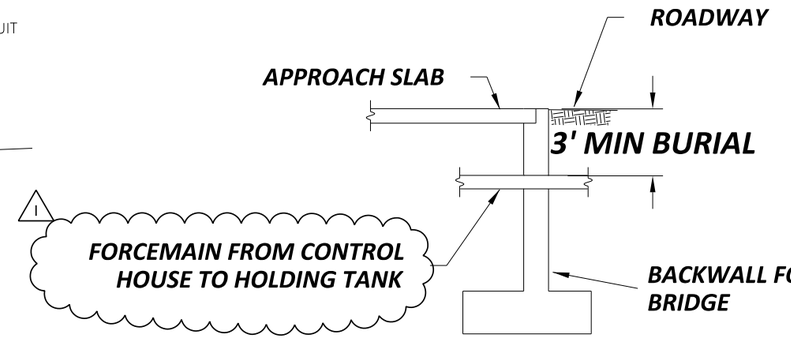


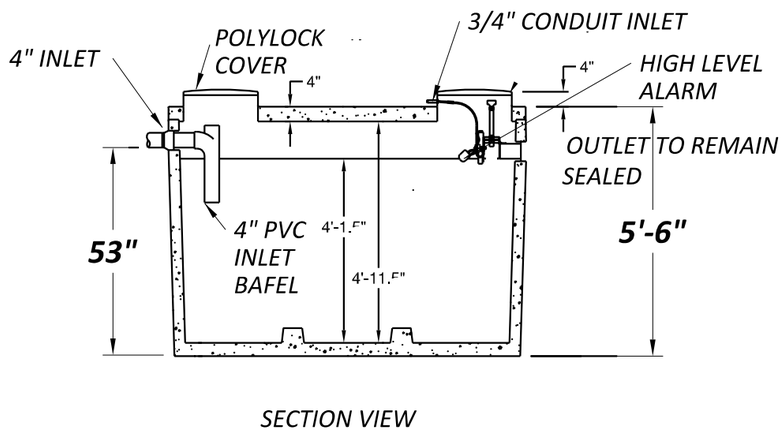
DRILLED WELL DETAIL
N.T.S.



PLAN VIEW







SECTION VIEW

DESIGN CRITERIA:

AVERAGE DAY DEMAND
3 BEDROOMS X 150 GPD/BEDROOM = 450 GPD
MAXIMUM DAY DEMAND
450 GPD X 2 (PEAKING FACTOR)=900 GPD/ 24HR/DAY / 60MIN/HR = 0.625GPM
STORAGE PROVIDED IN THE WELL
3.14 X 1.5'^2 X 9' DEPTH X 7.48 G/FT^3 = 475.6 GAL

GENERAL PROJECT NOTES:
1)HOLDING TANK SHALL BE LEAK TESTED ACCORDING TO VT ANR CHAPTER 1 RULES AND SHALL PASS ALLOWALBLE LEAKAGE TEST.
2) FORCEMAIN SHALL BE LEAK TESTED PRIOR TO BEING CONNECTED TO HOLDING TANK AND SHALL PASS THE VT ANR CHAPTER 1 RULES ALLOWABLE LEAKAGE.
3) 2" FORCE MAIN SHALL BE CONNECTED TO HOLDING TANK VIA POLY INLET AND SHALL HAVE A 90 DEGREE ELBOW TO DIRECT FLOW DOWN ONCE IN THE TANK.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	4-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42watlinedet.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: EIV
WATER AND SEWER LINE DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: N. HICKS
CHECKED BY: M. MOZER
SHEET 35 OF 379

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET 1

MILEMARKER, 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) lb/ft 1.8	2.0	2.5	1.88	2.42	3.35	ANCHOR	SLEEVE	TUBULAR STEEL Ø (in) FOUND-ATION	3.0	3.5	4.0	5.0	lb/ft 7.6	9.0	10.8	14.6	W-SHAPE STEEL FTG. SIZE 24"	30"	WEIGHT	POST SIZE	SIGN FRAME REQUIRED	REMARKS SHSM = FHWA STANDARD HIGHWAY SIGNS AND MARKINGS BOOK	SIGN DETAIL DETAIL IN SHSM	DETAIL ON DWG. NUMBER	STD. SHEET NUMBER
NORTH HERO GRAND ISLE US ROUTE 2:																																							
509+91.0, LT	DRAW BRIDGE AHEAD 0020 0704 0920	1 1	36 6	36 10	9.00 0.42						2					X			X																		BACK-TO-BACK SIGN ID CODE VD-700	W3-6		T-44
509+91.0, RT	DRAW BRIDGE AHEAD	1	36	36	9.00						2											2		252													FLASHING BEACON SHALL BE MOUNTED ABOVE SIGN	W3-6		
512+27.0, LT		1	36	36	9.00						2					X			X																			W3-3		
512+27.0, RT		1	36	36	9.00						2					X			X																			W3-3		
515+50.0, RT	STOP HERE ON RED	1	24	36	6.00						1					X			X																			R10-6		
517+25.0, RT	BRIDGE 8 US-2	1	6	10	0.42						1				X						X																SIGN ID CODE VD-701			T-42
518+40.0, RT	GRAND ISLE NORTH HERO	1	72	10	5.00						2					X			X																			SIGN ID CODE VD-024 MOUNT TO BRIDGE			T-94
520+50.0, LT	BRIDGE 8 US-2	1	6	10	0.42						1				X						X																SIGN ID CODE VD-701			T-42
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."												LF	LF	LF	LF 28	LF 126	LF			EA			LB	LB	252	LB	LB											
TOTALS					SF 48.26	SF	EA.	SF				LF			LF 154							EA. 2		LB 252						EA.	EA.	LB							

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PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: zl2bl42tss.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
TRAFFIC SIGN SUMMARY SHEET 1

PLOT DATE: 2/6/2018
DRAWN BY: A. KIRBY
CHECKED BY: J. SHIELDS
SHEET 36 OF 379

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET 2

MILEMARKER, 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) lb/ft 1.8	2.0	2.5	ANCHOR	SLEEVE	TUBULAR STEEL Ø (in) FOUNDATION	3.0	3.5	4.0	5.0 lb/ft 7.6	9.0	10.8	14.6	W-SHAPE STEEL FTG. SIZE 24"	30"	WEIGHT	POST SIZE	SIGN FRAME REQUIRED	REMARKS SHSM = FHWA STANDARD HIGHWAY SIGNS AND MARKINGS BOOK	SIGN DETAIL DETAIL IN SHSM	DETAIL ON DWG. NUMBER	STD. SHEET NUMBER
NORTH HERO GRAND ISLE US ROUTE 2:																																				
523+00.0, LT	STOP HERE ON RED	1	24	36	6.00						1					X		X																	R10-6		
525+71.0, LT		1	36	36	9.00						2					X		X																	W3-3		
525+71.0, RT		1	36	36	9.00						2					X		X																	W3-3		
528+84.0, LT	DRAW BRIDGE AHEAD 0020 0702 0020	1 1	36 6	36 10	9.00 0.42						2									2		252											FLASHING BEACON SHALL BE MOUNTED ABOVE SIGN BACK-TO-BACK SIGN ID CODE VD-700	W3-6		T-44
528+84.0, RT	DRAW BRIDGE AHEAD	1	36	36	9.00						2					X		X																	W3-6		
	THIS SHEET SUBTOTAL				42.42											98				2		252														
	TRAFFIC SIGN SUMMARY SHEET 1 SUBTOTAL				48.26										28	126				2		252														
	ROUNDING				0.32										2	6				-		-														
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."												LF	LF	LF	LF 30	LF 230	LF		EA		LB	LB 504	LB	LB											
	TOTALS				SF 91.00	SF	EA.	SF				LF			LF 260					EA. 4		LB 504				EA.	EA.	LB								

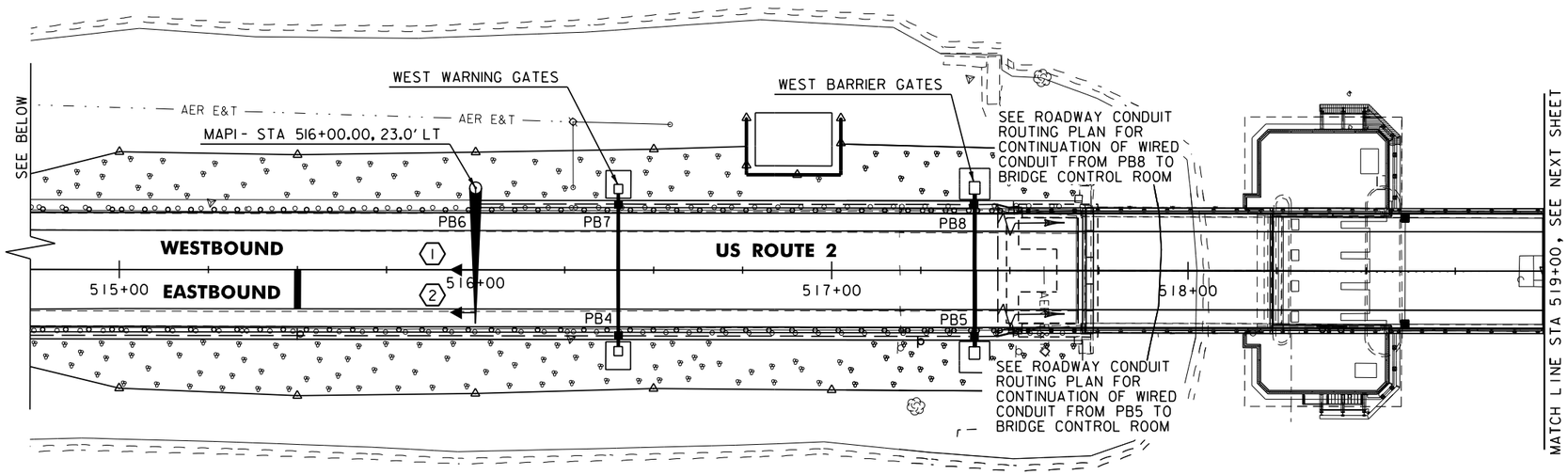
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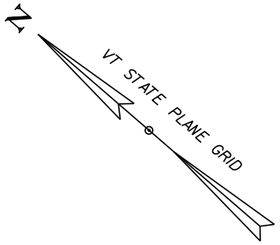
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PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

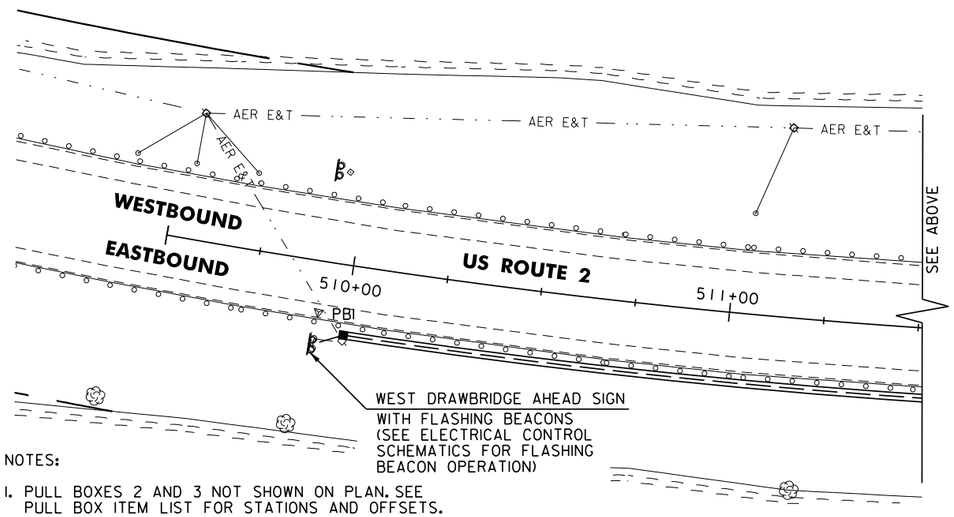
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PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
TRAFFIC SIGN SUMMARY SHEET 2

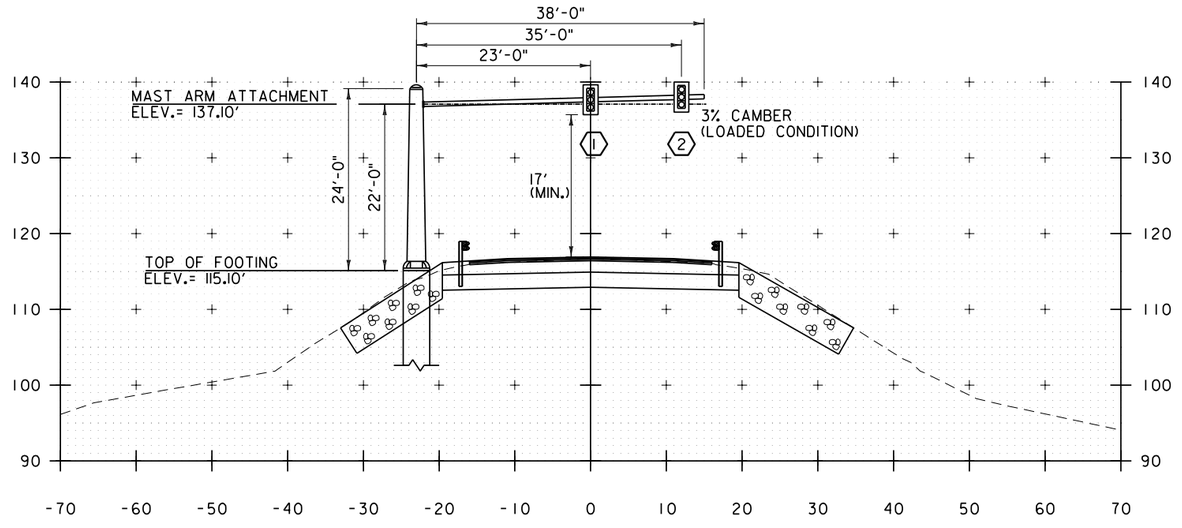
PLOT DATE: 2/6/2018
DRAWN BY: A. KIRBY
CHECKED BY: J. SHIELDS
SHEET 37 OF 379





EXISTING	NEW	LEGEND
		MAST ARM POLE (MAP)
		STRAIN POLE (SP)
		CONTROLLER CABINET
		PULL BOX (PB) / JUNCTION BOX (JB)
		SIGNAL HEAD
		VIDEO DETECTOR
EX		CONDUIT
		CONDUIT SLEEVE
		DETECTION ZONE
		PEDESTAL POST (PP)
		MAST ARM MOUNTED SIGN
		STANCHION
		ANTENNA & PREEMPTION TELL-TALE LIGHT
		LUMINAIRE





MAP I
STA 516+00

NOTES:

1. PULL BOXES 2 AND 3 NOT SHOWN ON PLAN. SEE PULL BOX ITEM LIST FOR STATIONS AND OFFSETS.
2. ALL MAST ARM FOOTINGS SHALL INCLUDE A FOUR INCH REVEAL. ELEVATIONS SHOWN IN CROSS-SECTIONS ARE APPROXIMATE FINAL GRADE ELEVATIONS FOR CONTRACTOR BIDDING PURPOSES ONLY. ACTUAL FOOTING ELEVATIONS SHALL BE DETERMINED BY THE CONTRACTOR PRIOR TO SUBMITTING WORKING DRAWINGS.
3. MAST ARM FOOTING SIZES ARE NOT TO SCALE. THE CONTRACTOR SHALL CONFIRM SOIL CONDITIONS AT THE POLE LOCATIONS. FOOTING DESIGNS SHALL BE DETERMINED BY THE CONTRACTOR IN ACCORDANCE WITH THESE SOIL CONDITIONS AND ACTUAL MAST ARM LOADINGS ARE TRANSMITTED TO THE TOP OF THE FOOTINGS.
4. SIGNAL HEADS SHALL BE MOUNTED ON THE VERTICAL CENTER OF THE MAST ARM.
5. SEE SHEETS 39, 40, AND 41 FOR ADDITIONAL TRAFFIC SIGNAL PLANS, NOTES, AND DETAILS.
6. SEE ELECTRICAL CONTROL SCHEMATICS FOR TRAFFIC SIGNAL OPERATING SEQUENCE.
7. THE QUANTITIES LISTED BELOW ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY. MISCELLANEOUS (UNLISTED) WIRE, CABLE, HARDWARE, ETC. ARE REQUIRED TO PROVIDE FOR A FUNCTIONING TRAFFIC SIGNAL SYSTEM. PAYMENT FOR THESE ITEMS AND THE ITEMS LISTED IN THE TABLE BELOW ARE TO BE INCLUDED UNDER ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL EQUIPMENT). THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF THE NUMBER OF ITEMS AND TYPES OF EQUIPMENT REQUIRED.

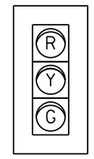
EQUIPMENT	QTY.
WIRED CONDUIT (2")(PVC)	1103'
PULL BOX, STANDARD	8

PULL BOX, STANDARD
PBI - STA 510+00.00, 18.5' RT
PB2 - STA 512+00.00, 18.5' RT
PB3 - STA 514+00.00, 18.5' RT
PB4 - STA 516+40.00, 18.5' RT
PB5 - STA 517+40.00, 18.5' RT

PB6 - STA 516+00.00, 18.5' LT
PB7 - STA 516+40.00, 18.5' LT
PB8 - STA 517+40.00, 18.5' LT

WIRED CONDUIT (2")(PVC)
WEST DRAWBRIDGE AHEAD SIGN ASSEMBLY TO PBI - 13 LF
PBI TO PB2 - 200 LF
PB2 TO PB3 - 200 LF
PB3 TO PB4 - 240 LF
PB4 TO PB5 - 100 LF (2 RUNS)
MAPI TO PB6 - 10 LF
PB6 TO PB7 - 40 LF
PB7 TO PB8 - 100 LF (2 RUNS)

SIGNAL FACE ARRANGEMENT
12 INCH LENSES W/ BACKPLATE



FACES 1, 2

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

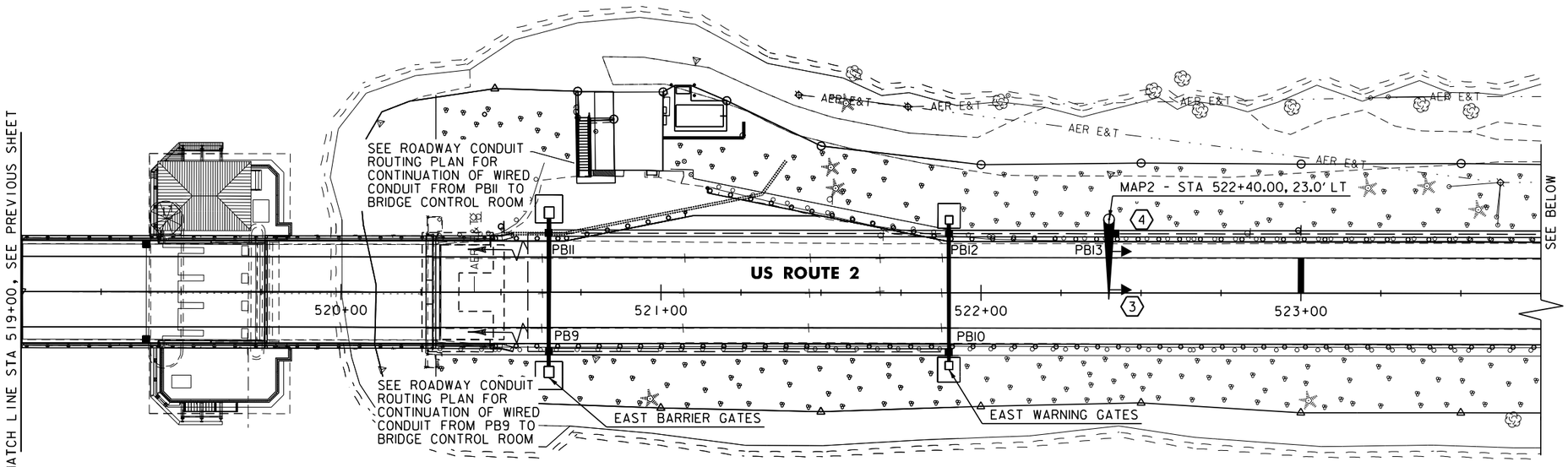
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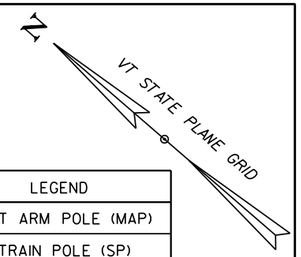
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142tsp.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: D. KAHLBAUGH
TRAFFIC SIGNAL PLAN SHEET 1

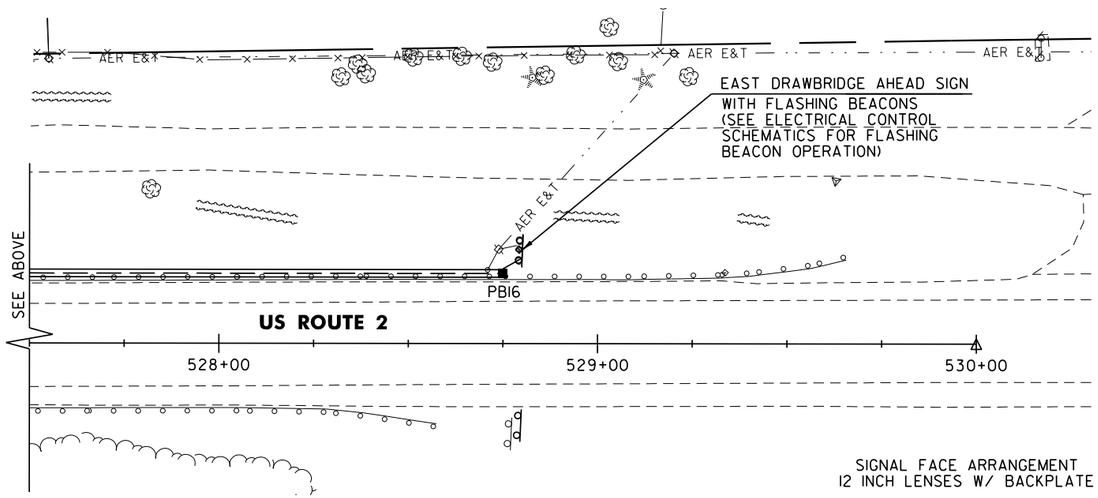
PLOT DATE: 2/6/2018
DRAWN BY: J. HEALD
CHECKED BY: S. BOWMAN
SHEET 38 OF 379

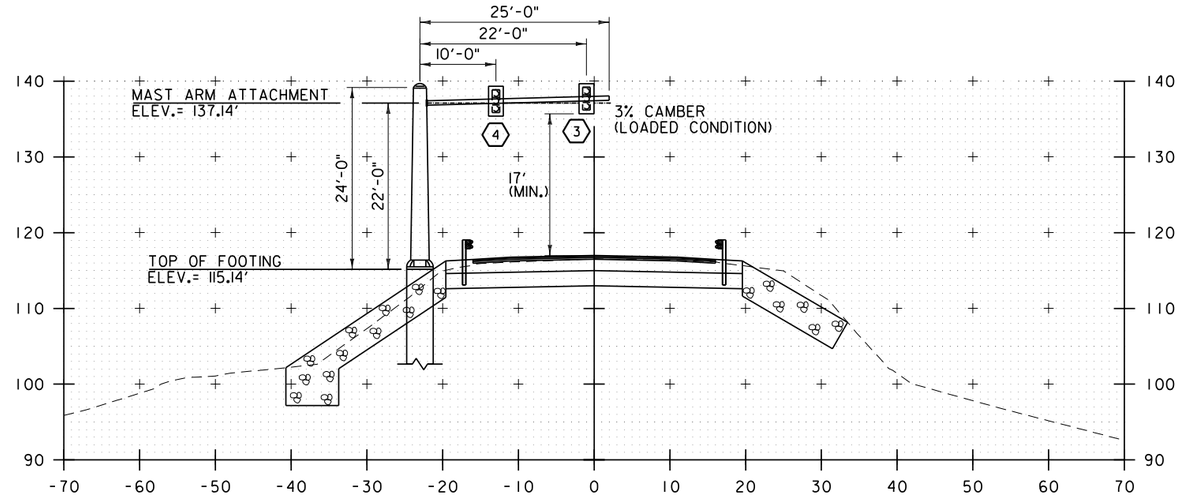
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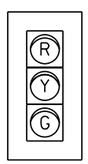
EXISTING	NEW	LEGEND
		MAST ARM POLE (MAP)
		STRAIN POLE (SP)
		CONTROLLER CABINET
		PULL BOX (PB) / JUNCTION BOX (JB)
		SIGNAL HEAD
		VIDEO DETECTOR
EX		CONDUIT
		CONDUIT SLEEVE
		DETECTION ZONE
		PEDESTAL POST (PP)
		MAST ARM MOUNTED SIGN
		STANCHION
		ANTENNA & PREEMPTION TELL-TALE LIGHT
		LUMINAIRE





MAP2
522+40

SIGNAL FACE ARRANGEMENT
12 INCH LENSES W/ BACKPLATE



FACES 3, 4

NOTES:

1. PULL BOXES 14 AND 15 NOT SHOWN ON PLAN. SEE PULL BOX ITEM LIST FOR STATIONS AND OFFSETS.
2. ALL MAST ARM FOOTINGS SHALL INCLUDE A FOUR INCH REVEAL. ELEVATIONS SHOWN IN CROSS-SECTIONS ARE APPROXIMATE FINAL GRADE ELEVATIONS FOR CONTRACTOR BIDDING PURPOSES ONLY. ACTUAL FOOTING ELEVATIONS SHALL BE DETERMINED BY THE CONTRACTOR PRIOR TO SUBMITTING WORKING DRAWINGS.
3. MAST ARM FOOTING SIZES ARE NOT TO SCALE. THE CONTRACTOR SHALL CONFIRM SOIL CONDITIONS AT THE POLE LOCATIONS. FOOTING DESIGNS SHALL BE DETERMINED BY THE CONTRACTOR IN ACCORDANCE WITH THESE SOIL CONDITIONS AND ACTUAL MAST ARM LOADINGS ARE TRANSMITTED TO THE TOP OF THE FOOTINGS.
4. SIGNAL HEADS SHALL BE MOUNTED ON THE VERTICAL CENTER OF THE MAST ARM.
5. SEE SHEETS 38, 40, AND 41 FOR ADDITIONAL TRAFFIC SIGNAL PLANS, NOTES, AND DETAILS.
6. SEE ELECTRICAL CONTROL SCHEMATICS FOR TRAFFIC SIGNAL OPERATING SEQUENCE.
7. THE QUANTITIES LISTED BELOW ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY. MISCELLANEOUS (UNLISTED) WIRE, CABLE, HARDWARE, ETC. ARE REQUIRED TO PROVIDE FOR A FUNCTIONING TRAFFIC SIGNAL SYSTEM. PAYMENT FOR THESE ITEMS AND THE ITEMS LISTED IN THE TABLE BELOW ARE TO BE INCLUDED UNDER ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL EQUIPMENT). THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF THE NUMBER OF ITEMS AND TYPES OF EQUIPMENT REQUIRED.

EQUIPMENT	QTY.
WIRED CONDUIT (2")(PVC)	1208'
PULL BOX, STANDARD	8
ELECTRICAL CONDUIT SLEEVE (8")(PVC)	125'

PULL BOX, STANDARD
PB9 - STA 520+65.00, 18.5' RT
PBI0 - STA 521+90.00, 18.5' RT

PBII - STA 520+65.00, 18.5' LT
PBI2 - STA 521+90.00, 18.5' LT
PBI3 - STA 522+42.00, 18.5' LT
PBI4 - STA 524+75.00, 18.5' LT
PBI5 - STA 526+75.00, 18.5' LT
PBI6 - STA 528+75.00, 18.5' LT

WIRED CONDUIT (2")(PVC)
PB9 TO PBI0 - 125 LF (2 RUNS)
PBII TO PBI2 - 125 LF (2 RUNS)
PBI2 TO PBI3 - 52 LF
MAP2 TO PBI3 - 10 LF
PBI3 TO PBI4 - 233 LF
PBI4 TO PBI5 - 200 LF
PBI5 TO PBI6 - 200 LF
PBI6 TO EAST DRAWBRIDGE AHEAD SIGN ASSEMBLY - 13 LF

ELECTRICAL CONDUIT SLEEVE (8")(PVC)
PBII TO PBI2 - 125 LF

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

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PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: zi2bl42tsp.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: J. HEALD
DESIGNED BY: D. KAHLBAUGH	CHECKED BY: S. BOWMAN
TRAFFIC SIGNAL PLAN SHEET 2	SHEET 39 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 03:50:01 PM
USER = $NTUSER$

TRAFFIC SIGNAL NOTES

A. SIGNAL OPERATION

1. ALL SIGNALS SHALL DWELL ON US ROUTE 2 UNLESS OTHERWISE NOTED.

2. THE US ROUTE 2 THRU PHASE SHALL BE USED FOR THE START-UP PHASE FOLLOWING FLASHING OPERATION.

B. PULL BOXES AND JUNCTION BOXES

1. PULL BOXES AND JUNCTION BOXES ARE DETAILED ON VTRANS STANDARD E-173. MINIMUM JUNCTION BOX SIZE SHALL BE 18" X 12" X 12", OR LARGER AS REQUIRED BY THE ELECTRICAL CODE.

2. THE LOGO ON PULL BOX AND JUNCTION BOX COVERS SHALL BE "TRAFFIC SIGNAL."

3. ALL PULL BOXES AND JUNCTION BOXES SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 678.

C. TRAFFIC SIGNAL CONDUIT

1. ALL TRAFFIC SIGNAL CONDUIT SHALL BE SCHEDULE 80 PVC.

2. ALL TRAFFIC SIGNAL CONDUIT AND CONDUIT SLEEVE WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 678.

D. GENERAL

1. ALL ELECTRICAL WIRING SHALL BE PERFORMED BY A LICENSED ELECTRICIAN AND OVERSEEN BY A MASTER ELECTRICIAN.

2. ALL TRAFFIC SIGNAL EQUIPMENT AND MAST ARM MOUNTED SIGNS SHALL HAVE SAFETY CABLES.

3. THE FOLLOWING EQUIPMENT IS INCLUDED UNDER ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL EQUIPMENT):
   A) MAST ARM POLES MAP1 AND MAP2
   B) 4 - 12" 3-SECTION TRAFFIC SIGNAL HEADS WITH VISORS, BACKPLATES & MOUNTING HARDWARE

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DATE/TIME = Friday, May 15, 2020 03:50:04 PM
USER = $NTUSER$

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: zl2bl42tsn01.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: J. HEALD
DESIGNED BY: D. KAHLBAUGH	CHECKED BY: S. BOWMAN
TRAFFIC SIGNAL NOTES SHEET 1	SHEET 40 OF 379

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TRAFFIC SIGNAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO VTRANS' "STANDARD SPECIFICATIONS FOR CONSTRUCTION", DATED 2011, WITH CURRENT MODIFICATIONS.

2. OVERHEAD SIGNAL SUPPORTS SHALL CONFORM TO AASHTO'S "SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS", DATED 2013.

3. THE DESIGN CALCULATIONS SHALL TAKE INTO ACCOUNT THE FOLLOWING CRITERIA:

   STRUCTURE CRITERIA
   - DESIGN LIFE AND RECURRENCE INTERVAL: 50 YEARS
   - WIND LOAD: 90 M.P.H.; REFER TO ASCE 7-05 TO VERIFY IF THE SITE IS WITHIN THE SPECIAL WIND REGION AND IF CONFIRMED, USE A WIND LOAD OF 120 MPH

   FATIGUE CRITERIA
   - FATIGUE CATEGORY: 2 FOR STRUCTURES LOCATED ON ROADWAYS WITH A SPEED LIMIT GREATER THAN 35 MPH, 3 FOR STRUCTURES LOCATED ON ROADWAYS WITH A SPEED LIMIT LESS THAN OR EQUAL TO 35 MPH.
   - VORTEX SHEDDING: NOT REQUIRED
   - NATURAL WIND GUSTS: INCLUDE
   - TRUCK INDUCED WIND GUSTS: INCLUDE FOR ROADWAYS WHERE THE POSTED SPEED LIMIT FOR THE MAINLINE APPROACHES ARE 40 M.P.H. OR GREATER
   - GALLOPING: DO NOT INCLUDE

   FOUNDATION CRITERIA
   - CONCRETE: CONCRETE, CLASS B, VTRANS' "STANDARD SPECIFICATIONS FOR CONSTRUCTION", DATED 2011, SECTION 541.
   - REINFORCING STEEL: REINFORCING STEEL, LEVEL I VTRANS' "STANDARD SPECIFICATIONS FOR CONSTRUCTION', DATED 2011, SECTION 507.
   - GEOTECHNICAL SOIL RESISTANCES TO BE DETERMINED BY CONTRACTOR; GEOTECHNICAL DATA TO BE OBTAINED BY CONTRACTOR.

4. ANCHOR BOLTS

   A) GALVANIZED ANCHOR BOLTS WITH TWO HEXAGON NUTS AND TWO WASHERS PER BOLT SHALL BE FURNISHED WITH EACH POLE. ANCHOR BOLT PLATES, WHEN USED, SHALL ALSO BE GALVANIZED. SEE SECTION 714.09. AFTER INSTALLATION, A MINIMUM OF TWO THREADS ON THE BOLT SHOULD BE EXPOSED ABOVE THE NUT.

   B) A MINIMUM OF SIX ANCHOR BOLTS SHALL BE PROVIDED AT EACH SINGLE UPRIGHT POST FOUNDATION.

   C) PROCEDURE FOR TIGHTENING DOUBLE-NUT ANCHOR BOLT CONNECTIONS:
      1. VERIFY THAT THE NUTS CAN BE TURNED ONTO THE BOLTS PAST THE ELEVATION CORRESPONDING TO THE BOTTOM OF EACH IN-PLACE LEVELING NUT AND BE BACKED OFF BY THE EFFORT OF ONE PERSON ON A 12-IN. LONG WRENCH OR EQUIVALENT (I.E., WITHOUT EMPLOYING A PIPE EXTENSION ON THE WRENCH HANDLE).
      2. CLEAN AND LUBRICATE THE EXPOSED THREADS OF ALL ANCHOR BOLTS. CLEAN AND LUBRICATE THE THREADS AND BEARING SURFACES OF ALL LEVELING NUTS. RE-LUBRICATE THE EXPOSED THREADS OF THE ANCHOR BOLTS AND THE THREADS OF THE LEVELING NUTS IF MORE THAN 24 HOURS HAS ELAPSED SINCE EARLIER LUBRICATION, OR IF THE ANCHOR BOLTS AND LEVELING NUTS HAVE BECOME WET SINCE THEY WERE FIRST LUBRICATED.
      3. TURN THE LEVELING NUTS ONTO THE ANCHOR BOLTS AND ALIGN THE NUTS TO THE SAME ELEVATION.
      4. PLACE STRUCTURAL WASHERS ON TOP OF THE LEVELING NUTS (ONE WASHER CORRESPONDING TO EACH ANCHOR BOLT).
      5. INSTALL THE BASE PLATE ATOP THE LEVELING NUTS, PLACE STRUCTURAL WASHERS ON TOP OF THE BASE PLATE (ONE WASHER CORRESPONDING TO EACH ANCHOR BOLT), AND TURN THE TOP NUTS ONTO THE ANCHOR BOLTS.
      6. TIGHTEN TOP NUTS TO A SNUG-TIGHT CONDITION IN A STAR PATTERN. SNUG-TIGHT IS DEFINED AS THE MAXIMUM NUT ROTATION RESULTING FROM THE FULL EFFORT OF ONE PERSON ON A 12-IN. LONG WRENCH OR EQUIVALENT. A STAR TIGHTENING PATTERN IS ONE IN WHICH THE NUTS ON OPPOSITE OR NEAR-OPPOSITE SIDES OF THE BOLT CIRCLE ARE SUCCESSIVELY TIGHTENED IN A PATTERN RESEMBLING A STAR. (FOR EXAMPLE, FOR AN 6-BOLT CIRCLE WITH BOLTS SEQUENTIALLY NUMBERED 1 TO 6, TIGHTEN NUTS IN THE FOLLOWING BOLT ORDER: 1, 5, 3, 4, 6, 2.)
      7. TIGHTEN LEVELING NUTS TO A SNUG-TIGHT CONDITION IN A STAR PATTERN.
      8. BEFORE FINAL TIGHTENING OF THE TOP NUTS, MARK THE REFERENCE POSITION OF EACH TOP NUT IN A SNUG-TIGHT CONDITION WITH A SUITABLE MARKING ON ONE FLAT WITH A CORRESPONDING REFERENCE MARK ON THE BASE PLATE AT EACH BOLT. THEN INCREMENTALLY TURN THE TOP NUTS USING A STAR PATTERN UNTIL ACHIEVING THE REQUIRED NUT ROTATION SPECIFIED BELOW. TURN THE NUTS IN AT LEAST TWO FULL TIGHTENING CYCLES (PASSES). AFTER TIGHTENING, VERIFY THE NUT ROTATION.
      9. TOP NUTS FOR ASTM F1554 GRADE 55 ANCHOR BOLTS SHALL BE TIGHTENED TO 1/3 TURN BEYOND SNUG TIGHT CONDITION FOR BOLTS LESS THAN OR EQUAL TO 11/2" DIAMETER AND 1/6 TURN BEYOND SNUG TIGHT CONDITION FOR BOLTS GREATER THAN 11/2" DIAMETER. THE TOLERANCE FOR NUT ROTATION IS PLUS 20 DEGREES. USE A BEVELED WASHER IF THE NUT IS NOT IN FIRM CONTACT WITH THE BASE PLATE OR THE OUTER FACE OF THE BASE PLATE IS SLOPED MORE THAN 1:40.

5. FLANGE BOLTS

   ALL FLANGE BOLTS, HEX NUTS, AND WASHERS SHALL CONFORM TO SUBSECTION 714.05. THE FLANGE BOLTS SHALL BE CAPABLE OF RESISTING 133% OF THE FULL DESIGN STRESS OF THE TUBE AT ITS YIELD STRENGTH STRESS. FLANGE BOLTS SHALL TENSIONED IN ACCORDANCE WITH SUBSECTION 506.19. DIRECT TENSION INDICATORS ARE REQUIRED.

6. U-BOLTS

   U-BOLTS AND ASSOCIATED HARDWARE SHALL CONFORM TO SUBSECTION 714.04.

7. STEEL FOR SIGNAL STRUCTURES

   A) ALL MATERIAL GREATER THAN 1/2" THICK SHALL MEET THE CHARPY V-NOTCH IMPACT REQUIREMENTS FOR THE SPECIFIED MATERIAL. TESTING AND SAMPLING SHALL BE IN ACCORDANCE WITH AASHTO T 243.

   B) PIPE AND TUBES SHALL MEET THE REQUIREMENTS OF ONE OF THE FOLLOWING SPECIFICATIONS:

CANTILEVER MAST ARM STRUCTURE:	
ASTM A595, GRADE A	WELDED, ROUND, TAPERED STEEL TUBE
ASTM A1011, GRADE 50	WELDED, ROUND, TAPERED STEEL TUBE
NON-CANTILEVERED OVERHEAD SIGNAL STRUCTURES	
ASTM A500, GRADE B	WELDED AND SEAMLESS STEEL PIPE (ROUNDS ONLY)
API 5L GRADE X42	AMERICAN PETROLEUM INSTITUTE SPECIFICATION 5L

8. GALVANIZING

   ALL STEEL COMPONENTS, EXCEPT CONCRETE REINFORCING, ARE TO BE HOT DIPPED GALVANIZED AFTER FABRICATION. THE ASSEMBLIES SHALL BE DESIGNED AND FABRICATED TO PERMIT GALVANIZING ON ALL INTERIOR AND EXTERIOR SURFACES AND SHALL BE FREE OF POCKETS AND OTHER STRUCTURAL OBSTRUCTIONS THAT WILL NOT PERMIT PROPER DEPOSITION OF ZINC COATING. GALVANIZING SHALL BE IN ACCORDANCE WITH SECTION 752.02.

9. WELDING

   A) ALL WELDING SHALL BE PERFORMED PER SECTION 506.10.

   B) ALL WELDS SHALL BE AT LEAST AS STRONG AS THE MATERIAL(S) BEING WELDED.

10. FOUNDATIONS

    A) FOOTINGS SHALL BE DESIGNED IN ACCORDANCE WITH VTRANS' MATERIALS & RESEARCH ENGINEERING INSTRUCTIONS GEOTECHNICAL DESIGN PROCEDURES FOR MAST ARM AND OVERHEAD SIGN SUPPORT FOUNDATIONS (MREI10-01), DATED MARCH 9, 2010, A COPY OF WHICH CAN BE FOUND ON THE AGENCY'S WEBSITE: WWW.VTRANS.VERMONT.GOV.

    B) FOUNDATIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING NOTES:

       1. A MINIMUM EMBEDMENT DEPTH OF FIVE FEET SHALL BE USED FOR ALL SPREAD FOOTING FOUNDATIONS; MEASURED FROM THE GROUND SURFACE ELEVATION TO THE BOTTOM OF THE FOOTING ELEVATION.
       2. FOR DRILLED SHAFT FOUNDATIONS, CONCRETE SHALL BE POURED AGAINST UNDISTURBED SOIL UNLESS A PERMANENT CASING IS DESIGNED FOR AND APPROPRIATE SUPPORTING CALCULATIONS ARE PROVIDED. THE TOP TWO FEET OF SOIL SHALL BE NEGLECTED FOR DESIGN PURPOSES. A DISPOSABLE CIRCULAR CONCRETE FORM, IF USED, SHALL NOT BE PLACED DEEPER THAN TWO FEET, IN ORDER NOT TO REDUCE THE FRICTION BETWEEN THE SOIL AND THE CONCRETE.
       3. AS AN ALTERNATIVE TO THE DRILLED HOLES, FOOTINGS MAY BE POURED IN EXCAVATED HOLES USING THE PROPER FORMS, WHICH MUST BE REMOVED. THE EXCAVATED HOLES SHALL BE AT LEAST TWO FEET CLEAR OF THE FOUNDATION SIDES AND ONE FOOT DEEPER THAN THE FOUNDATION. CARE SHALL BE TAKEN TO AVOID EXCAVATING AROUND THE TOP OF THE FOUNDATION. THE BACKFILL MATERIAL SHALL BE COMPACTED AS DESCRIBED IN SECTION 204.08. DESIGN LIMITS AS FOR AUGURED FOOTINGS APPLIES.
       4. ANY BACKFILL PLACED ADJACENT TO THE FOOTING SHALL BE GRANULAR MATERIAL MEETING THE REQUIREMENTS FOR GRANULAR BACKFILL FOR STRUCTURES, SECTION 704.08. IT SHALL BE COMPACTED AS DESCRIBED IN SECTION 204.08.
       5. CONCRETE FOR THE FOUNDATION SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE, SECTION 541 STRUCTURAL CONCRETE. IF DRILLED SHAFT FOUNDATIONS ARE REQUIRED, THE CONCRETE SPECIFICATIONS MAY NEED TO BE ADJUSTED FOR CONSTRUCTABILITY ISSUES. HOWEVER, IF REQUIRED, THE CONTRACTOR SHALL SUBMIT ANY CHANGES TO THE CONCRETE SPECIFICATION FOR REVIEW BY THE VTRANS PROJECT MANAGER.
       6. STEEL PILES IF USED, SHALL MEET THE REQUIREMENTS OF SECTION 505.
       7. WHEN THE DESIGN DEPTH OF A FOUNDATION CANNOT BE OBTAINED DUE TO UNFORESEEN FIELD CONDITIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR THE MANUFACTURER TO OBTAIN A REVISED FOUNDATION DESIGN. SUCH A REVISION SHALL BE SUBMITTED TO THE VTRANS PROJECT MANAGER AND MAY REQUIRE UP TO A FOUR-WEEK REVIEW PERIOD BY VTRANS.

    C) SIGNALS SHALL BE INSTALLED AND LEVELED. POLES SHALL BE PLUMB. STAINLESS STEEL STANDARD GRADE WIRE CLOTH WITH A 1/4" MAXIMUM OPENING WITH MINIMUM WIRE DIAMETER OF NO. 16 AWG WITH A 2" OVERLAP SHALL USED AT POLE BASES AND SECURED WITH 3/4" STAINLESS STEEL BANDING AFTER ANCHOR BOLTS ARE FULLY TIGHTENED.

11. EACH OVERHEAD TRAFFIC SIGNAL SUPPORT SHALL BE GROUNDED. THE GROUND SHALL CONSIST OF THE FOLLOWING:

    A) AN INTERNAL GROUND LUG OPPOSITE THE HAND HOLE

    B) A #6 (MIN.) SOFT DRAWN COPPER GROUNDING ELECTRODE CONDUCTOR

    C) A 5/8" X 8' (MIN.) COPPER CLAD GROUNDING ELECTRODE

    THE RESISTANCE TO GROUND SHALL BE 25 OHMS OR LESS. ADDITIONAL GROUNDING ELECTRODES MAY BE REQUIRED (MINIMUM SPACING SHALL BE 6'). WHEN A POWER SERVICE, METER AND DISCONNECT ARE ATTACHED TO A POLE, THERE SHALL BE A CONTINUOUS GROUND WIRE FROM THE METER AND DISCONNECT WHICH MAY RUN INTERNAL TO THE UPRIGHT, THROUGH THE 1/2" FLEXIBLE TUBING IN THE CONCRETE BASE TO THE REQUIRED GROUNDING ELECTRODE(S). THE GROUND WIRE FROM THE POLE GROUNDING LUG, CONTROLLER CABINET AND/OR LUMINAIRE MAY ATTACH TO THIS CONTINUOUS GROUNDING ELECTRODE CONDUCTOR FROM THE SERVICE METER AND DISCONNECT. THE CONTRACTOR SHALL PERFORM A RESISTANCE TO GROUND TEST ON THE CONTINUOUS GROUNDING ELECTRODE CONDUCTOR FROM THE SERVICE METER AND DISCONNECT AND PROVIDE A WRITTEN STATEMENT TO THE AREA ELECTRICAL INSPECTOR THAT THE GROUNDING ELECTRODE CONDUCTOR IS CONTINUOUS FROM THE SERVICE METER AND DISCONNECT AND THE RESISTANCE TO GROUND IS 25 OHMS OR LESS.

12. HORIZONTAL MEMBERS SHALL BE CAMBERED AND THE VERTICAL POLES BACK RAKED, WHERE APPLICABLE, TO THE ANTICIPATED DEAD LOAD DEFLECTION PLUS THE CAMBER, IF ANY, SPECIFIED ON THE PLANS.

13. AN EQUIVALENT ALTERNATE DESIGN MAY BE SUBSTITUTED FOR THE DETAILS AND MATERIALS SHOWN.

14. THE DETAILS OF DESIGN FOR THE STRUCTURE AND FOUNDATION ARE TO BE SUPPLIED BY THE CONTRACTOR AND/OR BY THE MANUFACTURER, THE STRUCTURE SHALL BE DESIGNED TO RESIST THE MAXIMUM LOADING AS OUTLINED IN THE AASHTO STANDARD SPECIFICATIONS, SEE NOTE 2. ALL DESIGN CALCULATIONS FOR THE STRUCTURE AND THE FOUNDATION SHALL BE CHECKED AND STAMPED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF VERMONT PRIOR TO SUBMITTAL OF THE FABRICATION DRAWINGS TO VTRANS.

15. THE CONTRACTOR SHALL SUBMIT ONE DIGITAL VERSION OF THE DESIGN CALCULATIONS TO VTRANS PROJECT MANAGER SHOWING THE FOLLOWING INFORMATION FOR EACH OF THE VERTICAL AND HORIZONTAL COMPONENTS OF THE STRUCTURE AND FOUNDATION:

    A) THE DESIGN AXIAL AND SHEAR FORCES AND BENDING AND TORSIONAL MOMENTS ACTING AT THE TOP OF THE FOUNDATION.

    B) THE DESIGN AXIAL, BENDING AND SHEAR STRESSES AND THE COMBINED STRESS RATIO.

    C) VIBRATION AND FATIGUE CALCULATIONS AS SET FORTH IN SECTION 11 OF THE AASHTO PUBLICATION REFERENCED IN NOTE 1.

    D) THE ALLOWABLE AXIAL, BENDING, AND SHEAR STRESSES.

    E) ITEMS A, B, AND D SHALL BE SHOWN FOR EACH OF THE GROUP LOADINGS (I, II, III) AND FOR THE BASIC WIND LOAD APPLIED TO THE TWO CASES OUTLINED IN THE AASHTO STANDARD SPECIFICATIONS (SEE NOTE 2), SECTION 1.2.5(D)(4).

    F) FAILURE TO SUPPLY THE PROPER DESIGN INFORMATION SHALL BE CAUSE FOR REJECTION OF THE STRUCTURE.

    G) A MINIMUM OF TWO WEEKS SHALL BE REQUIRED FOR REVIEW BY VTRANS.

    H) EVERY MEMBER AND CONNECTION IN A CANTILEVERED OVERHEAD TRAFFIC SIGNAL SUPPORT SHALL BE DESIGNED TO PROVIDE ADDITIONAL RESIDUAL CAPACITY FOR FUTURE MODIFICATION EQUIVALENT TO A 5-SECTION TRAFFIC SIGNAL HEAD WITH A 5-INCH LOUVERED BACKPLATE LOCATED ON THE OUTERMOST EXTENT OF THE MAST ARM. OVERHEAD SIGN STRUCTURES AND NON-CANTILEVERED TRAFFIC SIGNAL STRUCTURES SHALL BE DESIGNED TO A MAXIMUM DESIGN RATIO OF 85% FOR EVERY MEMBER AND CONNECTION.

16. FABRICATION DRAWINGS IN A DIGITAL FORMAT SHALL BE SUBMITTED TO VTRANS PROJECT MANAGER FOR APPROVAL PRIOR TO FABRICATION. THE FABRICATION DRAWINGS SHALL INCLUDE THE FOLLOWING INFORMATION:

    A) DETAILED DRAWING OF EACH COMPONENT OF THE STRUCTURE.

    B) MATERIAL SPECIFICATION FOR EACH COMPONENT OF THE STRUCTURE, EITHER BY COMPLETE SPECIFICATION OR REFERENCE TO APPLICABLE ASTM STANDARDS.

    C) NOTATION OF PROJECT NAME, PROJECT NUMBER, ROUTE NUMBER, AND STRUCTURE STATIONING TO BE INCLUDED ON EACH SHEET.

    D) DETAILS FOR LOCATION OF SIGNS/SIGNALS AND ATTACHMENT HARDWARE FOR THE SUPPORT STRUCTURE.

    E) ALL ELEVATIONS AND DIMENSIONS NECESSARY TO PROVIDE A COMPLETE SET OF RECORD PLANS.

    F) DEAD LOAD DEFLECTION AND CAMBER INFORMATION.

    G) WELDING DETAILS AND PROCEDURES ARE REQUIRED FOR ALL WELDS. PROCEDURES SHALL BE SUBMITTED FOR APPROVAL WITH REFERENCE TO EACH WELD IDENTIFIED ON THE FABRICATION DRAWINGS. SEE SECTION 506.10.

    H) BOLT TENSIONING REQUIREMENTS.

17. THE TRAFFIC SIGNALS SHALL BE MOUNTED TO THE ARM OR POLE USING A FIXED MOUNT SYSTEM, UNLESS OTHERWISE NOTED ON THE CROSS SECTION SHEET. FOR SIGNALS MOUNTED ON A MAST ARM, THE MAST ARM AND MOUNTING POINT SHALL BE IN THE MIDDLE OF THE SIGNAL HEAD.

18. BASE PLATES SHALL BE STAMPED WITH POLE INFORMATION INCLUDING: POLE DIAMETER, HEIGHT, YIELD STRENGTH, AND GAUGE; ARM INFORMATION SHALL INCLUDE: HORIZONTAL MEMBER DIAMETER, LENGTH, YIELD STRENGTH, AND GAUGE. THE INFORMATION SHALL BE STAMPED ON A METAL TAG RIVETED TO THE POLE NEAR THE HAND HOLE.

19. SEE STANDARD E-171A FOR ADDITIONAL NOTES AND INFORMATION.

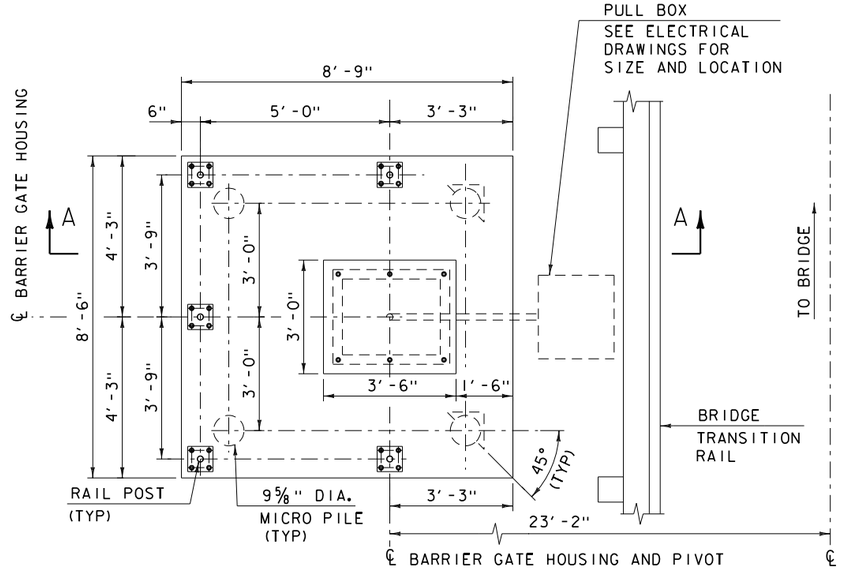
20. THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO SCHEDULE A FINAL INSPECTION AND OBTAIN WRITTEN APPROVAL OF WORK PER SECTION 678.11.

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PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

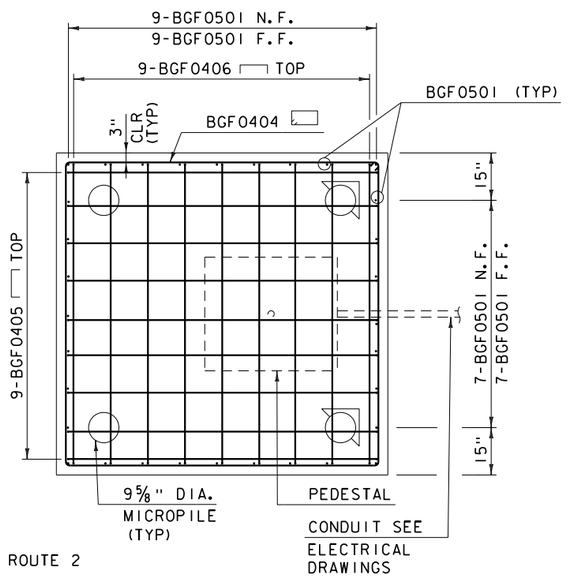
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PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: J. HEALD
DESIGNED BY: D. KAHLBAUGH	CHECKED BY: S. BOWMAN
TRAFFIC SIGNAL NOTES SHEET 2	SHEET 41 OF 379

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PLAN

SCALE ½" = 1'-0"

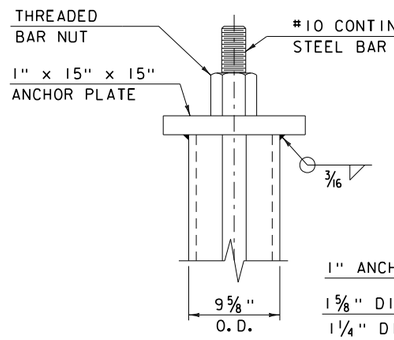


PLAN

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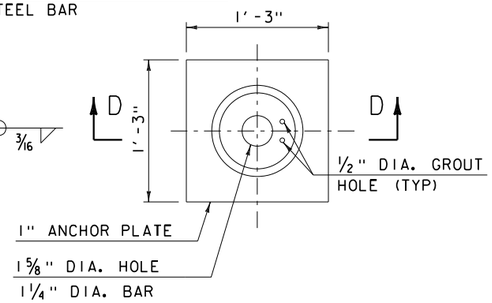
LEGEND:

- ○ = VERTICAL MICROPILE
- ⊘ = BATTERED MICROPILE AT 4 V TO 1 H
- NF = NEAR FACE
- FF = FAR FACE
- EF = EACH FACE
- ▲ = CUT TO FIT IN FIELD



SECTION D-D

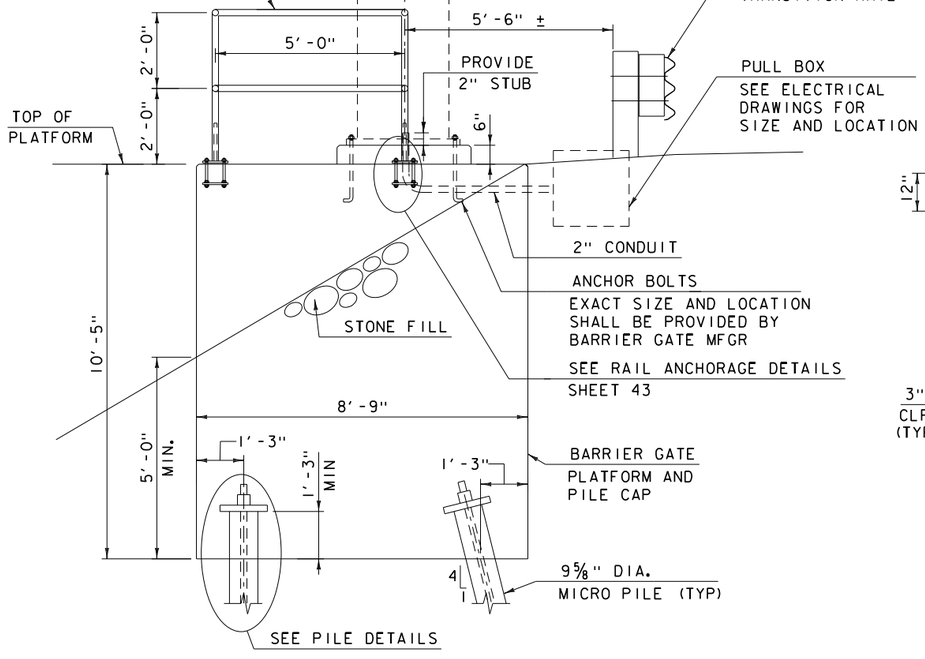
SCALE 1½" = 1'-0"



PLAN

SCALE 1½" = 1'-0"

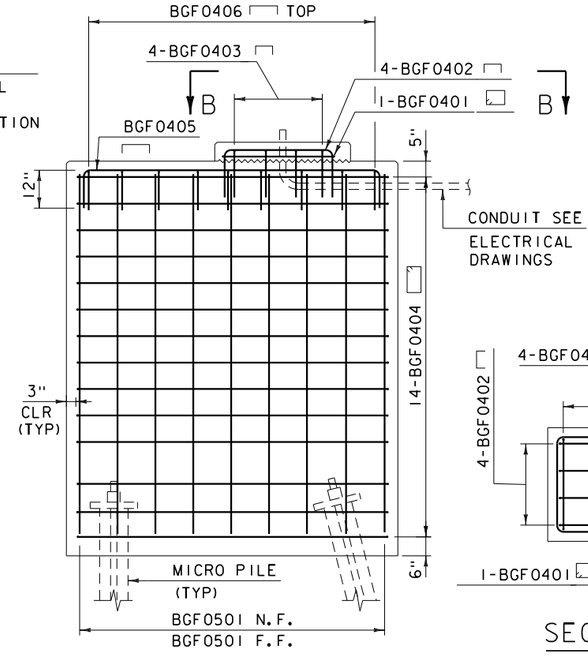
PILE DETAILS



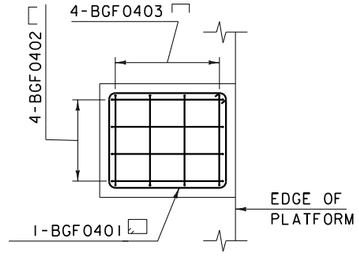
ELEVATION

BARRIER GATE FOUNDATION DETAIL

SCALE ½" = 1'-0"



SECTION A-A



SECTION B-B

PEDESTAL REINFORCEMENT

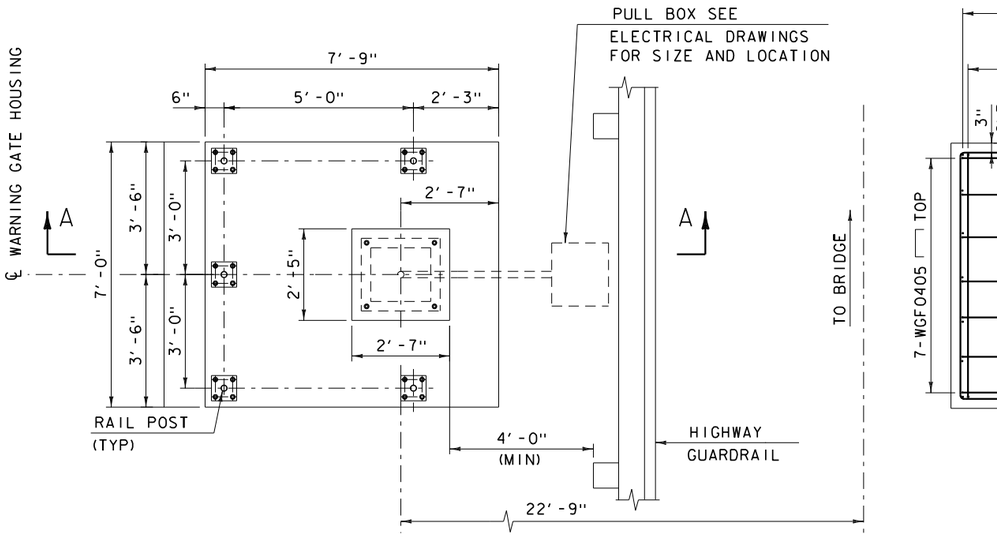
BARRIER GATE FOUNDATION REINFORCING (4 -REQ'D)

SCALE ½" = 1'-0"

NOTES:

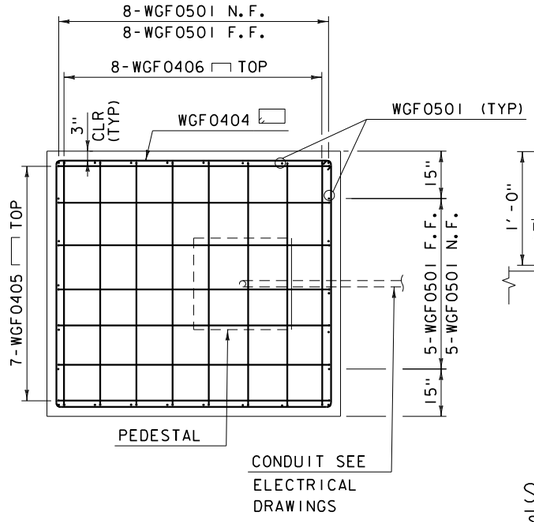
1. BARRIER GATE FOUNDATION SHOWN IS AT STA 517+40 LEFT. GATE FOUNDATION AT STA 517+40 RIGHT IS OPPOSITE HAND.
2. FOR ADDITIONAL NOTES, SEE SHEET 43.
3. FOR MICROPILE DETAILS AND NOTES, SEE GENERAL NOTES.

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142brbargtl.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: D. DOUGHERTY
DESIGNED BY: R. XU	CHECKED BY: M. MOZER
BARRIER GATE FOUNDATION DETAILS	SHEET 42 OF 379



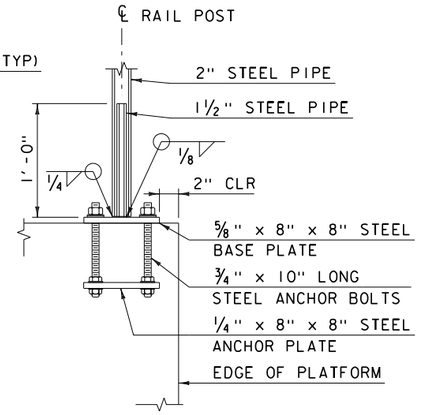
PLAN

SCALE 1/2" = 1'-0"



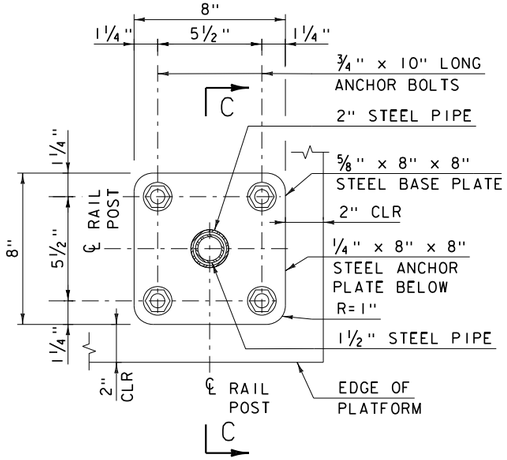
PLAN

SCALE 1/2" = 1'-0"



SECTION C-C

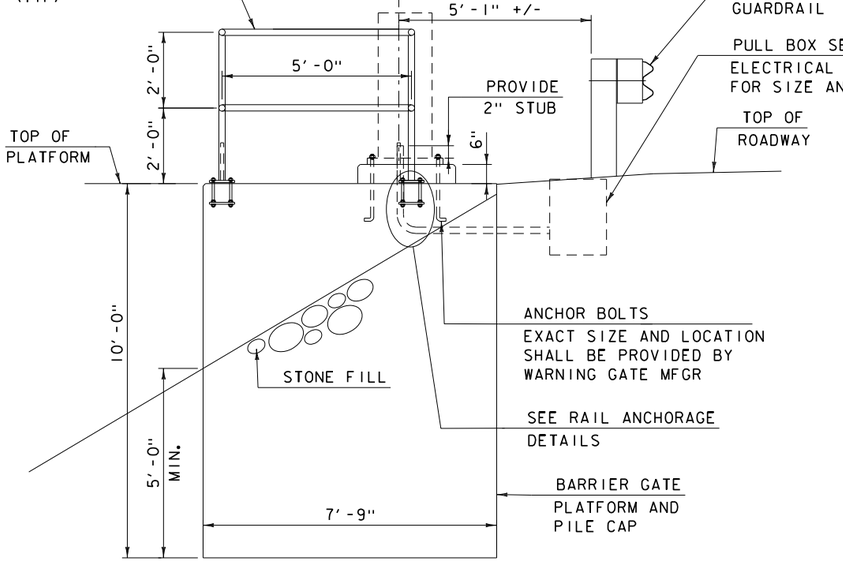
SCALE 1 1/2" = 1'-0"



PLAN

SCALE 3" = 1'-0"

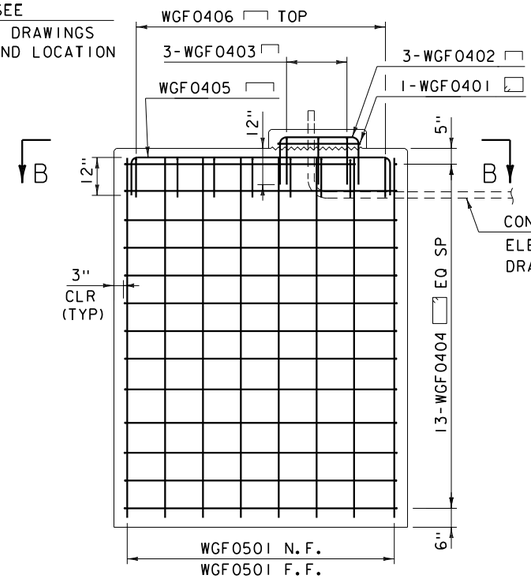
RAIL ANCHORAGE DETAILS



ELEVATION

WARNING GATE FOUNDATION DETAIL

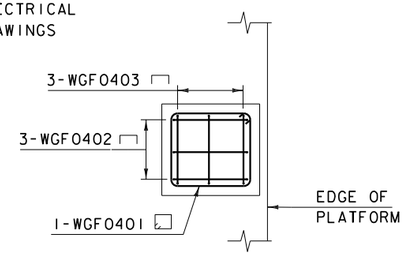
SCALE 1/2" = 1'-0"



SECTION A-A

WARNING GATE FOUNDATION REINFORCING (4-REQ'D)

SCALE 1/2" = 1'-0"



SECTION B-B

PEDESTAL REINFORCEMENT

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

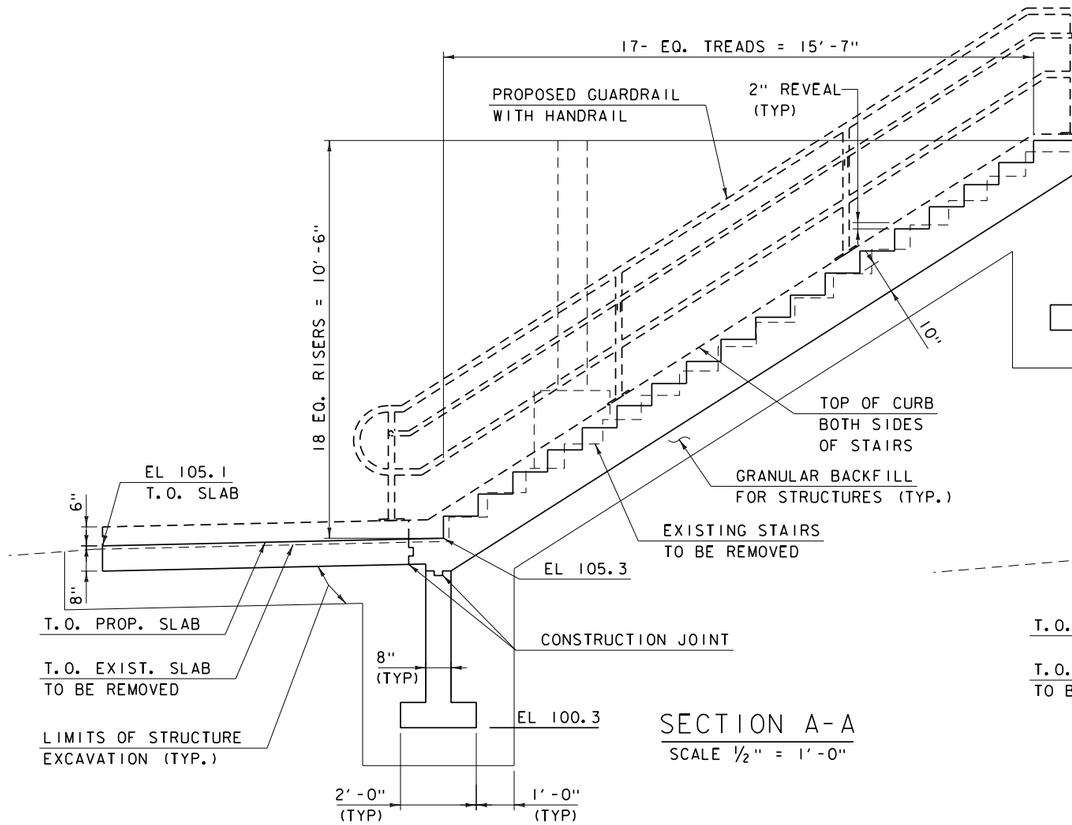
NOTES:

1. FOR GATE LOCATIONS, SEE SHEET 239.
2. WARNING GATE FOUNDATION SHOWN IS AT STA 516+40 LEFT. WARNING GATE FOUNDATION AT STA 516+40 RIGHT IS OPPOSITE HAND.
3. CHECK WITH THE ELECTRICAL CONTRACTOR TO VERIFY CONDUIT LOCATION AND SIZE.
3. VERIFY EQUIPMENT ANCHORAGE DETAILS.
4. ALL RAILING STEEL SHALL BE GALVANIZED AND CONFORM TO ASTM A53 GRADE B.
5. ALL PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36.
6. ALL CONCRETE MUST HAVE A MINIMUM 28 DAY STRENGTH OF 3500 PSI. CONSTRUCTION OF THE BARRIER GATE AND WARNING GATE FOUNDATIONS SHALL MEET REQUIREMENTS FOR MASS CONCRETE PLACEMENT AS SPECIFIED IN SPECIAL PROVISION SECTION 501.

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

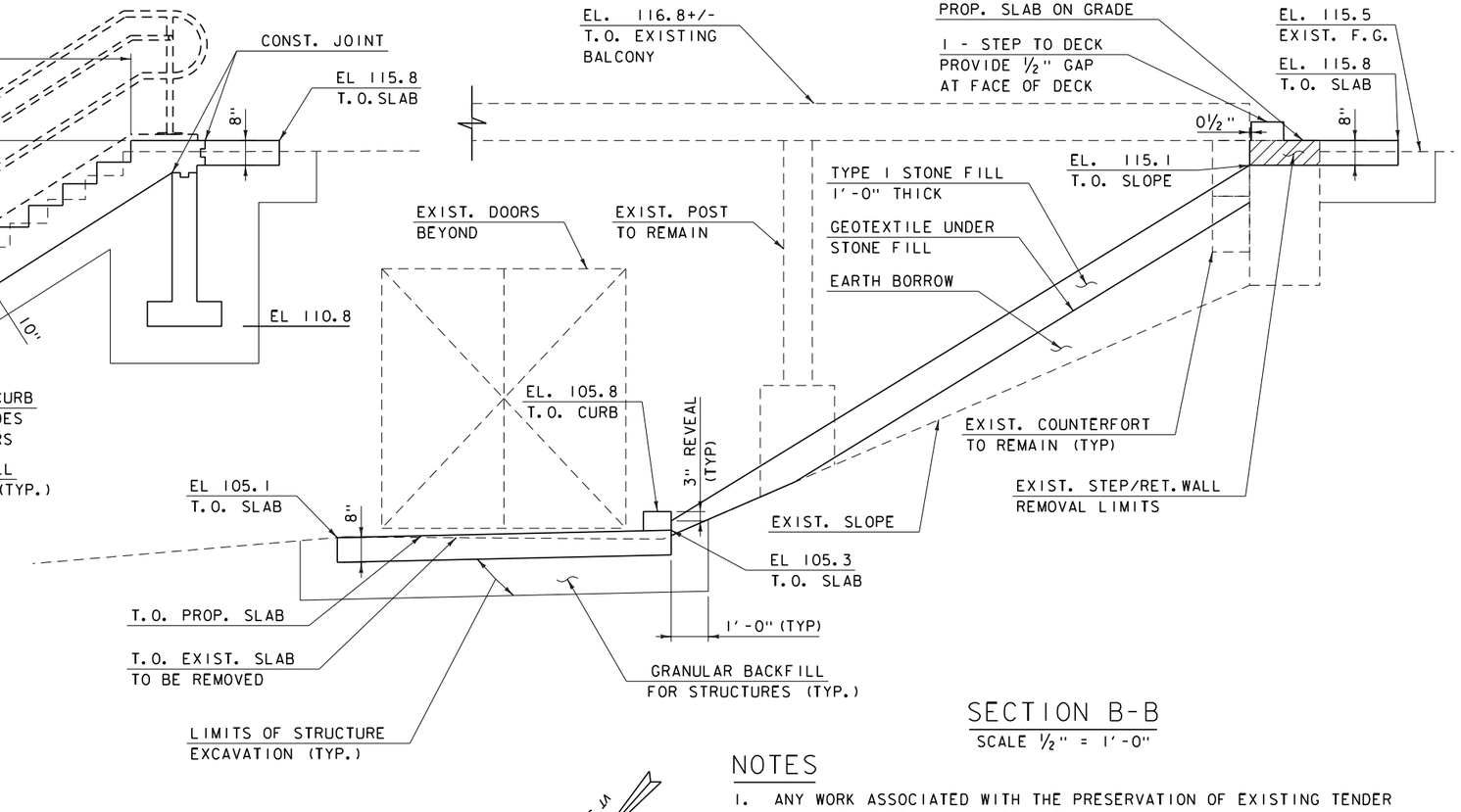
FILE NAME: z12b142brwarngtl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: R. XU
WARNING GATE FOUNDATION DETAIL

PLOT DATE: 2/6/2018
DRAWN BY: D. DOUGHERTY
CHECKED BY: M. MOZER
SHEET 43 OF 379



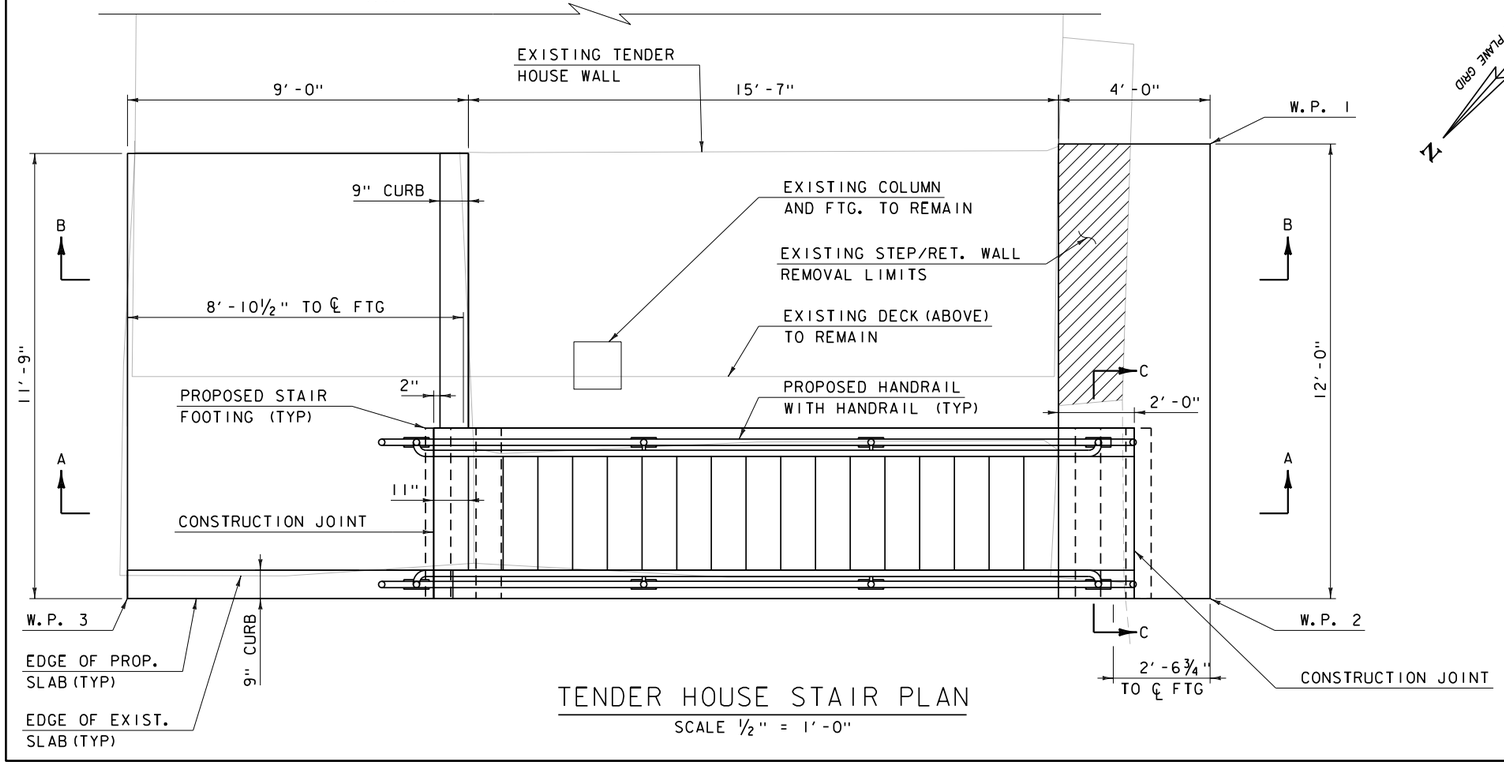
SECTION A-A

SCALE ½" = 1'-0"



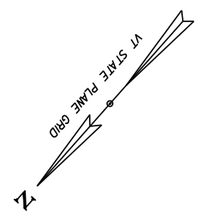
SECTION B-B

SCALE ½" = 1'-0"



TENDER HOUSE STAIR PLAN

SCALE ½" = 1'-0"

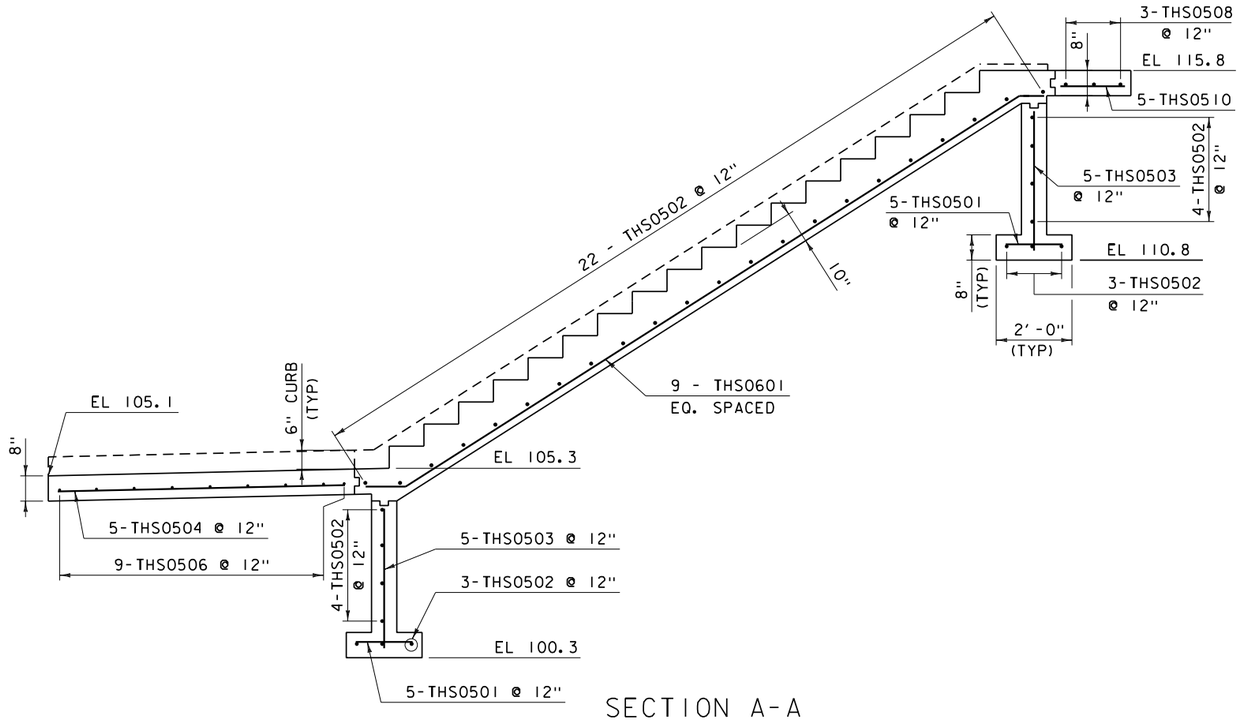


NOTES

1. ANY WORK ASSOCIATED WITH THE PRESERVATION OF EXISTING TENDER HOUSE FEATURES TO BE RETAINED, SUCH AS EXISTING BALCONY FOUNDATION, SHALL BE CONSIDERED INCIDENTAL TO THE WORK.
2. IF EXCAVATION OCCURS BELOW BOTTOM OF FOOTING ELEVATIONS, CONTRACTOR SHALL RE-ESTABLISH A PROPER FOOTING SUBGRADE WITH GRANULAR BACKFILL FOR STRUCTURES TO THE ELEVATION SHOWN.
3. MAXIMUM STAIR RISER HEIGHT = 7"
   MINIMUM STAIR TREAD WIDTH = 11"
4. PROVIDE 1/2" EXPANSION MATERIAL AT VERTICAL INTERFACE OF PROPOSED CONCRETE AND EXISTING STRUCTURES, UNLESS OTHERWISE NOTED. SEAL WITH GAP BETWEEN EXISTING STRUCTURES AND PROPOSED EDGE OF SLAB. SEAL WITH POLYURETHANE JOINT SEALER.
5. GUARDRAIL AND POSTS TO BE 2" DIAM SCH 40 STEEL. HANDRAIL TO BE 1½" DIAM SCH 40 STEEL. POST TO HAVE WELDED STEEL BASEPLATE. CAST THREADED INSERTS INTO CURBS FOR POST ATTACHMENT. ALL STEEL COMPONENTS AND HARDWARE TO BE GALVANIZED AFTER FABRICATION.
6. GRADE THE SLOPE NORTH AND WEST OF PROPOSED WORK SUCH THAT THE GRADING SLOPES AWAY FROM PROPOSED WORK. SHIM PAVEMENT AT TOP LANDING TO SLOPE AWAY FROM TOP LANDING AND TENDER HOUSE.
7. SEE GENERAL NOTES FOR ADDITIONAL DETAILS. SEE SD-501 AND SD-502 FOR TYPICAL CONCRETING DETAILS.
8. SEE SHEET 45 FOR SECTION C-C.

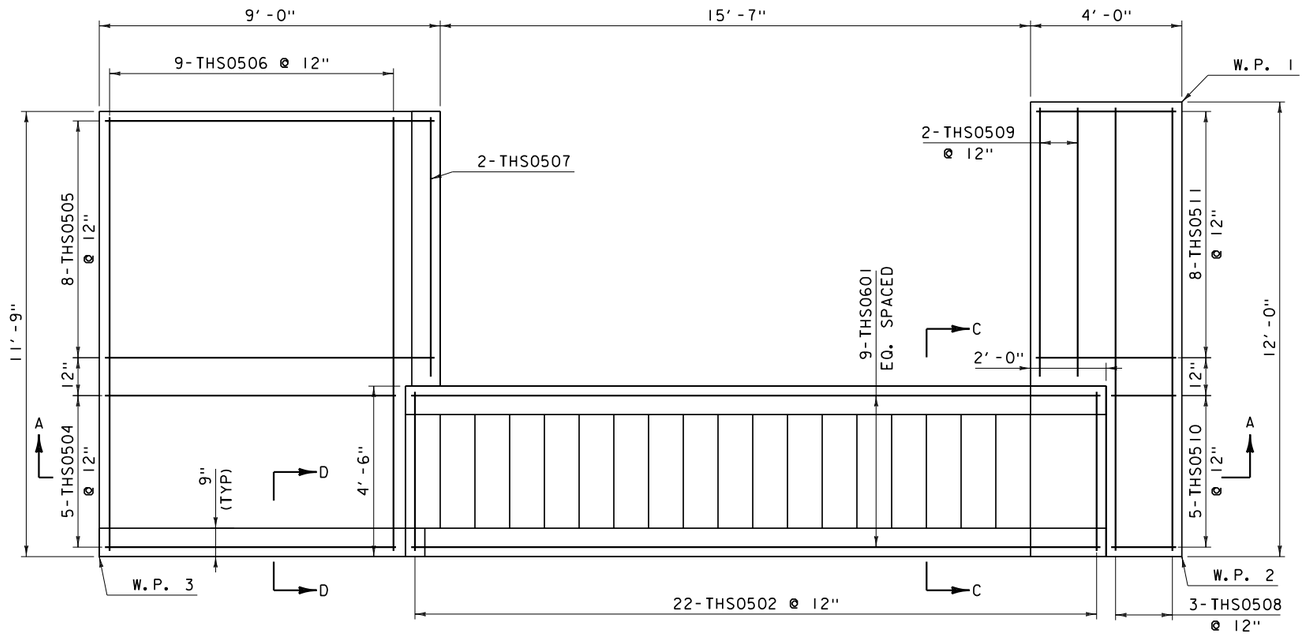
HDR

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142tendstl.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P. LEFEBVRE
DESIGNED BY: P. LEFEBVRE	CHECKED BY: M. MOZER
TENDER HOUSE STAIR CONSTRUCTION 1	SHEET 44 OF 379



SECTION A-A

SCALE ½" = 1'-0"

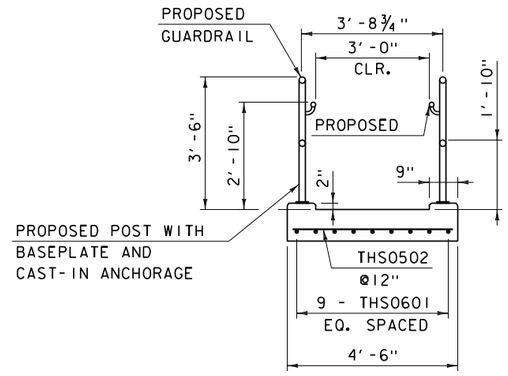


REINFORCING PLAN

SCALE ½" = 1'-0"

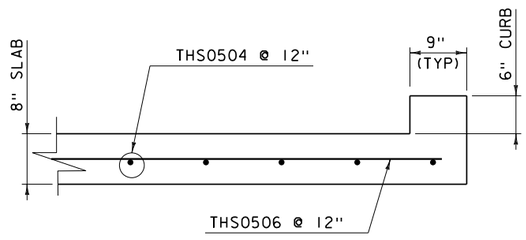
LEGEND:

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



SECTION C-C

SCALE ½" = 1'-0"



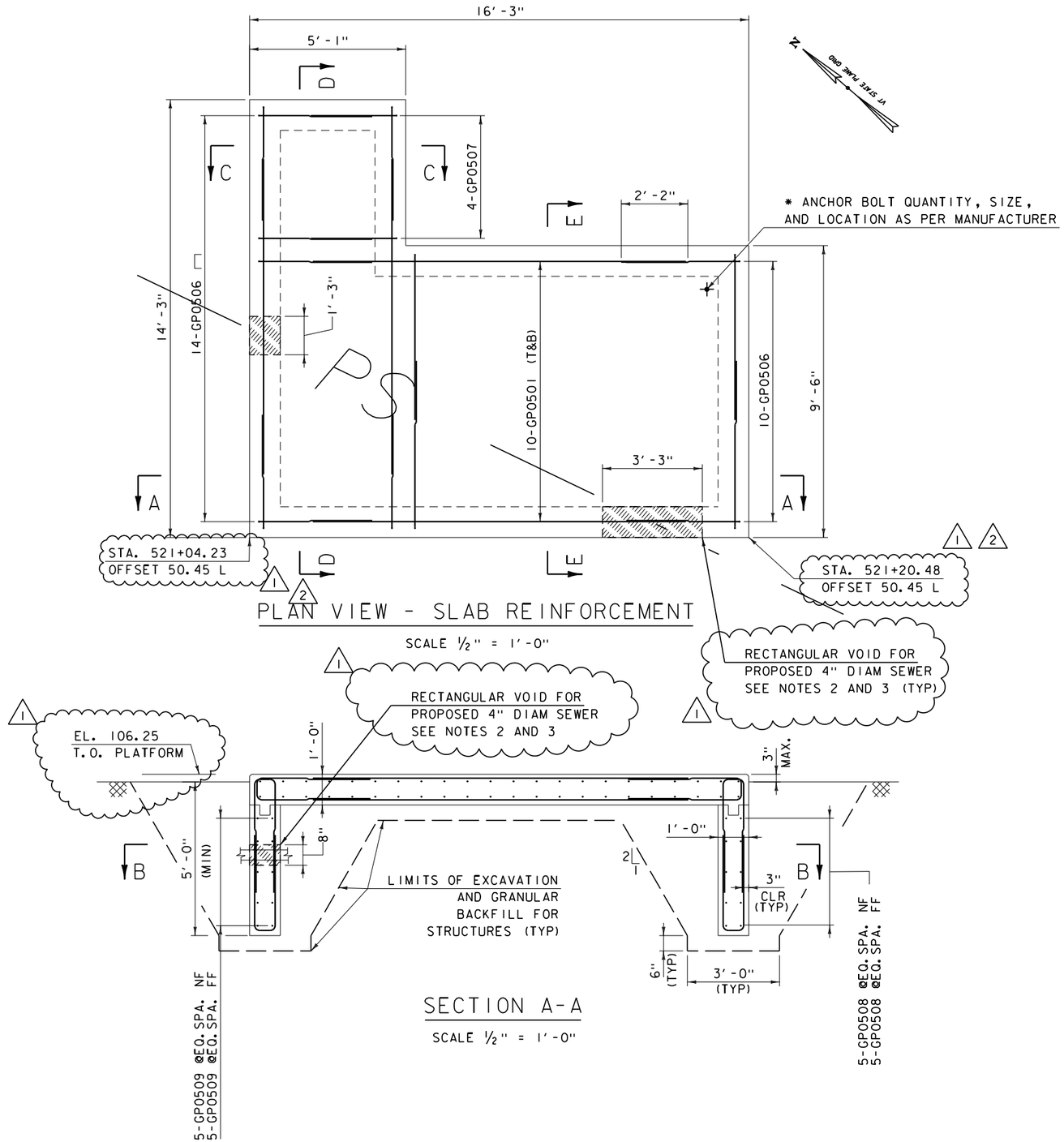
SECTION D-D

SCALE 1" = 1'-0"

NOTES:

1. SEE SHEET 44 FOR SECTION C-C.

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142tendst2.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P. LEFEBVRE
DESIGNED BY: P. LEFEBVRE	CHECKED BY: M. MOZER
TENDER HOUSE STAIR CONSTRUCTION 2	SHEET 45 OF 379

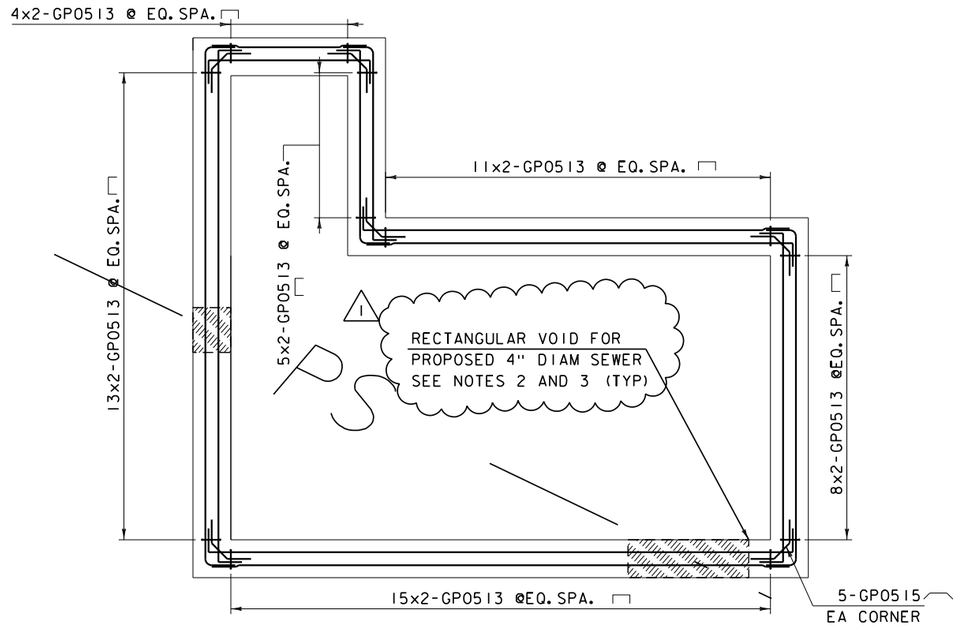


PLAN VIEW - SLAB REINFORCEMENT

SCALE ½" = 1'-0"

SECTION A-A

SCALE ½" = 1'-0"



SECTION B-B

SCALE ½" = 1'-0"

NOTES:

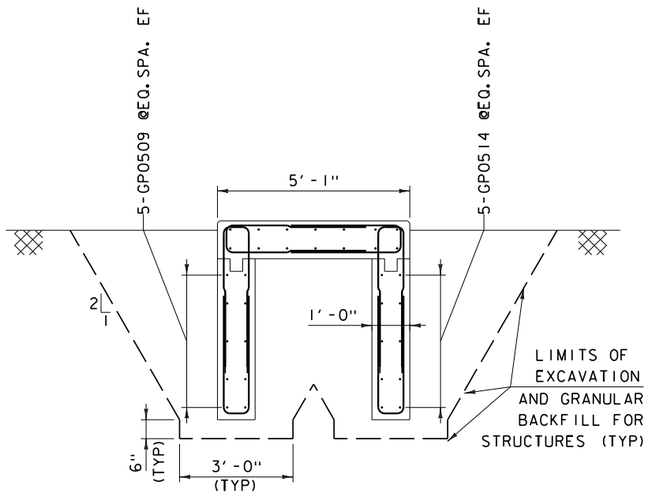
1. FOR PIER - 2 GENERATOR PAD LOCATION, SEE ELECTRICAL SITE PLAN SHEET 237.
2. FOR PROPOSED SEWER LINE LOCATION AND DETAILS, SEE SHEETS 34 AND 35. PIPE ELEVATIONS AT PIER - 2 GENERATOR PAD TO BE DETERMINED BY CONTRACTOR.
3. SEE DETAIL SHEET 47 FOR REINFORCING AROUND RECTANGULAR VOID.

REVISION	DATE	DESCRIPTION	BY
3			
2	06-01-2020	RFI110 CLARIFICATION	JLG
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

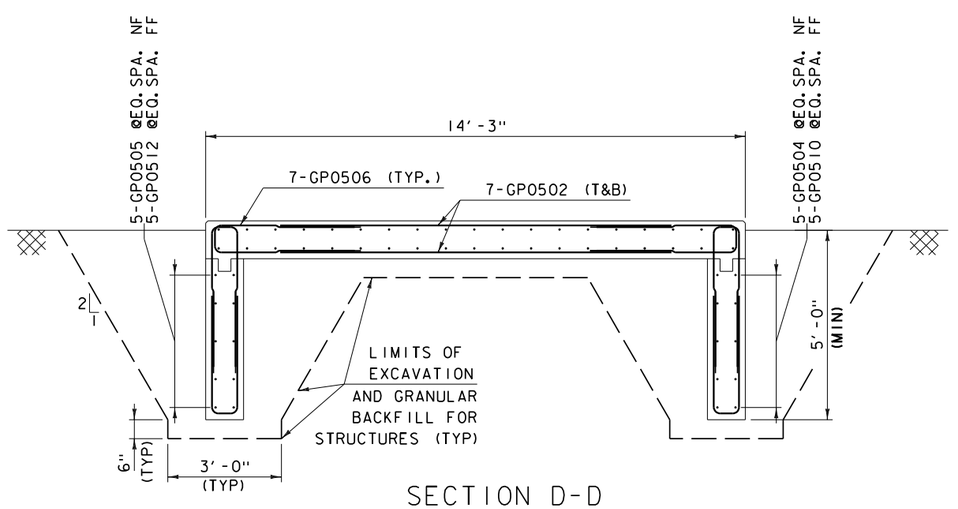
FILE NAME: z12b142GENPAD1.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: G. NICKELS
PIER 2 - GENERATOR PAD DETAILS 1

PLOT DATE: 2/6/2018
DRAWN BY: D. DOUGHERTY
CHECKED BY: M. MOZER
SHEET 46 OF 379



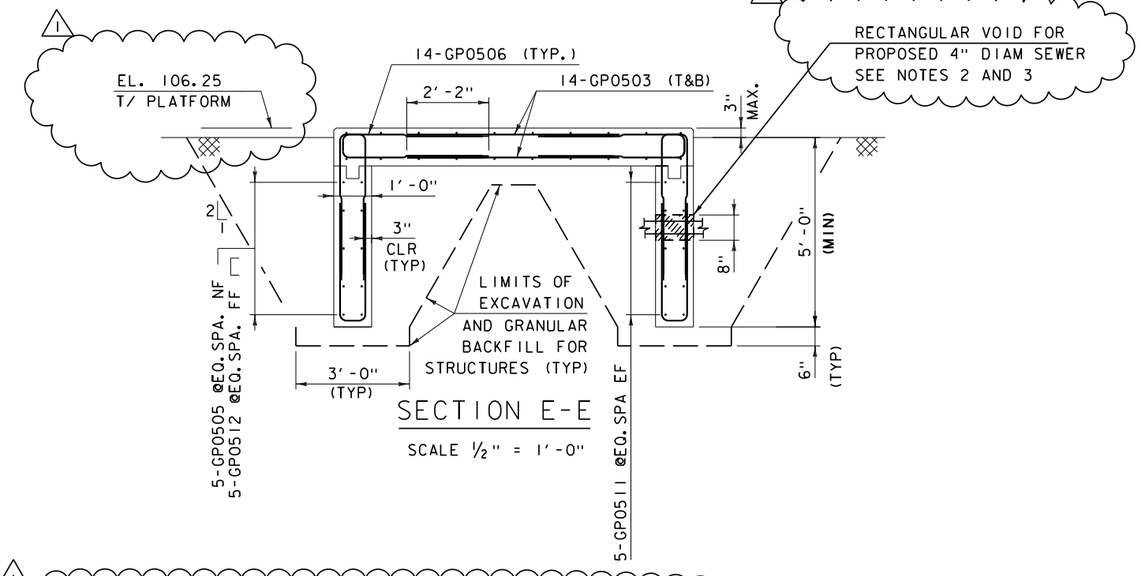
SECTION C-C

SCALE ½" = 1'-0"



SECTION D-D

SCALE ½" = 1'-0"



SECTION E-E

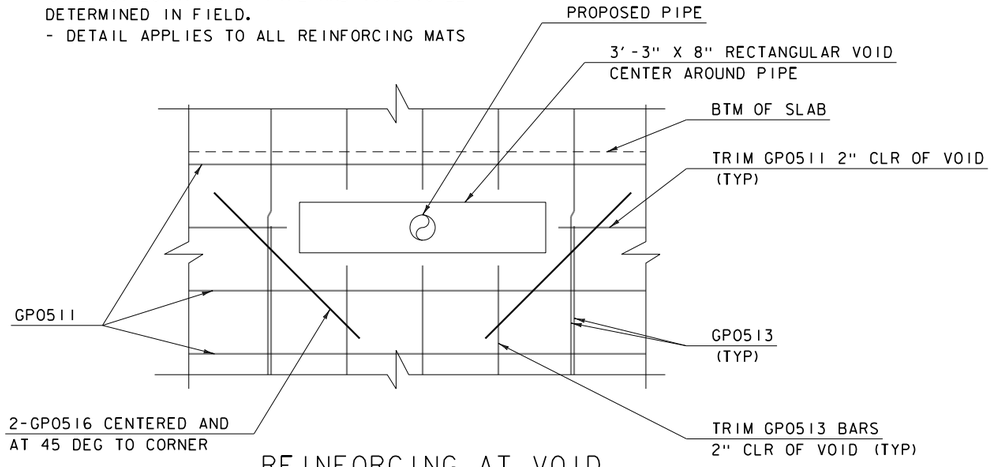
SCALE ½" = 1'-0"

1 NOTES:

1. FOR PIER - 2 GENERATOR PAD LOCATION, SEE ELECTRICAL SITE PLAN SHEET 237.
2. FOR PROPOSED SEWER LINE LOCATION AND DETAILS, SEE SHEETS 34 AND 35. PIPE ELEVATIONS AT PIER - 2 GENERATOR PAD TO BE DETERMINED BY CONTRACTOR.
3. SEE DETAIL THIS SHEET FOR REINFORCING AROUND RECTANGULAR VOID.

1 NOTE:

- VOID AND REINFORCING SHOWN ARE FOR PIPE PENETRATION AT WEST WALL, DETAILS FOR NORTH WALL SIMILAR
- EXACT LOCATION OF PIPE AND VOID TO BE DETERMINED IN FIELD.
- DETAIL APPLIES TO ALL REINFORCING MATS



REINFORCING AT VOID

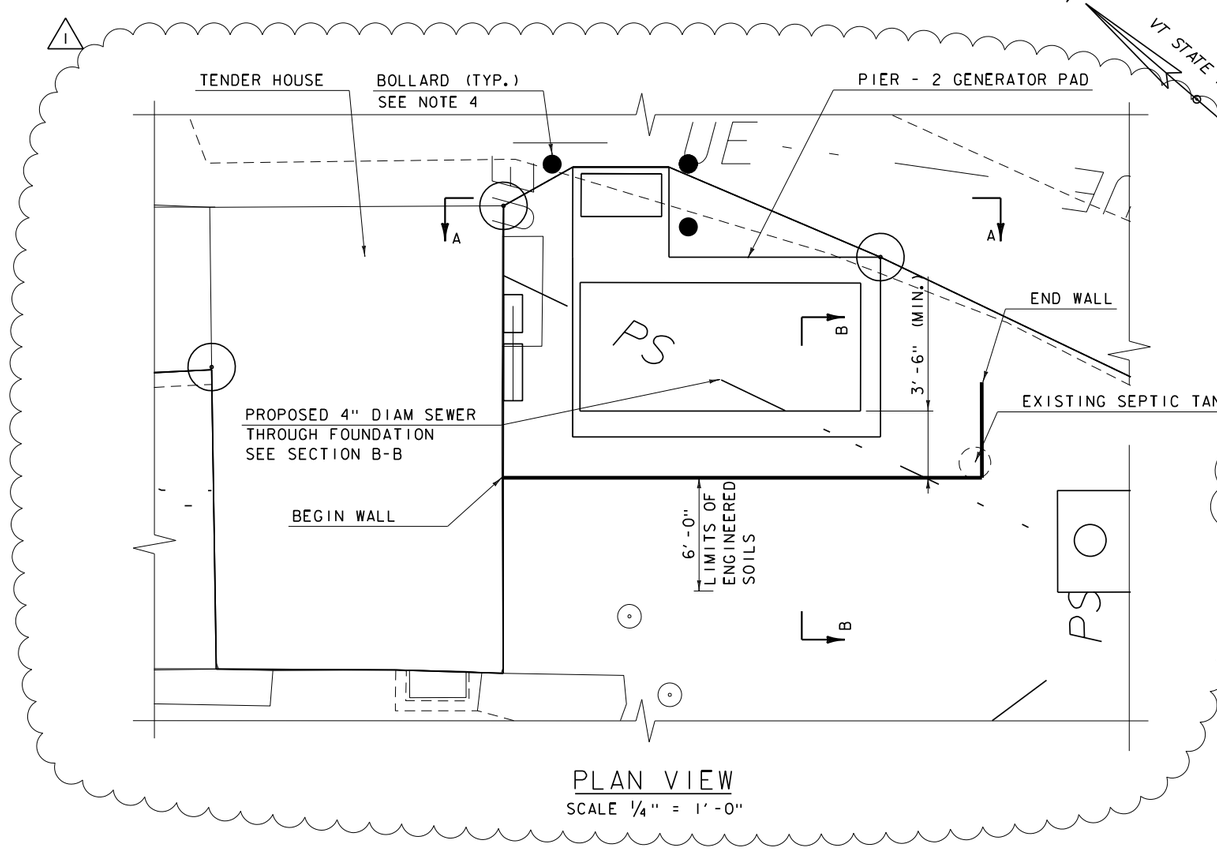
SCALE 1" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

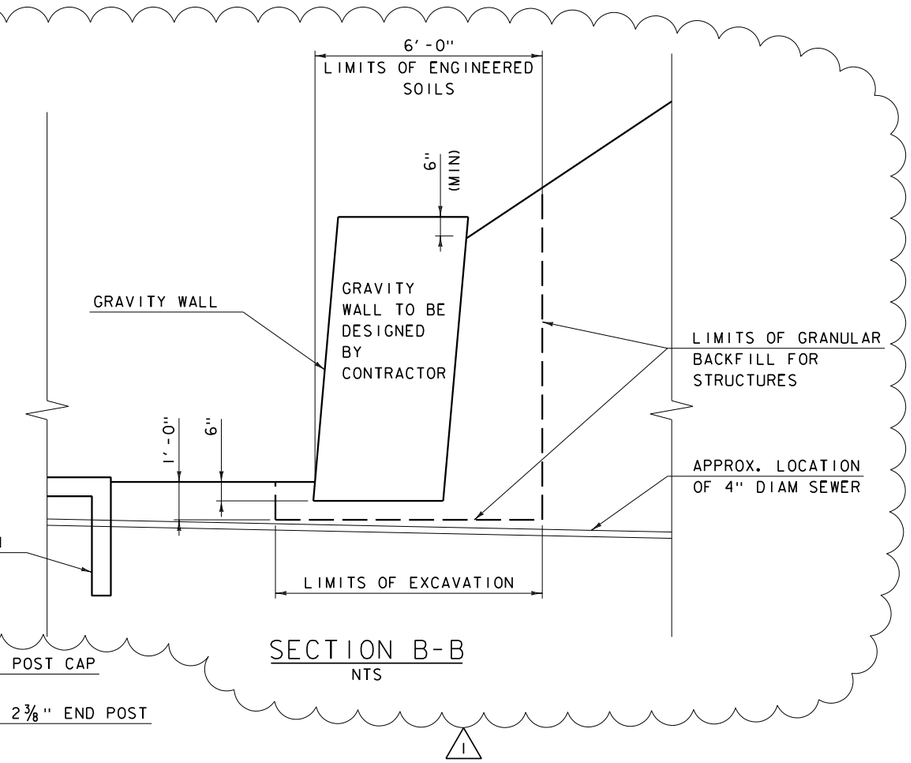
FILE NAME: z12b142GENPAD3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: G. NICKELS
PIER - 2 GENERATOR PAD DETAILS 2

PLOT DATE: 2/6/2018
DRAWN BY: D. DOUGHERTY
CHECKED BY: M. MOZER
SHEET 47 OF 379



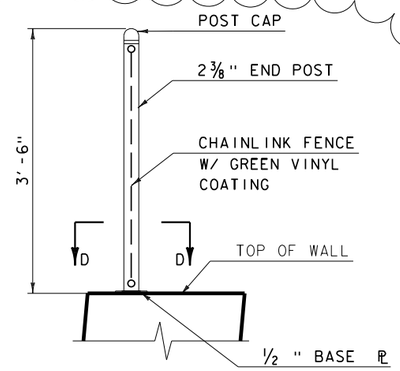
PLAN VIEW

SCALE 1/4" = 1'-0"



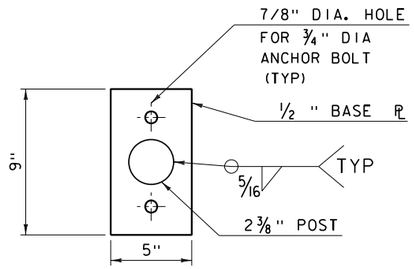
SECTION B-B

NTS



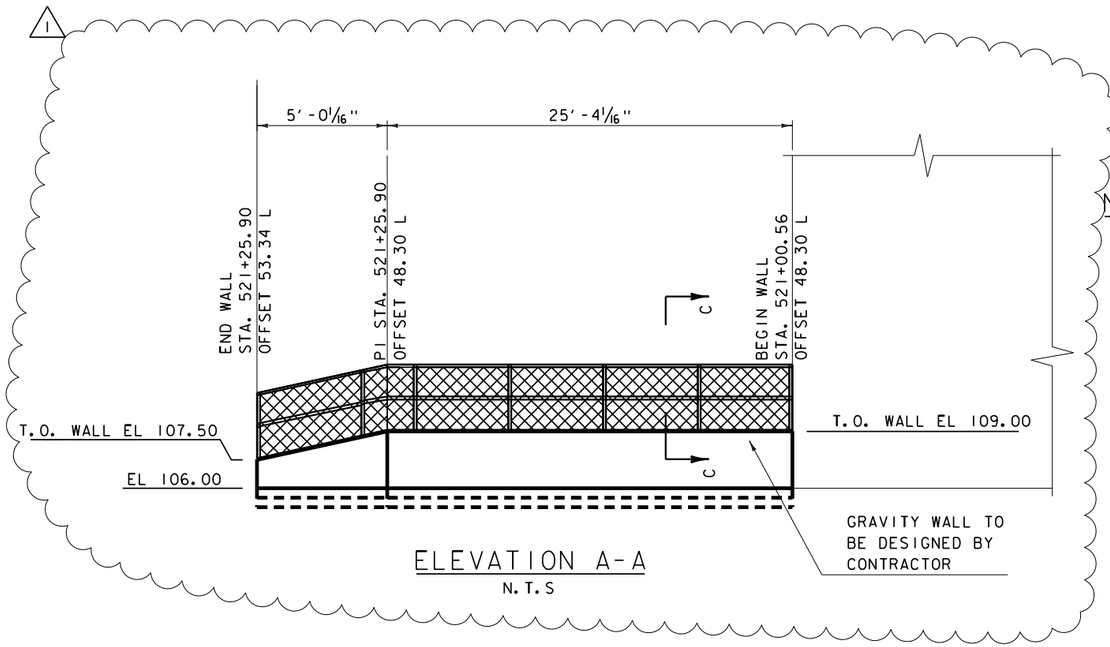
SECTION C-C

NTS



SECTION D-D

NTS



ELEVATION A-A

N.T.S

NOTE:

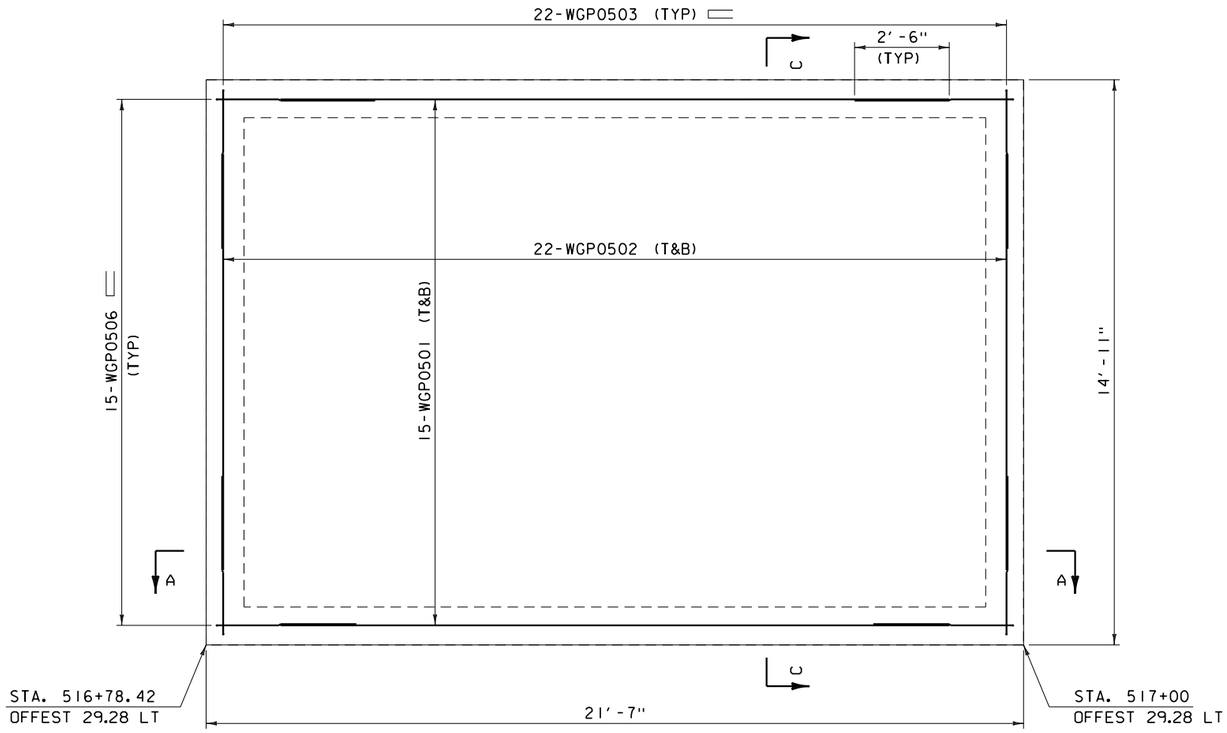
1. COST OF CHAIN-LINK FENCE SHALL BE INCLUDED IN PRICE BID FOR CHAIN-LINK FENCE ITEM 620.11.
2. COST OF RETAINING WALL SHALL BE INCLUDED IN PRICE BID ITEM 900.670 - SPECIAL PROVISION (RETAINING WALL).
3. GRAVITY WALL TO BE DESIGNED BY CONTRACTOR.
4. STEEL BOLLARDS SHALL CONFORM TO THE REQUIREMENTS SHOWN ON VTRANS STANDARD SHEET A-80. PLEASE NOTE THAT THESE STEEL BOLLARDS ARE INTENDED TO BE PERMANENTLY INSTALLED. THEREFORE, THE CONTRACTOR IS NOT REQUIRED TO MAKE THE STEEL BOLLARDS REMOVABLE OR REQUIRE A LOCKING DEVICE. THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO THE INSTALLATION OF STEEL BOLLARDS. ALL WORK ASSOCIATED WITH THE INSTALLATION OF STEEL BOLLARDS WILL BE CONSIDERED INCIDENTAL TO AND PAID FOR UNDER ITEM 619.14, BOLLARDS.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

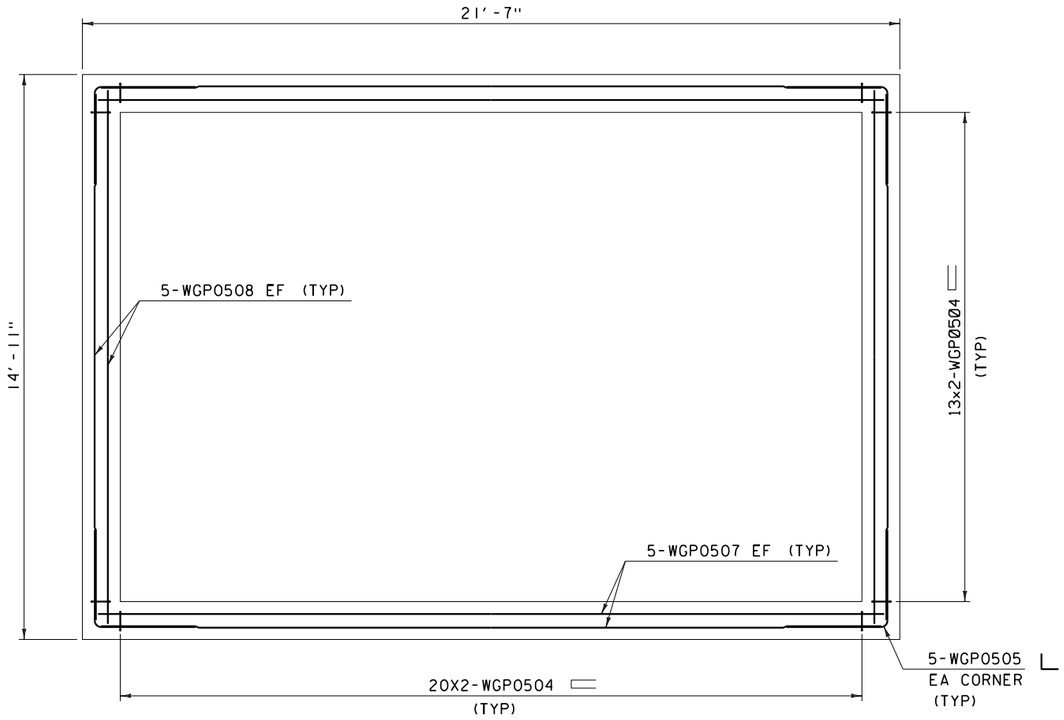
FILE NAME: z12b142GENPAD2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: G. NICKELS
PIER - 2 RETAINING WALL DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: G. NICKELS
CHECKED BY: M. MOZER
SHEET 48 OF 379



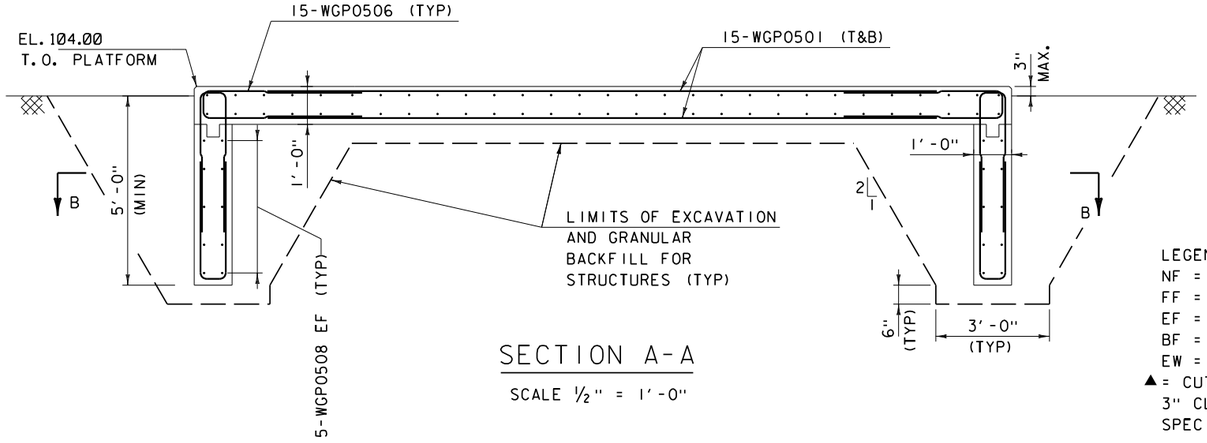
PLAN VIEW - SLAB REINFORCEMENT

SCALE ½" = 1'-0"



SECTION B-B

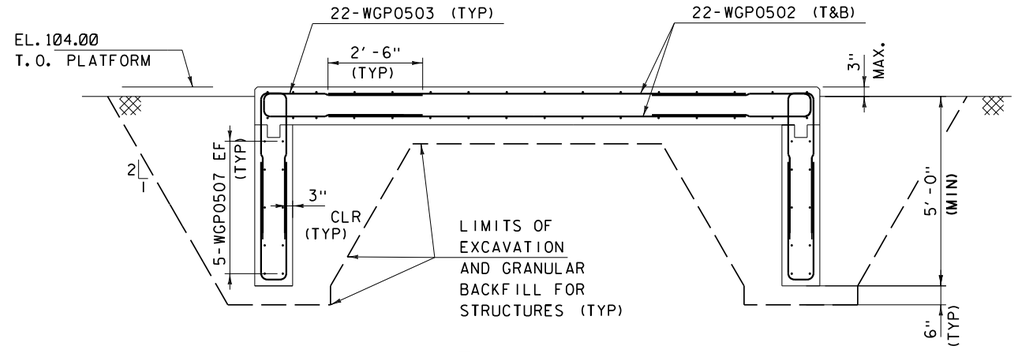
SCALE ½" = 1'-0"



SECTION A-A

SCALE ½" = 1'-0"

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



SECTION C-C

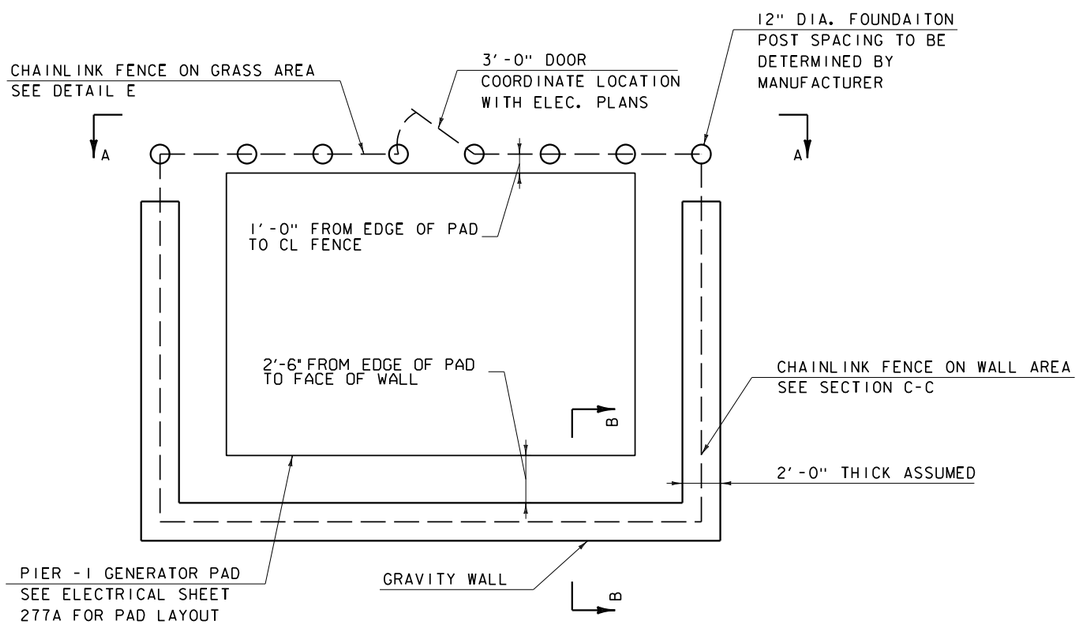
SCALE ½" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

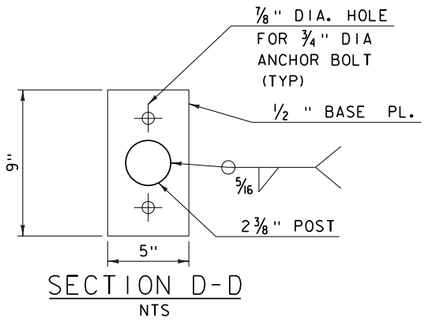
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142GENPAD4.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: L.OURREH
PIER - IGENERATOR PAD DETAILS

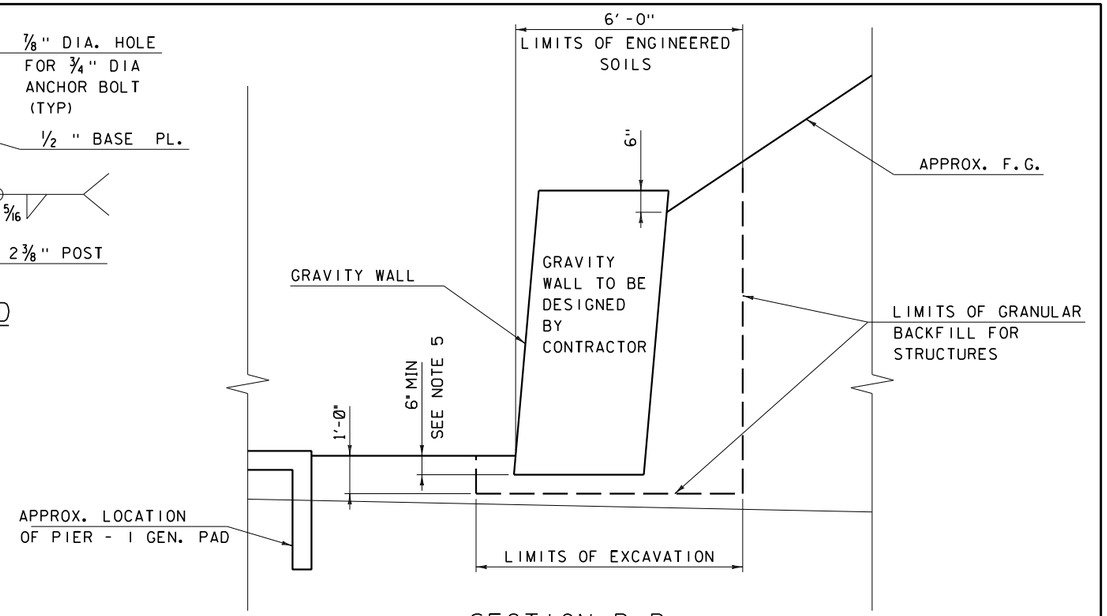
PLOT DATE: 2/6/2018
DRAWN BY: L.OURREH
CHECKED BY: J. GALLANT
SHEET 48A OF 379



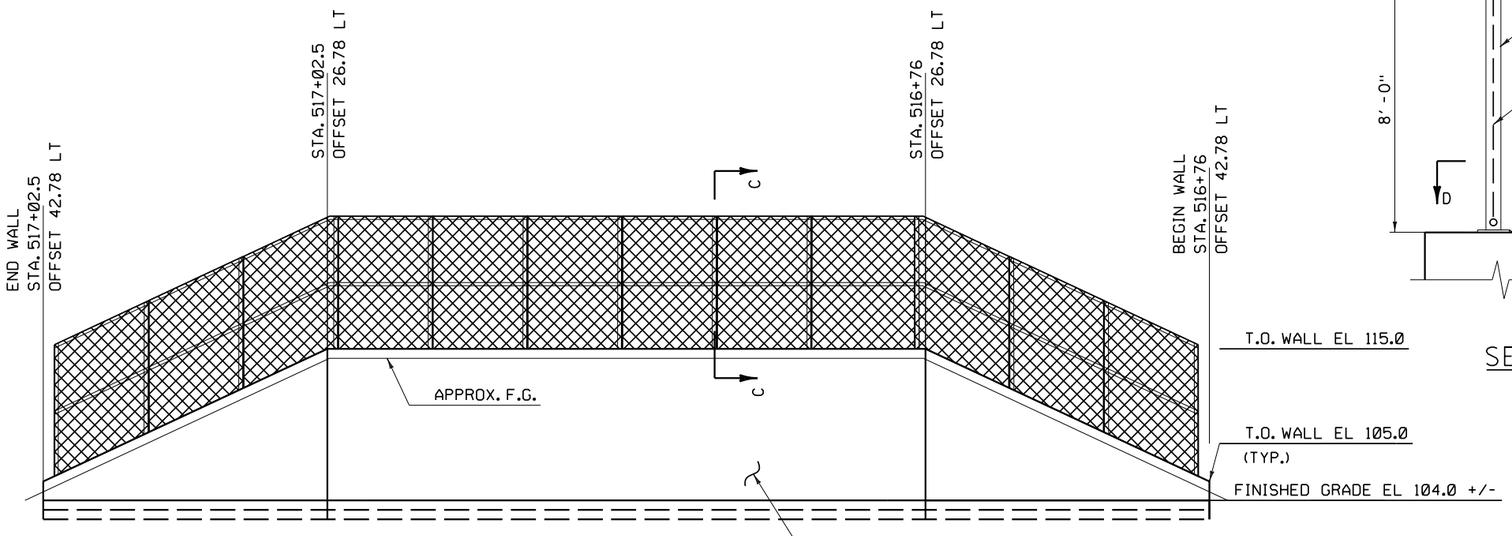
PLAN VIEW
SCALE 1/4" = 1'=0"



SECTION D-D
NTS

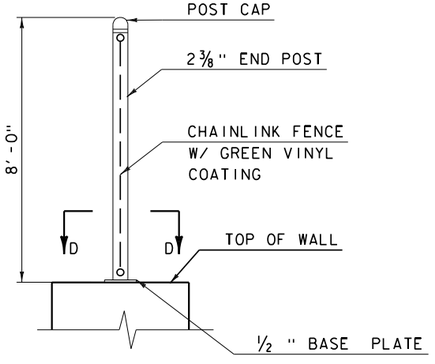


SECTION B-B
NTS

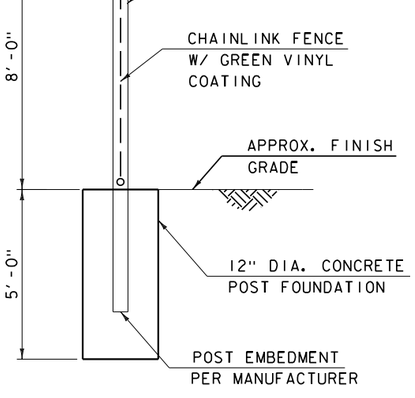


NOTE:
STATION AND OFFSET TAKEN AT FRONT FACE OF WALL.

DEVELOPED ELEVATION A-A
N. T. S



SECTION C-C
NTS



DETAIL E
NTS

NOTES:

1. COST OF CHAIN-LINK FENCE SHALL BE INCLUDED IN PRICE BID FOR CHAIN-LINK FENCE ITEM 620.11. TOP AND BOTTOM FENCE SELVAGES SHALL BE TWISTED.
2. COST OF RETAINING WALL SHALL BE INCLUDED IN PRICE BID ITEM 900.670 - SPECIAL PROVISION (RETAINING WALL).
3. GRAVITY WALL TO BE DESIGNED BY CONTRACTOR.
4. CONTRACTOR TO FIELD VERIFY ELEVATIONS.
5. CONTRACTOR TO CONFIRM BASED ON SELECTED WALL TYPE.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142GENPAD5.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: L. OURREH
PIER - IRETAINING WALL DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: L. OURREH
CHECKED BY: P. LEFEBVRE
SHEET 48B OF 379

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

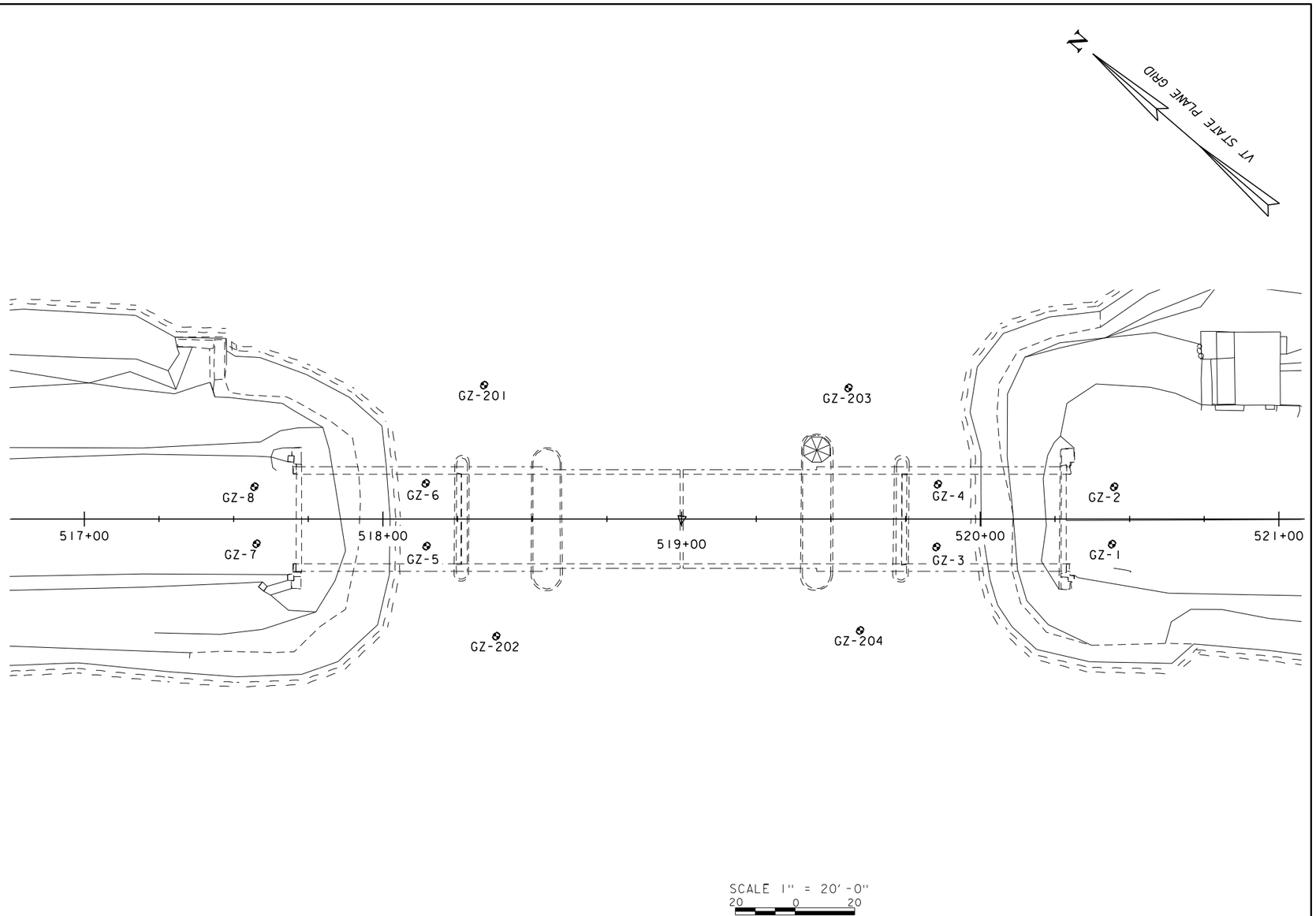
CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

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
ROD	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		



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

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 GZ-1 to GZ-8 were made between 07/27/2015 and 08/05/2015 by GZA. GZ-201 to GZ-204 were made on 6/29/16 and 6/30/16 by GZA.
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 meters and survey feet.

HOLE NO.	STATION	OFFSET (ft)	NORTHING	EASTING
GZ-1	520+44	8 RT	826881	1435346
GZ-2	520+44	11 LT	826893	1435361
GZ-3	519+85	9 RT	826925	1435307
GZ-4	519+86	12 LT	826938	1435323
GZ-5	518+15	9 RT	827054	1435196
GZ-6	518+14	11 LT	827068	1435211
GZ-7	517+57	8 RT	827098	1435159
GZ-8	517+57	11 LT	827111	1435173
GZ-201	518+34	45 LT	827075	1435249
GZ-202	518+37	39 RT	827017	1435188
GZ-203	519+56	44 LT	826982	1435328
GZ-204	519+59	37 RT	826926	1435269

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142borinfo1.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: D LAMOTHE
BORING INFORMATION SHEET

PLOT DATE: 2/6/2018
DRAWN BY: P LEFEBVRE
CHECKED BY: D LAMOTHE

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-1
Page No.: 1 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 8/05/15 Date Finished: 8/05/15
VTSPG NAD83: N 826881.00 ft E 1435346.00 ft
Station: 520+44 Offset: 8 R
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations		
Date	Depth (ft)	Notes
08/05/15	20.7	End of drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft – 0.66 ft, ASPHALT								
		Visual Description, (Modified Burmister), S-1 (1-3'): Dense, black, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Moist, FILL Rec. = 0.8 ft				24-19-12-11 (31)				
5		Visual Description, (Modified Burmister), S-2 (5-7'): Medium dense, gray, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Moist, Rec. = 1.0 ft, FILL				7-15-8-10 (23)				
10		Visual Description, (Modified Burmister), S-3 (10-12'): Very dense, black, fine to coarse SAND and fine Gravel, little Silt (weathered rock fragments). Wet, Rec. = 1.0 ft, FILL				11-23-28-32 (51)	9.3	59.0	26.2	14.8
15		Visual Description, (Modified Burmister), S-4 (15-17'): Medium dense, gray, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Wet, Rec. = 0.8 ft, FILL				11-12-10-13 (22)				
20		Visual Description, (Modified Burmister), S-5 (20-22'): Medium dense, gray, fine to coarse SAND and Gravel, little Silt (weathered rock fragments). Wet, Rec. = 0.66 ft, FILL				19-17-11-10 (27)				
25		Visual Description, (Modified Burmister), S-6 (25-27'): Medium dense, gray, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Wet, Rec. = 0.66 ft, FILL				9-9-20-11 (29)				
30		Visual Description, (Modified Burmister), S-7 (30-32'): Medium dense, gray, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Wet, Rec. = 0.58 ft, FILL				18-12-12-13 (24)				
		Visual Description, (Modified Burmister), S-8 (35-37'): Dense, gray,								

ABUTMENT 2
BTM OF FTG
EL = 105.70

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 04.0190044.01 - HDR NORTH HERO - GRAND ISLE NHF 028-1.GPJ VERMONT AOT.GDT 12/7/16

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-1
Page No.: 2 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 8/05/15 Date Finished: 8/05/15
VTSPG NAD83: N 826881.00 ft E 1435346.00 ft
Station: 520+44 Offset: 8 R
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations		
Date	Depth (ft)	Notes
08/05/15	20.7	End of drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		SILT, little Gravel, trace fine Sand. Wet, GLACIAL TILL Rec. = 1.4 ft				9-16-28-40 (44)				
		39.0 ft – 40.0 ft, WEATHERED BEDROCK								
40		40.0 ft – 45.0 ft, C-1: Hard, fresh to slightly weathered, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal, close, smooth, planar.	C-1	93 (63)	8.5 9 4 4.5 5					
45		45.0 ft – 50.0 ft, C-2: Hard, fresh to slightly weathered, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to slightly dipping, close, rough, planar.	C-2	95 (72)	4 4 4 5 5					
50		50.0 ft – 55.0 ft, C-3: Hard, fresh, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to slightly dipping, close, rough, undulating.	C-3	98 (87)	7 7.5 8 7 7					
55		55.0 ft – 60.0 ft, C-4: Hard, fresh, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to slightly dipping, close, rough, undulating.	C-4	96 (58)	8 8 9 7 7					
60		Hole stopped @ 60.0 ft								

ABUTMENT 2
EST PILE TIP
EL = 69.90

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 04.0190044.01 - HDR NORTH HERO - GRAND ISLE NHF 028-1.GPJ VERMONT AOT.GDT 12/7/16

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142boringl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: D LAMOTHE
BORING LOG SHEET 1

PLOT DATE: 2/6/2018
DRAWN BY: P LEFEBVRE
CHECKED BY: D LAMOTHE
SHEET 50 OF 379

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-2
Page No.: 1 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 7/29/15 Date Finished: 7/30/15
VTSPG NAD83: N 826893.00 ft E 1435361.00 ft
Station: 520+44 Offset: 11 L
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations		
Date	Depth (ft)	Notes
07/30/15	14.5	1st reading
07/30/15	21.0	End of drilling
07/30/15	19.45	After drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft – 0.66 ft, ASPHALT								
		Visual Description, (Modified Burmister), S-1 (1-3'): Medium dense, brown, fine to coarse SAND, some Gravel, little Silt (weathered rock fragments). Moist, FILL Rec. = 0.5 ft				16-14-15-12 (29)				
5		Visual Description, (Modified Burmister), S-2 (5-7'): Very dense, black, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Moist, Rec. = 1.0 ft, FILL				42-39-14-17 (53)				
ABUTMENT 2 BTM OF FTG EL = 105.70 → 10		Visual Description, (Modified Burmister), S-3 (10-12'): Dense, gray/black, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Wet, Rec. = 1.17 ft, FILL				7-18-22-24 (40)				
15		Visual Description, (Modified Burmister), S-4 (15-17'): Medium dense, gray, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Wet, Rec. = 0.83 ft, FILL				7-12-8-12 (20)				
20		Visual Description, (Modified Burmister), S-5 (20-22'): Very dense, gray, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Wet, Rec. = 0.5 ft, FILL				35-33-23-50/2" (56)				
25		Visual Description, (Modified Burmister), S-6 (25-27'): Dense, gray, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Wet, Rec. = 0.5 ft, FILL				8-10-28-13 (38)				
30		Visual Description, (Modified Burmister), S-7 (30-32'): Dense, gray, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Wet, Rec. = 0.33 ft, FILL				19-24-7-5 (31)				

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 04.0190044.01 – HDR NORTH HERO – GRAND ISLE NHF 028-1.GPJ VERMONT AOT.GDT 12/7/16

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-2
Page No.: 2 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 7/29/15 Date Finished: 7/30/15
VTSPG NAD83: N 826893.00 ft E 1435361.00 ft
Station: 520+44 Offset: 11 L
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations		
Date	Depth (ft)	Notes
07/30/15	14.5	1st reading
07/30/15	21.0	End of drilling
07/30/15	19.45	After drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Visual Description, (Modified Burmister), S-8 (35-37'): Very dense, gray, SILT, little Gravel, trace fine Sand. Wet, Rec. = 1.67 ft, GLACIAL TILL				18-34-31-49 (65)				
		38.0 ft – 40.0 ft, WEATHERED BEDROCK								
40		40.0 ft – 45.0 ft, C-1: Hard, fresh to slightly weathered, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to slightly dipping, close to moderate, rough to smooth, planar.	C-1	96 (74)	5.5 4.5 7 5.5 5					
ABUTMENT 2 EST PILE TIP EL = 69.90 → 45		45.0 ft – 50.0 ft, C-2: Hard, fresh to slightly weathered, fine-grained, gray, SHALE; slightly to moderately fractured, fractures are horizontal to slightly dipping, close to moderate, rough, undulating.	C-2	100 (97)	3 2.5 3 3 3					
50		50.0 ft – 55.0 ft, C-3: Hard, fresh, fine-grained, gray, SHALE; slightly to moderately fractured, fractures are horizontal to slightly dipping, close, rough, undulating.	C-3	100 (87)	4 3 3 3 3.5					
55		55.0 ft – 60.0 ft, C-4: Hard, fresh, fine-grained, gray, SHALE; slightly to moderately fractured, fractures are horizontal to slightly dipping, close to moderate, rough, undulating.	C-4	96 (82)	3 3 3.5 3 4					
60		Hole stopped @ 60.0 ft								

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 04.0190044.01 – HDR NORTH HERO – GRAND ISLE NHF 028-1.GPJ VERMONT AOT.GDT 12/7/16

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142boring2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: D LAMOTHE
BORING LOG SHEET 2

PLOT DATE: 2/6/2018
DRAWN BY: P LEFEBVRE
CHECKED BY: D LAMOTHE
SHEET 51 OF 379

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-3
Page No.: 1 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 7/30/15 Date Finished: 7/31/15
VTSPG NAD83: N 826925.00 ft E 1435307.00 ft
Station: 519+85 Offset: 9 R
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:		Manual/AWJ
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		0.0 ft – 0.75 ft, BRIDGE DECK										
		19.5 ft – 23.0 ft, WATER										
25		Visual Description, (Modified Burmister), S-1 (23-25'): Dense, black, fine to coarse SAND and Gravel, little Silt (weathered rock fragments). Wet, Rec. = 0.5 ft, FILL				10-17-13-20 (30)						
30		Visual Description, (Modified Burmister), S-2 (28-30'): Loose, gray, SILT, little fine to coarse Sand, little Gravel (weathered rock fragments). Wet, Rec. = 0.5 ft, FILL				4-4-2-5 (6)						
		Visual Description, (Modified Burmister), S-3 (33-35'): Stiff, gray-brown, Clayey SILT, little Sand. Wet, Rec. = 1.67 ft				2-2-2-8 (10)	13.9			17	4	

PIER 2
BTM OF FTG
EL = 84.50

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 04.0190044.01 – HDR NORTH HERO – GRAND ISLE NHF 028-1.GPJ VERMONT AOT.GDT 12/7/16

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-3
Page No.: 2 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 7/30/15 Date Finished: 7/31/15
VTSPG NAD83: N 826925.00 ft E 1435307.00 ft
Station: 519+85 Offset: 9 R
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:		Manual/AWJ
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		38.0 ft – 40.0 ft, WEATHERED BEDROCK										
40		40.0 ft – 45.0 ft, C-1: Hard, fresh to slightly weathered, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to slightly dipping, close, rough to smooth, planar.	C-1	90 (67)	11 6 8 6 5							
45		45.0 ft – 50.0 ft, C-2: Hard, fresh, fine-grained, gray, SHALE; slightly to moderately fractured, fractures are horizontal to slightly dipping, close, rough to smooth, planar.	C-2	100 (68)	3.5 3.5 3 2.5 3							
50		50.0 ft – 55.0 ft, C-3: Hard, fresh, fine-grained, gray, SHALE; slightly to moderately fractured, fractures are horizontal to slightly dipping, close, rough to smooth, undulating.	C-3	100 (77)	3 3 3 3 3							
55		55.0 ft – 60.0 ft, C-4: Hard, fresh, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to slightly dipping, close, rough to smooth, undulating.	C-4	98 (82)	3 3 3 3 2.5							
60		Hole stopped @ 60.0 ft										

PIER 2
BTM OF TREMIE
EL = 76.40

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 04.0190044.01 – HDR NORTH HERO – GRAND ISLE NHF 028-1.GPJ VERMONT AOT.GDT 12/7/16

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142boring3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: D LAMOTHE
BORING LOG SHEET 3

PLOT DATE: 2/6/2018
DRAWN BY: P LEFEBVRE
CHECKED BY: D LAMOTHE

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-4
Page No.: 1 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 7/27/15 Date Finished: 7/27/15
VTSPG NAD83: N 826938.00 ft E 1435323.00 ft
Station: 519+86 Offset: 12 L
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		0.0 ft – 0.75 ft, BRIDGE DECK										
19.6		19.6 ft – 23.0 ft, WATER										
23.0		Visual Description, (Modified Burmister), S-1 (23-25'): Medium dense, black, fine to coarse SAND and Gravel, little Silt (weathered rock fragments), trace Organics. Wet, Rec. = 0.33 ft, FILL				6-7-6-5 (13)						
25.0		Visual Description, (Modified Burmister), S-2 (28-30'): Medium dense, black, fine to coarse SAND and Gravel, little Silt (weathered rock fragments). Wet, Rec. = 0.25 ft, FILL				12-9-9-21 (18)						
30.0		Visual Description, (Modified Burmister), S-3A (33-34.3'): Very soft, gray, Clayey SILT, little fine Sand, trace Organics. Wet, Rec. = 2.0 ft				1-1-1-1 (2)						

PIER 2
BTM OF FTG
EL = 84.50

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 04.0190044.01 – HDR NORTH HERO – GRAND ISLE NHF 028-1.GPJ VERMONT AOT.GDT 12/7/16

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-4
Page No.: 2 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 7/27/15 Date Finished: 7/27/15
VTSPG NAD83: N 826938.00 ft E 1435323.00 ft
Station: 519+86 Offset: 12 L
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		Visual Description, (Modified Burmister), S-3B (34.3-35'): Very soft, gray, CLAY & SILT, trace Sand. Wet					23.7				37	17
		(Modified Burmister), S-4: (38) No recovery. Split Spoon Refusal, Rec. = 0.0 ft, 38.0 ft – 38.0 ft				50/0" (50)						
39.0		39.0 ft – 40.0 ft, WEATHERED BEDROCK										
40.0		40.0 ft – 45.0 ft, C-1: Hard, fresh to slightly weathered, fine-grained, gray, SHALE; moderately fractured, fractures are moderately dipping, close, rough, planar.	C-1	88 (42)	7 6.5 5 2.5 4							
45.0		45.0 ft – 50.0 ft, C-2: Hard, fresh, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to slightly dipping, close to moderate, rough, planar.	C-2	100 (87)	3.5 4 3.5 3 3.5							
50.0		50.0 ft – 55.0 ft, C-3: Hard, fresh, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to slightly dipping, close to moderate, rough, undulating.	C-3	95 (82)	2 2 2.5 2.5 3							
55.0		55.0 ft – 60.0 ft, C-4: Hard, fresh, fine-grained, gray, SHALE; moderately to severely fractured, fractures are moderately dipping to vertical, moderate to close, rough to smooth, undulating.	C-4	100 (43)	3 3 3 3 3							
60.0		Hole stopped @ 60.0 ft										

PIER 2
BTM OF TREMIE
EL = 76.40

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 04.0190044.01 – HDR NORTH HERO – GRAND ISLE NHF 028-1.GPJ VERMONT AOT.GDT 12/7/16

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142boring4.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: D LAMOTHE
BORING LOG SHEET 4

PLOT DATE: 2/6/2018
DRAWN BY: P LEFEBVRE
CHECKED BY: D LAMOTHE

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-5
Page No.: 1 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 8/03/15 Date Finished: 8/03/15
VTSPG NAD83: N 827054.00 ft E 1435196.00 ft
Station: 518+15 Offset: 9 R
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		0.0 ft – 0.75 ft, BRIDGE DECK										
19.6		19.6 ft – 22.5 ft, WATER										
22.5		Visual Description, (Modified Burmister), S-1 (23-25"): Medium dense, black, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Wet, FILL Rec. = 0.5 ft				8-7-6-7 (13)						
25		Visual Description, (Modified Burmister), S-2 (28-30"): Loose, gray, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Wet, Rec. = 0.33 ft, FILL				4-2-2-4 (4)						
30		Visual Description, (Modified Burmister), S-3 (33-35"): Soft, gray-brown, SILT & CLAY, little Sand. Wet Rec. = 1.0 ft				4-1-1-2 (2)	16.0			19	6	

PIER I
BTM OF FTG
EL = 83.00

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 04.0190044.01 – HOR NORTH HERO – GRAND ISLE NHF 028-1.GPJ VERMONT AOT.GDT 12/7/16

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-5
Page No.: 2 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 8/03/15 Date Finished: 8/03/15
VTSPG NAD83: N 827054.00 ft E 1435196.00 ft
Station: 518+15 Offset: 9 R
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		Visual Description, (Modified Burmister), S-4 (38-39.25"): Very dense, gray, SILT, trace Gravel, trace fine Sand. Wet, GLACIAL TILL Rec. = 1.25 ft				18-18-100/3" (100)						
39.25		39.25 ft – 40.0 ft, WEATHERED BEDROCK										
40		40.0 ft – 45.0 ft, C-1: Hard, fresh to slightly weathered, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal, close, smooth, planar.	C-1	88 (42)	6.5 6.5 9 3.5 4							
45		45.0 ft – 50.0 ft, C-2: Hard, fresh, fine-grained, gray, SHALE; slightly to moderately fractured, fractures are horizontal, close, smooth, undulating.	C-2	100 (73)	4 3.5 5 4.5 5							
50		50.0 ft – 55.0 ft, C-3: Hard, fresh, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to vertical, close, smooth, undulating.	C-3	100 (47)	3 3 4.5 5 5							
55		55.0 ft – 60.0 ft, C-4: Hard, fresh to slightly weathered, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal, close to moderate, smooth, undulating.	C-4	96 (65)	6 3 3.5 3.5 3.5							
60		Hole stopped @ 60.0 ft										
65												

PIER I
BTM OF TREMIE
EL = 76.40

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 04.0190044.01 – HOR NORTH HERO – GRAND ISLE NHF 028-1.GPJ VERMONT AOT.GDT 12/7/16

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142boring5.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: D LAMOTHE
BORING LOG SHEET 5

PLOT DATE: 2/6/2018
DRAWN BY: P LEFEBVRE
CHECKED BY: D LAMOTHE
SHEET 54 OF 379

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-6
Page No.: 1 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 7/28/15 Date Finished: 7/28/15
VTSPG NAD83: N 827068.00 ft E 1435211.00 ft
Station: 518+14 Offset: 11 L
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations		
Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		0.0 ft – 0.75 ft, BRIDGE DECK										
19.6		19.6 ft – 23.0 ft, WATER										
23.0		Visual Description, (Modified Burmister), S-1 (23-25'): Dense, black, fine to coarse SAND and Gravel, little Silt (weathered rock fragments). Wet, Rec. = 1.0 ft, FILL				9-13-30-19 (43)						
25.0		Visual Description, (Modified Burmister), S-2 (28-30'): Medium dense, black, fine to coarse SAND and Gravel, little Silt (weathered rock fragments). Wet, Rec. = 0.33 ft, FILL				3-5-7-6 (12)						
30.0		Visual Description, (Modified Burmister), S-3 (33-35'): Medium stiff, gray, SILT & CLAY, little Sand. Wet, Rec. = 0.33 ft				6-5-3-3 (8)	19.2			22	6	

PIER I
BTM OF FTG
EL = 83.00

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-6
Page No.: 2 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 7/28/15 Date Finished: 7/28/15
VTSPG NAD83: N 827068.00 ft E 1435211.00 ft
Station: 518+14 Offset: 11 L
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations		
Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
40.0		Visual Description, (Modified Burmister), S-4 (38-40'): Medium dense, gray, SILT, some fine Sand, little Gravel. Wet, Rec. = 0.75 ft, GLACIAL TILL				10-7-13-8 (20)						
42.5		42.5 ft – 45.0 ft, WEATHERED BEDROCK										
45.0		45.0 ft – 50.0 ft, C-1: Hard, fresh to slightly weathered, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to moderately dipping, close to moderate, rough to smooth, undulating.	C-1	95 (63)	4.5 5.5 6 4 3.5							
50.0		50.0 ft – 55.0 ft, C-2: Hard, fresh, fine-grained, gray, SHALE; moderately to severely fractured, fractures are moderately dipping to vertical, close to moderate, rough to smooth, undulating.	C-2	100 (40)	4 3 2 2 3							
55.0		55.0 ft – 60.0 ft, C-3: Hard, fresh, fine-grained, gray, SHALE; moderately to severely fractured, fractures are horizontal to moderately dipping, close, rough to smooth, undulating.	C-3	100 (55)	3 3 2 3 3							
60.0		60.0 ft – 65.0 ft, C-4: Hard, fresh, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to moderately dipping, close, smooth, undulating.	C-4	100 (80)	3 2 2 2.5 2.5							
65.0		Hole stopped @ 65.0 ft										

PIER I
BTM OF TREMIE
EL = 71.40

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 04.0190044.01 – HDR NORTH HERO – GRAND ISLE NHF 028-1.GPJ VERMONT AO1.GDT 12/7/16

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142boring6.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: D LAMOTHE
BORING LOG SHEET 6

PLOT DATE: 2/6/2018
DRAWN BY: P LEFEBVRE
CHECKED BY: D LAMOTHE
SHEET 55 OF 379

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-7
Page No.: 1 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 8/04/15 Date Finished: 8/04/15
VTSPG NAD83: N 827098.00 ft E 1435159.00 ft
Station: 517+57 Offset: 8 R
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		0.0 ft – 0.66 ft, ASPHALT										
		Visual Description, (Modified Burmister), S-1 (1-3'): Medium dense, black, fine to coarse SAND, some Silt, some Gravel. Moist, FILL Rec. = 1.0 ft				9-12-12-11 (24)						
5		Visual Description, (Modified Burmister), S-2 (5-7'): Medium dense, black, fine to coarse SAND, some Silt, trace Gravel. Moist, Rec. = 1.0 ft, FILL				8-11-8-3 (19)						
10		Visual Description, (Modified Burmister), S-3 (10-12'): Medium dense, dark gray, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments), with wood fragments. Wet, Rec. = 0.5 ft, FILL				12-6-5-7 (11)						
15		Visual Description, (Modified Burmister), S-4 (15-16.25'): Very dense, gray, fine to coarse SAND and Gravel, little Silt (weathered rock fragments). Wet, Rec. = 0.42 ft, FILL				5-12-50/3" (50)						
20		Visual Description, (Modified Burmister), S-5 (20-22'): Medium dense, gray, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Wet, Rec. = 0.58 ft, FILL				7-8-18-11 (26)						
25		Visual Description, (Modified Burmister), S-6 (25-27'): Medium dense, gray, fine to coarse SAND and Gravel, little Silt (weathered rock fragments). Wet, Rec. = 0.42 ft, FILL				9-7-7-7 (14)						
30		Visual Description, (Modified Burmister), S-7 (30-32'): Medium dense, gray, fine to coarse SAND and Gravel, little Silt (weathered rock fragments). Wet, Rec. = 0.42 ft, FILL				6-5-7-8 (12)						
		Visual Description, (Modified Burmister), S-8 (35-37'): Soft, gray, Silty CLAY. Wet										

ABUTMENT 1
BTM OF FTG
EL = 105.70

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 04.0190044.01 - HDR NORTH HERO - GRAND ISLE NHF 028-1.GPJ VERMONT AOT.GDT 12/7/16

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-7
Page No.: 2 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 8/04/15 Date Finished: 8/04/15
VTSPG NAD83: N 827098.00 ft E 1435159.00 ft
Station: 517+57 Offset: 8 R
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		Rec. = 1.0 ft				2-1-2-2 (3)	27.1				42	21
		39.0 ft – 40.0 ft, WEATHERED BEDROCK										
40		40.0 ft – 45.0 ft, C-1: Hard, fresh, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal, close, smooth, planar.	C-1	100 (68)	5 6.5 4.5 6 6							
45		45.0 ft – 50.0 ft, C-2: Hard, fresh, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal, close, smooth, planar.	C-2	96 (72)	6.5 6 6 7 6							
50		50.0 ft – 55.0 ft, C-3: Hard, fresh to slightly weathered, fine-grained, gray, SHALE; moderately to severely fractured, fractures are horizontal, close, smooth, planar.	C-3	96 (48)	13 9.5 11.5 17 12.5							
55		55.0 ft – 60.0 ft, C-4: Hard, fresh to slightly weathered, fine-grained, gray, SHALE; moderately to severely fractured, fractures are horizontal, close, smooth, planar.	C-4	95 (43)	6 7.5 7 9 7							
60		Hole stopped @ 60.0 ft										
65												

ABUTMENT 1
EST PILE TIP
EL = 69.90

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 04.0190044.01 - HDR NORTH HERO - GRAND ISLE NHF 028-1.GPJ VERMONT AOT.GDT 12/7/16

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142boring7.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: D LAMOTHE
BORING LOG SHEET 7

PLOT DATE: 2/6/2018
DRAWN BY: P LEFEBVRE
CHECKED BY: D LAMOTHE
SHEET 56 OF 379

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-8
Page No.: 1 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 7/28/15 Date Finished: 7/29/15
VTSPG NAD83: N 827111.00 ft E 1435173.00 ft
Station: 517+57 Offset: 11 L
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations

Date	Depth (ft)	Notes

ABUTMENT 1
BTM OF FTG
EL = 105.70

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		0.0 ft – 0.75 ft, ASPHALT										
		Visual Description, (Modified Burmister), S-1 (1-3'): Medium dense, brown, fine to coarse SAND, little Gravel, trace Silt. Moist, FILL Rec. = 0.25 ft				17-12-13-21 (25)						
5		Visual Description, (Modified Burmister), S-2 (5-7'): Medium dense, black, fine to medium SAND, little Gravel, trace Silt (weathered rock fragments). Moist, Rec. = 1.0 ft, FILL				5-7-9-8 (16)						
10		Visual Description, (Modified Burmister), S-3 (10-12'): Medium dense, gray, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Wet, Rec. = 0.58 ft, FILL				3-6-11-13 (17)						
15		Visual Description, (Modified Burmister), S-4 (15-17'): Very loose, brown, fine to coarse GRAVEL, some Silt, some fine to coarse Sand (weathered rock fragments). Wet, Rec. = 0.42 ft, FILL				2-1-1-2 (2)	12.6	60.6	11.4	22.0		
20		Visual Description, (Modified Burmister), S-5 (20-21.3'): Very dense, black, fine to coarse SAND and Gravel, little Silt (weathered rock fragments). Wet, Rec. = 0.67 ft, FILL				4-12-100/4" (100)						
25		Visual Description, (Modified Burmister), S-6 (25-27'): No recovery., Rec. = 0.0 ft, FILL				7-7-4-8 (11)						
30		Visual Description, (Modified Burmister), S-7 (30-32'): Loose, gray, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Wet, Rec. = 0.58 ft, FILL				5-3-5-8 (8)						

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 04.0190044.01 - HDR NORTH HERO - GRAND ISLE NHF 028-1.GPJ VERMONT AOT.GDT 12/7/16

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-8
Page No.: 2 of 2
Pin No.:
Checked By: MA

Boring Crew: M. St. John(NEBC), M. Bergen(GZA)
Date Started: 7/28/15 Date Finished: 7/29/15
VTSPG NAD83: N 827111.00 ft E 1435173.00 ft
Station: 517+57 Offset: 11 L
Ground Elevation: 116.4 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE B53 TRUCK	CE = 1.0

Groundwater Observations

Date	Depth (ft)	Notes

ABUTMENT 1
EST PILE TIP
EL = 69.90

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		Visual Description, (Modified Burmister), S-8A (35-35.2'): Loose, gray, SILT, some fine to coarse Sand, little Gravel (weathered rock fragments). Wet, Rec. = 1.66 ft, FILL Visual Description, (Modified Burmister), S-8B (35.2-37'): Medium stiff, gray, SILT & CLAY, trace Sand. Wet				6-2-3-7 (5)	19.8				24	9
40		40.0 ft – 45.0 ft, C-1: Moderately hard, fresh, fine-grained, gray, SHALE; moderately to severely fractured, fractures are horizontal to slightly dipping, close, rough to smooth, planar.	C-1	88 (30)	8 7 7 9.5 12.5							
45		45.0 ft – 50.0 ft, C-2: Moderately hard, fresh, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to slightly dipping, close to wide, rough to smooth, planar.	C-2	100 (78)	5.5 7 6.5 5.5 9							
50		50.0 ft – 55.0 ft, C-3: Moderately hard, fresh, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to slightly dipping, close to wide, rough to smooth, planar.	C-3	100 (57)	4 6 4 5 7							
55		55.0 ft – 59.0 ft, C-4: Moderately hard, slightly weathered, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to vertical, close, smooth to rough, planar.	C-4	100 (42)	5 4 4 6							
60		Hole stopped @ 59.0 ft										
65												

Notes:
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BORING LOG 04.0190044.01 - HDR NORTH HERO - GRAND ISLE NHF 028-1.GPJ VERMONT AOT.GDT 12/7/16

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142boring8.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: D LAMOTHE
BORING LOG SHEET 8

PLOT DATE: 2/6/2018
DRAWN BY: P LEFEBVRE
CHECKED BY: D LAMOTHE
SHEET 57 OF 379

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-201
Page No.: 1 of 1
Pin No.:
Checked By: MA

Boring Crew: B. Enos (NEBC), L. Williams (GZA)
Date Started: 6/30/16 Date Finished: 6/30/16
VTSPG NAD83: N 827075.00 ft E 1435249.00 ft
Station: 518+34.00 Offset: 45 L
Ground Elevation: 94.8 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	CME 45C BARGE	CE = 1.0

Groundwater Observations		
Date	Depth (ft)	Notes

PIER I
BTM OF FTG
EL = 83.00

PIER I
BTM OF TREMIE
EL = 71.40

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft – 8.5 ft, WATER Ground elevation shown is top of water elevation at time of boring.								
10		Visual Description, (Modified Burmister), S-1 (8.5-10.5'): Loose, black, GRAVEL (weathered rock fragments), trace fine Sand, trace Silt. Wet, Rec. = 0.8 ft, FILL				3-2-4-7 (6)				
15		Visual Description, (Modified Burmister), S-2 (13.8-15.8'): Very loose, gray, SILT, some fine Sand, trace Organics. Wet, Rec. = 1.3 ft				1-1-0-1 (1)				
20		Visual Description, (Modified Burmister), S-3 (18.8-20.8'): Very loose, gray, SILT, some fine Sand, trace Organics, trace Gravel. Wet, Rec. = 1.9 ft				WOH-1-1-1 (2)				
		Note:, Drill action and cuttings indicate possible Glacial Till from approximately 20.8 to 22.8 feet below water								
		22.8 ft – 23.4 ft, WEATHERED BEDROCK								
25		23.4 ft – 28.4 ft, C-1: Hard, fresh to slightly weathered, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to slightly dipping, close to moderate, rough to smooth, undulating.	C-1	95 (63)	1 1 1 1 2					
30		28.4 ft – 33.4 ft, C-2: Hard, fresh, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to moderately dipping, close, rough to smooth, planar.	C-2	98 (95)	2 1 2 2 2					
		Hole stopped @ 33.4 ft								

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-202
Page No.: 1 of 1
Pin No.:
Checked By: MA

Boring Crew: B. Enos (NEBC), L. Williams (GZA)
Date Started: 6/29/16 Date Finished: 6/29/16
VTSPG NAD83: N 827017.00 ft E 1435188.00 ft
Station: 518+37.00 Offset: 39 R
Ground Elevation: 94.8 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	CME 45C BARGE	CE = 1.0

Groundwater Observations		
Date	Depth (ft)	Notes

PIER I
BTM OF FTG
EL = 83.00

PIER I
BTM OF TREMIE
EL = 71.90

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft – 11.5 ft, WATER Ground elevation shown is top of water elevation at time of boring.								
10		Visual Description, S-1 (11.5-13.5'): No recovery, Rec. = 0.0 ft				10-2-2-2 (4)				
15		Visual Description, (Modified Burmister), S-2 (16.5-18.5'): Dense, gray, SILT, some fine to medium Sand, little Gravel. Wet, GLACIAL TILL Rec. = 0.87 ft				20-16-18-21 (34)				
		Visual Description, (Modified Burmister), S-3 (21.5-22.6'): Very dense, gray, SILT, some fine Sand, some Gravel. Wet, Rec. = 1.0 ft, GLACIAL TILL				14-43-50/1"				
		22.6 ft – 22.9 ft, WEATHERED BEDROCK								
25		22.9 ft – 27.9 ft, C-1: Hard, fresh to slightly weathered, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to slightly dipping, close to moderate, rough to smooth, undulating.	C-1	91 (70)	1 2 1 2 2					
30		27.9 ft – 32.9 ft, C-2: Hard, fresh, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to slightly dipping, close, rough to smooth, planar.	C-2	98 (90)	1 1 2 2 2					
		Hole stopped @ 32.9 ft								

Notes:
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2010 COPY 04.0190044.01 - HDR NORTH HERO - GRAND ISLE NHF 028-1.GPJ VERMONT AOT.GDT 12/13/16

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142boring9.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: D LAMOTHE
BORING LOG SHEET 9

PLOT DATE: 2/6/2018
DRAWN BY: P LEFEBVRE
CHECKED BY: D LAMOTHE
SHEET 58 OF 379

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-203
Page No.: 1 of 1
Pin No.:
Checked By: MA

Boring Crew: B. Enos (NEBC), L. Williams (GZA)
Date Started: 6/30/16 Date Finished: 6/30/16
VTSPG NAD83: N 826982.00 ft E 1435328.00 ft
Station: 519+56.00 Offset: 44 L
Ground Elevation: 94.8 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:		Manual/AWJ
Rig:	CME 45C BARGE	CE = 1.0

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft – 7.0 ft, WATER Ground elevation shown is top of water elevation at time of boring.								
5										
		Visual Description, (Modified Burmister), S-1 (7-9'): Loose, brown, GRAVEL, trace Silt, trace fine Sand. Wet, FILL Rec. = 0.5 ft				4-3-4-7 (7)				
10										
PIER 2 BTM OF FTG EL = 84.50		Visual Description, S-2 (12-14'): No recovery, Rec. = 0.0 ft, FILL				5-4-3-1 (7)				
15										
		Visual Description, (Modified Burmister), S-3 (17-18.2'): Hard, gray, Clayey SILT, some fine Sand, little Gravel. Wet, Rec. = 1.25 ft				4-2-50/2"				
		19.0 ft – 20.3 ft, WEATHERED BEDROCK								
20		20.3 ft – 25.3 ft, C-1: Hard, fresh to slightly weathered, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to slightly dipping, close to moderate, rough to smooth, undulating.	C-1	91 (76)	3 2 2 2 2					
PIER 2 BTM OF TREMIE EL = 74.50										
25		25.3 ft – 30.3 ft, C-2: Hard, fresh, fine-grained, gray, SHALE; slightly fractured, fractures are horizontal to slightly dipping, close, rough to smooth, planar.	C-2	100 (99)	2 1 2 2 2					
30		Hole stopped @ 30.3 ft								

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

BORING LOG

North Hero – Grand Isle
BHF 028-1(26)
Bridge No. 8, U.S. Route 2

Boring No.: GZ-204
Page No.: 1 of 1
Pin No.:
Checked By: MA

Boring Crew: B. Enos (NEBC), L. Williams (GZA)
Date Started: 6/29/16 Date Finished: 6/29/16
VTSPG NAD83: N 826926.00 ft E 1435269.00 ft
Station: 519+59.00 Offset: 37 R
Ground Elevation: 94.8 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.38 in
Hammer Wt:	300 lb.	140 lb.
Hammer Fall:	24 in.	30 in.
Hammer/Rod Type:		Manual/AWJ
Rig:	CME 45C BARGE	CE = 1.0

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft – 9.5 ft, WATER Ground elevation shown is top of water elevation at time of boring.								
5										
PIER 2 BTM OF FTG EL = 84.50		Visual Description, (Modified Burmister), S-1 (9.5-11.5'): Loose, gray, GRAVEL, some Silt, little fine Sand, trace Organics. Wet, Rec. = 0.58 ft, FILL				2-2-6-2 (8)				
15		Visual Description, (Modified Burmister), S-2 (14.5-16.5'): Very soft, gray, Clayey SILT, some fine Sand, trace Gravel. Wet, Rec. = 1.83 ft				3-WOH/18"				
		Visual Description, (Modified Burmister), S-3 (19.5-19.8'): Hard, gray, Clayey SILT, some fine Sand, little Gravel. Wet, Rec. = 0.25 ft, GLACIAL TILL				50/3"				
20		19.8 ft – 20.8 ft, WEATHERED BEDROCK	C-1	93 (68)	2 1 2 1 2					
PIER 2 BTM OF TREMIE EL = 74.00		20.8 ft – 25.8 ft, C-1: Hard, fresh to slightly weathered, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to moderately dipping, close to moderate, rough to smooth, undulating.								
25		25.8 ft – 30.8 ft, C-2: Hard, fresh, fine-grained, gray, SHALE; moderately fractured, fractures are horizontal to slightly dipping, close, rough to smooth, planar.	C-2	98 (83)	2 2 2 2 2					
30		Hole stopped @ 30.8 ft								

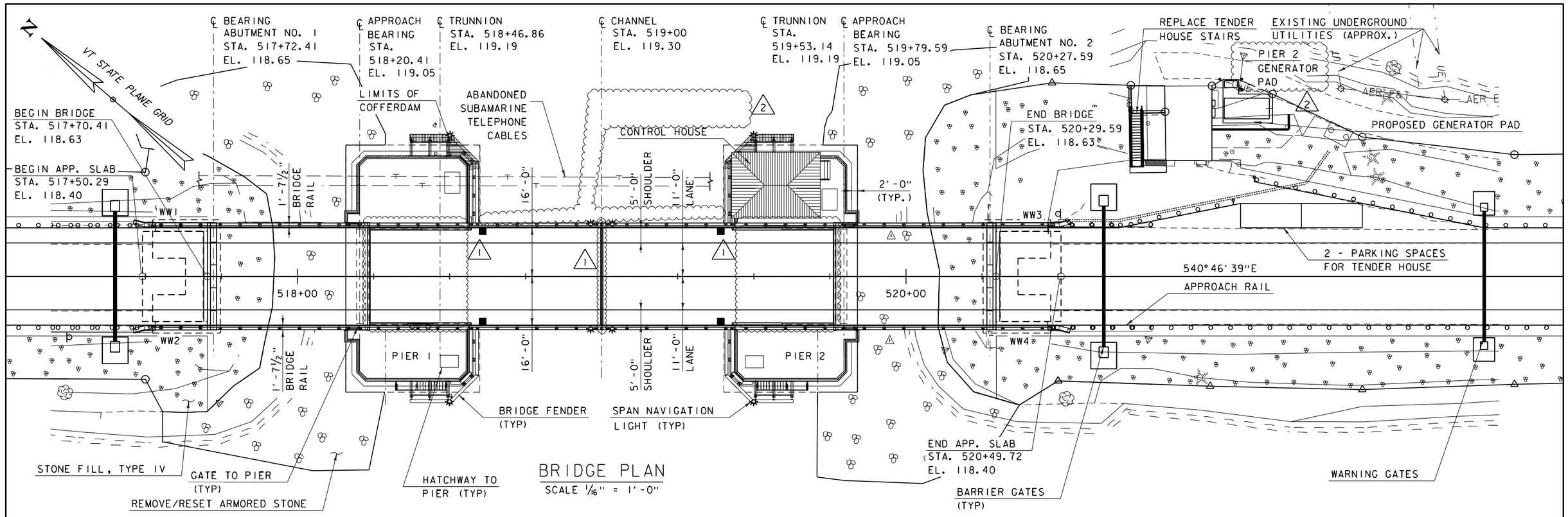
Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

2010 COPY 04.0190044.01 - HDR NORTH HERO - GRAND ISLE BHF 028-1.GPJ VERMONT AOT.GDT 12/13/16

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

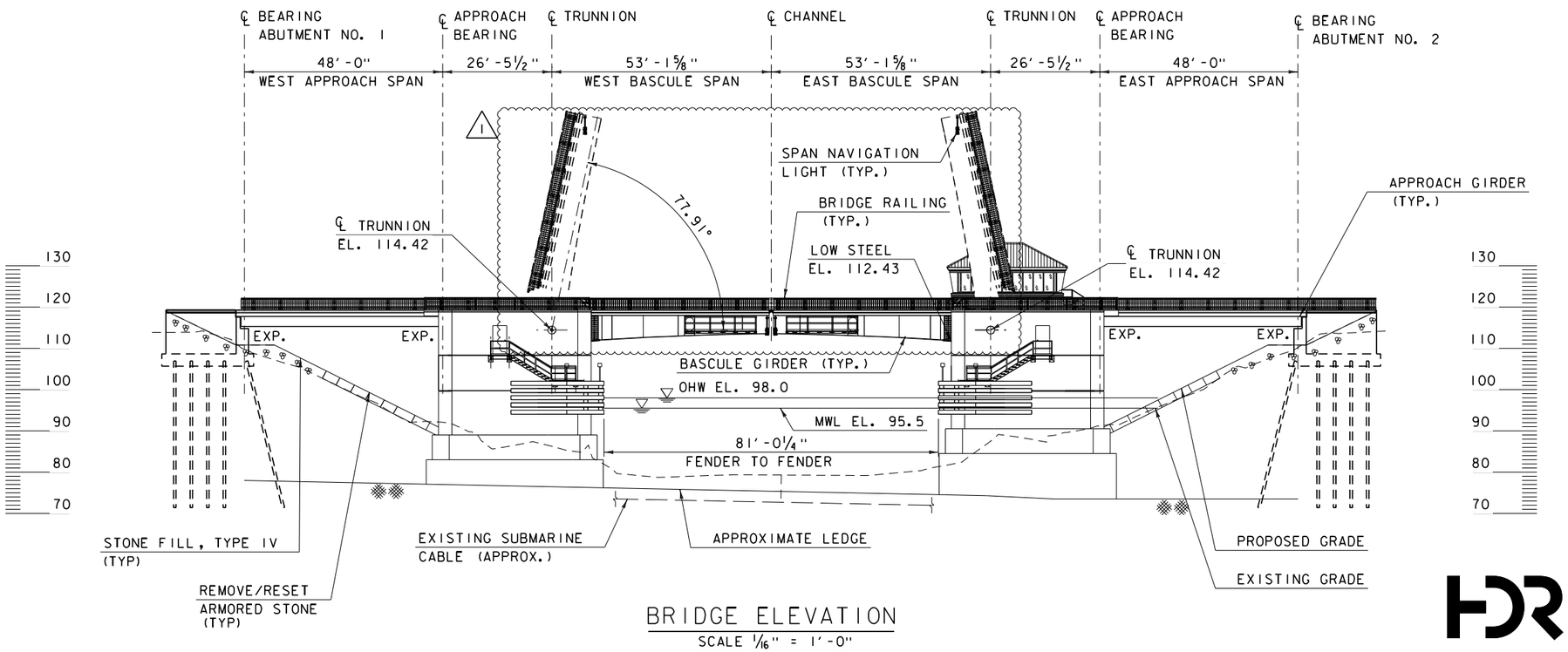
FILE NAME: z12b142boring10.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: D LAMOTHE
BORING LOG SHEET 10

PLOT DATE: 2/6/2018
DRAWN BY: P LEFEBVRE
CHECKED BY: D LAMOTHE
SHEET 59 OF 379



BRIDGE PLAN

SCALE 1/16" = 1'-0"



BRIDGE ELEVATION

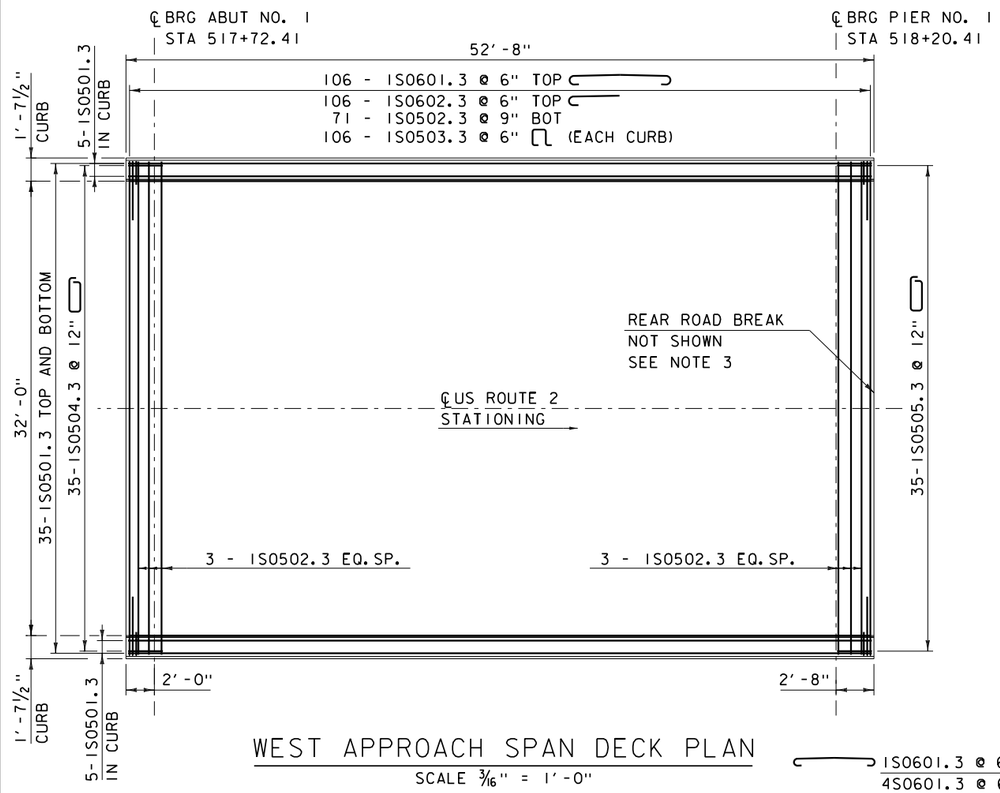
SCALE 1/16" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12br142pe.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BRIDGE PLAN AND ELEVATION

PLOT DATE: 2/16/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 60 OF 379

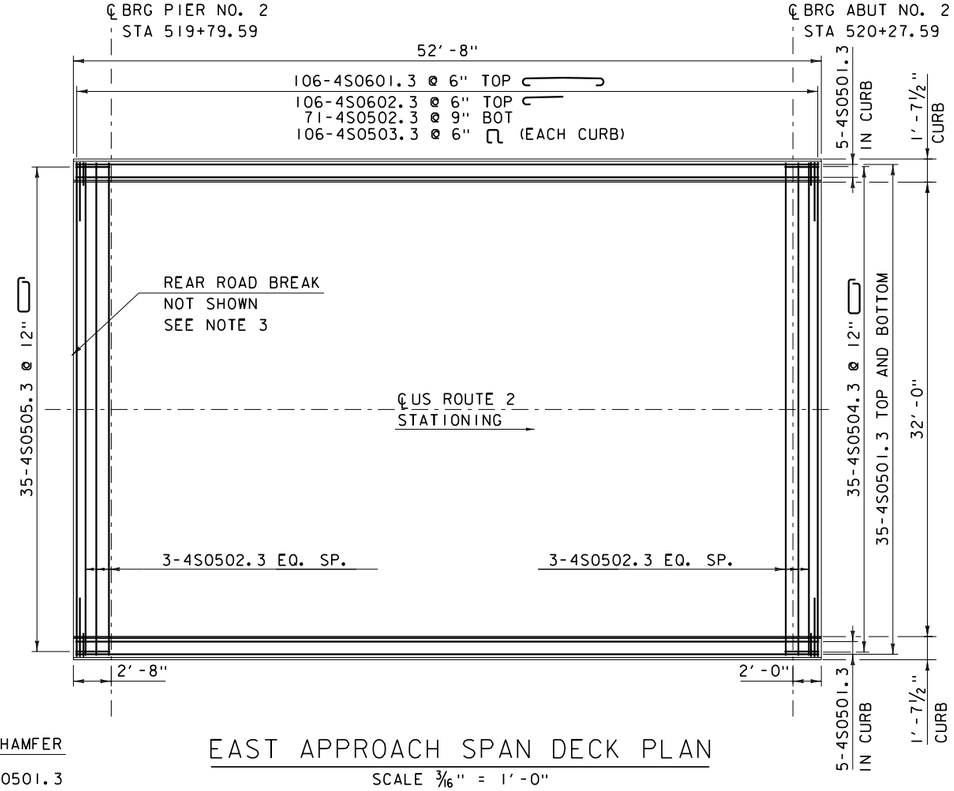


WEST APPROACH SPAN DECK PLAN

SCALE 3/16" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, U.O.N.
2'-2" #5 LAP SPLICE, U.O.N.
2'-7" #6 LAP SPLICE, U.O.N.



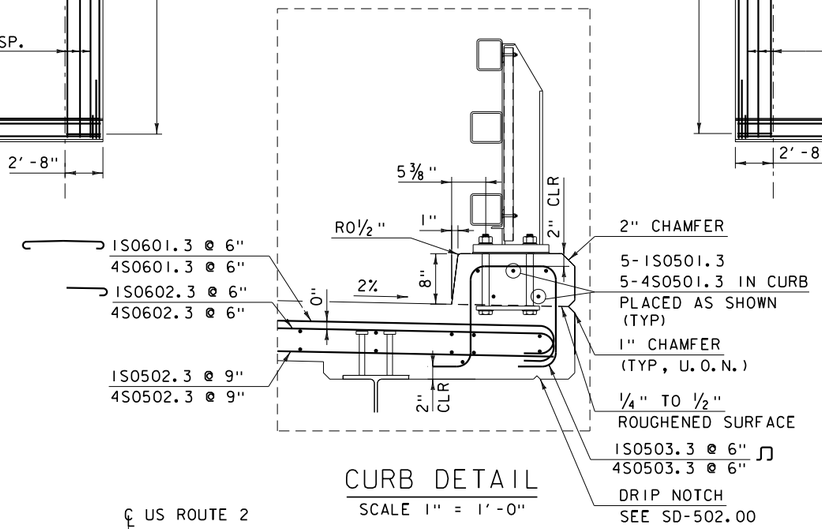
EAST APPROACH SPAN DECK PLAN

SCALE 3/16" = 1'-0"

NOTES:

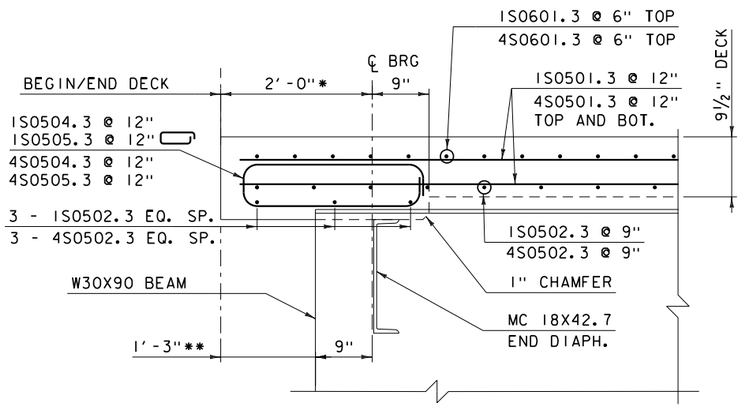
1. UTILITIES NOT SHOWN FOR CLARITY
2. SEE SD-501.00 AND SD-502.00 FOR STANDARD DETAILS.
3. SEE SHEETS 76-77 FOR JOINT DETAILS.
4. SEE SHEETS 205-214 FOR BRIDGE RAIL DETAILS.
5. FOR DETAILS AT PIER, SEE NOTE 3

* 2'-0" @ ABUTMENT AND 2'-8" @ PIER
** 1'-3" @ ABUTMENT AND 1'-11" @ PIER



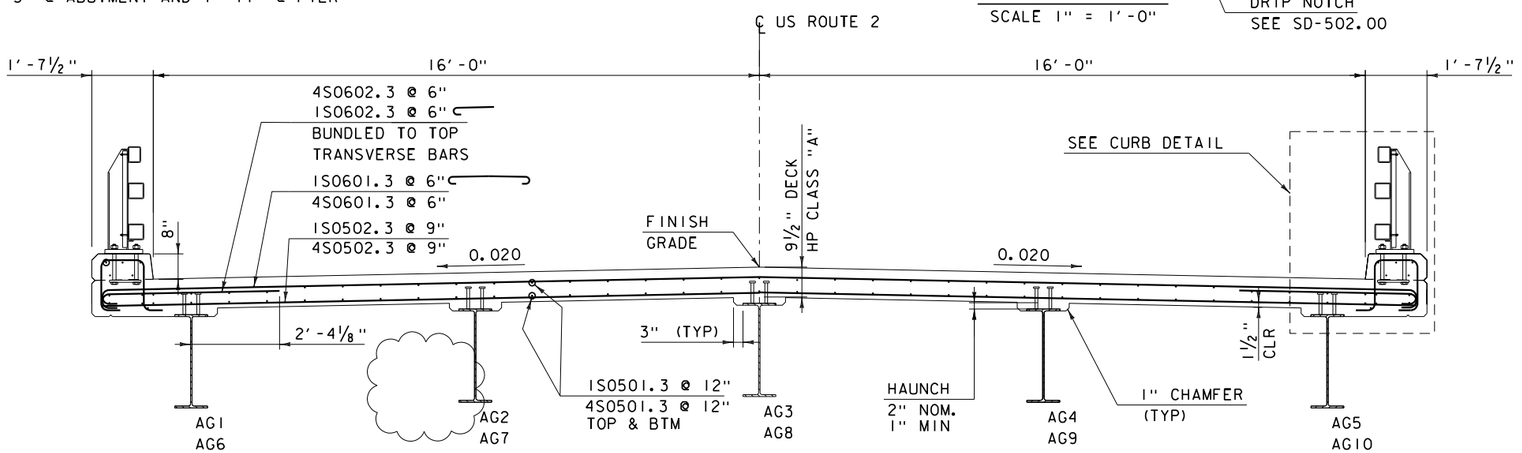
CURB DETAIL

SCALE 1" = 1'-0"



DECK END DETAIL

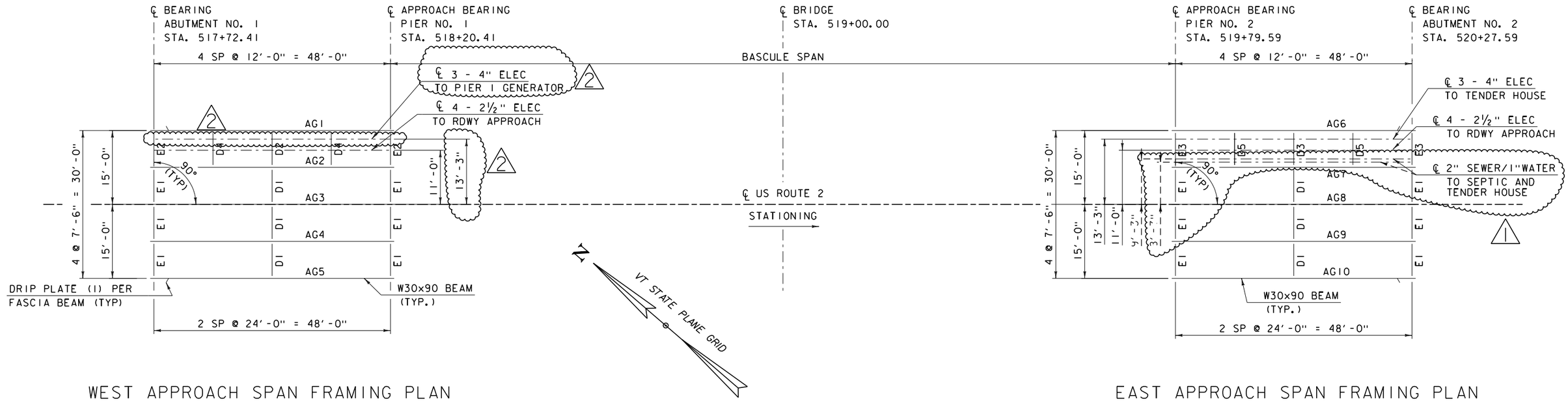
SCALE 1" = 1'-0"



APPROACH SPAN DECK TYPICAL

SCALE ½" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142apdckdet.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P. LEFEBVRE
DESIGNED BY: P. LEFEBVRE	CHECKED BY: M. MOZER
APPROACH SPAN DECK DETAILS	SHEET 61 OF 379

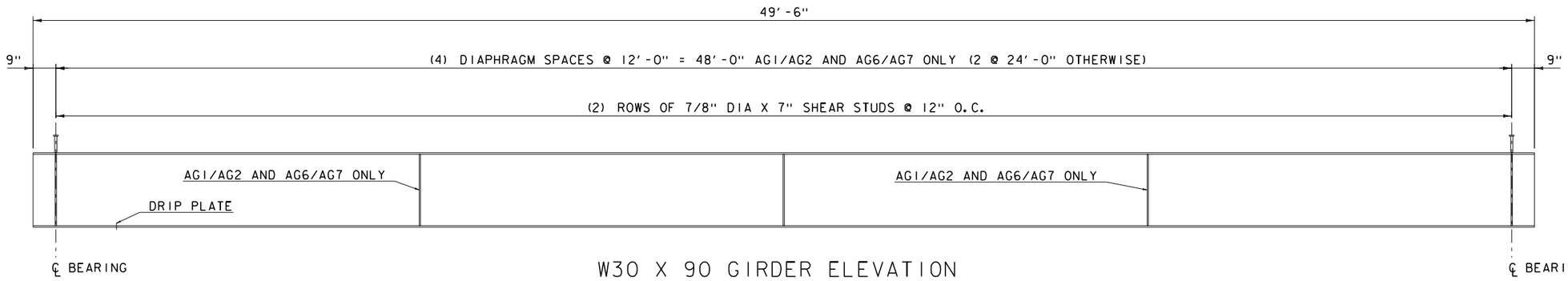


WEST APPROACH SPAN FRAMING PLAN

SCALE 1" = 10'-0"

EAST APPROACH SPAN FRAMING PLAN

SCALE 1" = 10'-0"

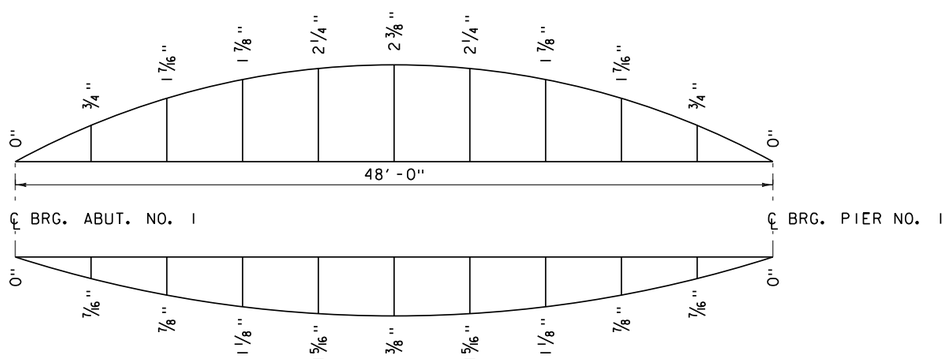


W30 X 90 GIRDER ELEVATION

SCALE: ½" = 1'-0"

CAMBER DIAGRAM

NTS



DEAD LOAD DEFLECTION DIAGRAM

NTS

NOTES:

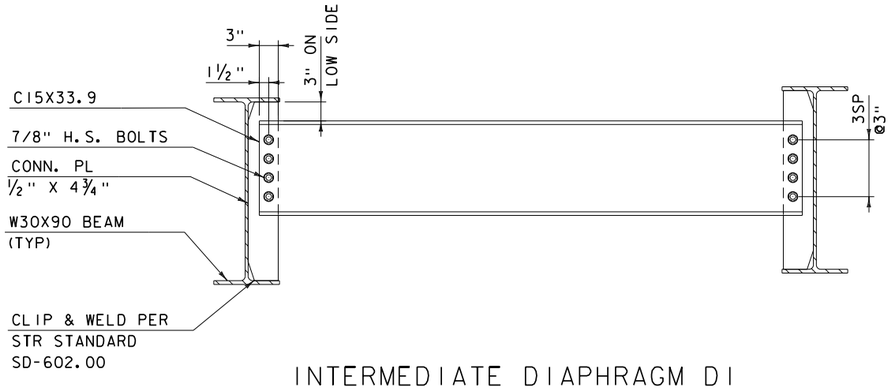
1. SEE SD-601.00 AND SD-602.00 FOR STANDARD STEEL DETAILS.
2. SEE SHEET 305 FOR ELECTRICAL CONDUIT CONTINUATION.
3. SEE SHEET 35 FOR WATER LINE AND SEWER LINE CONTINUATION.
4. CAMBER AND DEFLECTION MEASUREMENTS ARE GIVEN AT TENTH POINTS. MEASUREMENTS INCLUDE GIRDER SELF WEIGHT AND FUTURE WEARING SURFACE.
5. CAMBER DIAGRAM SHOWN FOR WEST APPROACH SPAN. EAST APPROACH SPAN OPPOSITE HAND.

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

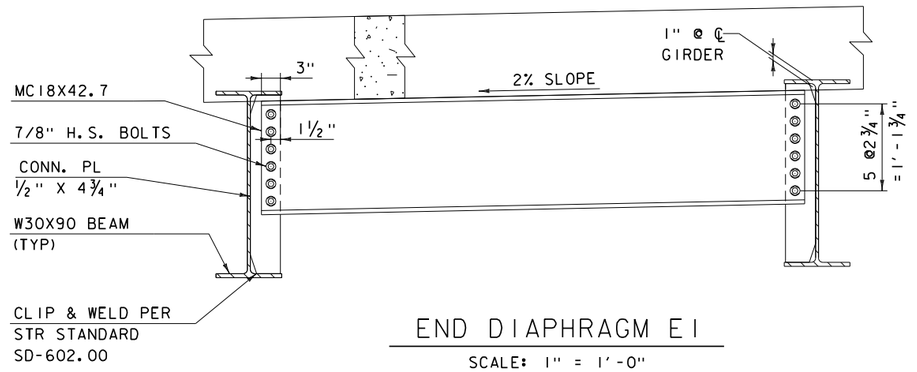
FILE NAME: z12bl42frameappl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: P. LEFEBVRE
APPROACH SPAN FRAMING PLAN

PLOT DATE: 2/6/2018
DRAWN BY: P. LEFEBVRE
CHECKED BY: M. MOZER
SHEET 62 OF 379



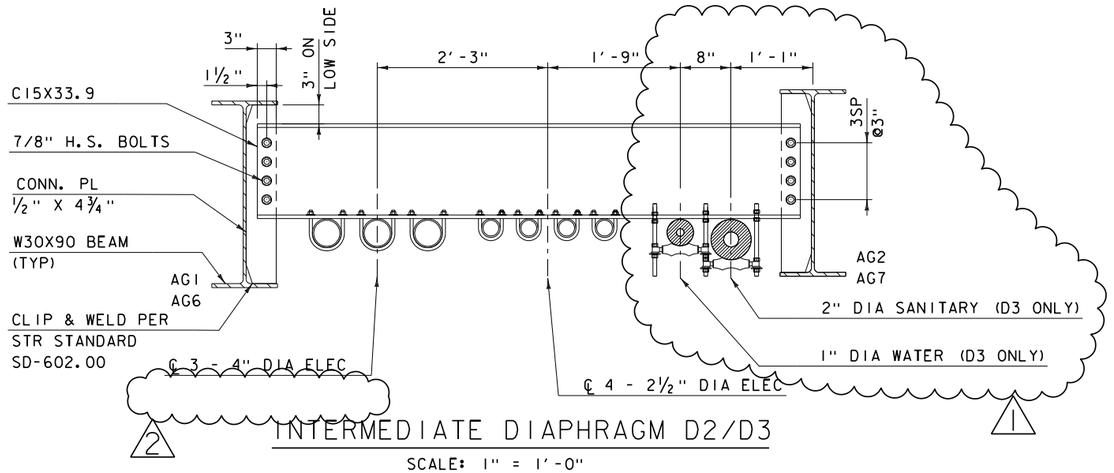
INTERMEDIATE DIAPHRAGM D1

SCALE: 1" = 1'-0"



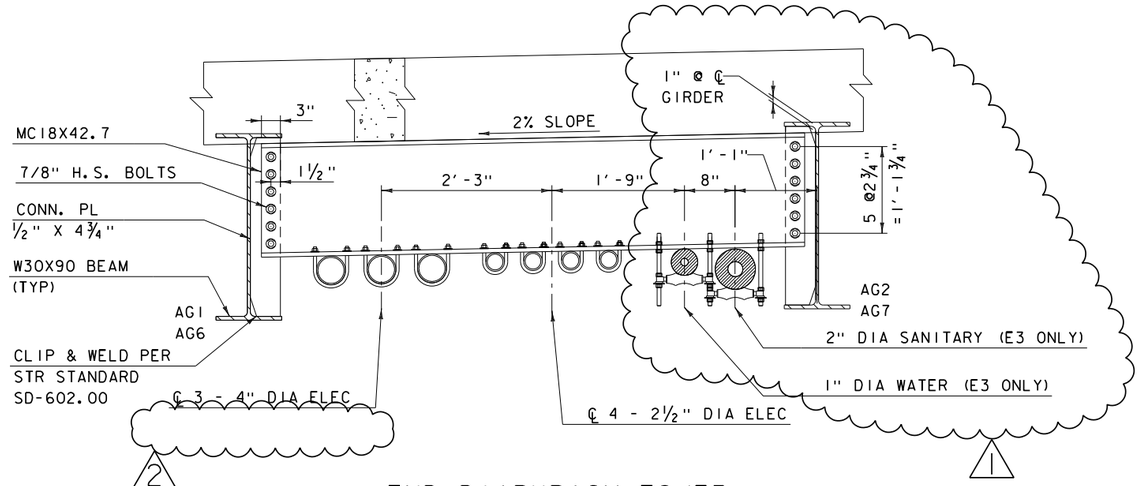
END DIAPHRAGM E1

SCALE: 1" = 1'-0"



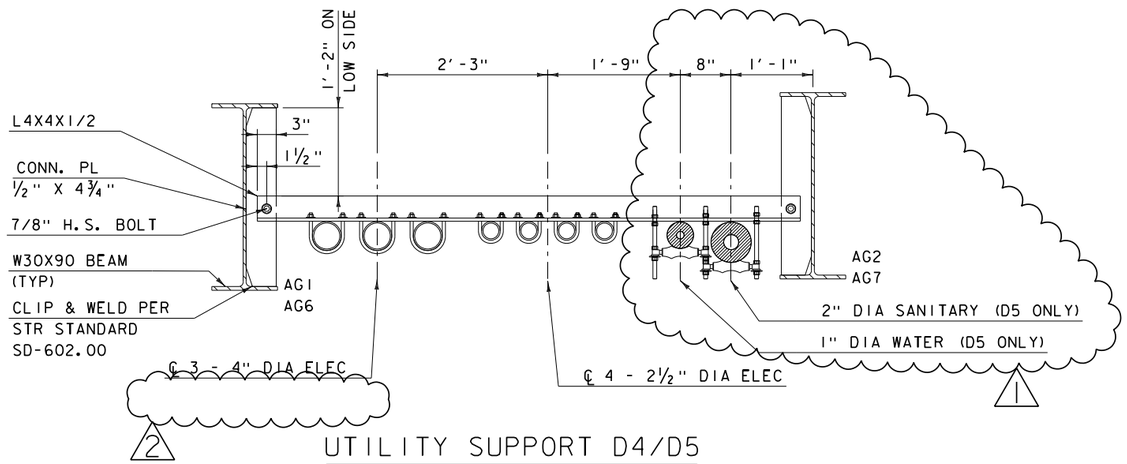
INTERMEDIATE DIAPHRAGM D2/D3

SCALE: 1" = 1'-0"



END DIAPHRAGM E2/E3

SCALE: 1" = 1'-0"



UTILITY SUPPORT D4/D5

SCALE: 1" = 1'-0"

NOTES:

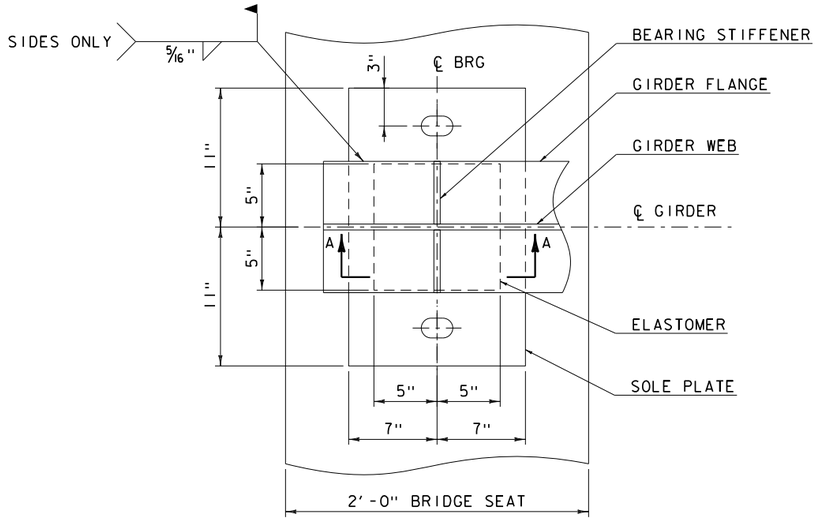
1. SEE SD-601.00 AND SD-602.00 FOR STANDARD STEEL DETAILS.
2. 1" DIA WATER AND 2" DIA SANITARY TO BE WRAPPED WITH REDUNDANT HEAT TRACE, 2" THICK RIGID FOAM INSULATION, AND STAINLESS STEEL SHEATHING. SEE DETAIL SHEET 297.
3. SANITARY SEWER TO BE SLOPED ¼" PER FOOT (MIN) FROM PIER TO ABUTMENT.

REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG
1	4-29-2020	POST-AWARD RFI'S 037-114	JLG

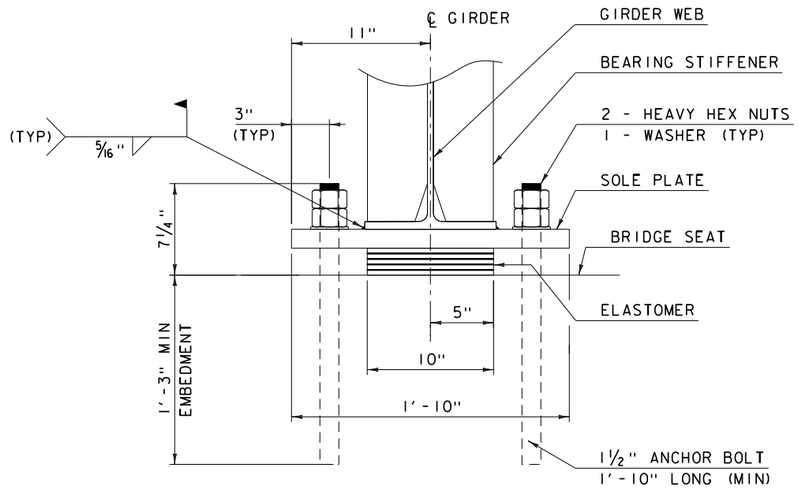
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142apgirdet.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: P. LEFEBVRE
APPROACH SPAN GIRDER DETAILS

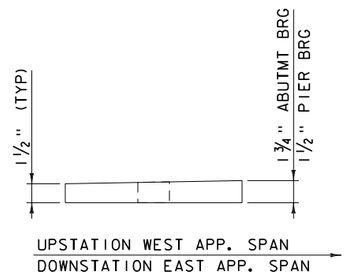
PLOT DATE: 2/6/2018
DRAWN BY: P. LEFEBVRE
CHECKED BY: M. MOZER
SHEET 63 OF 379



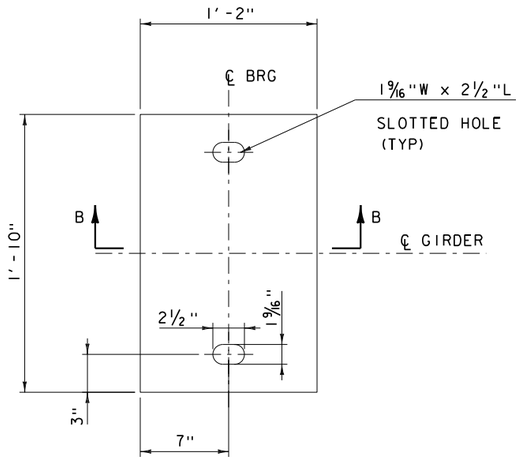
PLAN VIEW
SCALE 2" = 1'-0"



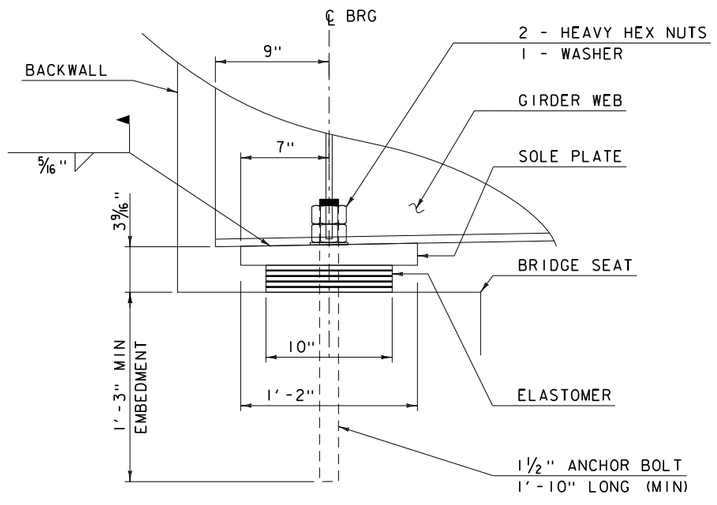
FRONT ELEVATION
SCALE 2" = 1'-0"



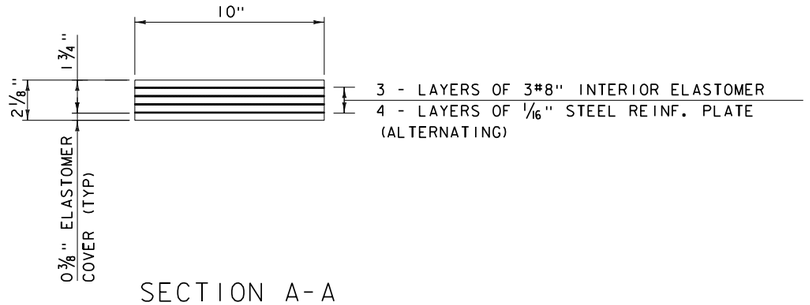
SECTION B-B
SCALE 2" = 1'-0"



SOLE PLATE DETAIL
SCALE 2" = 1'-0"



SIDE ELEVATION
SCALE 2" = 1'-0"

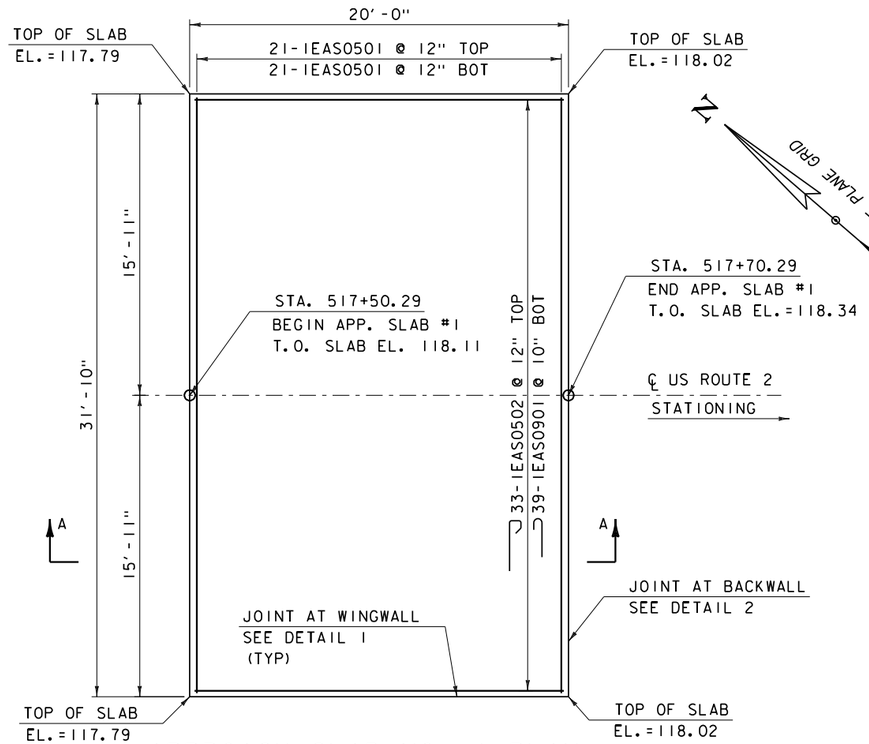


SECTION A-A
SCALE 3" = 1'-0"

NOTES

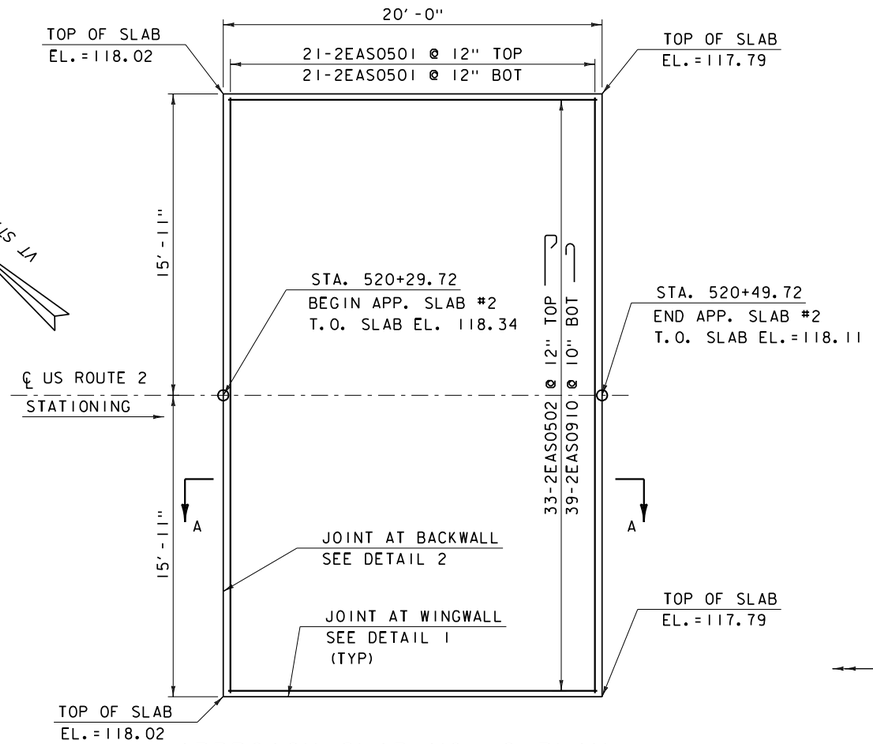
1. SEE GENERAL NOTES FOR BEARING NOTES.

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142apbrgdet.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P. LEFEBVRE
DESIGNED BY: P. LEFEBVRE	CHECKED BY: M. MOZER
APPROACH SPAN BEARING DETAILS	SHEET 64 OF 379



APPROACH SLAB NO. 1 PLAN

SCALE 1/4" = 1'-0"

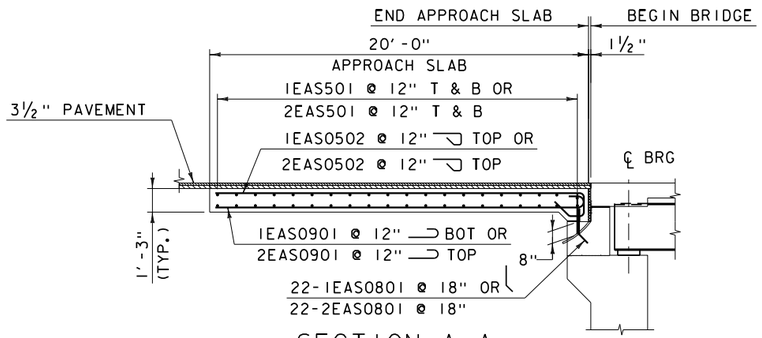


APPROACH SLAB NO. 2 PLAN

SCALE 1/4" = 1'-0"

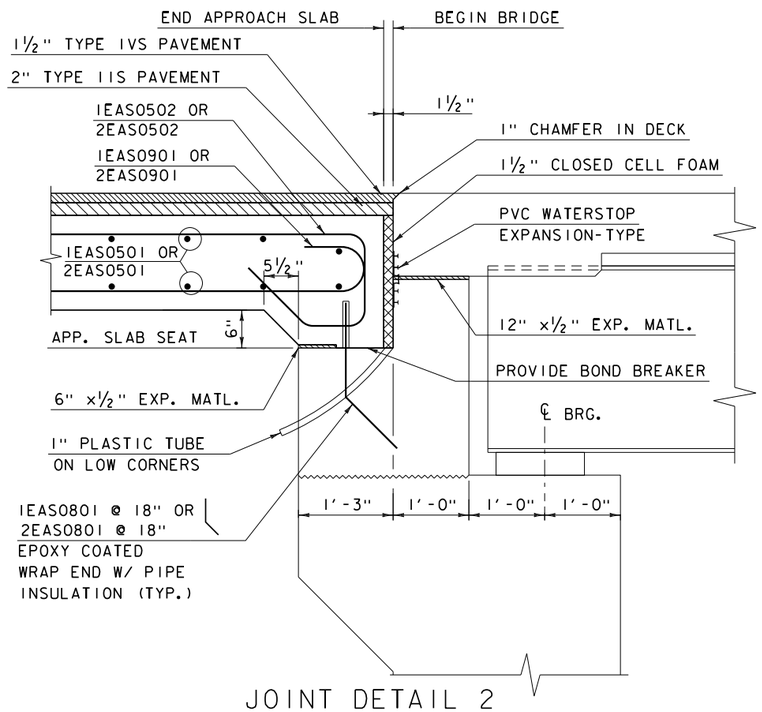
LEGEND:

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



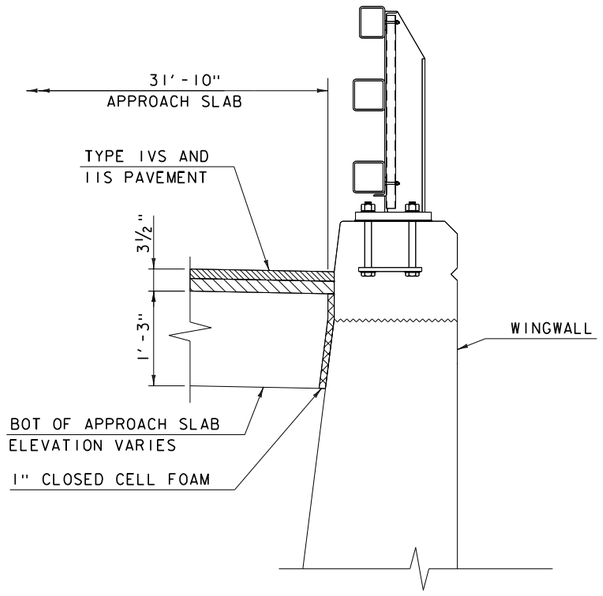
SECTION A-A

SCALE 1/4" = 1'-0"



JOINT DETAIL 2

SCALE 1" = 1'-0"



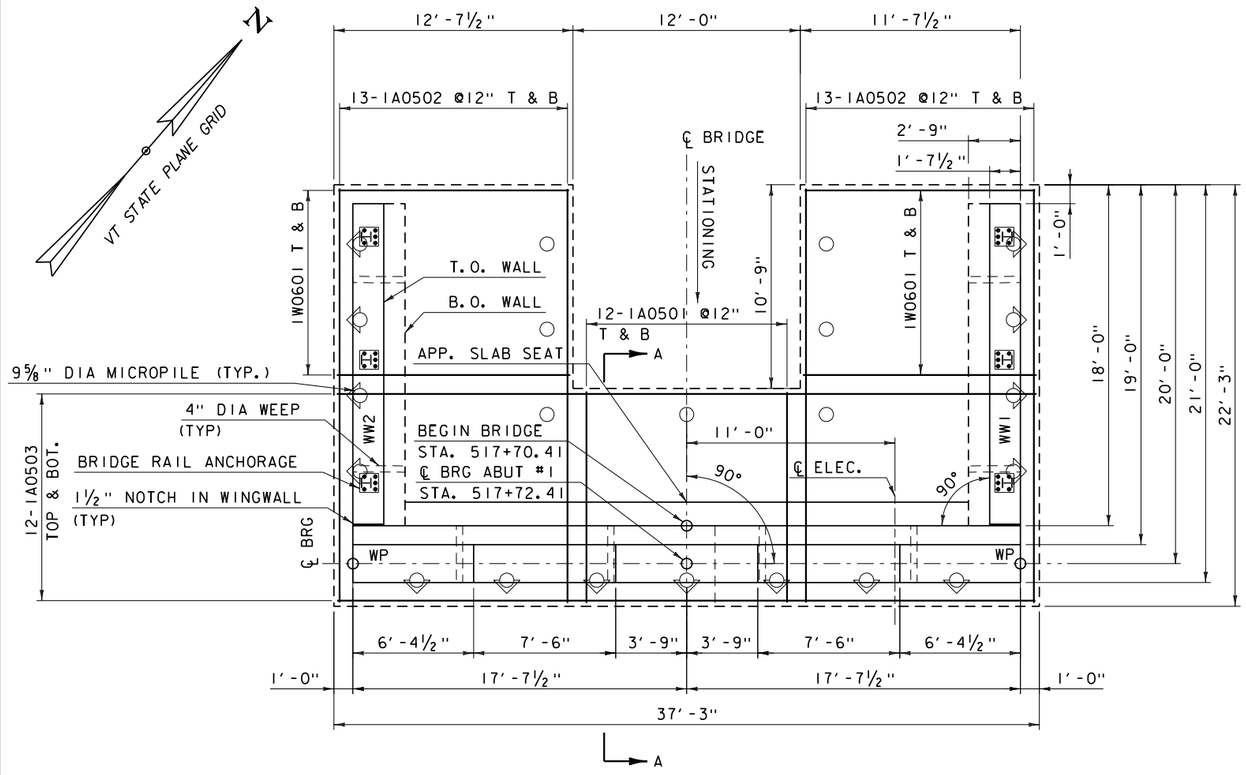
JOINT DETAIL 1

SCALE 1" = 1'-0"

NOTES:

1. SEE SHEETS 66-70 FOR ABUTMENT DETAILS.

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142appslabl.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: D. DOUGHERTY
DESIGNED BY: P. LEFEBVRE	CHECKED BY: M. MOZER
APPROACH SLAB DETAILS	SHEET 65 OF 379

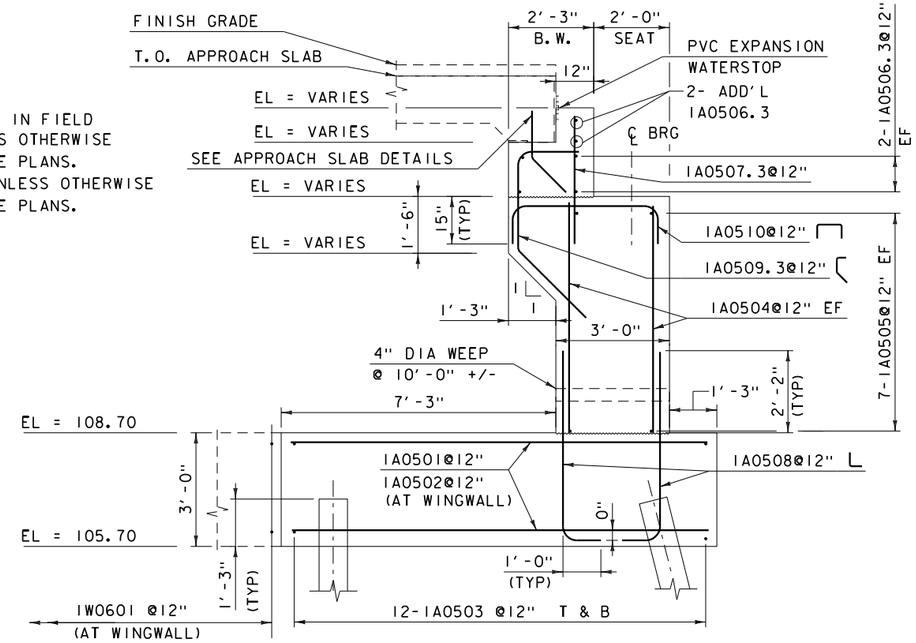


ABUTMENT I PLAN

SCALE ¼" = 1'-0"

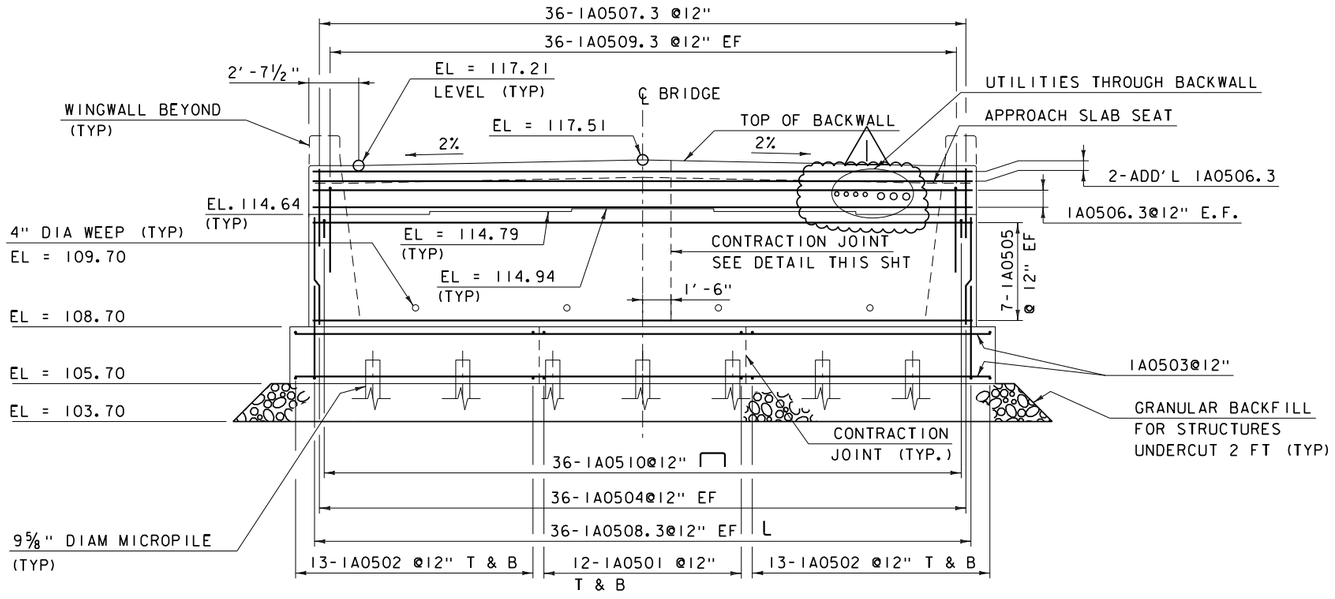
LEGEND:

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



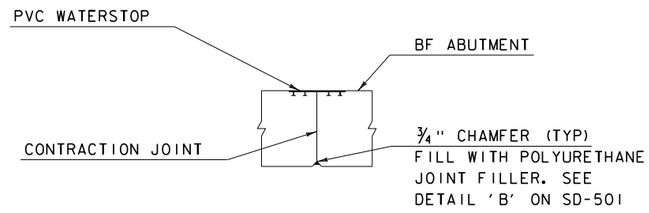
SECTION A-A

SCALE ½" = 1'-0"



ABUTMENT I ELEVATION

SCALE ¼" = 1'-0"



CONTRACTION JOINT DETAIL

SCALE 1" = 1'-0"

NOTES:

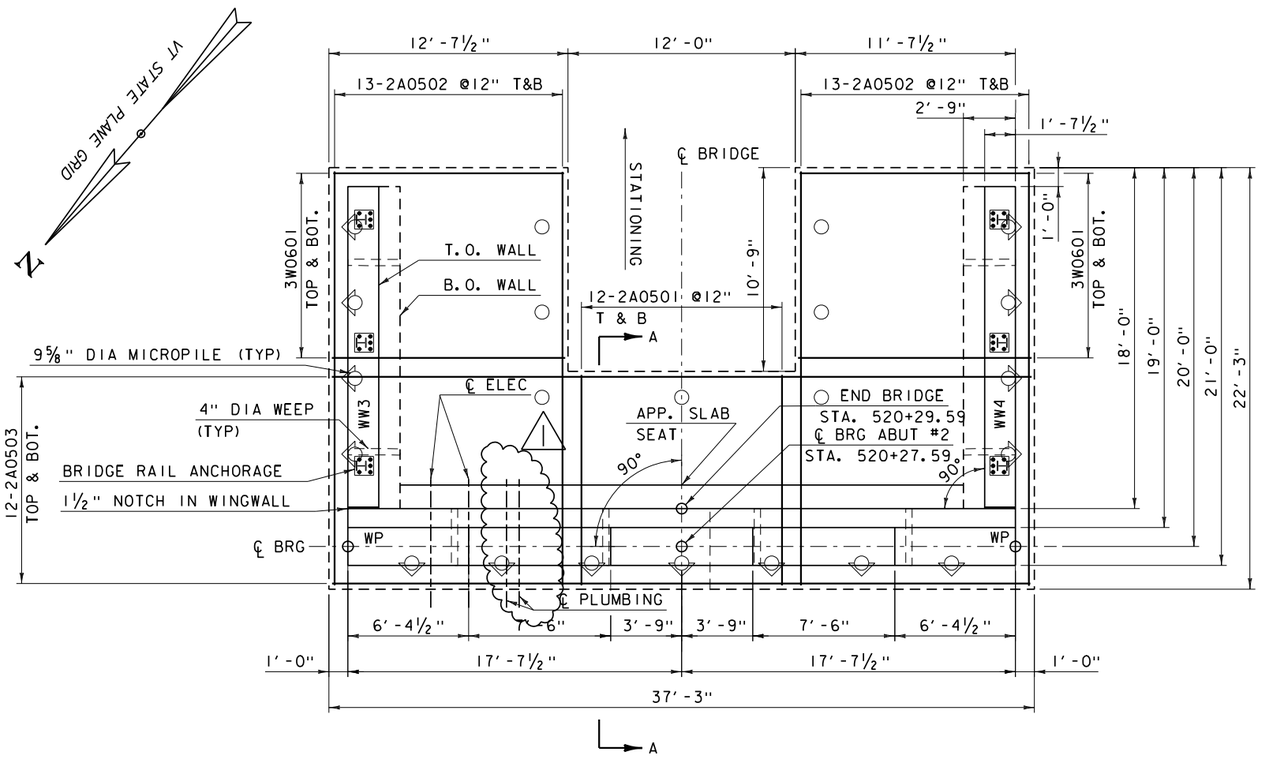
1. ABUTMENT IS SYMMETRICAL ABOUT ℄ BRIDGE, EXCEPT FOR UTILITY OPENINGS.
2. TOP OF PEDESTAL ELEVATIONS BASED ON 2" HAUNCH @ ABUTMENT.
3. SEE SHEET 65 FOR APPROACH SLAB DETAILS.
4. SEE SHEETS 76-77 FOR JOINT DETAILS.
5. SEE SHEETS 205-214 FOR BRIDGE RAIL DETAILS.
6. SEE SD-501.00 AND SD-502.00 FOR STANDARD CONCRETE DETAILS.
7. BRIDGE PLAQUE TO BE INSTALLED ON WW2. SEE SD-502.00

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	4-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

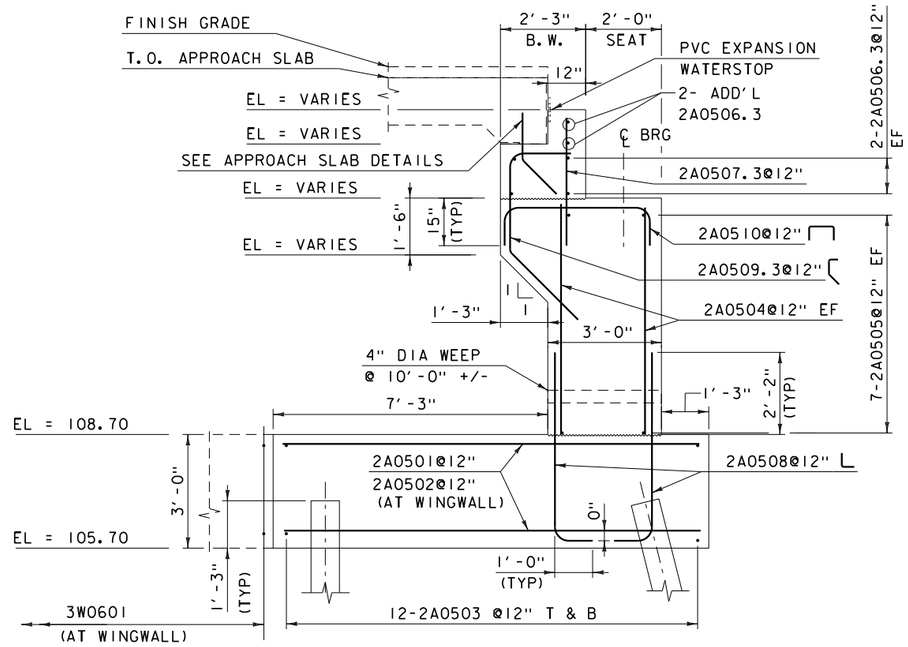
FILE NAME: zl2bl42abutment.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: P. LEFEBVRE
ABUTMENT I DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: P. LEFEBVRE
CHECKED BY: M. MOZER



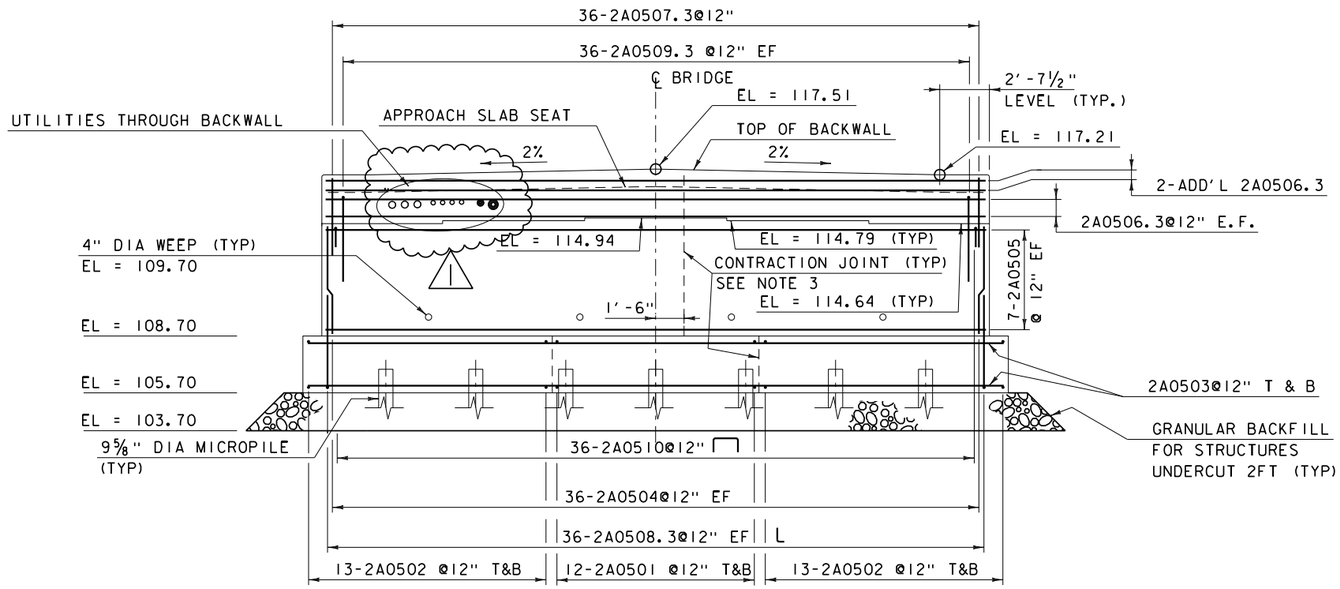
ABUTMENT 2 PLAN

SCALE ¼" = 1'-0"



SECTION A-A

SCALE ½" = 1'-0"



ABUTMENT 2 ELEVATION

SCALE ¼" = 1'-0"

LEGEND:

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

NOTES:

1. ABUTMENT IS SYMMETRICAL ABOUT ℄ BRIDGE, EXCEPT FOR UTILITY OPENINGS.
2. SEE ABUTMENT 1 FOR ADDITIONAL NOTES.
3. SEE SHEET 66 FOR CONTRACTION JOINT DETAIL.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

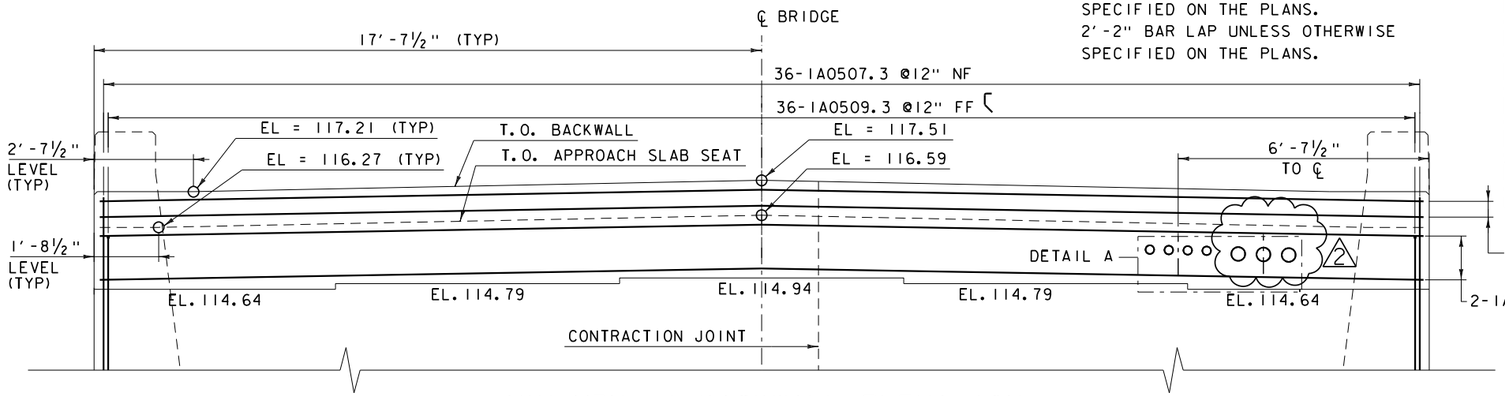
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: zi2bl42abutmnt2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: P. LEFEBVRE
ABUTMENT 2 DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: P. LEFEBVRE
CHECKED BY: M. MOZER
SHEET 67 OF 379

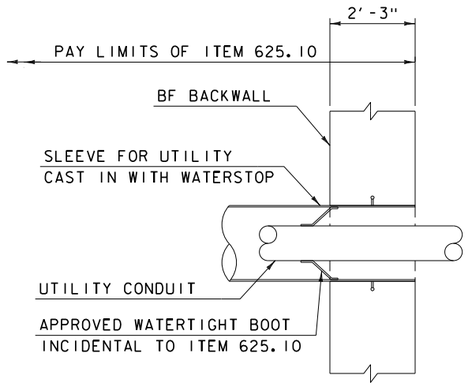
LEGEND:

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



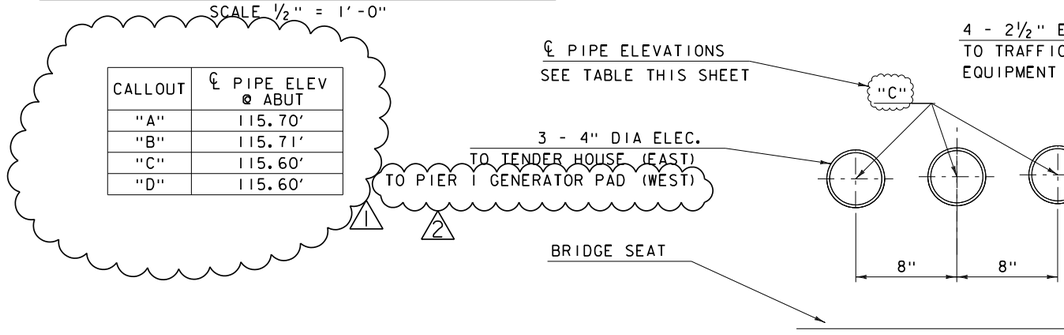
ABUTMENT 1 BACKWALL ELEVATION

SCALE ½" = 1'-0"

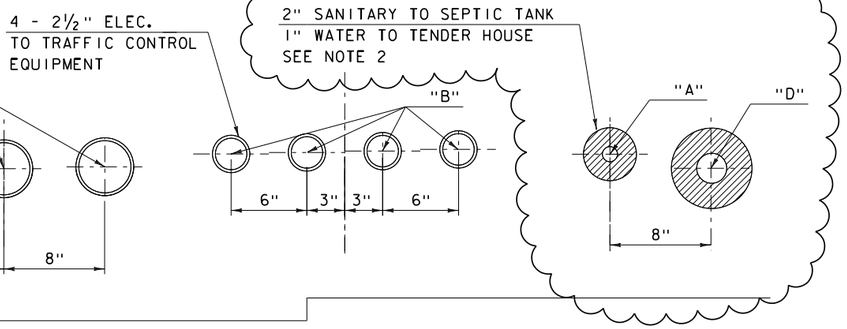


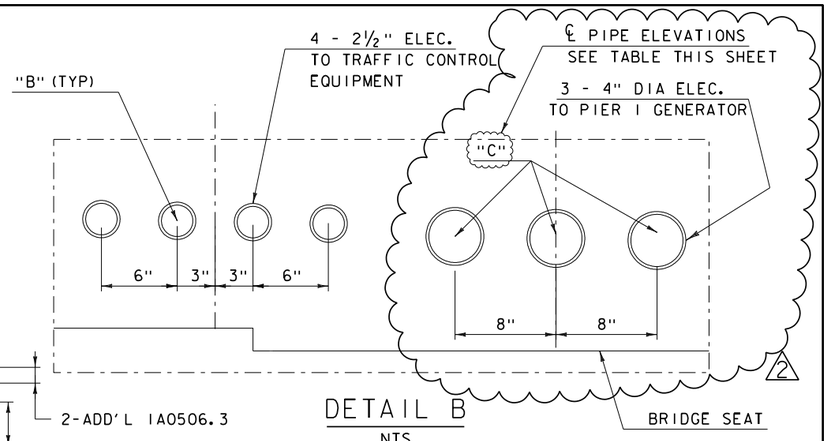
PIPE PENETRATION DETAIL

NTS



CALLOUT	℄ PIPE ELEV @ ABUT
"A"	115.70'
"B"	115.71'
"C"	115.60'
"D"	115.60'



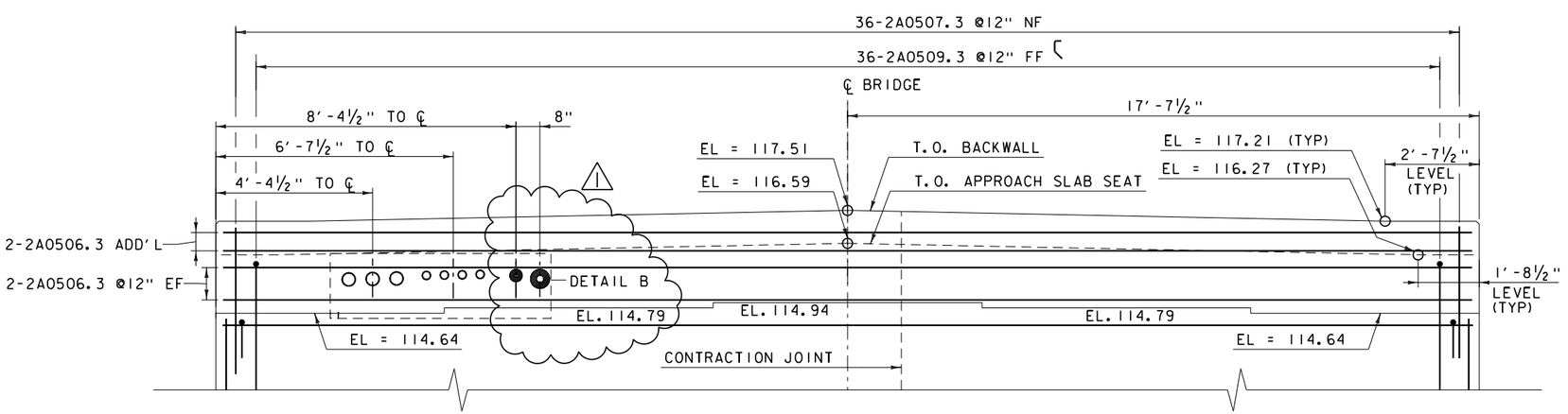


DETAIL B

NTS

NOTES:

1. PROVIDE FLEXIBLE WATER TIGHT SEAL AT BACKWALL FOR PIPE PENETRATIONS. SEE DETAIL THIS SHEET.
2. 2" SANITARY AND 1" WATER TO BE WRAPPED WITH REDUNDANT HEAT TRACE, 2" THICK RIGID FOAM INSULATION, AND STAINLESS STEEL SHEATHING. SEE DETAIL, SHEET 297.
3. PIPE ELEVATIONS SHALL BE VERIFIED PRIOR TO POURING ABOVE THE BRIDGE SEAT.
4. SEE ROADWAY DRAWINGS FOR CONTINUANCE BEYOND BACKWALL.
5. ABUTMENTS ARE SYMMETRICAL ABOUT CENTERLINE OF BRIDGE, EXCEPT FOR UTILITY OPENINGS. SEE ABUTMENT DRAWINGS FOR BACKWALL SECTIONS.
6. SEE SHEET 169 FOR PIER BACKWALL DETAILS.
7. SLEEVE SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 726.08.



ABUTMENT 2 BACKWALL ELEVATION

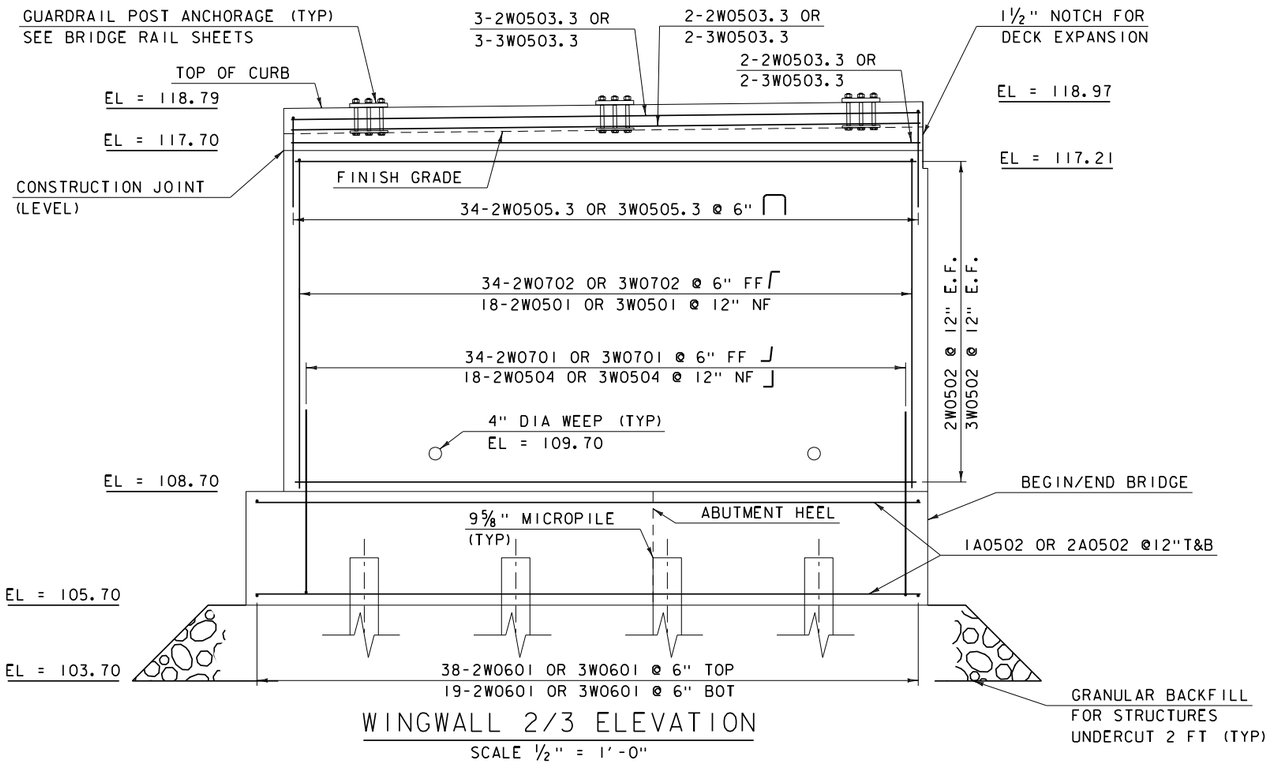
SCALE ½" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

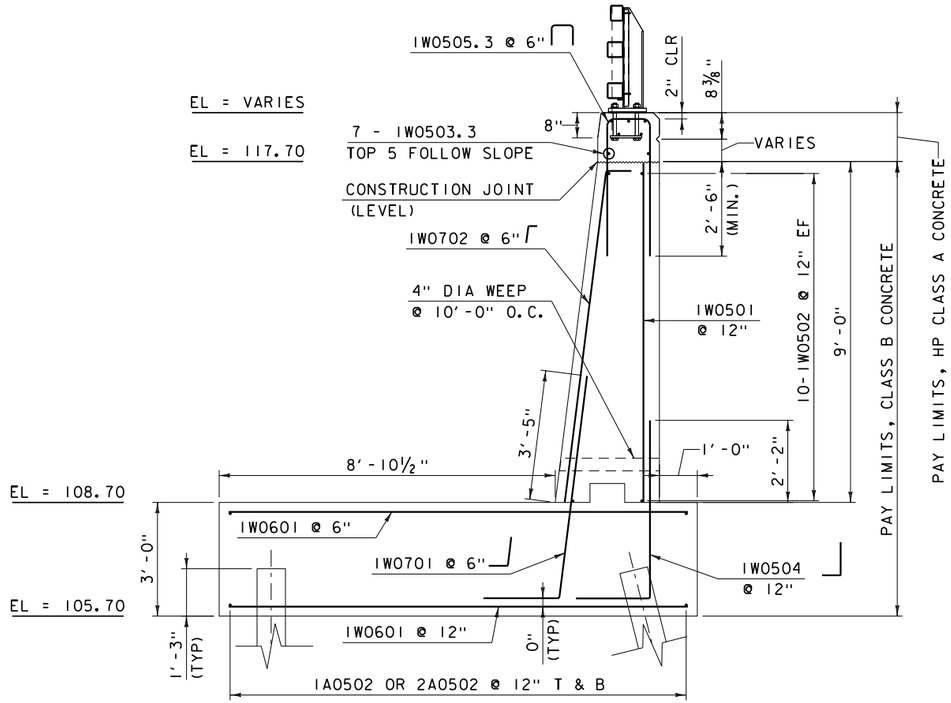
FILE NAME: z12b142abutbw.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: P. LEFEBVRE
ABUTMENT BACKWALL DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: P. LEFEBVRE
CHECKED BY: M. MOZER
SHEET 68 OF 379



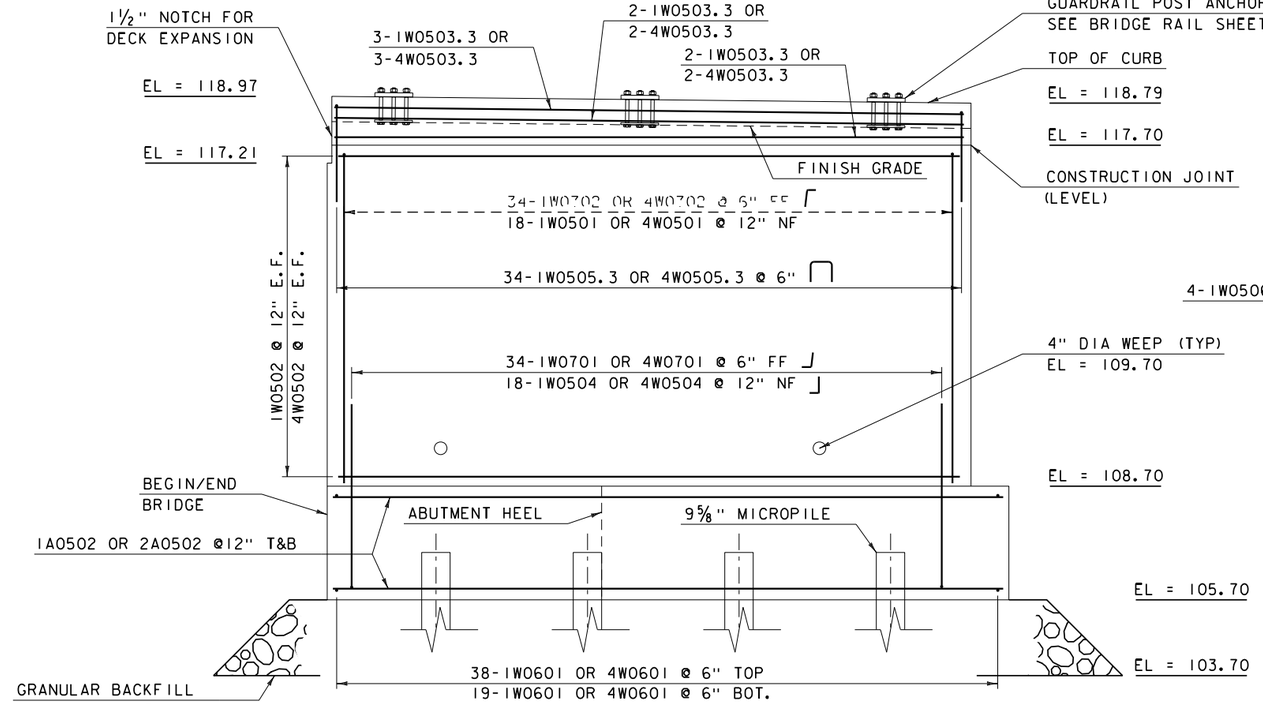
WINGWALL 2/3 ELEVATION

SCALE ½" = 1'-0"
(WW2 IS SHOWN WW3 IS SIMILAR)



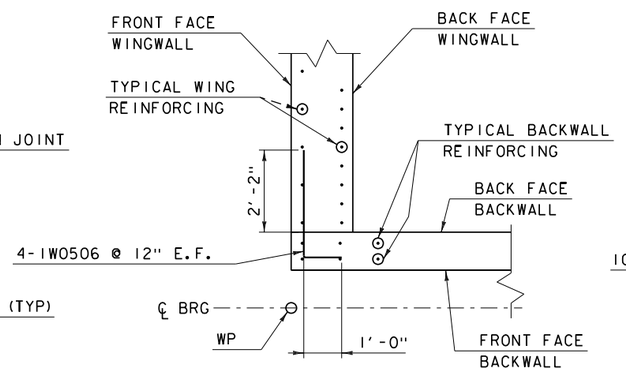
WINGWALL TYPICAL SECTION

SCALE ½" = 1'-0"
(WW1 SHOWN WW2, 3 AND 4 ARE SIMILAR)



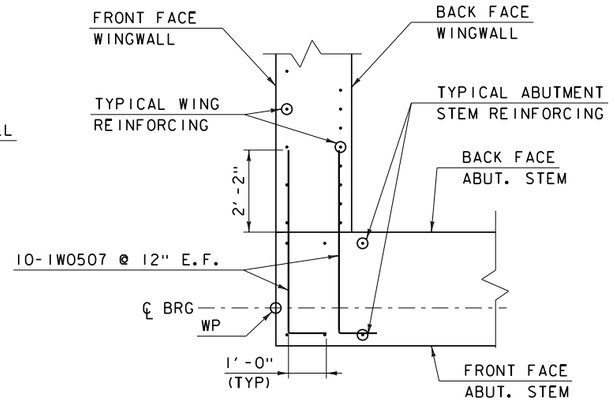
WINGWALL 1/4 ELEVATION

SCALE ½" = 1'-0"
(WW1 IS SHOWN WW4 IS SIMILAR)



WINGWALL CORNER DETAIL

ABOVE BRIDGE SEAT AND BELOW ELEV 117.70
(NTS)
(WW1 SHOWN WW2, 3 AND 4 ARE SIMILAR)

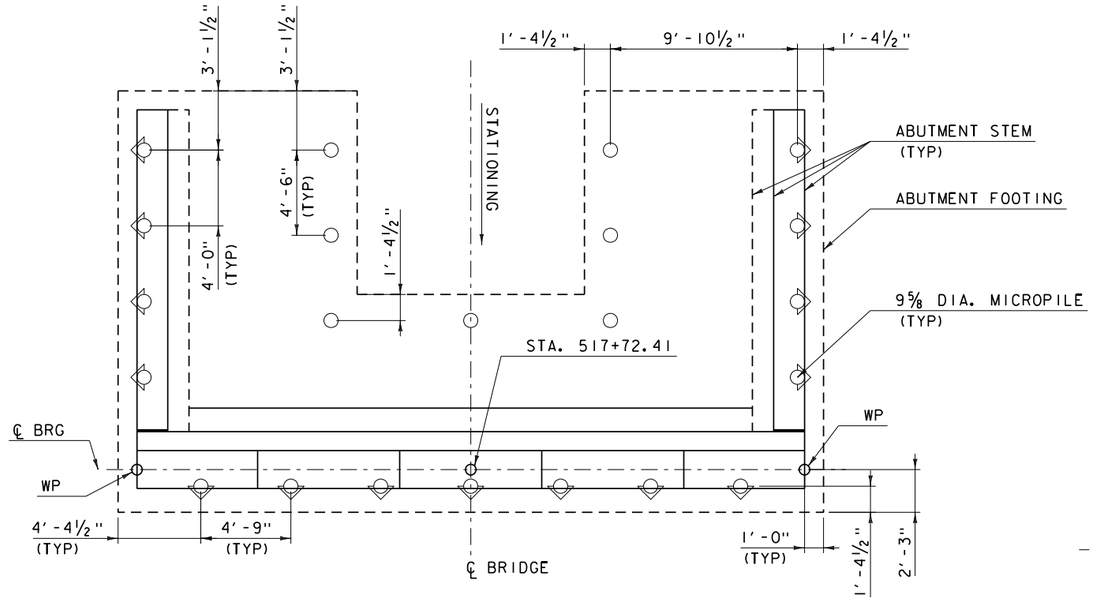


WINGWALL CORNER DETAIL

BELOW BRIDGE SEAT
(NTS)
(WW1 SHOWN WW2, 3 AND 4 ARE SIMILAR)

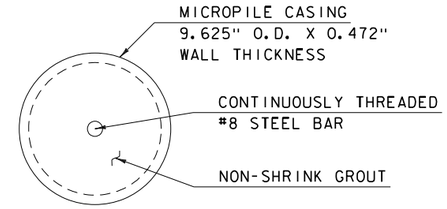
PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)

FILE NAME: z12bl42abutww.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P. LEFEBVRE
DESIGNED BY: P. LEFEBVRE	CHECKED BY: M. MOZER
WINGWALL DETAILS	SHEET 69 OF 379



ABUTMENT 1 PILE LAYOUT

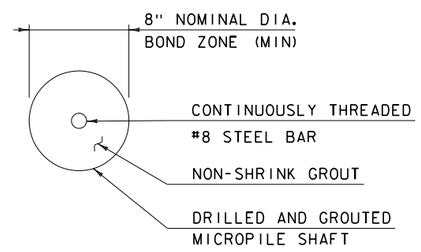
SCALE ¼" = 1'-0"



SECTION A-A

(CASED MICROPILE)

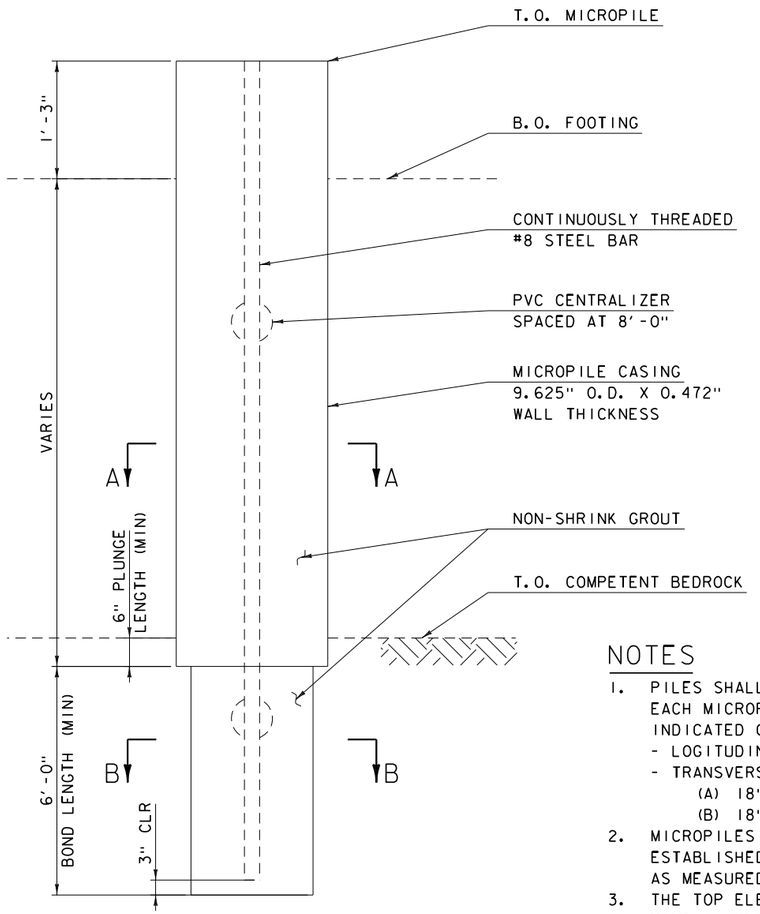
NOT TO SCALE



SECTION B-B

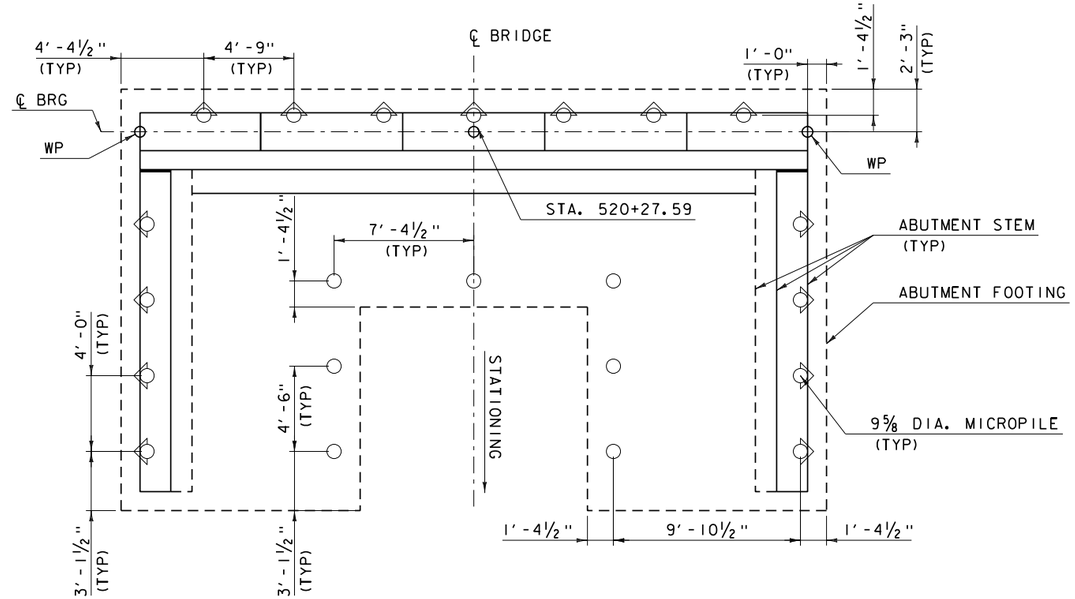
(UNCASED MICROPILE)

NOT TO SCALE



MICROPILE ELEVATION

NOT TO SCALE



ABUTMENT 2 PILE LAYOUT

SCALE ¼" = 1'-0"

LEGEND

○ VERTICAL MICROPILE

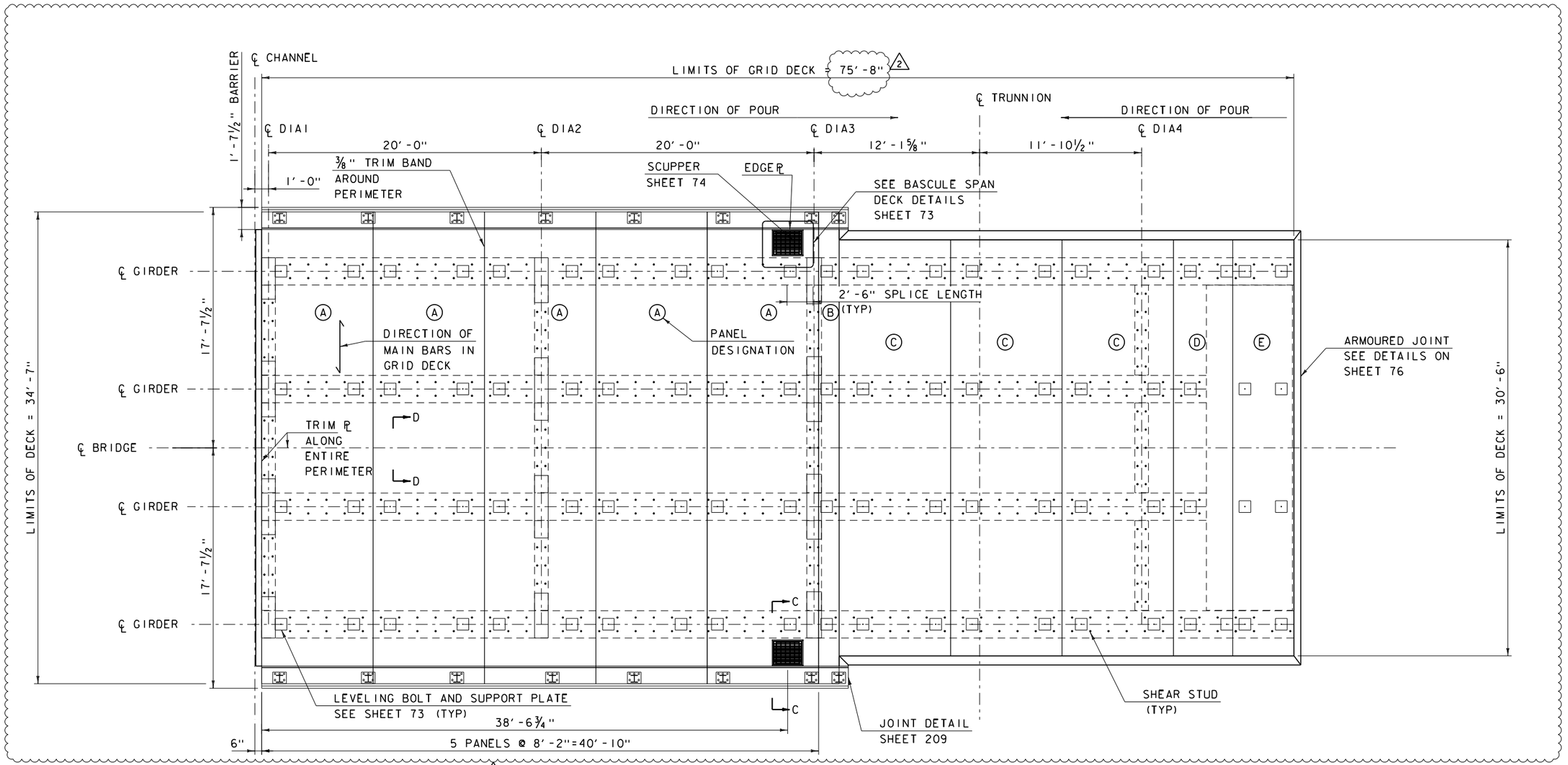
◇ BATTERED MICROPILE AT 4 TO 1

NOTES

1. PILES SHALL BE INSTALLED SO THAT THE CENTER OF EACH MICROPILE DOES NOT VARY FROM THE LOCATION INDICATED ON THE PLAN BY MORE THAN THE FOLLOWING:
   - LOGITUDINAL DIRECTION, 3".
   - TRANSVERSE DIRECTION,
     (A) 18" FOR ANY INDIVIDUAL PILE.
     (B) 18" APART FOR ANY TWO ADJACENT PILES.
2. MICROPILES SHALL NOT VARY FROM THE VERTICAL OR ESTABLISHED BATTER BY MORE THAN ¼ INCH PER FOOT, AS MEASURED ABOVE GROUND.
3. THE TOP ELEVATION OF THE COMPLETED MICROPILE SHALL HAVE A TOLERANCE OF PLUS OR MINUS ONE INCH.
4. SEE SPECIAL PROVISIONS AND GENERAL NOTES FOR ADDITIONAL REQUIREMENTS

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)

FILE NAME: z12bl42abutsub.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P. LEFEBVRE
DESIGNED BY: P. LEFEBVRE	CHECKED BY: M. MOZER
ABUTMENT FOUNDATION DETAILS	SHEET 70 OF 379



1

BASCULE SPAN DECK PLAN

(EAST LEAF SHOWN, WEST LEAF OPPOSITE HAND)
SCALE ¼" = 1'-0"

GRID DECK SCHEDULE (SEE NOTE 4)				
PANEL	LENGTH	WIDTH	NO. REQUIRED	TYPE
A	34'-7"	8'-2"	5	MAIN BARS SHALL BE AT 8" CENTER TO CENTER WITH 2 SUPPLAMENTARY BARS AT 2 11/16 ". MAIN BEAM WILL BE 5 3/16" DEEP SPECIAL ROLLED BEAM x 5.6 LB/LF.
B	34'-7"	1'-6"	1	
C	30'-6"	8'-2"	3	
D	30'-6"	4'-4" 2	1	
E	30'-6"	4'-6"	1	

NOTE

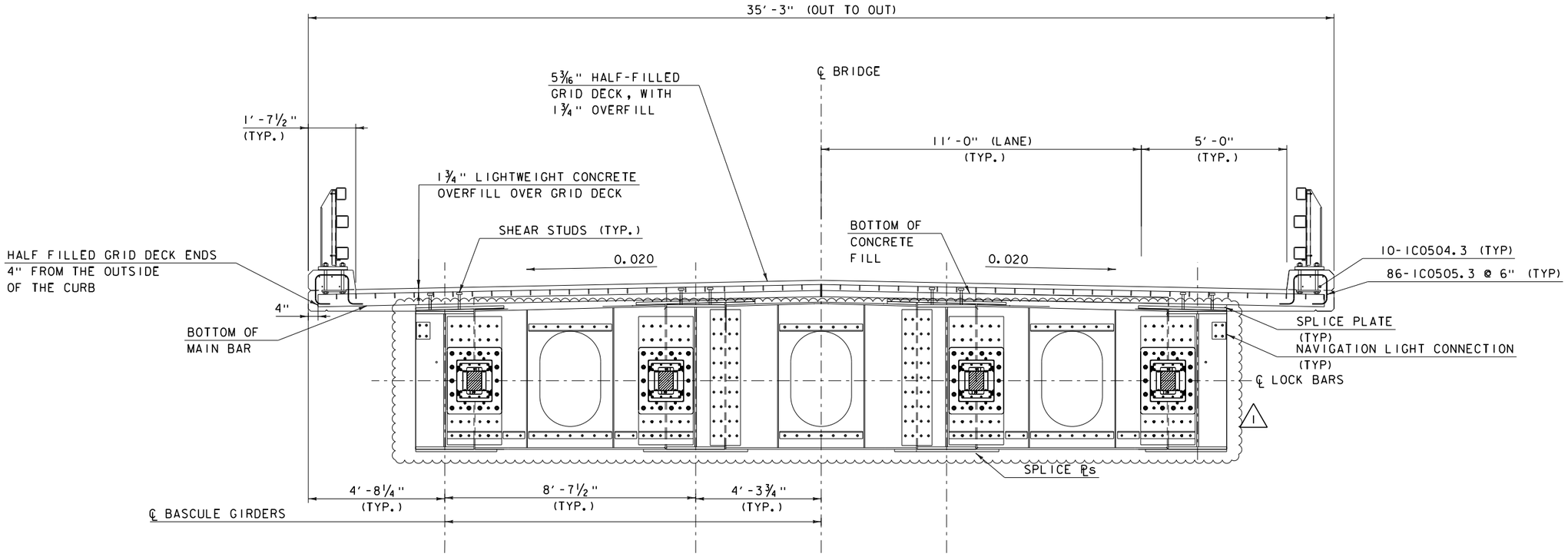
1. SEE SHEET 73 SECTIONS D-D.
2. RAILING NOT SHOWN FOR CLARITY.
3. ALL GRID DECK STEEL SHALL BE ASTM A709 GR. 50 AND GALVANIZED IN ACCORDANCE WITH ASTM A123.
4. DETAILS SHOWN ARE FOR WELDED LOCK GRID DECK. THE CONTRACTOR MAY SUBSTITUTE RIVETED GRID DECK OF EQUIVALENT DEPTH, SECTION MODULUS AND MOMENT OF INERTIA AT NO ADITIONAL COST.
5. HALF FILLED GRID DECK SHALL USE 120 PCF LIGHTWEIGHT CONCRETE.
6. ALL WORK ON THIS SHEET SHALL BE INCLUDED IN THE PRICE PAID FOR ITEM 900.670 SPECIAL PROVISIONS (HALF FILLED GRID DECK).
7. SEE SHEET 74 OR SECTION C-C.

REVISION	DATE	DESCRIPTION	BY
2			
2	4-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142bascdeck.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN DECK PLAN

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 71 OF 379



SECTION AT BASCULE SPAN

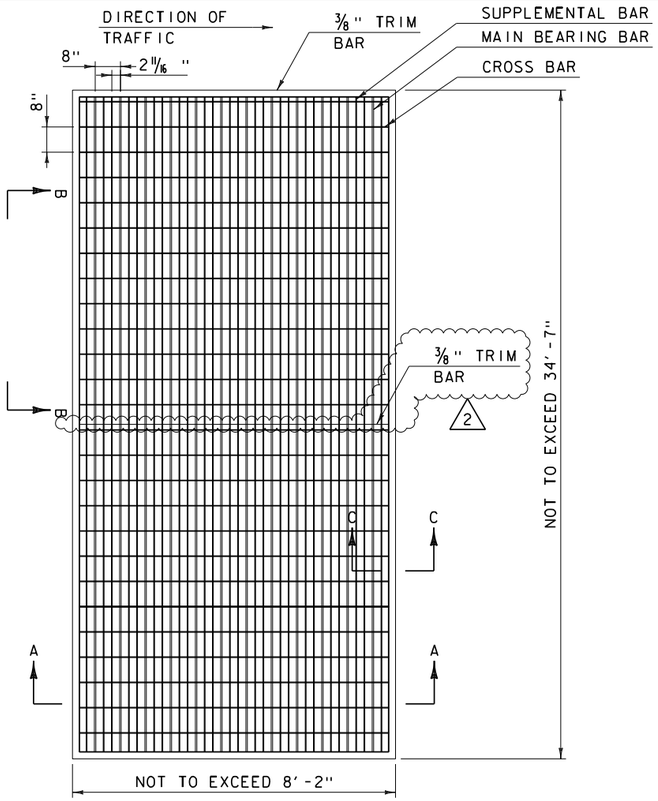
SCALE 1/2" = 1'-0"
(EAST BASCULE SPAN SHOWN, WEST BASCULE SIMILAR)

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

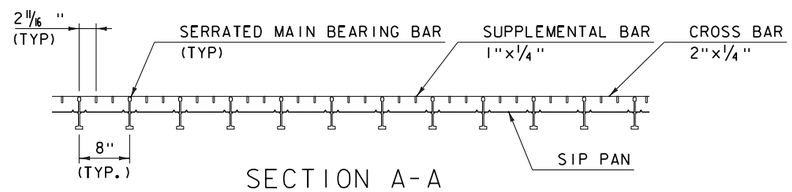
FILE NAME: z12b142bascsec.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN DECK DETAILS 1 OF 3

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 72 OF 379



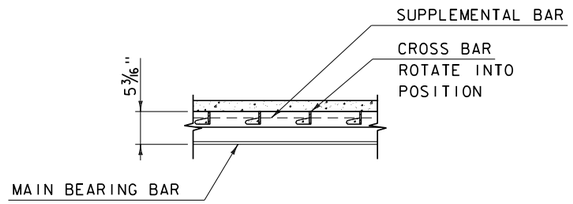
GRID DECK PLAN VIEW

SCALE 1/2" = 1'-0"



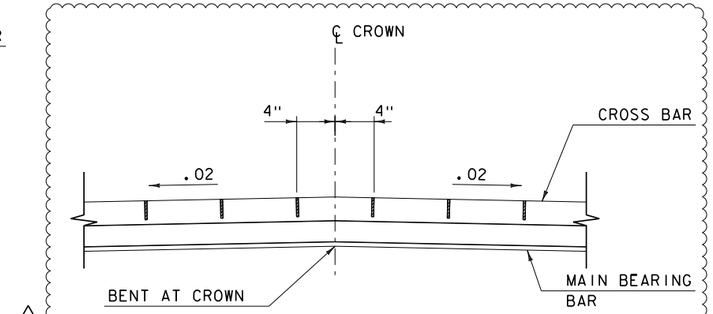
SECTION A-A

SCALE 1" = 1'-0"



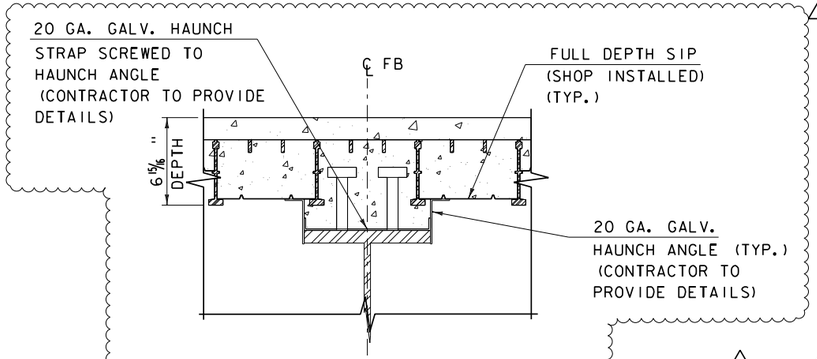
VIEW B-B

SCALE 1" = 1'-0"



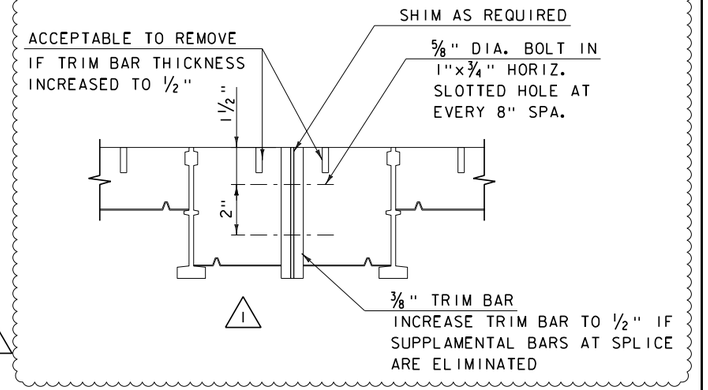
SECTION D-D

SCALE 1 1/2" = 1'-0"
(SEE NOTE 3)



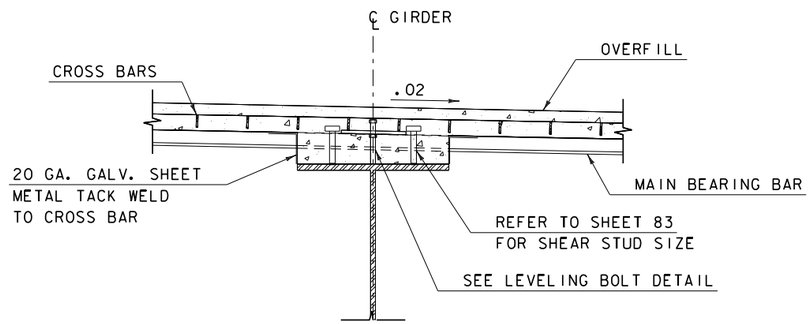
DIAPHRAGM HAUNCH DETAIL

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



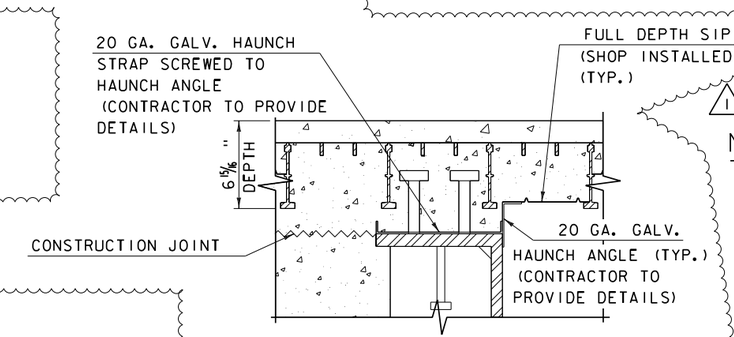
SECTION C-C

SCALE 3" = 1'-0"



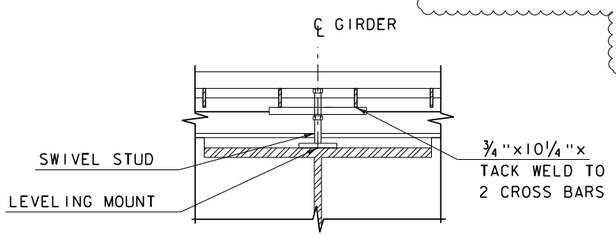
GIRDER HAUNCH DETAIL

SCALE 1" = 1'-0"



COUNTERWEIGHT HAUNCH DETAIL

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



LEVELING BOLT DETAIL

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

NOTE

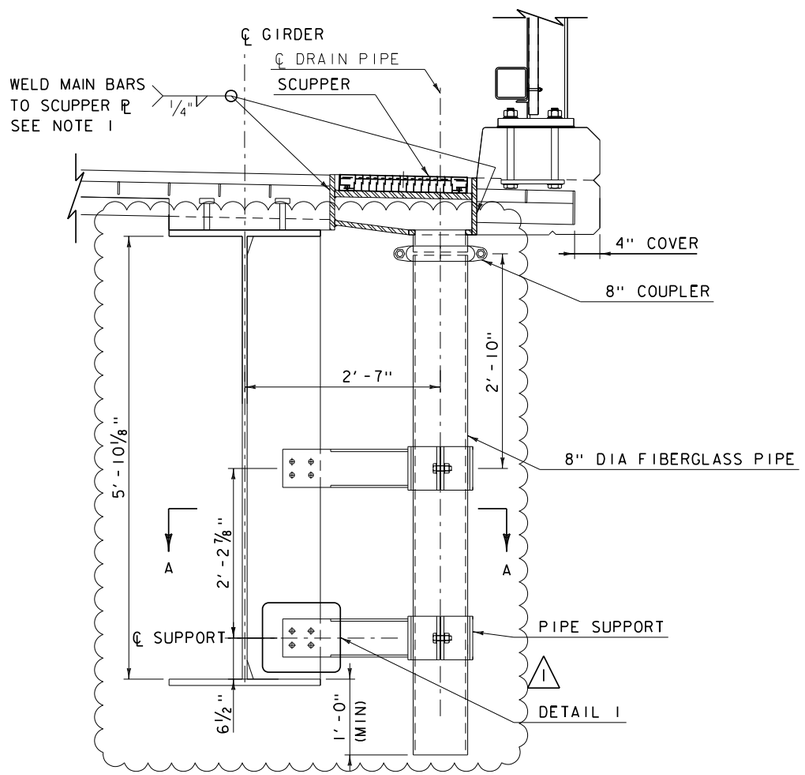
1. TOUCH UP GALVANIZED COATING PRIOR TO PLACING CONCRETE.
2. USE LEVELING BOLT WITH A SWIVELING STUD, 15 KIP CAPACITY AT 6 1/4" HEIGHT.
3. FOR LOCATION OF SECTION D-D SEE SHEET 71.

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

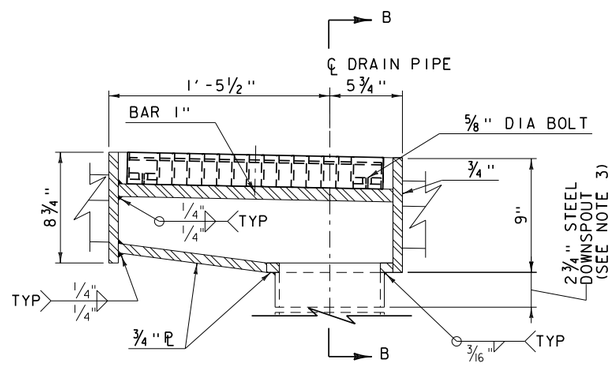
FILE NAME: z12b142deckdet1.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN DECK DETAILS 2 OF 3

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 73 OF 379

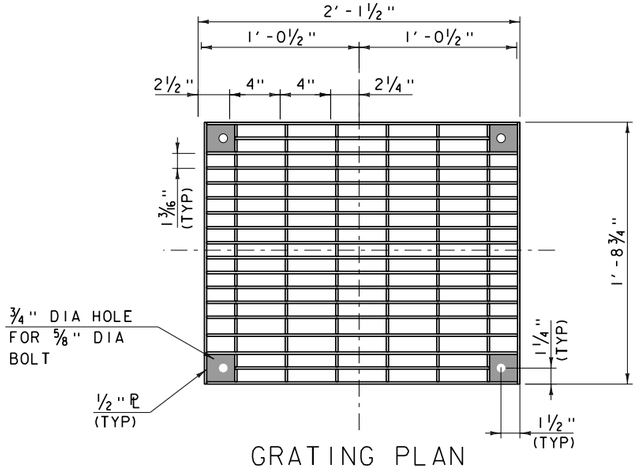


SECTION C-C
DRAINAGE SCUPPER IN DECK

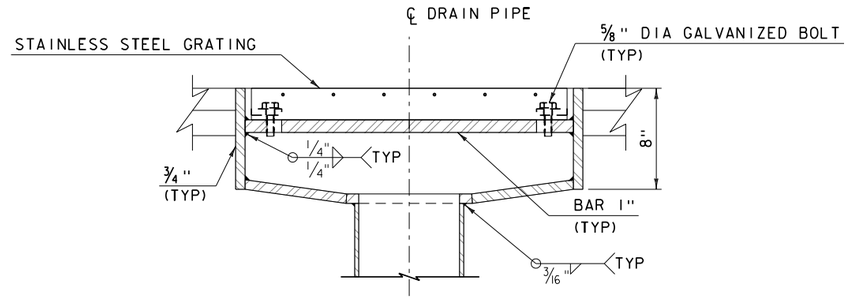
(SEE SECTION CUT ON PAGE 69)
SCALE 1" = 1'-0"



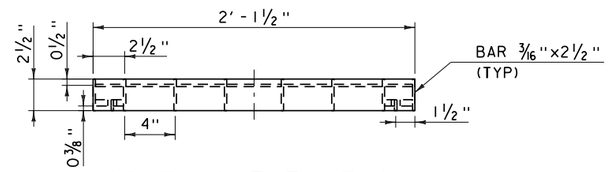
SCUPPER ELEVATION



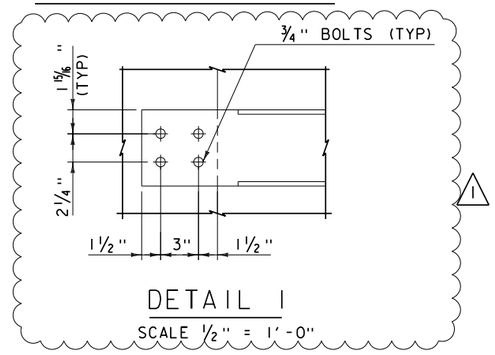
GRATING PLAN



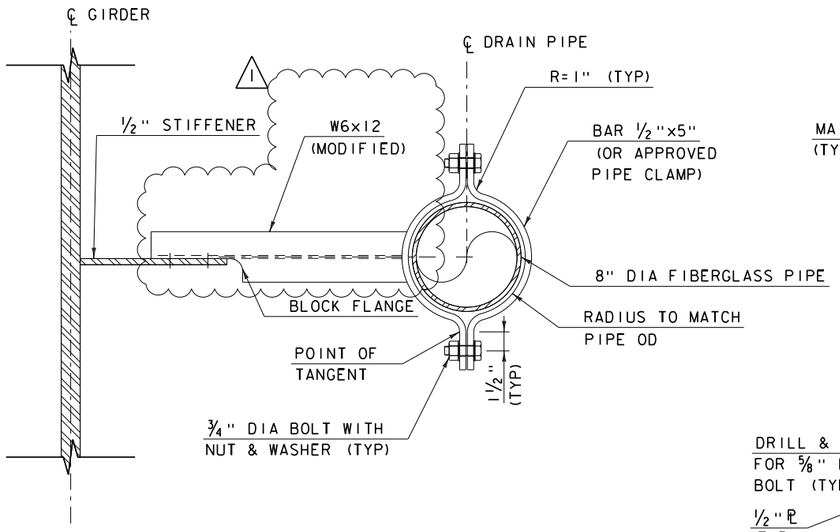
SECTION B-B



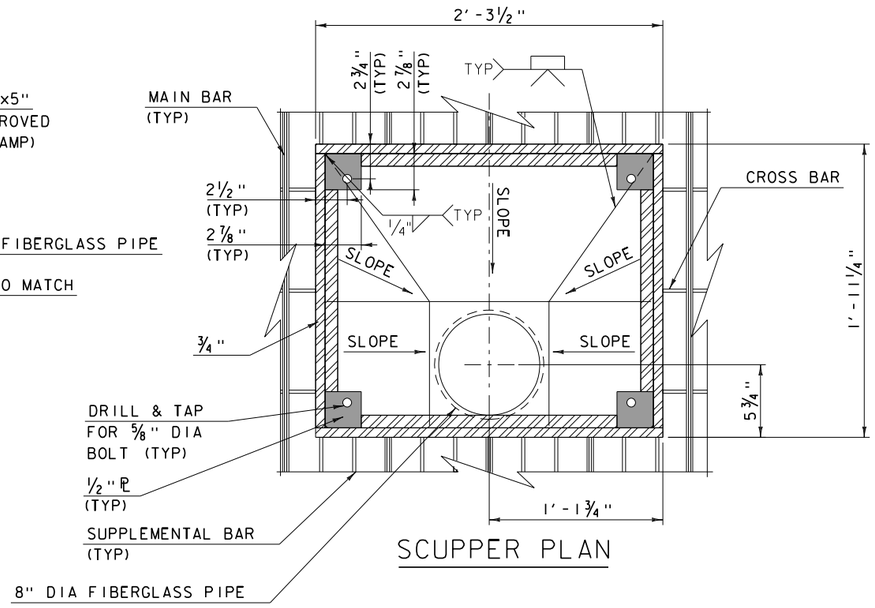
GRATING ELEVATION



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



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



SCUPPER PLAN

NOTE:

1. MAIN BAR WELD TO SCUPPER PLATES SHALL BE WELDED AT GRID MANUFATURER.
2. BAR FOR SCUPPER GRATING SHALL BE ASTM A304 STAINLESS STEEL.
3. FIBERGLASS DOWNSPOUT SHALL BE CONNECTED TO STEEL DOWNSPOUT WITH COUPLER.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42deckdet2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN DECK DETAILS 3 OF 3

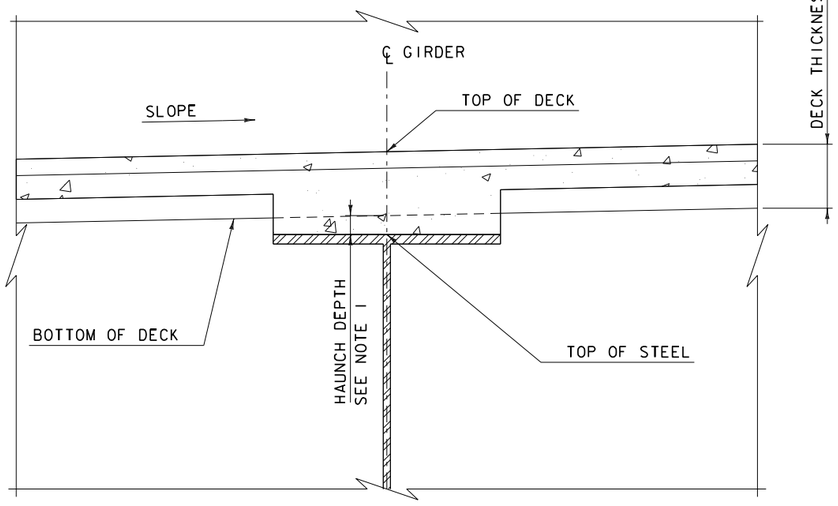
PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 74 OF 379

G1, G4, G5 & G8	AT BACK	0.1 L.	0.2 L.	0.3 L.	0.4 L.	0.5 L.	0.6 L.	0.7 L.	0.8 L.	0.9 L.	AT TOE
Ⓐ REQ'D BOTTOM OF SLAB ELEVATION	118.23	118.27	118.31	118.35	118.38	118.40	118.43	118.44	118.45	118.46	118.46
Ⓑ TOP OF STEEL EL. (FIELD MEASURE)											
Ⓒ = Ⓐ - Ⓑ											
Ⓓ CONCRETE D.L. DEFLECTION (IN.)	0.30	0.24	0.18	0.12	0.07	0.03	0.01	0.00	0.02	0.05	0.09
Ⓔ DEPTH OF HAUNCH REQ'D = Ⓒ + Ⓓ (FT.)											

G2, G3, G6 & G7	AT BACK	0.1 L.	0.2 L.	0.3 L.	0.4 L.	0.5 L.	0.6 L.	0.7 L.	0.8 L.	0.9 L.	AT TOE
Ⓐ REQ'D BOTTOM OF SLAB ELEVATION	118.40	118.45	118.49	118.52	118.55	118.58	118.60	118.61	118.63	118.63	118.64
Ⓑ TOP OF STEEL EL. (FIELD MEASURE)											
Ⓒ = Ⓐ - Ⓑ											
Ⓓ CONCRETE D.L. DEFLECTION (IN.)	0.30	0.25	0.15	0.14	0.10	0.07	0.05	0.04	0.04	0.05	0.07
Ⓔ DEPTH OF HAUNCH REQ'D = Ⓒ + Ⓓ (FT.)											

HAUNCH TABLE

SCALE 1" = 1'-0"



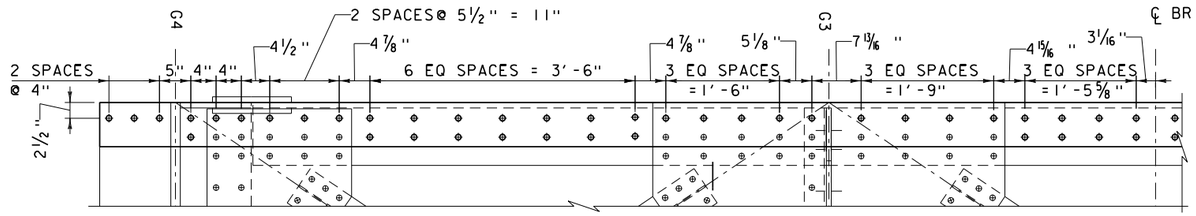
HAUNCH DIAGRAM

SCALE 1½" = 1'-0"

NOTE:

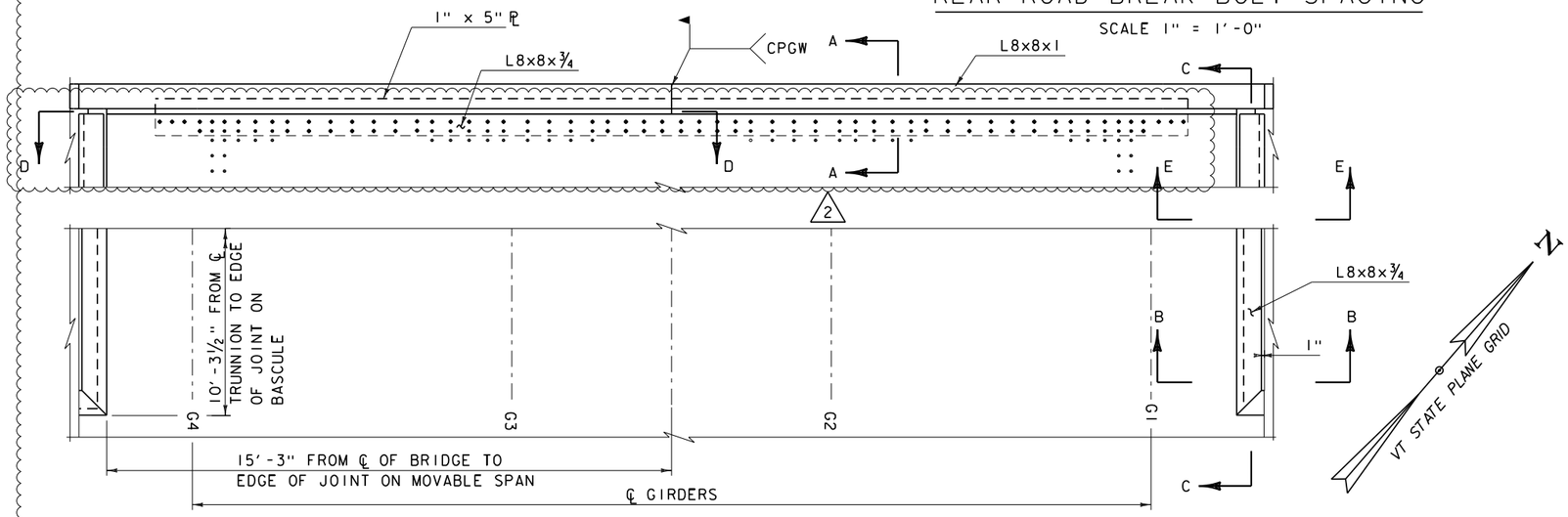
1. DEPTH OF HAUNCH WILL BE FROM THE BOTTOM OF DECK TO THE TOP OF STEEL AT THE CENTERLINE OF THE GIRDER.

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142haunchT.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: S. SANTRICH
DESIGNED BY: H. PROTIN	CHECKED BY: T. FRENCH
BASCULE SPAN HAUNCH TABLE	SHEET 75 OF 379



REAR ROAD BREAK BOLT SPACING

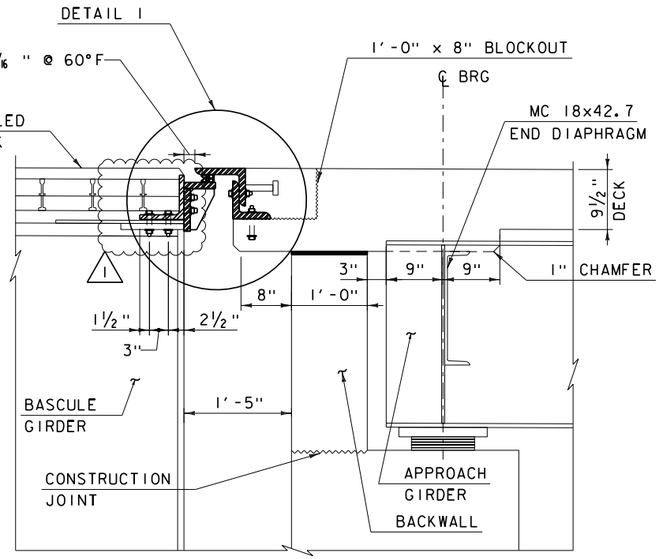
SCALE 1" = 1'-0"



REAR ROAD BREAK PLAN

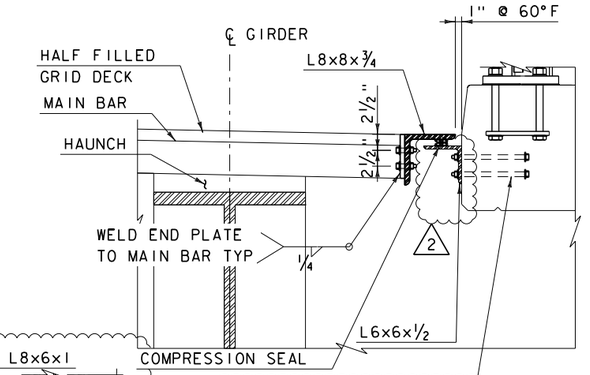
PIER 1 SHOWN, PIER 2 OPPOSITE HAND

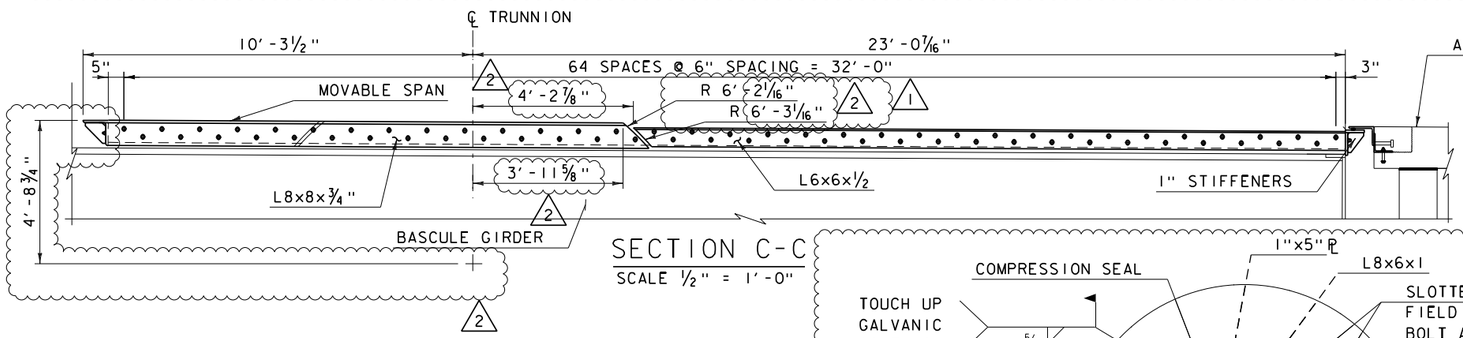
SCALE ½" = 1'-0"



SECTION A-A

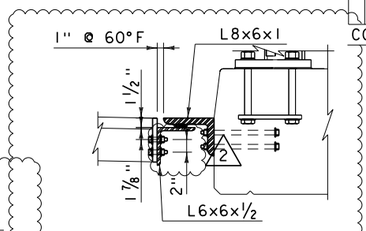
SCALE ¼" = 1'-0"





SECTION C-C

SCALE ½" = 1'-0"

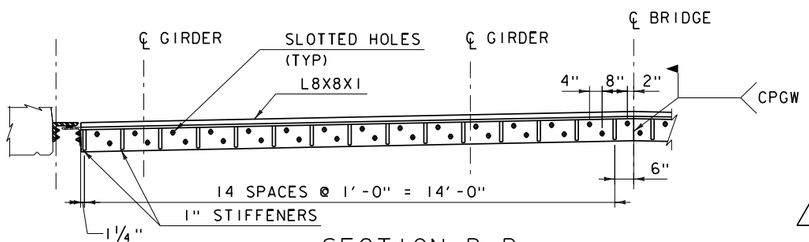


SECTION E-E

SCALE ¼" = 1'-0"

SECTION B-B

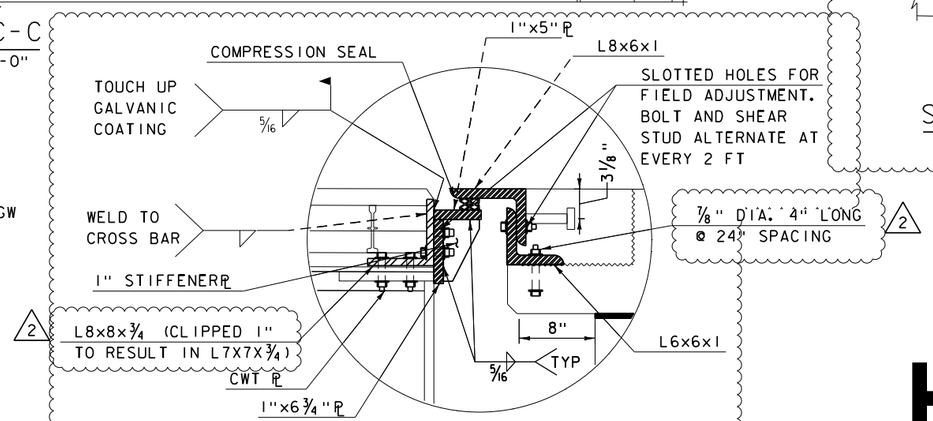
SCALE ¼" = 1'-0"



SECTION D-D

(SYM. ABOUT ℄ OF BRIDGE)

SCALE ½" = 1'-0"



DETAIL 1

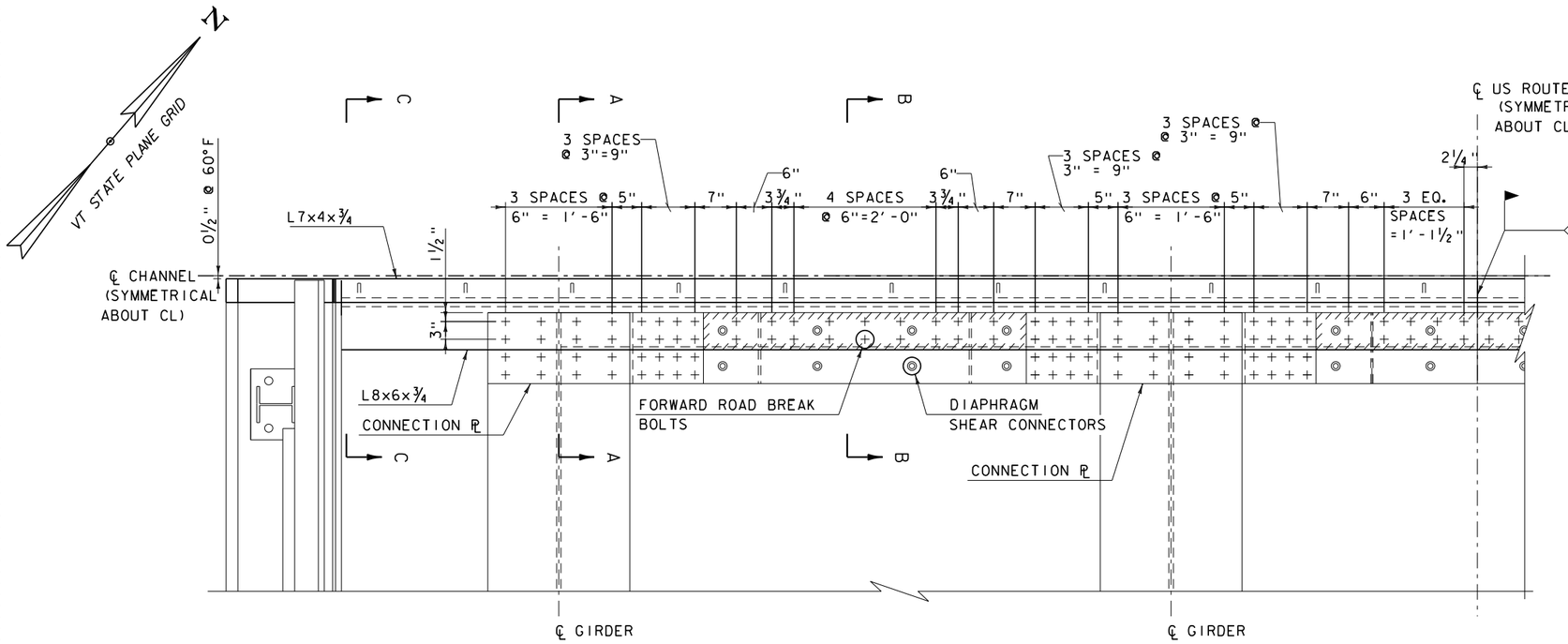
REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

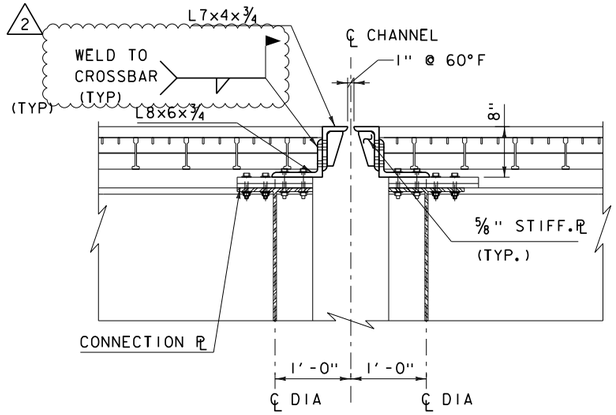
FILE NAME: z12b142jointdtl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
JOINT DETAILS 1

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 76 OF 379



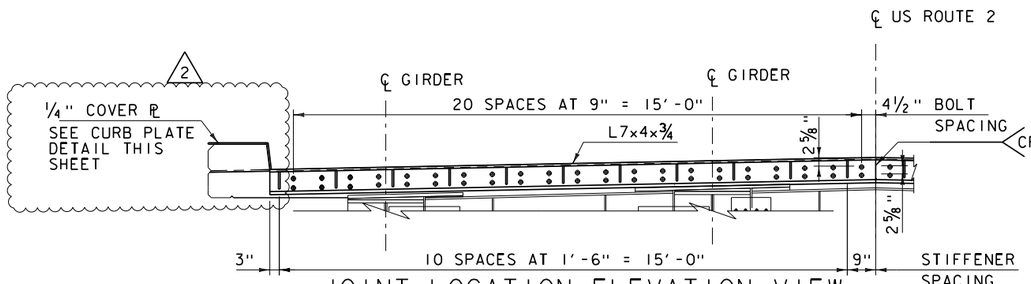
PLAN OF FORWARD ROAD BREAK

SCALE ¼" = 1'-0"



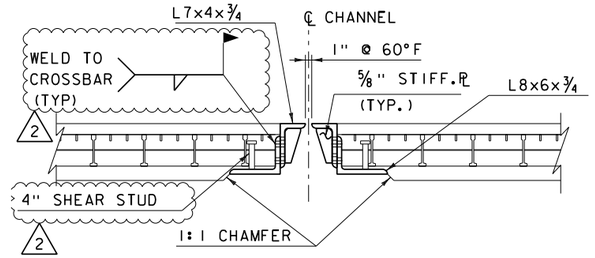
SECTION A-A

SCALE 1" = 1'-0"



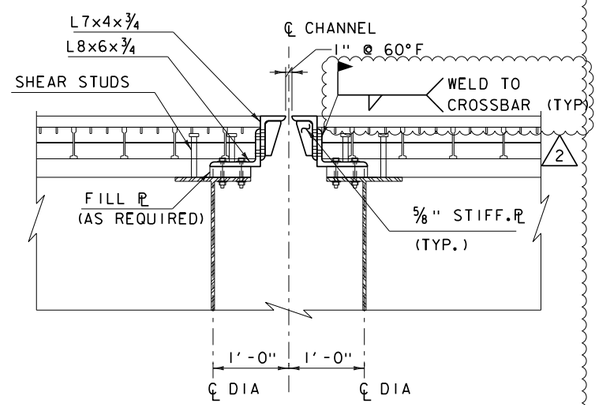
JOINT LOCATION ELEVATION VIEW (SYMMETRICAL ABOUT ℄ BRIDGE)

SCALE ½" = 1'-0"



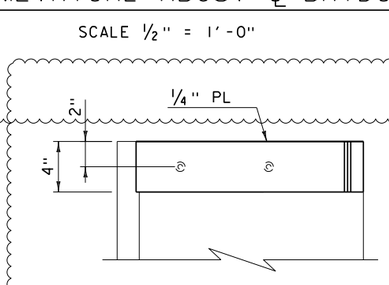
SECTION C-C

SCALE 1" = 1'-0"



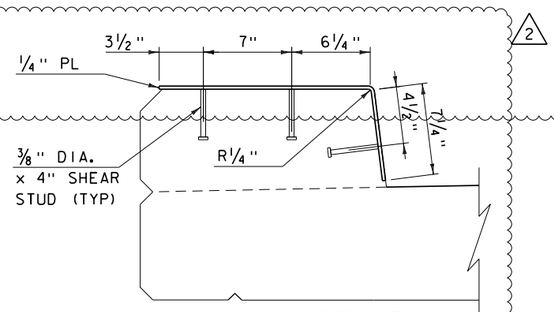
SECTION B-B

SCALE 1" = 1'-0"



CURB PLATE PLAN

NTS



CURB PLATE DETAIL

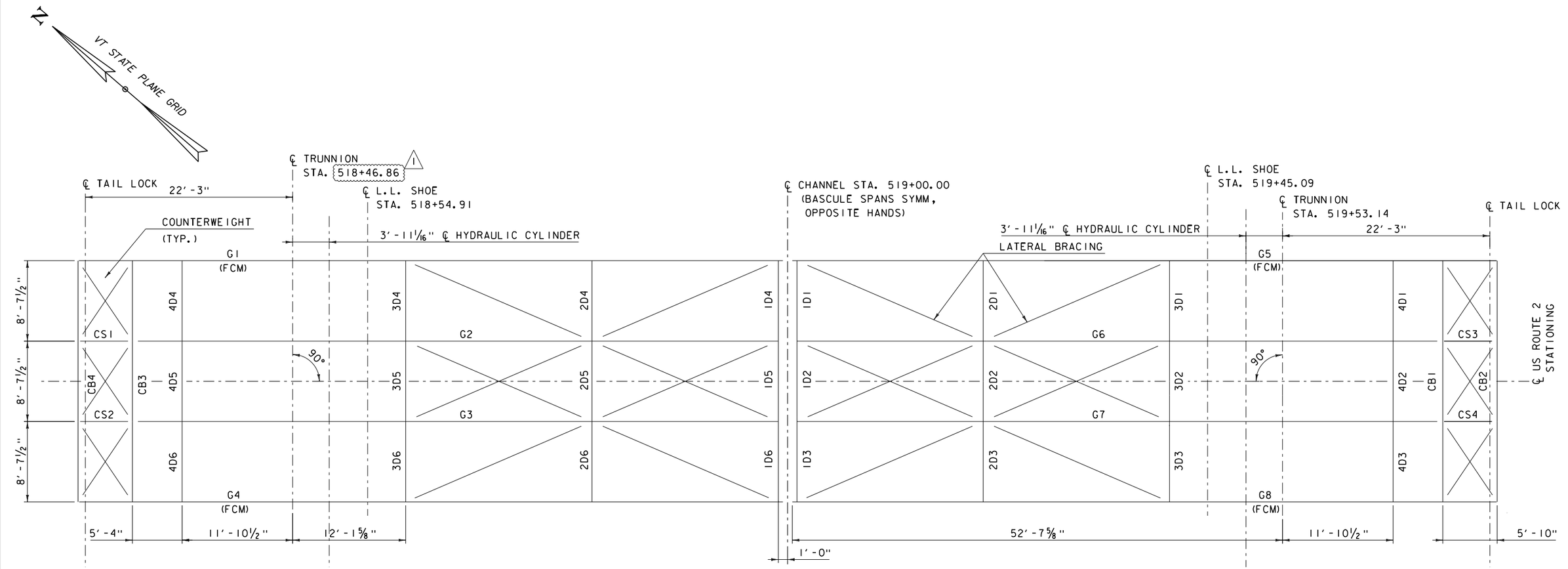
NTS

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42jointdt2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
JOINT DETAILS 2

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 77 OF 379



BASCULE SPAN FRAMING PLAN

SCALE 3/16" = 1'-0"

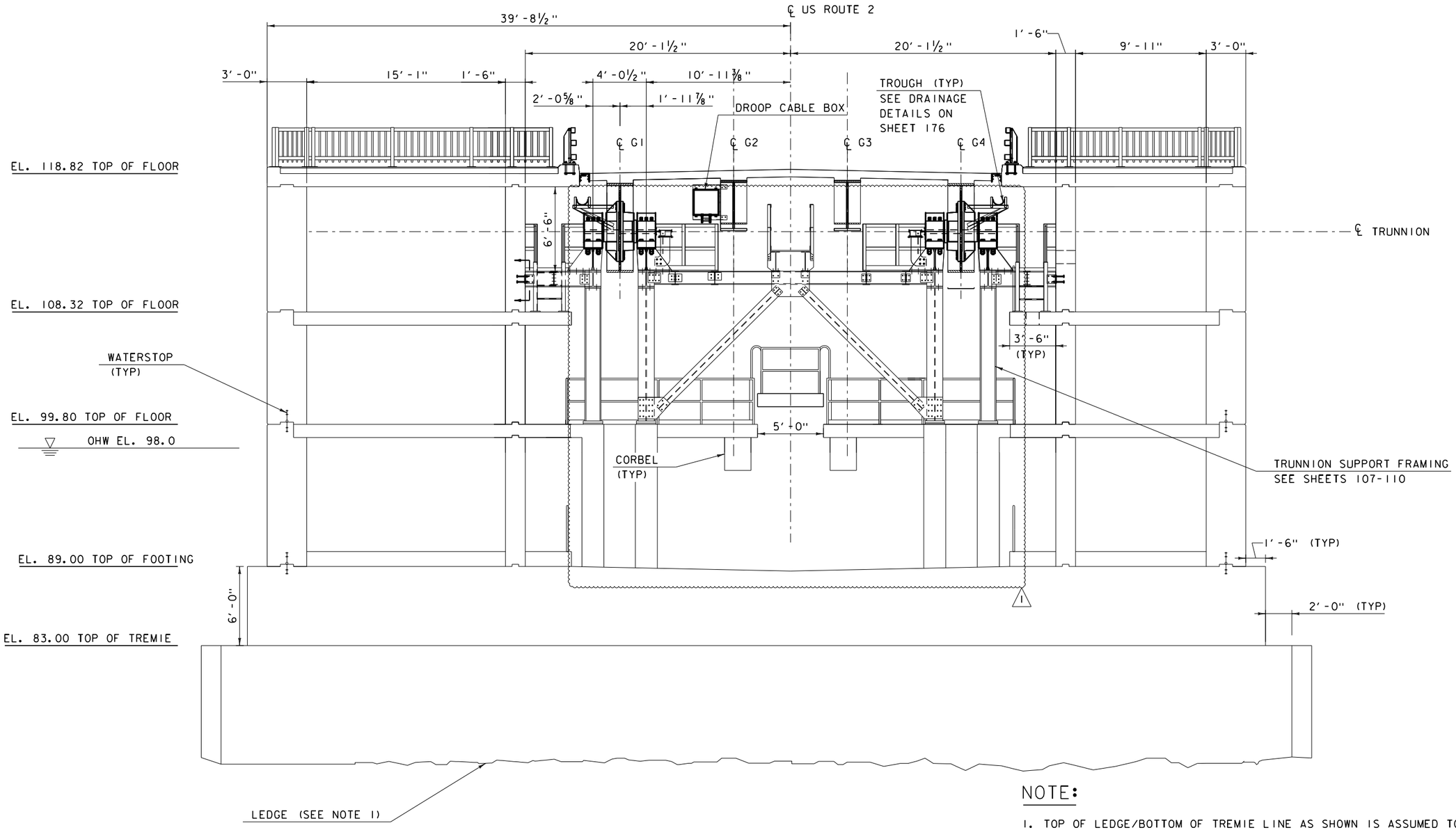
(FCM) - DENOTES FRACTURE CRITICAL MEMBER

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142framemovel.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN FRAMING PLAN

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: P. DAVIS
SHEET 78 OF 379



TYPICAL TRANSVERSE SECTION AT BASCULE PIER 1

SCALE ¼″ = 1′-0″

(LOOKING UPSTATION)

NOTE:

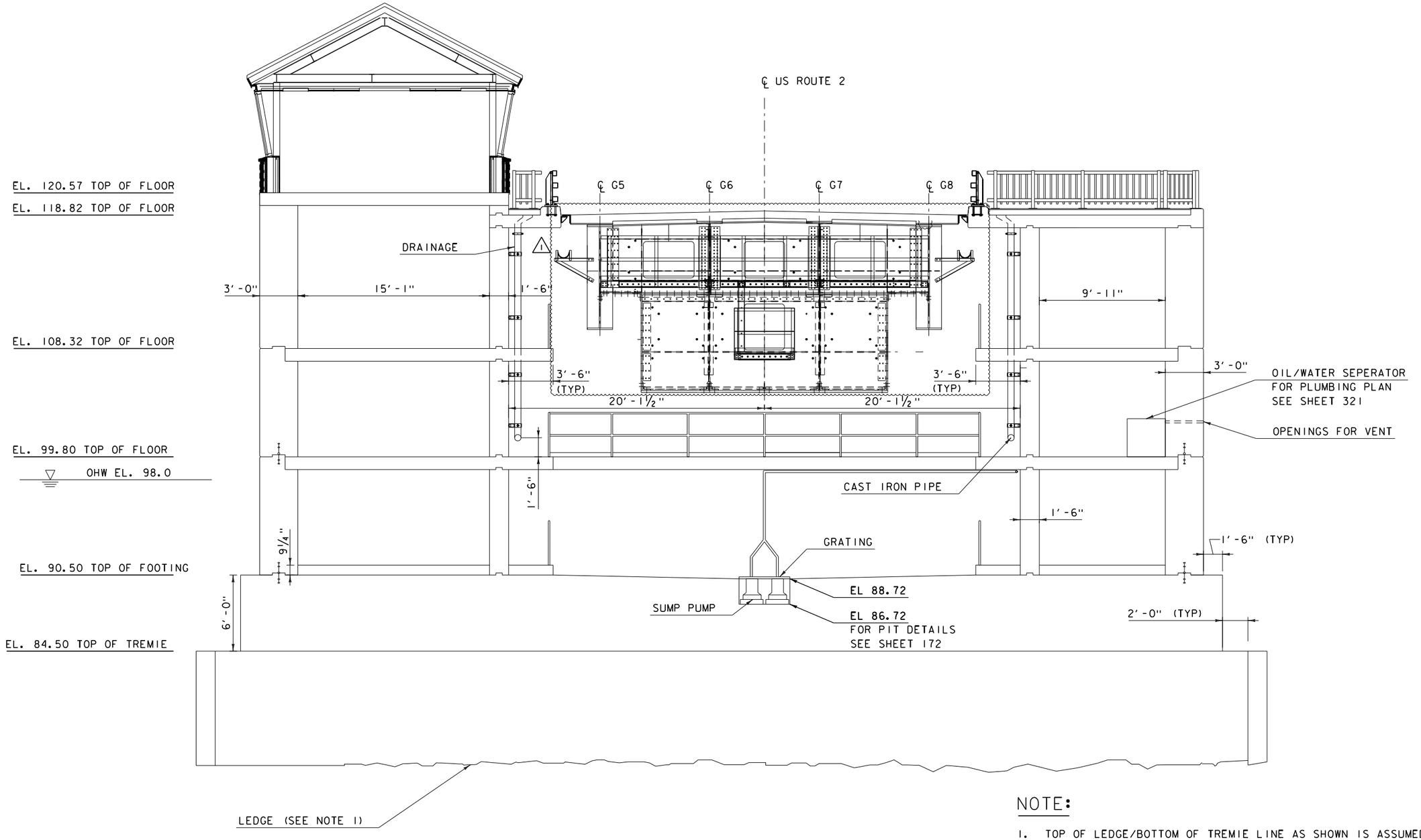
1. TOP OF LEDGE/BOTTOM OF TREMIE LINE AS SHOWN IS ASSUMED TO CORRESPOND WITH BOTTOM OF WEATHERED BEDROCK SHOWN IN BORING LOGS.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42pierxs3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN TRANSVERSE SECTION 1

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 79 OF 379



NOTE:

1. TOP OF LEDGE/BOTTOM OF TREMIE LINE AS SHOWN IS ASSUMED TO CORRESPOND WITH BOTTOM OF WEATHERED BEDROCK SHOWN IN BORING LOGS.

TYPICAL TRANSVERSE SECTION AT BASCULE PIER 2

SCALE ¼" = 1'-0"

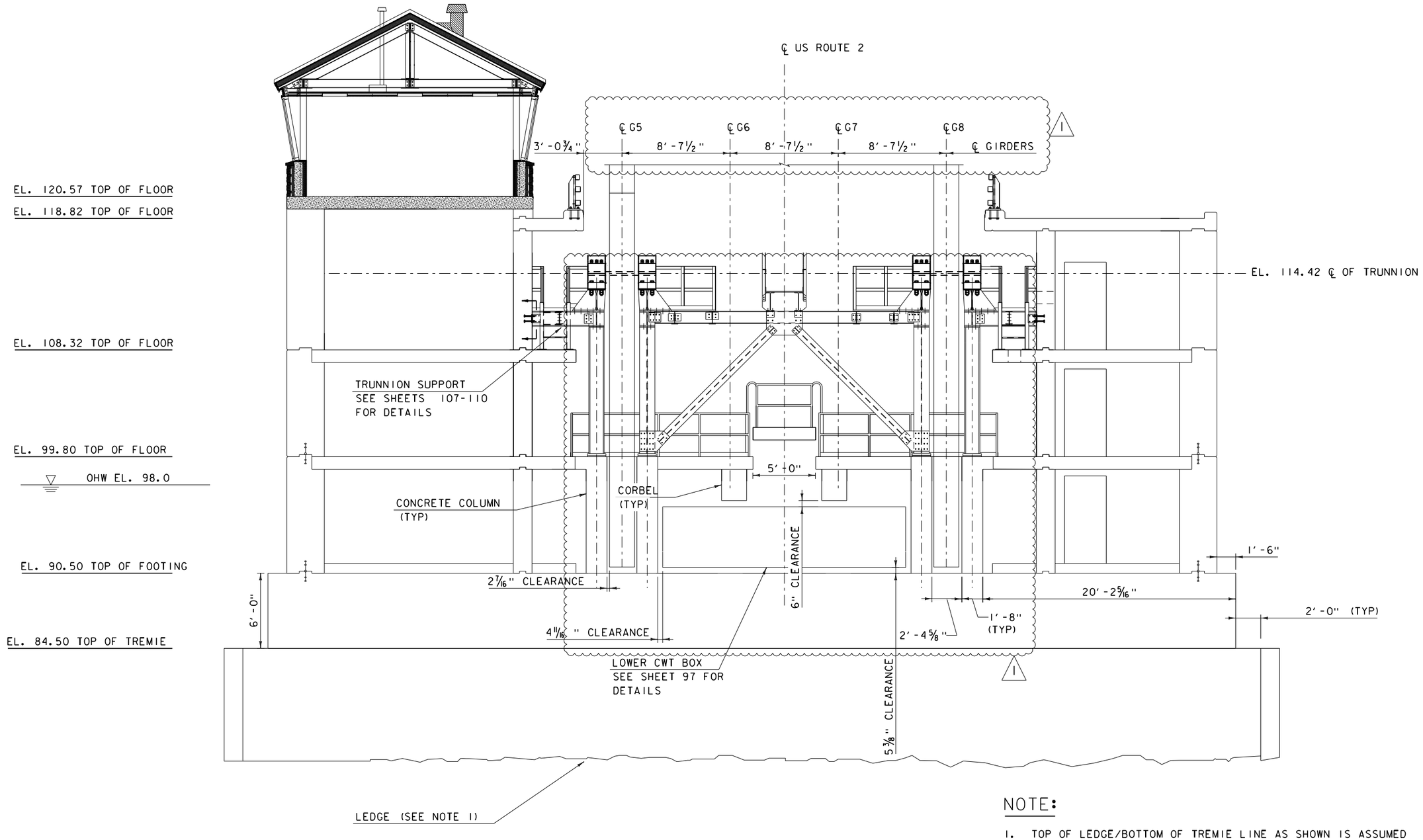
(LOOKING UPSTATION)

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142pierxs2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN TRANSVERSE SECTION 2

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T.FRENCH
SHEET 80 OF 379



TYPICAL TRANSVERSE SECTION AT BASCULE PIER 2 - OPEN POSITION

SCALE 1/4″ = 1′-0″

NOTE:

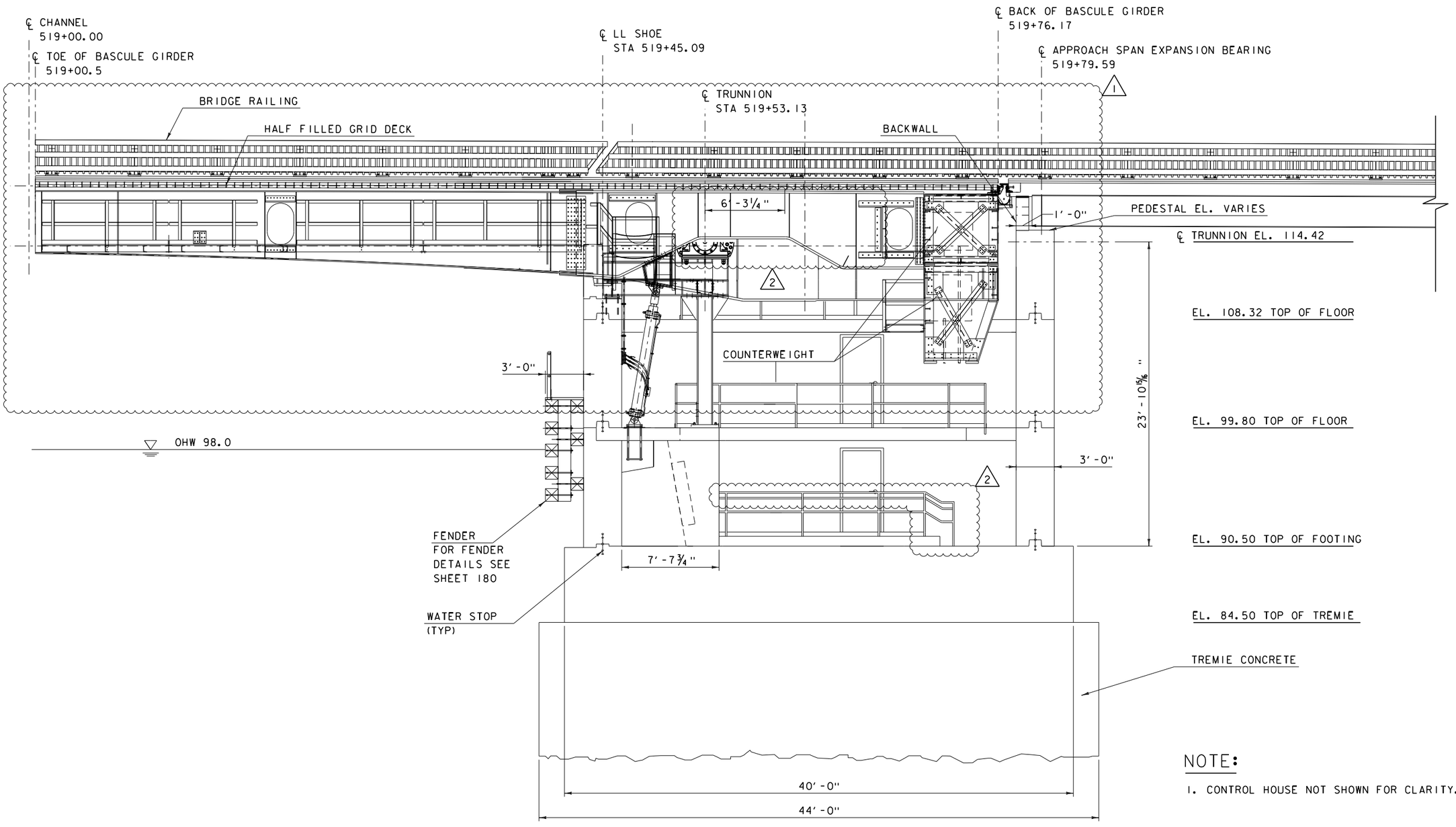
1. TOP OF LEDGE/BOTTOM OF TREMIE LINE AS SHOWN IS ASSUMED TO CORRESPOND WITH BOTTOM OF WEATHERED BEDROCK SHOWN IN BORING LOGS.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142pierxs4.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN TRANSVERSE SECTION 3

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T.FRENCH
SHEET 81 OF 379



LONGITUDINAL SECTION
AT BASCULE PIER
(PIER 2 SHOWN, PIER 1 SIMILAR)

SCALE ¼" = 1'-0"

NOTE:

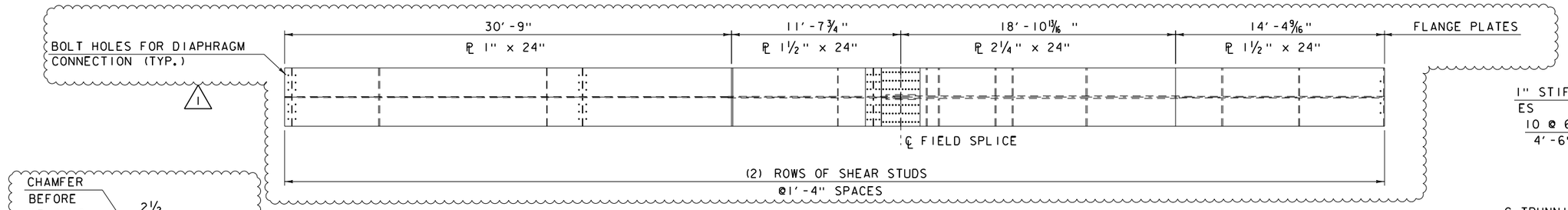
1. CONTROL HOUSE NOT SHOWN FOR CLARITY.

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

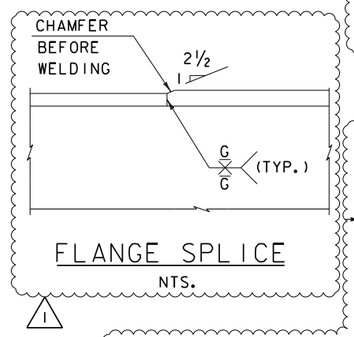
FILE NAME: z12b142pierxsl.dgn
PROJECT LEADER: T. FRENCH
DESIGNED BY: H. PROTIN
BASCULE PIER LONGITUDINAL SECTION

PLOT DATE: 2/20/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 82 OF 379



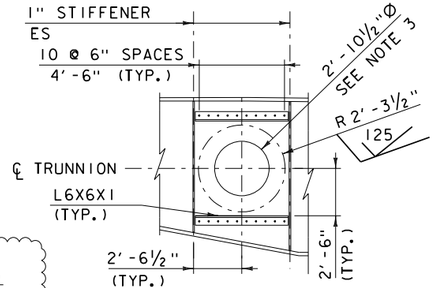
TOP FLANGE

HORIZONTAL SCALE ⅛" = 1'-0"
VERTICAL SCALE ¼" = 1'-0"



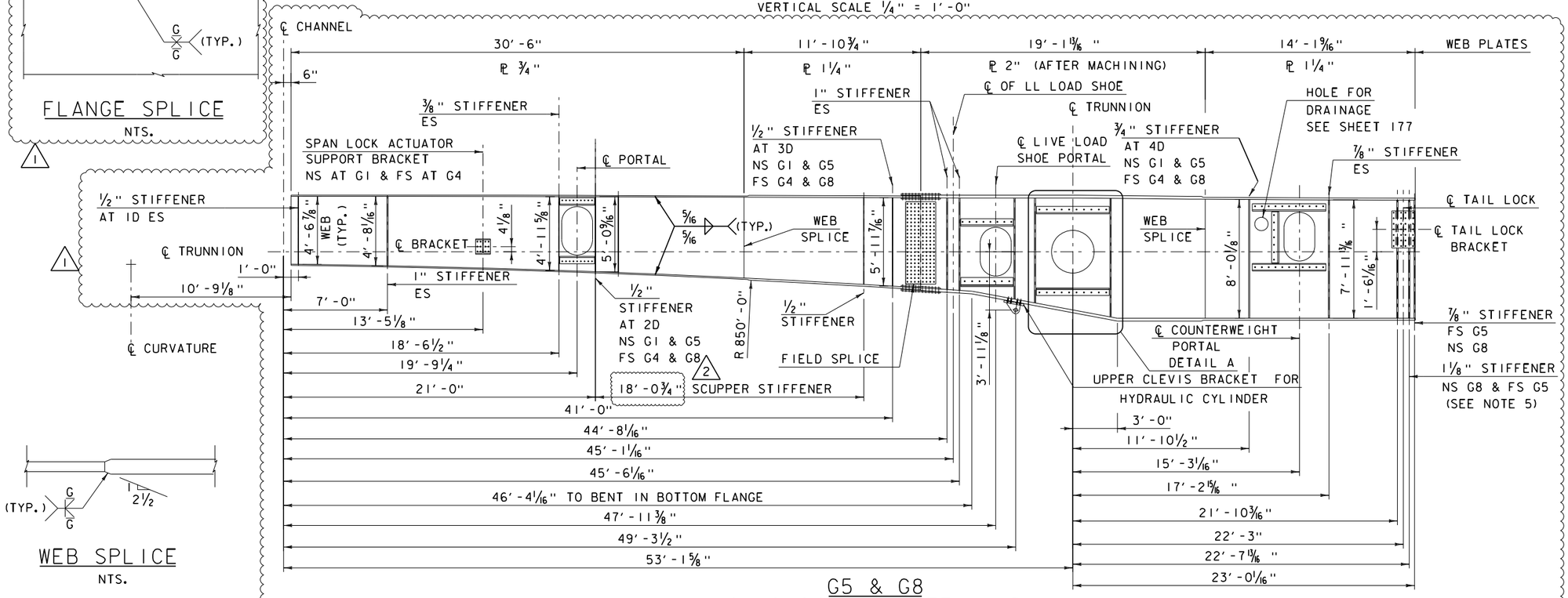
FLANGE SPLICE

NTS.



DETAIL A

SCALE ¼" = 1'-0"



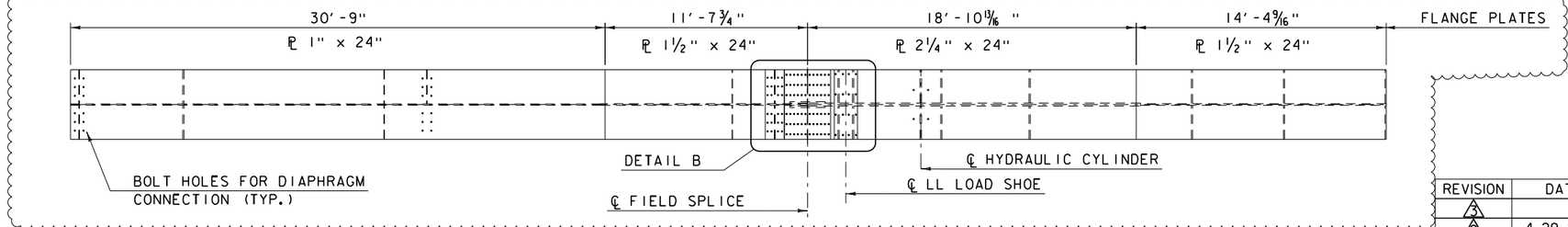
G5 & G8
G1 & G4 OPPOSITE HAND

SCALE ¼" = 1'-0"

ES - DENOTES EACH SIDE
FS - DENOTES FAR SIDE
NS - DENOTES NEAR SIDE

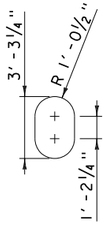
WEB SPLICE

NTS.



BOTTOM FLANGE

HORIZONTAL SCALE ⅛" = 1'-0"
VERTICAL SCALE ¼" = 1'-0"



TYPICAL PORTAL CUTOUT

SCALE ¼" = 1'-0"

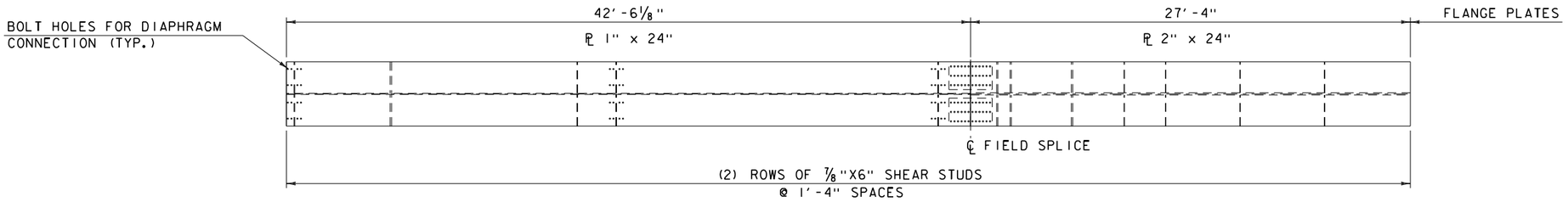
NOTE:

1. ALL SHEAR STUDS SHALL BE ⅞" DIA. x6" ASTM A108, GRADE 1015.
2. COORDINATE WITH SHEET - 218 (CYLINDER UPPER CLEVIS BRACKET).
3. COORDINATE WITH SHEET - 225 (TRUNNION HUB).
4. SEE SHEET - 086 FOR SPAN LOCK ACTUATOR SUPPORT BRACKET DETAILS AND COORDINATE WITH SHEET - 226 (SPAN LOCK ASSEMBLY).
5. COORDINATE WITH SHEET - 232 (TAIL LOCK ASSEMBLY).
6. SEE SHEET - 087 FOR DETAIL B.
7. GIRDER SHALL BE STRESS RELIEVED AFTER WELDING & BEFORE MACHINING.

REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

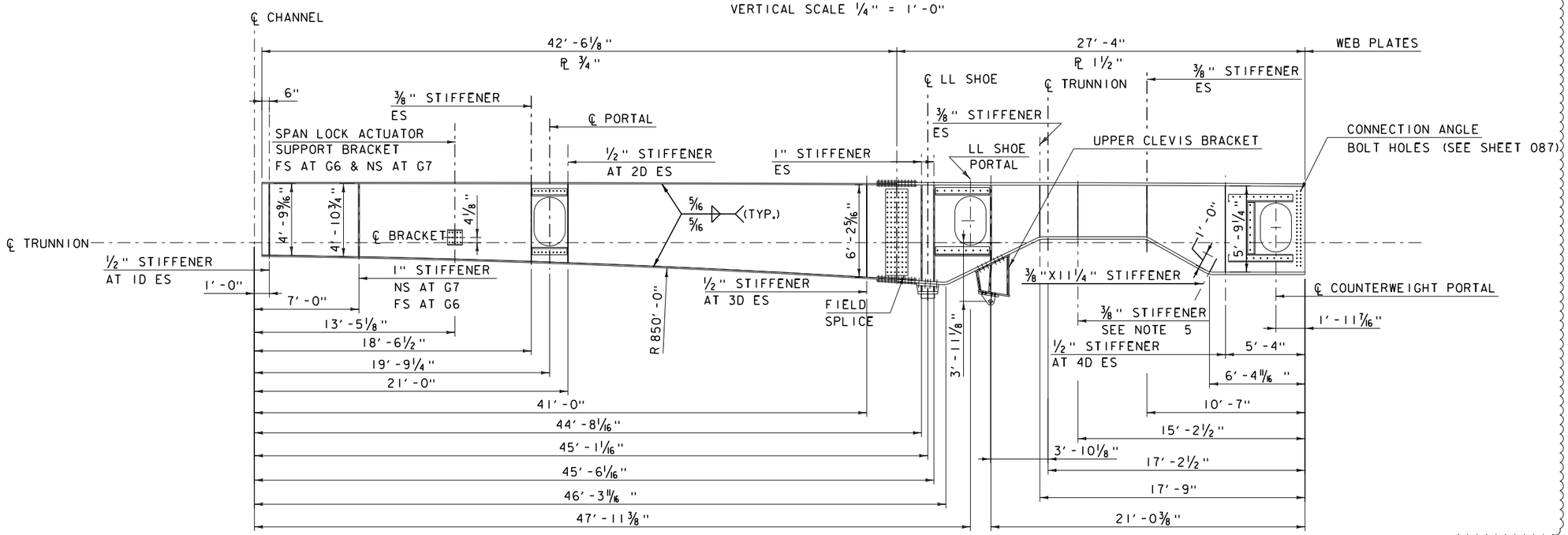
FILE NAME: z12bl42girdmovl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: P. DAVIS
BASCULE SPAN GIRDER DETAILS - 1OF 5
SHEET 83 OF 379



TOP FLANGE

FIELD SPLICE

HORIZONTAL SCALE 1/8" = 1'-0"
VERTICAL SCALE 1/4" = 1'-0"



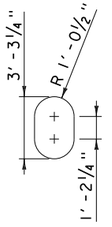
G6 & G7
G2 & G3 OPPOSITE HANDS

SCALE 1/4" = 1'-0"

ES - DENOTES EACH SIDE
FS - DENOTES FAR SIDE
NS - DENOTES NEAR SIDE

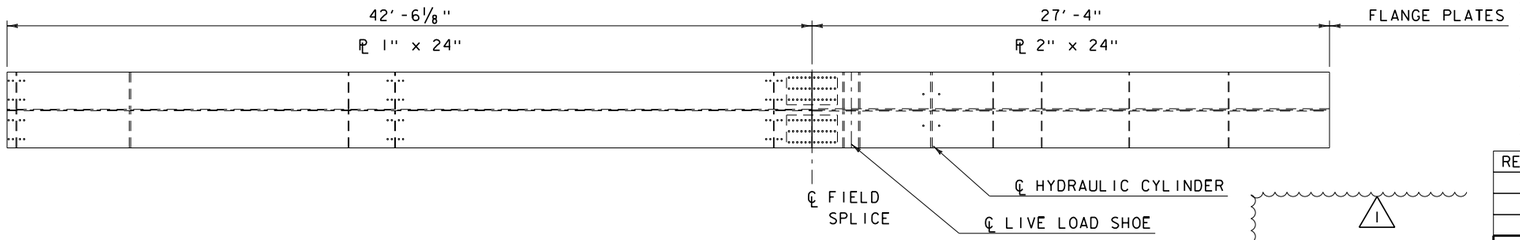
NOTE:

1. ALL SHEAR STUDS SHALL BE 7/8" DIA. X 6" ASTM A108, GRADE 1015.
2. COORDINATE WITH SHEET - 218 AND 86 (CYLINDER UPPER CLEVIS BRACKET).
3. COORDINATE WITH SHEET - 225 (TRUNNION HUB).
4. SEE SHEET - 086 FOR SPAN LOCK ACTUATOR SUPPORT BRACKET DETAILS AND COORDINATE WITH SHEET - 226 (SPAN LOCK ASSEMBLY).
5. DROP CABLE BOX STIFFENER AT FS ON G3 & G6.



TYPICAL PORTAL CUTOUT

SCALE 1/4" = 1'-0"



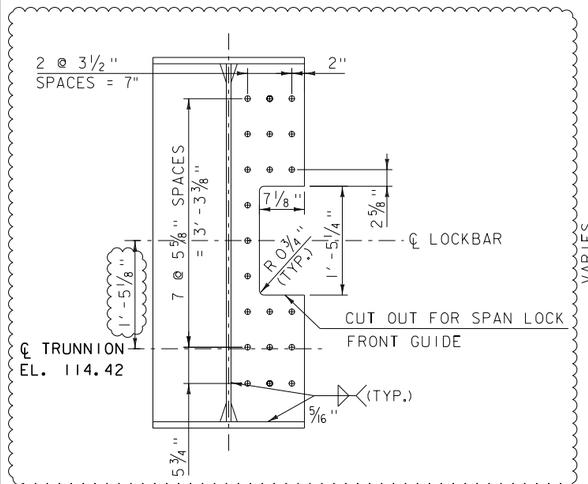
BOTTOM FLANGE

HORIZONTAL SCALE 1/8" = 1'-0"
VERTICAL SCALE 1/4" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

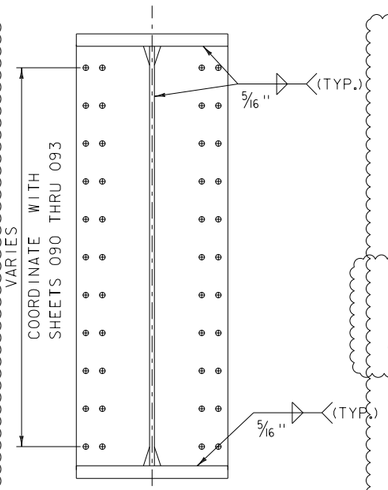
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142girdmov2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PLOT DATE: 8/08/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
BASCULE SPAN GIRDER DETAILS - 2 OF 5
SHEET 84 OF 379



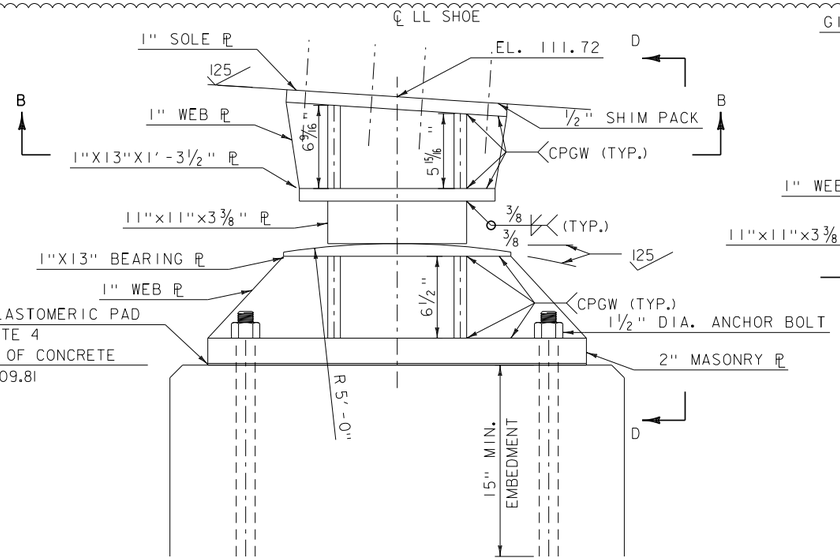
STIFFENERS AT SPAN LOCK FRONT GUIDE

SCALE 1" = 1'-0"



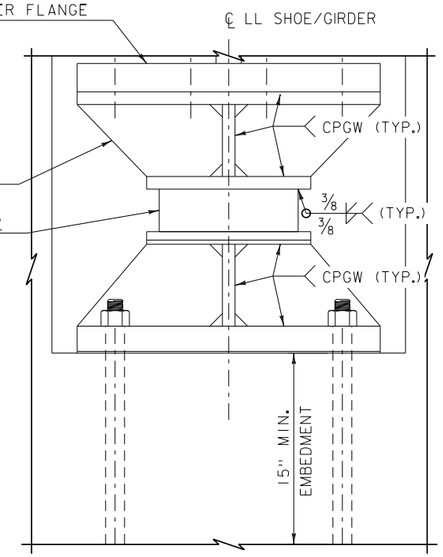
TYPICAL STIFFENERS AT DIAPHRAGMS

SCALE 1" = 1'-0"



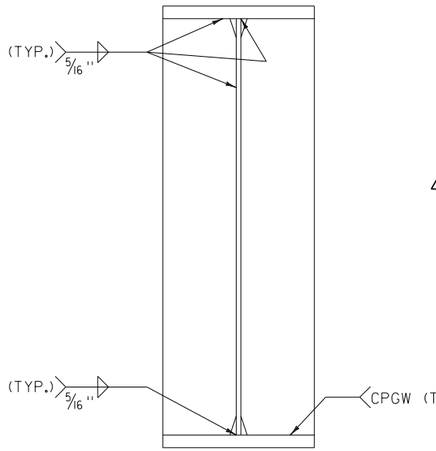
TYPICAL LIVE LOAD SHOE ELEVATION

SCALE 2" = 1'-0"



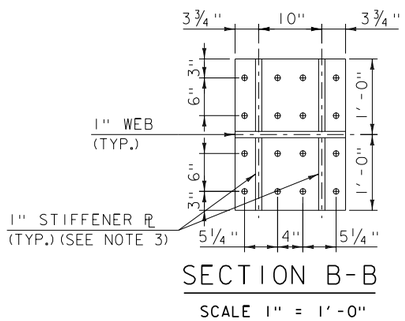
VIEW D-D

SCALE 2" = 1'-0"



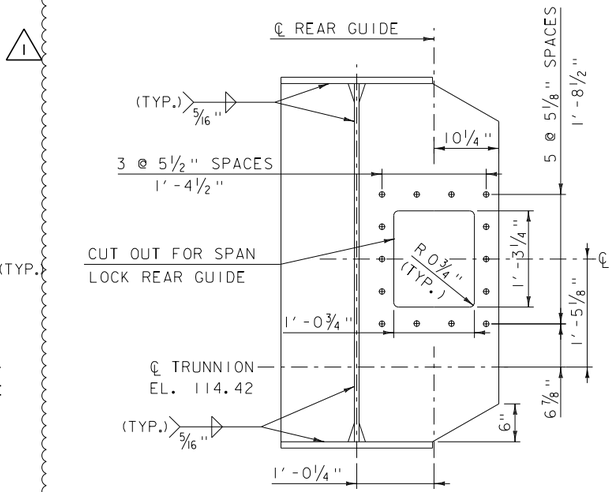
STIFFENERS AT TRUNNION & LL SHOE

SCALE 1" = 1'-0"



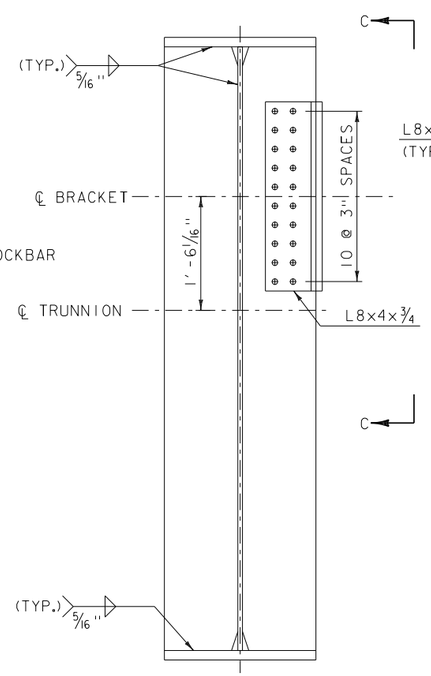
SECTION B-B

SCALE 1" = 1'-0"



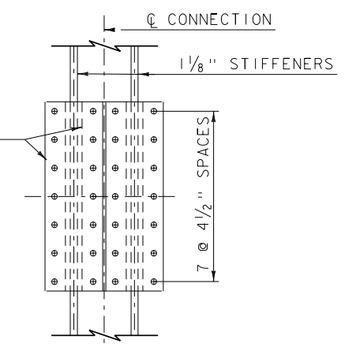
STIFFENER AT SPAN LOCK REAR GUIDE

SCALE 1" = 1'-0"



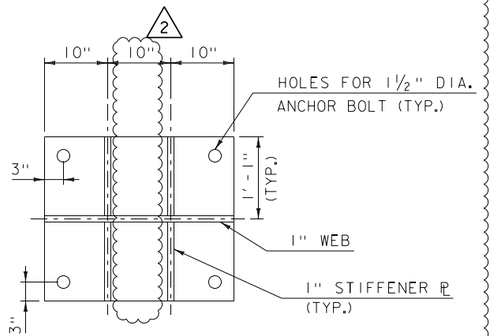
STIFFENER AT TAIL LOCK

SCALE 1" = 1'-0"



VIEW C-C

SCALE 1" = 1'-0"



SECTION A-A

SCALE 1" = 1'-0"

NOTE:

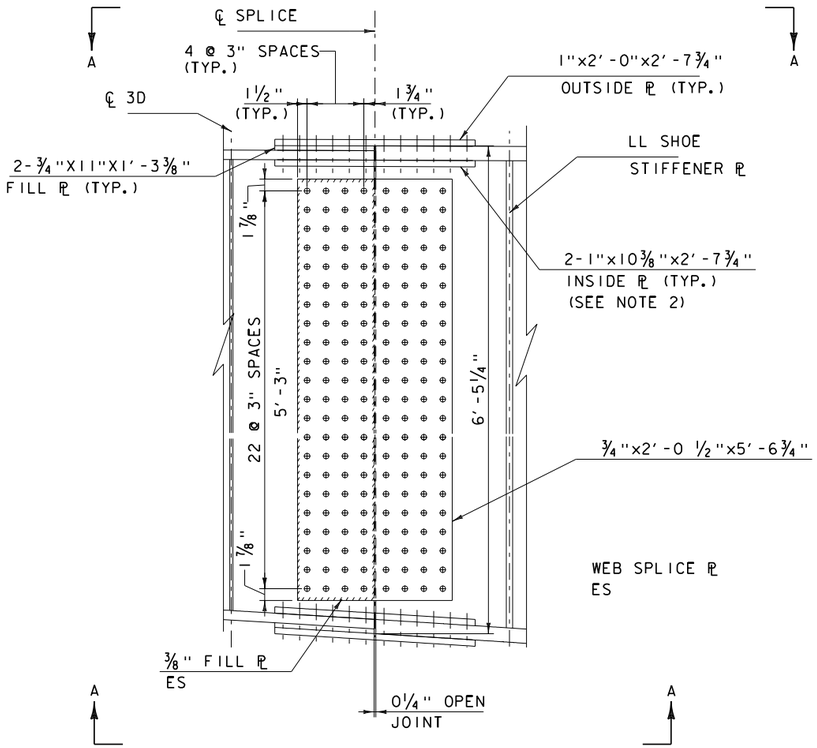
1. COORDINATE WITH SHEETS 231-232.
2. SEE SHEET 235 FOR FRONT VIEW OF LIVE LOAD SHOE.
3. LIVE LOAD SHOE STIFFENERS SHALL HAVE 1"x1" SNIPE.
4. ELASTOMERIC PAD SHALL BE SELECTED SUCH THAT AFTER FULL COMPRESSION WILL YIELD A ⅛" HEIGHT.

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

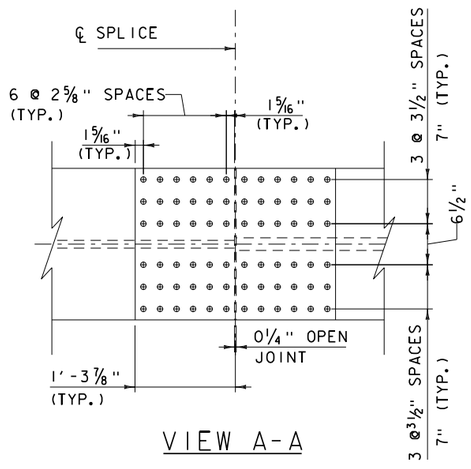
FILE NAME: z12bl42girdmov3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN GIRDER DETAILS - 3 OF 5

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: P. DAVIS
SHEET 85 OF 379



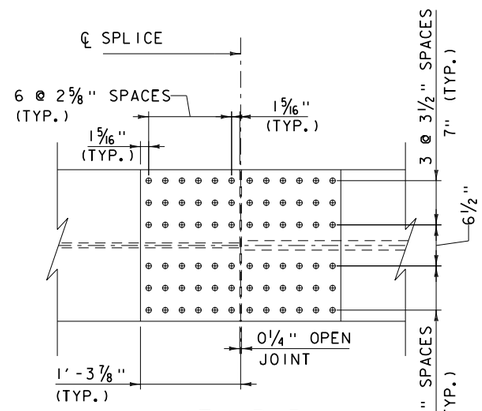
G5 & G8 FIELD SPLICE
(G1 & G4 OPPOSITE HAND)

SCALE 1" = 1'-0"



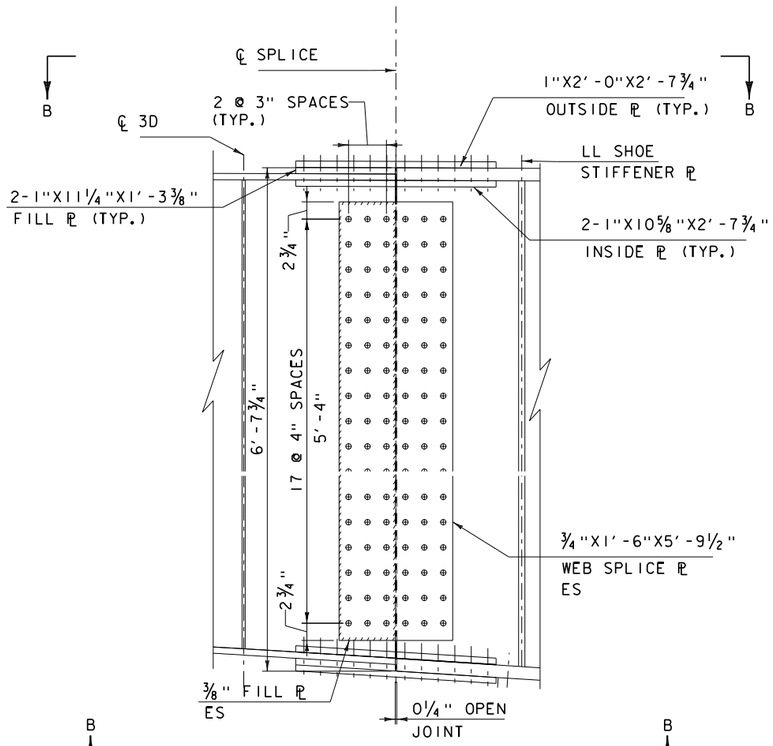
VIEW A-A

SCALE 1" = 1'-0"



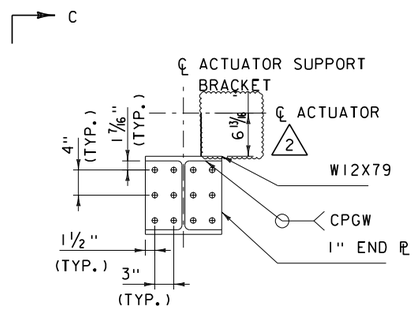
VIEW B-B

SCALE 1" = 1'-0"



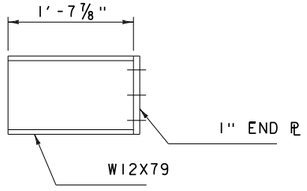
G6 & G7 FIELD SPLICE
(G2 & G3 OPPOSITE HAND)

SCALE 1" = 1'-0"



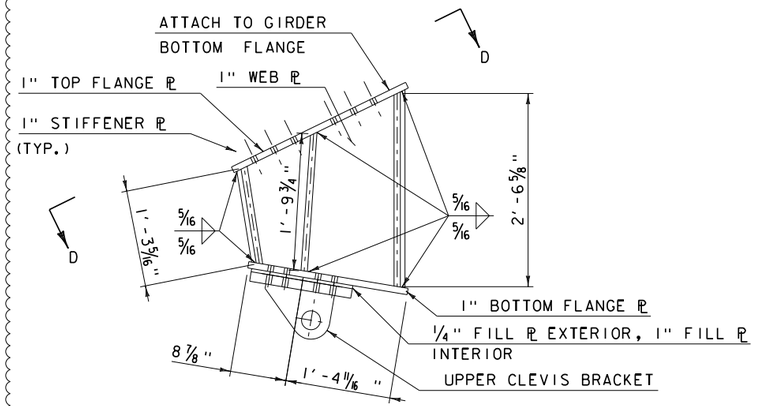
SPAN LOCK ACTUATOR SUPPORT BRACKET

SCALE 1" = 1'-0"



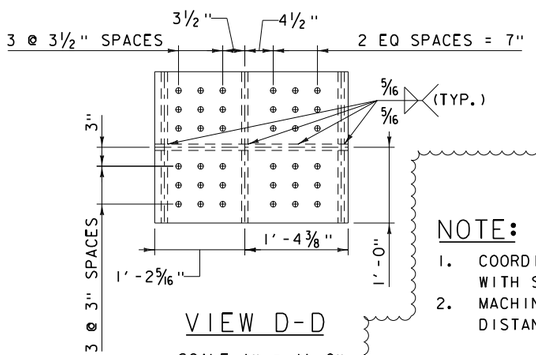
VIEW C-C

SCALE 1" = 1'-0"



CLEVIS ATTACHEMENT BOLSTER FOR G2, G3, G6 & G7

SCALE 1" = 1'-0"



VIEW D-D

SCALE 1" = 1'-0"

NOTE:

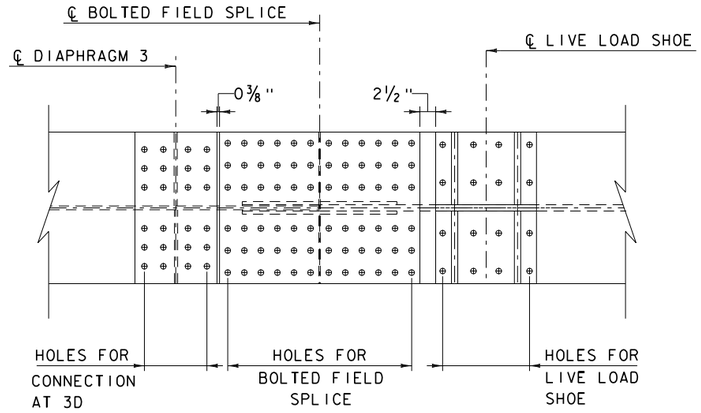
1. COORDINATE CLEVIS ATTACHMENT BOLSTER WITH SHEET - 084 AND 218.
2. MACHINE PLATE EDGES WHERE EDGE DISTANCE IS LESS THAN 1½".

REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

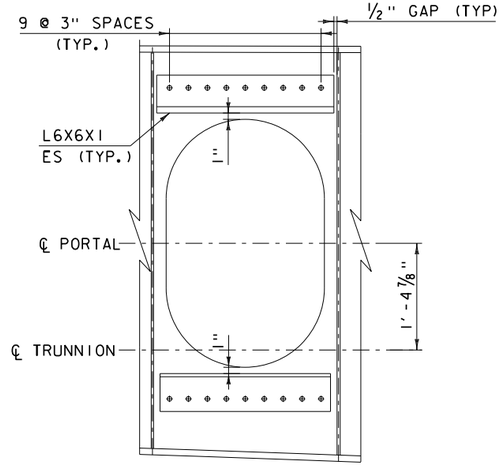
FILE NAME: z12b142girdmov4.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN GIRDER DETAILS - 4 OF 5

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: P. DAVIS
SHEET 86 OF 379



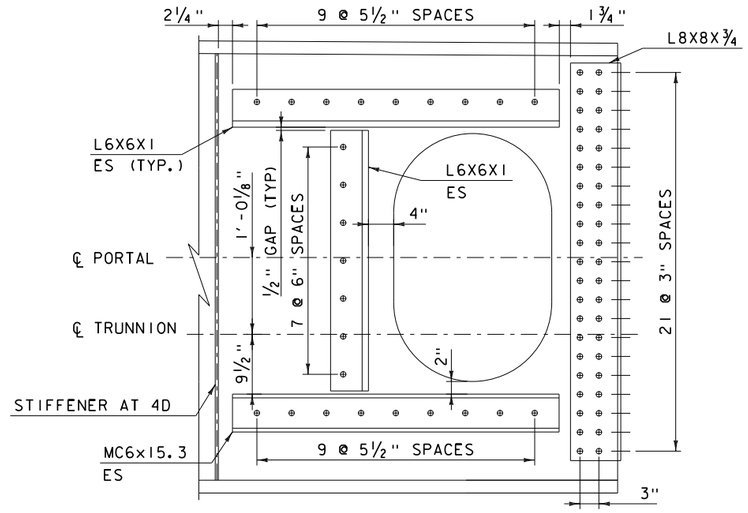
DETAIL B

SCALE 1" = 1'-0"



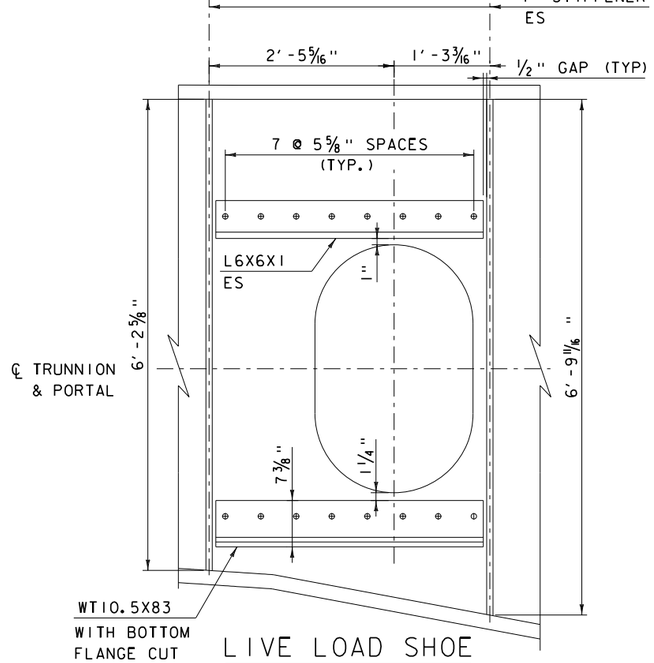
SPAN LOCK PORTAL DETAIL

SCALE 1" = 1'-0"



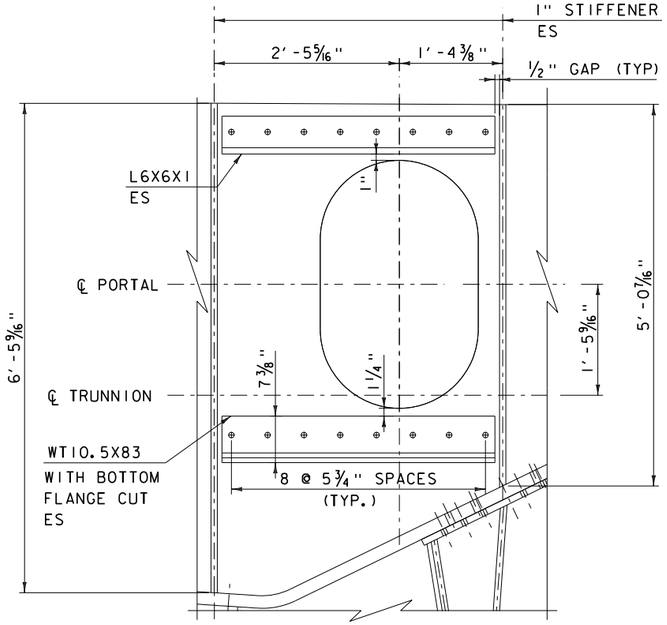
G6 & G7 COUNTERWEIGHT PORTAL AND CONNECTION (G2 & G3 OPPOSITE SIDE)

SCALE 1" = 1'-0"



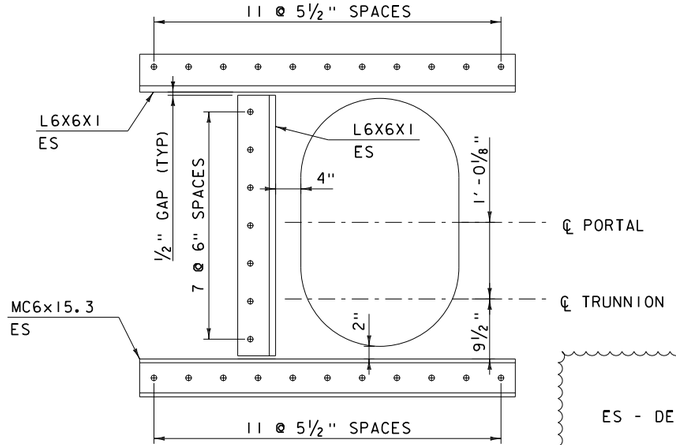
LIVE LOAD SHOE PORTAL DETAIL (G1 & G4 SHOWN, G5 & G8 OPPOSITE HAND)

SCALE 1" = 1'-0"



LIVE LOAD SHOE PORTAL DETAIL (G6 & G7 SHOWN, G2 & G3 OPPOSITE HAND)

SCALE 1" = 1'-0"



G5 & G8 COUNTERWEIGHT PORTAL AND CONNECTION (G1 & G4 OPPOSITE SIDE)

SCALE 1" = 1'-0"

ES - DENOTES EACH SIDE

NOTE:

1. FOR LOCATION OF DETAIL B, SEE SHEET - 083.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

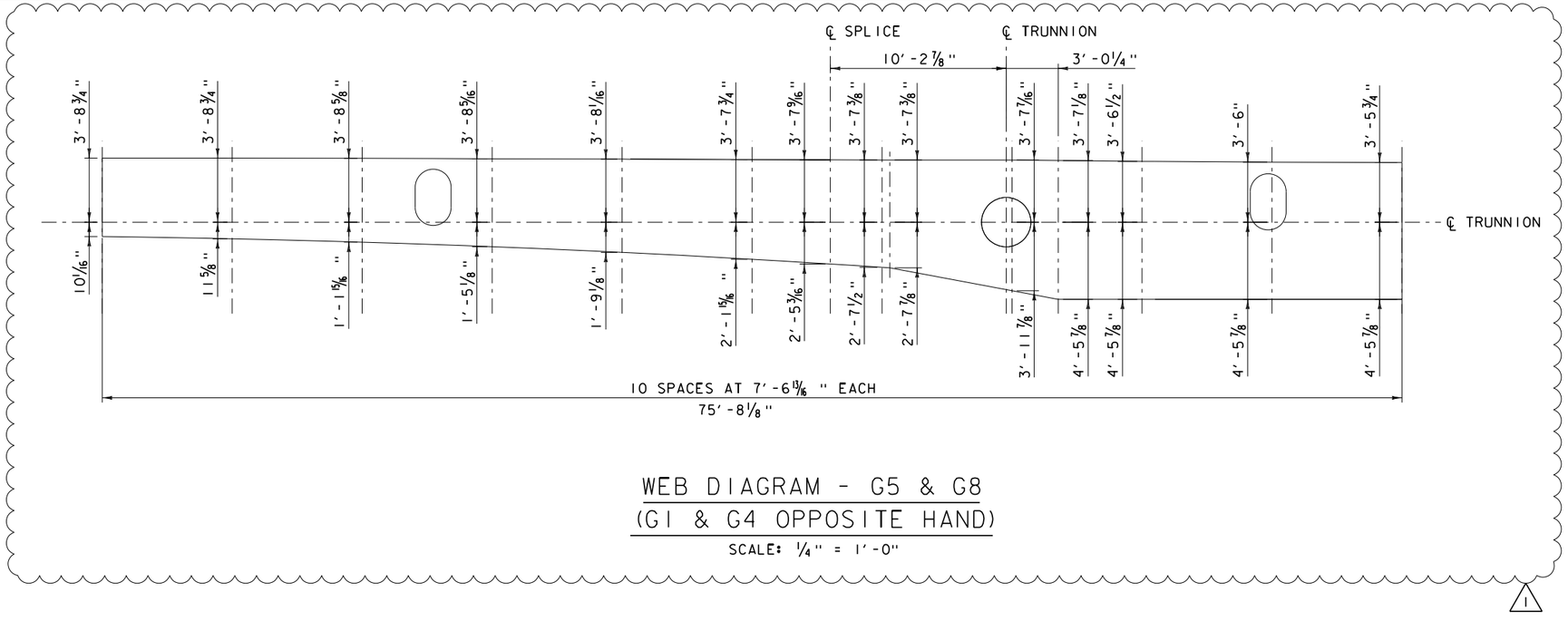
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42girdmov4.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN GIRDER DETAILS - 5 OF 5

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: P. DAVIS
SHEET 87 OF 379

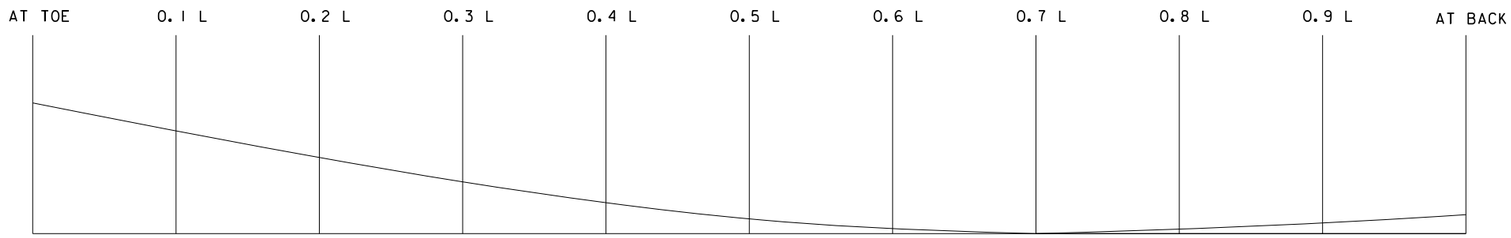
CAMBER TABLE		AT TOE	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	AT BACK
G1, G4, G5 & G8	I SELF WEIGHT (IN.)	-0.14	-0.11	-0.08	-0.05	-0.03	-0.01	0.00	0.00	0.00	0.00	0.00
	II STEEL D.L. (IN.)	-0.20	-0.16	-0.12	-0.08	-0.05	-0.02	-0.01	0.00	0.00	0.00	0.00
	III CONCRETE D.L. (IN.)	-0.30	-0.24	-0.18	-0.12	-0.07	-0.03	-0.01	0.00	-0.02	-0.05	-0.09
	VI SUPERIMPOSED D.L. (IN.)	-0.04	-0.03	-0.03	-0.02	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00
	TOTAL CAMBER (IN.)	-0.68	-0.54	-0.41	-0.27	-0.16	-0.07	-0.02	0.00	-0.02	-0.05	-0.09
	VERTICAL CURVE (IN.)	2.78	2.75	2.67	2.53	2.33	2.08	1.77	1.41	1.00	0.53	0.00

MOMENT AND SHEAR TABLE			AT TOE	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	AT BACK
G1, G4, G5 & G8	D.L.	MOMENT (KIP-FT.)	0.00	-24.47	-129.96	-338.86	-659.31	-1071.21	-1789.50	-2971.02	-1686.53	-574.59	0.00
		SHEAR (KIPS)	-0.03	10.28	20.34	45.65	53.96	64.24	139.59	-190.28	-177.83	-128.48	-0.03
	S.D.L.	MOMENT (KIP-FT.)	0.00	2.56	-8.46	-32.12	-64.35	-113.43	-184.65	42.66	17.49	6.13	0.00
		SHEAR (KIPS)	-0.01	0.66	2.41	4.15	5.87	7.82	11.91	1.76	1.75	1.28	-0.01
	HL-93 (+)	MOMENT (KIP-FT.)	0.30	110.76	116.10	108.32	115.51	171.99	204.63	656.66	231.77	24.03	0.30
		SHEAR (KIPS)	0.25	53.56	57.38	94.74	101.94	112.21	257.88	50.33	52.92	18.29	0.25
	HL-93 (-)	MOMENT (KIP-FT.)	-0.27	-208.45	-546.32	-999.69	-1613.36	-2388.14	-3118.50	-1874.06	-1110.65	-438.42	-0.27
		SHEAR (KIPS)	-0.39	-12.69	-7.50	-9.51	-9.02	-9.77	-505.08	-122.93	-108.52	-85.97	-0.39



WEB DIAGRAM - G5 & G8
(G1 & G4 OPPOSITE HAND)

SCALE: ¼" = 1'-0"



CAMBER DIAGRAM - G5 & G8
(G1 & G4 OPPOSITE HAND)

SEE CAMBER TABLE

NOTE:

1. MOMENTS AND SHEARS ARE UNFACTORED.
2. LIVE LOAD MOMENT AND SHEAR INCLUDE DYNAMIC LOAD ALLOWANCE.
3. VERTICAL CURVE NOT INCLUDED IN TOTAL CAMBER AS GIRDERS ARE DRAWN AT VERTICAL CURVE.
4. COUNTERWEIGHT STEEL DOES NOT REQUIRE CAMBER.
5. THE ELEVATIONS SHOWN ON THESE PLANS ARE GIVEN FOR THE FINAL CONDITION, AFTER CAMBER AND UNDER FULL DEAD LOAD.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

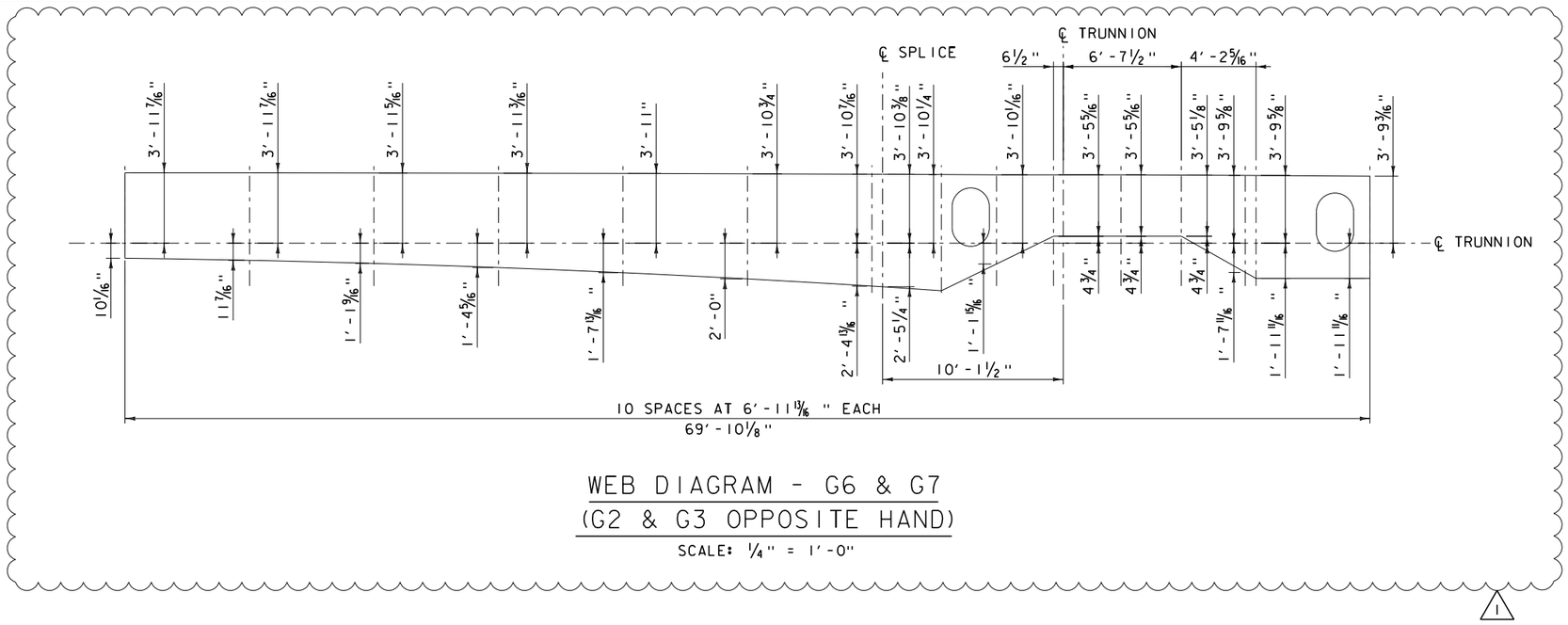
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142camber1.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN CAMBER DIAGRAMS 1

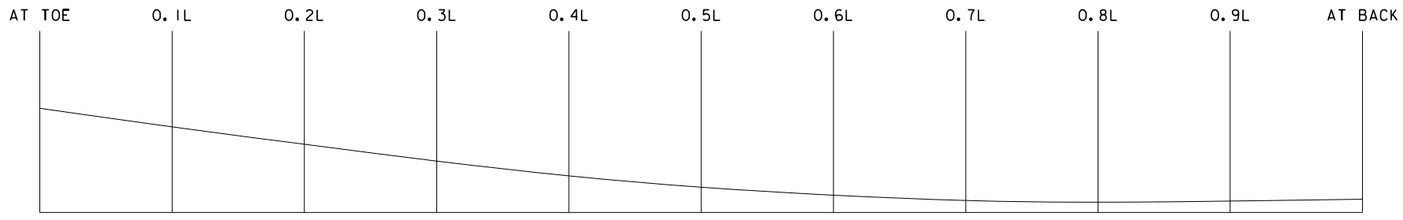
PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: P. DAVIS
SHEET 88 OF 379

CAMBER TABLE		AT TOE	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	AT BACK
G2, G3, G6 & G7	I STEEL D.L. (IN.)	-0.21	-0.17	-0.14	-0.10	-0.08	-0.05	-0.04	-0.02	-0.01	-0.01	0.00
	I CONCRETE D.L. (IN.)	-0.30	-0.25	-0.19	-0.14	-0.10	-0.07	-0.05	-0.04	-0.04	-0.05	-0.07
	III SUPERIMPOSED D.L. (IN.)	-0.04	-0.03	-0.03	-0.02	-0.01	-0.01	-0.01	0.00	0.00	0.00	0.00
	TOTAL CAMBER (IN.)	-0.55	-0.45	-0.36	-0.26	-0.19	-0.13	-0.10	-0.06	-0.05	-0.06	-0.07
	VERTICAL CURVE (IN.)	2.78	2.75	2.67	2.53	2.33	2.08	1.77	1.41	1.00	0.53	0.00

MOMENT AND SHEAR TABLE			AT TOE	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	AT BACK
G2, G3, G6 & G7	D.L.	MOMENT (KIP-FT.)	-0.01	-56.66	-157.26	-295.89	-426.85	-625.47	-659.39	-414.80	-280.70	-169.52	-0.01
		SHEAR (KIPS)	0.00	10.13	17.58	10.99	16.59	23.23	-24.97	-15.91	-7.41	-33.05	0.00
	S.D.L.	MOMENT (KIP-FT.)	-0.01	-8.46	-16.90	-26.66	-38.90	-52.24	-54.98	-32.98	-15.47	-5.07	-0.01
		SHEAR (KIPS)	0.00	1.16	1.16	1.24	1.20	1.17	-1.74	-1.76	-1.75	-1.28	0.00
	HL-93 (+)	MOMENT (KIP-FT.)	0.12	145.63	158.26	155.26	160.28	81.72	13.12	166.06	180.31	40.76	0.12
		SHEAR (KIPS)	0.34	42.57	60.23	54.82	54.93	73.27	3.96	14.94	31.04	35.25	0.34
	HL-93 (-)	MOMENT (KIP-FT.)	-0.16	-154.73	-393.45	-637.09	-845.40	-1133.25	-1310.35	-749.77	-268.04	-63.36	-0.16
		SHEAR (KIPS)	-0.25	-29.80	-9.72	-26.11	-15.88	-4.39	-76.38	-59.85	-58.68	-26.71	-0.25



WEB DIAGRAM - G6 & G7
(G2 & G3 OPPOSITE HAND)
SCALE: ¼" = 1'-0"



CAMBER DIAGRAM - G6 & G7
(G2 & G3 OPPOSITE HAND)
SEE CAMBER TABLE

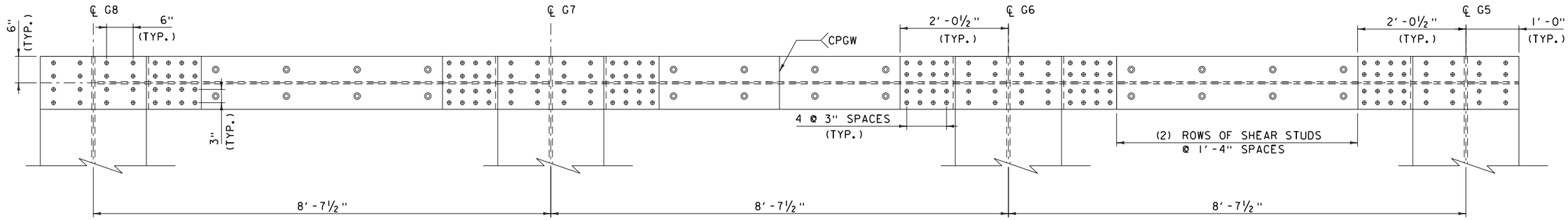
NOTE:

1. MOMENTS AND SHEARS ARE UNFACTORED.
2. LIVE LOAD MOMENT AND SHEAR INCLUDE DYNAMIC LOAD ALLOWANCE.
3. VERTICAL CURVE NOT INCLUDED IN TOTAL CAMBER AS GIRDERS ARE DRAWN AT VERTICAL CURVE.
4. COUNTERWEIGHT STEEL DOES NOT REQUIRE CAMBER.
5. THE ELEVATIONS SHOWN ON THESE PLANS ARE GIVEN FOR THE FINAL CONDITION, AFTER CAMBER AND UNDER FULL DEAD LOAD.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

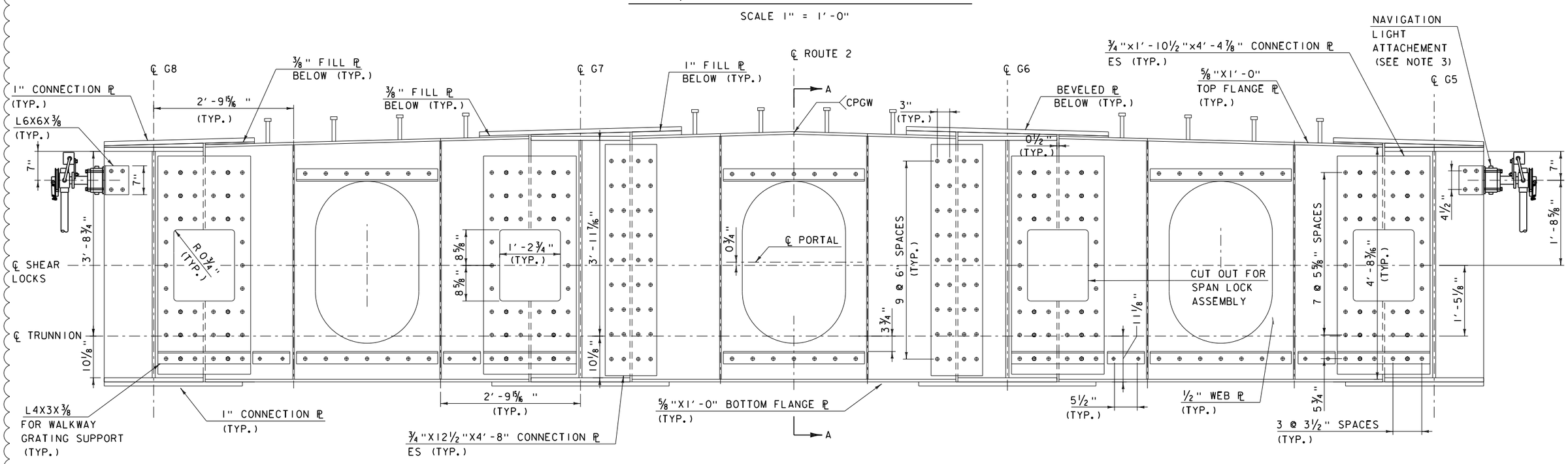
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142camber2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN CAMBER DIAGRAMS 2
PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: P. DAVIS
SHEET 89 OF 379



ID1, ID2 & ID3 PLAN
(ID4, ID5 & ID6 OPPOSITE HAND)

SCALE 1" = 1'-0"



ID1, ID2 & ID3 ELEVATION
(ID4, ID5 & ID6 OPPOSITE HAND)

SCALE 1" = 1'-0"

ES - DENOTES EACH SIDE

NOTE:

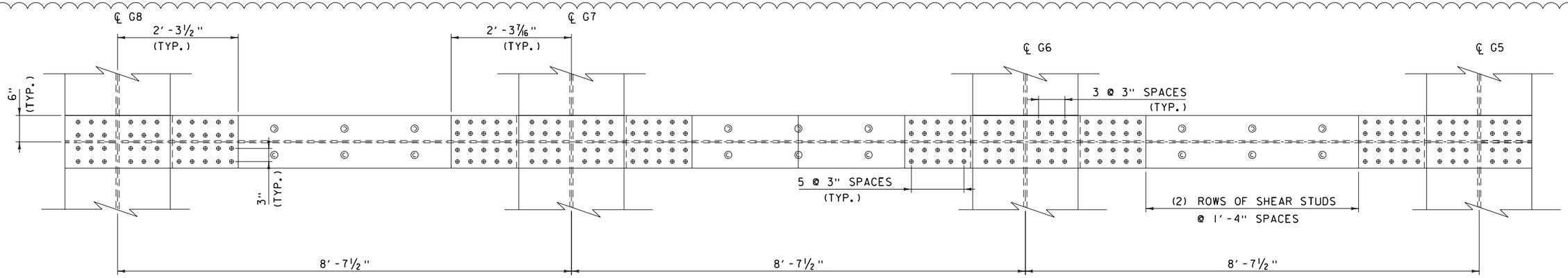
1. ALL SHEAR STUDS SHALL BE ASTM A108 GRADE 1015 - ⅞" DIA. X 6".
2. FOR SECTION A-A, PORTAL DETAIL AND BEVELED PLATED DETAIL, SEE SHEET - 094.
3. COORDINATE WITH SHEET - 296 (NAVIGATION LIGHT DETAIL).

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

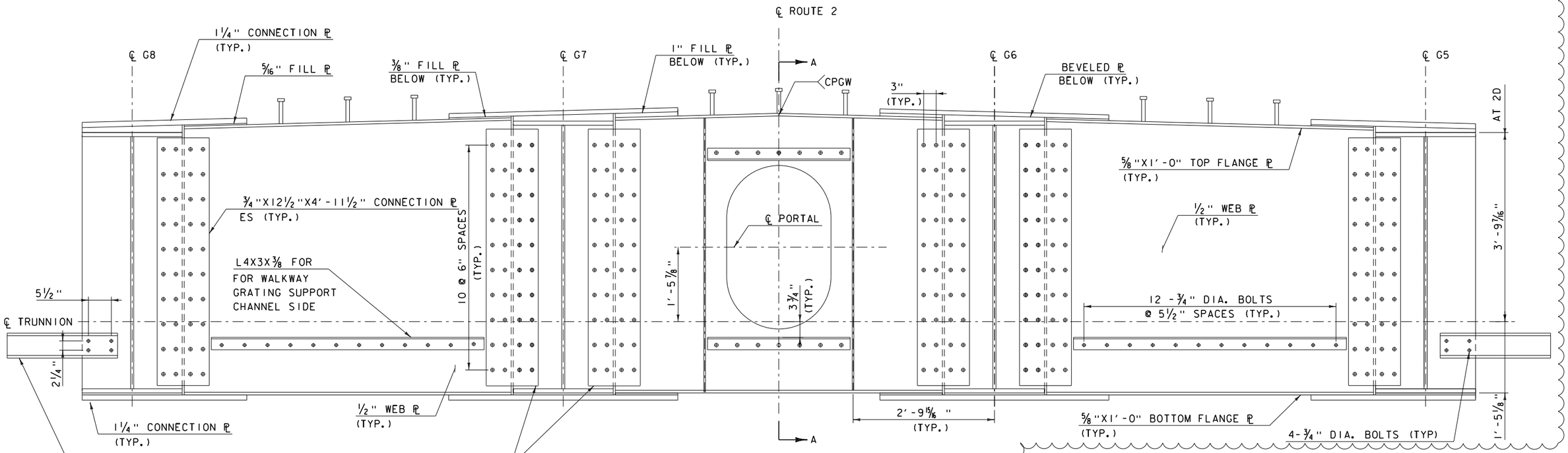
FILE NAME: z12b142dial_.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN DIAPHRAGM - 1

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: P. DAVIS
SHEET 90 OF 379



2D1, 2D2 & 2D3 PLAN
(2D4, 2D5 & 2D6 OPPOSITE HAND)

SCALE 1" = 1′-0"



NOTE:

1. ALL SHEAR STUDS SHALL BE ASTM A108 GRADE 1015 - ⅞" DIA. X 6".
2. FOR SECTION A-A, PORTAL DETAIL AND BEVELED PLATES DETAILS, SEE SHEET - 094.

2D1, 2D2 & 2D3 ELEVATION
(2D4, 2D5 & 2D6 OPPOSITE HAND)

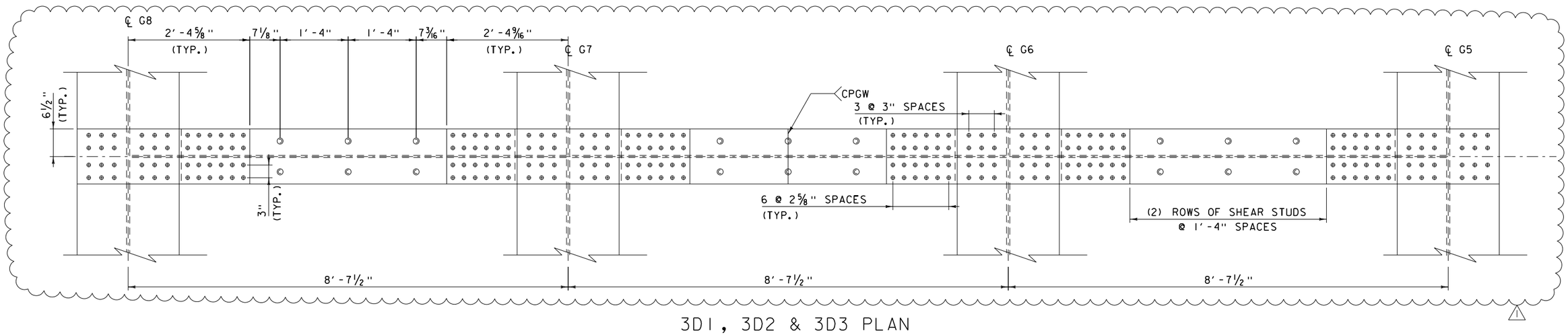
SCALE 1" = 1′-0"

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

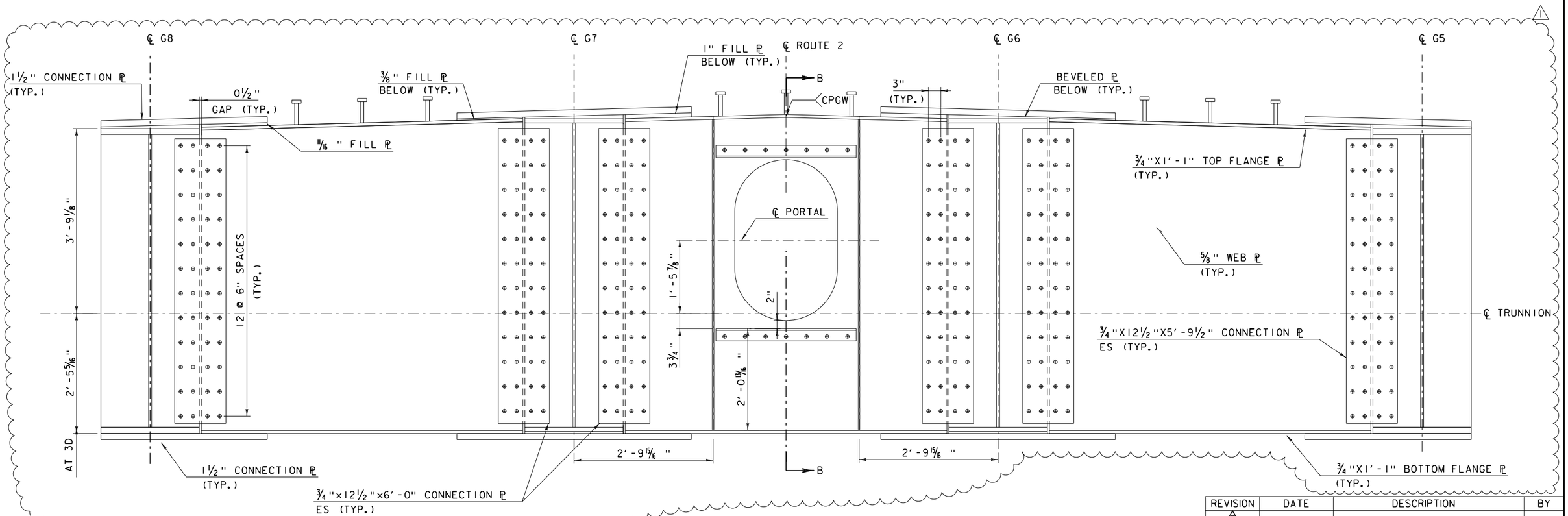
FILE NAME: z12b142dia2_.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN DIAPHRAGM - 2

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 91 OF 379



3D1, 3D2 & 3D3 PLAN
(3D4, 3D5 & 3D6 OPPOSITE HAND)

SCALE 1" = 1′-0"



3D1, 3D2 & 3D3 ELEVATION
(3D4, 3D5 & 3D6 OPPOSITE HAND)

SCALE 1" = 1′-0"

NOTE:

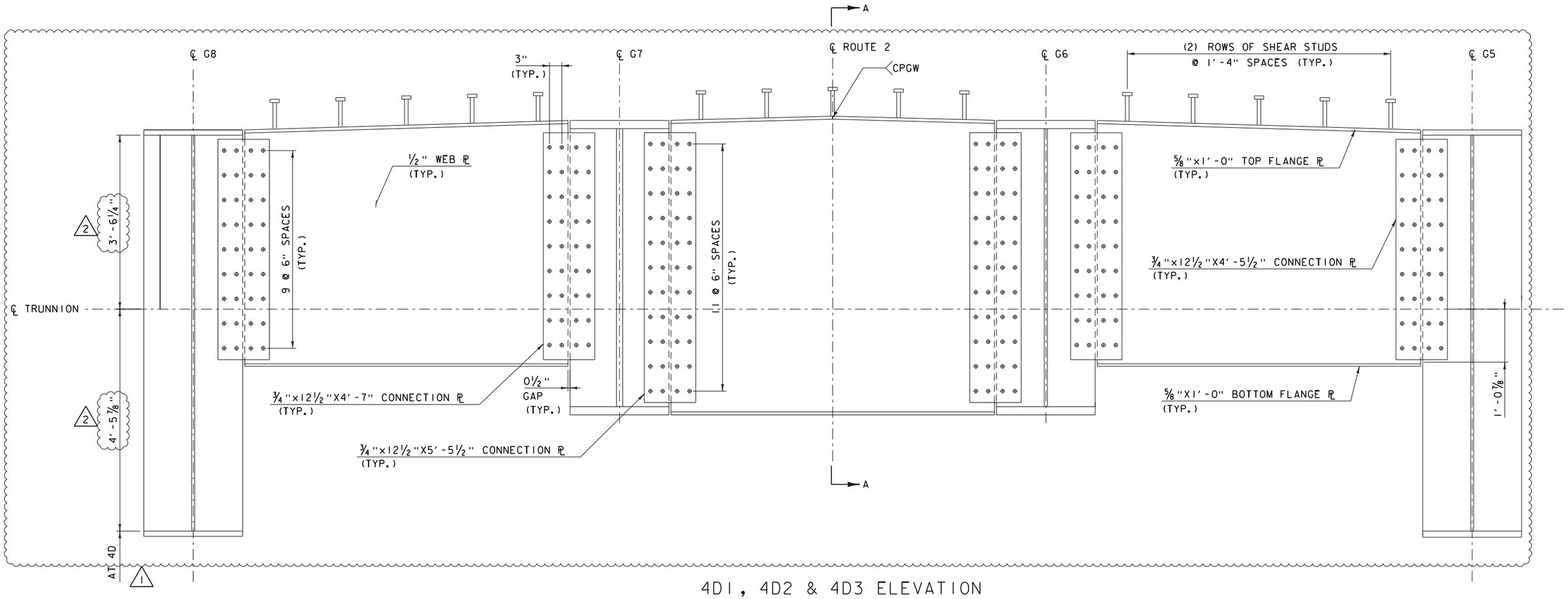
1. ALL SHEAR STUDS SHALL BE ASTM A108 GRADE 1015 - ⅞" DIA. X 6".
2. FOR SECTION B-B, PORTAL DETAIL AND BEVELED PLATES DETAIL, SEE SHEET - 094.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142dia3_.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN DIAPHRAGM - 3

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: P. DAVIS
SHEET 92 OF 379



4D1, 4D2 & 4D3 ELEVATION
(4D4, 4D5 & 4D6 OPPOSITE HAND)

SCALE 1" = 1'-0"

NOTE:

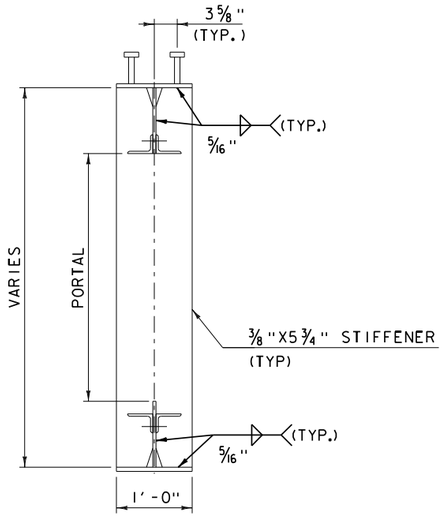
1. ALL SHEAR STUDS SHALL BE ASTM A108 GRADE 1015 - ⅞" DIA. X 6".
2. FOR SECTION A-A, PORTAL DETAIL AND BEVELED PLATES DETAIL, SEE SHEET - 094.

REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

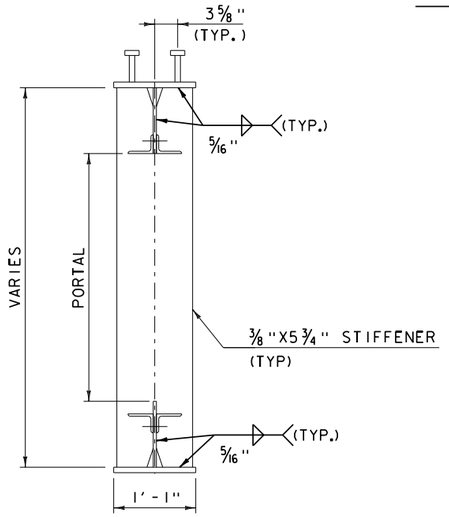
FILE NAME: z12b142dia2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN DIAPHRAGM - 4

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: P. DAVIS
SHEET 93 OF 379



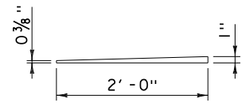
SECTION A-A

SCALE 1" = 1'-0"



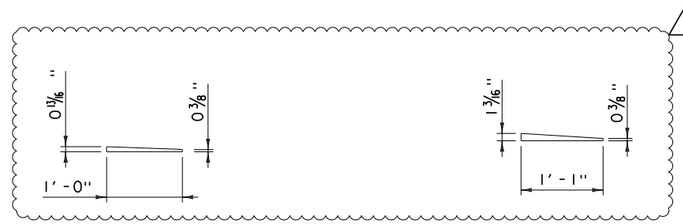
SECTION B-B

SCALE 1" = 1'-0"



TYPICAL TOP FLANGE BEVELED PLATE

SCALE 1" = 1'-0"

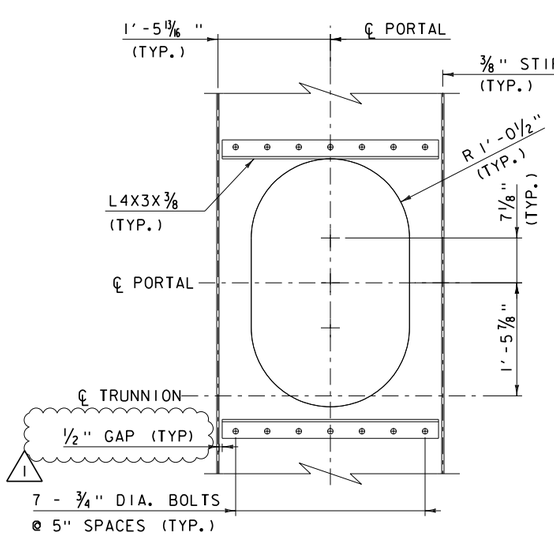


BOTTOM FLANGE BEVELED PLATE AT D2

SCALE 1" = 1'-0"

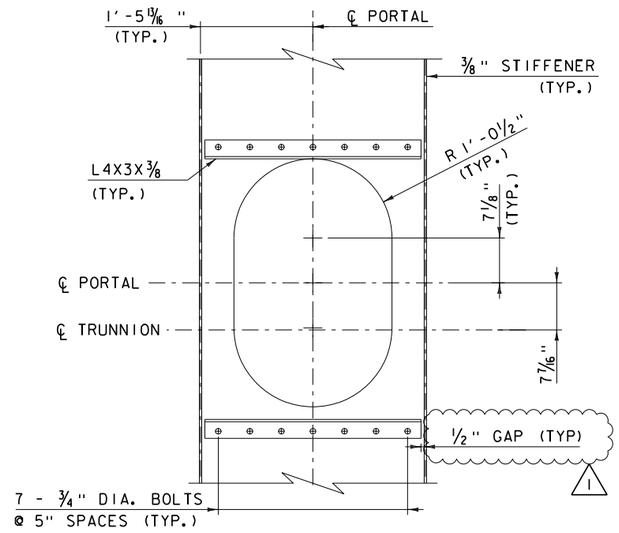
BOTTOM FLANGE BEVELED PLATE AT D3

SCALE 1" = 1'-0"



TYPICAL PORTAL DETAIL

SCALE 1" = 1'-0"



PORTAL AT 4D

SCALE 1" = 1'-0"

NOTE:

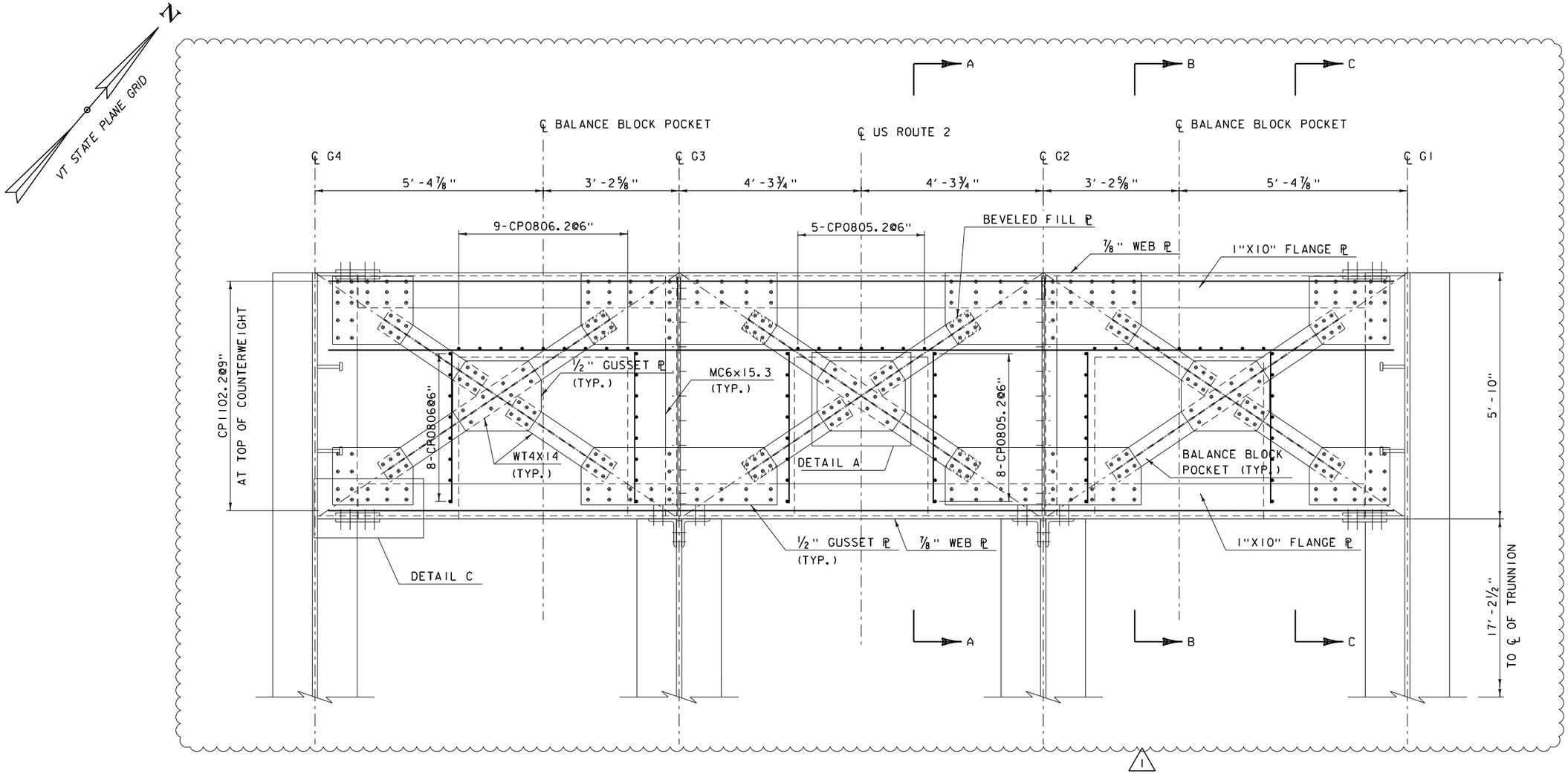
1. FOR SECTION A-A, SEE SHEET - 090, 091 & 093.
2. FOR SECTION B-B, SEE SHEET - 092.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

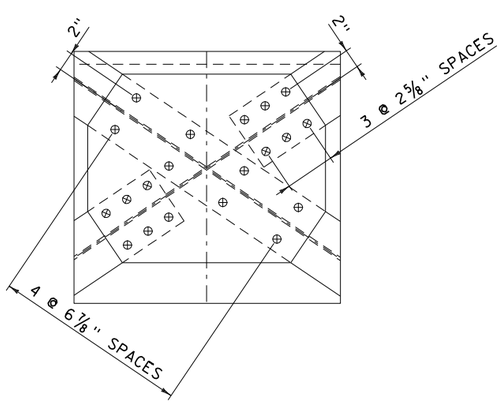
FILE NAME: z12b142dia3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE SPAN DIAPHRAGM DETAIL

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: P. DAVIS
SHEET 94 OF 379

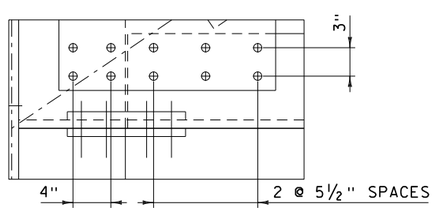


PLAN - UPPER COUNTERWEIGHT BRACING
(WEST COUNTERWEIGHT SHOWN, EAST COUNTERWEIGHT OPPOSITE HAND)

SCALE ¾" = 1'-0"



DETAIL A



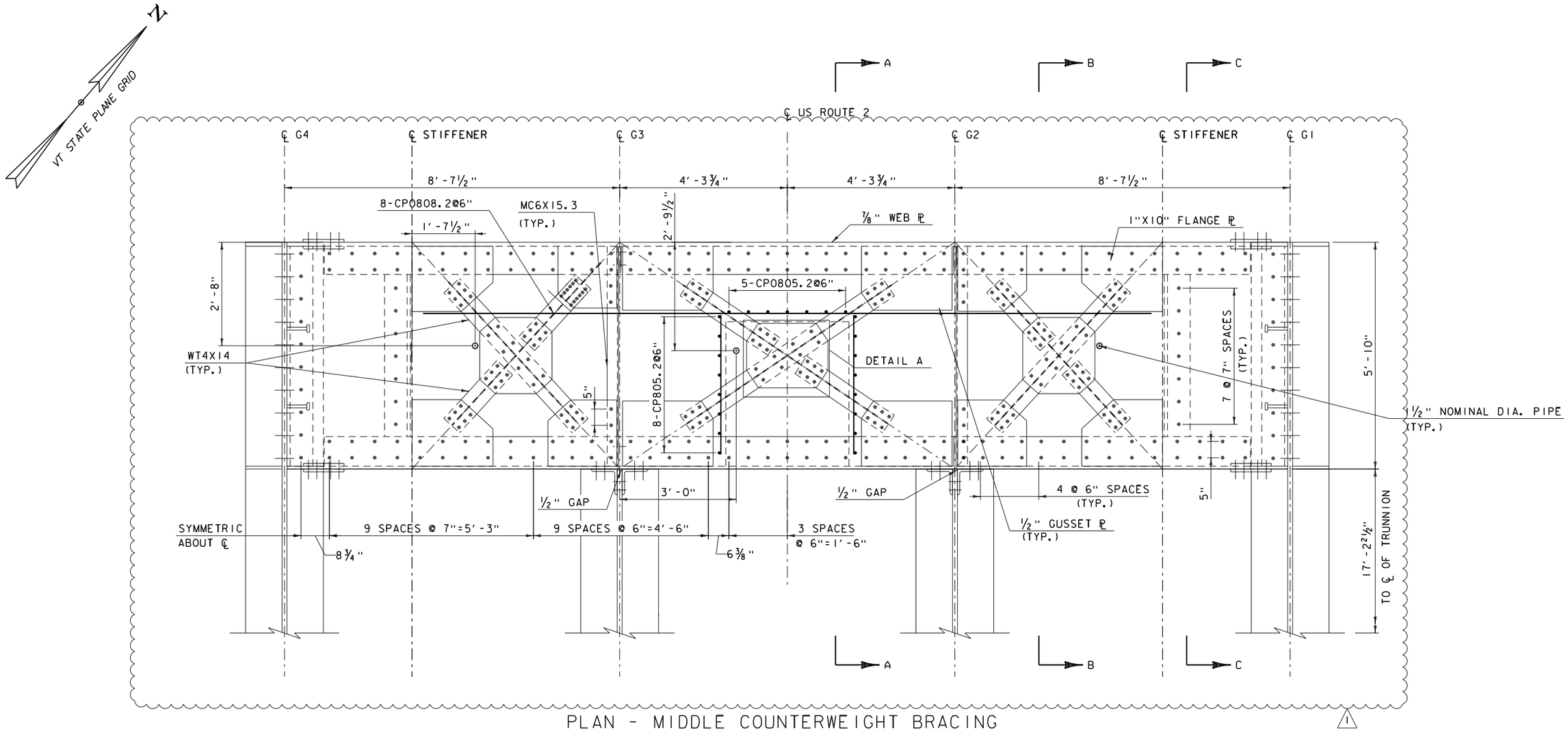
DETAIL C

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142ucwtplan.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
UPPER COUNTERWEIGHT BRACING PLAN

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 95 OF 379



PLAN - MIDDLE COUNTERWEIGHT BRACING

(WEST COUNTERWEIGHT SHOWN, EAST COUNTERWEIGHT OPPOSITE HAND)

SCALE ¾" = 1' - 0"

NOTE:

1. FOR SECTIONS A-A, B-B AND C-C, SEE SHEET-101.
2. FOR DETAIL A, SEE SHEET - 095.
3. SHEAR CONNECTIONS INSIDE COUNTERWEIGHT ARE ⅞" x 6" LONG.
4. DRAIN PIPE TO BE SCH 80 PVC PER ASTM D1785.

• DENOTES BOLT

⊙ DENOTES DRAIN PIPE

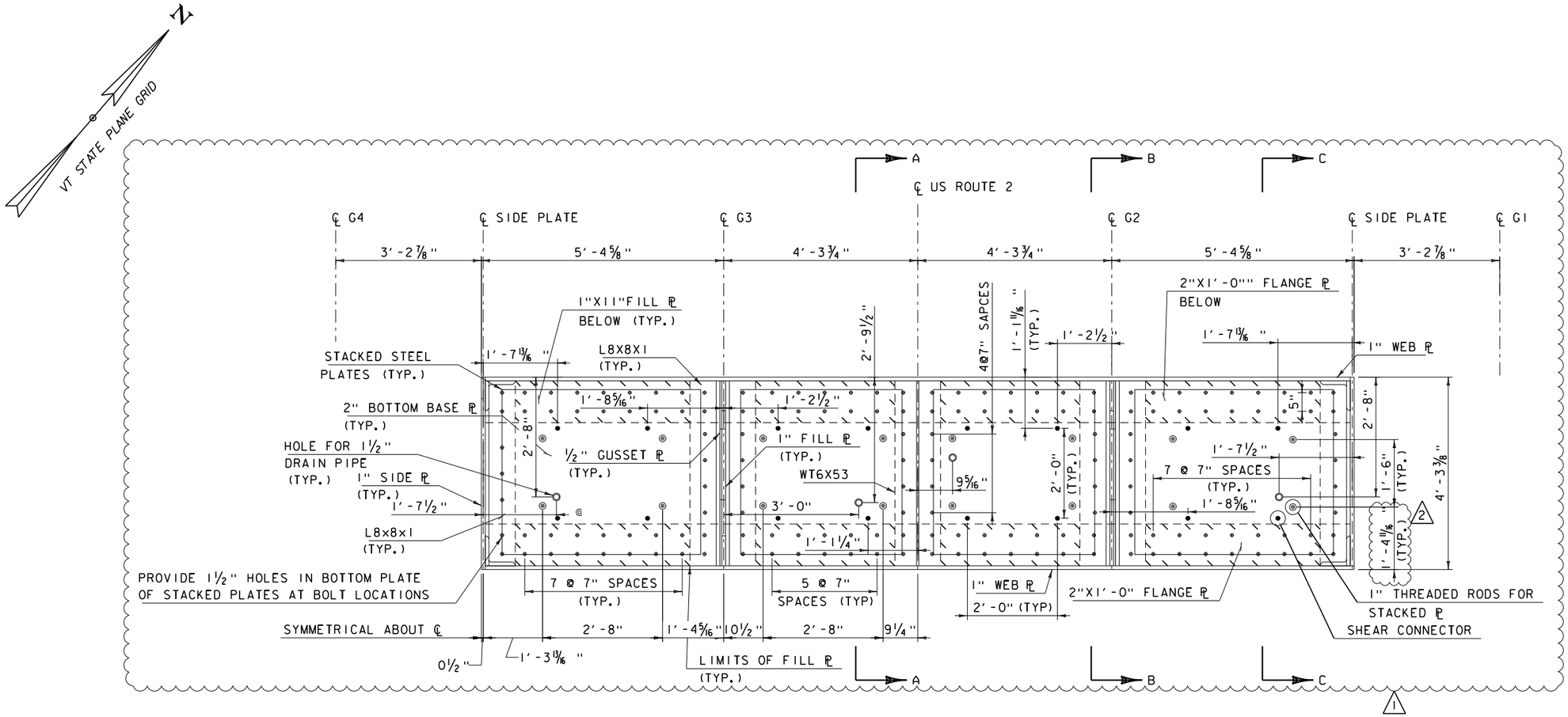
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142mcwtplan.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
MIDDLE COUNTERWEIGHT BRACING PLAN

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 96 OF 379



PLAN - LOWER COUNTERWEIGHT CELL
(WEST COUNTERWEIGHT SHOWN, EAST COUNTERWEIGHT OPPOSITE HAND)

SCALE ¾" = 1'-0"

NOTE:

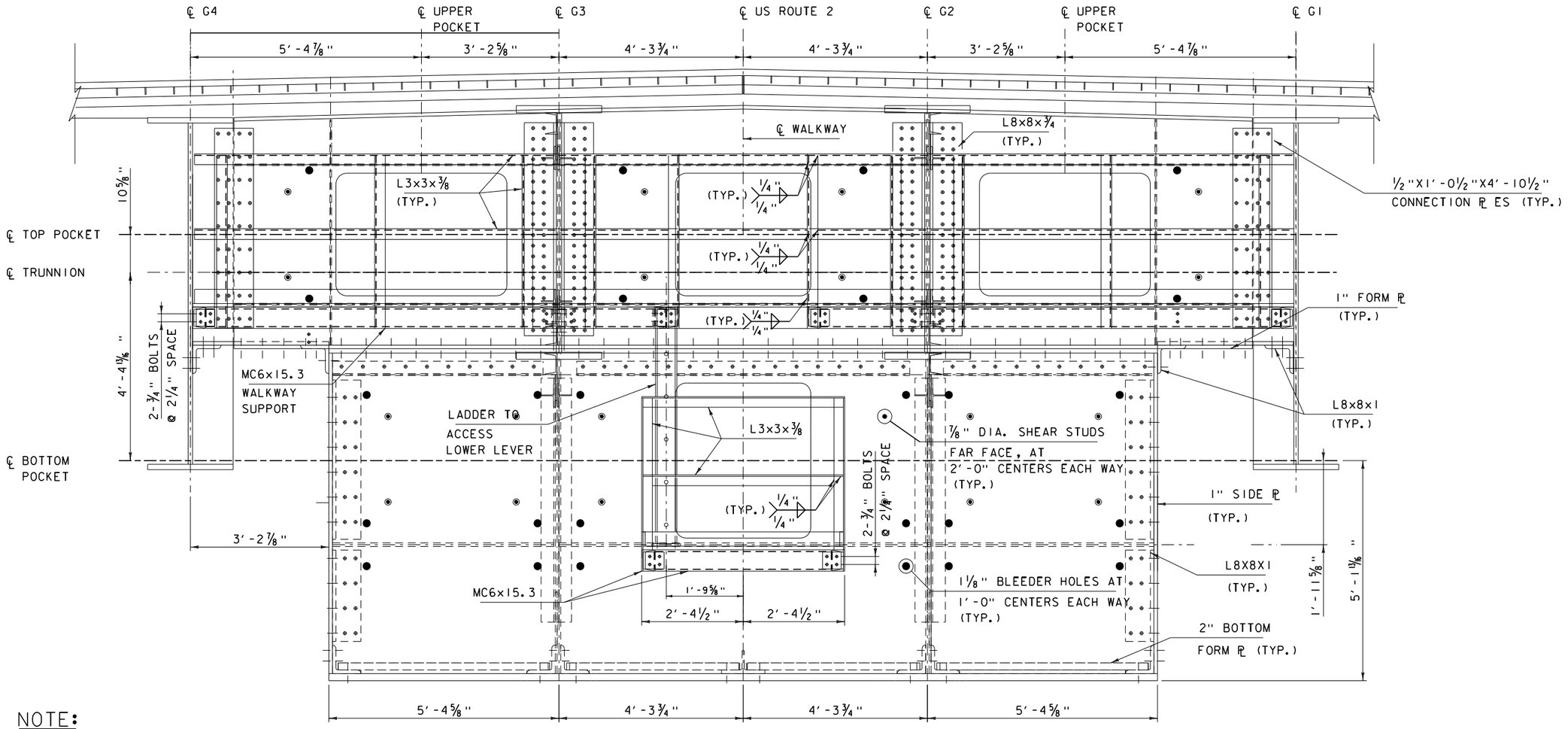
1. SHEAR CONNECTIONS INSIDE COUNTERWEIGHT ARE ⅞" × 6" LONG.
2. DRAIN PIPE TO BE SCH 80 PER ASTM D1785.
3. • DENOTES BOLT
   • DENOTES SHEAR CONNECTOR
   ◉ DENOTES THREADED ROD
   ○ DENOTES DRAIN PIPE

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142lcwtplan.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
LOWER COUNTERWEIGHT PLAN

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 97 OF 379



NOTE:

1. SHEAR CONNECTIONS INSIDE COUNTERWEIGHT ARE ⅞″ x 6″ LONG.
2. DRAIN PIPE TO BE SCH 80 PER ASTM D1785.
3. • DENOTES BOLT
   ◉ DENOTES SHEAR CONNECTOR
   ⋐ DENOTES THREADED ROD
   ○ DENOTES DRAIN PIPE

COUNTERWEIGHT ELEVATION

(WEST COUNTERWEIGHT SHOWN, EAST COUNTERWEIGHT OPPOSITE HAND)

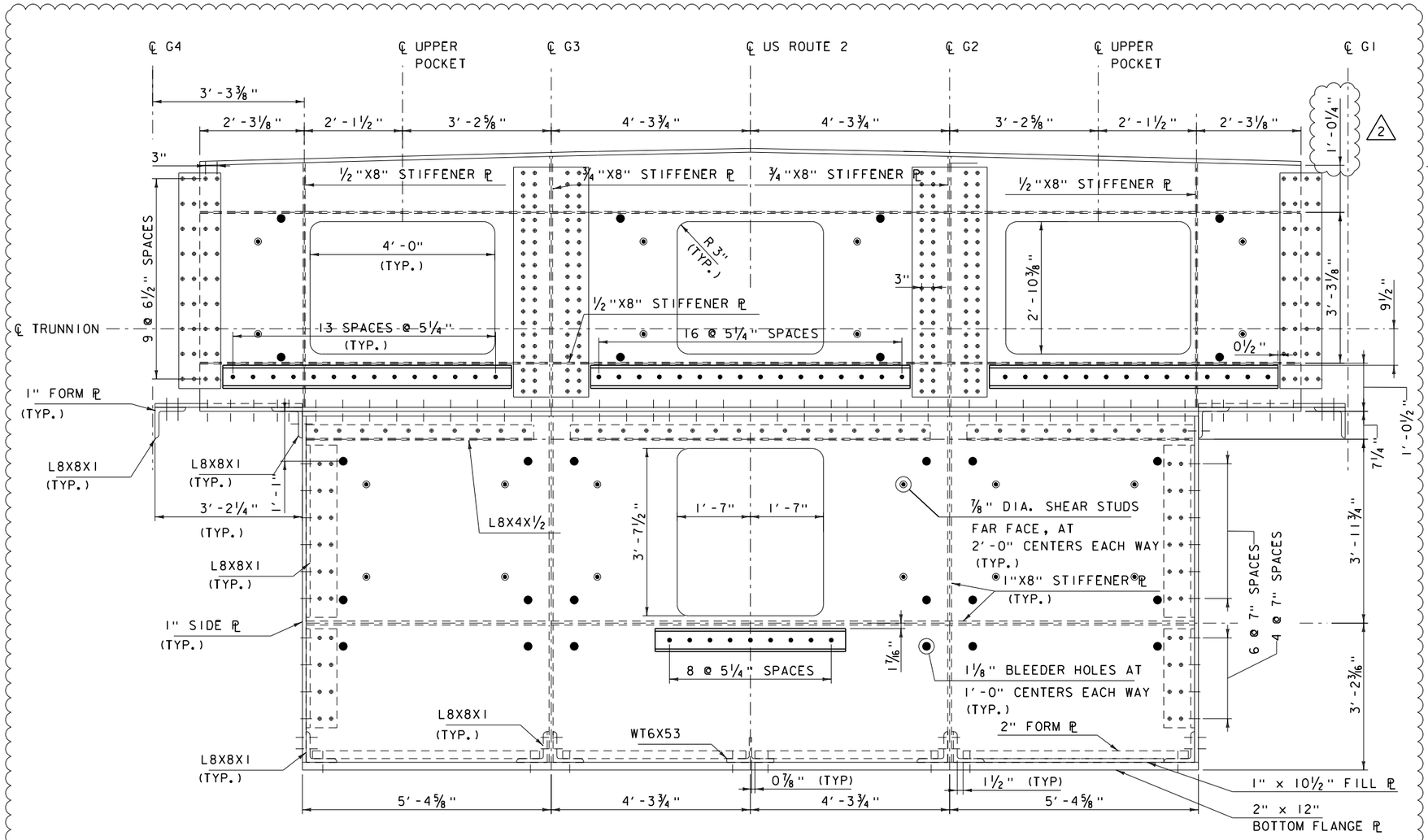
SCALE ¾″ = 1′-0″

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

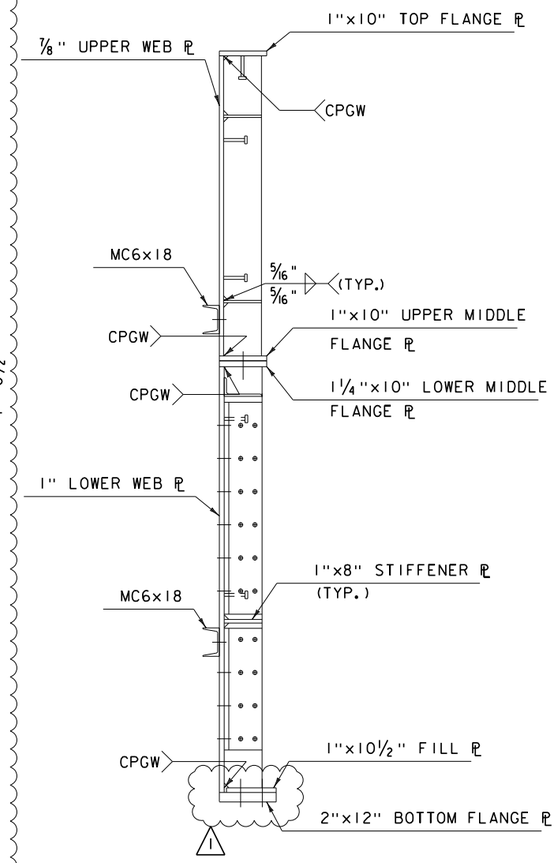
FILE NAME: z12b142cwtele.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
COUNTERWEIGHT ELEVATION

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 98 OF 379



COUNTERWEIGHT FLOORBEAM 1
(COUNTERWEIGHT FLOORBEAM 3 OPPOSITE HAND)

SCALE ¾" = 1'-0"



END VIEW

SCALE ¾" = 1'-0"

NOTE:

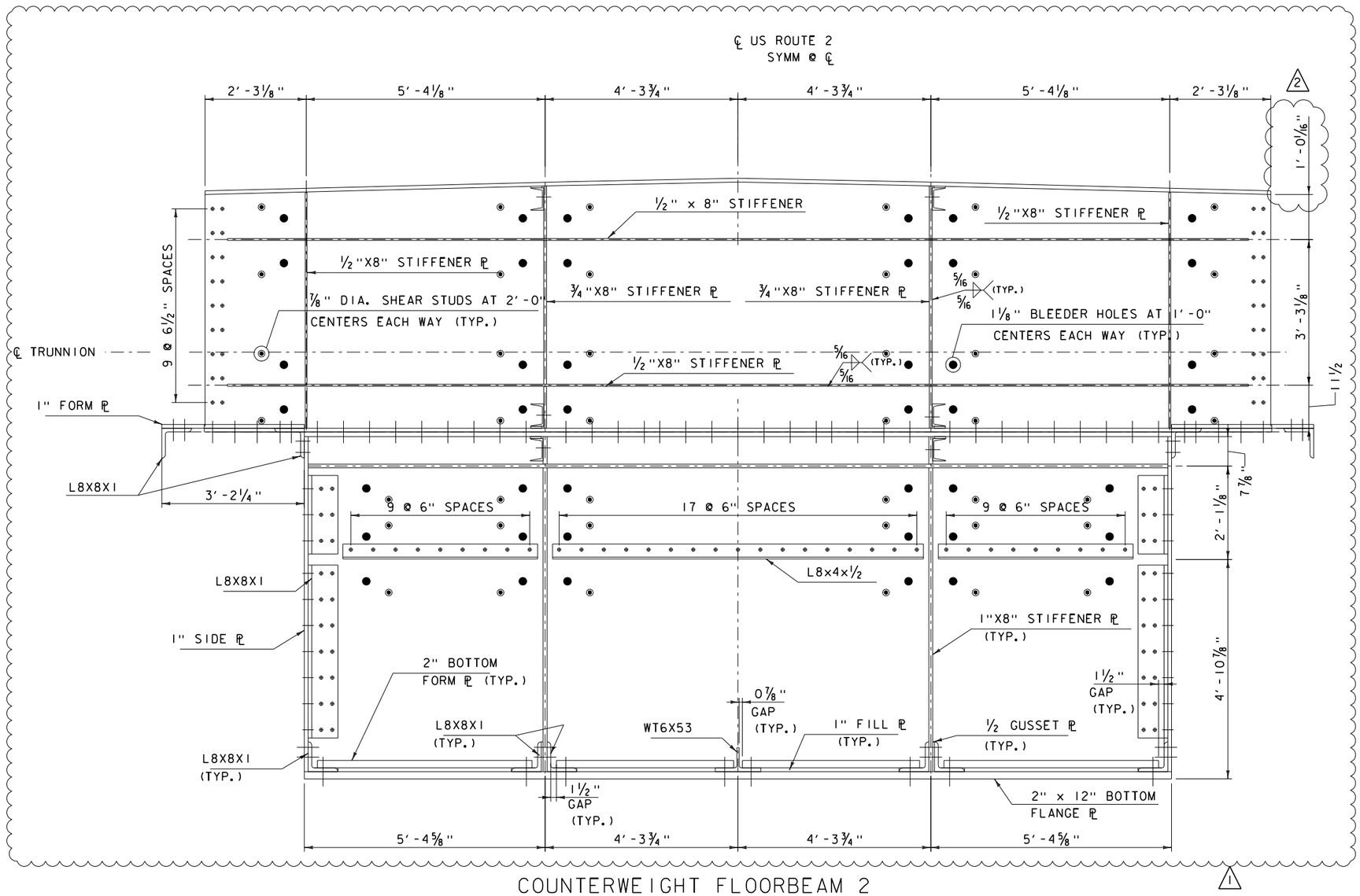
1. SHEAR CONNECTIONS INSIDE COUNTERWEIGHT ARE ⅞" x 6" LONG.
2. DRAIN PIPE TO BE SCH 80 PER ASTM D1785.
3. • DENOTES BOLT
   ◉ DENOTES SHEAR CONNECTOR
   ℄ DENOTES THREADED ROD
   ○ DENOTES DRAIN PIPE

REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

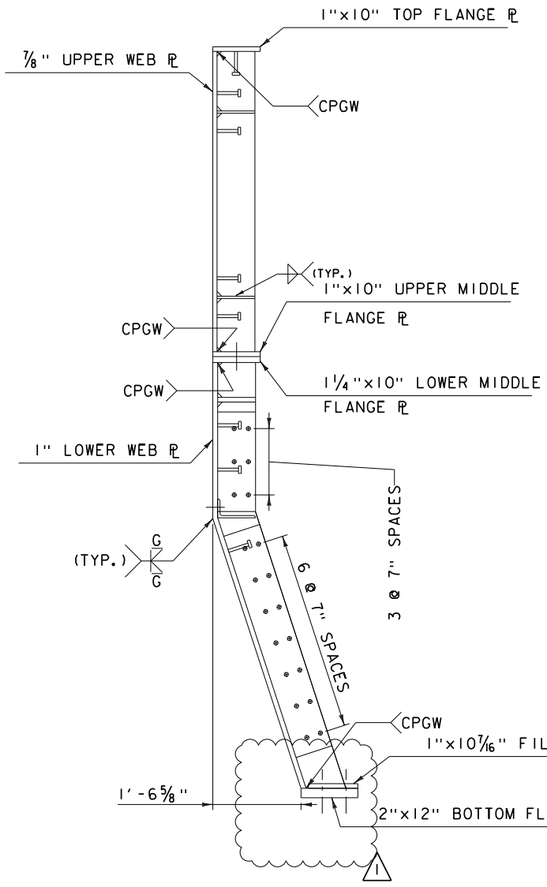
FILE NAME: z12bl42cwtfbl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
COUNTERWEIGHT FLOORBEAM 1

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 99 OF 379



COUNTERWEIGHT FLOORBEAM 2
(COUNTERWEIGHT FLOORBEAM 4 OPPOSITE HAND)

SCALE ¾" = 1′-0"



SIDE VIEW

SCALE ¾" = 1′-0"

NOTE:

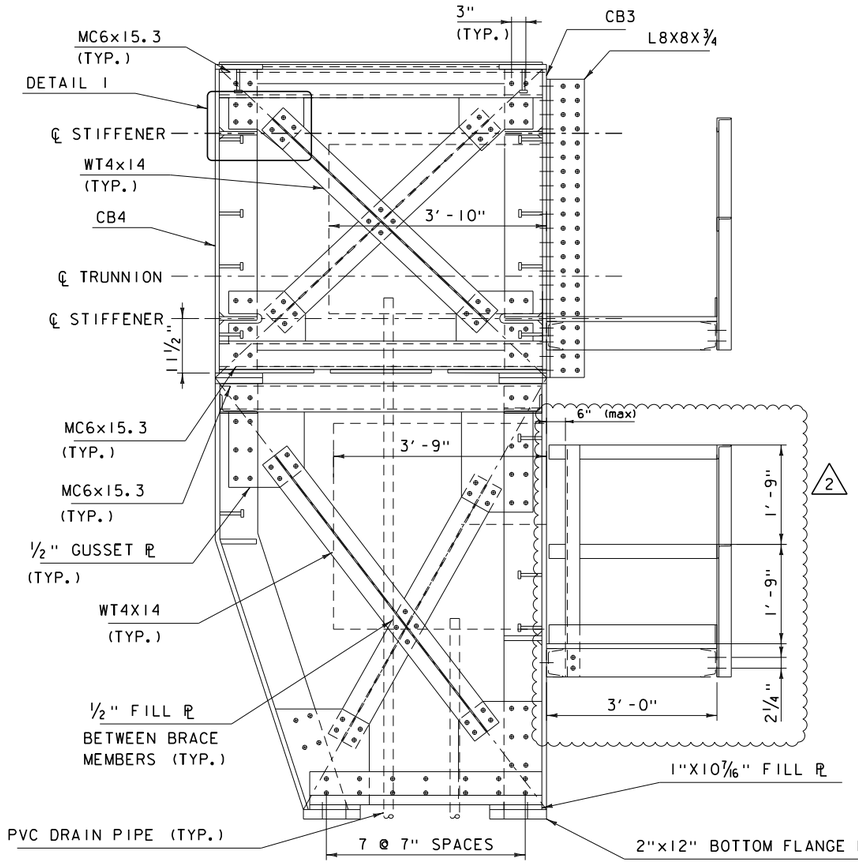
1. SHEAR CONNECTIONS INSIDE COUNTERWEIGHT ARE ⅞" x 6" LONG.
2. DRAIN PIPE TO BE SCH 80 PER ASTM D1785.
3. • DENOTES BOLT
   ◉ DENOTES SHEAR CONNECTOR
   ⊕ DENOTES THREADED ROD
   ○ DENOTES DRAIN PIPE

REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

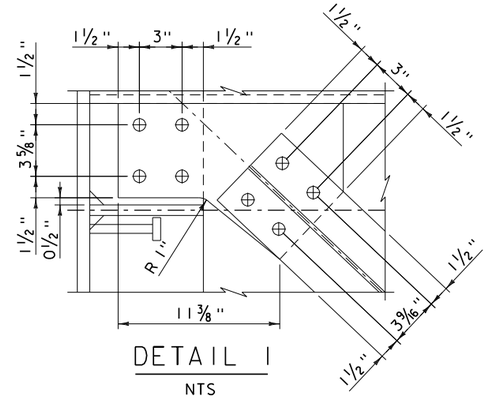
FILE NAME: z12b142cwtfb2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
COUNTERWEIGHT FLOORBEAM 2

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 100 OF 379



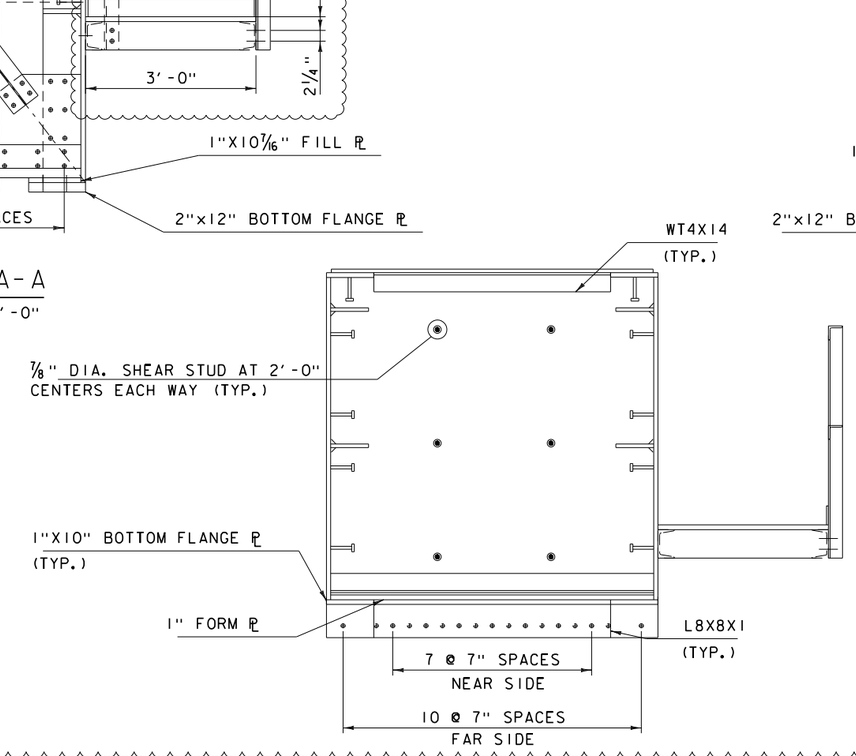
SECTION A-A

SCALE ¾" = 1'-0"



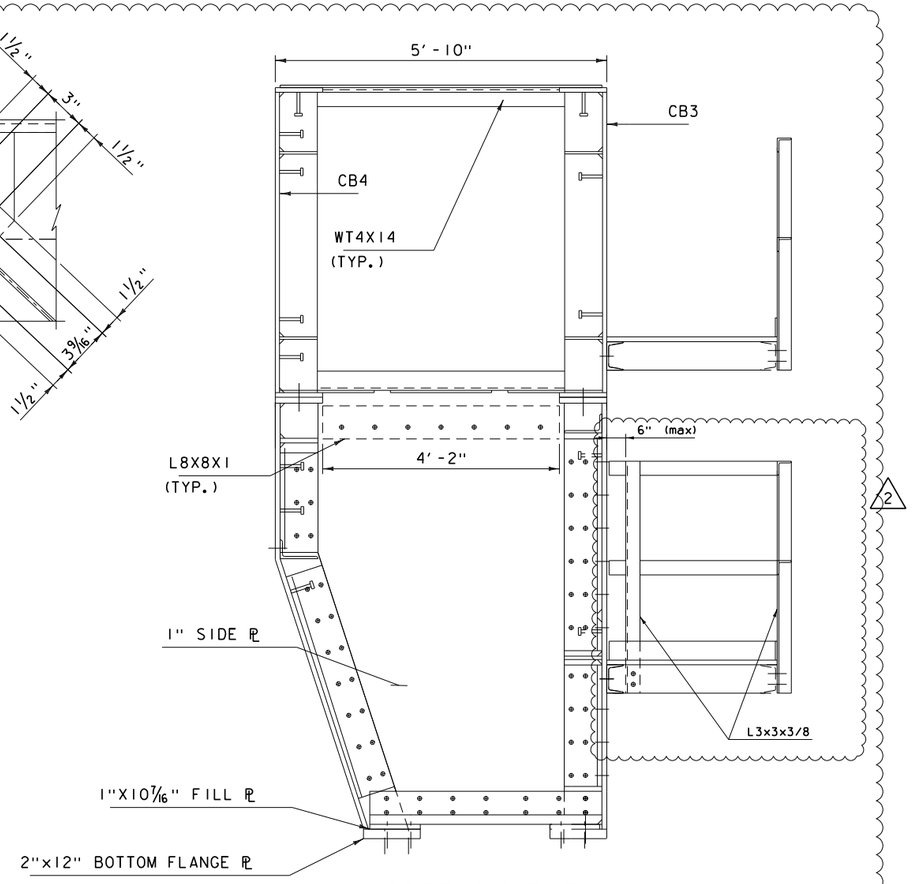
DETAIL 1

NTS



SECTION C-C

SCALE ¾" = 1'-0"



SECTION B-B

SCALE ¾" = 1'-0"

NOTE:

1. FOR LOCATION OF SECTION A-A, SECTION B-B AND SECTION C-C, SEE SHEET-096.
2. SHEAR CONNECTIONS INSIDE COUNTERWEIGHT ARE 7#8" x 6" LONG.
3. DRAIN PIPE TO BE SCH 80 PER ASTM D1785.
4. • DENOTES BOLT
   ◉ DENOTES SHEAR CONNECTOR
   ⊖ DENOTES THREADED ROD
   ○ DENOTES DRAIN PIPE

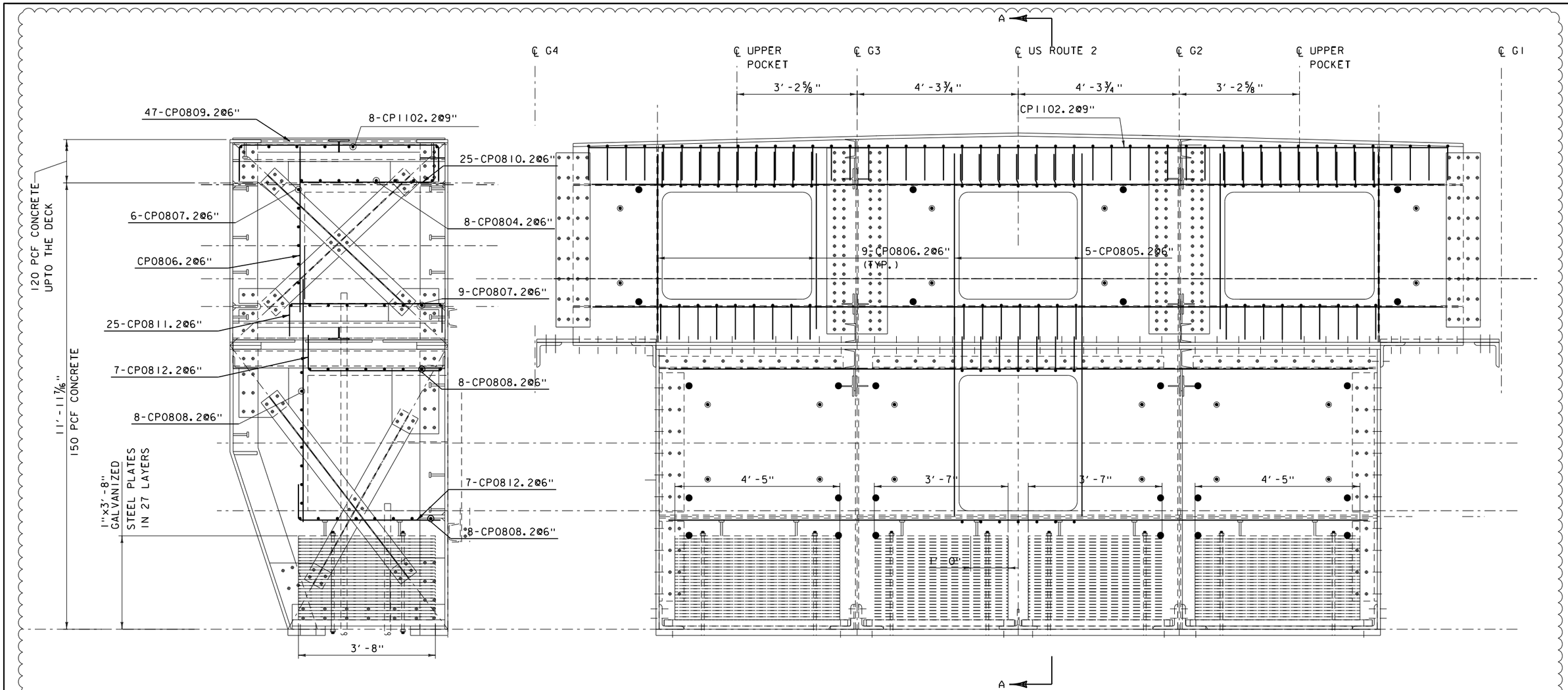
REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cwtxsl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
COUNTERWEIGHT CROSS SECTIONS

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 101 OF 379



SECTION A-A

SCALE ¾" = 1′-0"

REINFORCEMENT DETAILS - ELEVATION

SCALE ¾" = 1′-0"

NOTE:

1. COUNTERWEIGHT CONCRETE GREATER THAN 3 FEET IN LENGTH AND WIDTH SHALL NOT FALL UNDER MASS CONCRETE SPECIFICATION.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

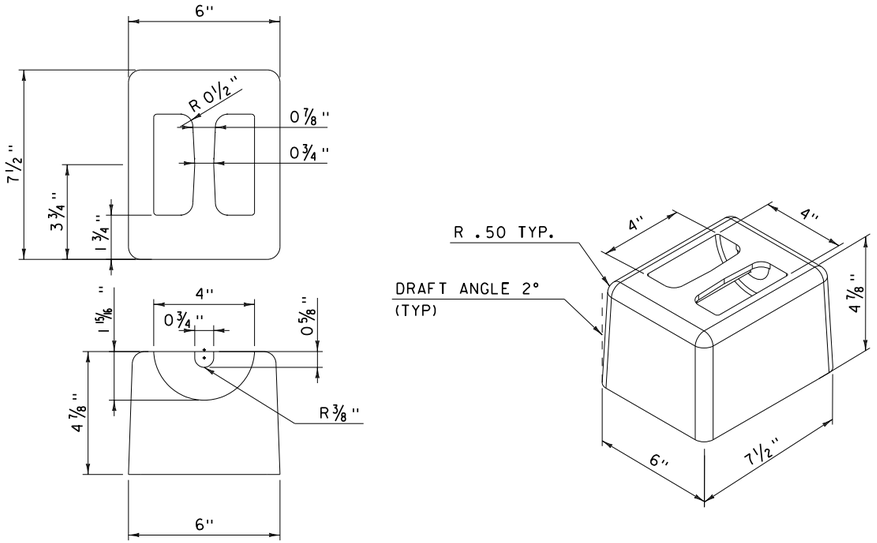
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cwtxs2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
COUNTERWEIGHT REINFORCEMENT

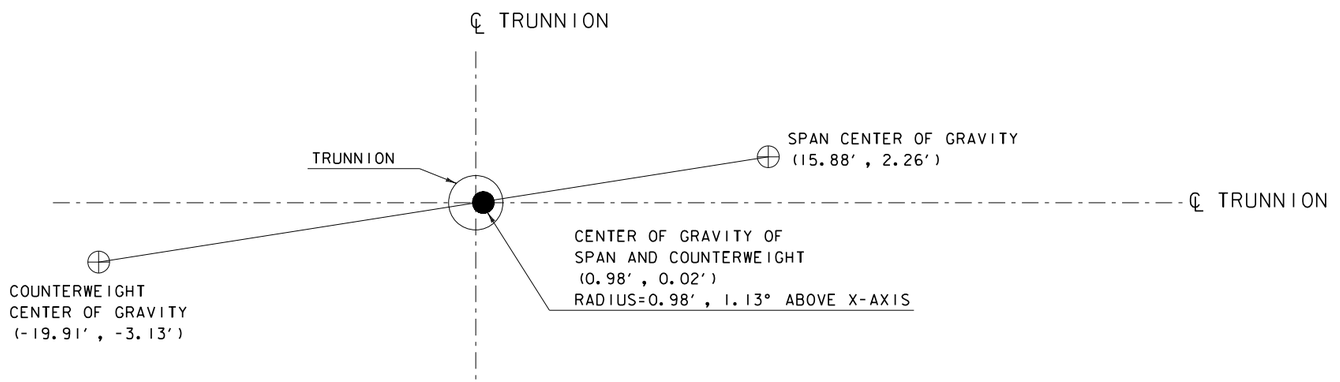
PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 102 OF 379

BALANCE TABLE					
COMPONENTS	WEIGHT (KIP)	X ARM TO TRUNNION (FT.)	Y ARM TO TRUNNION (FT.)	M, (KIP-FT)	M, (KIP-FT)
GIRDERS	145.20	9.44	0.67	1370.62	97.70
DECK	155.20	16.85	4.32	2615.72	671.16
HAUNCH	26.74	16.19	3.95	432.99	105.72
SPLICE	7.11	10.19	0.67	72.44	4.77
DECK JOINTS	9.04	13.02	4.46	117.80	40.36
STIFFENERS	23.85	5.36	0.37	127.73	8.75
ROADWAY RAILING	19.93	30.54	5.46	608.62	108.76
MAINTENANCE WALKWAY	39.04	27.98	-0.09	1092.42	-3.67
LATERAL BRACING	2.13	30.76	-1.38	65.64	-2.95
DIAPHRAGMS	29.62	22.50	1.26	666.33	37.24
LIVE LOAD SHOES	3.13	8.04	-3.22	25.17	-10.07
CLEVIS BOLSTER	2.00	3.95	-2.57	7.91	-5.14
SPAN LOCKS	4.72	47.44	1.43	223.71	6.73
IMBALANCE	6.00	52.53	0.00	315.18	0.00
COUNTER WEIGHT	333.70	-19.91	-3.13	-6643.32	-1043.87
TOTAL	801.41	0.98	0.02	783.78	14.47



STEEL BALANCE BLOCK

NTS
WEIGHT = 47.8 LBS



CENTER OF GRAVITY DIAGRAM

NTS

NOTE:

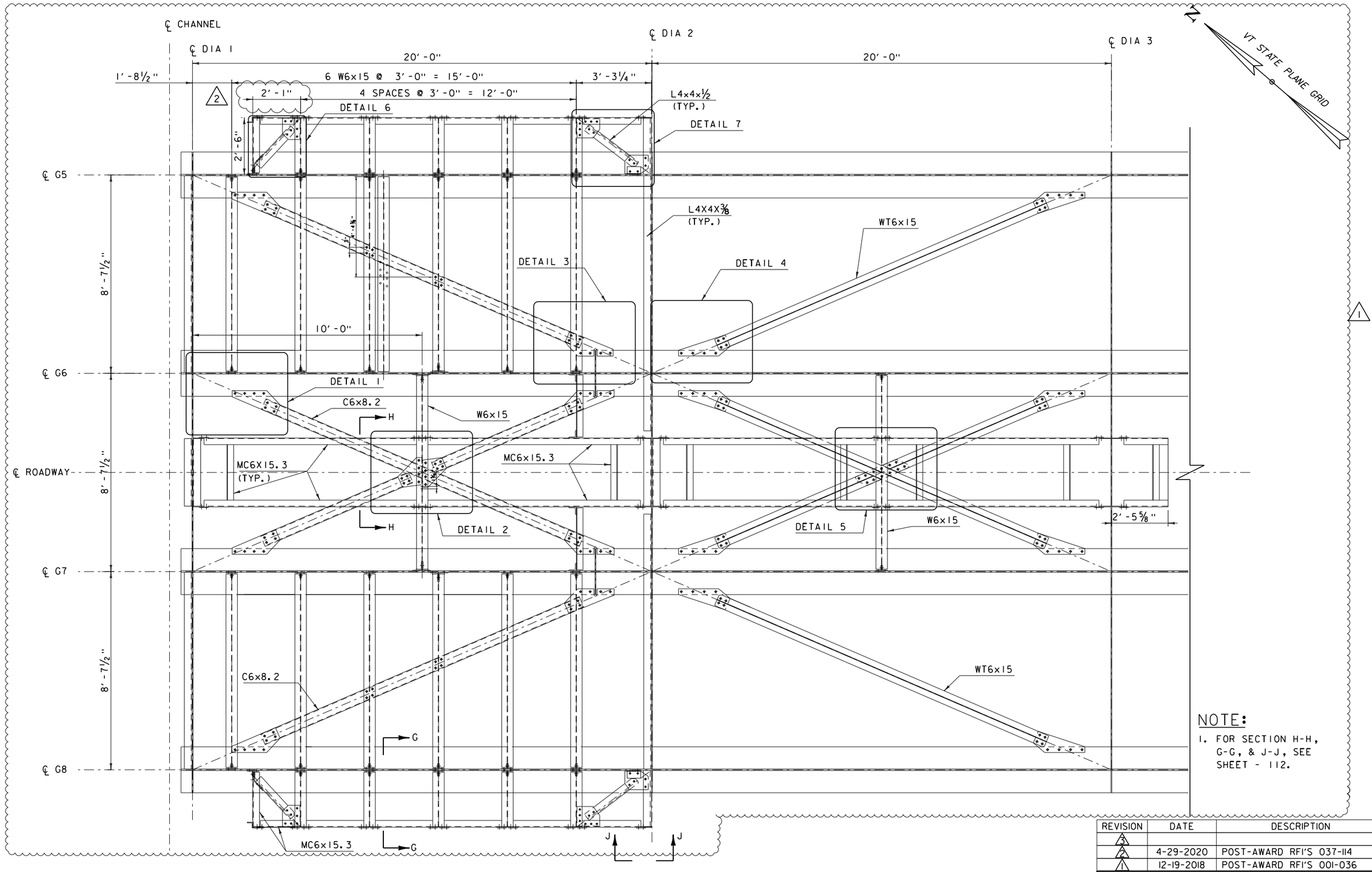
1. STEEL BALANCE BLOCKS SHALL BE CAST STEEL ASTM A27 AND EPOXY PAINTED.
2. THE CONTRACTOR MAY SUBSTITUTE GALVANIZED STEEL PLATE FOR BALANCE BLOCKS WITH REMOVABLE HANDLE. THE CONTRACTOR SHALL SUPPLY DETAILS OF ALTERNATE BLOCKS TO ENGINEER FOR APPROVAL.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42balance.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BRIDGE BALANCE TABLE

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 103 OF 379



NOTE:

1. FOR SECTION H-H, G-G, & J-J, SEE SHEET - 112.

LATERAL BRACING PLAN VIEW

(EAST SPAN SHOW, WEST SPAN OPP. HAND)

SCALE ½" = 1'-0"

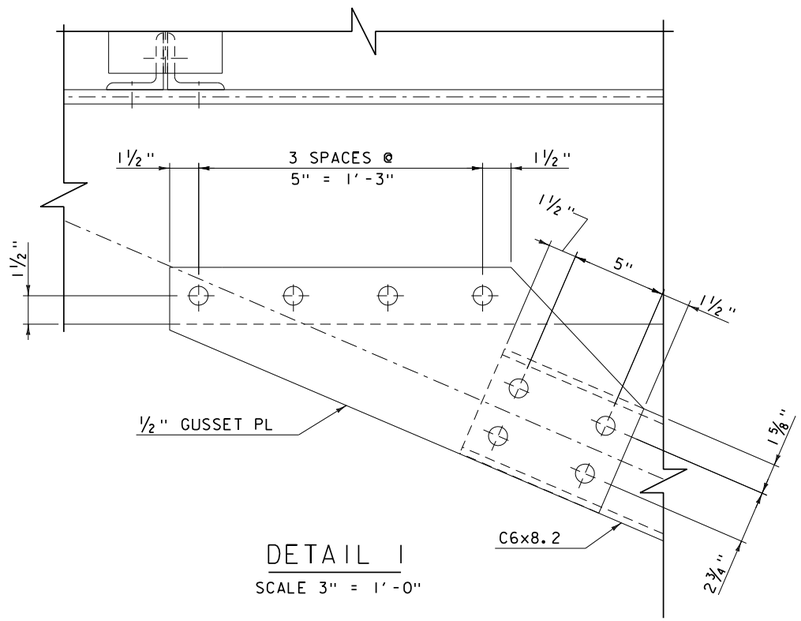
REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

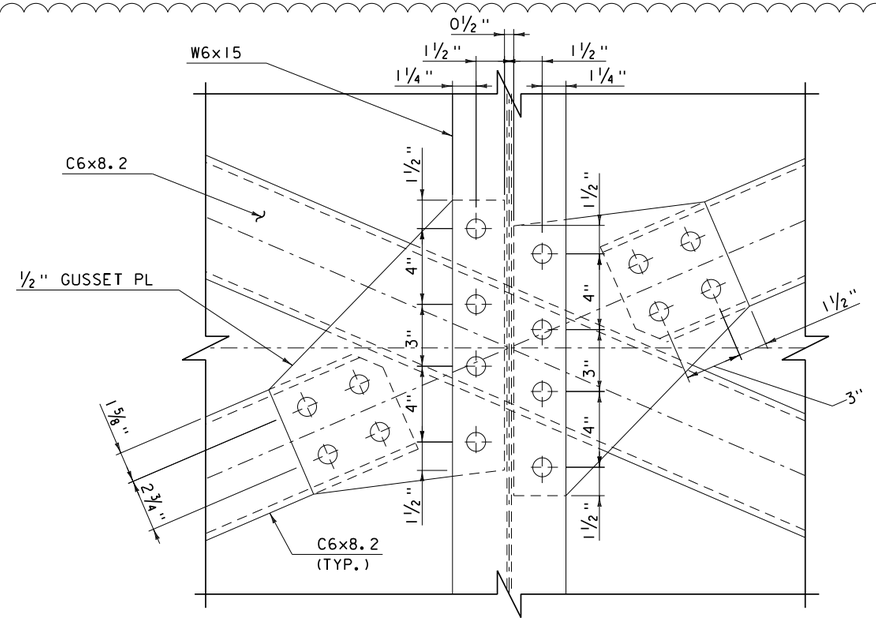
FILE NAME: z12b142latbrac.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
LATERAL BRACING

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 104 OF 379



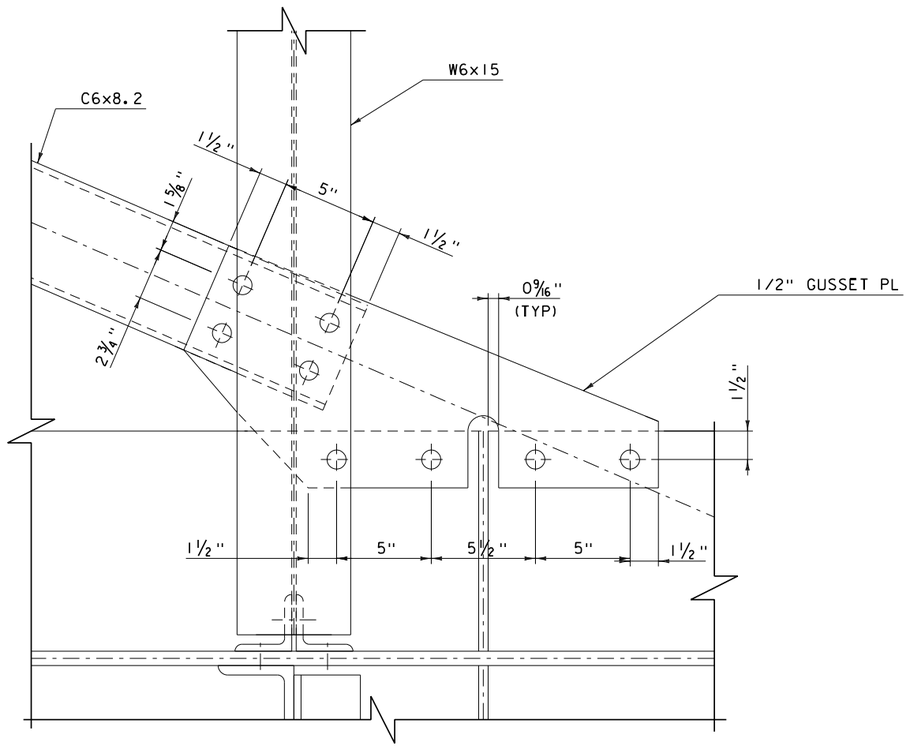
DETAIL 1

SCALE 3" = 1'-0"



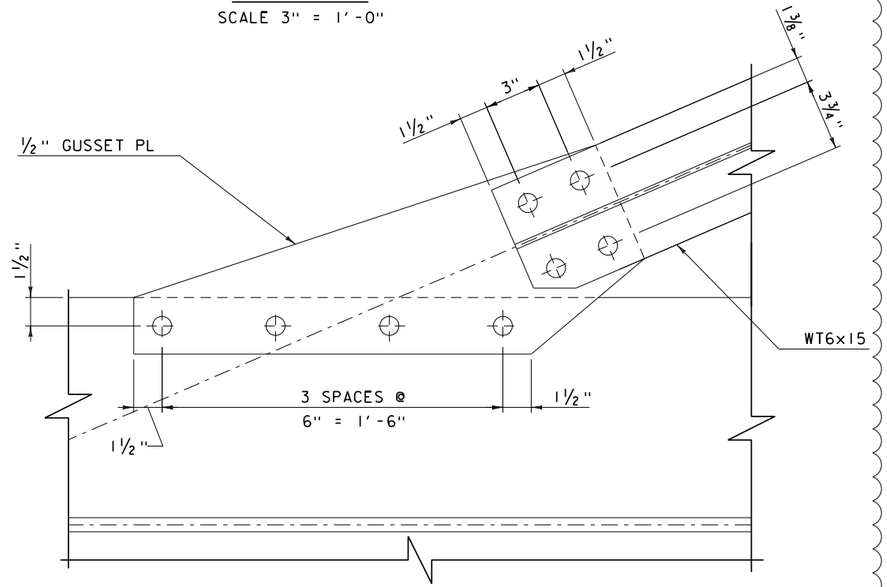
DETAIL 2

SCALE 3" = 1'-0"



DETAIL 3

SCALE 3" = 1'-0"



DETAIL 4

SCALE 3" = 1'-0"

NOTE:

1. ALL BOLTS SHALL BE ⅞" DIA. UNLESS OTHERWISE STATED.
2. DETAIL LOCATIONS SHOWN ON SHEET 104.

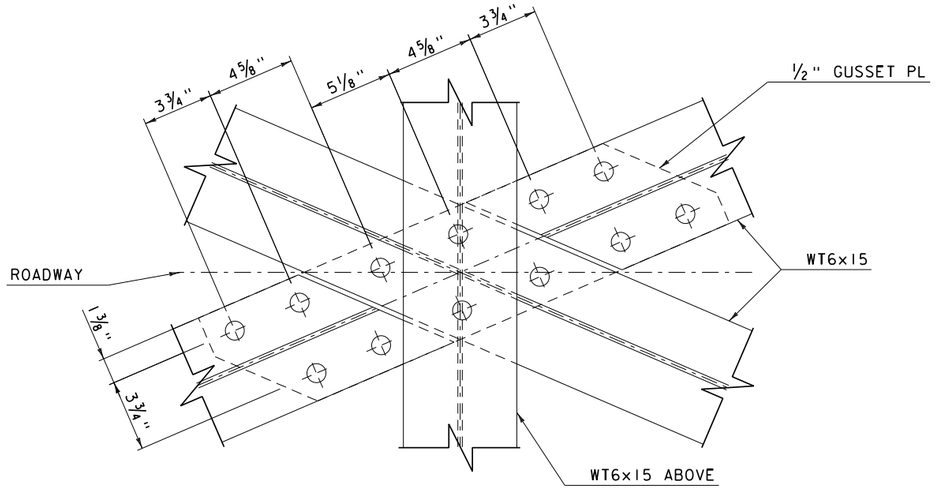
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

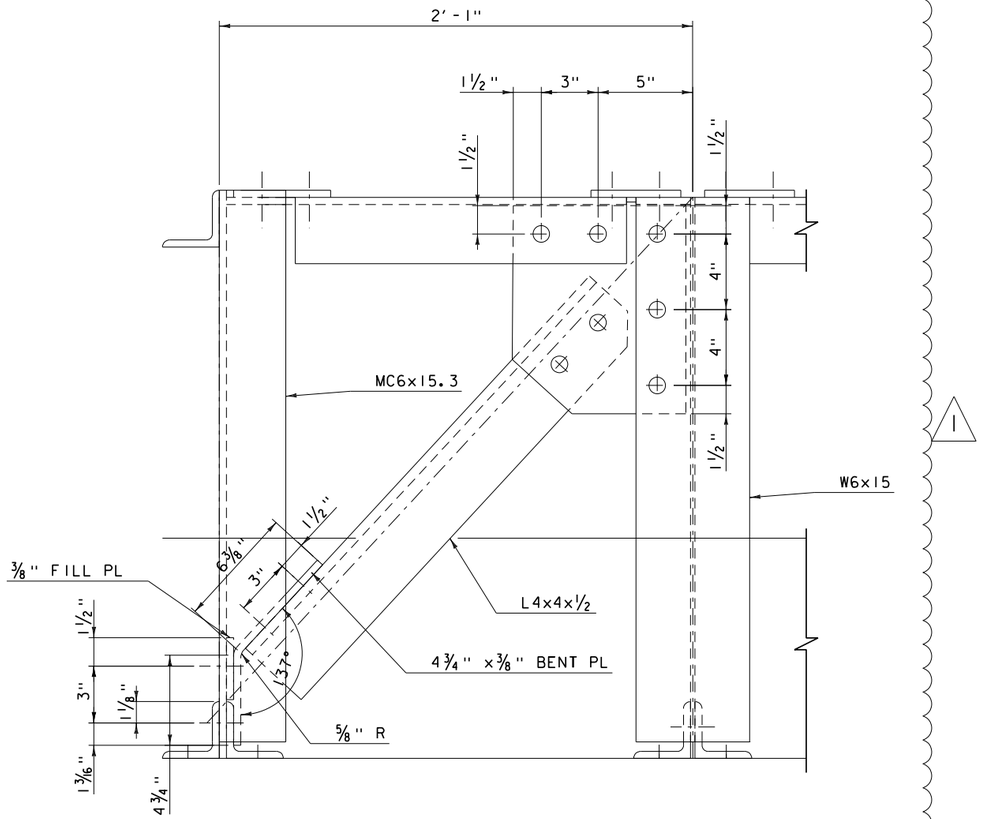
FILE NAME: z12b142LATDETL1.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
LATERAL BRACING DETAILS 1

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 105 OF 379



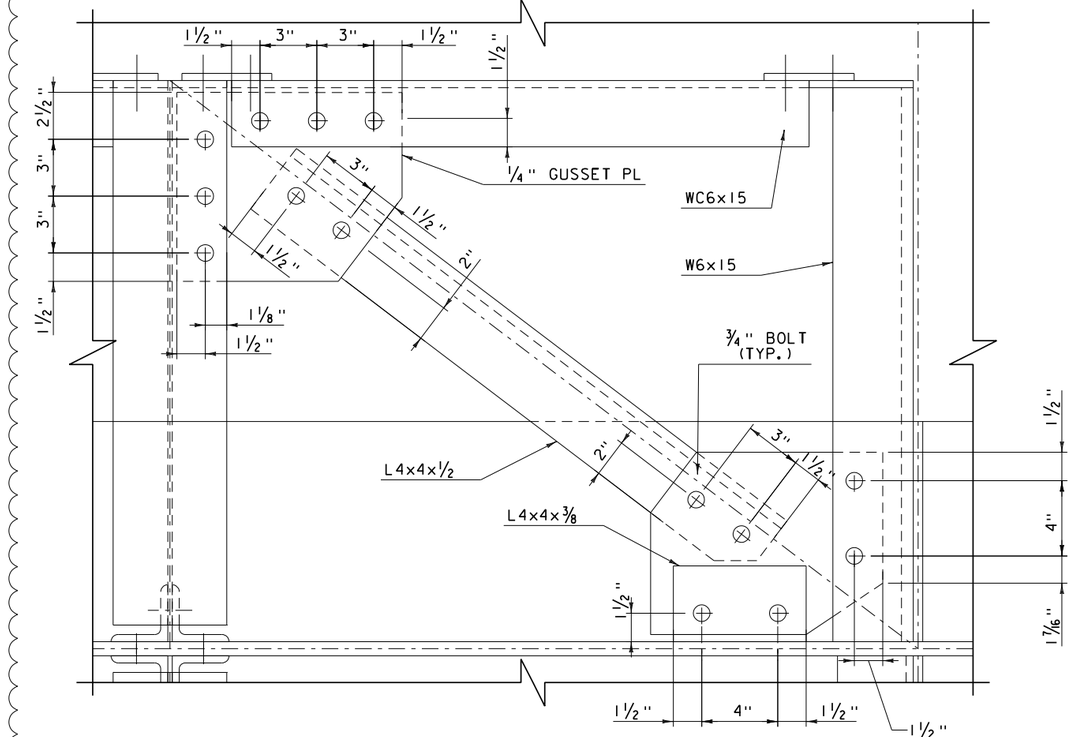
DETAIL 5

SCALE 3" = 1'-0"



DETAIL 6

SCALE 3" = 1'-0"



DETAIL 7

SCALE 3" = 1'-0"

NOTE:

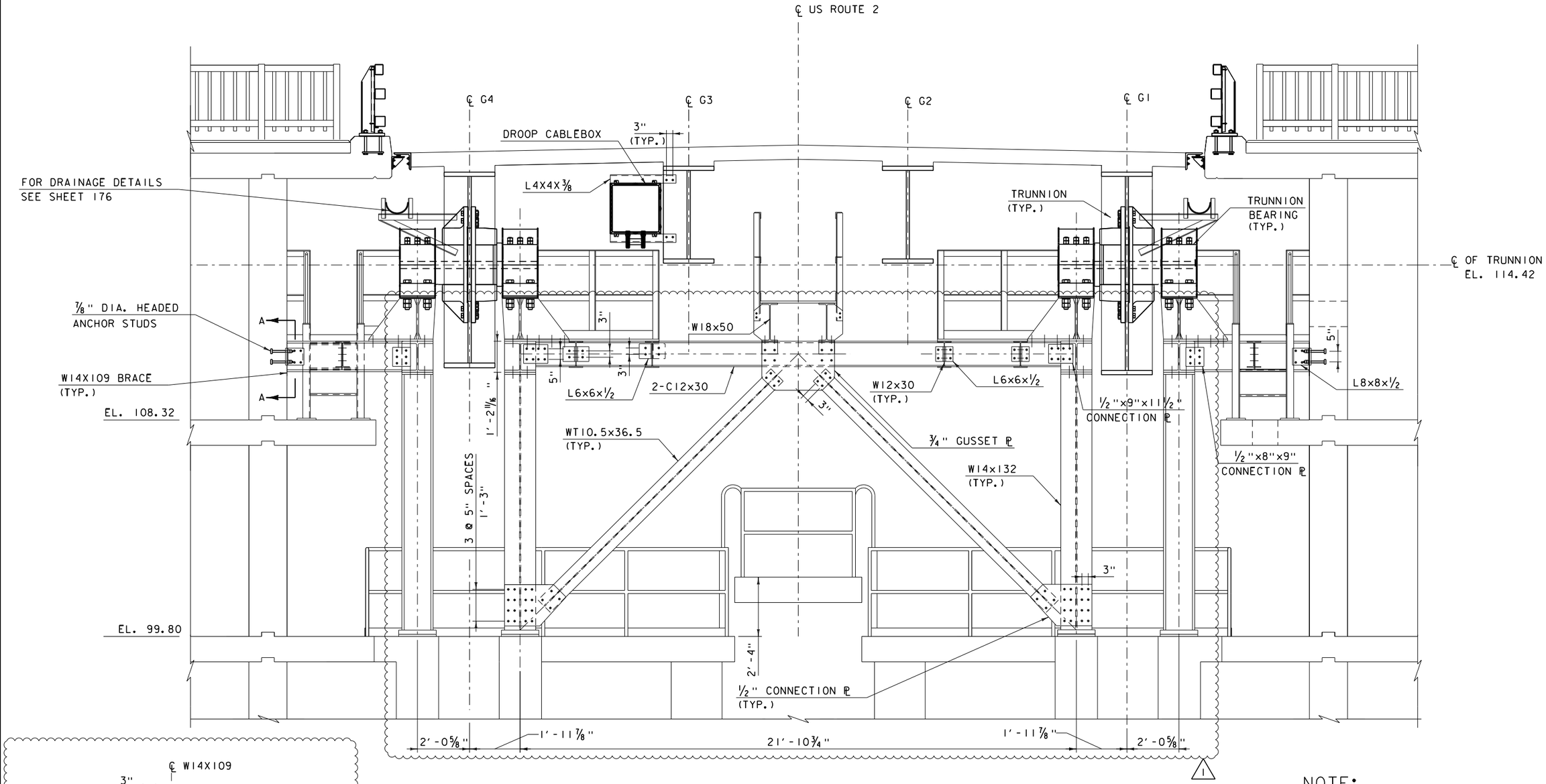
1. DETAIL LOCATIONS SHOWN ON SHEET 104.
2. VIEW A-A LOCATION SHOWN ON SHEET 112.

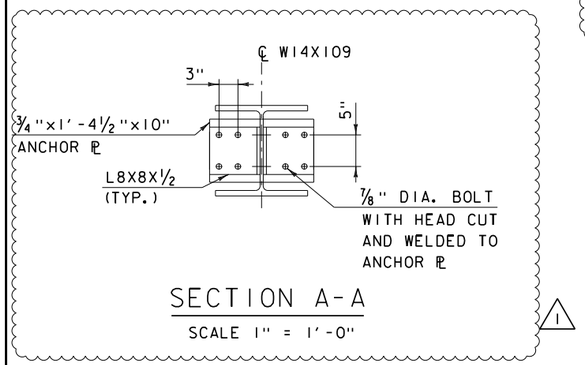
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142LATDETL2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
LATERAL BRACING DETAILS 2

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 106 OF 379





SECTION A-A

SCALE 1" = 1'-0"

PIER 2 - TRUNNION SUPPORT ELEVATION DETAILS (PIER 1 SIMILAR)

SCALE 1/2" = 1'-0"

NOTE:

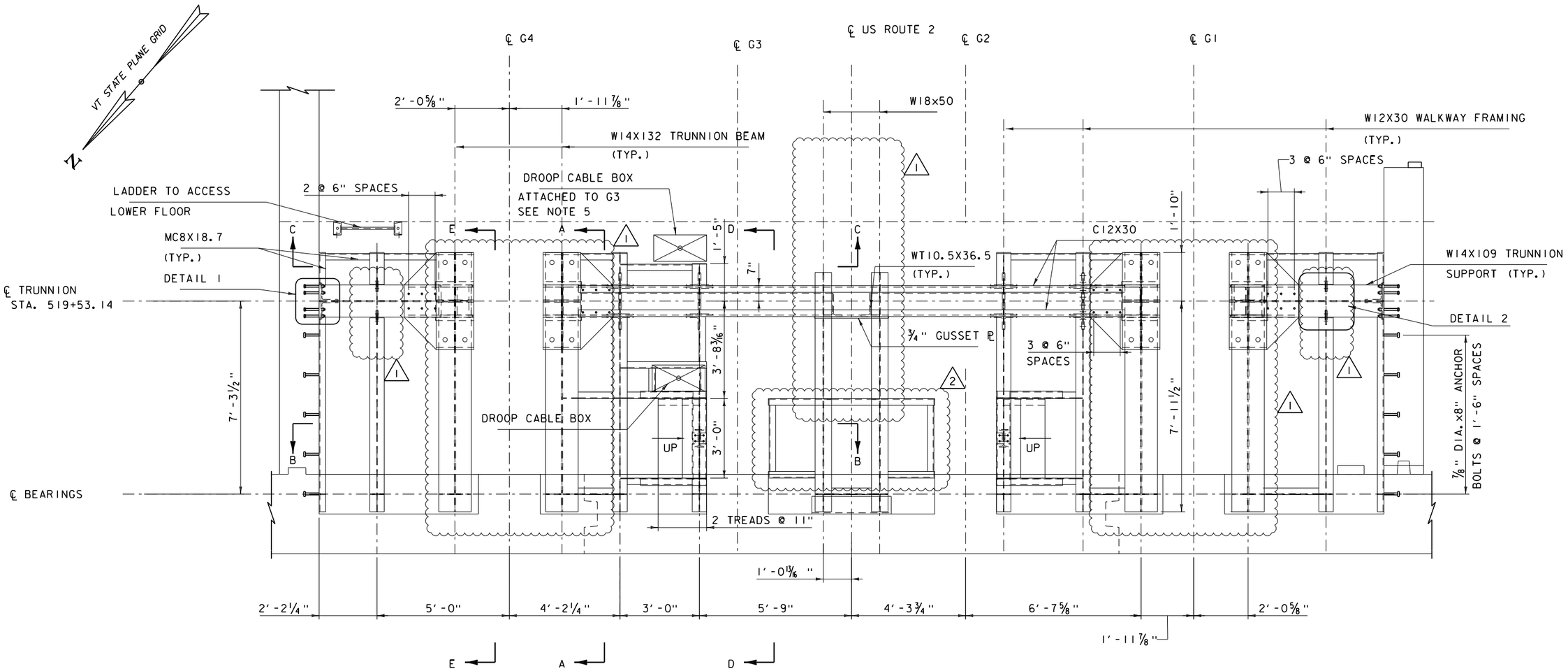
1. MAINTENANCE WALKWAY FRAMING NOT SHOWN FOR CLARITY.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

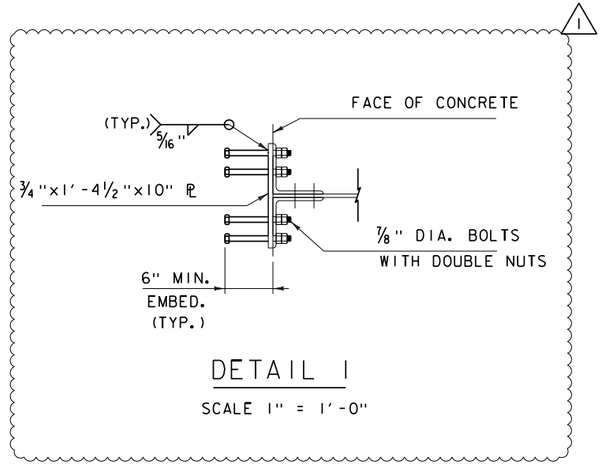
FILE NAME: z12b142tdetail1.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
TRUNNION SUPPORT DETAILS 1

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 107 OF 379



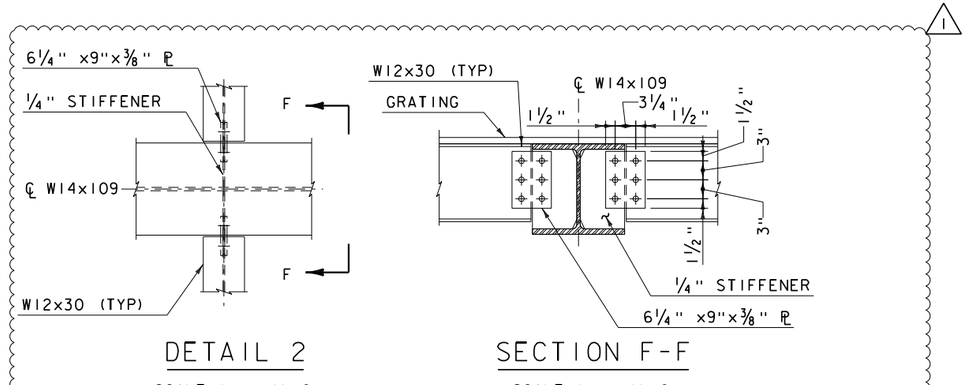
PIER 2 - TRUNNION SUPPORT PLAN
(PIER 1 SIMILAR)

SCALE ½" = 1'-0"



DETAIL 1

SCALE 1" = 1'-0"



DETAIL 2

SCALE 1" = 1'-0"

SECTION F-F

SCALE 1" = 1'-0"

NOTE:

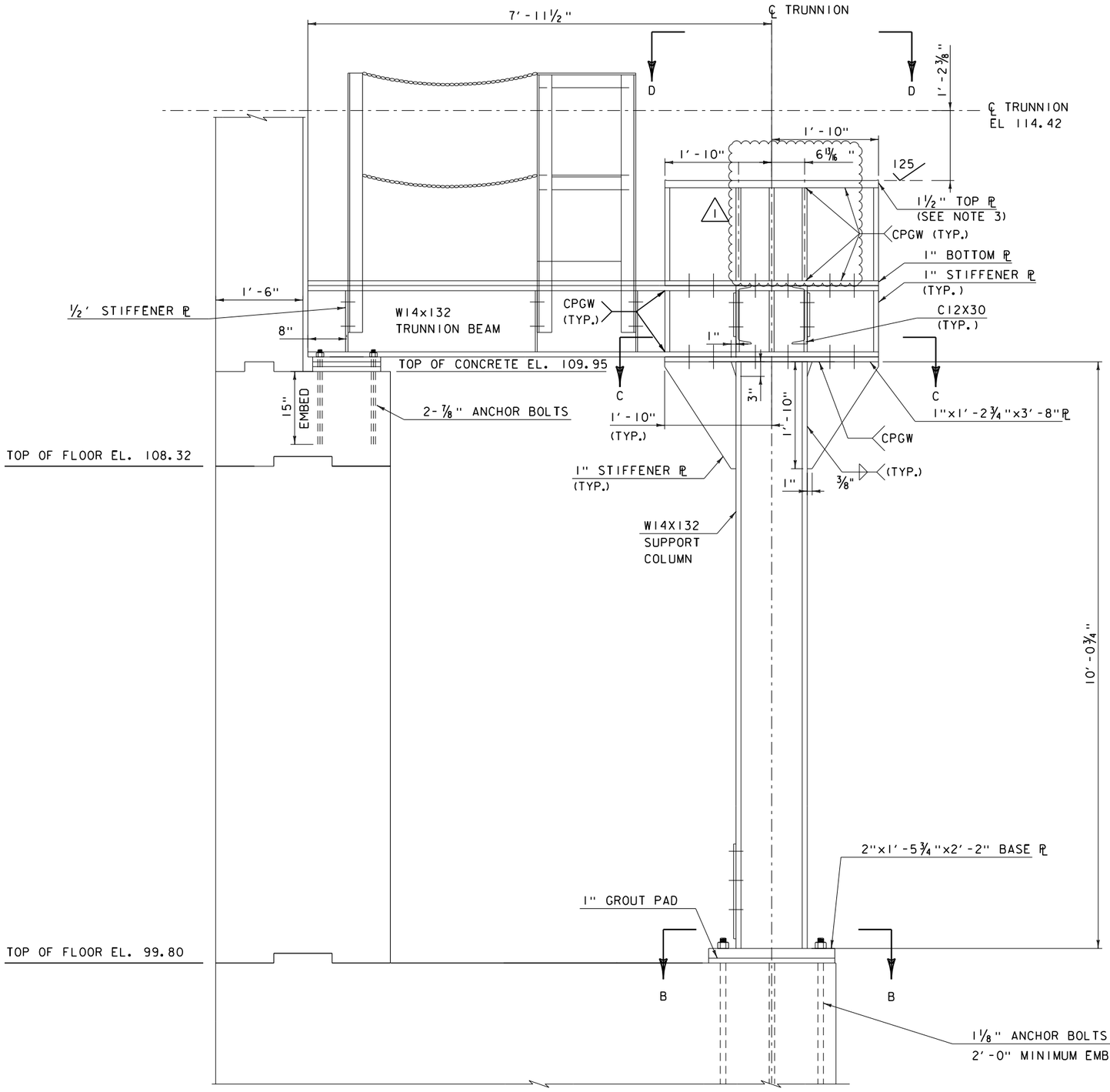
1. FOR SECTION A-A, SEE SHEET - 109.
2. FOR SECTION B-B AND D-D, SEE SHEET - 114.
3. FOR SECTION C-C, SEE SHEET - 113.
4. FOR SECTION E-E, SEE SHEET - 110.
5. COORDINATE WITH SHEET 084 & 107 FOR DROP CABLE BOX ATTACHEMENT TO G6.

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

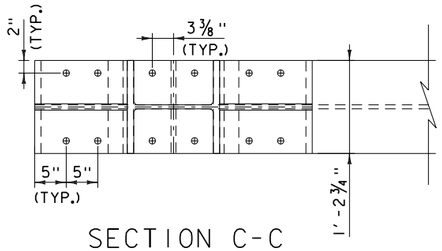
FILE NAME: z12b142tdetai12.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
TRUNNION SUPPORT DETAILS 2

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 108 OF 379



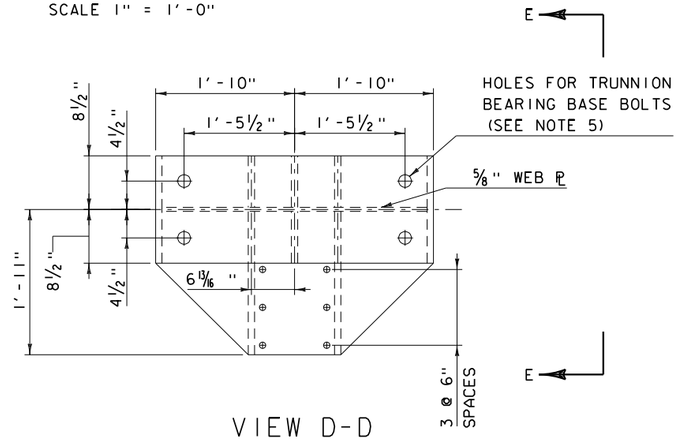
SECTION A-A

SCALE 1" = 1'-0"



SECTION C-C

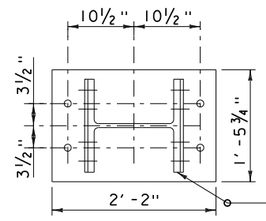
SCALE 1" = 1'-0"



VIEW D-D

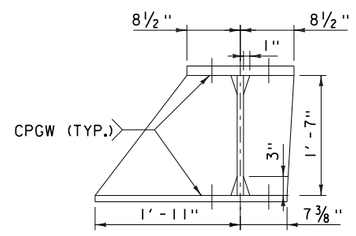
(VIEW H-H OPPOSITE HAND)

SCALE 1" = 1'-0"



SECTION B-B

SCALE 1" = 1'-0"



VIEW E-E

SCALE 1" = 1'-0"

NOTE:

1. FOR LOCATION OF SECTION A-A, SEE SHEET - 108.
2. FOR LOCATION OF VIEW H-H, SEE SHEET - 110.
3. PLATE THICKNESS AFTER MACHINING.
4. THE STEEL BOLSTERS ON TOP OF THE W14X132 SHALL BE STRESS RELIEVED AFTER WELDING AND BEFORE MACHINING.
5. COORDINATE WITH TRUNNION ASSEMBLY SHEET - 223 & TRUNNION DETAILS SHEET - 224.

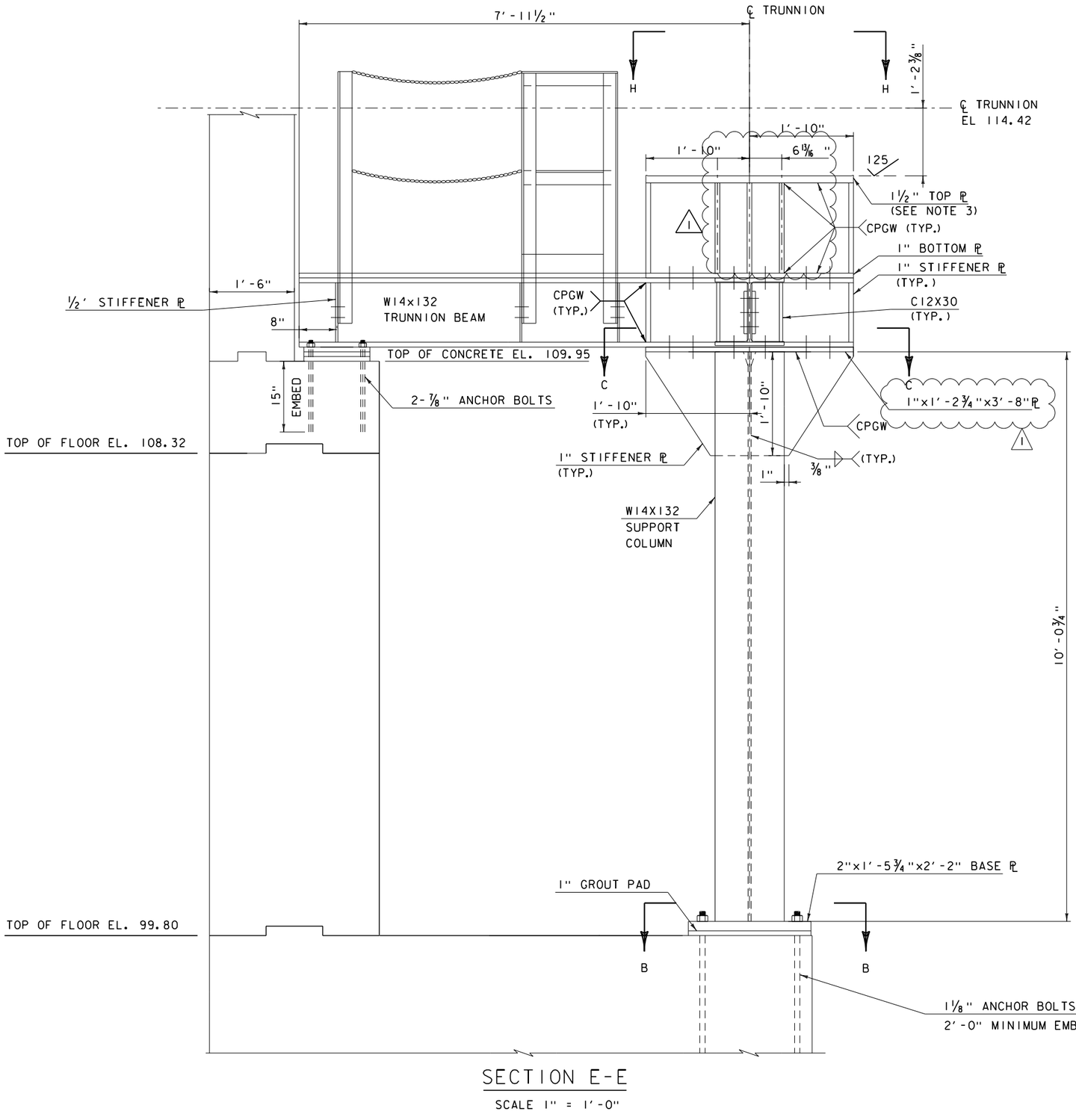
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

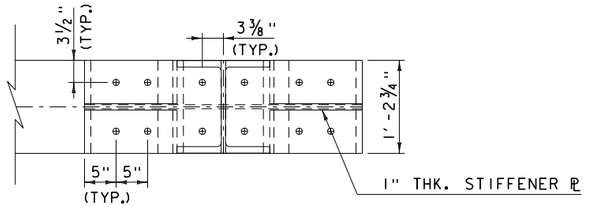
FILE NAME: z12b142tdetail3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
TRUNNION SUPPORT DETAILS 3

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 109 OF 379



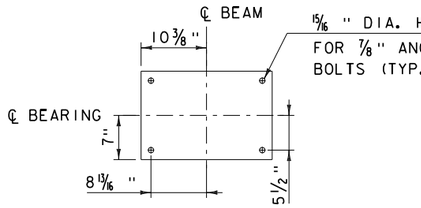
SECTION E-E

SCALE 1" = 1'-0"



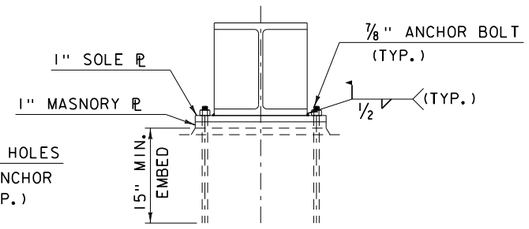
SECTION C-C

SCALE 1" = 1'-0"



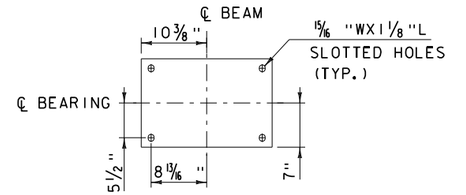
SOLE PLATE DETAIL

SCALE 1" = 1'-0"



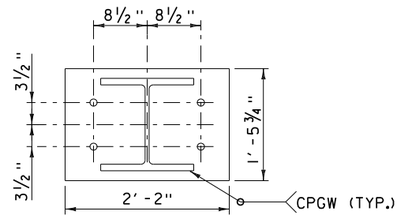
W14X132 BEARING ELEVATION

SCALE 1" = 1'-0"



MASONRY PLATE DETAIL

SCALE 1" = 1'-0"



SECTION B-B

SCALE 1" = 1'-0"

NOTE:

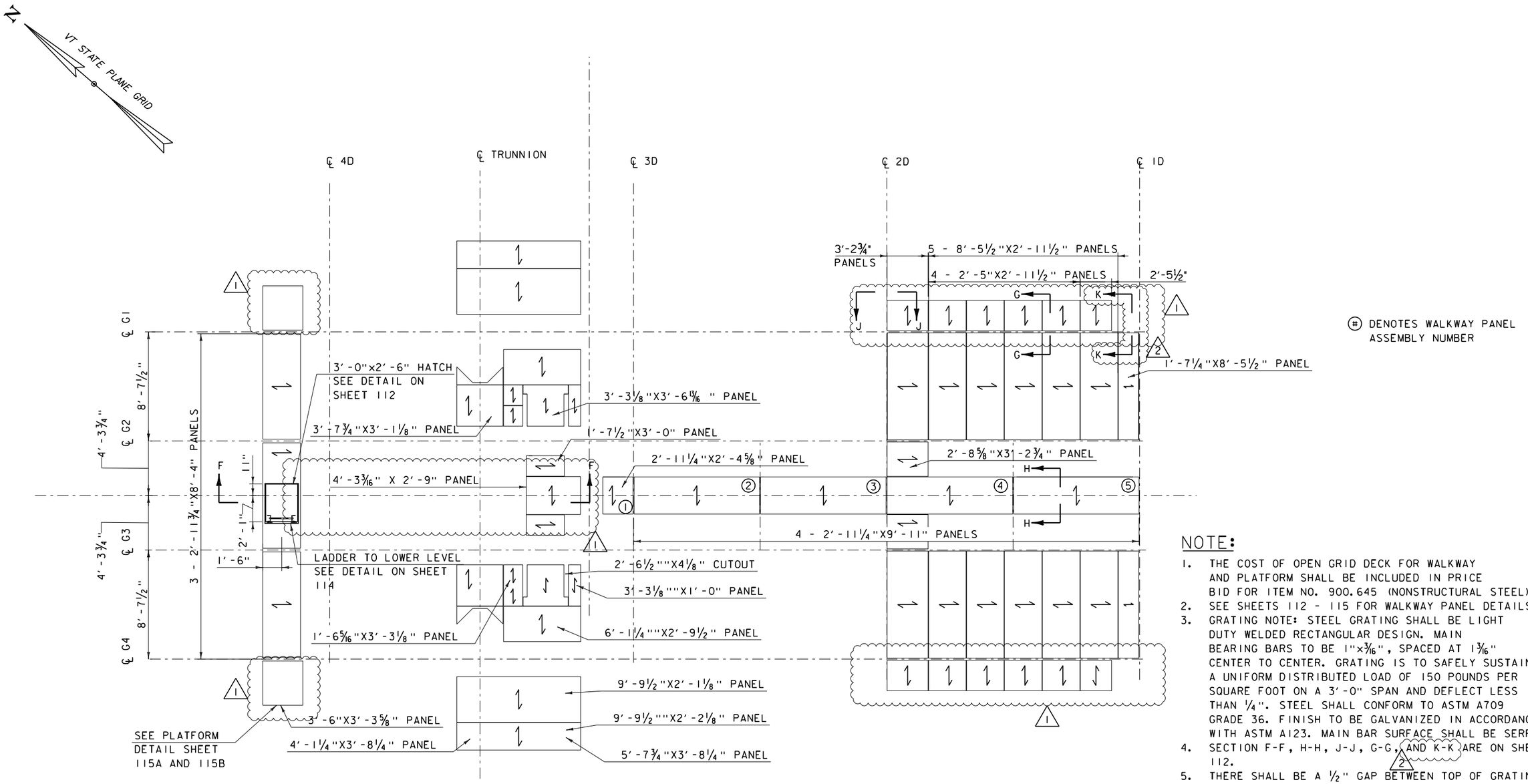
1. FOR LOCATION OF SECTION E-E, SEE SHEET - 108.
2. SEE SHEET - 109 FOR VIEW - H-H.
3. PLATE THICKNESS AFTER MACHINING.
4. THE STEEL BOLSTERS ON TOP OF THE W14X132 SHALL BE STRESS RELIEVED AFTER WELDING AND BEFORE MACHINING.
5. COORDINATE WITH TRUNNION ASSEMBLY SHEET - 223 & TRUNNION DETAILS SHEET - 224.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42tdetail3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
TRUNNION SUPPORT DETAILS 4

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 110 OF 379



NOTE:

1. THE COST OF OPEN GRID DECK FOR WALKWAY AND PLATFORM SHALL BE INCLUDED IN PRICE BID FOR ITEM NO. 900.645 (NONSTRUCTURAL STEEL).
2. SEE SHEETS 112 - 115 FOR WALKWAY PANEL DETAILS.
3. GRATING NOTE: STEEL GRATING SHALL BE LIGHT DUTY WELDED RECTANGULAR DESIGN. MAIN BEARING BARS TO BE 1"x3⁄16", SPACED AT 1 3⁄16" CENTER TO CENTER. GRATING IS TO SAFELY SUSTAIN A UNIFORM DISTRIBUTED LOAD OF 150 POUNDS PER SQUARE FOOT ON A 3'-0" SPAN AND DEFLECT LESS THAN ¼". STEEL SHALL CONFORM TO ASTM A709 GRADE 36. FINISH TO BE GALVANIZED IN ACCORDANCE WITH ASTM A123. MAIN BAR SURFACE SHALL BE SERRATED.
4. SECTION F-F, H-H, J-J, G-G, AND K-K ARE ON SHEET 112.
5. THERE SHALL BE A ½" GAP BETWEEN TOP OF GRATING PANEL TO BOTTOM OF RAILING KICK PLATE.

MAINTENANCE WALKWAY GRATING PANELS
(WEST SIDE SHOWN)

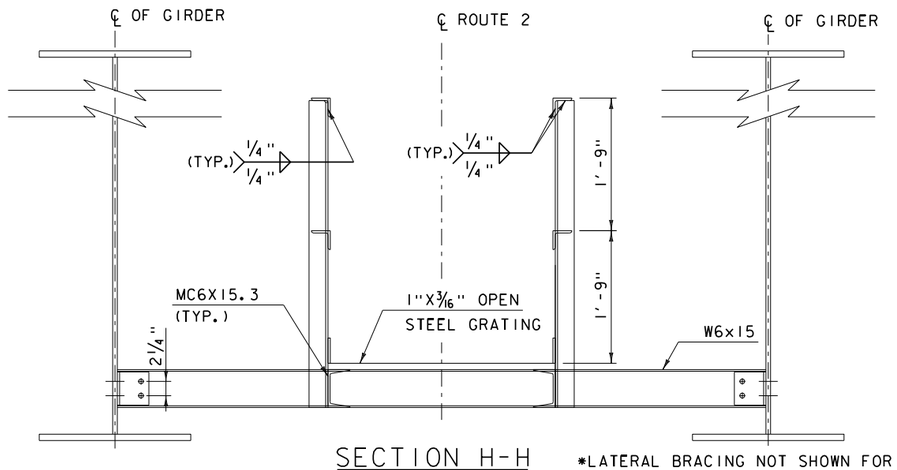
SCALE ¼" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

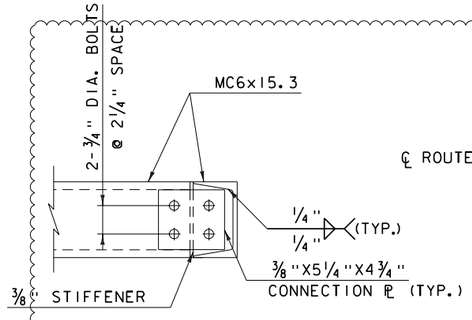
FILE NAME: z12b142walkway01.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
MAINTENENCE WALKWAY PLAN

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 111 OF 379

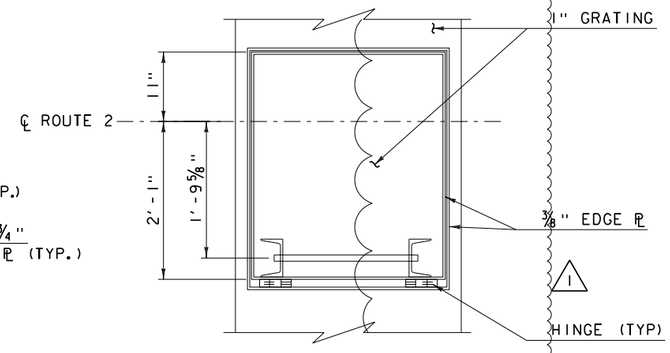


SECTION H-H
SCALE 1" = 1'-0"

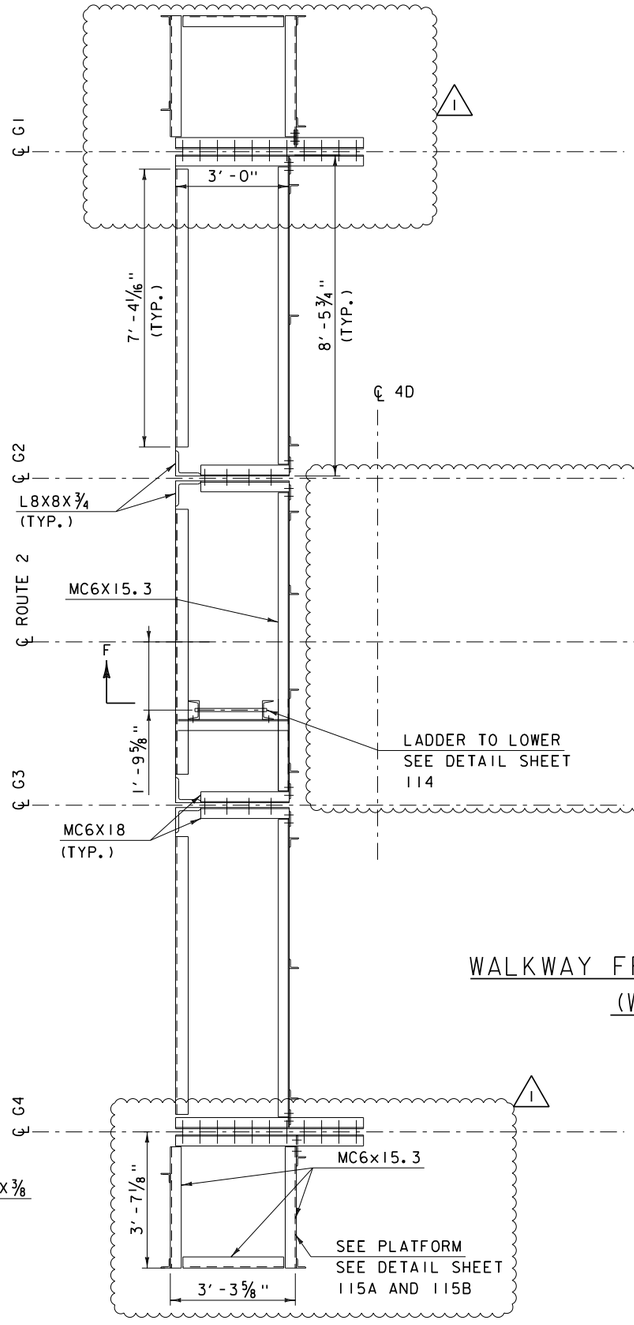
*LATERAL BRACING NOT SHOWN FOR CLARITY

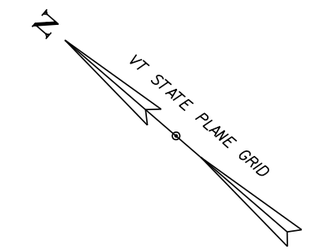


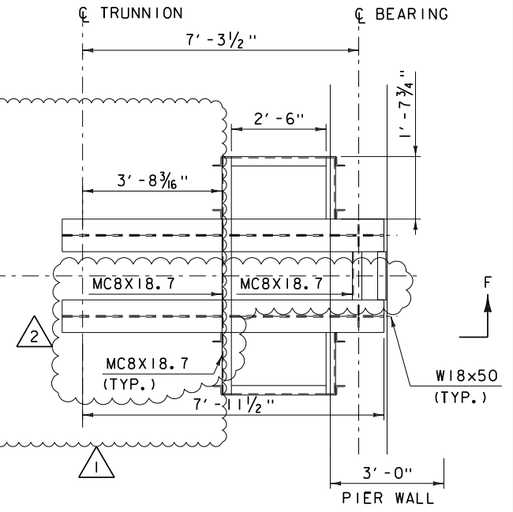
SECTION J-J
SCALE 2" = 1'-0"



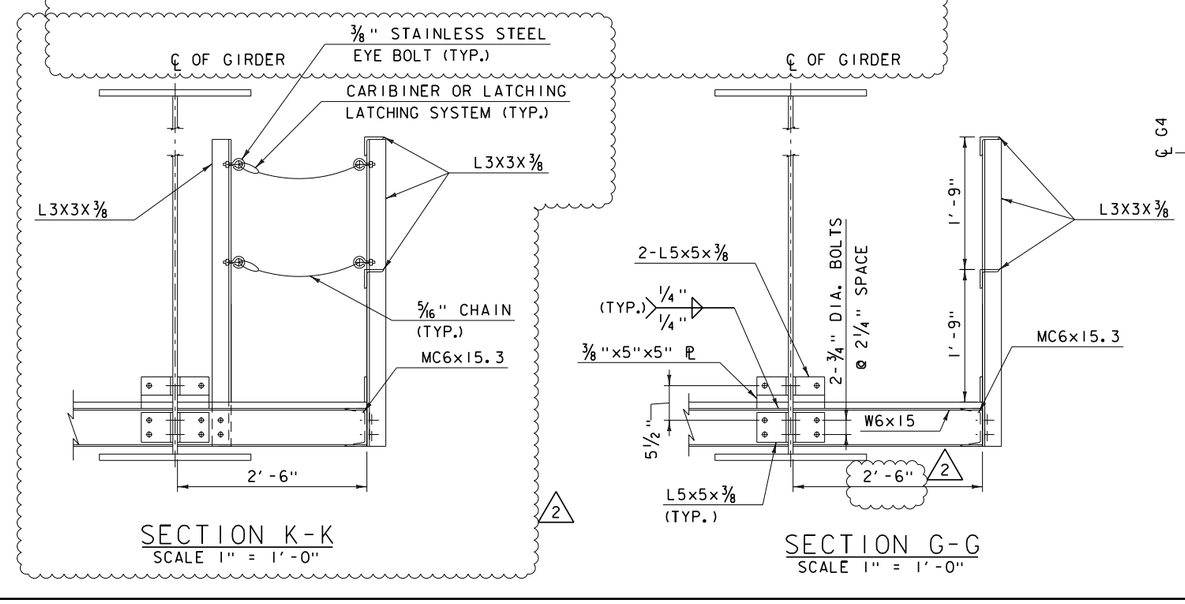
HATCH DETAIL
SCALE 1" = 1'-0"







WALKWAY FRAMING AT COUNTERWEIGHT
(WEST SIDE SHOWN)
SCALE 1/2" = 1'-0"



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

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

NOTE:

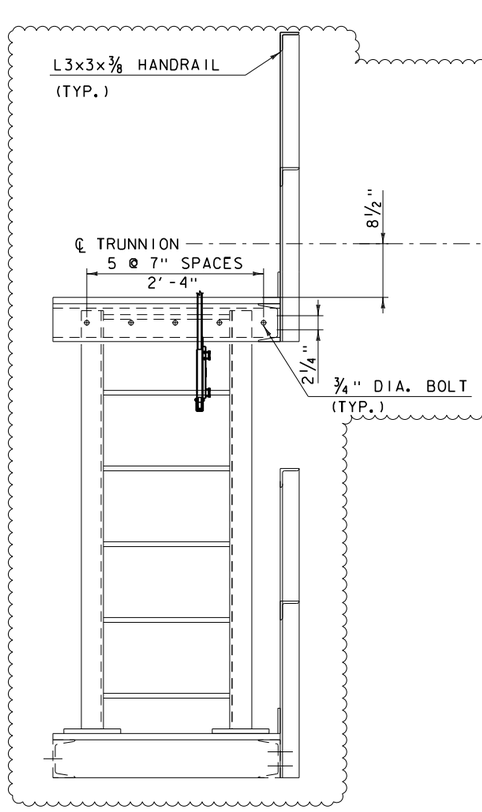
1. FOR LOCATION OF SECTION H-H, G-G & J-J SEE SHEET 104.
2. SEE SHEET - 113, FOR SECTION F-F.

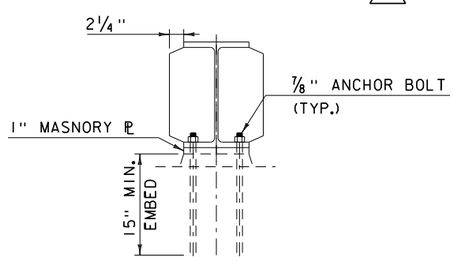
REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142walkwayd2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
MAINTENANCE WALKWAY DETAILS 1

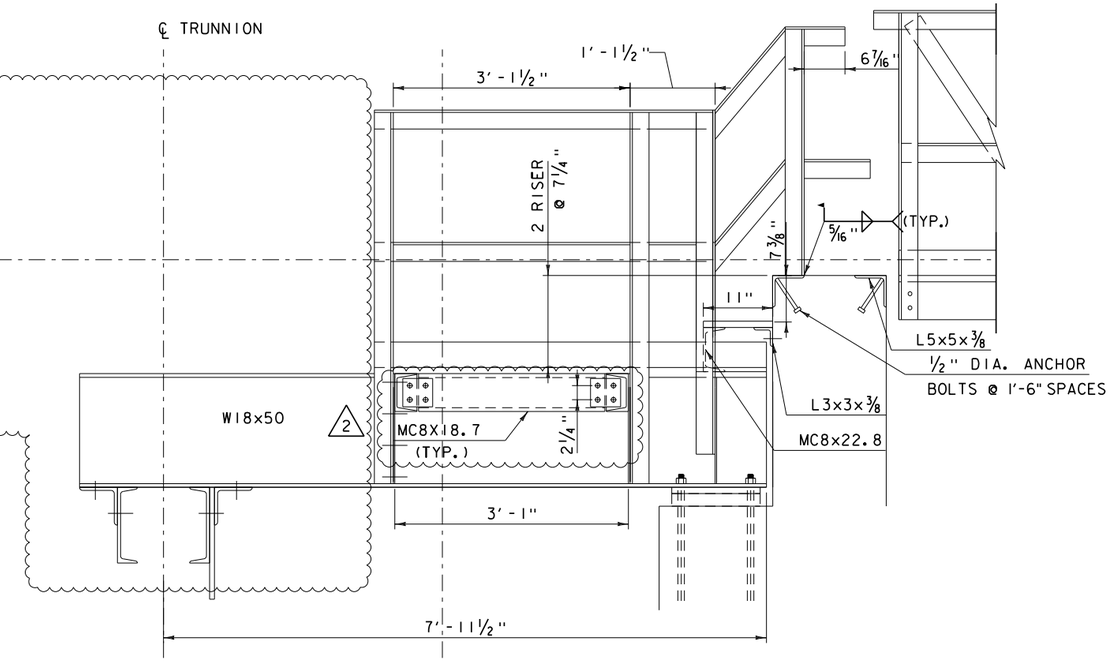
PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: P. DAVIS
SHEET 112 OF 379





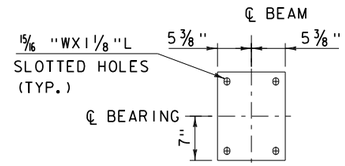
W18X50 BEARING DETAIL

SCALE 1" = 1'-0"



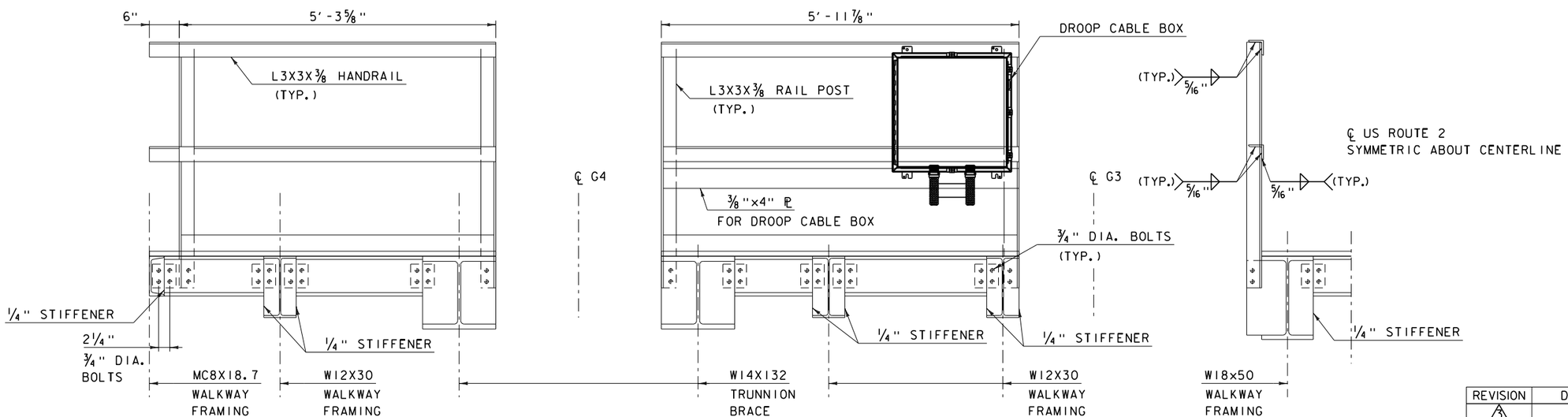
SECTION F-F

SCALE 1" = 1'-0"



W18X50 MASONRY PLATE DETAILS

SCALE 1" = 1'-0"



SECTION C-C

SCALE 1" = 1'-0"

NOTE:

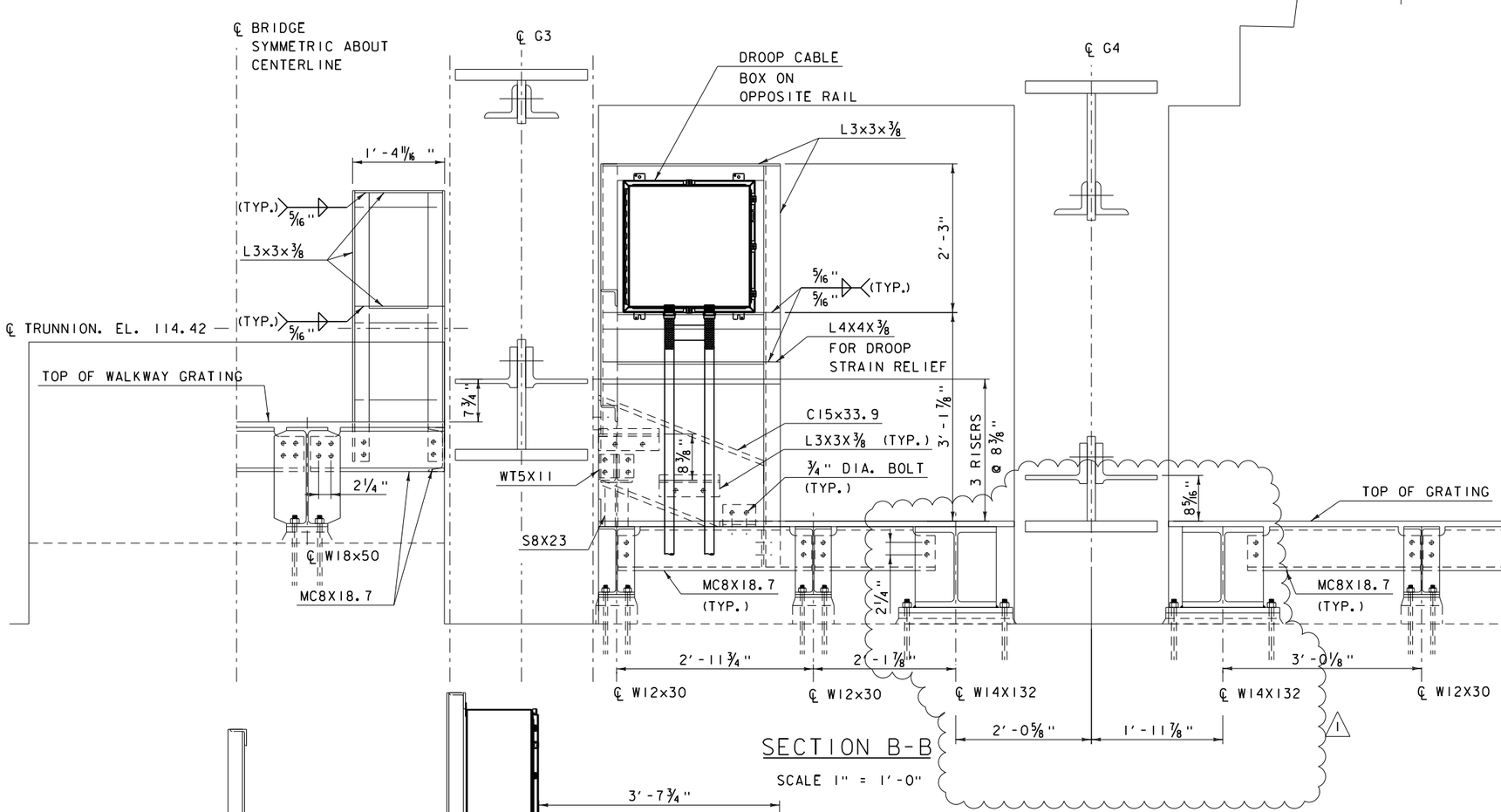
1. FOR LOCATION OF SECTION F-F, SEE SHEET - 112.
2. FOR LOCATION OF SECTION C-C, SEE SHEET - 108.

REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

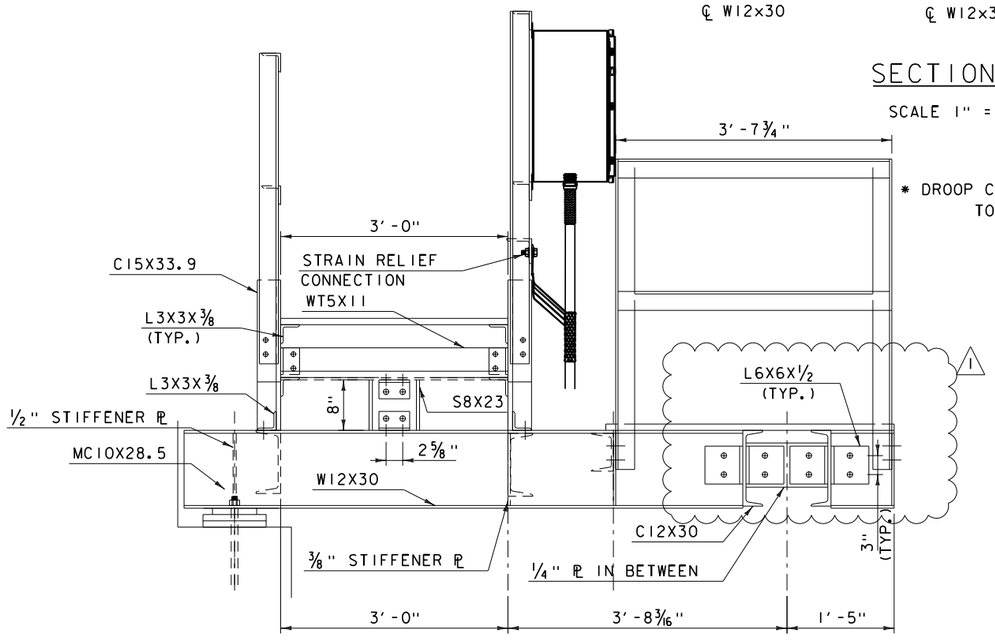
FILE NAME: z12b142walkwayd3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
MAINTENANCE WALKWAY DETAILS 2

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: P. DAVIS
SHEET 113 OF 379



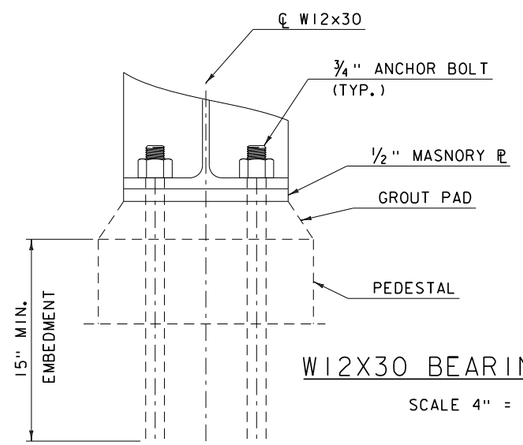
SECTION B-B

SCALE 1" = 1'-0"



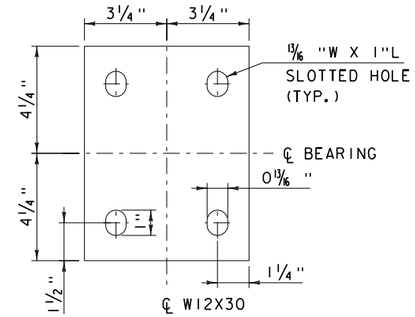
SECTION D-D

SCALE 1" = 1'-0"



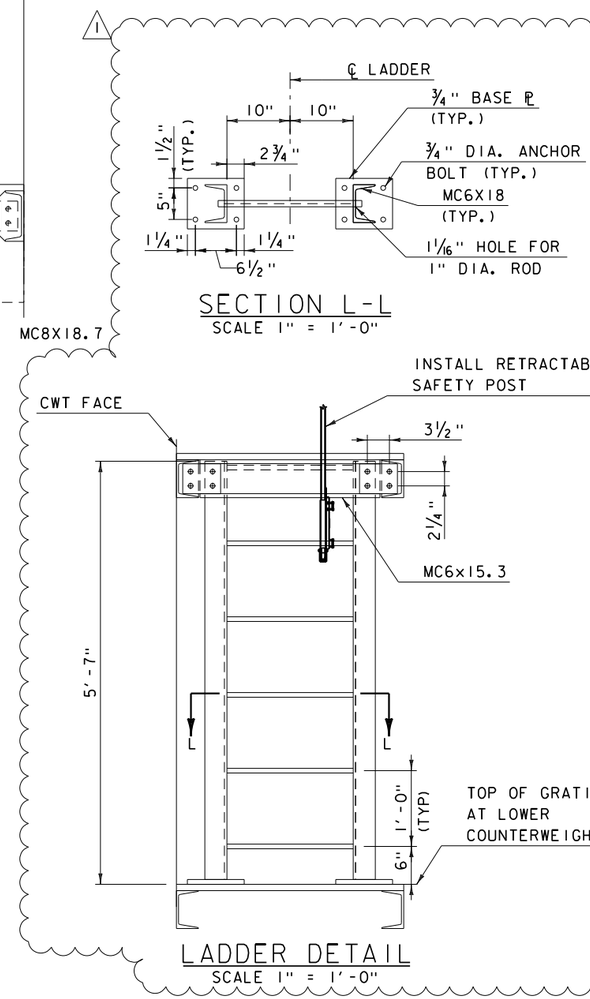
W12X30 BEARING DETAIL

SCALE 4" = 1'-0"



MASONRY PLATE DETAIL

SCALE 4" = 1'-0"



SECTION L-L

SCALE 1" = 1'-0"

LADDER DETAIL

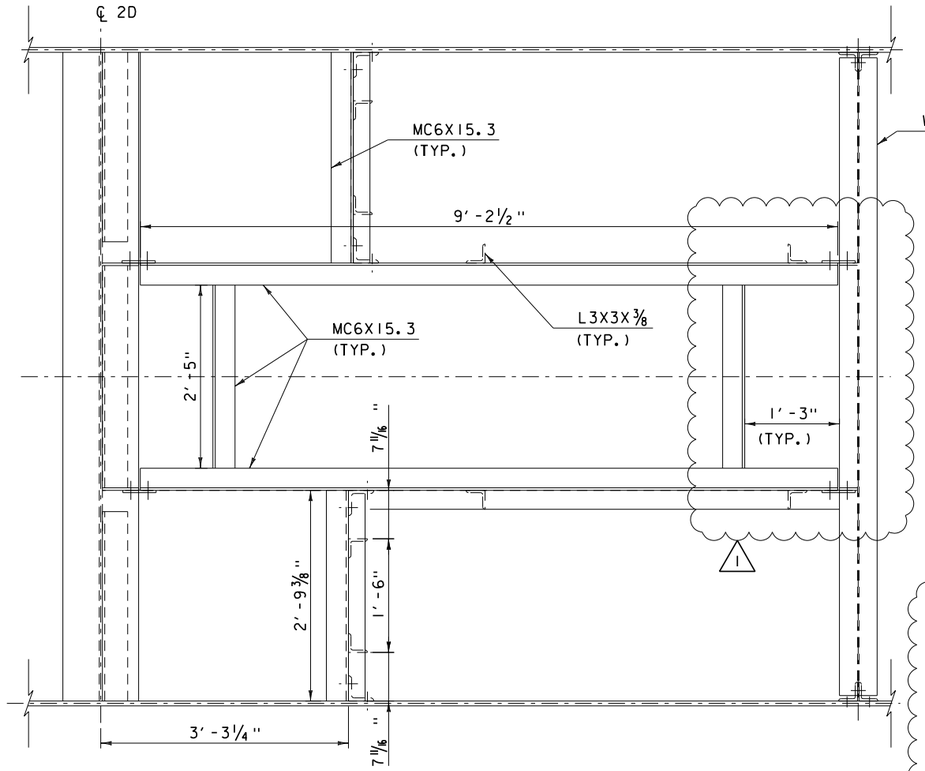
SCALE 1" = 1'-0"

NOTE:

1. FOR LOCATION OF SECTION B-B AND D-D, SEE SHEET - 108.

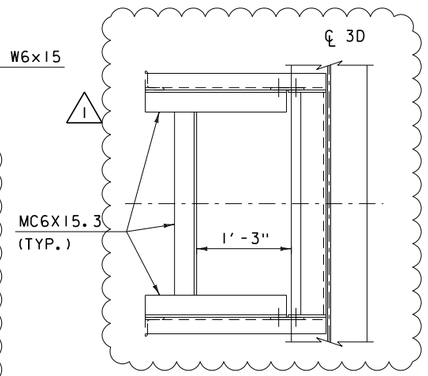
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142walkwayd4.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: K. PATEL
DESIGNED BY: H. PROTIN	CHECKED BY: T. FRENCH
MAINTENANCE WALKWAY DETAILS 3	SHEET 114 OF 379



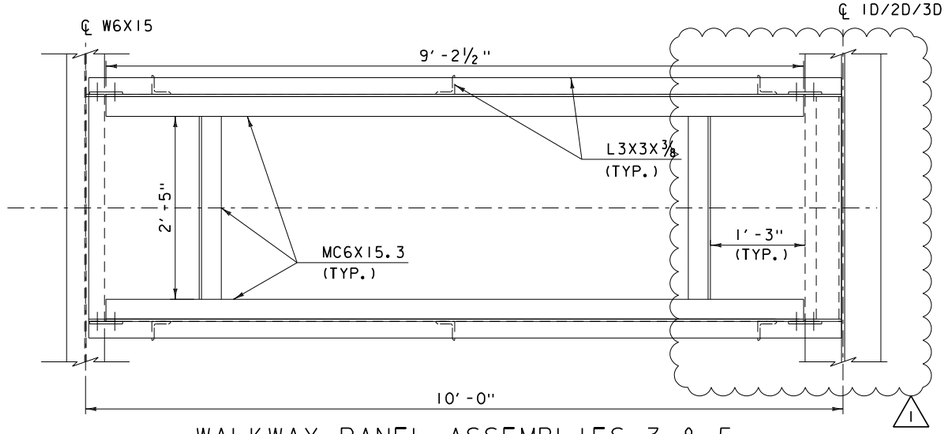
WALKWAY PANEL ASSEMBLY 4 - PLAN

SCALE 1" = 1′-0"



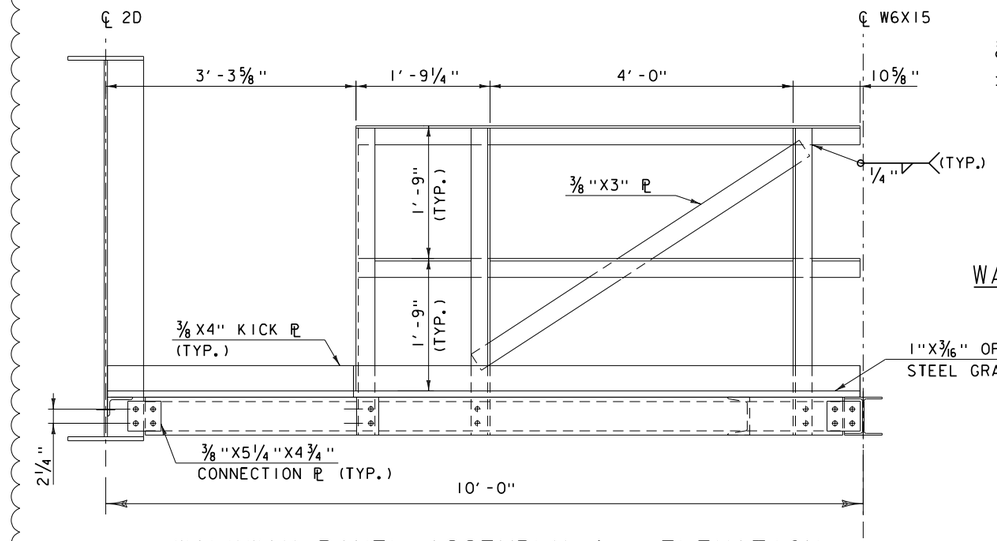
WALKWAY PANEL ASSEMBLY 1 - PLAN

SCALE 1" = 1′-0"



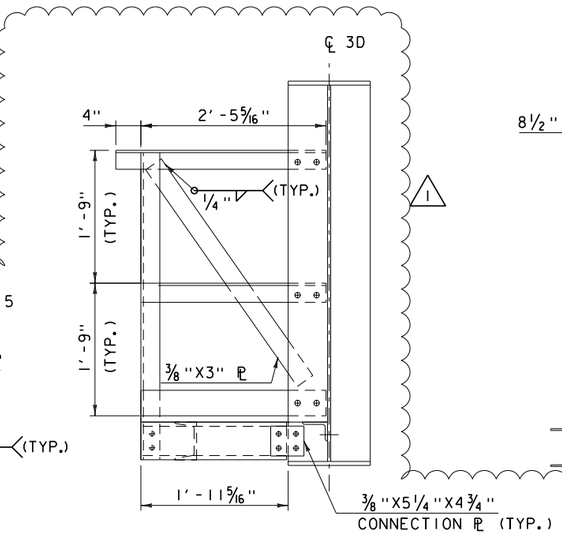
WALKWAY PANEL ASSEMBLIES 3 & 5 (WALKWAY PANEL 2 OPPOSITE HAND) PLAN

SCALE 1" = 1′-0"



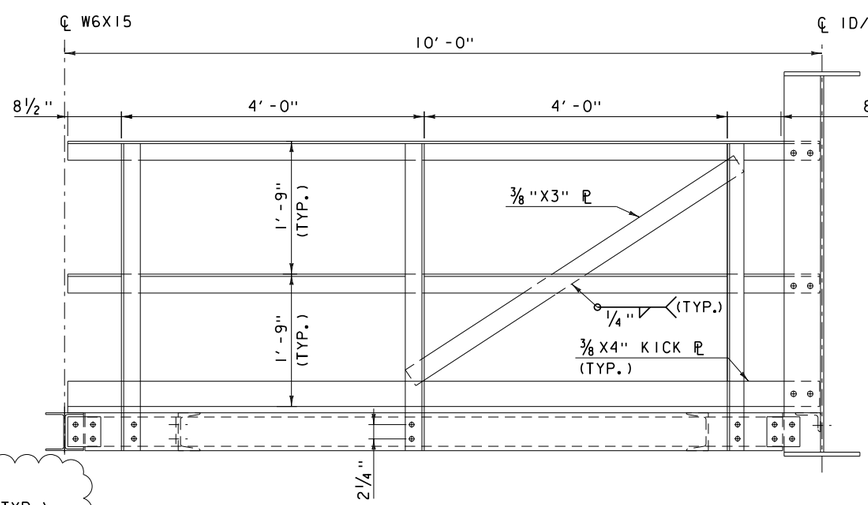
WALKWAY PANEL ASSEMBLY 4 - ELEVATION

SCALE 1" = 1′-0"



WALKWAY PANEL ASSEMBLY 1 - ELEVATION

SCALE 1" = 1′-0"



WALKWAY PANEL ASSEMBLIES 3 & 5 (WALKWAY PANEL 2 OPPOSIDE HAND) ELEVATION

SCALE 1" = 1′-0"

NOTE:

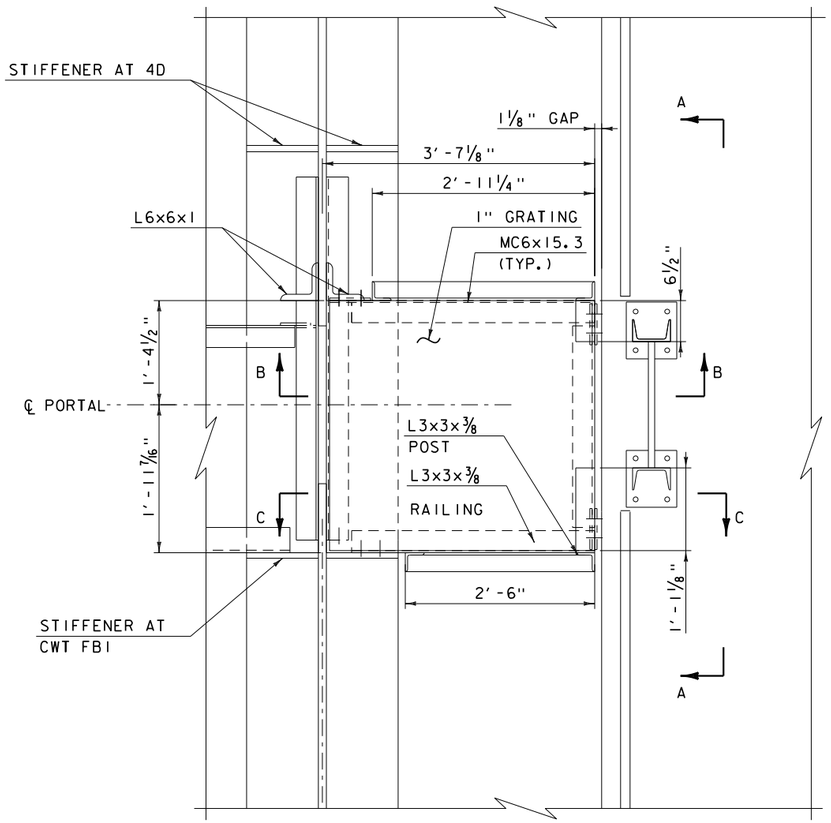
1. ALL BOLTS SHALL BE ¾" DIA. ASTM A325 H.S. BOLTS UNLESS OTHERWISE NOTED.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

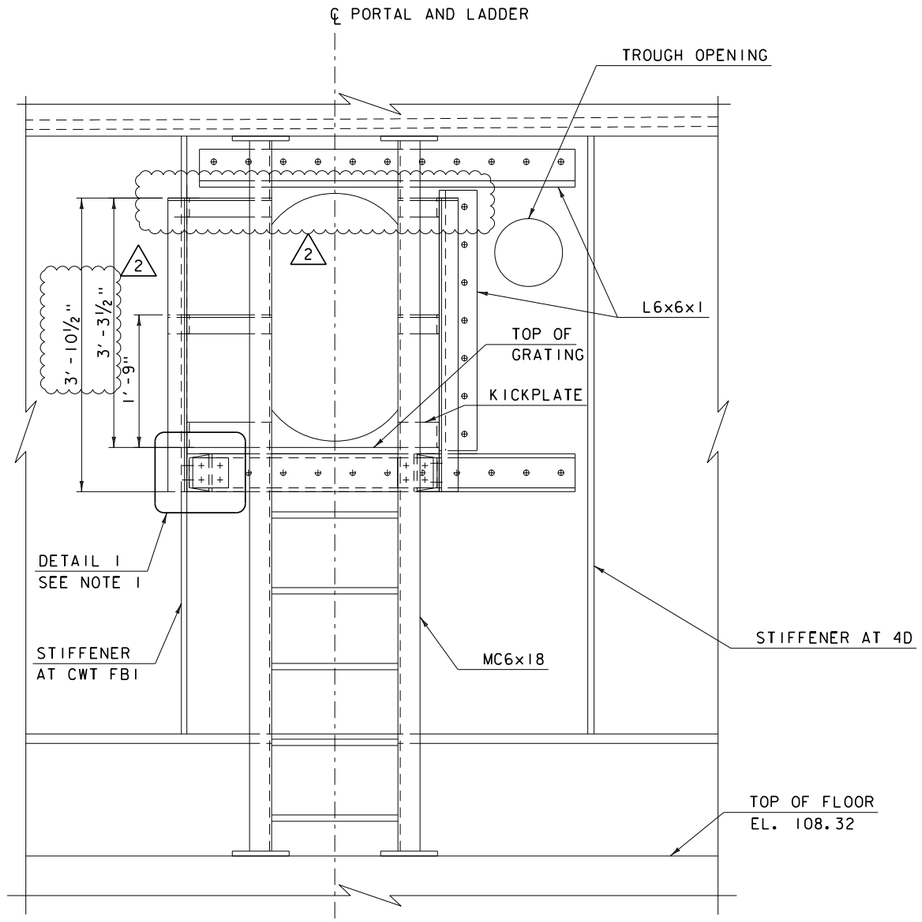
FILE NAME: z12b142walkwayd5.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
MAINTENANCE WALKWAY DETAILS 4

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: T. FRENCH
SHEET 115 OF 379



PLATFORM PLAN

(AT G5 - G8 OPPOSITE HAND, SMILAR ON PIER 1)
SCALE: 1" = 1'-0"



VIEW A-A

SCALE: 1" = 1'-0"

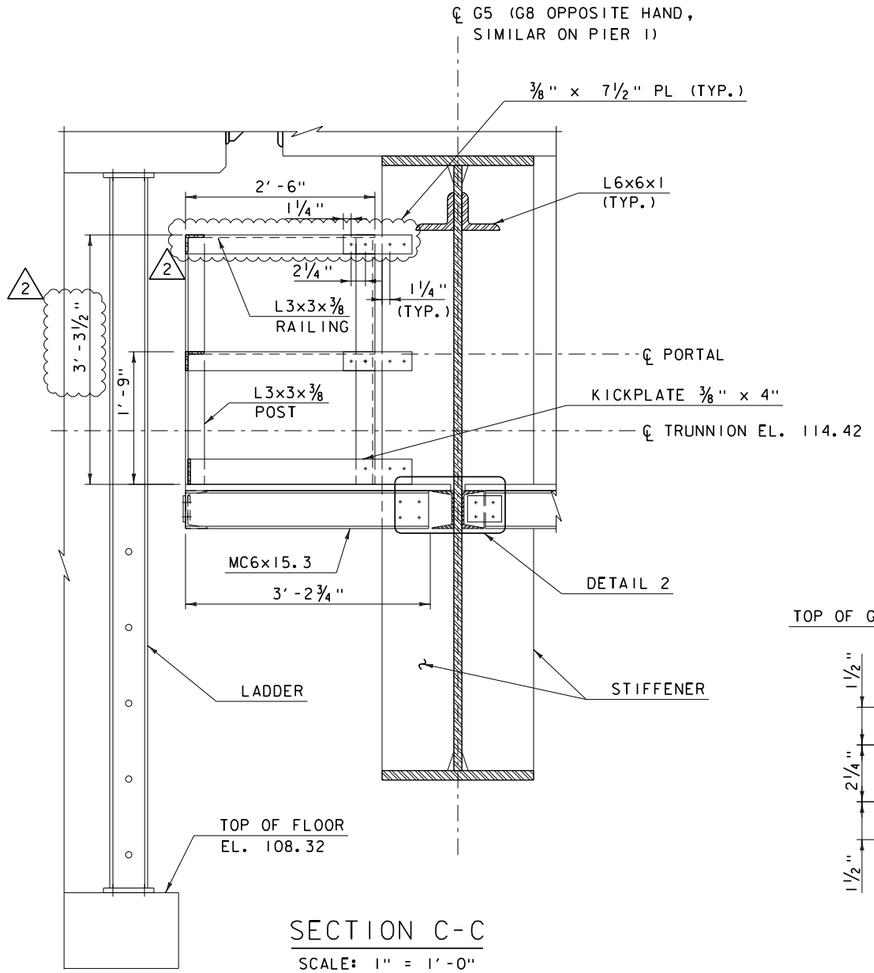
NOTE:

1. SEE SHEET 115B FOR SECTION B-B, SECTION C-C AND DETAIL 1.
2. BOLTS ON WALKWAY SHALL BE ASTM A325 ¾" DIA. H.S. BOLTS.

REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

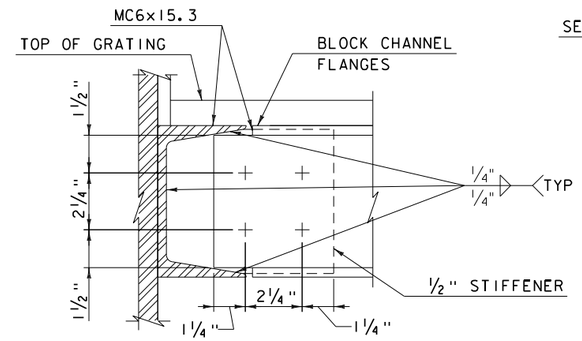
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142WALKWAY6.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: K. PATEL



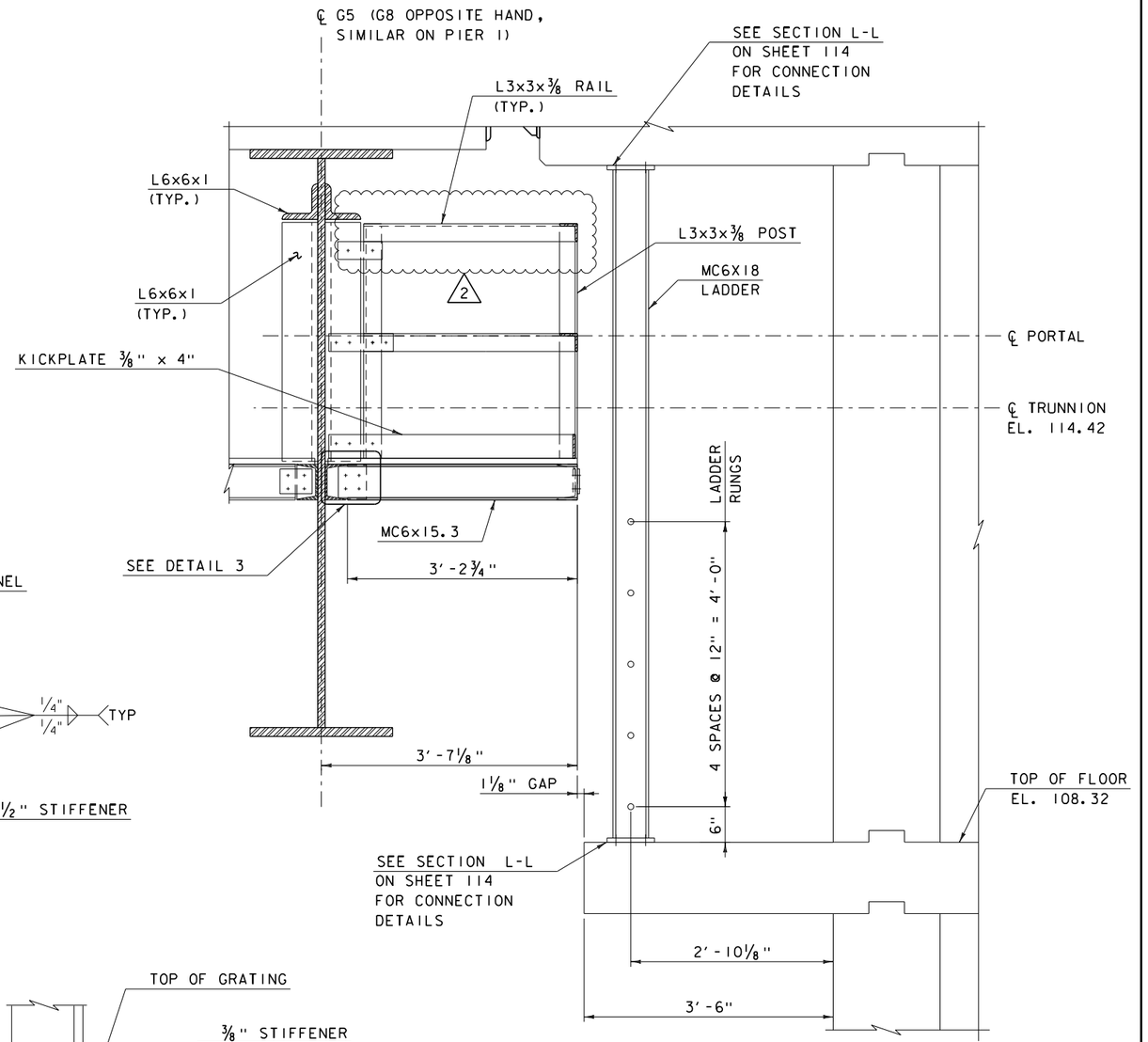
SECTION C-C

SCALE: 1" = 1'-0"



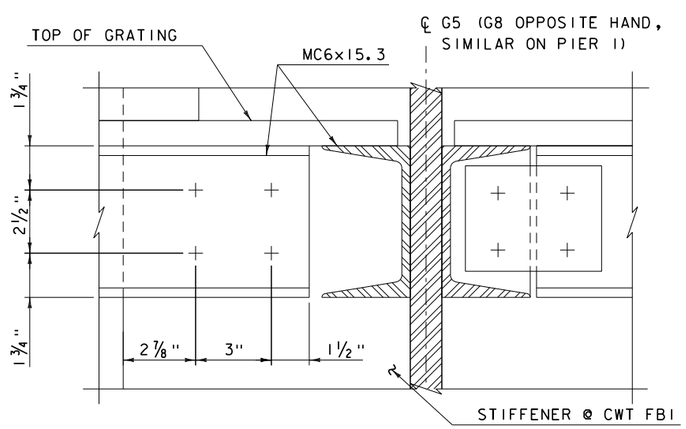
DETAIL 3

SCALE: 4" = 1'-0"



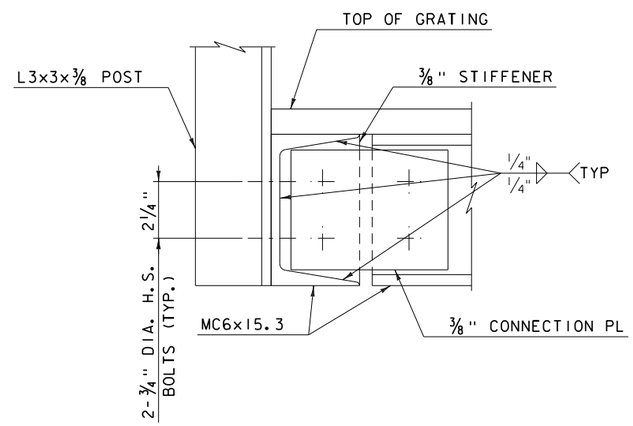
SECTION B-B

SCALE: 1" = 1'-0"



DETAIL 2

SCALE: 4" = 1'-0"



DETAIL 1

SCALE: 4" = 1'-0"

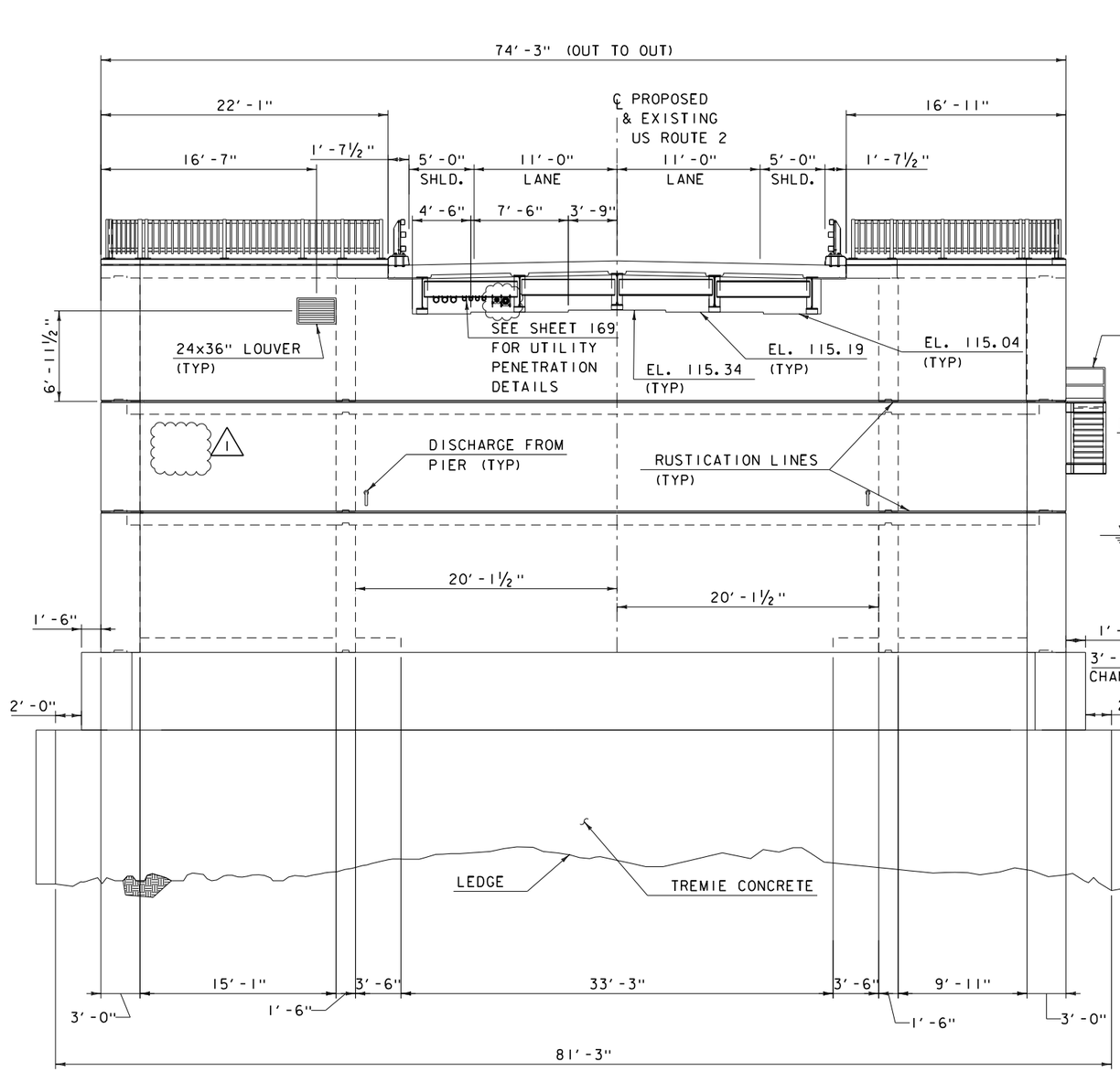
NOTE:

1. FOR SECTION B-B CUT SEE SHEET 115A.
2. BOLTS ON WALKWAY SHALL BE ASTM A325 3/4" DIA. H.S. BOLTS.

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

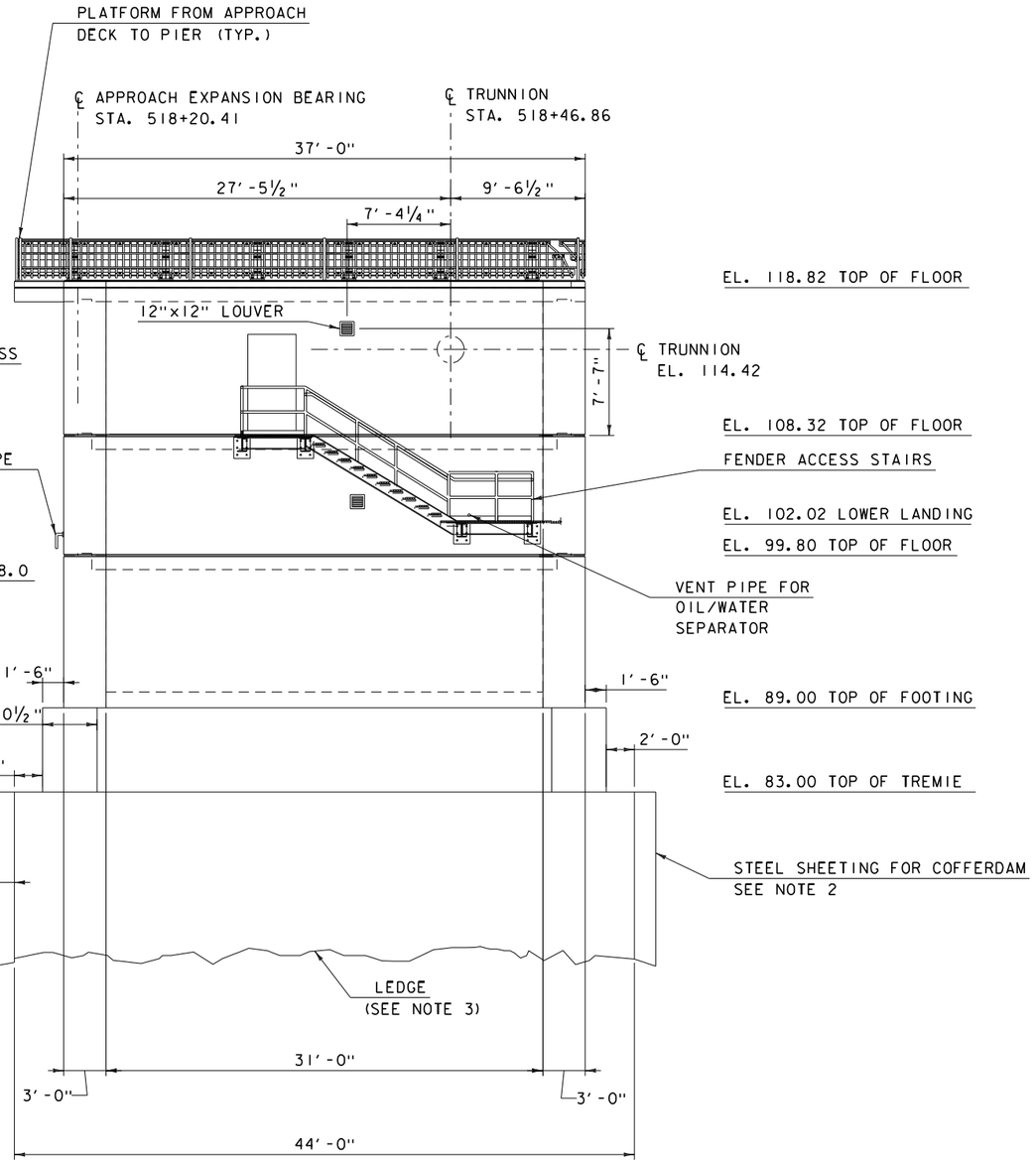
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142WALKWAY7.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
MAINTENANCE WALKWAY DETAILS 6
PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: K. PATEL
SHEET 115B OF 379



PIER 1 - WEST ELEVATION

SCALE 3/16" = 1'-0"



PIER 1 - SOUTH ELEVATION

SCALE 3/16" = 1'-0"

NOTE

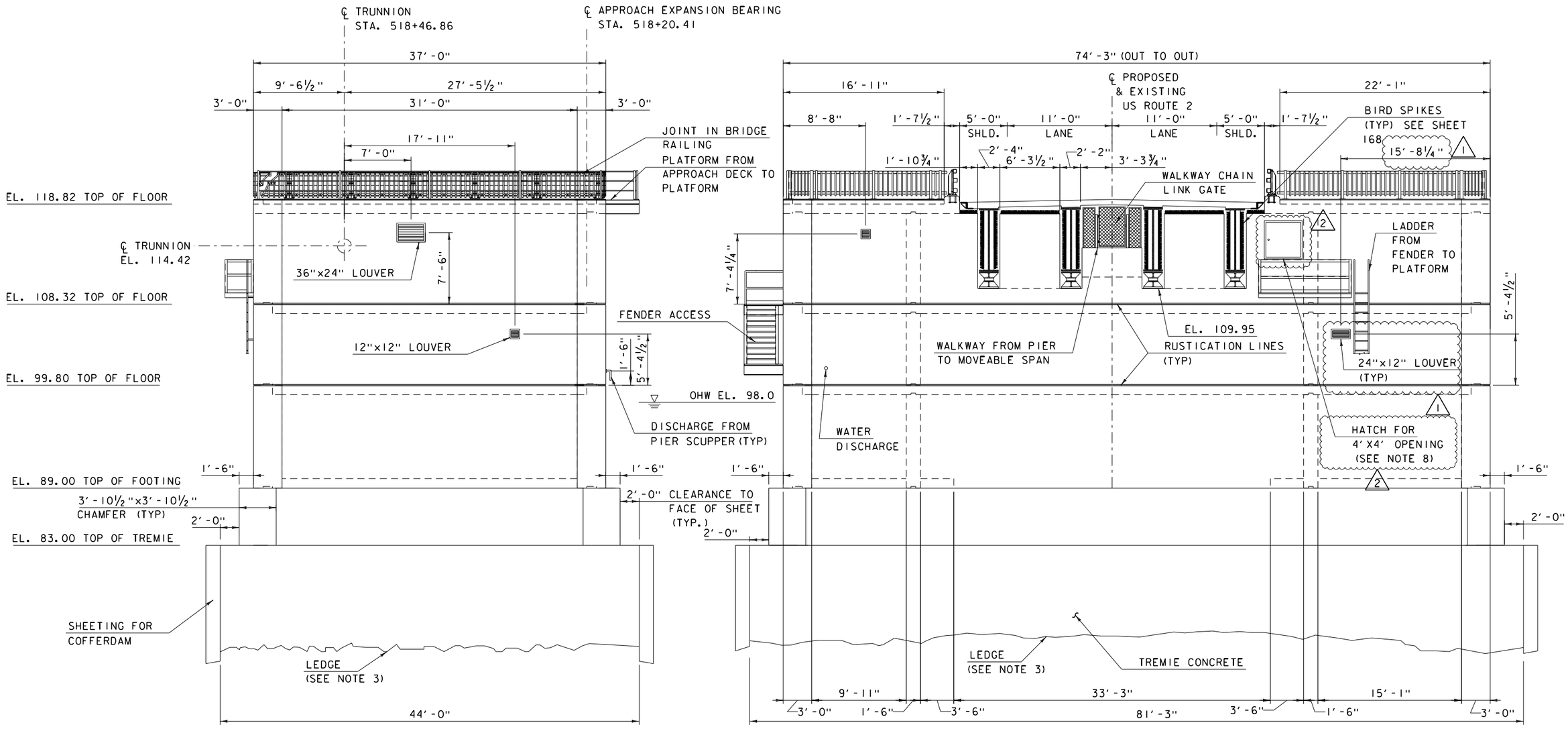
1. FENDER SYSTEM NOT SHOWN FOR CLARITY.
2. STEEL SHEETING FOR COFFERDAM SHALL BE REMOVED OR CUT OFF AT TOP OF TREMIE AT CONTRACTOR'S CONVENIENCE.
3. TOP OF LEDGE/BOTTOM OF TREMIE LINE AS SHOWN IS ASSUMED TO CORRESPOND WITH BOTTOM OF WEATHERED BEDROCK SHOWN IN BORING LOGS.
4. CONCRETE IN PIER ABOVE EL 83.00 SHALL BE INCLUDED IN PRICE BID FOR HIGH PERFORM. CLASS B CONC. ITEM 501.34.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142piere13.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER NO. 1 ELEVATIONS - 1

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 116 OF 379



PIER 1 - NORTH ELEVATION

SCALE 3/16" = 1'-0"

PIER 1 - EAST ELEVATION

SCALE 3/16" = 1'-0"

NOTE

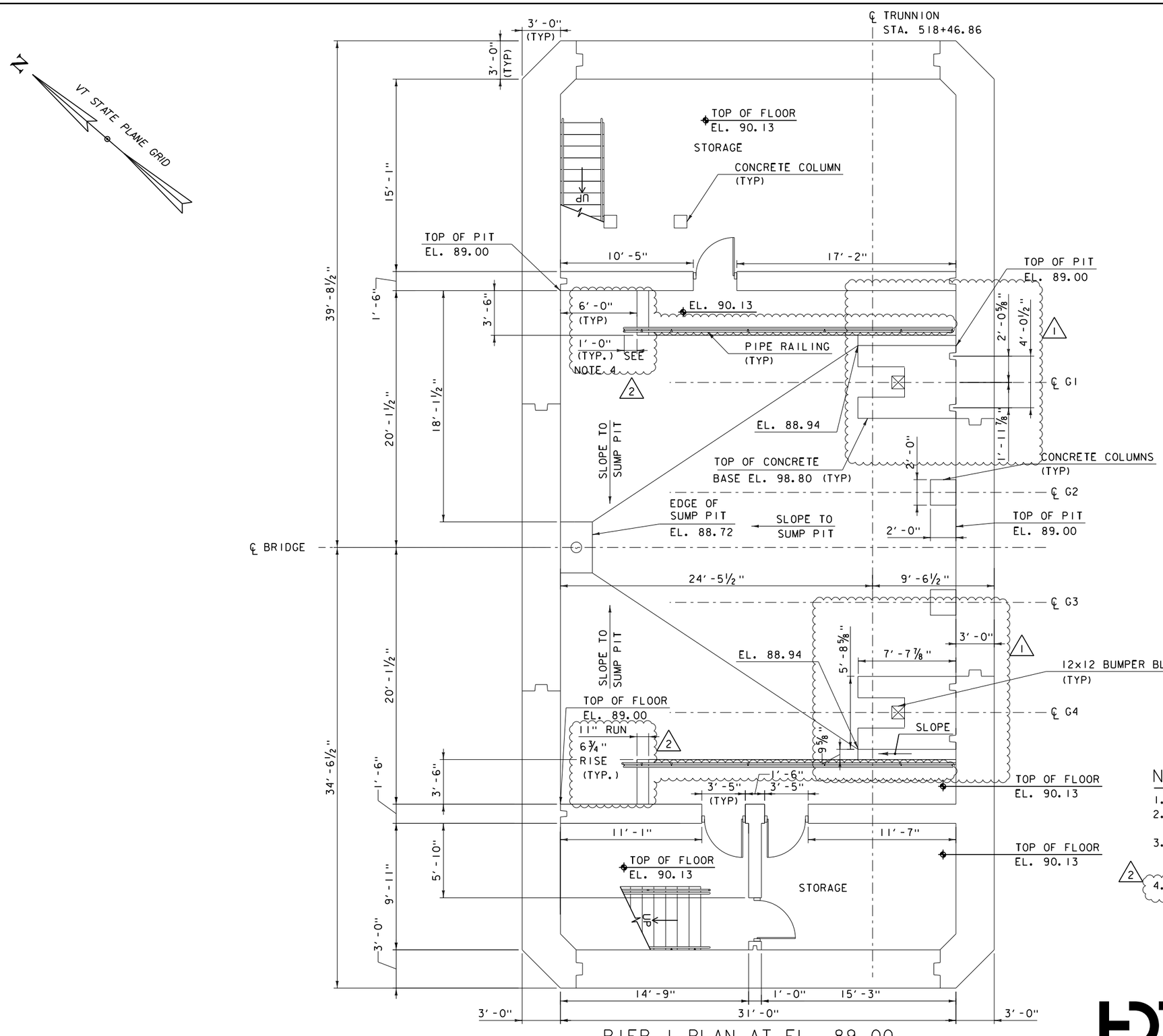
1. FENDER SYSTEM NOT SHOWN FOR CLARITY.
2. STEEL SHEETING FOR COFFERDAM SHALL BE REMOVED OR CUT OFF AT TOP OF TREMIE AT CONTRACTOR'S CONVENIENCE.
3. TOP OF LEDGE/BOTTOM OF TREMIE LINE AS SHOWN IS ASSUMED TO CORRESPOND WITH BOTTOM OF WEATHERED BEDROCK SHOWN IN BORING LOGS.
4. THE COST OF THE BIRD SCREEN WILL BE INCIDENTAL TO THE PRICE BID FOR STRUCTURAL STEEL.
5. SEE PIER MISCELLANEOUS SECTIONS 1 SHEET 172 FOR FRONT WALL PLATFORM DETAILS. (1) (2)
6. CONCRETE IN PIER ABOVE EL 83.00 SHALL BE INCLUDED IN PRICE BID FOR HIGH PERFORM. CLASS B CONC. ITEM 501.34.
7. WALKWAY CHAIN-LINK GATE SHALL BE INCLUDED IN PRICE BID FOR SPECIAL PROVISION (NON- STRUCTURAL STEEL) ITEM 900.645.
8. (2) SEE SHEET 173 FOR WALL HATCH DETAILS.

REVISION	DATE	DESCRIPTION	BY
3			
2	04/29/2020	WIRELESS DESIGN MODIFICATION 1	JLG
1	04/29/2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142piere14.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER NO. 1 ELEVATIONS - 2

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 117 OF 379



PIER 1 PLAN AT EL. 89.00

SCALE 1/4" = 1'-0"

NOTE

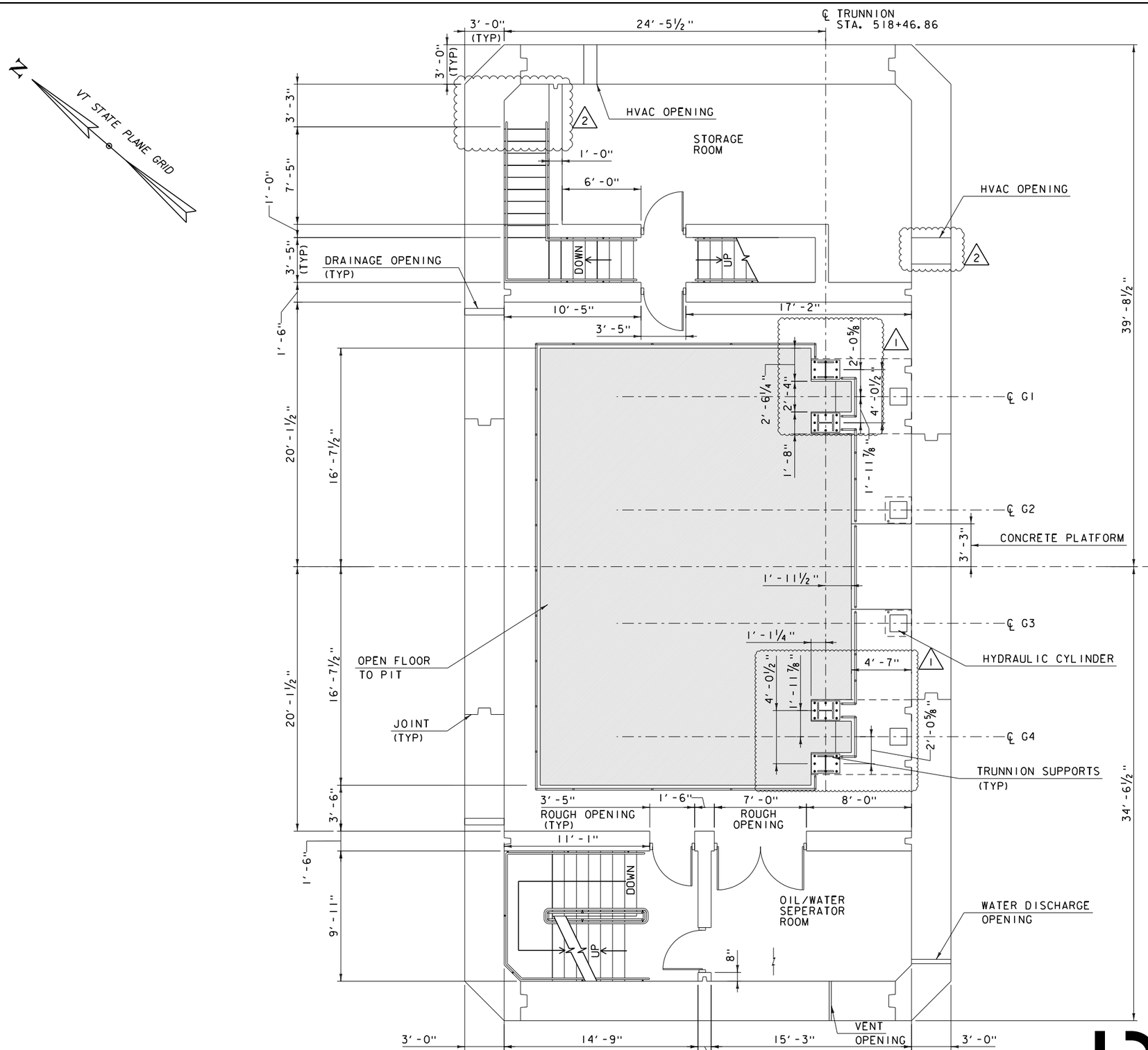
1. FENDER, FOOTING AND TREMIE NOT SHOWN FOR CLARITY.
2. COST OF PIPE RAILING SHALL BE INCLUDED IN PRICE BID FOR NONSTRUCTURAL STEEL ITEM 900.645.
3. CONCRETE IN PIER ABOVE EL. 83.00 SHALL BE INCLUDED IN PRICE BID FOR HIGH PERFORMANCE CLASS B CONCRETE ITEM 501.34.
4. FOR HANDRAIL DETAILS SEE SHEET 169.

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142pllevel3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER 1PLAN AT EL. 89.00

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH



PIER 1 PLAN AT EL. 99.80

SCALE 1/4" = 1'-0"

NOTE

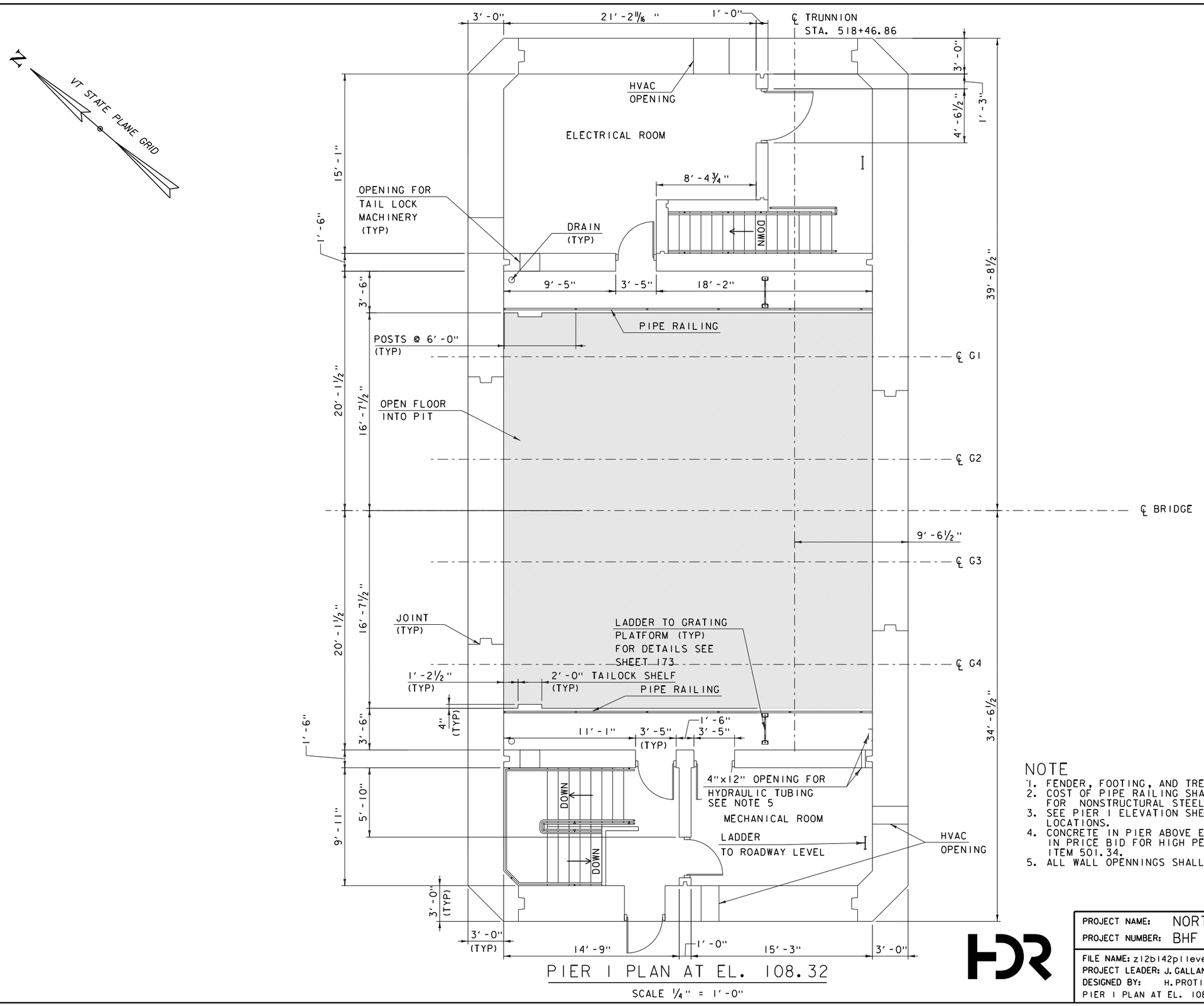
1. FENDER, FOOTING, AND TREMIE NOT SHOWN FOR CLARITY.
2. COST OF PIPE RAILING SHALL BE INCLUDED IN PRICE BID FOR NONSTRUCTURAL STEEL ITEM 900.645.
3. SEE TRUNNION SUPPORT DETAIL SHEETS 107-110.
4. CONCRETE IN PIER ABOVE EL. 83.00 SHALL BE INCLUDED IN PRICE BID FOR HIGH PERFORMANCE CLASS B CONCRETE ITEM 501.34.

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142pllevel2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER 1PLAN AT EL. 99.80

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 119 OF 379



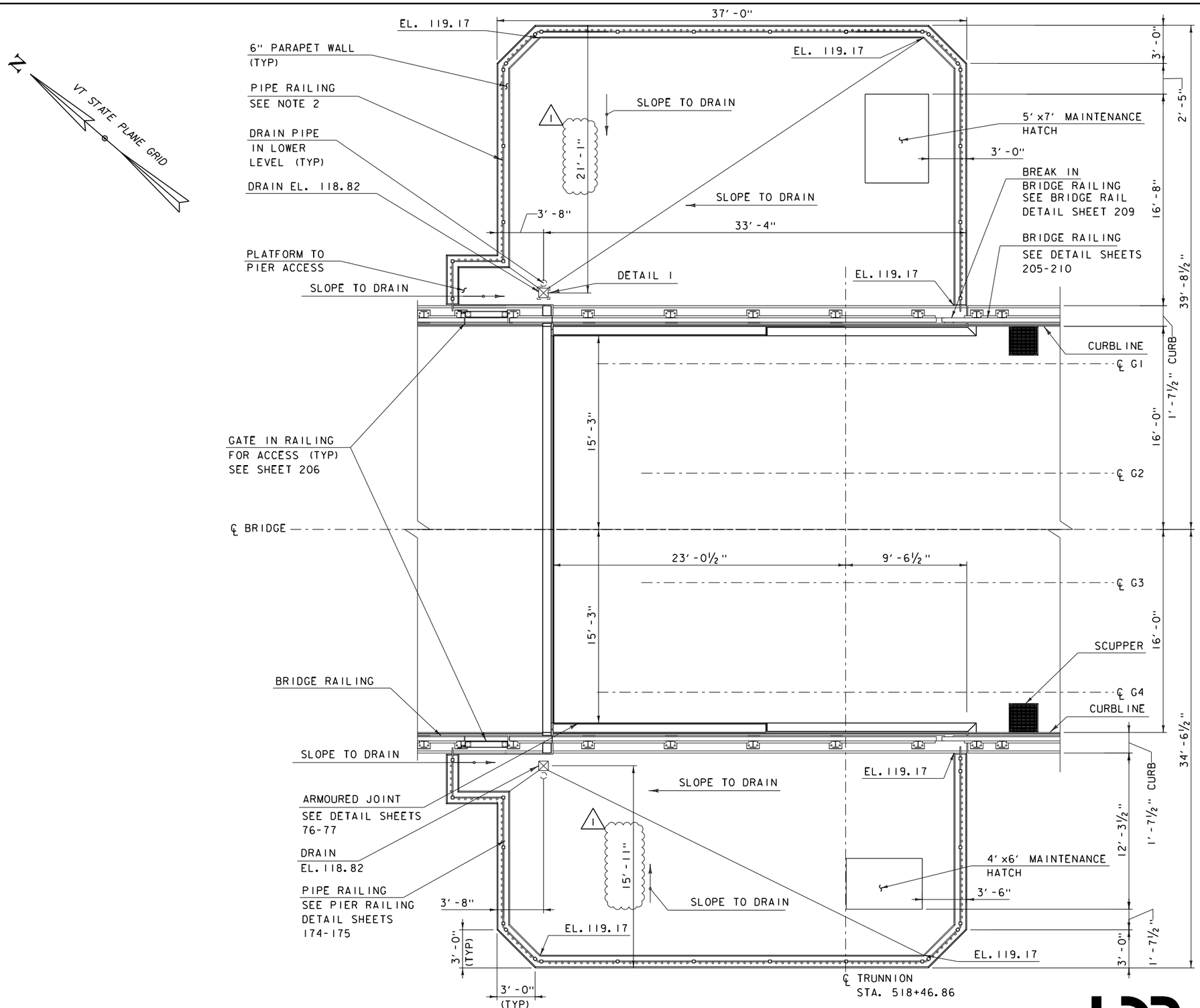
PIER 1 PLAN AT EL. 108.32

SCALE 1/4" = 1'-0"

NOTE

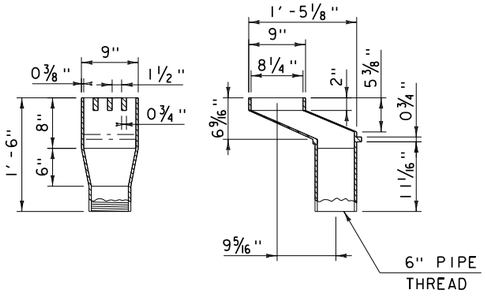
1. FENDER, FOOTING, AND TREMIE NOT SHOWN FOR CLARITY.
2. COST OF PIPE RAILING SHALL BE INCLUDED IN PRICE BID FOR NONSTRUCTURAL STEEL ITEM 900.645.
3. SEE PIER 1 ELEVATION SHEETS 116-117 FOR HVAC LOCATIONS.
4. CONCRETE IN PIER ABOVE EL. 83.00 SHALL BE INCLUDED IN PRICE BID FOR HIGH PERFORMANCE CLASS B CONCRETE ITEM 501.34.
5. ALL WALL OPENNINGS SHALL BE FIRESTOPPED.

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142p1level1.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: S. SANTRICH
DESIGNED BY: H. PROTIN	CHECKED BY: T. FRENCH
PIER 1 PLAN AT EL. 108.32	SHEET 120 OF 379



PIER 1 PLAN AT EL. 118.82

SCALE 1/4" = 1'-0"



DETAIL 1

SCALE 1" = 1'-0"

NOTE

1. FENDER, FOOTING AND TREMIE NOT SHOWN FOR CLARITY.
2. COST OF PIPE RAILING SHALL BE INCLUDED IN PRICE BID FOR NONSTRUCTURAL STEEL ITEM 900.645.
3. SCUPPER SHALL BE 9"x9" WITH A 9⅝" OFFSET.

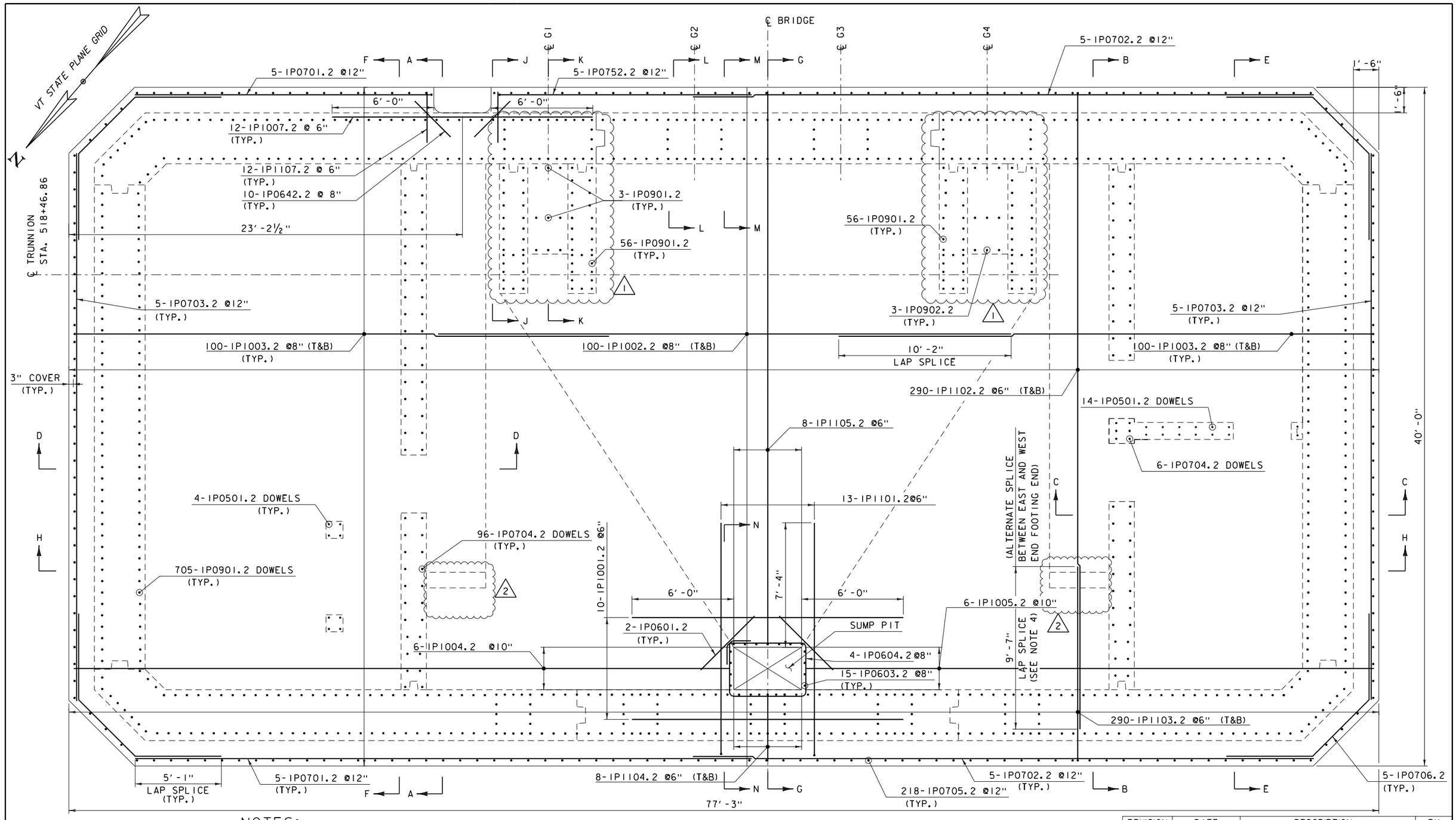
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P1level0.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER 1 PLAN AT EL. 118.82

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 121 OF 379



LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

1. CONSTRUCTION OF THE BASCULE PIER FOOTINGS SHALL MEET REQUIREMENTS FOR MASS CONCRETE PLACEMENT.
2. WALL DOWEL SPACING SHALL BE COORDINATED WITH THE WALL MAIN REINFORCEMENT.
3. FOR SECTIONS, SEE NOTES ON DWG. PIER 1-WALL REINFORCEMENT PLAN EL. 89.00.
4. ADJUST LAP SPLICE AS REQUIRED FOR DUCT PENETRATION.

PIER 1 - FOOTING REINFORCEMENT PLAN

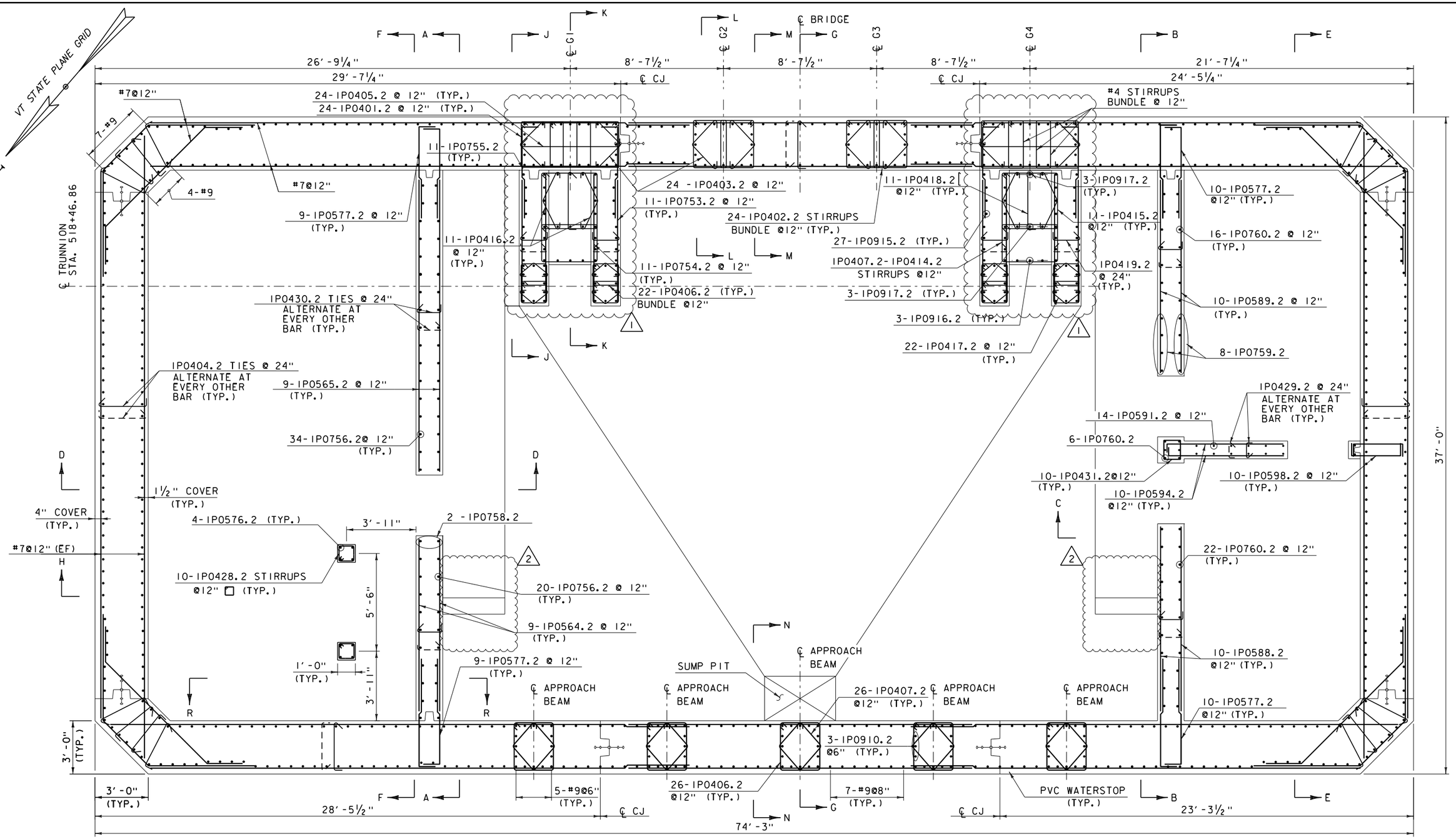
SCALE ⅜" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P1FR.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 1- FOOTING REINFORCEMENT PLAN

PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
SHEET 122 OF 379



NOTES:

SHEETS 134-139 1. FOR SECTIONS A-A THRU F-F SEE PIER I - SECTIONS A-A THRU F-F SHEETS.

SHEET 140 2. FOR SECTIONS G-G THRU H-H SEE PIER I - SECTIONS G-G THRU H-H SHEETS.

SHEET 166 3. FOR SECTIONS J-J THRU L-L SEE PIER I & 2 TRUNNION SUPPORT REINFORCEMENT I

SHEET 167 4. FOR SECTONS M-M AND N-N SEE PIER I & 2 TRUNNION SUPPORT REINFORCEMENT 2

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

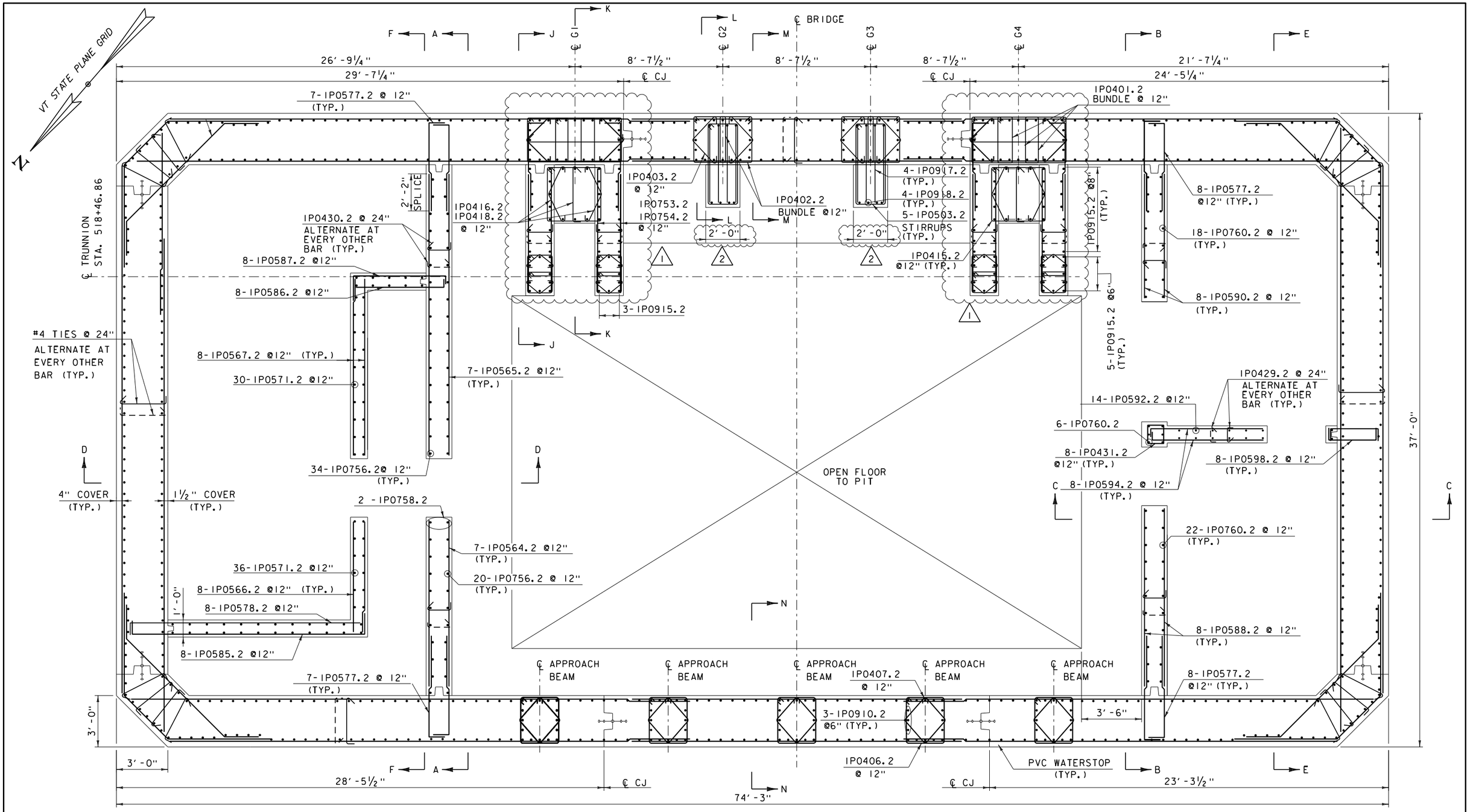
PIER I - WALL REINFORCEMENT PLAN AT EL. 89.00

SCALE ⅜" = 1′-0"

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142PIL3WR.dgn PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT DRAWN BY: J. JIMENEZ
DESIGNED BY: J. KRYSIEWICZ CHECKED BY: H. PROTIN
PIER I-WALL REINFORCEMENT PLAN EL. 89.00 SHEET 123 OF 379



LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

SHEETS 134-139 FOR SECTIONS A-A THRU F-F SEE PIER I - SECTIONS A-A THRU F-F SHEETS.

SHEET 140 FOR SECTIONS G-G THRU H-H SEE PIER I - SECTIONS G-G THRU H-H SHEETS.

SHEET 166 FOR SECTIONS J-J THRU L-L SEE PIER I & 2 TRUNNION SUPPORT REINFORCEMENT I

SHEET 167 FOR SECTONS M-M AND N-N SEE PIER I & 2 TRUNNION SUPPORT REINFORCEMENT 2

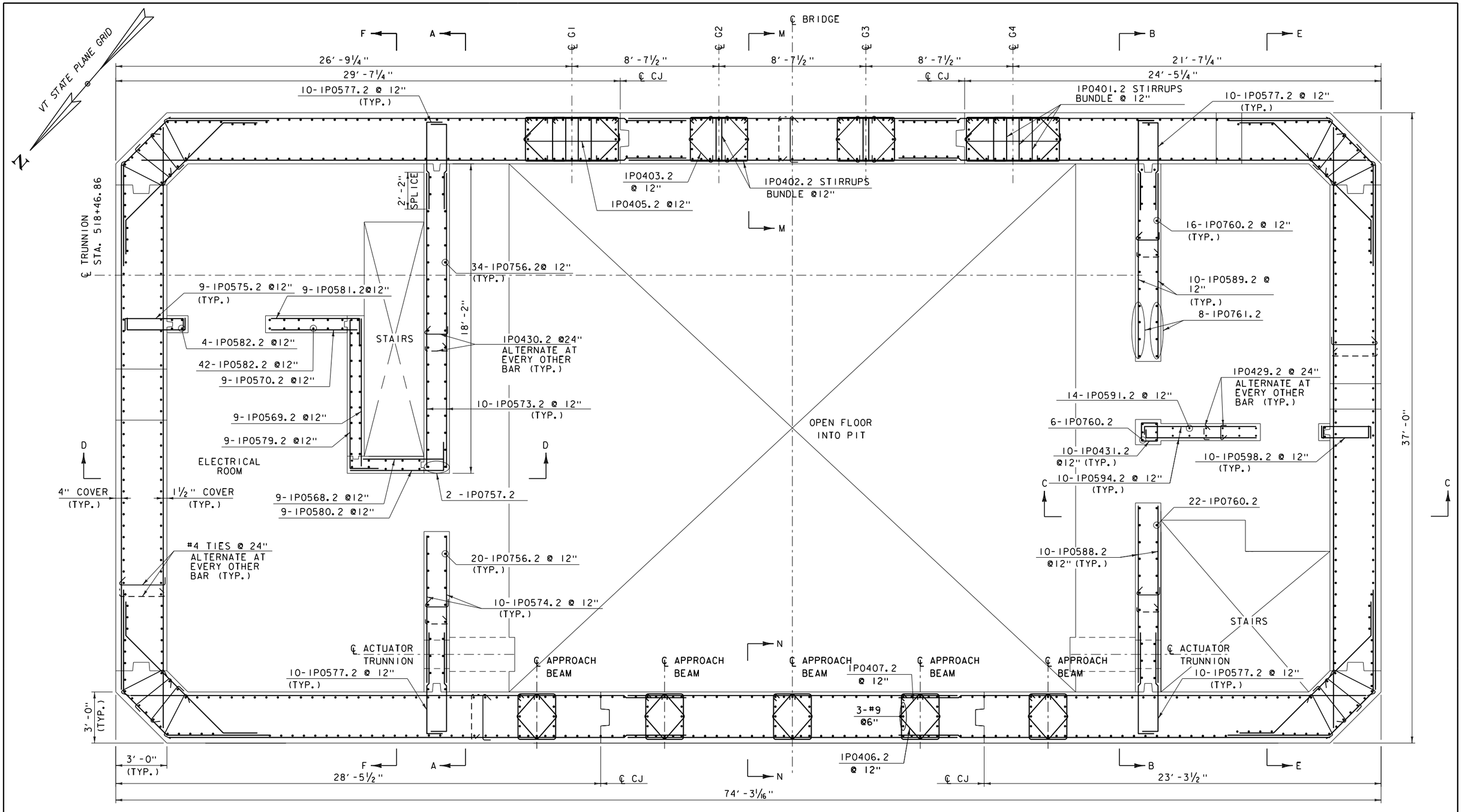
PIER I - WALL REINFORCEMENT PLAN AT EL. 99.80

SCALE ⅜" = 1′-0"

REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142PIL2WR.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
PIER I-WALL REINFORCEMENT PLAN EL. 99.80 SHEET 124 OF 379



PIER 1 - WALL REINFORCEMENT PLAN AT EL. 108.32

SCALE ⅜" = 1′-0"

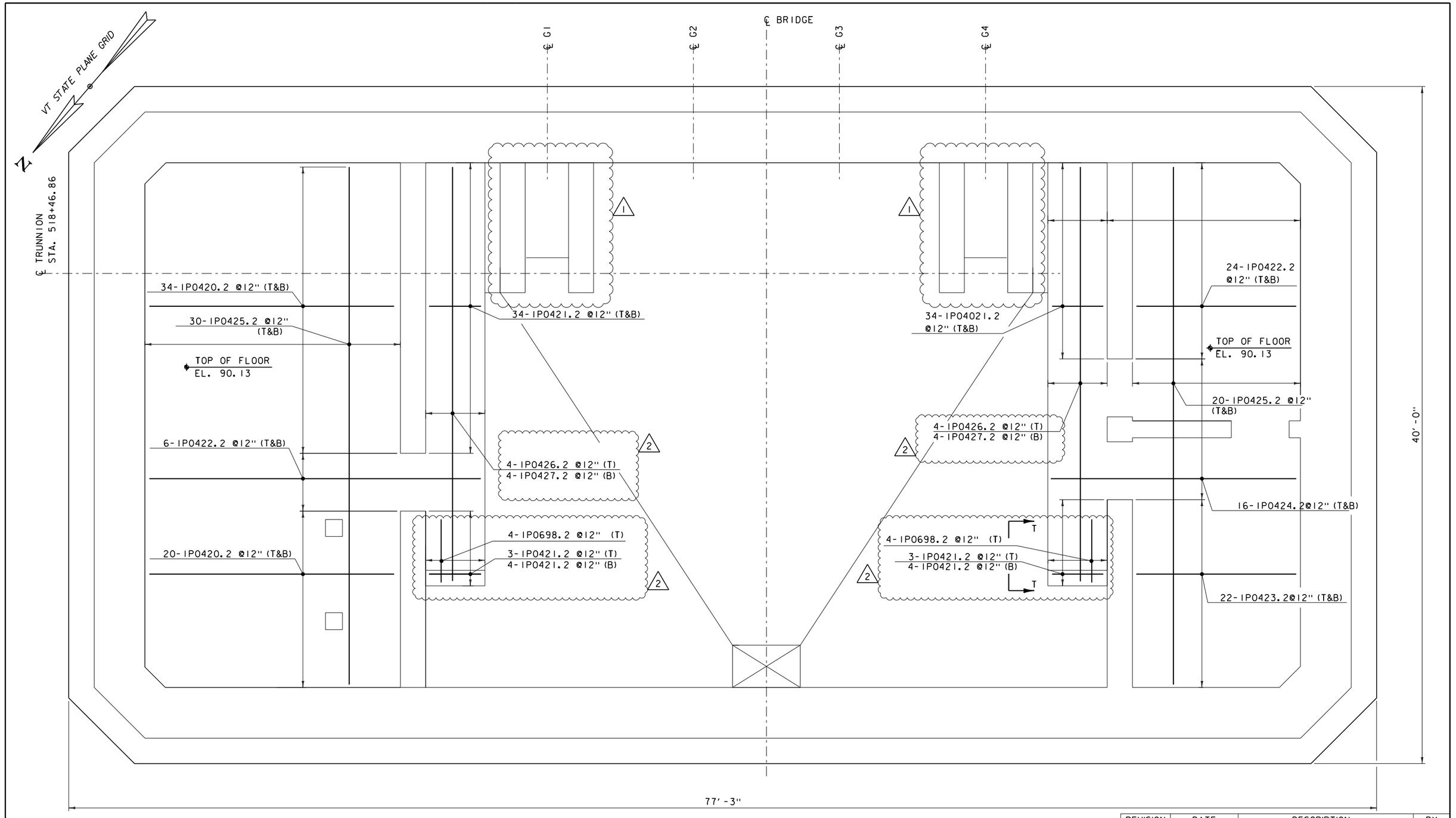
LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

1. FOR ADDITIONAL REINFORCEMENT ON DOOR OPENINGS SEE "PIER MISCELLANEOUS DETAILS 1" DRAWING. SHEET 168

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142PIL1WR.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. JIMENEZ
DESIGNED BY: J. KRYSIEWICZ	CHECKED BY: H. PROTIN
PIER 1-WALL REINFORCEMENT PLAN EL. 108.32	SHEET 125 OF 379



LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

1. SEE PIER 1 - SECTION A-A SHEET FOR CONCRETE COVER REQUIREMENTS SEE SHEET 134.
2. FOR SECTION T-T SEE SHEET 165.

PIER 1 - SLAB REINFORCEMENT PLAN AT EL. 90.13

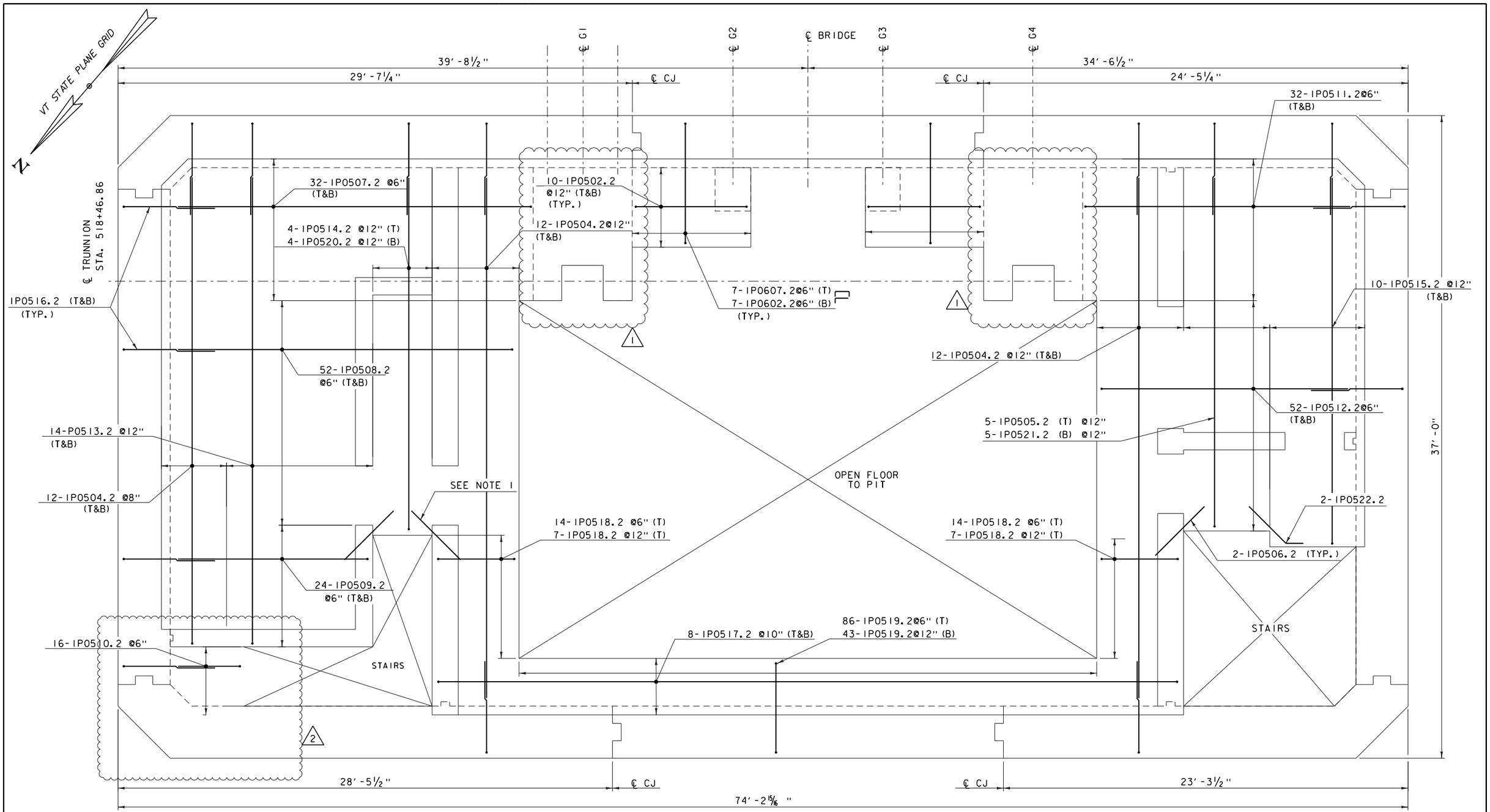
SCALE 3/8" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142PIL3SR.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 1-SLAB REINFORCEMENT PLAN EL. 90.13

PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
SHEET 126 OF 379



LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

1. PROVIDE #5 (T&B), 4 FT. LONG BARS AT ALL SLAB OPENING CORNERS (TYP.).
2. SEE PIER 1 - SECTIONS A-A SHEET FOR CONCRETE COVER REQUIREMENTS. SHEET 134

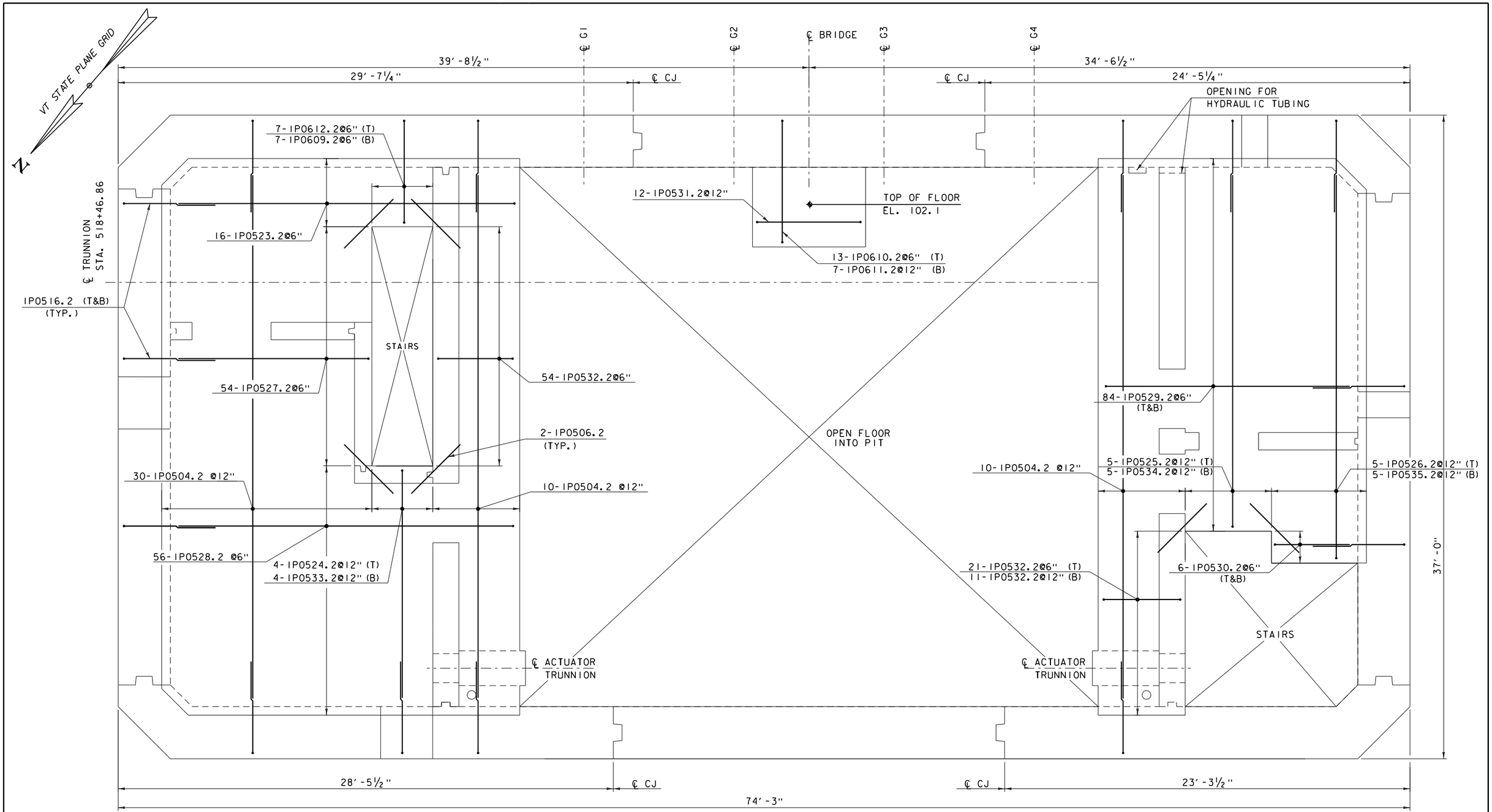
PIER 1 - SLAB REINFORCEMENT PLAN AT EL. 99.80

SCALE 3/8″ = 1′-0″

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142PIL2SR.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
PIER 1-SLAB REINFORCEMENT PLAN EL. 99.80
SHEET 127 OF 379



LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

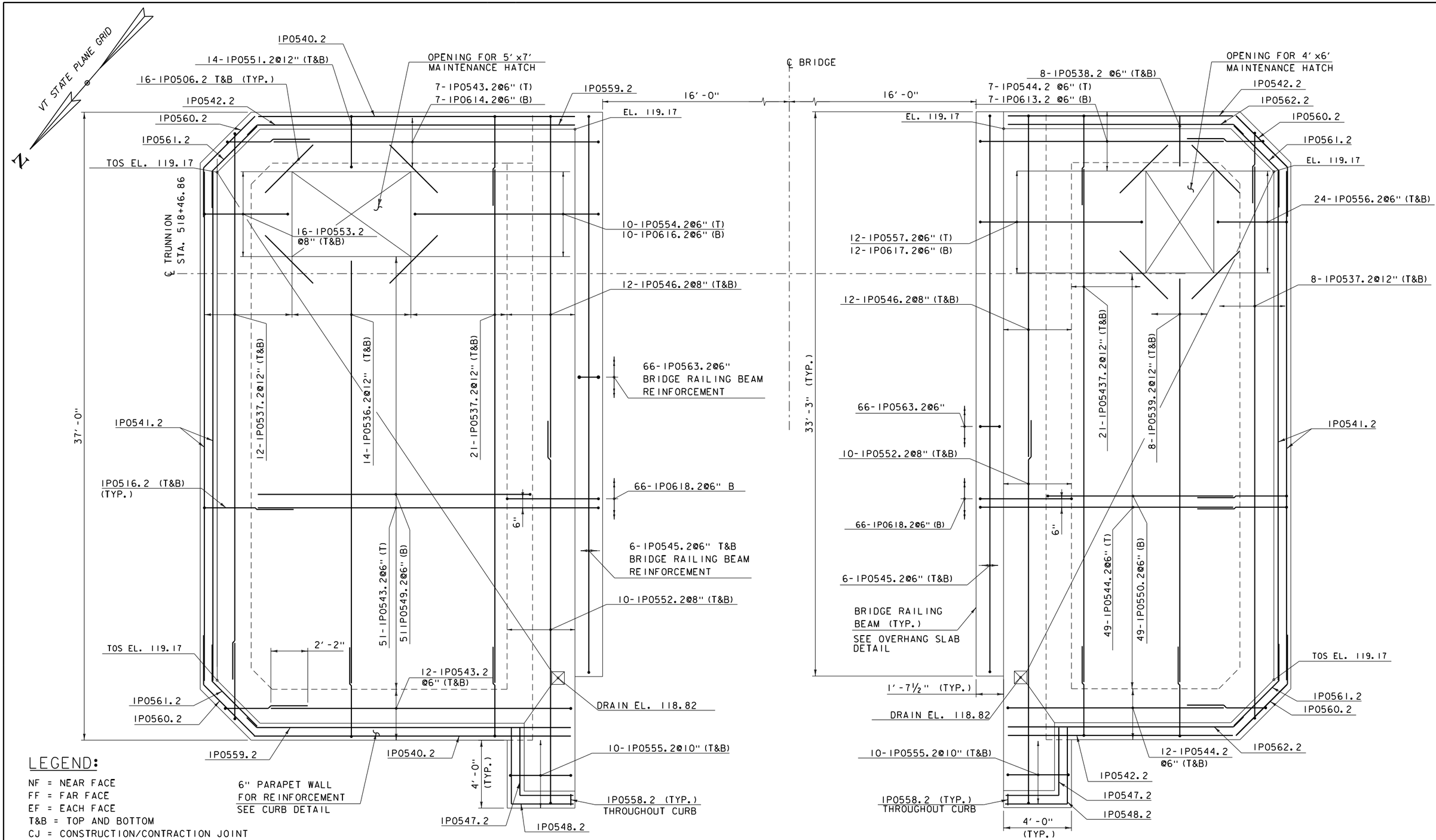
NOTES:

1. SEE PIER 1 - SECTION A-A SHEET FOR CONCRETE COVER REQUIREMENTS. SHEET 134

PIER 1 - SLAB REINFORCEMENT PLAN AT EL. 108.32

SCALE ⅜" = 1′-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142P1L1SR.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. JIMENEZ
DESIGNED BY: J. KRYSIEWICZ	CHECKED BY: H. PROTIN
PIER 1-SLAB REINFORCEMENT PLAN EL. 108.32	SHEET 128 OF 379



LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

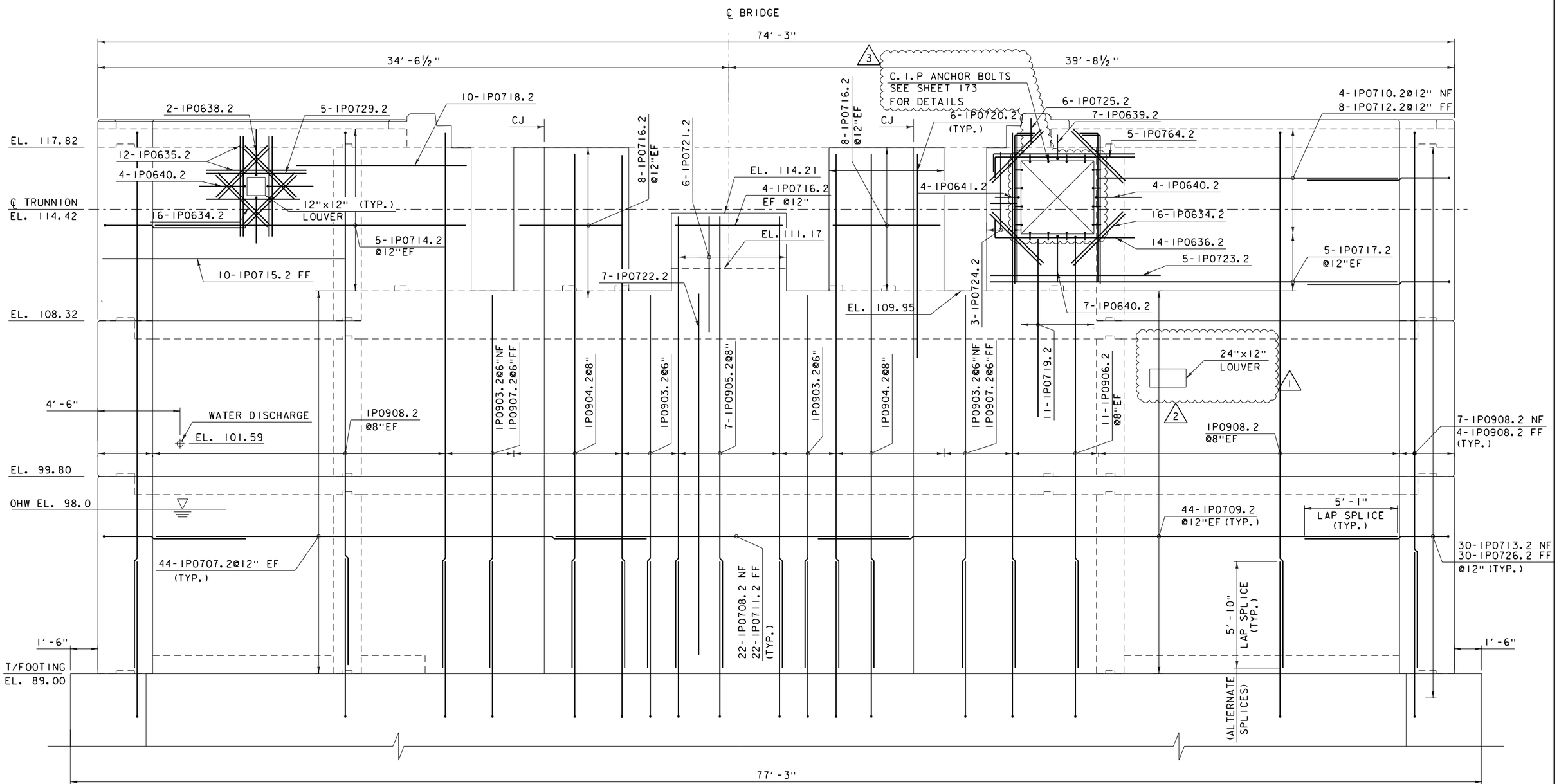
NOTES:

1. PROVIDE #5 (T&B), 4 FT. LONG BARS AT ALL SLAB OPENING CORNERS (TYP.).
SHEET 169 2. FOR OVERHANG SLAB AND PARAPET WALL DETAILS SEE PIER MISCELLANEOUS DETAILS - 2 SHEET.
SHEET 134 3. SEE PIER 1 - SECTIONS A-A SHEET FOR CONCRETE COVER REQUIREMENTS.

PIER 1 - SLAB REINFORCEMENT PLAN AT EL. 118.82

SCALE ⅜" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142P1LOSR.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. KRYSIEWICZ
DESIGNED BY: J. KRYSIEWICZ	CHECKED BY: H. PROTIN
PIER 1-SLAB REINFORCEMENT PLAN EL. 118.82	SHEET 129 OF 379



PIER 1 - EAST WALL REINFORCEMENT

SCALE ⅜" = 1′-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

1. FOR ADDITIONAL REINFORCEMENT AROUND DOOR AND WALL OPENINGS SEE "PIER MISCELLANEOUS DETAILS 1" DRAWING. SHEET 168

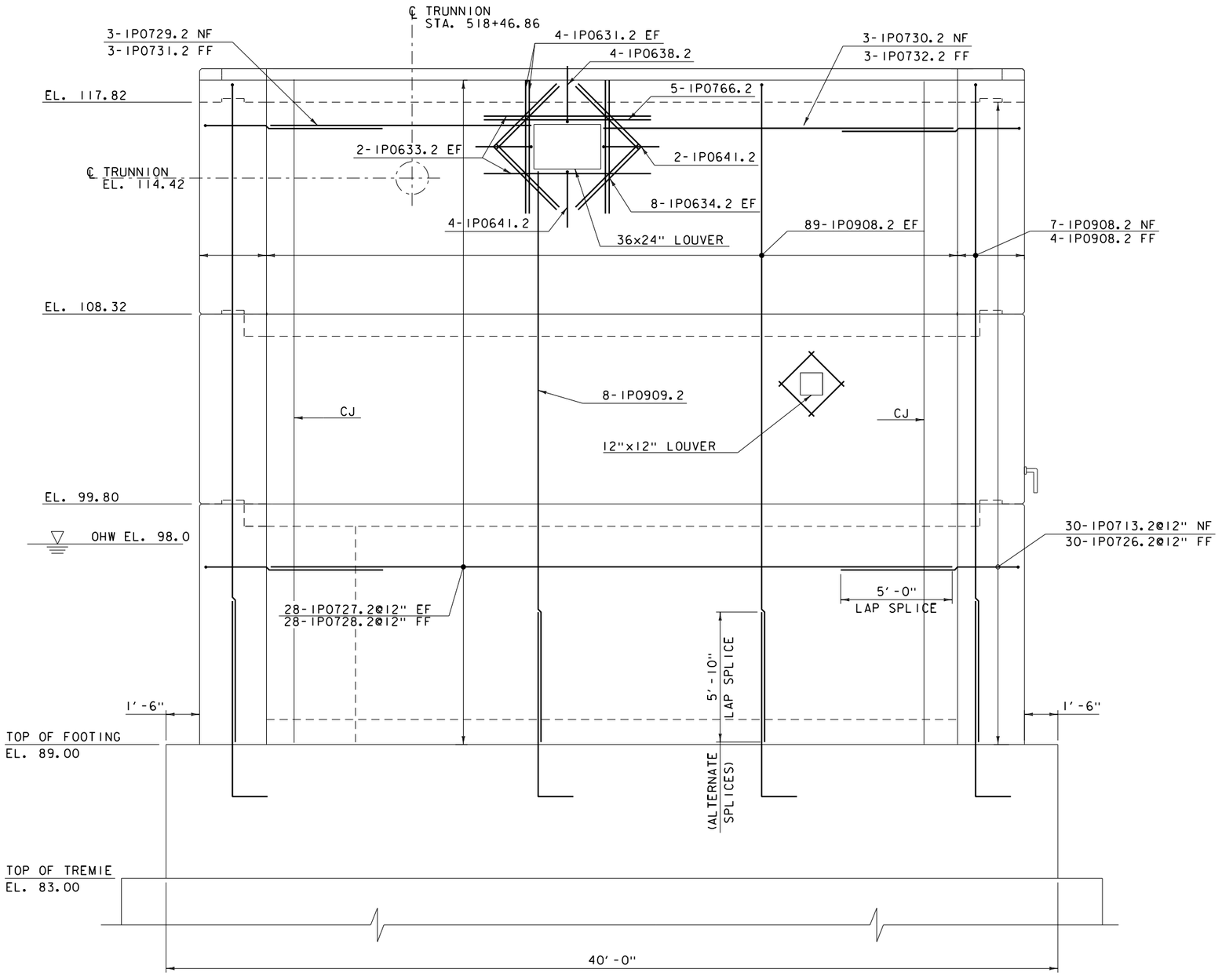
2. FOR DOWEL EMBEDMENT DEPTH, SEE PIER 1 SECTION G-G AND H-H DRAWING. SHEET 140

REVISION	DATE	DESCRIPTION	BY
3	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142PIEWall.dgn
PROJECT LEADER: T. FRENCH
DESIGNED BY: J. KRYSIEWICZ
PIER 1- EAST WALL REINFORCEMENT

PLOT DATE: 2/20/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
SHEET 130 OF 379



PIER 1 - NORTH WALL REINFORCEMENT

SCALE 3/8" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

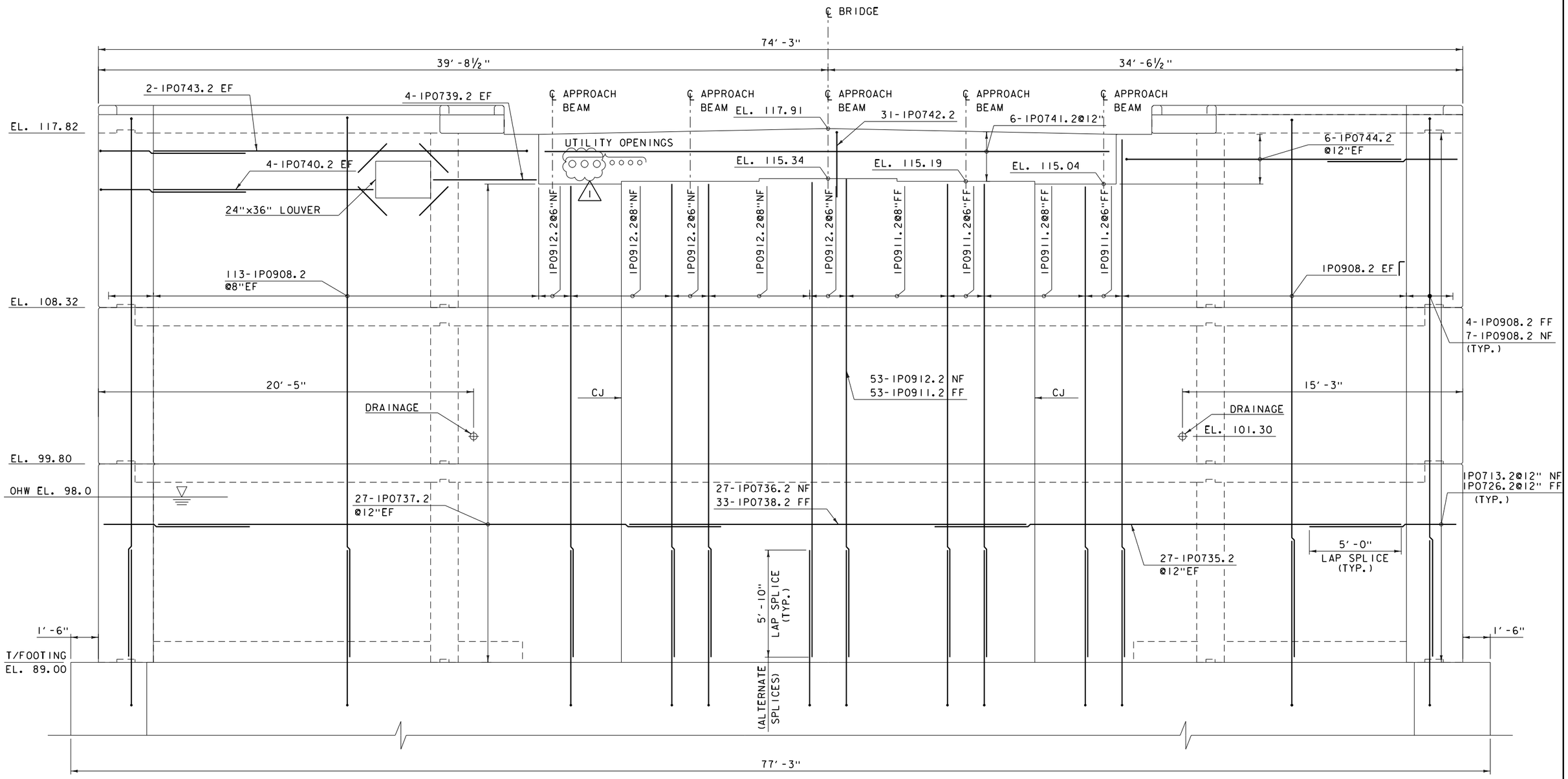
1. FOR ADDITIONAL REINFORCEMENT AROUND DOOR AND WALL OPENINGS SEE "PIER MISCELLANEOUS DETAILS 1" DRAWING. SHEET 168

2. FOR DOWEL EMBEDMENT DEPTH, SEE PIER 1 SECTION G-G AND H-H DRAWING. SHEET 140

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142PINWall.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 1- NORTH WALL REINFORCEMENT

PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
SHEET 131 OF 379



PIER 1 - WEST WALL REINFORCEMENT

SCALE ⅜" = 1′-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

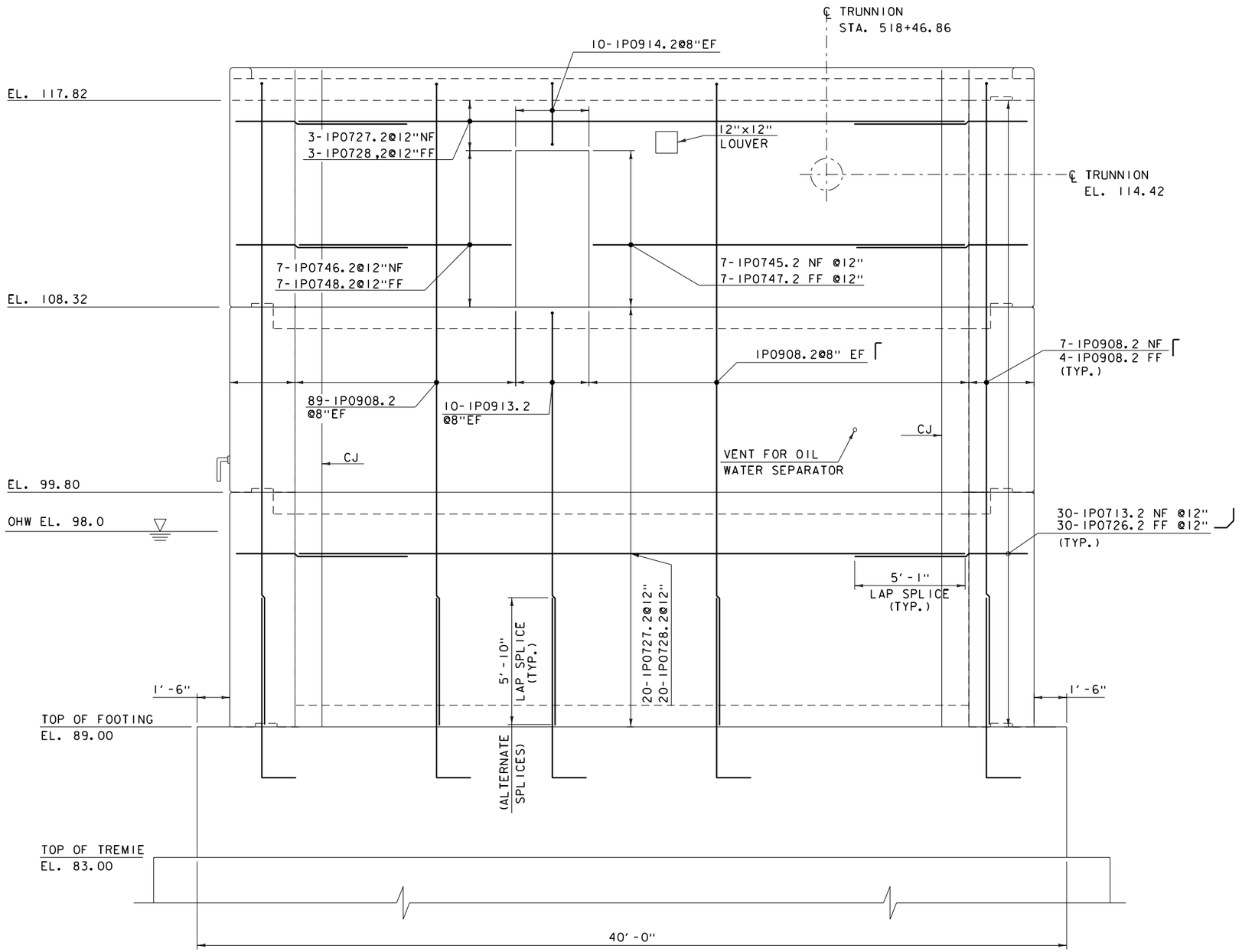
1. FOR ADDITIONAL REINFORCEMENT AROUND DOOR AND WALL OPENINGS SEE "PIER MISCELLANEOUS DETAILS 1" DRAWING. SHEET 168
2. FOR DOWEL EMBEDMENT DEPTH, SEE PIER 1 SECTION G-G AND H-H DRAWING. SHEET 140

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	4-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142PIWWall.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 1- WEST WALL REINFORCEMENT

PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
SHEET 132 OF 379



PIER 1 - SOUTH WALL REINFORCEMENT

SCALE 3/8" = 1'-0"

LEGEND:

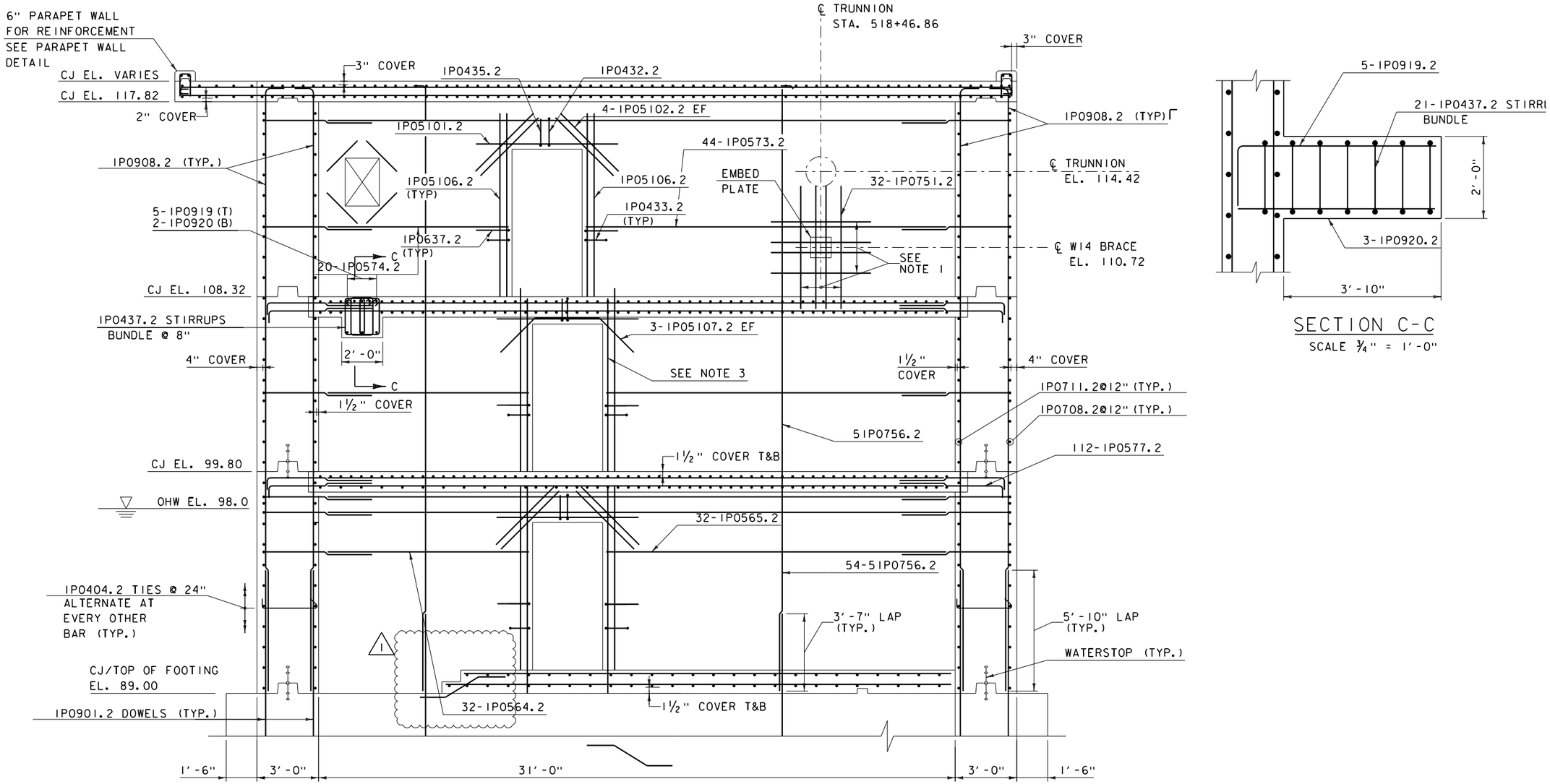
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

1. FOR ADDITIONAL REINFORCEMENT AROUND DOOR AND WALL OPENINGS SEE "PIER MISCELLANEOUS DETAILS 1" DRAWING. SHEET 168

2. FOR DOWEL EMBEDMENT DEPTH, SEE PIER 1 SECTION G-G AND H-H DRAWING. SHEET 140

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE		
PROJECT NUMBER:	BHF 028-1(26)		
FILE NAME: z12b142PISWall.dgn		PLOT DATE:	2/6/2018
PROJECT LEADER:	J. GALLANT	DRAWN BY:	J. JIMENEZ
DESIGNED BY:	J. KRYSIEWICZ	CHECKED BY:	H. PROTIN
PIER 1- SOUTH WALL REINFORCEMENT		SHEET	133 OF 379



PIER 1 - SECTION A-A

SCALE ⅜" = 1'-0"

SECTION C-C

SCALE ¾" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

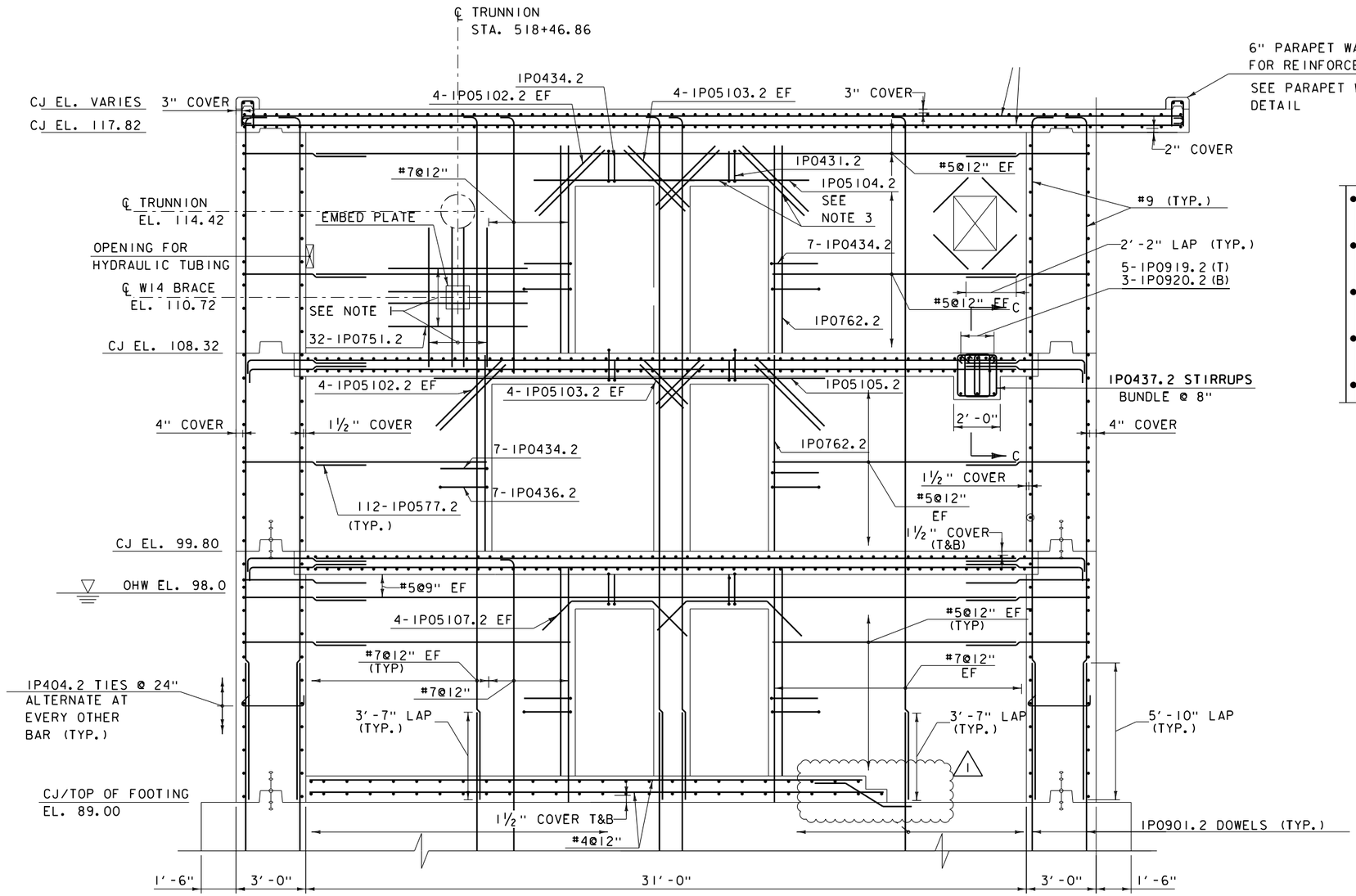
1. PROVIDE ADDITIONAL 4-#7, 6 FT LONG HORIZONTAL AND VERTICAL BARS EF. ALTERNATE WITH MAIN WALL REINFORCEMENT.
2. SEE TRUNNION SUPPORT DETAILS FOR EMBED PLATE DETAILS. SHEET 107
3. FOR ADDITIONAL REBARS AROUND OPENING SEE DOOR OPENING DETAIL ON PIER MISCELLANEOUS DETAILS 1 SHEET. SHEET 168
4. FOR CURB DETAILS SEE PIER MISCELLANEOUS DETAILS - 2 SHEET. SHEET 169
5. FOR FOOTING REINFORCEMENT, SEE PIER 1 SECTION G-G AND SECTION H-H DRAWING. SHEET 140

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

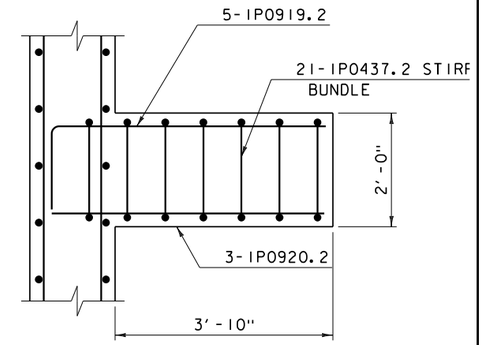
FILE NAME: z12b142PlsecA-A.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 1- SECTION A-A

PLOT DATE: 2/6/2018
DRAWN BY: J. KRYSIEWICZ
CHECKED BY: H. PROTIN
SHEET 134 OF 379



PIER 1 - SECTION B-B

SCALE ⅜" = 1'-0"



SECTION C-C

SCALE ¾" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

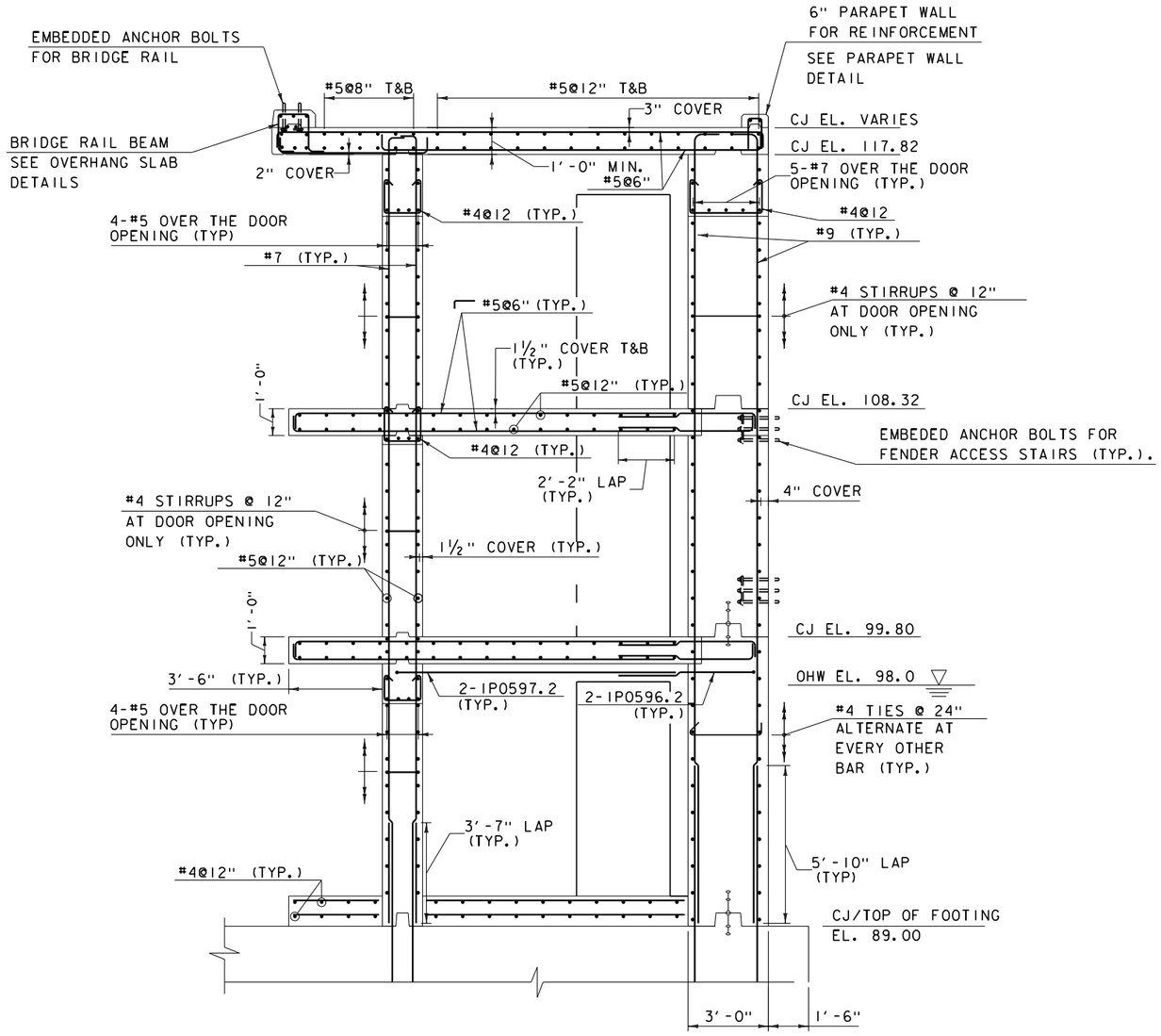
1. PROVIDE ADDITIONAL 4-#7, 6 FT LONG HORIZONTAL AND VERTICAL BARS EF. ALTERNATE WITH MAIN WALL REINFORCEMENT.
2. SEE TRUNNION SUPPORT DETAILS FOR EMBED PLATE DETAILS. SHEET 107
3. FOR ADDITIONAL REBARS AROUND OPENING SEE DOOR OPENING DETAIL ON PIER MISCELLANEOUS DETAILS 1 SHEET. SHEET 168
4. FOR CURB DETAILS SEE PIER MISCELLANEOUS DETAILS - 2 SHEET. SHEET 169
5. FOR FOOTING REINFORCEMENT, SEE PIER 1 SECTION G-G AND SECTION H-H DRAWING. SHEET 140

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142PlsecB-B.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 1- SECTION B-B

PLOT DATE: 2/6/2018
DRAWN BY: J. KRYSIEWICZ
CHECKED BY: H. PROTIN
SHEET 135 OF 379



PIER 1 - SECTION C-C

SCALE 3/8" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

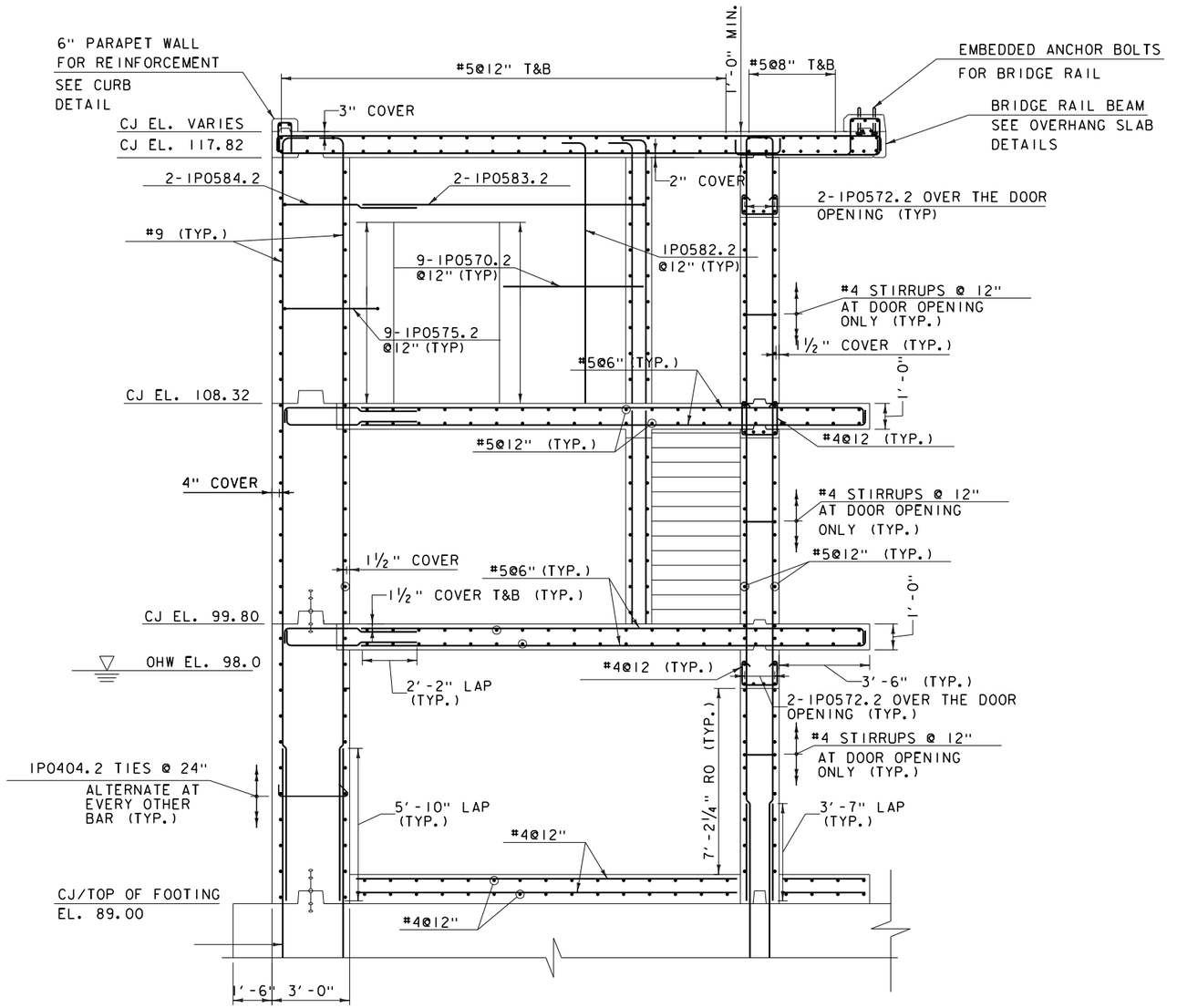
NOTES:

1. PARTITION WALLS REINFORCEMENT NOT SHOWN FOR CLARITY. SEE PIER MISCELLANEOUS DETAILS - 1 SHEET FOR PARTITION WALL REINFORCEMENT REQUIREMENTS. SHEET 168
2. SEE MISCELLANEOUS DETAILS FOR FENDER ACCESS STAIRS DETAILS SHEET 168
3. FOR OVERHANG SLAB AND CURB DETAILS SEE PIER MISCELLANEOUS DETAILS - 2 SHEET. SHEET 169
4. FOR FOOTING REINFORCEMENT, SEE PIER 1 SECTION G-G AND SECTION H-H DRAWING. SHEET 140

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142PlsecC-C.dgN
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 1- SECTION C-C

PLOT DATE: 2/6/2018
DRAWN BY: J. KRYSIEWICZ
CHECKED BY: H. PROTIN
SHEET 136 OF 379



PIER I - SECTION D-D

SCALE 3/8" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

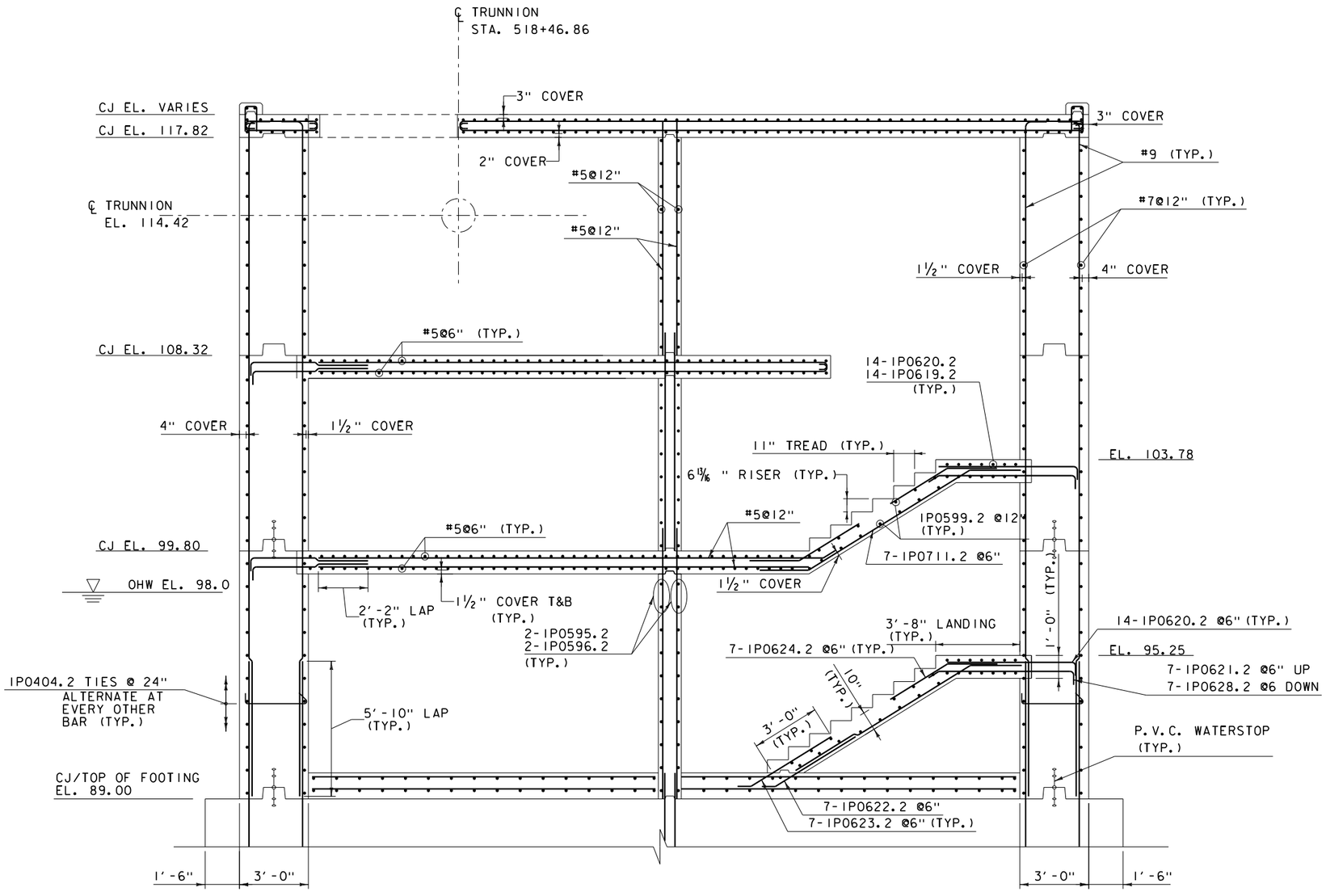
NOTES:

1. FOR OVERHANG SLAB AND PARAPET WALL DETAILS SEE PIER MISCELLANEOUS DETAILS - 2 SHEET. SHEET 169

2. PARTITION WALLS REINFORCEMENT NOT SHOWN FOR CLARITY. SEE PIER MISCELLANEOUS DETAILS -1 SHEET FOR PARTITION WALL REINFORCEMENT REQUIREMENTS. SHEET 168

3. FOR FOOTING REINFORCEMENT, SEE PIER I SECTION G-G AND SECTION H-H DRAWING. SHEET 140

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142PIsecD-D.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. KRYSIEWICZ
DESIGNED BY: J. KRYSIEWICZ	CHECKED BY: H. PROTIN
PIER I- SECTION D-D	SHEET 137 OF 379



PIER 1 - SECTION E-E

SCALE 3/8" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

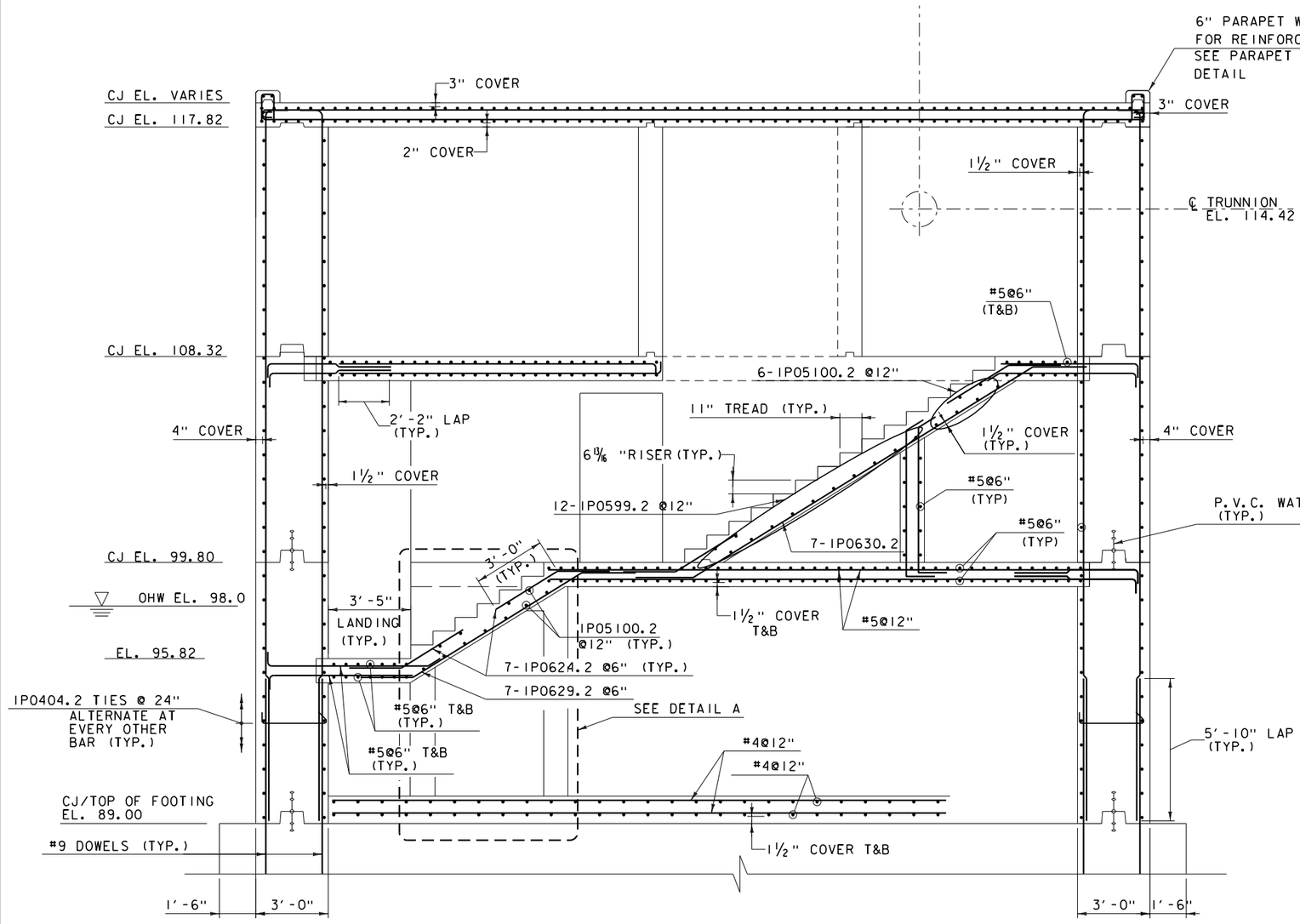
1. FOR CURB DETAILS SEE PIER MISCELLANEOUS DETAILS - 2 SHEET. SHEET 169
2. PARTITION WALLS REINFORCEMENT NOT SHOWN FOR CLARITY. SEE PIER MISCELLANEOUS DETAILS -1 SHEET FOR PARTITION WALL REINFORCEMENT REQUIREMENTS. 168
3. FOR FOOTING REINFORCEMENT, SEE PIER 1 SECTION G-G AND SECTION H-H DRAWING. SHEET 140

HDR

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

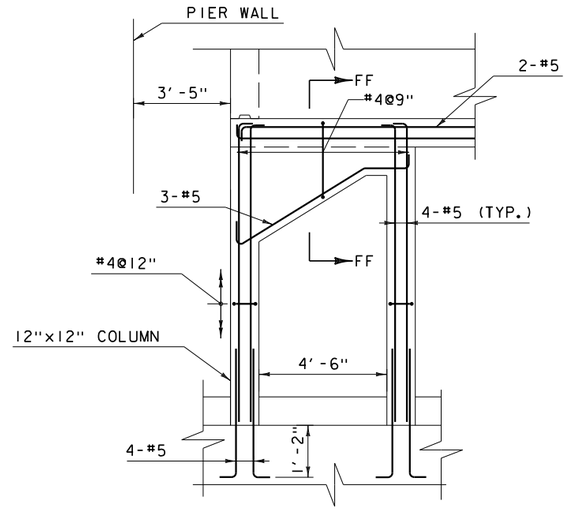
FILE NAME: z12b142PlsecE-E.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 1- SECTION E-E

PLOT DATE: 2/6/2018
DRAWN BY: J. KRYSIEWICZ
CHECKED BY: H. PROTIN
SHEET 138 OF 379



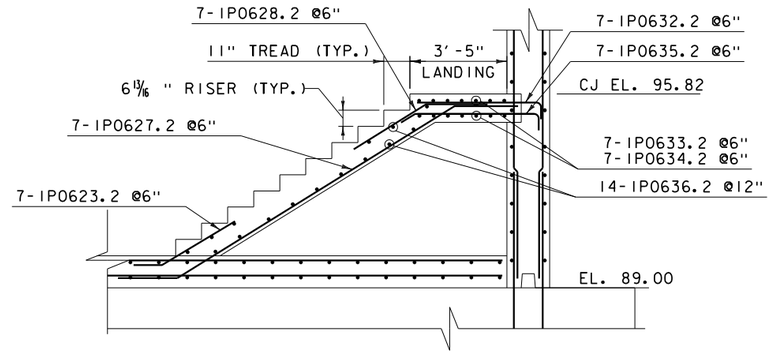
PIER 1 - SECTION F-F

SCALE 3/8" = 1'-0"



DETAIL A

SCALE 3/8" = 1'-0"



PIER 1 - SECTION R-R

SCALE 3/8" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

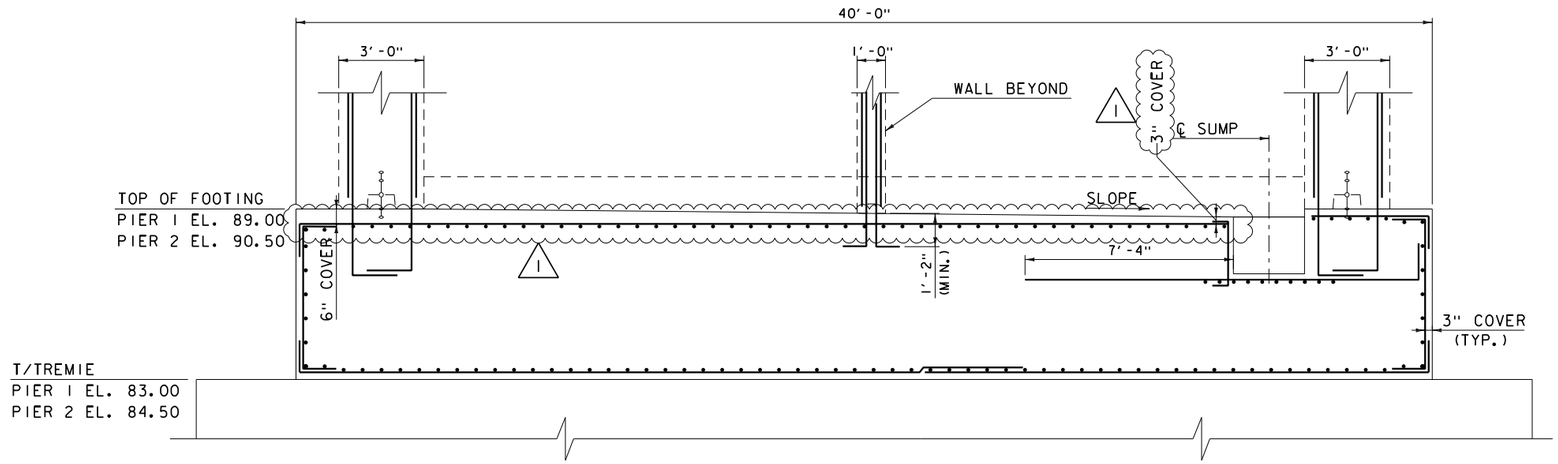
NOTES:

1. FOR CURB DETAILS SEE
   PIER MISCELLANEOUS DETAILS - 2 SHEET. SHEET 169

2. PARTITION WALLS REINFORCEMENT NOT SHOWN FOR CLARITY.
   SEE PIER MISCELLANEOUS DETAILS -1 SHEET FOR PARTITION
   WALL REINFORCEMENT REQUIREMENTS. SHEET 168

3. FOR FOOTING REINFORCEMENT, SEE PIER 1 SECTION G-G AND SECTION H-H DRAWING. SHEET 140

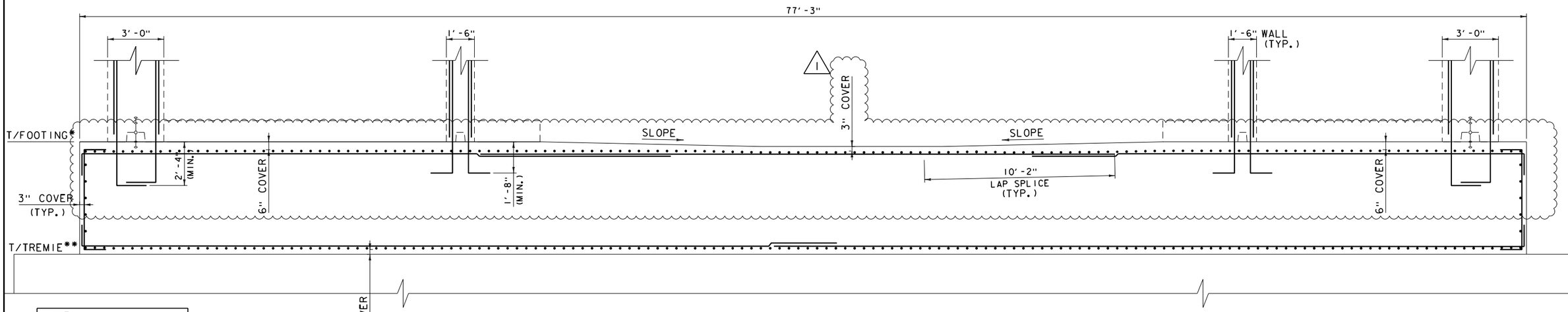
PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142P1secF-F.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. KRYSIEWICZ
DESIGNED BY: J. KRYSIEWICZ	CHECKED BY: H. PROTIN
PIER 1- SECTION F-F	SHEET 139 OF 379



PIER 1 - SECTION G-G

(SECTION G-G SIMILAR EXCEPT AS NOTED-PIER 2)

SCALE 3/8" = 1'-0"



NOTE:

* PIER 1 EL. 89.00
PIER 2 EL. 90.50

** PIER 1 EL. 83.00
PIER 2 EL. 84.50

PIER 1 - SECTION H-H

(SECTION H-H SIMILAR EXCEPT AS NOTED-PIER 2)

SCALE 3/8" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

1. FOR SUMP PIT ADDITIONAL DETAILS SEE "PIER MISCELLANEOUS SECTIONS-1" DRAWING. SHEET 172

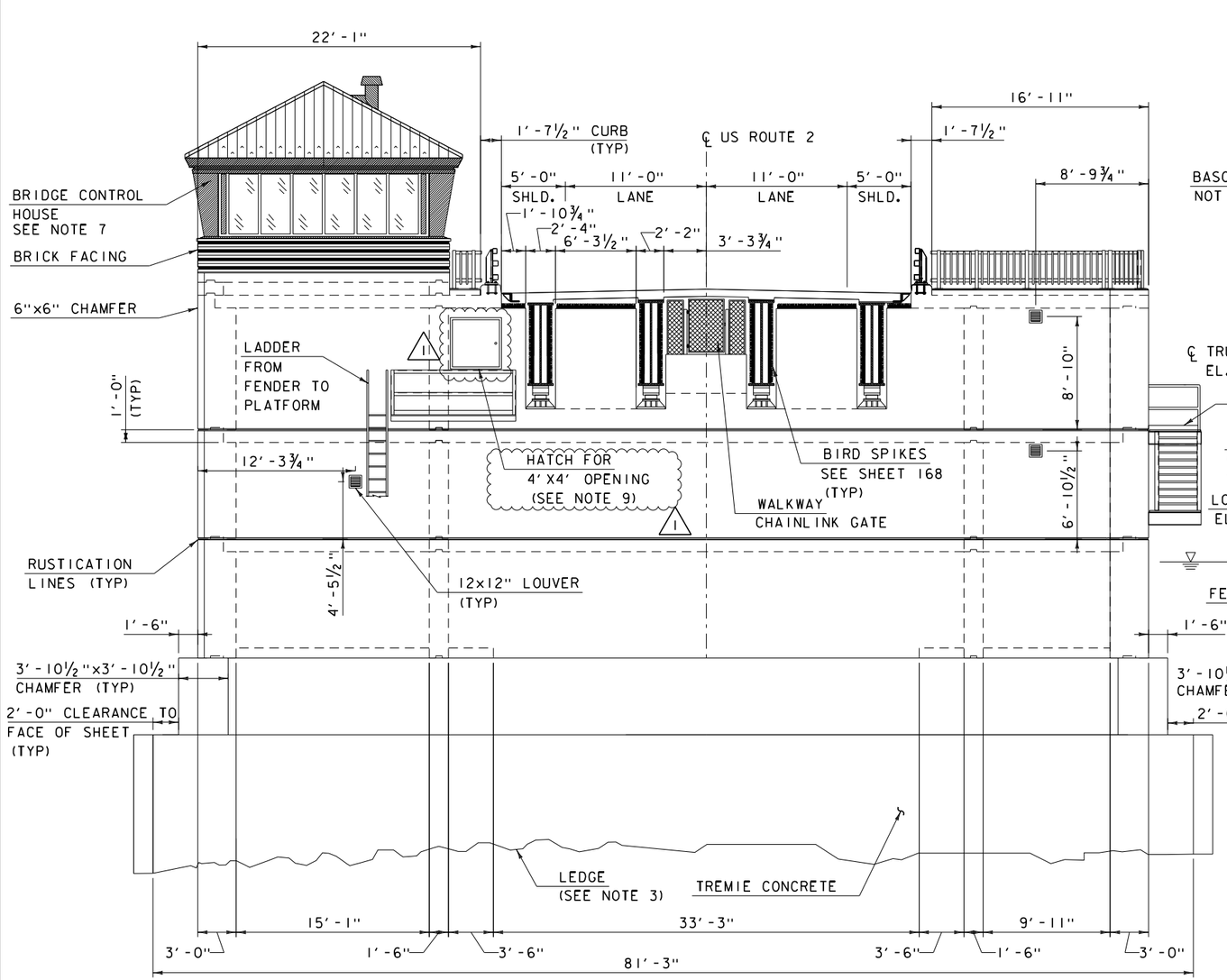
2. CONSTRUCTION OF THE BASCULE PIER FOOTINGS SHALL MEET REQUIREMENTS FOR MASS CONCRETE PLACEMENT.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	4-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

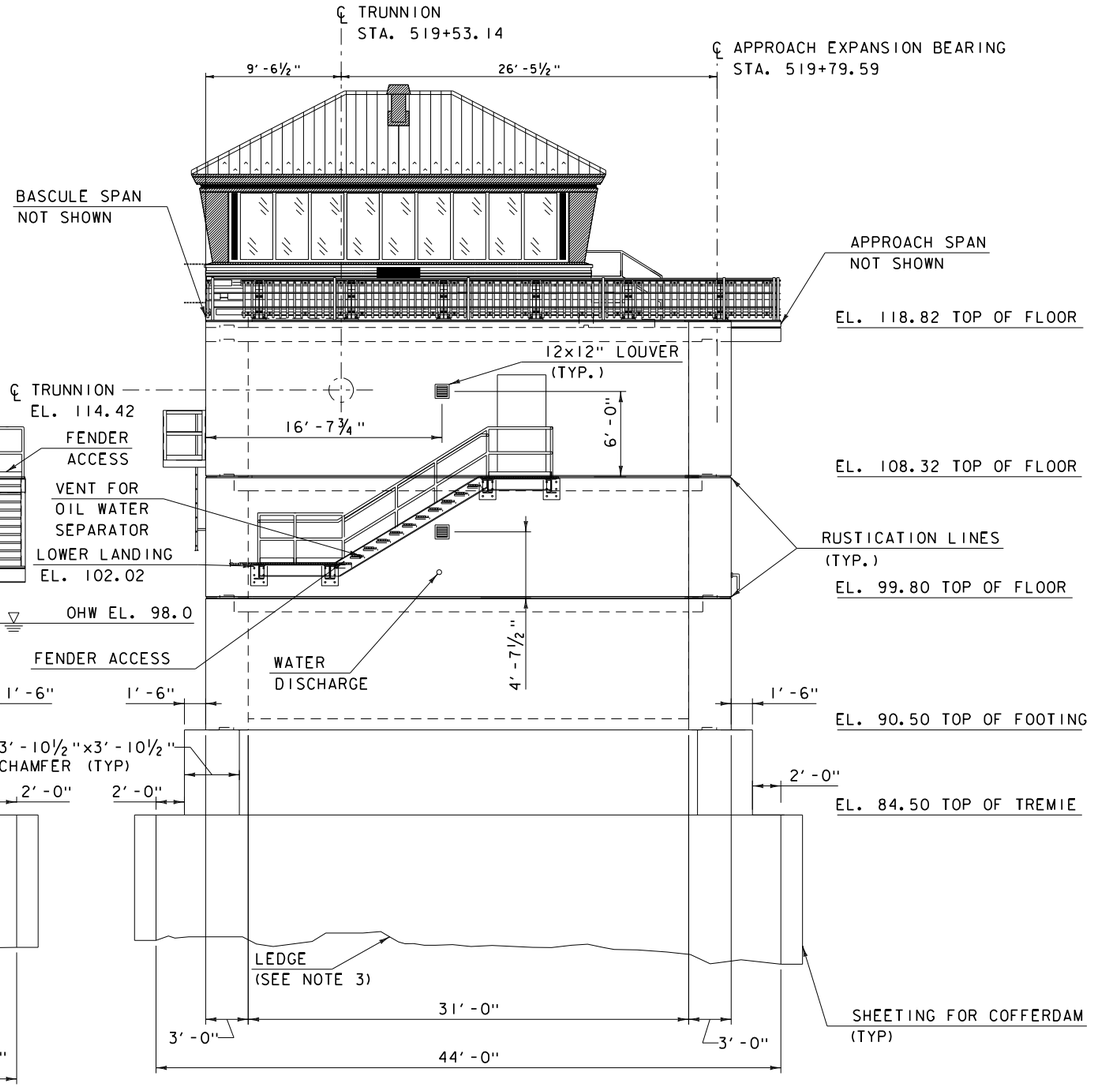
FILE NAME: z12b142PlsecG-G_H-H.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 1- SECTION G-G AND SECTION H-H

PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
SHEET 140 OF 379



PIER 2 - WEST ELEVATION

SCALE 3/16" = 1'-0"



PIER 2 - SOUTH ELEVATION

SCALE 3/16" = 1'-0"

NOTE

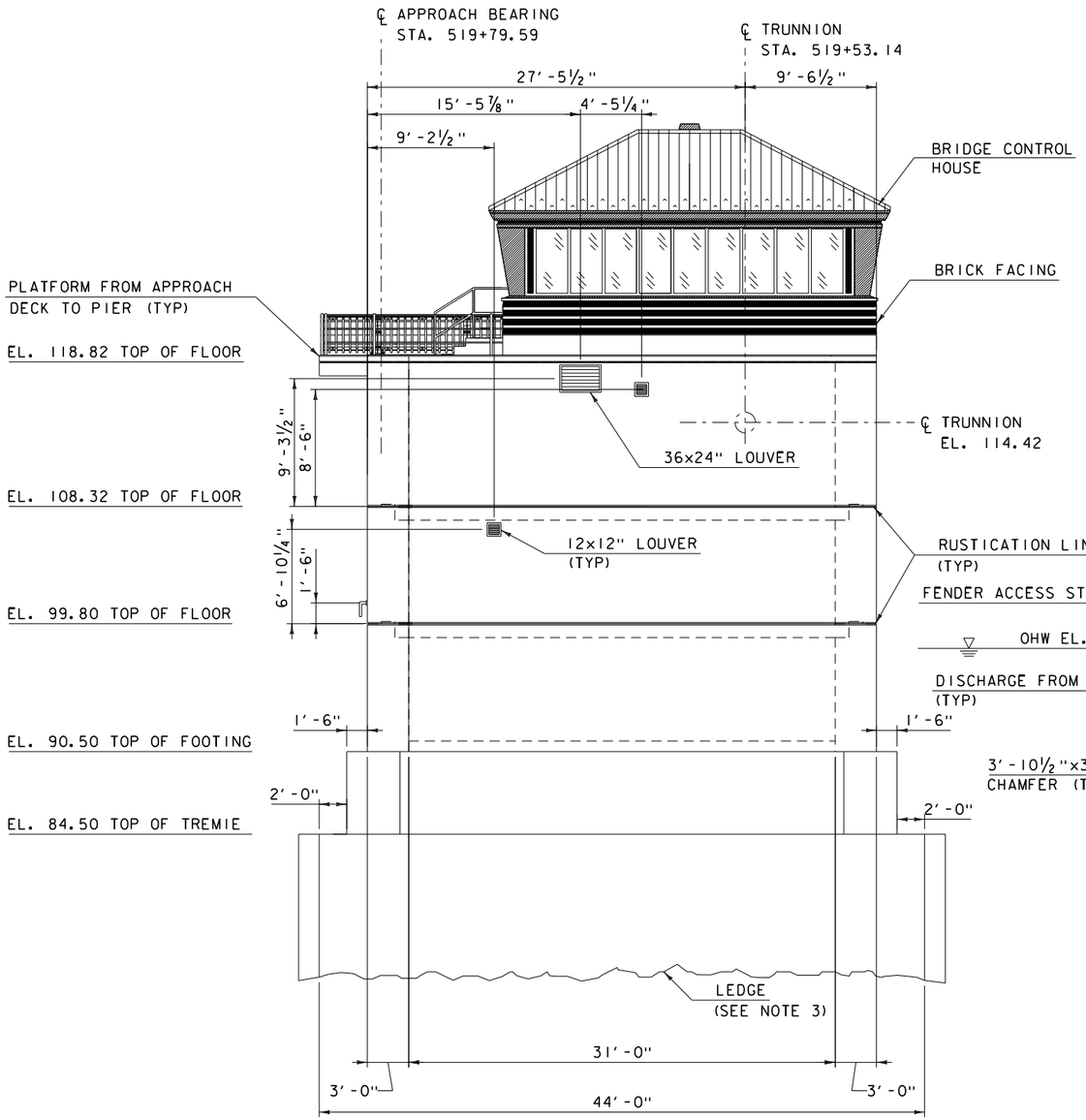
1. FENDER SYSTEM NOT SHOWN FOR CLARITY.
2. STEEL SHEETING FOR COFFERDAM SHALL BE REMOVED OR CUT OFF AT TOP OF TREMIE AT THE CONTRACTOR'S CONVENIENCE.
3. TOP OF LEDGE/BOTTOM OF TREMIE LINE AS SHOWN IS ASSUMED TO CORRESPOND WITH BOTTOM OF WEATHERED BEDROCK SHOWN IN BORING LOGS.
4. THE COST OF THE BIRD SPIKES WILL BE INCIDENTAL TO THE PRICE BID FOR NONSTRUCTURAL STEEL ITEM 900.645.
5. THE COST OF CONCRETE ABOVE ELEVATION 84.50 SHALL BE INCLUDED IN THE PRICE BID FOR CLASS B HIGH PERFORMANCE CONCRETE ITEM 501.34.
6. THE COST OF CONCRETE BELOW ELEVATION 84.50 SHALL BE INCLUDED IN THE PRICE BID FOR CONCRETE CLASS C (TREMIE) ITEM 541.30.
7. FOR ARCHITECTURAL CONTROL HOUSE DRAWINGS SEE SHEETS 183-202.
8. WALKWAY CHAIN-LINK GATE SHALL BE INCLUDED IN PRICE BID FOR SPECIAL PROVISION (NON-STRUCTURAL STEEL) ITEM 900.645.
9. SEE SHEET 173 FOR WALL HATCH DETAILS.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

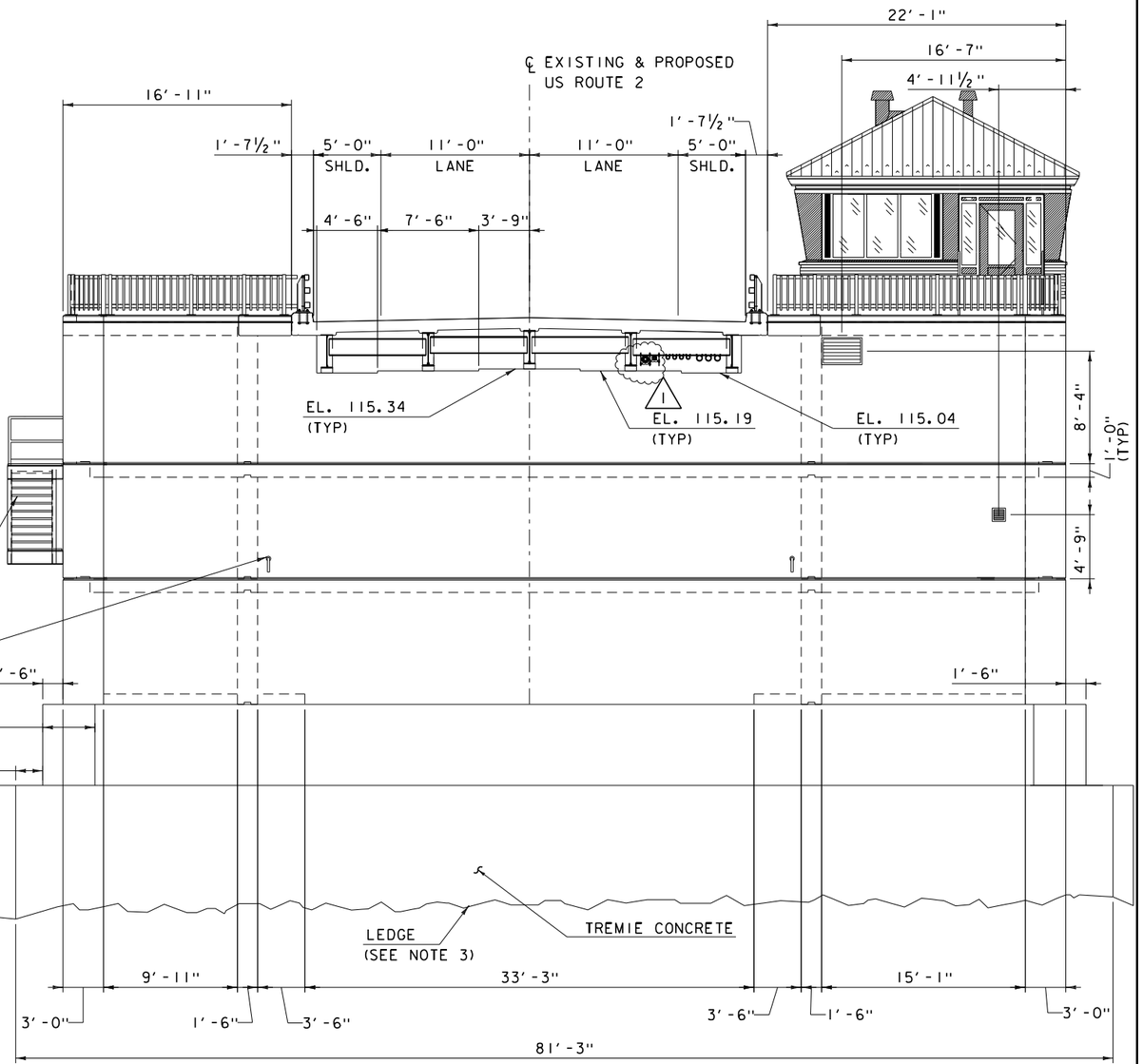
FILE NAME: z12b142pierel1.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER NO. 2 ELEVATIONS - 1

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 141 OF 379



PIER 2 - NORTH ELEVATION

SCALE 3/16" = 1'-0"



PIER 2 - EAST ELEVATION

SCALE 3/16" = 1'-0"

NOTE

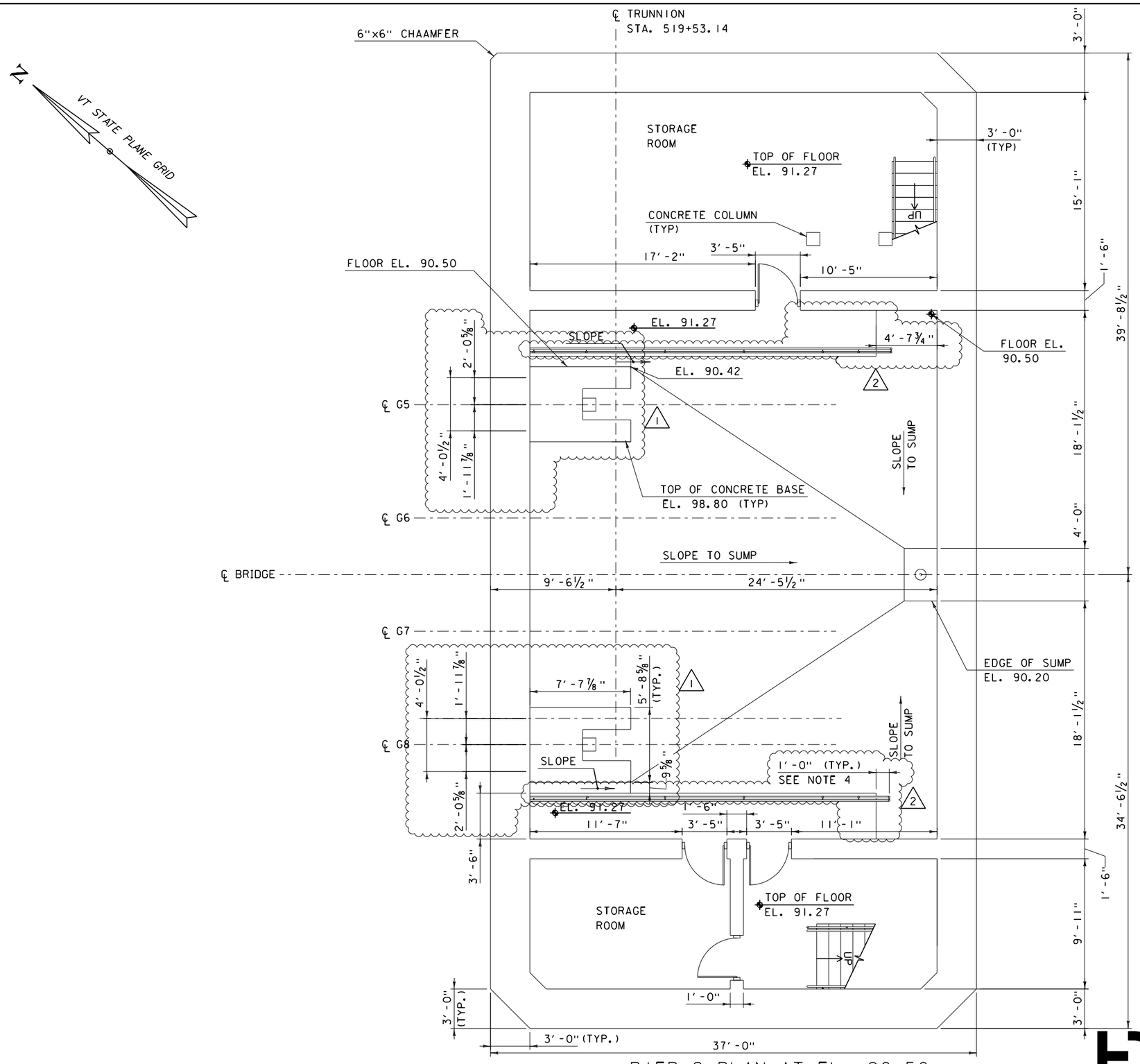
1. FENDER SYSTEM NOT SHOWN FOR CLARITY.
2. STEEL SHEETING FOR COFFERDAM SHALL BE REMOVED OR CUT OFF AT TOP OF TREMIE AT THE CONTRACTOR'S CONVENIENCE.
3. TOP OF LEDGE/BOTTOM OF TREMIE LINE AS SHOWN IS ASSUMED TO CORRESPOND WITH BOTTOM OF WEATHERED BEDROCK SHOWN IN BORING LOGS.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142pierel2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER NO. 2 ELEVATIONS - 2

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 142 OF 379



PIER 2 PLAN AT EL. 90.50

SCALE ¼" = 1'-0"

NOTE

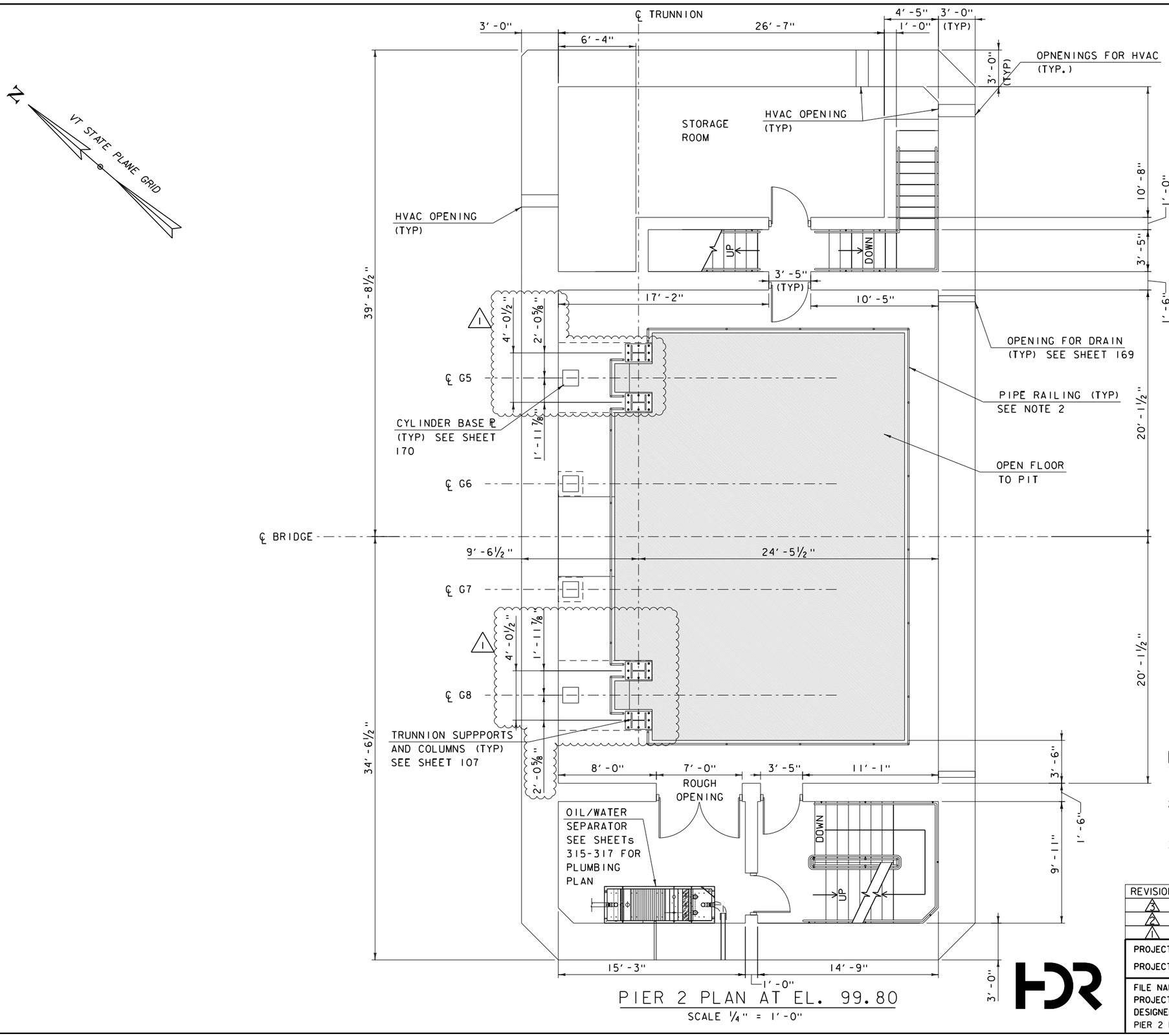
1. FENDER, TREMIE AND FOOTING NOT SHOWN FOR CLARITY.
2. COST OF PIPE RAIL SHALL BE INCLUDED IN PRICE BID FOR NONSTURCTURAL STEEL ITEM 900.645.
3. COST OF PIER CONCRETE SHALL BE INCLUDED IN PRICE BID ITEM FOR HIGH PERFORMANCE CONCRETE CLASS B ITEM 501.34.
4. FOR HANDRAIL DETAILS SEE SHEET 169. (2)

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142p2level3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER 2 PLAN AT EL. 90.50

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 143 OF 379



PIER 2 PLAN AT EL. 99.80

SCALE ¼" = 1′-0"

NOTE

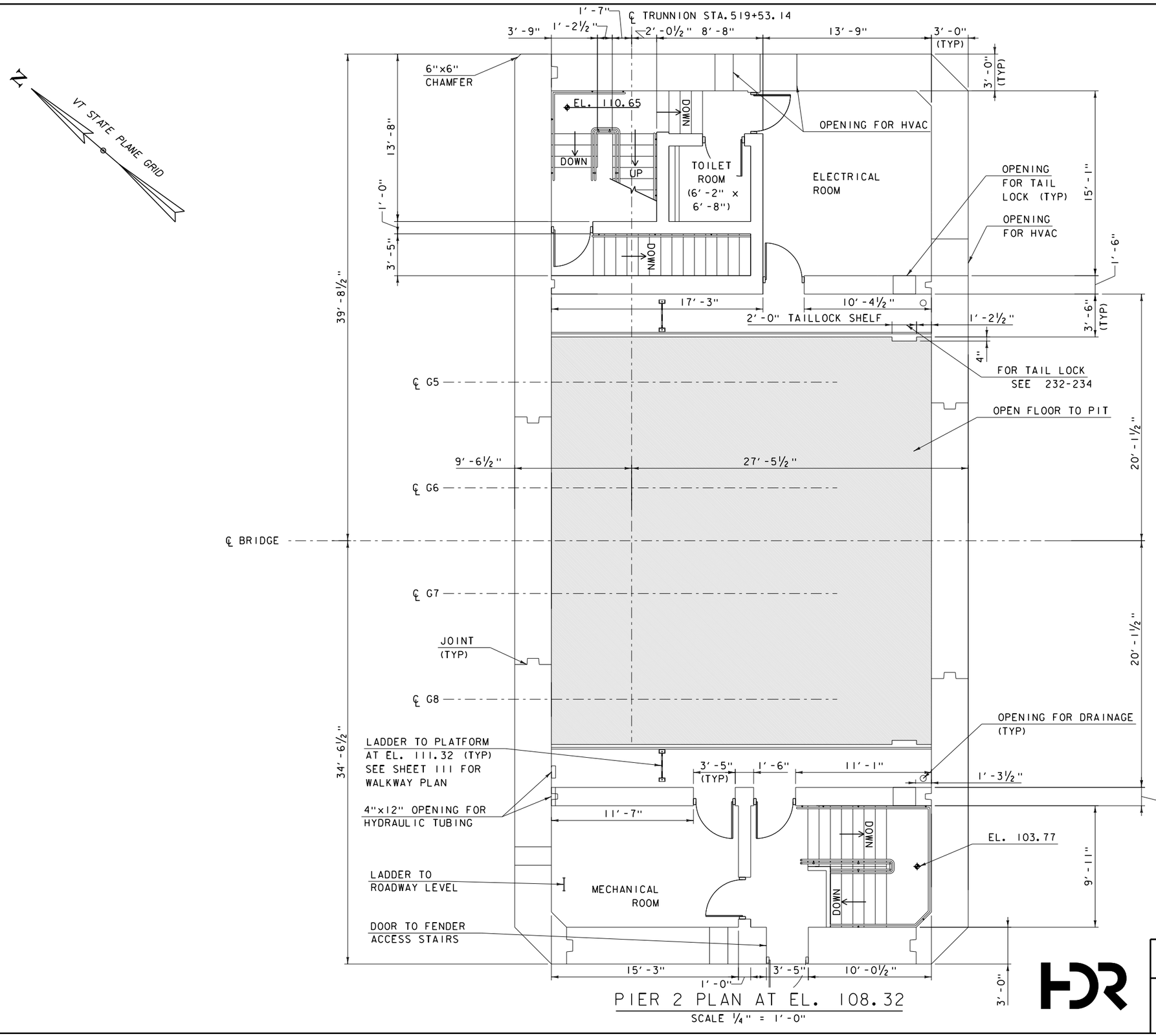
1. FENDER, FOOTING AND TREMIE NOT SHOWN FOR CLARITY.
2. COST OF PIPE RAIL SHALL BE INCLUDED IN PRICE BID FOR NONSTRUCTUAL STEEL ITEM 900.645.
3. COST OF PIER CONCRETE SHALL BE INCLUDED IN PRICE BID ITEM FOR HIGH PERFORMANCE CONCRETE CLASS B ITEM 501.34.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P2level2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER 2 PLAN AT EL.99.80

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 144 OF 379



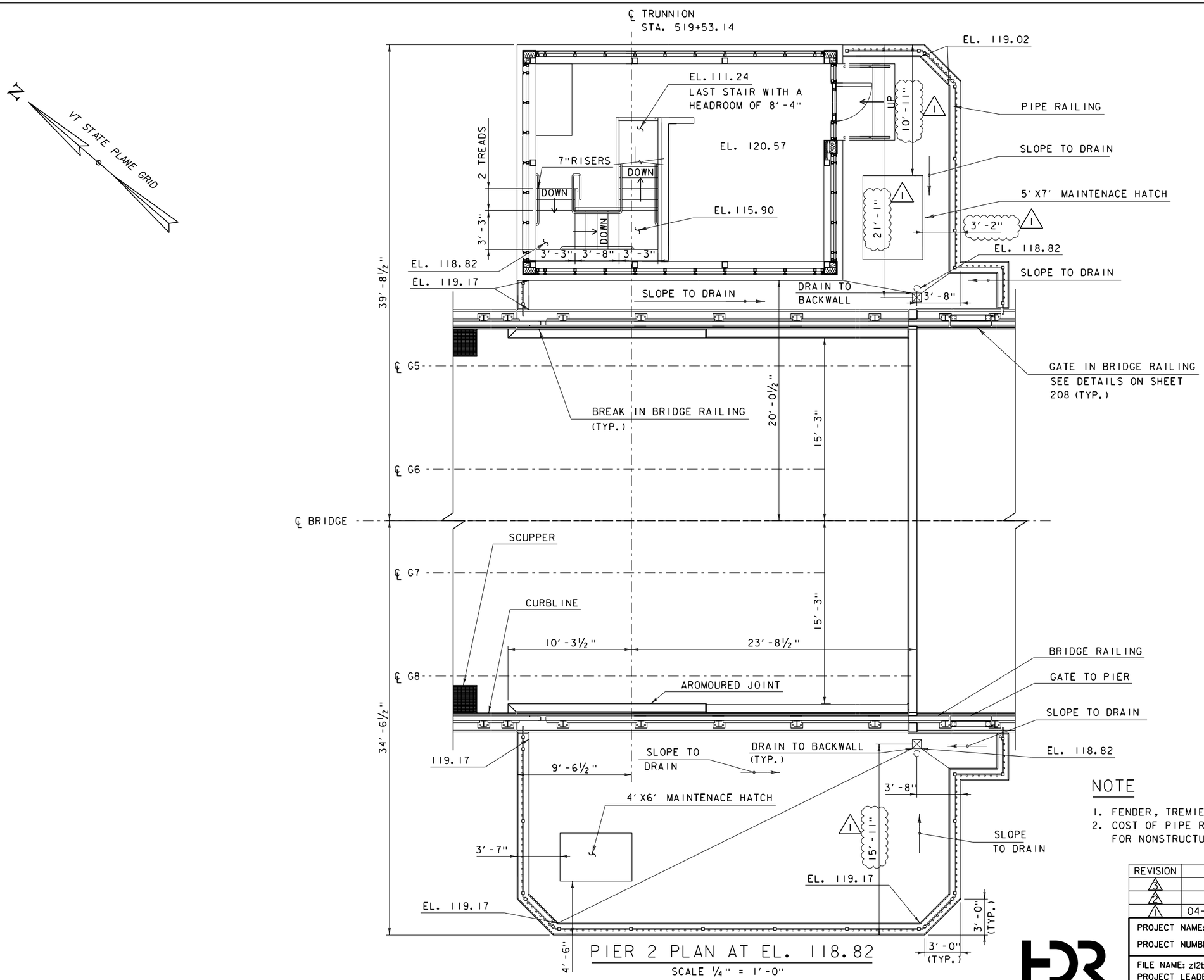
PIER 2 PLAN AT EL. 108.32

SCALE ¼" = 1'-0"

NOTE

1. FENDER, TREMIE, AND FOOTING NOT SHOWN FOR CLARITY.
2. COST OF PIPE RAIL SHALL BE INCLUDED IN PRICE BID FOR NON STRUCTURAL STEEL ITEM 900.645.
3. COST OF PIER CONCRETE SHALL BE INCLUDED IN PRICE BID ITEM FOR HIGH PERFORMANCE CONCRETE CLASS B ITEM 501.34.

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142p2levell.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: S. SANTRICH
DESIGNED BY: H. PROTIN	CHECKED BY: T. FRENCH
PIER 2 PLAN AT EL.108.32	SHEET 145 OF 379



PIER 2 PLAN AT EL. 118.82

SCALE 1/4" = 1'-0"

NOTE

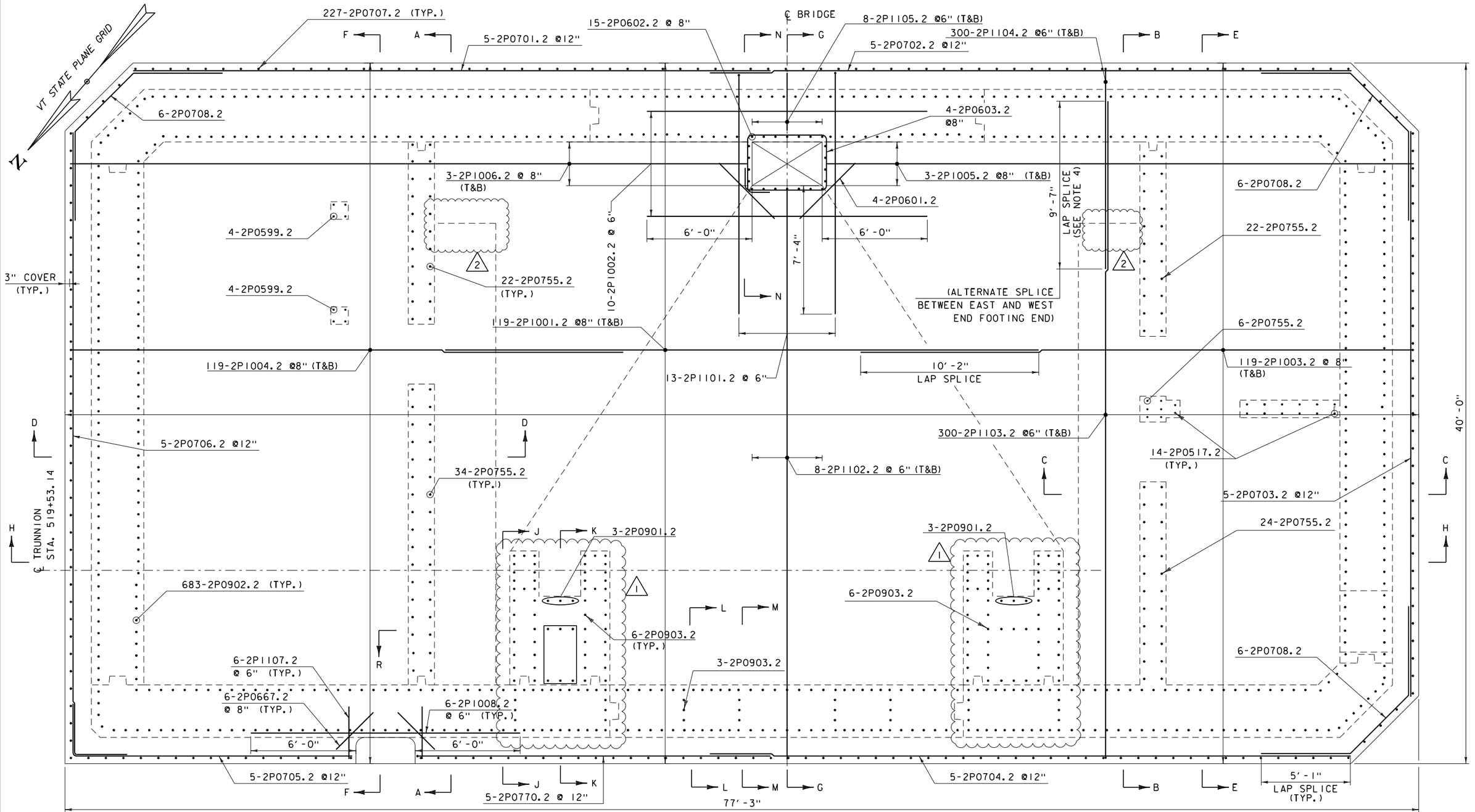
1. FENDER, TREMIE AND FOOTING NOT SHOWN FOR CLARITY.
2. COST OF PIPE RAIL SHALL BE INCLUDED IN PRICE BID FOR NONSTRUCTURAL STEEL ITEM 900.645.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142p2level0.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER 2 PLAN AT EL. 118.82

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 146 OF 379



NOTES:

1. CONSTRUCTION OF THE BASCULE PIER FOOTINGS SHALL MEET REQUIREMENTS FOR MASS CONCRETE PLACEMENT.
2. FOR FOOTING SECTIONS G-G AND H-H SEE "PIER I SECTION G-G AND SECTION H-H" SHEET. SHEET 140
3. WALL DOWEL SPACING SHALL BE COORDINATED WITH THE WALL MAIN REINFORCEMENT.
4. ADJUST LAP SPLICE AS REQUIRED FOR DUCT PENETRATION.

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

PIER 2 - FOOTING REINFORCEMENT PLAN

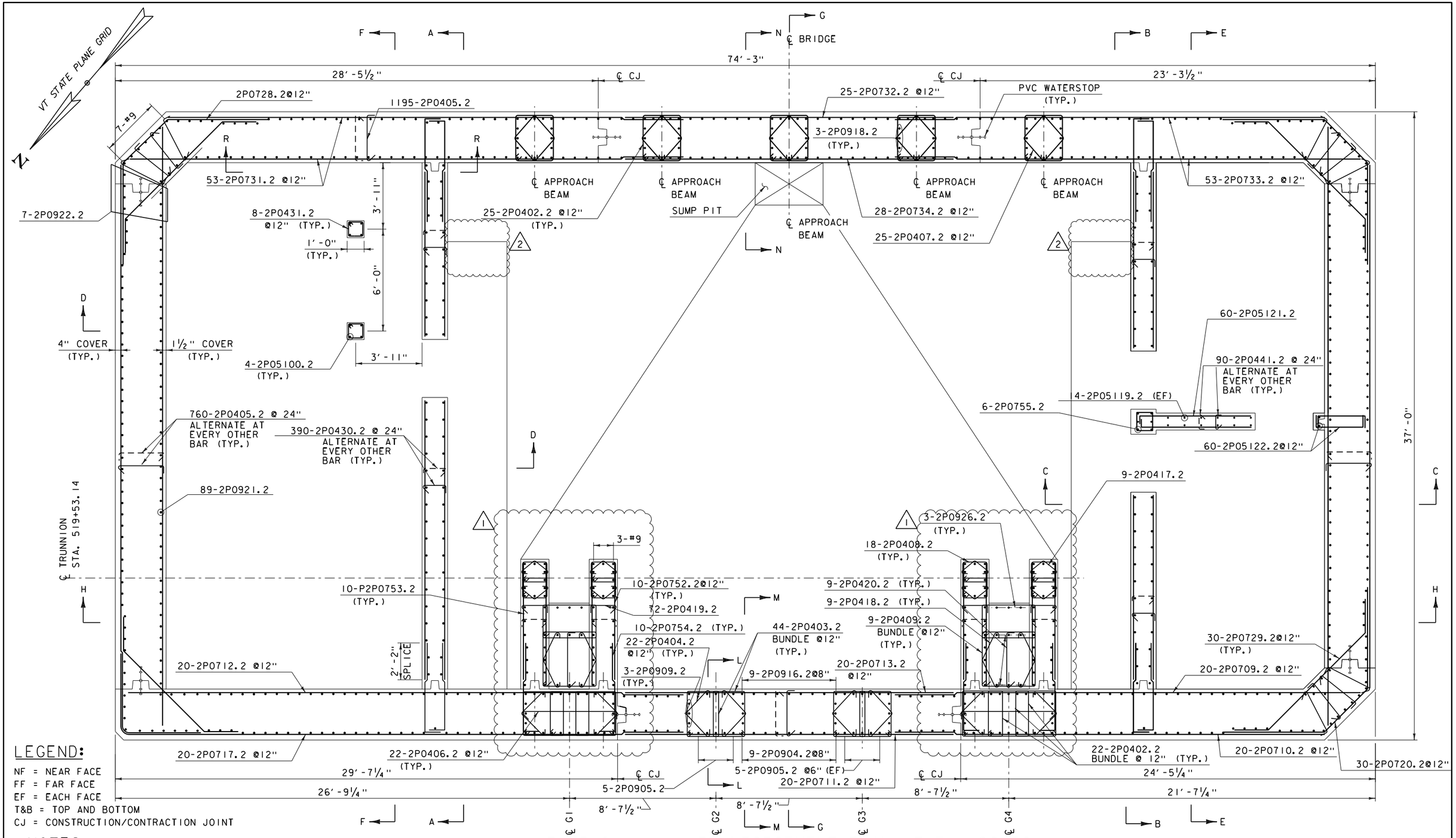
SCALE 3/8" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P2FR.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 2 - FOOTING REINFORCEMENT PLAN

PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
SHEET 147 OF 379



LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

1. FOR SECTIONS A-A THRU F-F SEE PIER 2 - SECTIONS A-A THRU F-F SHEETS. SHEETS 159-164

2. FOR SECTIONS G-G THRU H-H SEE PIER 2 - SECTIONS G-G THRU H-H SHEETS. SHEET 140

3. FOR SECTIONS J-J THRU L-L SEE PIER 1 & 2 TRUNNION SUPPORT REINFORCEMENT 1. SHEET 166

4. FOR SECTIONS M-M THRU N-N SEE PIER 1 & 2 TRUNNION SUPPORT REINFORCEMENT 2. SHEET 167

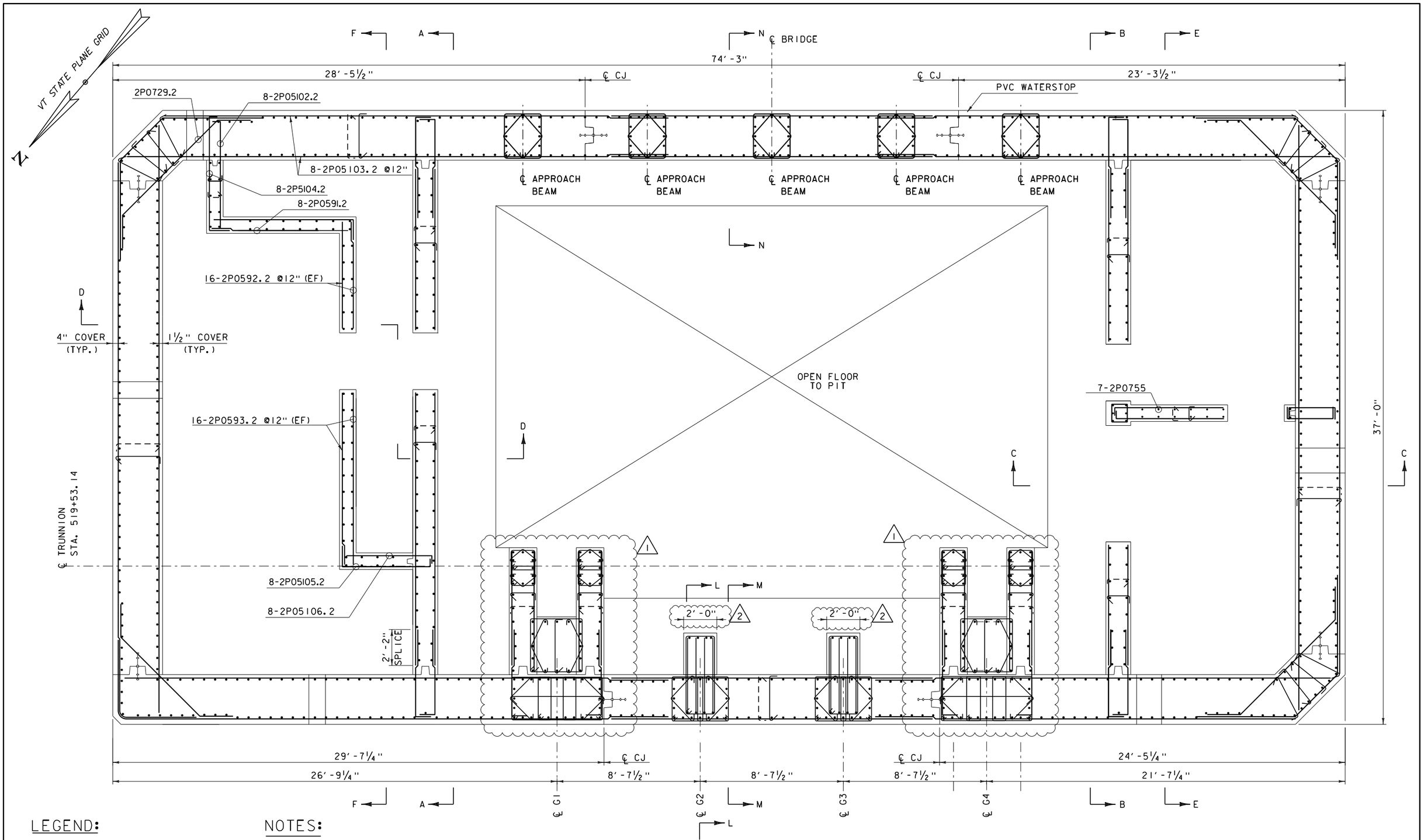
PIER 2 - WALL REINFORCEMENT PLAN AT EL. 90.50

SCALE ⅜″ = 1′-0″

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P2L3WR.dgn PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT DRAWN BY: J. JIMENEZ
DESIGNED BY: J. KRYSIEWICZ CHECKED BY: H. PROTIN
PIER 2-WALL REINFORCEMENT PLAN EL. 90.50 SHEET 148 OF 379



LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

1. FOR SECTIONS A-A THRU N-N SEE PIER 2 - SECTIONS A-A THRU N-N SHEETS. SHEETS 159-167

PIER 2 - WALL REINFORCEMENT PLAN AT EL. 99.80

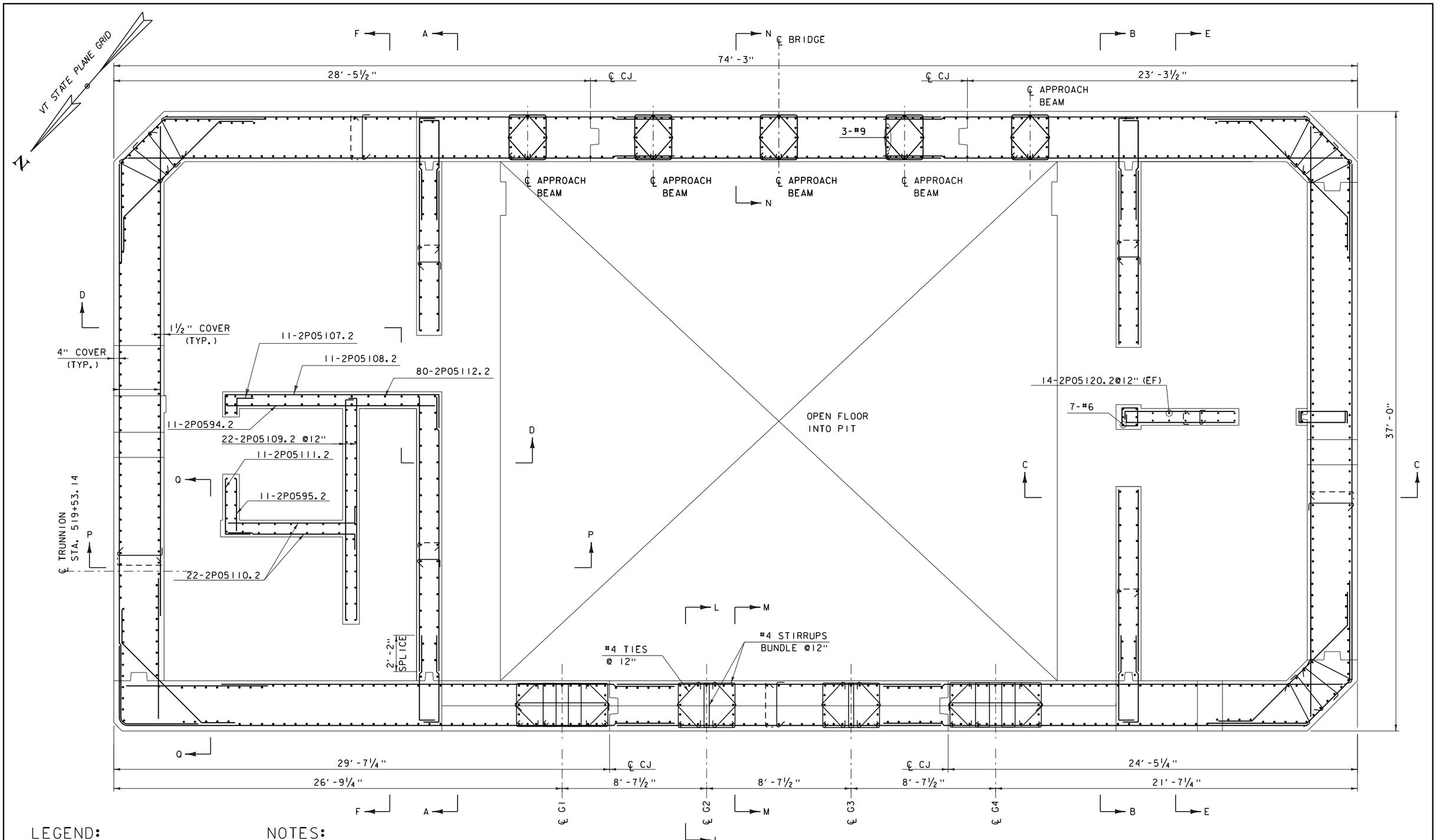
SCALE ⅜" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

HDR

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P2L2WR.dgn PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT DRAWN BY: J. JIMENEZ
DESIGNED BY: J. KRYSIEWICZ CHECKED BY: H. PROTIN
PIER 2-WALL REINFORCEMENT PLAN EL. 99.80 SHEET 149 OF 379



LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

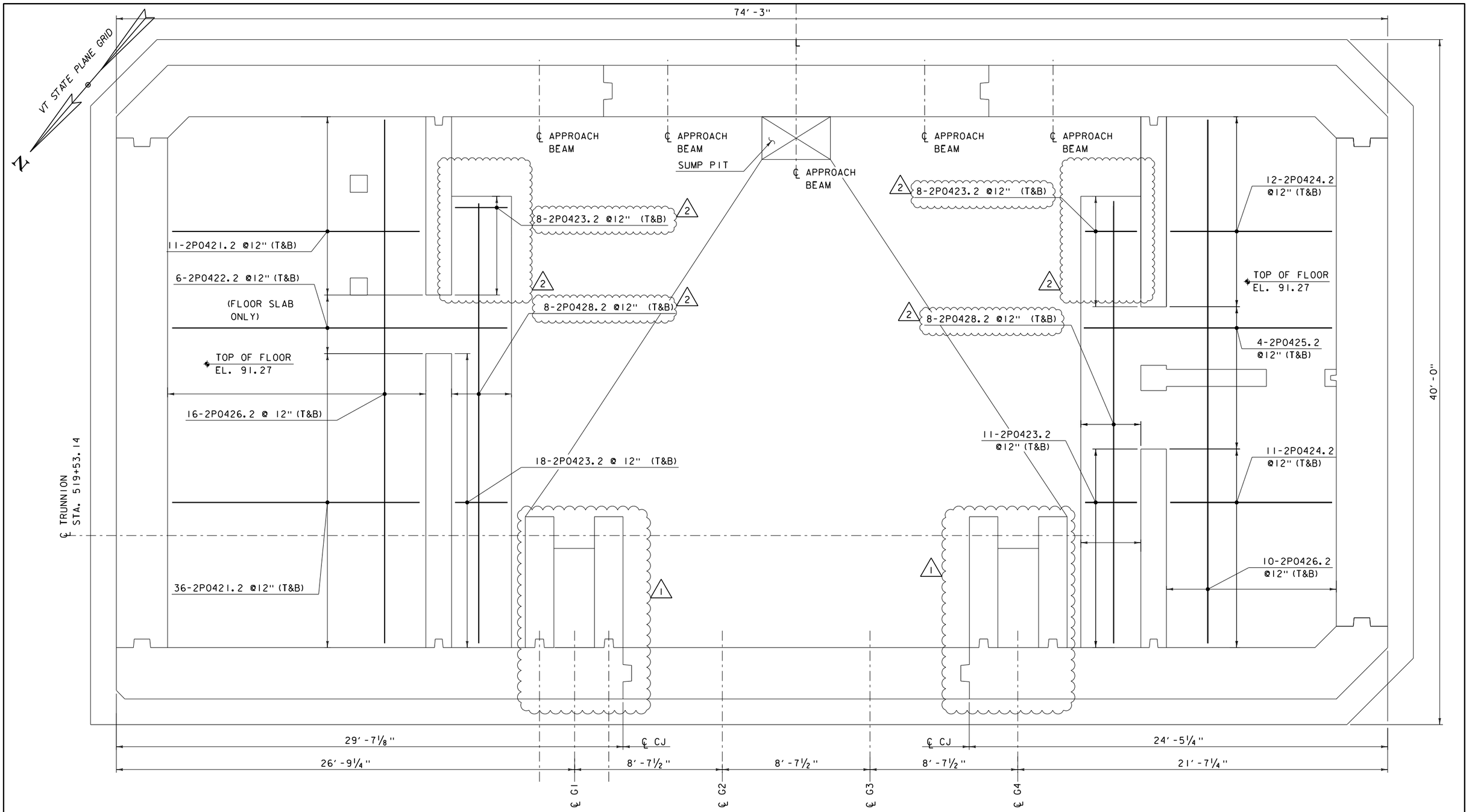
NOTES:

1. FOR SECTIONS P-P THRU Q-Q SEE PIER 2 - SECTIONS P-P THRU Q-Q SHEETS. SHEET 165

PIER 2 - WALL REINFORCEMENT PLAN AT EL. 108.32

SCALE ⅜" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142P2L2IWR.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. JIMENEZ
DESIGNED BY: J. KRYSIEWICZ	CHECKED BY: H. PROTIN
PIER 2-WALL REINF. PLAN EL. 108.32	SHEET 150 OF 379



LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

1. SEE PIER 2 - SECTIONS A-A SHEET FOR CONCRETE COVER REQUIREMENTS. SHEET 159.

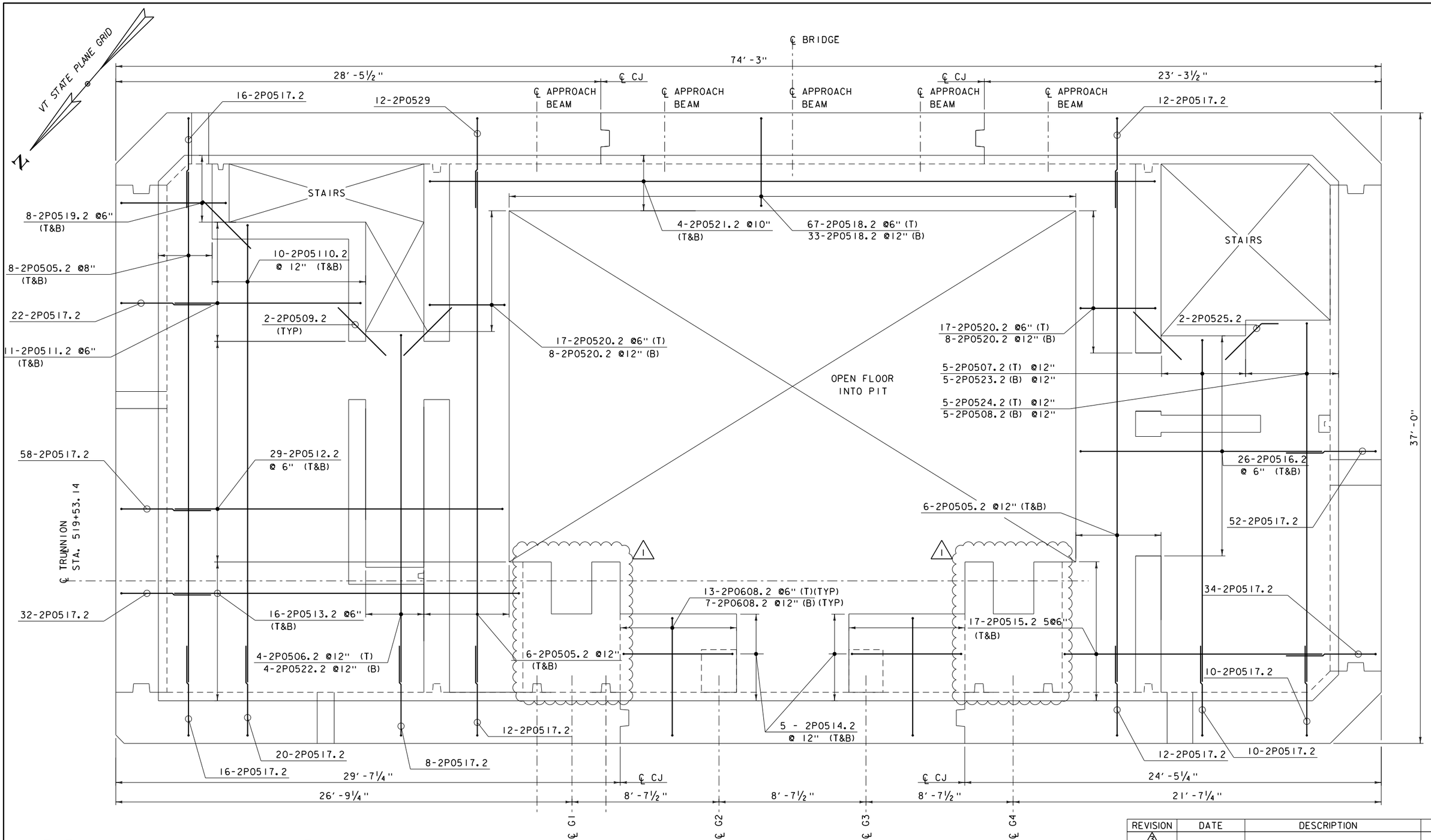
PIER 2 - SLAB REINFORCEMENT PLAN AT EL. 91.27

SCALE ⅜" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P2L3SR.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
PIER 2-SLAB REINFORCEMENT PLAN EL. 91.27 SHEET 151 OF 379



LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

1. SEE PIER 2 - SECTIONS A-A SHEET FOR CONCRETE COVER REQUIREMENTS. SHEET 159

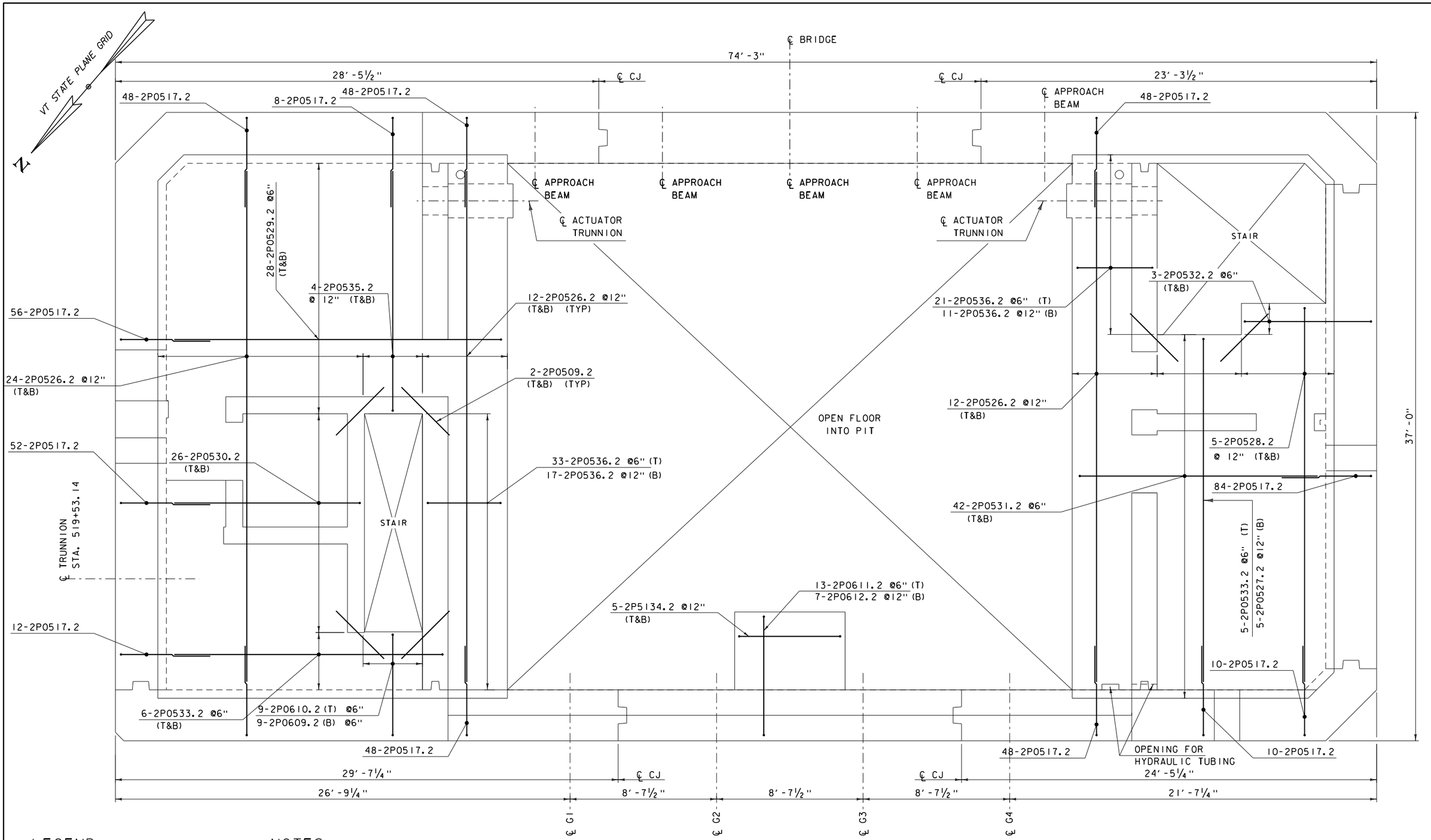
PIER 2 - SLAB REINFORCEMENT PLAN AT EL. 99.80

SCALE ⅜" = 1′-0"

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P2L2SR.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
PIER 2-SLAB REINFORCEMENT PLAN EL. 99.80 SHEET 152 OF 379



LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

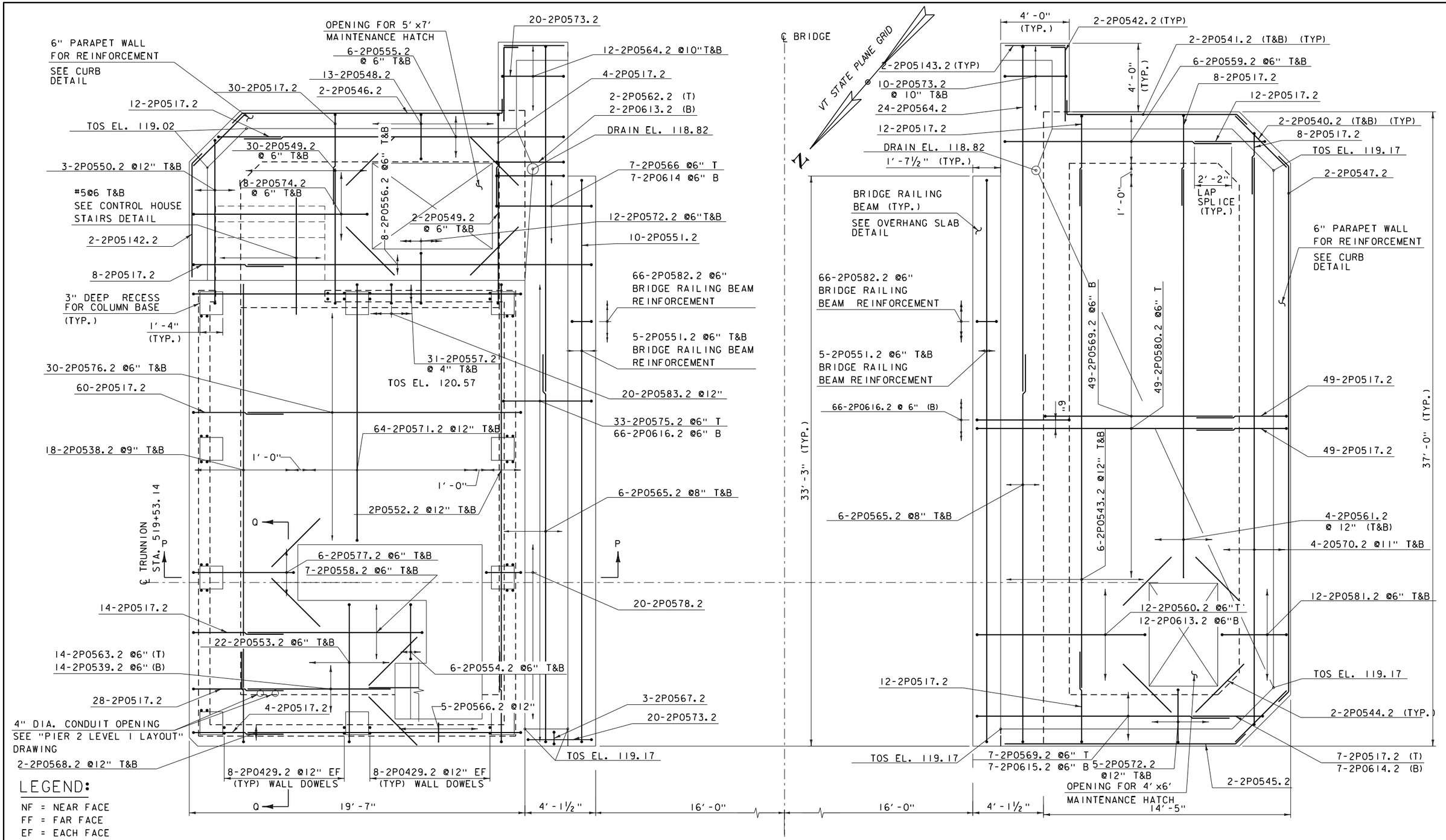
NOTES:

1. PROVIDE #5 (T&B), 4 FT. LONG BARS AT ALL SLAB OPENING CORNERS (TYP.).
2. SEE PIER 2 - SECTIONS A-A SHEET FOR CONCRETE COVER REQUIREMENTS. SHEET 159

PIER 2 - SLAB REINFORCEMENT PLAN AT EL. 108.32

SCALE ⅜" = 1′-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142P2L2ISR.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. JIMENEZ
DESIGNED BY: J. KRYSIEWICZ	CHECKED BY: H. PROTIN
PIER 2-SLAB REINFORCEMENT PLAN EL. 108.32	SHEET 153 OF 379



LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRACTION JOINT

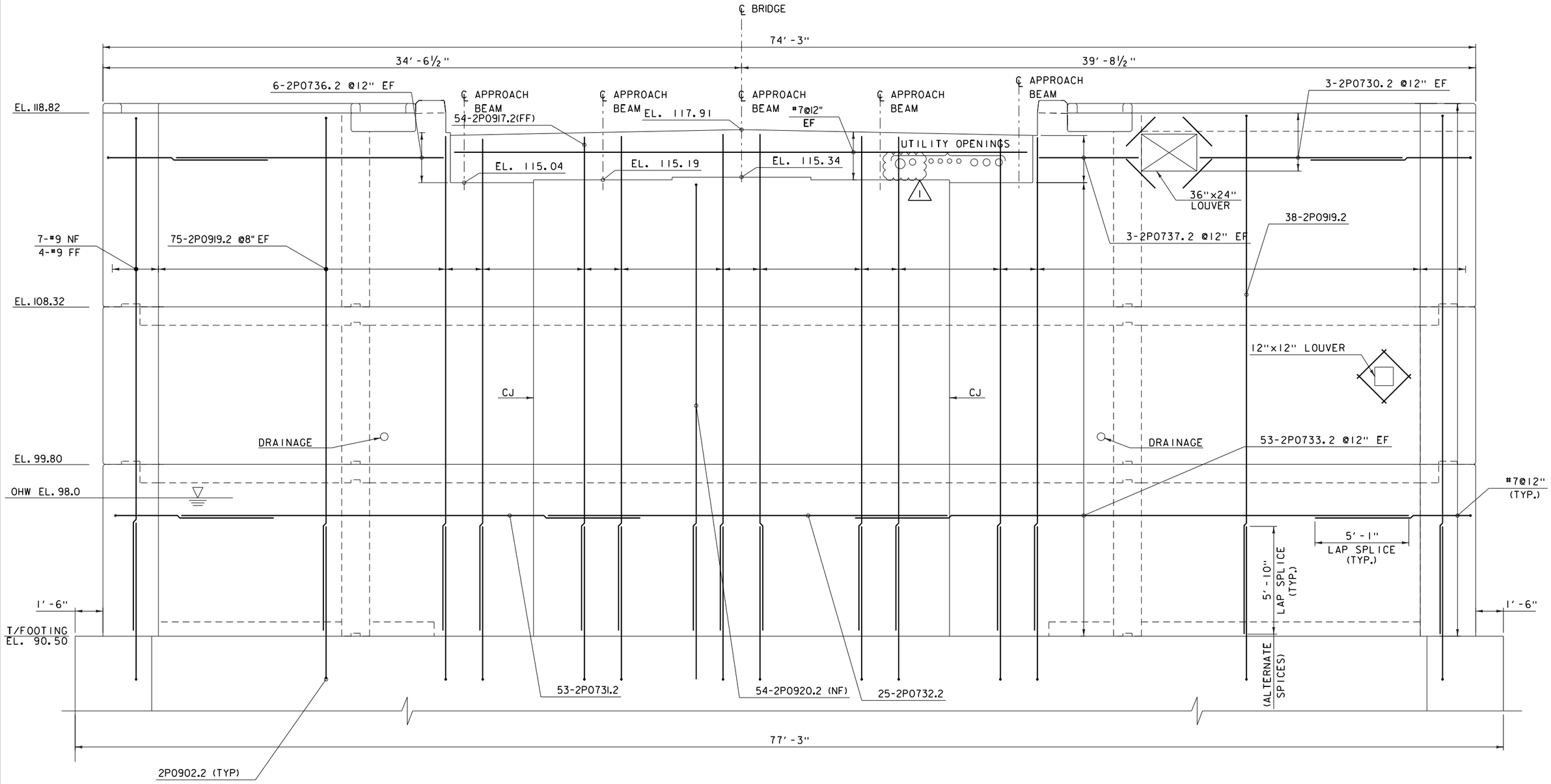
NOTES:

1. PROVIDE #5 (T&B), 4 FT. LONG BARS AT ALL SLAB OPENING CORNERS (TYP.).
2. FOR OVERHANG SLAB AND PARAPET WALL DETAILS SEE PIER MISCELLANEOUS DETAILS - 2 SHEET. SHEET 169
3. SEE PIER 2 - SECTIONS A-A SHEET FOR CONCRETE COVER REQUIREMENTS. SHEET 159
4. FOR CONTROL HOUSE STAIR DETAIL SEE DWG. PIER 2-SECTIONS P-P & Q-Q. SHEET 165

PIER 2 - SLAB REINFORCEMENT PLAN AT EL. 118.82

SCALE ⅜" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142P2L0SR.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. KRYSIEWICZ
DESIGNED BY: J. KRYSIEWICZ	CHECKED BY: H. PROTIN
PIER 2-SLAB REINFORCEMENT PLAN EL. 118.82	SHEET 154 OF 379



PIER 2 - EAST WALL REINFORCEMENT

SCALE ⅜" = 1′-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

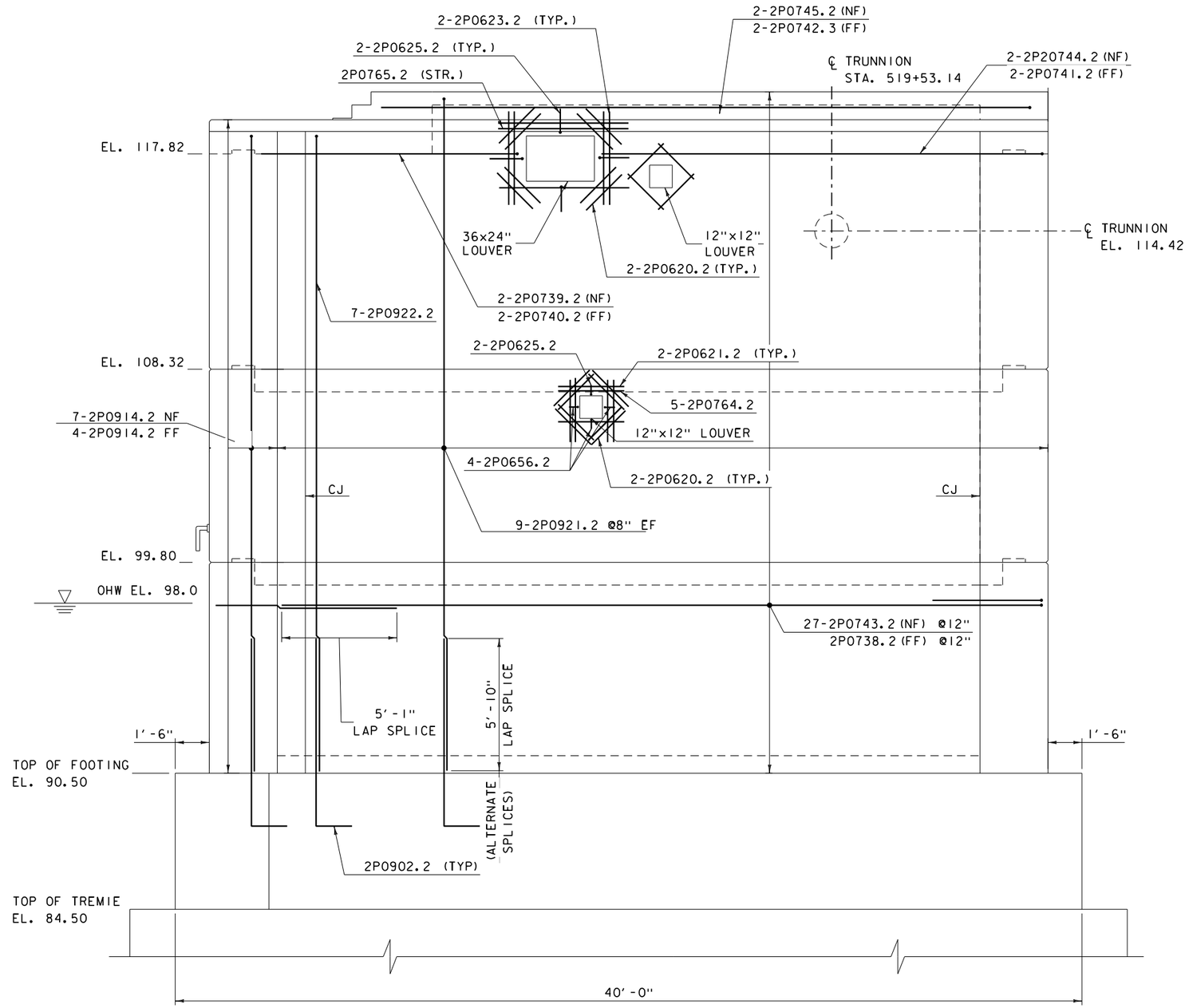
1. FOR ADDITIONAL REINFORCEMENT AROUND DOOR AND WALL OPENINGS SEE "PIER MISCELLANEOUS DETAILS 1" DRAWING. SHEET 168
2. FOR DOWEL EMBEDMENT DEPTH, SEE PIER 1 SECTION G-G AND H-H DRAWING. SHEET 140

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P2EWall.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 2 - EAST WALL REINFORCEMENT

PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
SHEET 155 OF 379



LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

1. FOR ADDITIONAL REINFORCEMENT AROUND DOOR AND WALL OPENINGS SEE "PIER MISCELLANEOUS DETAILS 1" DRAWING. SHEET 168

2. FOR DOWEL EMBEDMENT DEPTH, SHEET 168 PIER 1 SECTION G-G AND H-H DRAWING. SHEET 140

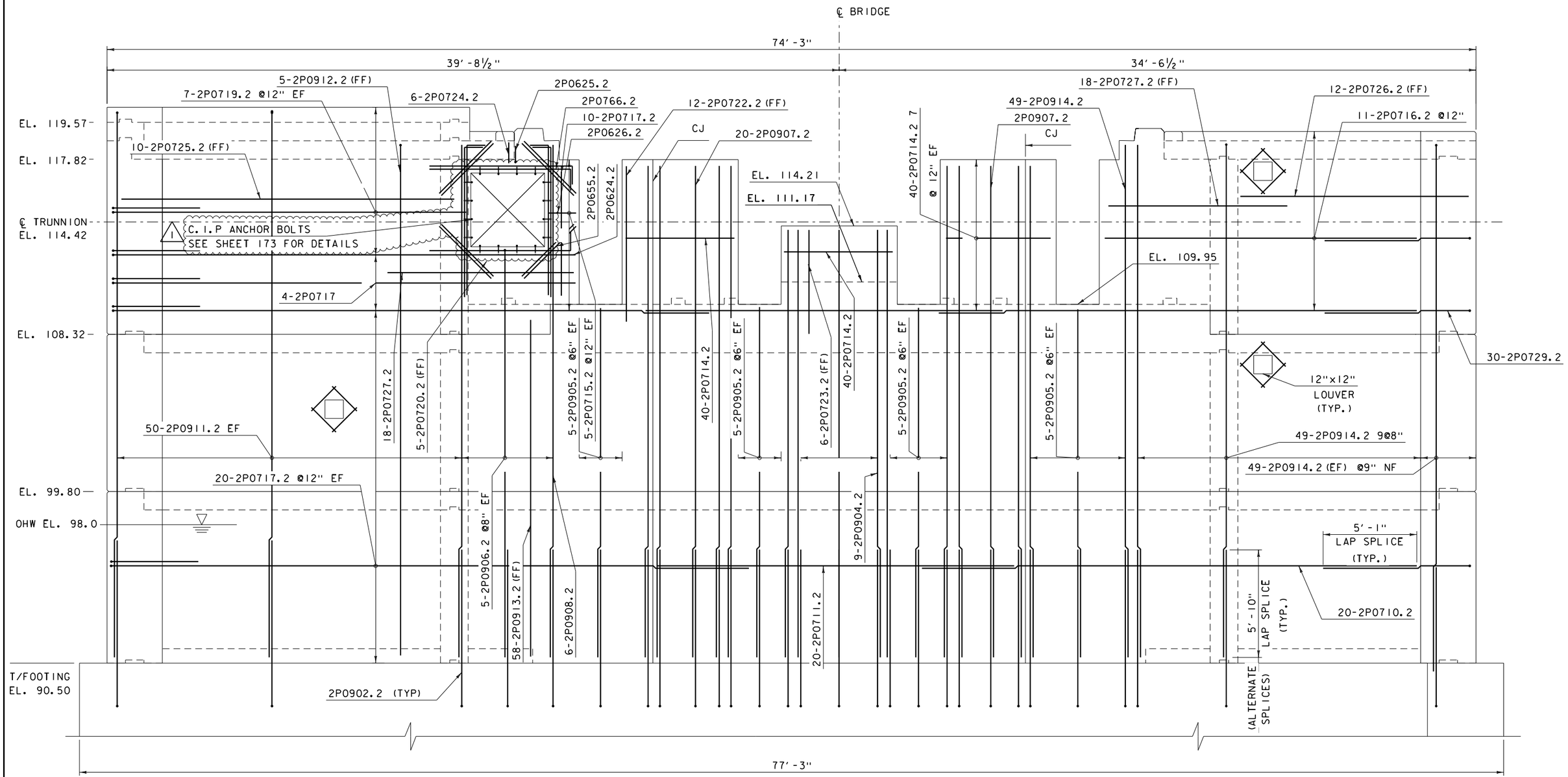
PIER 2 - NORTH WALL REINFORCEMENT

SCALE 3/8" = 1'-0"

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142PISWall.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 2 - NORTH WALL REINFORCEMENT

PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
SHEET 156 OF 379



PIER 2 - WEST WALL REINFORCEMENT

(CONTROL HOUSE NOT SHOWN FOR CLARITY)

SCALE ⅜" = 1′-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

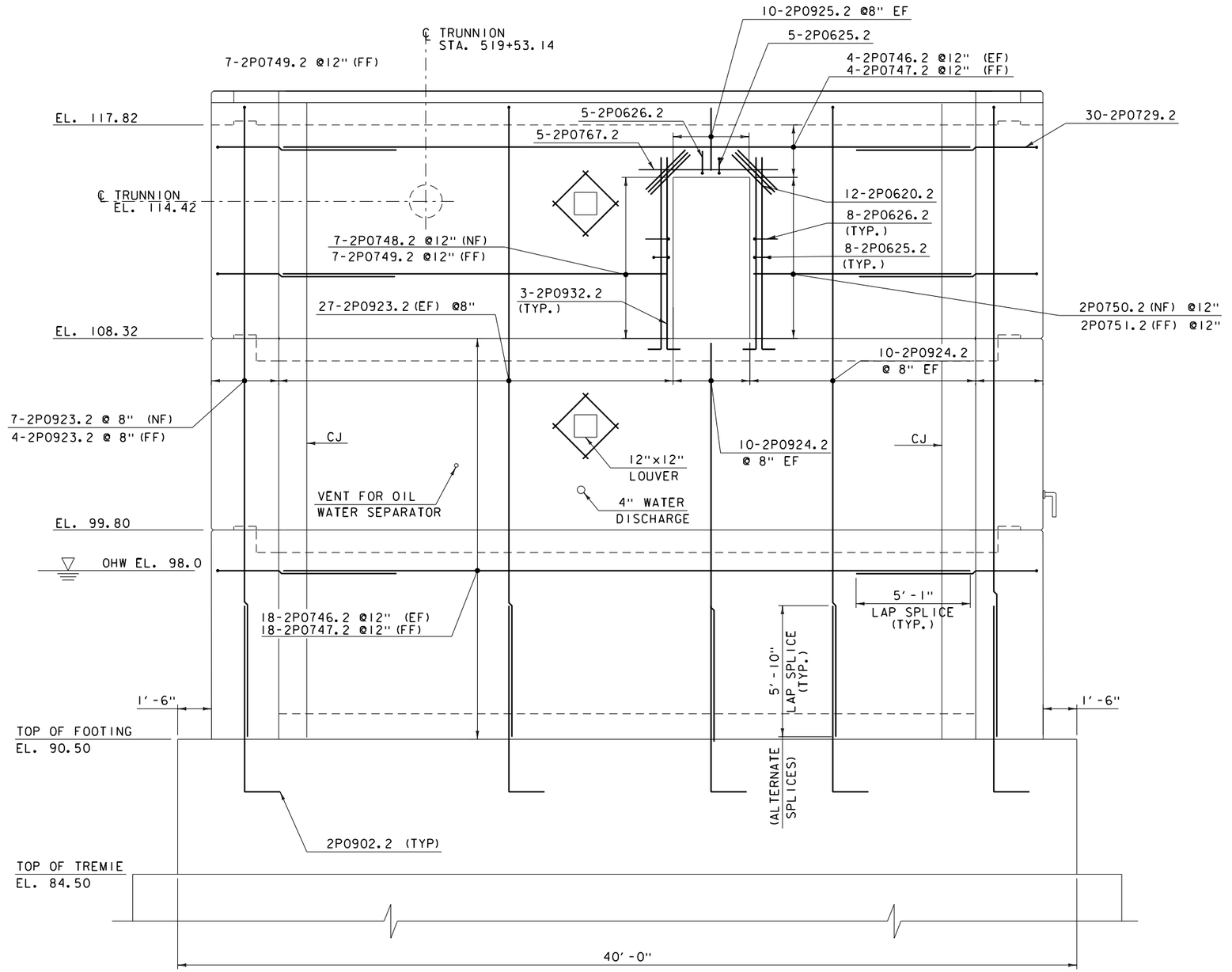
1. FOR ADDITIONAL REINFORCEMENT AROUND DOOR AND WALL OPENINGS SEE "PIER MISCELLANEOUS DETAILS 1" DRAWING. SHEET 168
2. FENDER NOT SHOWN FOR CLARITY, FOR DETAILS SEE FENDER SHEETS.
3. FOR DOWEL EMBEDMENT DEPTH, SEE PIER 1 SECTION G-G AND H-H DRAWING. SHEET 140

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42P2WWall.dgn
PROJECT LEADER: T. FRENCH
DESIGNED BY: J. KRYSIEWICZ
PIER 2 - WEST WALL REINFORCEMENT

PLOT DATE: 2/20/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
SHEET 157 OF 379



LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

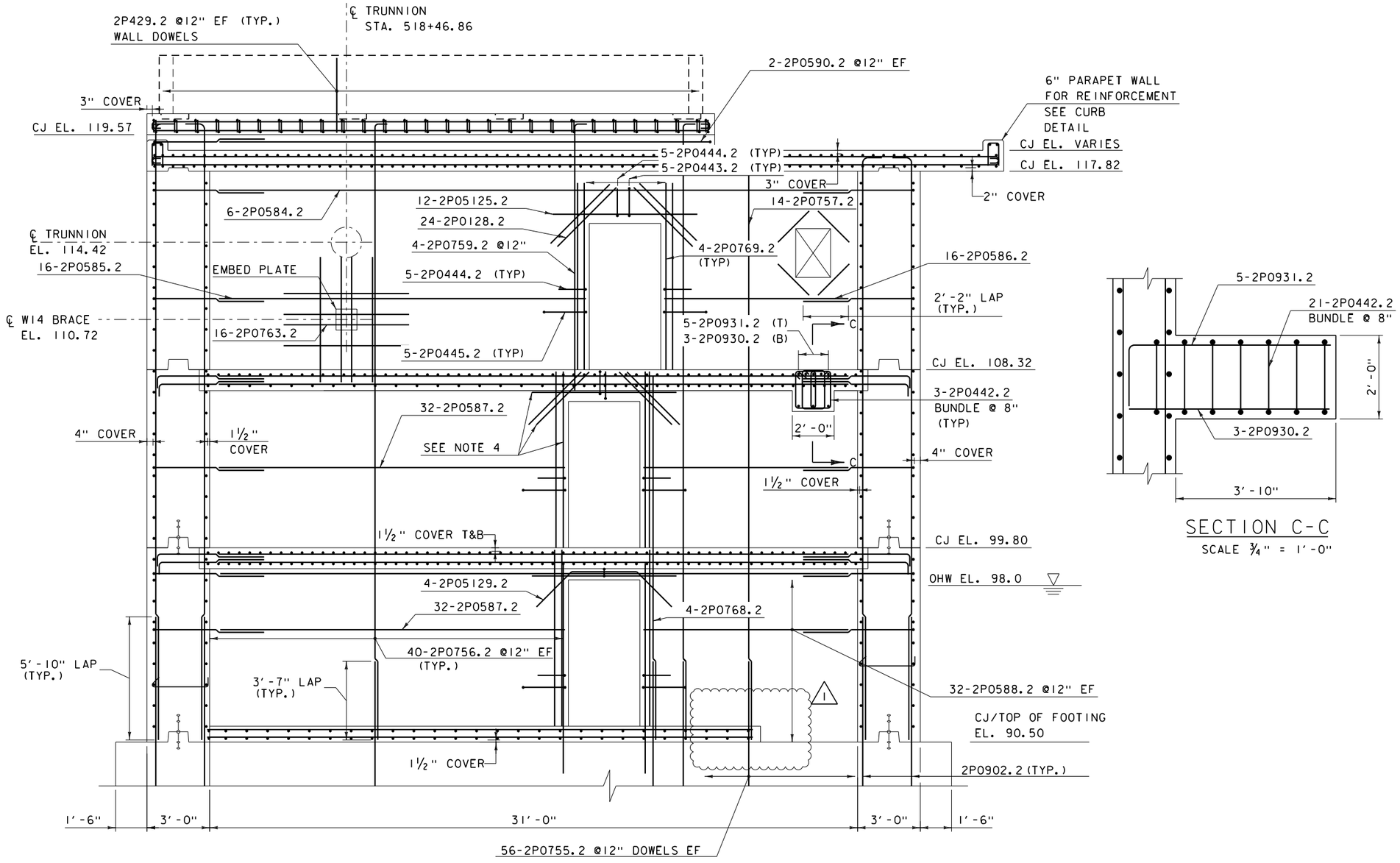
1. FOR ADDITIONAL REINFORCEMENT AROUND DOOR AND WALL OPENINGS SEE "PIER MISCELLANEOUS DETAILS 1" DRAWING. SHEET 168
2. FENDER NOT SHOWN FOR CLARITY, FOR DETAILS SEE FENDER SHEETS.
3. FOR DOWEL EMBEDMENT DEPTH, SEE PIER 1 SECTION G-G AND H-H DRAWING. SHEET 140

PIER 2 - SOUTH WALL REINFORCEMENT

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P2SWall.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 2 - SOUTH WALL REINFORCEMENT

PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
SHEET 158 OF 379



PIER 2 - SECTION A-A

SCALE ⅜" = 1'-0"

SECTION C-C

SCALE ¾" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

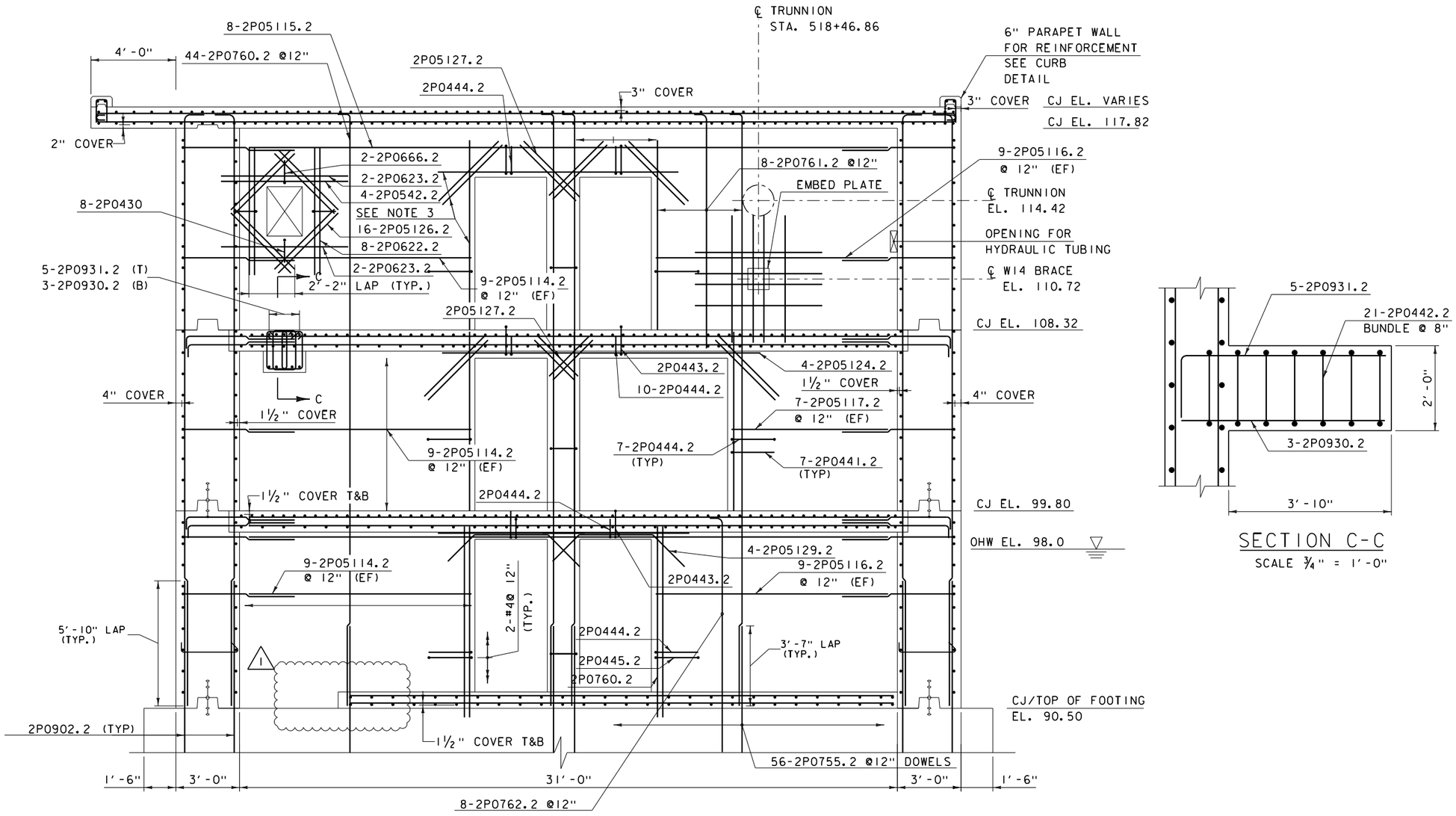
1. SEE TRUNNION SUPPORT DETAILS FOR EMBED PLATE DETAILS.
2. FOR ADDITIONAL REBARS AROUND OPENING SEE DOOR OPENING DETAIL ON PIER MISCELLANEOUS DETAILS 1 SHEET. SHEET 107-110
3. FOR CURB DETAILS SEE PIER MISCELLANEOUS DETAILS - 2 SHEET. SHEET 169
4. FOR FOOTING REINFORCEMENT, SEE PIER 1 SECTION G-G AND SECTION H-H DRAWING. SHEET 140

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P2secA-A.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 2 - SECTION A-A

PLOT DATE: 2/6/2018
DRAWN BY: J. KRYSIEWICZ
CHECKED BY: H. PROTIN
SHEET 159 OF 379



PIER 2 - SECTION B-B

SCALE 3/8" = 1'-0"

SECTION C-C

SCALE 3/4" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

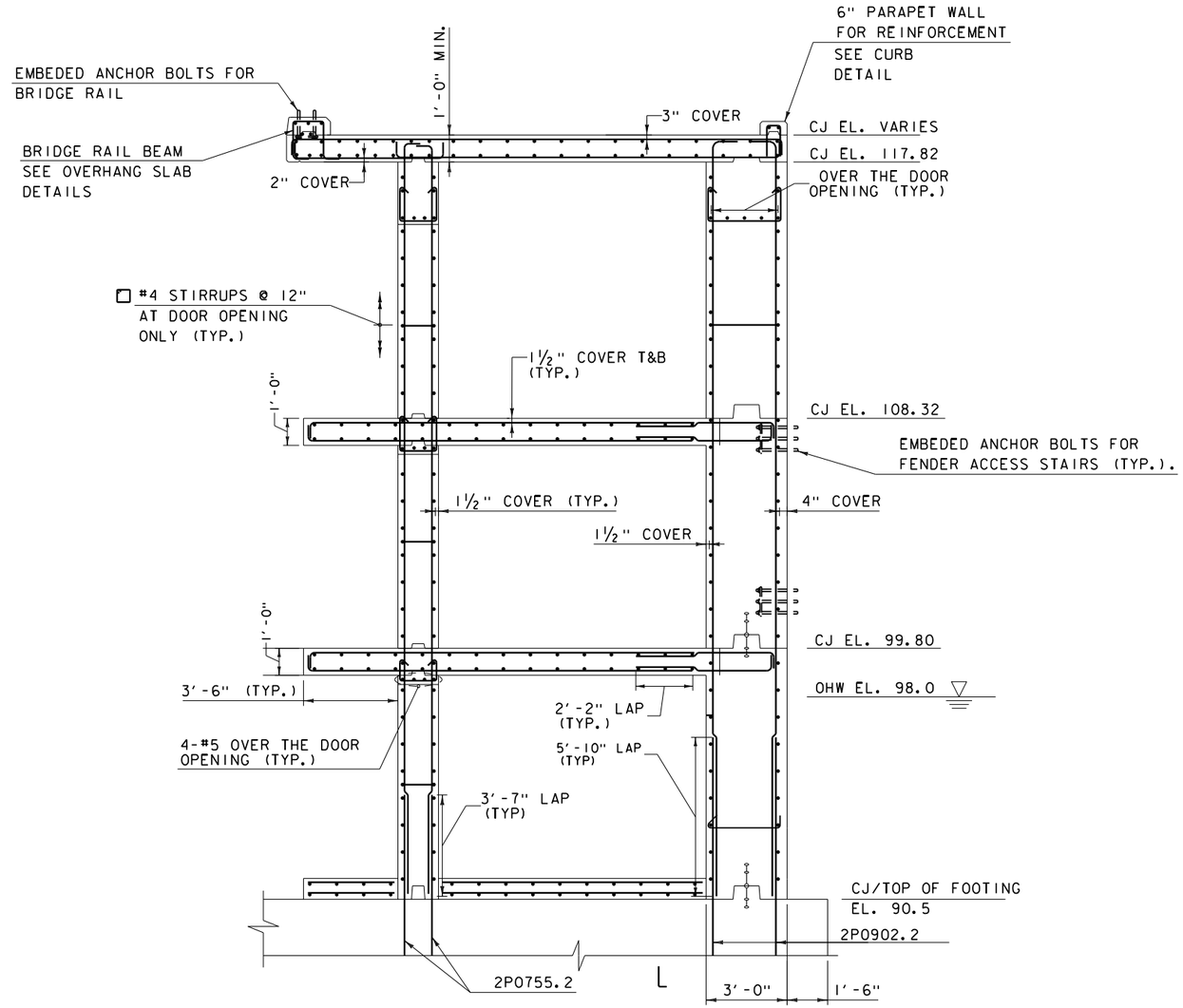
1. SEE TRUNNION SUPPORT DETAILS FOR EMBED PLATE DETAILS.
2. FOR ADDITIONAL REBARS AROUND OPENING SEE DOOR OPENING SHEET 107-110 DETAIL ON PIER MISCELLANEOUS DETAILS 1 SHEET. SHEET 168
3. FOR CURB DETAILS SEE PIER MISCELLANEOUS DETAILS - 2 SHEET. SHEET 169
4. FOR FOOTING REINFORCEMENT, SEE PIER 1 SECTION G-G AND SECTION H-H DRAWING. SHEET 140

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P2secB-B.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 2 - SECTION B-B

PLOT DATE: 2/6/2018
DRAWN BY: J. KRYSIEWICZ
CHECKED BY: H. PROTIN
SHEET 160 OF 379



PIER 2 - SECTION C-C

SCALE ⅜" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

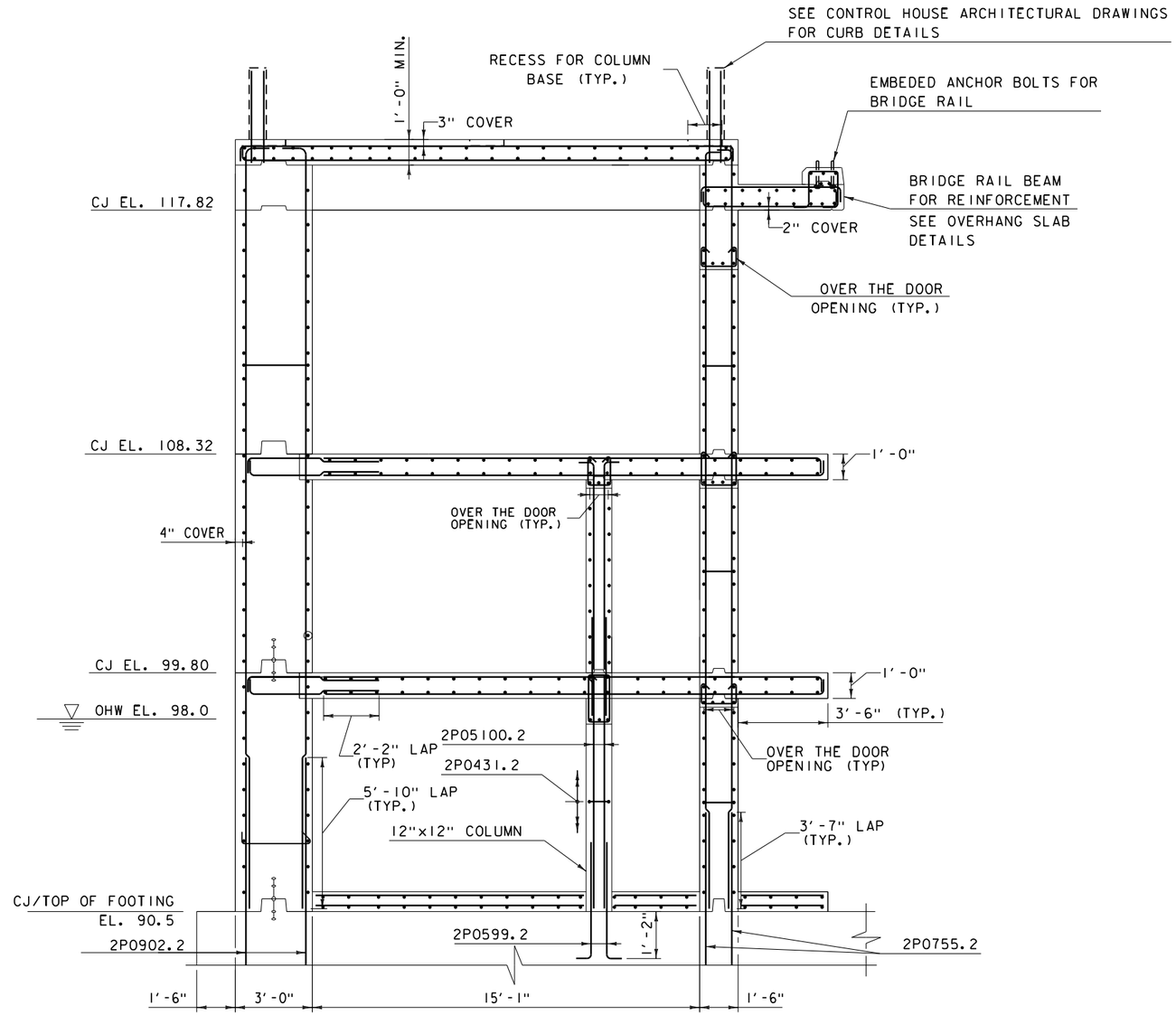
NOTES:

1. PARTITION WALLS REINFORCEMENT NOT SHOWN FOR CLARITY. SEE PIER MISCELLANEOUS DETAILS -1 SHEET FOR PARTITION WALL REINFORCEMENT REQUIREMENTS. SHEET 168
2. SEE MISCELLANEOUS DETAILS FOR FENDER ACCESS STAIRS DETAILS. SHEET 168
3. FOR OVERHANG SLAB AND CURB DETAILS SEE PIER MISCELLANEOUS DETAILS - 2 SHEET. SHEET 169
4. FOR FOOTING REINFORCEMENT, SEE PIER 1 SECTION G-G AND SECTION H-H DRAWING. SHEET 140

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P2secC-C.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 2 - SECTION C-C

PLOT DATE: 2/6/2018
DRAWN BY: J. KRYSIEWICZ
CHECKED BY: H. PROTIN



PIER 2 - SECTION D-D

SCALE 3/8" = 1'-0"

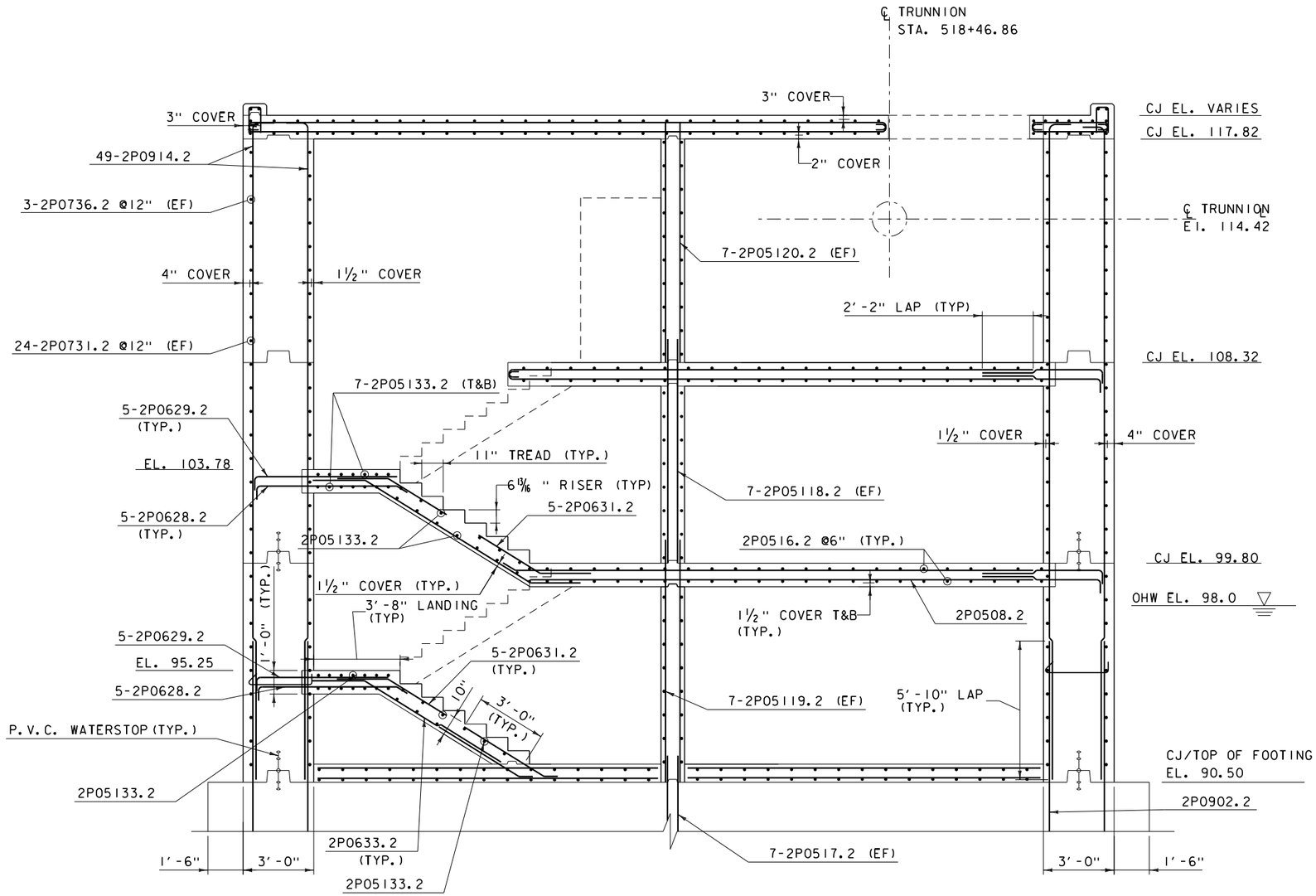
LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

1. FOR OVERHANG SLAB AND CURB DETAILS SEE PIER MISCELLANEOUS DETAILS - 2 SHEET. SHEET 169
2. PARTITION WALLS REINFORCEMENT NOT SHOWN FOR CLARITY. SEE PIER MISCELLANEOUS DETAILS -1 SHEET FOR PARTITION WALL REINFORCEMENT REQUIREMENTS. SHEET 168
3. FOR FOOTING REINFORCEMENT, SEE PIER 1 SECTION G-G AND SECTION H-H DRAWING. SHEET 140

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142P2secD-D.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. KRYSIEWICZ
DESIGNED BY: J. KRYSIEWICZ	CHECKED BY: H. PROTIN
PIER 2 - SECTION D-D	SHEET 162 OF 379



PIER 2 - SECTION E-E

SCALE ⅜" = 1'-0"

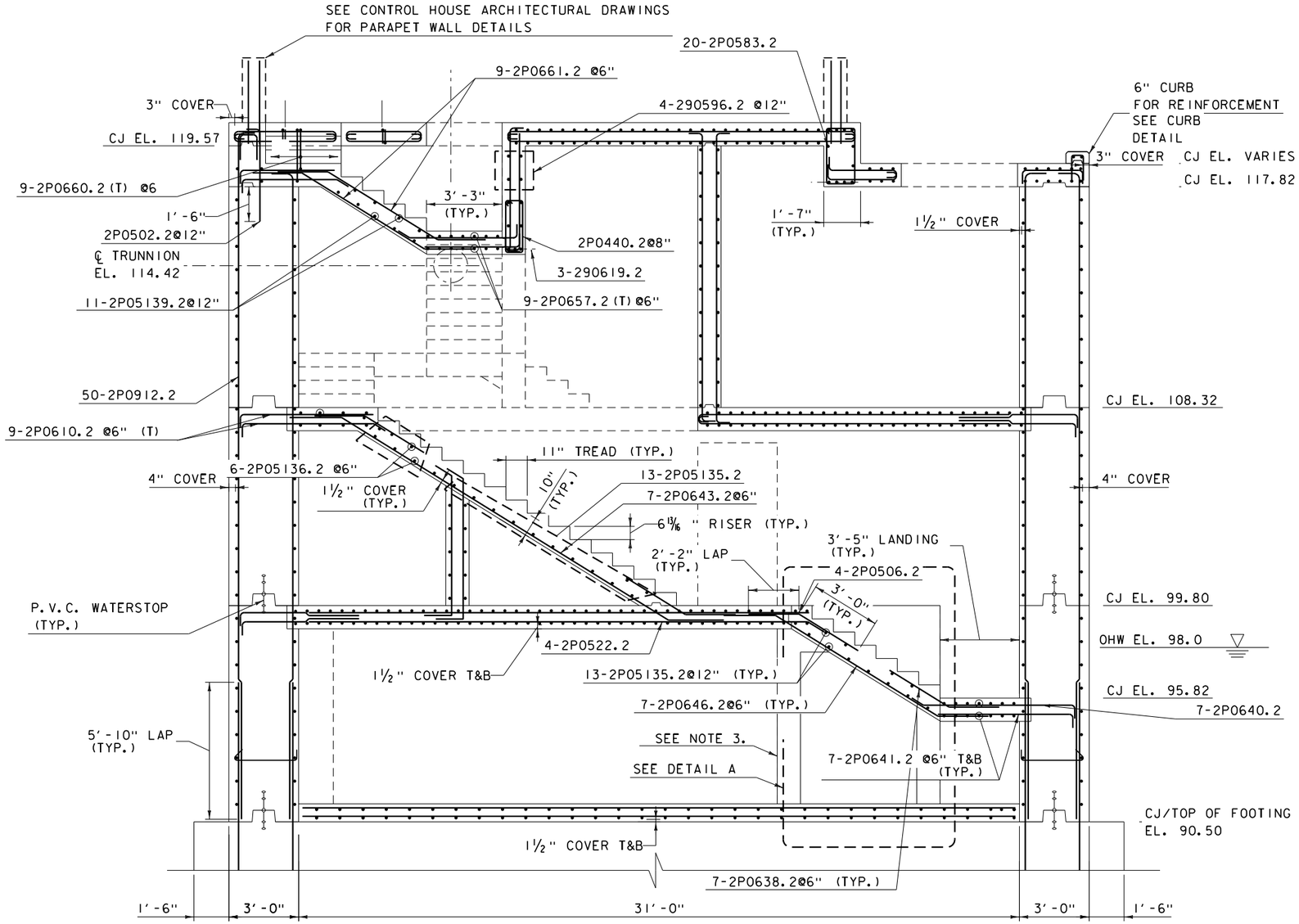
LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

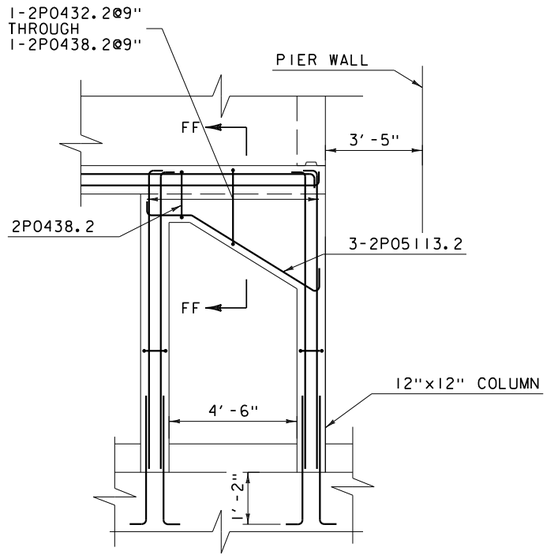
1. FOR CURB DETAILS SEE PIER MISCELLANEOUS DETAILS - 2 SHEET. SHEET 169
2. PARTITION WALLS REINFORCEMENT NOT SHOWN FOR CLARITY. SEE PIER MISCELLANEOUS DETAILS -1 SHEET FOR PARTITION WALL REINFORCEMENT REQUIREMENTS. SHEET 168
3. FOR FOOTING REINFORCEMENT, SEE PIER 1 SECTION G-G AND SECTION H-H DRAWING. SHEET 140

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142P2secE-E.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. KRYSIEWICZ
DESIGNED BY: J. KRYSIEWICZ	CHECKED BY: H. PROTIN
PIER 2 - SECTION E-E	SHEET 163 OF 379



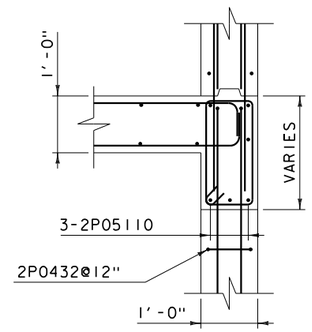
PIER 2 - SECTION F-F

SCALE 3/8" = 1'-0"



DETAIL A

SCALE 3/8" = 1'-0"



SECTION FF-FF

SCALE 3/4" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

1. FOR CURB DETAILS SEE PIER MISCELLANEOUS DETAILS - 2 SHEET. SHEET 169

2. PARTITION WALLS REINFORCEMENT NOT SHOWN FOR CLARITY. SEE PIER MISCELLANEOUS DETAILS -1 SHEET FOR PARTITION WALL REINFORCEMENT REQUIREMENTS. SHEET 168

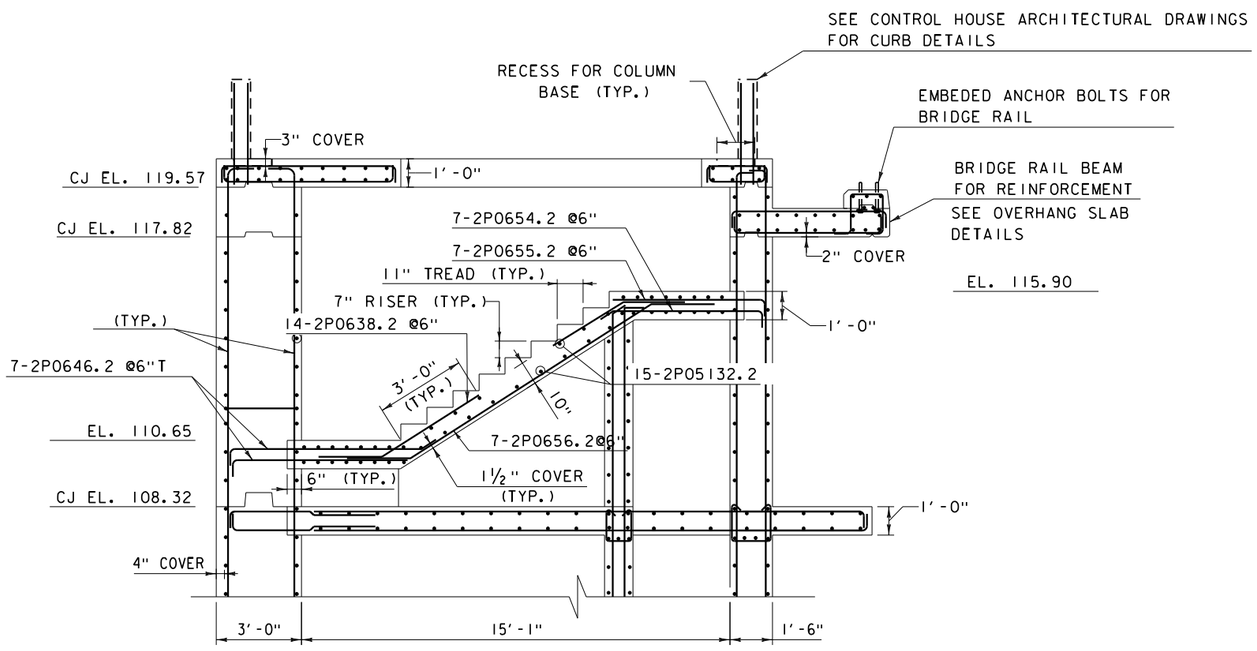
3. FOR COLUMN REINFORCEMENT DETAILS SEE PIER 2 SECTION D-D SHEET. SHEET 140

4. FOR FOOTING REINFORCEMENT, SEE PIER 1 SECTION G-G AND SECTION H-H DRAWING.

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

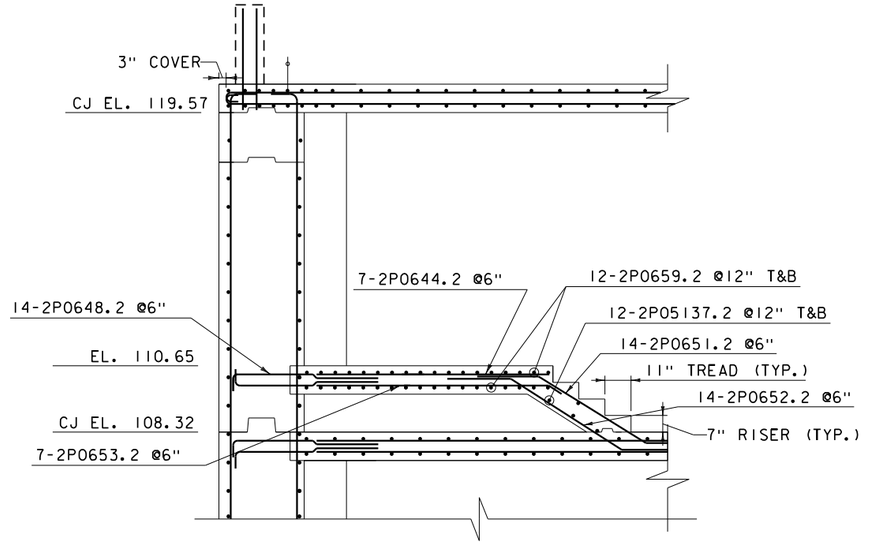
FILE NAME: z12b142P2secF-F.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 2 - SECTION F-F

PLOT DATE: 2/6/2018
DRAWN BY: J. KRYSIEWICZ
CHECKED BY: H. PROTIN
SHEET 164 OF 379



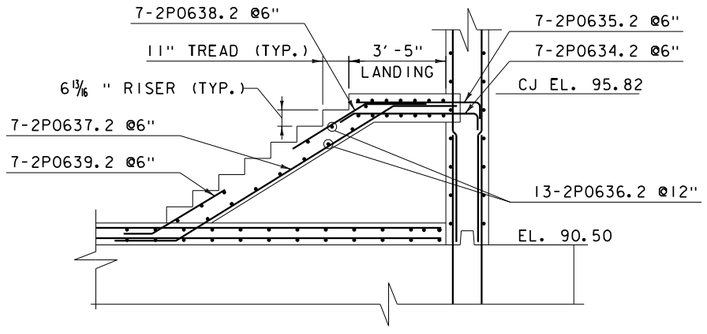
PIER 2 - SECTION P-P

SCALE ⅜" = 1'-0"



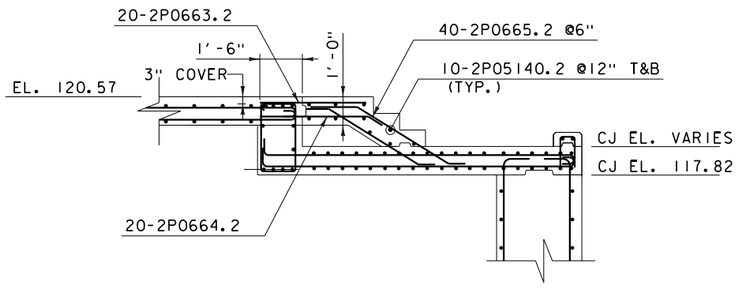
PIER 2 - SECTION Q-Q

SCALE ⅜" = 1'-0"



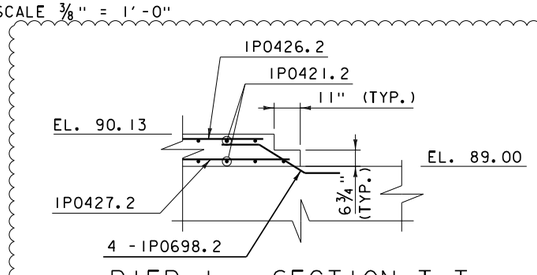
PIER 2 - SECTION R-R

SCALE ⅜" = 1'-0"



CONTROL HOUSE ACCESS STAIRS

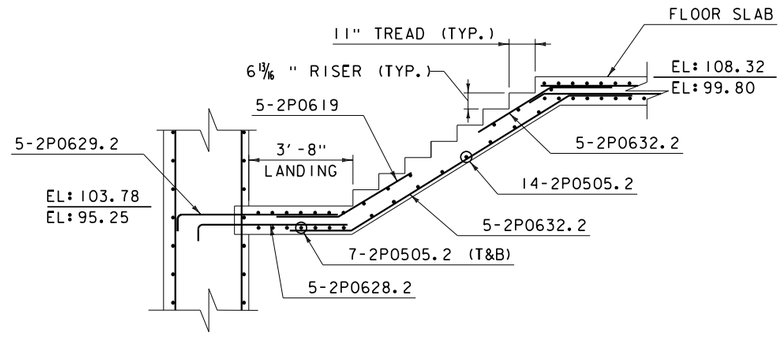
SCALE ⅜" = 1'-0"



PIER 1 - SECTION T-T

SCALE ⅜" = 1'-0"

(SEE SHEET 126 FOR QUANTITIES AT LOCATION)



TYPICAL STAIR SECTION

(FROM EL: 108.32 TO 103.78 & 99.80 TO 95.25)

SCALE ⅜" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

1. FOR OVERHANG SLAB AND CURB DETAILS SEE PIER MISCELLANEOUS DETAILS - 2 SHEET. SHEET 169

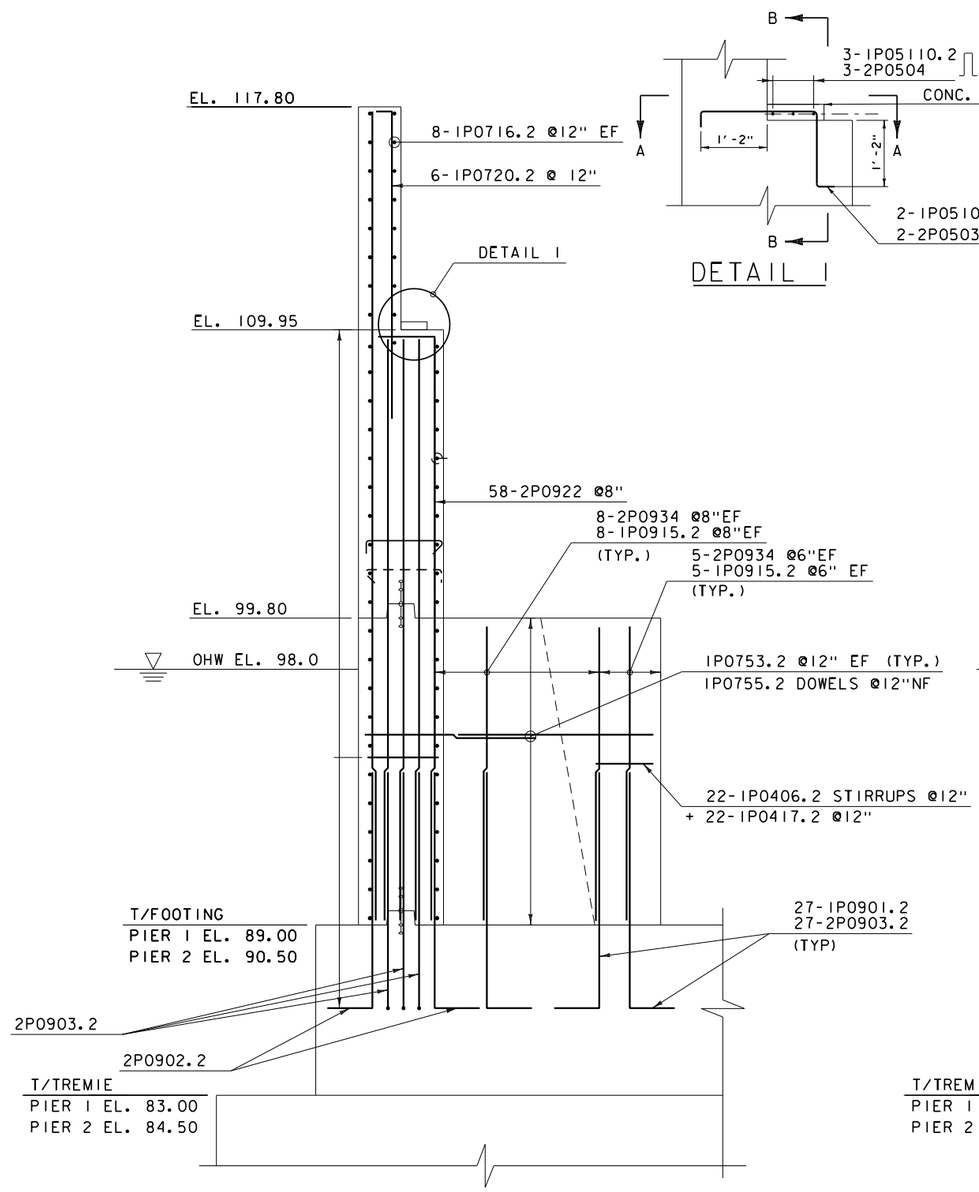
2. PARTITION WALLS REINFORCEMENT NOT SHOWN FOR CLARITY. SEE PIER MISCELLANEOUS DETAILS - 1 SHEET FOR PARTITION WALL REINFORCEMENT REQUIREMENTS. SHEET 168

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

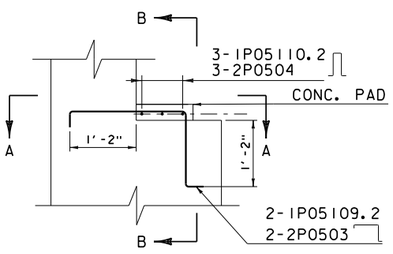
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P2secP-P_Q-Q.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER 2 - SECTIONS P-P AND Q-Q

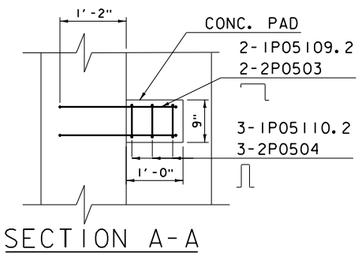
PLOT DATE: 2/6/2018
DRAWN BY: J. KRYSIEWICZ
CHECKED BY: H. PROTIN
SHEET 165 OF 379



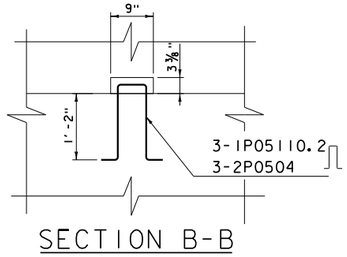
SECTION J-J
(TRUNNION SUPPORT NOT SHOWN FOR CLARITY)
SCALE 3/8" = 1'-0"



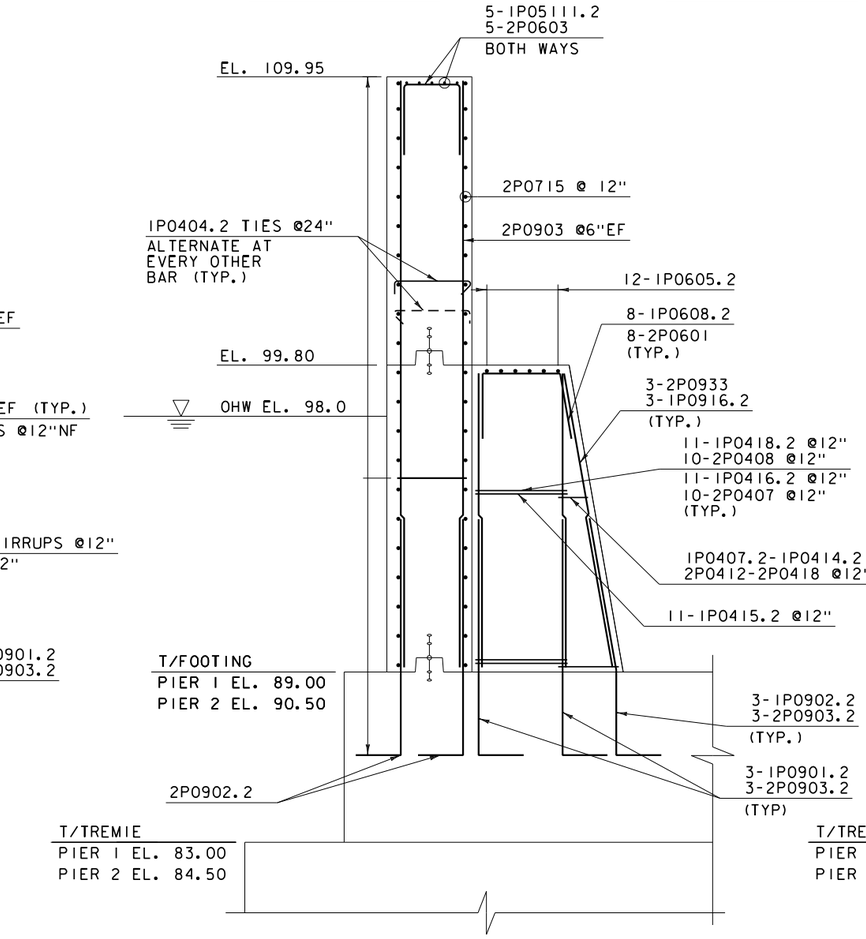
DETAIL 1



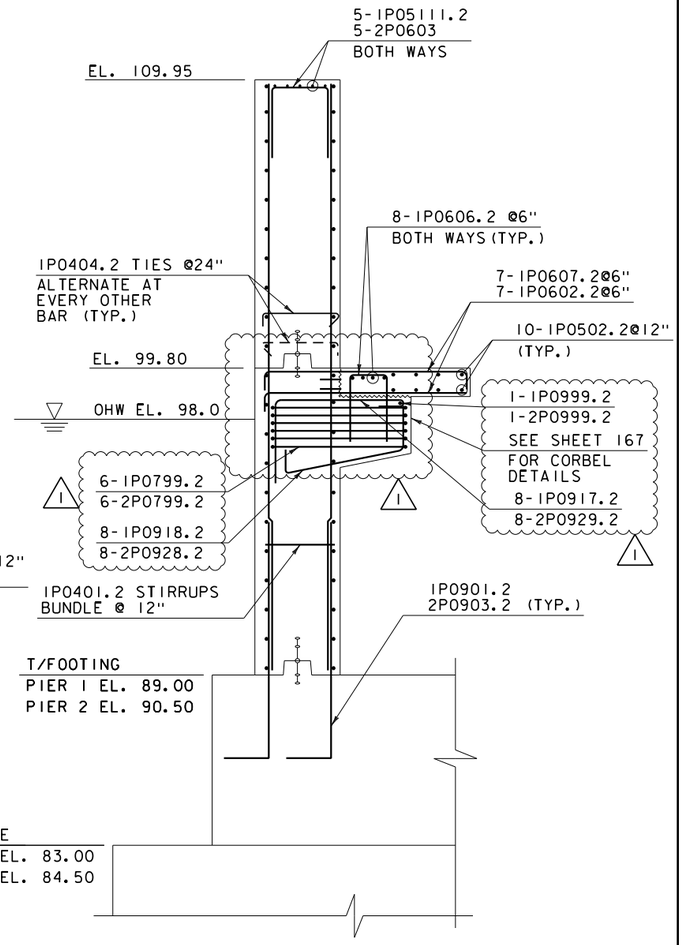
SECTION A-A



SECTION B-B



SECTION K-K
(LIVE LOAD SHOE NOT SHOWN FOR CLARITY)
SCALE 3/8" = 1'-0"



SECTION L-L
SCALE 3/8" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

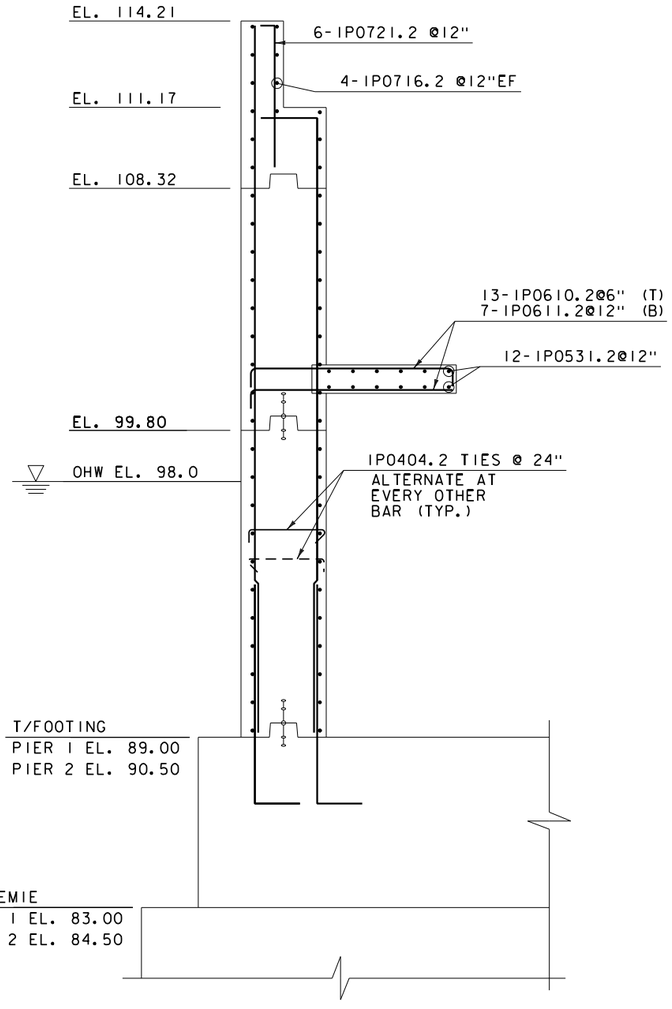
1. FOR SECTION LOCATIONS SEE PIER 1 AND PIER 2 FOOTING REINFORCEMENT PLAN SHEETS.
2. PIER 1 SECTIONS ARE SHOWN. PIER 2 SECTIONS ARE SIMILAR EXCEPT AS NOTED.
3. FOR LIVE LOAD SHOE DETAIL SEE SHEET 85.
4. FOR TRUNNION SUPPORT FRAME ATTACHMENT TO PIER, SEE TRUNNION SUPPORT DETAILS 2 SHEET.
5. FENDER NOT SHOWN FOR CLARITY, FOR DETAILS SEE FENDER SHEETS.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

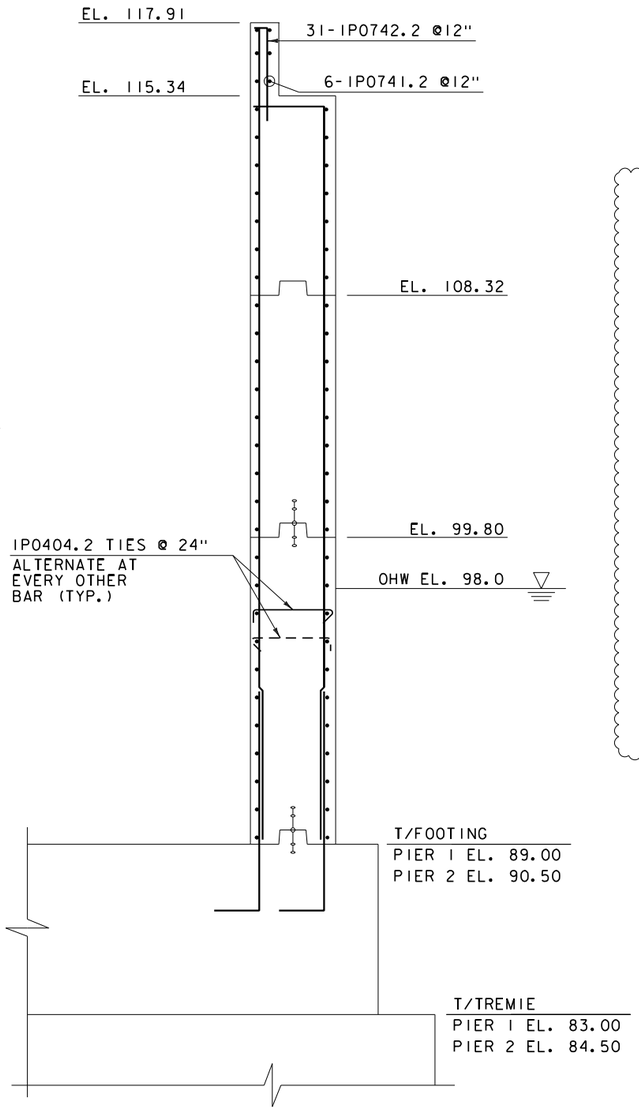
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142PierTrunnRI.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER TRUNNION SUPPORT REINFORCEMENT 1

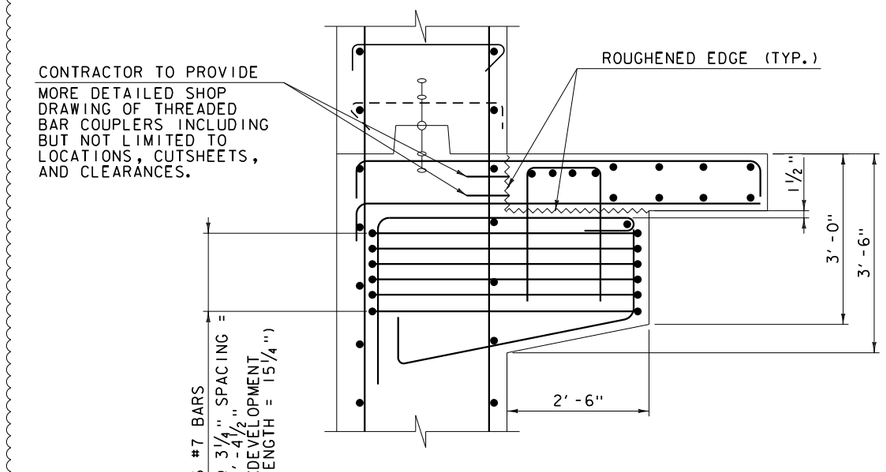
PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
SHEET 166 OF 379



SECTION M-M
SCALE 3/8" = 1'-0"



SECTION N-N
(APPROACH SPAN BEARING NOT SHOWN FOR CLARITY)
SCALE 3/8" = 1'-0"



CORBEL DETAIL
SCALE 3/4" = 1'-0"
(SEE NOTE 5)

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

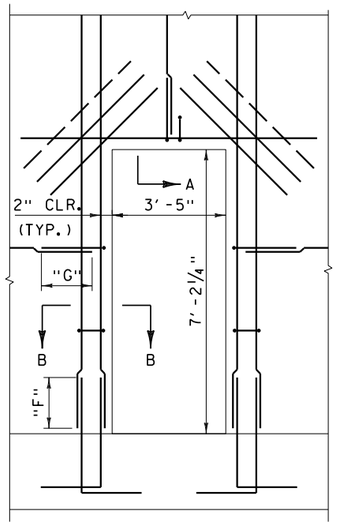
NOTES:

1. FOR ADDITIONAL REINFORCEMENT AROUND DOOR OPENINGS SEE "PIER MISCELLANEOUS DETAILS 1" DRAWING. SHEET 168
2. FOR SECTION LOCATIONS SEE PIER 1 AND PIER 2 FOOTING REINFORCEMENT PLAN SHEETS. SHEET 147 AND 122
3. PIER 1 SECTIONS ARE SHOWN. PIER 2 SECTIONS ARE SIMILAR EXCEPT AS NOTED.
4. FENDER NOT SHOWN FOR CLARITY, FOR DETAILS SEE FENDER SHEETS. SHEETS 178-181
5. SEE SHEET 166 FOR CORBEL BAR MARKS. (1)

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

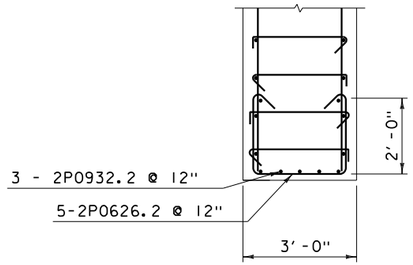
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

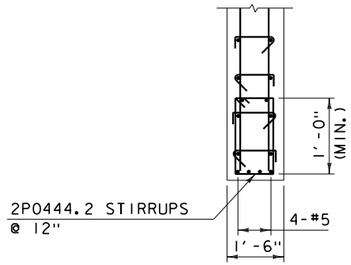
FILE NAME: z12b142PierTrunnR2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER TRUNNION SUPPORT REINFORCEMENT 2
PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
SHEET 167 OF 379

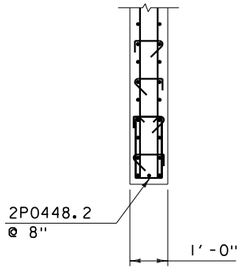


TYPICAL DOOR OPENING

SCALE ½" = 1'-0"







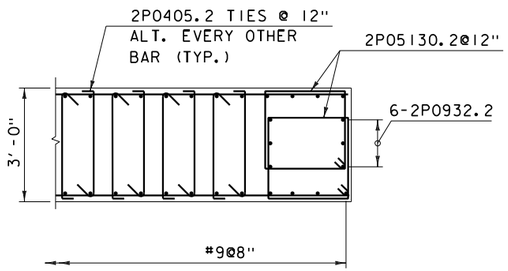
SECTION A-A

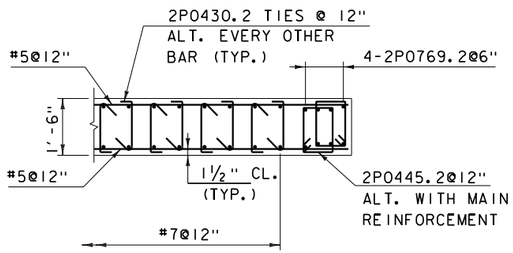
SCALE ½" = 1'-0"

TYPICAL DOOR OPENING

(DOORS IN 1FT THICK PARTITION WALLS)

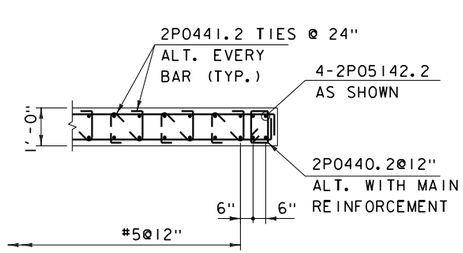
SCALE ½" = 1'-0"





SECTION B-B

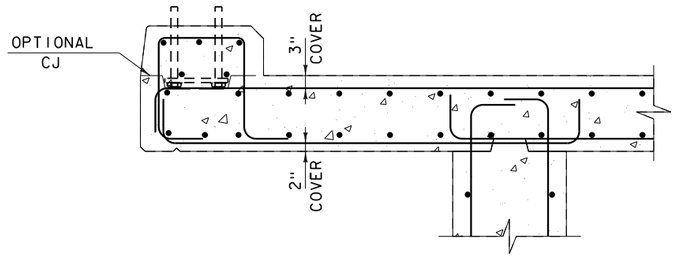
SCALE ½" = 1'-0"



NOTE:

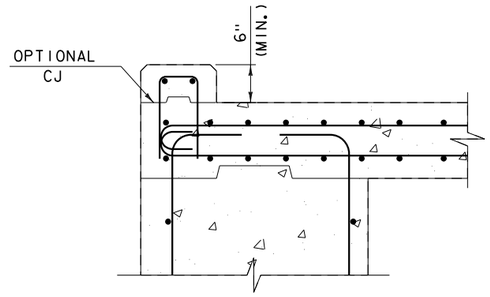
1. SEE ELEVATION AND SECTION DRAWINGS FOR BAR MARKS.

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142PierMiscDet1.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. JIMENEZ
DESIGNED BY: J. KRYSIEWICZ	CHECKED BY: H. PROTIN
PIER MISCELLANEOUS DETAILS 1	SHEET 168 OF 379



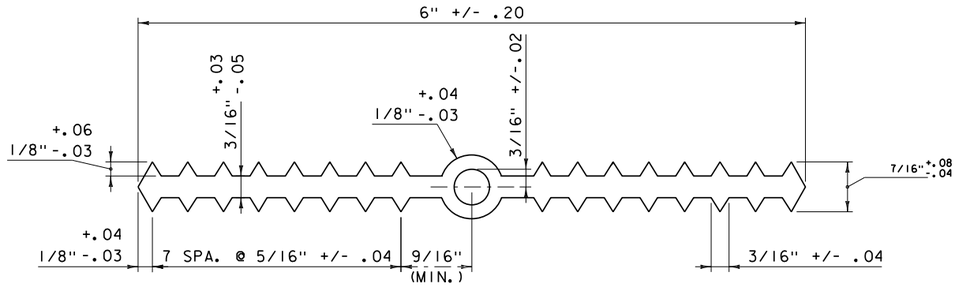
OVERHANG SLAB DETAIL

(BRIDGE RAILING NOT SHOWN FOR CLARITY)
SCALE 1" = 1'-0"



CURB DETAIL

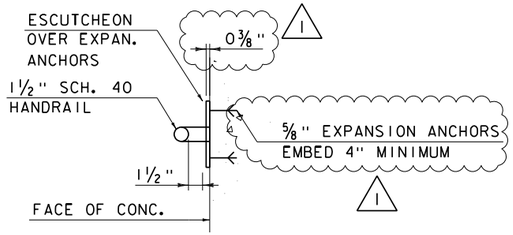
(TOP OF PIER RAILING NOT SHOWN FOR CLARITY)
SCALE 1" = 1'-0"



NOTE:
HOLES MUST NOT BE MADE IN WATERSTOP FOR ANY PURPOSE.

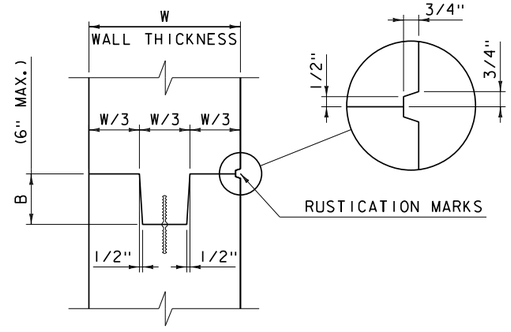
TYPE 'A' WATERSTOP

NO SCALE



HANDRAIL DETAIL AT CONCRETE

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



TYPICAL CONCRETE CONSTRUCTION JOINT

NO SCALE

CONSTRUCTION AND CONTRACTION JOINTS	
B	W/3
1 1/2"	0 TO 6"
3 1/2"	6" TO 10"
6"	10" AND OVER

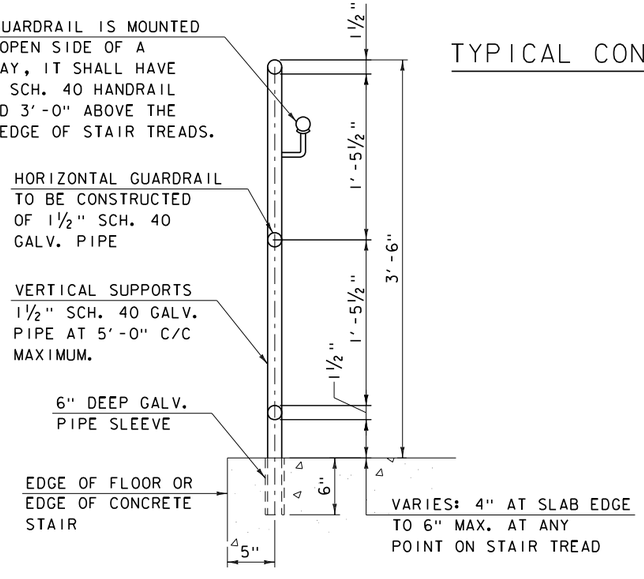
WATERSTOP NOTES:

1. PVC USED IN WATERSTOPS SHALL CONFORM TO THE REQUIREMENTS OF VTRANS STANDARD SPECIFICATIONS SUBSECTION 707.10.
2. THE COST OF FURNISHING AND PLACING WATERSTOPS SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE CONCRETE ITEMS.
3. FIELD SPLICES SHOULD BE AVOIDED IF POSSIBLE, HOWEVER, HEAT WELDED BUTT SPLICES WILL BE PERMITTED ON LONG STRAIGHT RUNS (GENERALLY IN EXCESS OF 50 FEET) AT POINTS APPROVED BY THE ENGINEER.

CONSTRUCTION JOINT NOTES:

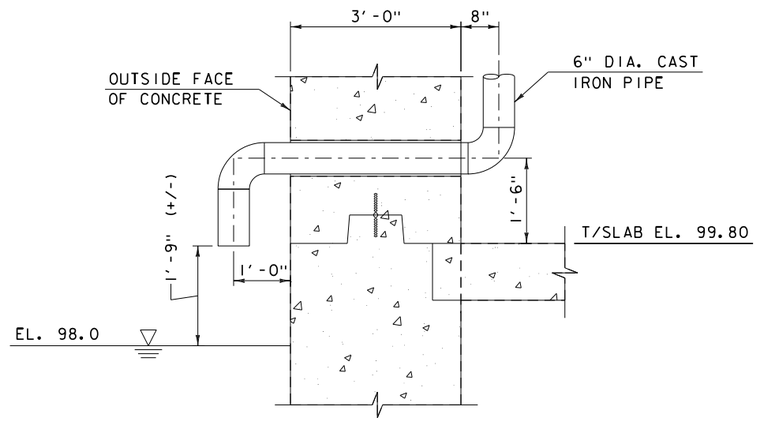
1. CONSTRUCTION JOINT SHALL BE FORMED BY MEANS OF A HORIZONTAL OR VERTICAL BULKHEAD SO CONSTRUCTED AS TO PRODUCE A KEY JOINT, PLACED AS SHOWN IN THE CONTRACT DOCUMENTS.
2. PLACE WATERSTOP AT ALL JOINTS, AT THE CENTER OF KEY, AS SHOWN IN THE CONTRACT DOCUMENTS.
3. THE WATERSTOP SHALL EXTEND INTO THE CONCRETE ON EACH SIDE OF THE JOINT, SHALL BE JOINED TO BE CONTINUOUS AND WATERTIGHT, AND SHALL BE CAREFULLY PROTECTED FROM DAMAGE UNTIL COVERED BY CONCRETE.
4. DURING AND IMMEDIATELY AFTER DEPOSITION, KEY JOINT CONCRETE SHALL BE THOROUGHLY CONSOLIDATED BY VIBRATING THE CONCRETE INTERNALLY WITH MECHANICAL VIBRATING EQUIPMENT.
5. KEY FORMS SHALL BE REMOVED IN SUCH A MANNER AS TO AVOID DAMAGE TO THE CONCRETE.

NOTE:
WHEN GUARDRAIL IS MOUNTED ALONG OPEN SIDE OF A STAIRWAY, IT SHALL HAVE A 1 1/2" SCH. 40 HANDRAIL MOUNTED 3'-0" ABOVE THE FRONT EDGE OF STAIR TREADS.



GUARDRAIL/HANDRAIL DETAIL

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



DRAINAGE DISCHARGE DETAIL

SCALE 3/4" = 1'-0"

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
CJ = CONSTRUCTION/CONTRACTION JOINT

NOTES:

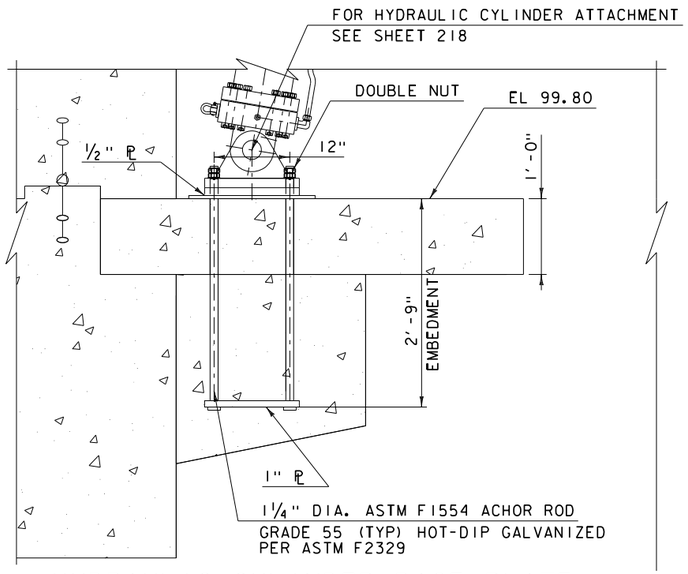
1. FOR TOP OF PIER RAILING, SEE PIER RAILING DETAILS 1 AND 2 ON SHEETS 174-175
2. FOR BRIDGE RAILING, SEE BRIDGE RAILING DETAILS 1 AND 2 ON SHEETS 206-210.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	4-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

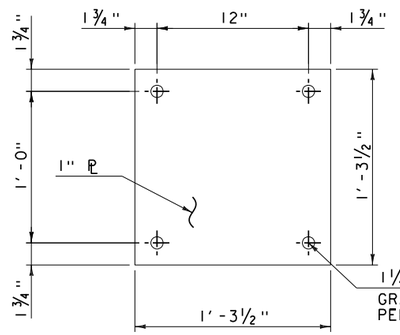
FILE NAME: z12bl42PierMiscDet2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER MISCELLANEOUS DETAILS 2

PLOT DATE: 2/6/2018
DRAWN BY: K. PATEL
CHECKED BY: H. PROTIN
SHEET 169 OF 379



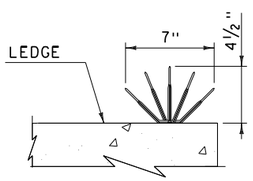
HYDRAULIC CYLINDER BASE PLATE

SCALE 1"=1'-0"

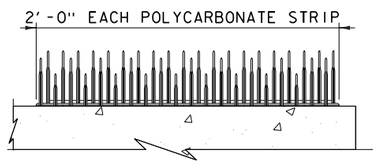


BASE PLATE DETAILS

SCALE 2"=1'-0"

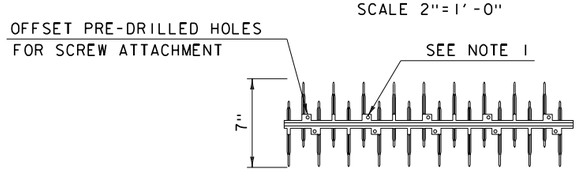


SIDE VIEW



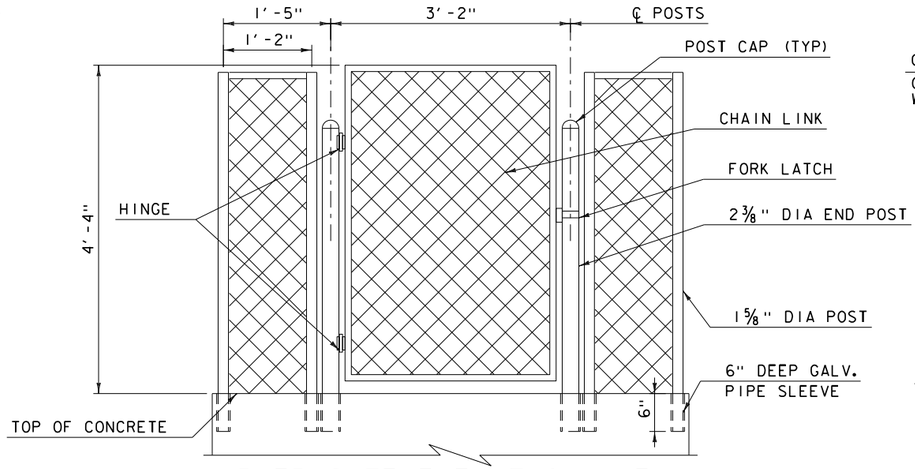
BIRD SPIKE ELEVATION VIEW

SCALE 2"=1'-0"



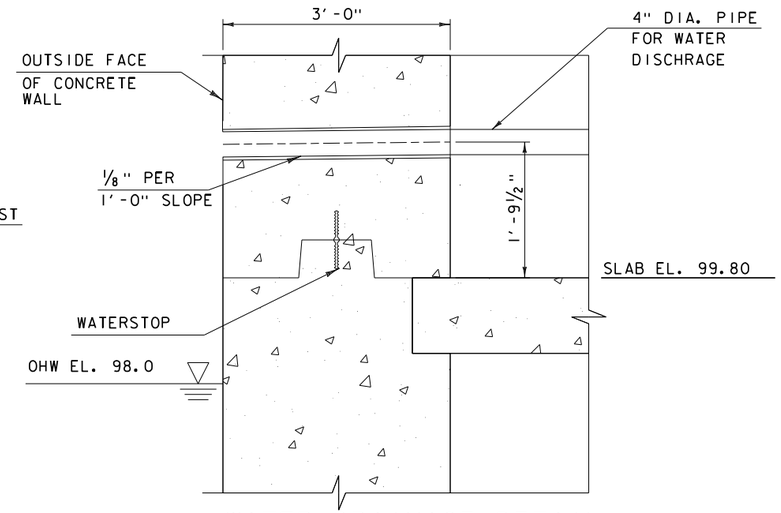
BIRD SPIKE BOTTOM VIEW

SCALE 2"=1'-0"



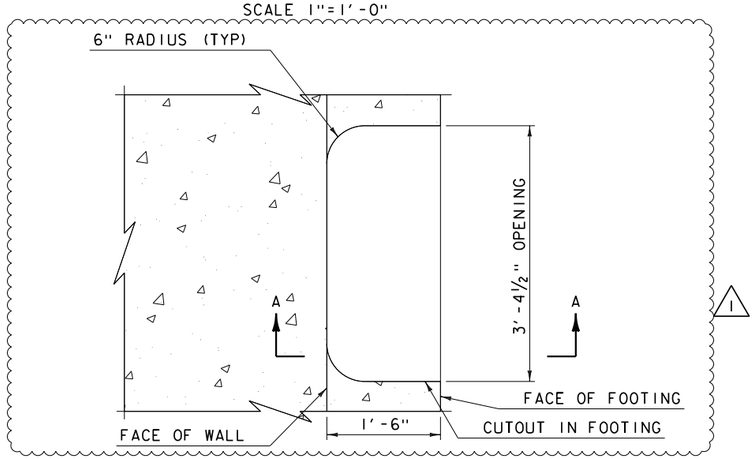
PIER GATE ELEVATION VIEW

SCALE 1"=1'-0"



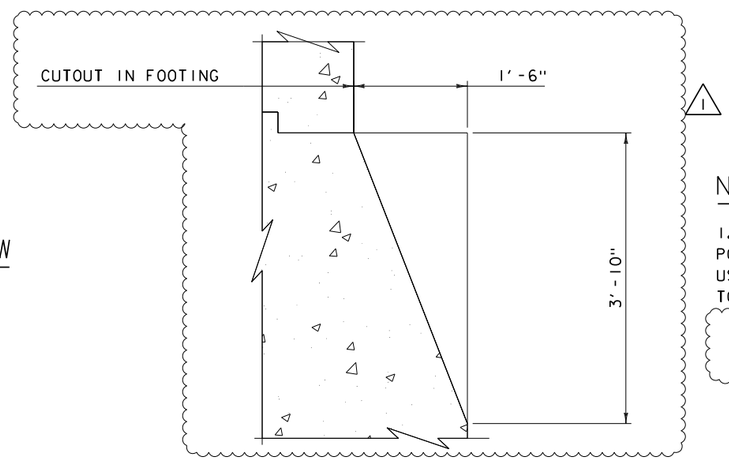
WATER DRAINAGE DETAIL

SCALE 1"=1'-0"



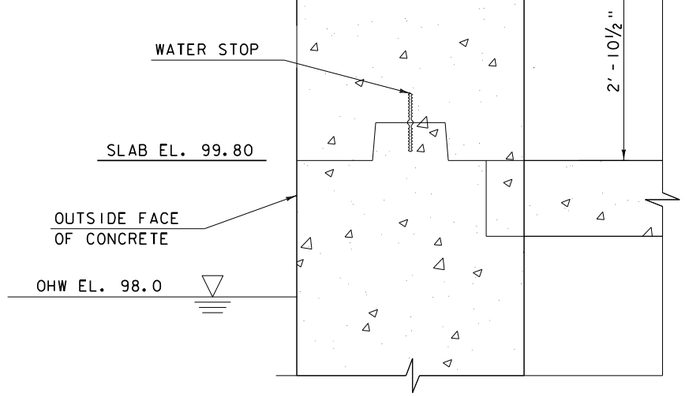
FOUNDATION CUT-OUT DETAIL

SCALE 1"=1'-0"



SECTION A-A

SCALE 1"=1'-0"



VENT PIPE DETAIL

SCALE 1"=1'-0"

NOTE

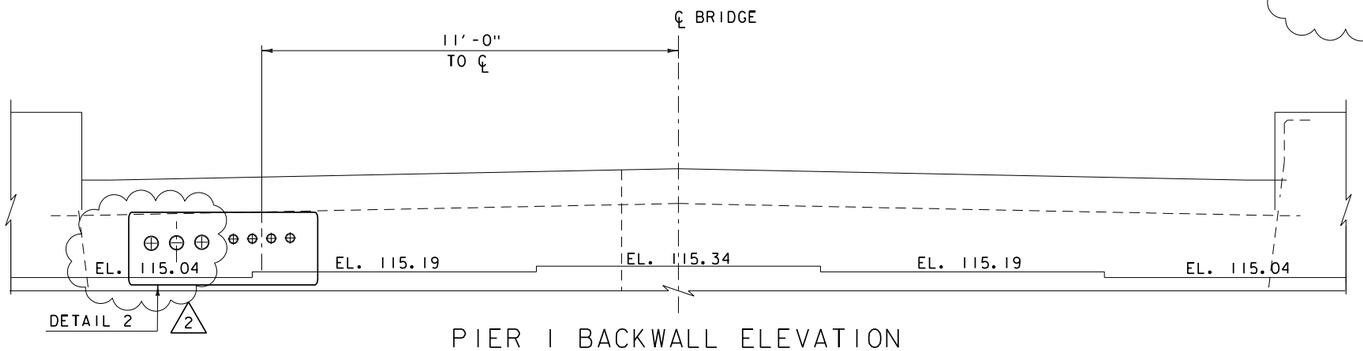
1. FOR BIRD SPIKES USE BIRD. B. GONE POLYCARBONATE SPIKES OR SIMILAR. USE OUTDOOR ADHESIVE WHEN MOUNTING TO CONCRETE.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04/29/2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

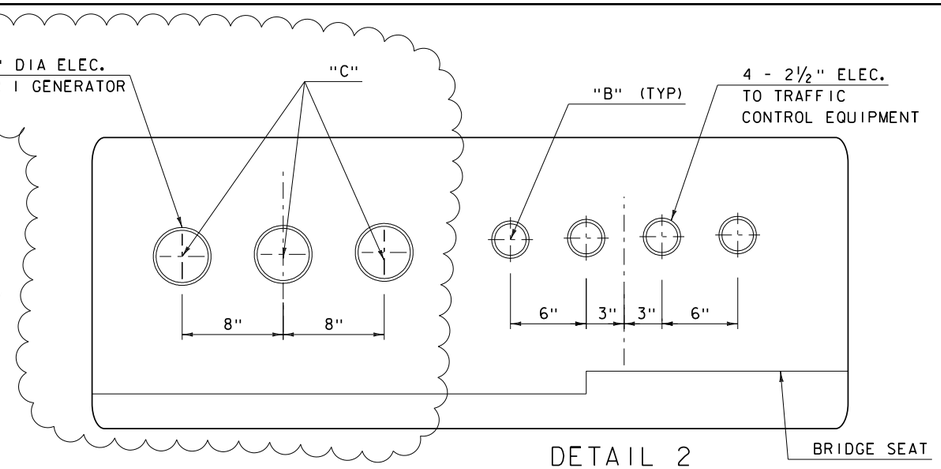
FILE NAME: z12b142miscdet3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER MISCELLANEOUS DETAILS 3

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 170 OF 379



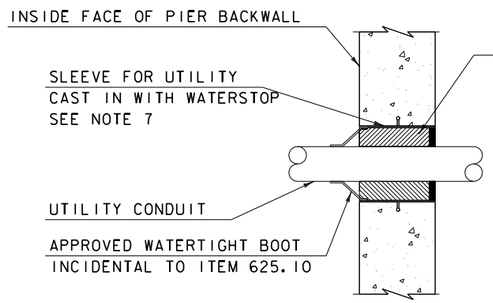
PIER 1 BACKWALL ELEVATION

SCALE ½" = 1'-0"



DETAIL 2

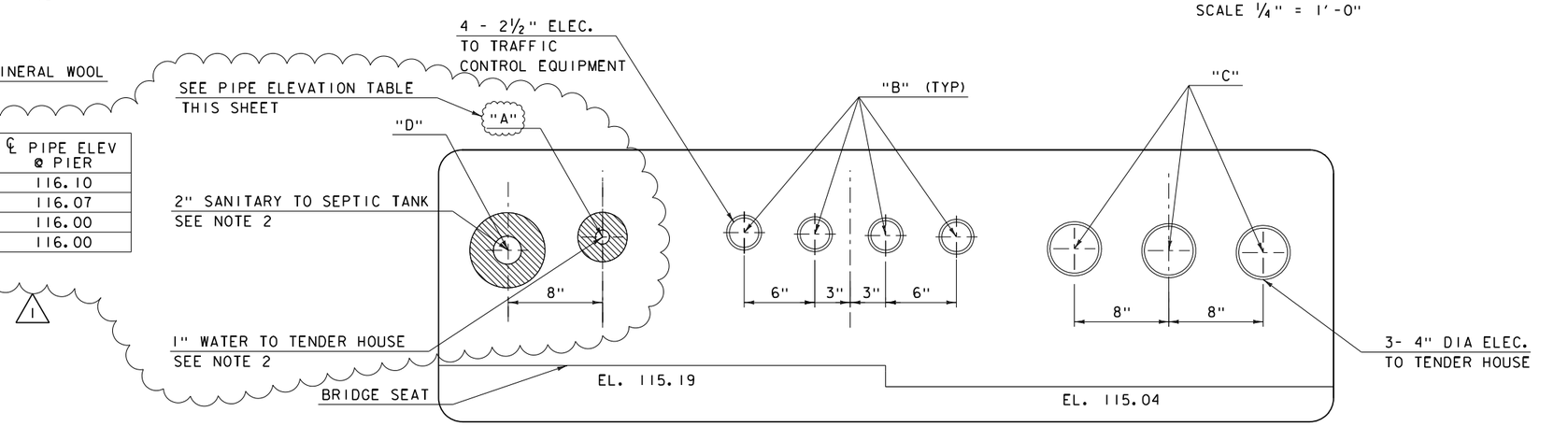
SCALE ¼" = 1'-0"



PIPE PENETRATION DETAIL

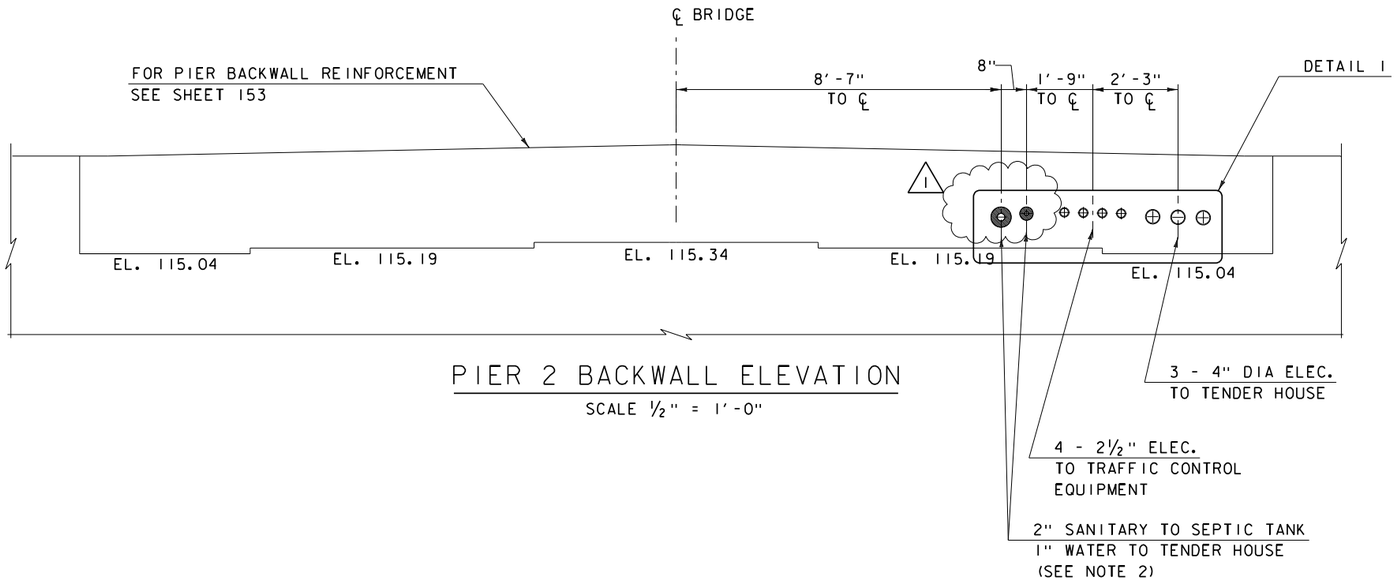
NTS

CALLOUT	℄ PIPE ELEV @ PIER
"A"	116.10
"B"	116.07
"C"	116.00
"D"	116.00



DETAIL 1

SCALE ¼" = 1'-0"



PIER 2 BACKWALL ELEVATION

SCALE ½" = 1'-0"

NOTES:

1. PROVIDE FLEXIBLE WATER TIGHT SEAL AT BACKWALL FOR PIPE PENETRATIONS. SEE DETAIL THIS SHEET.
2. 2" SANITARY AND 1" WATER TO BE WRAPPED WITH REDUNDANT HEAT TRACE, 2" THICK RIGID FOAM INSULATION, AND STAINLESS STEEL SHEATHING. SEE DETAIL, SHEET 292.
3. PIPE ELEVATIONS SHALL BE VERIFIED PRIOR TO POURING ABOVE THE BRIDGE SEAT.
4. SEE HVAC AND ELECTRICAL FOR CONTINUANCE BEYOND BACKWALL.
5. SEE PIER DRAWINGS FOR BACKWALL SECTIONS.
6. SEE SHEET 68 FOR ABUTMENT BACKWALL DETAILS.
7. SLEEVE SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 726.08.

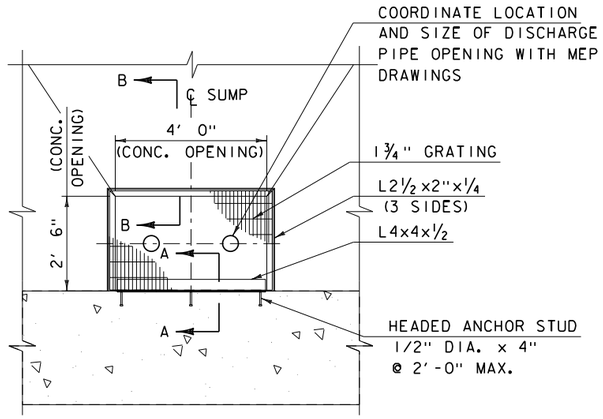
REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

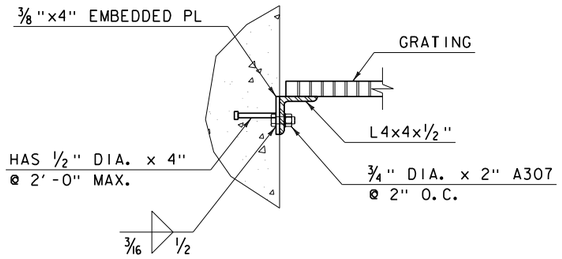
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142miscdet4.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER MISCELLANEOUS DETAILS 4

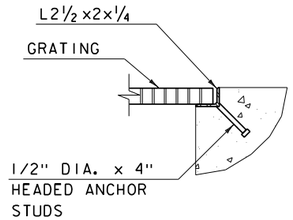
PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 171 OF 379



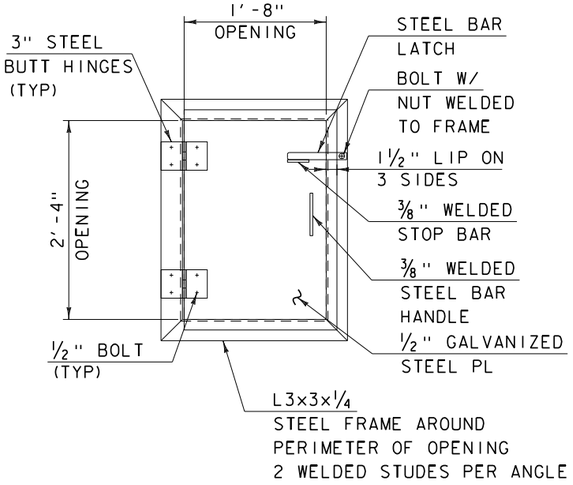
SUMP PIT PLAN
SCALE ½" = 1'-0"



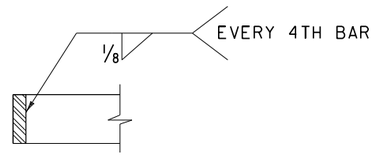
SECTION A-A
SCALE 1½" = 1'-0"



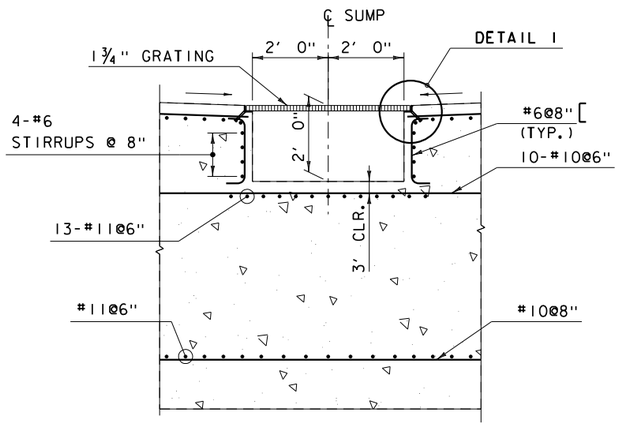
SECTION B-B
SCALE 1½" = 1'-0"



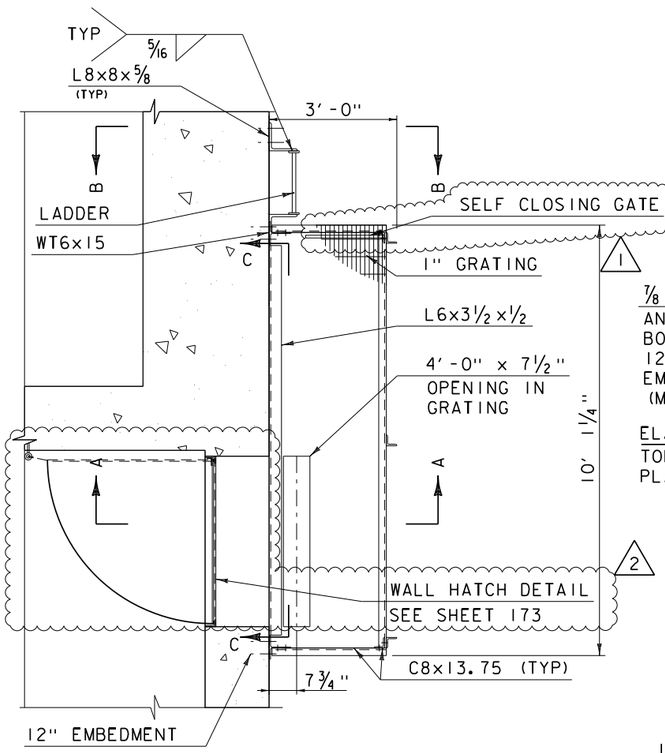
TAIL LOCK HATCH DETAIL
(NTS)



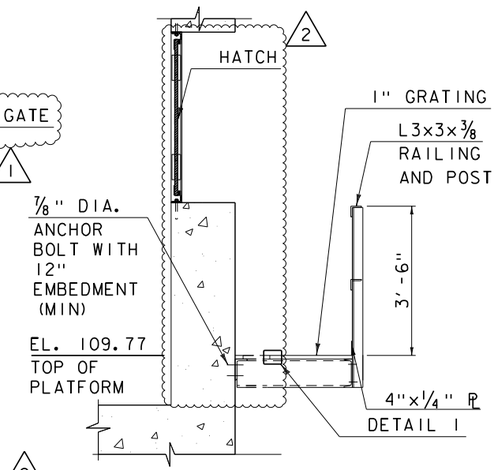
DETAIL 1
(NTS)



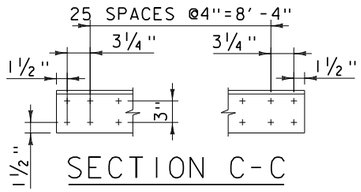
REINFORCEMENT AT SUMP PIT
SCALE ½" = 1'-0"



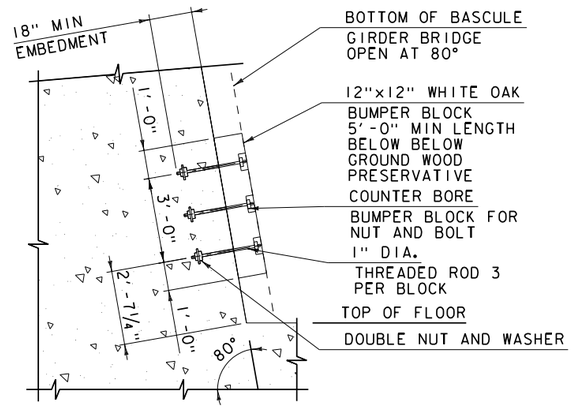
FRONT WALL PLATFORM
SCALE ¾" = 1'-0"



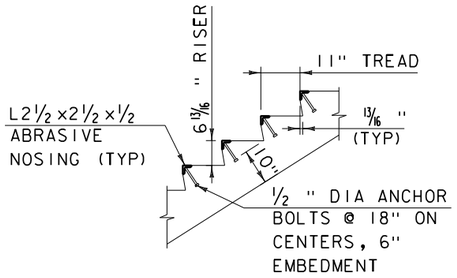
SECTION A-A
SCALE ¾" = 1'-0"



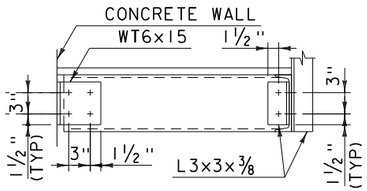
SECTION C-C
(NTS)



BUMPER BLOCK DETAIL
SCALE ⅜" = 1'-0"



NOSING DETAIL
SCALE ¾" = 1'-0"



CONNECTION DETAIL
(NTS)

NOTES:

1. GRATING:
   A. STEEL GRATING FABRICATED USING A-1011, GALVANIZED ACCORING TO ASTM 123.
   B. STEEL GRATING SHALL BE 1¾" x 3/16" WITH 4" CROSS BAR SPACING WITH SMOOTH SURFACE. WEIGHT OF GRATING SHALL BE 10.94 PSF.
   C. ALL GRATING EDGES SHALL BE BANDED.
   D. GRATING SHALL BE PAID FOR UNDER ITEM 900.645 (NON-STRUCUTRAL STEEL)
2. FOR LOCATION OF HATCH SEE TAIL LOCK ASSEMBLY SHEET 230.
3. TRIM WELD BANDING AT PENETRATION CUTS.

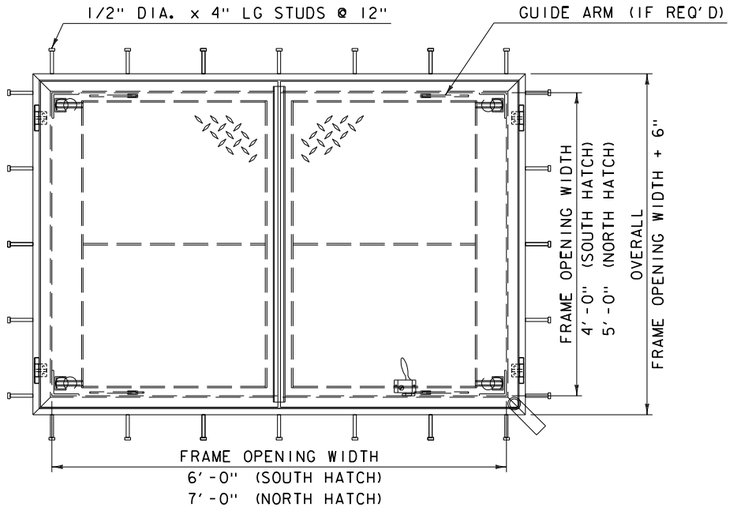
2

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

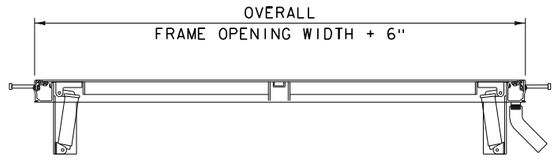
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

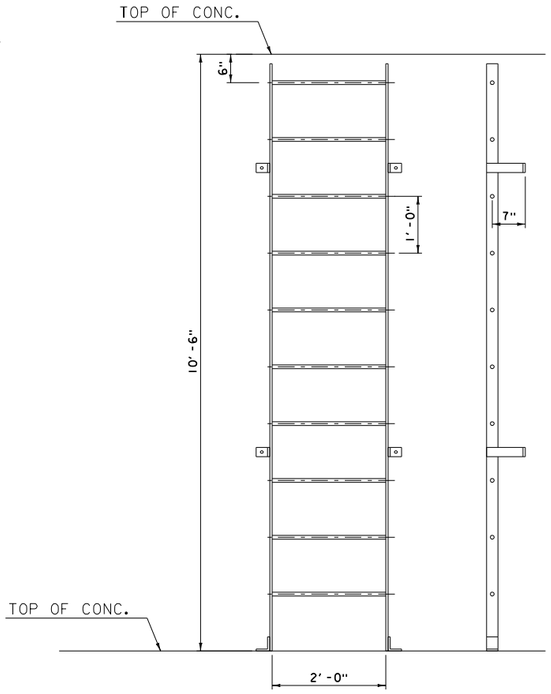
FILE NAME: zi2bl42PierMiscSecl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER MISCELLANEOUS SECTIONS - 1

PLOT DATE: 2/6/2018
DRAWN BY: J. JIMENEZ
CHECKED BY: H. PROTIN
SHEET 172 OF 379

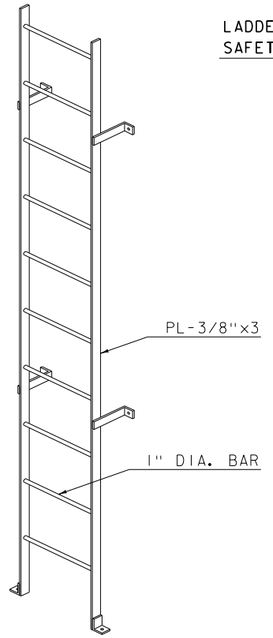


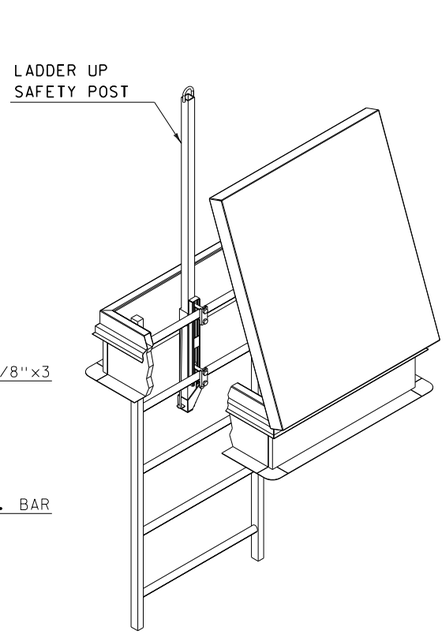
HATCH DOORS

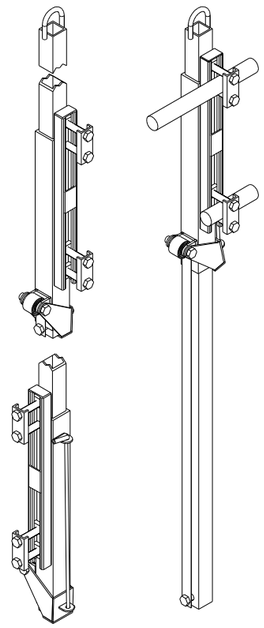




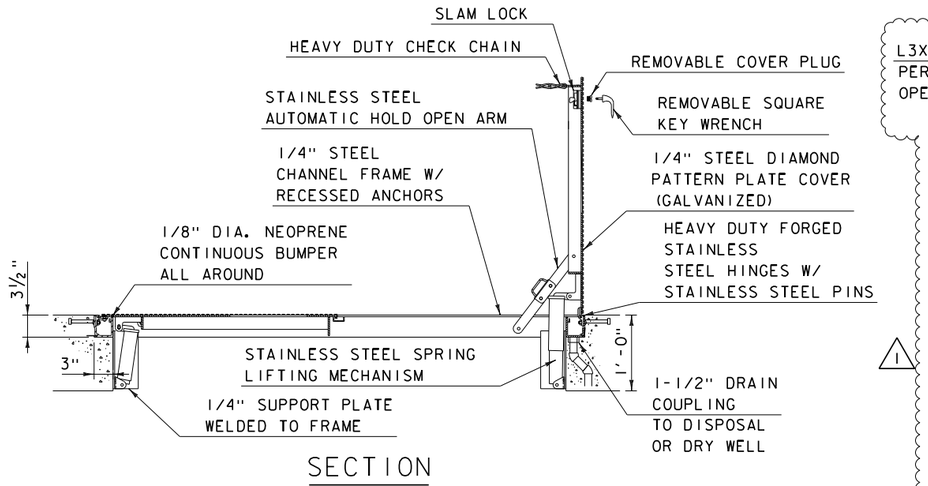
STEEL LADDER DETAIL



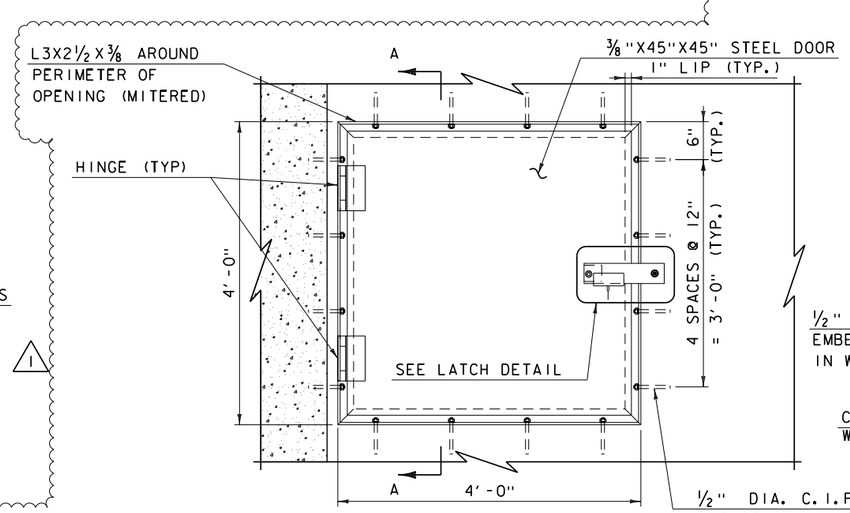




LADDER UP SAFETY POST

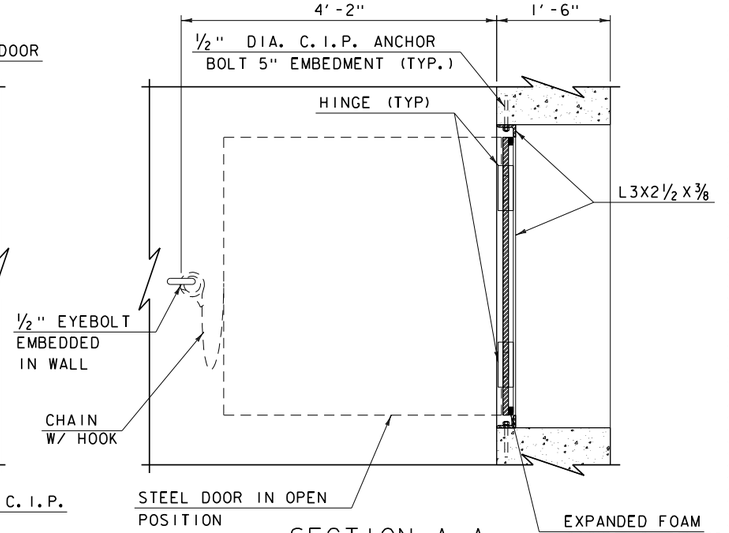


SECTION



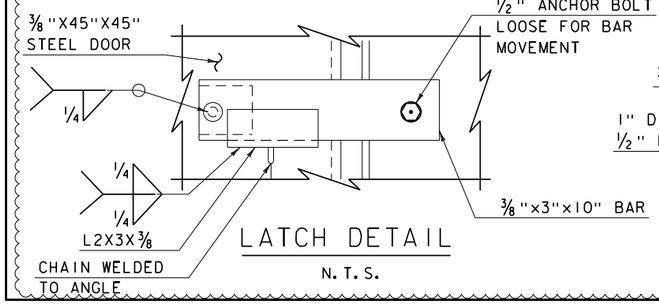
WALL OPENING HATCH

SCALE: 1" = 1'-0"
(LOOKING FROM INSIDE PIER WALL)



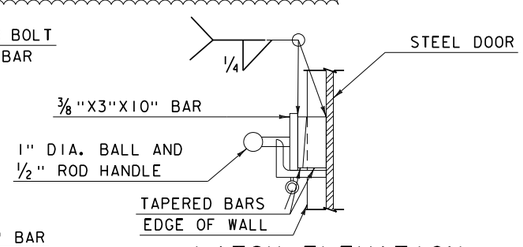
SECTION A-A

SCALE: 1" = 1'-0"



LATCH DETAIL

N.T.S.



LATCH ELEVATION

N.T.S.

NOTE:
1. ALL STEEL ASTM A36 AND GALVANIZED.

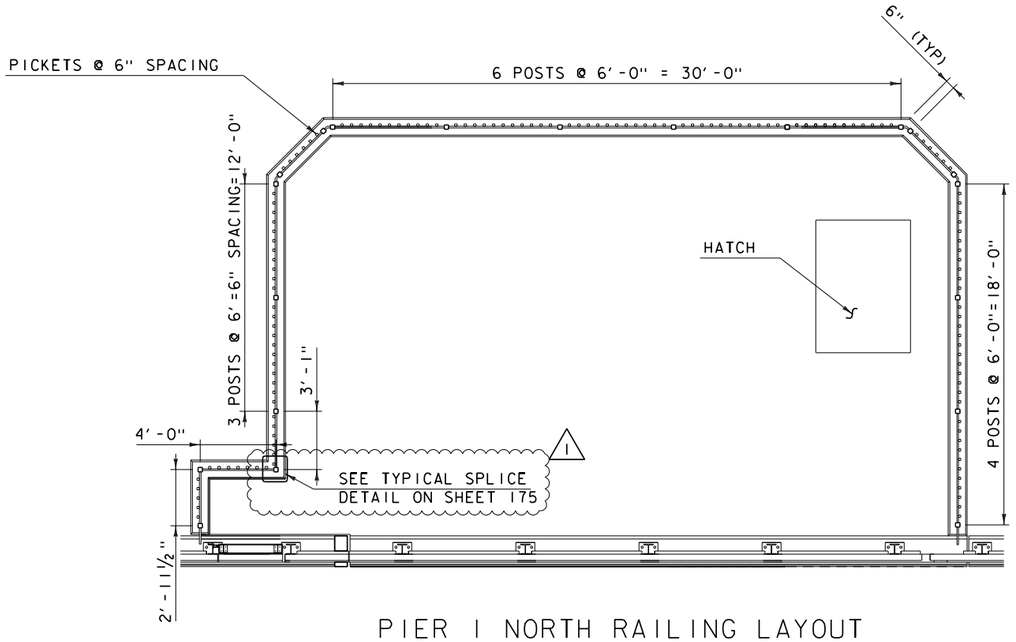
2. WALL GATE ITEMS ARE TO BE PAID FOR UNDER ITEM 900.645 "SPECIAL PROVISION (NON-STRUCTURAL STEEL)".

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

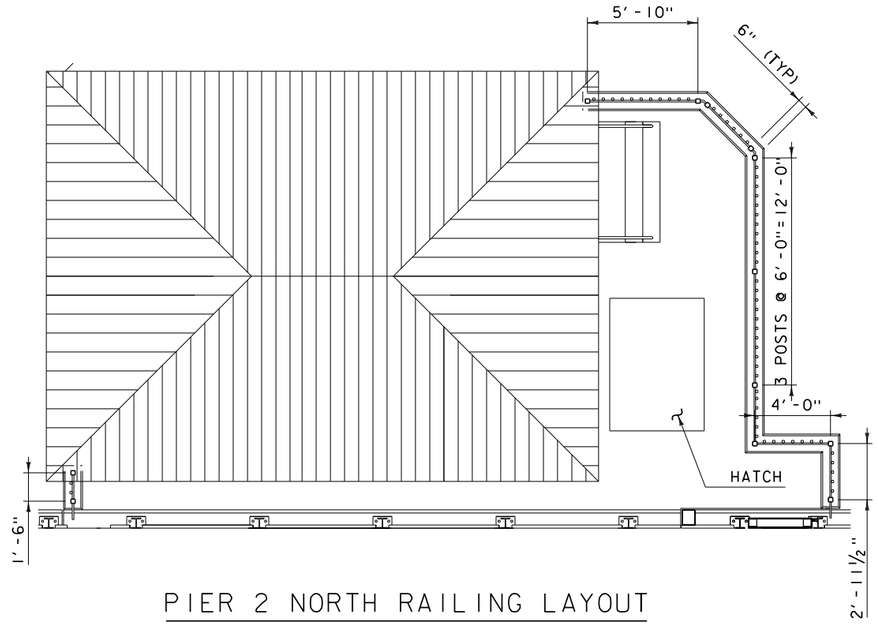
FILE NAME: zl2bl42PierHatch.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: J. KRYSIEWICZ
PIER HATCH DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: J.JIMENEZ
CHECKED BY: H. PROTIN
SHEET 173 OF 379



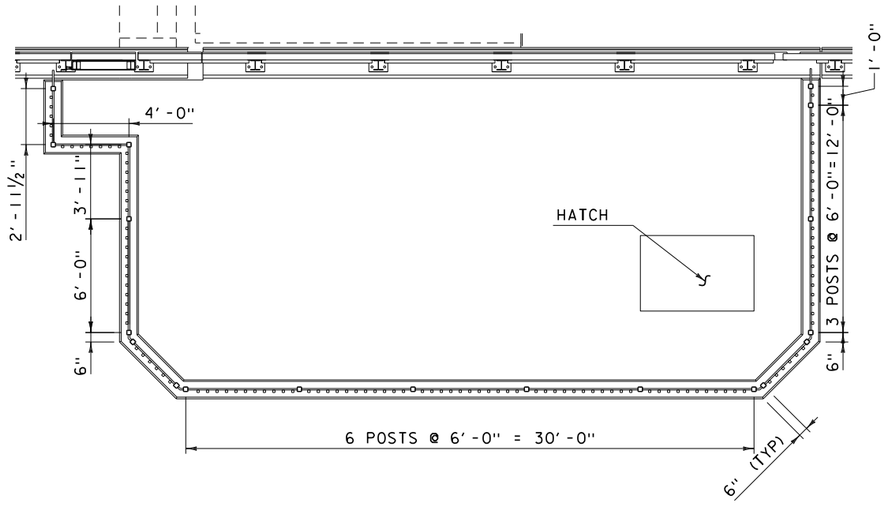
PIER 1 NORTH RAILING LAYOUT

SCALE ¼" = 1'-0"



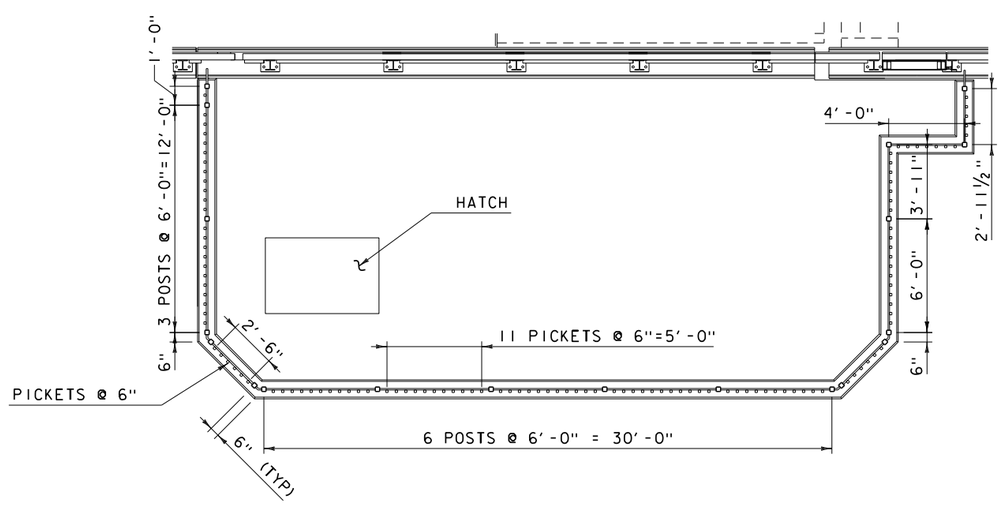
PIER 2 NORTH RAILING LAYOUT

SCALE ¼" = 1'-0"



PIER 1 SOUTH RAILING LAYOUT

SCALE ¼" = 1'-0"



PIER 2 SOUTH RAILING LAYOUT

SCALE ¼" = 1'-0"

LEGEND

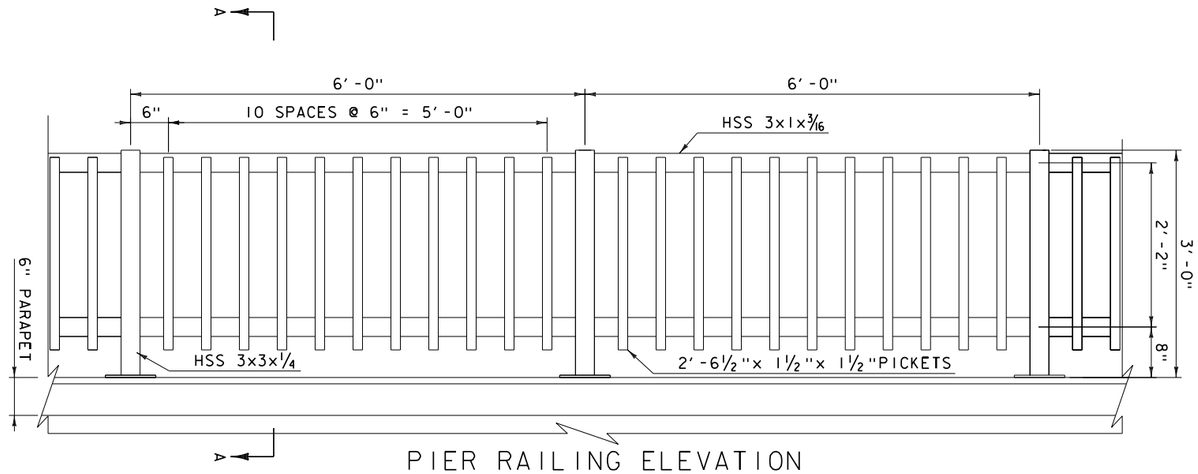
- PICKET
- RAILING POST

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

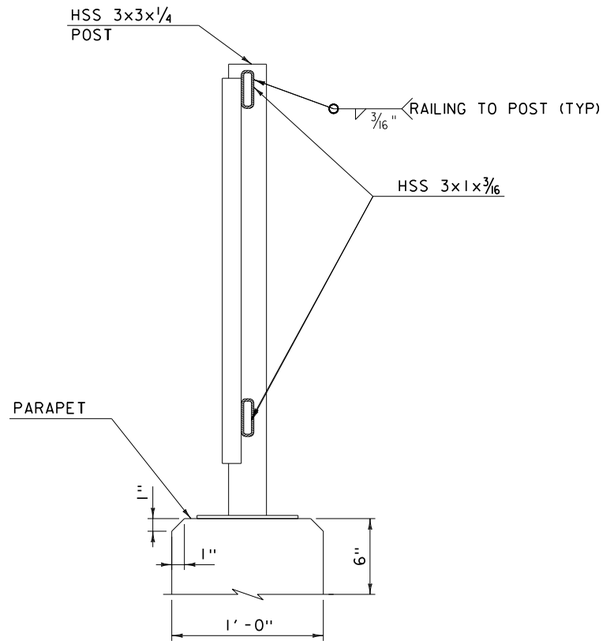
FILE NAME: z12bl42BRdetl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER RAILING DETAILS 1

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 174 OF 379



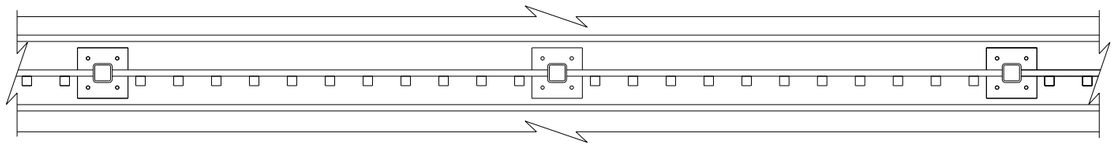
PIER RAILING ELEVATION

SCALE 1"= 1' -0"



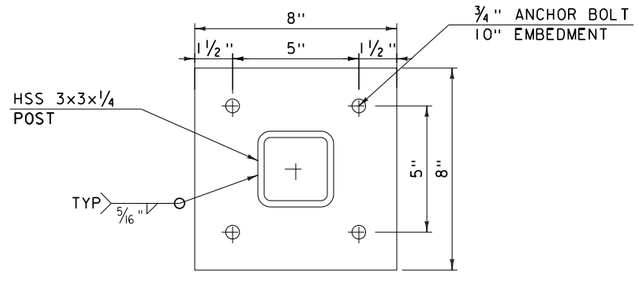
SECTION A-A

SCALE 2"= 1' -0"



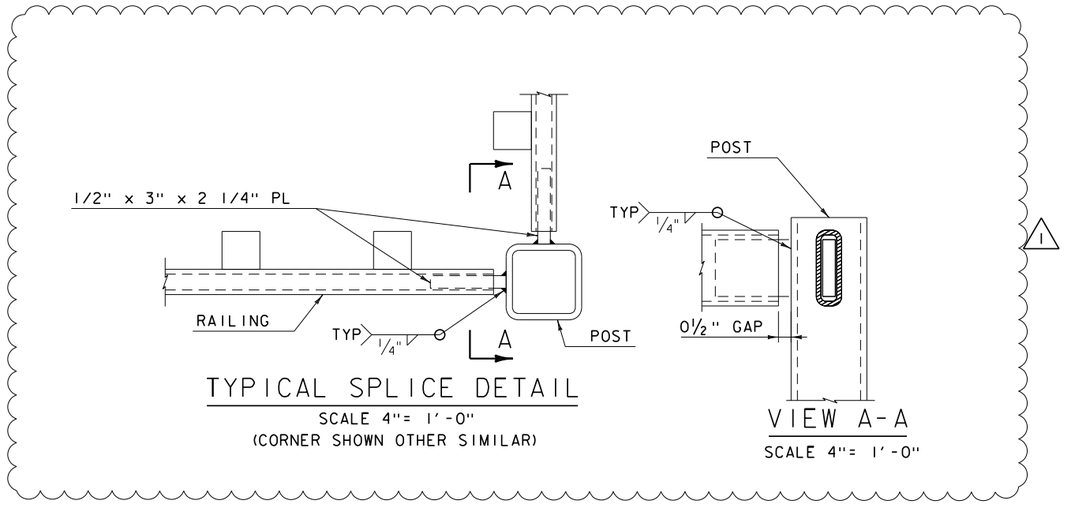
PIER RAILING PLAN

SCALE 1"= 1' -0"



BASE PLATE DETAIL

SCALE 4"= 1' -0"



TYPICAL SPLICE DETAIL

SCALE 4"= 1' -0"
(CORNER SHOWN OTHER SIMILAR)

VIEW A-A

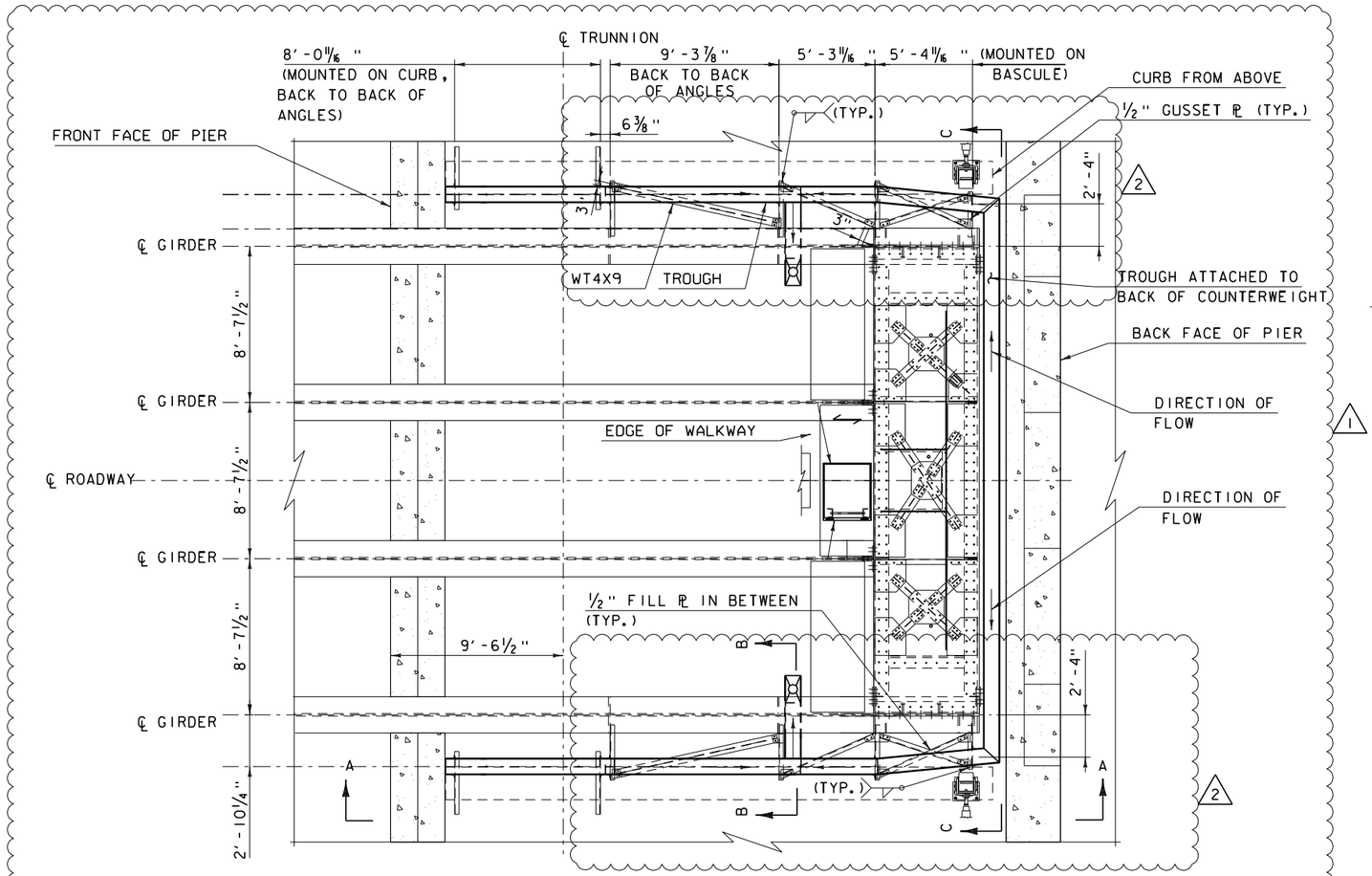
SCALE 4"= 1' -0"

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	4-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

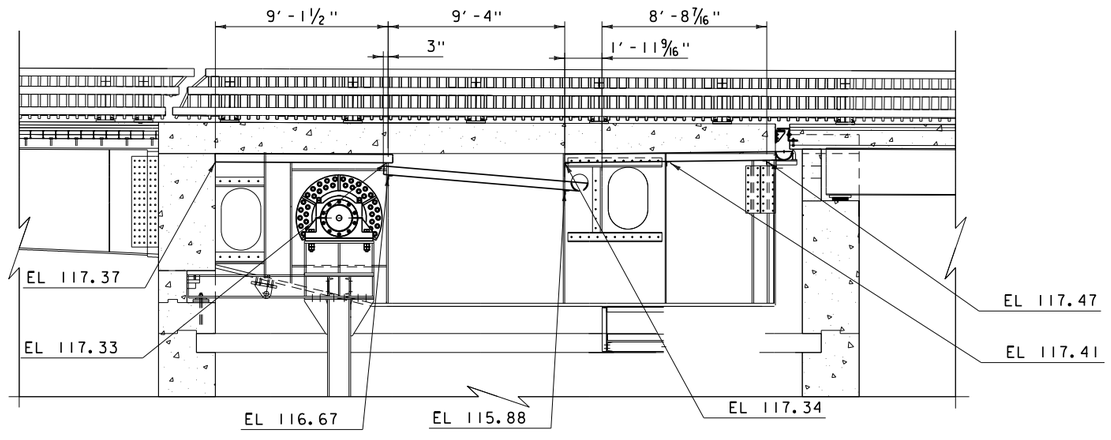
FILE NAME: zl2bl42BRdet2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER RAILING DETAILS 2

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 175 OF 379



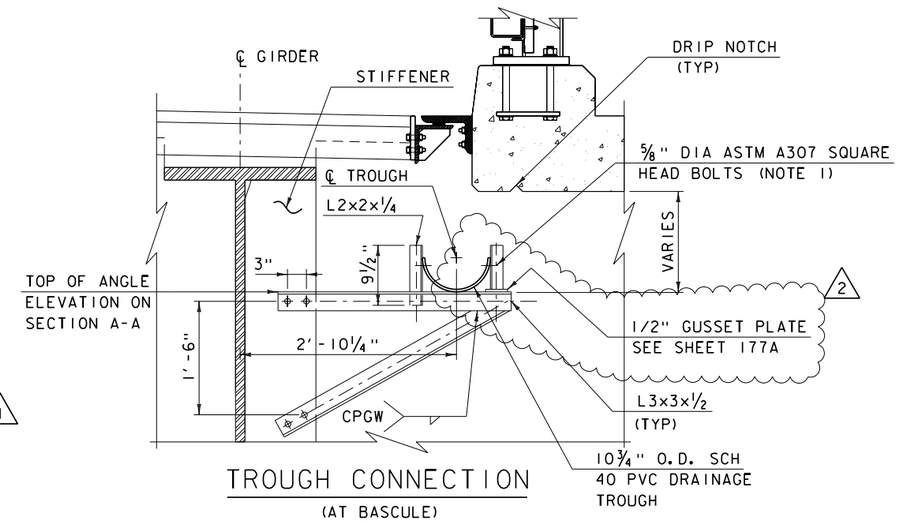
TROUGH CONNECTION PLAN

SCALE 1/4″= 1′-0″



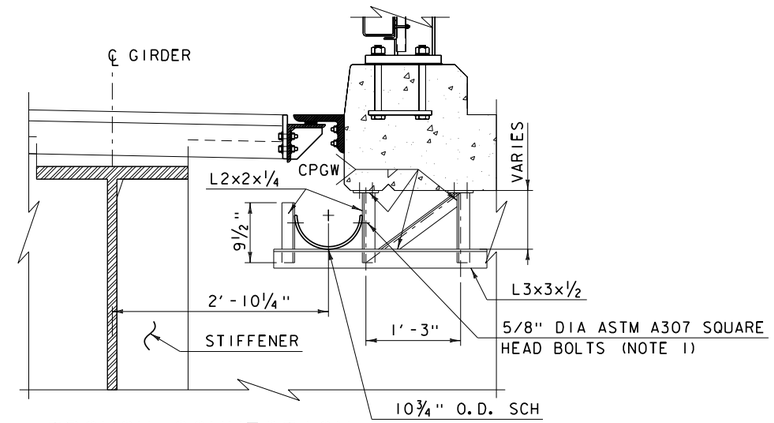
TROUGH CONNECTION ELEVATION SECTION A-A

SCALE 1/4″= 1′-0″



TROUGH CONNECTION

(AT BASCULE)
SCALE 1″= 1′-0″



TROUGH CONNECTION

(AT CURB)
SCALE 1″= 1′-0″

NOTE

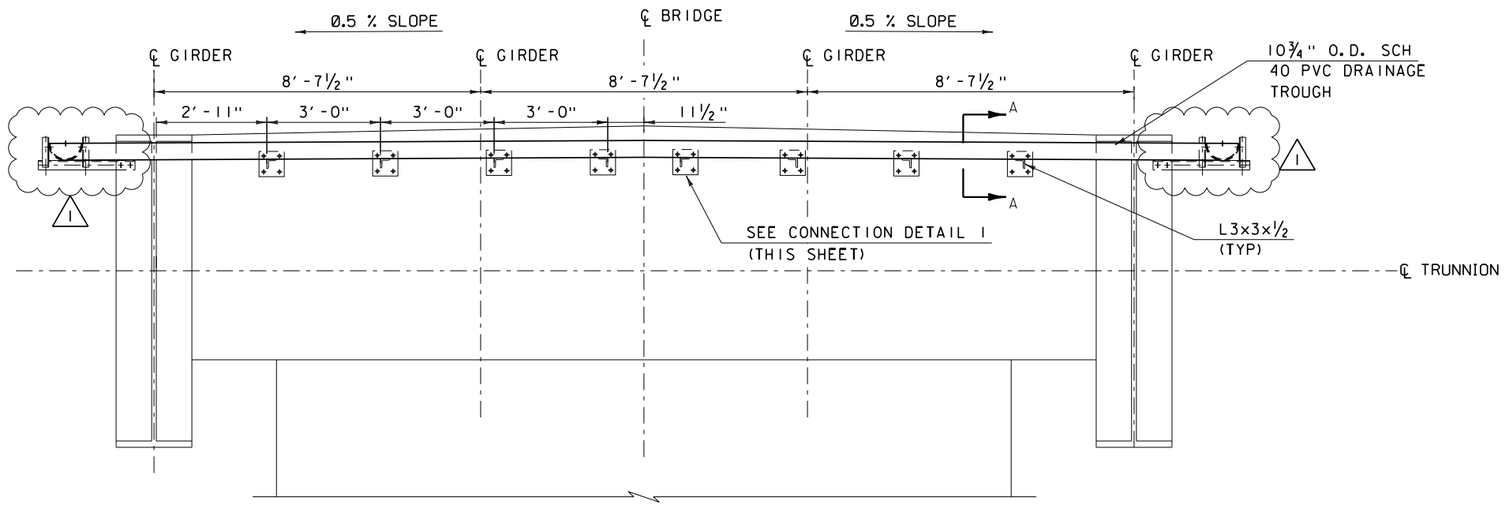
1. VERTICAL BOLT LOCATIONS ON THE PVC TROUGH WILL VARY AT EACH ANGLE BRACKET. SLOTTED HOLES IN THE L2x2x1/4 SHALL ALLOW FOR THE VARYING VERTICAL BOLT LOCATIONS NECESSARY TO ENSURE THE REQUIRED DRAINAGE SLOPE. BEVELED WASHERS SHALL BE INSTALLED WITH THE BOLTS ON THE INNER AND OUTER FACES OF THE TROUGH TO ACCOUNT FOR ITS CURVATURE.
2. DRAINAGE TROUGH WILL BE PAID FOR UNDER ITEM 900.645 SPECIAL PROVISION (STRUCTURAL STEEL - BASCULE SPAN).
3. ELEVATIONS PROVIDED ARE FROM TOP OF ANGLE CONNECTION.

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

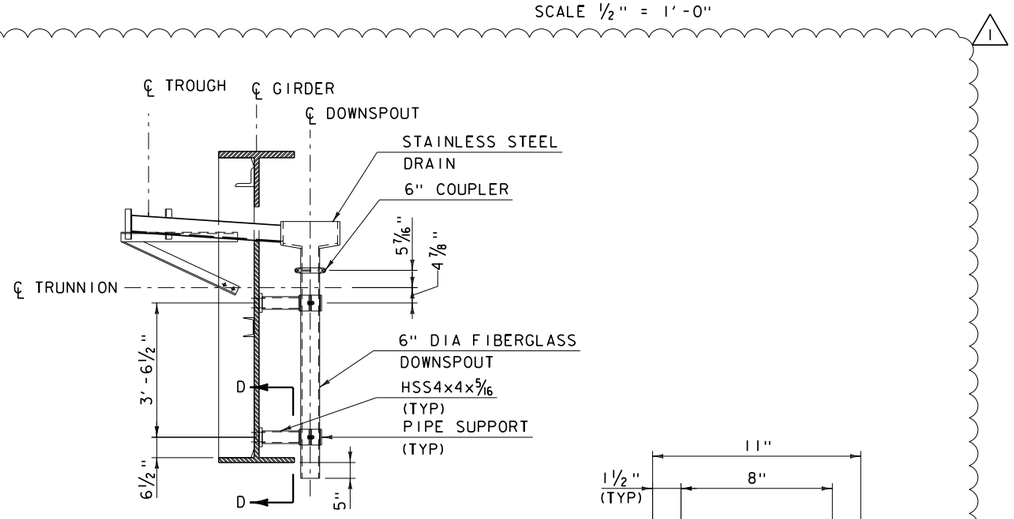
FILE NAME: z12bl42drngdetl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER DRAINAGE DETAILS I

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 176 OF 379



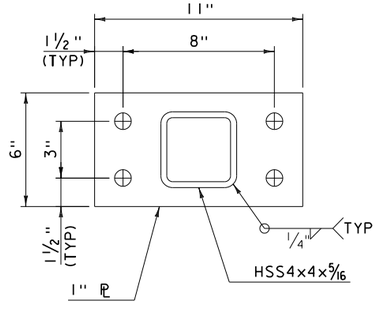
SECTION C-C

(BACK OF COUNTERWEIGHT)
SCALE ½" = 1'-0"



SECTION B-B

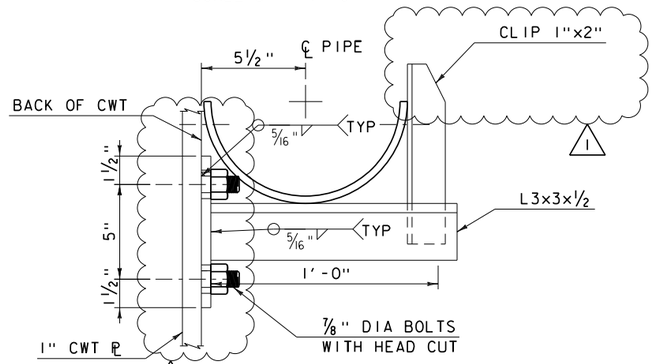
SCALE ½" = 1'-0"



SECTION D-D

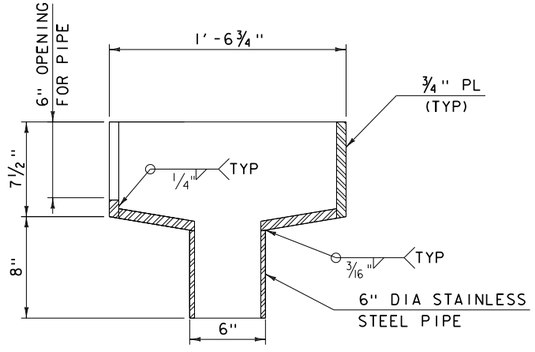
CONNECTION DETAIL 1

SCALE 3" = 1'-0"

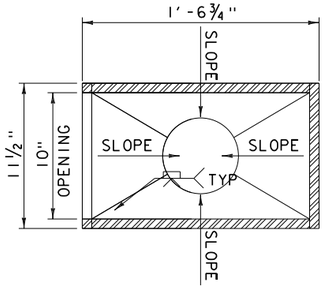


VIEW A-A

SCALE 3" = 1'-0"



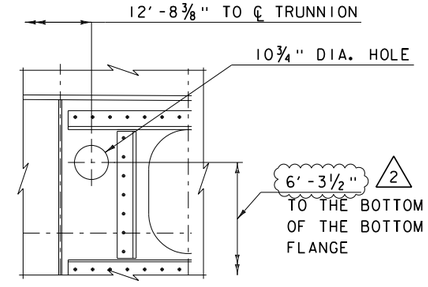
STEEL DRAIN SECTION



STEEL DRAIN PLAN

NOTE:

1. FIBERGLASS DOWNSPOUT SHALL BE CONNECTED TO STEELDOWNSPOUT WITH COUPLER.



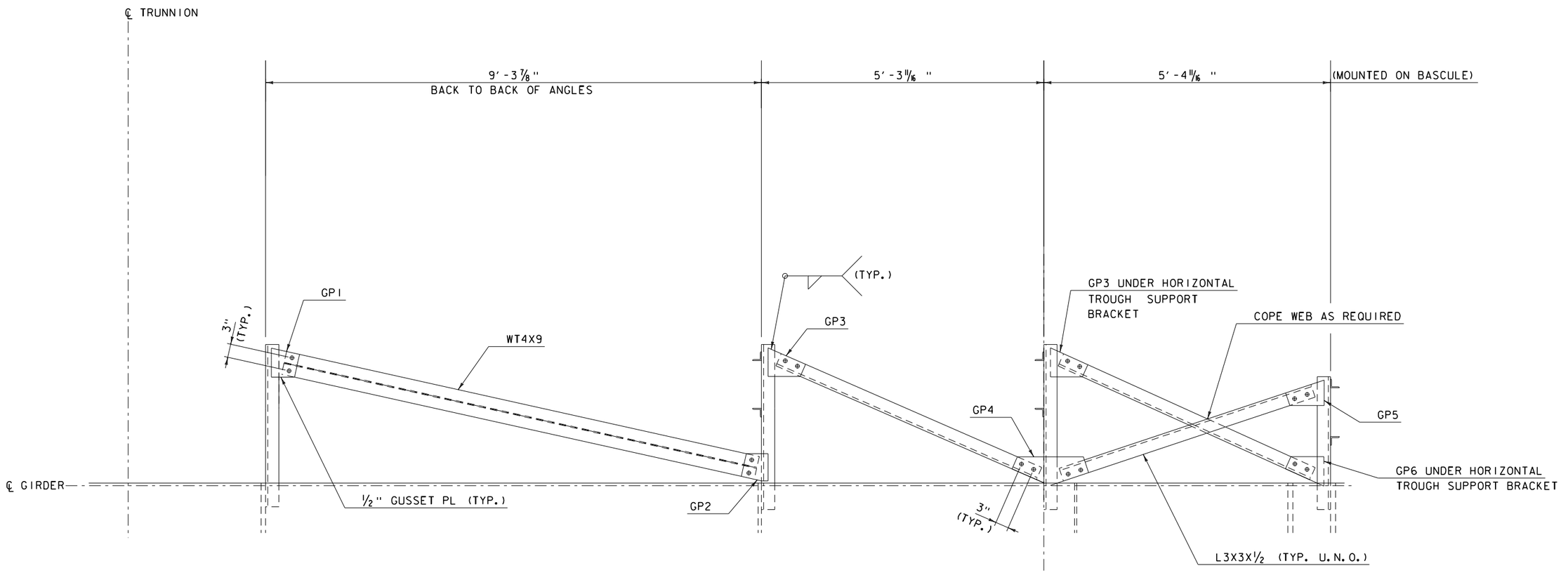
DRAINAGE OPENING

REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42drngdet2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER DRAINAGE DETAILS 2

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 177 OF 379



TROUGH CONNECTION BRACING

SCALE: 1" = 1'-0"
(PIER 2 NORTH SIDE SHOWN, ALL OTHERS SIMILAR)

NOTE:

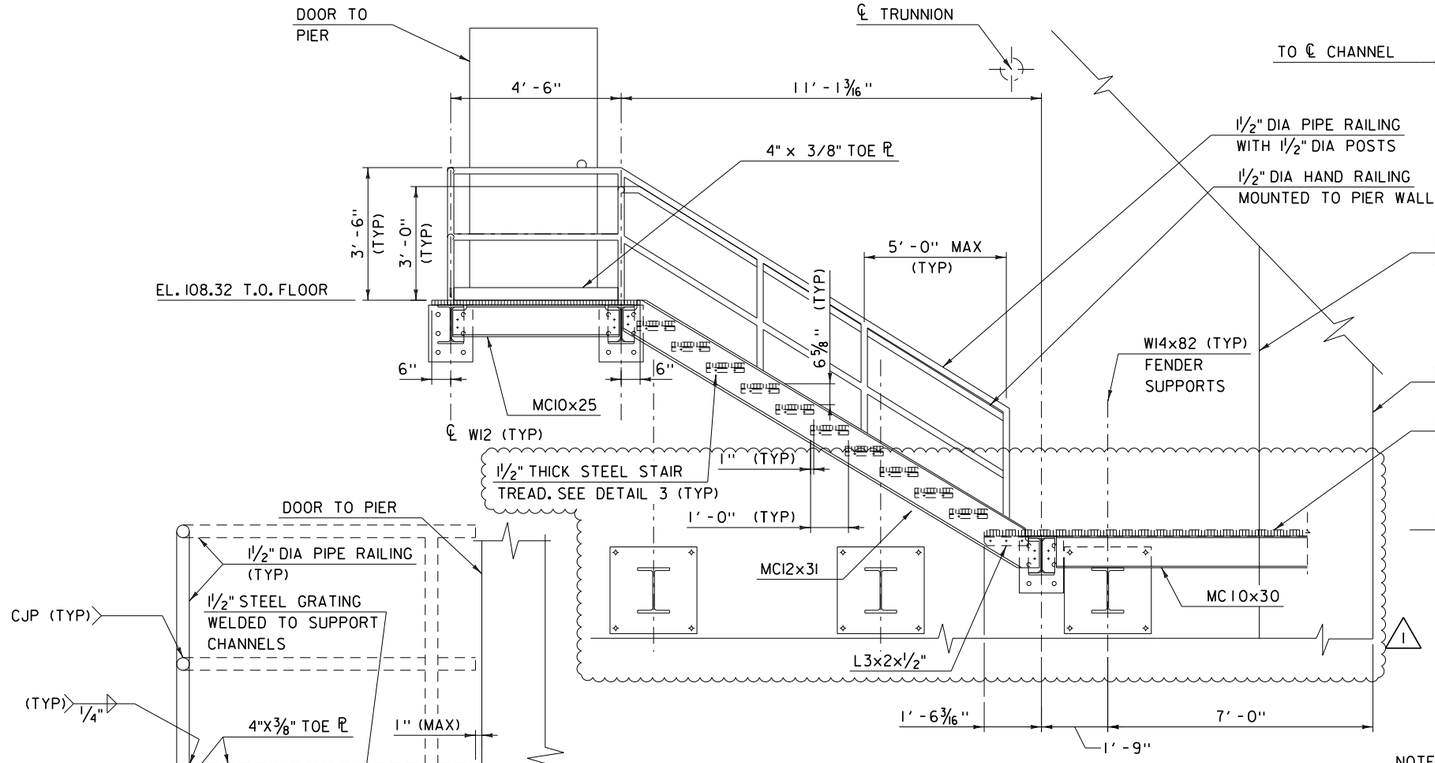
1. ALL GUSSET PLATES ARE TO BE SHOP WELDED ON TOP OF TROUGH SUPPORT BRACKETS UNLESS NOTED OTHERWISE.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	4-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142drngdetl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER DRAINAGE DETAILS 3

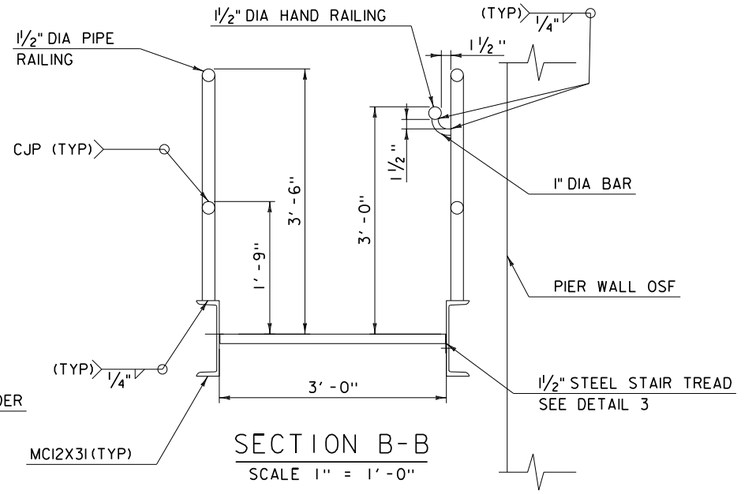
PLOT DATE: 2/6/2018
DRAWN BY: D. DOUGHERTY
CHECKED BY: T. FRENCH
SHEET 177A OF 379



PIER 1 FENDER ACCESS STAIR ELEVATION

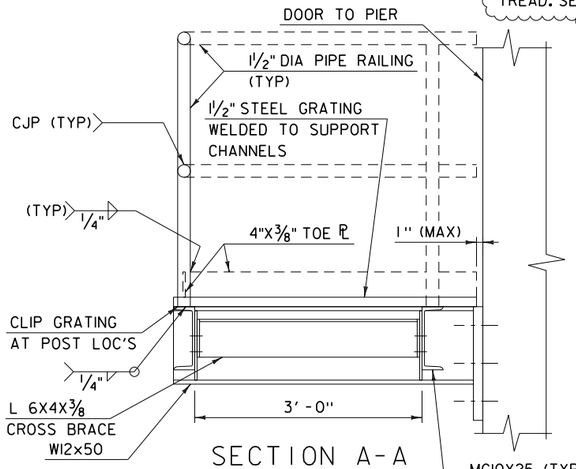
SCALE 1/2" = 1'-0"

NOTE:
FENDER NOT SHOWN FOR CLARITY



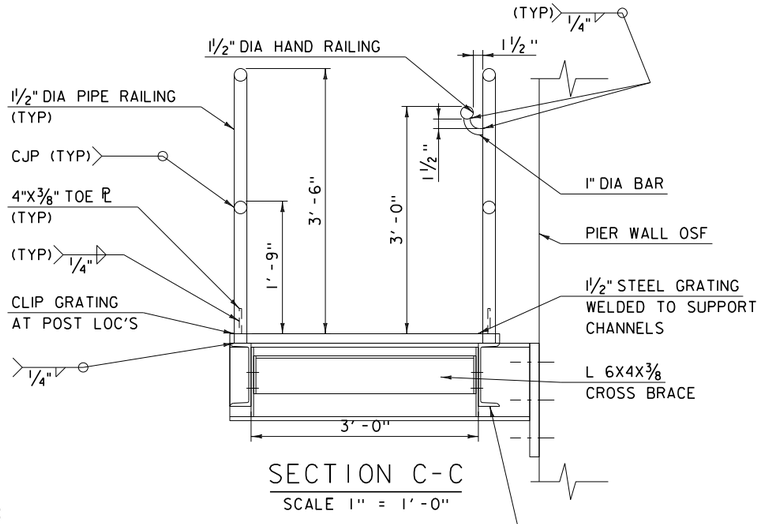
SECTION B-B

SCALE 1" = 1'-0"



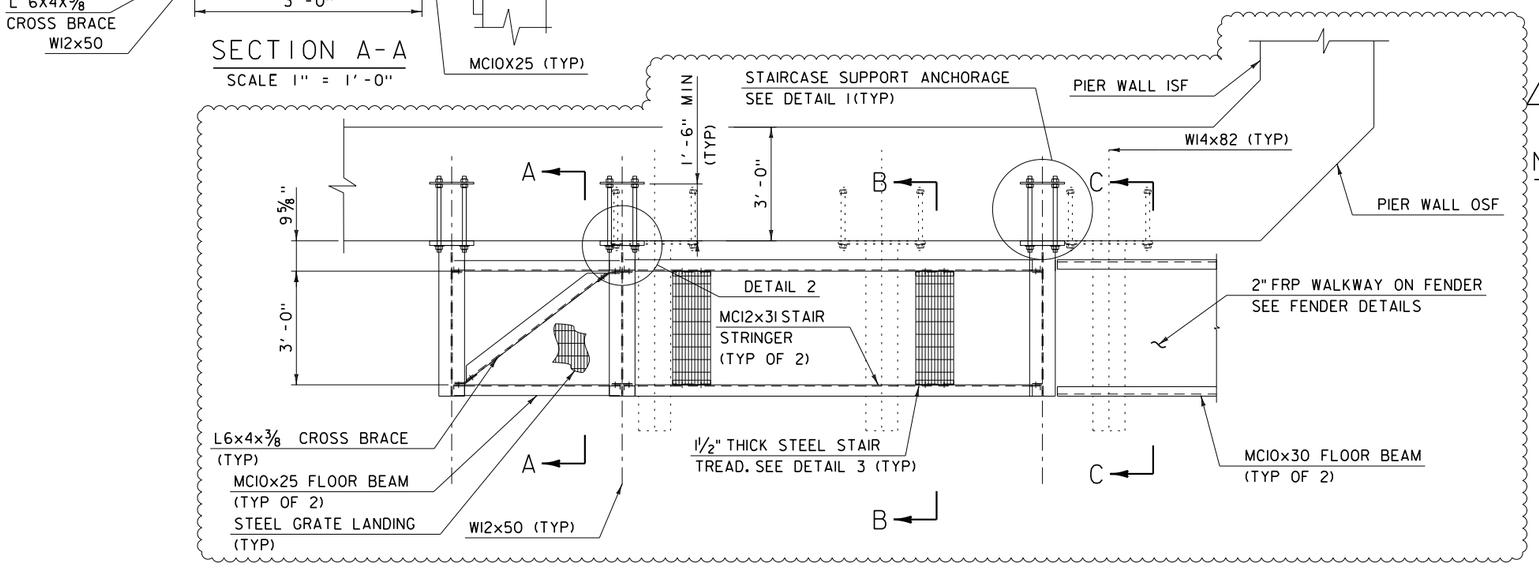
SECTION A-A

SCALE 1" = 1'-0"



SECTION C-C

SCALE 1" = 1'-0"



PIER 1 FENDER ACCESS STAIR PLAN

SCALE 1/2" = 1'-0"

NOTES:

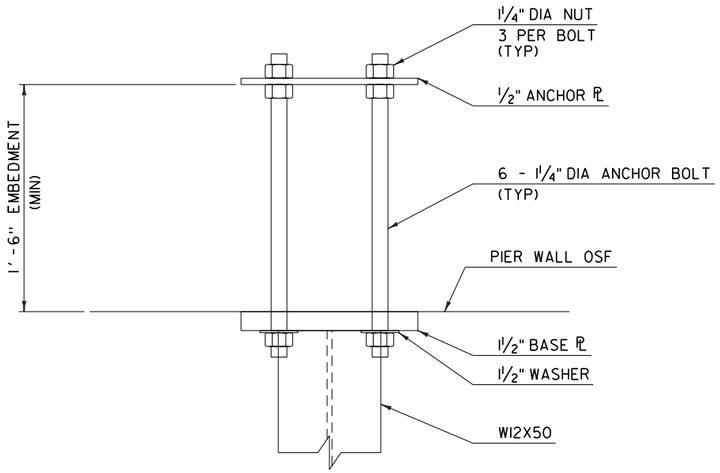
1. PIER 1 FENDER ACCESS STAIRS SHOWN. PIER 2 STAIRS OPPOSITE HAND.
2. RAILINGS NOT SHOWN IN PLAN VIEW FOR CLARITY.
3. SEE FENDER ACCESS STAIR DETAIL 2 SHEET FOR ADDITIONAL DETAILS.
4. ALL FENDER ACCESS STAIR COMPONENTS SHALL BE GALVANIZED AFTER FABRICATION.
5. ALL FENDER ACCESS STAIR COMPONENTS SHALL BE PAID FOR UNDER ITEM 900.645 "SPECIAL PROVISION (NON-STRUCTURAL STEEL)".
6. STEEL GRATING SHALL BE 1 1/2" THICK AND LIGHT-DUTY WELDED RECTANGULAR DESIGN. GRATING SHALL SAFELY SUSTAIN A UNIFORM DISTRIBUTED LIVE LOAD OF 300 POUNDS PER SQUARE FOOT ON A 3'-6" SPAN AND DEFLECT LESS THAN 1/4". STEEL SHALL MEET OR EXCEED ASTM A709 GRADE 36. GRATING TO BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123. MAIN BAR SURFACE SHALL BE SERRATED.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	4-29-2020	POST-AWARD RFI'S 037-114	JLG

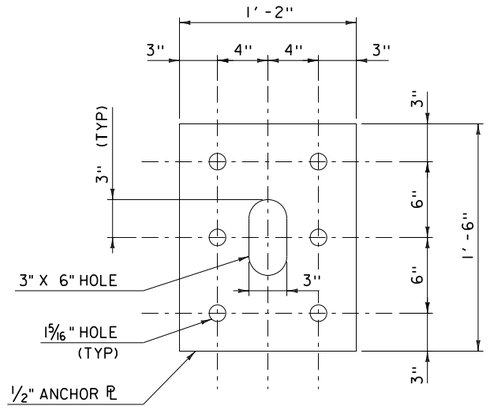
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142fend_st1.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: G. WANG
FENDER ACCESS STAIR DETAILS 1

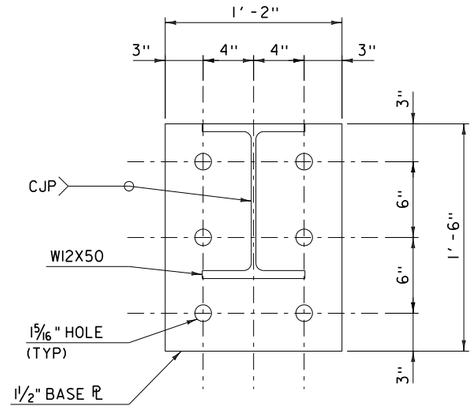
PLOT DATE: 2/6/2018
DRAWN BY: P. LEFEBVRE
CHECKED BY: J. KRYSIEWICZ
SHEET 178 OF 379



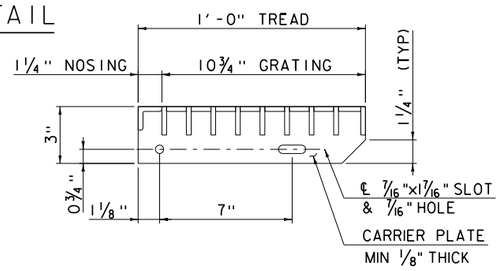
DETAIL 1
SCALE 2" = 1'-0"



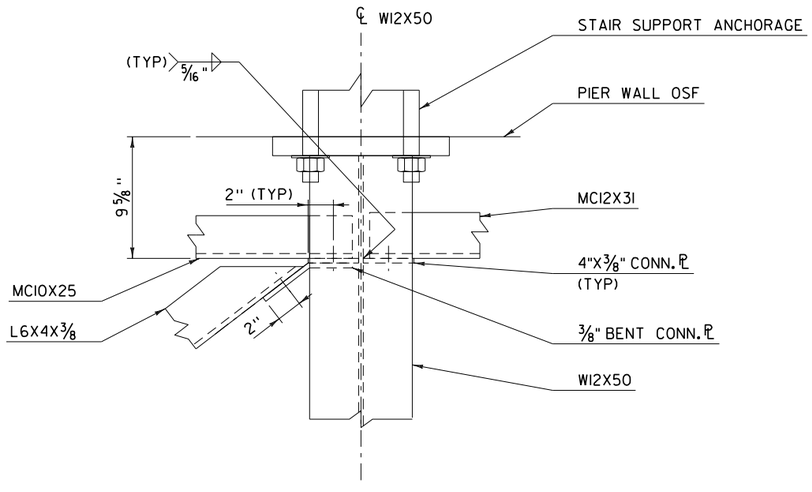
ANCHOR PLATE DETAIL
SCALE 2" = 1'-0"



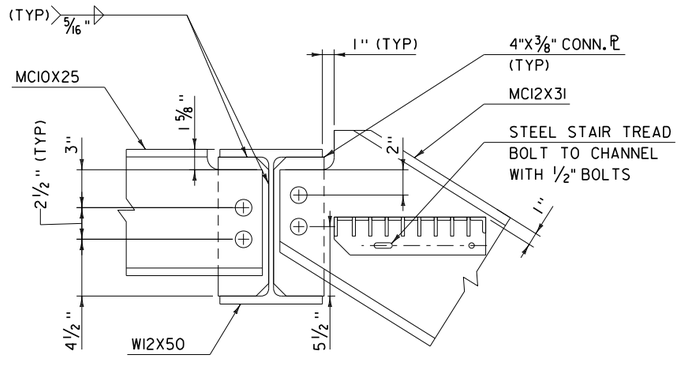
BASE PLATE DETAIL
SCALE 2" = 1'-0"



DETAIL 3
STEEL STAIR TREAD
SCALE 3" = 1'-0"



DETAIL 2 PLAN
SCALE 2" = 1'-0"



DETAIL 2 ELEV
SCALE 2" = 1'-0"

NOTES:

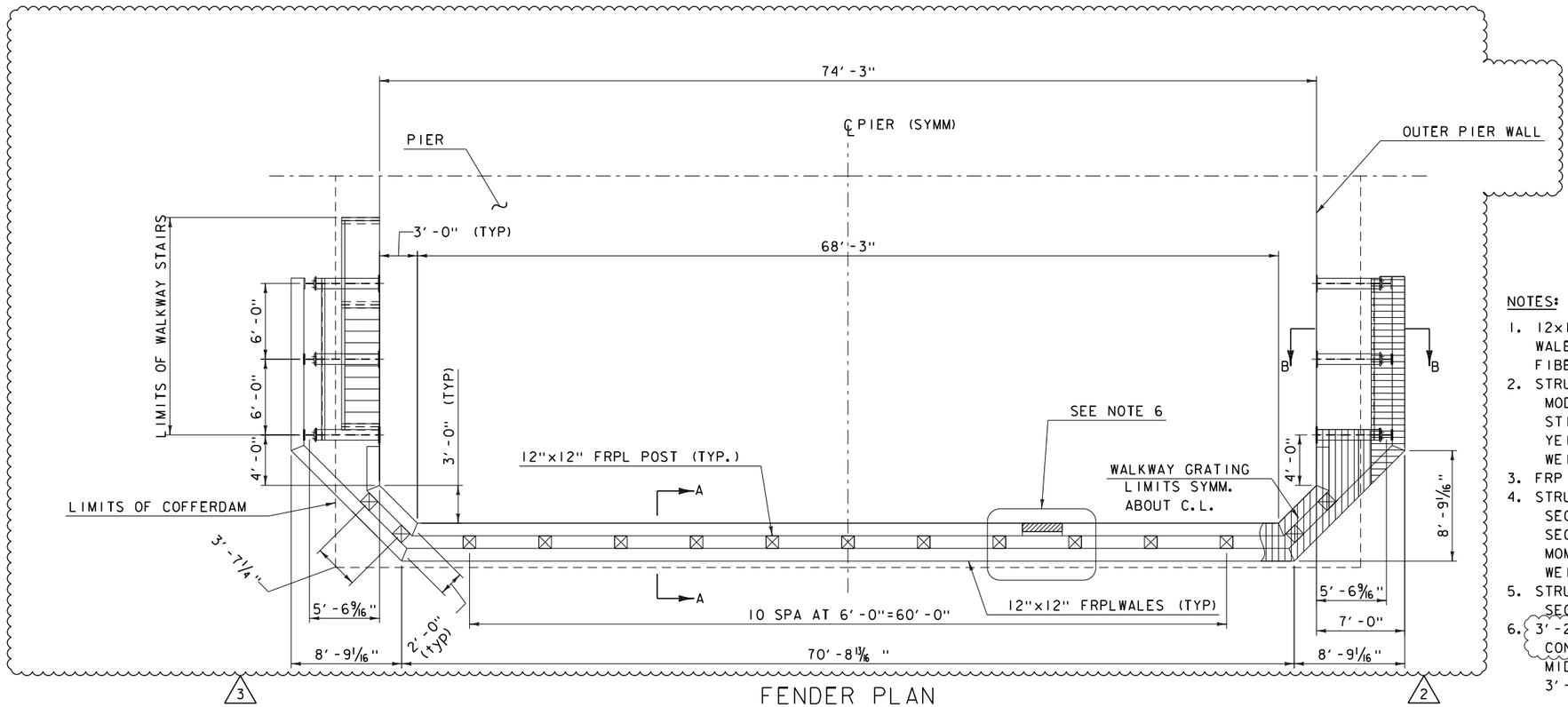
1. SEE SHEET 178 FOR LOCATION ADDITIONAL DETAILS.
2. ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF SUBSECTION 714.08. THE COMBINATION OF BOLT, NUT, AND WASHER SHALL BE MECHANICALLY GALVANIZED IN ACCORDANCE WITH AASHTO M298, CLASS 50, TYPE 1. GALVANIZING THAT HAS BEEN DAMAGED SHALL BE REPAIRED IN ACCORDANCE WITH SUBSECTION 726.08
3. ANCHOR PLATES AND BASE PLATES SHALL MEET THE REQUIREMENTS OF AASHTO M270 GRADE 50.
4. BOLTED CONNECTIONS TO BE ¾" ASTM A325 TYPE 1BOLTS, EXCEPT AS NOTED.
6. STEEL STAIR TREAD SHALL BE WELDED RECTANGULAR DESIGN AND SIMILAR IN APPEARANCE TO THE ADJACENT STEEL GRATING. STEEL STAIR TREAD SHALL SAFELY SUSTAIN A UNIFORM DISTRIBUTED LIVE LOAD OF 300 POUNDS PER SQUARE FOOT ON A 3'-6" SPAN AND DEFLECT LESS THAN 1"4". STEEL SHALL MEET OR EXCEED ASTM A709 GRADE 36. TREAD ASSEMBLY TO BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123. MAIN BAR SURFACE SHALL BE SERRATED.

HDR

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

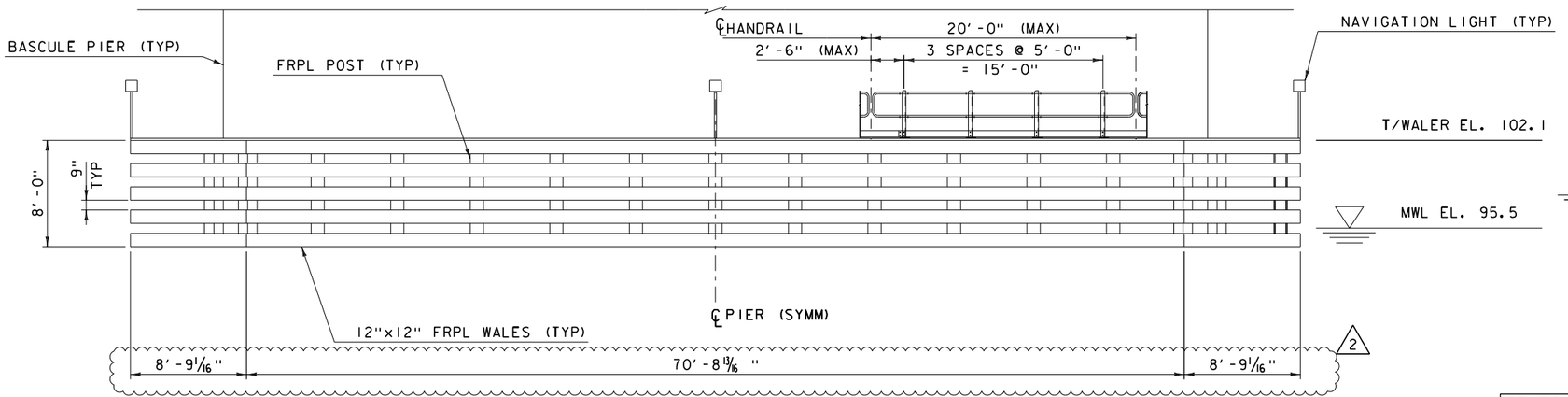
FILE NAME: z12bl42fend_st2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: G. WANG
FENDER ACCESS STAIR DETAILS 2

PLOT DATE: 2/6/2018
DRAWN BY: P. LEFEBVRE
CHECKED BY: J. KRYSIEWICZ
SHEET 179 OF 379



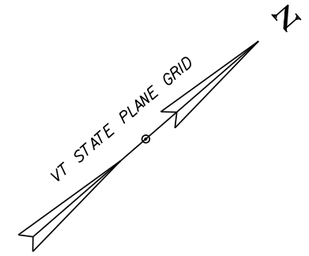
FENDER PLAN

SCALE 3/16" = 1'-0"
WEST PIER SHOWN, EAST SIMILAR
(SEE SHEET 180A FOR NW CORNER OF PIER 2) 2



FENDER ELEVATION

SCALE 3/16" = 1'-0"
WEST PIER SHOWN, EAST SIMILAR



NOTES:

1. 12x12 FIBERGLASS REINFORCED PLASTIC LUMBER (FRPL) WALERS AND POSTS TO BE REINFORCED WITH (4) 1.5" DIAMETER FIBERGLASS REINFORCING BARS.
2. STRUCTURAL PROPERTIES OF FRPL TO MEET (MINIMUMS):

MODULUS OF ELASTICITY, E =	375 KSI
STIFFNESS, E.I. =	6.08x10^8 LB-IN^2
YEILD STRESS IN BENDING, Fy =	6.74 KSI
WEIGHT, W =	46-53 PLF

3. FRP WALKWAY TO BE OPEN DECK (50%), 2" THICK
4. STRUCTURAL PROPERTIES OF FRP WALKWAY TO MEET (MINIMUMS):

SECTION MODULUS TOP, St =	1.906 IN^3/FT
SECTION MODULUS BOTTOM, Sb =	1.495 IN^3/FT
MOMENT OF INERTIA, I =	1.676 IN^4/FT
WEIGHT, W =	3.1 PSF

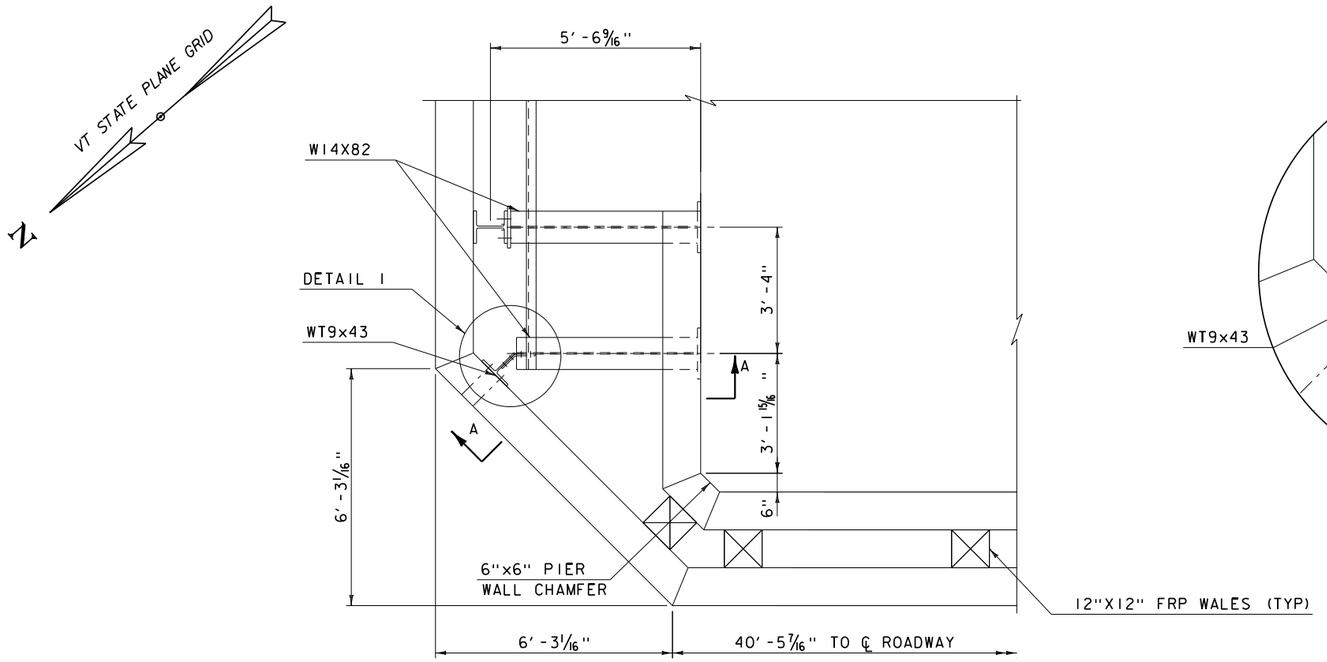
5. STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 506 AND SUBSECTION 708.03. 1
6. 3'-2" x 8" CUTOUT IN TOP REAR FRP WALE AND WALKWAY. CONTRACTOR TO PROVIDE TOEBOARD AT OPENING IN WALKWAY. MIDDLE AND BOTTOM REAR WALE TO HAVE FULL CUT OUT FOR 3'-2" LENGTH.

REVISION	DATE	DESCRIPTION	BY
3	04/29/2020	SHOP DRAWING REVIEW UPDATES	JLG
2	04/29/2020	POST AWARD RFI'S 037-114	JLG
1	04/29/2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142fender1.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: G. NICKELS
FENDER DETAILS 1

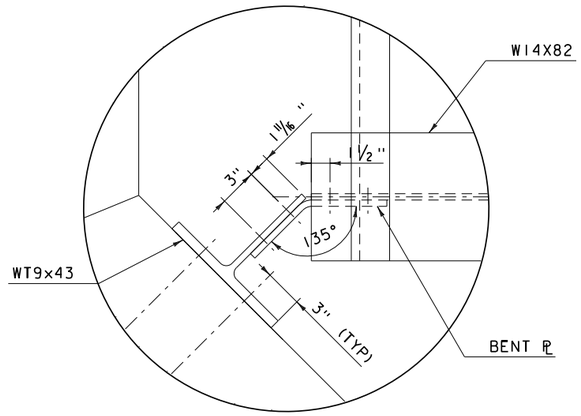
PLOT DATE: 2/6/2018
DRAWN BY: G. NICKELS
CHECKED BY: H. PROTIN
SHEET 180 OF 379



FENDER PLAN 2

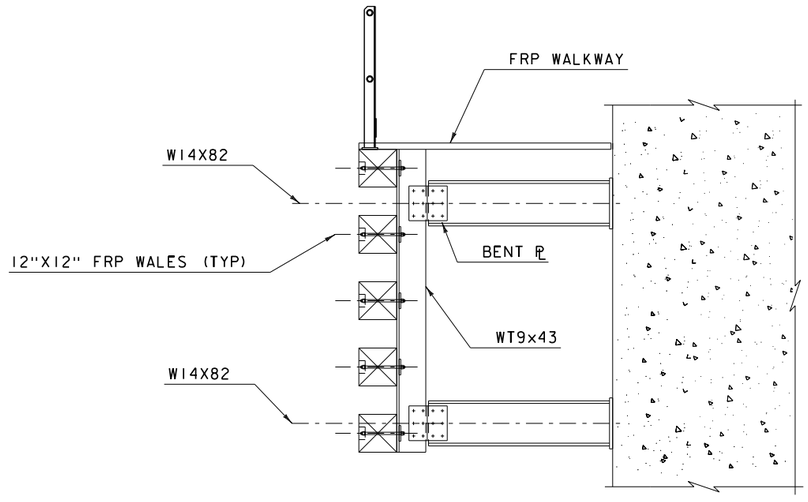
SCALE 1/2" = 1'-0"

PIER 2 NW CORNER



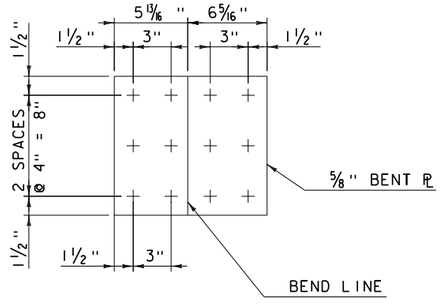
DETAIL 1

NTS



SECTION A-A

SCALE 1/2" = 1'-0"



BENT PLATE DETAIL

NTS

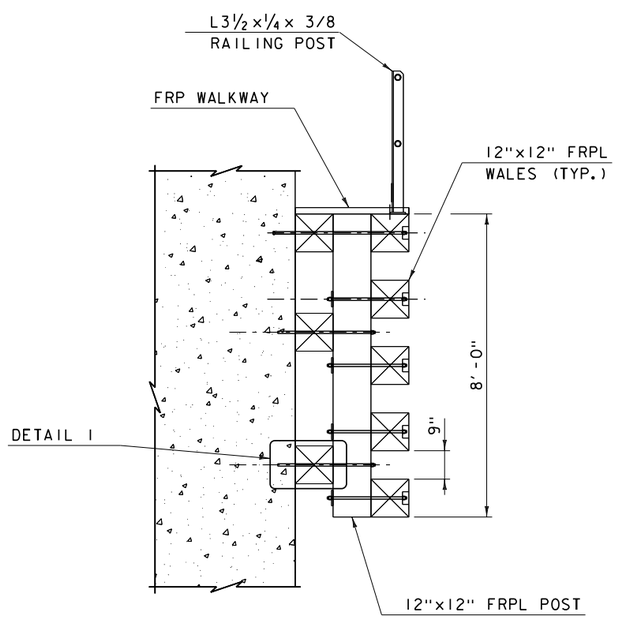
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

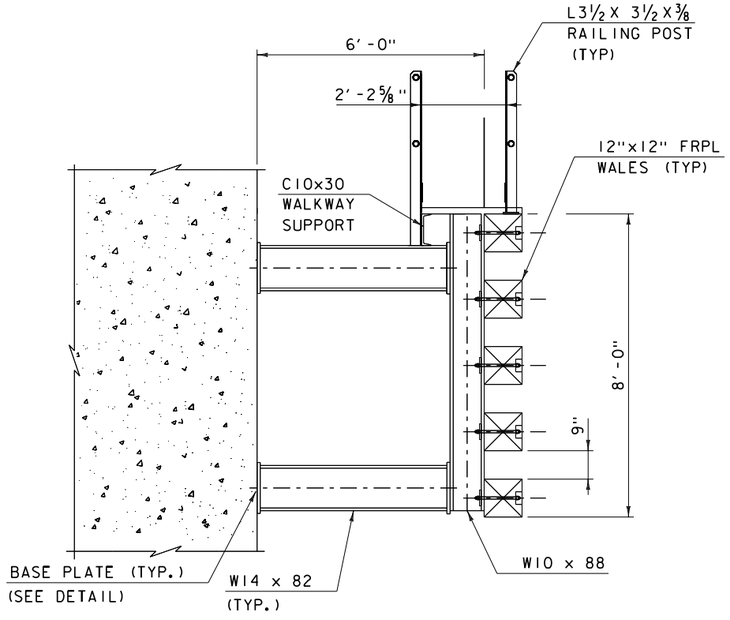
FILE NAME: zl2bl42fender3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: G. NICKELS
FENDER DETAILS IA

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: H. PROTIN
SHEET 180A OF 379



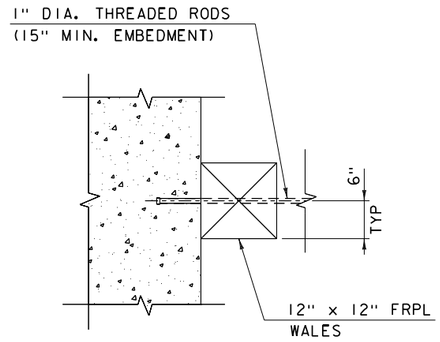
SECTION A-A

SCALE ½" = 1'-0"



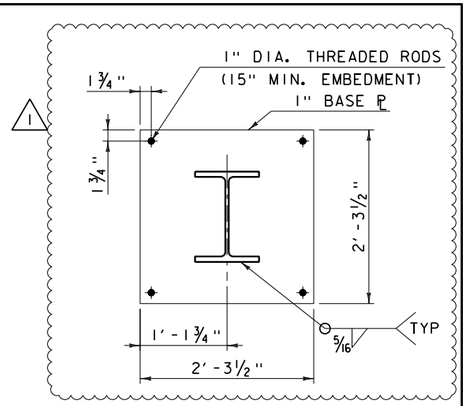
SECTION B-B

SCALE ½" = 1'-0"



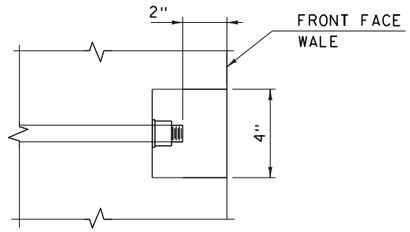
DETAIL 1

SCALE 1" = 1'-0"



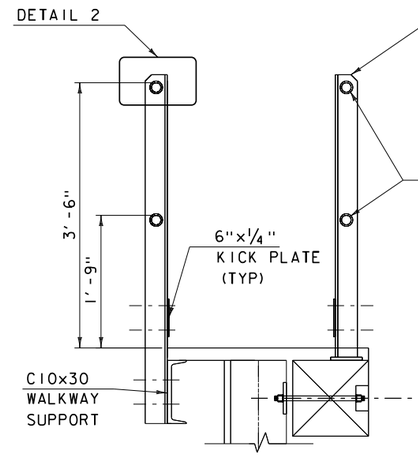
BASE PLATE

SCALE 1" = 1'-0"



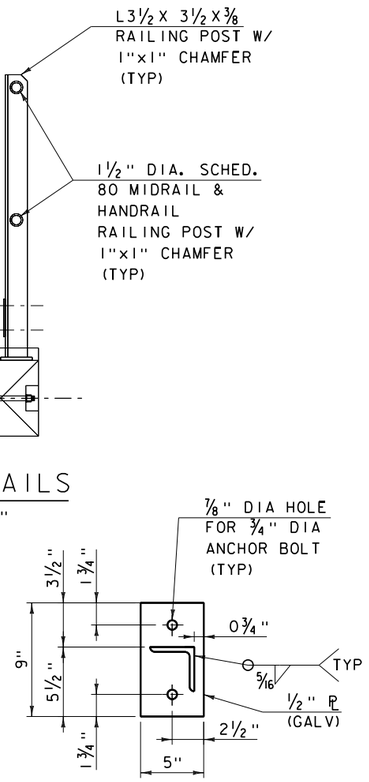
COUNTER BORE DETAIL

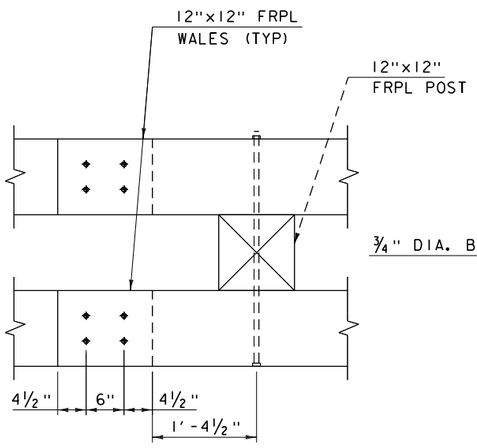
N.T.S.



HANDRAIL DETAILS

SCALE 1" = 1'-0"

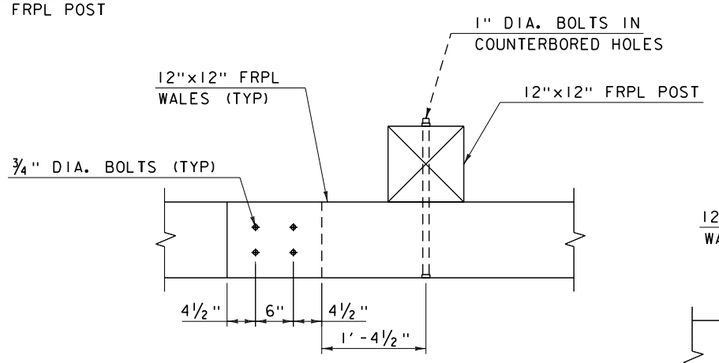




WALE SPLICE PLAN*

(ROW 1)

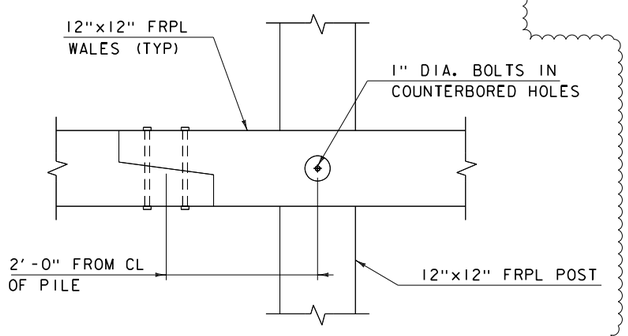
SCALE 1" = 1'-0"



WALE SPLICE PLAN*

(ROWS 2, 3, 4 & 5)

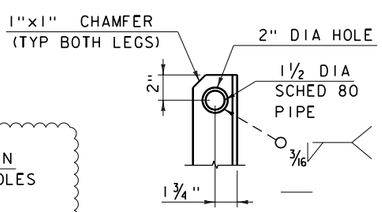
SCALE 1" = 1'-0"



WALE SPLICE ELEVATION*

SCALE 1" = 1'-0"

*NOTE: ALTERNATIVE SPLICES MAY BE RECOMMEND BY FRPL MANUFACTURER



DETAIL 2

N.T.S.

RAILING POST BASE PLATE

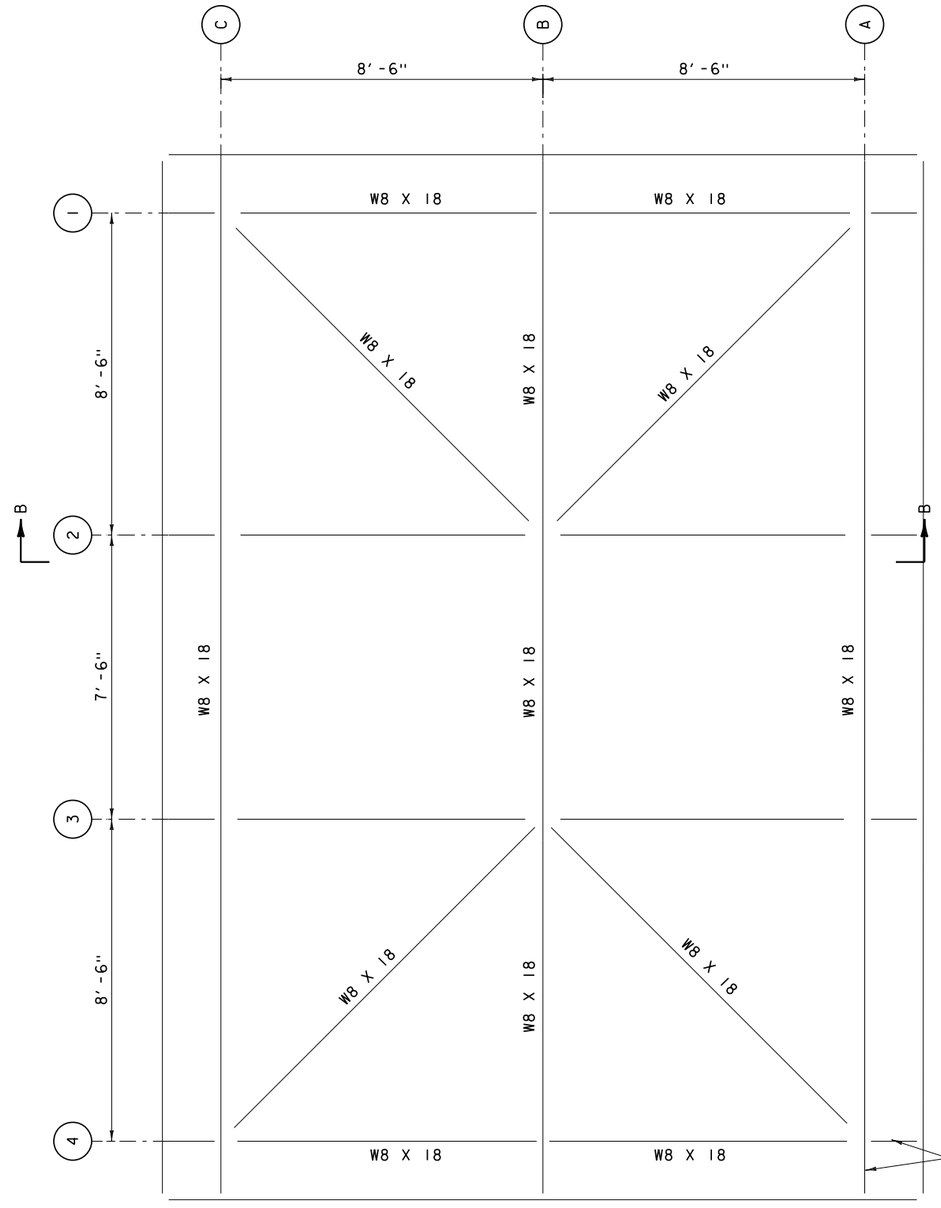
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

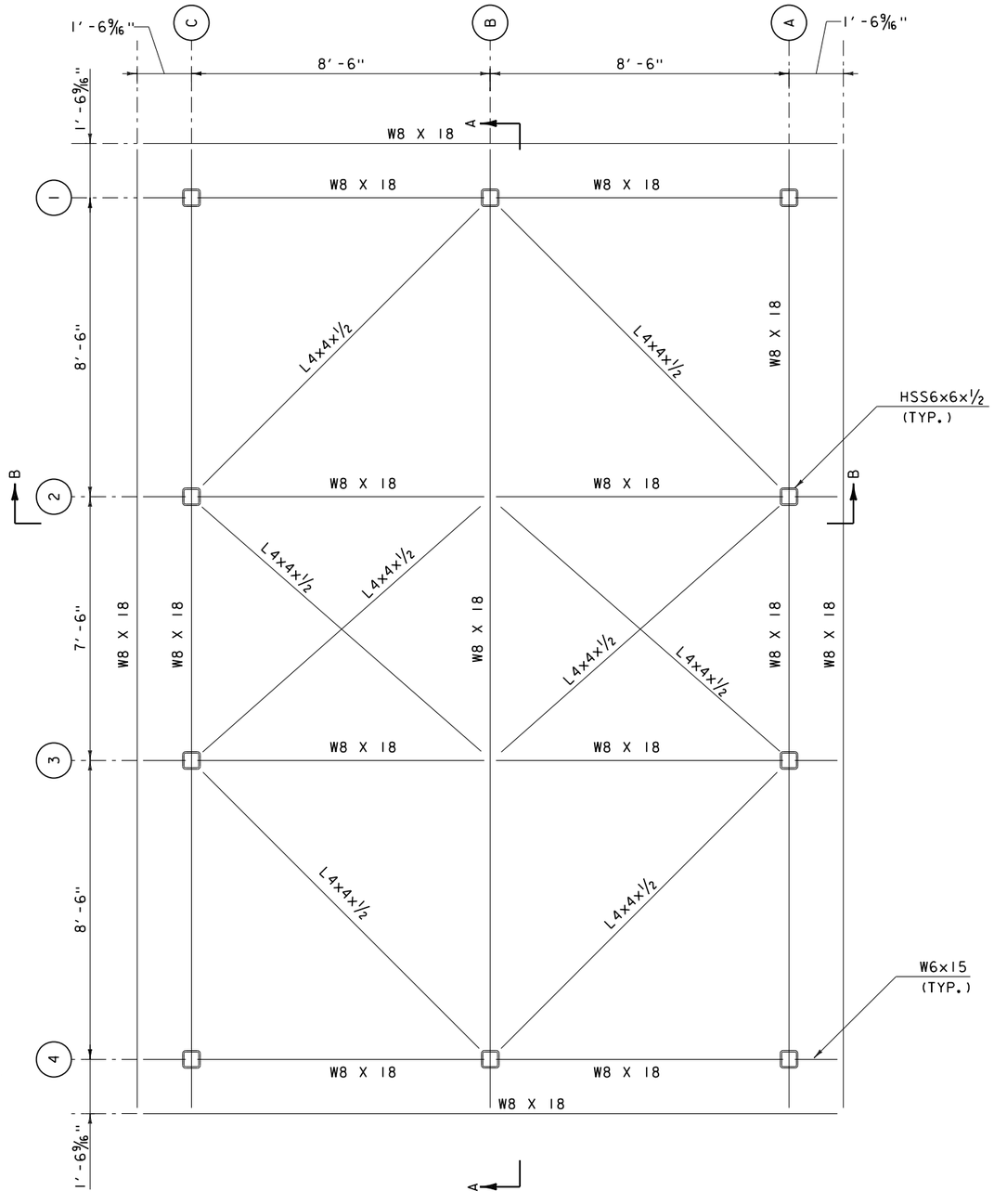
FILE NAME: z12b142fender2.dgn
PROJECT LEADER: T. FRENCH
DESIGNED BY: G. NICKELS
FENDER DETAILS 2

PLOT DATE: 2/20/2018
DRAWN BY: G. NICKELS
CHECKED BY: H. PROTIN
SHEET 181 OF 379



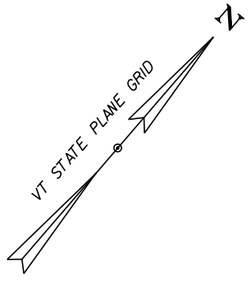
CONTROL HOUSE ROOF FRAMING PLAN

SCALE 1/2" = 1'-0"

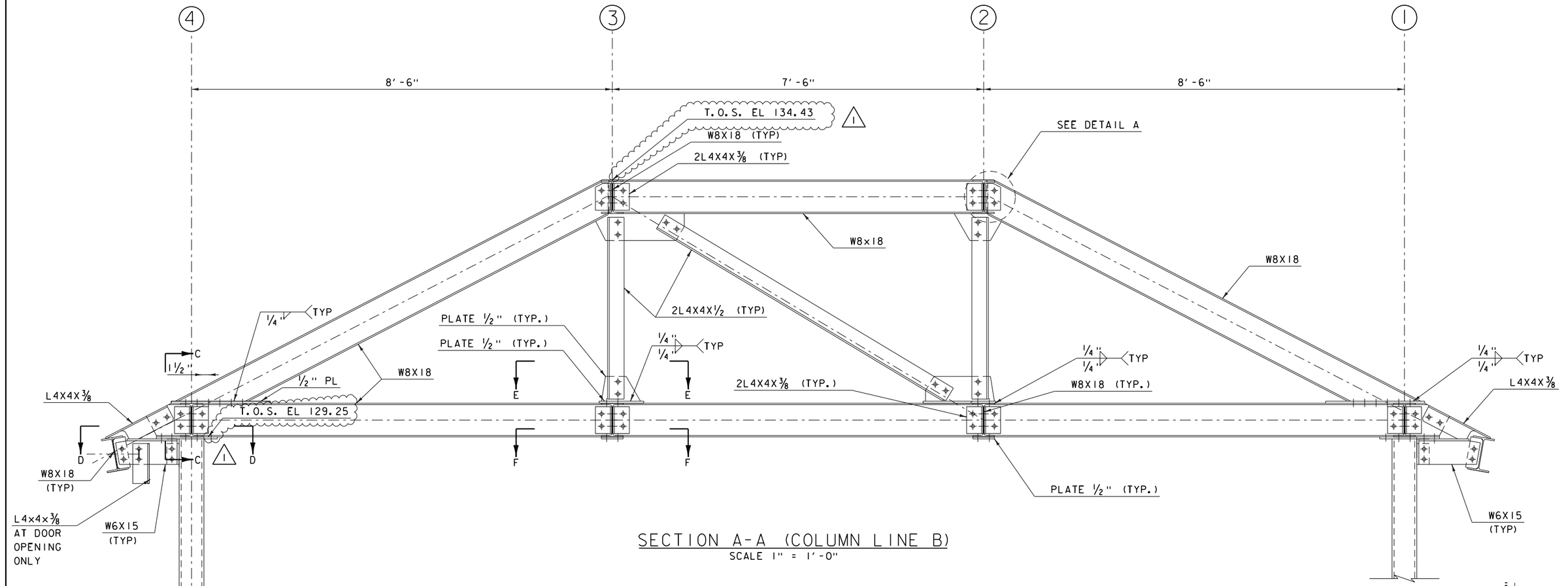


CONTROL HOUSE CEILING FRAMING PLAN

SCALE 1/2" = 1'-0"



PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142_chfrpll.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: S. SANTRICH
DESIGNED BY: S. SANTRICH	CHECKED BY: J. KRYSIEWICZ
CONTROL HOUSE ROOF FRAMING PLAN	SHEET 182 OF 379

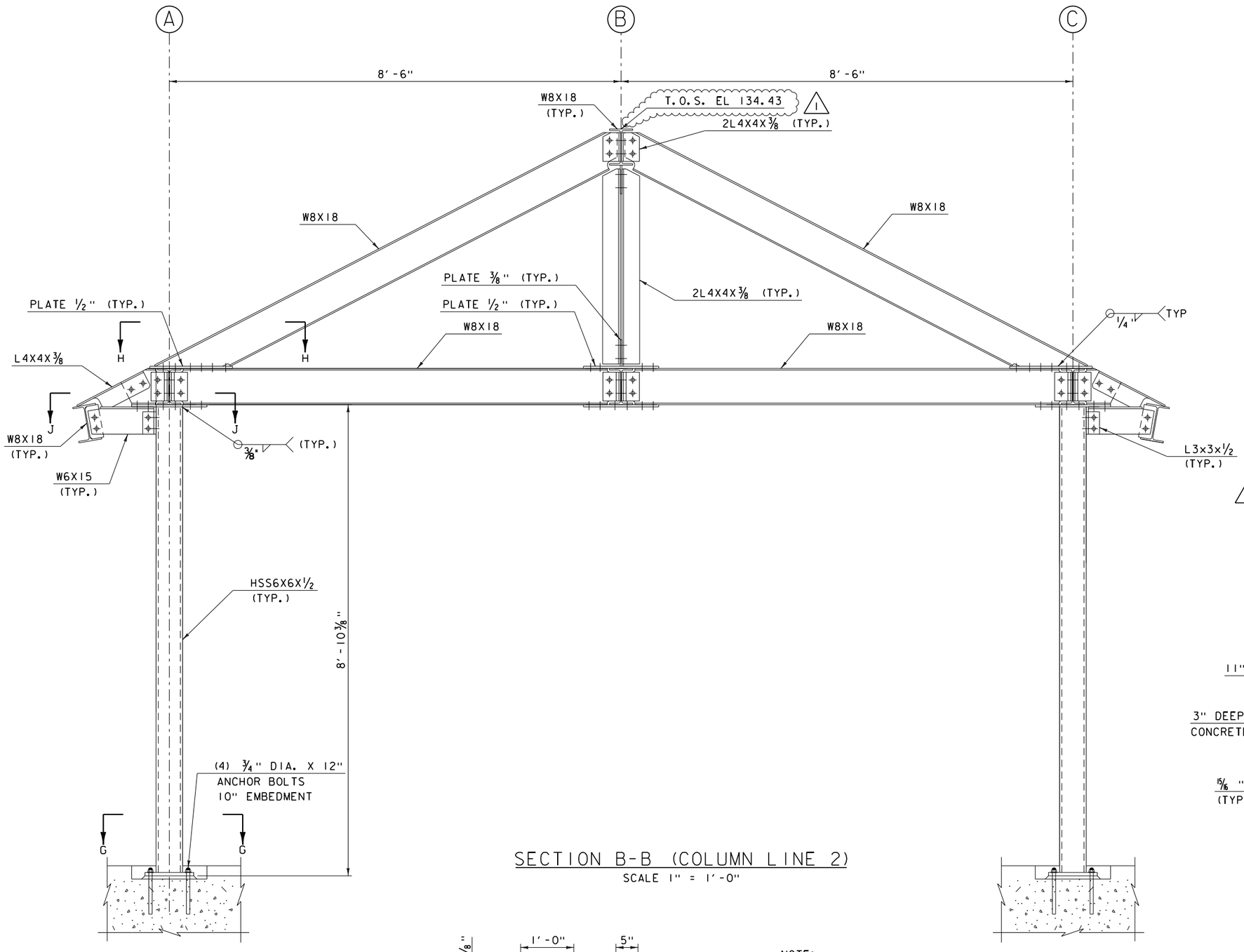


REVISION	DATE	DESCRIPTION	BY
3			
2			
1	4-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

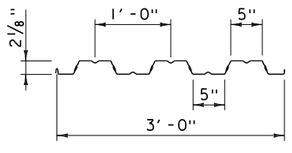
FILE NAME: z12b142_chfrsec1.dgn
PROJECT LEADER: T. FRENCH
DESIGNED BY: S. SANTRICH
CONTROL HOUSE FRAMING SECTION A-A

PLOT DATE: 2/20/2018
DRAWN BY: S. SANTRICH
CHECKED BY: J. KRYSIEWICZ
SHEET 183 OF 379



SECTION B-B (COLUMN LINE 2)

SCALE 1" = 1′-0"



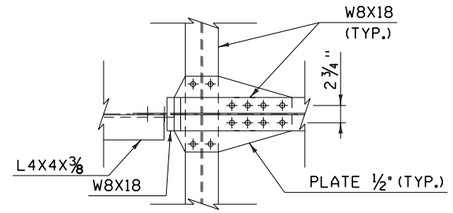
STEEL ROOF DECK DETAILS

SCALE 1" = 1′-0"

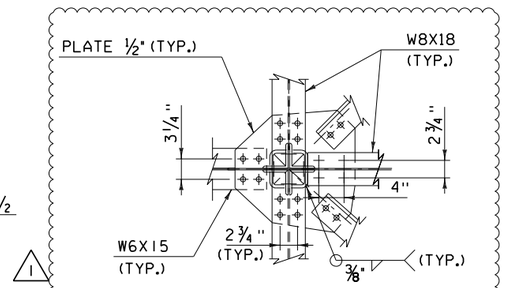
NOTE:

1. THE STEEL DECK ROOF SHALL BE GRADE 38, GAGE 16 AND GALVANIZED IN ACCORDANCE WITH ASTM A653 (G-90). THE PAN SHALL WEIGH 3.11 PSF WITH A BASE METAL THICKNESS OF 0.0598 IN. AND A MOMENT OF INTERTIA OF 0.73 IN⁴/FT AND SECTION MODULUS OF 0.688 IN³/FT.

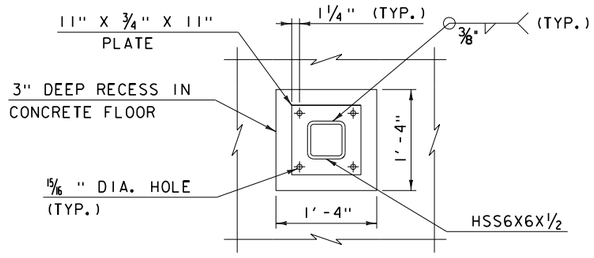
2. METAL DECK PROFILE SHALL BE IN ACCORDANCE WITH ANSI/SDI STANDARD RD1.0.



SECTION H-H



SECTION J-J



SECTION G-G

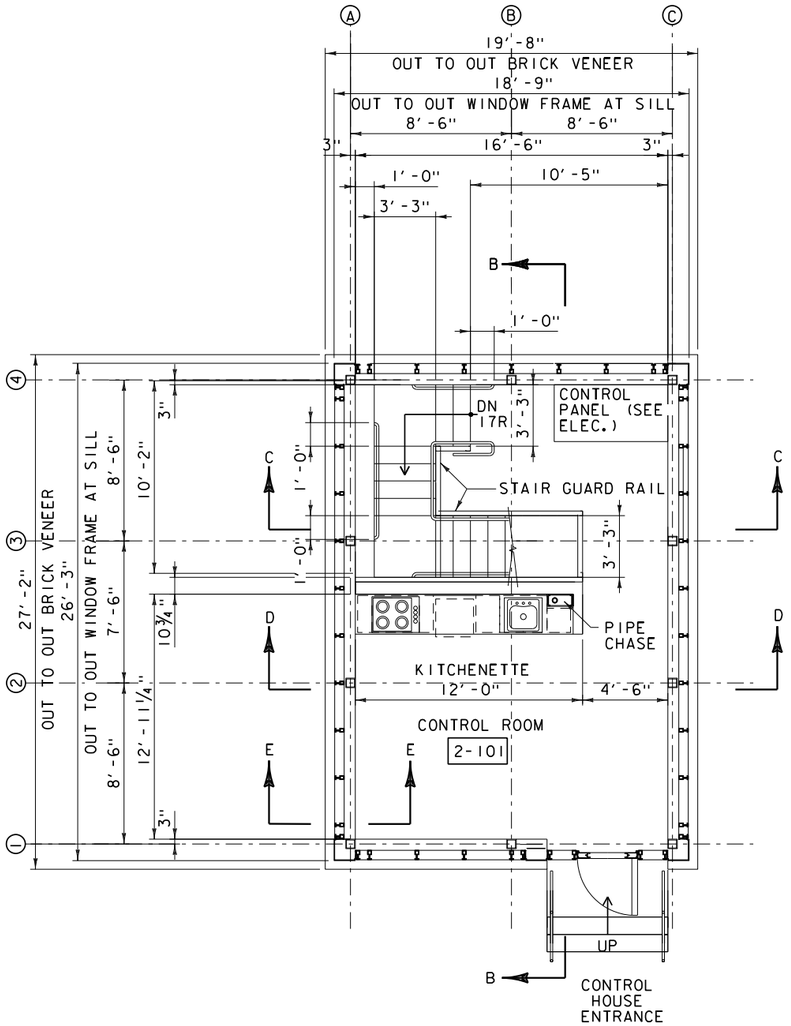
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	4-29-2020	POST-AWARD RFI'S 037-114	JLG

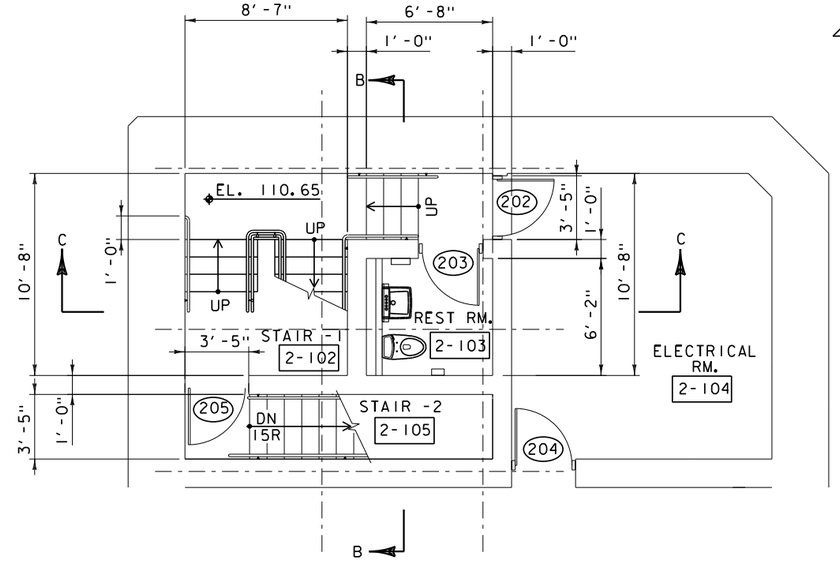
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142_chfrsec2.dgn
PROJECT LEADER: T. FRENCH
DESIGNED BY: S. SANTRICH
CONTROL HOUSE FRAMING SECTION B-B

PLOT DATE: 2/20/2018
DRAWN BY: S. SANTRICH
CHECKED BY: J. KRYIEWICZ
SHEET 184 OF 379





PIER 2 CONTROL HOUSE FLOOR PLAN AT EL. 120.57

SCALE ¼" = 1'-0"

NOTES:

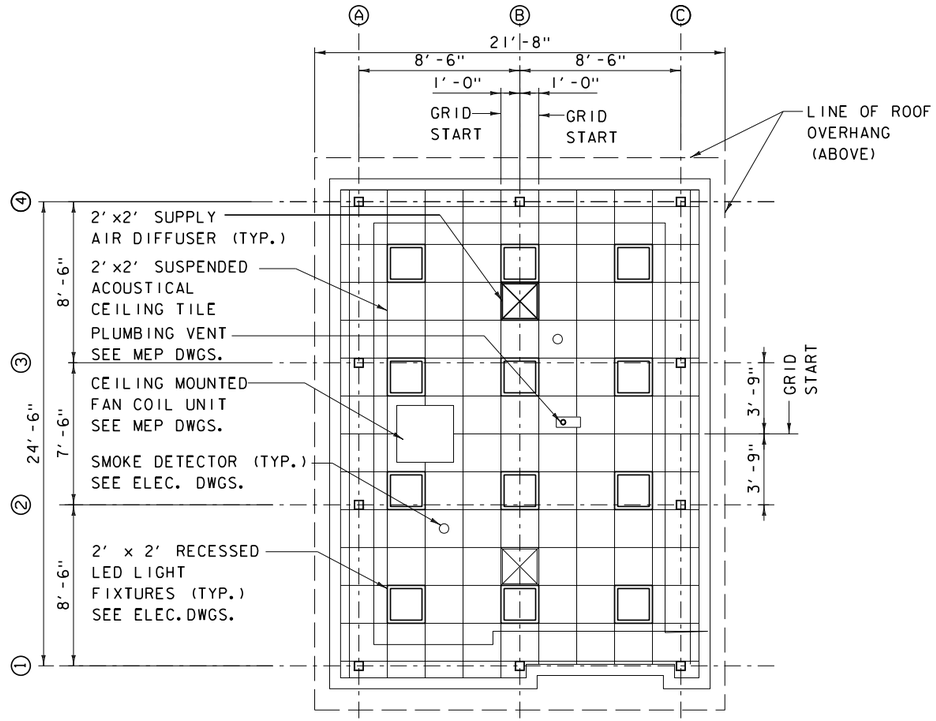
1. FOR CONTROL HOUSE STAIR GUARD RAIL DETAILS, SEE DWG. 195
2. FOR CONTROL HOUSE KITCHENETTE DETAILS, SEE DWG. 194
3. FOR CONTROL HOUSE ENTRANCE DETAILS, SEE DWG. 189
4. FOR CONTROL HOUSE CROSS SECTIONS, SEE DWGS. 191 AND 192
5. FOR CONTROL HOUSE ELEVATIONS, SEE DRAWINGS 187 AND 188

PIER 2 CONTROL HOUSE PARTIAL FLOOR PLAN AT EL. 108.32

NOTES:

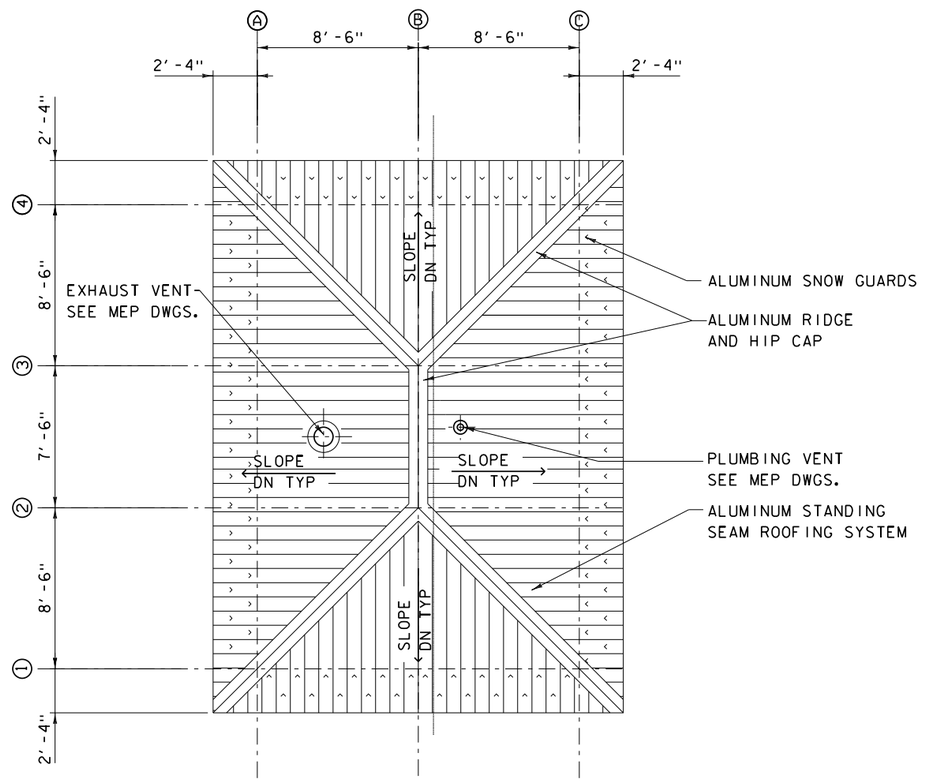
1. FOR CONTROL HOUSE REST ROOM DETAILS, SEE DWG. 193
2. FOR CONTROL HOUSE CROSS SECTIONS, SEE DWG. 191 AND 192

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142_ch.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: S. SANTRICH
DESIGNED BY: H. PROTIN	CHECKED BY: J. PESA
CONTROL HOUSE FLOOR PLANS	SHEET 185 OF 379



CONTROL HOUSE REFLECTED CEILING PLAN

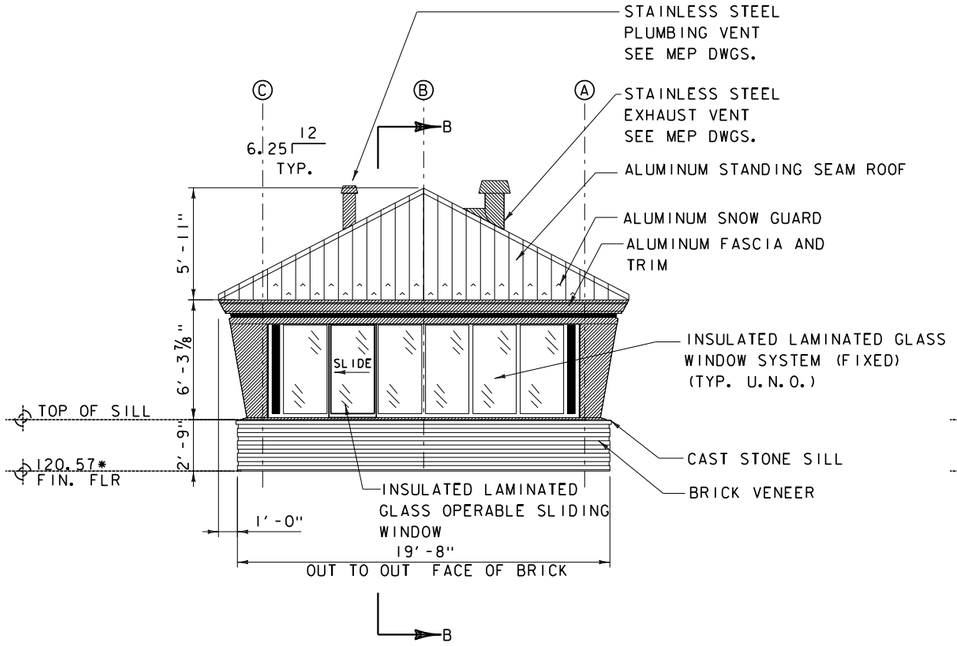
SCALE 1/4" = 1'-0"



CONTROL HOUSE ROOF PLAN

SCALE 1/4" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142_ch.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: S. SANTRICH
DESIGNED BY: J. PESA	CHECKED BY: J. PESA
CONTROL HOUSE ROOF & CEILING PLANS	SHEET 186 OF 379

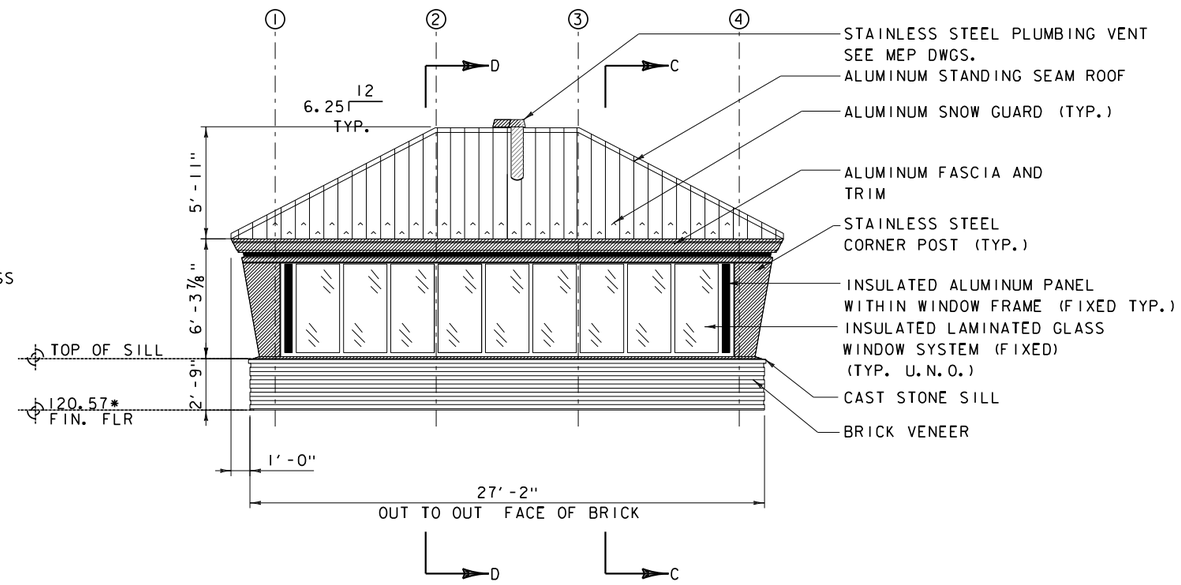


CONTROL HOUSE NORTH ELEVATION

SCALE ¼" = 1'-0"

NOTES:

1. FOR CONTROL HOUSE CROSS SECTIONS, SEE DWG. 191 AND 192



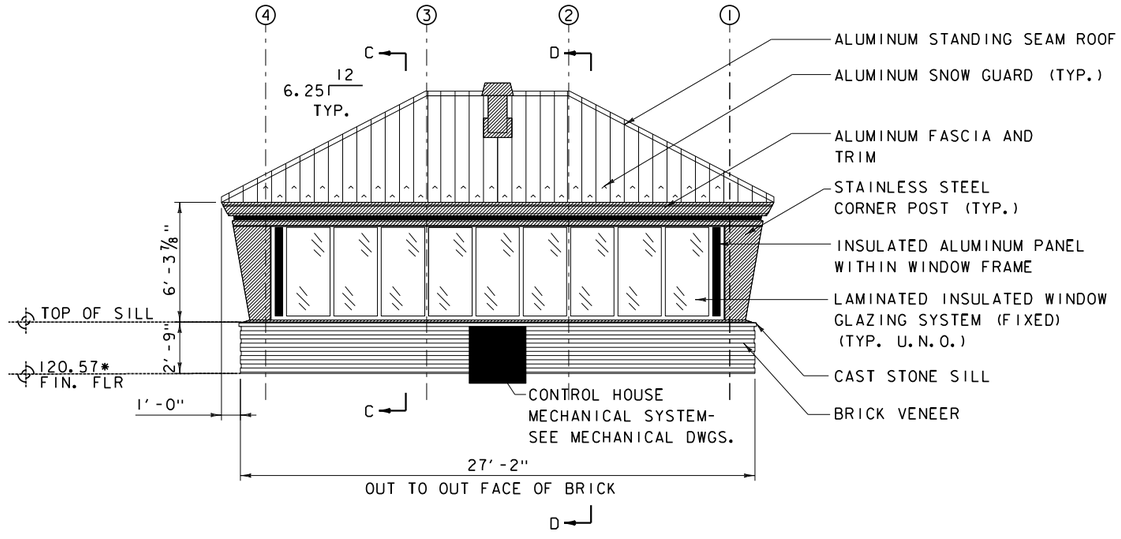
CONTROL HOUSE EAST ELEVATION

SCALE ¼" = 1'-0"

NOTES:

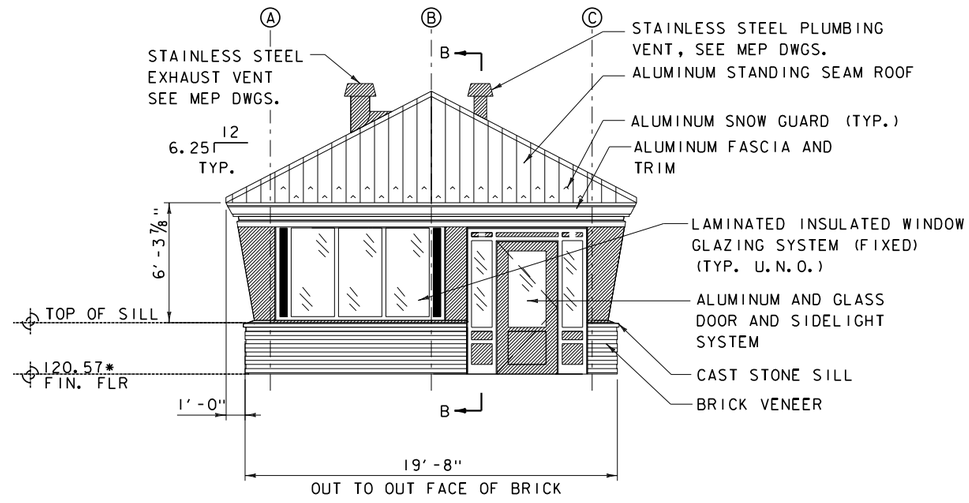
1. FOR CONTROL HOUSE CROSS SECTIONS, SEE DWG. 191 AND 192

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142_chelev2.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. PESA
DESIGNED BY: H. PROTIN	CHECKED BY: T. FRENCH
CONTROL HOUSE ELEVATIONS 1	SHEET 187 OF 379



CONTROL HOUSE WEST ELEVATION

SCALE ¼" = 1'-0"



CONTROL HOUSE SOUTH ELEVATION

SCALE ¼" = 1'-0"

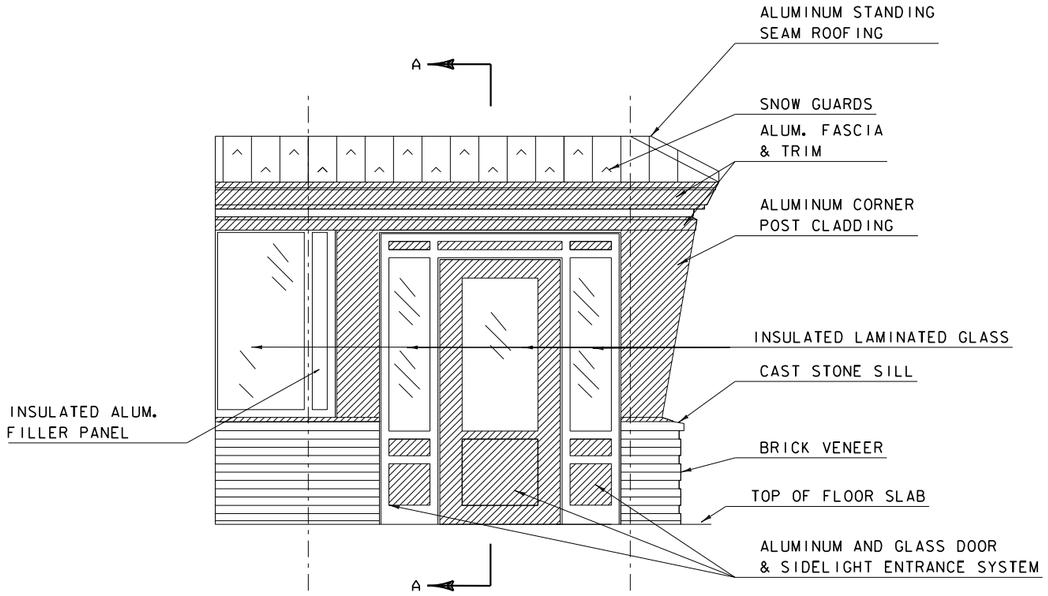
NOTES:

1. FOR CONTROL HOUSE CROSS SECTIONS, SEE DWG. 191 AND 192

NOTES:

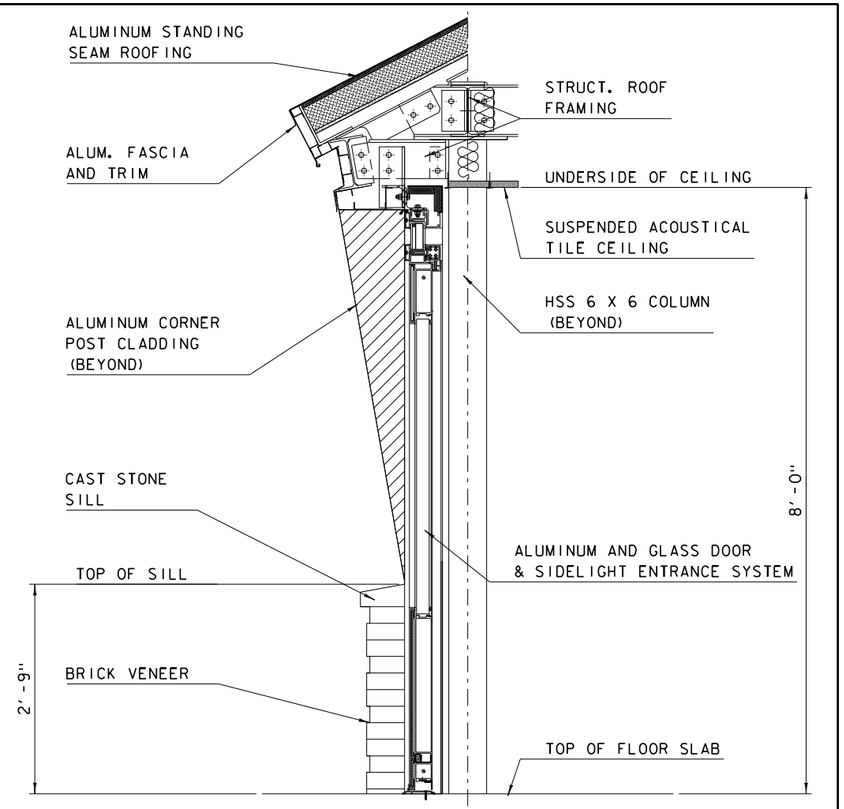
1. FOR CONTROL HOUSE CROSS SECTIONS, SEE DWG. 191 AND 192

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142_chelev.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. PESA
DESIGNED BY: H. PROTIN	CHECKED BY: P. DAVIS
CONTROL HOUSE ELEVATIONS 2	SHEET 188 OF 379



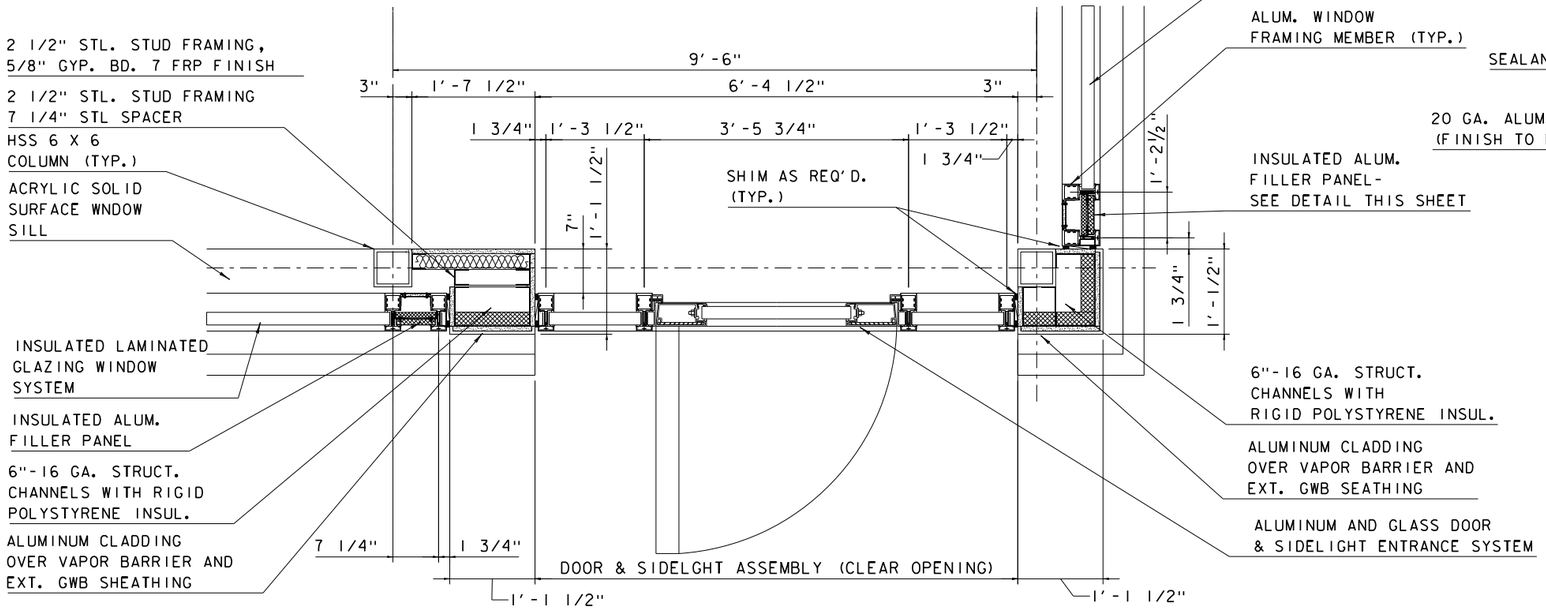
CONTROL HOUSE ENTRANCE ELEVATION

SCALE 1/4" = 1'-0"



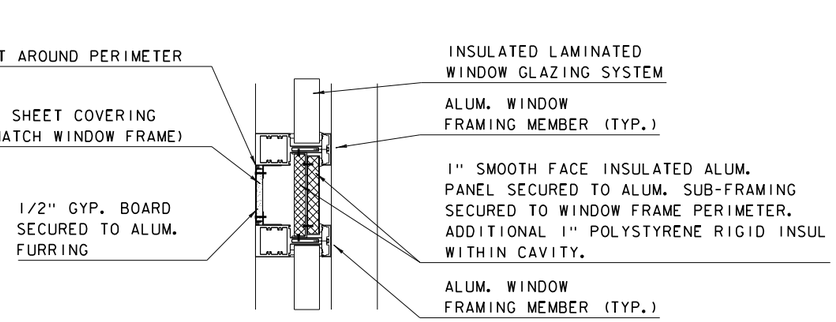
ENTRANCE SECTION A-A

SCALE 1/2" = 1'-0"



CONTROL HOUSE ENTRANCE PLAN @ EL. 120.57

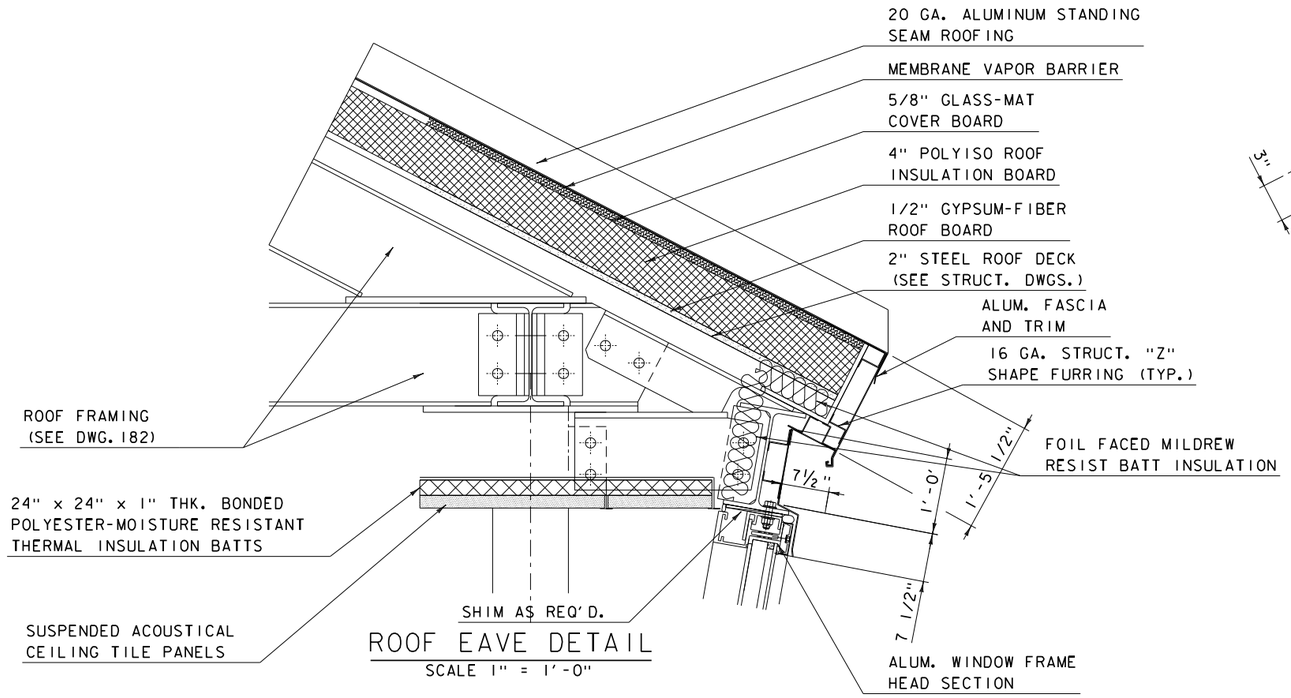
SCALE 1/2" = 1'-0"



INSULATED ALUMINUM FILLER PANEL DETAIL

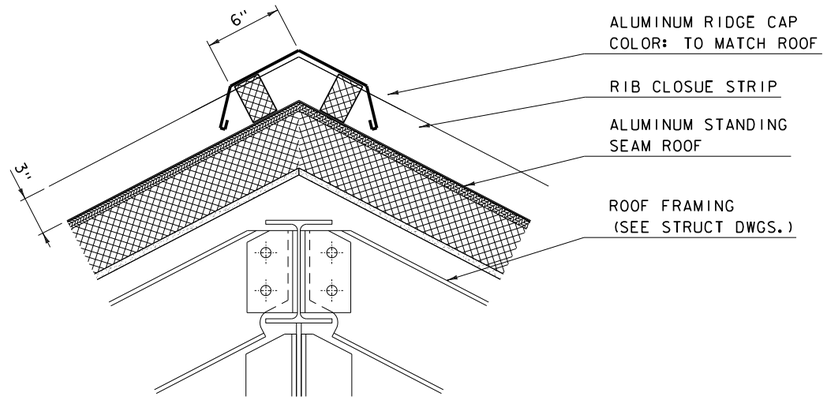
SCALE 1/2" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: Z12b142_chdet2.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J.PESA
DESIGNED BY: H. PROTIN	CHECKED BY: T. FRENCH
CONTOL HOUSE ENTRANCE DETAILS	SHEET 189 OF 379



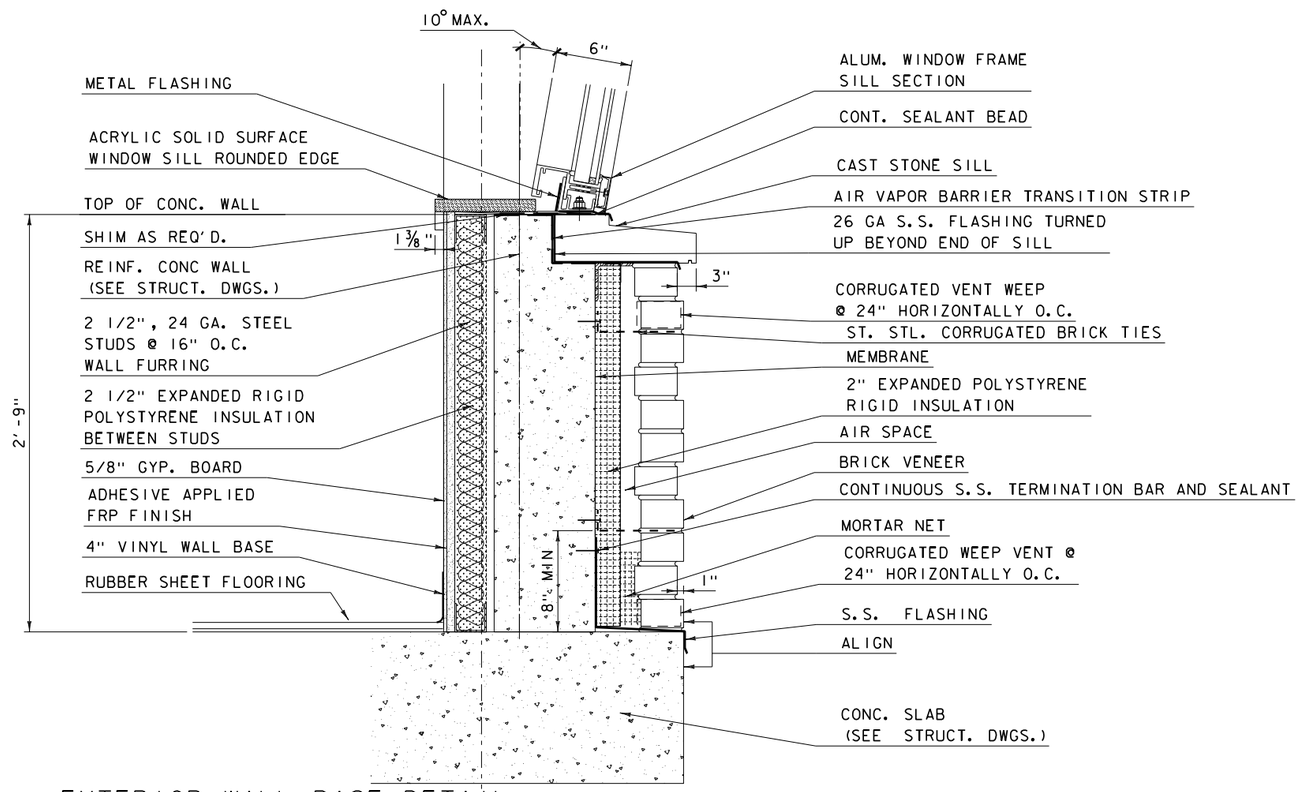
ROOF EAVE DETAIL

SCALE 1" = 1'-0"



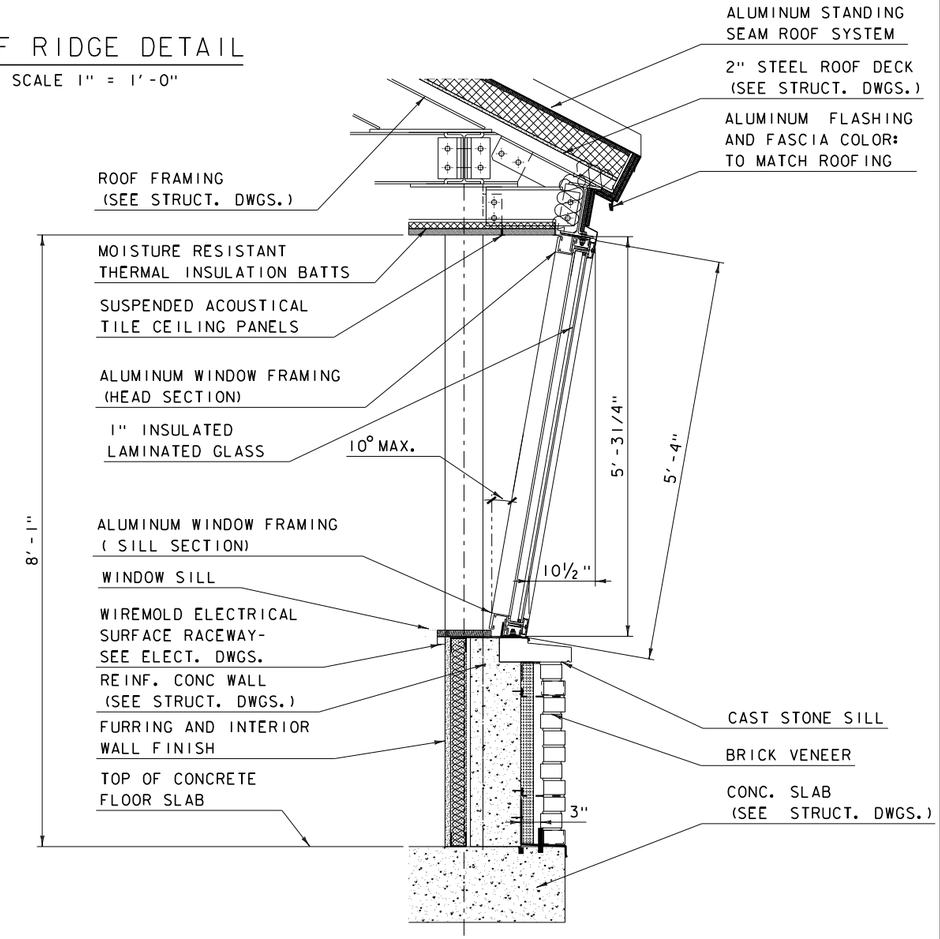
ROOF RIDGE DETAIL

SCALE 1" = 1'-0"



EXTERIOR WALL BASE DETAIL

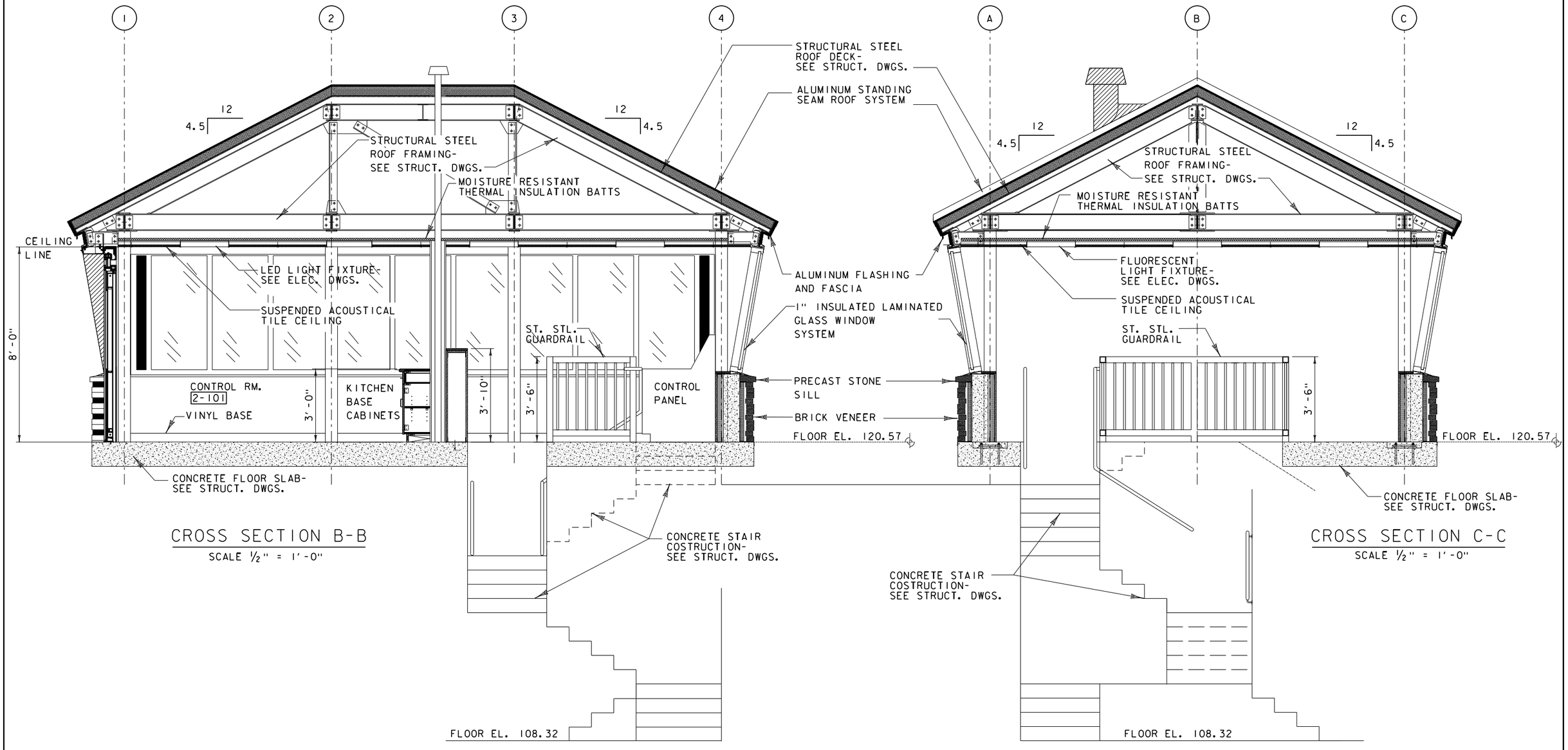
SCALE 1" = 1'-0"



CONTROL HOUSE TYPICAL WALL SECTION E-E

SCALE 1" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142_chdetsl.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. PESA
DESIGNED BY: J. PESA	CHECKED BY: T. FRENCH
CONTROL HOUSE TYPICAL WALL SECTION	SHEET 190 OF 379



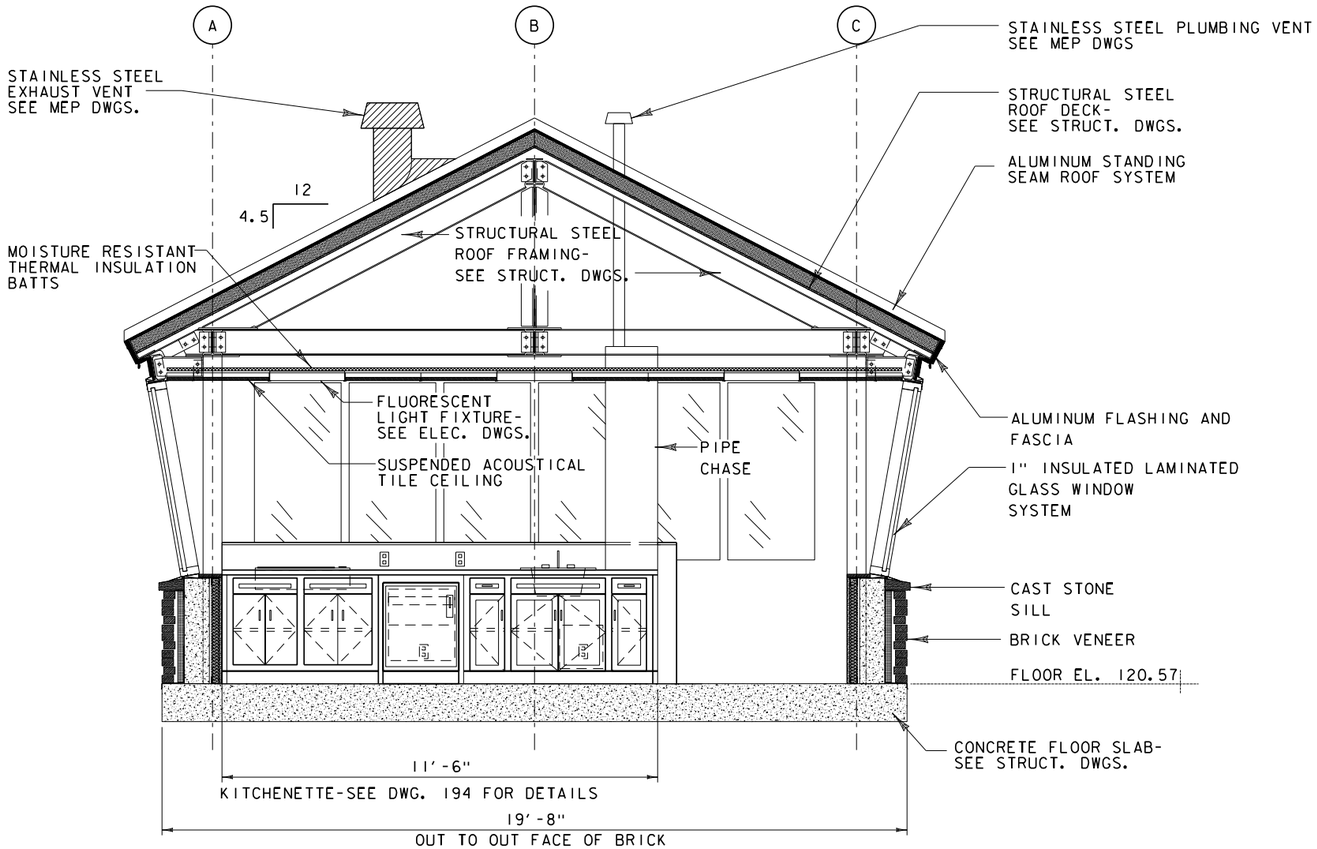
CROSS SECTION B-B

SCALE ½" = 1'-0"

CROSS SECTION C-C

SCALE ½" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142_chelxs2.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. PESA
DESIGNED BY: H. PROTIN	CHECKED BY: T. FRENCH
CONTROL HOUSE CROSS SECTIONS 1	SHEET 191 OF 379



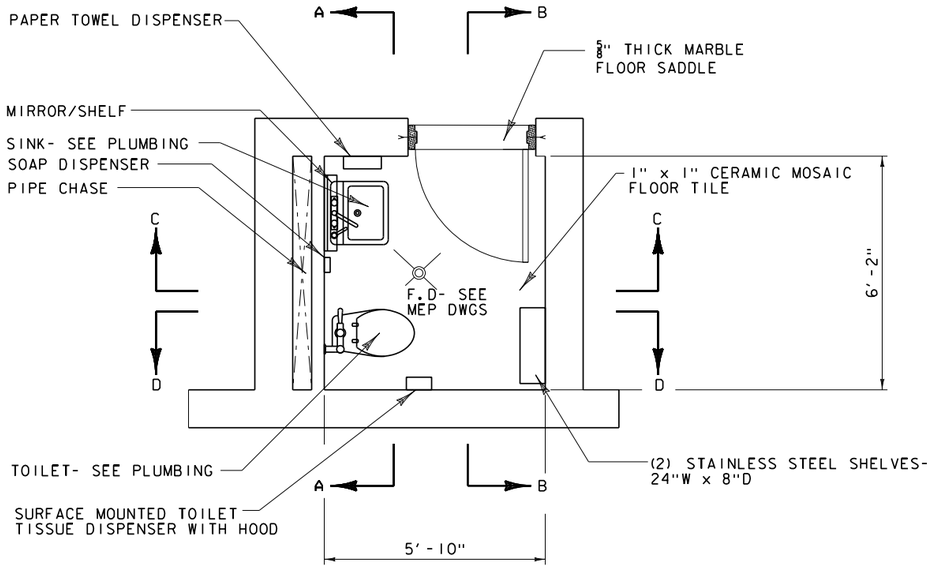
CROSS SECTION D-D

SCALE ½" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142_chelxs.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. PESA
DESIGNED BY: J.PESA	CHECKED BY: T. FRENCH
CONTROL HOUSE CROSS SECTION 2	SHEET 192 OF 379

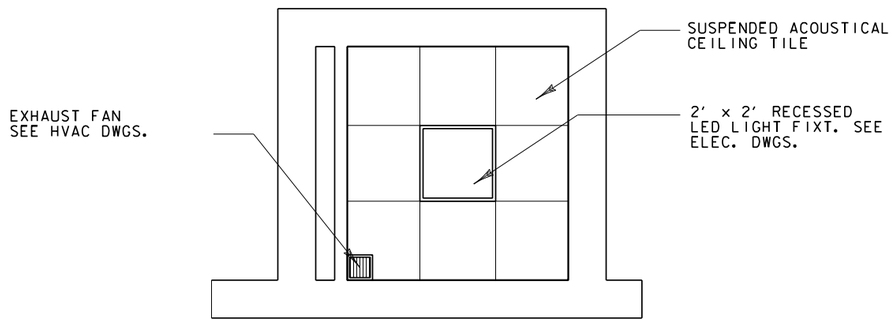
NOTES:

1. INSTALL FLOOR AND WALL TILE WITH A THIN SET MORTAR SYSTEM.
2. FLOOR TILE: UNGLAZED PORCELAIN, 1" x 1" TILE (12" SHEETS)
3. WALL TILE: 4.25" x 4.25", GLAZED FIELD TILE AND COVE BASE



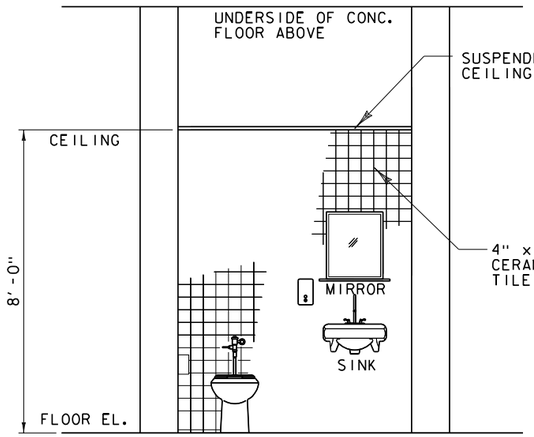
CONTROL HOUSE REST RM - FLOOR PLAN

SCALE 1/4" = 1'-0"



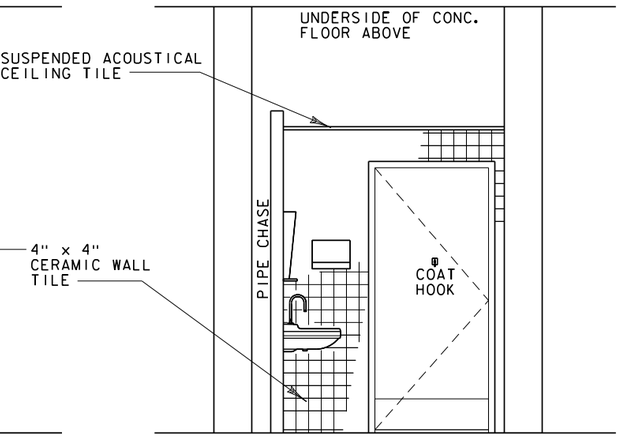
CONTROL HOUSE REST RM - CEILING PLAN

SCALE 1/4" = 1'-0"



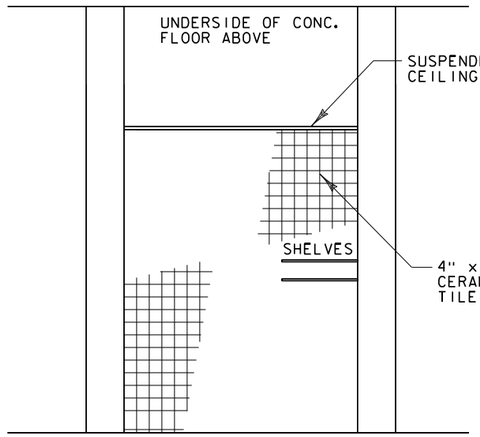
SECTION A-A

SCALE 1/4" = 1'-0"



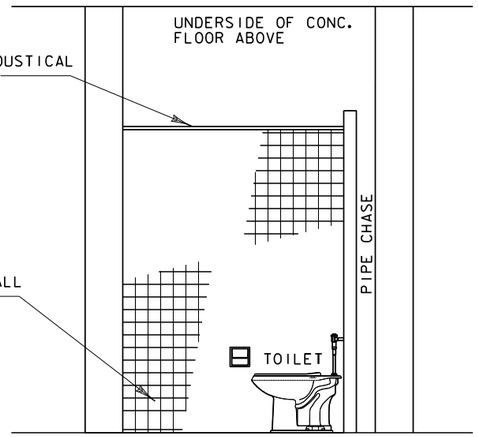
SECTTION C-C

SCALE 1/4" = 1'-0"



SECTION B-B

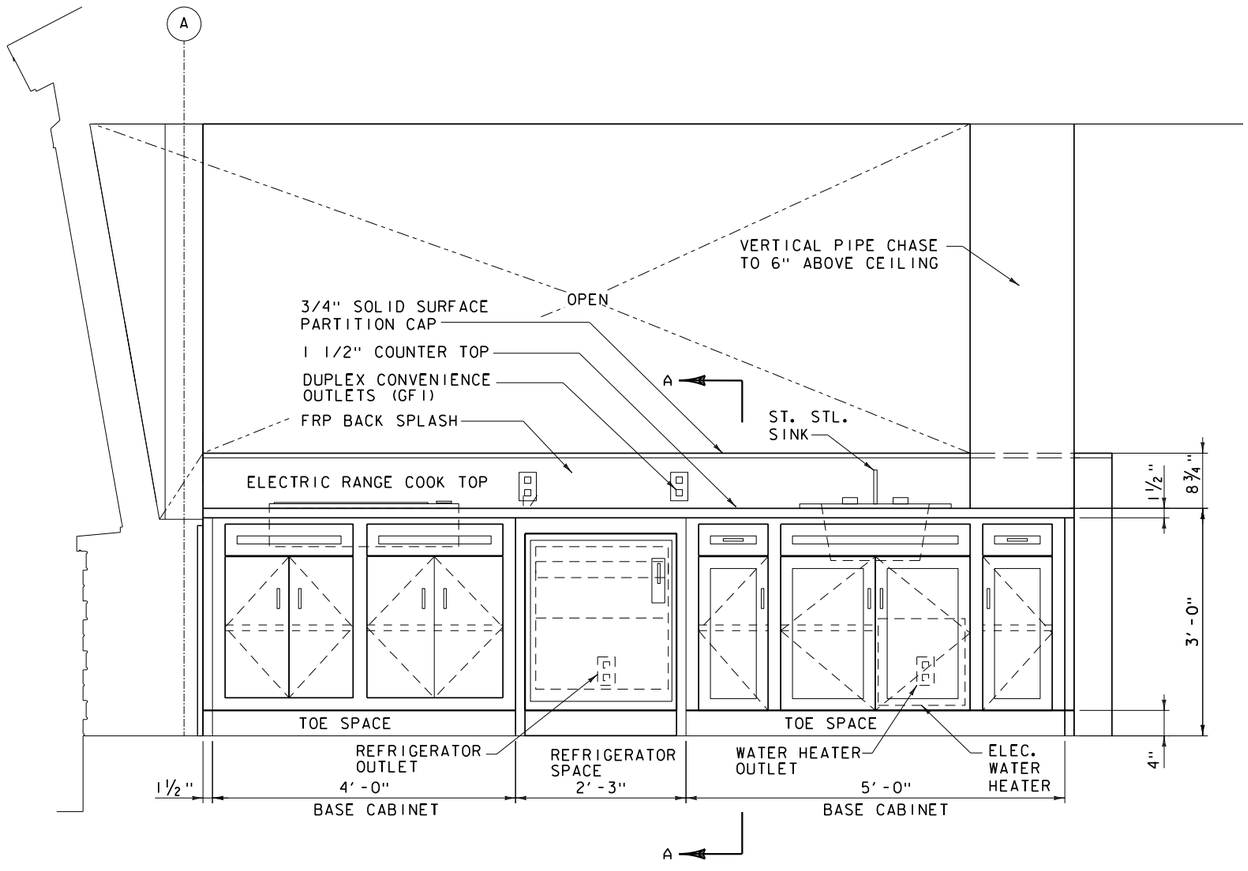
SCALE 1/4" = 1'-0"



SECTION D-D

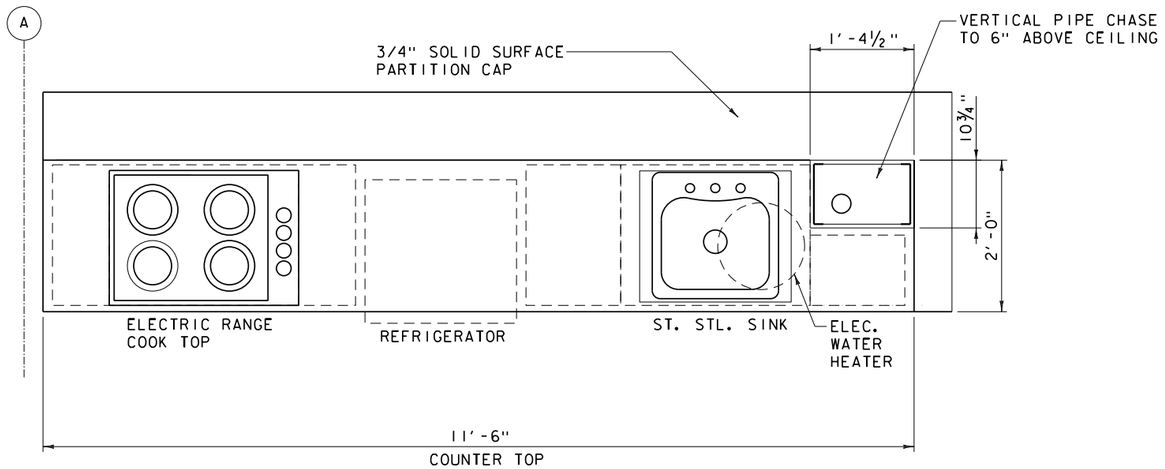
SCALE 1/4" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: zi2bl42_intdet3.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: S. SANTRICH
DESIGNED BY: H. PROTIN	CHECKED BY: P. DAVIS
CONTROL HOUSE REST ROOM DETAILS	SHEET 193 OF 379



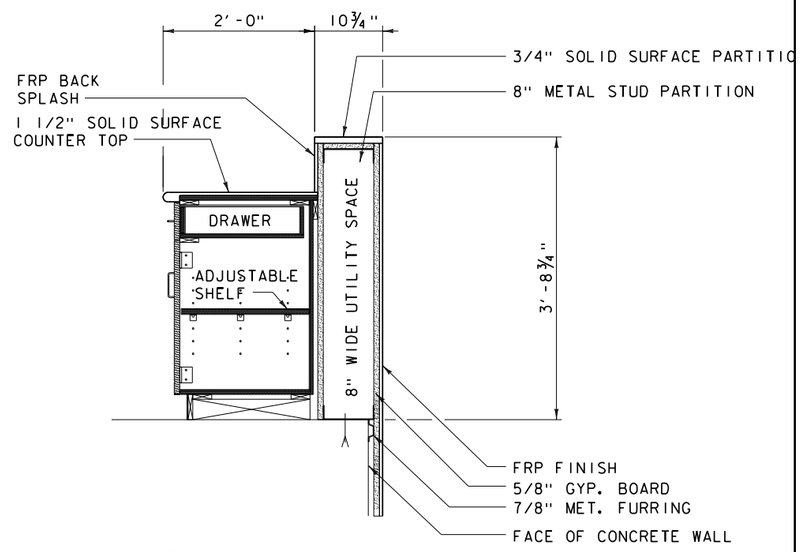
KITCHENETTE BASE CABINET ELEVATION

SCALE 1" = 1'-0"



KITCHENETTE BASE CABINET PLAN

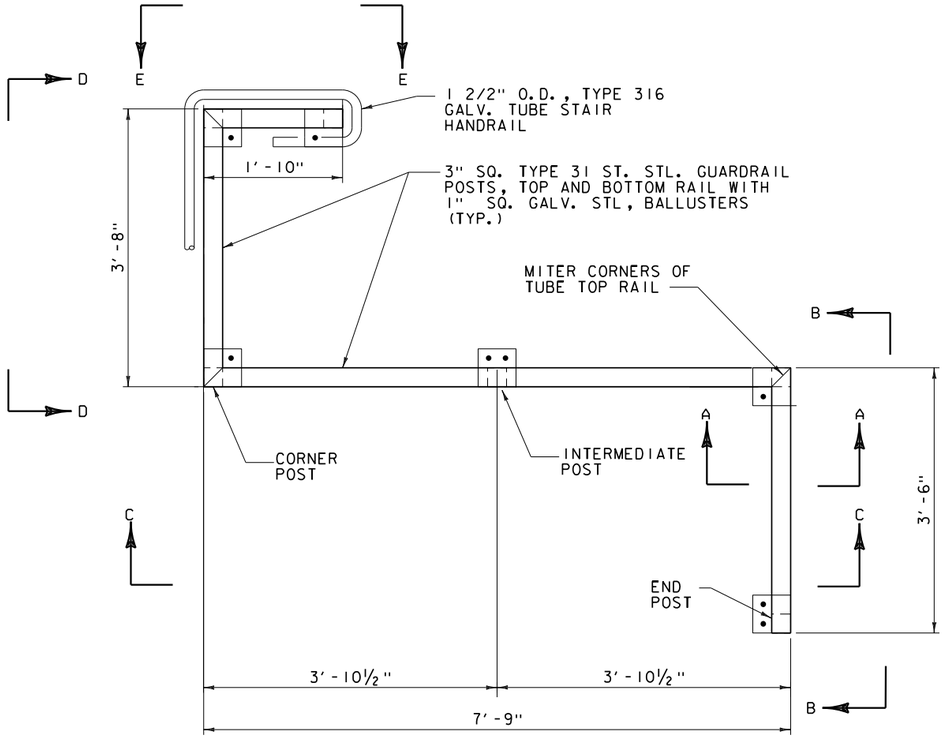
SCALE 1" = 1'-0"



SECTION A-A

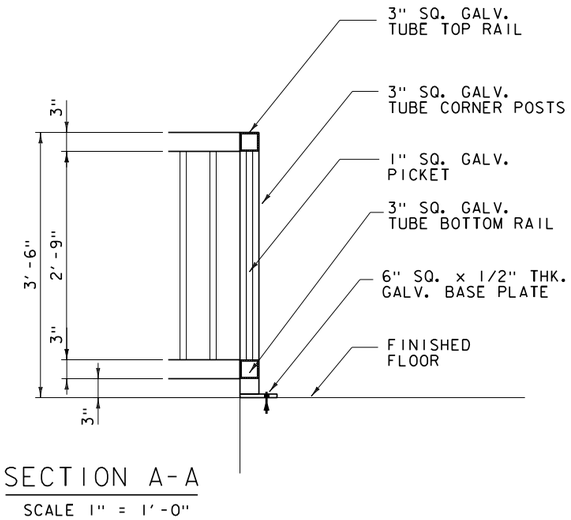
SCALE 1" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12bl42_intdetl.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. PESA
DESIGNED BY: J. PESA	CHECKED BY: T. FRENCH
CONTROL HOUSE KITCHEN DETAILS	SHEET 194 OF 379



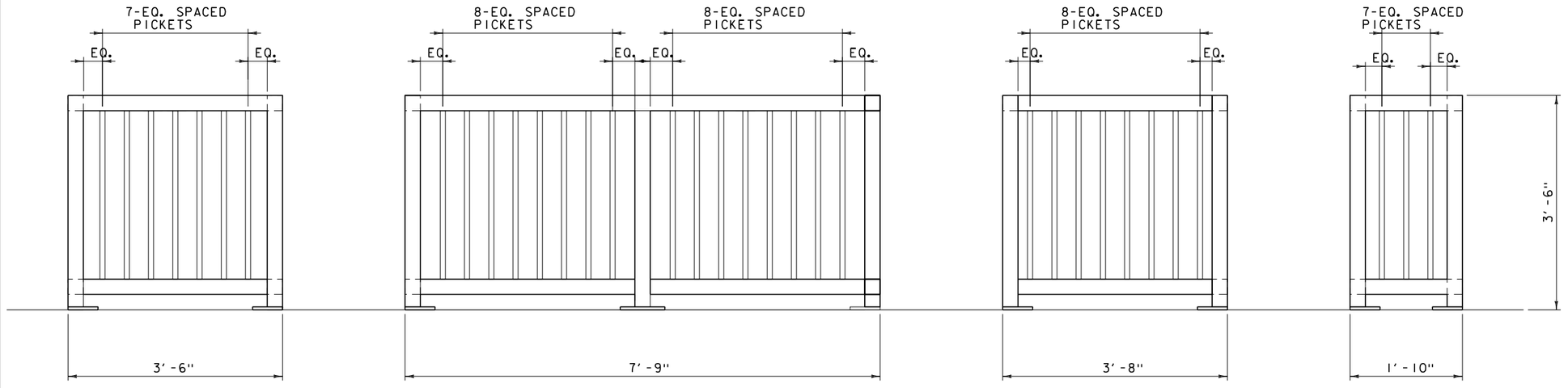
CONTROL HOUSE STAIR GUARD RAIL PLAN

SCALE 1" = 1'-0"



SECTION A-A

SCALE 1" = 1'-0"



ELEVATION B-B

SCALE 1" = 1'-0"

ELEVATION C-C

SCALE 1" = 1'-0"

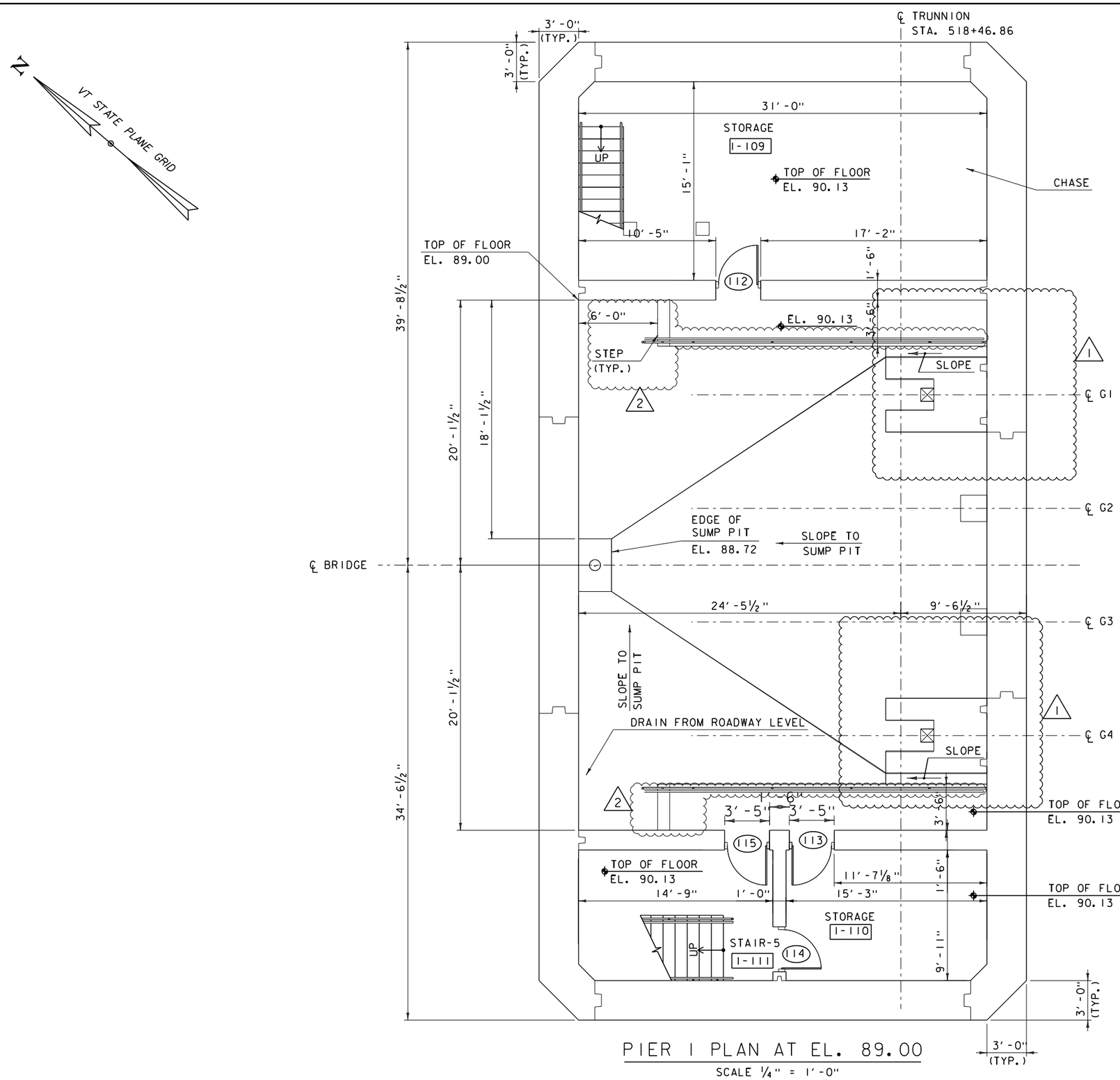
ELEVATION D-D

SCALE 1" = 1'-0"

ELEVATION E-E

SCALE 1" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142_intdet2.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: S. SANTRICH
DESIGNED BY: J. PESA	CHECKED BY: T. FRENCH
CONTROL HOUSE STAIR RAILING DETAILS	SHEET 195 OF 379



PIER I PLAN AT EL. 89.00

SCALE ¼" = 1'-0"

LEGEND

(XXX) DOOR NUMBER

[X-XXX] ROOM FINISH NUMBER

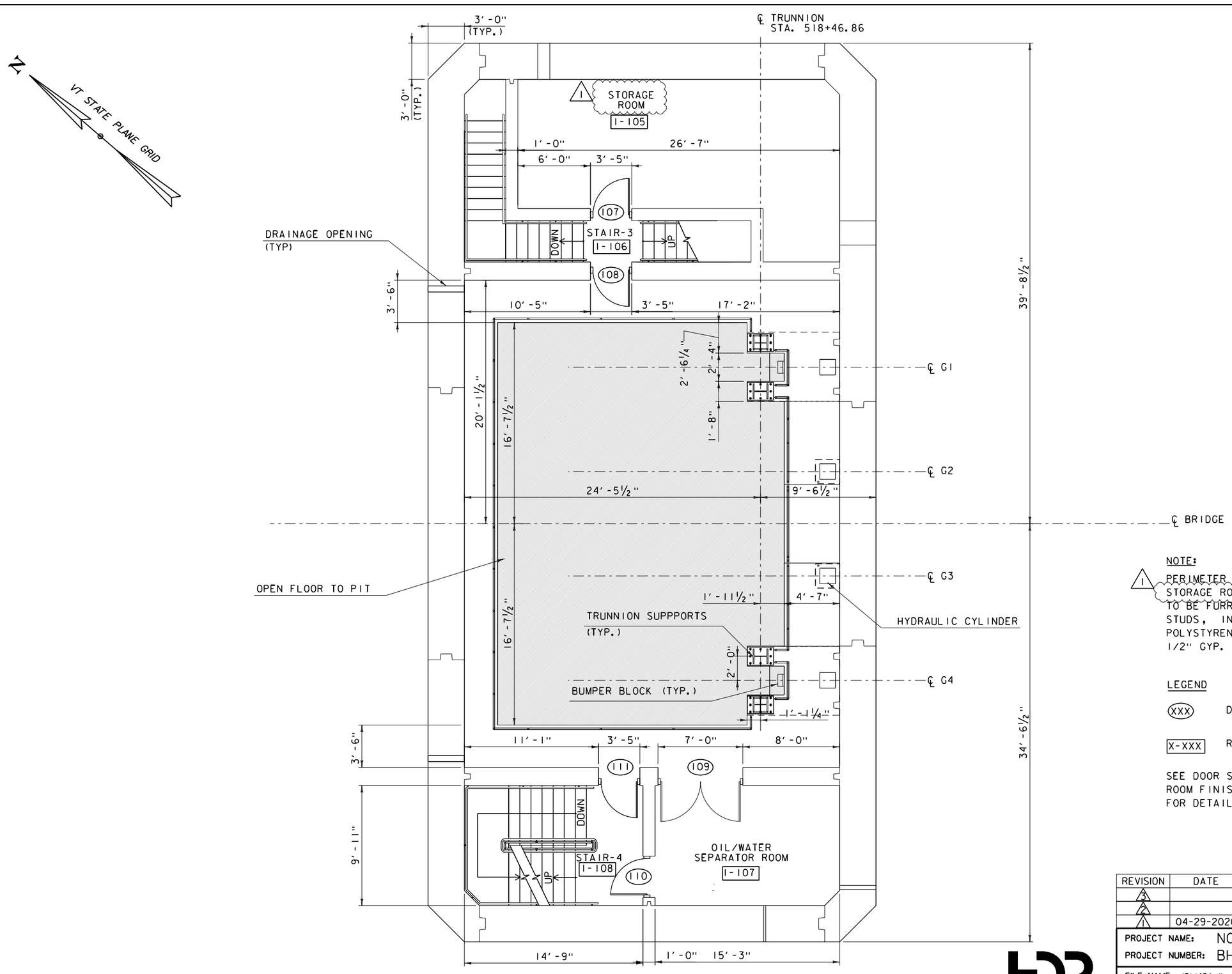
SEE DOOR SCHEDULE AND
ROOM FINISH SCHEDULE
FOR DETAILS

REVISION	DATE	DESCRIPTION	BY
3			
2	4-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142apllevel3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER IDOOR & FINISH PLAN I

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 196 OF 379



PIER 1 PLAN AT EL. 99.80

SCALE ¼" = 1'-0"

NOTE:

1. PERIMETER WALLS SURFACES WITHIN STORAGE ROOM I-105 TO BE FURRED WTH 2" GALV. STEEL STUDS, INSULATED WITH 2" RIGID POLYSTYRENE INSULATION AND FINISHED WITH 1/2" GYP. BD AND 1/4" FRP SHEET

LEGEND

(XXX) DOOR NUMBER

X-XXX ROOM FINISH NUMBER

SEE DOOR SCHEDULE AND ROOM FINISH SCHEDULE FOR DETAILS

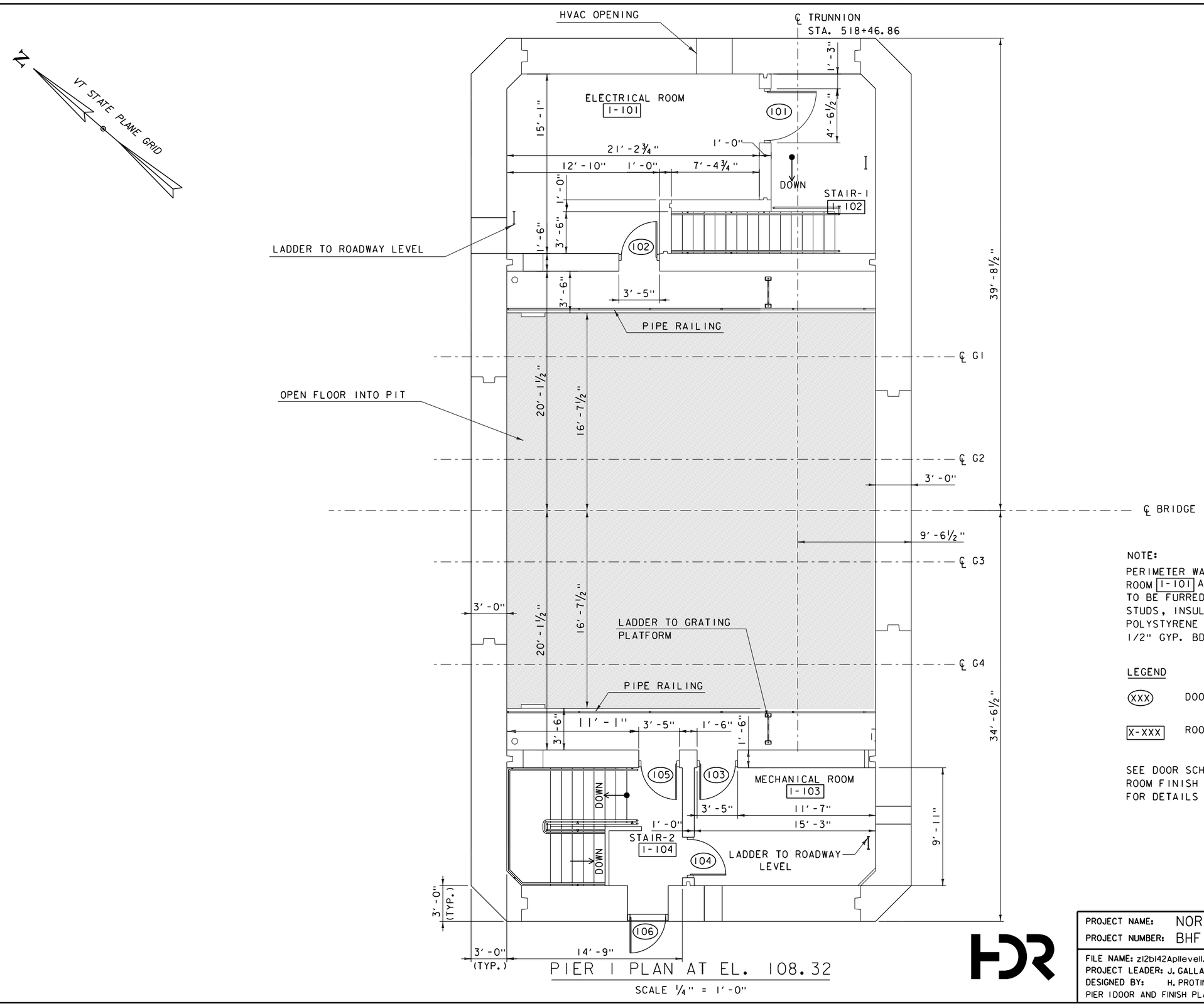
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42Aplevel2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER 1DOOR & FINISH PLAN 2

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 197 OF 379



PIER I PLAN AT EL. 108.32

SCALE ¼" = 1'-0"

NOTE:

PERIMETER WALL SURFACES WITHIN ELECTRICAL ROOM I-101 AND MECHANICAL ROOM I-103 TO BE FURRED WITH 2' GALV. STEEL STUDS, INSULATED WITH 2" RIGID POLYSTYRENE INSULATION AND FINISHED WITH 1/2" GYP. BD. AND 1/4" FRP SHEET

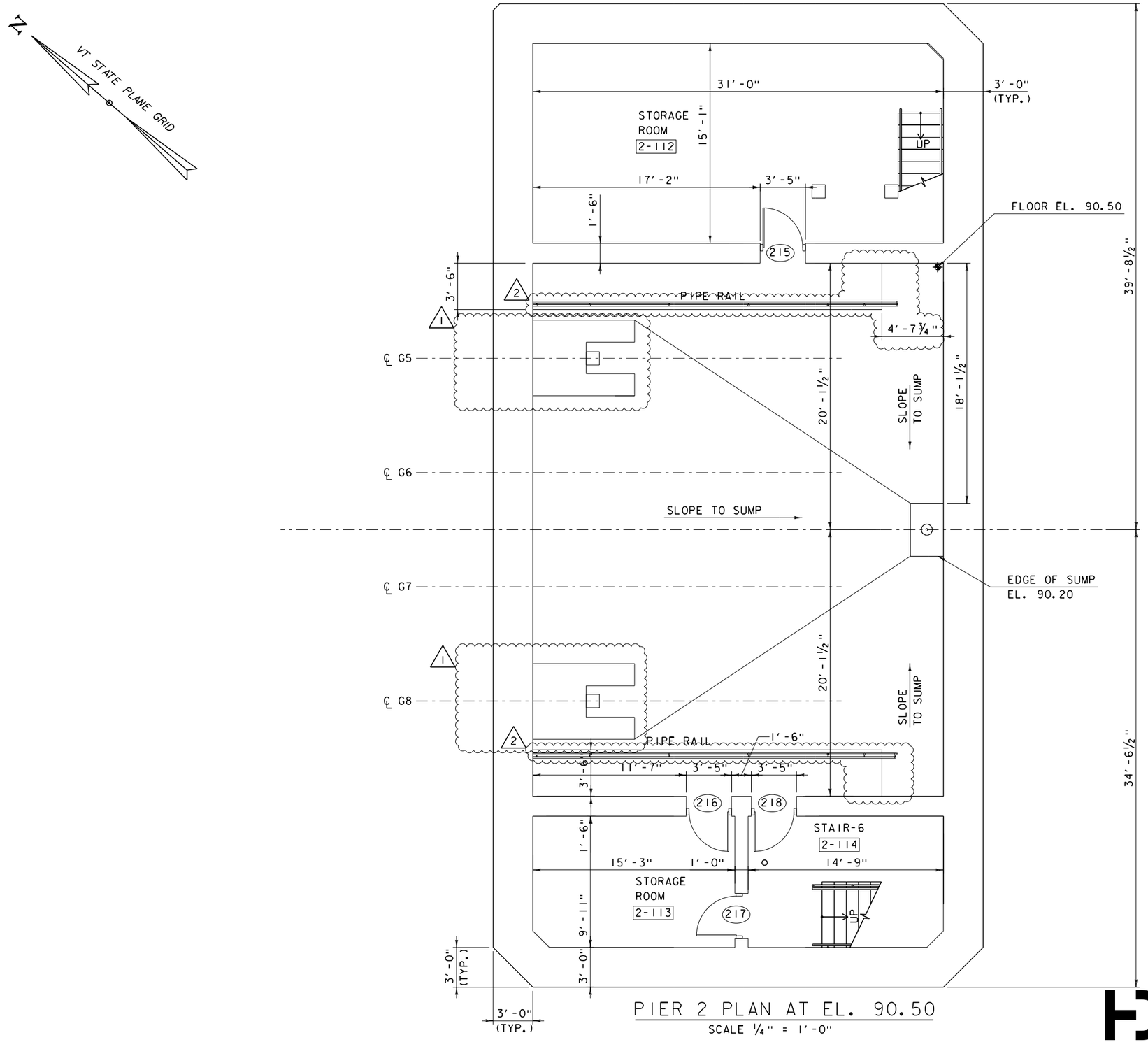
LEGEND

(XXX) DOOR NUMBER

X-XXX ROOM FINISH NUMBER

SEE DOOR SCHEDULE AND ROOM FINISH SCHEDULE FOR DETAILS

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142Apllevell.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: S. SANTRICH
DESIGNED BY: H. PROTIN	CHECKED BY: T. FRENCH
PIER IDOOR AND FINISH PLAN 3	SHEET 198 OF 379



PIER 2 PLAN AT EL. 90.50

SCALE ¼" = 1'-0"

LEGEND

(XXX) DOOR NUMBER

[X-XXX] ROOM FINISH NUMBER

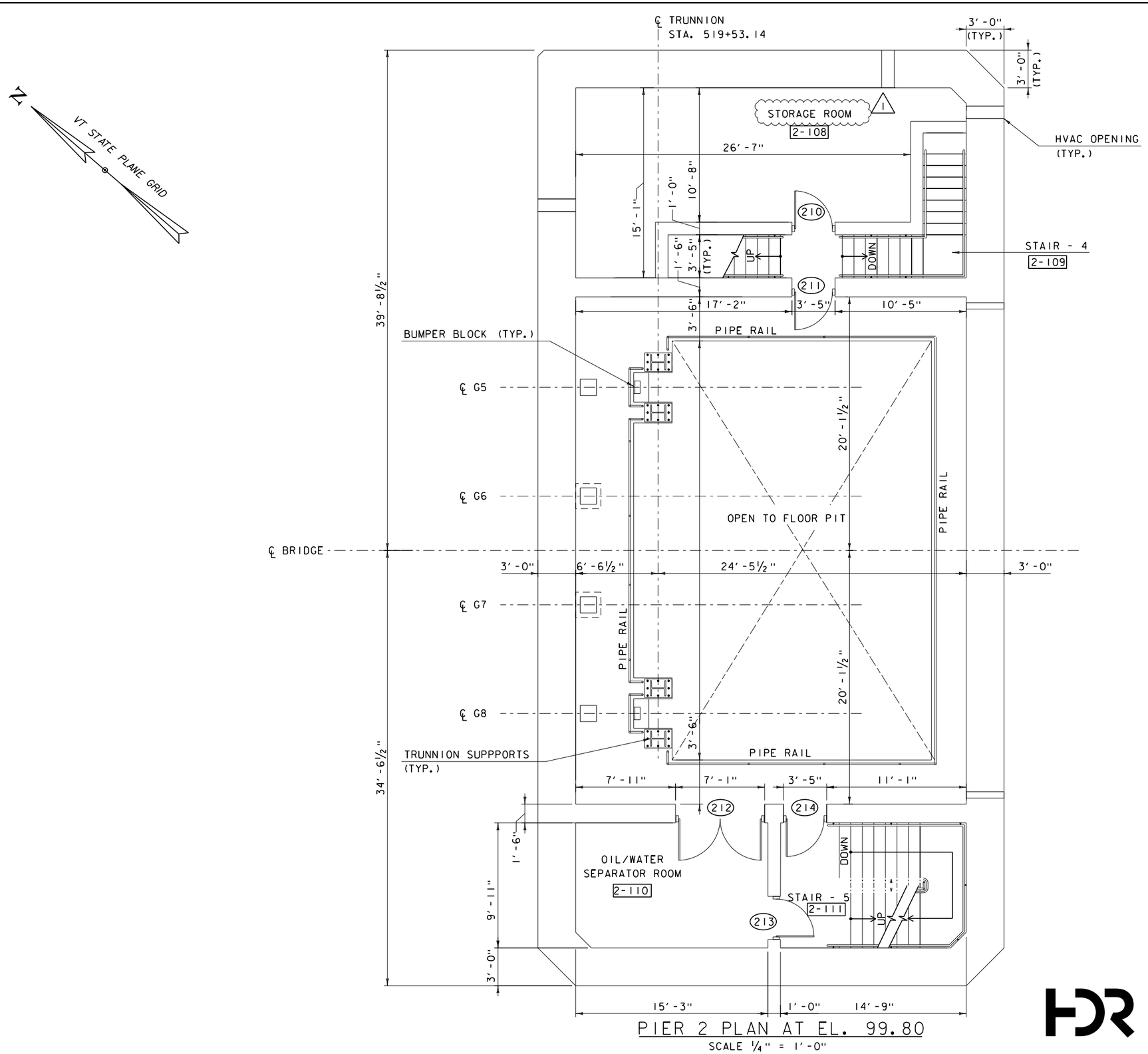
SEE DOOR SCHEDULE AND ROOM FINISH SCHEDULE FOR DETAILS

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142Ap2level3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER 2 DOOR & FINISH PLAN 1

PLOT DATE: 2/6/2018
DRAWN BY: E. STEPIEN
CHECKED BY: T. FRENCH
SHEET 199 OF 379



PIER 2 PLAN AT EL. 99.80

SCALE 1/4" = 1'-0"

NOTE:

1 PERIMETER WALLS SURFACES WITHIN STORAGE ROOM (2-108) TO BE FURRED WTH 2" GALV. STEEL STUDS, INSULATED WITH 2" RIGID POLYSTYRENE INSULATION AND FINISHED WITH 1/2" GYP. BD AND 1/4" FRP SHEET

LEGEND

(XXX) DOOR NUMBER

[X-XXX] ROOM FINISH NUMBER

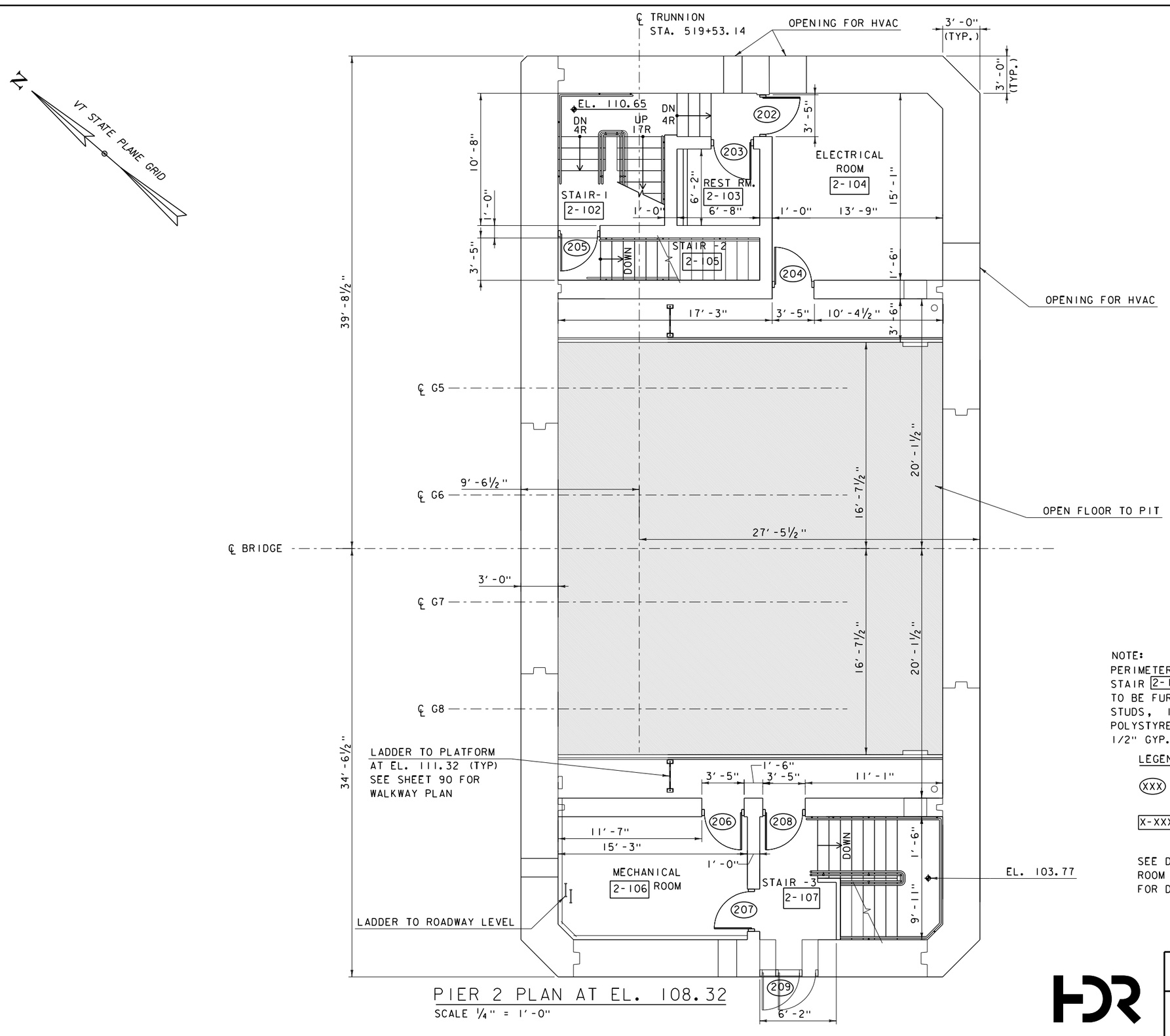
SEE DOOR SCHEDULE AND ROOM FINISH SCHEDULE FOR DETAILS

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04/29/2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42Ap2level2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER 2 DOOR & FINISH PLAN 2

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 200 OF 379



PIER 2 PLAN AT EL. 108.32

SCALE 1/4" = 1'-0"

NOTE:
PERIMETER WALLS SURFACES WITHIN STAIR [2-102], ELECTRIC ROOM [2-104] AND MECHANICAL ROOM [2-106] TO BE FURRED WTH 2" GALV. STEEL STUDS, INSULATED WITH 2'' RIGID POLYSTYRENE INSULATION AND FINISHED WITH 1/2" GYP. BD AND 1/4" FRP SHEET

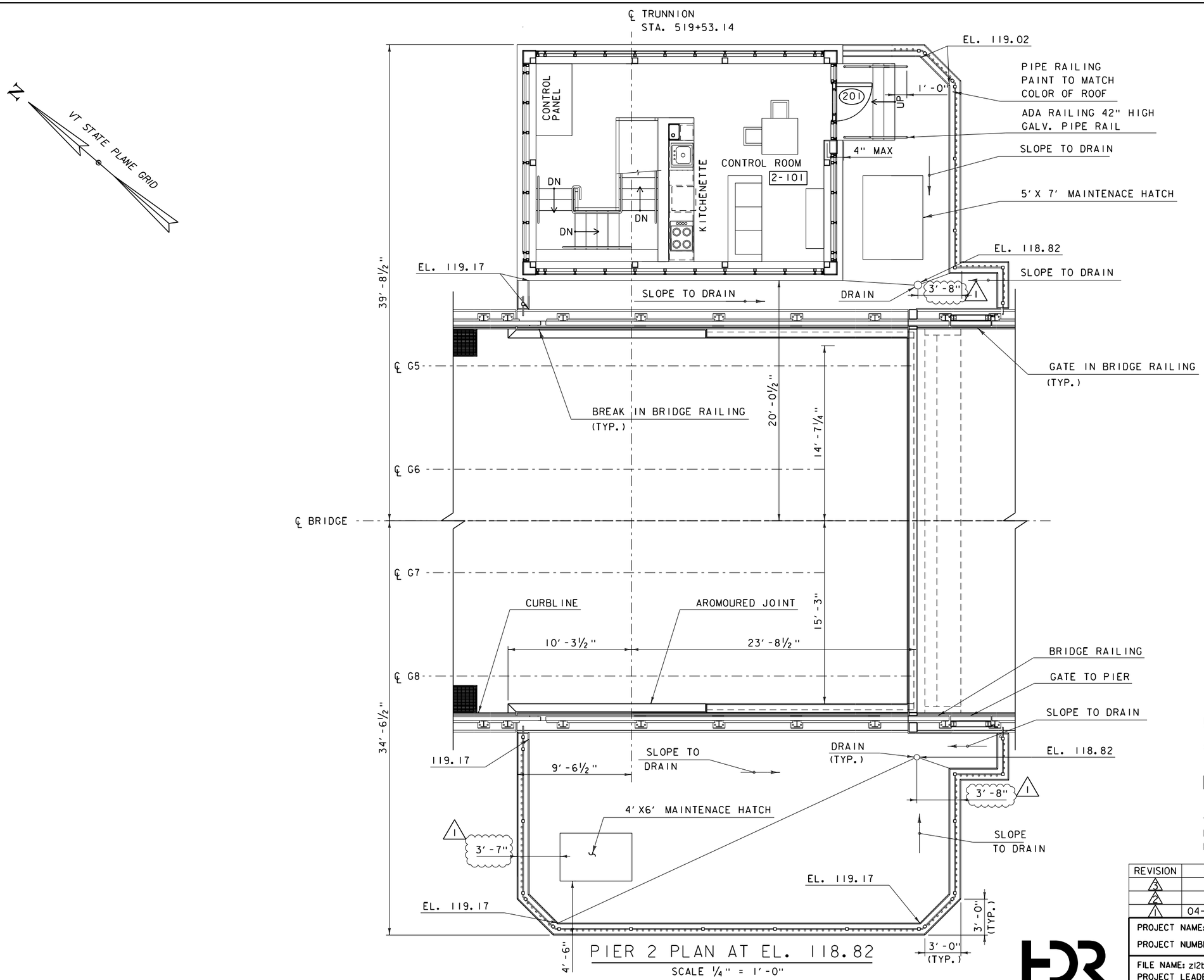
LEGEND

(XXX) DOOR NUMBER

[X-XXX] ROOM FINISH NUMBER

SEE DOOR SCHEDULE AND ROOM FINISH SCHEDULE FOR DETAILS

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12bl42Ap2levell.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: S. SANTRICH
DESIGNED BY: H. PROTIN	CHECKED BY: T. FRENCH
PIER 2 DOOR & FINISH PLAN 3	SHEET 201 OF 379



PIER 2 PLAN AT EL. 118.82

SCALE ¼" = 1'-0"

LEGEND

(XXX) DOOR NUMBER

X-XXX ROOM FINISH NUMBER

SEE DOOR SCHEDULE AND
ROOM FINISH SCHEDULE
FOR DETAILS

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

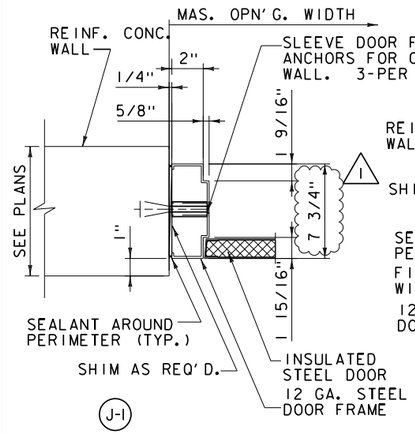
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142Ap2level0.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
PIER 2 DOOR & FINISH PLAN 4

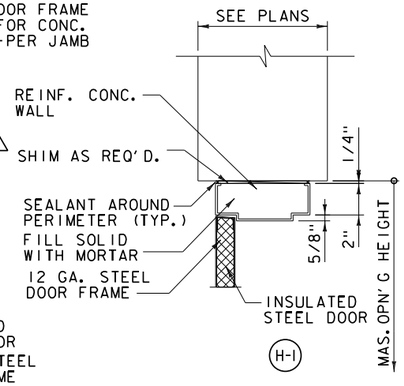
PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: T. FRENCH
SHEET 202 OF 379

DOOR SCHEDULE

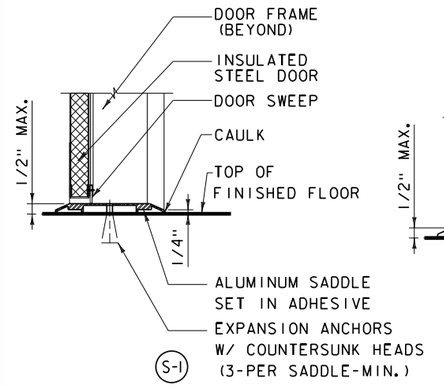
	DOOR NO.	LOCATION	FROM	TO	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR TYPE	FRAME TYPE	JAMB TYPE	HEAD TYPE	SADDLE TYPE	LABEL	HARDW. SET	REMARKS
PIER 1	101	STAIRWELL #1	STAIRWELL #1	ELECTRICAL RM.	4'-6"	7'-0"	A	1	J1	H1	-	B	-	-
	102	ELECTRICAL RM.	ELECTRICAL RM.	CATWALK	3'-0"	7'-0"	A	1	J1	H1	-	-	-	-
	103	MECHANICAL RM.	MECHANICAL RM.	CATWALK	3'-0"	7'-0"	B	1	J1	H1	-	-	-	-
	104	MECHANICAL RM.	STAIRWELL #2	MECHANICAL RM.	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	105	STAIRWELL #2	STAIRWELL #2	CATWALK	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	106	EXTERIOR	EXTERIOR	STAIRWELL #2	3'-0"	7'-0"	A	1	J1	H1	S1	-	-	-
	107	STORAGE RM. (1)	STAIRWELL #3	STORAGE RM. (1)	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	108	STAIRWELL #3	STAIRWELL #3	CATWALK	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	109	OIL/WATER SEPARATOR RM.	OIL/WATER SEP. RM.	CATWALK	6'-8"	7'-0"	C	1	J1	H1	-	-	-	-
	110	STAIRWELL #4	STAIRWELL #4	OIL/WATER SEP. RM.	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	111	STAIRWELL #4	STAIRWELL #4	CATWALK	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	112	STORAGE RM.	STORAGE RM.	RAMP	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	113	STORAGE RM.	STORAGE RM.	RAMP	3'-0"	7'-0"	B	1	J1	H1	-	-	-	-
	114	STAIRWELL #5	STAIRWELL #5	STORAGE RM.	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	115	STAIRWELL #5	STAIRWELL #5	RAMP	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
PIER 2	201	CONTROL HOUSE	EXTERIOR	CONTROL ROOM	3'-0"	7'-0"	MFR. STD.	MFR. STD.	MFR. STD.	MFR. STD.	S1	-	-	MFR. STD. HARDWARE
	202	CORRIDOR	CORRIDOR	ELECTRICAL RM.	2'-10"	7'-0"	A	1	J1	H1	-	B	-	-
	203	CORRIDOR	CORRIDOR	RESTROOM	3'-0"	7'-0"	B	1	J1	H1	S2	-	-	-
	204	ELECTRICAL RM.	ELECTRICAL RM.	CATWALK	2'-8"	7'-0"	B	1	J1	H1	-	-	-	-
	205	CORRIDOR	CORRIDOR	STAIRWELL #2	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	206	MECHANICAL RM.	MECHANICAL RM.	CATWALK	3'-0"	7'-0"	B	1	J1	H1	-	-	-	-
	207	MECHANICAL RM.	STAIRWELL #3	MECHANICAL RM.	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	208	STAIRWELL #3	STAIRWELL #3	CATWALK	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	209													
	210	STORAGE RM. (1)	STAIRWELL #4	STORAGE RM. (1)	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	211	STAIRWELL #4	STAIRWELL #4	CATWALK	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	212	OIL/WATER SEPARATOR RM.	OIL/WATER SEP. RM.	CATWALK	6'-8"	7'-0"	C	1	J1	H1	-	-	-	-
	213	STAIRWELL #5	STAIRWELL #5	OIL/WATER SEP. RM.	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	214	STAIRWELL #5	STAIRWELL #5	CATWALK	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	215	STORAGE RM.	STORAGE RM.	CATWALK	3'-0"	7'-0"	B	1	J1	H1	-	B	-	-
	216	STORAGE RM.	STORAGE RM.	CATWALK	3'-0"	7'-0"	B	1	J1	H1	-	-	-	-
	217	STAIRWELL #6	STAIRWELL #6	STORAGE RM.	3'-0"	7'-0"	A	1	J1	H1	-	B	-	-
	218	STAIRWELL #6	STAIRWELL #6	CATWALK	3'-0"	7'-0"	A	1	J1	H1	-	B		

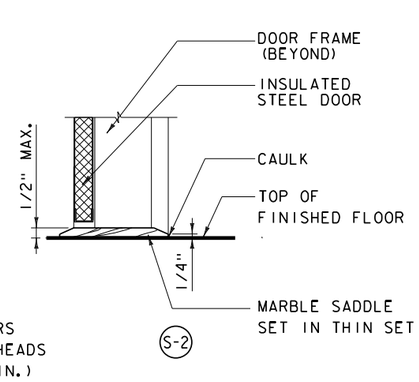


JAMB TYPES
N.T.S

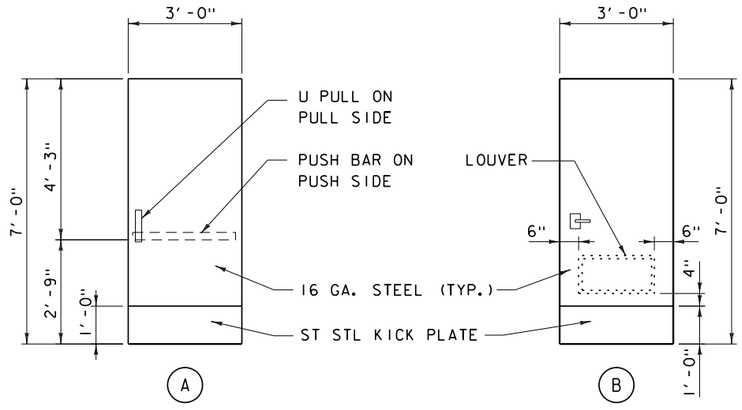


HEAD TYPES
N.T.S

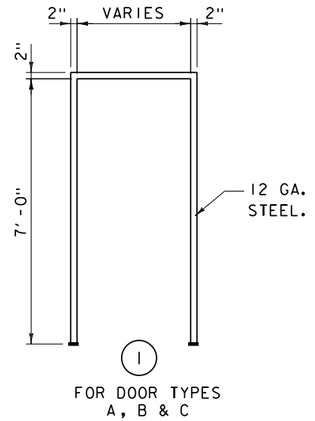




SADDLE TYPES
N.T.S



DOOR TYPES
N.T.S



DOOR FRAME TYPES
N.T.S

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142DoorSchd.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
DOOR SCHEDULE

PLOT DATE: 2/6/2018
DRAWN BY: E. STEPIEN
CHECKED BY: T. FRENCH
SHEET 203 OF 379

ROOM FINISH SCHEDULE

	RM. NO.	NAME OF ROOM	FLOOR				WALL - WEST					WALL - NORTH					WALL - EAST					WALL - SOUTH					CEILING			REMARK (S)
			MATERIAL	FINISH	COLOR	GROUT	BASE	MATERIAL	FINISH	COLOR	GROUT	BASE	MATERIAL	FINISH	COLOR	GROUT	BASE	MATERIAL	FINISH	COLOR	GROUT	BASE	MATERIAL	FINISH	COLOR	GROUT	MATERIAL	FINISH	COLOR	
PIER 1	1-101	ELECTRICAL ROOM	CONC	SEALER	-	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	CONC	PAINT	LT. GRAY	
	1-102	STAIRWELL #1	CONC	SEALER	-	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	PAINT	LT. GRAY	
	1-103	MECHANICAL ROOM	CONC	SEALER	-	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	CONC	PAINT	LT. GRAY	
	1-104	STAIRWELL #2	CONC	SEALER	-	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	PAINT	LT. GRAY	
	1-105	STORAGE ROOM (1)	CONC	SEALER	-	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	CONC	PAINT	LT. GRAY	
	1-106	STAIRWELL #3	CONC	SEALER	-	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	PAINT	LT. GRAY	
	1-107	OIL/WATER SEPARATOR RM.	CONC	SEALER	-	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	PAINT	LT. GRAY	
	1-108	STAIRWELL #4	CONC	SEALER	-	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	PAINT	LT. GRAY	
	1-109	STORAGE ROOM	CONC	SEALER	-	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	PAINT	LT. GRAY	
	1-110	STORAGE ROOM	CONC	SEALER	-	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	PAINT	LT. GRAY	
	1-111	STAIRWELL #5	CONC	SEALER	-	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	PAINT	LT. GRAY	
PIER 2	2-101	CONTROL ROOM	CONC	RUBBER FLOORING		-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	ACT	-	WHITE	
	2-102	STAIRWELL #1	CONC	SEALER	-	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	-	LT. GRAY	NOTE 1
	2-103	TOILET ROOM	CONC	CT	2A	2D	CT	CONC	CT	2B	2C	CT	CONC	CT	2B	2C	CT	CONC	CT	2B	2C	CT	CONC	CT	2B	2C	ACT	-	WHITE	NOTE 1
	2-104	ELECTRICAL ROOM	CONC	SEALER	-	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	CONC	-	LT. GRAY	NOTE 1
	2-105	STAIRWELL #2	CONC	SEALER	-	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	CONC	-	LT. GRAY	NOTE 1
	2-106	MECHANICAL ROOM	CONC	SEALER	-	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	CONC	PAINT	LT. GRAY	
	2-107	STAIRWELL #3	CONC	SEALER	-	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	PAINT	LT. GRAY	
	2-108	STORAGE ROOM (1)	CONC	SEALER	-	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	VINYL	CONC	FRP	GRAY	-	CONC	PAINT	LT. GRAY	
	2-109	STAIWELL #4	CONC	SEALER	-	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	PAINT	LT. GRAY	
	2-110	OIL/WATER SEPARATOR RM.	CONC	SEALER	-	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	PAINT	LT. GRAY	
	2-111	STAIRWELL #5	CONC	SEALER	-	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	PAINT	LT. GRAY	
	2-112	STORAGE ROOM	CONC	SEALER	-	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	PAINT	LT. GRAY	
	2-113	STORAGE ROOM	CONC	SEALER	-	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	PAINT	LT. GRAY	
	2-114	STAIRWELL #6	CONC	SEALER		-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	VINYL	CONC	PAINT	GRAY	-	CONC	PAINT	LT. GRAY	

FINISH NOTES:

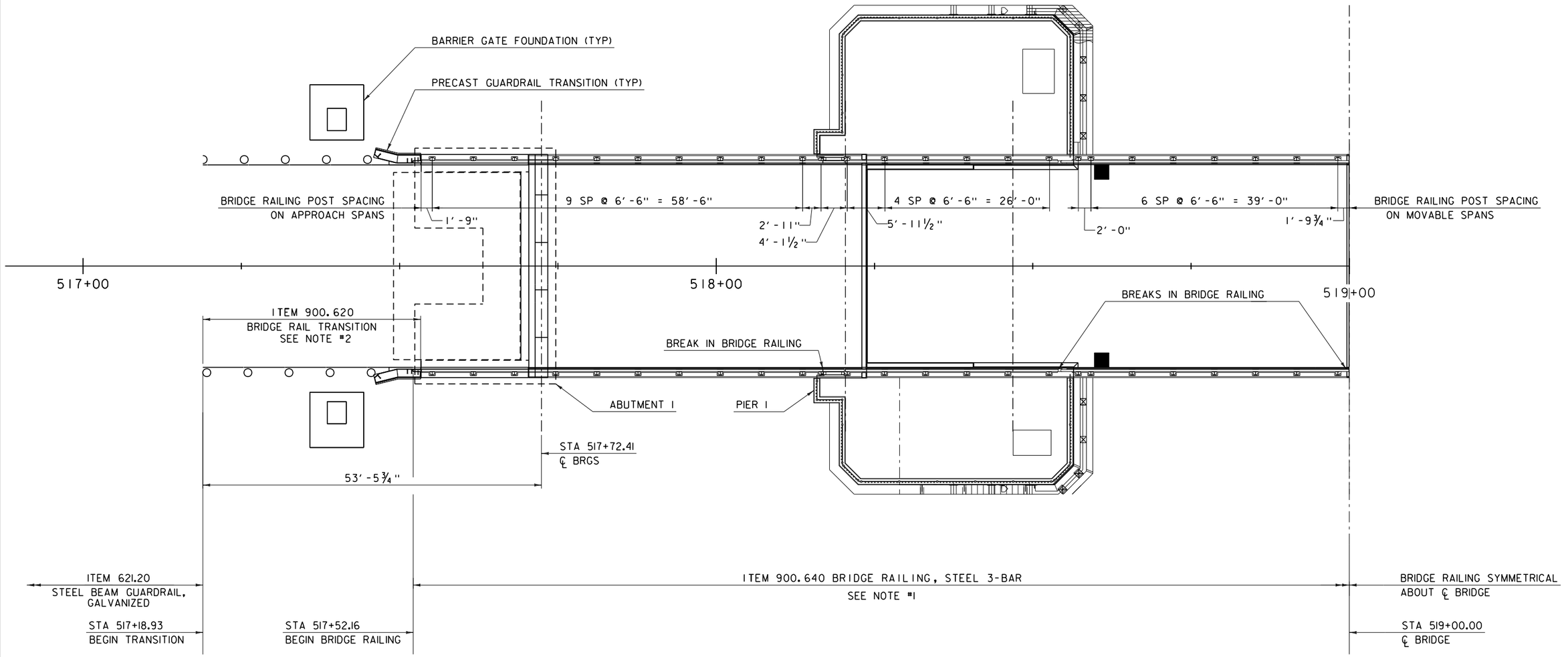
1. 2", CLASS I FIRE RATED, TWO PART,
   CLOSED CELL POLYURETHANE FOAM
   SPRAY-ON INSULATION (R-6-7/INCH)
   APPLIED TO UNDERSIDE OF CONCRETE SLAB ABOVE

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04/29/2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142FinSchd.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
ROOM FINISH SCHEDULE

PLOT DATE: 2/6/2018
DRAWN BY: E. STEPIEN
CHECKED BY: T. FRENCH
SHEET 204 OF 379



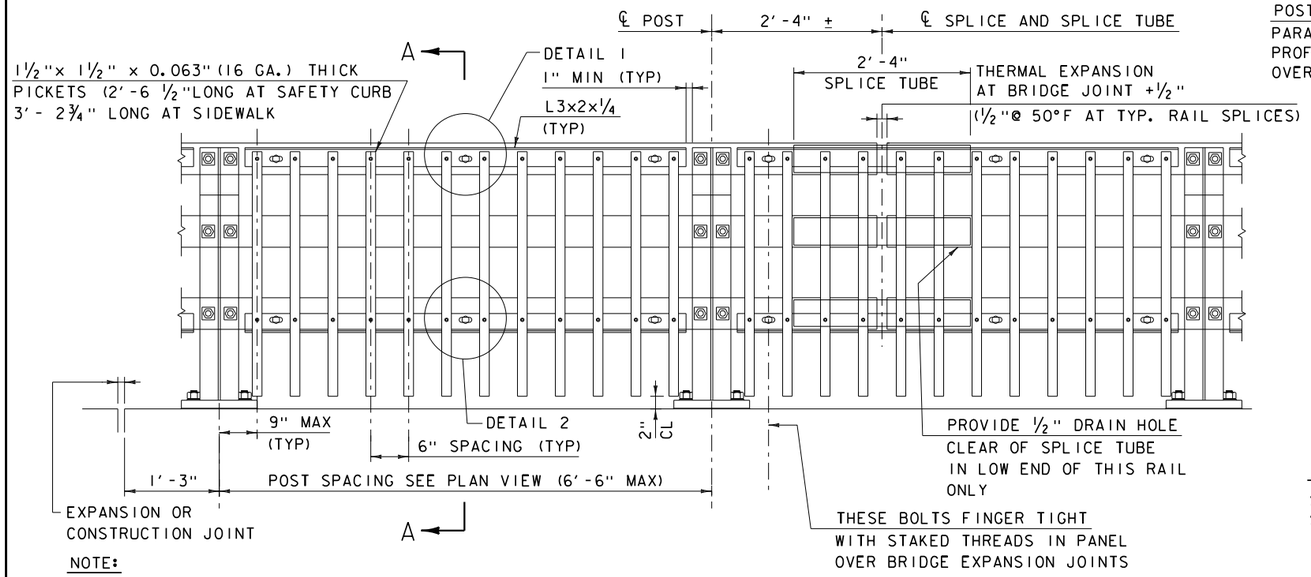
BRIDGE RAILING LAYOUT

SCALE ⅛" = 1'-0"

NOTES

1. BRIDGE RAILING DETAILS AND PAY LIMITS ARE TYPICAL FOR LEFT AND RIGHT EDGES OF TRAVELWAY.
2. BRIDGE RAIL TRANSITION CONSISTS OF TRANSITION FROM STEEL BEAM GUARDRAIL TO THRIE BEAM, BRIDGE RAIL TO HIGHWAY GUARD TRANSITION, AND PRECAST HIGHWAY GUARDRAIL TRANSITION. SEE SHEETS 211 - 214 AND SPECIAL PROVISION (BRIDGE RAIL TRANSITION) FOR DETAILS.

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142braillay.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P. LEFEBVRE
DESIGNED BY: P. LEFEBVRE	CHECKED BY: M. MOZER
BRIDGE RAILING LAYOUT	SHEET 205 OF 379

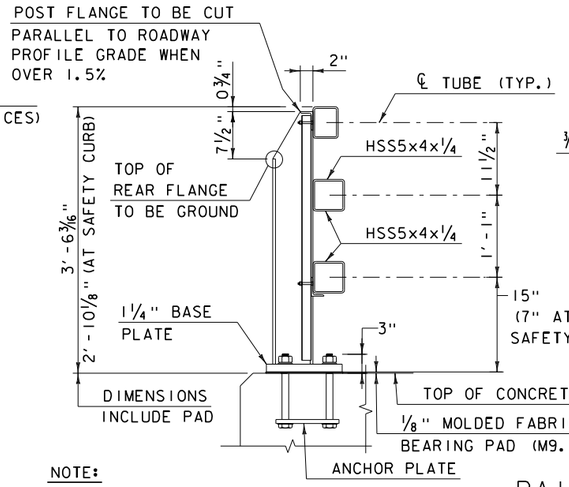


NOTE:

ELEVATION AT SIDEWALK SHOWN. ELEVATION AT SAFETY CURB SIMILAR EXCEPT AS NOTED.

BRIDGE RAILING ELEVATION

SCALE 1" = 1'-0"

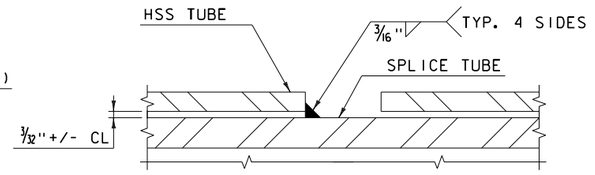


NOTE:

SECTION AT SIDEWALK SHOWN. SECTION AT SAFETY CURB SIMILAR, EXCEPT AS NOTED.

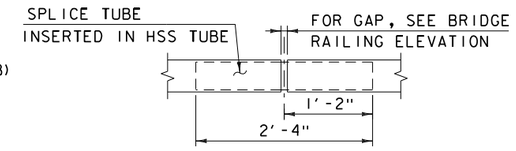
SECTION A-A

SCALE 1" = 1'-0"



SPLICE DETAIL

NOT TO SCALE

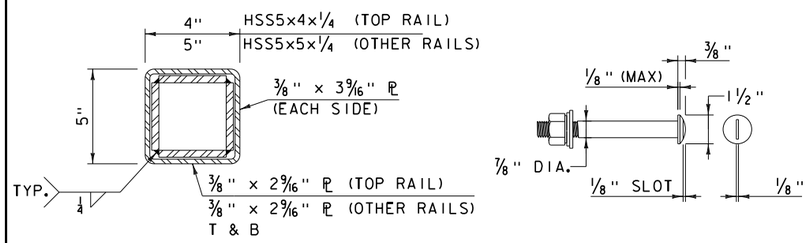


TYPICAL SPLICE

SCALE 1" = 1'-0"

RAILING NOTES:

1. SEE SHEET 207 FOR POST DETAILS. SEE SPECIAL PROVISION FOR ADDITIONAL DETAILS.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING (HSS) SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 500 WITH A CERTIFIED Fy = 50 KSI MINIMUM. THE MINIMUM HORIZONTAL BENDING RADII OF THE HSS TUBING SHALL BE 8 FEET. PICKET CARRIER ANGLES, ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 36. PICKET TUBING SHALL CONFORM TO ASTM A 513 WITH Fy = 36 KSI MIN. OR A 500 GRADE B.
3. ALL STEEL (EXCEPT THE 5/8" ANCHOR PLATE AND FASTENERS) SHALL BE GALVANIZED AND PAINTED. ANCHOR PLATE SHALL BE GALVANIZED ONLY. HEADS OF 7/8" DIA. ROUND HEAD BOLTS SHALL BE PAINTED TO MATCH RAIL.
4. ANCHOR BOLTS SHALL BE SET WITH TEMPLATES. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN AFTER STEEL IS IN PLACE.
5. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR (4) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN THE PANELS OVER EXPANSION JOINT.
6. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
7. ALL POSTS TO BE PLUMB WHEN PROFILE GRADE EXCEEDS 1.5%. FOR PROFILE GRADES LESS THAN 1.5%, POSTS SHALL BE SET PERPENDICULAR TO GRADE.
8. POST FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING. WELD SHALL BE BACK-GOUGED ON BACK SIDE EXCEPT AT WEB. WELD IS THE SAME ON BOTH FLANGES.
9. 7/8" DIA. ROUND HEAD BOLTS SHALL CONFORM TO THE CHEMICAL AND PHYSICAL REQUIREMENTS OF AASHTO M 164.

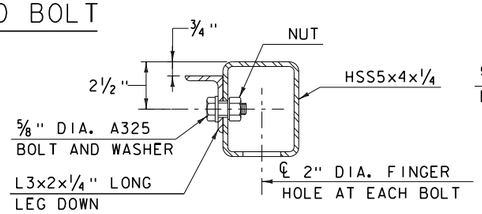


SPLICE TUBE DETAILS

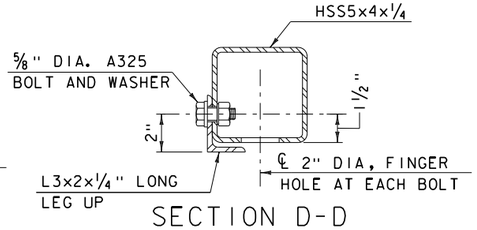
SCALE 3" = 1'-0"

⅞" DIA. ROUND HEAD BOLT

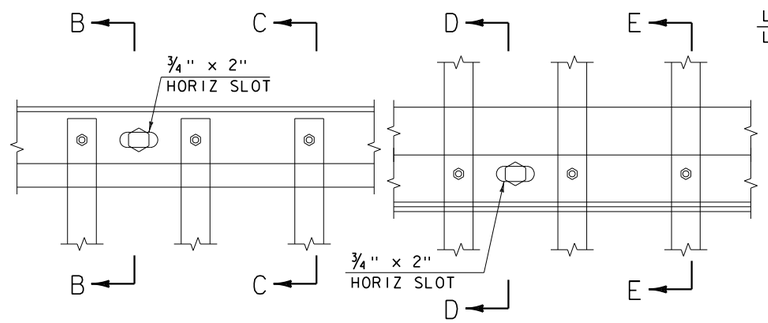
SCALE 3" = 1'-0"



SECTION B-B



SECTION D-D

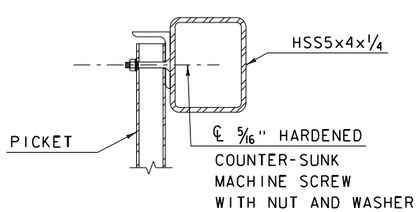


DETAIL 1

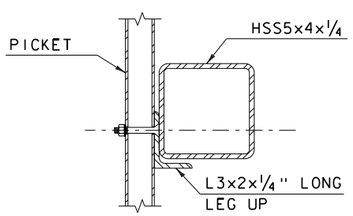
DETAIL 2

TYPICAL PICKET TO RAIL DETAILS

SCALE 3" = 1'-0"

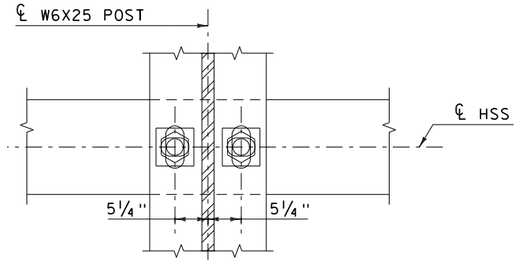


SECTION C-C

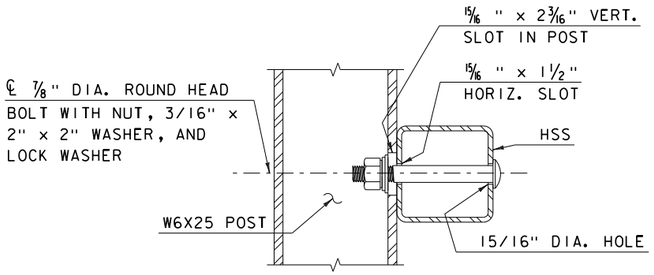


SECTION E-E

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12bl42bdet1.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: D. DOUGHERTY
DESIGNED BY: MASSDOT	CHECKED BY: M. MOZER
BRIDGE RAIL DETAILS 1	SHEET 206 OF 379



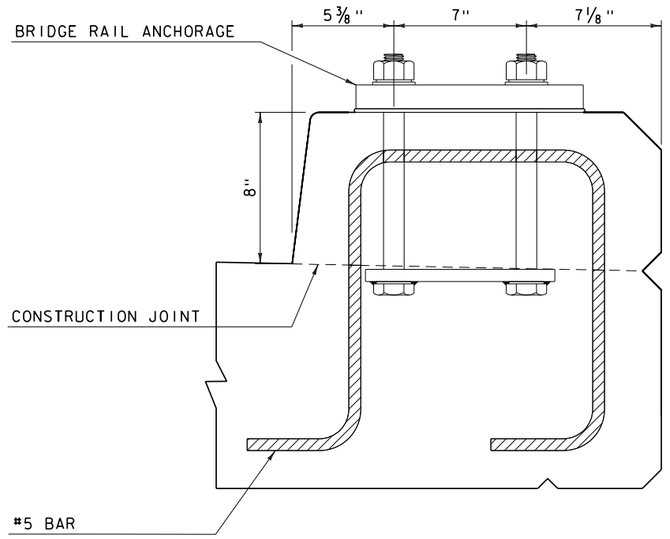
SECTION THRU POST WEB



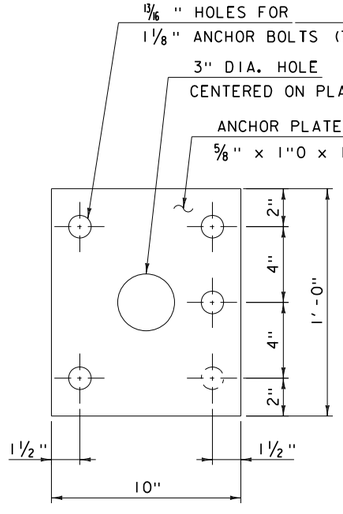
SECTION THRU RAIL

NOTE:
CONNECTIONS AT LOWER RAILS SHOWN.
CONNECTIONS AT TOP RAIL SIMILAR.

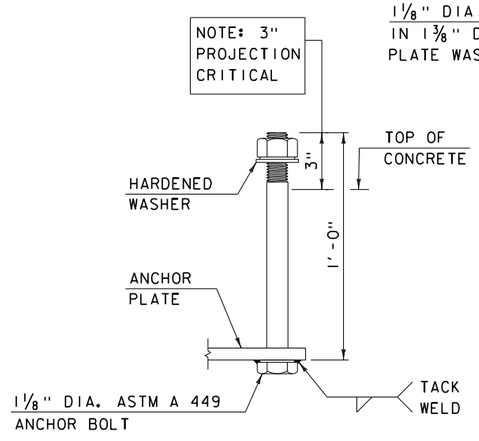
TYPICAL RAIL TO POST CONNECTIONS
SCALE 1" = 1'-0"



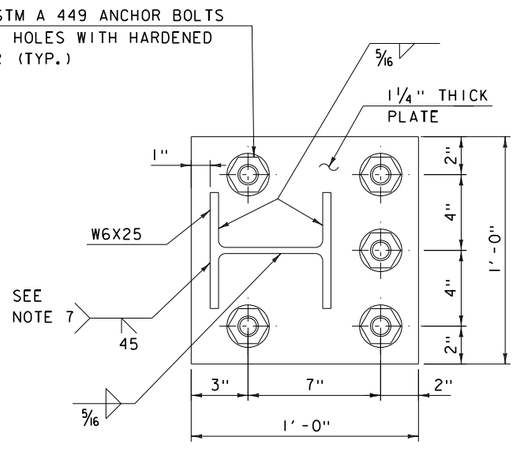
CURB DETAIL
SCALE 3" = 1'-0"



ANCHOR PLATE
SCALE 3" = 1'-0"

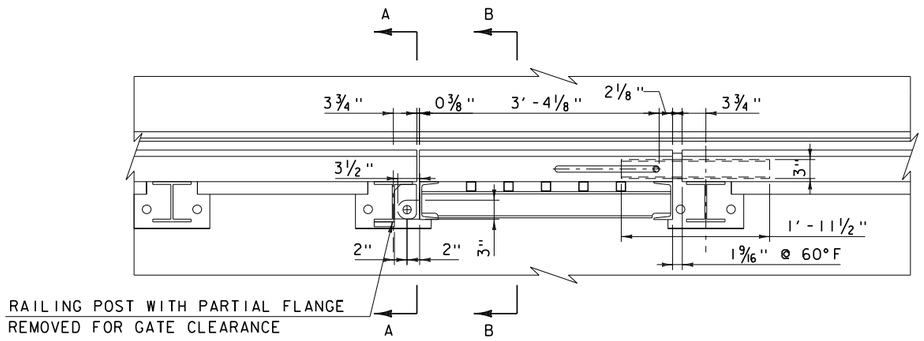


ANCHOR BOLT
SCALE 3" = 1'-0"



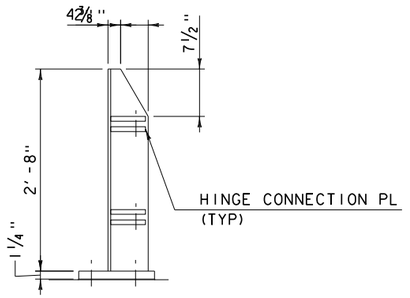
BASE PLATE
SCALE 3" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12bl42bdet2.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: D. DOUGHERTY
DESIGNED BY: MASSDOT	CHECKED BY: M. MOZER
BRIDGE RAIL DETAILS 2	SHEET 207 OF 379



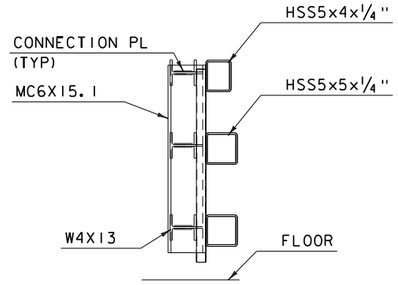
RAILING GATE DETAIL PLAN

SCALE 1" = 1'-0"



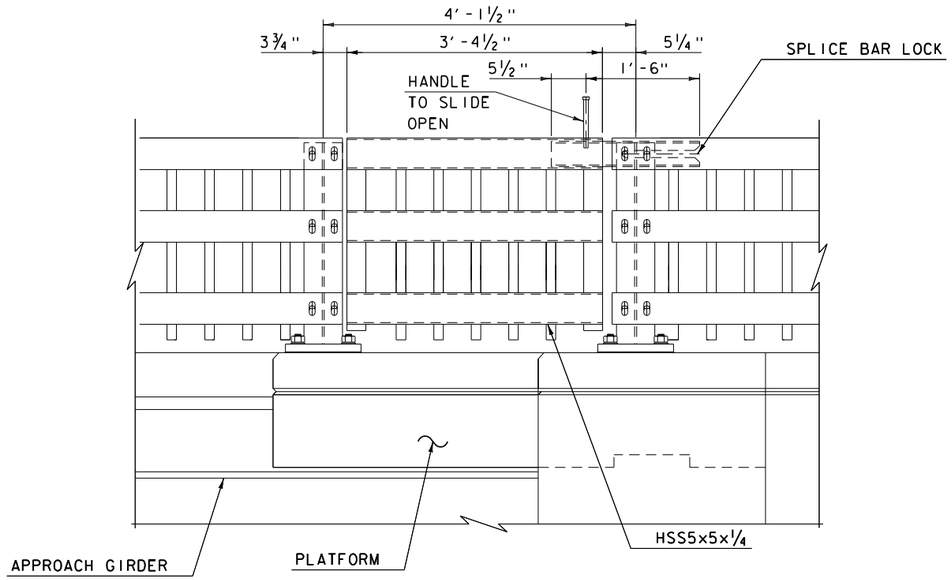
SECTION A-A

SCALE 1" = 1'-0"



SECTION B-B

SCALE 1" = 1'-0"



RAILING GATE DETAIL ELEVATION

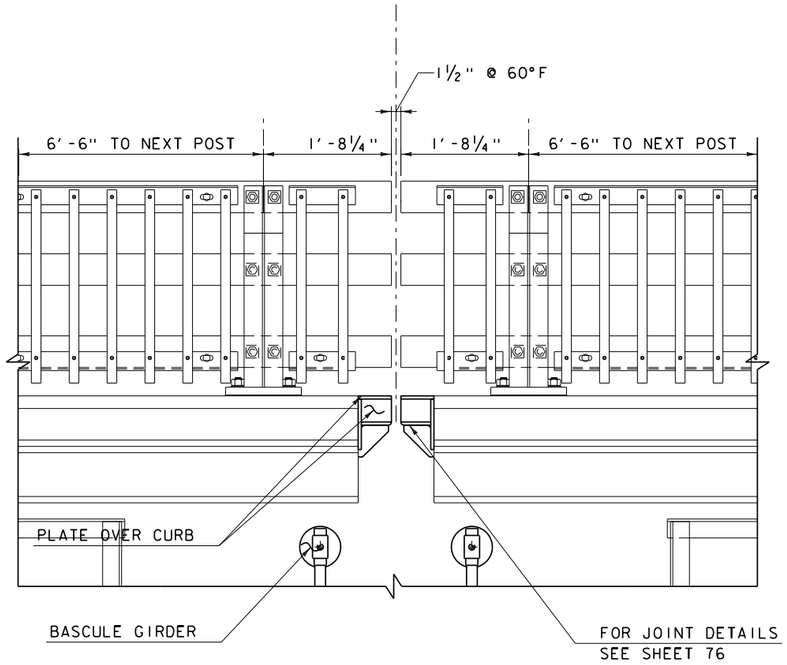
SCALE 1" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

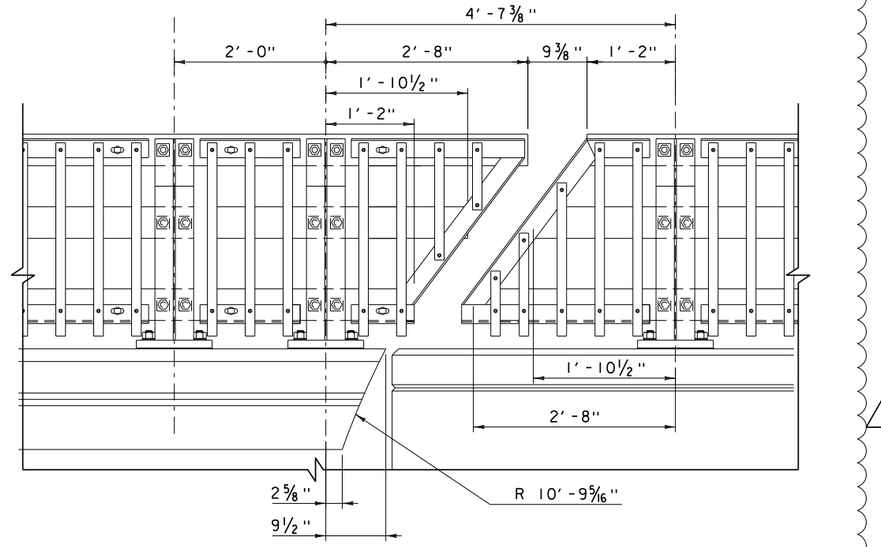
FILE NAME: z12bl42bdet3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BRIDGE RAIL DETAILS 3

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: M. MOZER
SHEET 208 OF 379



JOINT AT CHANNEL

SCALE 1"- 1'-0"



JOINT AT BASCULE & PIER

SCALE 1"- 1'-0"

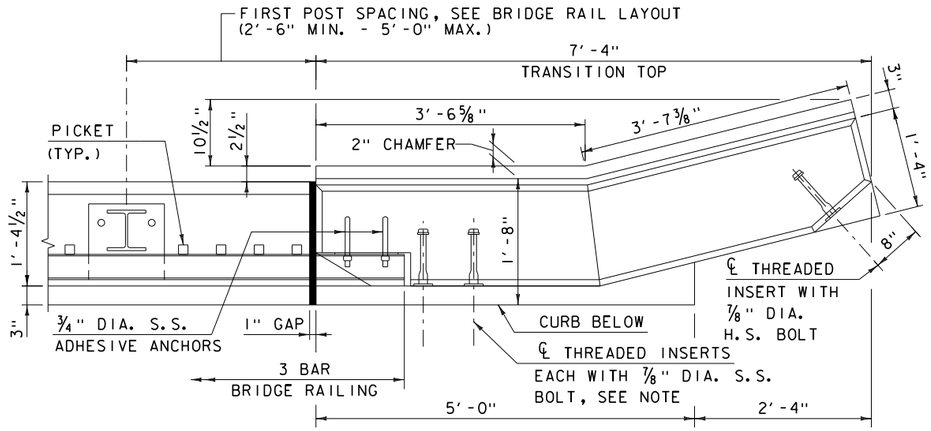
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

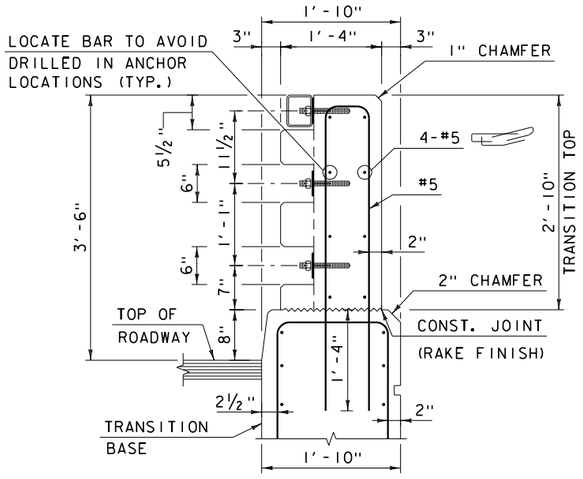
FILE NAME: z12bl42bdet4.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
BASCULE RAIL DETAILS 4

PLOT DATE: 2/6/2018
DRAWN BY: S. SANTRICH
CHECKED BY: M. MOZER
SHEET 209 OF 379



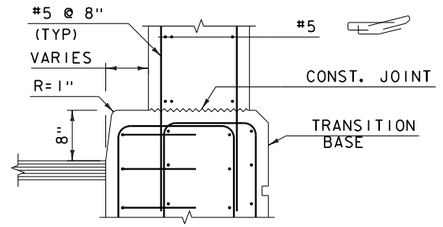
PLAN AT SAFETY CURB

SCALE 1" = 1'-0"



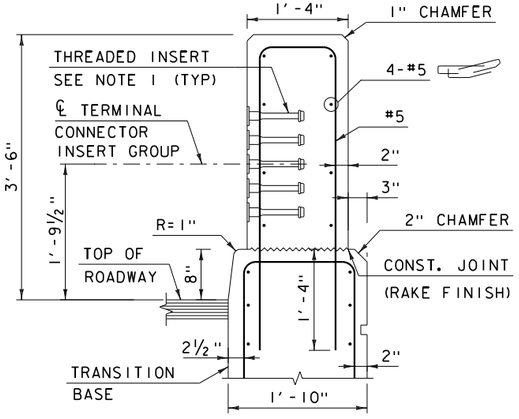
SECTION B-B AT SAFETY CURB

SCALE 1" = 1'-0"



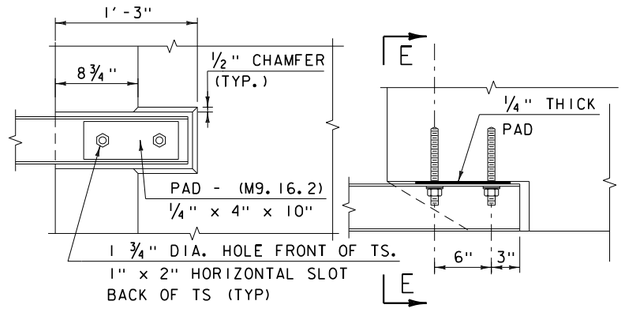
SECTION C-C AT SAFETY CURB

SCALE 1" = 1'-0"



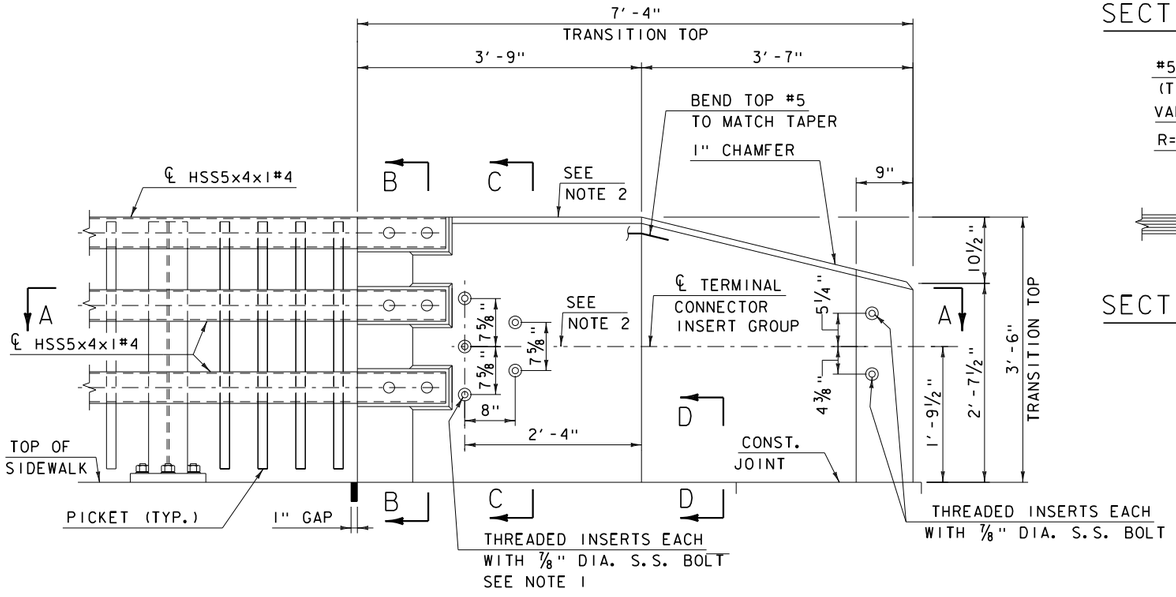
SECTION D-D AT SAFETY CURB

SCALE 1" = 1'-0"



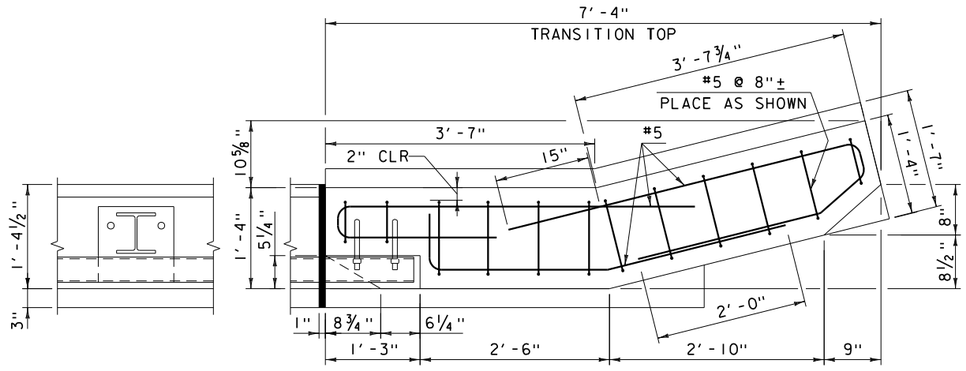
RAIL ATTACHMENT

SCALE 1½" = 1'-0"



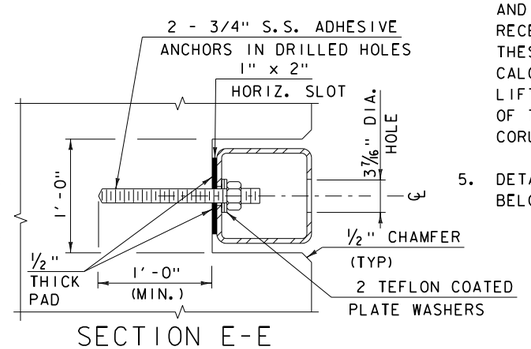
ELEVATION AT SIDEWALK

SCALE 1" = 1'-0"



SECTION A-A

SCALE 1" = 1'-0"



SECTION E-E

SCALE 3" = 1'-0"

NOTES:

1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING A NOMINAL SHEAR RESISTANCE OF 20 KIPS PER ⅞" DIA. S.S. BOLT. S.S. BOLTS SHALL BE ⅞" DIA. x 1½" LONG FULLY THREADED AISI TYPE 304N STAINLESS STEEL. INSERTS FOR ⅞" S.S. BOLTS SHALL BE GALVANIZED AND CAST INTO THE TRANSITION.

2. FOR AN APPROACH GRADE UP TO 3%, THE TRANSITION MAY BE CAST SQUARE AND SET PLUMB WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SQUARE TO THE POST.

3. ALL CONCRETE FOR THE PRECAST HIGHWAY GUARDRAIL TRANSITION SHALL MEET THE REQUIREMENTS OF "CONCRETE, HIGH PERFORMANCE CLASS A".

4. LIFTING DEVICES (NOT SHOWN), INCLUDING THEIR NUMBER AND LOCATION, SHALL BE DESIGNED AND DETAILED BY THE PRECASTER. THEY SHALL BE GALVANIZED AND SHALL BE PLACED AND RECESSED IN POCKETS TO PROVIDE 1½" CLEAR COVER TO THE FACE OF THE TRANSITION CONCRETE. THESE DEVICES SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS ALONG WITH ALL SUPPORTING CALCULATIONS AND/OR CATALOG CUTS. ONCE THE PRECAST TRANSITION IS SET IN PLACE, THE LIFTING DEVICE POCKETS SHALL BE FILLED WITH A NON-SHRINK GROUT THAT MATCHES THE COLOR OF THE TRANSITION CONCRETE WHEN CURED AND THE FILLED POCKETS SHALL BE RUBBED WITH A CORUNDUM STONE TO BLEND OUT THE JOINTS.

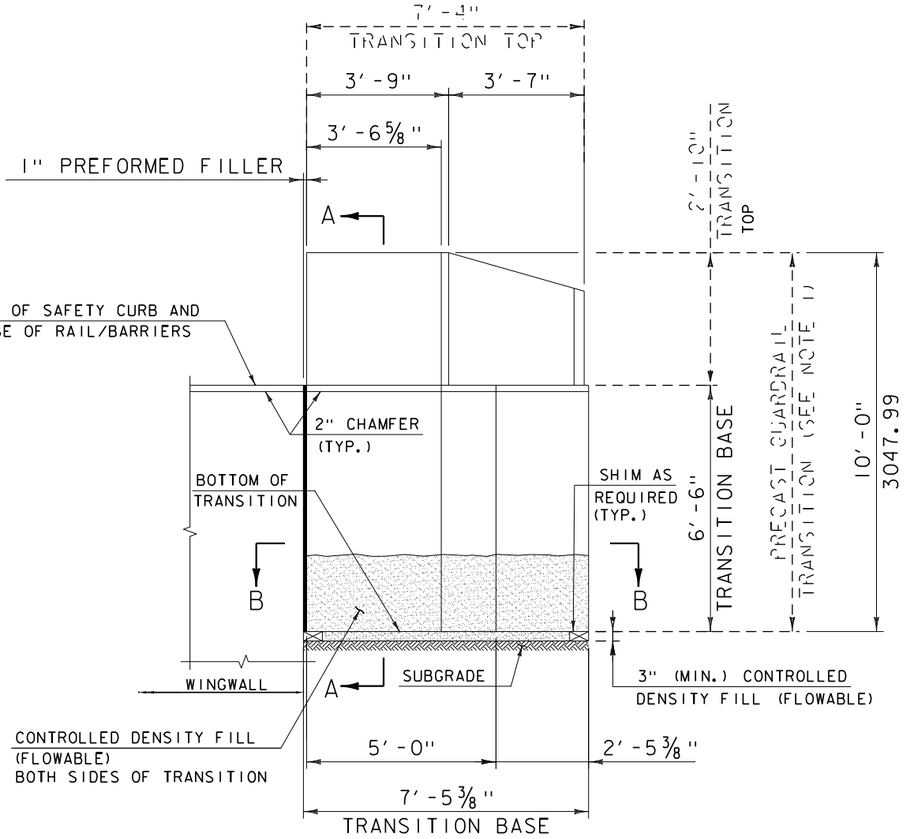
5. DETAILS FOR ABOVE GROUND PORTION OF PRECAST TRANSITION ARE SHOWN. FOR DETAILS OF BELOW GRADE PORTION, SEE SHEET 211.

HDR

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

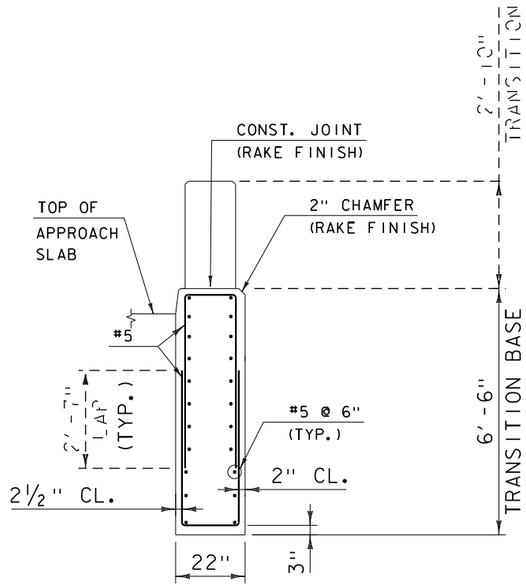
FILE NAME: z12bl42bdet5.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: MASSDOT
BRIDGE RAIL DETAILS 5

PLOT DATE: 2/6/2018
DRAWN BY: D. DOUGHERTY
CHECKED BY: M. MOZER
SHEET 210 OF 379



PRECAST GUARDRAIL TRANSITION
ELEVATION AT U-WINGWALL

SCALE ½" = 1'-0"

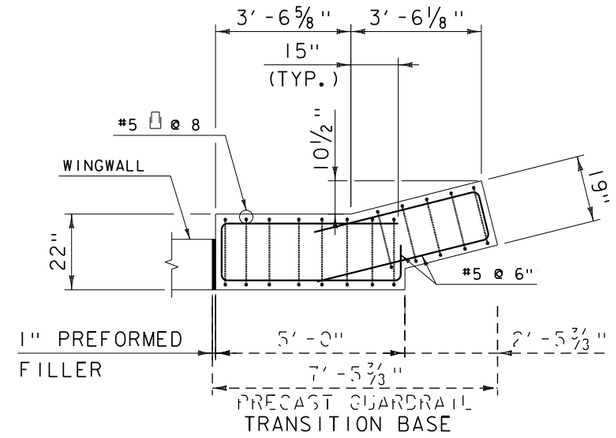


NOTES:

1. REINFORCEMENT OF THE TRANSITION TOP IS NOT SHOWN FOR CLARITY.

SECTION A-A

SCALE: ½" = 1'-0"



NOTES:

WINGWALL REINFORCEMENT NOT SHOWN FOR CLARITY.

SECTION B-B

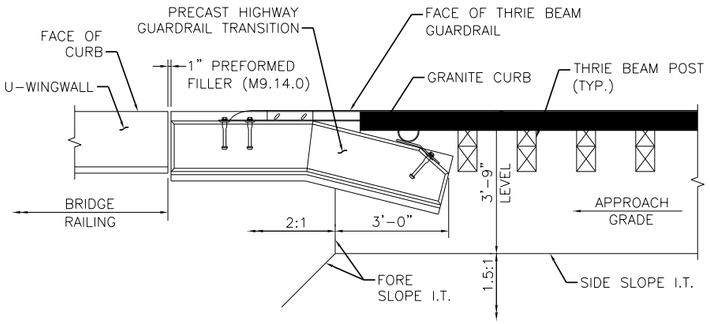
SCALE: ½" = 1'-0"

NOTES:

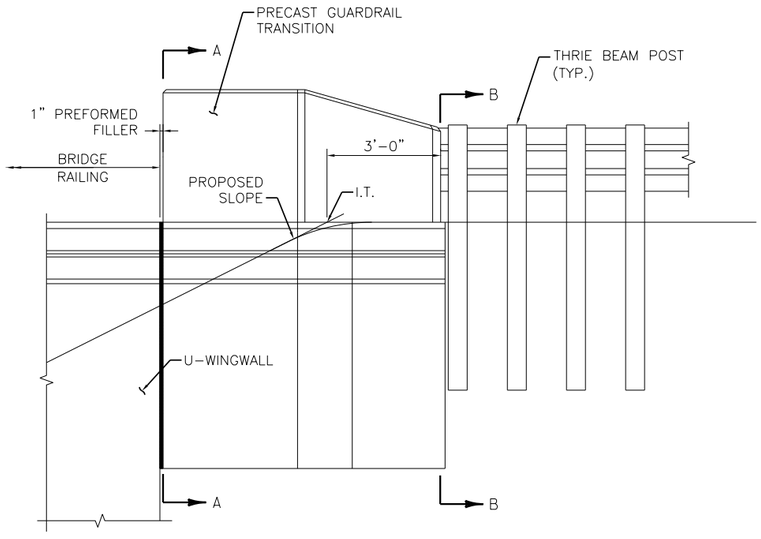
1. PRECAST GUARDRAIL TRANSITION SHALL MEET THE REQUIREMENTS OF "CONCRETE, HIGH PERFORMANCE CLASS A."
2. GRANULAR BACKFILL FOR STRUCTURES SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF 3" (MIN.) BELOW THE INTENDED BOTTOM OF THE PRECAST GUARDRAIL TRANSITION BASE AND TO A HEIGHT OF 2'-0" (MIN.) ON ALL SIDES OF THE TRANSITION BASE TO FORM A TRENCH IN WHICH TO SET THE TRANSITION. WHERE NO GRAVEL BORROW IS REQUIRED BELOW THE BASE, IT SHALL BE PLACED ON UNDISTURBED SOIL.
3. CONTRACTOR SHALL SET THE PRECAST GUARDRAIL TRANSITION TO THE REQUIRED ELEVATION AND ALIGNMENT, AND BACKILL PRECAST GUARDRAIL TRANSITION WITH CONTROLLED DENSITY FLOWABLE FILL TO THE ELEVATION SHOWN.
4. CONTROLLED DENSITY FLOWABLE FILL WILL MEET THE REQUIREMENT OF SECTION 541.

1. REINFORCEMENT OF THE TRANSITION TOP IS NOT SHOWN FOR CLARITY.

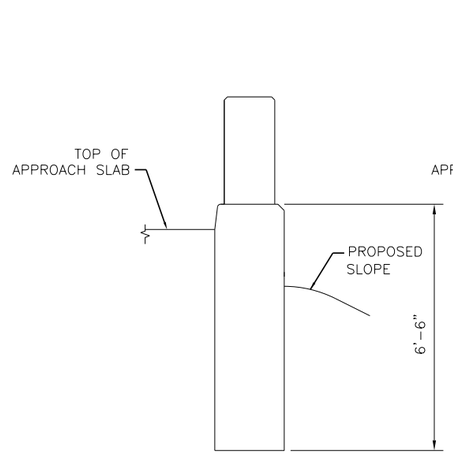
PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142brtransl.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P. LEFEBVRE
DESIGNED BY: MASSDOT	CHECKED BY: M. MOZER
BRIDGE RAIL TRANSITION DETAILS 1 OF 4	SHEET 211 OF 379



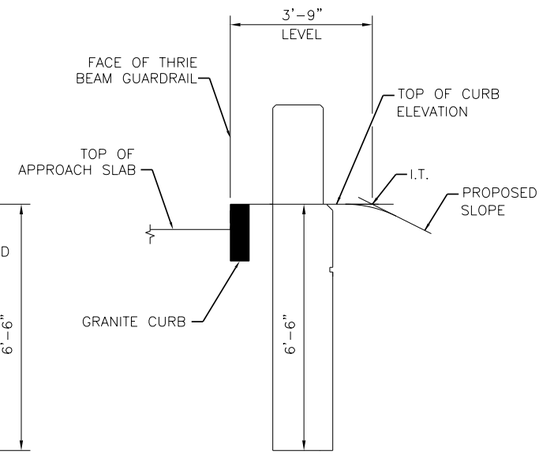
GRADING REQUIREMENTS
PLAN
SCALE: $\frac{1}{2}$" = 1'-0"



GRADING REQUIREMENTS
ELEVATION
SCALE: $\frac{1}{2}$" = 1'-0"

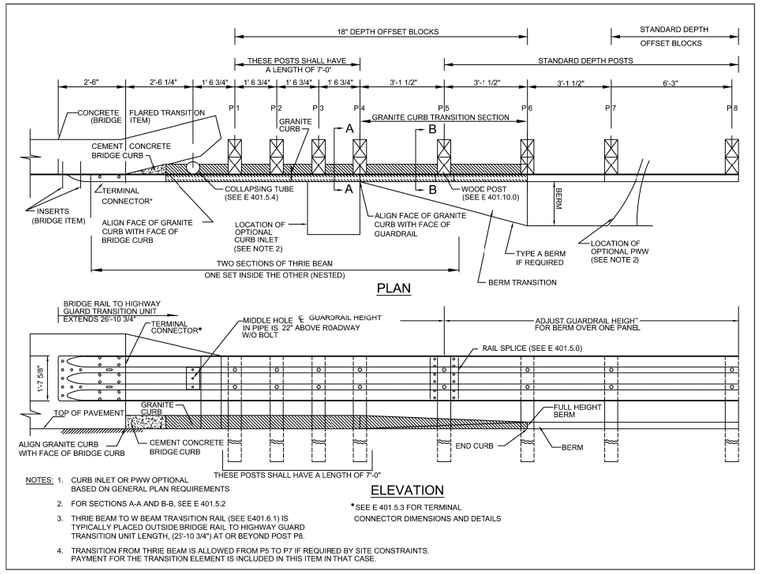


SECTION A-A
SCALE: $\frac{3}{8}$" = 1'-0"

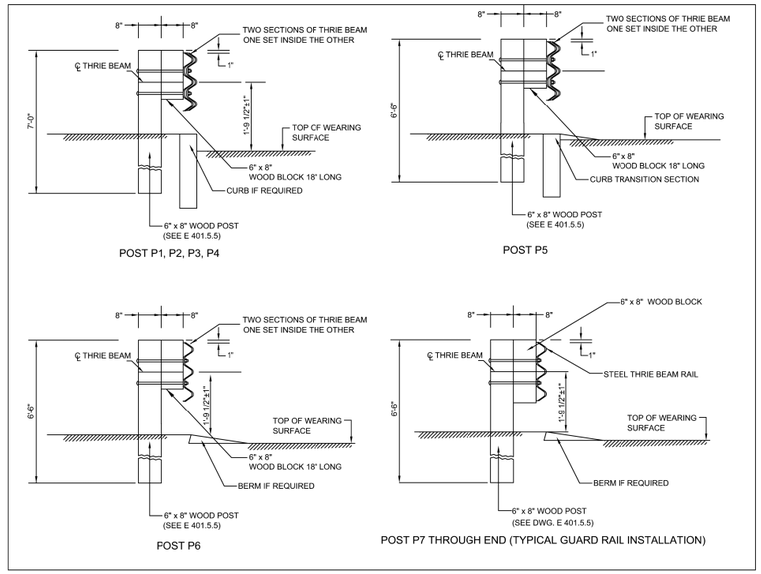


SECTION B-B
SCALE: $\frac{3}{8}$" = 1'-0"

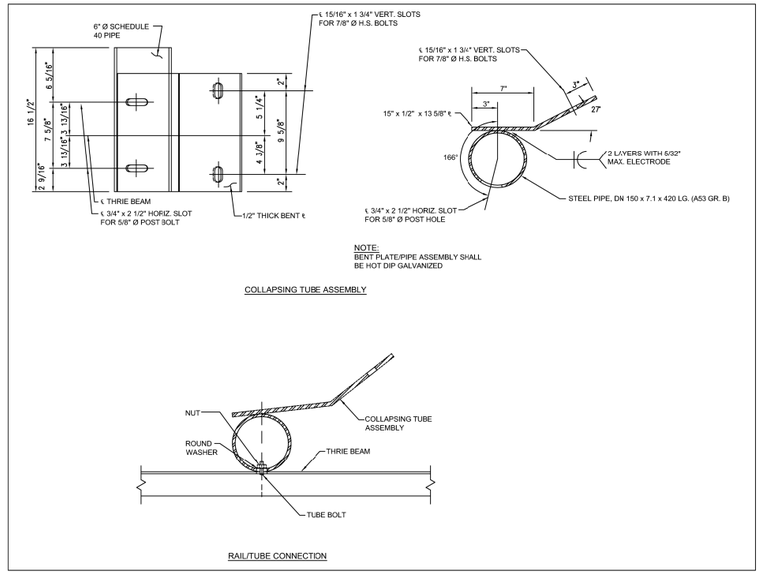
PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12bl42brtrans2.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P. LEFEBVRE
DESIGNED BY: MASSDOT	CHECKED BY: M. MOZER
BRIDGE RAIL TRANSITION DETAILS 2 OF 4	SHEET 212 OF 379



E 401.5.1

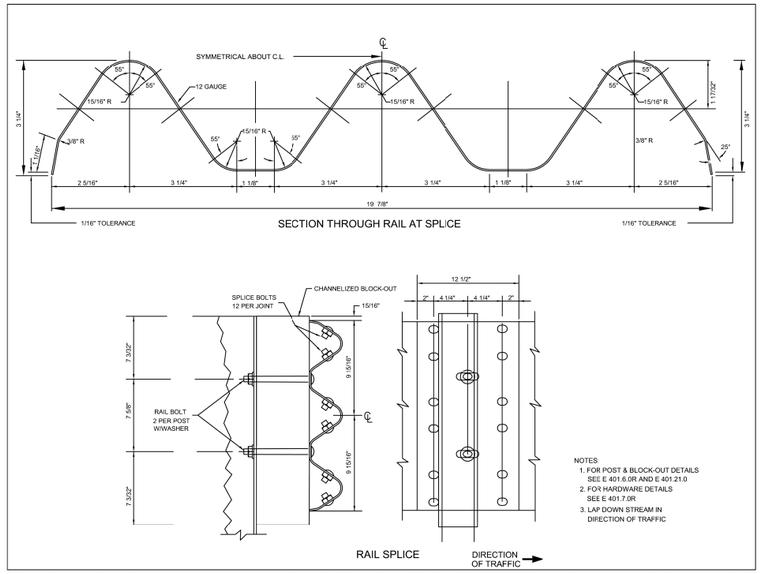


E 401.5.2

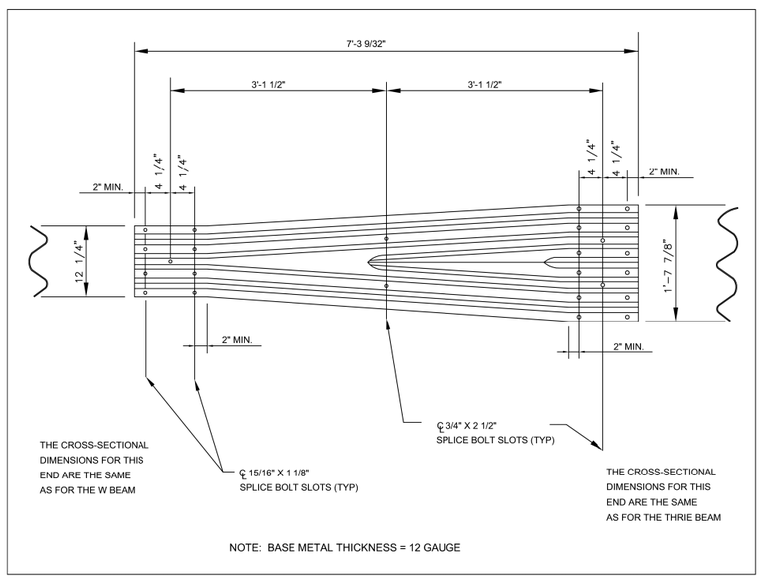


E 401.5.4

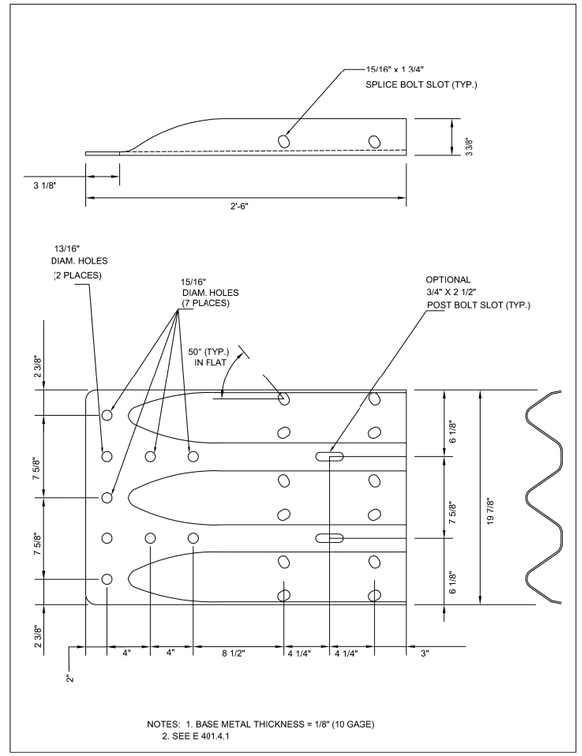
PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142brtrans3.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P. LEFEBVRE
DESIGNED BY: MASSDOT	CHECKED BY: M. MOZER
BRIDGE RAIL TRANSITION DETAILS 3 OF 4	SHEET 213 OF 379



E 401.5.0



E 401.6.1



E 401.5.3

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: zl2bl42brtrans4.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P. LEFEBVRE
DESIGNED BY: MASSDOT	CHECKED BY: M. MOZER
BRIDGE RAIL TRANSITION DETAILS 4 OF 4	SHEET 214 OF 379

MECHANICAL GENERAL NOTES

1. DETAILS OF MACHINERY SHALL CONFORM TO THE LATEST AASHTO STANDARD SPECIFICATIONS FOR MOVABLE HIGHWAY BRIDGES UNLESS OTHERWISE SHOWN ON THE PLANS OR PROVIDED FOR IN THE SPECIFICATIONS.

2. THIS PROJECT IS SUBJECT TO ALL PROVISIONS OF THE "BUY AMERICA" REQUIREMENTS FOR STEEL. SUPPLIERS OF MACHINERY COMPONENTS SHALL FULLY COMPLY WITH THESE REQUIREMENTS (23 USC 313 AND 23 CFR 635.410)

3. ALL DIMENSIONS FOR MACHINE FINISHED SURFACES SHALL BE HELD TO .010" AFTER MACHINING EXCEPT AS OTHERWISE REQUIRED BY THE DRAWINGS OR SPECIFICATIONS. ALL KEYS ARE TO CONFORM TO ANSI B17.1, CLASS 2 UNLESS OTHERWISE NOTED. STEEL IS ASTM A709 GR50, UNLESS OTHERWISE NOTED.

4. UNLESS OTHERWISE NOTED ALL BOLTS SHALL BE FINISH BODY HIGH STRENGTH MEETING THE REQUIREMENTS OF ASTM A449. THE FINISH BODY HIGH STRENGTH BOLT TO HOLE CLEARANCE SHALL BE BETWEEN 0.003" AND 0.010" UNLESS OTHERWISE NOTED. WHERE STRUCTURAL FIT HIGH STRENGTH BOLTS ARE SPECIFIED THE BOLT TO HOLE CLEARANCE SHALL BE BETWEEN 0.003" AND 0.063" UNLESS OTHERWISE NOTED. WHERE TURNED BOLTS/FASTENERS ARE SPECIFIED THE BOLT SHANK DIAMETER SHALL BE 1/16" LARGER IN DIAMETER THAN THE MAJOR DIAMETER OF THE THREAD AND THE SHANK TO HOLE CLEARANCE SHALL BE LC6 UNLESS OTHERWISE NOTED. ALL H.S. FASTENERS SHALL HAVE A HARDENED PLAIN WASHER UNDER THE HEAD AND THE NUT. HIGH STRENGTH BOLTS THAT HAVE BEEN TORQUED SHALL NOT BE REUSED.

5. PROVIDE STAINLESS STEEL SHIM PACKS FOR LEVELING AND ALIGNING ALL MACHINERY COMPONENTS (SEE SHIM PACK TABLE). NOMINAL THICKNESS SHALL BE 1/2" UNLESS OTHERWISE SPECIFIED WITH ADJUSTMENTS FOR 1/64" VARIATIONS. ALL SHIMS TO BE FULL FOOTPRINT OF MACHINERY COMPONENT AND MADE FROM 316 STAINLESS STEEL. U-SHAPED OR SLOTTED SHIMS ARE NOT ACCEPTABLE. IF REQUIRED, BEVELED SHIMS SHALL BE PROVIDED AT NO ADDITIONAL COST. STEPPED SHIMS ARE NOT ACCEPTABLE.

6. MACHINERY DIMENSIONS SHOWN ON DRAWINGS ARE DIMENSIONS AFTER MACHINING.

   UNLESS OTHERWISE NOTED, FITS AND FINISHES FOR MACHINERY SHALL BE AS FOLLOWS:

SURFACE	FIT ENGLISH	FINISH MICRO INCH
MACHINERY BASE ON STEEL	-	250
MACHINERY PARTS IN FIXED CONTACT	-	125
SHAFT JOURNAL	RC6	8
JOURNAL BUSHINGS	RC6	16
SOLID BUSHING IN BASE (TO 1/4" WALL)	FN1	63
SOLID BUSHING IN BASE (OVER 1/4" WALL)	FN2	63
HUBS ON SHAFTS (TO 2" BORE)	FN2	32
HUBS ON SHAFTS (OVER 2" BORE)	FN2	63
TURNED BOLTS IN FINISHED HOLES	LC6	63
SPLIT BUSHING IN BASE	LC1	125
SLIDING BEARINGS	RC6	32
KEYS AND KEYWAYS	-	63

   THE ABOVE FITS FOR CYLINDRICAL PARTS SHALL ALSO APPLY TO THE MAJOR DIMENSIONS OF NON-CYLINDRICAL PARTS.

7. MODEL NUMBERS AND DETAILS OF STANDARD COMPONENTS ARE BASED ON MANUFACTURER'S CATALOG DATA CURRENT AT THE TIME THE PLANS WERE PREPARED. THE MODELS SPECIFIED ARE ONLY TO ESTABLISH A STANDARD OF QUALITY AND TO DEFINE PERFORMANCE REQUIREMENTS. EQUIVALENT MODELS FROM OTHER MANUFACTURERS MAY BE SUBSTITUTED AT THE OPTION OF THE CONTRACTOR AND WITH THE APPROVAL OF THE ENGINEER.

8. ALL STEEL PARTS SHALL BE SHOP PAINTED PRIOR TO INSTALLATION IN THE FIELD WITH PAINTS FOR OFFSHORE APPLICATION. ALL FAYING SURFACES TO BE PRIME PAINTED ONLY. BEARING SURFACES OR SURFACES FOR PINS AND SLEEVES SHALL NOT BE PAINTED.

9. THE CONTRACTOR SHALL SUBMIT SHOP AND ASSEMBLY DRAWINGS BASED ON THE CONTRACT DRAWINGS AND SPECIFICATIONS FOR APPROVAL. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO DETAIL, COORDINATE AND VERIFY THE RELATIONSHIP AND ASSEMBLY OF ALL PARTS FOR A COMPLETE WORKING SYSTEM.

10. ALL REQUIRED MACHINING, RIGGING, SPECIAL SHIMMING, LUBRICATION, PAINTING, TESTING AND ASSEMBLY SHALL BE CONSIDERED PART OF THE WORK.

11. ALL WELDMENTS ARE TO BE STRESS RELIEVED BY CONTROLLED HEATING AND CONTROLLED COOLING AND BLAST CLEANED AFTER WELDING AND BEFORE MACHINING.

12. ALL TRANSITIONS OF SURFACES OF MACHINERY SHALL BE BLENDED SMOOTH.

13. ALL MATING SURFACES OF MACHINERY PARTS, SUPPORTS AND EXTERNAL EDGES SHALL BE MACHINED. ALL BURRS SHALL BE REMOVED.

14. ANY MODIFICATIONS OF MACHINERY AFFECTED BY THE IMPLEMENTATION OF THE PROJECT SHALL BE INCLUDED IN THE FINAL AS BUILT DOCUMENTS.

15. THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THESE CONTRACT DRAWINGS, THE CONTRACT SPECIFICATIONS AND ALL OTHER CONTRACT DOCUMENTS.

16. THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT ANY MATERIAL WHICH IS TO REMAIN THE PROPERTY OF VTRANS, WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY OF THESE MATERIALS, THE DAMAGED MATERIAL SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER AT NO ADDITIONAL COST TO VTRANS.

HYDRAULIC SYSTEM NOTES

1. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL HYDRAULIC COMPONENTS AND EQUIPMENT AS REQUIRED IN THE DRAWINGS AND SPECIFICATIONS. IN ADDITION, THE FOLLOWING ADDITIONAL DATA FOR THE HYDRAULIC SYSTEM SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. REVIEWING PROCESS WILL TAKE 2 WEEKS FOR EACH SUBMITTAL:

   A. HYDRAULIC SCHEMATIC WITH BILL OF MATERIALS. HYDRAULIC SYMBOLS UTILIZED IN THE SCHEMATIC AND SHOP DRAWING SUBMITTALS SHALL BE IN ACCORDANCE WITH ANSI Y32.10.

   B. CERTIFIED DIMENSIONAL PRINTS FOR ALL MAJOR HYDRAULIC COMPONENTS. THIS SHALL INCLUDE AT A MINIMUM THE HYDRAULIC CYLINDERS, THE MANIFOLDS, THE RESERVOIR, THE PUMPS, AND THE MOTORS.

   C. HYDRAULIC POWER UNIT ASSEMBLY DRAWING INCLUDING OVERALL DIMENSIONS, BILL OF MATERIALS, LIFTING/HANDLING PROVISIONS, AND REQUIRED CLEARANCES/MAINTENANCE ENVELOPES.

   D. ENGINEERING AND PERFORMANCE DATA OF ALL ITEMS SUPPLIED, INCLUDING MATERIAL SPECIFICATIONS, PUMP EFFICIENCIES, COMPONENT CATALOG CUTS, ETC.

   E. INITIAL HYDRAULIC FILL AND FIELD FLUSHING PROCEDURE.

   F. COMPLETE PIPING LAYOUTS AND DETAILS, INCLUDING FITTINGS, LENGTHS, SUPPORT TYPES, SUPPORT LOCATIONS.

2. THE CONTRACTOR SHALL FURNISH MAINTENANCE AND OPERATION MANUALS GIVING COMPLETE INSTRUCTIONS RELATIVE TO ASSEMBLY, INSTALLATION, OPERATION, ADJUSTMENT, ALIGNMENT, LUBRICATION, MAINTENANCE, DISASSEMBLY, FILLING, FLUSHING, AND VENTING. THE MANUAL SHALL INCLUDE A COMPLETE PARTS LISTS AND ALL SHOP DRAWINGS AND CUTSHEETS FOR THE INSTALLED HYDRAULIC SYSTEM. (4) PRINTED COPIES AND E-FILES ARE REQUIRED.

3. PROVIDE CLEARLY VISIBLE WARNING SIGNS "HIGH PRESSURE OIL LEAKS" IN MECHANICAL ROOMS IN A LOCATION AS DIRECTED BY THE RESIDENT ENGINEER.

4. THE HYDRAULIC SYSTEM SHALL HAVE HIGH POINT VENTS AND LOW POINT DRAINS.

5. THE HYDRAULIC SYSTEM SHALL BE FLUSHED TO A MINIMUM ISO 4406 CLEANLINESS LEVEL OF 18/16/13 (NAS 1638, CLASS 7).

ABBREVIATIONS

ASTM - AMERICAN SOCIETY FOR TESTING AND MATERIALS

CL - CENTERLINE

DIA - DIAMETER

DWG - DRAWING

FT - FEET

HP - HORSEPOWER

HS - HIGH STRENGTH

KIPS - KILOPOUNDS

LBS - POUNDS

MK - MARK

MPT - MAINTENANCE AND PROTECTION OF TRAFFIC

QTY - QUANTITY

SS - STAINLESS STEEL

TYP - TYPICAL

USCG - UNITED STATES COAST GUARD

BC - BOLT CIRCLE

CJP -COMPLETE JOINT PENETRATION

TOLERANCES

UNLESS OTHERWISE INDICATED OR REQUIRED FOR THE PROPER ASSEMBLY OF THE PARTS, DIMENSIONAL TOLERANCES OF MACHINERY IN GENERAL SHALL BE AS FOLLOWS:

SURFACE TOLERANCE	
MACHINED (TO 1")	+/-0.015"
MACHINED (OVER 1")	+/-0.030"
ROLLED	+/-0.030"
COMPONENT LOCATIONS	+/-0.030"
BOLT HOLE LOCATIONS	+/-0.030"
ANGULAR	+/-0.5°

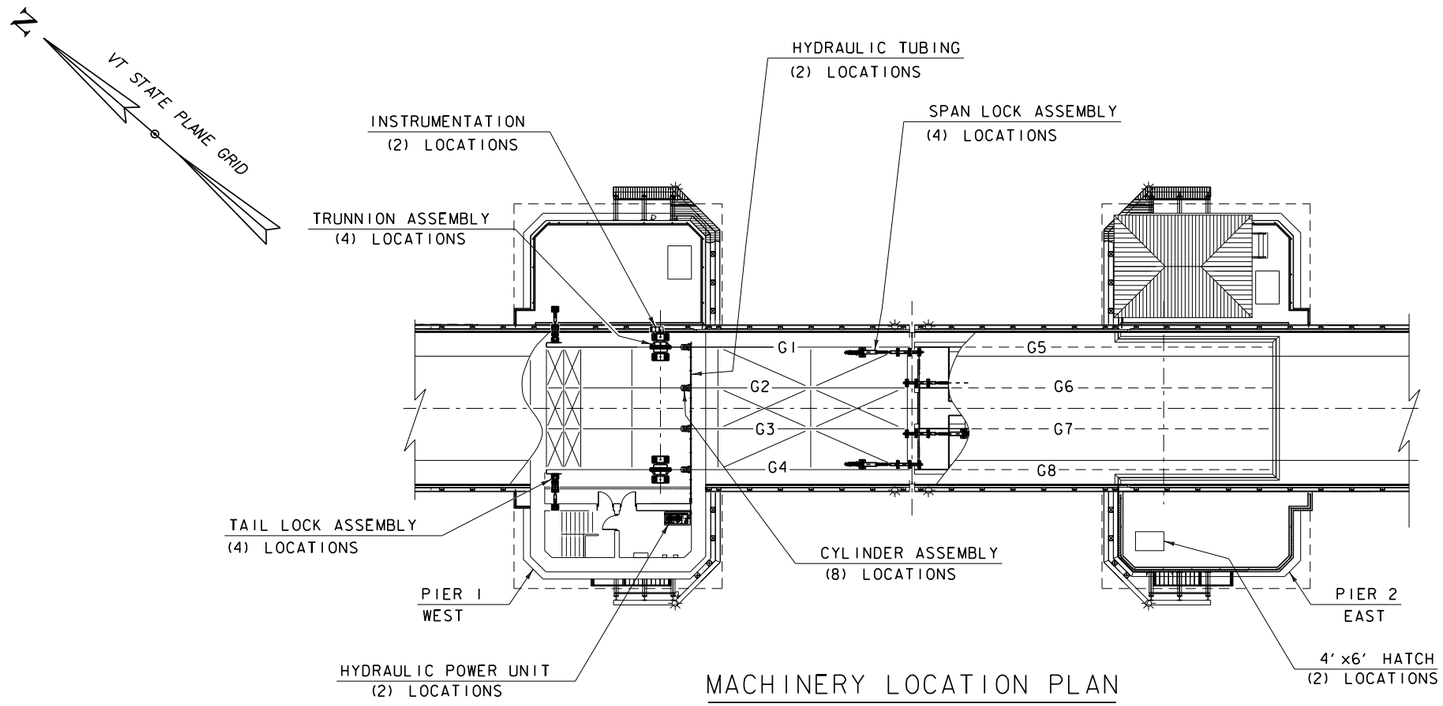
SHIM PACK TABLE		
	THICKNESS	QTY
SHIM PACK CONSISTING OF THE FOLLOWING THICKNESSES AND QUANTITIES ASTM A240 TYPE 316	1/2"	1
	1/4"	1
	1/8"	1
	1/16"	1
	1/32"	1
	1/64"	2

HDR

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

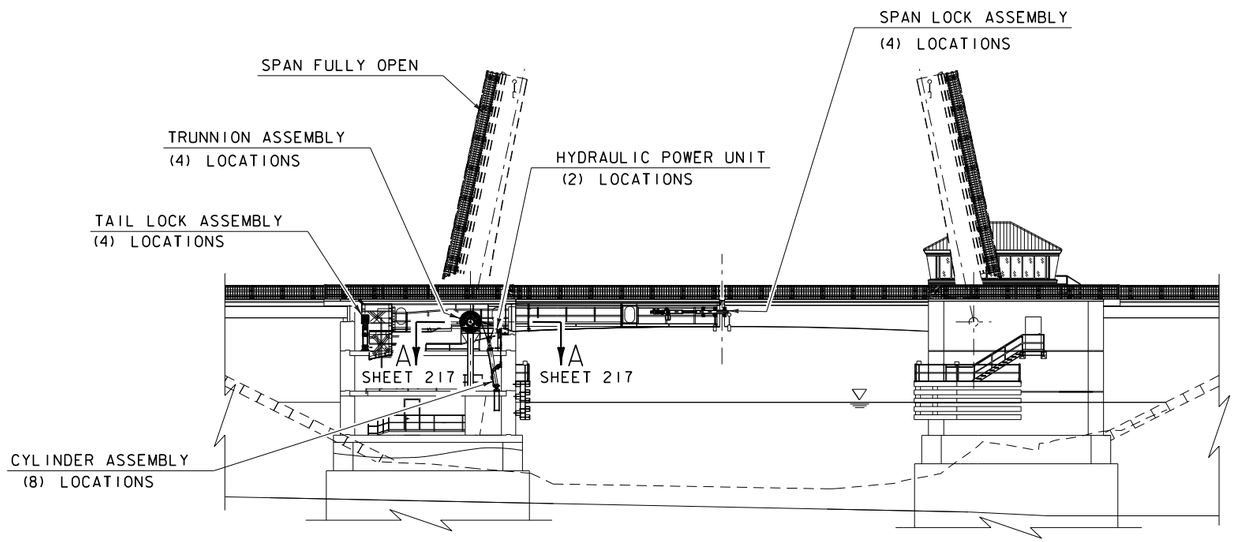
FILE NAME: z12b142mechnote.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: W. KAPLO
MECHANICAL GENERAL NOTES

PLOT DATE: 2/6/2018
DRAWN BY: I. ZIZAOUI
CHECKED BY: P. JAKUBICKI
SHEET 215 OF 379



MACHINERY LOCATION PLAN

SCALE 1/16" = 1'-0"

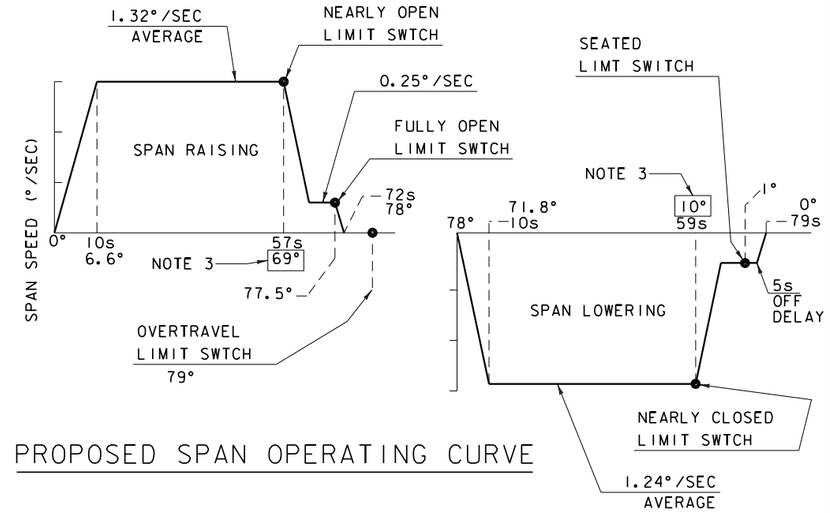


MACHINERY LOCATION ELEVATION

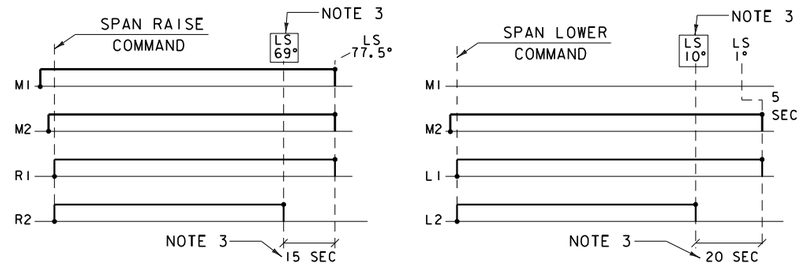
SCALE 1/16" = 1'-0"

SPAN OPERATING TIME

1. OPERATING MACHINERY IS DESIGNED TO ACCELERATE, RUN AT CONSTANT SPEED AND DECELERATE THE SPAN TO THE FULLY OPEN POSITION IN APPROXIMATELY 90 SECONDS. THE FULLY OPEN SPAN ANGLE IS 78° (77.91°).
2. THE SPAN SHALL ACCELERATE UNIFORMLY FROM A STATIONARY POSITION TO FULL SPEED IN APPROXIMATELY 10 SECONDS. THE SPAN SHALL DECELERATE TO CREEP SPEED IN APPROXIMATELY 8 SECONDS.



PROPOSED SPAN OPERATING CURVE



SIGNALS FROM BRIDGE ELECTRICAL CONTROL SYSTEM

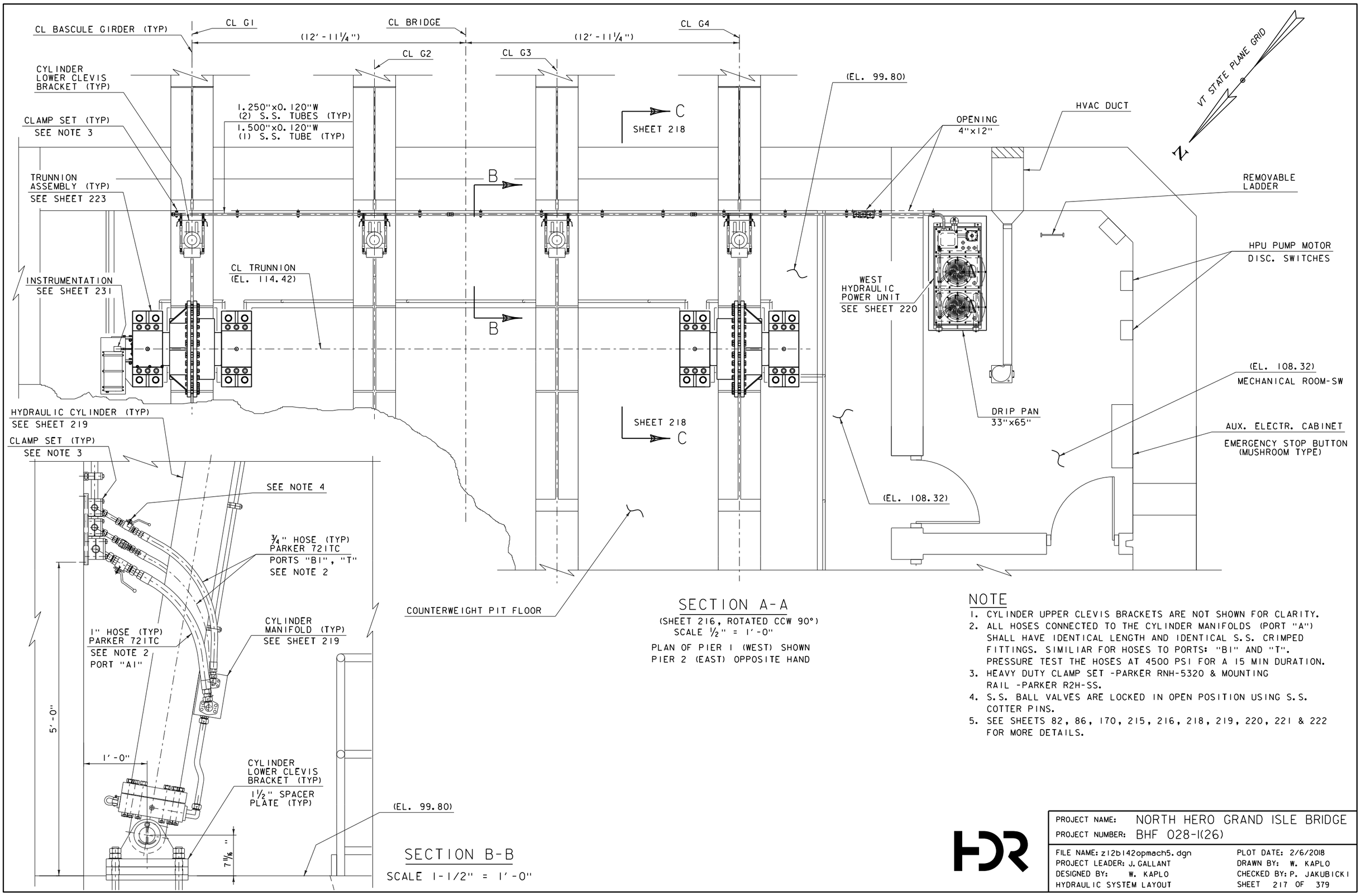
NOTES:

1. MACHINERY TO BE CONSIDERED SYMMETRICAL ACROSS THE CHANNEL CENTER LINE WITH THE EXCEPTION OF THE SPAN LOCKS.
2. "M1" & "M2" (ELECTRIC MOTORS) ARE 460 VAC/3 PH. SIGNALS "R1", "R2", "L1" & "L2" ARE 115 VAC. "R1"-RAISE AT CREEP SPEED. "R2"-RAISE AT FULL SPEED. "L1"-LOWER AT CREEP SPEED. "L2"-LOWER AT FULL SPEED.
3. AFTER (3) SUCCESSFUL OPENINGS, READJUST POSITION OF LIMIT SWITCHES 69° & 10° TO GET TIME INTERVALS APPROXIMATELY 15 SEC & 20 SEC DURING WINDLESS WEATHER.
4. MAXIMUM ALLOWABLE WIND SPEED DURING BRIDGE OPERATION IS 62.5 MPH.

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142mechpe.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: W. KAPLO
MECHANICAL PLAN AND ELEVATION

PLOT DATE: 2/16/2018
DRAWN BY: I. ZIZAOUI
CHECKED BY: P. JAKUBICKI
SHEET 216 OF 379



SECTION A-A

(SHEET 216, ROTATED CCW 90°)
SCALE ½" = 1'-0"

PLAN OF PIER 1 (WEST) SHOWN
PIER 2 (EAST) OPPOSITE HAND

SECTION B-B

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

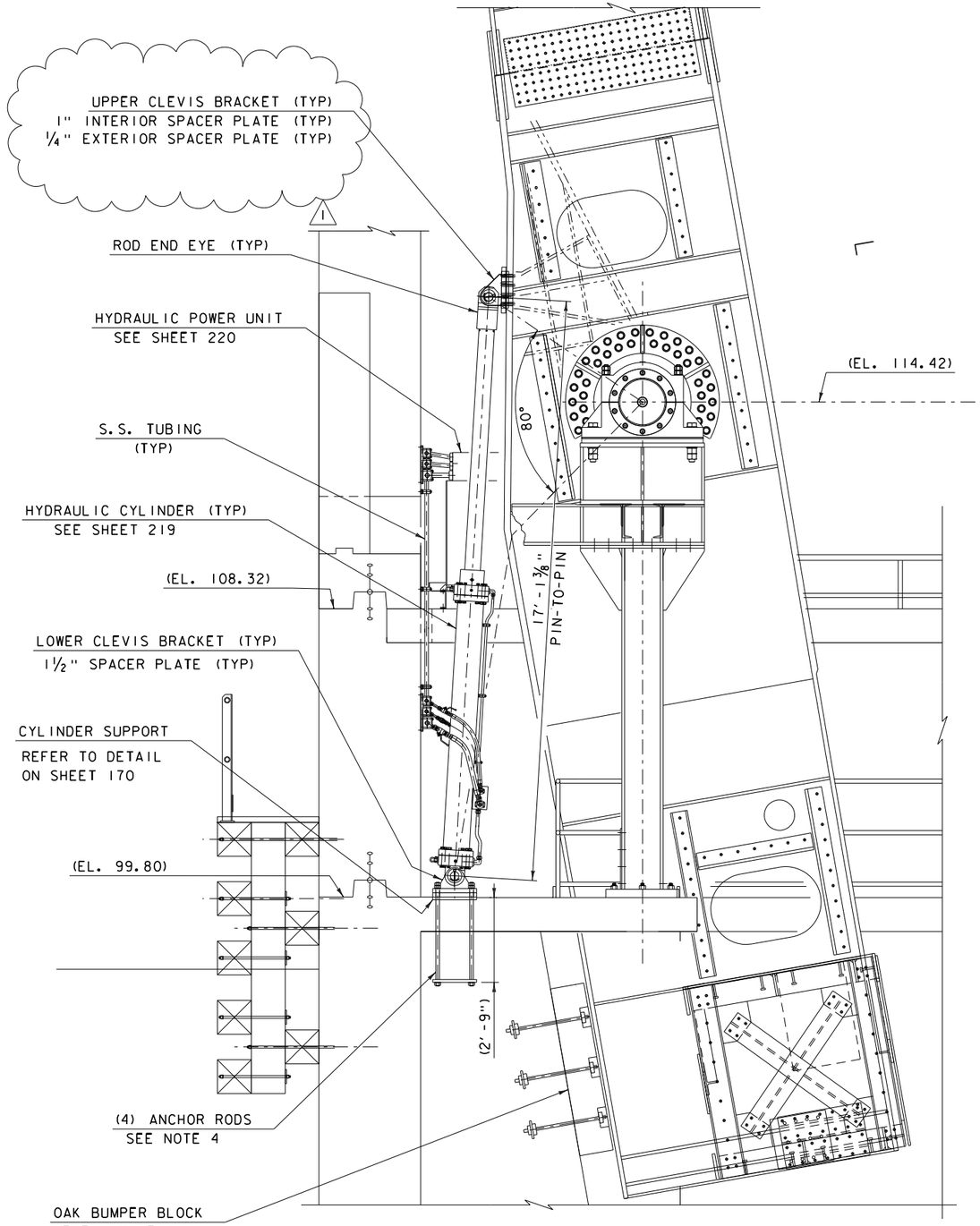
NOTE

1. CYLINDER UPPER CLEVIS BRACKETS ARE NOT SHOWN FOR CLARITY.
2. ALL HOSES CONNECTED TO THE CYLINDER MANIFOLDS (PORT "A") SHALL HAVE IDENTICAL LENGTH AND IDENTICAL S.S. CRIMPED FITTINGS. SIMILIAR FOR HOSES TO PORTS: "B1" AND "T". PRESSURE TEST THE HOSES AT 4500 PSI FOR A 15 MIN DURATION.
3. HEAVY DUTY CLAMP SET -PARKER RNH-5320 & MOUNTING RAIL -PARKER R2H-SS.
4. S.S. BALL VALVES ARE LOCKED IN OPEN POSITION USING S.S. COTTER PINS.
5. SEE SHEETS 82, 86, 170, 215, 216, 218, 219, 220, 221 & 222 FOR MORE DETAILS.

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142opmach5.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: W. KAPLO
HYDRAULIC SYSTEM LAYOUT

PLOT DATE: 2/6/2018
DRAWN BY: W. KAPLO
CHECKED BY: P. JAKUBICKI
SHEET 217 OF 379

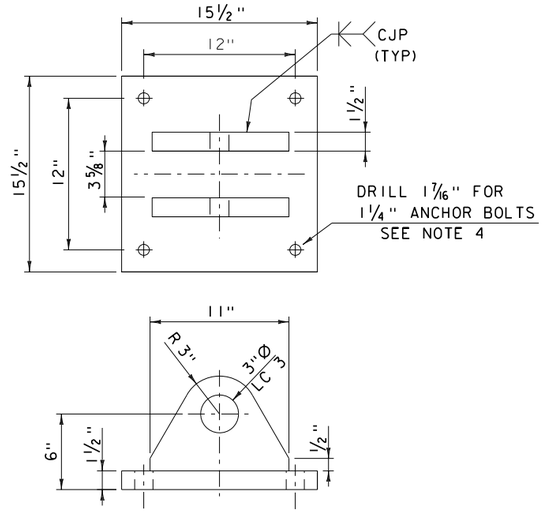


SECTION C-C

(SHEET 217)

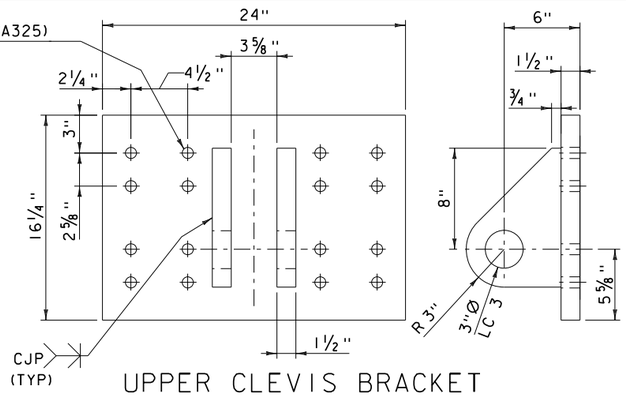
SCALE ½" = 1'-0"

BRIDGE SPAN IS SHOWN OPEN AT 80° AND STOPS AGAINST BUMPERS
DECK AND FENDER NOT SHOWN FOR CLARITY



LOWER CLEVIS BRACKET

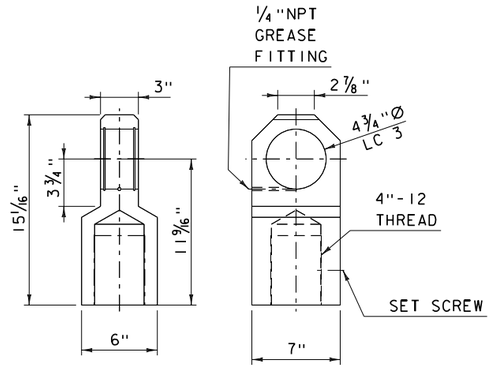
SCALE 2" = 1'-0"
MATERIAL: ASTM A709 GR 50



UPPER CLEVIS BRACKET

(FOR ALL GIRDERS)

SCALE 2" = 1'-0"
MATERIAL: ASTM A709 GR 50



ROD END EYE

SCALE 2" = 1'-0"
MATERIAL: ASTM A668 CL D

NOTE

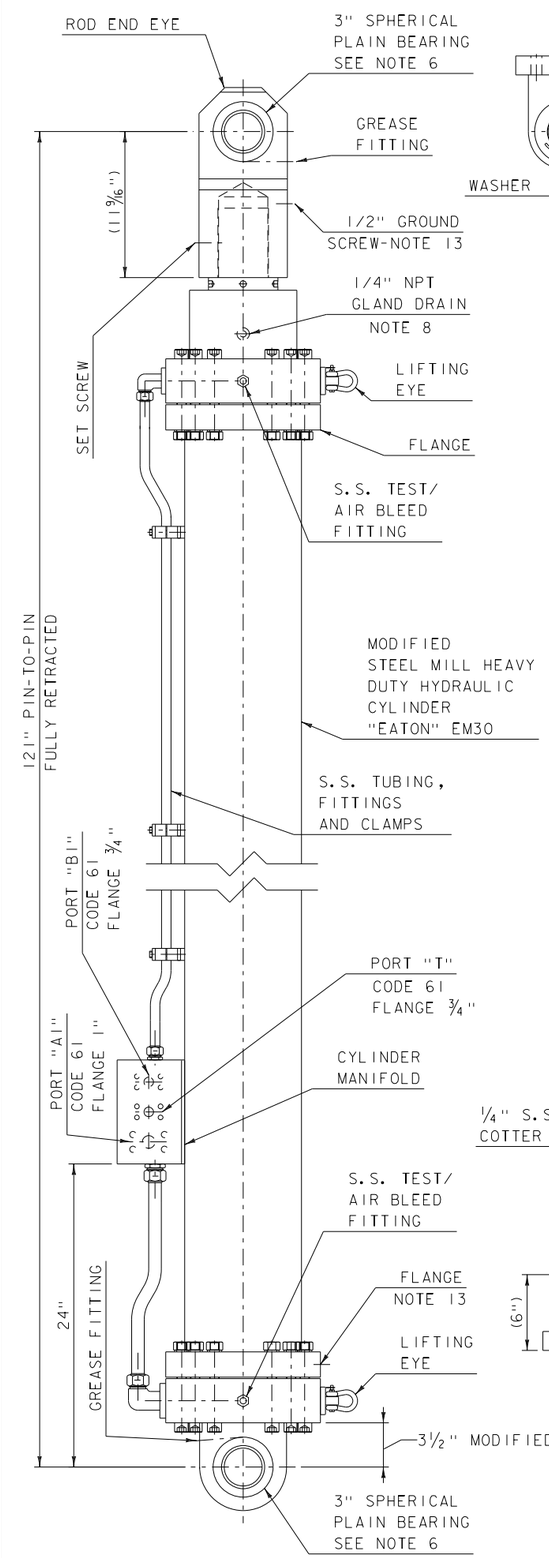
1. CONTRACTOR TO VERIFY MAXIMUM ANGLE OF BRIDGE OPENING IS 80° WHEN BRIDGE SPAN STOPS ON BUMPERS.
2. CONTRACTOR TO VERIFY LIMIT SWITCH SETTINGS: FULLY OPEN 77.5° AND OVERTRAVEL 79°.
3. CYLINDER "PIN-TO-PIN" DIMENSION IS 10'-2¼" WHEN BRIDGE SPAN IS SEATED.
4. 1¼" ANCHOR RODS: ASTM F1554 GRADE 55, HOT-DIP GALVANIZED PER ASTM F2329.
5. SEE SHEETS 82, 86, 170, 215, 216, 217, 219, 221 & 222 FOR MORE DETAILS.
6. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.5 AND SHALL BE TESTED BY ULTRASONIC INSPECTION PER SECTION 208, SPECIAL PROVISION. WELDMENT MACHINING SHALL BE PERFORMED AFTER WELDING AND STRESS RELIEVING.

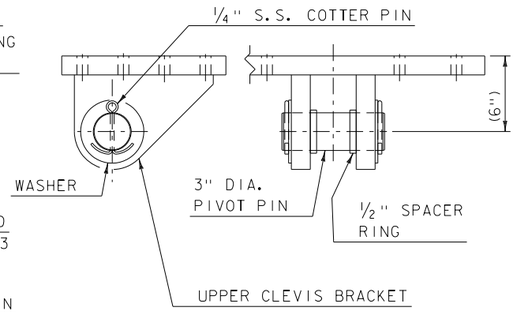
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

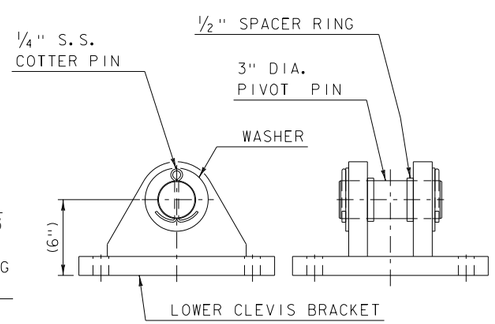
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142opmachl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: W. KAPLO
HYDRAULIC CYLINDER ATTACHMENT

PLOT DATE: 2/6/2018
DRAWN BY: W. KAPLO
CHECKED BY: P. JAKUBICKI
SHEET 218 OF 379







HYDRAULIC CYLINDER ASSEMBLY

SCALE 2" = 1'-0"

NOTES:

1. COMPLETE HYDRAULIC CYLINDER ASSEMBLY CONSISTS OF: STEEL MILL HEAVY DUTY HYDRAULIC CYLINDER, CYLINDER MANIFOLD, TUBING, UPPER CLEVIS BRACKET, (2) PIVOT PINS, SPHERICAL ROD END EYE, LOWER CLEVIS BRACKET AND ONE SET OF SPARE PARTS (ROD SEALS, PISTON SEALS, SLIDE BEARINGS). REFER TO SHEETS 216, 217, 218, 221, 222 AND MECHANICAL SPECIAL PROVISION 900.645 . EIGHT (8) COMPLETE HYDRAULIC CYLINDER ASSEMBLIES ARE REQUIRED FOR THE PROJECT.

2. CYLINDER BORE DIA.: 8", ROD DIA.: 5½", STROKE: 87½". PIN-TO-PIN DISTANCE: 208½" (FULLY EXTENDED), 121" (FULLY RETRACTED). WORKING SPEED OF CYLINDER ROD IS: 0.3 IN/SEC TO 1.4 IN/SEC. RATED OPERATING PRESSURE IS 1500 PSI TO EXTEND, 3000 PSI TO RETRACT. CYLINDER SHALL BE OF STEEL MILL HEAVY DUTY DESIGN, MODIFIED FROM THE "EATON" EM30 SERIES. THE DESIGN SHALL CONFORM TO AASHTO, LRFD 2007 STANDARD SPECIFICATIONS FOR MOVABLE HIGHWAY BRIDGES, ALL INTERIM REVISIONS AND ASME B31.1. FLANGES ARE TO BE WELDED TO THE CYLINDER TUBE. THE CYLINDER HEAD AND CAP MUST BE CONNECTED TO THE CYLINDER FLANGES WITH CORROSION RESISTANT BOLTS. TOTAL WEIGHT OF CYLINDER ASSEMBLY WITH OIL IS APPROXIMATELY 1600 LB.

3. A S.S. NAME PLATE STAMPED WITH MODEL NO., MANUFACTURER, BORE DIA., ROD DIA., STROKE, RATED PRESSURE, TEST PRESSURE AND WEIGHT SHALL BE SECURELY ATTACHED IN THE CAP END AREA. INDIVIDUALLY SERIALIZE EACH CYLINDER. WARNING SAFETY LABELS "HIGH PRESSURE OIL LEAKS" SHALL BE PLACED NEAR THE TEST FITTING/AIR BLEEDS.

4. PROPOSED MATERIALS: THE ROD MATERIAL IS TO BE STAINLESS STEEL ASTM A276 TYPE 316, TRIPLE CHROME PLATED (.004"/.008" TOTAL) PER SAE-AMS-QQ-C-320 CLASS 2E. CHROMED SURFACE ROUGHNESS IS TO BE 8 RMS. THE CYLINDER TUBE MATERIAL IS TO BE ASTM A106-GRADE B OR ASTM A333-GRADE 6, SEAMLESS STEEL TUBE. PRIMARY MATERIALS: UPPER/LOWER CLEVIS BRACKETS (ASTM A709 GRADE 50), PIVOT PINS (ASTM A668 CLASS K), ROD END EYE (ASTM A668 CLASS D), MANIFOLD (ASTM A276 TYPE 316), PISTON (ASTM A536 GRADE 65-45-12), TUBING (ASTM A269 TYPE 304L). THESE MATERIALS SHALL BE CHARPY TESTED. STRESS RELIEVING AFTER WELDING BY CONTROLLED HEATING AND CONTROLLED COOLING IS REQUIRED. ALL SUBASSEMBLIES SHALL BE ULTRASONIC TESTED IN ACCORDANCE WITH ASTM A609, METHOD A, QUALITY LEVEL 3. ALL TEST REPORTS AND MATERIAL CERTIFICATES FROM STEEL MILLS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION. PAINT: PRIMER DAVOE CATHACOAT 302H REINFORCED INORGANIC ZINC RICH PRIMER, 2ND COAT AMERCOAT 385 MULTI-PURPOSE HIGH BUILD EPOXY & TOP COAT AMERCOAT 450 SEMI-GLOSS ALIPHATIC POLYURETHANE TOPCOAT. FEDERAL SAFETY GREEN TOPCOAT FOR FIXED PARTS AND FEDERAL SAFETY ORANGE TOPCOAT FOR MOVING PARTS. MINIMUM 2 MIL DFT IS REQUIRED PER COAT. DO NOT PAINT S.S. TUBING OR S.S. FITTINGS.

5. THE SYSTEM DESIGN IS BASED UPON HYDRAULIC OIL: "MOBIL" DTE10 EXCEL 32, CLEANLINESS LEVEL ISO 18/16/13 TO 20/18/15 (NAS 7 TO 9). RATED FOR OUTDOOR APPLICATION IN A HARSH AIR ENVIRONMENT WITH AMBIENT TEMPERATURE OF 0°F TO 100°F.

6. SPHERICAL PLAIN BEARINGS ARE TO BE "RBC LUBRON" SL30/958/17-4PH OR SIMILAR. INNER RING SHALL BE C95800 BRONZE WITH EMBODIED SOLID LUBRICANT ON THE SPHERICAL SURFACE. OUTER RING SHALL BE 17-4PH STAINLESS STEEL (CONDITION H1025, NOM. HARDNESS 331HB) SEAL-WIPERS FOR BOTH ENDS ARE REQUIRED. THE BEARING HOUSINGS AT THE CAP-END AND ROD-END SHALL BE PROVIDED WITH ZERK GREASE FITTINGS TO FILL THE GAP BETWEEN THE INNER AND OUTER RING WITH GREASE TO KEEP MOISTURE OUT. THE GREASE SHALL BE COMPATIBLE WITH THE SOLID LUBRICANT. ROD-END MOUNTING AND CAP-END MOUNTING OF CYLINDER SHALL ALLOW TRANSVERSE TILT UP TO A 3° ANGLE IN EACH DIRECTION.

7. NO END CUSHIONING IS REQUIRED.

8. THE SPARE ROD SEALS SHALL BE REPLACEABLE WITHOUT DISMANTLING OF THE ROD ATTACHMENT. S.S. ADJUSTING SHIMS SHALL BE PROVIDED TO CORRECT THE COMPRESSION OF THE ROD SEALS DUE TO PACKING WEAR. PROVIDE A GLAND DRAIN PASSAGE (WITH 1/4" NPT PORT) TO REMOVE POTENTIAL ACCUMULATION OF OIL FROM THE CAVITY BEHIND THE GLAND WIPER SEAL. INSTALL OIL INDICATOR.

9. BOTH ROD SEALS AND PISTON SEALS WITH SLIDE BEARINGS SHALL PROVIDE A LONG LIFE FOR THE CYLINDER WITHOUT "STICK-SLIP" BEHAVIOR. CYLINDER DESIGN LIFE SHALL BE BASED ON 25 YEARS OF NORMAL BRIDGE OPERATING SERVICE (APPROXIMATELY 3000 OPERATIONS PER YEAR).

10. BOTH PRESSURE RELIEF VALVES IN THE CYLINDER MANIFOLD SHALL BE FACTORY-SET, WIRE-AND-LEAD SEALED AND STAMPED WITH THE VALVE MANUFACTURER'S LOGO AND SETTING PRESSURE (TAMPER RESISTANT).

11. PRESSURE TEST THE CYLINDER ASSEMBLY IN THE SHOP (CYLINDER, TUBING AND MANIFOLD) AT 4500 PSI FOR BOTH SIDES, FOR A 15 MIN DURATION EACH SIDE. INSPECT FOR DAMAGE OR LEAKS. ANY LEAKAGE SHALL BE JUSTIFICATION FOR REJECTION.

12. ALL PARTS AND CONNECTIONS OF THE CYLINDER ASSEMBLY SHALL HAVE A SAFETY FACTOR OF 4:1 BASED ON MATERIAL ULTIMATE STRENGTH AND 77,900 LBS PUSH-PULL LOAD. THE THREADED CONNECTION BETWEEN THE CYLINDER ROD END AND THE ROD EYE SHALL BE TORQUED TO PRODUCE A JOINT CLAMP TENSILE STRENGTH IN THE ROD EQUAL TO 1% - 5% OF ITS YIELD STRENGTH.

13. BOTH THE CYLINDER FLANGE AND THE ROD END EYE MUST BE ELECTRICALLY BONDED TOGETHER TO THE MAIN BRIDGE GROUND (TO PROTECT FROM STRAY CURRENT). USE FLEXIBLE BARE COPPER BRAID. DO NOT WELD. REFER TO SHEET 303.

14. ALL STEEL MATERIALS TO MEET FHWA BUY AMERICA CERTIFICATION (23 USC 313 AND 23 CFR 635-410).

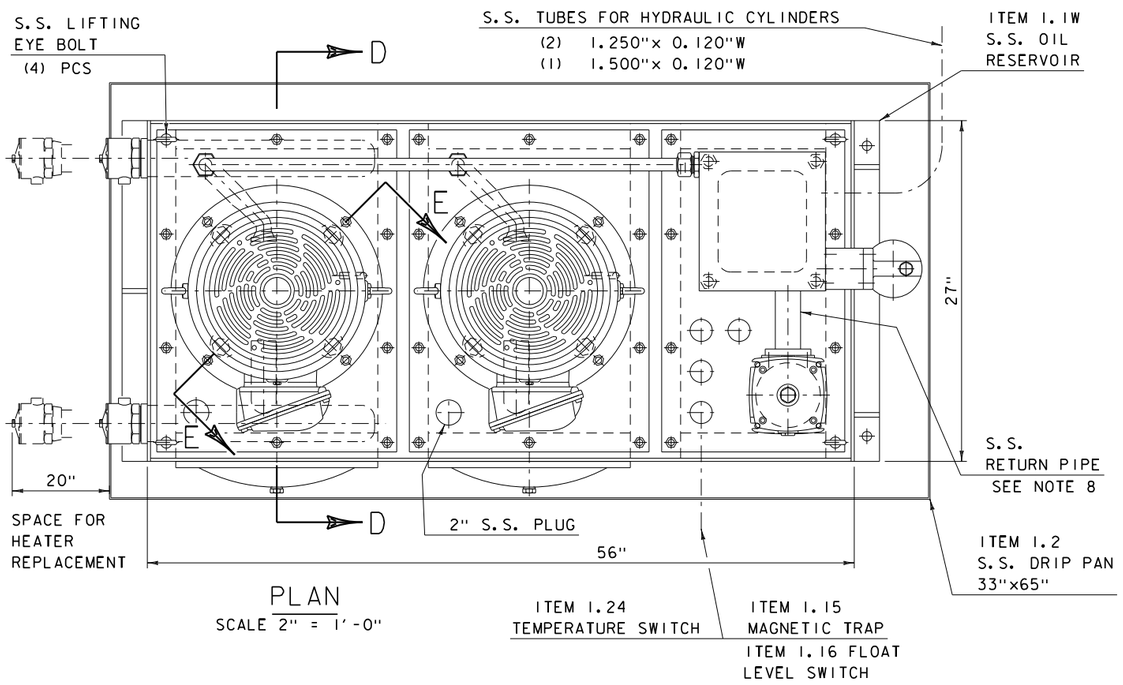
15. PAYMENT WILL BE MADE UNDER PAY ITEM 900.645 SPECIAL PROVISION (HYDRAULIC CYLINDERS).

HDR

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42opmach2.dgn
PROJECT LEADER: T. FRENCH
DESIGNED BY: W. KAPLO
HYDRAULIC CYLINDER ASSEMBLY

PLOT DATE: 2/20/2018
DRAWN BY: W. KAPLO
CHECKED BY: P. JAKUBICKI
SHEET 219 OF 379

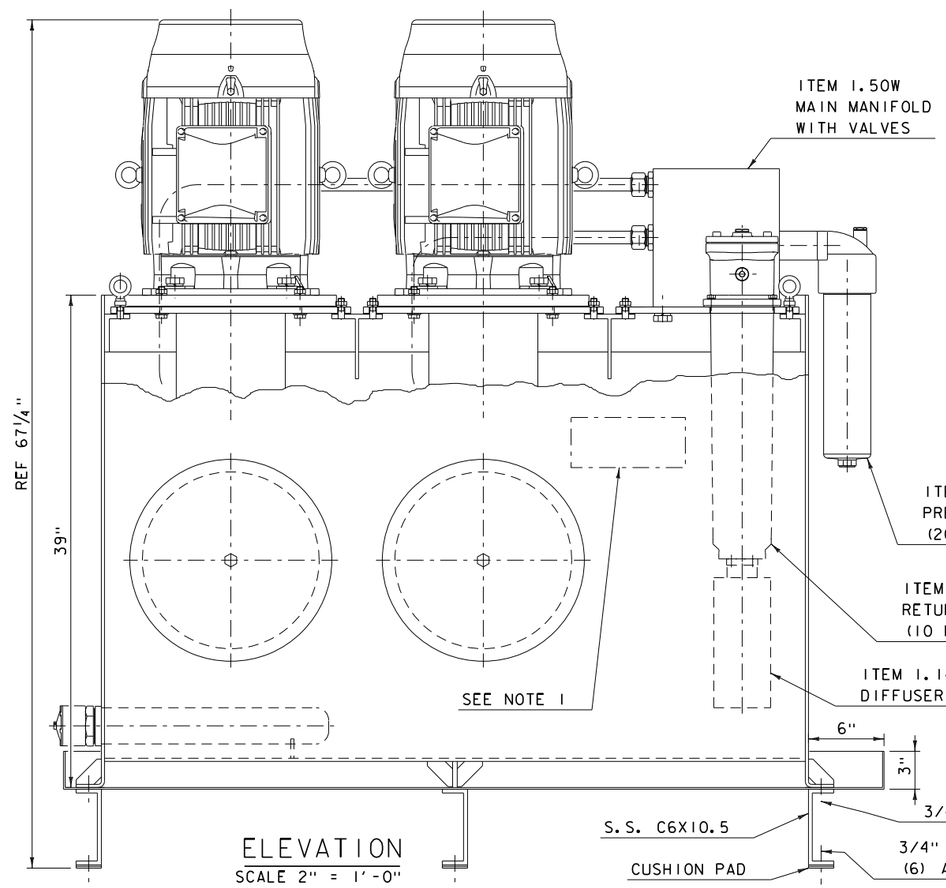


PLAN

SCALE 2" = 1'-0"

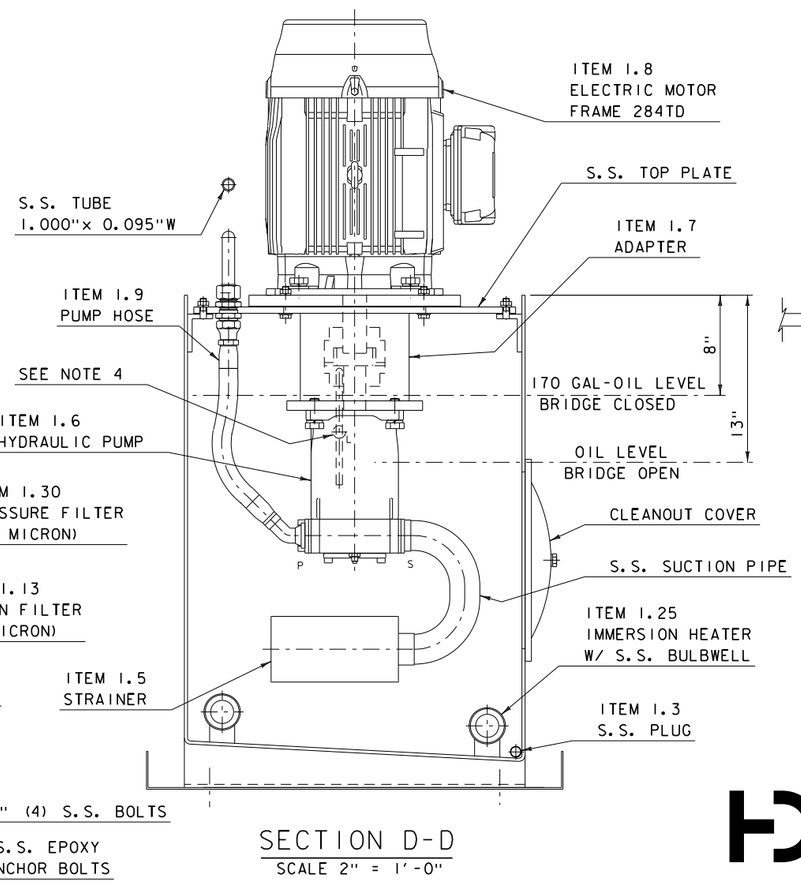
NOTES:

1. WEST HPU FOR PIER 1 IS SHOWN. EAST HPU FOR PIER 2 IS OPPOSITE HAND. TWO (2) HPU'S ARE REQUIRED FOR THE PROJECT. APPLY OIL RESISTANT LABEL STATING: "WEST HYDRAULIC POWER UNIT, HYDRAULIC OIL: MOBIL DTE10 EXCEL 32". APPLY SIMILAR LABEL FOR EAST HPU. HPU FOOTPRINT SHALL NOT EXCEED 48"X72". HPU ASSEMBLY WEIGHT WITHOUT OIL IS APPROXIMATELY 2000 LB, OIL WEIGHT IS 1200 LB.
2. USE A PORTABLE FILTER CART WITH A 10 MICRON ABSOLUTE ELEMENT TO FILL THE RESERVOIR WITH NEW HYDRAULIC OIL MOBIL DTE10 EXCEL 32. CIRCULATE OIL APPROXIMATELY 10 TIMES TO ACHIEVE A CLEANLINESS LEVEL OF ISO 18/16/13 (NAS 7) OR BETTER. FILL PUMP CASES WITH THE CLEAN OIL BEFORE FIRST TIME START-UP.
3. REPEAT OIL CIRCULATION AFTER THE TUBING/HOSES SYSTEM FLUSHING IS COMPLETED.
4. PIPES FOR PUMP CASE DRAINS SHALL HAVE 1/8" HOLES AT THE HIGHEST POINT TO AVOID SIPHONAGE.
5. ALL PARTS INSTALLED INSIDE THE RESERVOIR SHALL BE STAINLESS STEEL OR CORROSION RESISTANT. ALL FASTENERS INSIDE THE RESERVOIR SHALL BE PROTECTED FROM LOOSENING BY S.S. LOCK WIRES.
6. ALL THREADS IN HYDRAULIC CONNECTORS FOR PRESSURE HIGHER THAN 150 PSI MUST BE STRAIGHT THREADS. TAPERED PIPE THREADS ARE UNACCEPTABLE.
7. PROVIDE SAFETY WARNING LABELS SPECIFIC FOR FLUID POWER (HIGH PRESSURE OIL LEAKS).
8. REMOVE S.S. RETURN PIPE AND CONNECT A TEMPORARY AIR/OIL HEAT EXCHANGER IF NECESSARY DURING TESTING OR START-UP.
9. SEE SHEETS 215, 216, 217, 218, 221, 222 AND MECHANICAL SPECIAL PROVISIONS FOR MORE DETAILS. PAYMENT WILL BE MADE UNDER: PAY ITEM 900.645 SPECIAL PROVISION (HYDRAULIC POWER UNITS). THIS PAY ITEM ALSO INCLUDES ALL PLUMBING MATERIALS (TUBINGS, HOSES, BALL VALVES, ETC.) SHOWN ON SHEET 217.



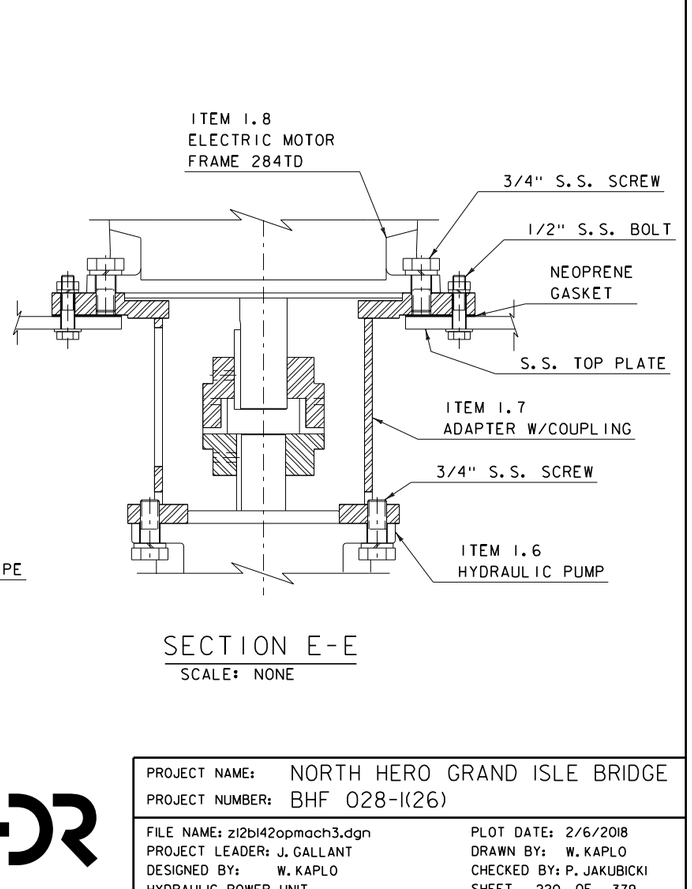
ELEVATION

SCALE 2" = 1'-0"



SECTION D-D

SCALE 2" = 1'-0"



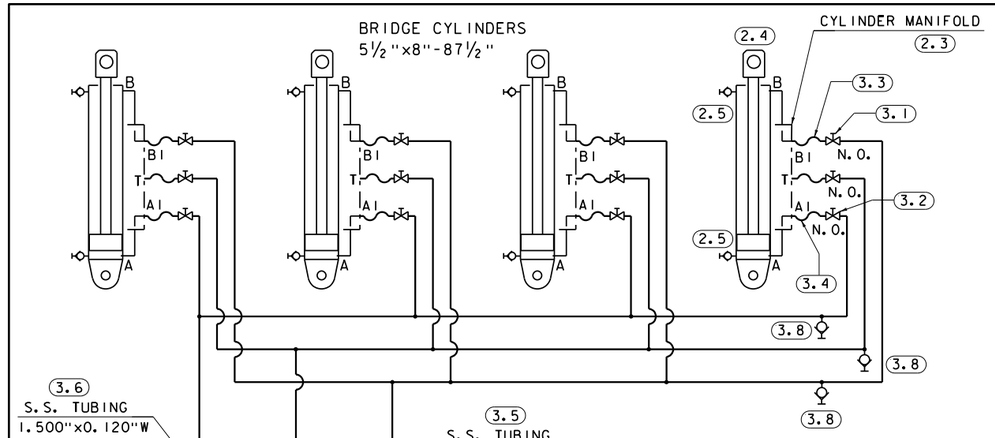
SECTION E-E

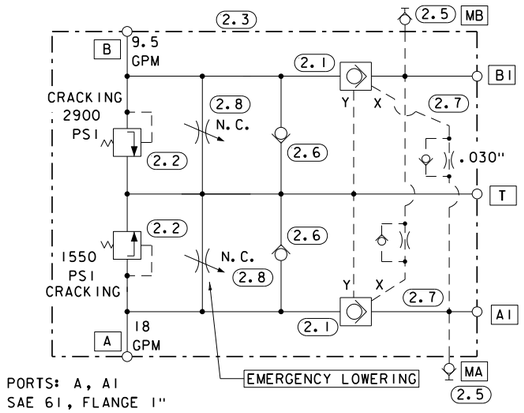
SCALE: NONE

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

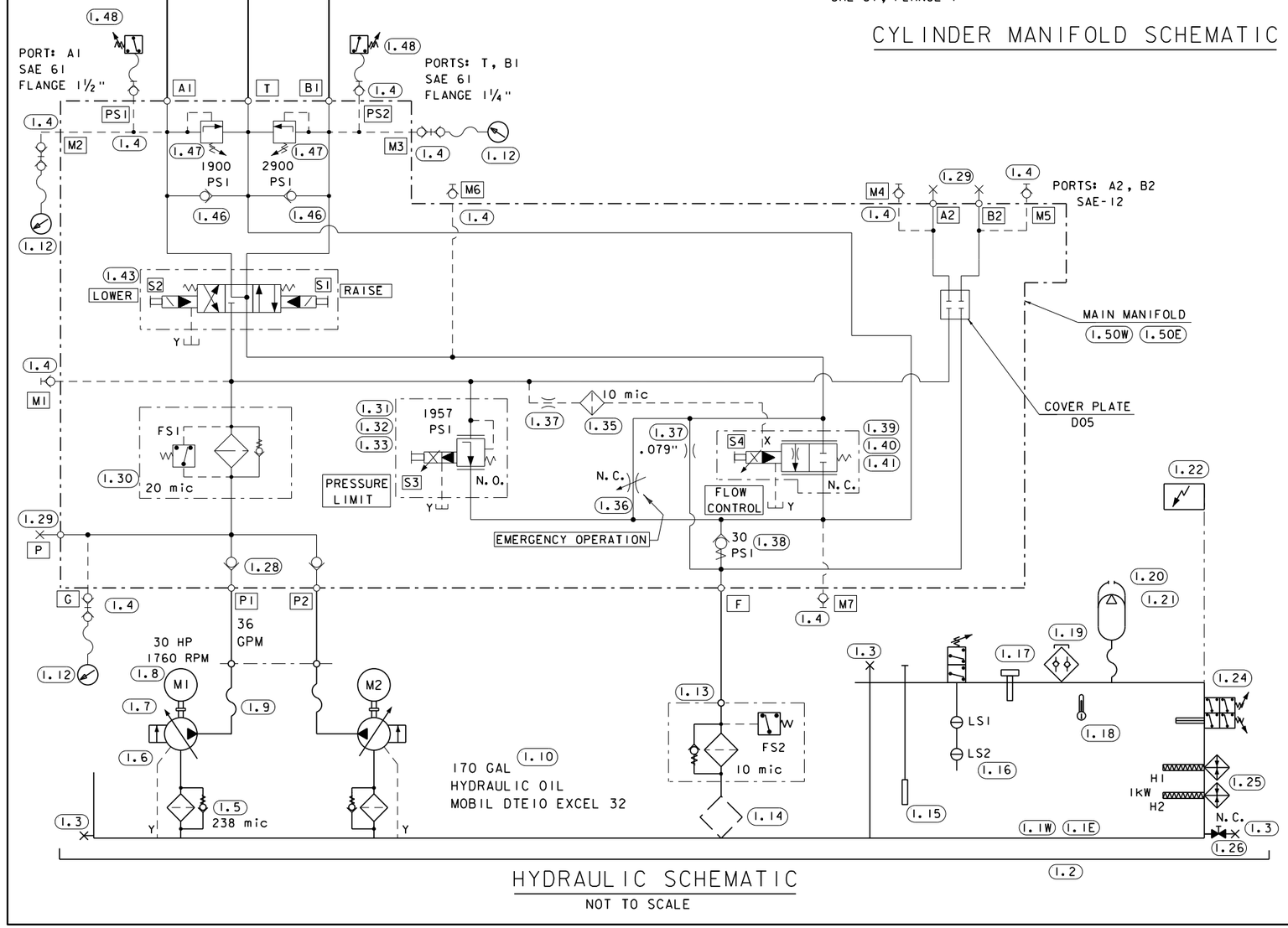
FILE NAME: z12b142opmach3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: W. KAPLO
HYDRAULIC POWER UNIT

PLOT DATE: 2/6/2018
DRAWN BY: W. KAPLO
CHECKED BY: P. JAKUBICKI
SHEET 220 OF 379





CYLINDER MANIFOLD SCHEMATIC



HYDRAULIC SCHEMATIC

NOT TO SCALE

NOTES

1. TWO (2) COMPLETE HYDRAULIC OPERATING SYSTEMS AS SHOWN ARE REQUIRED FOR THE ENTIRE PROJECT. SEE SHEETS 215, 216, 217, 218, 219, 220, 222 AND MECHANICAL SPECIAL PROVISION 900.645 FOR ADDITIONAL INFORMATION.

2. THE MAXIMUM WORKING PRESSURE IS SET BY THE PROPORTIONAL RELIEF VALVE (ITEM 1.31):
- 950 PSI FOR "SPAN RAISE"
- 1450 PSI FOR "SPAN LOWER"
- 250 PSI FOR "SPAN SEATING"

ALL SETTINGS ARE FIELD ADJUSTABLE BY THE CONTRACTOR.

3. HYDRAULIC PUMPS (ITEM 1.6) ARE FACTORY SET FOR A "CUT-OFF" PRESSURE OF 2000 PSI AND A TORQUE LIMIT OF 89.5 FT-LB ("KNEE" PRESSURE IS APPROXIMATELY 1200 PSI). TWO (2) PUMPS OPERATE FOR "SPAN RAISE", ONE (1) PUMP OPERATES FOR "SPAN LOWER".

4. ALL DRAIN LINES "Y" FROM THE MAIN MANIFOLD MUST RUN SEPARATELY AND DIRECTLY TO THE RESERVOIR UNDER OIL LEVEL. NO PRESSURE IN THESE LINES SHALL BE BUILT UP.

5. PRESSURE SWITCHES (ITEM 1.48) ARE USED TO OVERCOME OVER RUNNING LOADS. THEY ARE MOUNTED WITH VIBRATION ISOLATION CLAMPS AND 12" TEST HOSES. THE SWITCH "PSI" CLOSES AT 500 PSI AND OPENS AT 250 PSI FOR "SPAN RAISE". THE SWITCH "PS2" CLOSES AT 750 PSI AND OPENS AT 375 PSI FOR "SPAN LOWER".

6. PRESSURE RELIEF VALVES (ITEM 2.2) IN CYLINDER MANIFOLDS ARE SET, WIRE-AND-LEAD SEALED WITH A STAMP CONTAINING MANUFACTURER'S LOGO AND SETTING PRESSURE. THEY ARE NOT FIELD ADJUSTABLE.

7. SETTINGS FOR TEMPERATURE SWITCH (ITEM 1.24) ARE: 25°F (TS1), 45°F (TS2), 130°F (TS3) AND 150°F (TS4).

8. ALL DESCRIPTIONS IN SQUARE TEXT BOXES [XXXX] MUST BE PERMANENTLY ENGRAVED ON THE MANIFOLDS AND MUST BE LEGIBLE.

9. ALL SOLENOID NUMBERS "S1," "S2," "S3," AND "S4" MUST BE PERMANENTLY ENGRAVED ON BOTH THE MANIFOLD AND THE ELECTRICAL CONNECTORS.

10. SOLENOIDS "S1" AND "S2" SHALL HAVE 96 VDC COILS. THE POWER SUPPLY FOR THE SOLENOIDS SHALL BE 115 VAC. CONNECTORS SHALL HAVE INTEGRATED DC RECTIFIERS AND LED INDICATOR LIGHTS.

11. PROPORTIONAL SOLENOIDS "S3" AND "S4" ARE PARTS OF THE PROPORTIONAL VALVES (ITEMS 1.31 & 1.39). THESE VALVES INCORPORATE ON-BOARD ELECTRONIC AMPLIFIERS. SIGNALS FOR "S3" AND "S4" ARE TO BE 0 TO +10 VDC PROVIDED FROM SEPARATE COMMAND MODULES (ITEMS 1.33 & 1.41). COMMAND MODULES ARE INSTALLED IN THE "HPU CONTROL PANEL" (ITEM 1.22).

12. THE ORIFICES (ITEM 1.37 & ITEM 2.7) ARE PRECISION, SHARP-EDGED ARRANGED WITH EXTERNAL PLUGS FOR EASY CHANGE IN THE FIELD.

13. THE OIL FLOW VELOCITY OF INTERNAL PASSAGEWAYS IN MANIFOLDS SHALL BE LIMITED TO 20 FT/SEC.

14. ALL HYDRAULIC LINES FROM MANIFOLDS TO CYLINDERS "A", "B","AI","BI" AND "T" MUST HAVE "PARKER O-RING FACE SEAL" FITTINGS WITH SAE STRAIGHT THREAD O-RING PORTS OR SAE CODE 61 FLANGE (W/ O-RING) CONNECTIONS.

15. ALL THREADS IN THE HYDRAULIC SYSTEM FOR PRESSURES HIGHER THAN 150 PSI MUST BE STRAIGHT THREADS. TAPERED PIPE THREADS ARE UNACCEPTABLE.

16. HANDLES OF BALL VALVES MUST BE LOCKED IN THE SHOWN POSITION BY S.S. COTTER PINS.

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)

FILE NAME: z12bl42opmach4.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: W. KAPLO
DESIGNED BY: W. KAPLO	CHECKED BY: P. JAKUBICKI
HYDRAULIC SCHEMATIC	SHEET 221 OF 379

TABLE OF HYDRAULIC POWER UNIT MAJOR COMPONENTS

ITEM	QTY.	DESCRIPTION	PART NUMBER	MANUF.
1.1W	1	SS 170 GAL RESERVOIR ASSEMBLY	FOR WEST HPU	CUSTOM
1.1E	1	SS 170 GAL RESERVOIR ASSEMBLY	FOR EAST HPU	CUSTOM
1.2	2	SS DRIP PAN		CUSTOM
1.3	6	SS 1"NPT PLUG		
1.4	22	M16x2 TEST FITTING/AIR BLEED	SMK20-7/16UNF-VE-V2A	STAUFF
1.5	4	SS COARSE STRAINER	MESH #60, FLOW 75 GPM, 3 PSI BYPASS	
1.6	4	HYDRAULIC PUMP	PV-080-R1D3-1V-KLC	PARKER
1.7	4	ADAPTER W/ COUPLING, W/GASKET	BSF P/N 46632-780	BSF
1.8	4	ELECTRIC MOTOR 30 HP/1760 RPM	460 VAC/3 PH, FRAME 284TD, NEMA DESIGN "B"	
1.9	4	1" FLEXIBLE HOSE, 3000 PSI	PARKER 721TC	PARKER
1.10	--	HYDRAULIC OIL	MOBIL DTE10 EXCEL 32	MOBIL
1.11				
1.12	6	PRESSURE GAUGE W/TEST HOSE	5000 PSI(SAE)	
1.13	2	RETURN FILTER (10 MICRON)	RF-BN/HC-330-D-L-10-D-1.X/12-L110	HYDAC
1.14	2	FLOW DIFFUSER	120 GPM	
1.15	2	MAGNETIC TRAP	HD-8 /26" LG. /2"NPT SS PLUG	KEBBY
1.16	2	FLOAT LEVEL SWITCH	SETTINGS: 16" & 20" FROM TOP	
1.17	2	SS OIL FILLER W/PLUG		
1.18	2	SIGHT GLASS W/ TEMP. GAUGE		
1.19	2	AIR PRESSURE/VACUUM VALVE	PN1486670000	PARKER
1.20	2	40 GAL. BREATHER	KV40FOT01A1	PARKER
1.21	2	LOW PRESSURE FLEXIBLE HOSE	FOR BREATHER	
1.22	2	HPU CONTROL PANEL		
1.23				
1.24	2	TEMPERATURE SWITCH W/SS THERMOWELL	SETTINGS: 25°F, 45°F, 130°F & 150°F	
1.25	4	IMMERSION HEATER W/SS BULBWELL	1 kW	WARREN
1.26	2	1" SS LOW PRESSURE BALL VALVE		
1.27				
1.28	4	CHECK VALVE	60 GPM, 15 PSI CRACKING, 3000 PSI	
1.29	6	SS HIGH PRESSURE PLUG		
1.30	2	PRESSURE FILTER (20 MICRON)	DF-BH/HC-280-M-A-20-D-1.X/B6-L110	HYDAC
1.31	2	PROPORTIONAL PRESSURE RELIEF VALVE	DBEME-20-7X/100YG24K31A1V	REXROTH
1.32	2	MATING CONNECTOR	FOR DBEME-20	REXROTH
1.33	2	COMMAND VALUE MODULE (10 SEC RAMP)	VT-SWMA3-5-1X/V0/01	REXROTH
1.34				
1.35	2	CARTRIDGE FILTER (10 MICRON)	CP-C16-W-40-G-10-W-1.0/12	HYDAC
1.36	2	THROTTLE VALVE	50 GPM, 3000PSI	
1.37	4	ORIFICE .079" (2.0 mm)		
1.38	2	CHECK VALVE	120 GPM, 30 PSI CRACKING	
1.39	2	PROPORTIONAL THROTTLE VALVE	4WRZE-10-EA85-7X/6EG24N9K31/A1D3V	REXROTH
1.40	2	MATING CONNECTOR	FOR 4WRZE-10	REXROTH
1.41	2	COMMAND VALUE MODULE (10 SEC RAMP)	VT-SWMA3-5-1X/V0/01	REXROTH
1.42				
1.43	2	SLOW SHIFT DIRECT. CONTROL VALVE	SEE DETAIL ON THIS SHEET	
1.44				
1.45				
1.46	4	CHECK VALVE	5-10 GPM, 30 PSI CRACKING, 3000 PSI	
1.47	4	PRESSURE RELIEF VALVE	5-10 GPM, 3000 PSI	
1.48	4	PRESSURE SWITCH W/12" TEST HOSE	UDS3-13-G-4	BARKSDALE
1.49				
1.50W	1	MAIN MANIFOLD	FOR WEST HPU	CUSTOM
1.50E	1	MAIN MANIFOLD	FOR EAST HPU	CUSTOM

TABLE OF BRIDGE CYLINDER MAJOR COMPONENTS

ITEM	QTY.	DESCRIPTION	PART NUMBER	MANUF.
2.1	16	P.O. CHECK VALVE	SL-10-PA-1-4X/V	REXROTH
2.2	16	PRESSURE RELIEF VALVE	DBDS-20-K1X/200V-E	REXROTH
2.3	8	CYLINDER MANIFOLD	SEE DETAIL SHEET 219 & 221	
2.4	8	BRIDGE CYLINDER	SEE DETAIL SHEET 219	EATON
2.5	32	M16x2 TEST FITTING/AIR BLEED	SMK20-7/16UNF-VE-V2A	STAUFF
2.6	16	CHECK VALVE	20 GPM, 30 PSI CRACKING, 3000 PSI	SUN
2.7	16	THROTTLE/CHECK VALVE (METER-OUT)	FCO8-2OF-O-V-A-10	HYDRAFORCE
2.8	16	NEEDLE VALVE	18 GPM, 3000 PSI, STAINLESS STEEL HOUSING	

TABLE OF HYDRAULIC OPERATING SYSTEM HARDWARE (MAJOR ITEMS)

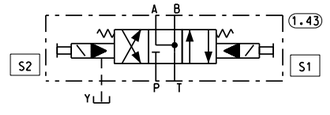
ITEM	QTY.	DESCRIPTION	PART NUMBER	MANUF.
3.1	16	3/4" HIGH PRESSURE BALL VALVE	3000 PSI, STAINLESS STEEL HOUSING	
3.2	8	1" HIGH PRESSURE BALL VALVE	3000 PSI, STAINLESS STEEL HOUSING	
3.3	16	3/4" FLEXIBLE HOSE, 3000 PSI	PARKER 721TC	PARKER
3.4	8	1" FLEXIBLE HOSE, 3000 PSI	PARKER 721TC	PARKER
3.5		1.250"xO.120"W -S.S. SEAMLESS TUBING, S.S. FITTINGS		PARKER
3.6		1.500"xO.120"W -S.S. SEAMLESS TUBING, S.S. FITTINGS		PARKER
3.7		R2H-SS MOUNTING RAILS, RNH-5320 CLAMP SET (HEAVY DUTY)		PARKER
3.8	4	M16x2 TEST FITTING/AIR BLEED	SMK20-7/16UNF-VE-V2A	STAUFF

TABLE OF LOOSE ITEMS AND SPARE PARTS

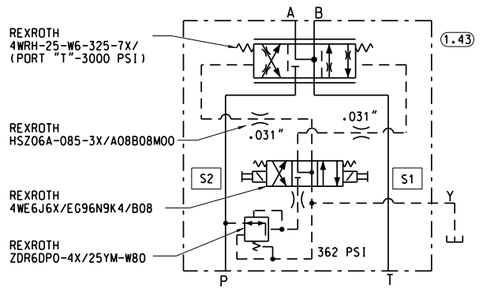
ITEM	QTY.	DESCRIPTION	PART NUMBER	MANUF.
4.1	1	ELECTRIC MOTOR 30 HP/1760 RPM	(SPARE FOR ITEM 1.8)	
4.2	1	HYDRAULIC PUMP	(SPARE FOR ITEM 1.6)	PARKER
4.3	2	PRESSURE SWITCH	(SPARE FOR ITEM 1.48)	BARKSDALE
4.4	1	PRESSURE GAUGE	(SPARE FOR ITEM 1.12)	
4.5	4	COMMAND VALUE MODULE (10 SEC RAMP)	(SPARE FOR ITEM 1.33)	REXROTH
4.6	2	IMMERSION HEATER -1 kW	(SPARE FOR ITEM 1.25)	WARREN
4.7	1	SLOW SHIFT DIRECT. CONTROL VALVE	(SPARE FOR ITEM 1.43)	
4.8	2	PROPORTIONAL PRESSURE RELIEF VALVE	(SPARE FOR ITEM 1.31)	REXROTH
4.9	2	PROPORTIONAL THROTTLE VALVE	(SPARE FOR ITEM 1.39)	REXROTH
4.10	2	CARTRIDGE FILTER (10 MICRON)	(SPARE FOR ITEM 1.35)	HYDAC
4.11	4	FILTER ELEMENT (20 MICRON)	(FOR ITEM 1.30)	HYDAC
4.12	4	FILTER ELEMENT (10 MICRON)	(FOR ITEM 1.13)	HYDAC
4.13	2	P.O. CHECK VALVE	(SPARE FOR ITEM 2.1)	REXROTH
4.14	4	PRESSURE RELIEF VALVE	(SPARE FOR ITEM 2.2)	REXROTH
4.15	1	1" FLEXIBLE HOSE, 721TC	(SPARE FOR ITEM 1.9)	PARKER
4.16	2	3/4" FLEXIBLE HOSE, 721TC	(SPARE FOR ITEM 3.3)	PARKER
4.17	1	1" FLEXIBLE HOSE, 721TC	(SPARE FOR ITEM 3.4)	PARKER
4.18	1	3/4" HIGH PRESSURE BALL VALVE	(SPARE FOR ITEM 3.1)	
4.19	1	1" HIGH PRESSURE BALL VALVE	(SPARE FOR ITEM 3.2)	
4.20	2	TEMPERATURE SWITCH	(SPARE FOR ITEM 1.24)	
4.21	2	TEST HOSE FOR AIR BLEEDING	SMS-20-1000-B-W3	STAUFF
4.22	2	DRUM OF HYDRAULIC OIL	MOBIL DTE10 EXCEL 32	MOBIL
4.23	2	PORTABLE FILTER CART (5 - 10 GPM)	(10 MICRON FILTER ELEMENTS)	
4.24	1	2-TON CAR ENGINE LIFT	(FOR PUMP/MOTOR ASSEMBLY MAINTENANCE)	NORTHERN

NOTES:

1. QUANTITIES SHOWN IN THE TABLES ARE TOTALS FOR THE ENTIRE PROJECT.
2. ITEMS PROVIDED WITHOUT SPECIFIC PART NUMBERS SHALL BE DETERMINED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL. THE MANUFACTURER NAME/PART NUMBERS SPECIFIED ARE ONLY TO DEFINE PERFORMANCE REQUIREMENTS. EQUIVALENT ITEMS FROM DIFFERENT MANUFACTURERS MAY BE SUBSTITUTED AT THE OPTION OF THE CONTRACTOR AND WITH THE APPROVAL OF THE ENGINEER.
3. CONTRACTOR SHALL DETERMINE LOCATION OF BREATHERS (ITEM 1.20) IN MECHANICAL ROOMS AND PLUMB THEM TO THE RESERVOIRS BY LOW PRESSURE FLEXIBLE HOSES (ITEM1.21).
4. SEE SHEETS 217, 219, 220, 221 AND MECHANICAL SPECIAL PROVISION 900.645 FOR MORE INFORMATION.



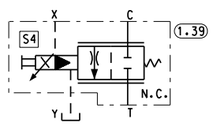
SIMPLIFIED SCHEMATIC (SHEET 221)



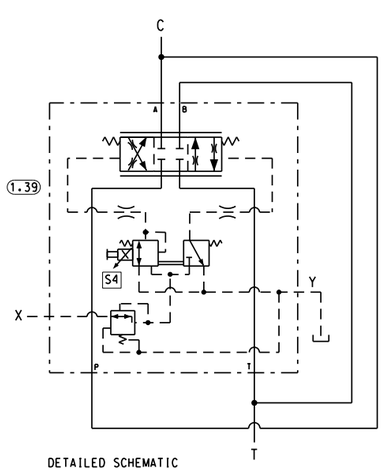
DETAILED SCHEMATIC

SLOW SHIFT DIRECTIONAL CONTROL VALVE

SHEET 221, ITEM 1.43



SIMPLIFIED SCHEMATIC
(SHEET 221)

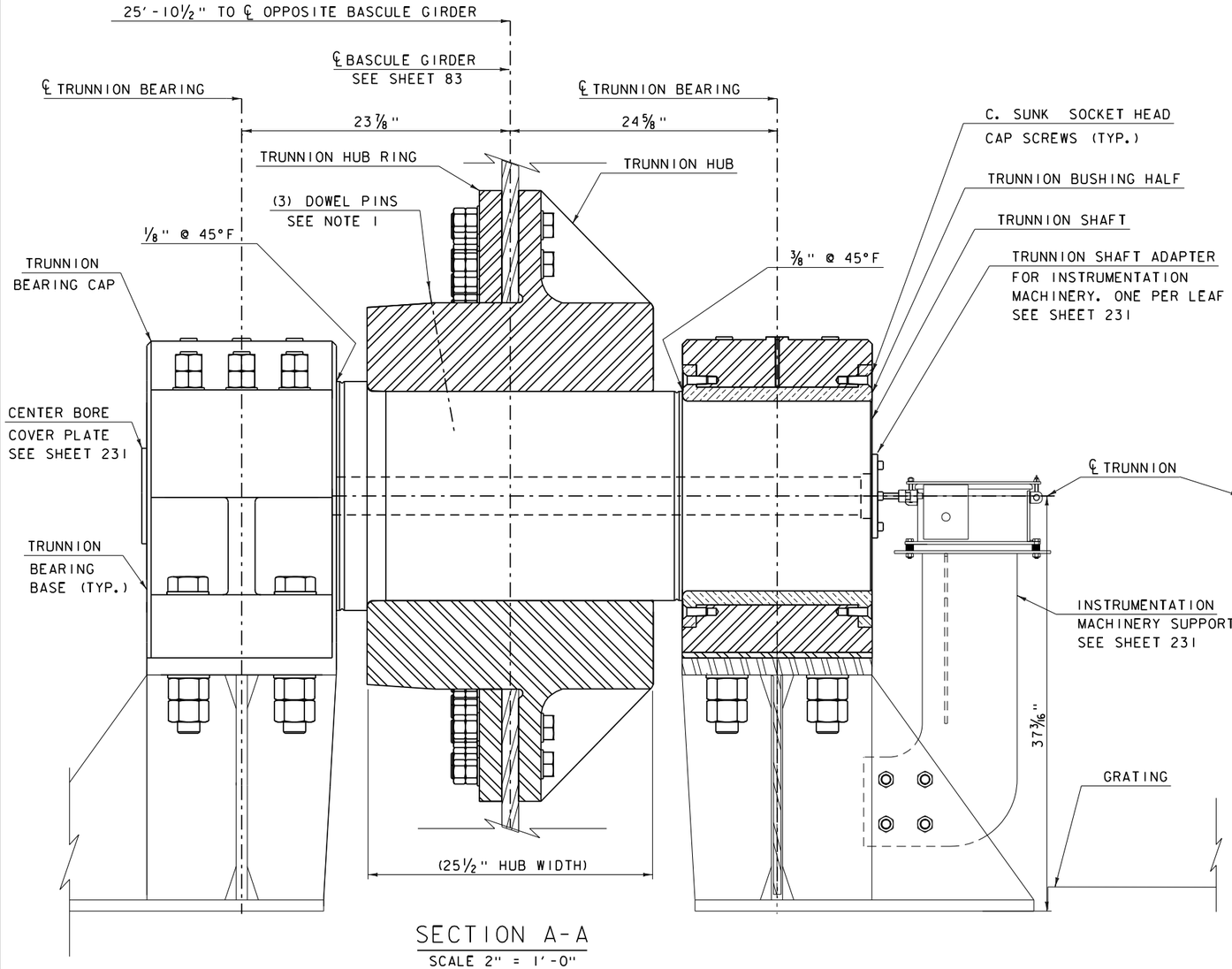


DETAILED SCHEMATIC

PROPORTIONAL THROTTLE VALVE

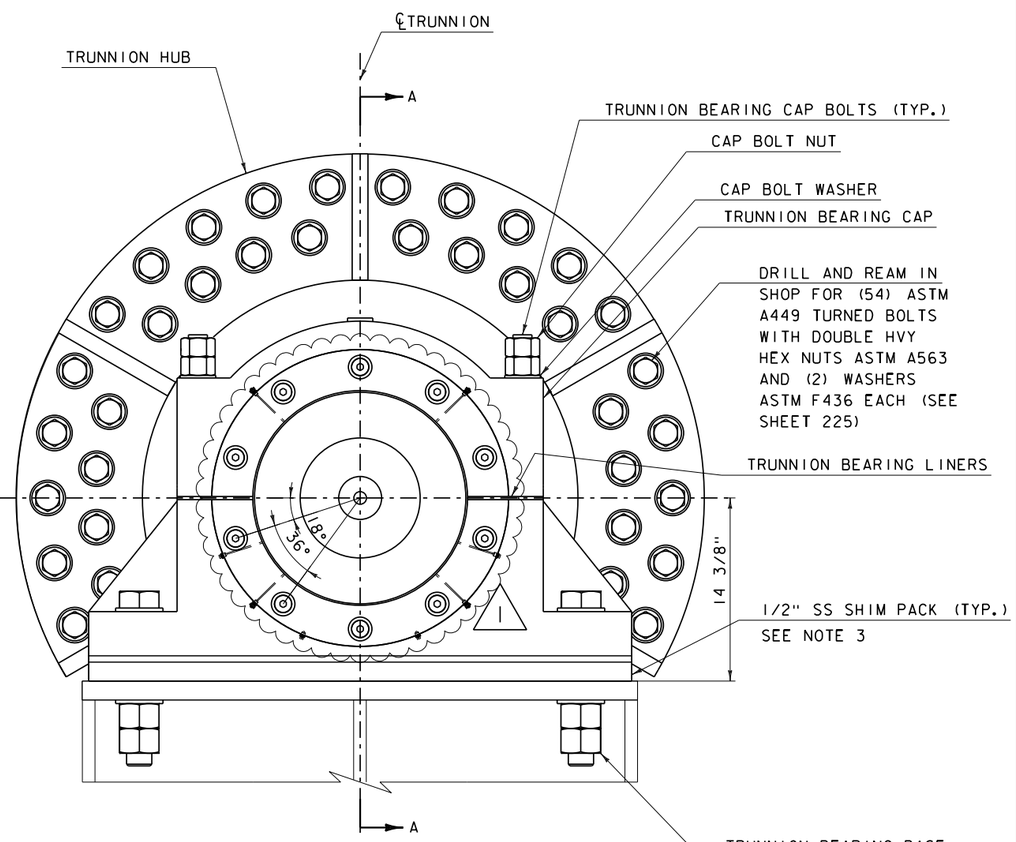
SHEET 221, ITEM 1.39

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142opmach3B.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: W. KAPLO
DESIGNED BY: W. KAPLO	CHECKED BY: P. JAKUBICKI
HYDRAULIC SCHEMATIC DETAILS	SHEET 222 OF 379



SECTION A-A

SCALE 2" = 1'-0"



TRUNNION BEARING ASSEMBLY ELEVATION

SCALE 2" = 1'-0"

INSTRUMENTATION AND SUPPORT
NOT SHOWN FOR CLARITY

TRUNNION BILL OF MATERIALS

ITEM	QTY.	DESCRIPTION	ITEM	QTY.	DESCRIPTION
TRUNNION SHAFT	4	ASTM A668 CL K, SEE DETAIL SHEET 224	CAP BOLT WASHER	48	1 1/2" ASTM F436 WASHER
TRUNNION BUSHING HALF	16	ASTM B22 UNS 91100, SEE DETAIL SHEET 224	TRUNNION BRG. BASE BOLT	32	2" ASTM A449 TURNED BOLT
TRUNNION BEARING CAP	8	ASTM A148 GR 80-50, SEE DETAIL SHEET 224	BASE BOLT NUT	64	2" ASTM A563 HEX NUT
TRUNNION BEARING BASE	8	ASTM A148 GR 80-50, SEE DETAIL SHEET 224	BASE BOLT WASHER	64	2" ASTM F436 WASHER
TRUNNION HUB	4	ASTM A148 GR 90-60, SEE DETAIL SHEET 225	TRUNNION HUB BOLT	216	1 ¼" ASTM A449 HEX BOLT
TRUNNION HUB RING	4	ASTM A572 GR 65, SEE DETAIL SHEET 225	TRUNNION HUB WASHER	432	1 ¼" ASTM F436 WASHER
TRUNNION BEARING SHIM PACK	8	STAINLESS STEEL, 1/2"	TRUNNION HUB NUT	216	1 ¼" ASTM A563 HEX NUT
TRUNNION BRG. CAP BOLT	48	1 1/2" ASTM A449 TURNED BOLT	DOWEL, 2 1/2" DIA.	12	ASTM A668, CLASS K
CAP BOLT NUT	96	1 1/2" ASTM A563 HEX NUT	BEARING LINERS, 1/4" THICK	16	BRASS LAMINATIONS
C. SUNK SOCKET HEAD CAP SCREWS	160	¾" FLAT HEAD CAP SCREW			

NOTES:

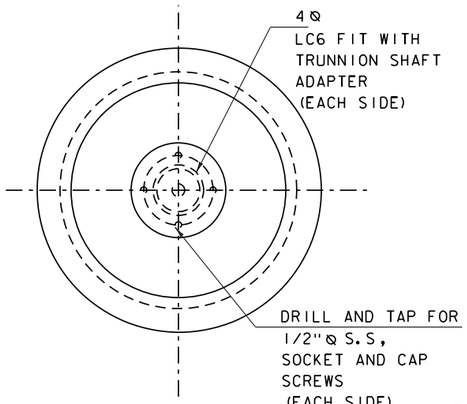
1. TRUNNION HUBS TO BE DOWELED TO TRUNNION SHAFT. 2½" DIA. DOWEL PINS WITH FNI FIT WITH HOLE FOR 3" ON EACH SIDE OF INTERFERENCE. LC3 FIT REMAINING LENGTH. SECURE BY PEENING EDGES OF HOLES. CUT AIR GROOVE IN DOWEL.
2. TRUNNION HUBS, BEARING HOUSINGS AND HUB RINGS TO BE PAINTED. SEE SPECIFICATIONS FOR FURTHER COATING REQUIREMENTS.
3. TO OBTAIN 100% BEARING BETWEEN TRUNNION SHAFT JOURNAL AND MATING BEARING BUSHING, TAPERED SHIMS MAY BE REQUIRED.
4. THE B.O.M QUANTITIES ARE FOR THE ENTIRE BRIDGE. 5. PROVIDE CLEARANCES AT 45°F BETWEEN BRONZE BUSHINGS AND TRUNNION RESULTING IN ¼" TOTAL FLOAT OF THE SPAN BETWEEN BEARINGS.
6. PROVIDE DETAILED ASSEMBLY PROCEDURE OF TRUNNION-HUB-GIRDER-RING FOR APPROVAL.

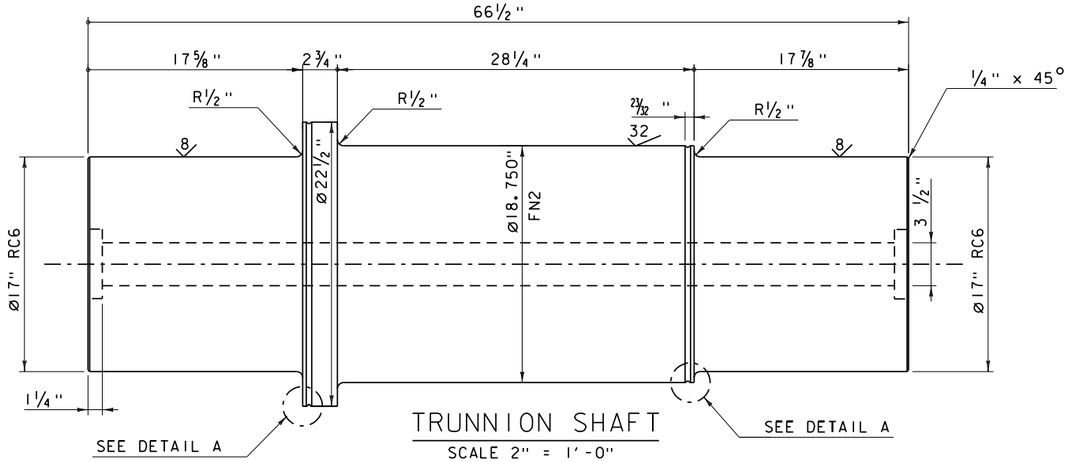
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142supmachi.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: M.CARLTON
TRUNNION ASSEMBLY

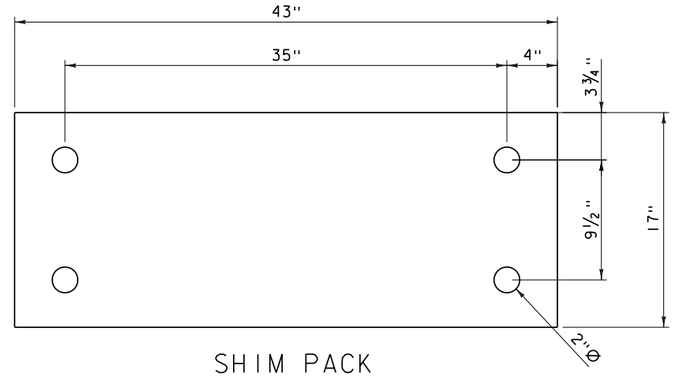
PLOT DATE: 2/6/2018
DRAWN BY: W. KAPLO
CHECKED BY: P. JAKUBICKI
SHEET 223 OF 379





TRUNNION SHAFT

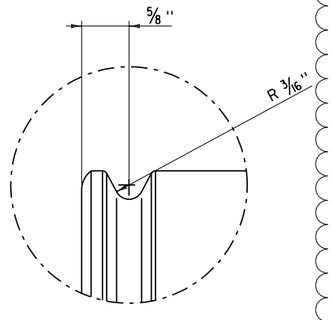
SCALE 2" = 1'-0"
QUANTITY: (4)
MATERIAL: ASTM A668 CL K
STRESS RELIEVE BY CONTROLLED
HEATING AND CONTROLLED COOLING



SHIM PACK

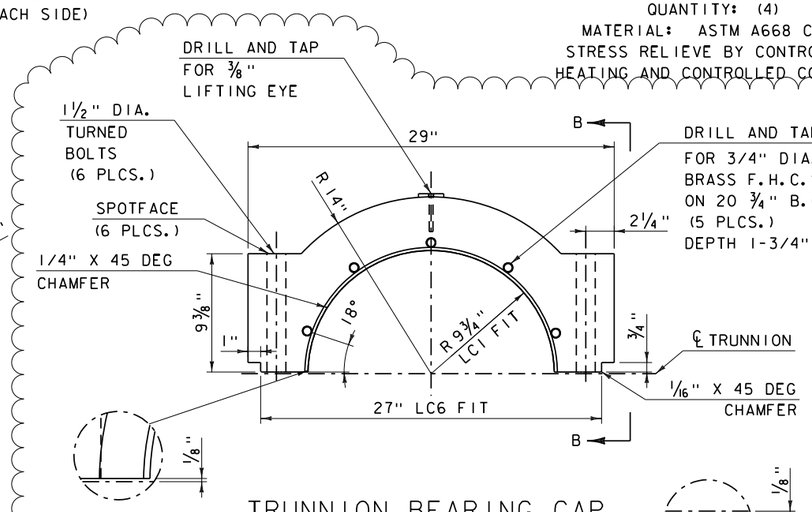
SCALE 2" = 1'-0"
QUANTITY: (8)
MATERIAL: STAINLESS STEEL

FOR BEARING CAP,
ONLY THESE 2 GROOVES
ARE REQUIRED



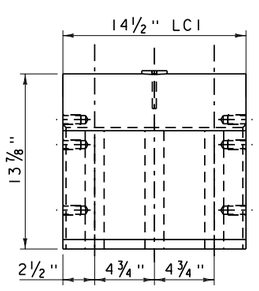
DETAIL A

SCALE 1/8" = 1'-0"



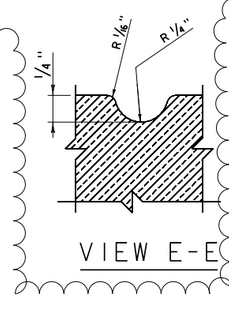
TRUNNION BEARING CAP

SCALE 2" = 1'-0"
QUANTITY: (8)
MATERIAL: ASTM A148 GR 80-50

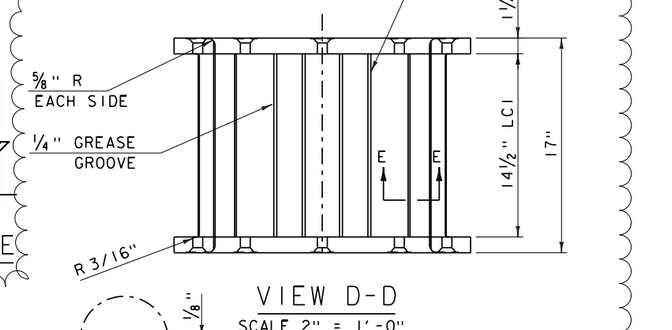


VIEW B-B

SCALE 2" = 1'-0"

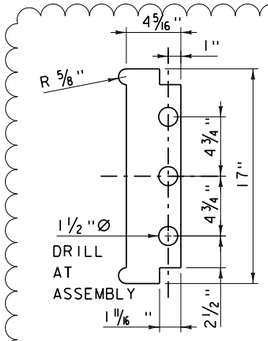


VIEW E-E



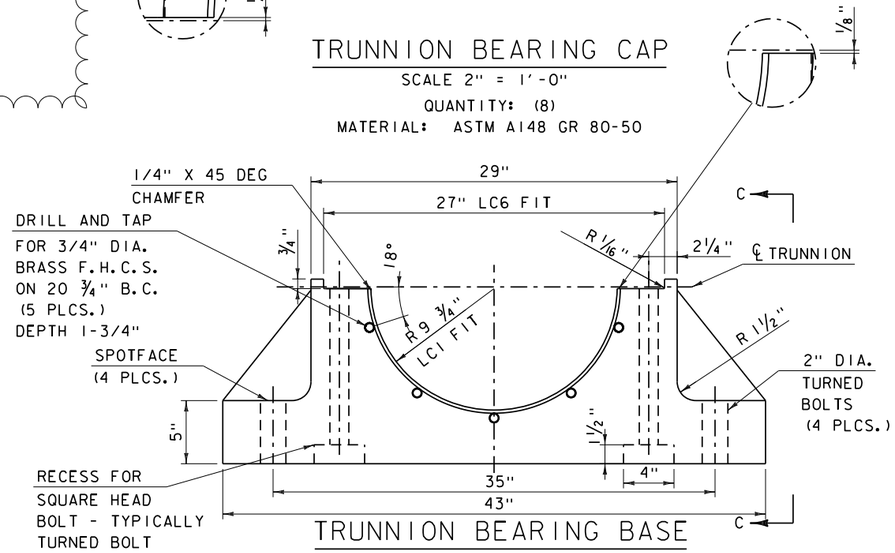
VIEW D-D

SCALE 2" = 1'-0"



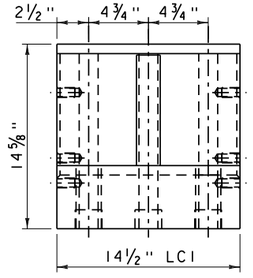
BEARING LINER

SCALE 2" = 1'-0"
QUANTITY: (16)
MATERIAL: BRASS LAMINATIONS
THICKNESS: 1/4"



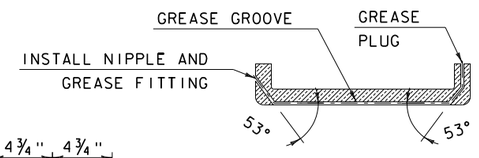
TRUNNION BEARING BASE

SCALE 2" = 1'-0"
QUANTITY: (8)
MATERIAL: ASTM A148 GR 80-50



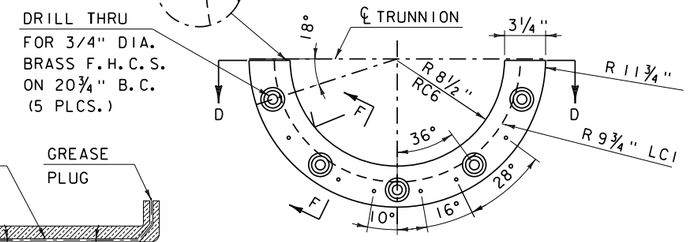
VIEW C-C

SCALE 2" = 1'-0"



VIEW F-F

SCALE 2" = 1'-0"



TRUNNION BUSHING HALF

SCALE 2" = 1'-0"
QUANTITY: (16)
MATERIAL: ASTM B22 UNS 91100

1 NOTES:

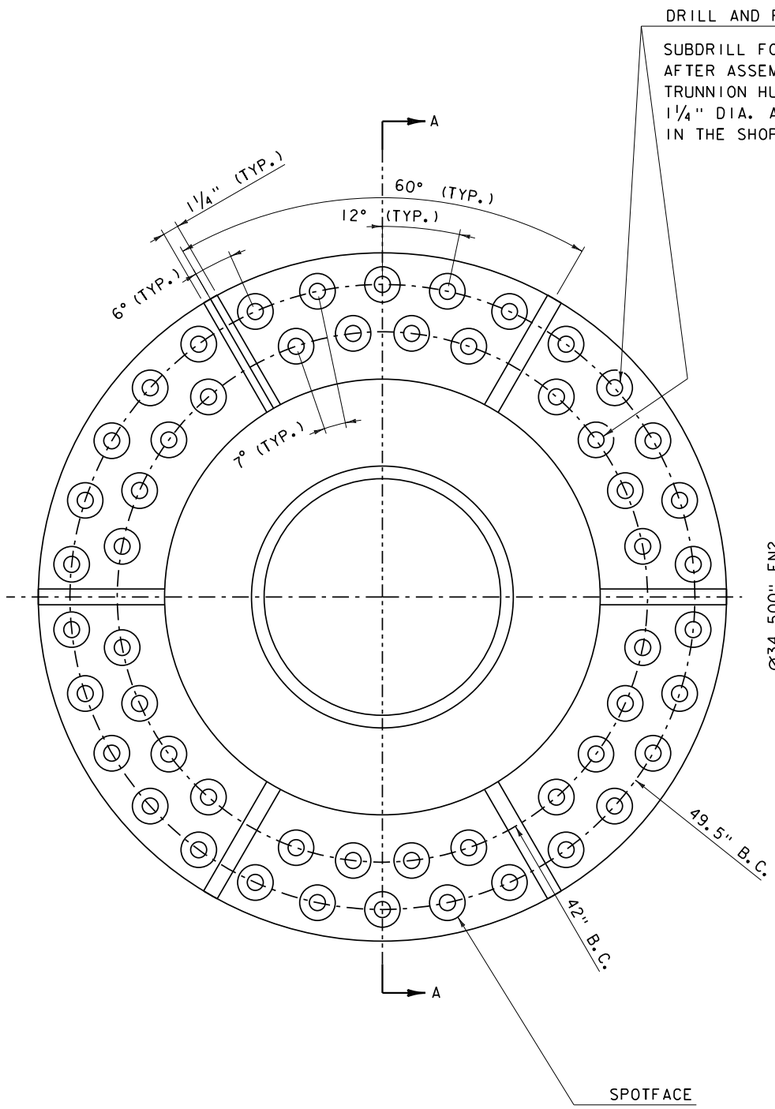
1. TAPERED SHIM MAY BE REQUIRED TO OBTAIN FULL BEARING BETWEEN TRUNNION AND BUSHING.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142supmach2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: M.CARLTON
TRUNNION DETAILS 1

PLOT DATE: 2/6/2018
DRAWN BY: W. KAPLO
CHECKED BY: P. JAKUBICKI
SHEET 224 OF 379



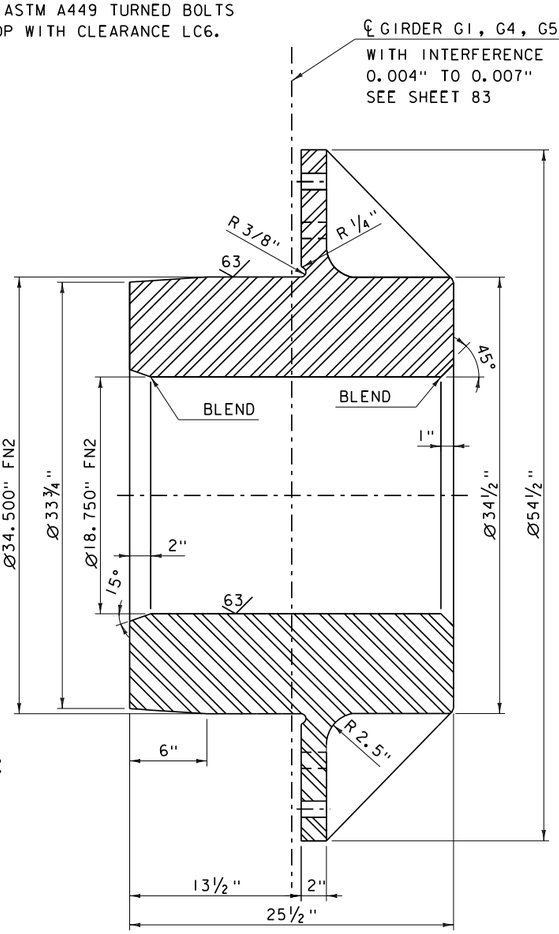
TRUNNION HUB

SCALE 2" = 1'-0"
QUANTITY: (4)
MATERIAL: ASTM A148 GR 90-60
STRESS RELIEVE BY CONTROLLED
HEATING AND CONTROLLED COOLING

DRILL AND REAM IN THE SHOP AT FINAL ASSEMBLY

SUBDRILL FOR 1¼" ASTM A449 TURNED BOLTS. AFTER ASSEMBLY WITH MAIN GIRDER AND TRUNNION HUB RING, DRILL AND REAM FOR 1¼" DIA. ASTM A449 TURNED BOLTS IN THE SHOP WITH CLEARANCE LC6.

℄ GIRDER G1, G4, G5 & G8
WITH INTERFERENCE
0.004" TO 0.007"
SEE SHEET 83

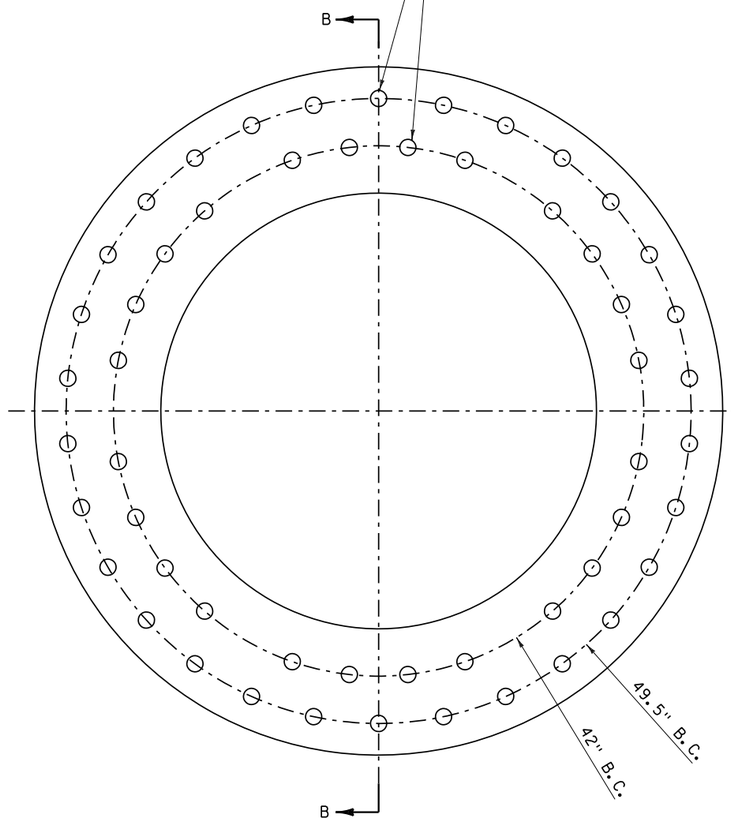


SECTION A-A

SCALE 2" = 1'-0"

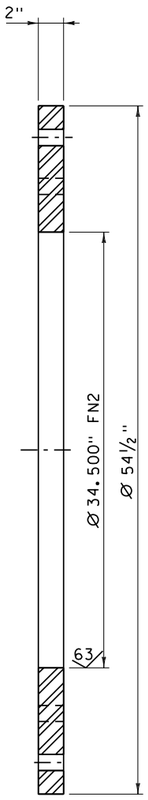
DRILL AND REAM IN THE SHOP AT FINAL ASSEMBLY.

FROM SOLID USING TRUNNION HUB AS TEMPLATE DRILL AND REAM FOR 1¼" DIA. ASTM A449 TURNED BOLTS WITH CLEARANCE LC6.



TRUNNION HUB RING

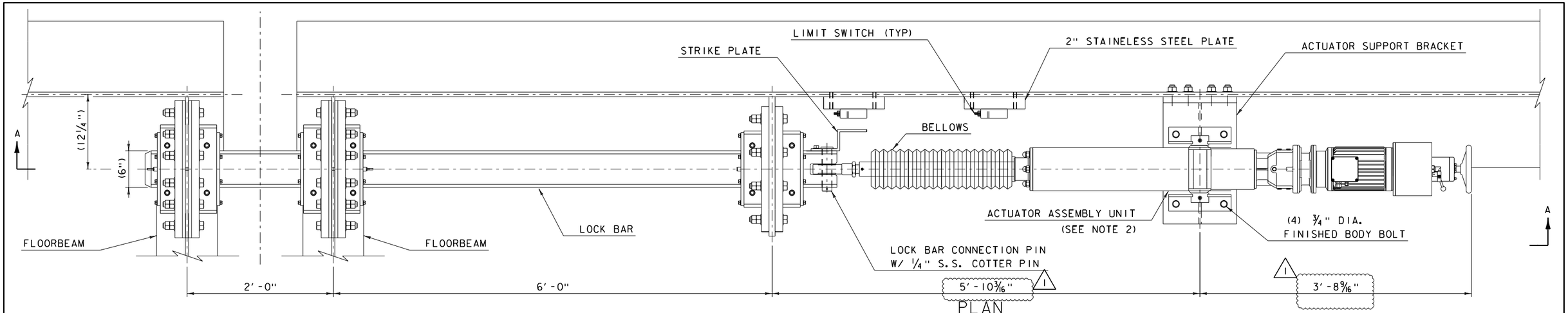
SCALE 2" = 1'-0"
QUANTITY: (4)
MATERIAL: ASTM A572 GR 65
STRESS RELIEVE BY CONTROLLED
HEATING AND CONTROLLED COOLING



SECTION B-B

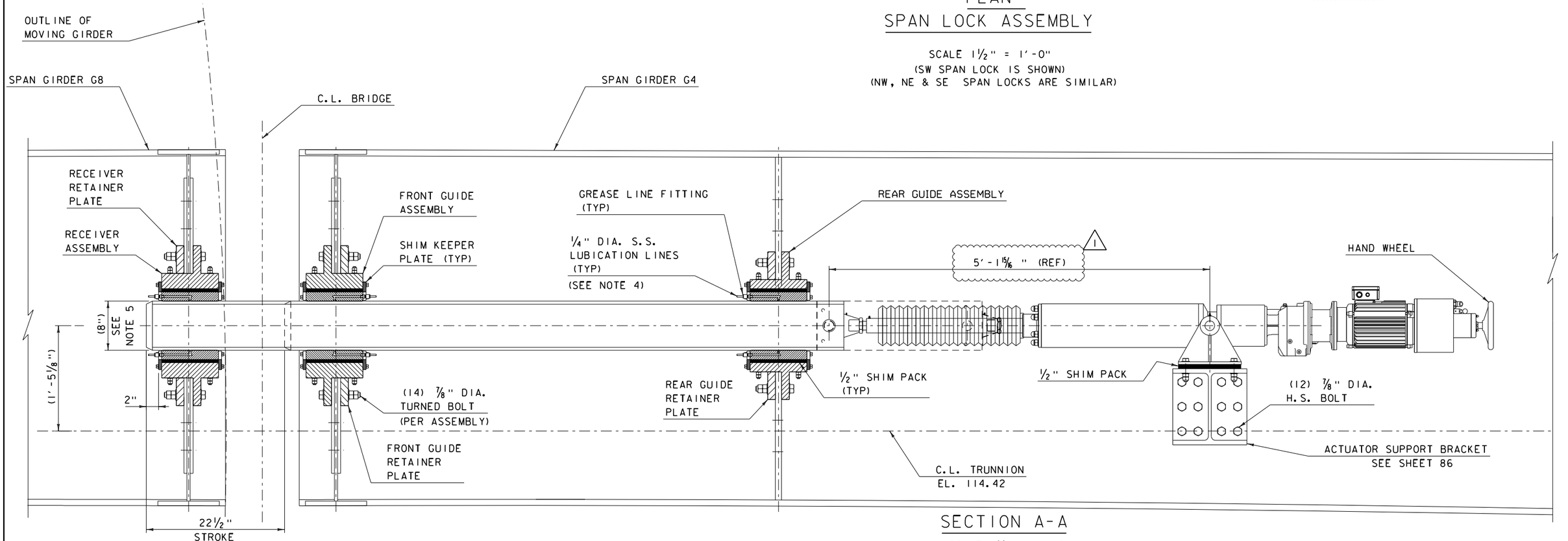
SCALE 2" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142supmach3.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: W. KAPLO
DESIGNED BY: M. CARLTON	CHECKED BY: P. JAKUBICKI
TRUNNION DETAILS 2	SHEET 225 OF 379



PLAN
SPAN LOCK ASSEMBLY

SCALE 1½" = 1'-0"
(SW SPAN LOCK IS SHOWN)
(NW, NE & SE SPAN LOCKS ARE SIMILAR)



SECTION A-A

SCALE 1½" = 1'-0"
(SEE SHEETS 85, 228, 229, & 230 FOR DETAILS)

SPAN LOCK BILL OF MATERIALS	
ITEM	QTY.
ACTUATOR ASSEMBLY UNIT	4
LOCK BAR	4
LOCK BAR CONNECTION PIN	4
FRONT GUIDE ASSEMBLY	4
REAR GUIDE ASSEMBLY	4
RECEIVER ASSEMBLY	4
ACTUATOR SUPPORT BRACKET	4
1/2" SHIM PACK ACTUATOR	8
STRIKE PLATE	4

NOTES:

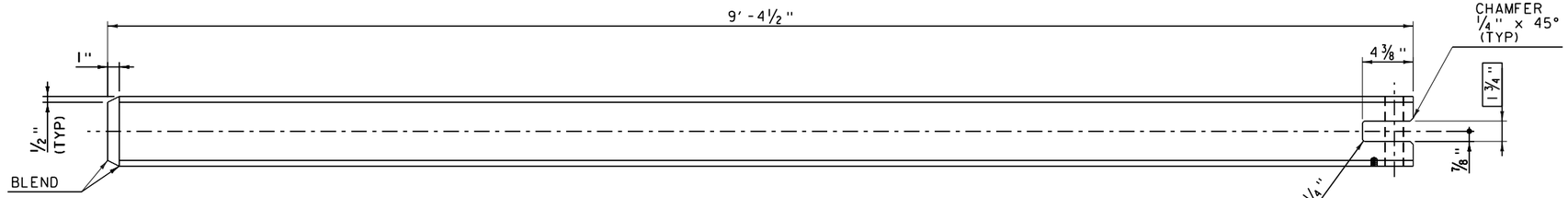
1. SEE SHEET 216 FOR SPAN LOCK LOCATION.
2. DESCRIPTION OF THE ACTUATOR ASSEMBLY UNIT:
   - REQUIRED THRUST FORCE: 6,600 - 9,000 LB, ACME SCREW TYPE
   - ROD SPEED: 2.0 TO 2.5 IN/SEC
   - ROD STROKE: 22½"+3/16" (RESERVE E.S.)=23⅝" TOTAL STROKE
   - SPHERICAL ROD END & TRUNNION MOUNTING BRACKETS
   - ELECTRICALLY RELEASED BRAKE
   - BELLOWS & HAND WHEEL WITH INTERLOCK SWITCH
3. CONTRACTOR TO ENSURE THAT THE LIMIT SWITCH IS PROPERLY MOUNTED AND ADJUSTED PER MANUFACTURERS RECOMMENDATIONS TO OBTAIN THE STROKE AND POSITION OF THE LOCK BAR AS SHOWN IN THE PLANS.
4. PROVIDE ¼" DIA. S.S. LUBRICATION LINES CONNECTING TO S.S. GREASE STATION IN AN EASY ACCESSIBLE PLACE. DETAIL LUBRICATION SYSTEM IN SHOP DRAWINGS.
5. RECEIVER AND GUIDE SHOES SHALL BE PARALLEL WITH LOCK BAR WITHIN 0.005"/FT. AT ASSEMBLY THIS SHALL BE CHECKED TOP AND BOTTOM WITH FEELER GAUGES AT EACH END OF THE SHOE. TAPERED SHIMS BETWEEN THE HOUSING AND STRUCTURE MAY BE REQUIRED.

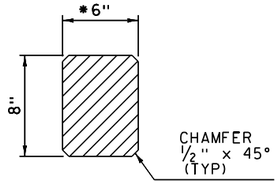
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04/29/2020	POST AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

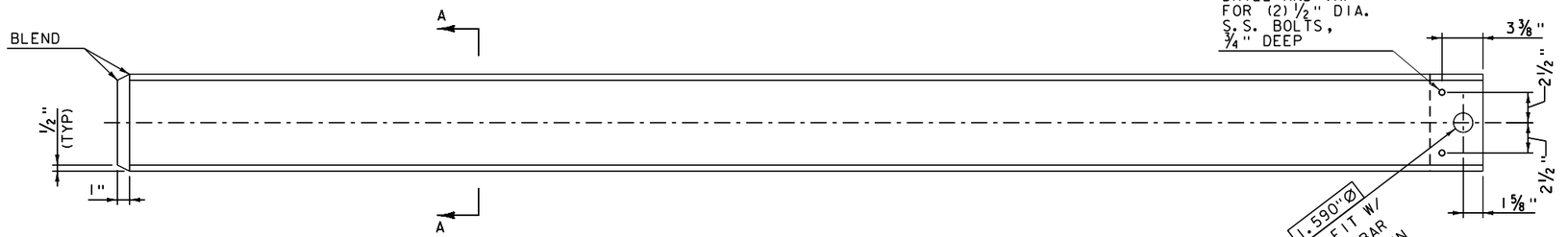
FILE NAME: z12b142supmach4.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: M.CARLTON
SPAN LOCK ASSEMBLY

PLOT DATE: 2/6/2018
DRAWN BY: B.CURRAN
CHECKED BY: P. JAKUBICKI
SHEET 226 OF 379



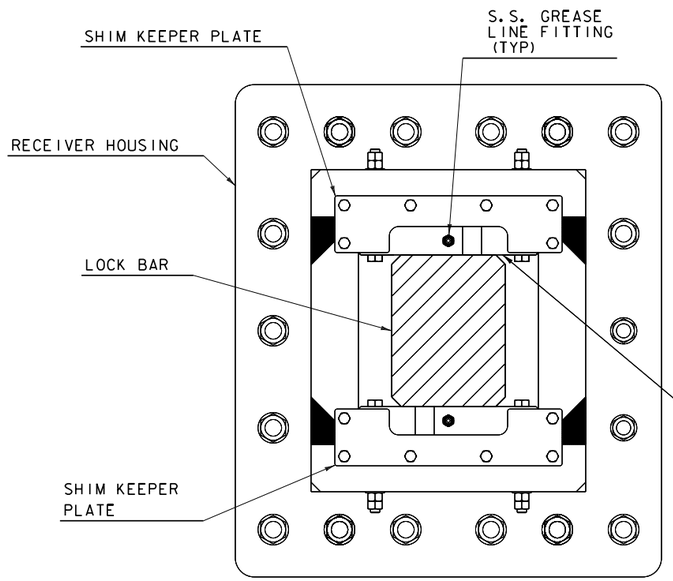


SECTION A-A



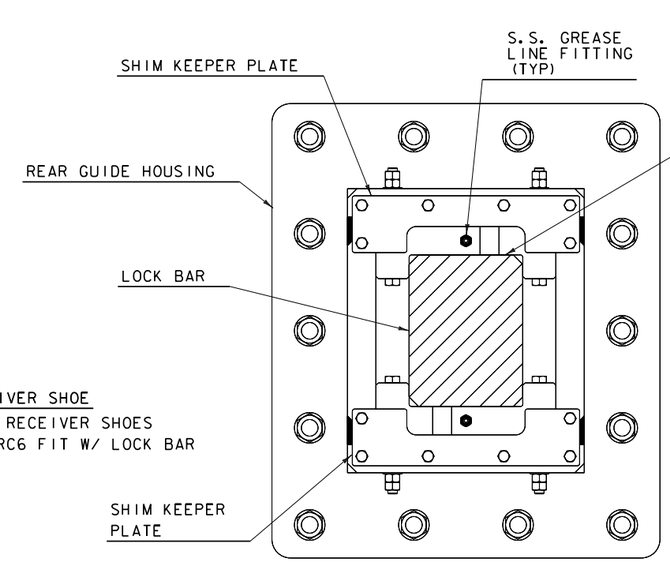
LOCK BAR

QUANTITY: (4)
MATERIAL: ASTM A668 CL J
* RC9 FIT W/ GUIDE SHOES



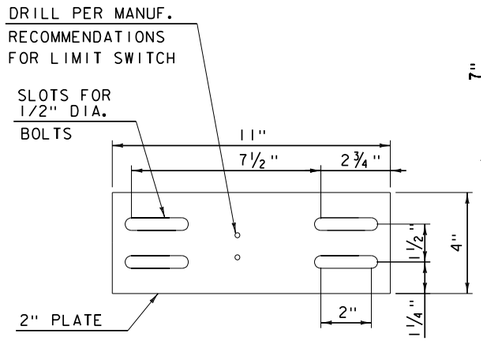
RECEIVER ASSEMBLY

SCALE 2" = 1'-0"



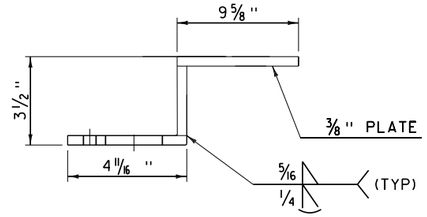
REAR GUIDE ASSEMBLY

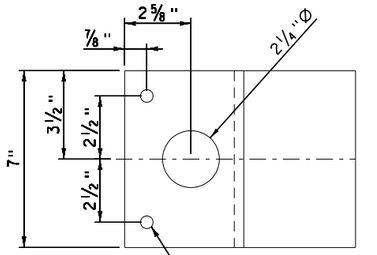
SCALE 2" = 1'-0"



LIMIT SWITCH PLATE

QUANTITY: (8)
MATERIALS: 300 SERIES STAINLESS STEEL

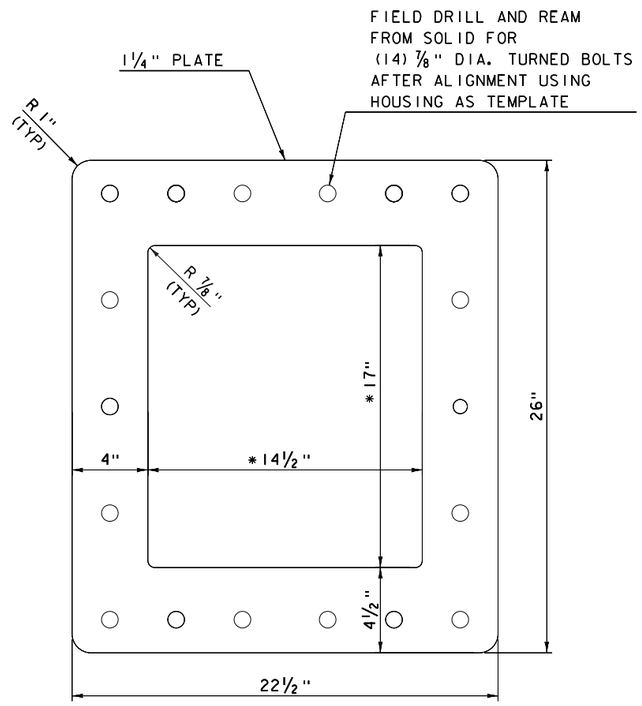




STRIKE PLATE

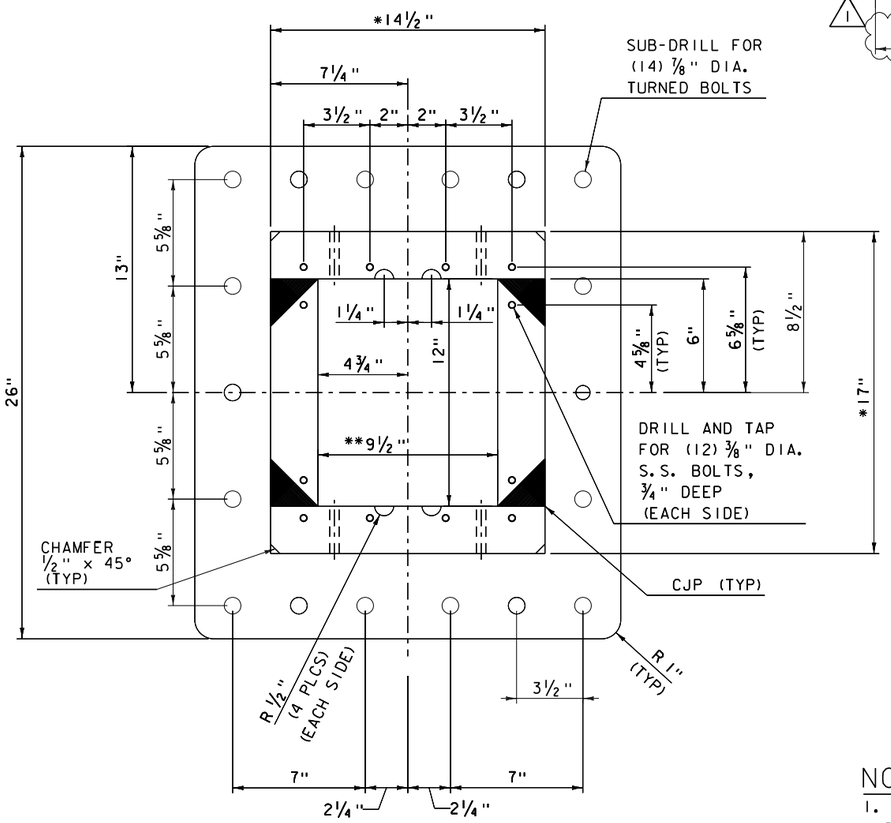
QUANTITY: (4)
MATERIALS: STEEL

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12bl42supmach5.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: B.CURRAN
DESIGNED BY: M.CARLTON	CHECKED BY: P. JAKUBICKI
SPAN LOCK DETAILS	SHEET 227 OF 379



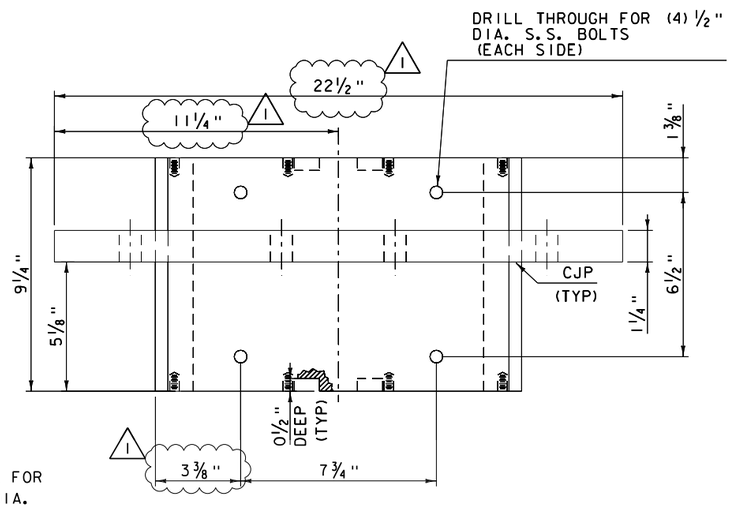
FRONT GUIDE AND RECEIVER RETAINER PLATE

QUANTITY: (8)
MATERIALS: ASTM A36
*LC5 FIT W/ FRONT GUIDE AND RECEIVER HOUSING



FRONT GUIDE AND RECEIVER HOUSING

QUANTITY: (8)
MATERIALS: ASTM A36
*LC5 FIT W/ FRONT GUIDE AND RECEIVER RETAINER PLATE
** LC4 FIT W/ GUIDE SHOES



NOTE

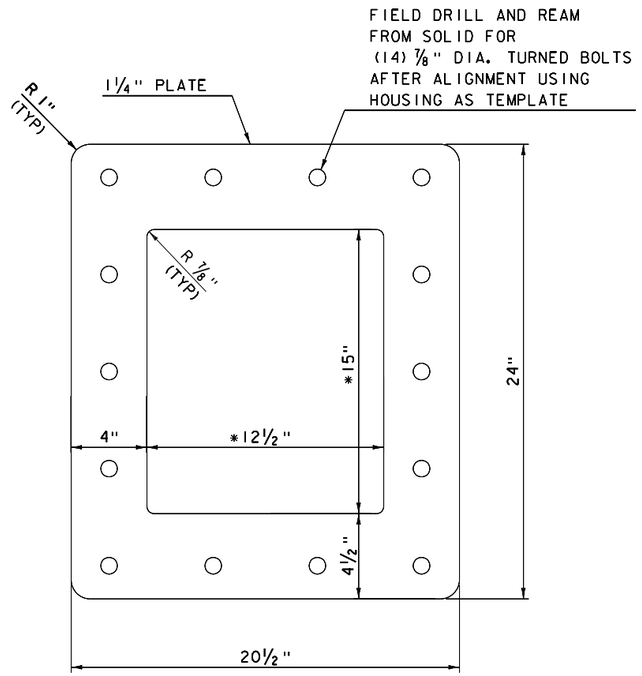
1. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.5 AND SHALL BE TESTED BY ULTRASONIC INSPECTION PER SECTION 208, SPECIAL PROVISION. WELDMENT MACHINING SHALL BE PERFORMED AFTER WELDING AND STRESS RELIEVING.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	4-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

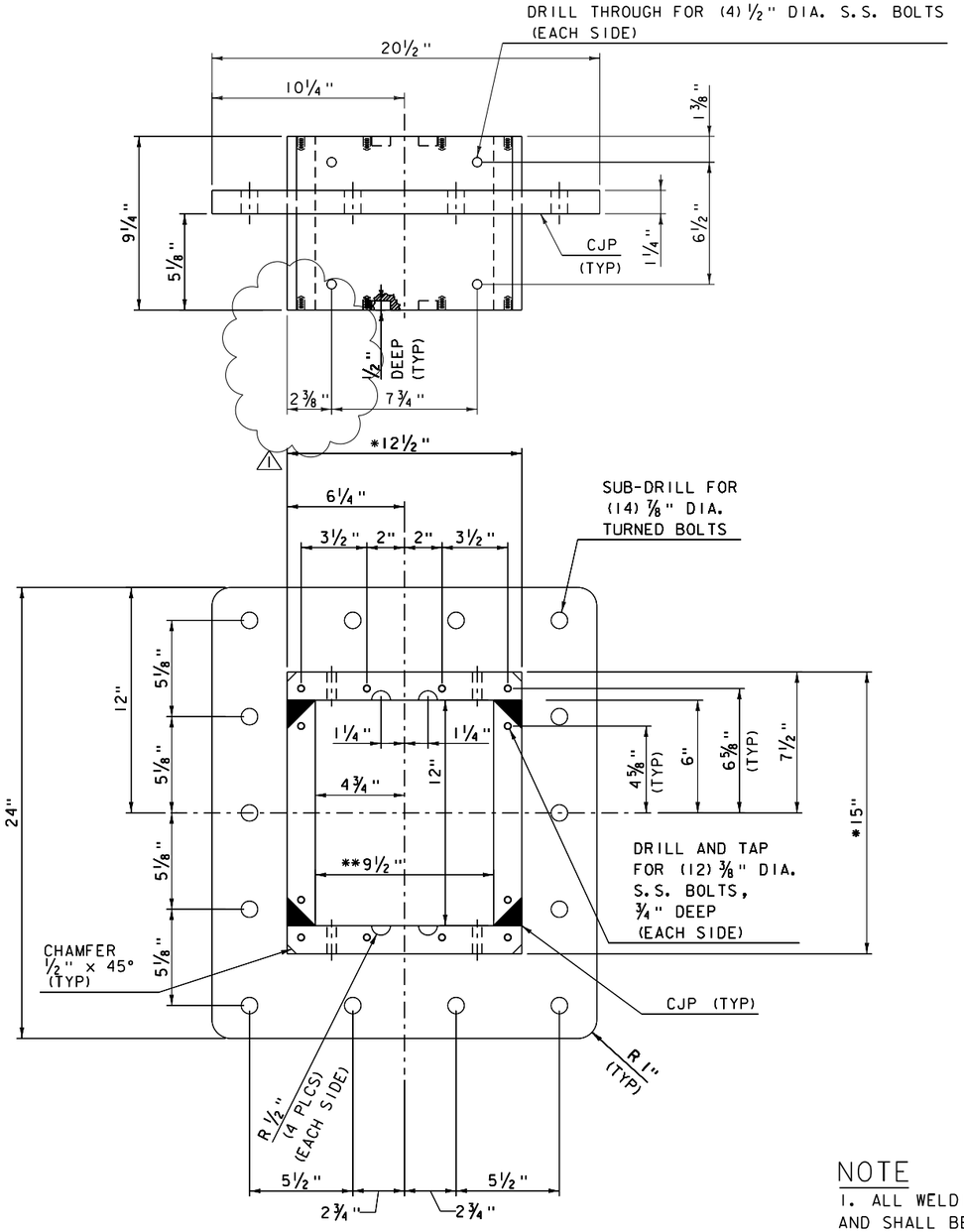
FILE NAME: z12b142supmach5.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: M.CARLTON
SPAN LOCK DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: B. CURRAN
CHECKED BY: P. JAKUBICKI
SHEET 228 OF 379



REAR GUIDE RETAINER PLATE

QUANTITY: (4)
MATERIALS: ASTM A36
*LC5 FIT W/ REAR GUIDE HOUSING



REAR GUIDE HOUSING

QUANTITY: (4)
MATERIALS: ASTM A36
*LC5 FIT W/ REAR GUIDE RETAINER PLATE
** LC4 FIT W/ GUIDE SHOES

NOTE

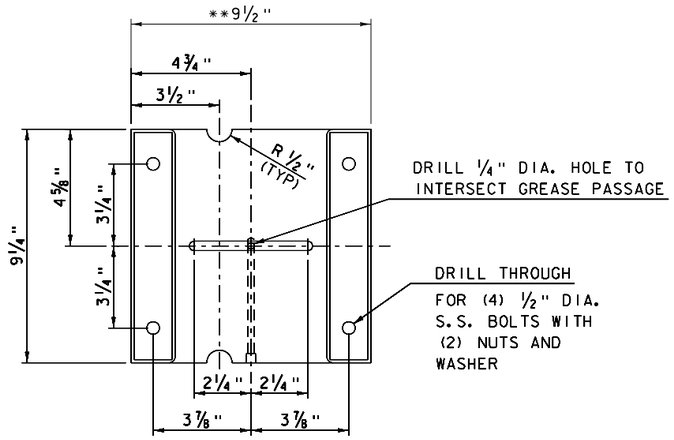
1. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.5 AND SHALL BE TESTED BY ULTRASONIC INSPECTION PER SECTION 208, SPECIAL PROVISION. WELDMENT MACHINING SHALL BE PERFORMED AFTER WELDING AND STRESS RELIEVING.

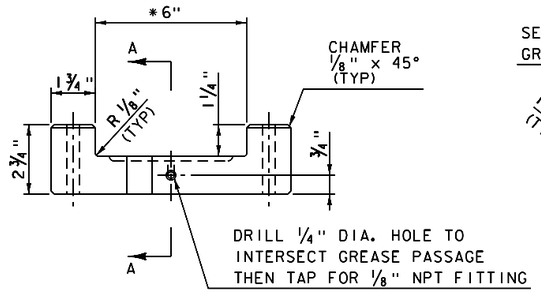
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

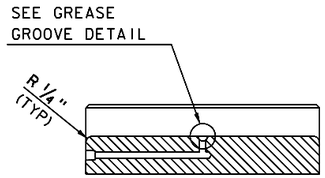
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142supmach7.dgn
PROJECT LEADER: J. GALLANI
DESIGNED BY: M.CARLTON
SPAN LOCK DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: B. CURRAN
CHECKED BY: P. JAKUBICKI
SHEET 229 OF 379



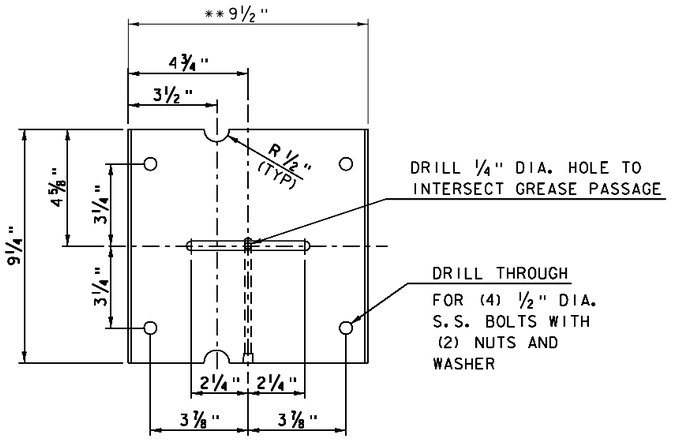


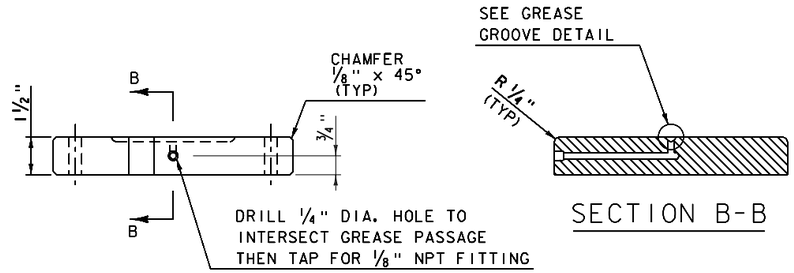


SECTION A-A

GUIDE SHOE

QUANTITY: (16)
MATERIALS: ASTM B22 ALLOY C93700
*RC9 FIT W/ LOCK BAR
**LC4 FIT W/ HOUSING
(32 MICRO INCH FINISH ALL OVER)

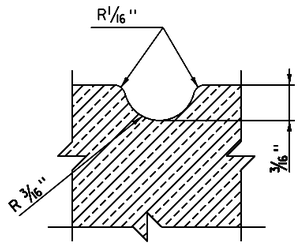




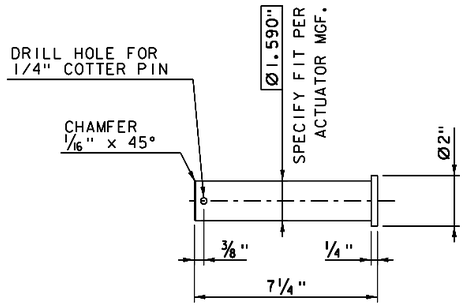
SECTION B-B

RECEIVER SHOE

QUANTITY: (8)
MATERIALS: ASTM B22 ALLOY C93700
**LC4 FIT W/ HOUSING
(32 MICRO INCH FINISH ALL OVER)

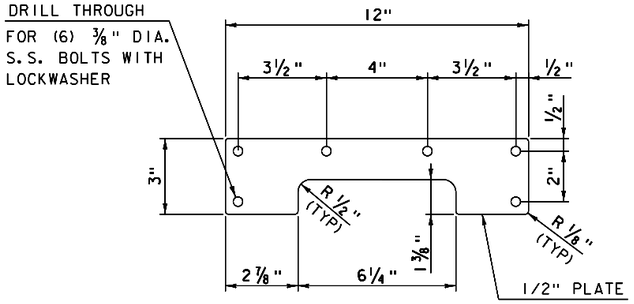


GREASE GROOVE DETAIL



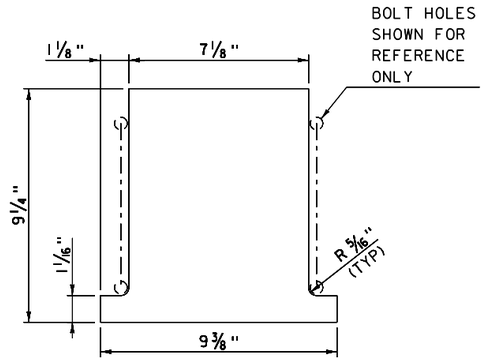
LOCK BAR CONNECTION PIN

QUANTITY: (4)
MATERIAL: ASTM A668 CL K



SHIM KEEPER PLATE

QUANTITY: (48)
MATERIALS: ASTM A36



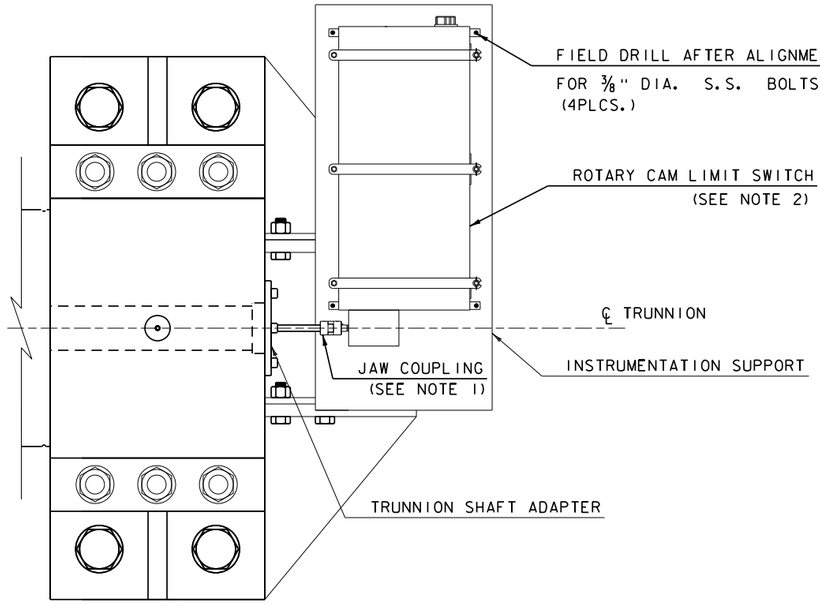
GUIDE/RECEIVER 1/2" SHIM PACK

QUANTITY: (24 SETS)
MATERIALS: STAINLESS STEEL

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

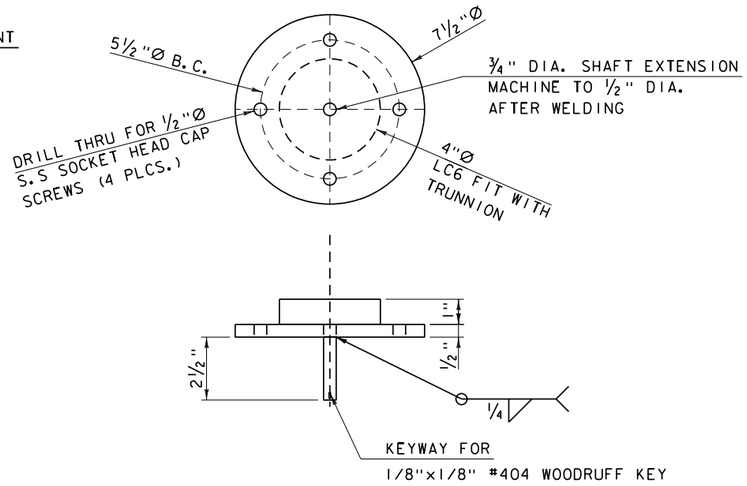
FILE NAME: z12b142supmach5.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: M.CARLTON
SPAN LOCK DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: B.CURRAN
CHECKED BY: P. JAKUBICKI
SHEET 230 OF 379



PLAN

SCALE 2" = 1'-0"



TRUNNION SHAFT ADAPTER

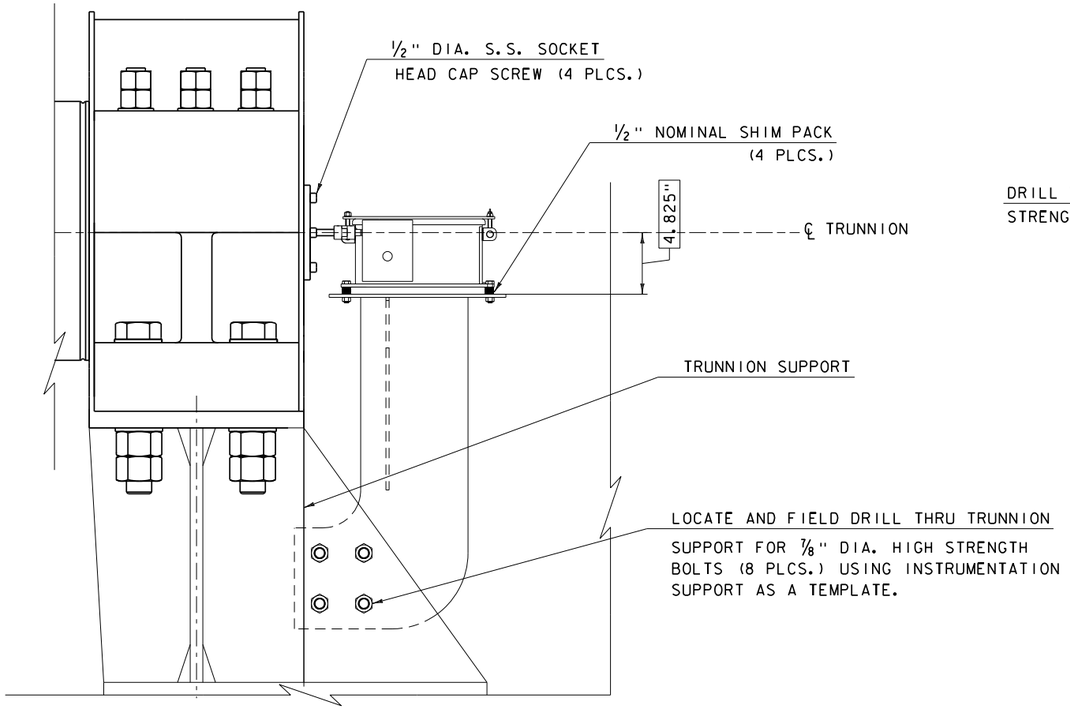
QUANTITY: (2) WITH SHAFT EXTENSION;
(6) WITHOUT SHAFT EXTENSION
MATERIAL: ASTM A36

NOTE

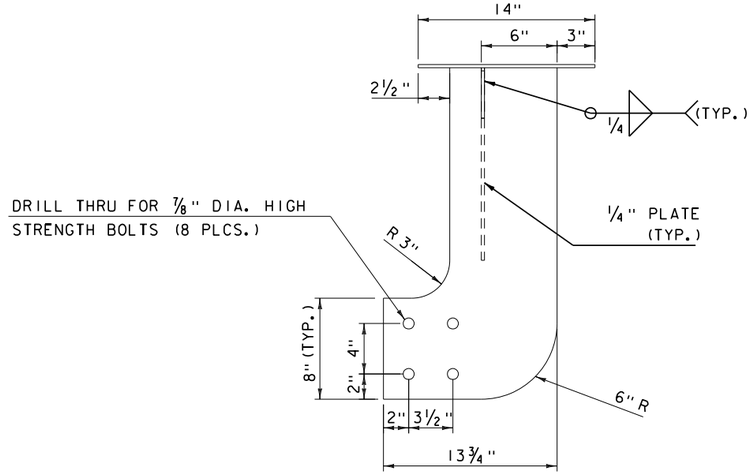
1. PROVIDE JAW COUPLING WITH HUB MATERIAL MADE FROM ALUMINUM AND INSERT MADE FROM OIL RESISTANT NITRILE RUBBER. FINISH BORE PER ROTARY CAM LIMIT SWITCH MANUFACTURER'S RECOMMENDATIONS.

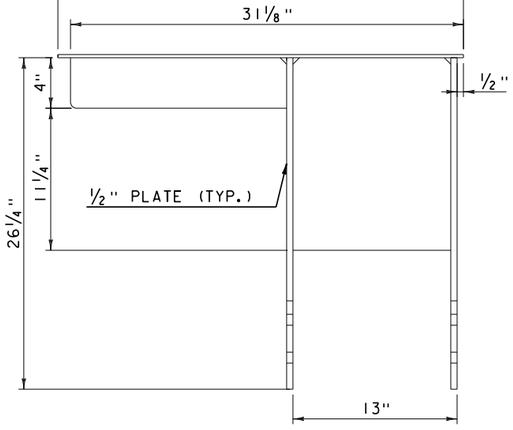
2. ROTARY CAM LIMIT SWITCH TO BE A NEMA 4X STAINLESS STEEL ENCLOSURE, 10 CIRCUIT WITH INTERNAL RESOLVER (16 CIRCUIT HOUSING), AND 4:1 RIGHT ANGLE GEARBOX. COORDINATE WITH ELECTRICAL PLAN.

3. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.5 AND SHALL BE TESTED BY ULTRASONIC INSPECTION PER SECTION 208, SPECIAL PROVISION. WELDMENT MACHINING SHALL BE PERFORMED AFTER WELDING AND STRESS RELIEVING.



ELEVATION

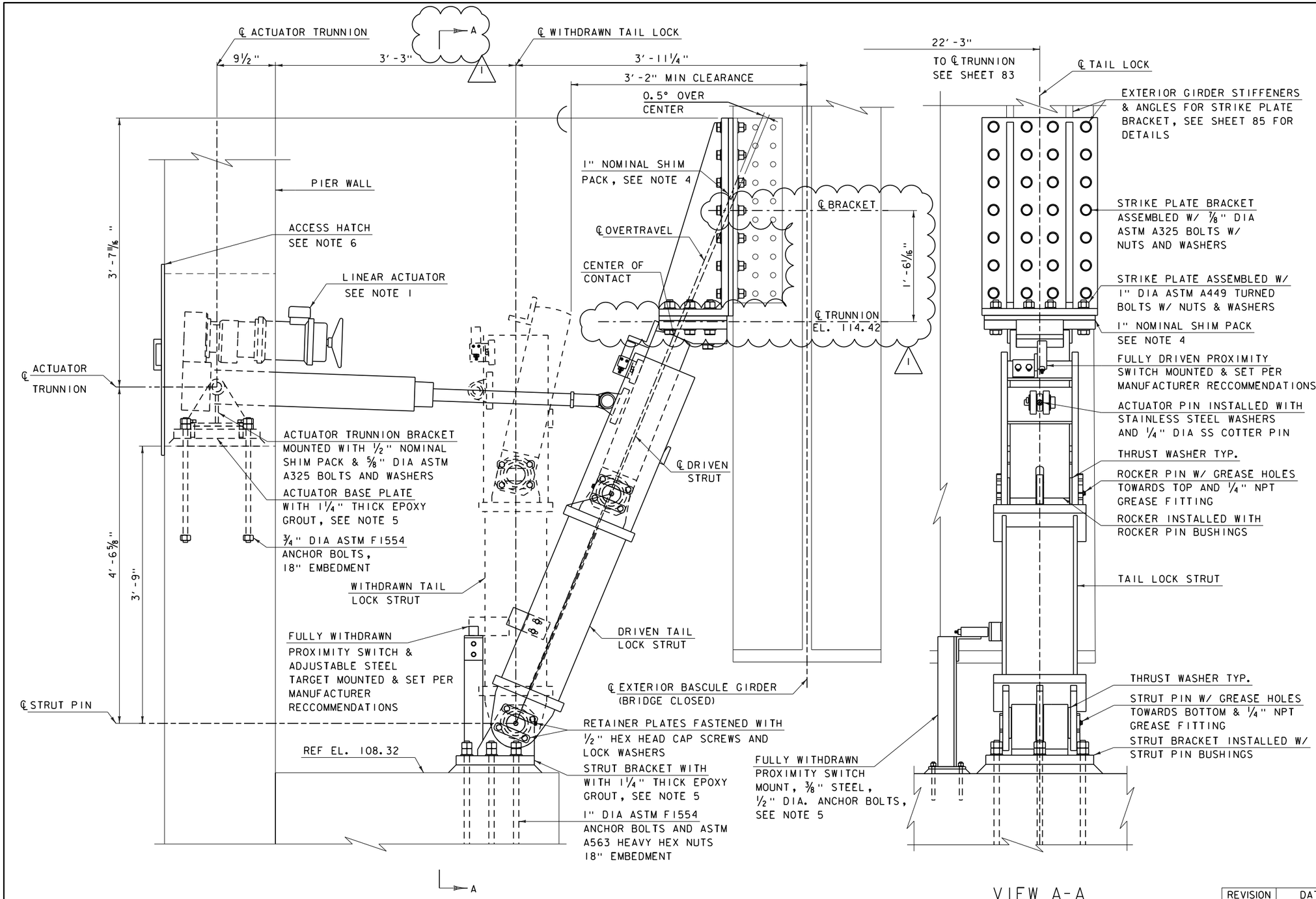




INSTRUMENTATION SUPPORT

QUANTITY: (2)
MATERIAL: ASTM A36

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142minst1.dgn	PLOT DATE: 2/16/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: B.CURRAN
DESIGNED BY: M.CARLTON	CHECKED BY: P. JAKUBICKI
TRUNNION INSTRUMENTATION	SHEET 231 OF 379



TAIL LOCK ASSEMBLY

SCALE 1-1/2" = 1'-0"
NORTHWEST CORNER SHOWN

VIEW A-A

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

NOTES:

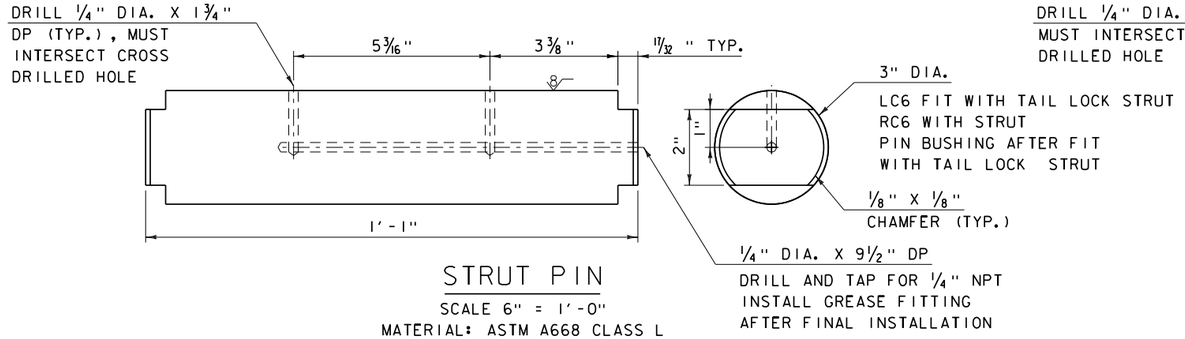
1. DESCRIPTION OF THE ACTUATOR ASSEMBLY UNIT
   - THRUST FORCE: 3,000 LB MIN - 6000 LB MAX
   - ROD SPEED RANGE: 1.2 TO 1.5 IN/SEC
   - ROD STROKE: 22" MIN
   - ELECTRICALLY RELEASED BRAKE
   - PUSH ROD BELLOWS (NOT SHOWN)
   - MECHANICAL DISENGAGE
   - HANDWHEEL WITH INTERLOCK SWITCH
   - TROPICAL PROTECTION
2. ACTUATOR AND TAIL LOCK MOUNTING REQUIREMENTS SHALL CONFORM TO MANUFACTURER RECOMMENDATIONS AND MAY VARY BASED ON ACTUATOR SELECTION.
3. THE BASCULE LEAVES SHALL BE INSTALLED AND ALIGNED PRIOR TO INSTALLATION OF THE TAIL LOCK ASSEMBLY.
4. SHIMS SHALL BE INSTALLED ON STRIKE PLATE AND BRACKET TO PROVIDE FULL BEARING BETWEEN STRIKE PLATE AND ROCKER IN THE DRIVEN POSITION. FULL BEARING SHALL BE MAINTAINED DURING ALL AMBIENT TEMPERATURE CONDITIONS.
5. MACHINERY BASE PLATES SHALL BE SET AND SURROUNDED WITH CHOCKFAST RED OR APPROVED EQUAL EPOXY GROUT. ANCHOR BOLT HOLES SHALL BE DRILLED AND GROUTED AFTER FINAL ALIGNMENT OF MACHINERY. ANCHOR EMBEDMENT SHALL BE BASED ON MANUFACTURER'S RECOMMENDATIONS.
6. ACCESS HATCH BEHIND LINEAR ACTUATOR SHALL BE WEATHERPROOF WHILE HATCH IS CLOSED. HATCH SHALL COMPLETELY COVER HOLE IN PIER WALL. SEE SHEET 172 FOR TAIL LOCK HATCH DETAIL.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

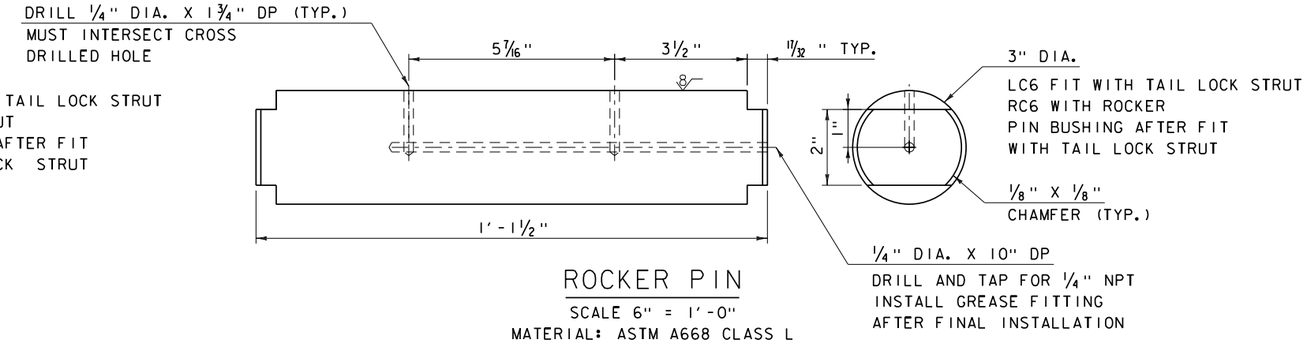
FILE NAME: z12b142supmach9.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: M. CASSERA
TAIL LOCK ASSEMBLY

PLOT DATE: 2/6/2018
DRAWN BY: M. CASSERA
CHECKED BY: M. CARLTON
SHEET 232 OF 379



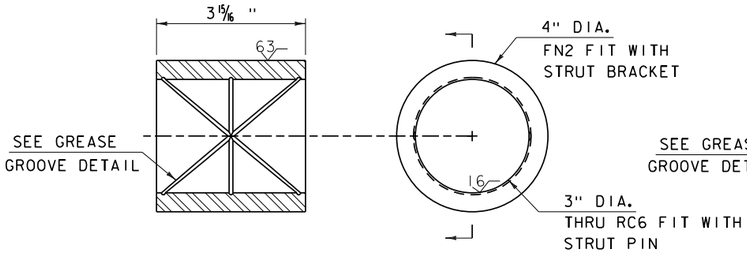
STRUT PIN

SCALE 6" = 1'-0"
MATERIAL: ASTM A668 CLASS L
QUANTITY: 4



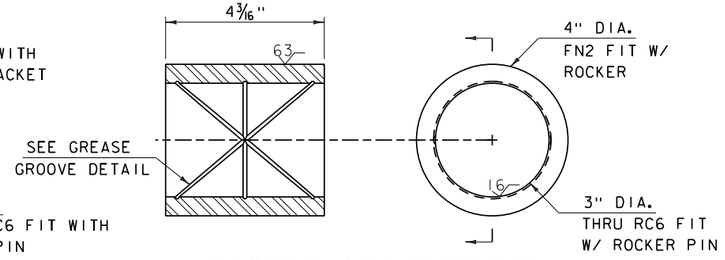
ROCKER PIN

SCALE 6" = 1'-0"
MATERIAL: ASTM A668 CLASS L
QUANTITY: 4



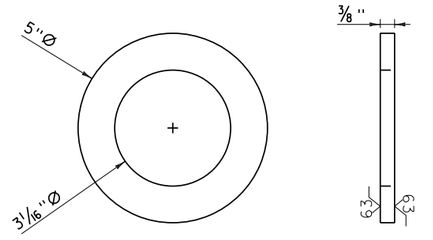
STRUT PIN BUSHING

SCALE 6" = 1'-0"
MATERIAL: ASTM B148 C9550 BH 200
QUANTITY: 8



ROCKER PIN BUSHING

SCALE 6" = 1'-0"
MATERIAL: ASTM B148 C9550 BH 200
QUANTITY: 8

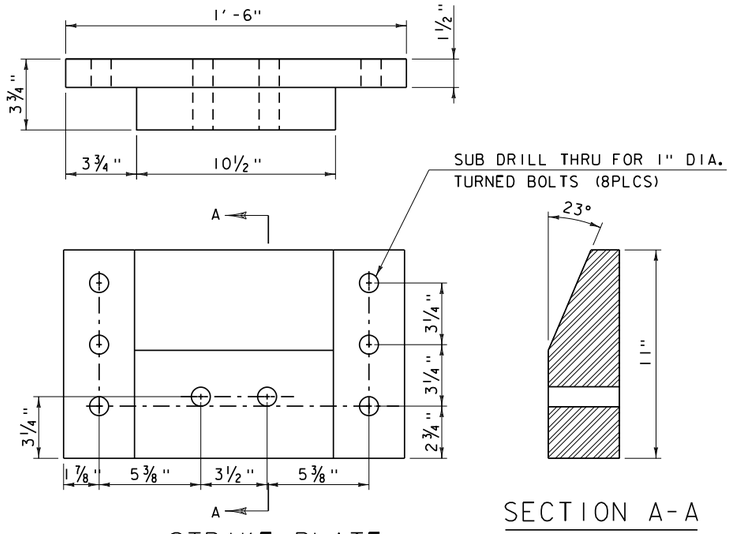


THRUST RING

SCALE 6" = 1'-0"
MATERIAL: ASTM B148 C9550 BH 200
QUANTITY: 16

NOTES:

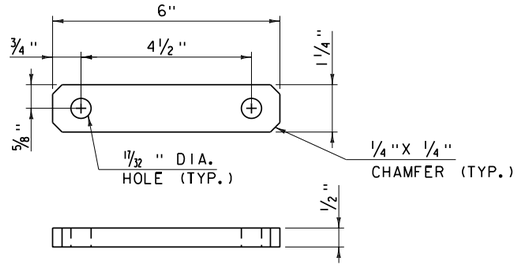
1. SPECIFIED FITS BETWEEN BUSHINGS AND PINS REPRESENT FIT AFTER BUSHINGS INSTALLATION.
2. ACTUATOR PIN DIAMETER AND FIT SHALL BE ADJUSTED TO FIT ROD END AS SPECIFIED BY ACTUATOR MANUFACTURER.
3. BREAK SHARP EDGES AND CORNERS



STRIKE PLATE

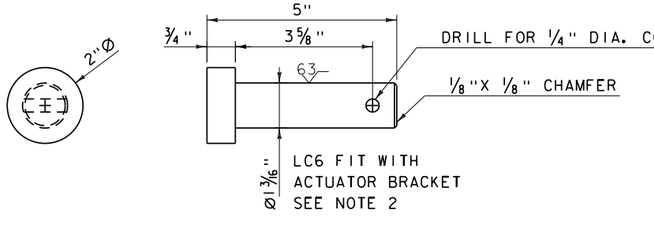
SCALE 3" = 1'-0"
MATERIAL: ASTM A668 CLASS G (1)
QUANTITY: 4
(FINISH 125 ALL OVER)

SECTION A-A



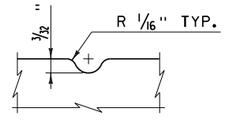
RETAINER PLATE

SCALE 6" = 1'-0"
MATERIAL: ASTM A709 GR50
QUANTITY: 32



ACTUATOR PIN

SCALE 6" = 1'-0"
MATERIAL: ASTM A668 CLASS L
QUANTITY: 4



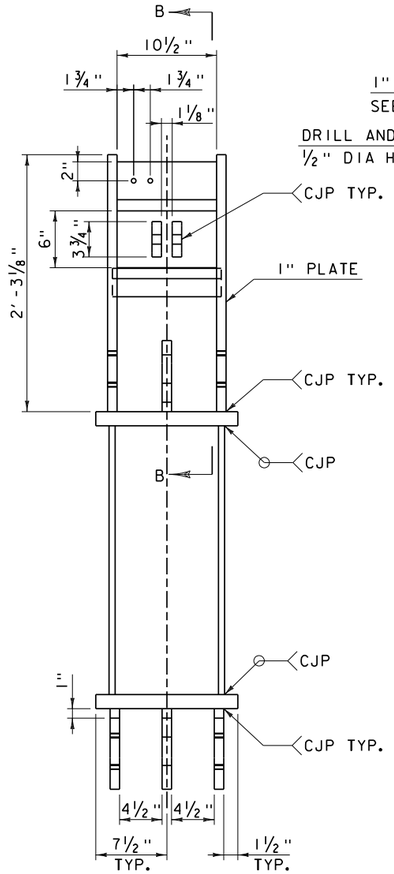
GREASE GROOVE DETAIL

SCALE 2" = 1"

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	05-04-2020	POST-AWARD RFI117	JLG

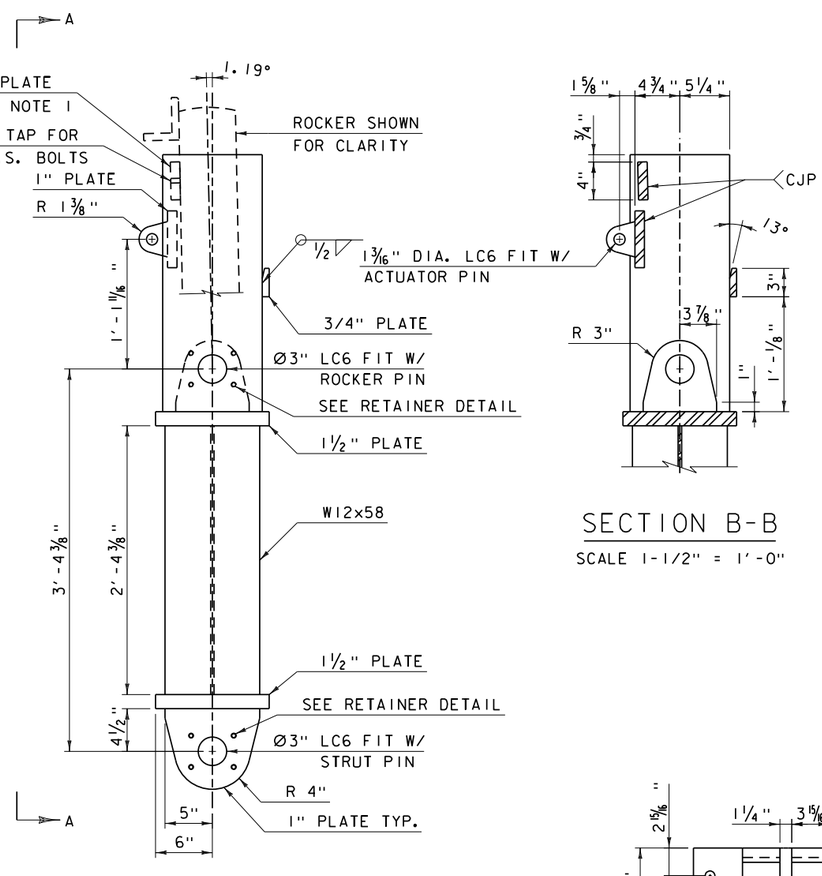
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42supmac10.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: M.CASSERA
TAIL LOCK DETAILS 1
PLOT DATE: 2/6/2018
DRAWN BY: I. ZIZAOUI
CHECKED BY: P. JAKUBICKI
SHEET 233 OF 379



VIEW A-A

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

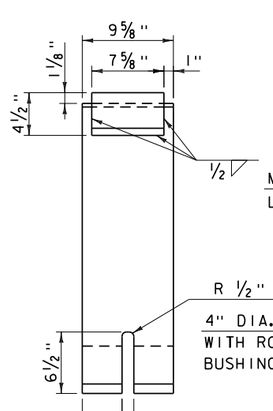


TAIL LOCK STRUT

SCALE 1-1/2" = 1'-0"
MATERIAL: ASTM A709 GR50
QUANTITY: 4

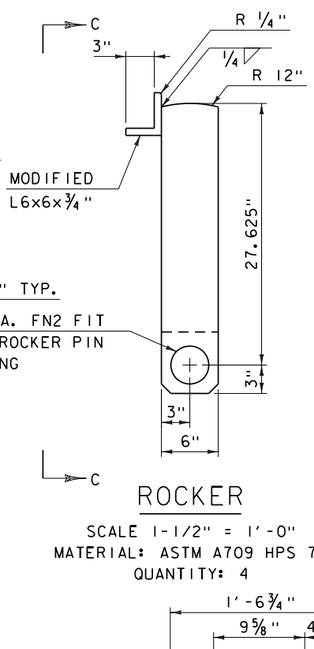
SECTION B-B

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



VIEW C-C

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

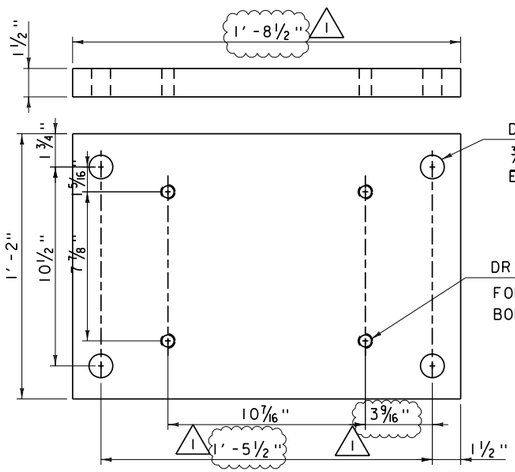


ROCKER

SCALE 1-1/2" = 1'-0"
MATERIAL: ASTM A709 HPS 70
QUANTITY: 4

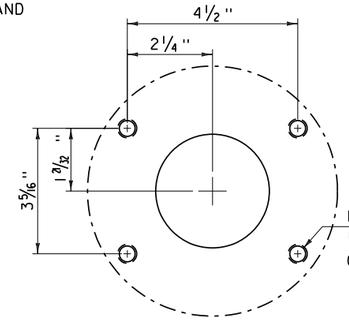
NOTES:

1. ROCKER STOP PLATE SHALL BE WELDED IN POSITION TO OBTAIN FULL BEARING BETWEEN 3" FACE OF PLATE AND ROCKER WHEN IN POSITION SHOWN.
2. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.5 AND SHALL BE TESTED BY ULTRASONIC INSPECTION PER SECTION 208, SPECIAL PROVISION. WELDMENT MACHINING SHALL BE PERFORMED AFTER WELDING AND STRESS RELIEVING.
3. FITS AND FINISHES SHALL BE IN ACCORDANCE WITH THE MECHANICAL GENERAL NOTES SHEET UNLESS OTHERWISE SPECIFIED.
4. BREAK SHARP EDGES AND CORNERS.



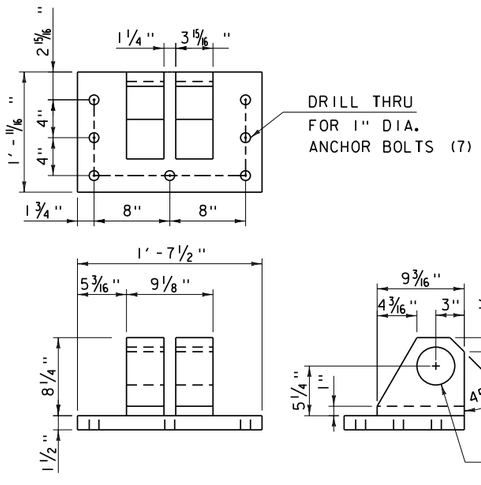
ACTUATOR BASE PLATE

SCALE 3" = 1'-0"
MATERIAL: ASTM A709 GR50
QUANTITY: 4



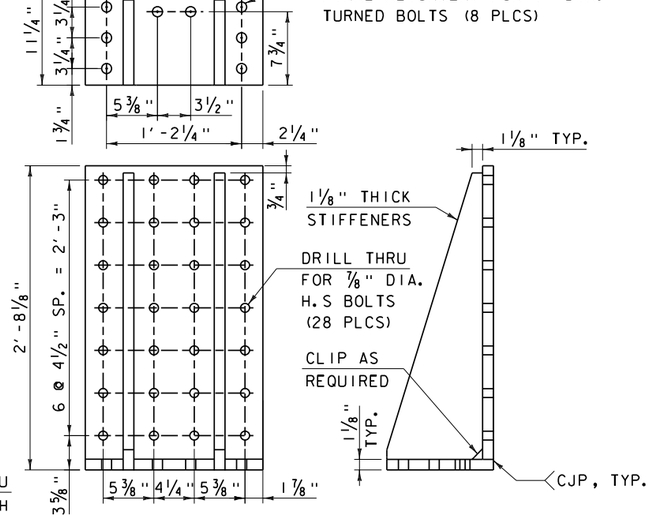
RETAINER DETAIL

SCALE 6" = 1'-0"



STRUT BRACKET

SCALE 1-1/2" = 1'-0"
MATERIAL: ASTM A709 GR50
QUANTITY: 4



STIFFENER BRACKET

SCALE 1-1/2" = 1'-0"
MATERIAL: ASTM A709 GR50
QUANTITY: 4

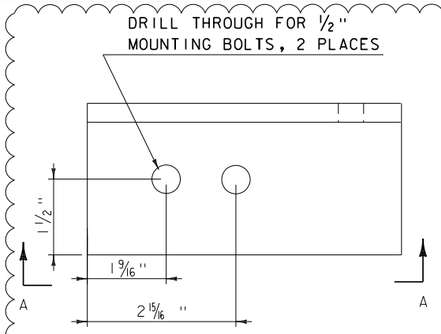
REVISION	DATE	DESCRIPTION	BY
3			
2			
1	4-29-2020	POST-AWARD RFI'S 037-114	JLG

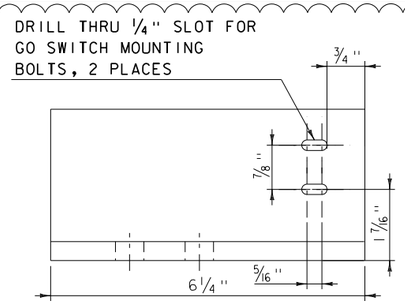
HDR

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42supmacll.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: M. CASSERA
TAIL LOCK DETAILS 2

PLOT DATE: 2/6/2018
DRAWN BY: M. CASSERA
CHECKED BY: M. CARLTON
SHEET 234 OF 379

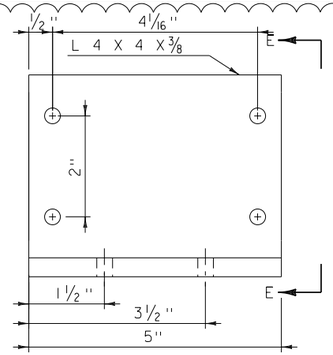


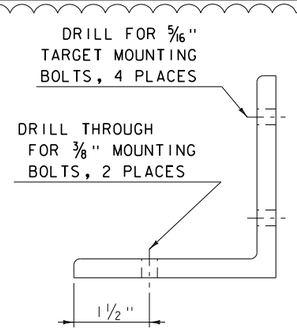


SECTION A-A

FULLY SEATED LIMIT SWITCH GO SWITCH BASE

SCALE 8" = 1'-0"
MATERIAL: ASTM A276 TYPE 316

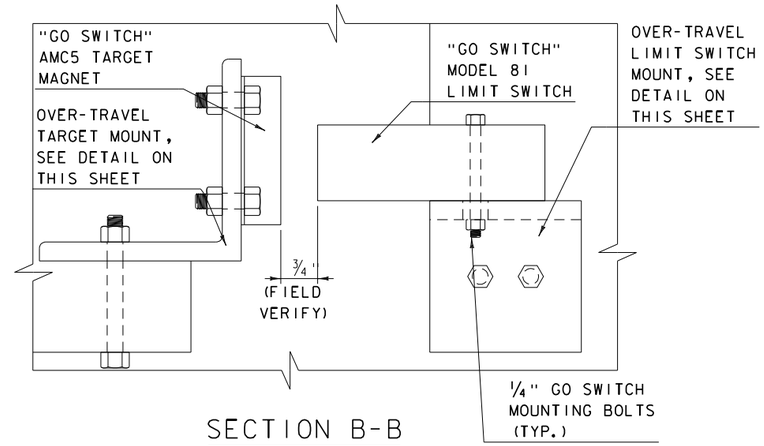




SECTION E-E

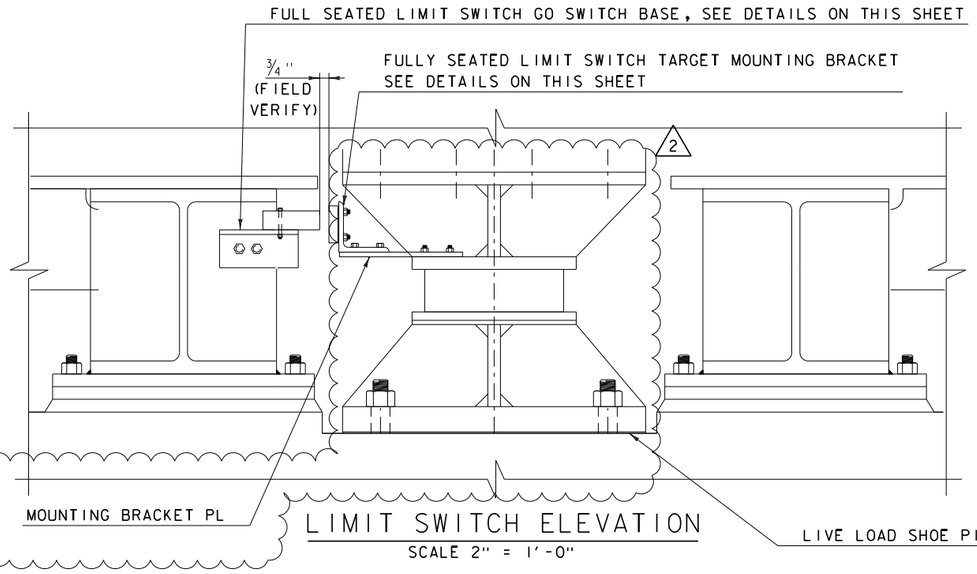
OVER TRAVEL TARGET MOUNT

SCALE 8" = 1'-0"
MATERIAL: ASTM A709 GR50



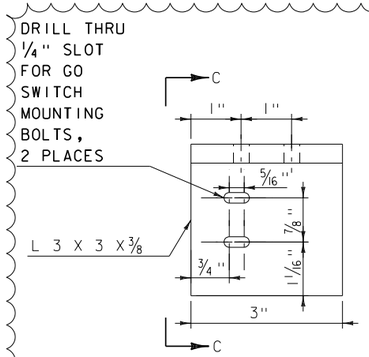
SECTION B-B

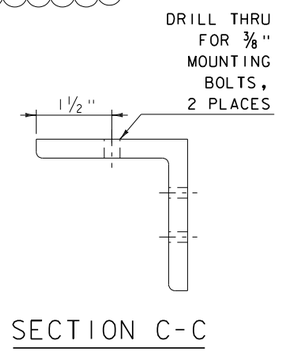
SCALE 8" = 1'-0"



LIMIT SWITCH ELEVATION

SCALE 2" = 1'-0"

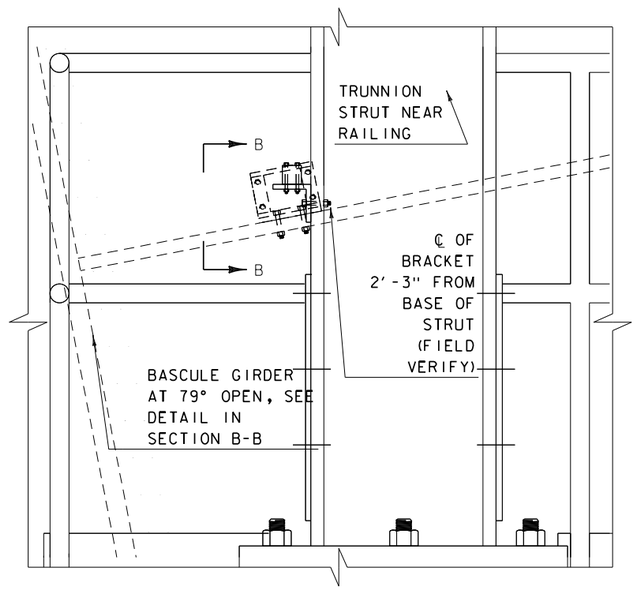




SECTION C-C

OVER-TRAVEL LIMIT SWITCH GO SWITCH MOUNTING BRACKET

SCALE 8" = 1'-0"
MATERIAL: ASTM A276 TYPE 316



TYPICAL OVER-TRAVEL LIMIT SWITCH ELEVATION

SCALE 2" = 1'-0"

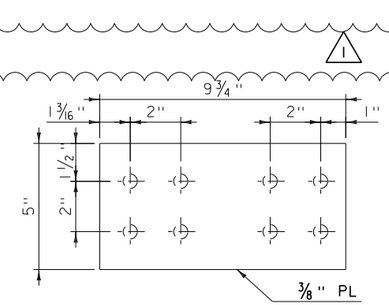
NOTE

1. LIMIT SWITCHES SHALL BE TOPWORX GO SWITCH MODEL 81, SUBMERSIBLE END SENSING LEVERLESS PROXIMITY SWITCHES. CONDUIT POSITION SHALL BE CONFIGURATION 5 WHERE PRACTICAL.

2. LIMIT SWITCH PLACEMENT SHOWN IS NOTIONAL. CONTRACTOR SHALL DETERMINE FINAL MOUNTING POSITIONS BASED ON FIELD CONDITIONS.

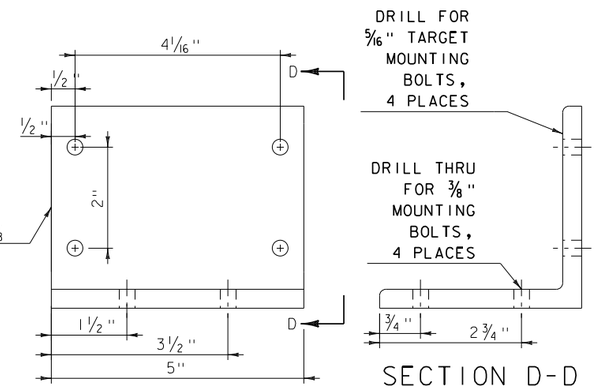
3. ALL LIMIT SWITCH TARGET MAGNETS SHALL BE MANUFACTURED BY TOPWORX OR APPROVED EQUAL. MOUNTING OF TARGETS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.

4. CONTRACTOR SHALL ENSURE THAT THE LIMIT SWITCH AND TARGET DO NOT COME INTO CONTACT AT ANY TIME.



MOUNTING BRACKET PLATE DETAIL

SCALE 4" = 1'-0"
MATERIAL: ASTM A709 GR50



SECTION D-D

FULLY SEATED LIMIT SWITCH TARGET MOUNTING BRACKET

SCALE 8" = 1'-0"
MATERIAL: ASTM A709 GR50

REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142supmach12.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
LIMIT SWITCH DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: A. BRONFMAN
CHECKED BY: M. CARLTON
SHEET 235 OF 379

ELECTRICAL GENERAL NOTES:

1. DRAWINGS ARE DIAGRAMMATC IN NATURE AND ARE NOT INTENDED TO SHOW THE FULL EXTENT OF EXISTING CONDITIONS BUT RATHER TO SHOW THE GENERAL ARRANGEMENT AND LOCATION OF THE SYSTEMS. PERFORM FIELD SURVEY AS NECESSARY TO DETERMINE THE ROUTING AND LOCATION OF RACEWAYS AND EQUIPMENT ON EXISTING STRUCTURE (TENDER HOUSE AND ROADWAY). NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES IN THE CONTRACT DRAWINGS OR SPECIAL PROVISIONS THAT WOULD PRECLUDE PERFORMANCE OF THE WORK AS SHOWN. NO CHANGE IN THE CONTRACT DRAWINGS DETAILS IS PERMISSIBLE WITHOUT THE CONSENT OF THE ENGINEER. IF CHANGES ARE MADE, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING A FULLY FUNCTIONAL SYSTEM AT NO ADDITIONAL COST TO VTRANS.

2. VERIFY BY FIELD MEASUREMENTS ALL DIMENSIONS, ELEVATIONS AND CONDITIONS THAT MAY BE REQUIRED TO LOCATE EQUIPMENT IN THE TENDER HOUSE. THE FIELD MEASUREMENTS SHALL BE PERFORMED PRIOR TO THE PREPARATION OF SHOP DRAWINGS AND THE MANUFACTURING, FABRICATION AND INSTALLATION OF ALL ITEMS OF CONSTRUCTION IN THE TENDER HOUSE. ALL VARIATIONS FROM THE CONTRACT DRAWING SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE PREPARATION OF SHOP DRAWINGS.

3. THESE PLANS ARE INCOMPLETE UNLESS ACCOMPANIED BY THE SPECIAL PROVISIONS AND ALL OTHER DOCUMENTS AS DEFINED WITHIN THE SPECIAL PROVISION.

4. THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH ALL APPLICABLE STATE AND FEDERAL REGULATIONS AND CODES.

5. WHENEVER DISCREPANCIES ARE FOUND TO EXIST BETWEEN INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS AND THE EXISTING PLANS OR EXISTING STRUCTURES, PROVIDE THE ENGINEER WITH A RECOMMENDATION FOR RESOLUTION OF THE INCONSISTENCY FOR REVIEW AND APPROVAL.

6. AREAS DISTURBED BY CONSTRUCTION OPERATIONS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING AT NO ADDITIONAL COST TO VTRANS.

7. ANY DAMAGE TO, INCLUDING BUT NOT LIMITED TO, ROADWAY, BASCULE SPANS, ANY SUPPORT STRUCTURES, APPROACH SPANS, UTILITIES (UNDERGROUND OR OVERHEAD) DUE TO THE CONSTRUCTION OPERATION WILL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AND AT NO COST TO VTRANS.

8. ALL WARNING AND BARRIER GATES PLATFORM DESIGNS ARE BASED ON PRELIMINARY DESIGN LOADS FROM THE GATE MANUFACTURER. FINAL LOADING WILL NOT BE AVAILABLE UNTIL FINAL DESIGN OF GATES IS COMPLETED BY THE GATE MANUFACTURER. AS PART OF THE SHOP DRAWING SUBMITTAL, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, COMPLETE CALCULATIONS AND DETAILS INCLUDING FOOTPRINT LOADS FOR THE DESIGN OF ANCHOR BOLTS FOR ALL GATES. THE GATE PLATFORM SHALL BE COORDINATED WITH THE GATE DIMENSIONS AND REQUIRED WORKING CLEARANCES PRIOR TO INSTALLATION.

9. THE EXISTING DETAILS AND DIMENSIONS SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM RECORD DRAWINGS OF THE EXISTING STRUCTURE (TENDER HOUSE). THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS WHICH GOVERN, FIT AND LOCATION CALLED OUT FOR WITH RESPECT TO THE EXISTING STRUCTURE. THE CONTRACTOR SHALL PERFORM A FIELD SURVEY TO VERIFY ALL DIMENSIONS AFFECTING FABRICATION OR CONSTRUCTION. SHOP AND CONSTRUCTION DRAWINGS SHALL INDICATE FIELD VERIFIED DIMENSIONS. PAYMENT FOR COMPLETING THE FIELD SURVEY SHALL BE CONSIDERED SUBSIDIARY TO ITEM 529.15, REMOVAL OF STRUCTURE.

10. WHERE NEW EQUIPMENT ARE BEING INSTALLED IN THE TENDER HOUSE, ACTUAL FIELD MEASUREMENTS SHALL SUPERSEDE THOSE SHOWN IN THE PLANS, AND SHALL BE IDENTIFIED ON THE SHOP DRAWINGS AS FIELD VERIFIED DIMENSIONS. ANY INTERFERENCE SHALL BE DOCUMENTED AND PRESENTED TO THE ENGINEER FOR RESOLUTION.

11. THE ENGINEER WILL NOT COMMENCE REVIEW OF THE CONTRACTOR'S SHOP DRAWINGS OR OTHER WORKING DRAWINGS UNTIL THE ENGINEER HAS COMPLETED HIS REVIEW AND APPROVED THE WRITTEN PLAN OF CONSTRUCTION.

12. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING THE METHODS OF INSTALLING ALL RIGGING EQUIPMENT. SHOP DRAWINGS SHALL SHOW INTENDED PATH OF MATERIAL/EQUIPMENT MOVEMENT AND DETAIL THE PROPOSED LOCATIONS OF SUPPORT OR HANGING OF LIFTING EQUIPMENT TO THE ENGINEER FOR REVIEW AND APPROVAL.

13. INSTALLATION AND DEMOLITION OF ELECTRICAL EQUIPMENT INCLUDING BUT NOT LIMITED TO INCOMING SERVICE, TRAFFIC CONTROL DEVICES AND THE STANDBY GENERATOR SHALL BE COORDINATED WITH THE INSTALLATION AND REMOVAL OF THE TEMPORARY BRIDGE.

14. COORDINATE ALL ELECTRICAL WORK WITH OTHER TRADES.

15. ALL LIMIT SWITCHES, RELAYS, CONTACTORS AND STARTERS ARE SHOWN WITH THE SPAN SEATED, LOCKS DRIVEN, GATE RAISED, TRAFFIC SIGNAL GREEN AND OPEN TO VEHICULAR TRAFFIC.

16. FOR ELECTRICAL EQUIPMENT NAMING AND LOCATION REFERENCING, "EAST" IS INTERCHANGEABLE WITH "PIER 2", "WEST" IS INTERCHANGEABLE WITH "PIER 1".

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142enotes.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
ELECTRICAL GENERAL NOTES

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 236 OF 379

ELECTRICAL SCOPE OF WORK

1. UTILITY SERVICE:

   EAST
   THE EXISTING ELECTRIC UTILITY TRANSFORMER SHALL BE UPGRADED TO A NEW 500KVA, 480V SECONDARY, 3 PHASE, 4W SYSTEM. BASED ON THE DESIGN LOADS, THE MINIMUM CURRENT REQUIRED TO OPERATE THE EAST LEAF AND MISCELLANEOUS BRIDGE EQUIPMENT IS 400AMPS. CONTRACTOR SHALL COORDINATE UTILITY SERVICE UPGRADE WITH VT ELECTRIC.

   WEST
   FURNISH AND INSTALL A NEW 225KVA, 480V SECONDARY, 3 PHASE, 4W UTILITY TRANSFORMER. BASED ON THE DESIGN LOADS, THE MINIMUM CURRENT REQUIRED TO OPERATE THE WEST LEAF AND MISCELLANEOUS BRIDGE EQUIPMENT IS 200AMPS. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF A NEW UTILITY SERVICE WITH VT ELECTRIC. RUN NEW FEEDERS AND CONDUITS FROM UTILITY TRANSFORMER SECONDARY TO BRIDGE METERING EQUIPMENT, AND ELECTRICAL EQUIPMENT.

   RUN NEW FEEDERS AND CONDUITS FROM UTILITY TRANSFORMERS SECONDARY TO BRIDGE METERING EQUIPMENT, AND ELECTRICAL EQUIPMENT.

2. STANDBY GENERATOR:

   EAST
   FURNISH AND INSTALL A NEW 300KW STANDBY GENERATOR WITH PMG EXCITATION SYSTEM WITH A 660 GALLON DOUBLE WALL SUB-BASE FUEL TANK, LOAD BANK AND EXHAUST SYSTEM. GENERATOR SYSTEM SHALL BE HOUSED IN AN EXTREME WEATHER PROOF, SOUND ATTENUATED ENCLOSURE MANUFACTURED BY THE SAME MANUFACTURER OF THE GENERATOR. THE LOAD BANK SHALL BE FURNISHED IN AN OUTDOOR RATED STAINLESS STEEL ENCLOSURE. FURNISH THE LOAD BANK WITH A CONTROLLER FOR LOAD STEP CONTROL. THE LOAD BANK CONTROLLER SHALL BE LOCATED IN THE TENDER HOUSE.

   WEST
   FURNISH AND INSTALL A NEW 150KW STANDBY GENERATOR WITH PMG EXCITATION SYSTEM WITH A 402 GALLON DOUBLE WALL SUB-BASE FUEL TANK, LOAD BANK AND EXHAUST SYSTEM. GENERATOR SYSTEM SHALL BE HOUSED IN AN EXTREME WEATHER PROOF, SOUND ATTENUATED ENCLOSURE MANUFACTURED BY THE SAME MANUFACTURER OF THE GENERATOR. THE LOAD BANK SHALL BE FURNISHED IN AN OUTDOOR RATED STAINLESS STEEL ENCLOSURE. FURNISH THE LOAD BANK WITH A CONTROLLER FOR LOAD STEP CONTROL. THE GENERATOR, AUTOMATIC TRANSFER SWITCH, LOAD BANK AND LOAD BANK CONTROLLER SHALL BE LOCATED ON THE NEW GENERATOR PLATFORM ON THE WEST SIDE.

   THE LOAD BANK CONTROLLERS SHALL BE PROGRAMMED TO ENSURE THAT WHEN THE GENERATORS ARE IN USE, THE GENERATORS RUNS AT A MINIMUM OF 50% LOAD.

   EACH GENERATOR SHALL BE CONTROLLED BY A DEDICATED ATS. THE PIER 2 GENERATOR SHALL BE CONTROLLED BY THE ATS INSTALLED INSIDE THE TENDER HOUSE AND THE PIER 1 GENERATOR SHALL BE CONTROLLED BY THE ATS INSTALLED ON THE GENERATOR PLATFORM ON THE WEST SIDE. CONTRACTOR SHALL INTEGRATE THE GENERATOR CONTROLS TO MEET THE INTENT OF THESE PLANS AND AS SPECIFIED IN THE SPECIAL PROVISION.

3. CONTROL SYSTEM:
   THE BRIDGE CONTROL SYSTEM SHALL BE PROGRAMMABLE LOGIC CONTROLLER (PLC) BASED WITH A BACKUP RELAY CONTROL AS SHOWN ON THE CONTRACT DRAWINGS. FURNISH AND INSTALL A REDUNDANT PLC WITH A BACKUP RELAY SYSTEM FOR EACH LEAF. COMPONENTS OF THE PLC AND RELAY SYSTEM SHALL BE INSTALLED IN A DEDICATED CABINETS LOCATED IN EACH BASCULE PIER ELECTRICAL ROOM AS SHOWN ON THE CONTRACT DRAWINGS.

   INPUTS TO THE BRIDGE CONTROL SYSTEM SHALL INCLUDE BUT NOT LIMITED TO THE TRAFFIC SIGNAL, WARNING GATES, BARRIER GATES, LOCKS, SPAN POSITION, HYDRAULIC FLUID LEVEL, HYDRAULIC FLUID TEMPERATURE, ETC.

   THE BRIDGE CONTROL LOGIC SHALL INCLUDE ALL SAFETY INTERLOCKS AND BYPASS FUNCTION AS REQUIRED BY AASHTO.

   COMMUNICATION BETWEEN THE TWO BASCULE LEAVES SHALL BE VIA A REDUNDANT WIRELESS LINK. RADIO TRANSCEIVERS SHALL BE INSTALLED ON THE EAST AND WEST FASCIA OF THE PIER EXTERIOR WALL AS SHOWN ON THE PLANS

4. IN ADDITION TO ALL SAFETY INTERLOCKS REQUIRED BY AASHTO, THE BRIDGE CONTROL SYSTEM SHALL INCLUDE THE FOLLOWING INTERLOCKS:

   WITH THE HPU PUMPS RUNNING, ALL THREE PHASE HEATING LOADS SHALL BE TURNED OFF

   THE ATS SHALL NOT BE ABLE TO RE-TRANSFER FROM GENERATOR POWER TO UTILITY POWER IN THE MIDDLE OF A LIFTING OPERATION EVEN IF UTILITY POWER IS SENSED, RE-TRANSFER SHALL ONLY BE PERMITTED WHEN BOTH TRAFFIC SIGNALS ARE GREEN.

5. BRIDGE OPERATION:

   THE PRIMARY MODE OF OPERATION SHALL BE VIA THE PLC BASED CONTROL SYSTEM AND WIRELESS LINK. OPERATION SHALL BE FROM THE CONTROL DESK LOCATED IN THE CONTROL ROOM AT THE EAST PIER. IF THE PLC SYSTEM IS NOT OPERATIONAL OR THERE IS A LOSS OF WIRELESS CONNECTIVITY, THE LEAVES SHALL BE OPERATED INDEPENDENTLY USING THE RELAY BASED CONTROL SYSTEM FROM THE ELECTRICAL ROOMS.

   INDEPENDENT CONTROL OF THE LEAVES DUE TO LOSS OF PLC OR WIRELESS CONNECTIVITY SHALL BE AS FOLLOWS.
   EAST - FROM THE EAST MCC AND RELAY CABINET
   WEST - FROM THE WEST MCC AND RELAY CABINET

6. HPU - PUMP MOTOR:
   FURNISH AND INSTALL FOUR NEW HYDRAULIC PUMP MOTORS ALONG WITH THE HYDRAULIC EQUIPMENT AS SHOWN ON THE CONTRACT DRAWINGS.

   THE HYDRAULIC SYSTEM SHALL BE INTERLOCKED SUCH THAT TWO PUMPS (PER LEAF) SHALL BE UTILIZED DURING SPAN RAISING AND ONE PUMP (PER LEAF) DURING SPAN LOWERING.

7. LIMIT SWITCHES AND POSITION FEEDBACK:
   INSTALL LIMIT SWITCHES AS SHOWN ON THE CONTRACT DRAWINGS, COORDINATE LIMIT SWITCH INSTALLATION WITH OTHER DISCIPLINES. SEE MECHANICAL DRAWINGS FOR LIMIT SWITCH MOUNTING DETAILS.

8. CONDUIT AND WIRING:
   FURNISH AND INSTALL ALL CONDUITS AND WIRING REQUIRED TO COMPLETE THE INSTALLATION AS SHOWN ON THE CONTRACT DRAWINGS. ALL CONDUITS SHALL BE PVC COATED RIGID GALVANIZED METAL CONDUIT TYPE UNLESS OTHERWISE NOTED. ALL WIRING SHALL BE RHW-2 UNLESS OTHERWISE NOTED.

   ALL CONDUITS INSTALLED WITHIN THE PIER SHALL BE BOTTOM ENTRY, UNLESS OTHERWISE NOTED. SUBMIT CONDUIT ROUTING PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL. COORDINATE EQUIPMENT LOCATION WITH ALL CONDUIT PENETRATIONS.

   ALL CONDUITS PENETRATIONS THROUGH WALLS AND FLOOR SLABS SHALL PENETRATE THROUGH A TYPE 316 STAINLESS STEEL PIPE SLEEVE. ALL EXPOSED CAVITIES FROM CONDUIT PENETRATIONS SHALL BE FIRESTOPPED.

9. NAVIGATION LIGHTING:
   FURNISH AND INSTALL NEW SPAN AND PIER NAVIGATION LIGHTS AS SHOWN ON THE CONTRACT DRAWINGS.

10. CCTV SYSTEM:
    FURNISH AND INSTALL NEW CCTV SYSTEM AS SHOWN ON THE CONTRACT DRAWINGS.

11. GROUNDING SYSTEM:
    FURNISH AND INSTALL NEW GROUNDING SYSTEM AS SHOWN ON THE CONTRACT DRAWINGS.

12. MARINE RADIO:
    FURNISH AND INSTALL A MARINE RADIO DESKTOP UNIT IN THE CONTROL HOUSE AND ACCOMPANYING HANDSETS AND MARINE RADIO ANTENNA.

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142escope.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
ELECTRICAL SCOPE OF WORK
SHEET 236A OF 379

ABBREVIATIONS

A	AMBER
A, AMPS	AMPERE
AF	AMPS FRAME
AH	AIR HORN
ALT	ALTERNATING
AM	AMMETER
AS	AMBER TRAFFIC SIGNAL
AT	AMPS TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAUGE
BCP	BRIDGE CONTROL PERMISSIVE
BP	BYPASS
CB	CIRCUIT BREAKER
CFR	CODE OF FEDERAL REGULATIONS
CKT	CIRCUIT
CP	CONTROL POWER
CR	CONTROL RELAY
CT	CURRENT TRANSFORMER
DC	DIRECT CURRENT
DIA	DIAMETER
DIM	DIMENSION
DISC, DS	DISCONNECT
DSS	DOOR SAFETY SWITCH
E	EAST
EBG	EAST BARRIER GATE
EFBG	EAST OFF GOING BARRIER GATE
EFWG	EAST OFF GOING WARNING GATE
EHTR	EAST HYDRAULIC TANK HEATER
EL	ELEVATION
EM	EAST MOTOR
EMAIN	EAST MAIN BUS
ENBG	EAST ON COMING BARRIER GATE
ENWG	EAST ON COMING WARNING GATE
ESP	EAST SPAN LOCK
ESPM	EAST SUMP PUMP MOTOR
ESTOP	EMERGENCY STOP
EWG	EAST WARNING GONG
F	FAHRENHEIT
FCT	FLUID CRITICAL TEMPERATURE
FHT	FLUID HIGH TEMPERATURE
FLT	FLUID LOW TEMPERATURE
FR	FLASHER RELAY
FVR	FULL VOLTAGE REVERSING
FVNR	FULL VOLTAGE NON-REVERSING
G	GREEN, GROUND
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
HC	HEATER CONTACTOR
HCSS	HAND CRANK SAFETY SWITCH
HDPE	HIGH DENSITY POLYETHYLENE
HP	HEATING PANEL, HORSE POWER
HPOE	HIGH POWER OVER ETHERNET
HPU	HYDRAULIC POWER UNIT
HTR	HEATER
HZ	HERTZ
IL	INDICATOR LIGHT
INST	INSTANTANEOUS
KAIC	KILO AMPERE INTERRUPTING CURRENT
KSS	KEY SELECTOR SWITCH
KVA	KILO VOLT AMPERE
K	WKILOWATT
L	LOWER
LED	LIGHT EMITTING DIODE

ABBREVIATIONS CONTD.

LP	LIGHTING PANEL
LS	LIMIT SWITCH
LT	LAMP TEST
M	MOTOR, MOTOR CONTACTOR
MA	MAIN BUS CURRENT, MILLIAMPERE
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTION
MHW	MEAN HIGH WATER
MIN	MINIMUM
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
MV	MAIN BUS VOLTAGE
N	NEUTRAL
NAV	NAVIGATION
NC	NORMALLY CLOSED
NEL	NORTH EAST SPAN LOCK
NEMA	NATIONAL ELECTRICAL MANUFACTURER ASSOCIATION
NETL	NORTH EAST TAIL LOCK
NO	NORMALLY OPENED, NUMBER
NTS	NOT TO SCALE
NWL	NORTH WEST SPAN LOCK
NWTL	NORTH WEST TAIL LOCK
OD	OUTER DIAMETER
OHW	ORDINARY HIGH WATER
OL	OVERLOAD
P	POLE
PB	PUSH BUTTON
PFR	PHASE FAILURE RELAY
PH	PHASE
POE	POWER OVER ETHERNET
PVC	POLYVINYL CHLORIDE
R	RED, RAISE
RS	RED TRAFFIC SIGNAL
SEC	SECOND(S)
SEL	SOUTH EAST SPAN LOCK
SERV	SERVICE
SETL	SOUTH EAST TAIL LOCK
SL	SPAN LOCK
SLD	SPAN LOCK DRIVEN
SLP	SPAN LOCK PULLED
SMF	SINGLE MODE FIBER
SS	SELECTOR SWITCH, STAINLESS STEEL
STA	STATION
SUB	SUBMARINE
SWL	SOUTH WEST SPAN LOCK
SWTL	SOUTH WEST TAIL LOCK
TAS	THERMOSTAT
TC	TERMINATION CABINET
TR	TRANSFORMER, TIME DELAY RELAY
TS	TRAFFIC SIGNAL, TEMPERATURE SWITCH
TSP	TWISTED SHIELDED PAIR
TRANS	TRANSDUCER
TYP	TYPICAL
UH	UNIT HEATER
UTIL	UTILITY
V	VOLTAGE
VA	VOLT AMPERE
VAC	AC VOLTAGE
VM	VOLTMETER
VM-E	EAST BUS VOLTMETER
VM-W	WEST BUS VOLTMETER
VT	VERMONT
W	WATT, WEST
WBG	WEST BARRIER GATE
WFBG	WEST OFF GOING BARRIER GATE
WFWG	WEST OFF GOING WARNING GATE

ABBREVIATIONS CONTD.

WG	WARNING GATE
WH	WATT-HOUR
WHTR	WEST HYDRAULIC TANK HEATER
WM	WEST MOTOR
WMAIN	WEST MAIN BUS
WNBG	WEST ON COMING BARRIER GATE
WNWG	WEST ON COMING WARNING GATE
WSP	WEST SPAN LOCK
WSPM	WEST SUMP PUMP MOTOR
WT	WEST TRAFFIC
WV	WEST BUS VOLTAGE
WVM	WEST VOLTAGE METER
WWG	WEST WARNING GONG

LEGEND

CIRCUIT BREAKER


DISCONNECT SWITCH


ATS


TRANSFORMER


CURRENT TRANSFORMER


OVERLOAD

VOLTMETER

AMMETER

WATTMETER

WATT-HOUR METER

MOTOR, 20 DENOTES HP RATING

MOTOR WITH BRAKE,
20 DENOTES HP RATING

MAGNETIC CONTACTOR OR RELAY,
M DENOTES MAGNETIC CONTACTOR
CR DENOTES RELAY

GROUND

FUSE

NORMALLY CLOSED CONTACT

NORMALLY OPENED CONTACT

SOFT STARTER

LEGEND CONTD.

NORMALLY CLOSED PUSH BUTTON


NORMALLY OPEN PUSH BUTTON


SELECTOR SWITCH, POSITION MAINTAINED


SELECTOR SWITCH, POSITION RETURNED

NORMALLY CLOSED HELD CLOSED LIMIT SWITCH

NORMALLY OPEN HELD OPEN LIMIT SWITCH

NORMALLY OPEN HELD CLOSED LIMIT SWITCH


NORMALLY CLOSED HELD OPEN LIMIT SWITCH

NORMALLY OPEN TEMPERATURE SWITCH

NORMALLY CLOSED TEMPERATURE SWITCH OR
HAND CRANK SAFETY SWITCH


LOW LEVEL SWITCH


PRESSURE SWITCH


NORMALLY CLOSED TIME DELAY RELAY CONTACT


NORMALLY OPEN TIME DELAY RELAY CONTACT


INDICATOR LIGHT


HEATER


AIR HORN


GONG


RECEPTACLE

CENTER LINE


TSP WIRING

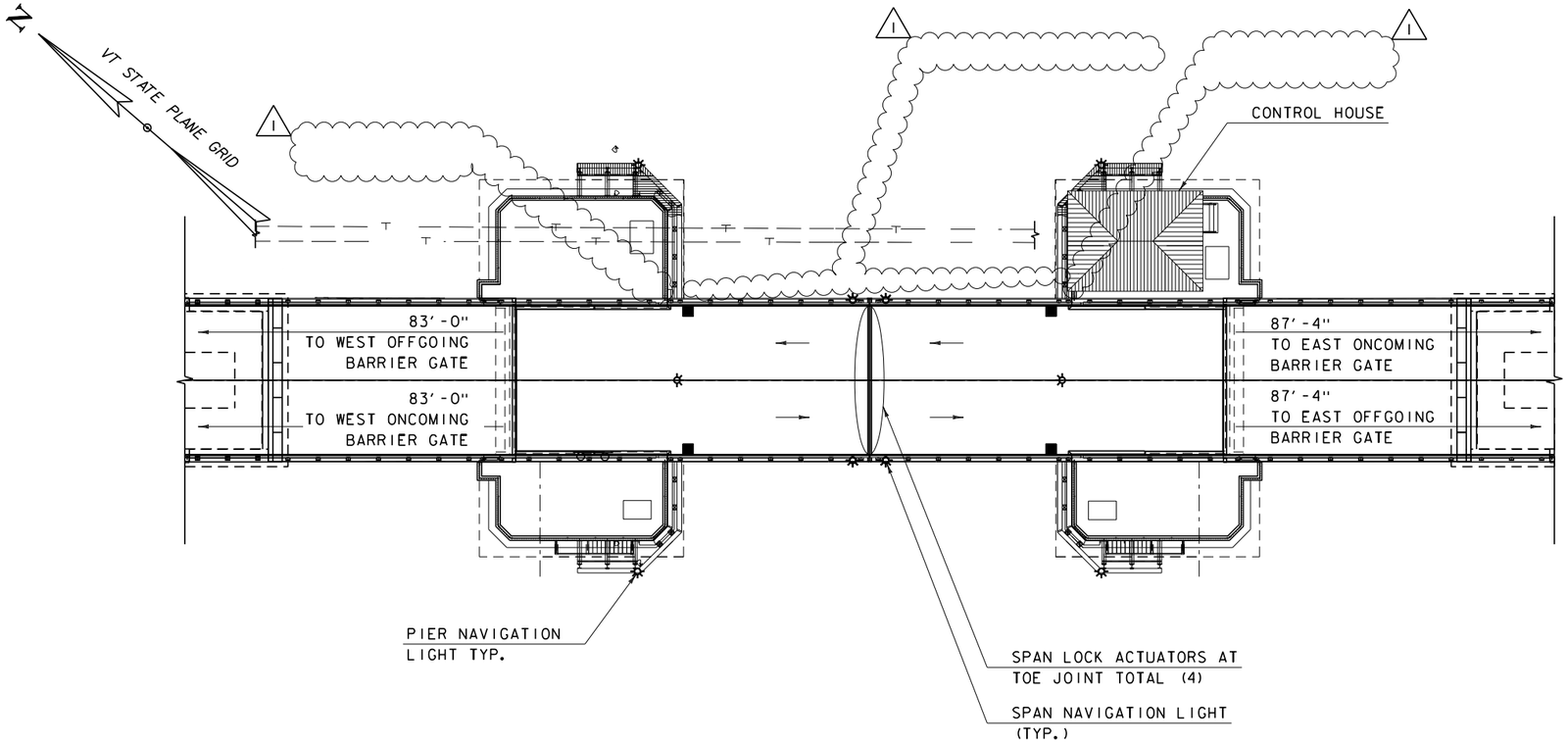
UNDERGROUND CONDUIT

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)

FILE NAME: z12bl42elegendl.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: C. SHEN
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
ELECTRICAL LEGEND AND ABBREVIATIONS	SHEET 237 OF 379

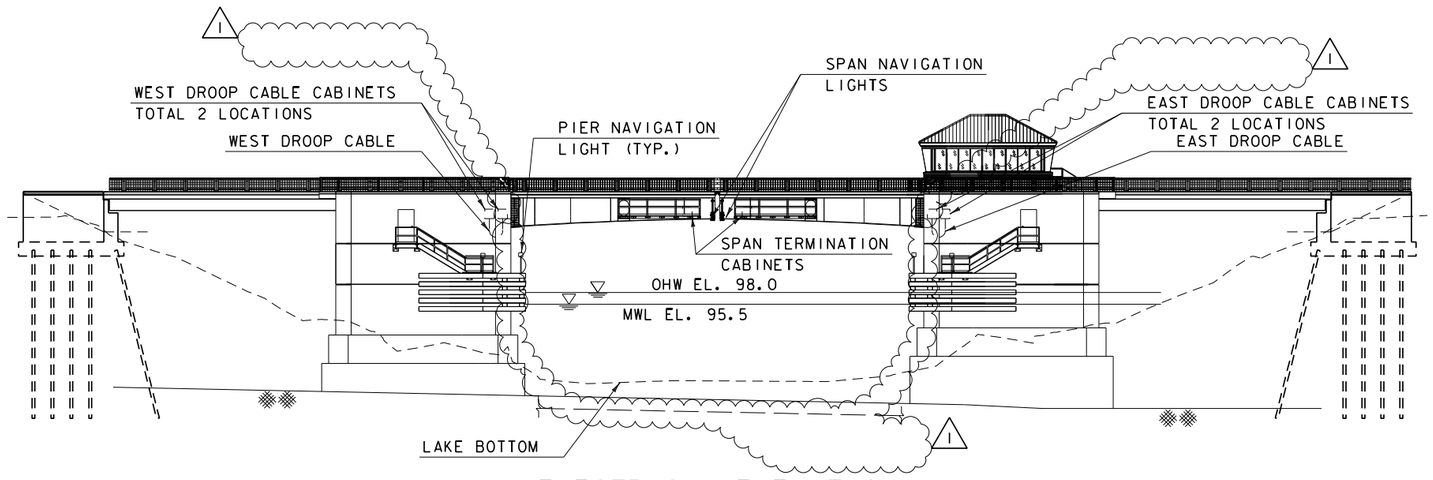
NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.



ELECTRICAL PLAN

SCALE 1/16" = 1'-0"



ELECTRICAL ELEVATION

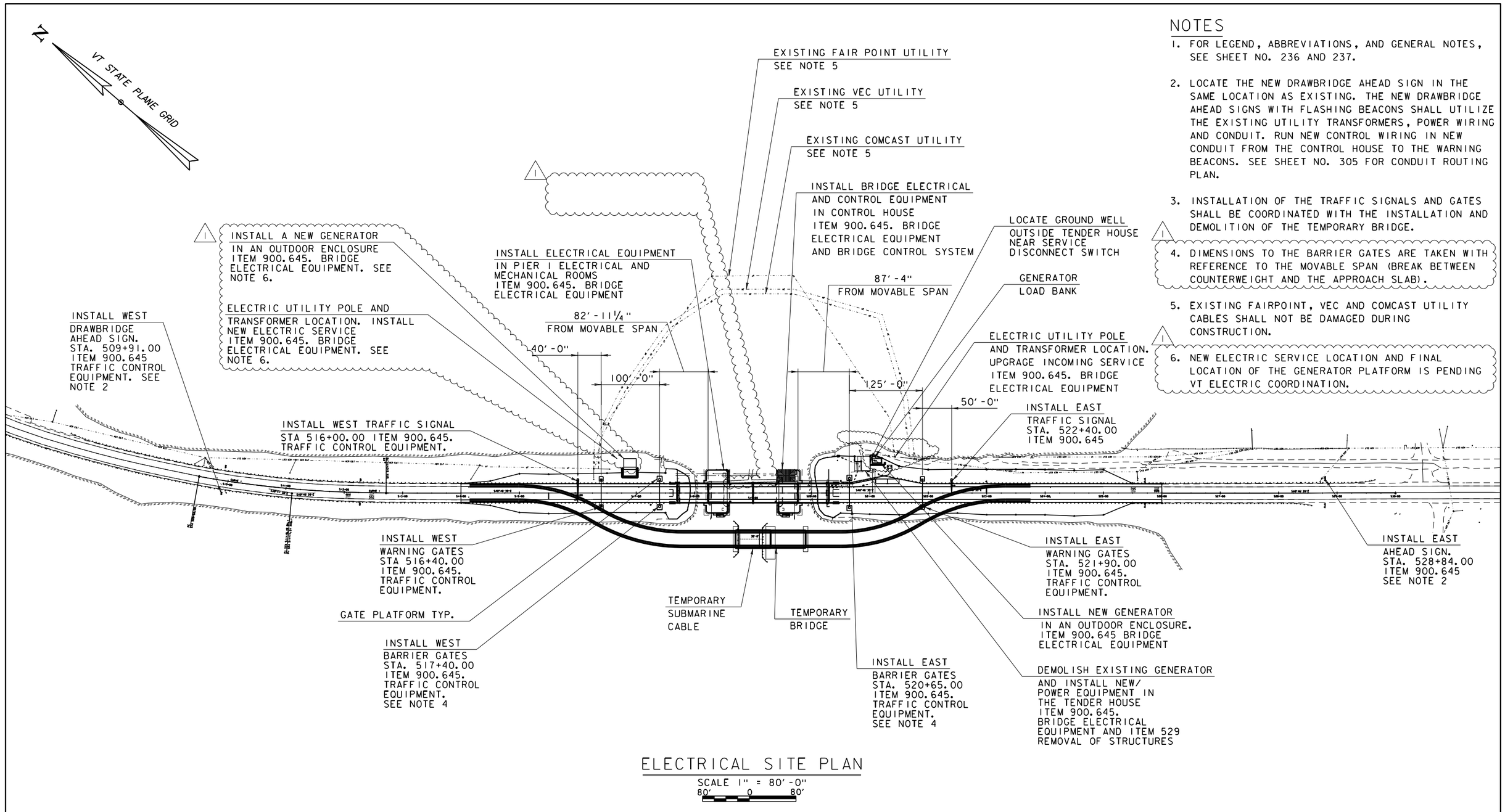
SCALE 1/16" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142elecpe.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
ELECTRICAL PLAN & ELEVATION

PLOT DATE: 2/6/2018
DRAWN BY: J. TAYLOR
CHECKED BY: K. HAJJEH
SHEET 238 OF 379



ELECTRICAL SITE PLAN

SCALE 1" = 80'-0"
80' 0 80'

NOTES

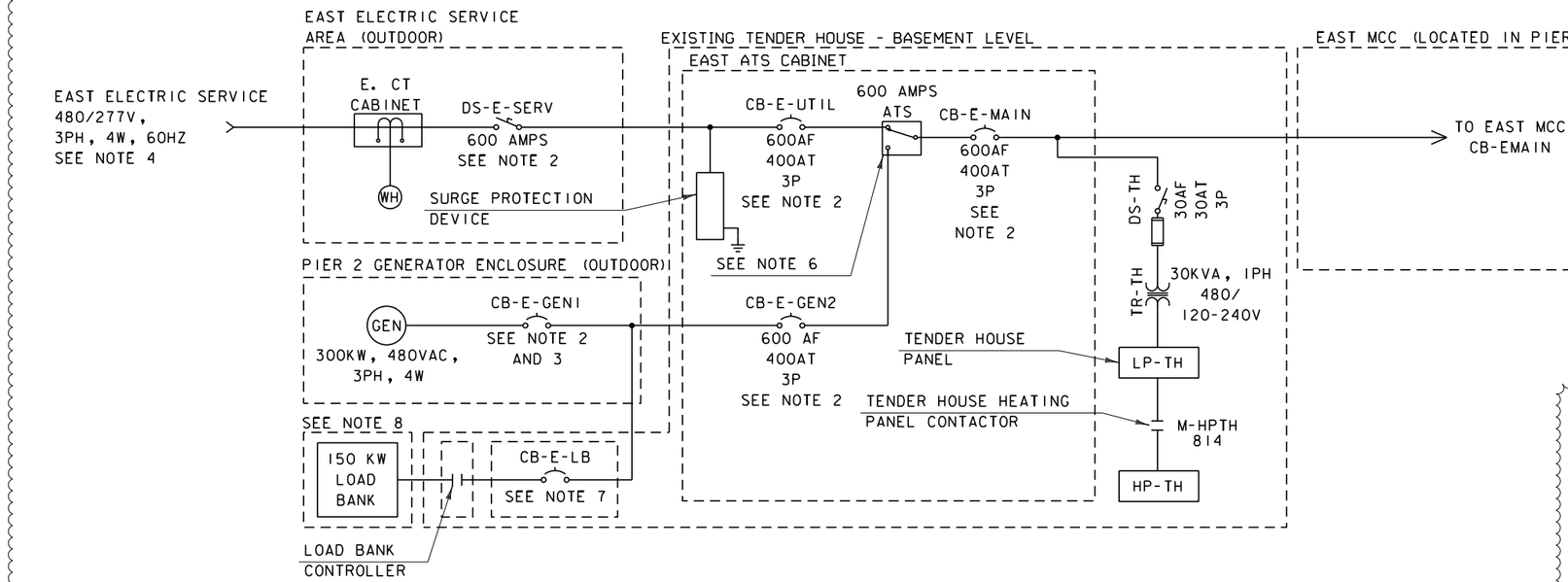
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. LOCATE THE NEW DRAWBRIDGE AHEAD SIGN IN THE SAME LOCATION AS EXISTING. THE NEW DRAWBRIDGE AHEAD SIGNS WITH FLASHING BEACONS SHALL UTILIZE THE EXISTING UTILITY TRANSFORMERS, POWER WIRING AND CONDUIT. RUN NEW CONTROL WIRING IN NEW CONDUIT FROM THE CONTROL HOUSE TO THE WARNING BEACONS. SEE SHEET NO. 305 FOR CONDUIT ROUTING PLAN.
3. INSTALLATION OF THE TRAFFIC SIGNALS AND GATES SHALL BE COORDINATED WITH THE INSTALLATION AND DEMOLITION OF THE TEMPORARY BRIDGE.
4. DIMENSIONS TO THE BARRIER GATES ARE TAKEN WITH REFERENCE TO THE MOVABLE SPAN (BREAK BETWEEN COUNTERWEIGHT AND THE APPROACH SLAB).
5. EXISTING FAIRPOINT, VEC AND COMCAST UTILITY CABLES SHALL NOT BE DAMAGED DURING CONSTRUCTION.
6. NEW ELECTRIC SERVICE LOCATION AND FINAL LOCATION OF THE GENERATOR PLATFORM IS PENDING VT ELECTRIC COORDINATION.

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: zi2bl42elecsite.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
ELECTRICAL SITE PLAN

PLOT DATE: 2/6/2018
DRAWN BY: J. TAYLOR
CHECKED BY: K. HAJJEH



NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. THE MAIN SERVICE DISCONNECT SWITCH AND GENERATOR CIRCUIT BREAKERS SHALL BE CAPABLE OF BEING LOCKED OUT AND TAGGED OUT.
3. GENERATOR CURRENT BREAKER SIZE SHALL BE COORDINATED WITH GENERATOR MANUFACTURER.
4. NEUTRAL CONDUCTOR SHALL BE BONDED TO GROUND AT THE UTILITY POLE/TRANSFORMER. BOND NEUTRAL TO GROUND PER VT ELECTRIC REQUIREMENTS.
5. ALL BREAKER TRIP SETTINGS SHALL BE DETERMINED IN ACCORDANCE WITH THE NEC AND COORDINATED WITH THE LOADS FURNISHED AND INSTALLED.
6. ATS SHALL BE SERVICE ENTRANCE RATED.
7. FURNISH CIRCUIT BREAKER IN A NEMA 4X STAINLESS STEEL ENCLOSURE. THE ENCLOSURE SHALL BE FURNISHED WITH A SWITCH CONNECTED TO THE TRIPPING MECHANISM OF THE CIRCUIT BREAKER.
8. THE EAST LOAD BANK SHALL BE LOCATED OUTSIDE THE TENDER HOUSE. FOR LOAD BANK LOCATION, SEE SHEET 282 FOR DETAILS.

⚠1

9. THE WEST ATS, LOAD BANK, LOAD BANK CONTROLLER AND LOAD BANK CIRCUIT BREAKER SHALL BE LOCATED ON THE GENERATOR PLATFORM, NEXT TO THE GENERATOR.

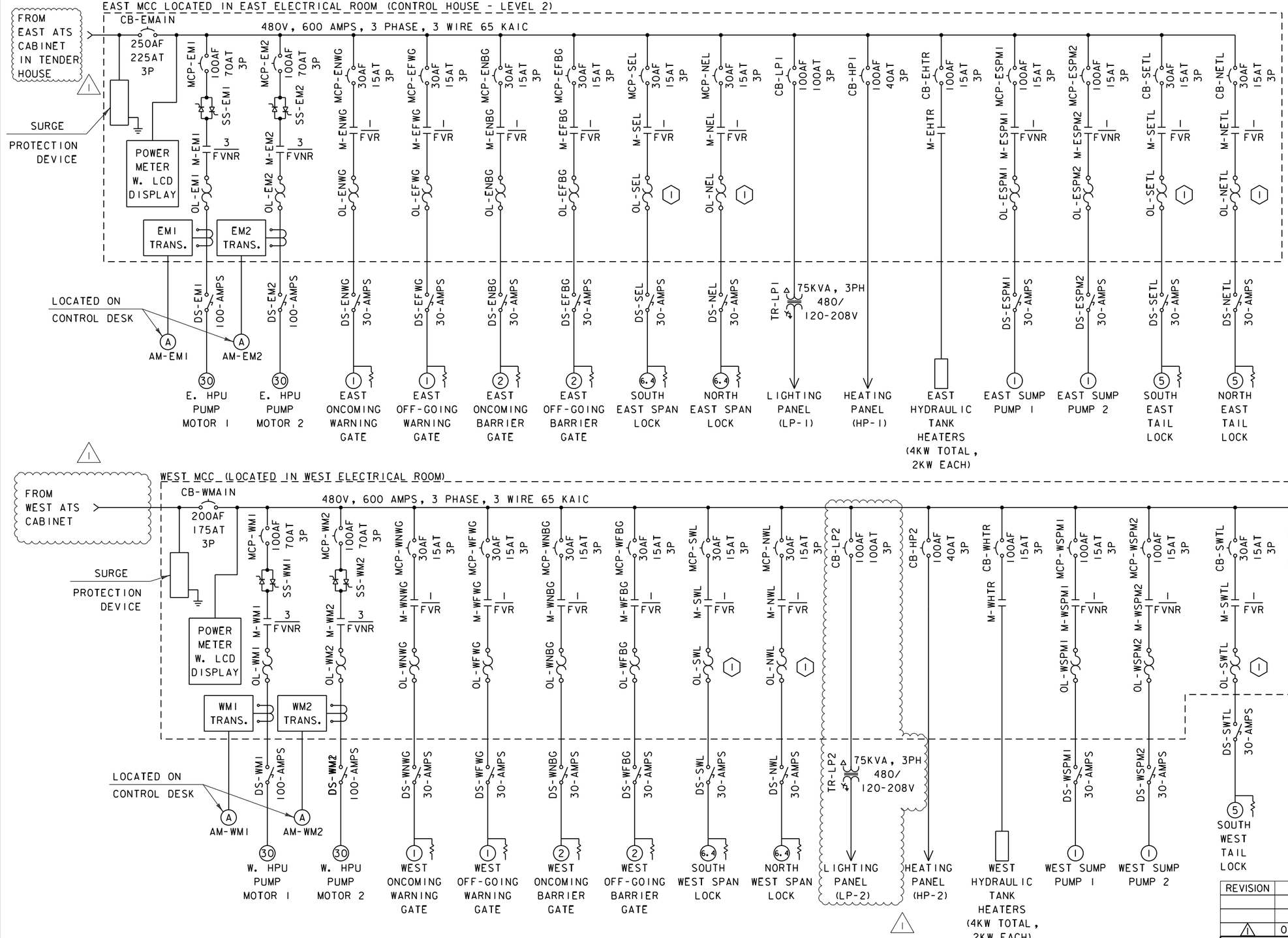
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REVISION	DATE	DESCRIPTION	BY
⚠1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142onelinel.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
ONE LINE DIAGRAM 1 OF 3 ⚠1

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 240 OF 379



NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. ALL COMPARTMENTS OF THE MCC SHALL BE CAPABLE OF BEING PADLOCKED FOR LOCKOUT AND TAGOUT PROCEDURE.
3. GATE DISCONNECT SWITCHES SHALL BE FURNISHED INSIDE THE GATES. COORDINATE WITH GATE MANUFACTURER.
4. ALL BREAKER TRIP SETTINGS SHALL BE DETERMINED IN ACCORDANCE WITH THE NEC AND COORDINATED WITH THE LOADS FURNISHED AND INSTALLED.

KEY NOTES

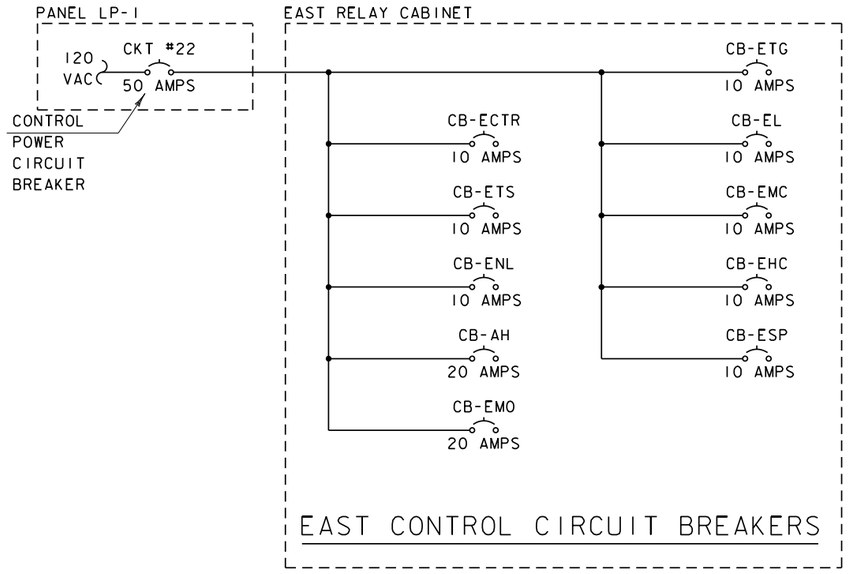
(1) FURNISH AND INSTALL MANUFACTURER RECOMMENDED OVERLOAD. OVERLOAD SHALL BE SIZED TO PROTECT THE ACTUATOR MOTOR AND INTERNAL COMPONENTS.

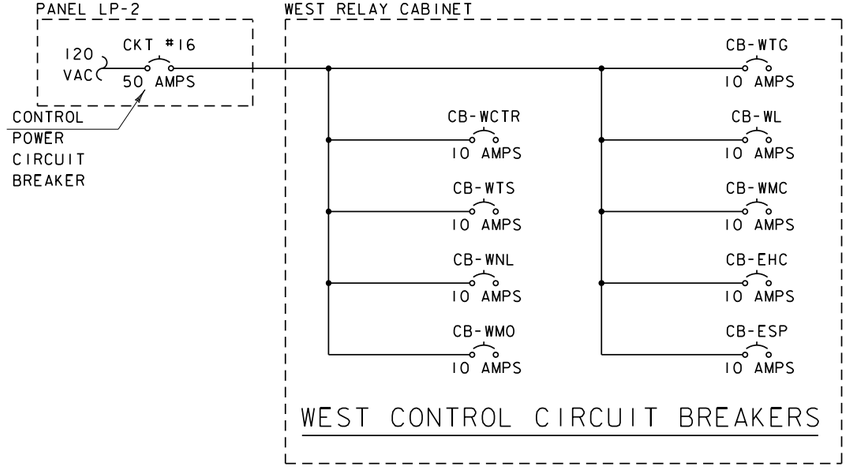
REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142oneline2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
ONE LINE DIAGRAM 2 OF 3 (1)

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 241 OF 379





REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142oneline3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
ONE LINE DIAGRAM 3 OF 3

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 24A OF 379

EAST INCOMING ELECTRIC SERVICE

DS-E-SERV

EAST ATS CABINET

CB-E-UTIL

CB-E-MAIN

EAST MCC

CB-EMAIN

CB-E-GEN1

CB-E-GEN2

E-GEN

SURGE PROTECTION DEVICE

CB-E-LB

EAST LOAD BANK CONTROLLER

EAST LOAD BANK

DS-TH

TR-TH

LP-ETH

M-HPTH 839

HP-ETH

SURGE PROTECTION DEVICE

TR-MV1

C.T.

C.T.

C.T.

C.T.

CB-EPFR

EPFR

EAST POWER MONITORING DEVICE

TO BRIDGE CONTROL CIRCUIT

TO 0201

WEST INCOMING ELECTRIC SERVICE

DS-W-SERV

WEST ATS CABINET

CB-W-UTIL

CB-W-MAIN

WEST MCC

CB-WMAIN

CB-W-GEN1

CB-W-GEN2

W-GEN

SURGE PROTECTION DEVICE

CB-W-LB

WEST LOAD BANK CONTROLLER

WEST LOAD BANK

TR-MV2

C.T.

C.T.

C.T.

C.T.

CB-WPFR

WPFR

WEST POWER MONITORING DEVICE

TO BRIDGE CONTROL CIRCUIT

TO 0501

NOTE

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. PHASE FAILURE RELAY CIRCUIT SHALL BE IN THE SAME BUCKET AS POWER MONITORING DEVICE. (1)

THREE LINE DIAGRAM

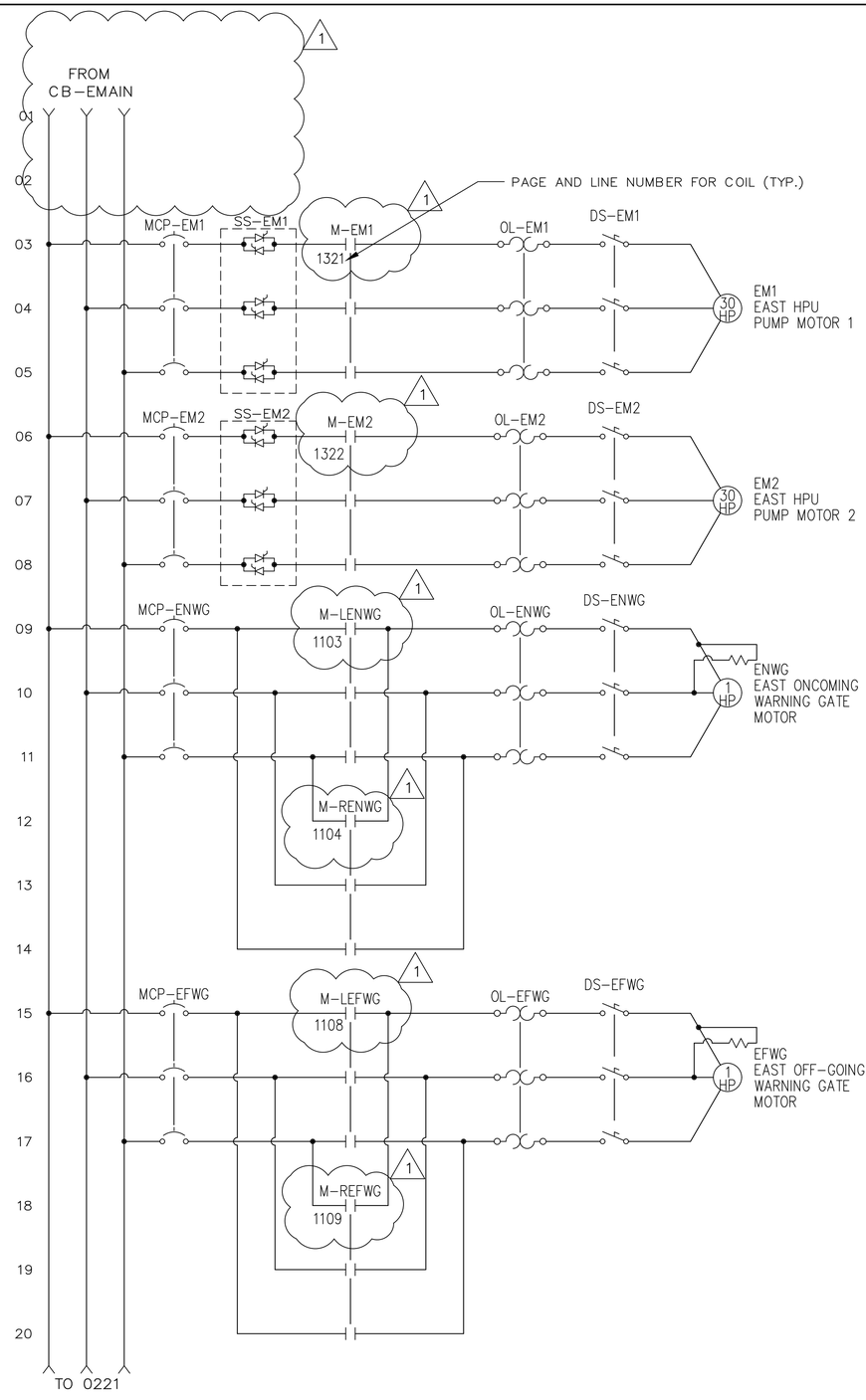
REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

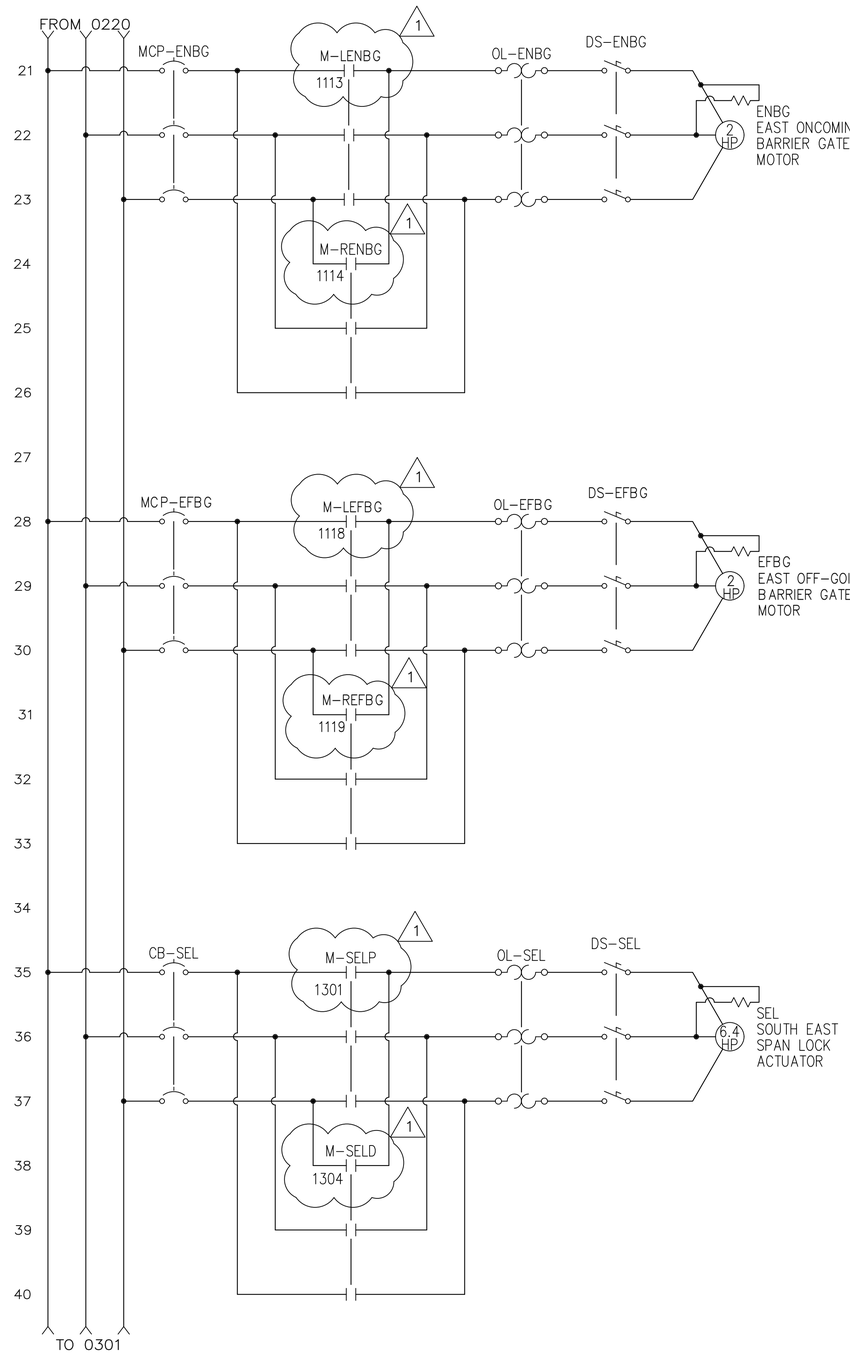
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls01.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 1

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 242 OF 379





NOTE
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.

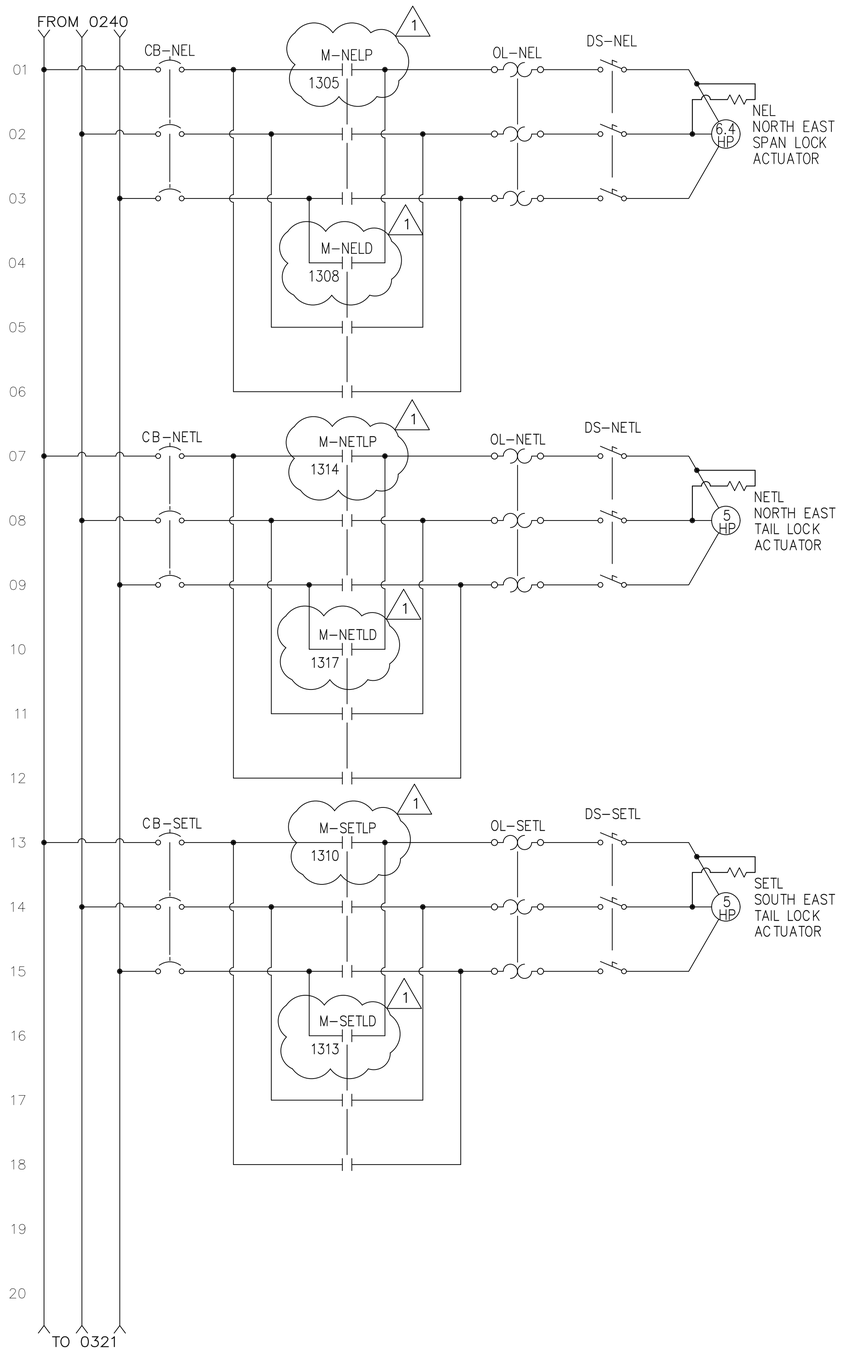
EAST MCC THREE LINE DIAGRAM 1 OF 3

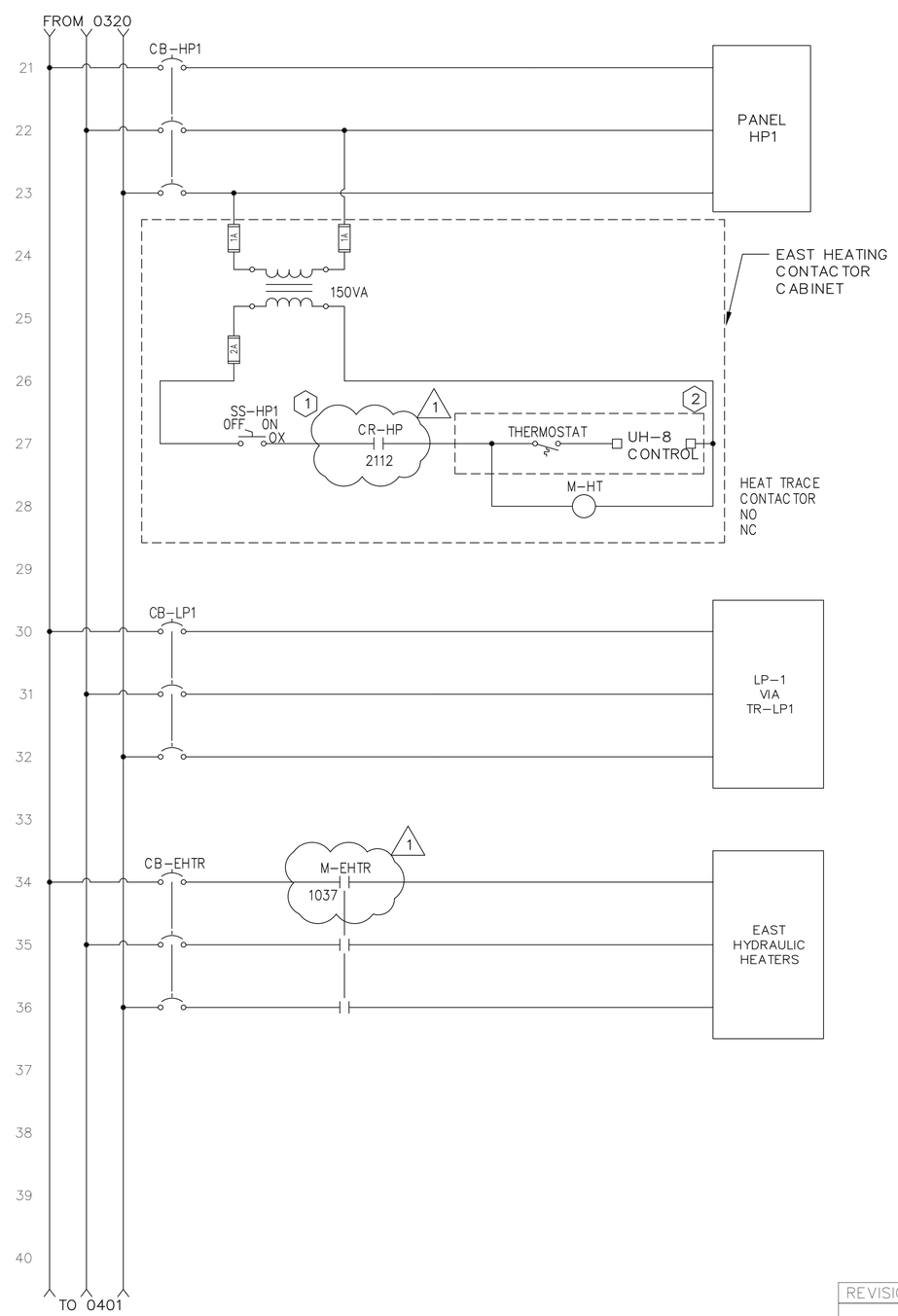
REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028–1(26)

FILE NAME: z12b142cntrls02.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 2

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 243 OF 379





NOTE
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.

KEY NOTE

(1) MOUNT SELECTOR SWITCH ON EAST HEATING CONTACTOR TERMINATION CABINET

(2) DRAWING IS TYPICAL FOR UH-8. POWER TO ALL EAST UNIT HEATERS HEATING ELEMENTS SHALL BE TURNED OFF DURING A BRIDGE LIFT, AND THE HEATER FANS SHALL REMAIN ON.

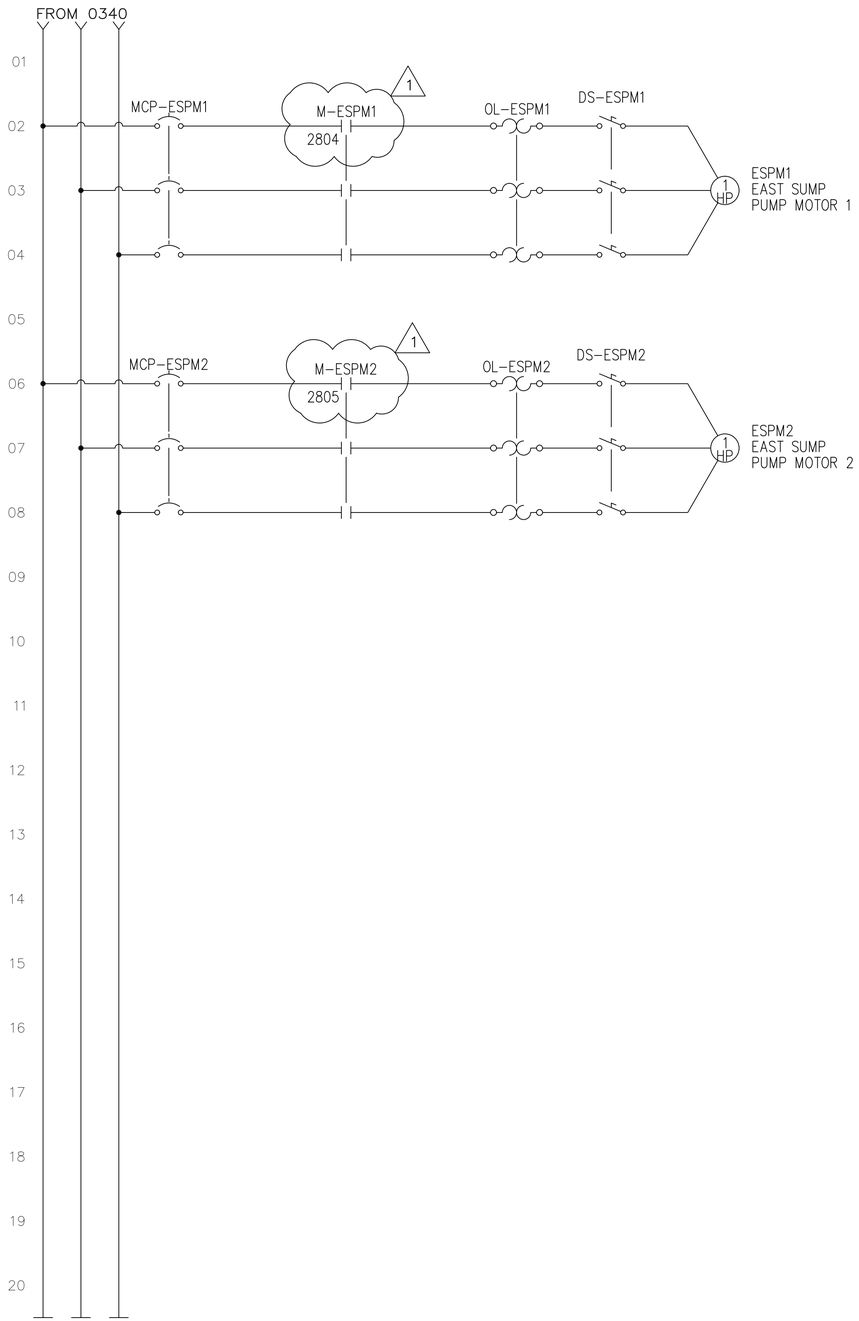
EAST MCC THREE LINE DIAGRAM 2 OF 3

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

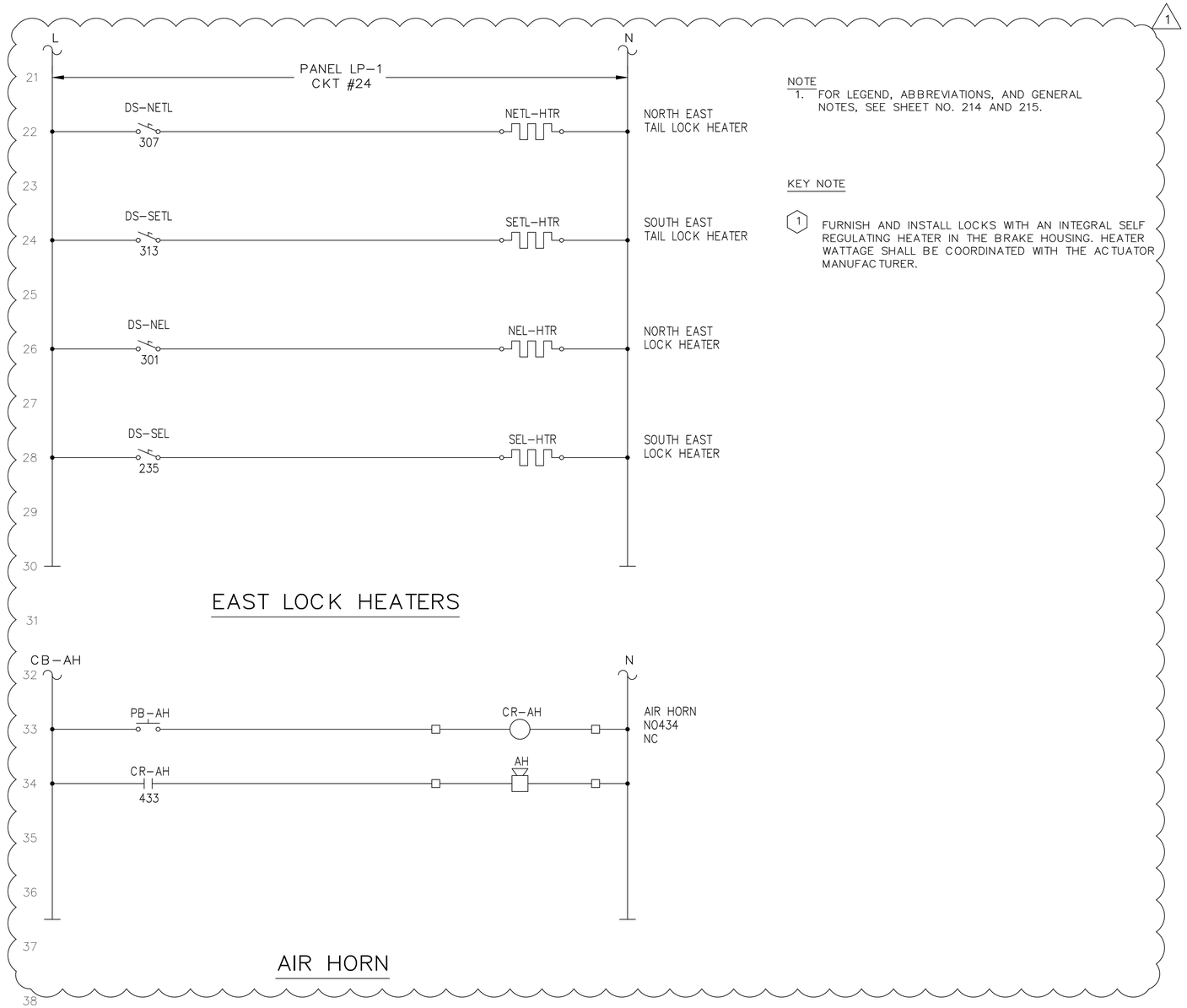
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls03.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 3

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 244 OF 379



EAST MCC THREE LINE DIAGRAM 3 OF 3



EAST LOCK HEATERS

AIR HORN

NOTE
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.

KEY NOTE

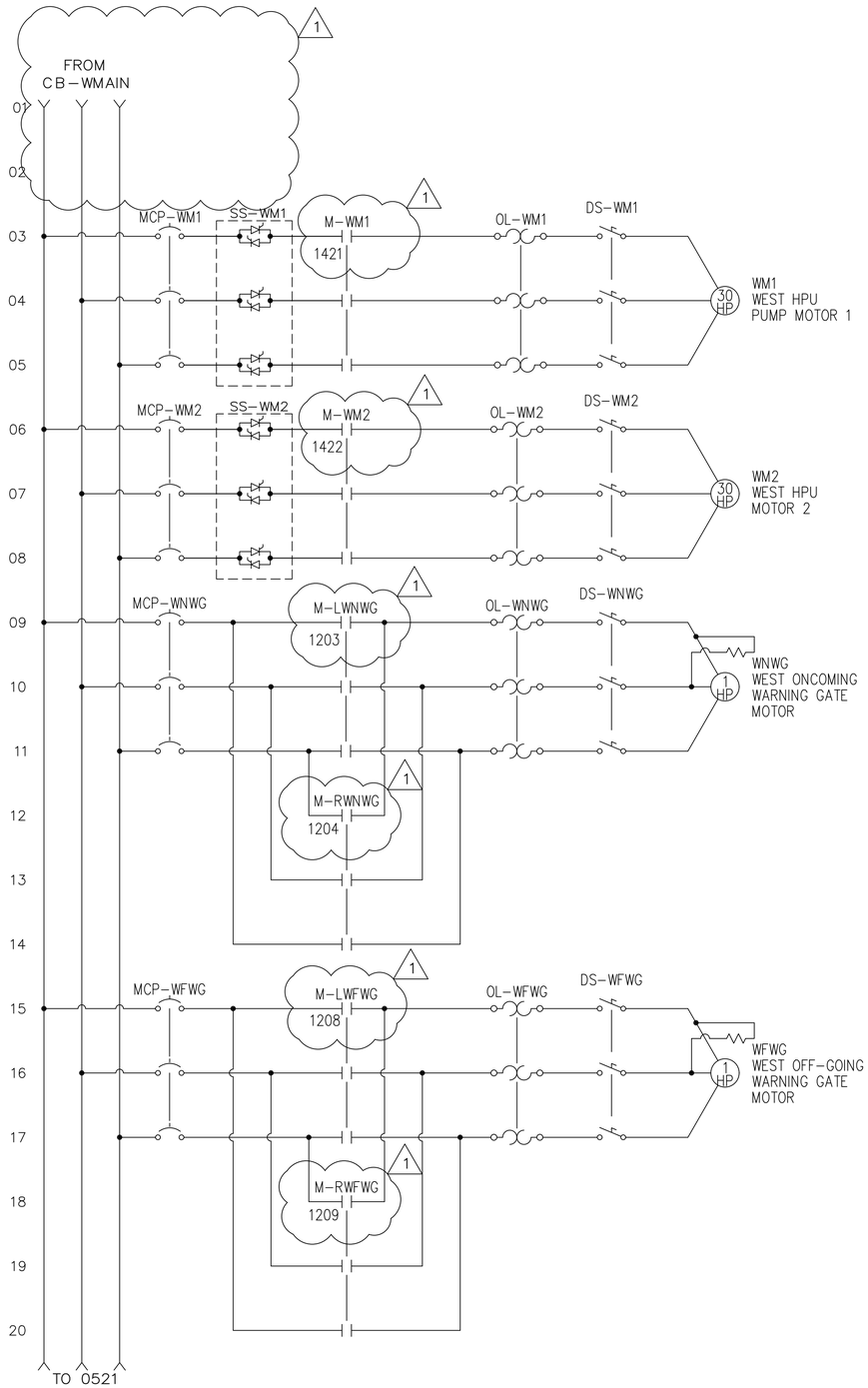
(1) FURNISH AND INSTALL LOCKS WITH AN INTEGRAL SELF REGULATING HEATER IN THE BRAKE HOUSING. HEATER WATTAGE SHALL BE COORDINATED WITH THE ACTUATOR MANUFACTURER.

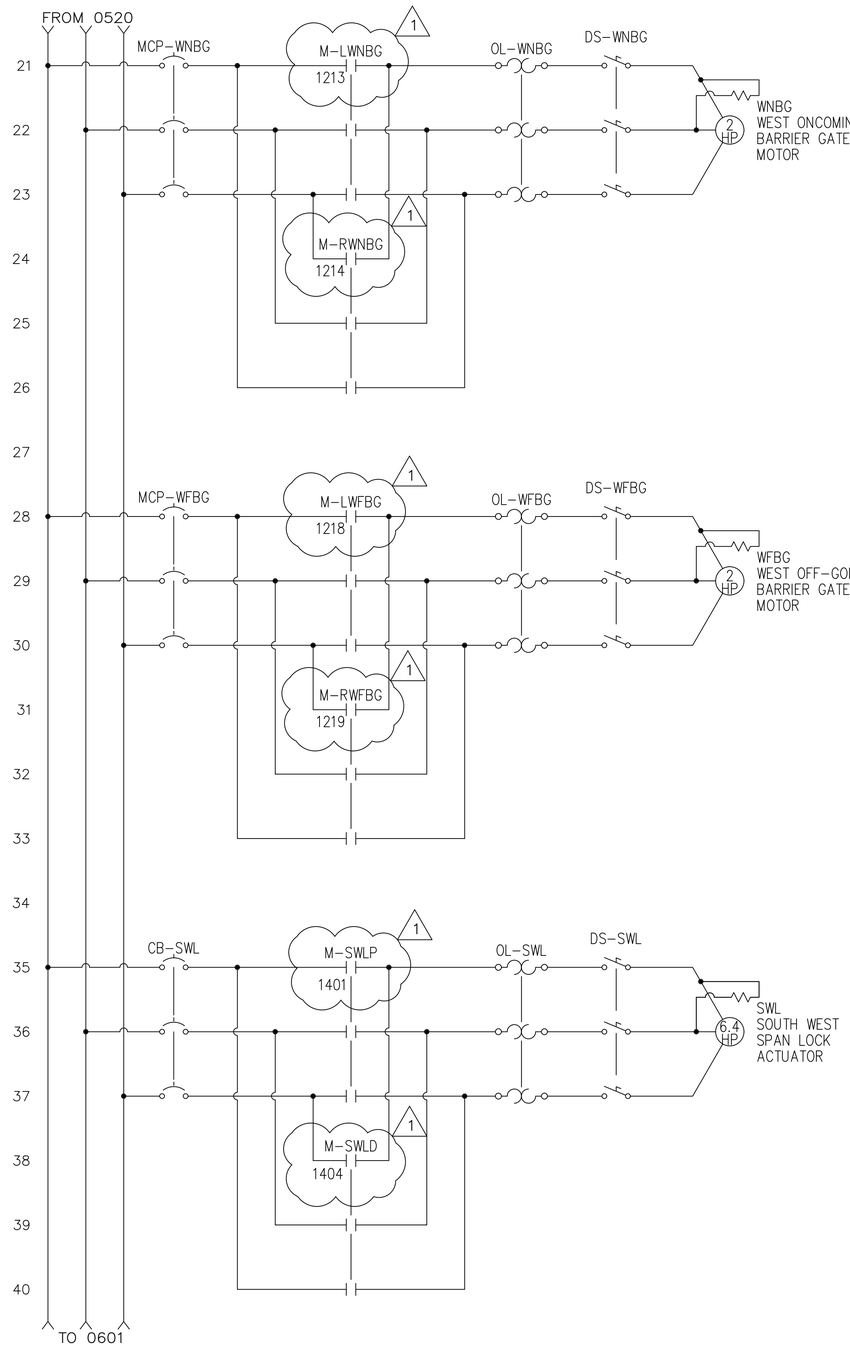
REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls04.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 4

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 245 OF 379





NOTE
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.

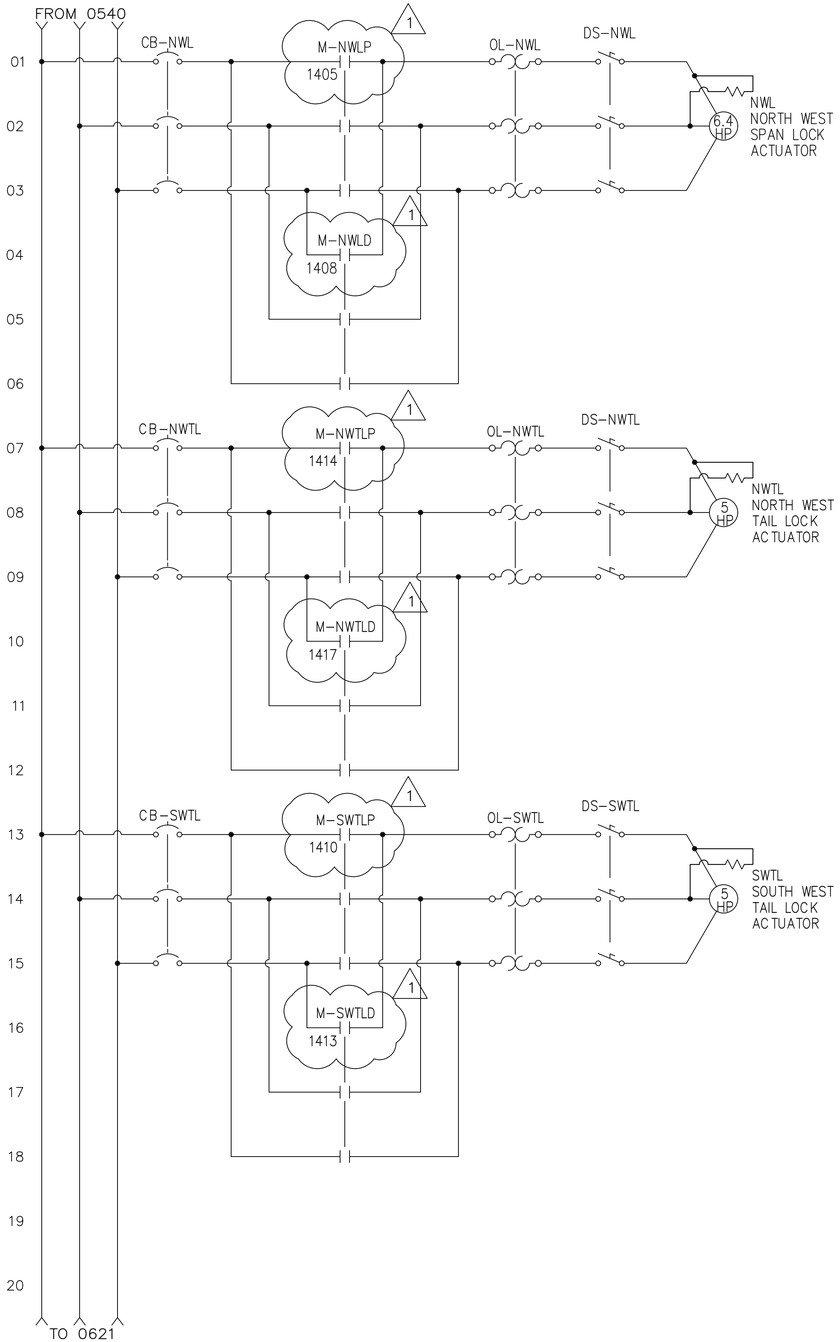
WEST MCC THREE LINE DIAGRAM 1 OF 3

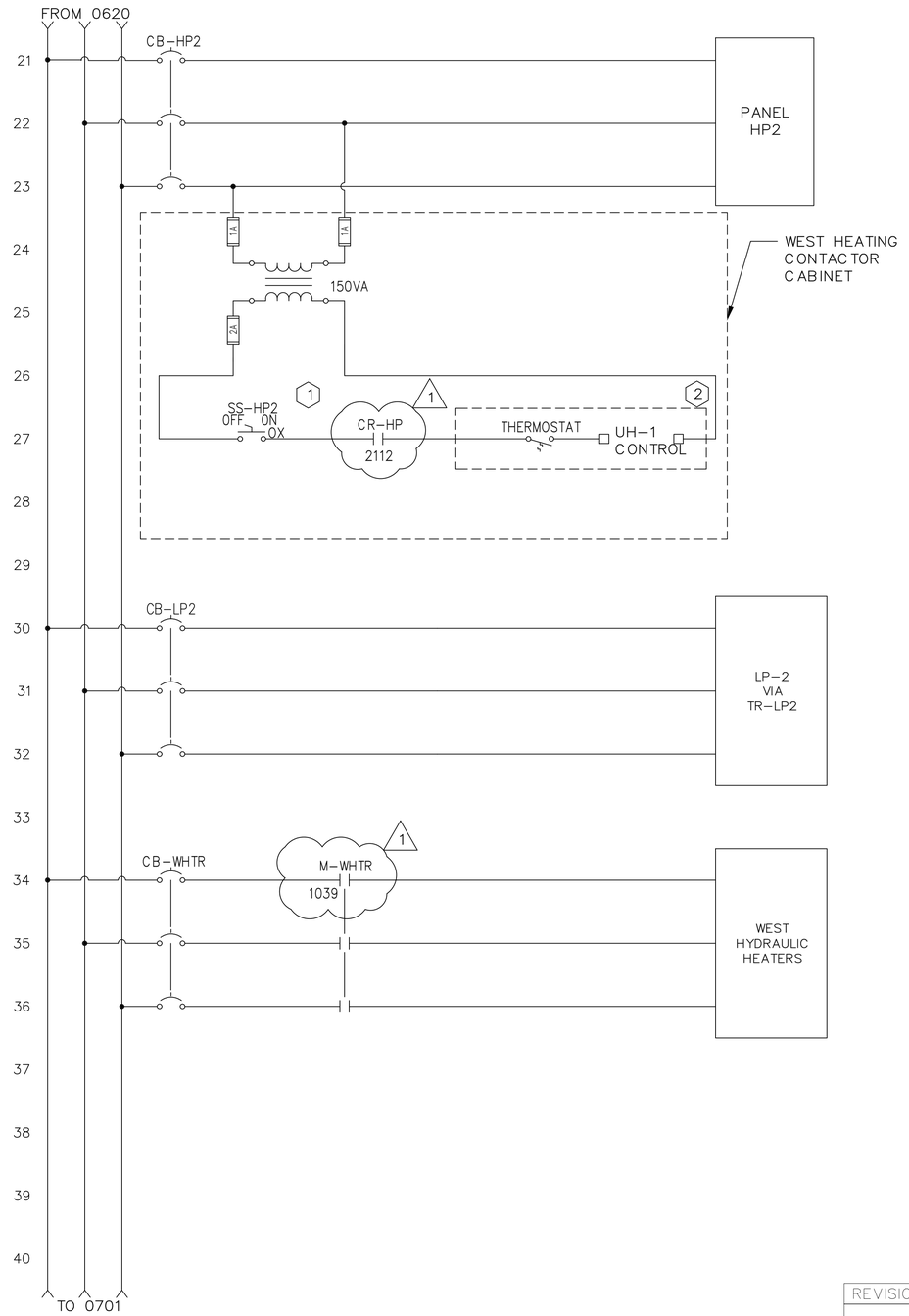
REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028–1(26)

FILE NAME: z12b142cntrls05.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 5

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 246 OF 379





NOTE
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.

KEY NOTE

(1) MOUNT SELECTOR SWITCH ON EAST HEATING CONTACTOR TERMINATION CABINET

(2) DRAWING IS TYPICAL FOR UH-1. POWER TO ALL WEST UNIT HEATERS HEATING ELEMENTS SHALL BE TURNED OFF DURING A BRIDGE LIFT, AND THE HEATER FANS SHALL REMAIN ON.

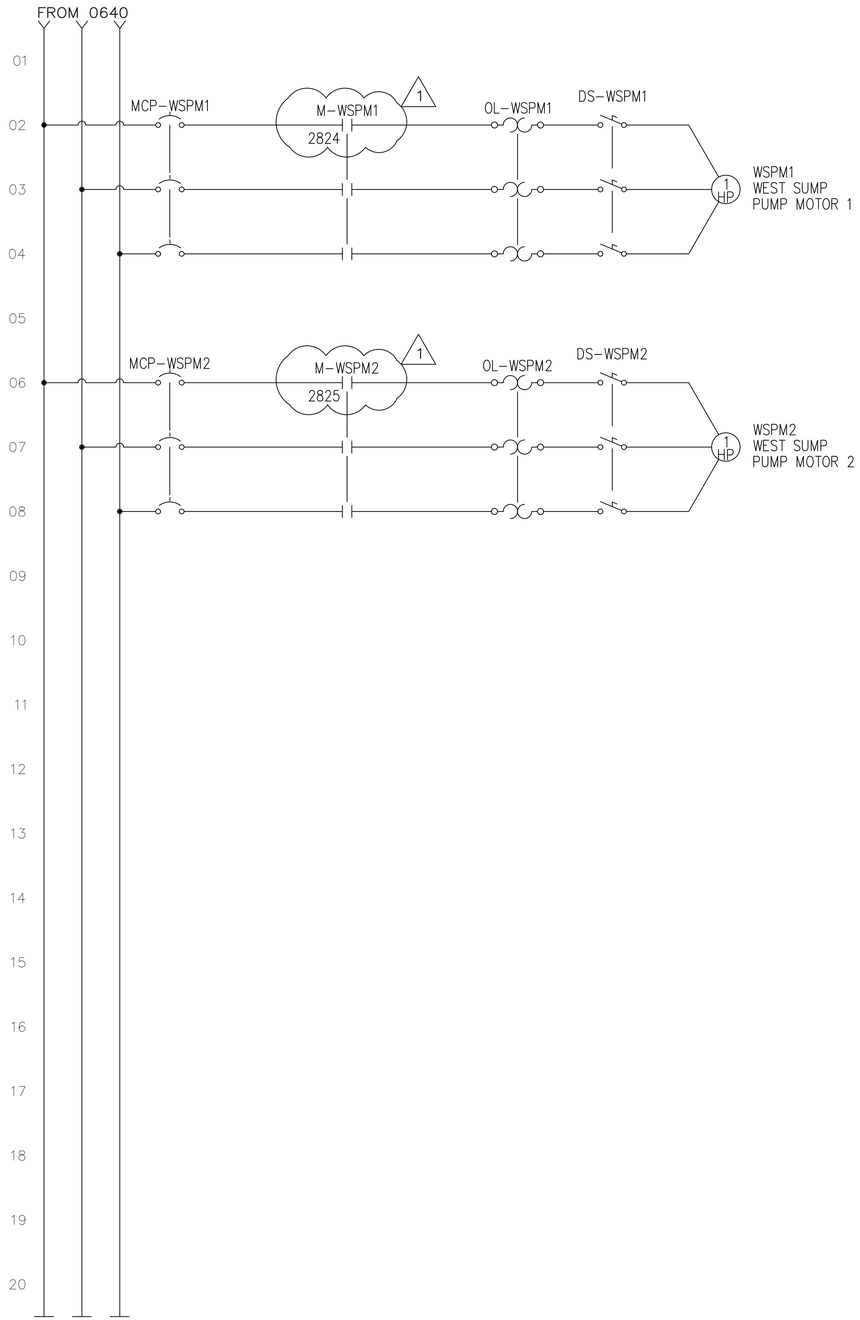
WEST MCC THREE LINE DIAGRAM 2 OF 3

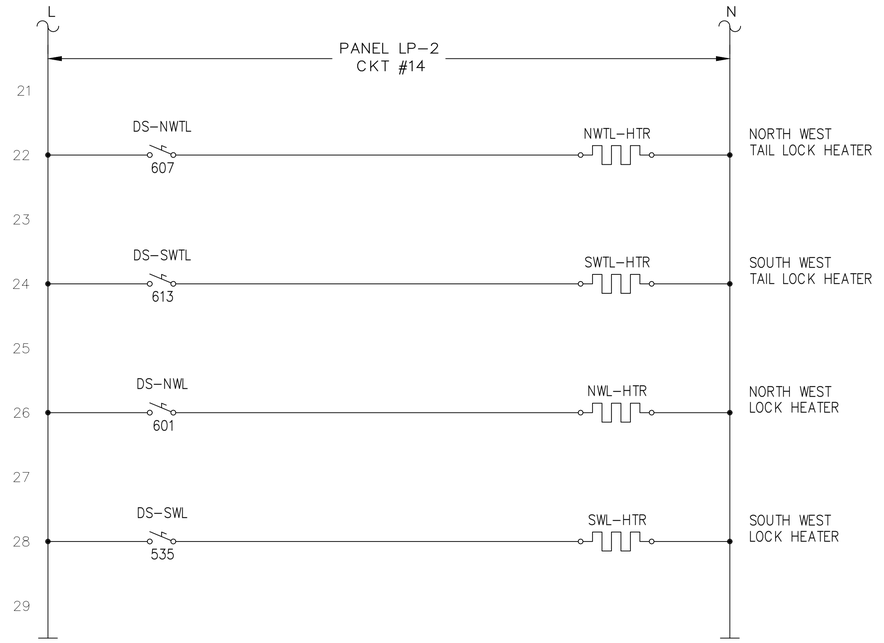
REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls06.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 6

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 247 OF 379





NOTE
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.

KEY NOTE

(1) FURNISH AND INSTALL LOCKS WITH AN INTEGRAL SELF REGULATING HEATER IN THE BRAKE HOUSING. HEATER WATTAGE SHALL BE COORDINATED WITH THE ACTUATOR MANUFACTURER.

WEST LOCK HEATERS

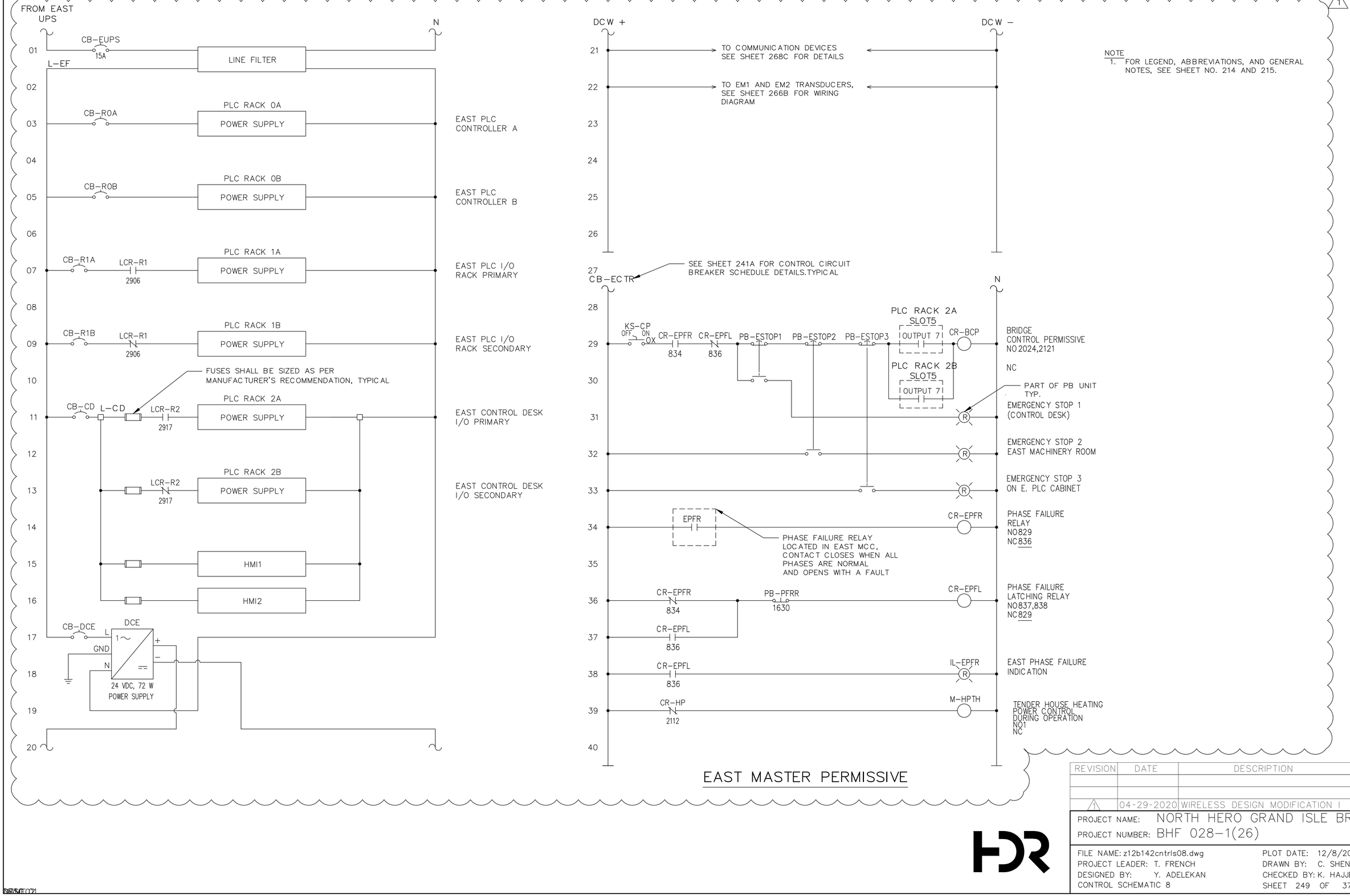
WEST MCC THREE LINE DIAGRAM 3 OF 3

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls07.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 7

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 248 OF 379



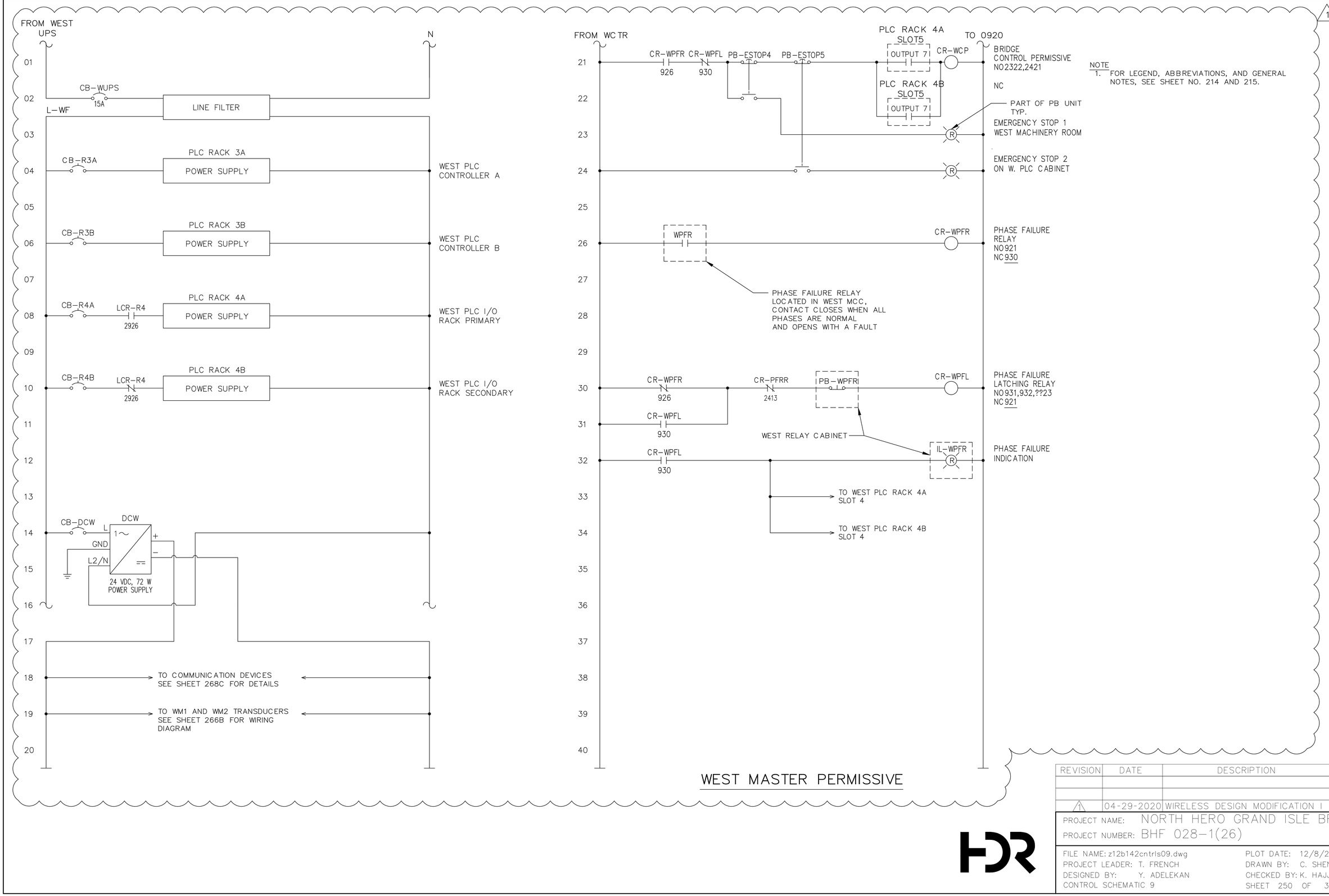
EAST MASTER PERMISSIVE

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028–1(26)

FILE NAME: z12b142cntrls08.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 8

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 249 OF 379



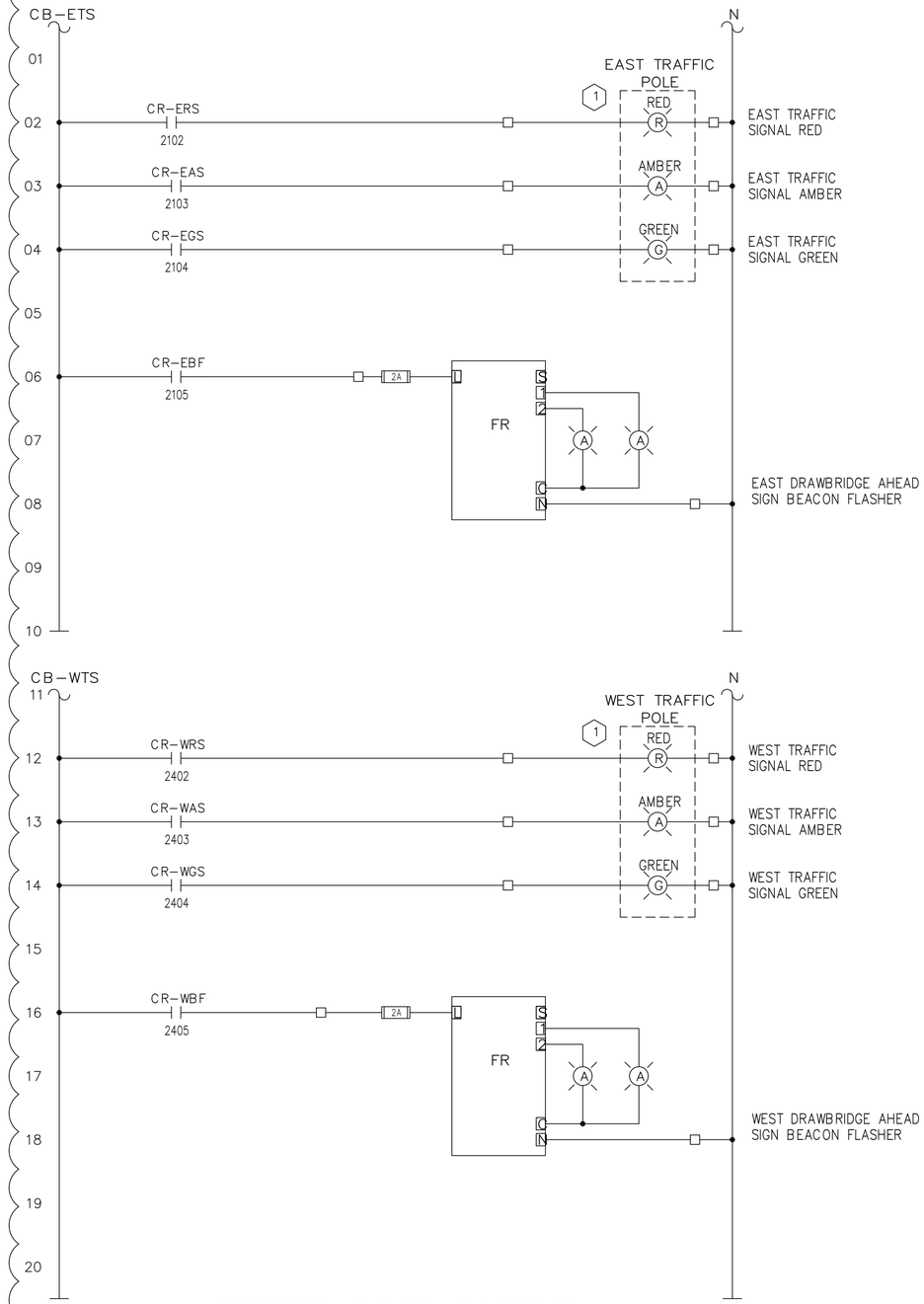
WEST MASTER PERMISSIVE

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

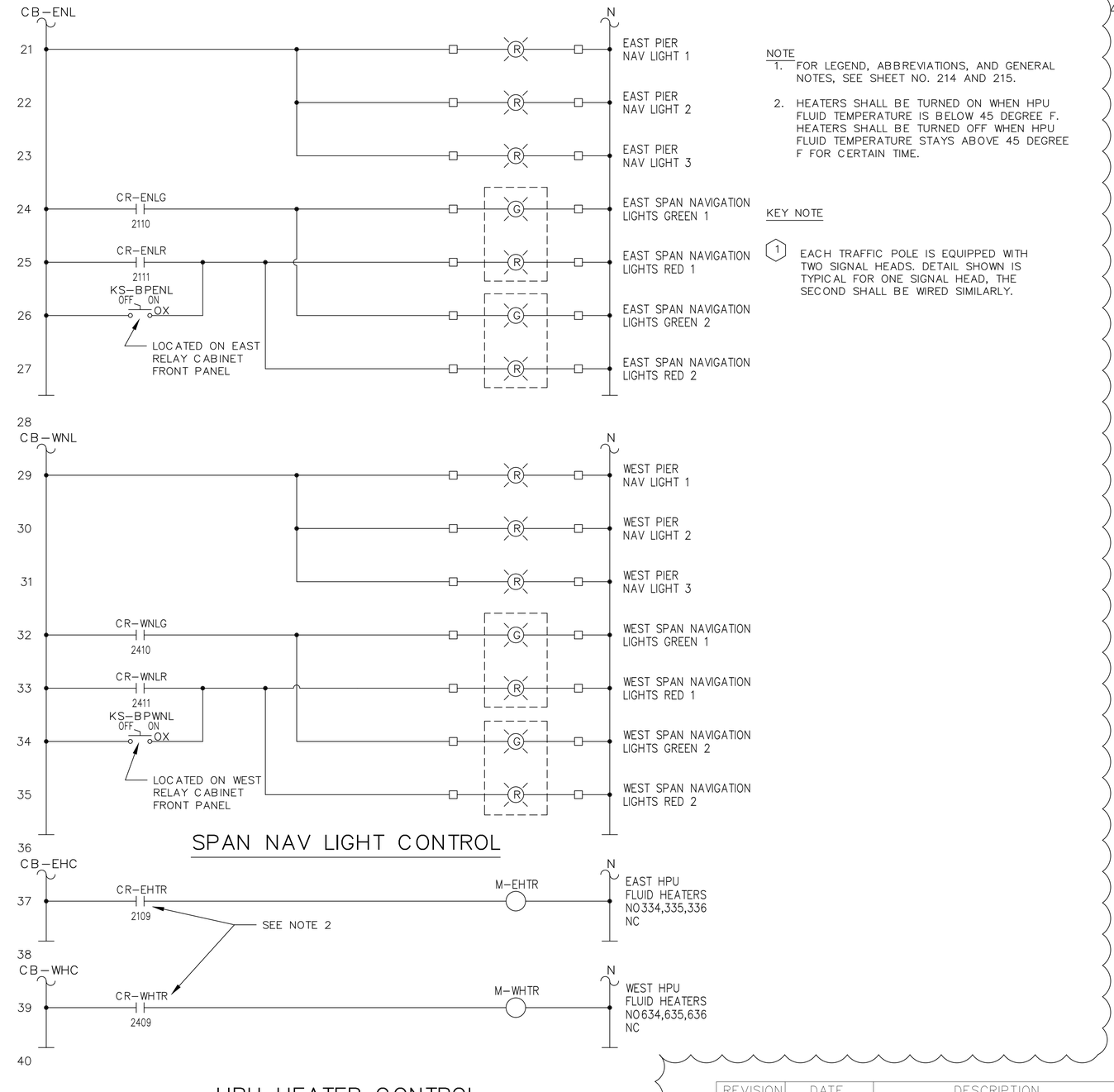
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls09.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 9

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 250 OF 379



TRAFFIC SIGNAL CONTROL



SPAN NAV LIGHT CONTROL

HPU HEATER CONTROL

1

NOTE

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. HEATERS SHALL BE TURNED ON WHEN HPU FLUID TEMPERATURE IS BELOW 45 DEGREE F. HEATERS SHALL BE TURNED OFF WHEN HPU FLUID TEMPERATURE STAYS ABOVE 45 DEGREE F FOR CERTAIN TIME.

KEY NOTE

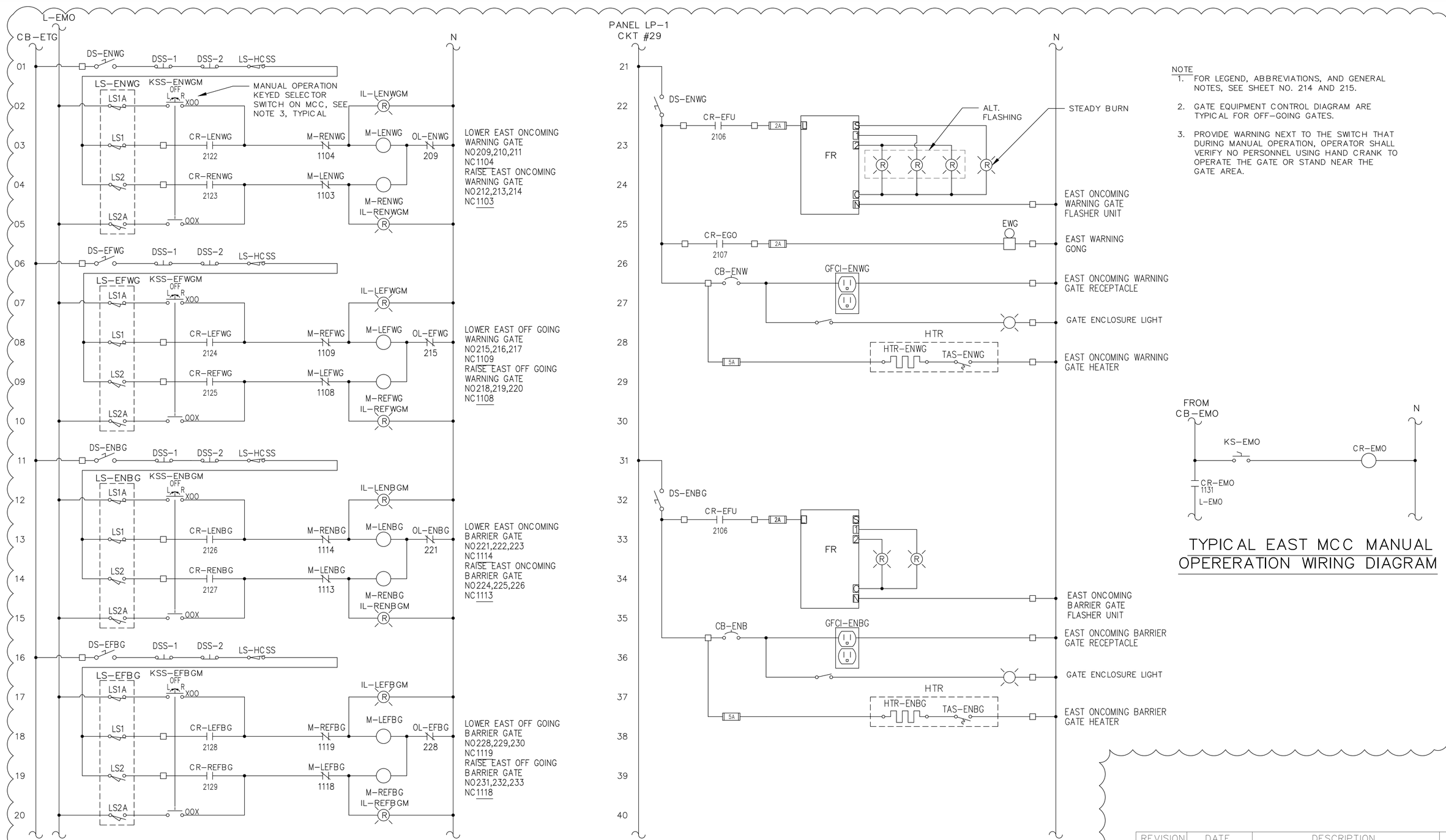
1 EACH TRAFFIC POLE IS EQUIPPED WITH TWO SIGNAL HEADS. DETAIL SHOWN IS TYPICAL FOR ONE SIGNAL HEAD, THE SECOND SHALL BE WIRED SIMILARLY.

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028–1(26)

FILE NAME: z12b142cntrls10.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 10

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 251 OF 379



EAST GATE CONTROLS

NOTE
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. GATE EQUIPMENT CONTROL DIAGRAM ARE TYPICAL FOR OFF-GOING GATES.
3. PROVIDE WARNING NEXT TO THE SWITCH THAT DURING MANUAL OPERATION, OPERATOR SHALL VERIFY NO PERSONNEL USING HAND CRANK TO OPERATE THE GATE OR STAND NEAR THE GATE AREA.

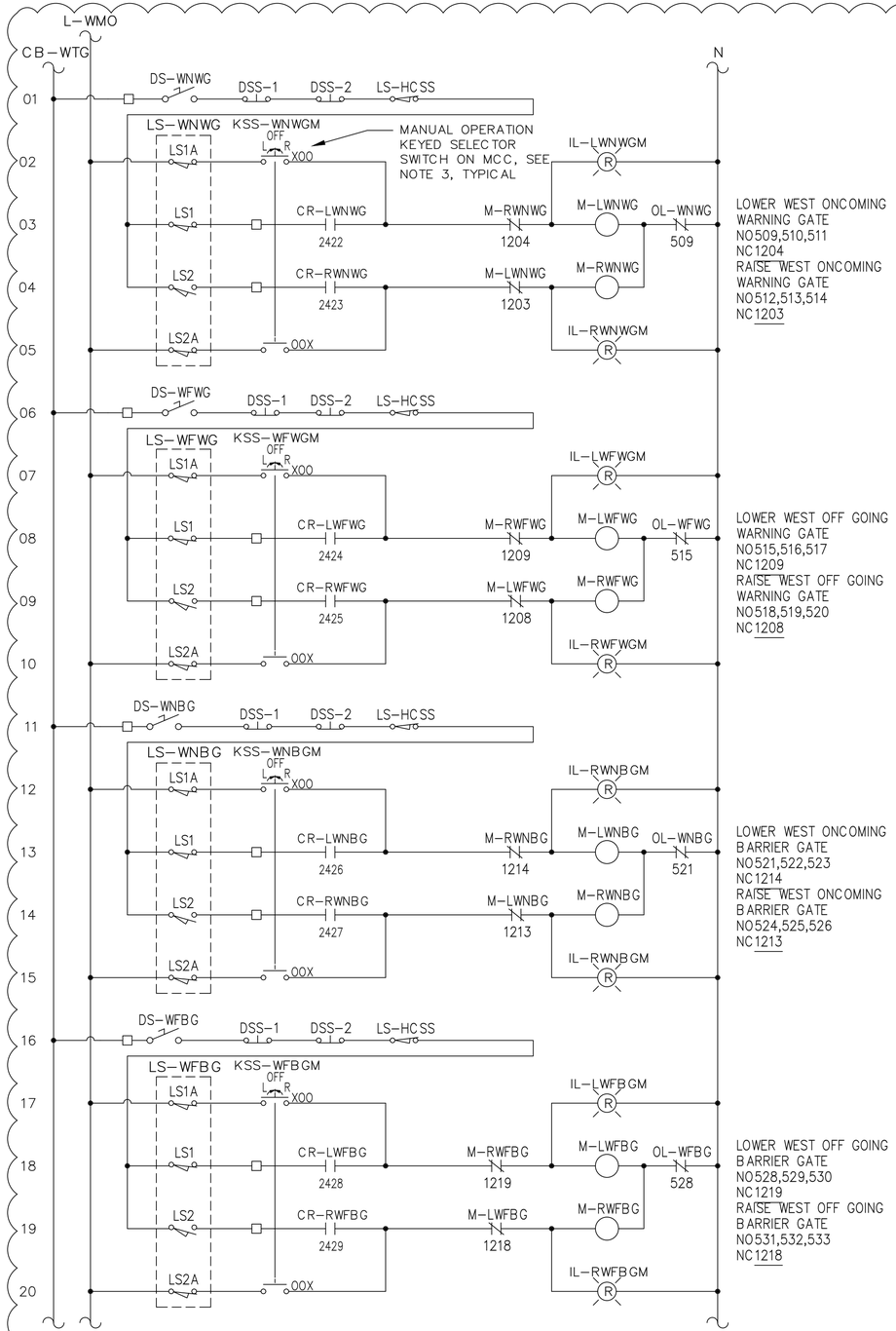
TYPICAL EAST MCC MANUAL OPERERATION WIRING DIAGRAM

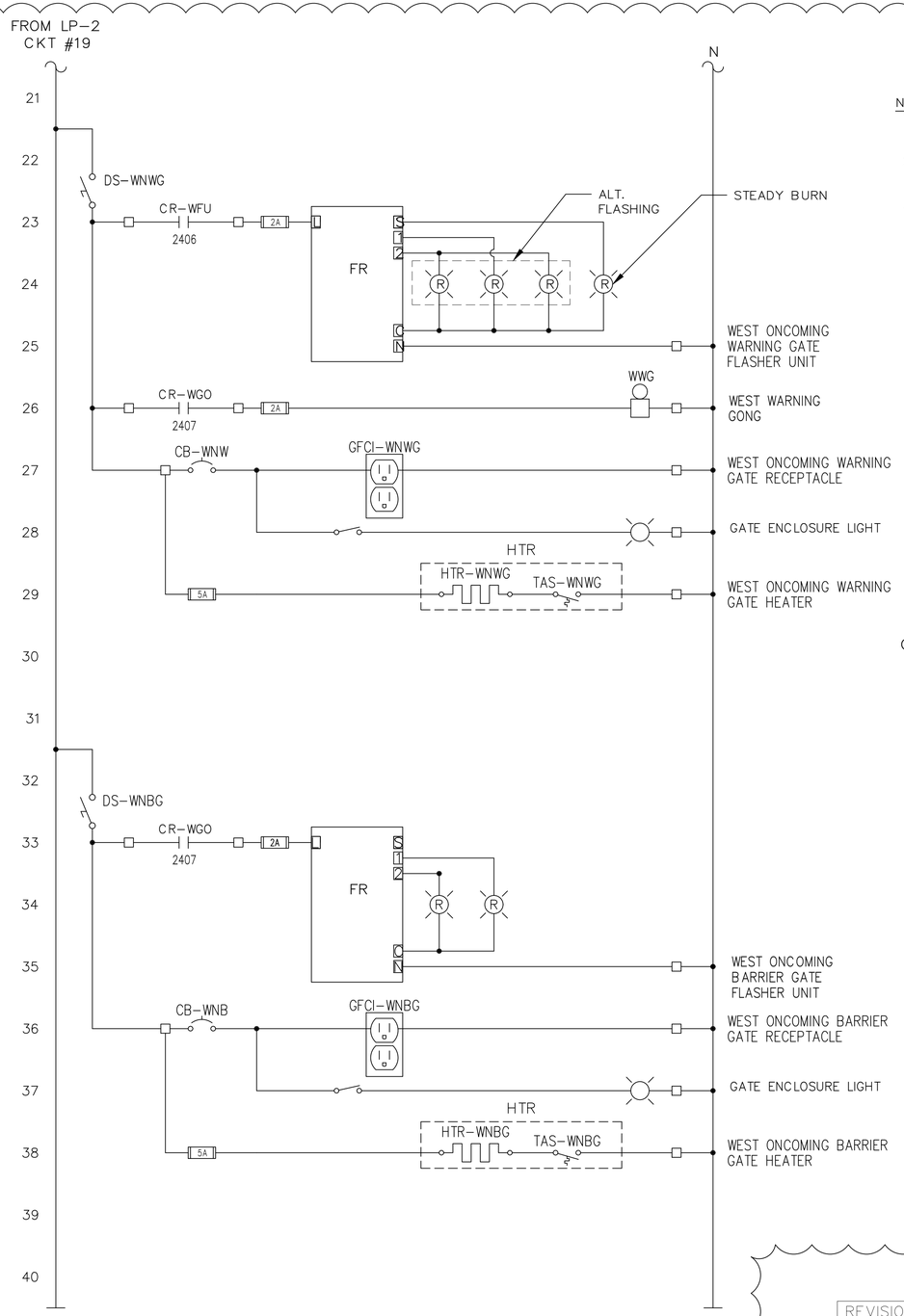
REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls11.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 11

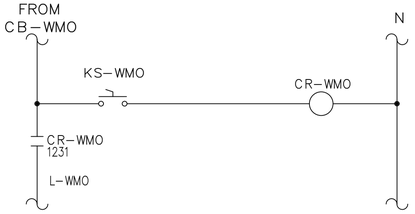
PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 252 OF 379





NOTE

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. GATE EQUIPMENT CONTROL DIAGRAM ARE TYPICAL FOR OFF–GOING GATES.
3. PROVIDE WARNING NEXT TO THE SWITCH THAT DURING MANUAL OPERATION, OPERATOR SHALL VERIFY NO PERSONNEL USING HAND CRANK TO OPERATE THE GATE OR STAND NEAR THE GATE AREA.



TYPICAL WEST MCC MANUAL OPERATION WIRING DIAGRAM

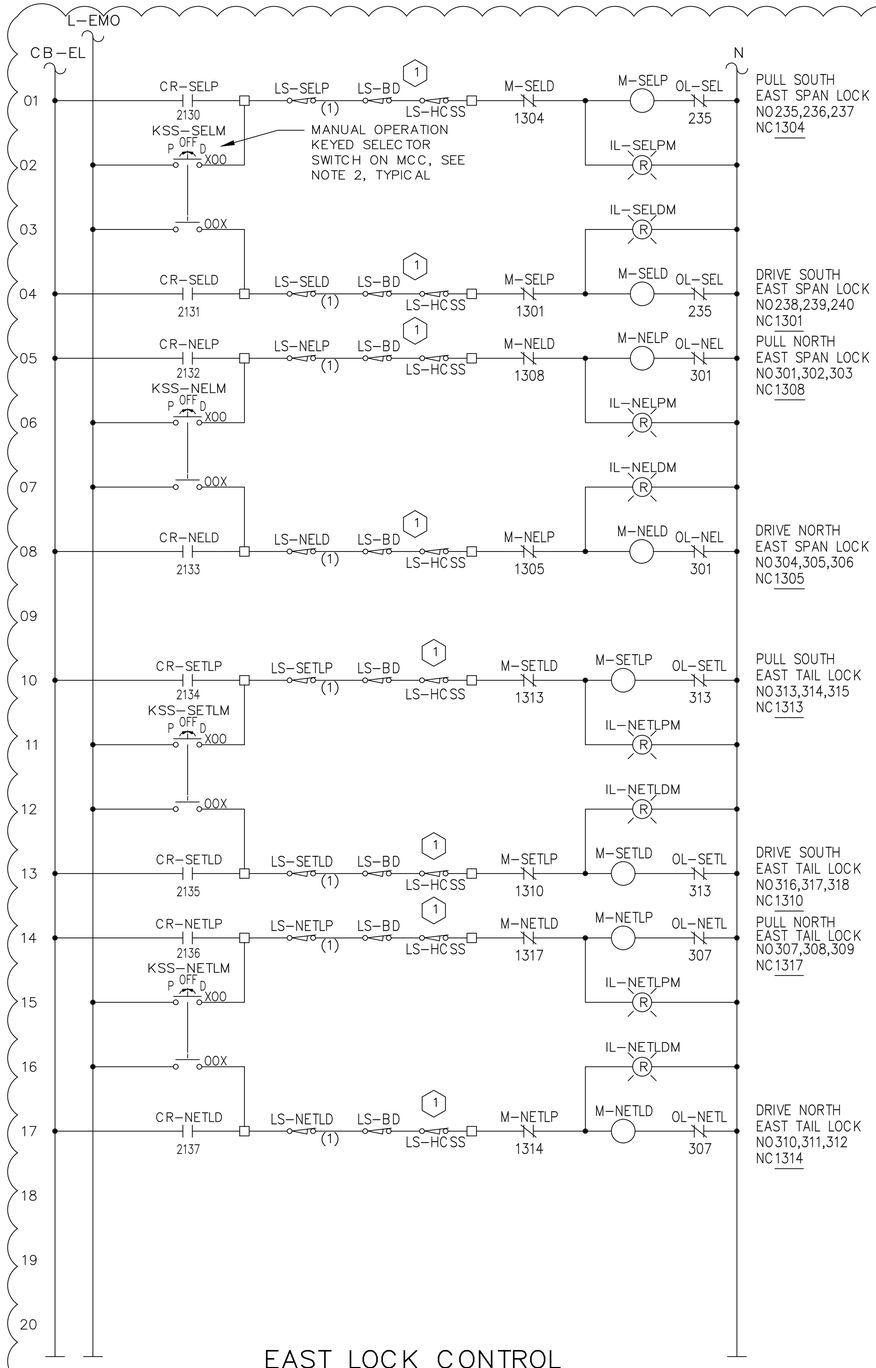
WEST GATE CONTROLS

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028–1(26)

FILE NAME: z12b142cntrls12.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 12

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 253 OF 379



EAST LOCK CONTROL



EAST MOTOR CONTROL

NOTE
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. PROVIDE WARNING NEXT TO THE SWITCH THAT DURING MANUAL OPERATION, OPERATOR SHALL VERIFY NO PERSONNEL STANDS NEAR THE LOCKS.

KEY NOTE

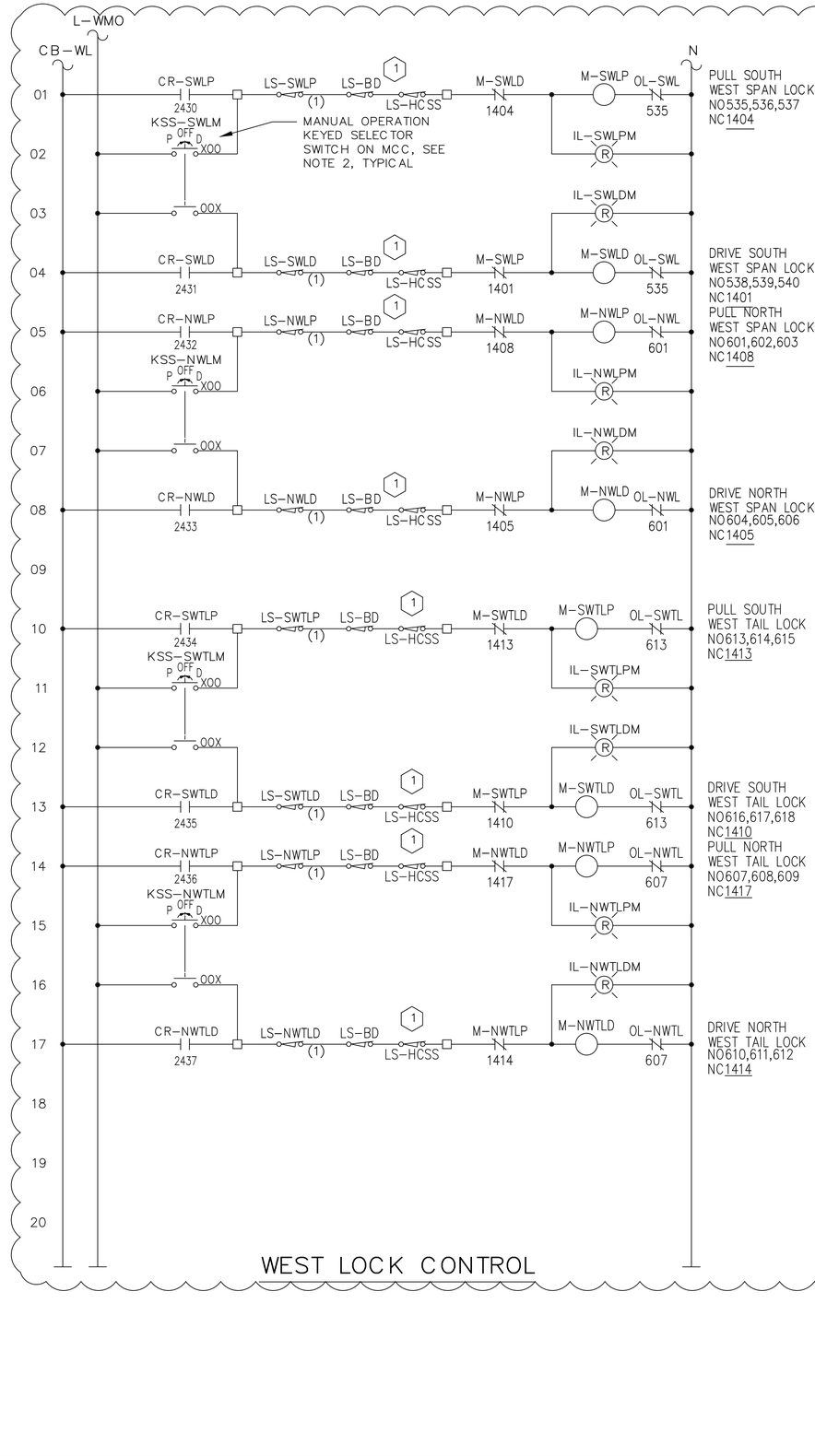
(1) FURNISH AND INSTALL TAIL LOCKS WITH AN INTEGRAL HAND CRANK LIMIT SWITCH, BRAKE DISCONNECT LIMIT SWITCH AND MANUFACTURER RECOMMENDED OVERLOAD.

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

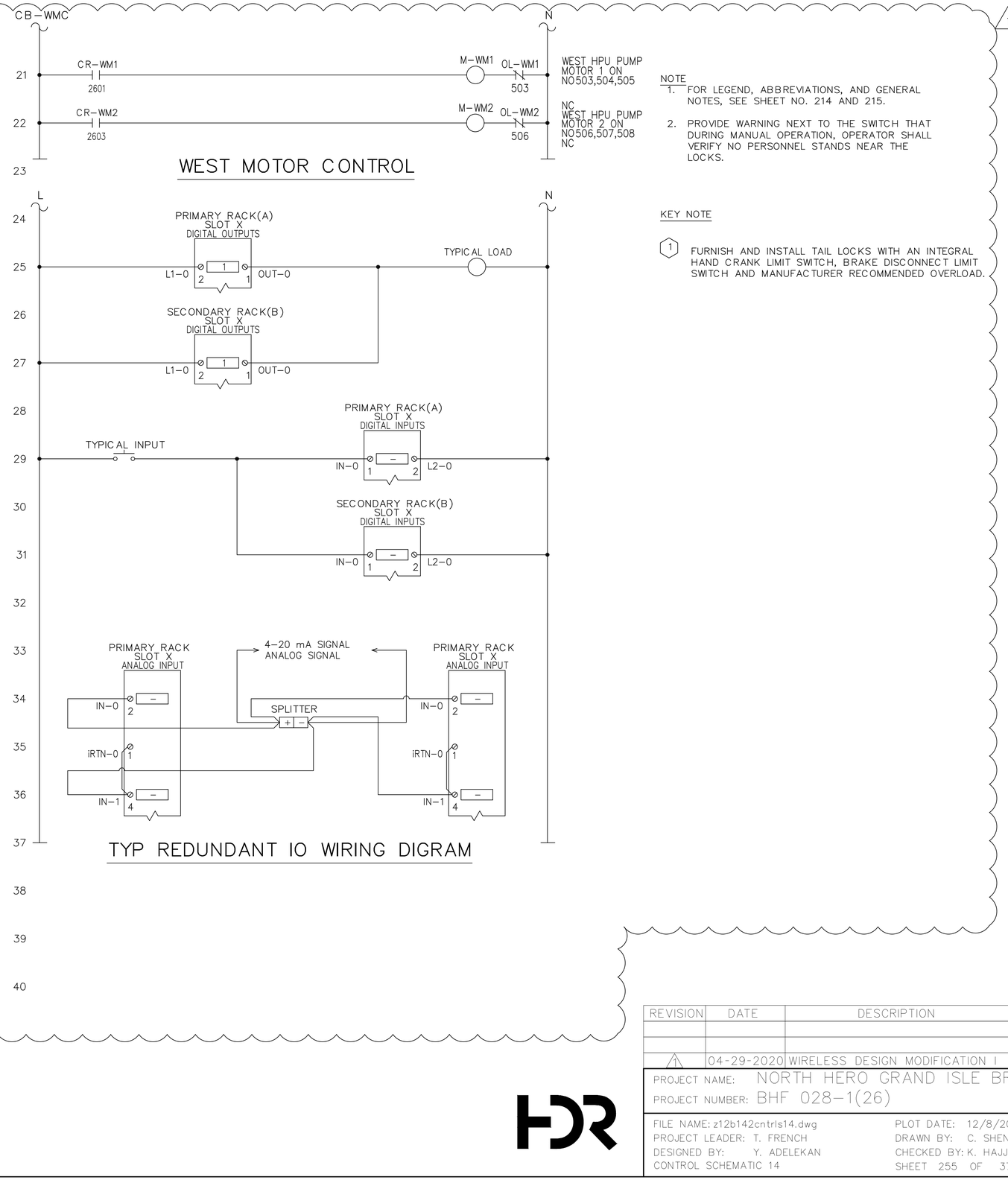
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls13.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 13

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 254 OF 379



WEST LOCK CONTROL



WEST MOTOR CONTROL

NOTE
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. PROVIDE WARNING NEXT TO THE SWITCH THAT DURING MANUAL OPERATION, OPERATOR SHALL VERIFY NO PERSONNEL STANDS NEAR THE LOCKS.

KEY NOTE

(1) FURNISH AND INSTALL TAIL LOCKS WITH AN INTEGRAL HAND CRANK LIMIT SWITCH, BRAKE DISCONNECT LIMIT SWITCH AND MANUFACTURER RECOMMENDED OVERLOAD.

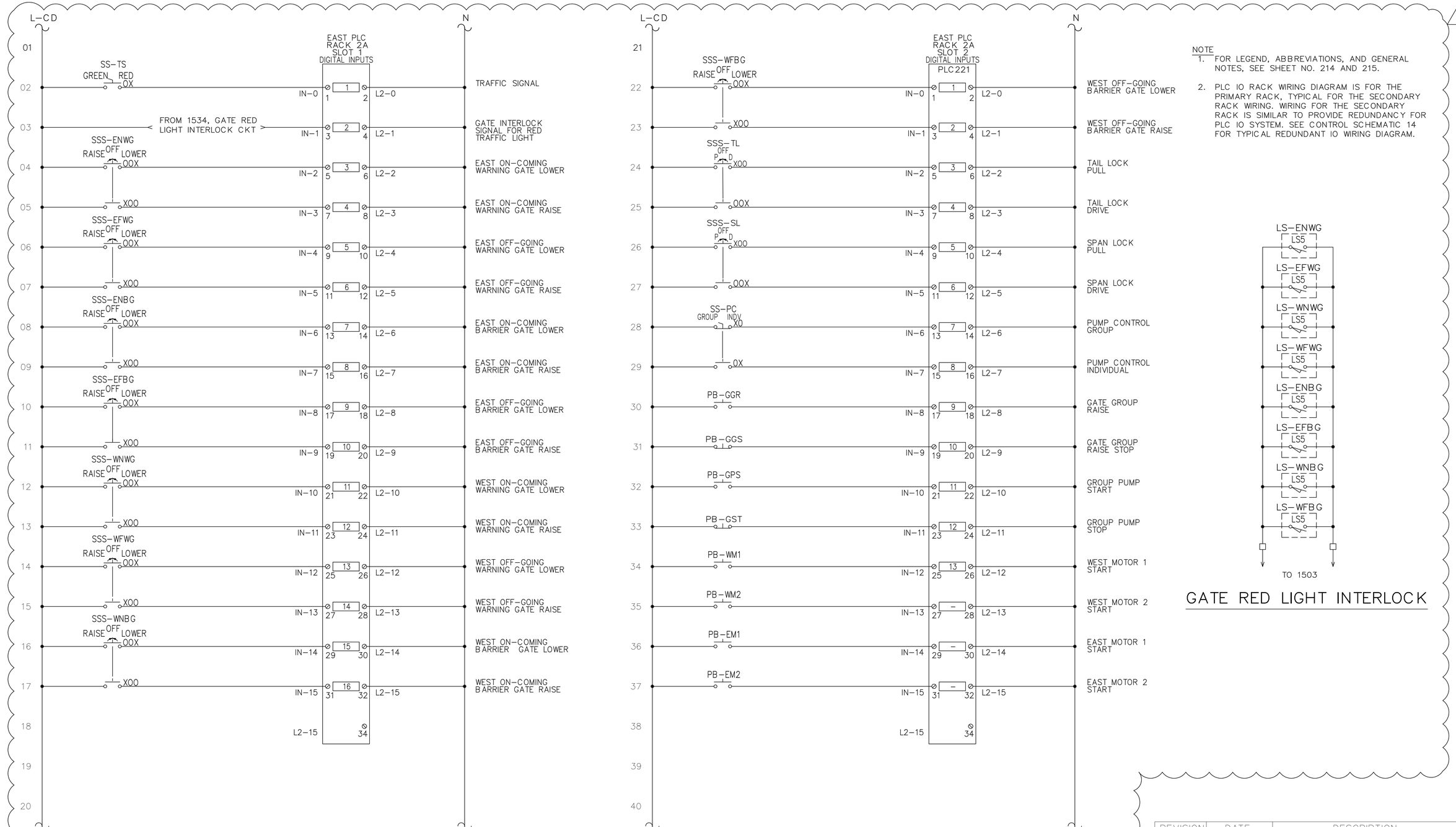
TYP REDUNDANT IO WIRING DIGRAM

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls14.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 14

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 255 OF 379

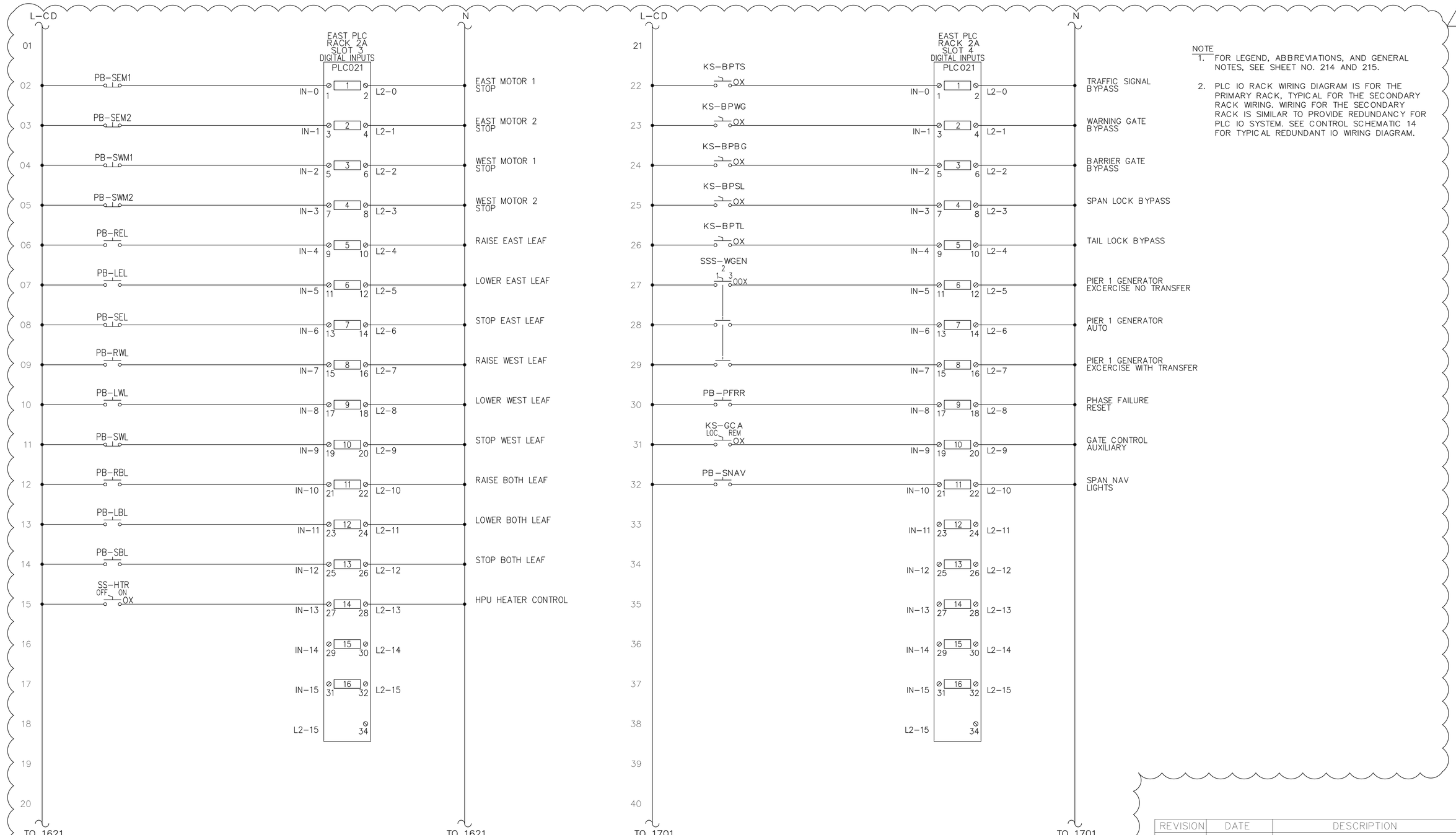


REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls15.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 15

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 256 OF 379



NOTE

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. PLC IO RACK WIRING DIAGRAM IS FOR THE PRIMARY RACK, TYPICAL FOR THE SECONDARY RACK WIRING. WIRING FOR THE SECONDARY RACK IS SIMILAR TO PROVIDE REDUNDANCY FOR PLC IO SYSTEM. SEE CONTROL SCHEMATIC 14 FOR TYPICAL REDUNDANT IO WIRING DIAGRAM.

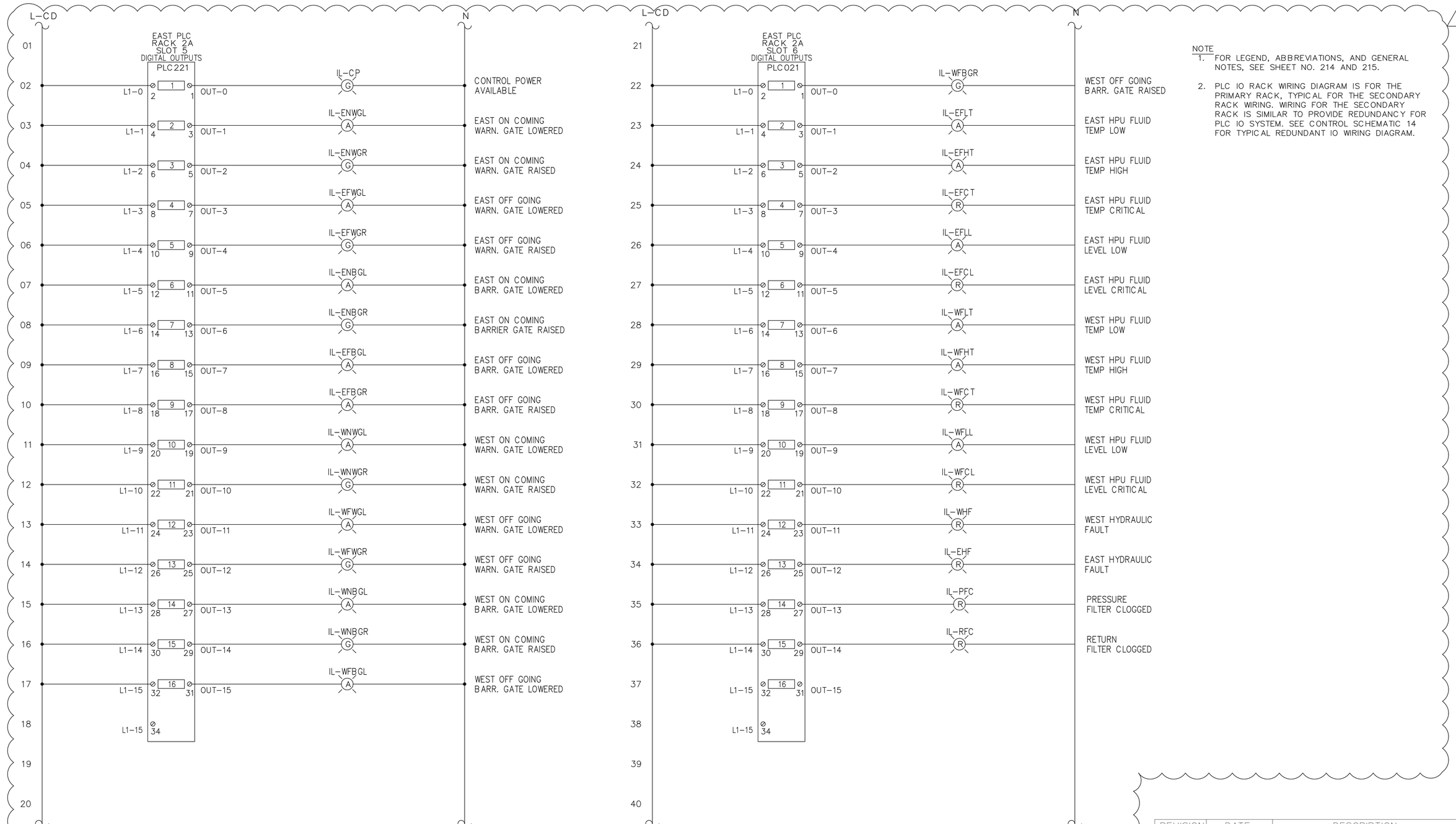
CONTROL DESK PLC IO RACK 2 OF 4

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls16.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 16

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 257 OF 379



NOTE

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. PLC IO RACK WIRING DIAGRAM IS FOR THE PRIMARY RACK, TYPICAL FOR THE SECONDARY RACK WIRING. WIRING FOR THE SECONDARY RACK IS SIMILAR TO PROVIDE REDUNDANCY FOR PLC IO SYSTEM. SEE CONTROL SCHEMATIC 14 FOR TYPICAL REDUNDANT IO WIRING DIAGRAM.

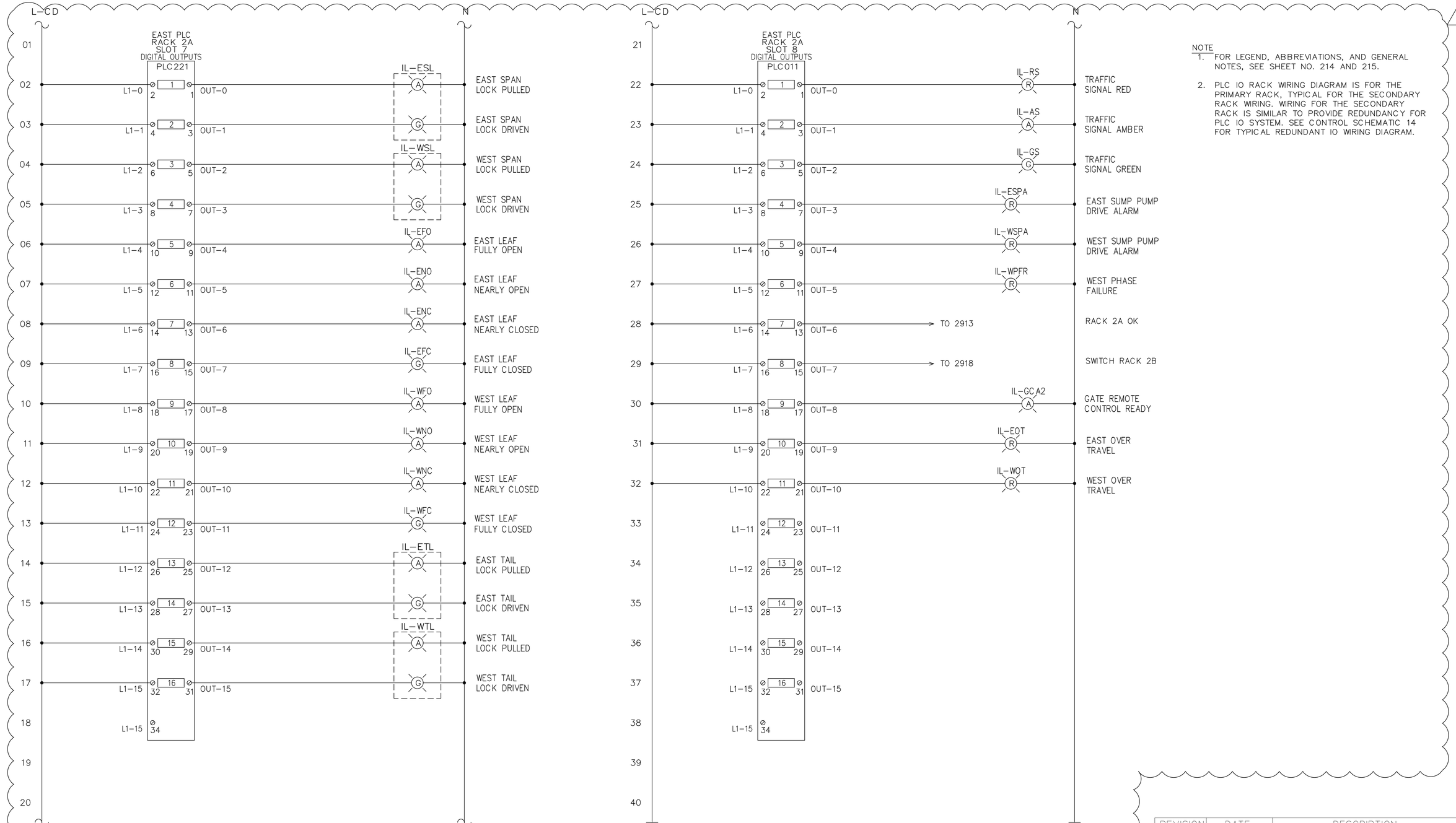
CONTROL DESK PLC IO RACK 3 OF 4

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls17.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 17

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 258 OF 379



NOTE

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. PLC IO RACK WIRING DIAGRAM IS FOR THE PRIMARY RACK, TYPICAL FOR THE SECONDARY RACK WIRING. WIRING FOR THE SECONDARY RACK IS SIMILAR TO PROVIDE REDUNDANCY FOR PLC IO SYSTEM. SEE CONTROL SCHEMATIC 14 FOR TYPICAL REDUNDANT IO WIRING DIAGRAM.

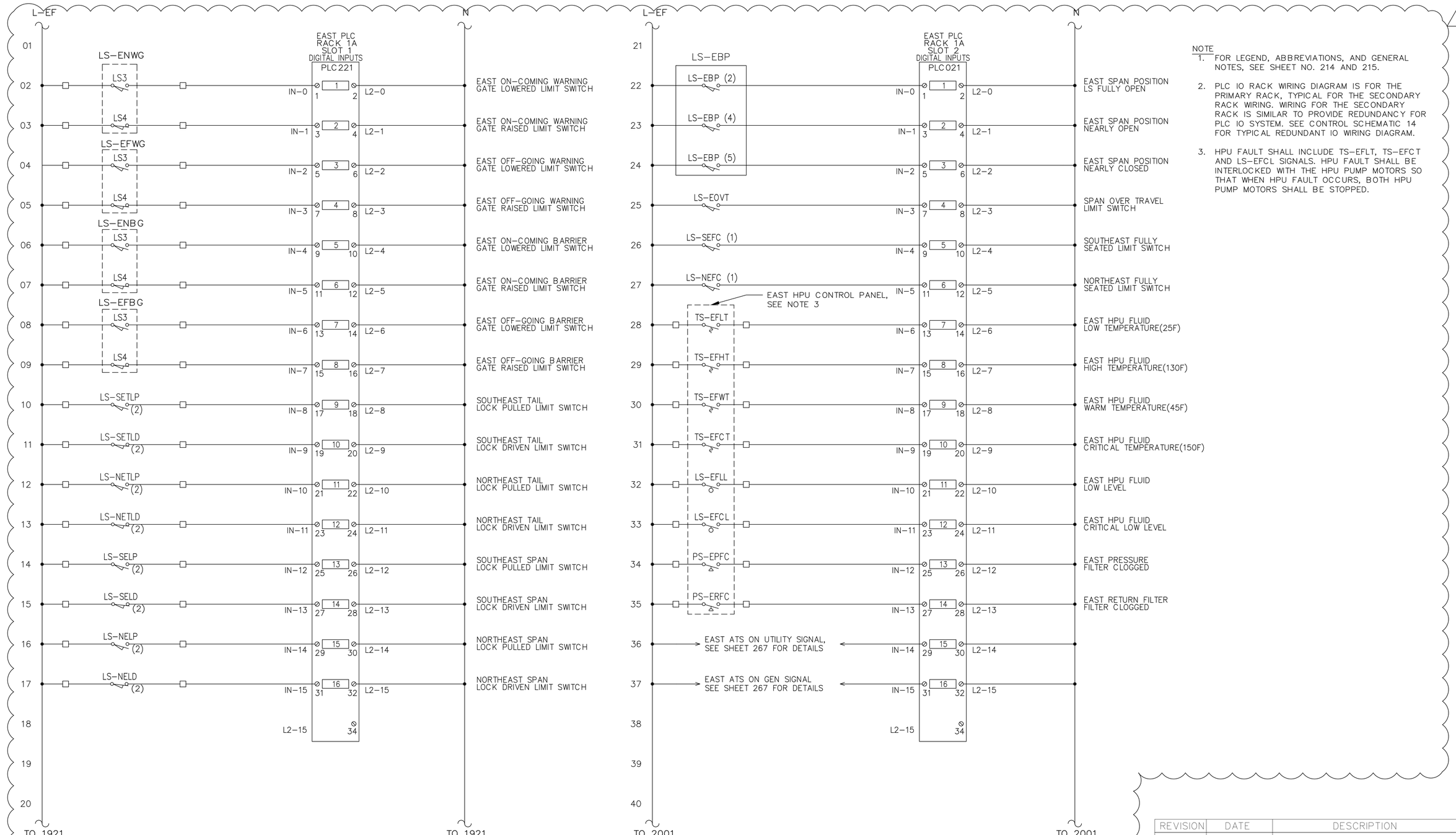
CONTROL DESK PLC IO RACK 4 OF 4

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls18.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 18

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 259 OF 379



NOTE

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. PLC IO RACK WIRING DIAGRAM IS FOR THE PRIMARY RACK, TYPICAL FOR THE SECONDARY RACK WIRING. WIRING FOR THE SECONDARY RACK IS SIMILAR TO PROVIDE REDUNDANCY FOR PLC IO SYSTEM. SEE CONTROL SCHEMATIC 14 FOR TYPICAL REDUNDANT IO WIRING DIAGRAM.
3. HPU FAULT SHALL INCLUDE TS-EFLT, TS-EFCT AND LS-EFCL SIGNALS. HPU FAULT SHALL BE INTERLOCKED WITH THE HPU PUMP MOTORS SO THAT WHEN HPU FAULT OCCURS, BOTH HPU PUMP MOTORS SHALL BE STOPPED.

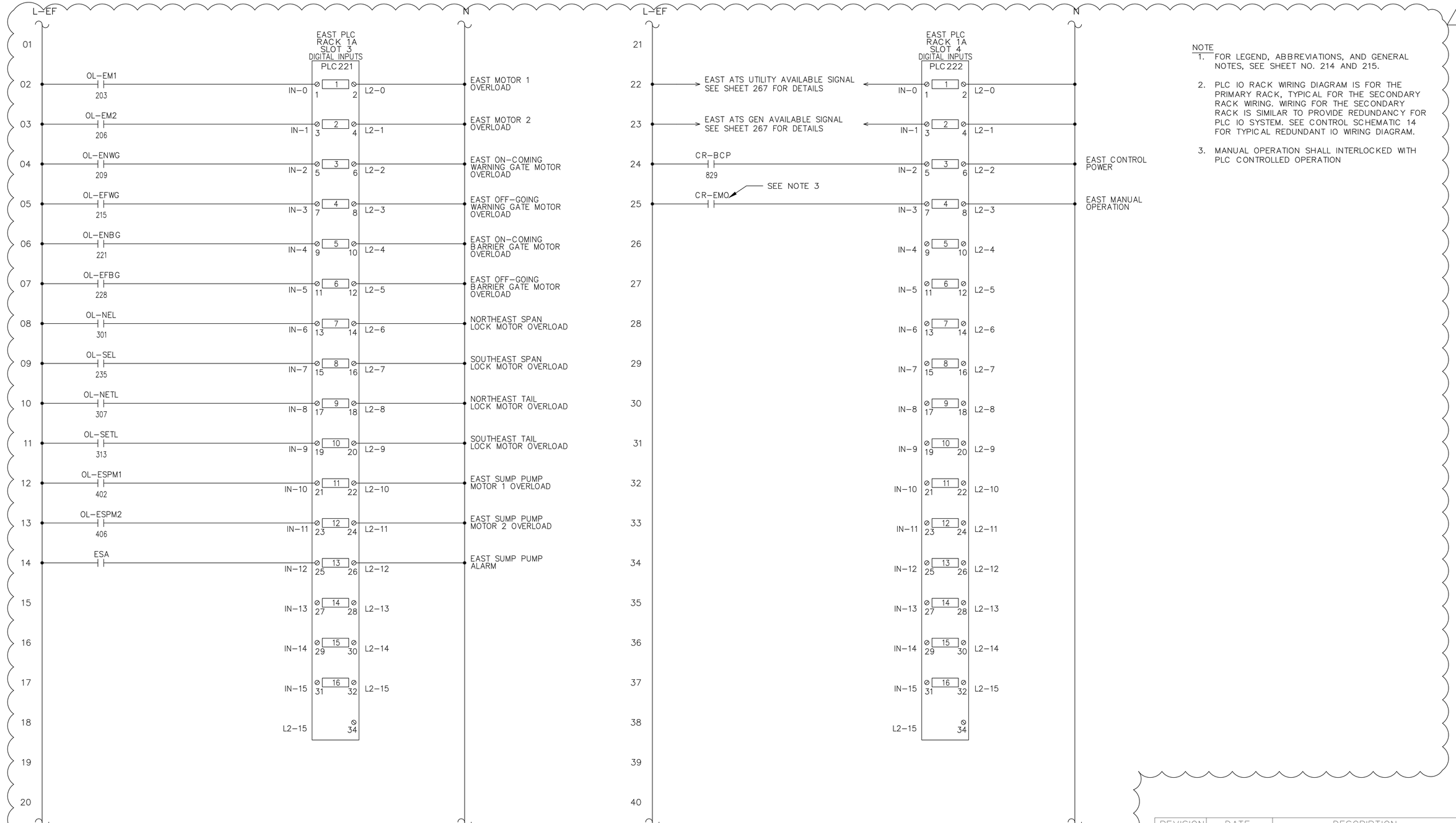
EAST PLC INPUTS 1 OF 2

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls19.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 19

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 260 OF 379



NOTE

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. PLC IO RACK WIRING DIAGRAM IS FOR THE PRIMARY RACK, TYPICAL FOR THE SECONDARY RACK WIRING. WIRING FOR THE SECONDARY RACK IS SIMILAR TO PROVIDE REDUNDANCY FOR PLC IO SYSTEM. SEE CONTROL SCHEMATIC 14 FOR TYPICAL REDUNDANT IO WIRING DIAGRAM.
3. MANUAL OPERATION SHALL INTERLOCKED WITH PLC CONTROLLED OPERATION

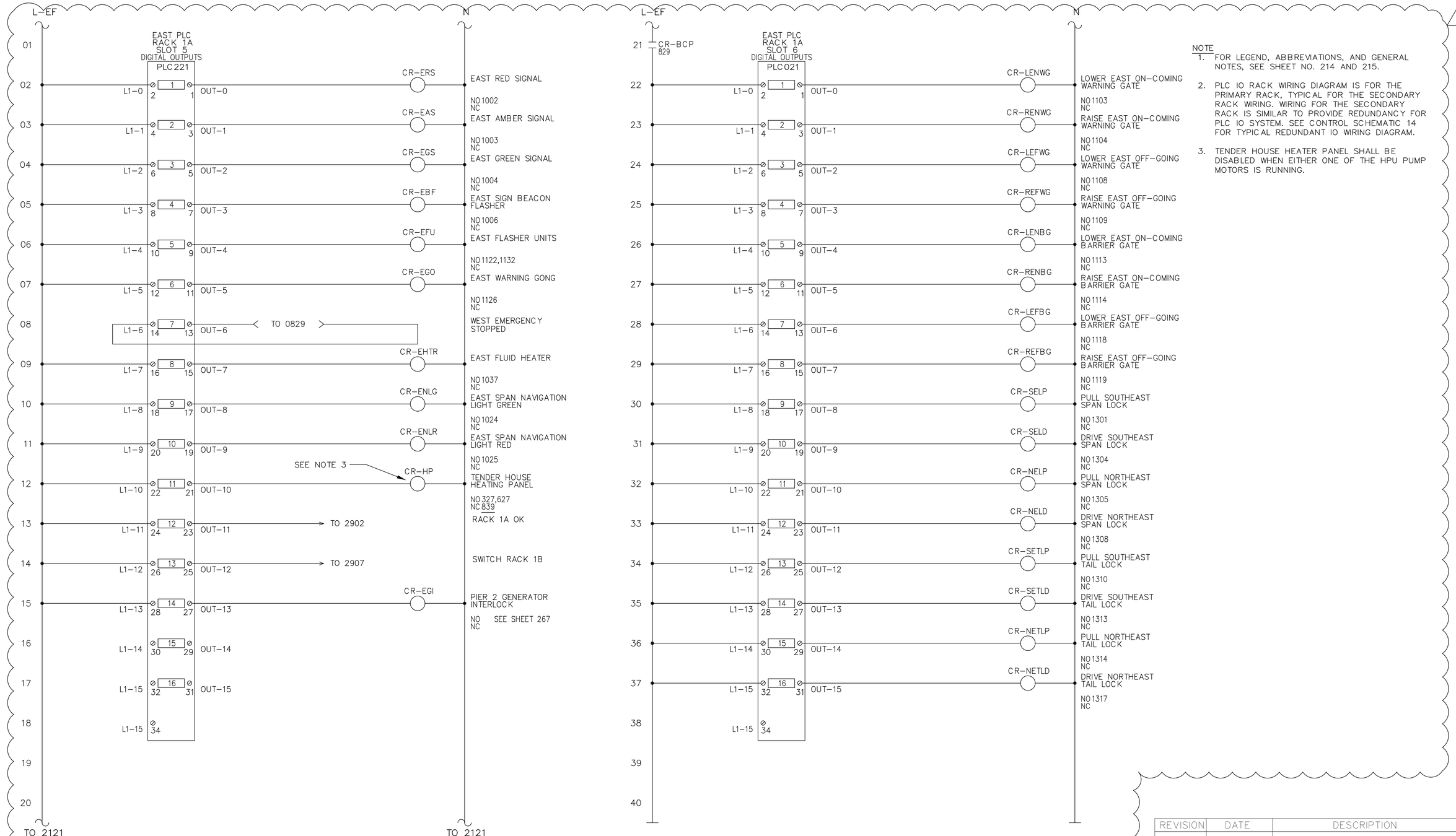
EAST PLC INPUTS 2 OF 2

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls20.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 20

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 261 OF 379



NOTE

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. PLC IO RACK WIRING DIAGRAM IS FOR THE PRIMARY RACK, TYPICAL FOR THE SECONDARY RACK WIRING. WIRING FOR THE SECONDARY RACK IS SIMILAR TO PROVIDE REDUNDANCY FOR PLC IO SYSTEM. SEE CONTROL SCHEMATIC 14 FOR TYPICAL REDUNDANT IO WIRING DIAGRAM.
3. TENDER HOUSE HEATER PANEL SHALL BE DISABLED WHEN EITHER ONE OF THE HPU PUMP MOTORS IS RUNNING.

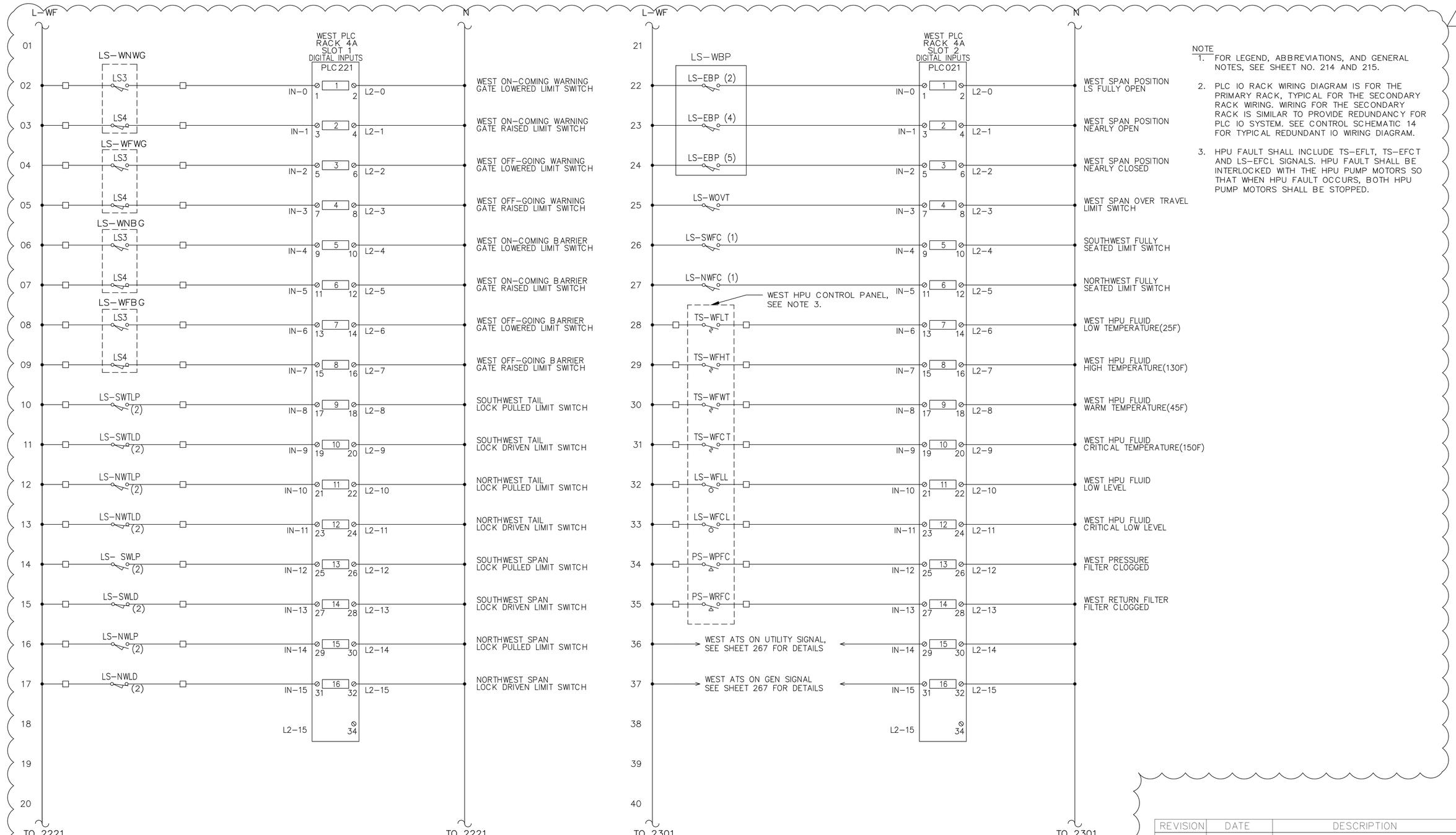
EAST PLC OUTPUTS

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls21.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 21

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 262 OF 379



NOTE

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. PLC IO RACK WIRING DIAGRAM IS FOR THE PRIMARY RACK, TYPICAL FOR THE SECONDARY RACK WIRING. WIRING FOR THE SECONDARY RACK IS SIMILAR TO PROVIDE REDUNDANCY FOR PLC IO SYSTEM. SEE CONTROL SCHEMATIC 14 FOR TYPICAL REDUNDANT IO WIRING DIAGRAM.
3. HPU FAULT SHALL INCLUDE TS-EFLT, TS-EFCT AND LS-EFCL SIGNALS. HPU FAULT SHALL BE INTERLOCKED WITH THE HPU PUMP MOTORS SO THAT WHEN HPU FAULT OCCURS, BOTH HPU PUMP MOTORS SHALL BE STOPPED.

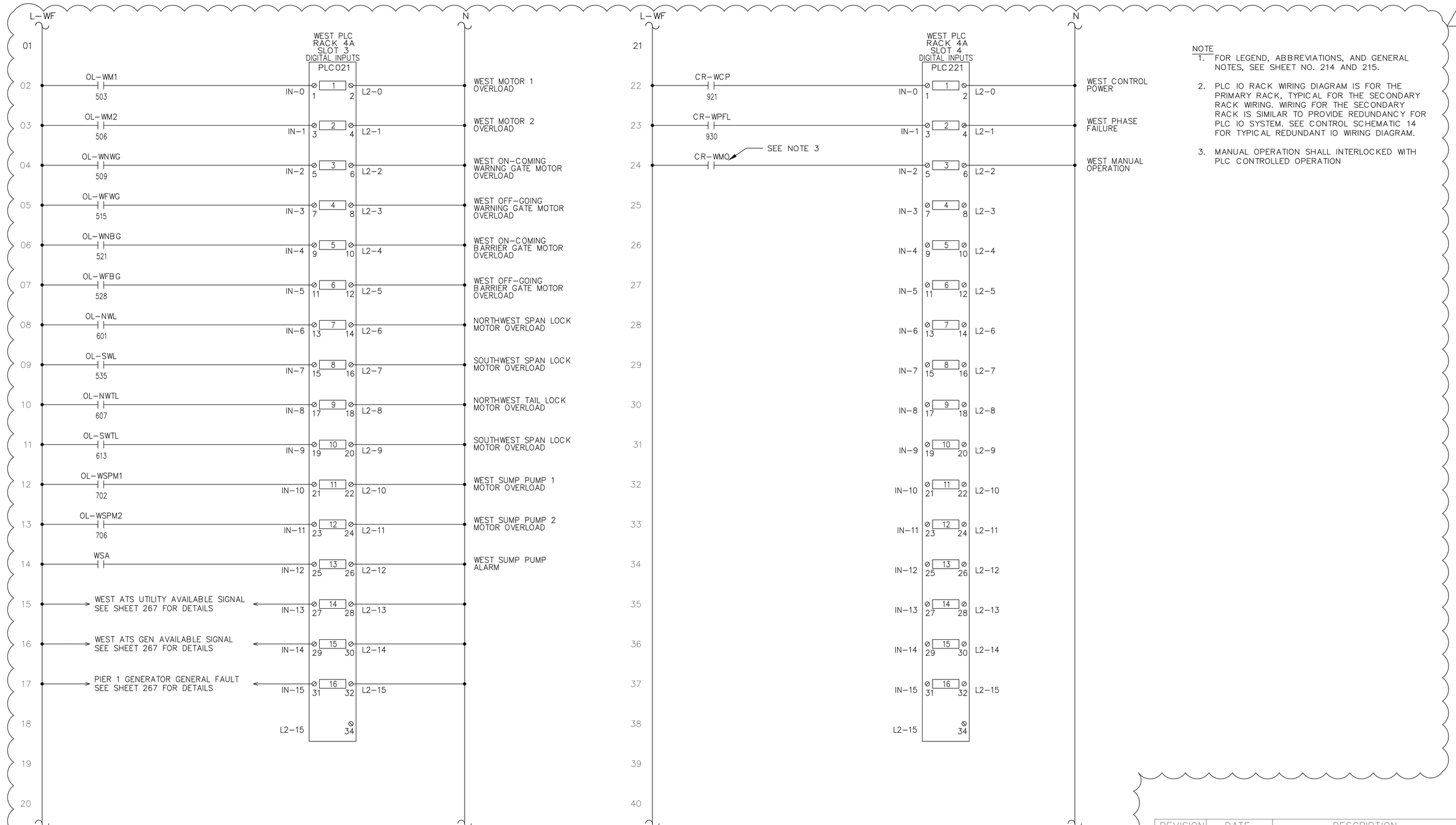
WEST PLC INPUTS 1 OF 2

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls22.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 22

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 263 OF 379



NOTE

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. PLC IO RACK WIRING DIAGRAM IS FOR THE PRIMARY RACK, TYPICAL FOR THE SECONDARY RACK WIRING. WIRING FOR THE SECONDARY RACK IS SIMILAR TO PROVIDE REDUNDANCY FOR PLC IO SYSTEM. SEE CONTROL SCHEMATIC 14 FOR TYPICAL REDUNDANT IO WIRING DIAGRAM.
3. MANUAL OPERATION SHALL INTERLOCKED WITH PLC CONTROLLED OPERATION

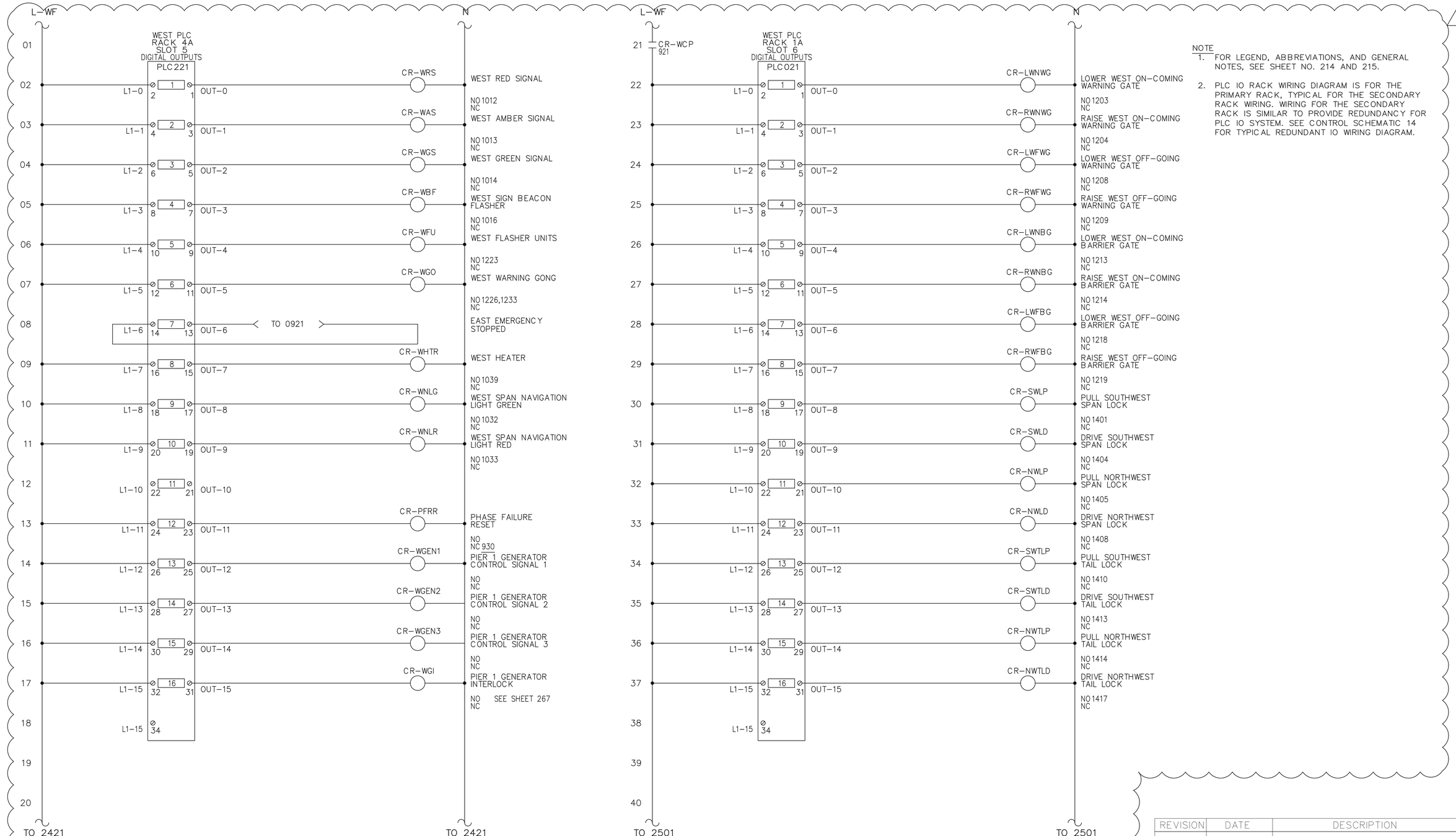
WEST PLC INPUTS 2 OF 2

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls23.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 23

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 264 OF 379



NOTE

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. PLC IO RACK WIRING DIAGRAM IS FOR THE PRIMARY RACK, TYPICAL FOR THE SECONDARY RACK WIRING. WIRING FOR THE SECONDARY RACK IS SIMILAR TO PROVIDE REDUNDANCY FOR PLC IO SYSTEM. SEE CONTROL SCHEMATIC 14 FOR TYPICAL REDUNDANT IO WIRING DIAGRAM.

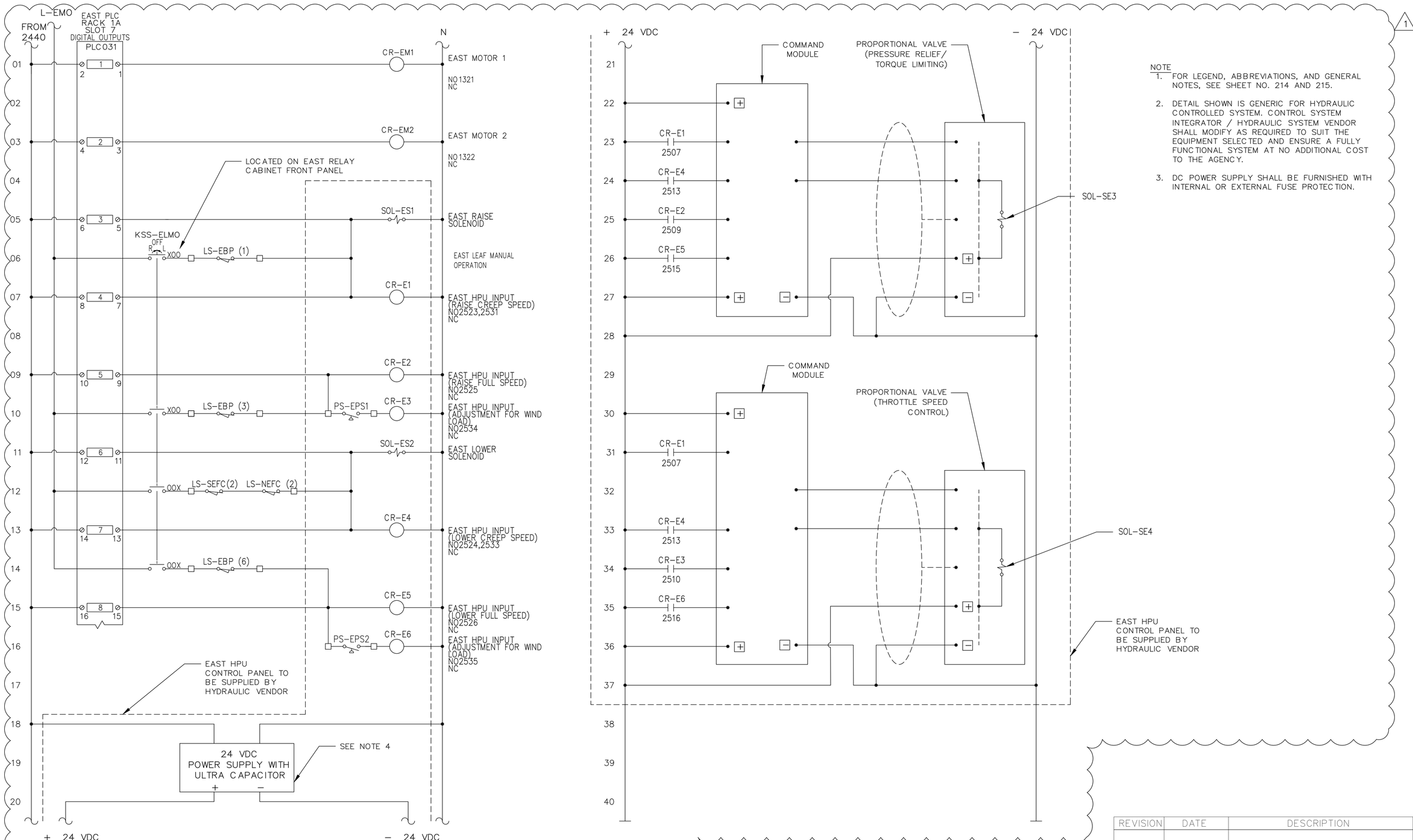
WEST PLC OUTPUTS

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls24.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 24

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 265 OF 379



NOTE

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. DETAIL SHOWN IS GENERIC FOR HYDRAULIC CONTROLLED SYSTEM. CONTROL SYSTEM INTEGRATOR / HYDRAULIC SYSTEM VENDOR SHALL MODIFY AS REQUIRED TO SUIT THE EQUIPMENT SELECTED AND ENSURE A FULLY FUNCTIONAL SYSTEM AT NO ADDITIONAL COST TO THE AGENCY.
3. DC POWER SUPPLY SHALL BE FURNISHED WITH INTERNAL OR EXTERNAL FUSE PROTECTION.

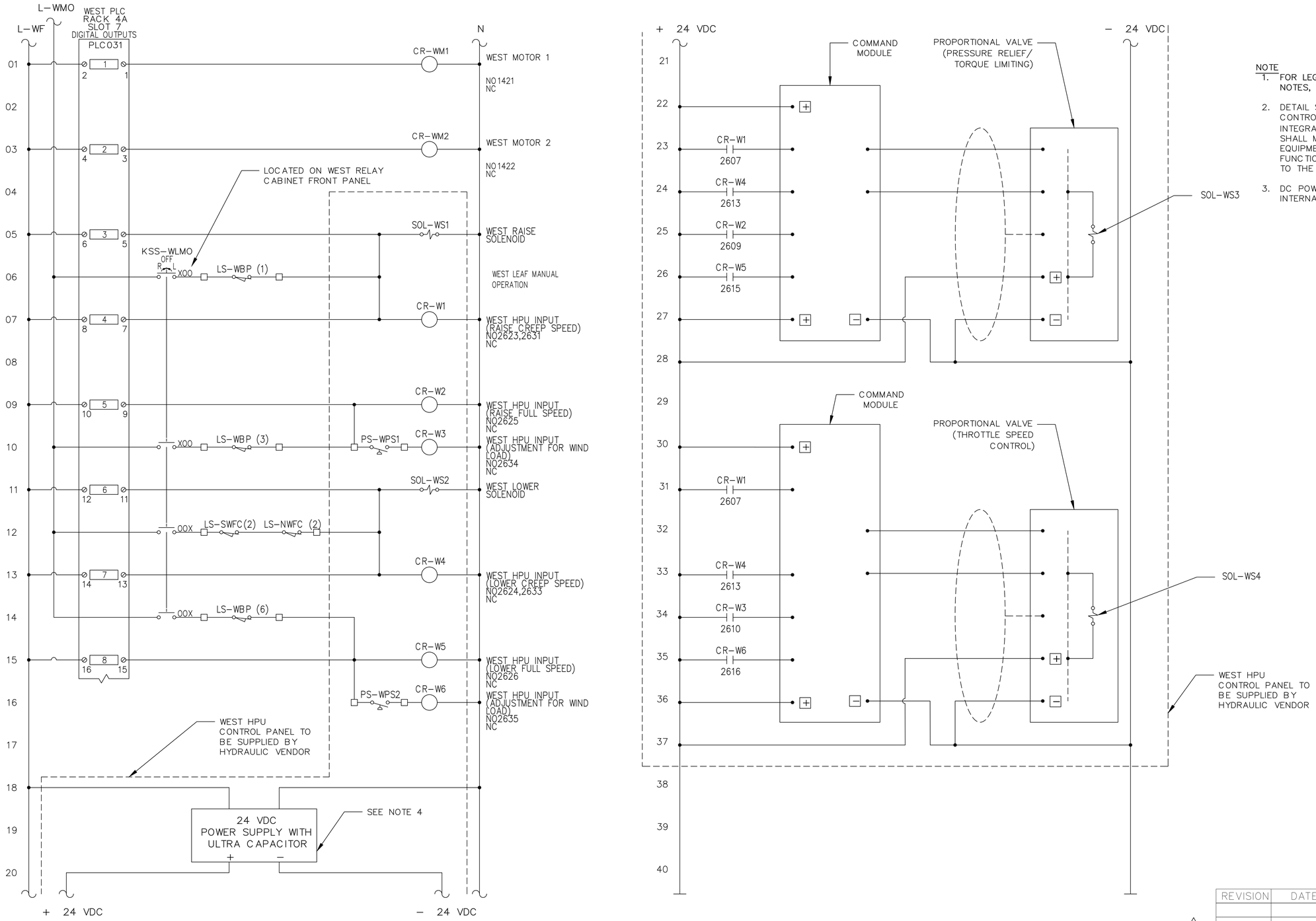
EAST HPU/SPAN CONTROL

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls25.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 25

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 266 OF 379



NOTE

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. DETAIL SHOWN IS GENERIC FOR HYDRAULIC CONTROLLED SYSTEM. CONTROL SYSTEM INTEGRATOR / HYDRAULIC SYSTEM VENDOR SHALL MODIFY AS REQUIRED TO SUIT THE EQUIPMENT SELECTED AND ENSURE A FULLY FUNCTIONAL SYSTEM AT NO ADDITIONAL COST TO THE AGENCY.
3. DC POWER SUPPLY SHALL BE FURNISHED WITH INTERNAL OR EXTERNAL FUSE PROTECTION.

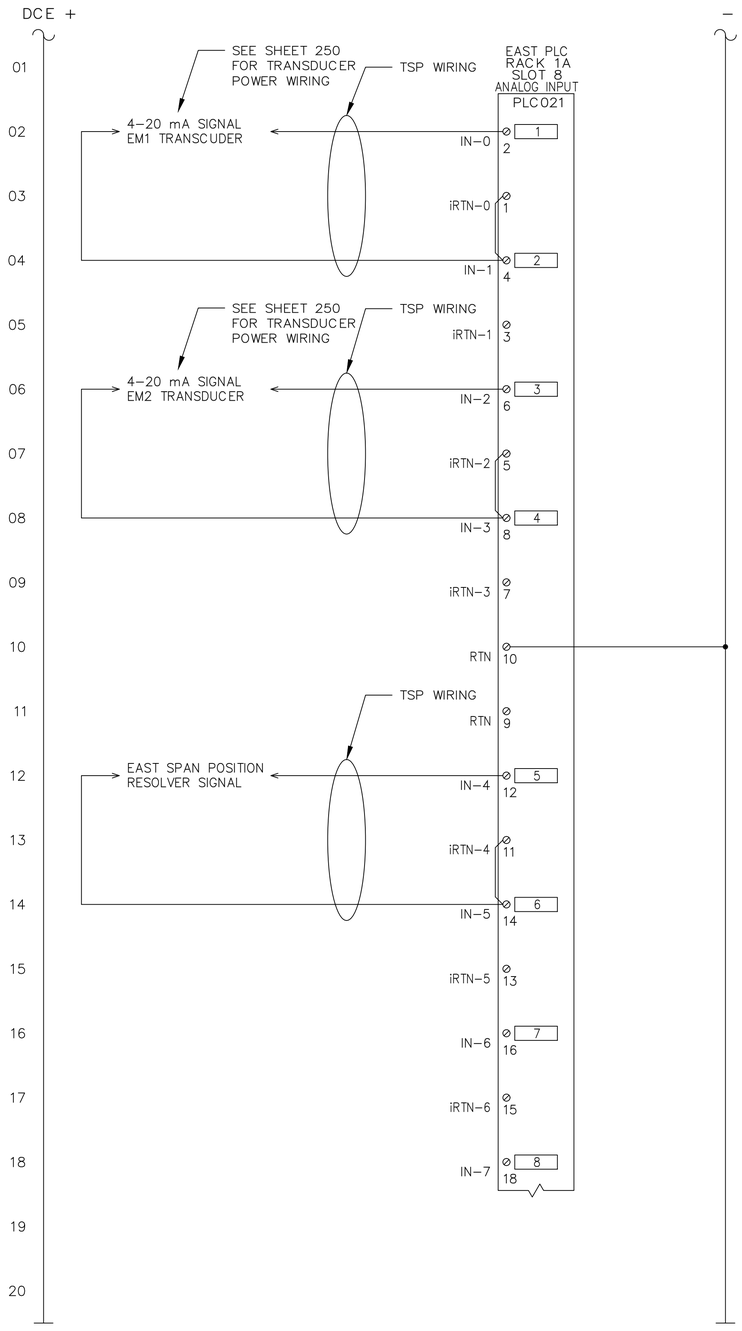
WEST HPU/SPAN CONTROL

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

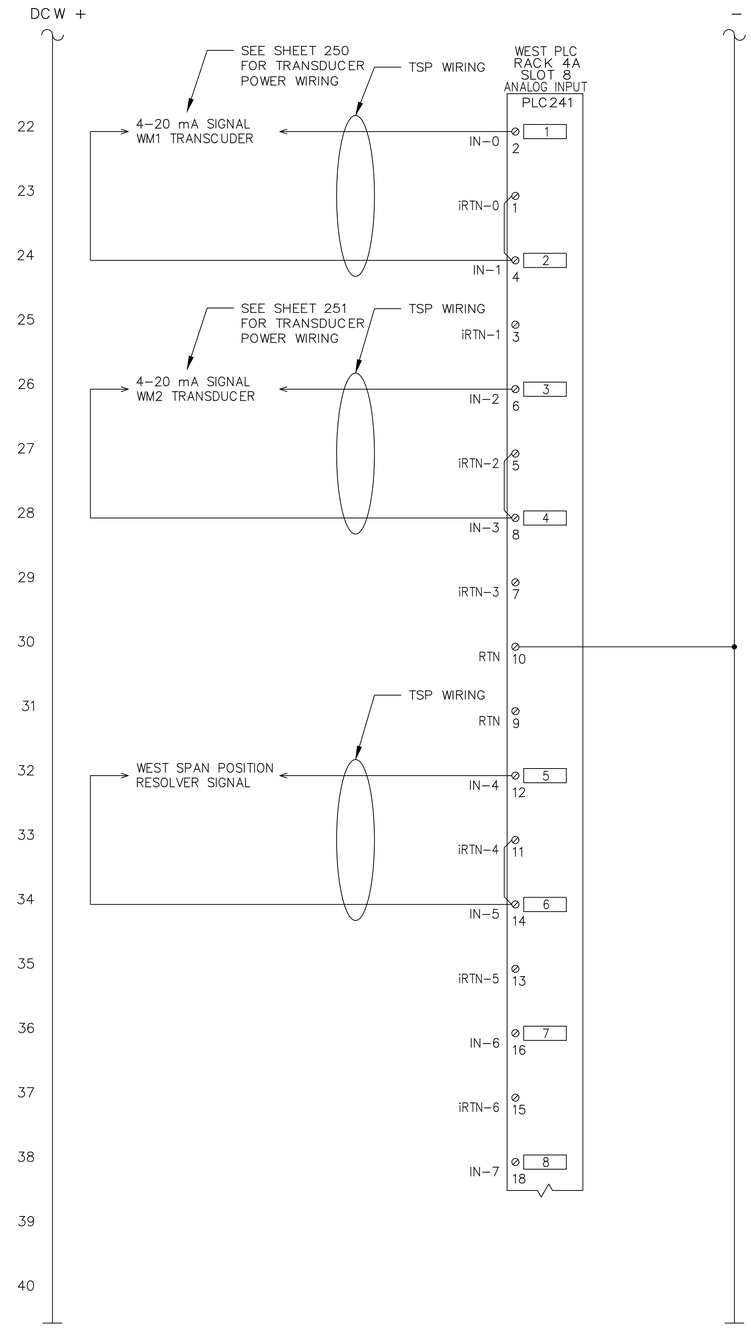
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028–1(26)

FILE NAME: z12b142cntrls26.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 26

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 266A OF 379



EAST ANALOG INPUT



WEST ANALOG INPUT

NOTE

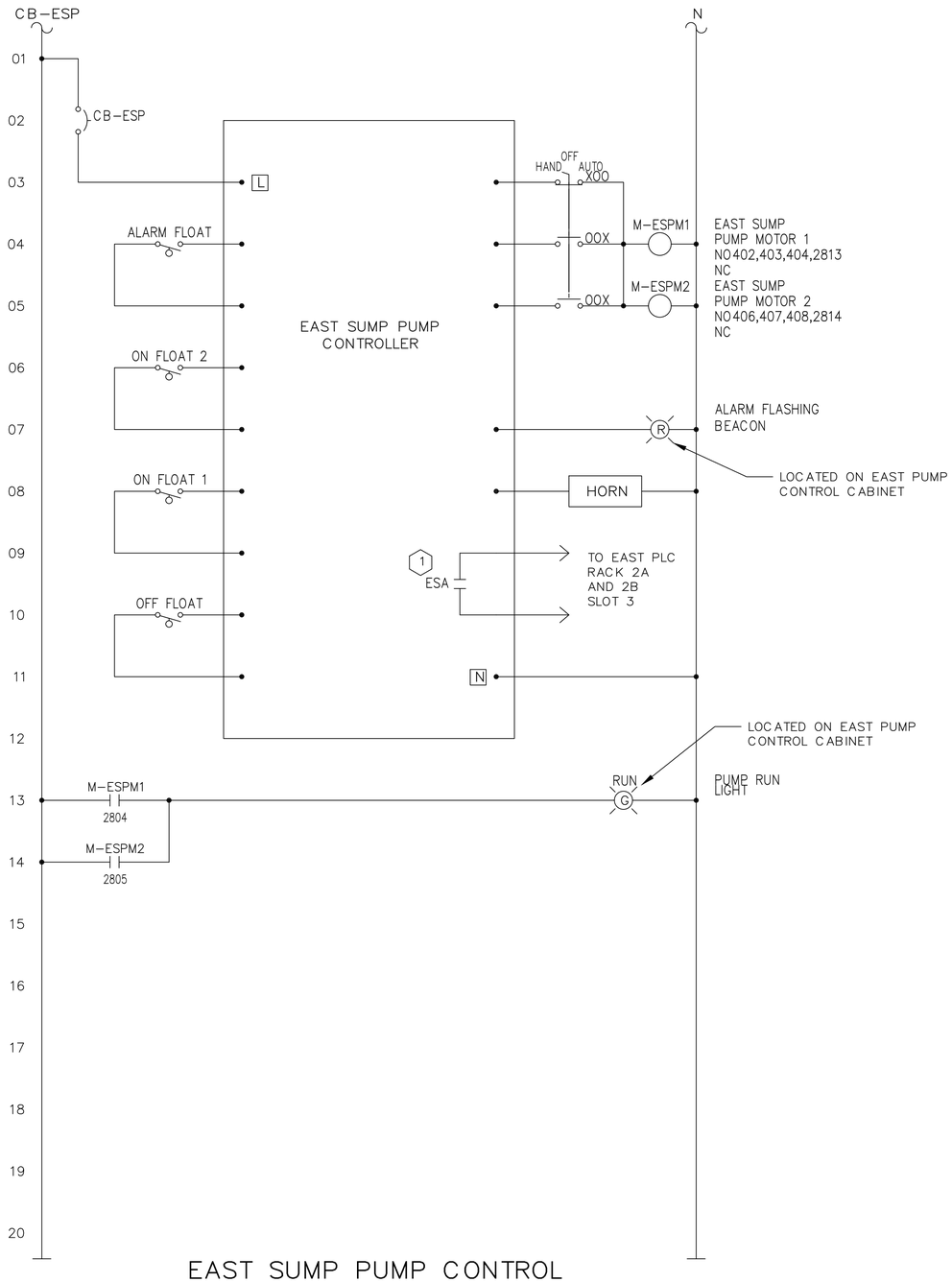
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.
2. PLC IO RACK WIRING DIAGRAM IS FOR THE PRIMARY RACK, TYPICAL FOR THE SECONDARY RACK WIRING. WIRING FOR THE SECONDARY RACK IS SIMILAR TO PROVIDE REDUNDANCY FOR PLC IO SYSTEM. SEE CONTROL SCHEMATIC 14 FOR TYPICAL REDUNDANT IO WIRING DIAGRAM.

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

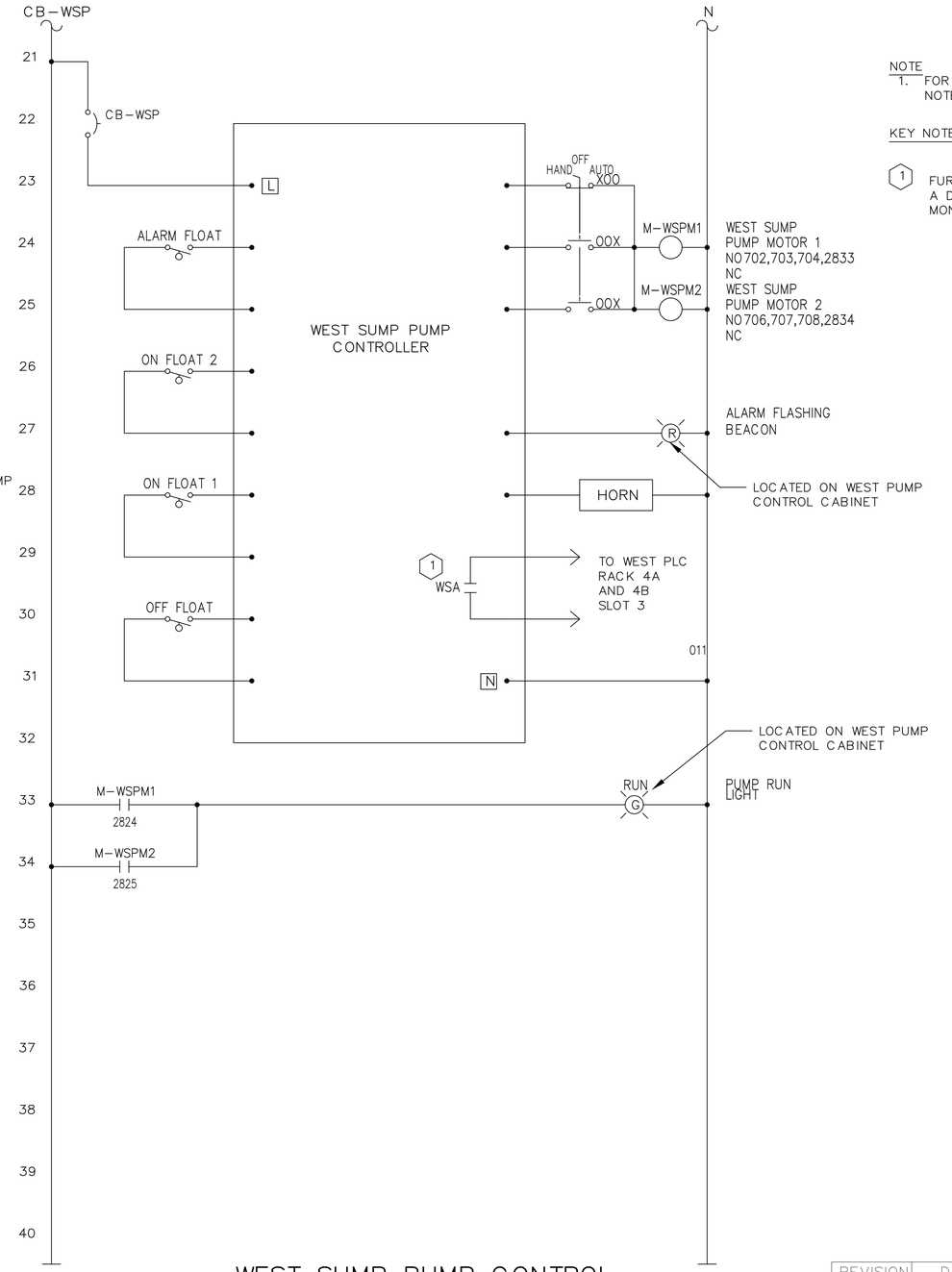
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028–1(26)

FILE NAME: z12b142cntrls27.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 27

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 266B OF 379



EAST SUMP PUMP CONTROL



WEST SUMP PUMP CONTROL

NOTE
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.

KEY NOTE

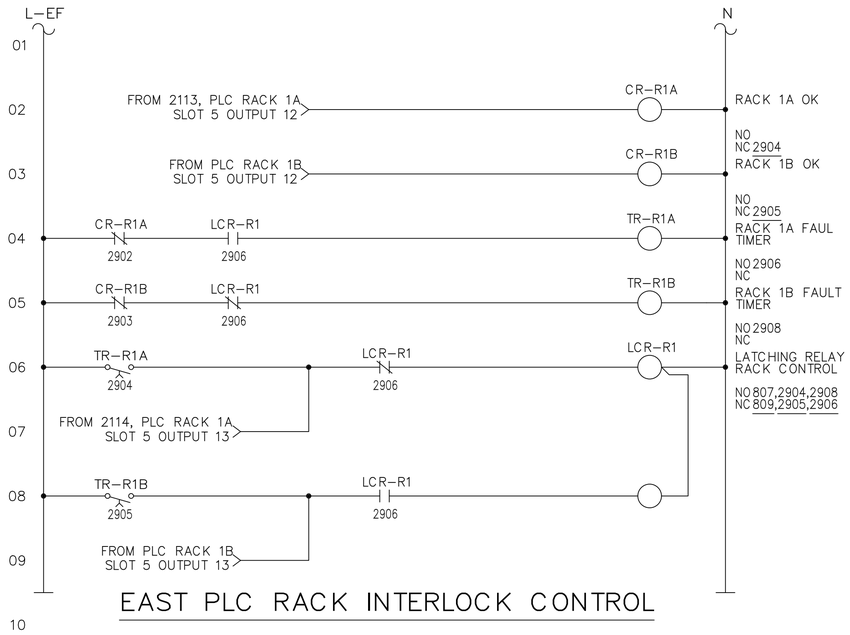
(1) FURNISH SUMP PUMP CONTROLLER WITH A DRY CONTACT FOR REMOTE ALARM MONITORING.

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

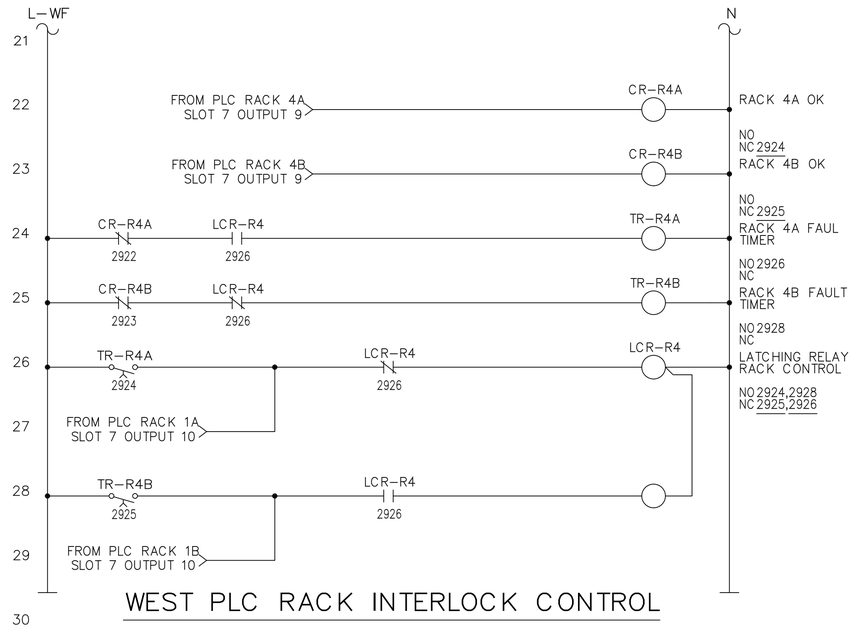
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls28.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 28

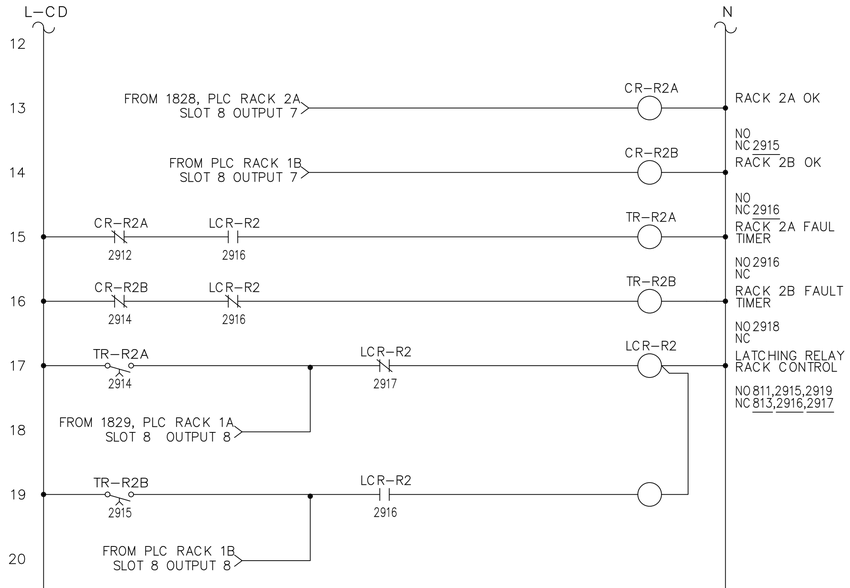
PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 266C OF 379



EAST PLC RACK INTERLOCK CONTROL



WEST PLC RACK INTERLOCK CONTROL



CONTROL DESK INTERLOCK CONTROL

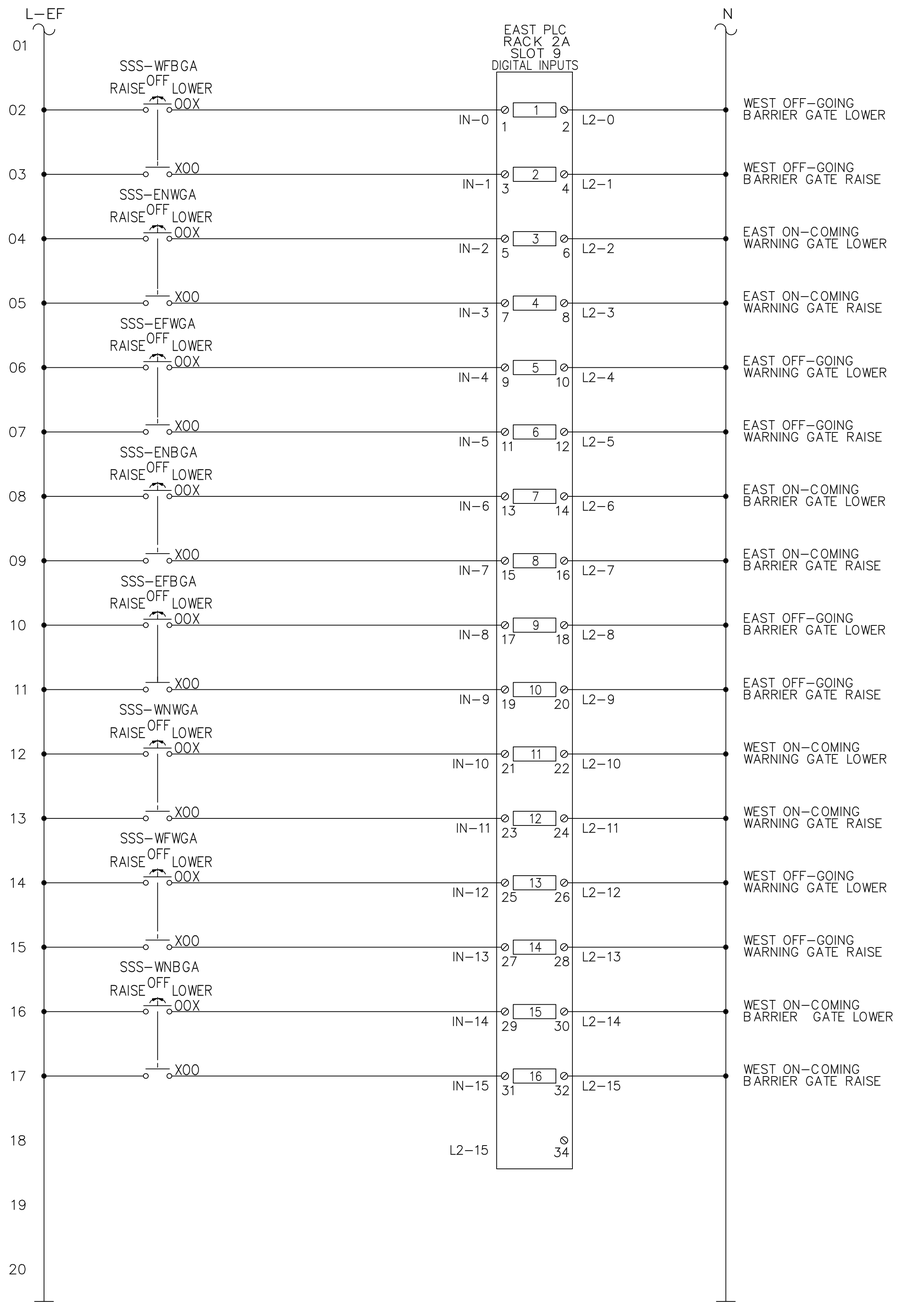
NOTE
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.

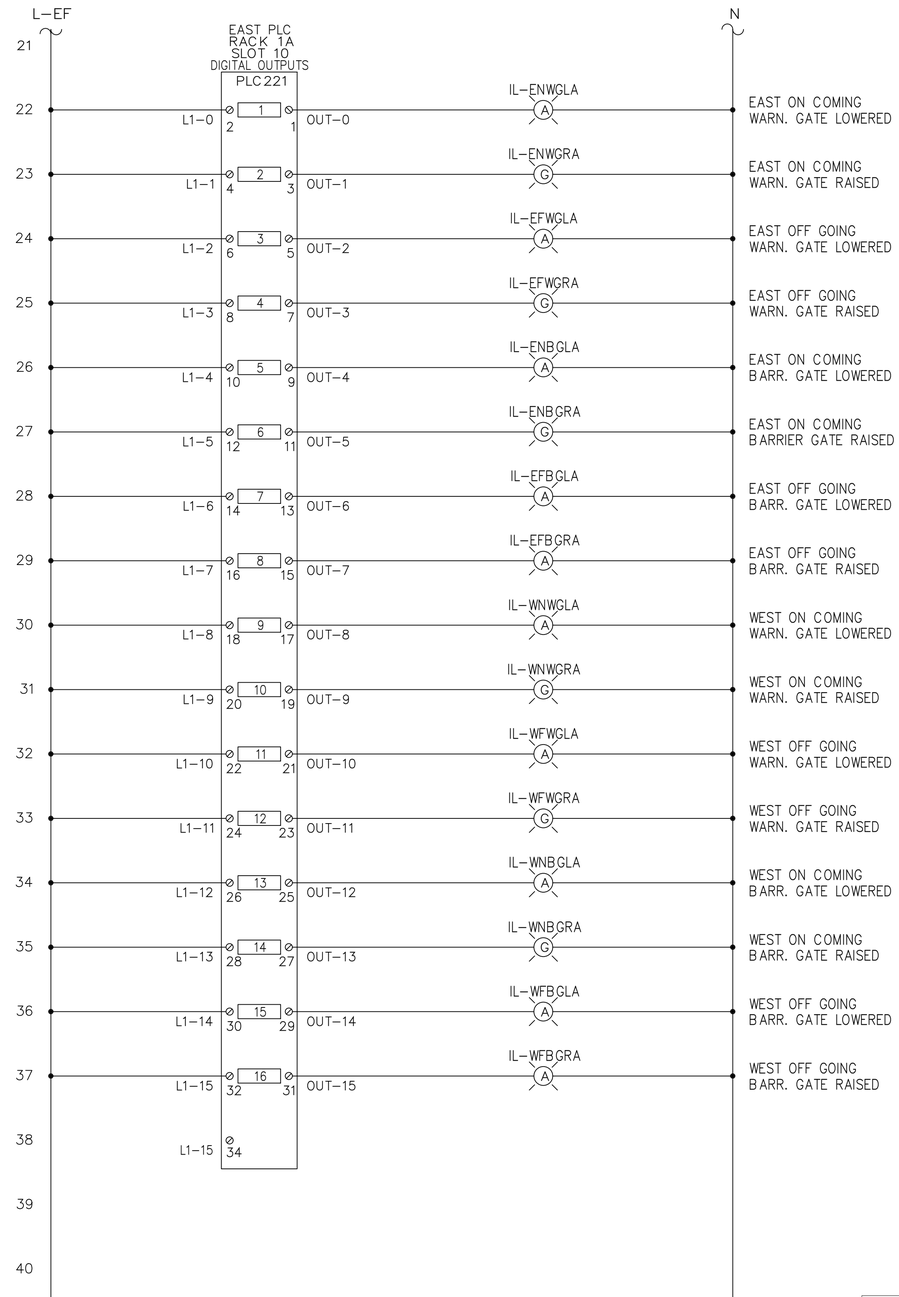
REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls29.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 29

PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 266D OF 379





NOTE
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 214 AND 215.

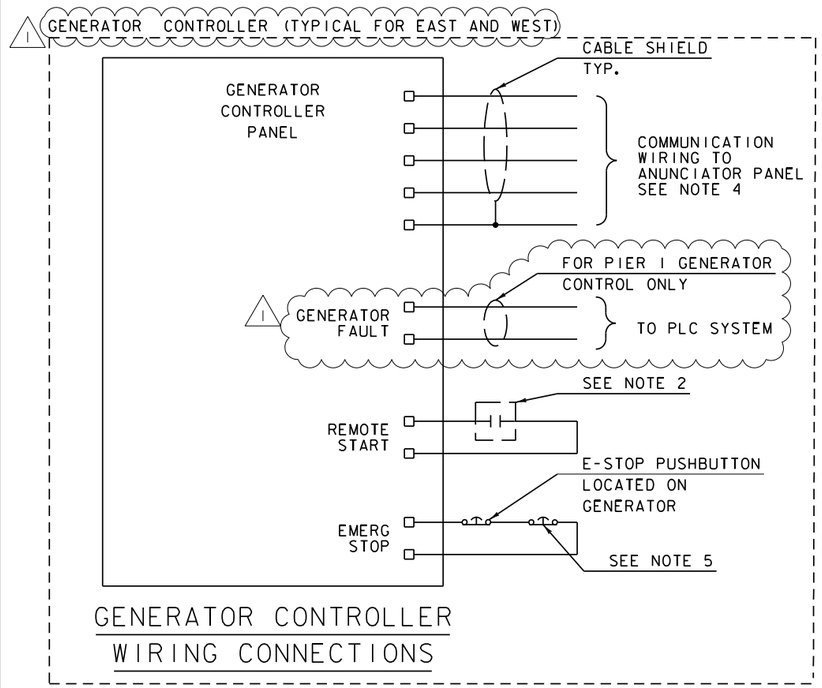
GATE REMOTE STATION CONTROL

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

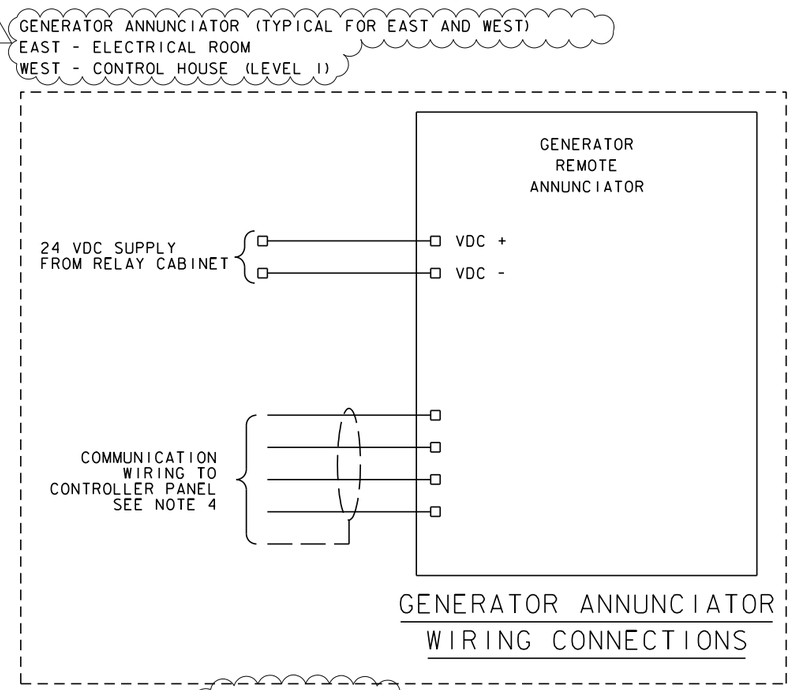
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cntrls30.dwg
PROJECT LEADER: T. FRENCH
DESIGNED BY: Y. ADELEKAN
CONTROL SCHEMATIC 30

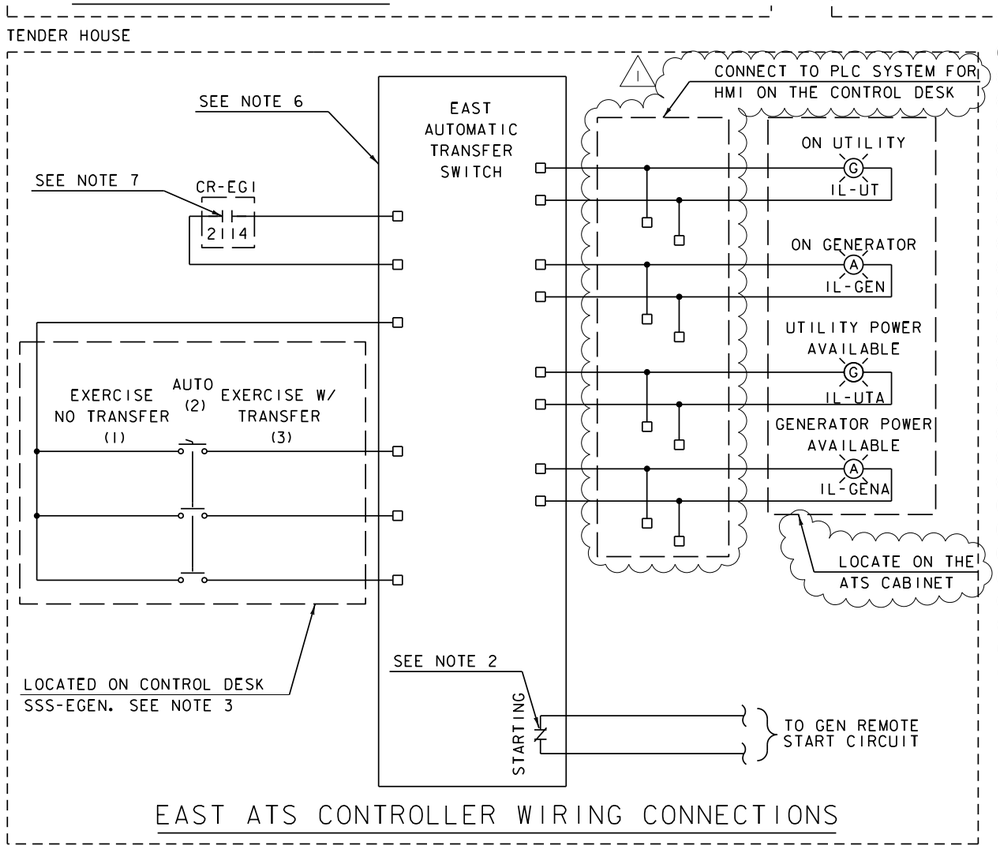
PLOT DATE: 12/8/2017
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 266E OF 379



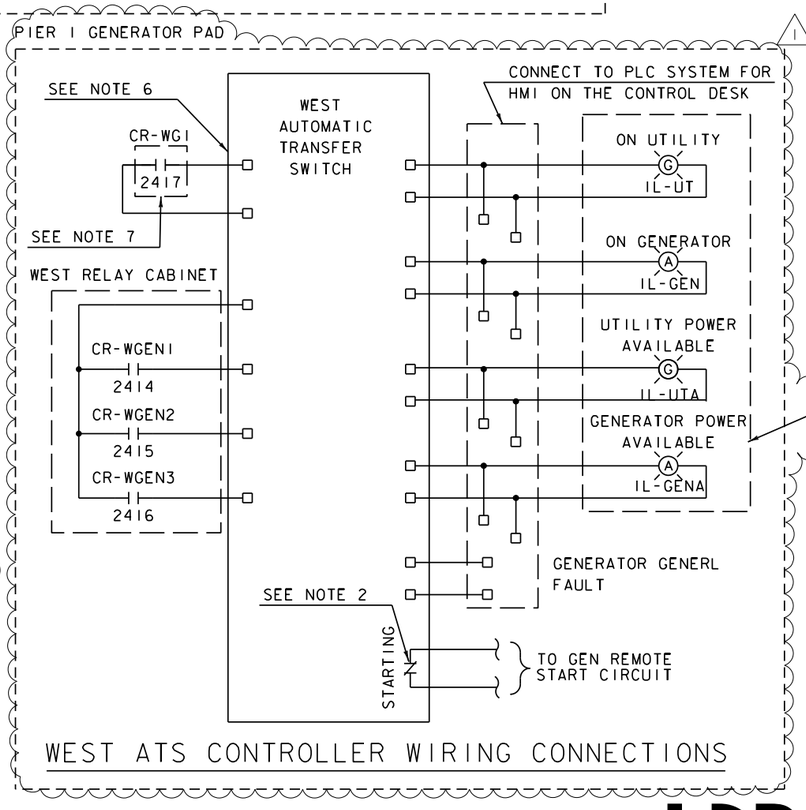
GENERATOR CONTROLLER
WIRING CONNECTIONS



GENERATOR ANNUNCIATOR
WIRING CONNECTIONS



EAST ATS CONTROLLER WIRING CONNECTIONS



WEST ATS CONTROLLER WIRING CONNECTIONS

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. STARTING CONTACT CLOSES WHEN UTILITY POWER HAS FAILED, "EXERCISE NO TRANSFER" SWITCH POSITION IS SELECTED, "EXERCISE W/ TRANSFER" POSITION IS SELECTED, OR IF THE PROGRAMMED SCHEDULED MAINTENANCE IS TURNED ON.
3. "AUTO" SETS THE GENERATOR TO RUN AUTOMATICALLY WHEN THE ATS SENSES A POWER FAILURE OR WHEN THE ATS'S MAINTENANCE SCHEDULER IS ACTIVATED. "EXERCISE NO TRANSFER" TURNS THE GENERATOR ON BUT KEEPS THE SOURCE OF POWER FROM THE UTILITY. ONCE THE "EXERCISE W/ TRANSFER" SWITCH POSITION IS HELD FOR 10 SEC THE GENERATOR WILL BE FORCED TO BE TURNED ON AND THE POWER SOURCE TO BE SWITCHED TO THE GENERATOR.
4. CONTRACTOR TO COORDINATE WITH GENERATOR MANUFACTURER ON ACTUAL NUMBER OF COMMUNICATION CONDUCTORS BETWEEN THE GENERATOR CONTROLLER AND THE ANNUNCIATOR.
5. GENERATOR E-STOP LOCATED NEAR THE ANNUNCIATOR PANEL IN THE CONTROL ROOM. E-STOP BUTTON SHALL BE NON-ILLUMINATED JUMBO MUSHROOM HEAD PUSHBUTTON.
6. 1 FURNISH THE GENERATOR ATS WITH AUTOMATIC EXERCISING FUNCTION TO EXERCISE THE GENERATOR WITHOUT TRANSFER WITH A MANUFACTURER'S RECOMMENDED FREQUENCY.
7. THE ATS SHALL NOT BE ABLE TO RE-TRANSFER FROM GENERATOR POWER TO UTILITY POWER IN THE MIDDLE OF A LIFTING OPERATION EVEN IF THE UTILITY VOLTAGE IS SENSED. RE-TRANSFER SHALL ONLY BE 1 PERMITTED WHEN TRAFFIC SIGNAL IS GREEN.

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42genint.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
GENERATOR INTERCONNECTION DIAGRAM

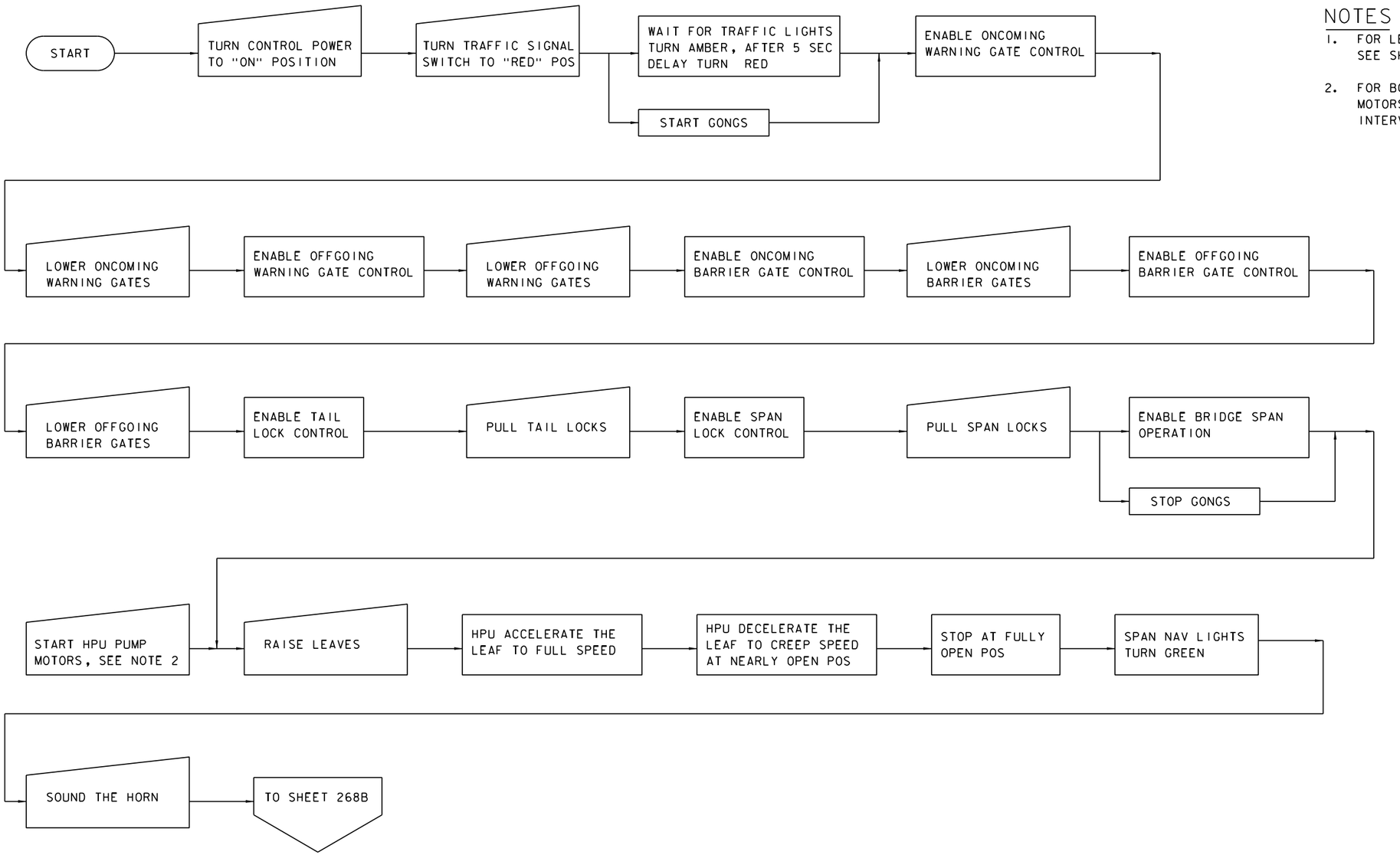
PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 267 OF 379

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142instrumn.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
INSTRUMENTATION WIRING DIAGRAM

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 268 OF 379



NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. FOR BOTH EAST AND WEST SIDES, THE TWO PUMP MOTORS SHALL BE STARTED WITH 3 SECONDS INTERVAL BETWEEN THE STARTS.

BRIDGE OPENING FLOW CHART

CHART LEGEND

START/END OF SEQUENCE

PROGRAM AUTOMATED SEQUENCE

OPERATOR INPUT

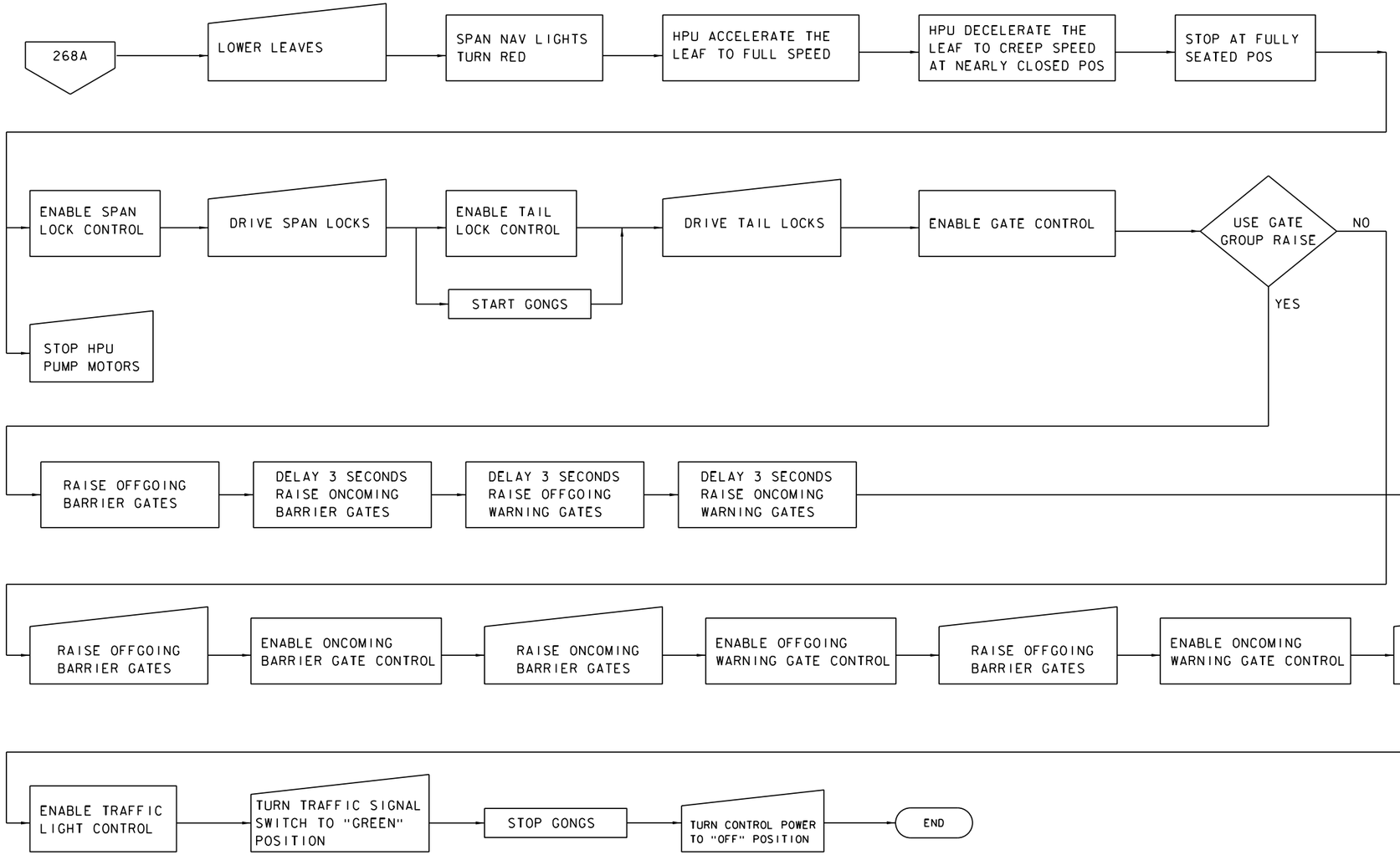
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REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42PLCblckdia.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
PLC FLOWCHART 1OF 2

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 268A OF 379



NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.

BRIDGE CLOSING FLOW CHART

CHART LEGEND

START/END OF SEQUENCE

PROGRAM AUTOMATED SEQUENCE

OPERATOR INPUT

PAGE CONTINUATION

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

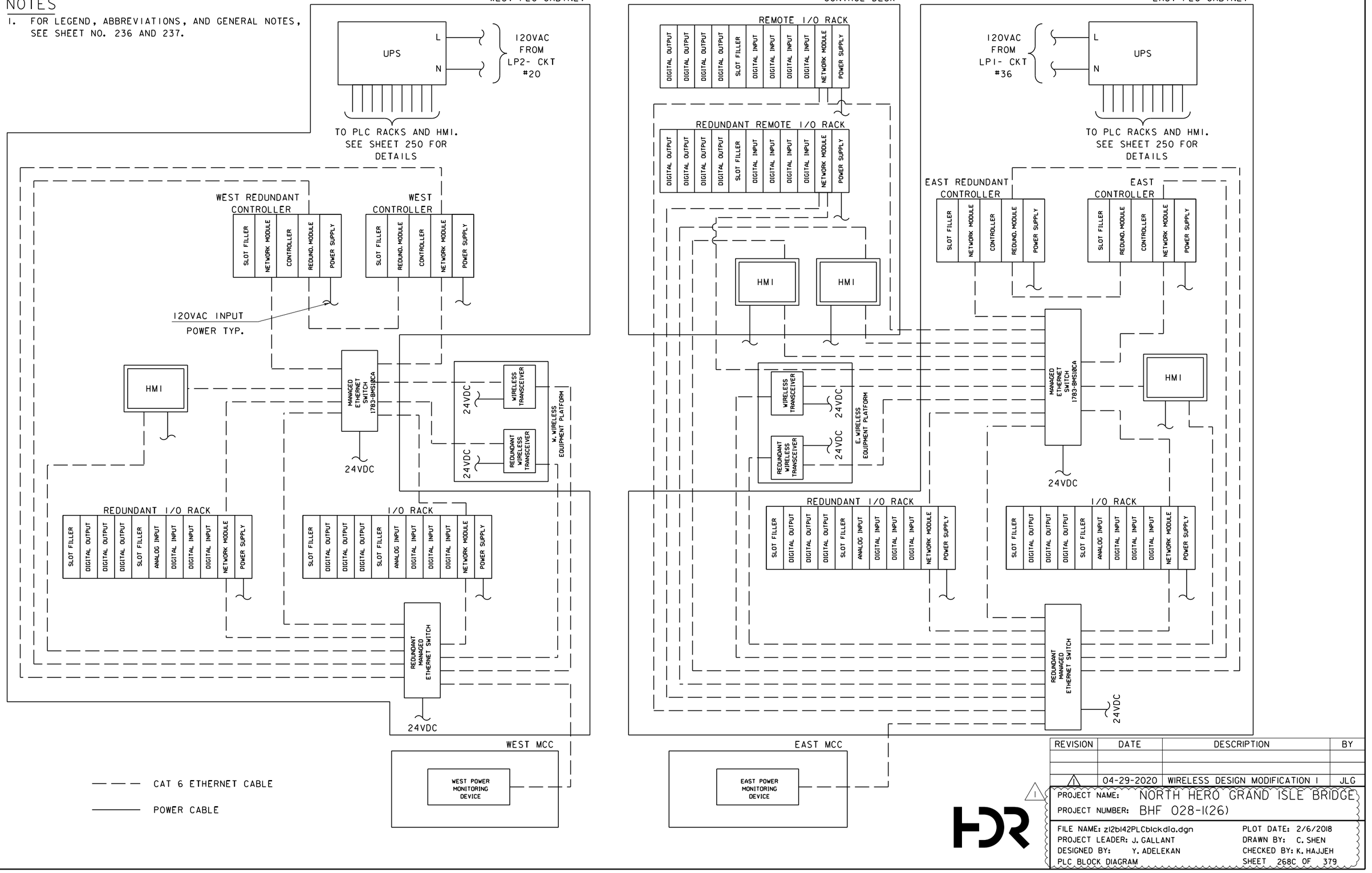
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42PLCblckdia.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
PLC FLOWCHART 2 OF 2

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 268B OF 379

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.



REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

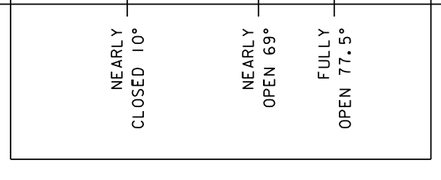
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142PLCblckdia.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
PLC BLOCK DIAGRAM

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 268C OF 379

BRIDGE POSITION ROTARY CAM LIMIT SWITCHES

LIMIT SWITCH	DEVELOPMENT	FUNCTION
LS-WBP1 LS-EBP1		FULLY OPEN
LS-WBP2 LS-EBP2		FULLY OPEN
LS-WBP3 LS-EBP3		NEARLY OPEN
LS-WBP4 LS-EBP4		NEARLY OPEN
LS-WBP5 LS-EBP5		NEARLY CLOSED
LS-WBP6 LS-EBP6		NEARLY CLOSED
LS-WBP7 LS-EBP7		SPARE
LS-WBP8 LS-EBP8		SPARE
LS-WBP9 LS-EBP9		SPARE
LS-WBP10 LS-EBP10		SPARE



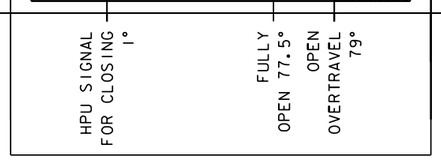
SPAN FULLY CLOSED LIMIT SWITCHES

LIMIT SWITCH	DEVELOPMENT	FUNCTION
LS-SWFC1 LS-NWFC1		FULLY CLOSED
LS-SWFC2 LS-NWFC2		FULLY CLOSED
LS-SEFC1 LS-NEFC1		FULLY CLOSED
LS-SEFC2 LS-NEFC2		FULLY CLOSED



SPAN OVERTRAVEL LIMIT SWITCHES

LIMIT SWITCH	DEVELOPMENT	FUNCTION
LS-EOVT		WEST LEAF OVERTRAVEL
LS-WOVT		EAST LEAF OVERTRAVEL

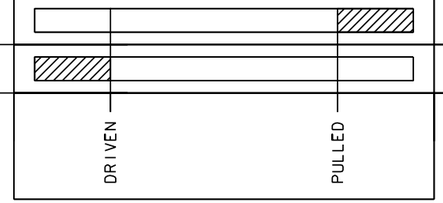


NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. SEE MECHANICAL DRAWINGS FOR LIMIT SWITCH MOUNTING DETAILS.
3. FURNISH THE SPAN LOCK AND TAIL LOCK LIMIT SWITCHES WITH DOUBLE POLE DOUBLE THROW CONTACTS FOR BOTH PLC CONTROL SYSTEM AND MANUAL OPERATION INTERLOCKS

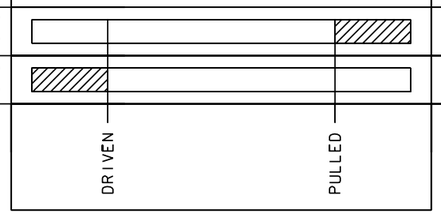
SPAN LOCK LIMIT SWITCHES

LIMIT SWITCH	DEVELOPMENT	FUNCTION
LS-SELP, LS-NELP LS-SWLP, LS-NWLP		SPAN LOCK PULLED
LS-SELD, LS-NELD LS-SWLD, LS-NWLD		SPAN LOCK DRIVEN



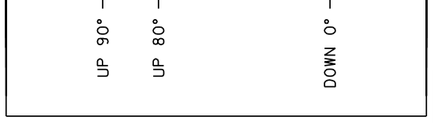
TAIL LOCK LIMIT SWITCHES

LIMIT SWITCH	DEVELOPMENT	FUNCTION
LS-SETLP, LS-NETLP LS-SWTLP, LS-NWTLP		TAIL LOCK PULLED
LS-SETLD, LS-NETLD LS-SWTLD, LS-NWTLD		TAIL LOCK DRIVEN

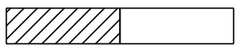


GATES LIMIT SWITCHES
LS-ENWG, LS-EFWG, LS-ENBG, LS-EFBG, LS-WNWG, LS-WFWG, LS-WNBG, LS-WFBG

LIMIT SWITCH	DEVELOPMENT	FUNCTION
LS1, LS1A 1		LOWER
LS2, LS2A		RAISE
LS3		LOWERED
LS4		RAISED
LS5		TRAFFIC SIGNAL INTERLOCK



DEVELOPMENT KEY



REVISION	DATE	DESCRIPTION	BY
3			
2			
1	4-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

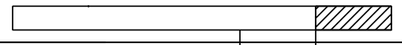
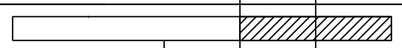
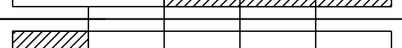
FILE NAME: z12b142limdevl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
LIMIT SWITCH DEVELOPMENT 1 OF 2

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 269 OF 379

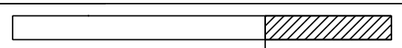
NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.

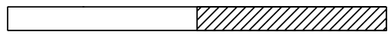
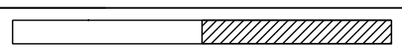
HYDRAULIC FLUID TEMPERATURE SWITCHES

TEMPERATURE SWITCH	DEVELOPMENT	FUNCTION
TS-EFCT TS-WFCT		CRITICAL HIGH HYDRAULIC FLUID TEMPERATURE
TS-EFHT TS-WFHT		HIGH HYDRAULIC FLUID TEMPERATURE
TS-EFWT TS-WFWT		WARM HYDRAULIC FLUID TEMPERATURE
TS-EFLT TS-WFLT		LOW HYDRAULIC FLUID TEMPERATURE

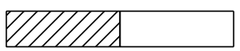
HYDRAULIC FLUID OIL LEVEL SWITCHES

LEVEL SENSOR	DEVELOPMENT	FUNCTION
LS-EFCL LS-WFCL		CRITICAL (LOW) FLUID LEVEL
LS-EFLL LS-WFLL		LOW FLUID LEVEL

HYDRAULIC FILTER CLOGGED SWITCHES

LEVEL SENSOR	DEVELOPMENT	FUNCTION
PS-EPFC PS-WPFC		PRESSURE FILTER CLOGGED
PS-ERFC PS-WRFC		RETURN FILTER CLOGGED

DEVELOPMENT KEY



PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)

FILE NAME: zi2bl42limdev2.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: C. SHEN
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
LIMIT SWITCH DEVELOPMENT 2 OF 2	SHEET 270 OF 379

NOTES

1. FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. ALL SPACES IN PANELBOARDS SHALL BE COVERED WITH SPACE FILLERS.
3. FURNISH AND INSTALL PANELBOARDS WITH A MINIMUM OF 20% SPARE CIRCUIT BREAKERS.

PANEL LP-1 208/120V, 3 PH, 4 WIRE 225 AMP MAINS, 225A MCB, 35KA, GND BUS

CIRCUIT DESCRIPTION	TRIP	CKT	CKT	TRIP	CIRCUIT DESCRIPTION
EXHAUST FAN EF-4 AND EF-5	20	1	2	20	EXHAUST FAN EF-6 AND EF-7
C.H. HEAT PUMP HP-1	30	3	4	20	EXIT/EMERGENCY LIGHTS
			6	20	DOMESTIC HOT WATER HEATER
C.H. FAN COIL UNIT FC-1	40	7	8	20	BASCULE PIT LIGHTS I
			10	20	BASCULE PIT LIGHTS II
SEWAGE EJECTOR PUMP PB-1	20	11	12	20	BASCULE PIT LIGHTS III
ROOM LIGHTS I	20	13	14	20	CONTROL ROOM LIGHTS I
ROOM LIGHTS II	20	15	16	20	CONTROL ROOM LIGHTS II
BASCULE PIT OIL/WATER SEPARATOR	20	17	18	20	STAIRWAY LIGHTS
RECEPTACLES I	20	19	20	20	EAST CCTV CAMERA EQUIPMENT
EAST SUMP PUMP CONTROLLER	20	21	22	50	CONTROL CIRCUIT
SPARE	20	23	24	20	EAST LOCK HEATERS
RECEPTACLES II	20	25	26	20	SPARE
RECEPTACLES III	20	27			
EAST ONCOMING GATES	20	29	30	20	MAIN CONTROL DESK LTG AND RECEP
EAST OFF GOING GATES	20	31	32	20	REMOTE GATE STATION LTG AND RECEP
SPACE	-	33	34	-	EAST RELAY CABINET LTG & RECEP
EAST PLC CABINET LTG & RECEP	20	35	36	20	EAST PLC CABINET

PANEL HP-1 480/277V, 3 PH, 4 WIRE 100 AMP MAINS, 100A MCB, 22KA, GND BUS

CIRCUIT DESCRIPTION	TRIP	CKT	CKT	TRIP	CIRCUIT DESCRIPTION
ELECTRICAL ROOM HEATERS UH-8 AND UH-9	20	1	2	20	MECHANICAL ROOM HEATERS UH-10 AND UH-11
STORAGE ROOM HEATERS UH-12, UH-13 AND UH-14	20	7	8	20	BATHROOM HEATER UH-15
			10	30	HEAT TRACE

PANEL LP-2 208/120V, 3 PH, 4 WIRE 225 AMP MAINS, 225A MCB, 35KA, GND BUS

CIRCUIT DESCRIPTION	TRIP	CKT	CKT	TRIP	CIRCUIT DESCRIPTION
EXHAUST FAN EF-1 AND EF-3	20	1	2	20	EXHAUST FAN EF-2
ROOM LIGHTS I	20	3	4	20	EXIT/EMERGENCY LIGHTS
ROOM LIGHTS II	20	5	6	20	BASCULE PIT LIGHTS I
DC POWER SUPPLY	20	7	8	20	WEST CCTV CAMERA EQUIPMENT
STAIRWAY LIGHTS	20	9	10	20	BASCULE PIT LIGHTS II
BASCULE PIT OIL/WATER SEPARATOR	20	11	12	20	BASCULE PIT LIGHTS III
RECEPTACLES I	20	13	14	20	WEST LOCK HEATERS
RECEPTACLES II	20	15	16	50	CONTROL CIRCUITS
WEST SUMP PUMP CONTROLLER	20	17	18	20	WEST RELAY CABINET LTG & RECEP
WEST ONCOMING GATES	20	19	20	20	WEST PLC CABINET LTG & RECEP
WEST OFF GOING GATES	20	21	22	20	WEST PLC CABINET
PIER 1 GEN. HEATER	20	23	24	20	PIER 1 GEN ENC. LIGHTING
PIER 1 GEN BATTERY CHARGER	20	25	26	20	PIER 1 GEN. LOAD BANK CONTROLLER
SPARE	20	27	28	20	PIER 1 GEN. ALTERNATOR HTR

PANEL HP-2 480/277V, 3 PH, 4 WIRE 100 AMP MAINS, 100A MCB, 22KA, GND BUS

CIRCUIT DESCRIPTION	TRIP	CKT	CKT	TRIP	CIRCUIT DESCRIPTION
ELECTRICAL ROOM HEATERS UH-1 AND UH-2	20	1	2	20	MECHANICAL ROOM HEATERS UH-3 AND UH-4
STORAGE ROOM HEATERS UH-5, UH-6 AND UH-7	20	7	8	30	HEAT TRACE

PANEL HP-TH 240/120V, 1 PH, 3 WIRE 60 AMP MAINS, 60A MCB, 22KA, WITH INTEGRAL CONTACTOR AND GND BUS

CIRCUIT DESCRIPTION	TRIP	CKT	CKT	TRIP	CIRCUIT DESCRIPTION
ELECTRIC HEATER	20	1	2	40	CONTROL HOUSE RANGE RECEPTACLE
ELECTRIC HEATER	20	5			

PANEL LP-TH 240/120V, 1 PH, 3 WIRE 100 AMP MAINS, 100A MCB, 22KA, GND BUS

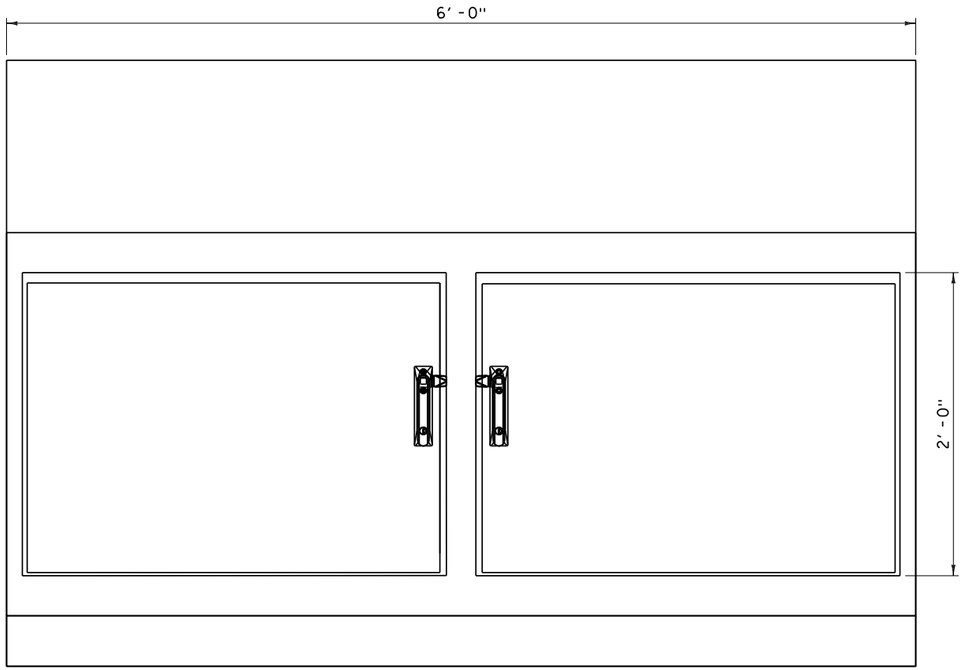
CIRCUIT DESCRIPTION	TRIP	CKT	CKT	TRIP	CIRCUIT DESCRIPTION
PIER 2 GEN ENC. LIGHTING	20	1	2	20	SPARE
SPARE	20	3			
BASEMENT LIGHTS	20	5	6	20	BATHROOM
WATER HEATER	20	7	8	20	KITCHEN GFI
PANEL HP-TH	60	9	10	20	REF
			12	20	LIGHTS
PIER 2 GENERATOR HTR	20	13	14	20	OFFICE OUTLET
PIER 2 GEN BATTERY CHARGER	20	15	16	20	PANEL GFI
WATER PUMP	20	17	18	20	PANEL GFI
LOAD BANK CONTROLLER	20	19	20	20	PIER 2 LOAD BANK CONTROLLER
PIER 2 GEN. ALTERNATOR HTR	-	21	22	20	SPARE
EMERGENCY LIGHTING	20	23	24	20	SPARE

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

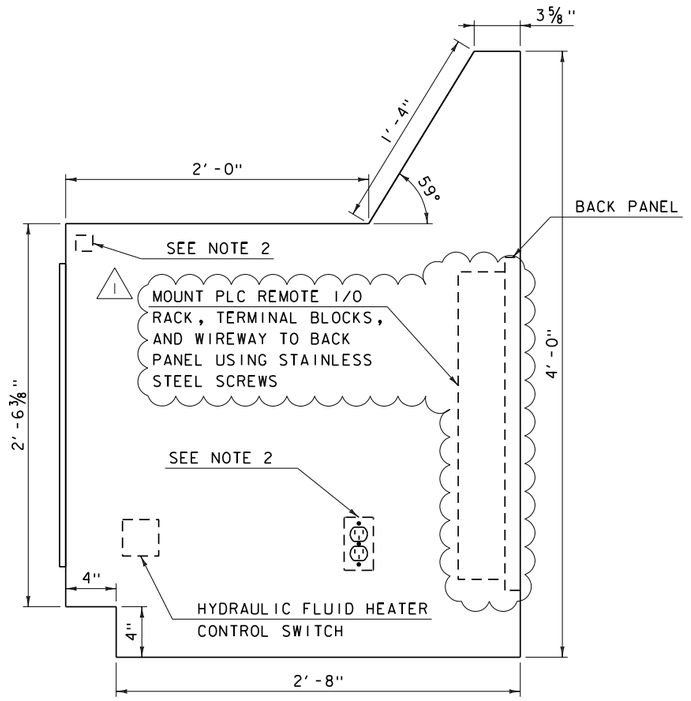
FILE NAME: z12b142pbsched.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
PANELBOARD SCHEDULES

PLOT DATE: 2/6/2018
DRAWN BY: J. TAYLOR
CHECKED BY: K. HAJJEH
SHEET 271 OF 379



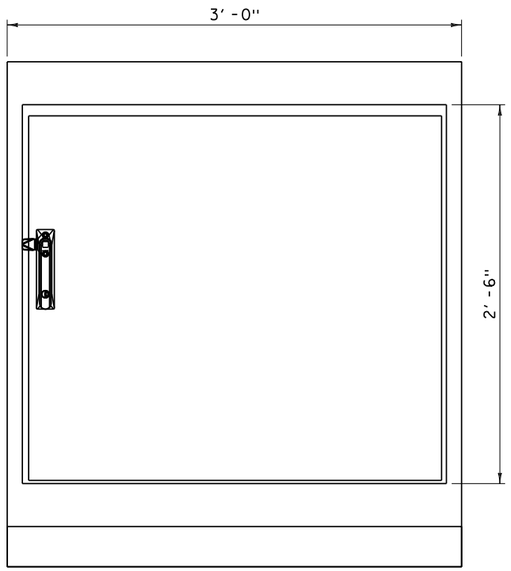
CONTROL DESK FRONT ELEVATION

NOT TO SCALE



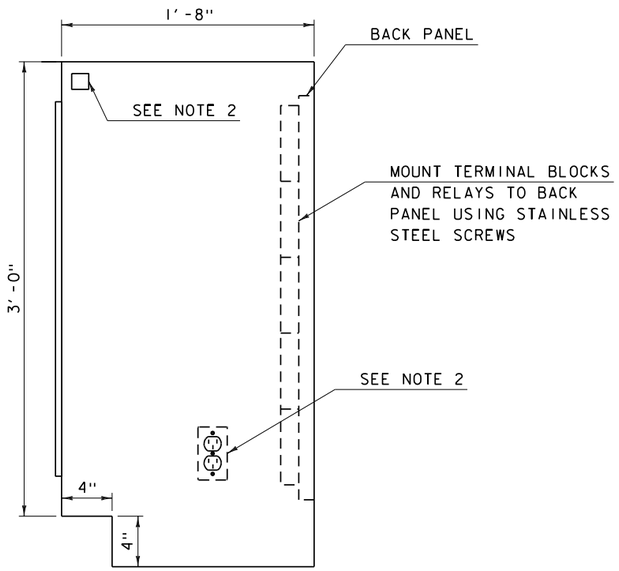
CONTROL DESK SIDE ELEVATION

NOT TO SCALE



GATE REMOTE STATION FRONT ELEVATION

NOT TO SCALE

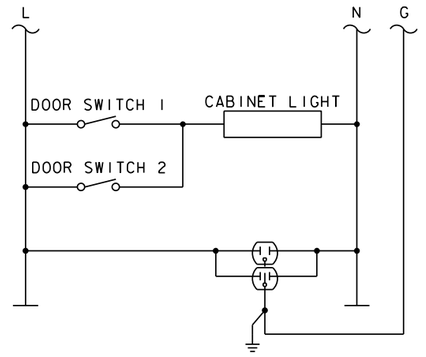


GATE REMOTE STATION SIDE ELEVATION

NOT TO SCALE

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. FURNISH CONTROL DESK WITH 120V DUPLEX RECEPTACLE AND LIGHTING. RECEPTACLE SHALL BE LOCATED IN AN ACCESSIBLE LOCATION. LIGHTING SHALL BE INTERLOCKED WITH THE DOOR SWITCHES, SUCH THAT THE LIGHT WILL TURN ON WHEN EITHER OF THE CABINET DOORS ARE OPEN AND OFF WHEN BOTH DOORS ARE CLOSED.
3. DRAWING SHOWN IS TYPICAL FOR PLC CABINETS, RELAY CABINETS, MAIN CONTROL CONSOLE AND GATE REMOTE CONTROL STATION. FOR CABINET WITH MULTIPLE DOORS, EACH DOOR SHALL BE INTERLOCKED WITH THE CABINET LIGHT.
4. SEE PANELBOARD SCHEDULE FOR CABINET LIGHTING AND RECEPTACLE CIRCUIT.



TYPICAL CABINET LIGHT& RECEPTACLE WIRING SCHEMATIC

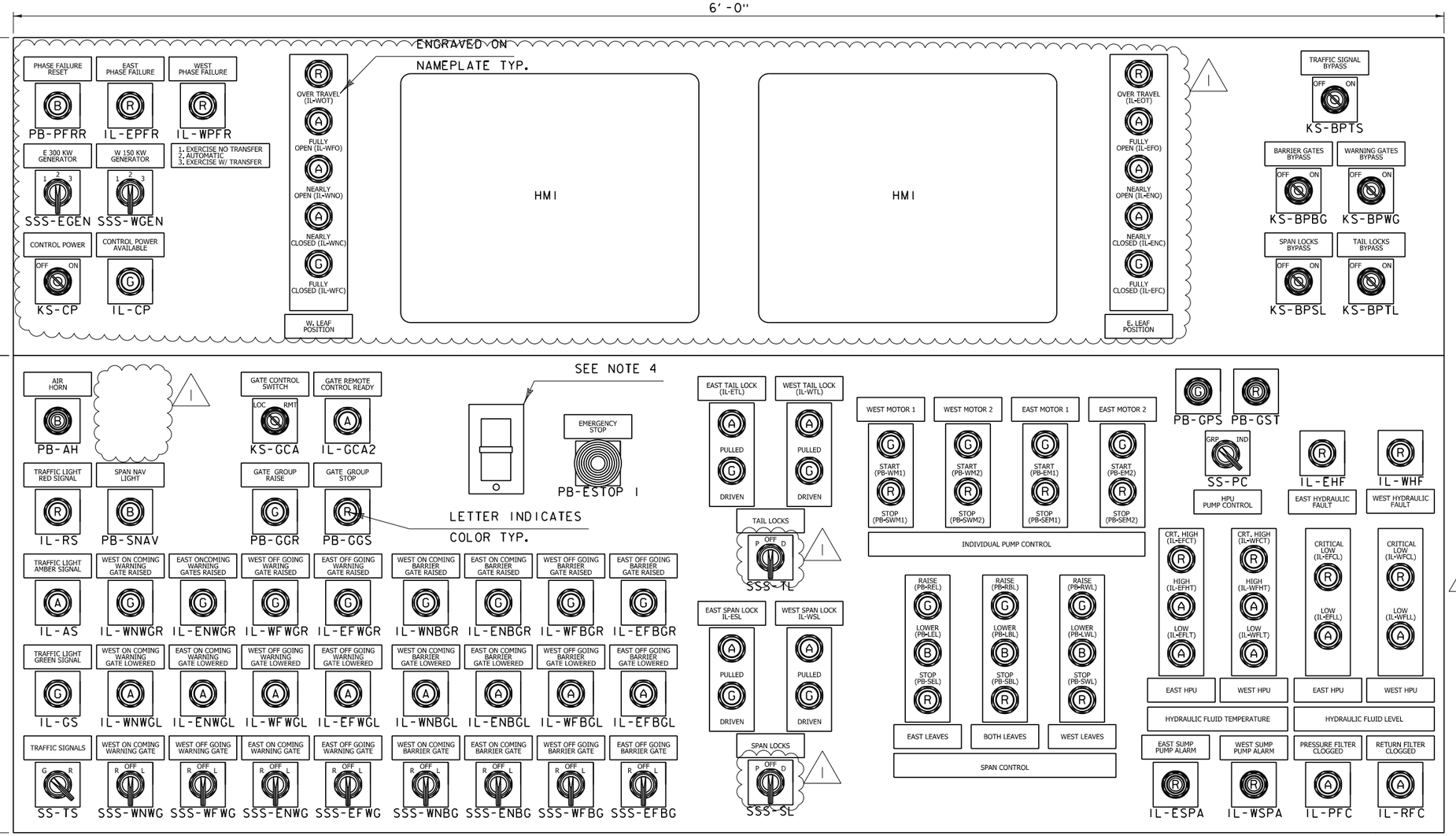
(SEE NOTE 3 AND 4)

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142ctrlddet.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
CONTROL DESK DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 272 OF 379



NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. CONTROL DESK SHALL BE FABRICATED OF 10 GAUGE TYPE 316 NEMA 4X STAINLESS STEEL. DESKTOP SHALL HAVE A NON-GLARE FINISH.
3. ALL NAMEPLATES SHALL BE HOT-POLISHED, BLACK AND WHITE, LAMINATED PHENOLIC COMPOUND WITH WHITE SURFACES AND INTERMEDIATE BLACK LAYER.

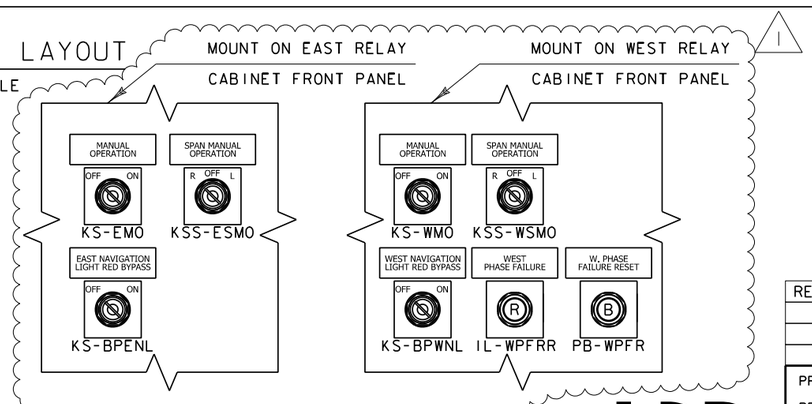
   LETTERING SHALL BE ENGRAVED INTO THE INTERMEDIATE BLACK LAYER. LETTERING SHALL NOT BE SMALLER THAN 1/4". USE HELVETICA MEDIUM TYPE FACE LETTERING.

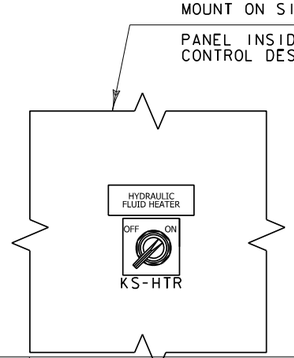
   ALL NAMEPLATES SHALL BE AFFIXED TO THE DESK WITH STAINLESS STEEL MOUNTING SCREWS.
4. DIMMER SWITCH TO CONTROL TWO LIGHT FIXTURES ABOVE CONTROL DESK. COVER PLATE SHALL BE STAINLESS STEEL AND DIMMER SWITCH TO BE RATED FOR NO LESS THAN 15A.

1 5. PRESSURE FILTER CLOGGED AND RETURN FILTER CLOGGED INDICATOR LIGHTS ARE FOR GENERAL CONDITION OF BOTH EAST AND WEST SIDES. INDIVIDUAL ALARM WOULD BE DISPLAYED ON HMI.

CONTROL DESK LAYOUT

NOT TO SCALE





EQUIPMENT ID PREFIX	DESCRIPTION	QUANTITY
HMI	19" HUMAN-MACHINE INTERFACE	2
IL	PUSH TO TEST INDICATOR LIGHT	34
KS	TWO POSITION KEYED SELECTOR SWITCH	7
PB	PUSH BUTTON	7
PB-ESTOP I	ILLUMINATED EMERGENCY STOP PUSH BUTTON	1
SS	TWO POSITION SELECTOR SWITCH	2
SSS	THREE POSITION SELECTOR SWITCH	11
DIMMER SWITCH	LIGHT FIXTURE DIMMER SWITCH	1

1

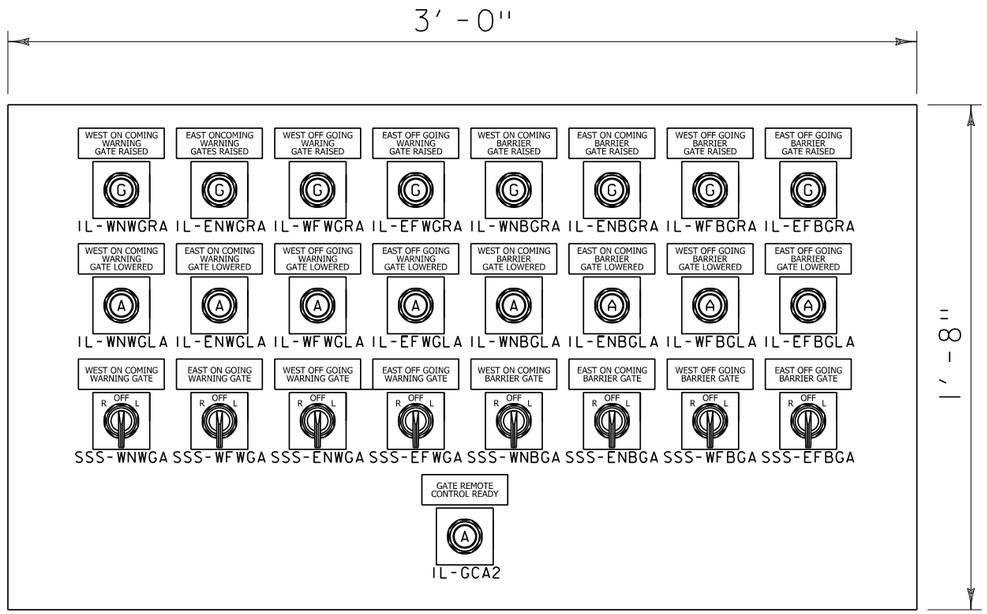
CONTROL DESK BILL OF MATERIALS

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142ctrldlay.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
CONTROL DESK LAYOUT

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 273 OF 379



GATE REMOTE STATION LAYOUT

NOT TO SCALE

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. GATE REMOTE CONTROL STATION SHALL BE FABRICATED OF 10 GAUGE TYPE 316 NEMA 4X STAINLESS STEEL. DESKTOP SHALL HAVE A NON-GLARE SATIN FINISH.
3. ALL NAMEPLATES SHALL BE HOT-POLISHED, BLACK AND WHITE, LAMINATED PHENOLIC COMPOUND WITH WHITE SURFACES AND INTERMEDIATE BLACK LAYER.

   LETTERING SHALL BE ENGRAVED INTO THE INTERMEDIATE BLACK LAYER. LETTERING SHALL NOT BE SMALLER THAN 1/4". USE HELVETICA MEDIUM TYPE FACE LETTERING.

   ALL NAMEPLATES SHALL BE AFFIXED TO THE DESK WITH STAINLESS STEEL MOUNTING SCREWS.

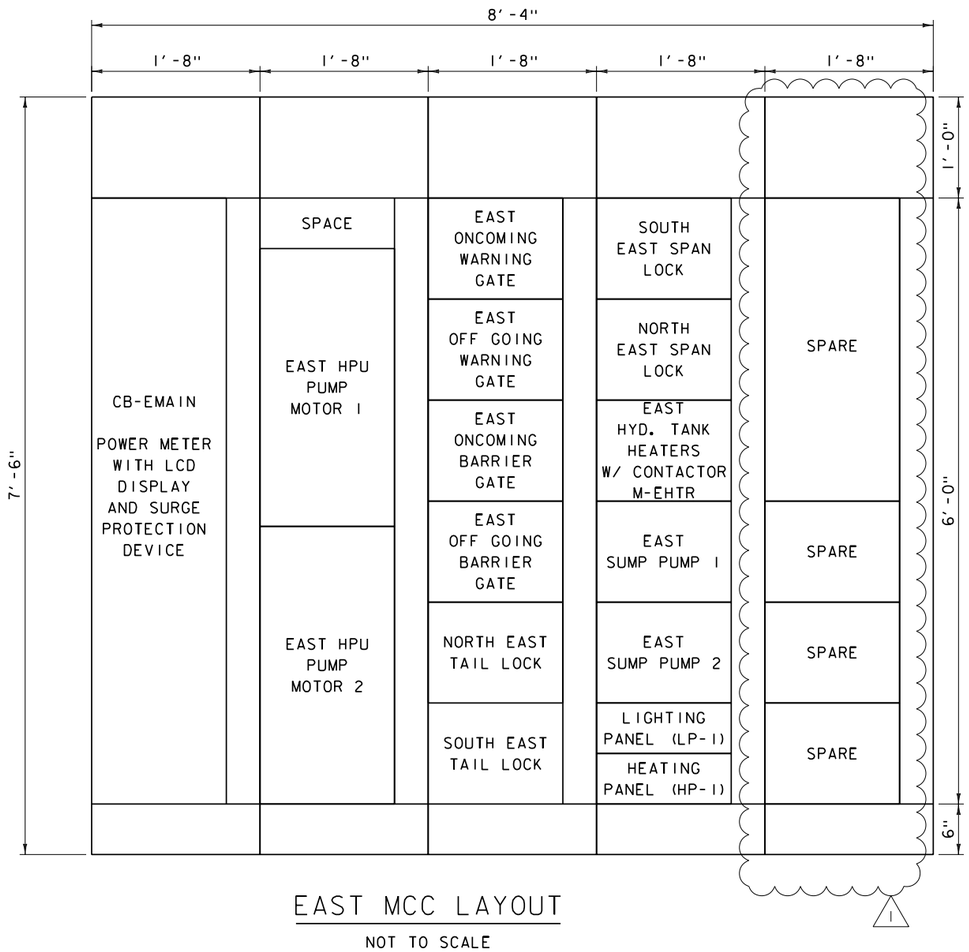
EQUIPMENT ID PREFIX	DESCRIPTION	QUANTITY
IL	INDICATOR LIGHT	17
SSS	THREE POSITION SELECTOR SWITCH	8

GATE REMOTE STATION BILL OF MATERIALS

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12bl42grmtslay.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: Y. ADELEKAN
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
GATE REMOTE STATION LAYOUT	SHEET 274 OF 379

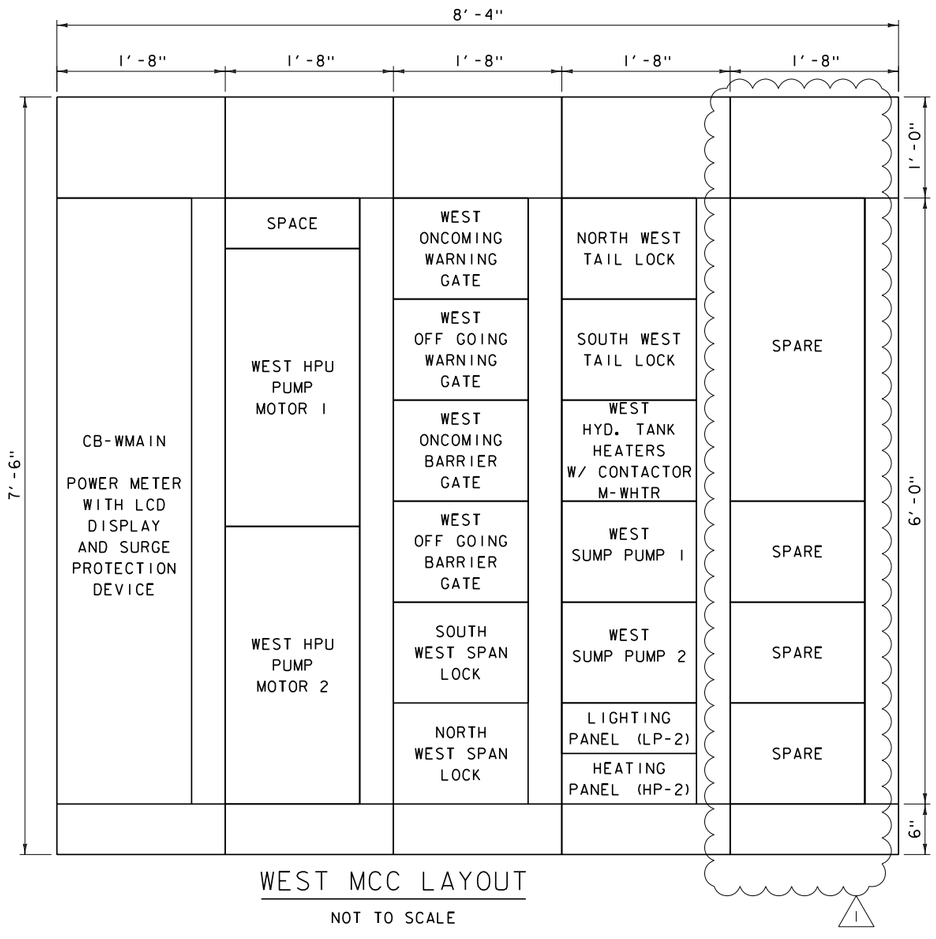
NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.



EAST MCC LAYOUT

NOT TO SCALE



WEST MCC LAYOUT

NOT TO SCALE

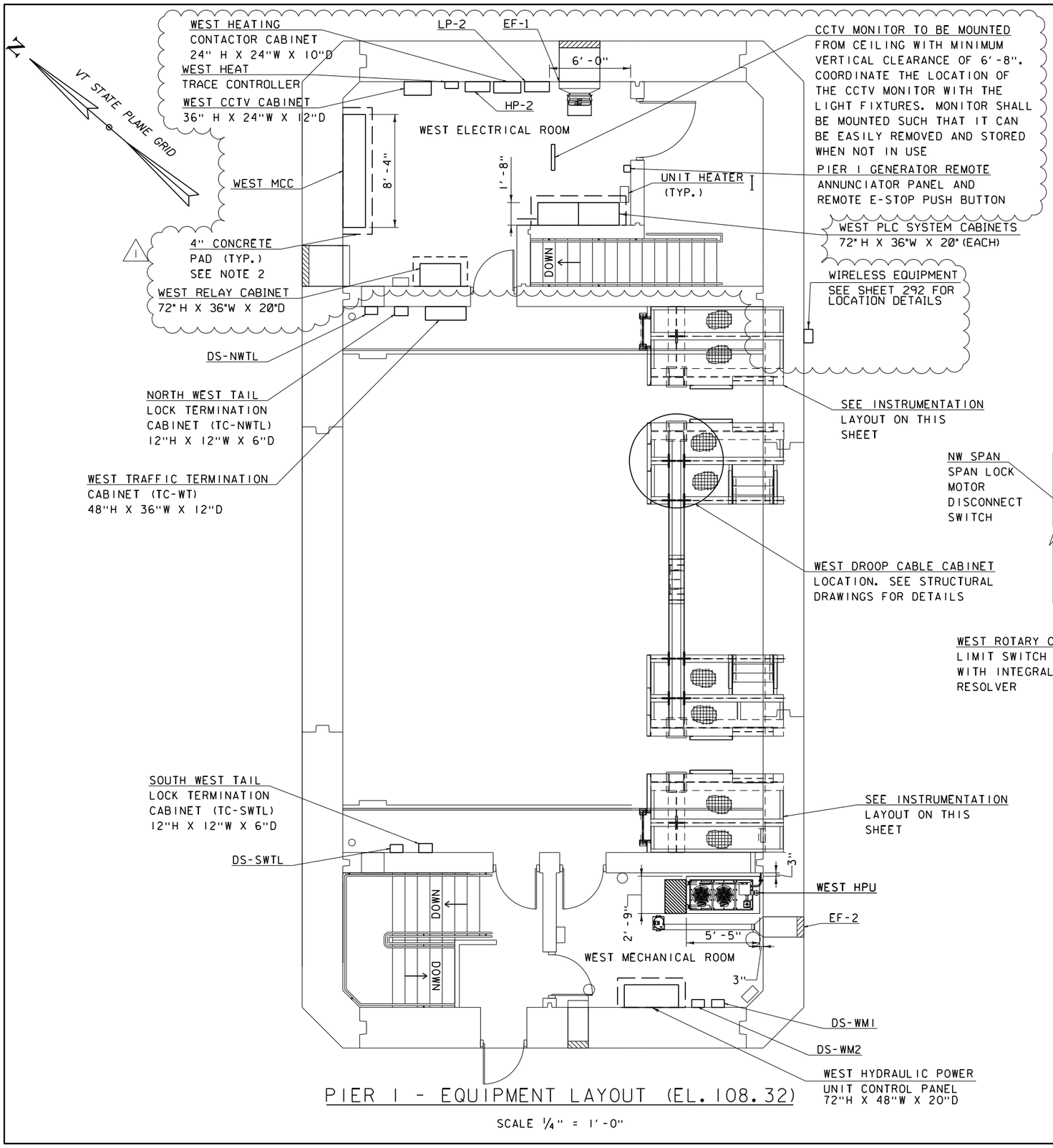
REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142mcc.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
MOTOR CONTROL CENTER LAYOUT

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 275 OF 379

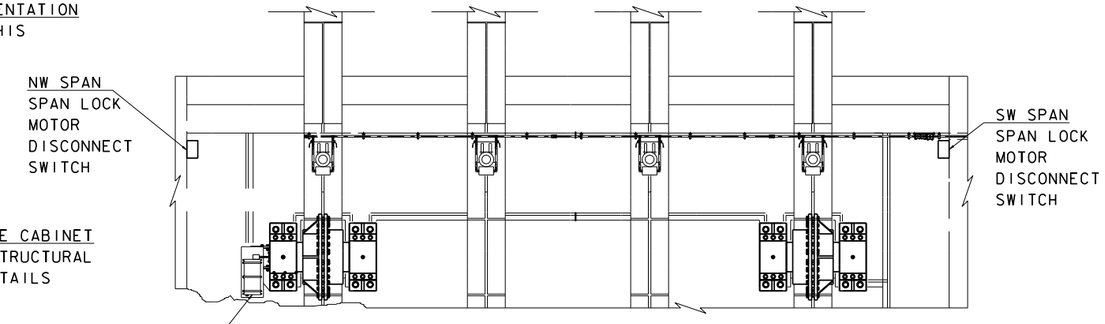


PIER I - EQUIPMENT LAYOUT (EL. 108.32)

SCALE 1/4" = 1'-0"

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. ALL FLOOR MOUNTED EQUIPMENT SHALL BE MOUNTED ON A 4" CONCRETE PAD. THE 4" CONCRETE PAD SHALL EXTEND 6" FROM THE EQUIPMENT EDGE ON ALL SIDES. COORDINATE EQUIPMENT DIMENSIONS WITH MANUFACTURER PRIOR TO INSTALLING CONCRETE PAD.
3. CONTRACTOR SHALL COORDINATE INSTALLATION OF ELECTRICAL EQUIPMENT WITH THE LOCATION OF MECHANICAL EQUIPMENT.



INSTRUMENTATION LAYOUT

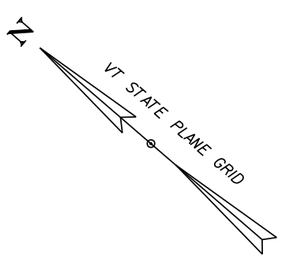
WEST SHOWN EAST IS SIMILAR
SCALE 1/2" = 1'-0"

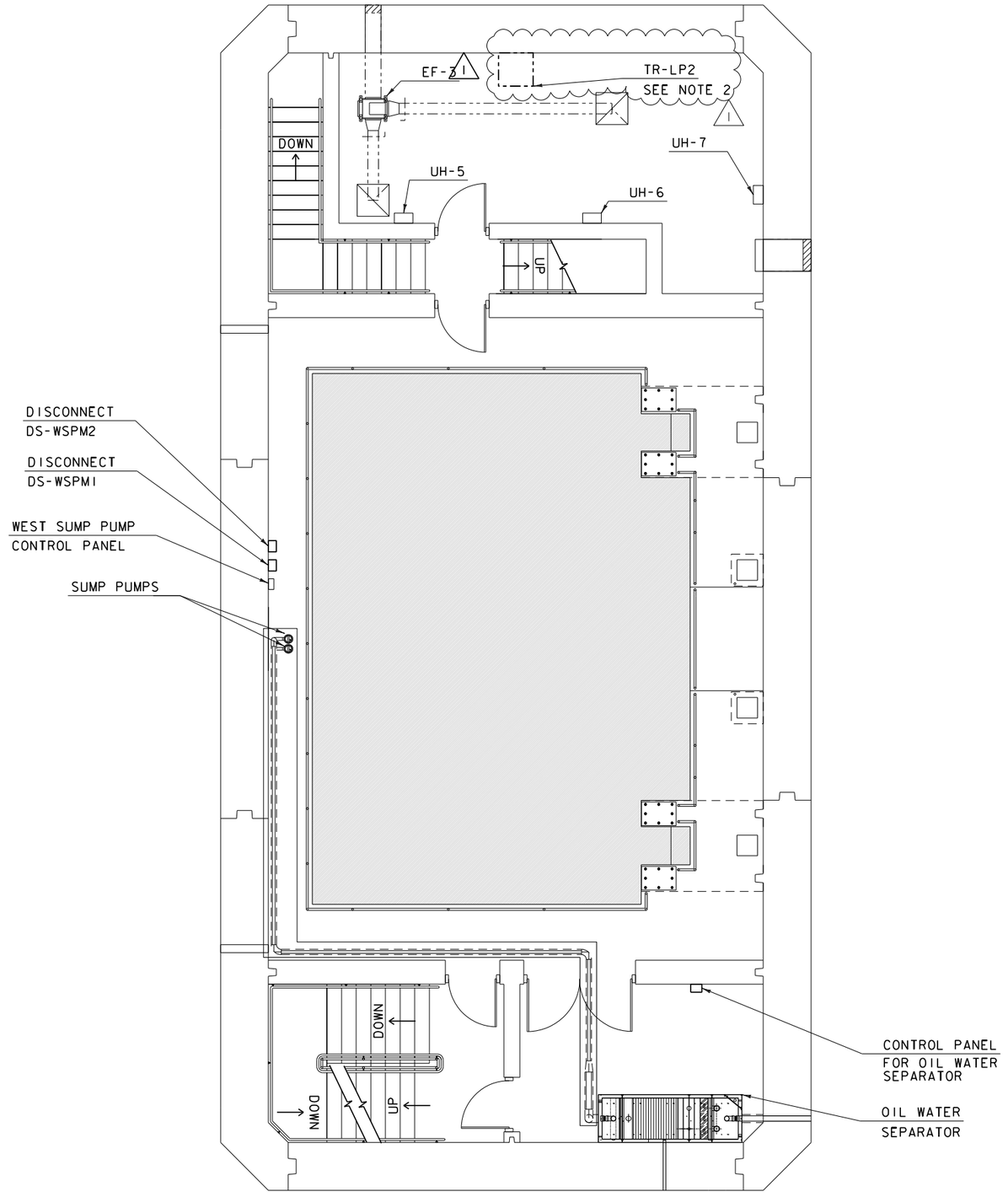
CLEAR SPACE FOR HEATER MAINTENANCE

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42pier12.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
PIER I LAYOUT I
PLOT DATE: 2/6/2018
DRAWN BY: J. TAYLOR
CHECKED BY: K. HAJJEH
SHEET 276 OF 379





PIER 1 - EQUIPMENT LAYOUT (EL. 99.80)

SCALE 1/4" = 1'-0"

NOTES

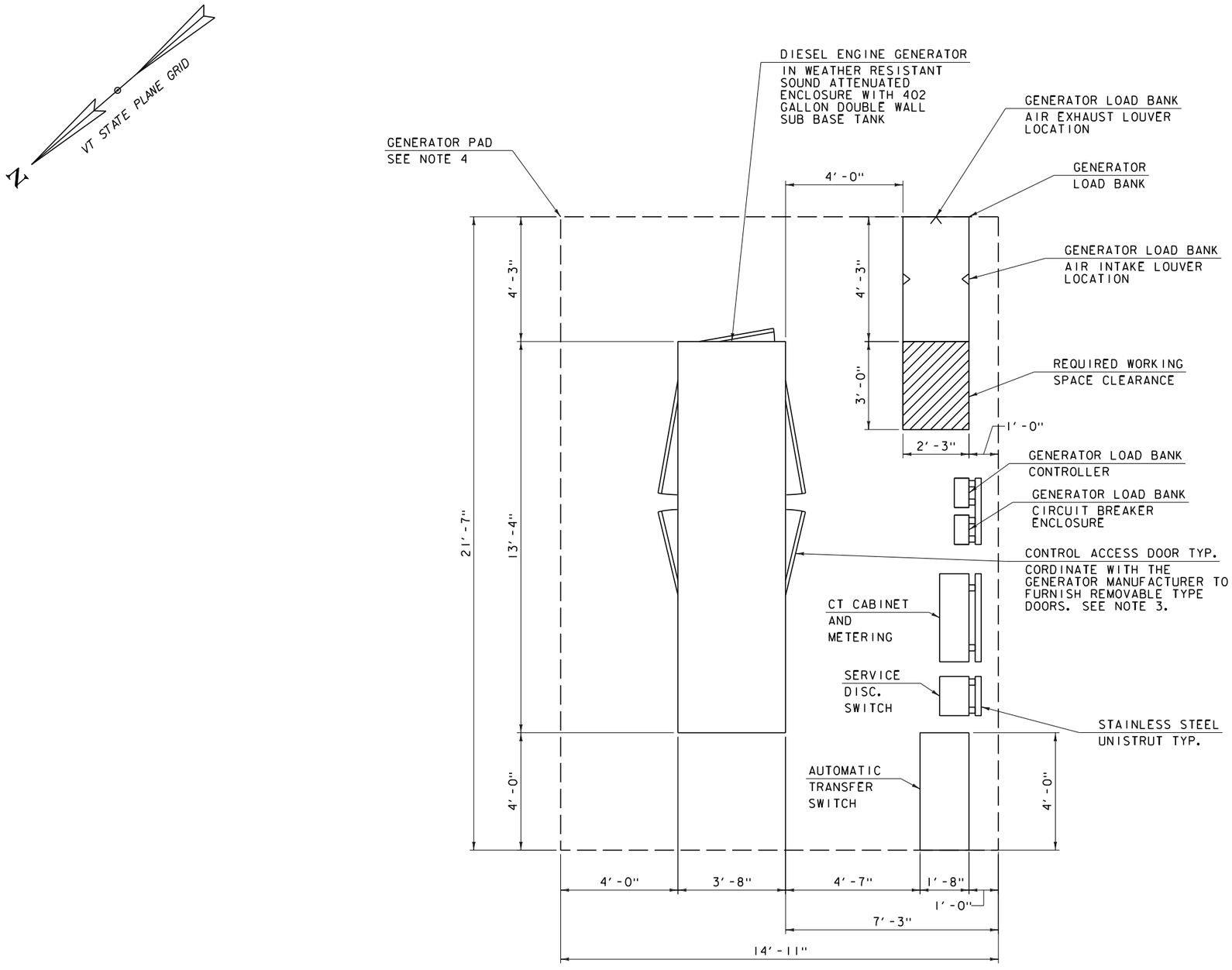
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. TRANSFORMER TR-LP2 TO BE MOUNTED OVERHEAD AND SUPPORTED BY THE CEILING OR WALL USING STAINLESS STEEL SUPPORT. SUBMIT MOUNTING DETAILS FOR ENGINEERS APPROVAL.

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142pier13.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
PIER 1 LAYOUT 2

PLOT DATE: 2/6/2018
DRAWN BY: J. TAYLOR
CHECKED BY: K. HAJJEH
SHEET 277 OF 379



NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. CONDUIT ROUTING IS DIAGRAMMATIC. CONTRACTOR TO VERIFY EXISTING CONDITIONS TO PROVIDE ROUTING THAT WILL NOT BE OBSTRUCTED.
3. ALL DOORS SHALL BE REMOVABLE FROM THE HINGE ESPECIALLY IN AREAS NEAR THE CT CABINET, SERVICE DISONNECT SWITCH AND LOAD BANK FOR WORK SPACE CLEARANCE AND ACCESS.
4. SEE STRUCTURAL DRAWINGS FOR STRUTURAL PAD DETAILS, RETAINING WALL AND FENCING AROUND GENERATOR PAD.

PIER 1 GENERATOR PAD LAYOUT

SCALE ½" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142wgenpad.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
PIER 1GENERATOR PAD LAYOUT

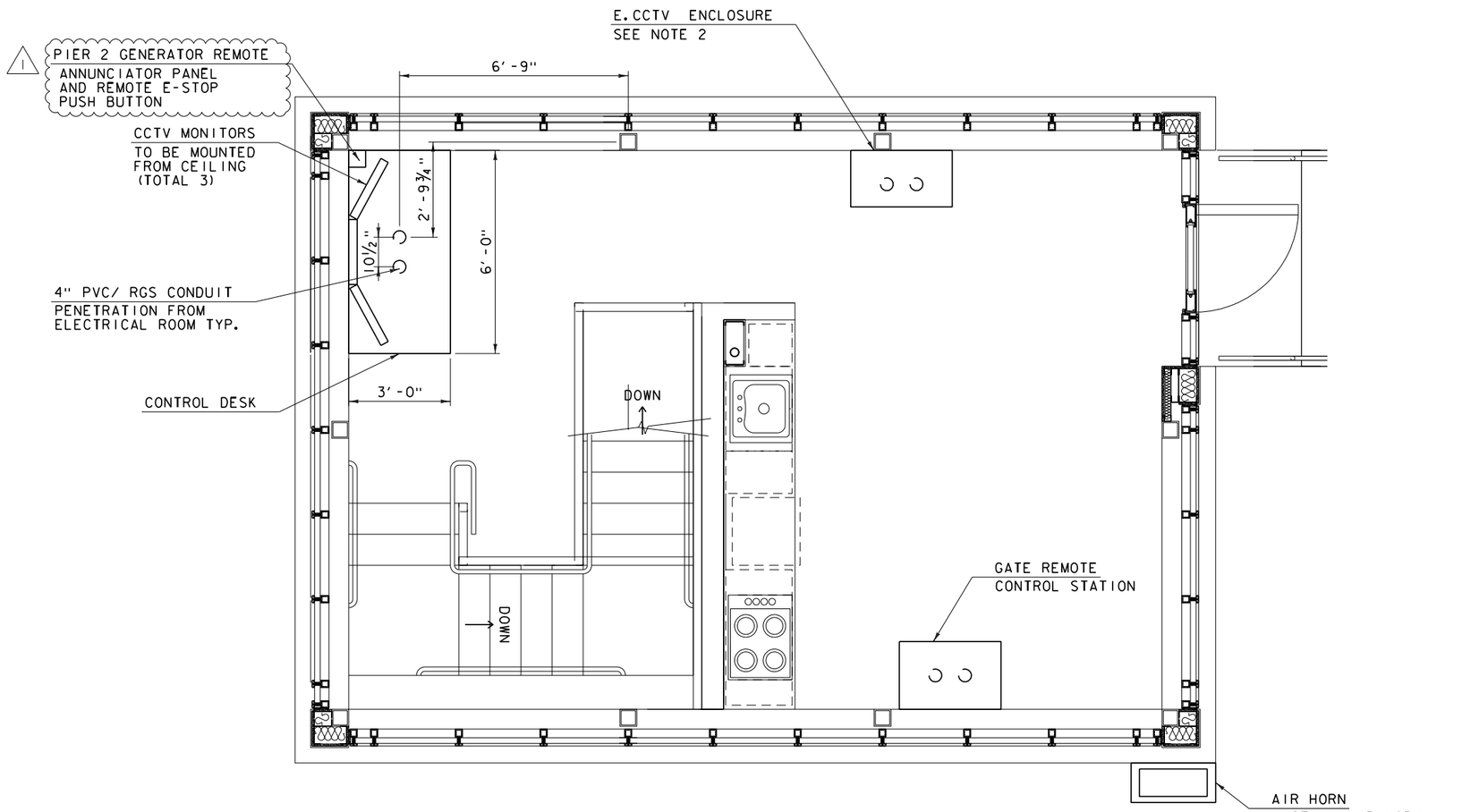
PLOT DATE: 2/6/2018
DRAWN BY: J. TAYLOR
CHECKED BY: K. HAJJEH
SHEET 277A OF 379

N

VT STATE PLANE GRID

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. CCTV ENCLOSURE SHALL BE FURNISHED AND INSTALLED WITH A 120VAC DUPLEX RECEPTACLE.



CONTROL HOUSE - PIER 2 - EQUIPMENT LAYOUT (EL. 120.57)

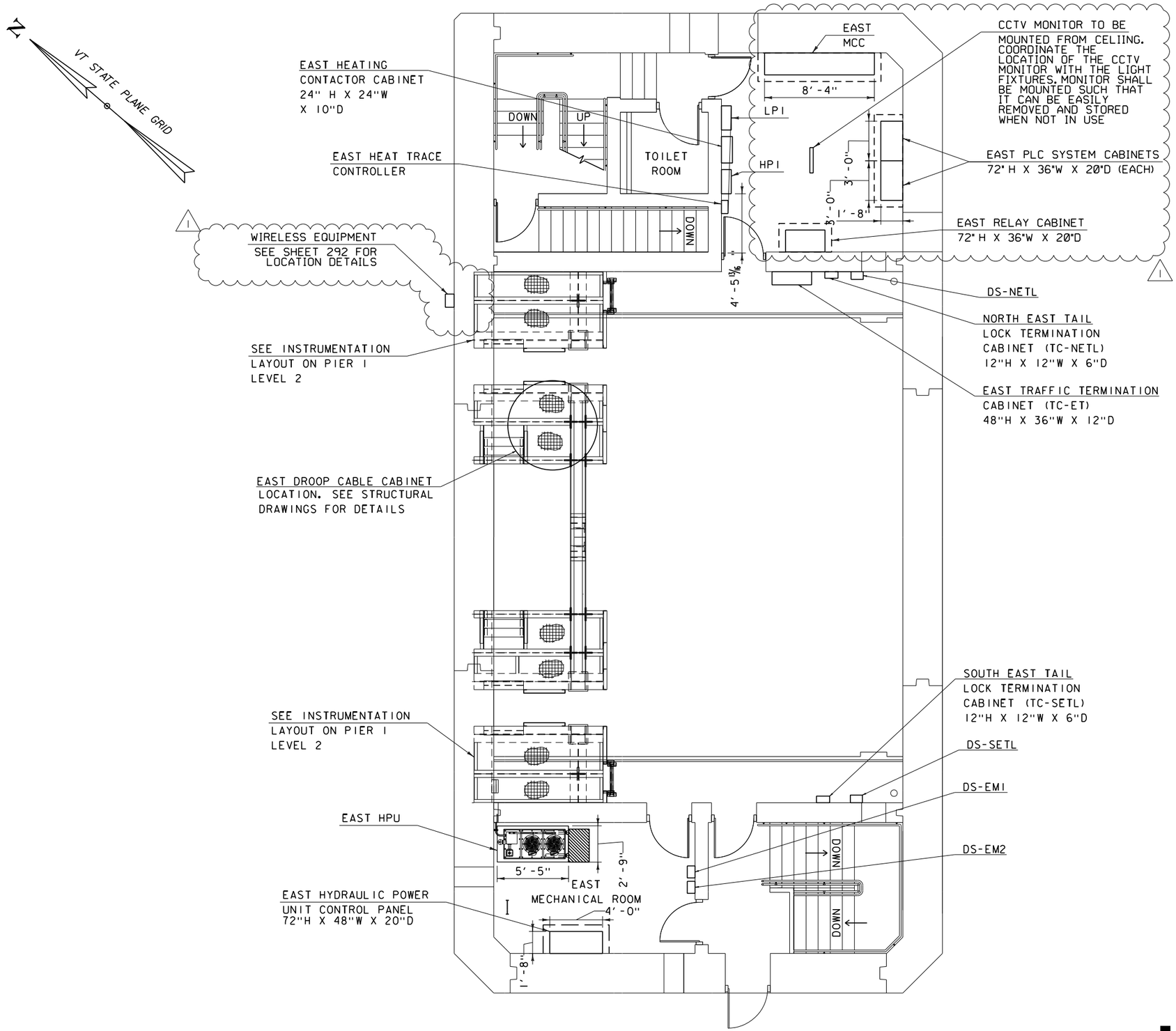
SCALE ½" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142ctrlhsl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
CONTROL HOUSE LAYOUT 1

PLOT DATE: 2/6/2018
DRAWN BY: J. TAYLOR
CHECKED BY: K. HAJJEH
SHEET 278 OF 379



CONTROL HOUSE - PIER 2 - EQUIPMENT LAYOUT (EL. 108.32)

SCALE ¼" = 1'-0"

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. ALL FLOOR MOUNTED EQUIPMENT SHALL BE MOUNTED ON A 4" CONCRETE PAD. THE 4" CONCRETE PAD SHALL EXTEND 6" FROM THE EQUIPMENT EDGE ON ALL SIDES. COORDINATE EQUIPMENT DIMENSIONS WITH MANUFACTURER PRIOR TO INSTALLING THE CONCRETE PAD.

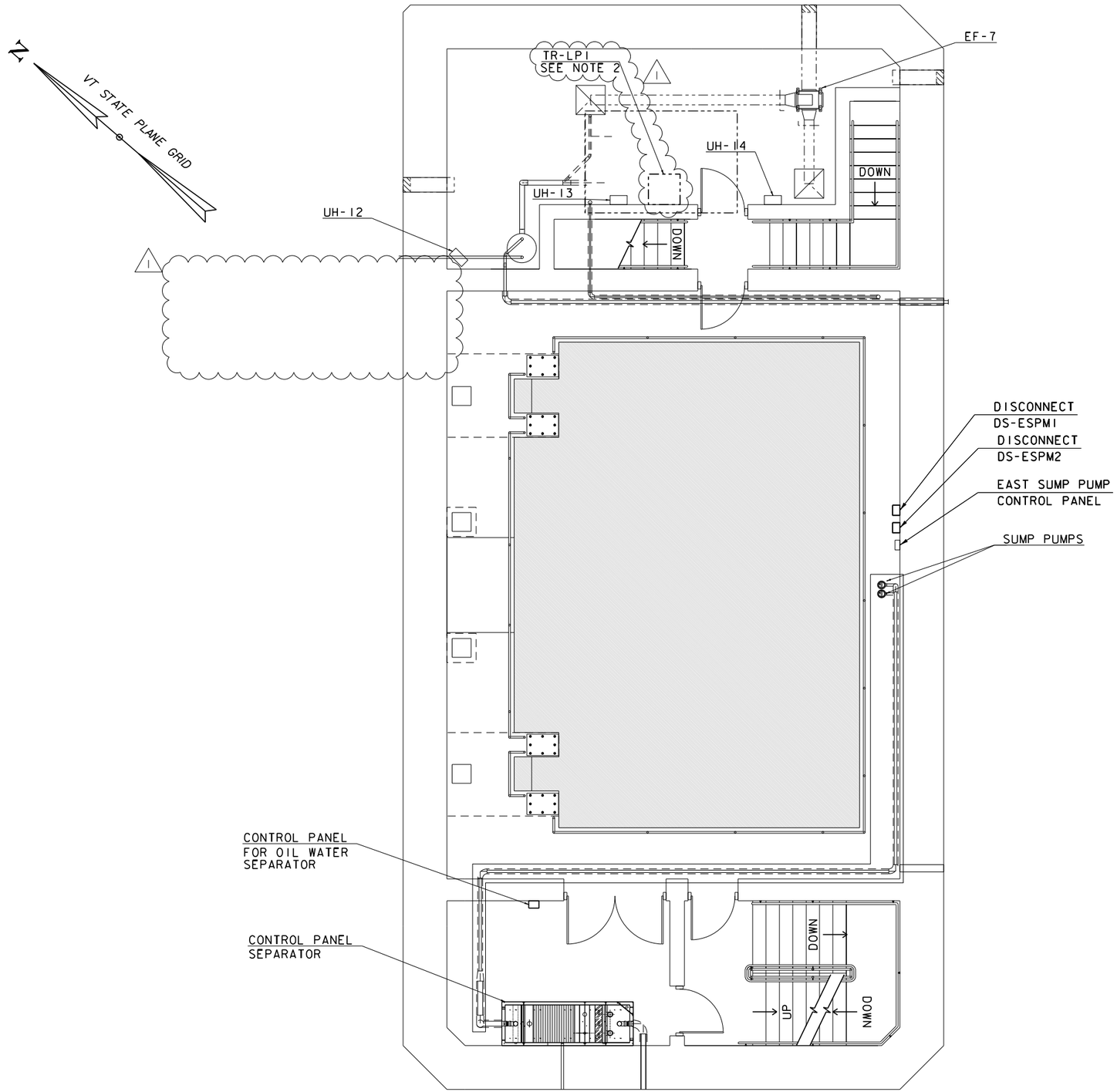
CLEAR SPACE FOR HEATER MAINTENANCE

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142ctrlhs2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
CONTROL HOUSE LAYOUT 2

PLOT DATE: 2/6/2018
DRAWN BY: J. TAYLOR
CHECKED BY: K. HAJJEH
SHEET 279 OF 379



CONTROL HOUSE - PIER 2 - EQUIPMENT LAYOUT (EL. 99.80)

SCALE ½" = 1'-0"

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. TRANSFORMER TR-LP1 TO BE MOUNTED OVERHEAD AND SUPPORTED BY THE CEILING OR WALL USING STAINLESS STEEL SUPPORT. SUBMIT MOUNTING DETAILS FOR ENGINEERS APPROVAL.

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142ctrlhs3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
CONTROL HOUSE LAYOUT 3

PLOT DATE: 2/6/2018
DRAWN BY: J. TAYLOR
CHECKED BY: K. HAJJEH
SHEET 280 OF 379

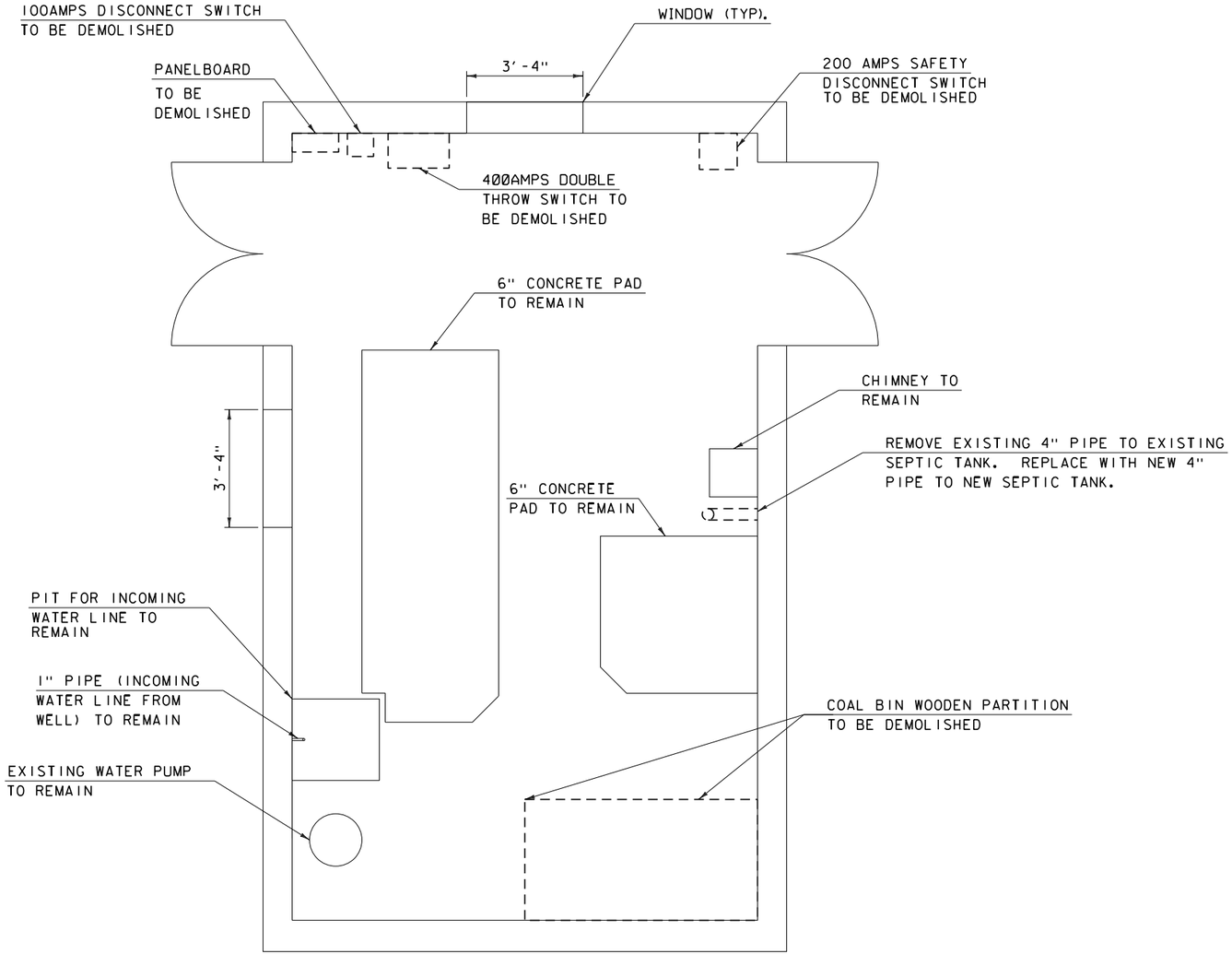
N

VT STATE PLANE GRID

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.

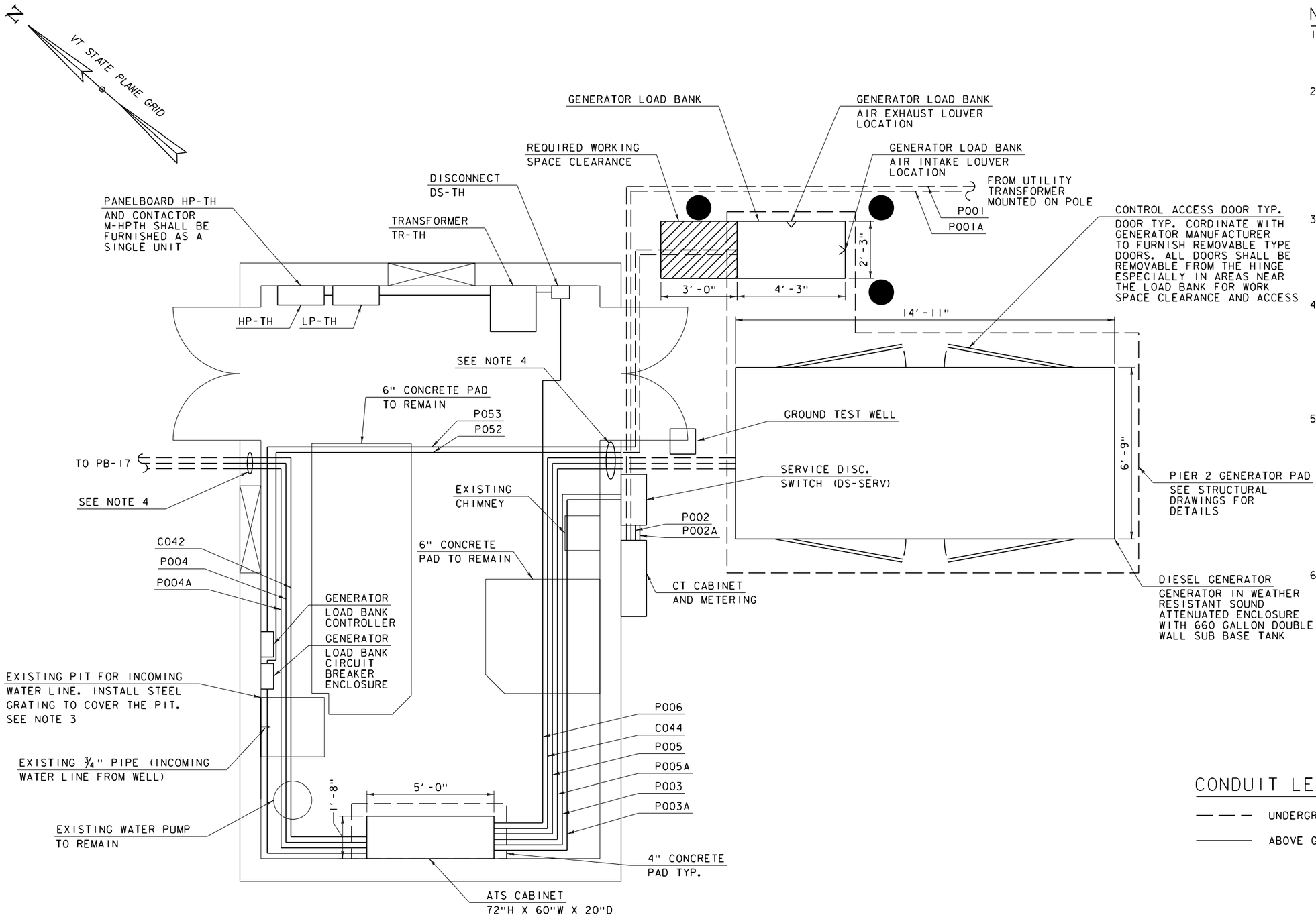
2. ALL ELECTRICAL DEMOLITION TO BE PAID FOR UNDER ITEM 529.15, REMOVAL OF STRUCTURE.



TENDER HOUSE - BASEMENT LEVEL DEMOLITION PLAN

SCALE: ½" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142tenhs2.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. TAYLOR
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
EXISTING TENDER HOUSE BASEMENT LAYOUT	SHEET 281 OF 379



NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. ALL FLOOR MOUNTED EQUIPMENT SHALL BE MOUNTED ON A 4" CONCRETE PAD. THE PADS SHALL EXTEND 6" FROM THE EQUIPMENT EDGE ON ALL SIDES. COORDINATE EQUIPMENT DIMENSIONS AND CONDUIT STUB UP LOCATIONS WITH MANUFACTURER PRIOR TO INSTALLING THE CONCRETE PAD.
3. STEEL GRATING SHALL BE LIGHT DUTY WELDED RECTANGULAR DESIGN. STEEL SHALL CONFORM TO ASTM A709 GRADE 36. FINISH TO BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
4. ALL CONDUITS PENETRATING THE TENDER HOUSE WALLS AND FLOORS SHALL PENETRATE THE WALLS AND FLOORS THROUGH A TYPE 316 STAINLESS STEEL PIPE SLEEVE. ALL EXPOSED CAVITIES FROM CONDUIT PENETRATIONS SHALL BE FIRESTOPPED.
5. SUPPORT CONDUITS VERTICALLY ON WALLS AND HORIZONTALLY UNDER THE FLOOR SLAB AS SHOWN ON DRAWING 304. SUPPORT CONDUITS EVERY 5 FEET AS SHOWN. USE APPROPRIATE CONDUIT FITTING FOR CONDUIT BENDS AND TRANSITIONS. CONDUIT EXPANSION AND DEFLECTION FITTINGS SHALL BE USED AS REQUIRED IN THE SPECIAL PROVISIONS.
6. CONDUIT ROUTING IS DIAGRAMMATIC. CONTRACTOR TO VERIFY EXISTING CONDITIONS TO PROVIDE ROUTING THAT WILL NOT BE OBSTRUCTED. THE EXISTING DOORS AND WINDOWS SHALL NOT BE OBSTRUCTED.

CONDUIT LEGEND

— — — UNDERGROUND CONDUIT

——— ABOVE GROUND CONDUIT

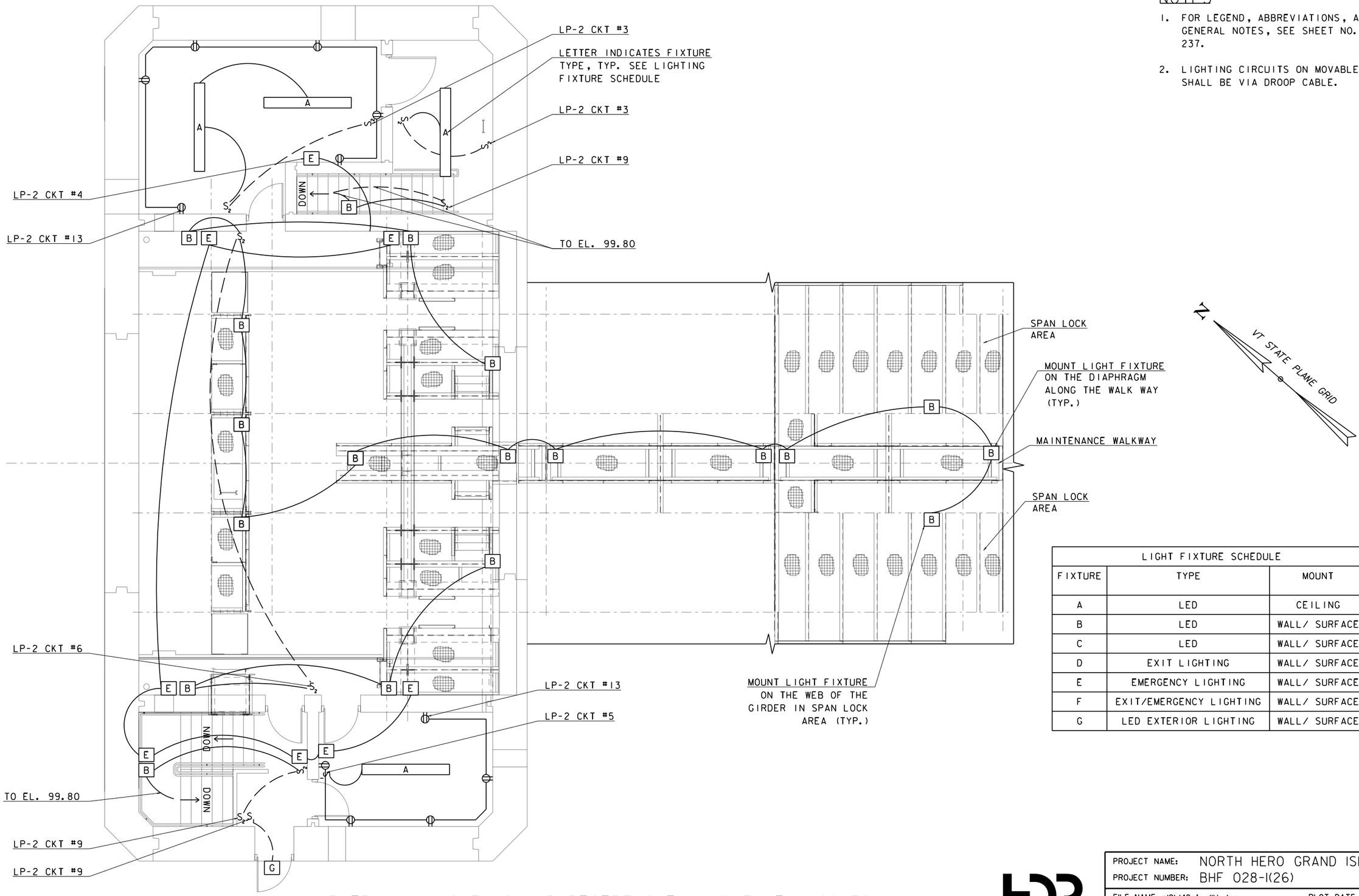
PROPOSED TENDER HOUSE - BASEMENT LEVEL LAYOUT

SCALE 1/2" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142tenhsl.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. TAYLOR
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
PROPOSED TENDER HOUSE BASEMENT LAYOUT	SHEET 282 OF 379

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. LIGHTING CIRCUITS ON MOVABLE SPAN SHALL BE VIA DROOP CABLE.



LIGHT FIXTURE SCHEDULE			
FIXTURE	TYPE	MOUNT	OUTPUT WATTS
A	LED	CEILING	100.5
B	LED	WALL/ SURFACE	102
C	LED	WALL/ SURFACE	129
D	EXIT LIGHTING	WALL/ SURFACE	-
E	EMERGENCY LIGHTING	WALL/ SURFACE	-
F	EXIT/EMERGENCY LIGHTING	WALL/ SURFACE	-
G	LED EXTERIOR LIGHTING	WALL/ SURFACE	120

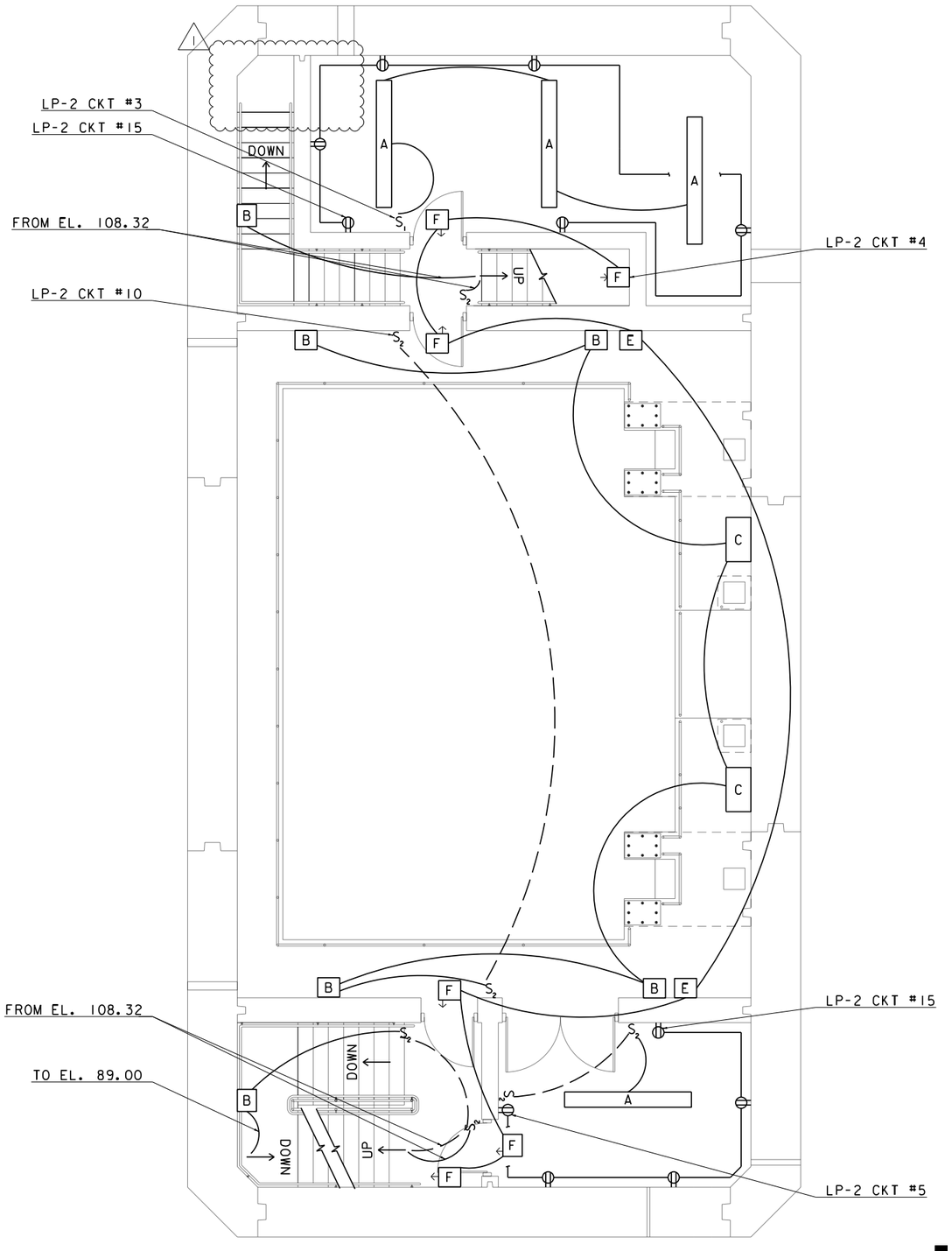
PIER 1 - LIGHTING AND RECEPTACLE LAYOUT (EL. 108.32)

SCALE 1/4" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142pier111t.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. TAYLOR
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
PIER 1 LIGHTING AND RECEPTACLE 1	SHEET 283 OF 379

N

VT STATE PLANE GRID



PIER 1 - LIGHTING AND RECEPTACLE LAYOUT (EL. 99.80)

SCALE ½" = 1'-0"

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

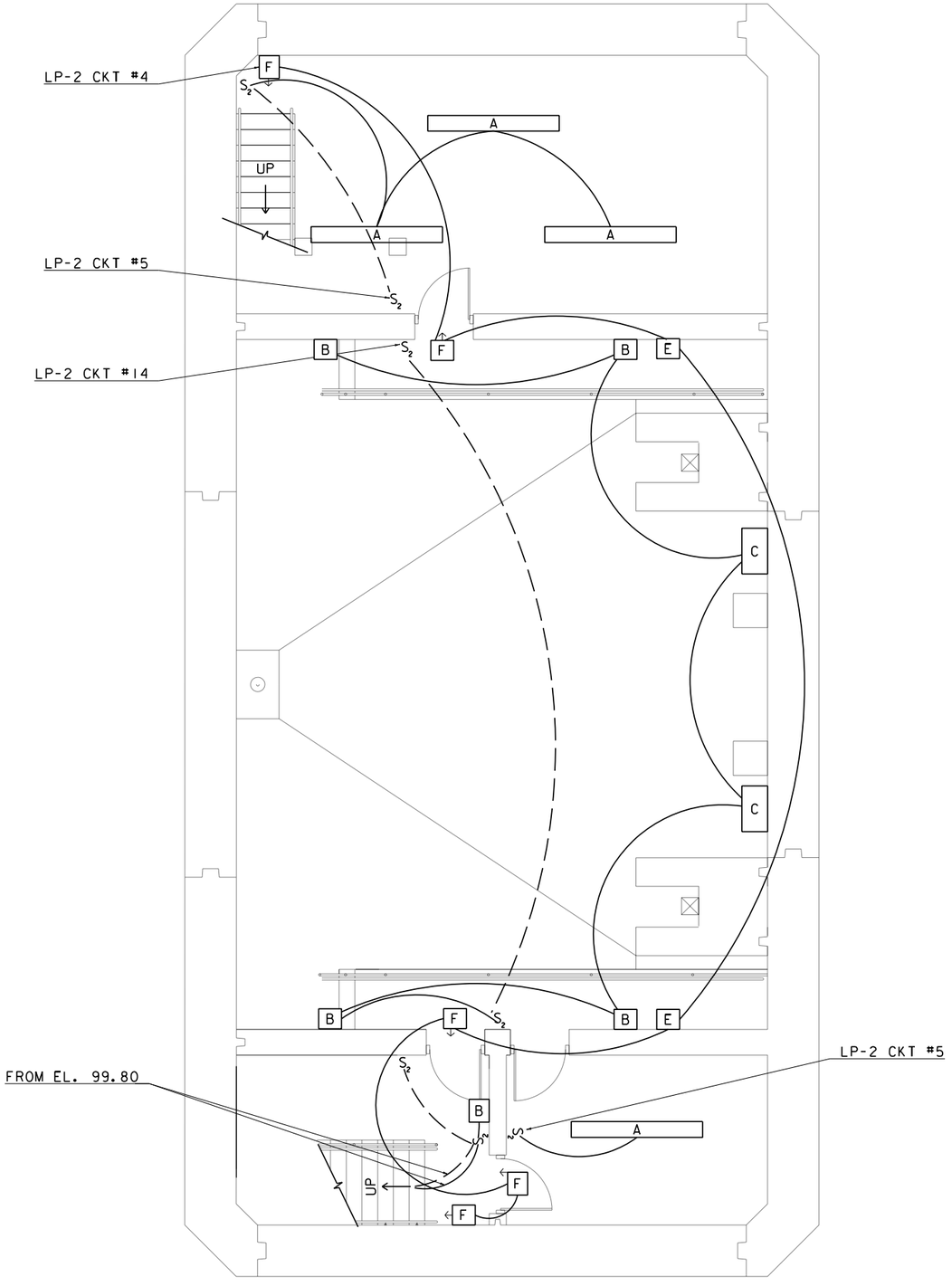
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142pier12lt.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
PIER 1 LIGHTING AND RECEPTACLE 2

PLOT DATE: 2/6/2018
DRAWN BY: J. TAYLOR
CHECKED BY: K. HAJJEH
SHEET 284 OF 379

N

VT STATE PLANE GRID



PIER 1 - LIGHTING AND RECEPTACLE LAYOUT (El. 89.00)

SCALE ½" = 1'-0"

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.

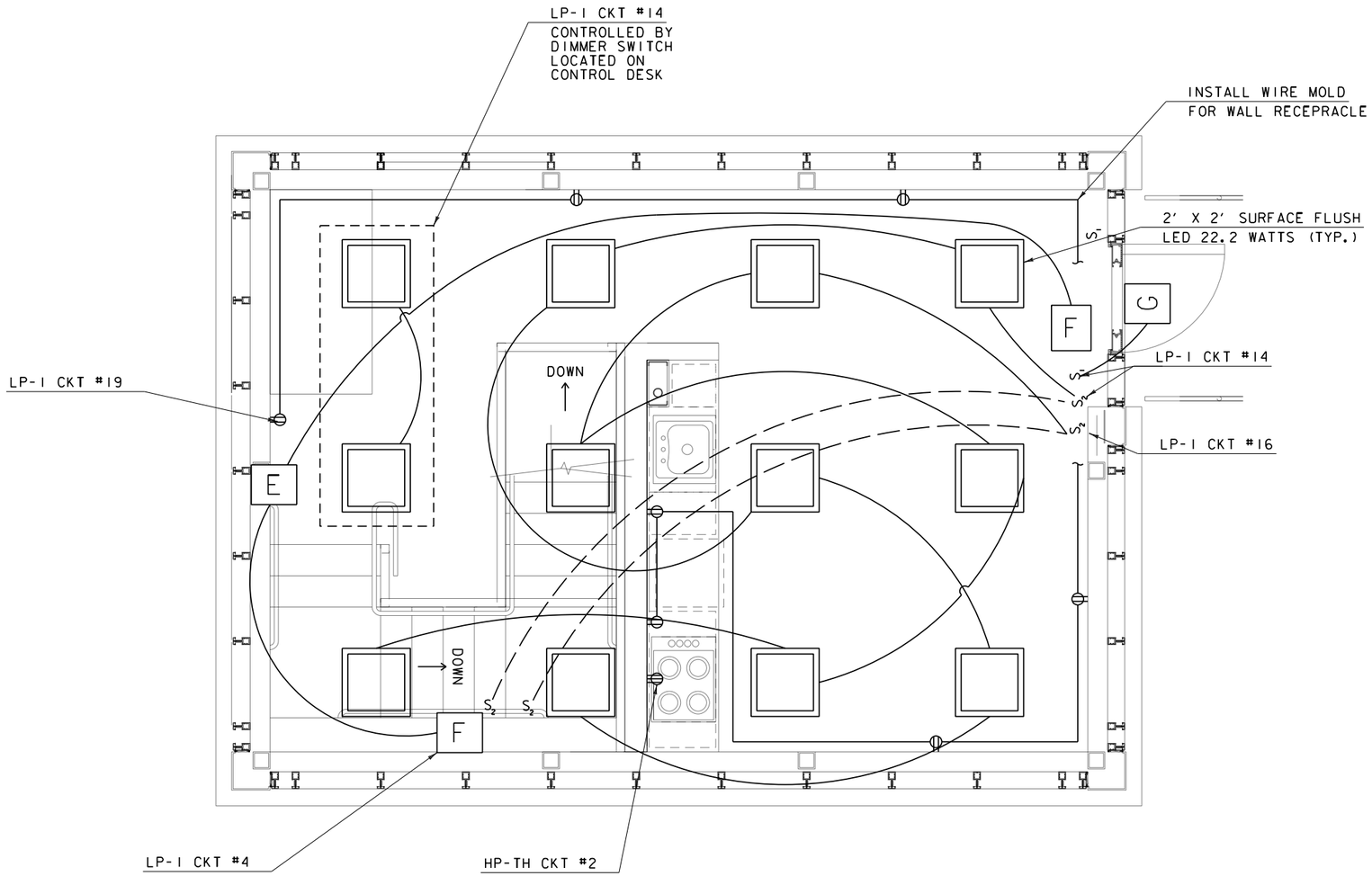
PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142pier13lt.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. TAYLOR
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
PIER 1 LIGHTING AND RECEPTACLE 3	SHEET 285 OF 379

N

VT STATE PLANE GRID

NOTES

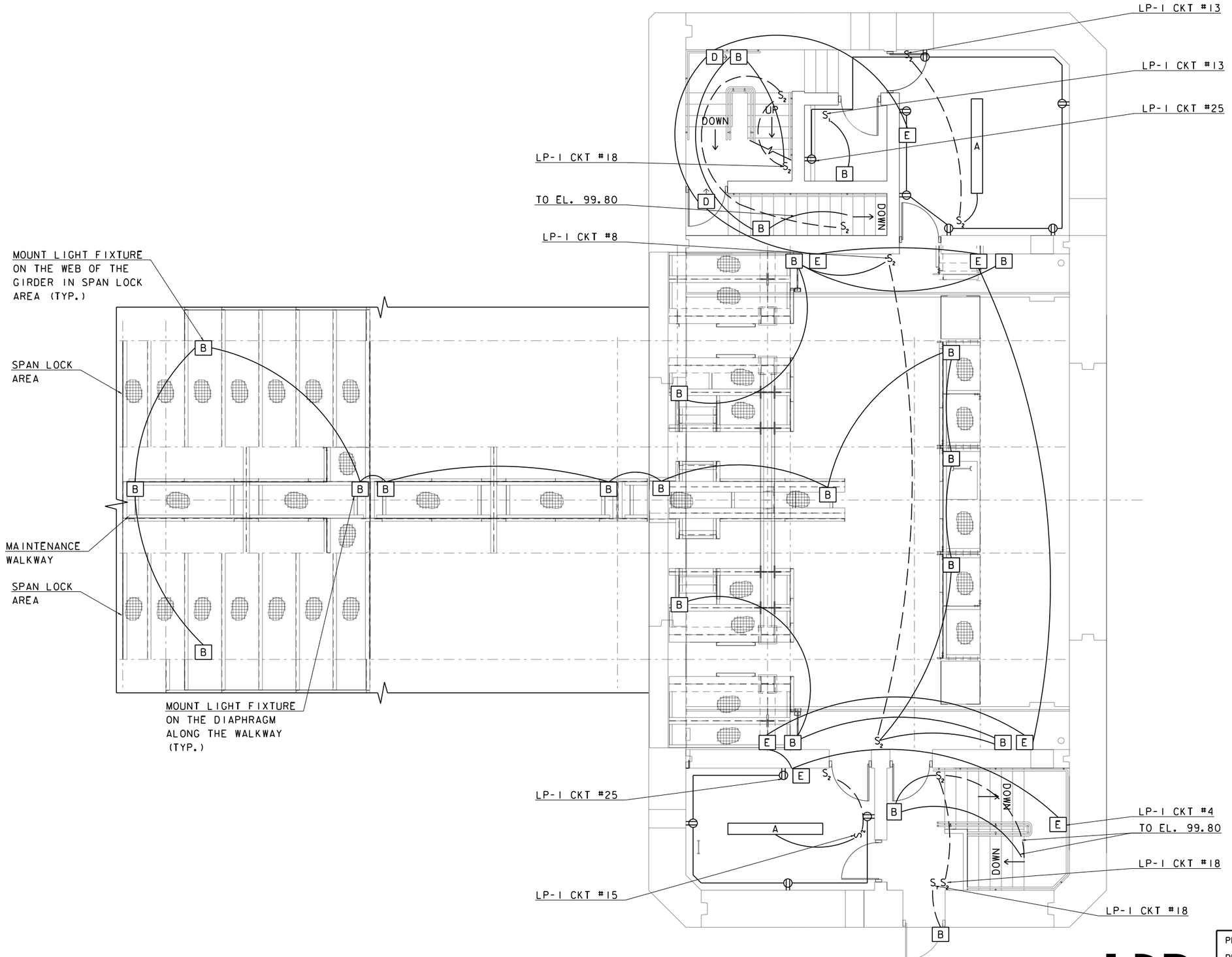
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.



CONTROL HOUSE - PIER 2 LIGHTING, AND RECEPTACLE LAYOUT (EL. 120.57)

SCALE ½" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142pier201t.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. TAYLOR
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
PIER 2 LIGHTING AND RECEPTACLE 1	SHEET 286 OF 379



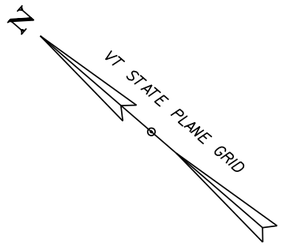
NOTES

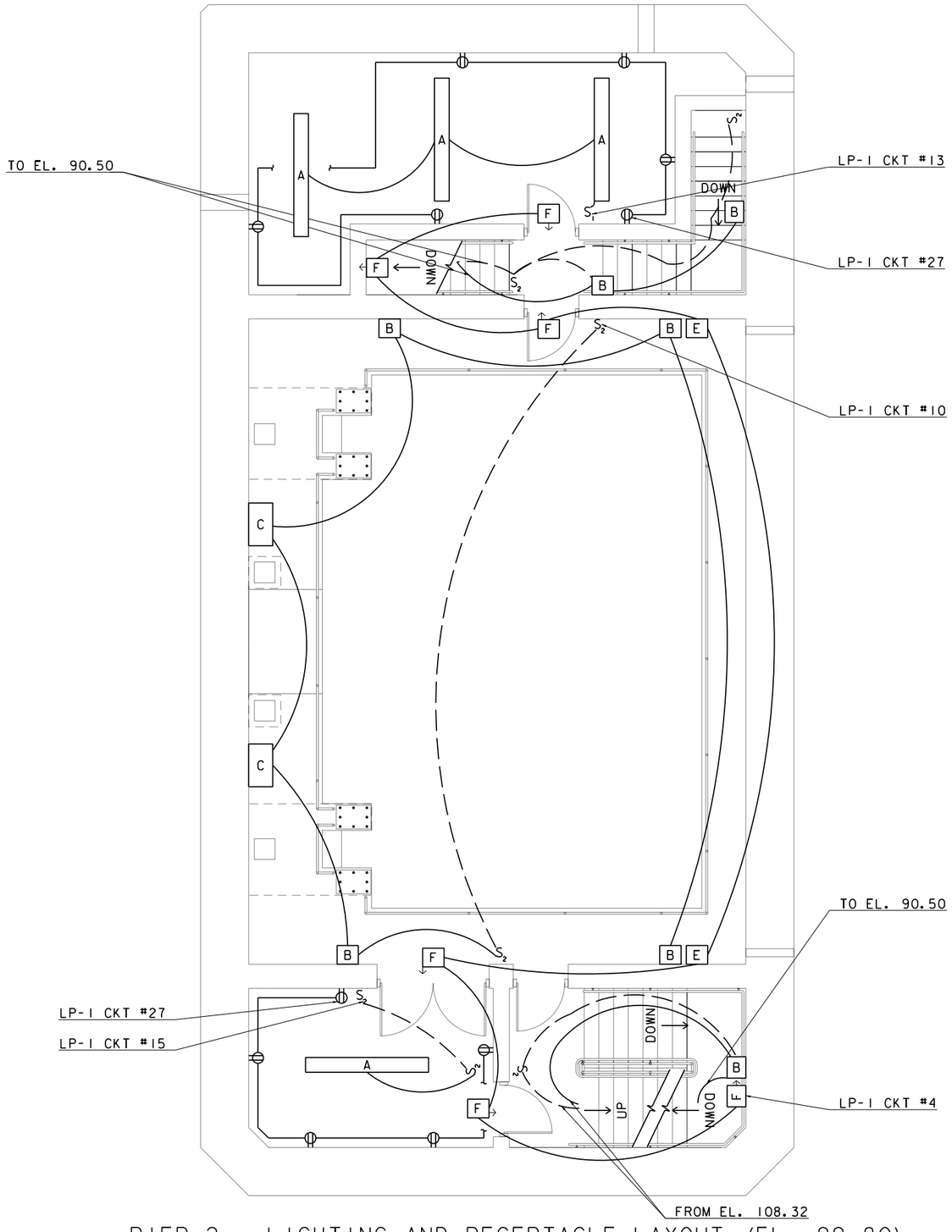
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. LIGHTING CIRCUITS ON MOVABLE SPAN SHALL BE VIA DROOP CABLE.

PIER 2 - LIGHTING AND RECEPTACLE LAYOUT (EL. 108.32)

SCALE 1/4" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142pier2llt.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. TAYLOR
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
PIER 2 LIGHTING AND RECEPTACLE 2	SHEET 287 OF 379





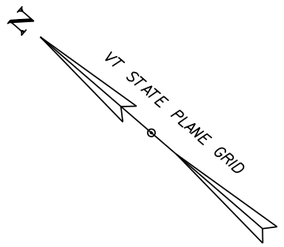
PIER 2 - LIGHTING AND RECEPTACLE LAYOUT (EL. 99.80)

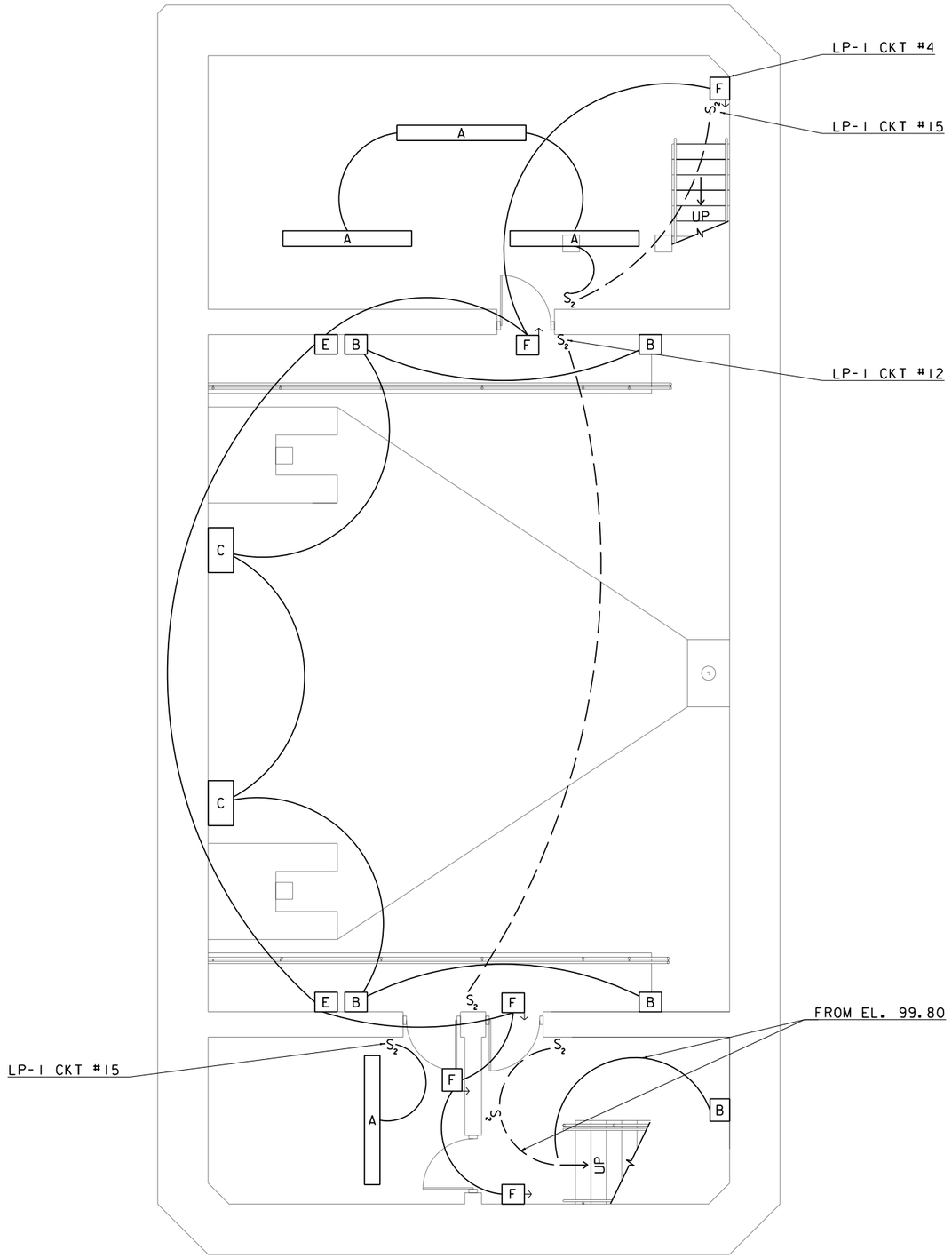
SCALE ½" = 1'-0"

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142pier221t.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. TAYLOR
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
PIER 2 LIGHTING AND RECEPTACLE 3	SHEET 288 OF 379





NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.

PIER 2 - LIGHTING AND RECEPTACLE LAYOUT (EL. 90.50)

SCALE ½" = 1'-0"

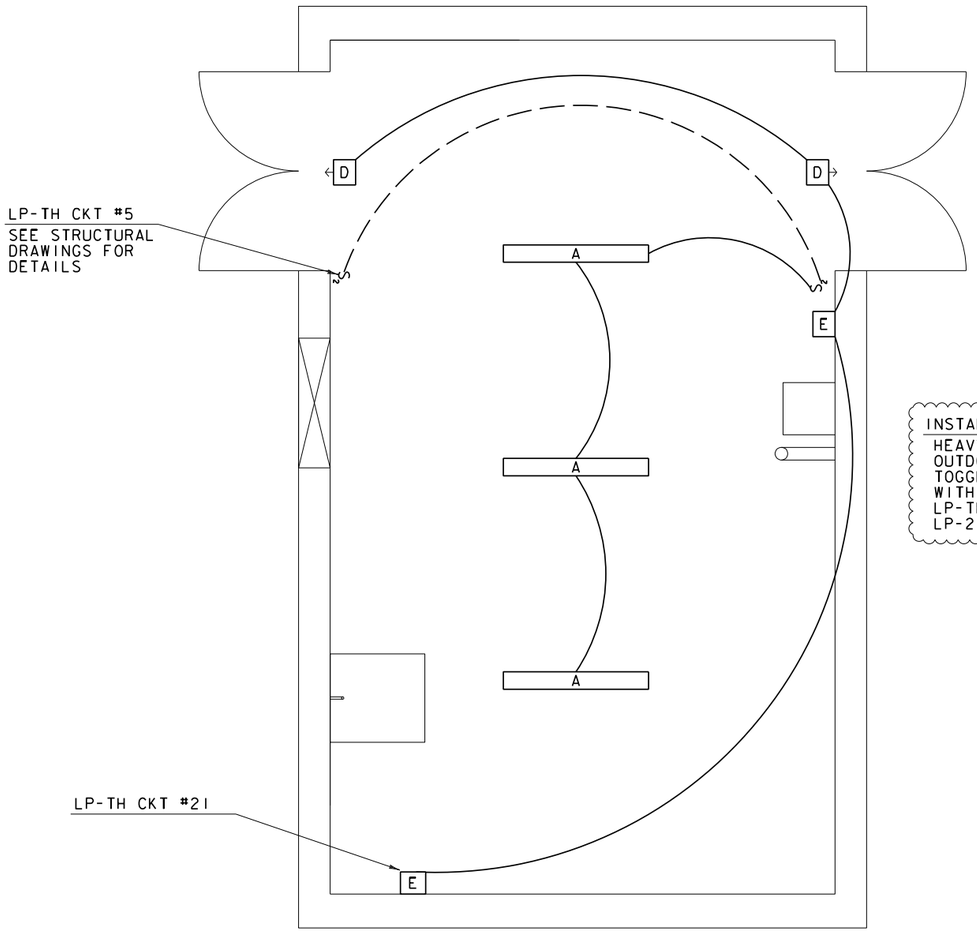
PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142pier231t.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. TAYLOR
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
PIER 2 LIGHTING AND RECEPTACLE 4	SHEET 289 OF 379

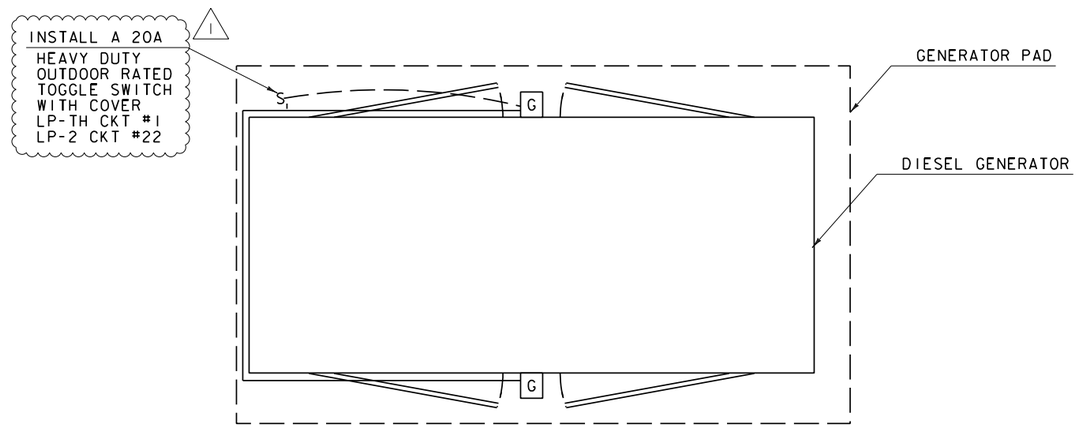
N

VT STATE PLANE GRID

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.





GENERATOR ENCLOSURE LIGHTING LAYOUT (TYP.) 1

SCALE ½" = 1'-0"

TENDER HOUSE BASEMENT LIGHTING AND RECEPTACLE LAYOUT

SCALE ½" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

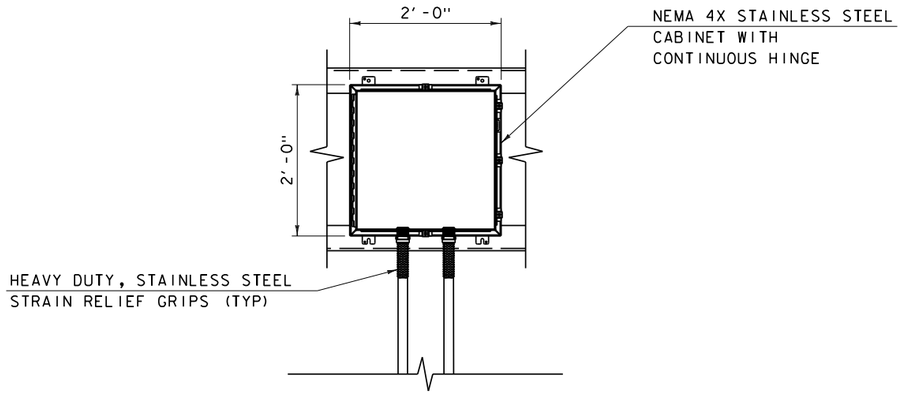
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142tenhslt.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
TENDER HOUSE LIGHTING AND RECEPTACLE

PLOT DATE: 2/6/2018
DRAWN BY: J. TAYLOR
CHECKED BY: K. HAJJEH
SHEET 290 OF 379

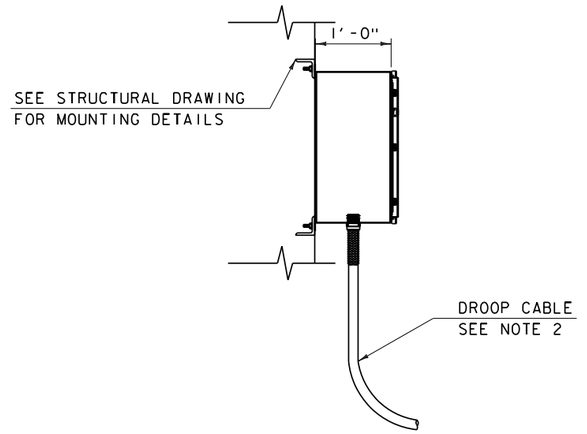
NOTES

1. FOR LEGEND, NOTES, AND ABBREVIATIONS, SEE DRAWING SHEET NO. 236 AND 237.
2. CONTRACTOR SHALL MOUNT CABINETS TO ENSURE DROOP CABLES DO NOT DRAG ON STRUCTURAL STEEL THROUGHOUT THE TRAVEL OF THE BRIDGE.
3. CONTRACTOR SHALL FURNISH DROOP CABLE CABINETS WITH A PARTITION TO PROVIDE ISOLATION BETWEEN 480V AND 120V CIRCUITS. PARTITION SHALL BE INSTALLED BY CABINET MANUFATURER.
4. SEE STRUCTURAL DRAWINGS FOR DROOP CABLE CABINET LOCATION.
5. MOTOR DISCONNECT SWITCHES AND CABINET MOUNTED TO THE MOBABLE SPAN GIRDER SHALL BE MOUNTED SIMILAR TO THE MOVABLE DROOP CABLE CABINET.



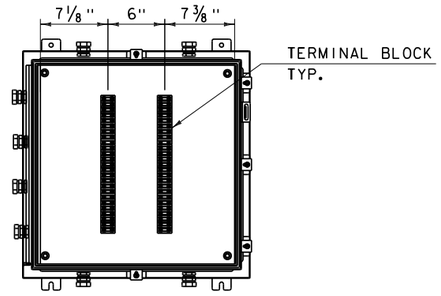
MOVABLE DROOP CABLE CABINET
SUPPORT FRONT ELEVATION

SCALE: NTS



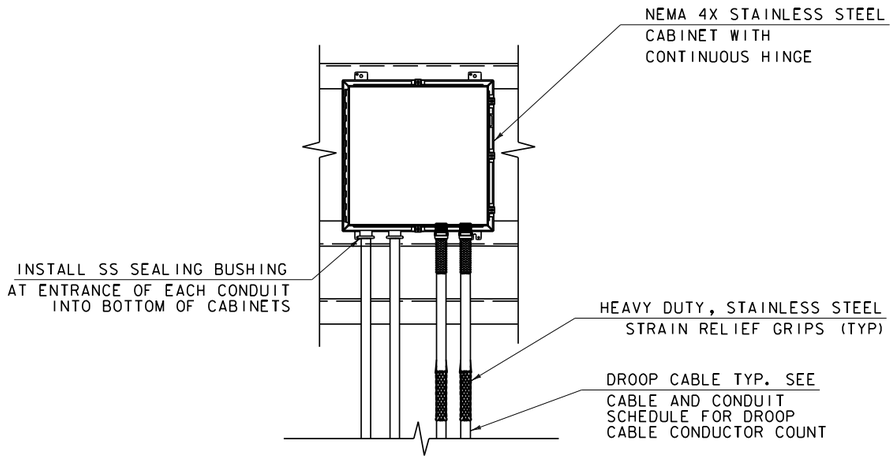
MOVABLE DROOP CABLE CABINET
SIDE ELEVATION

SCALE: NTS



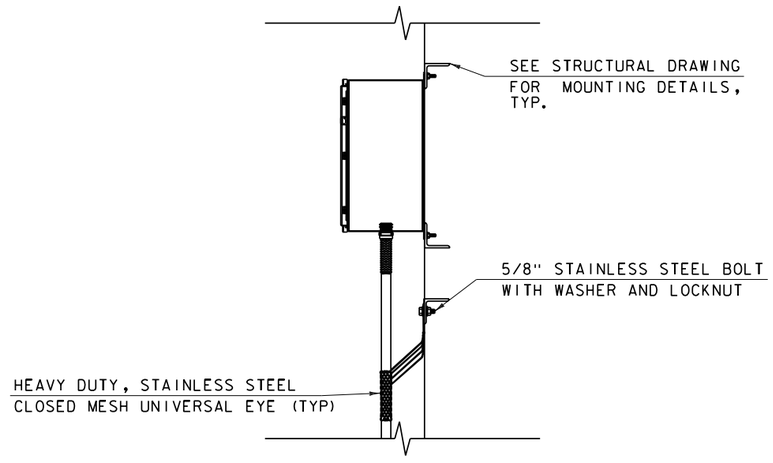
DROOP CABLE CABINET
BACK PANEL DETAIL

SCALE: NTS



FIXED DROOP CABLE CABINET
FRONT ELEVATION

SCALE: NTS



FIXED DROOP CABLE CABINET
SIDE ELEVATION

SCALE: NTS

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142droopdet.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: C. SHEN
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
DROOP CABLE AND CABINET DETAILS	SHEET 291 OF 379

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: zi2bl42subcabdetl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
SUBMARINE CABLE AND CABIET DETAILS 1

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 292 OF 379

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

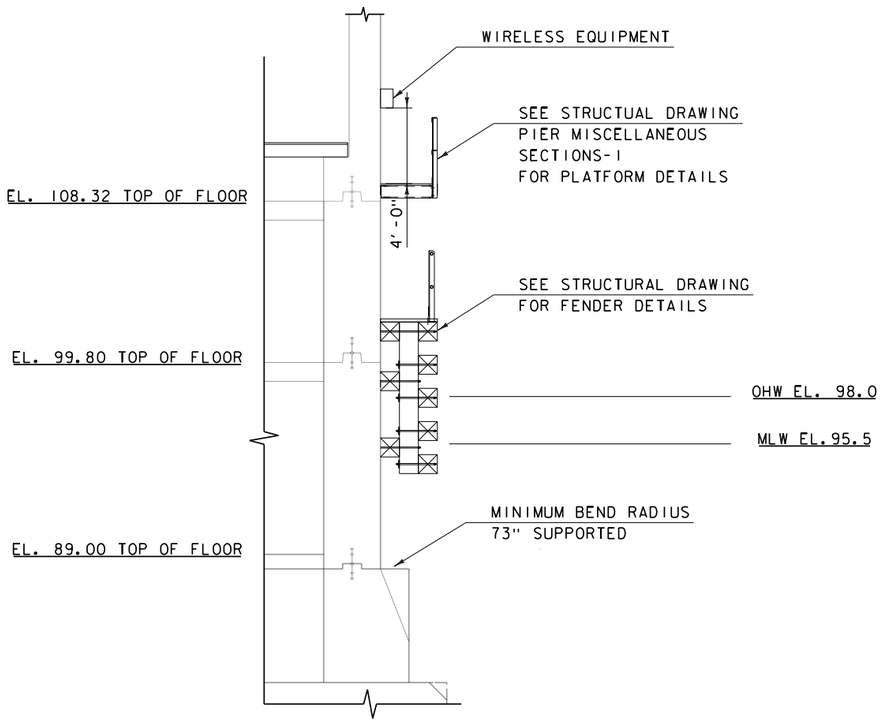
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: zi2bl42subcabdet2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
SUBMARINE CABLE AND CABINET DETAILS 2

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 293 OF 379

NOTES

1. FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES, SEE SHEETS NO. 236 AND 237.

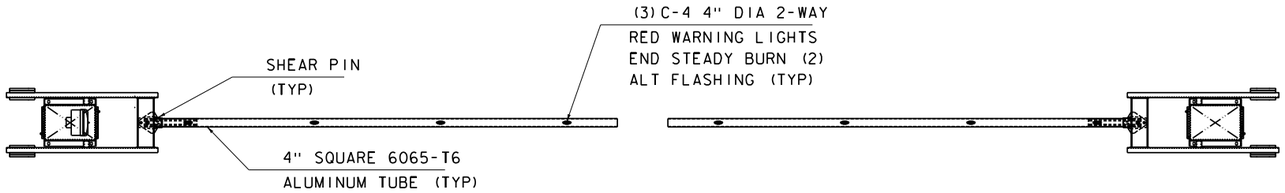


WIRELESS EQUIPMENT PLATFORM ELEVATION

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

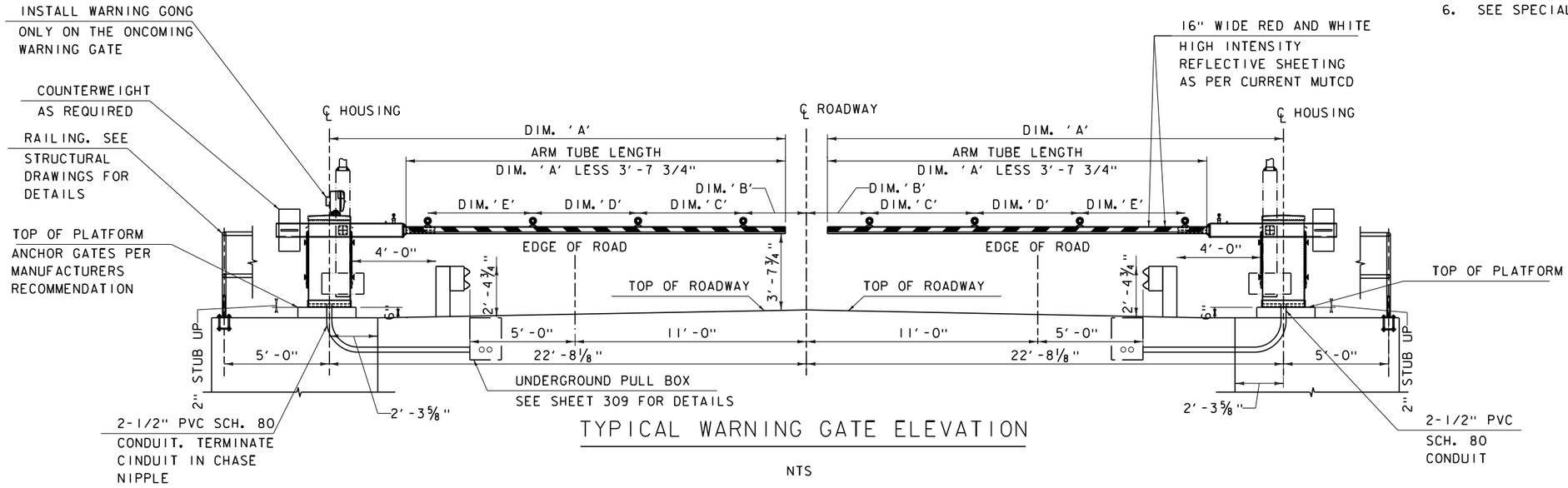
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42wirelessplttfm.dgn PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT DRAWN BY: C. SHEN
DESIGNED BY: Y. ADELEKAN CHECKED BY: K. HAJJEH
WIRELESS EQUIPMENT PLATFORM ELEVATION SHEET 293A OF 379



TYPICAL WARNING GATE PLAN

NTS



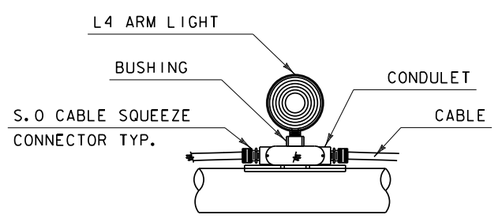
TYPICAL WARNING GATE ELEVATION

NTS

NOTES

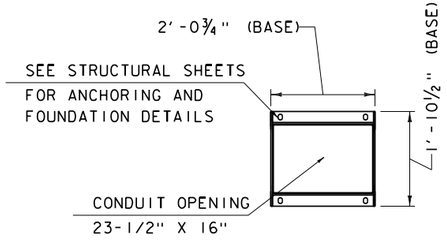
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. CONTRACTOR TO VERIFY ALL FEILD DIMENSIONS, BEFORE GATE FABRICATION.
3. FOUR (4) UNITS REQUIRED.
4. GATES TO HAVE HINGED REMOVABLE LOCKABLE DOORS. LOCKS TO BE KEYED ALIKE.
5. WARNING GATE IS PROVIDED WITH FRONT AND BACK ACCESS. COORDINATE RAILING INSTALLATION WITH GATE INSTALLATION SUCH THAT VERTICAL POSTS ARE NOT INSTALLED IN FRONT OF THE GATE.
6. SEE SPECIAL PROVISION FOR WARNING GATE SPECIFICATION.

WARNING GATE ARM LENGTH AND LIGHT LOCATION TABLE				
LIGHT LOCATION	ENWG	WNWG	WFWG	EFWG
GATE ARM LENGTH 'A'	21' 8-1/8"	21' 8-1/8"	21' 8-1/8"	21' 8-1/8"
'B'	3' - 0"	3' - 0"	3' - 0"	3' - 0"
'C'	5' - 0"	5' - 0"	5' - 0"	5' - 0"
'D'	5' - 0"	5' - 0"	5' - 0"	5' - 0"
'E'	5' - 0"	5' - 0"	5' - 0"	5' - 0"



ARM LIGHT MOUNTING DETAIL

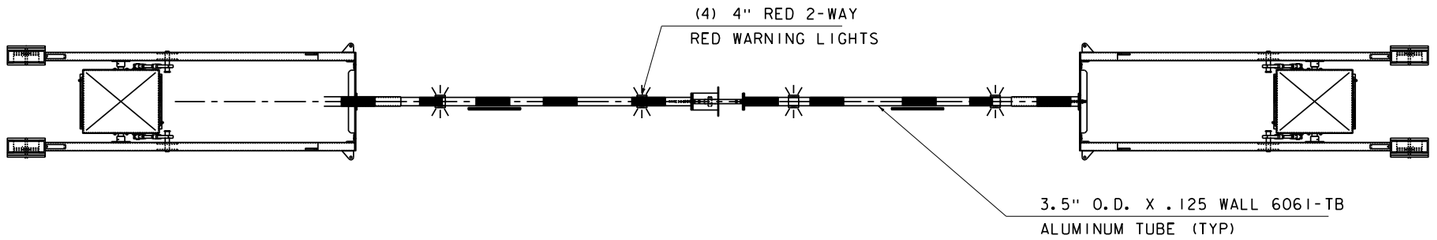
NTS



WARNING GATE FOOT PRINT

NTS

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12bl42gatedet1.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: C. SHEN
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
WARNING GATE DETAILS	SHEET 294 OF 379

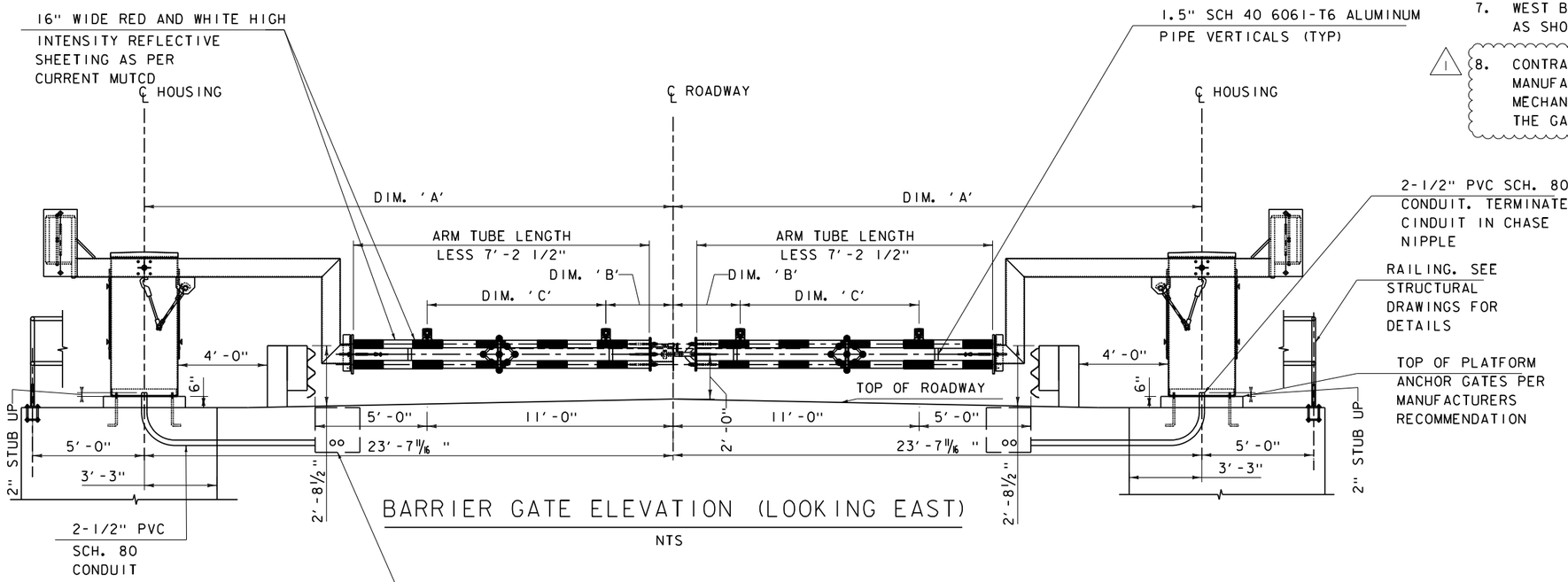


TYPICAL BARRIER GATE PLAN

NTS

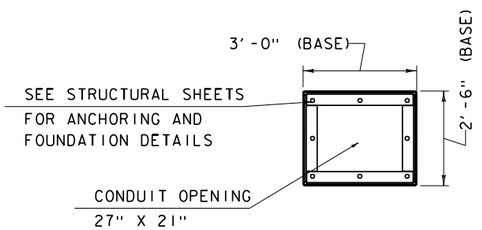
NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. CONTRACTOR TO VERIFY ALL FEILD DIMENSIONS, BEFORE GATE FABRICATION.
3. FOUR (4) UNITS REQUIRED.
4. GATES TO HAVE HINGED REMOVABLE LOCKABLE DOORS. LOCKS TO BE KEYED ALIKE.
5. BARRIER GATE IS PROVIDED WITH FRONT AND BACK ACCESS. COORDINATE RAILING INSTALLATION WITH GATE INSTALLATION SUCH THAT VERTICAL POSTS ARE NOT INSTALLED IN FRONT OF THE GATE.
6. SEE SPECIAL PROVISION FOR BARRIER GATE SPECIFICATION.
7. WEST BARRIER GATE IS SIMILAR TO EAST BARRIER GATE AS SHOWN.
1. CONTRACTOR TO COORDINATE WITH THE GATE MANUFACTURER TO ENSURE THAT THE BARRIER GATE MECHANICAL LOCKING MECHANISM IS CONSISTENT WITH THE GATE SEQUENCE OF OPERATION.



BARRIER GATE ELEVATION (LOOKING EAST)

NTS



BARRIER GATE FOOT PRINT

NTS

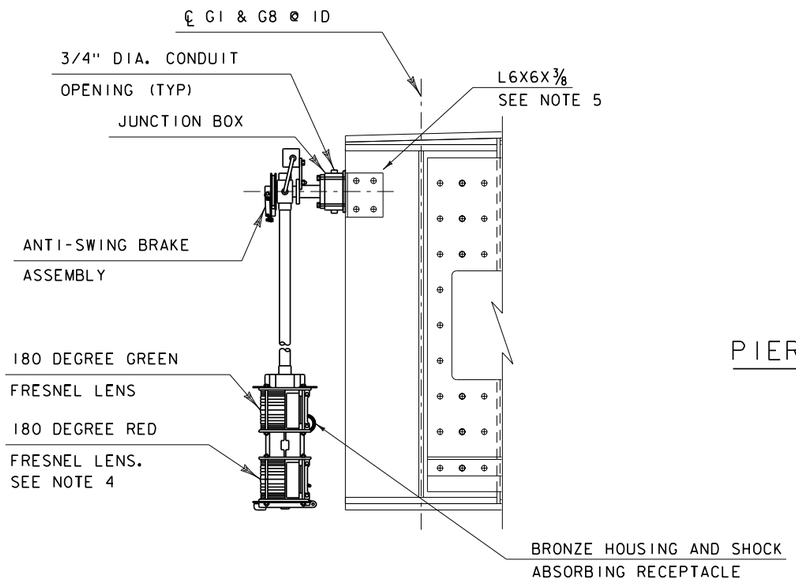
BARRIER GATE ARM LENGTH AND LIGHT LOCATION TABLE				
LIGHT LOCATION	ENWG	WNWG	EFWG	WFWG
GATE ARM LENGTH 'A'	23' - 7 11/16"	23' - 7 11/16"	23' - 7 11/16"	23' - 7 11/16"
'B'	3' - 1/16"	3' - 1/16"	3' - 1/16"	3' - 1/16"
'C'	7' - 11 7/8"	7' - 11 7/8"	7' - 11 7/8"	7' - 11 7/8"

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

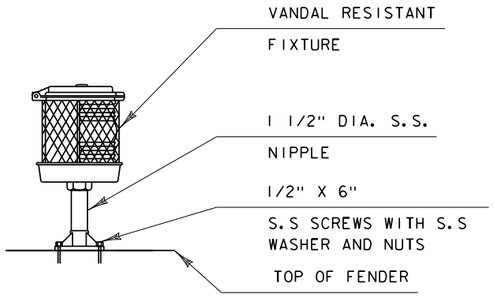
FILE NAME: z12b142gatedet2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
BARRIER GATE DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: S. SCHULMAN
CHECKED BY: K. HAJJEH
SHEET 295 OF 379



BASULE SPAN NAVIGATION LIGHT ATTACHMENT
(G1 & G8 SHOWN, G4 & G5 OPPOSITE HAND)

(4 REQUIRED)
NOT TO SCALE

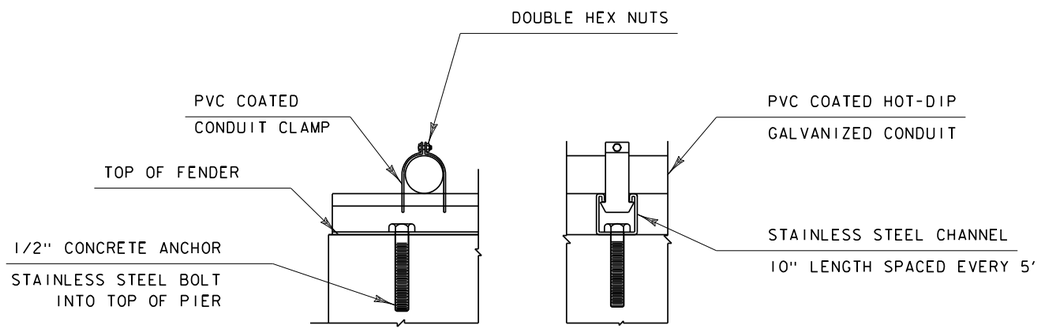


PIER NAVIGATION LIGHT

(6 REQUIRED)
NOT TO SCALE

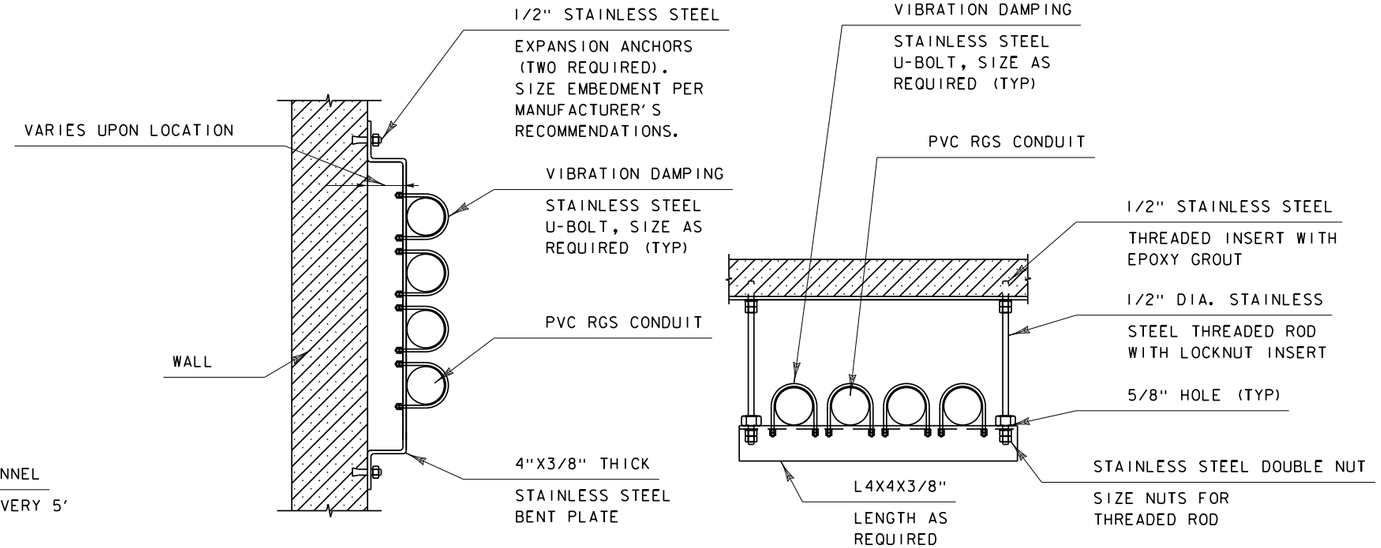
NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. SPAN NAVIGATION LIGHTS SHALL BE INSTALLED SUCH THAT THE 180 DEGREE VIEW IS SPLIT EVENLY BY A LINE PARALLEL TO THE NAVIGATIONAL CHANNEL CENTERLINE SUCH THAT THE VESSEL WILL HAVE A DIRECT 180 DEGREE VISUAL OF THE NAVIGATION LIGHTS.
3. THE SPAN NAVIGATION LIGHT SHALL BE INSTALLED AT A LENGTH LONG ENOUGH TO CLEAR THE BRIDGE GIRDER IN ORDER TO ALLOW FOR AN UNOBSTRUCTED VIEW.
4. BOTTOM OF RED LIGHT SHALL BE IN LINE WITH THE BOTTOM OF THE GIRDER.
5. SEE STRUCTURAL DRAWINGS FOR NAVIGATION LIGHT MOUNTING DETAILS.



PIER NAVIGATION LIGHT CONDUIT SUPPORT

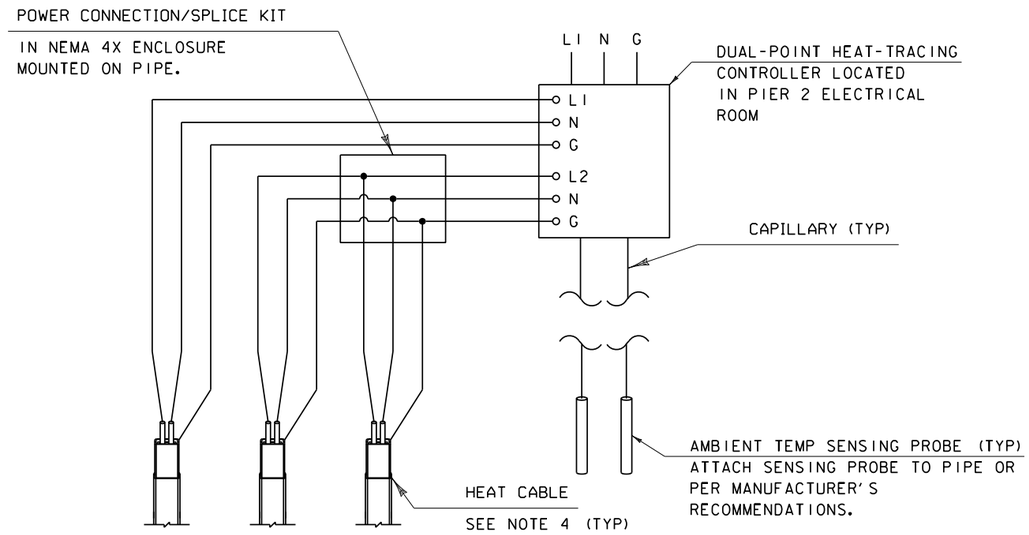
NOT TO SCALE



TYPICAL CONDUIT SUPPORT DETAIL

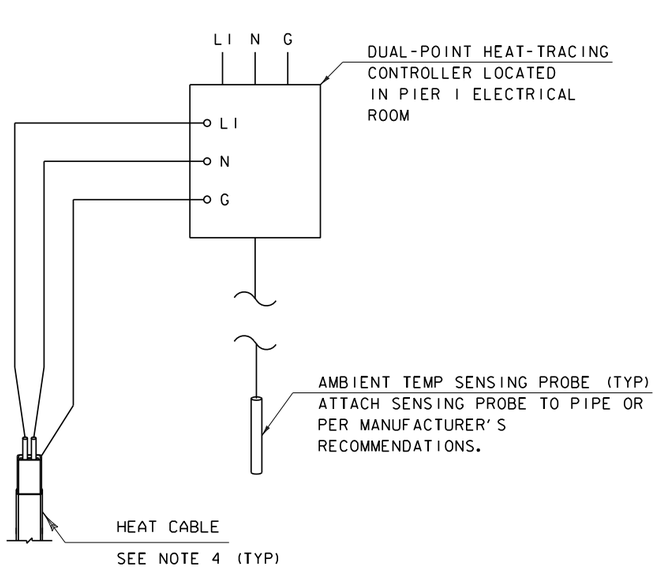
NOT TO SCALE

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142navdet.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: C. SHEN
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
NAVIGATION LIGHT & MISC. CONDUIT DETAILS	SHEET 296 OF 379



EAST HEAT TRACE SYSTEM CONTROLLER WIRING DIAGRAM (PIER 2)

NTS

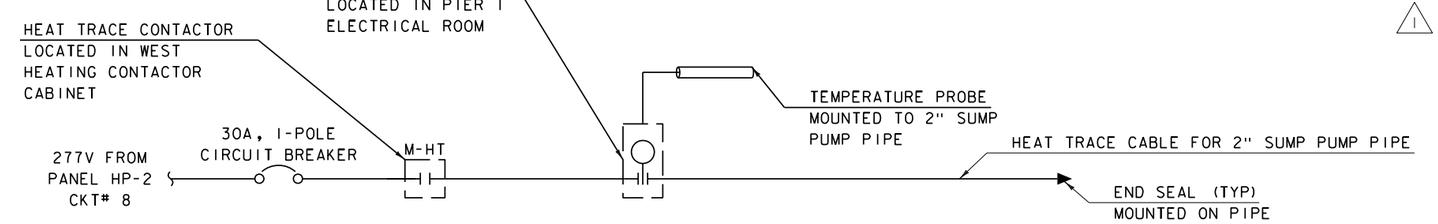


WEST HEAT TRACE SYSTEM CONTROLLER WIRING DIAGRAM FOR (PIER 1)

NTS

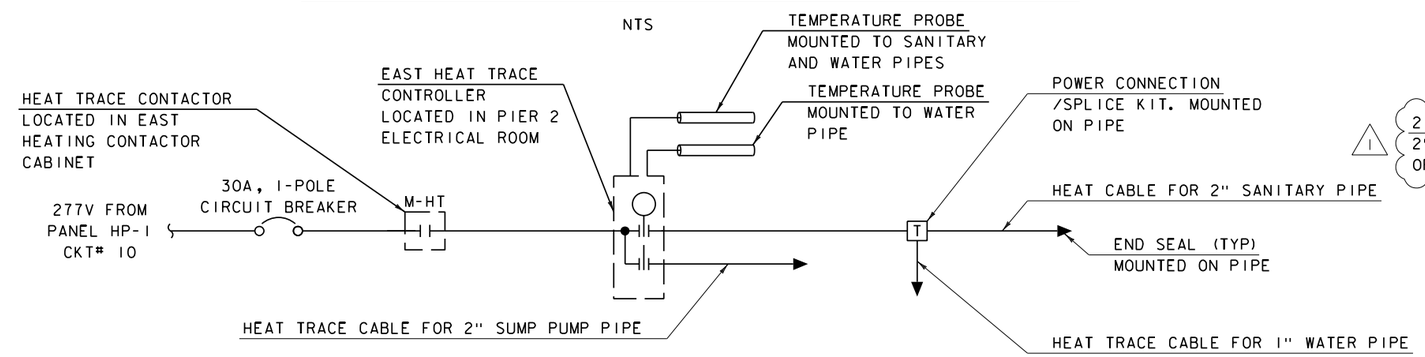
NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. HEAT TRACING SYSTEM (HEATER CABLE AND ACCESSORIES) SHALL BE SELF-REGULATING AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
3. HEAT TRACE CONTROLLERS SHALL BE INSTALLED IN THE ELECTRICAL ROOMS.
4. THE HEATER CABLE SHALL FIT SNUGLY AGAINST THE PIPE AND BE SECURED AT ONE (1) FOOT INTERVALS.
5. ALL HEAT TRACING CABLES, COMPONENTS, AND ACCESSORIES SHALL OF THE SAME MANUFACTURER.
6. THE HEATER CABLE SHALL BE INSTALLED ON ALL OUTDOOR WATER AND SEWER PIPES THAT ARE ABOVE THE FROST LINE AND ALL INDOOR PIPES LOCATED IN AREAS WITH NON INSULATED WALL AND NOT TEMPERATURE CONTROLLED.
7. DETAIL SHOWN IS TYPICAL FOR THE WATER AND SEWER LINE WHICH RUNS ON THE BRIDGE APPROACH.



WEST HEAT TRACING SCHEMATIC DIAGRAM (PIER 1)

NTS



EAST HEAT TRACING SCHEMATIC DIAGRAM (PIER 2)

NTS



HEAT TRACE CABLE ON SINGLE PIPE INSTALLATION

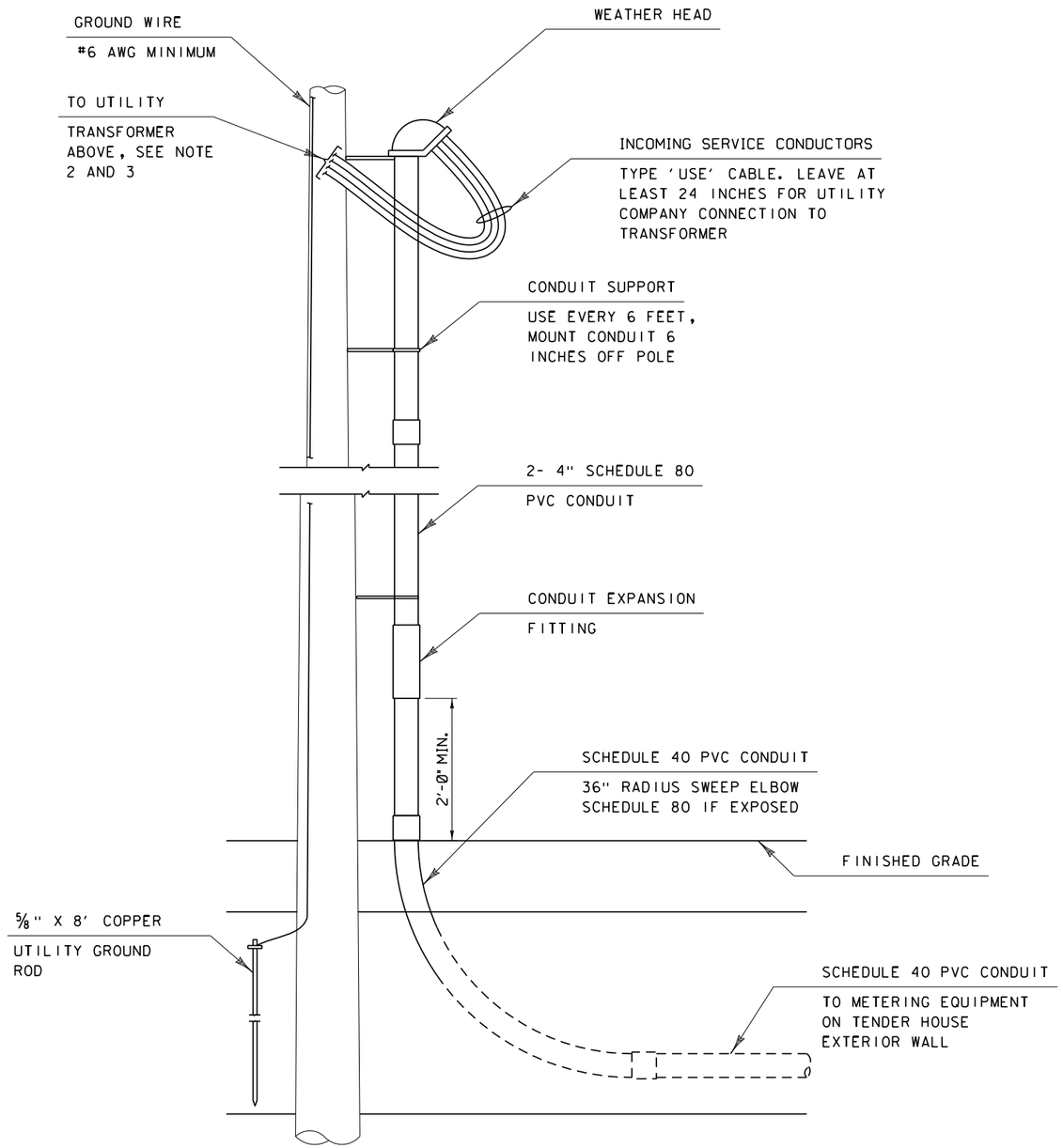
NTS
SEE NOTES 6 AND 7

REVISION	DATE	DESCRIPTION	BY
1	4-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142heatdet.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
HEAT TRACE DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: J. TAYLOR
CHECKED BY: K. HAJJEH
SHEET 297 OF 379

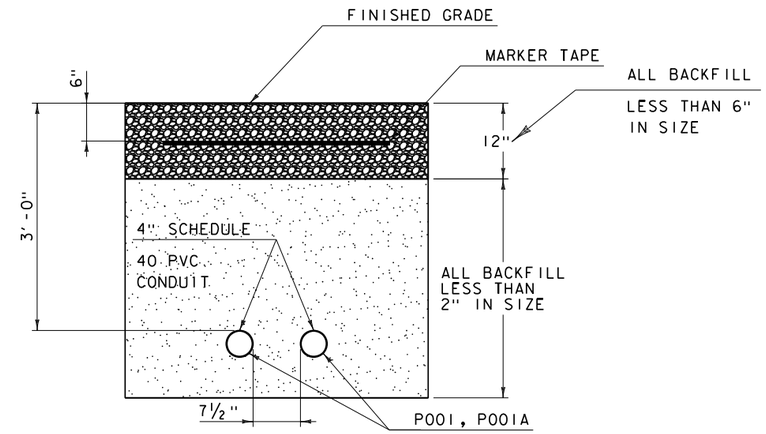


ELECTRIC UTILITY RISER POLE DETAILS

NOT TO SCALE

NOTES

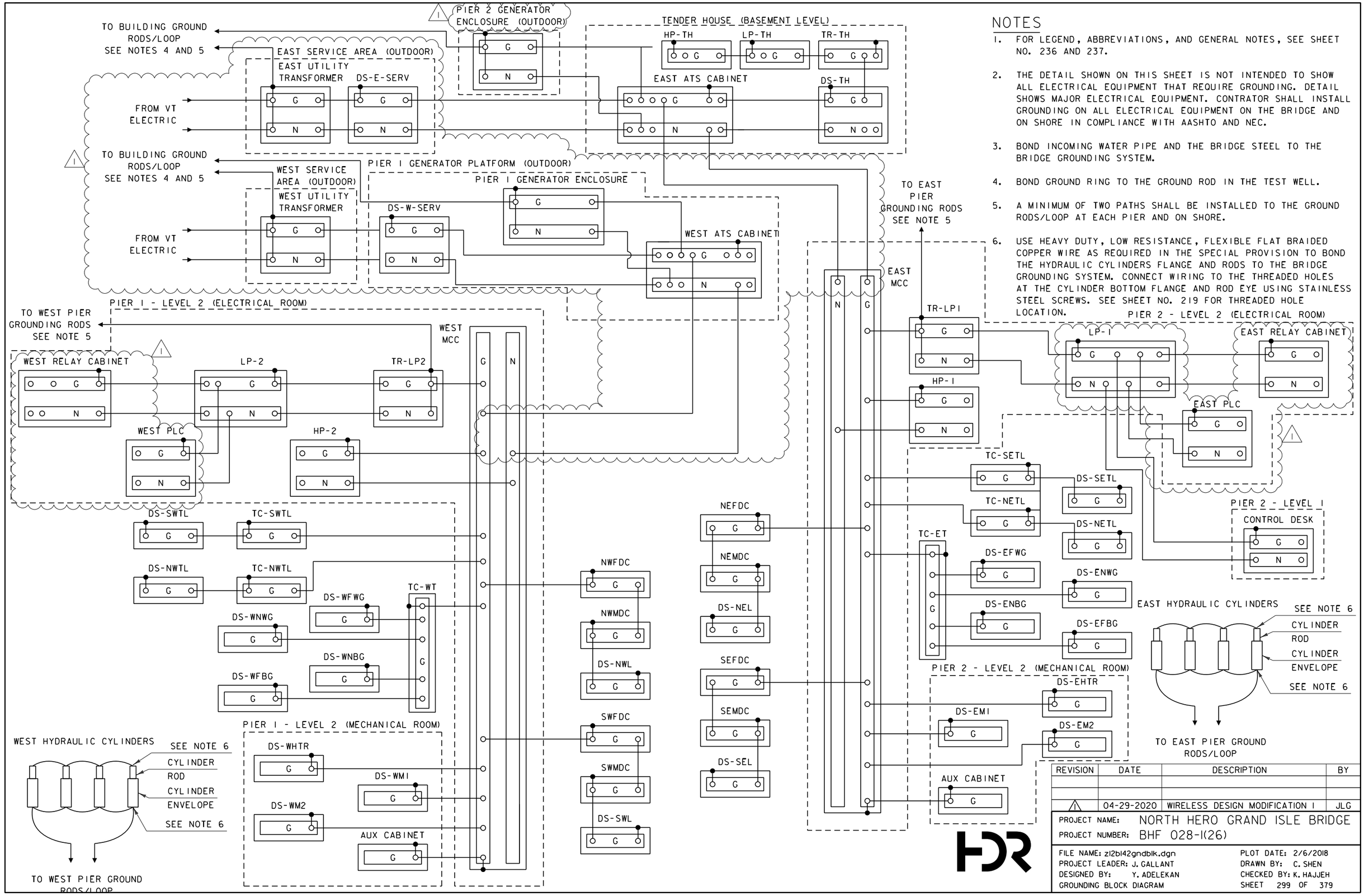
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. UTILITY TRANSFORMER SHALL BE SUPPLIED AND INSTALLED BY VERMONT ELECTRIC COOP. (VT ELECTRIC).
3. CONNECTION TO TRANSFORMER SHALL BE MADE BY VT ELECTRIC UPON APPROVAL FROM THE VERMONT DIVISION OF FIRE AND SAFETY. AN APPROVED ENERGIZING PERMIT IS REQUIRED PRIOR TO MAKING CONNECTION. CONTRACTOR SHALL SECURE THE ENERGIZING PERMIT WITH THE VERMONT DIVISION OF FIRE AND SAFETY. ALL OTHER EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR
4. INSTALLATION OF THE NEW ELECTRIC SERVICE EQUIPMENT SHALL BE PERFORMED BY A MASTER ELECTRICIAN LICENSED IN THE STATE OF VERMONT.
5. COORDINATE THE INSTALLATION OF THE NEW ELECTRIC SERVICE WITH VT ELECTRIC.
6. INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE NATIONAL ELECTRIC CODE ADOPTED BY VTRANS AND THE LATEST VERSION OF THE "VERMONT UTILITIES ELECTRIC SERVICE REQUIREMENTS" MANUAL.



ELECTRIC UTILITY CONDUIT TRENCH DETAILS

SCALE: 1" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142utildet.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. TAYLOR
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
ELECTRIC UTILITY DETAILS	SHEET 298 OF 379



NOTES

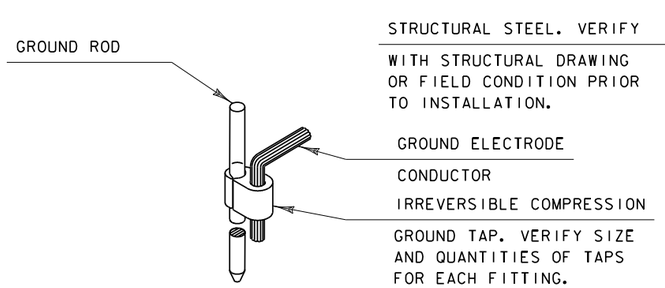
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. THE DETAIL SHOWN ON THIS SHEET IS NOT INTENDED TO SHOW ALL ELECTRICAL EQUIPMENT THAT REQUIRE GROUNDING. DETAIL SHOWS MAJOR ELECTRICAL EQUIPMENT. CONTRATOR SHALL INSTALL GROUNDING ON ALL ELECTRICAL EQUIPMENT ON THE BRIDGE AND ON SHORE IN COMPLIANCE WITH AASHTO AND NEC.
3. BOND INCOMING WATER PIPE AND THE BRIDGE STEEL TO THE BRIDGE GROUNDING SYSTEM.
4. BOND GROUND RING TO THE GROUND ROD IN THE TEST WELL.
5. A MINIMUM OF TWO PATHS SHALL BE INSTALLED TO THE GROUND RODS/LOOP AT EACH PIER AND ON SHORE.
6. USE HEAVY DUTY, LOW RESISTANCE, FLEXIBLE FLAT BRAIDED COPPER WIRE AS REQUIRED IN THE SPECIAL PROVISION TO BOND THE HYDRAULIC CYLINDERS FLANGE AND RODS TO THE BRIDGE GROUNDING SYSTEM. CONNECT WIRING TO THE THREADED HOLES AT THE CYLINDER BOTTOM FLANGE AND ROD EYE USING STAINLESS STEEL SCREWS. SEE SHEET NO. 219 FOR THREADED HOLE LOCATION.

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

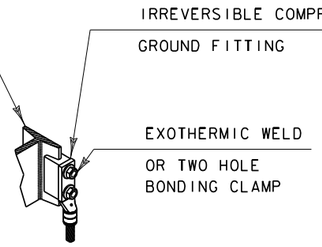
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142gndblk.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
GROUNDING BLOCK DIAGRAM

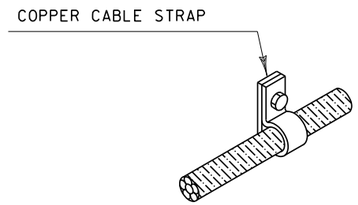
PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 299 OF 379



CABLE TO GROUND ROD

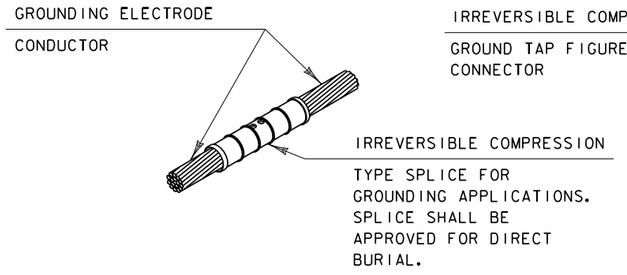


CABLE TO BRIDGE STEEL

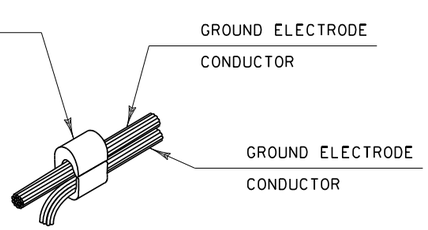


NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. MAIN GROUND ELECTRODE CONDUCTOR TO BE #4/0 AWG BARE COPPER.
3. GROUND CABLE SHALL BE BURIED AT A MINIMUM OF 30" BELOW GRADE AT THE TENDER HOUSE AREA.
4. GROUND CONNECTIONS SHALL BE VIA COMPRESSION CONNECTORS OR EXOTHERMIC WELD.
5. CABLE TO GROUND ROD SHALL BE VIA EXOTHERMIC WELD.



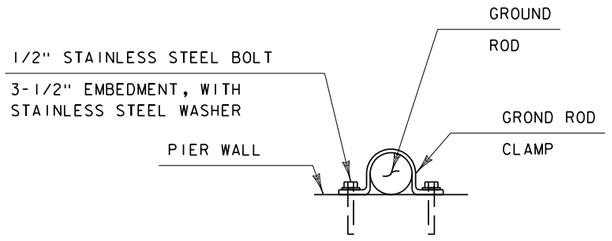
CABLE SPLICE



CABLE TO CABLE

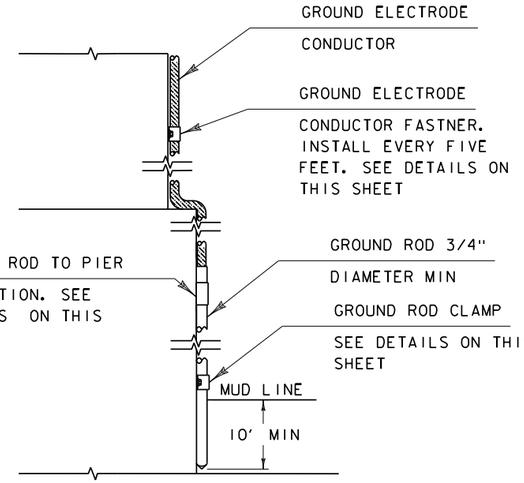
TYPICAL GROUND ELECTRODE CONDUCTOR FASTNER

NTS



GROUND ROD TO PIER CONNECTION

NTS

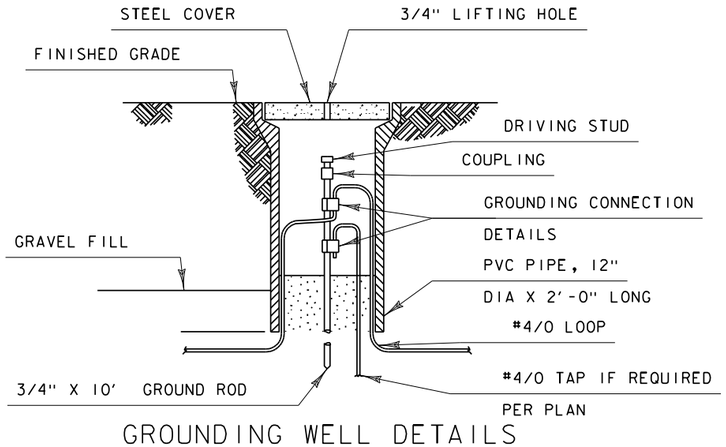


PIER GROUND CONNECTION

NTS

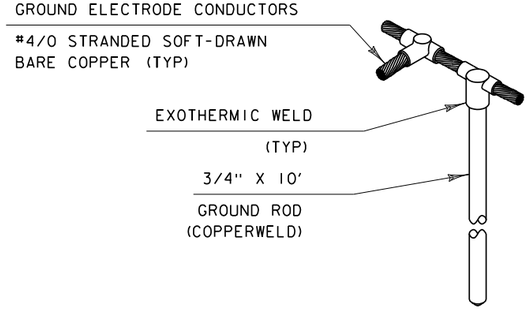
GROUNDING CONNECTION DETAILS

NTS



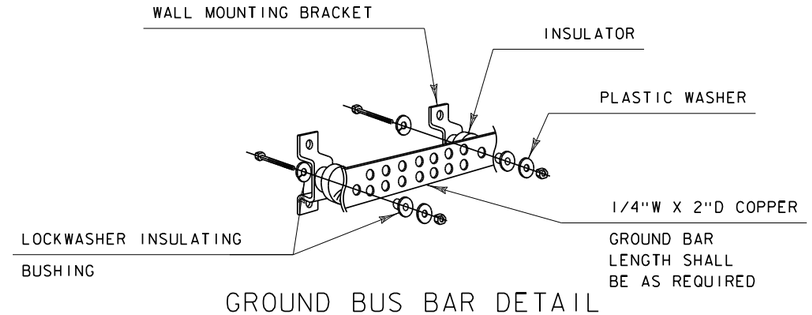
GROUNDING WELL DETAILS

SCALE: 1" = 1'-0"



GROUND ROD DETAIL

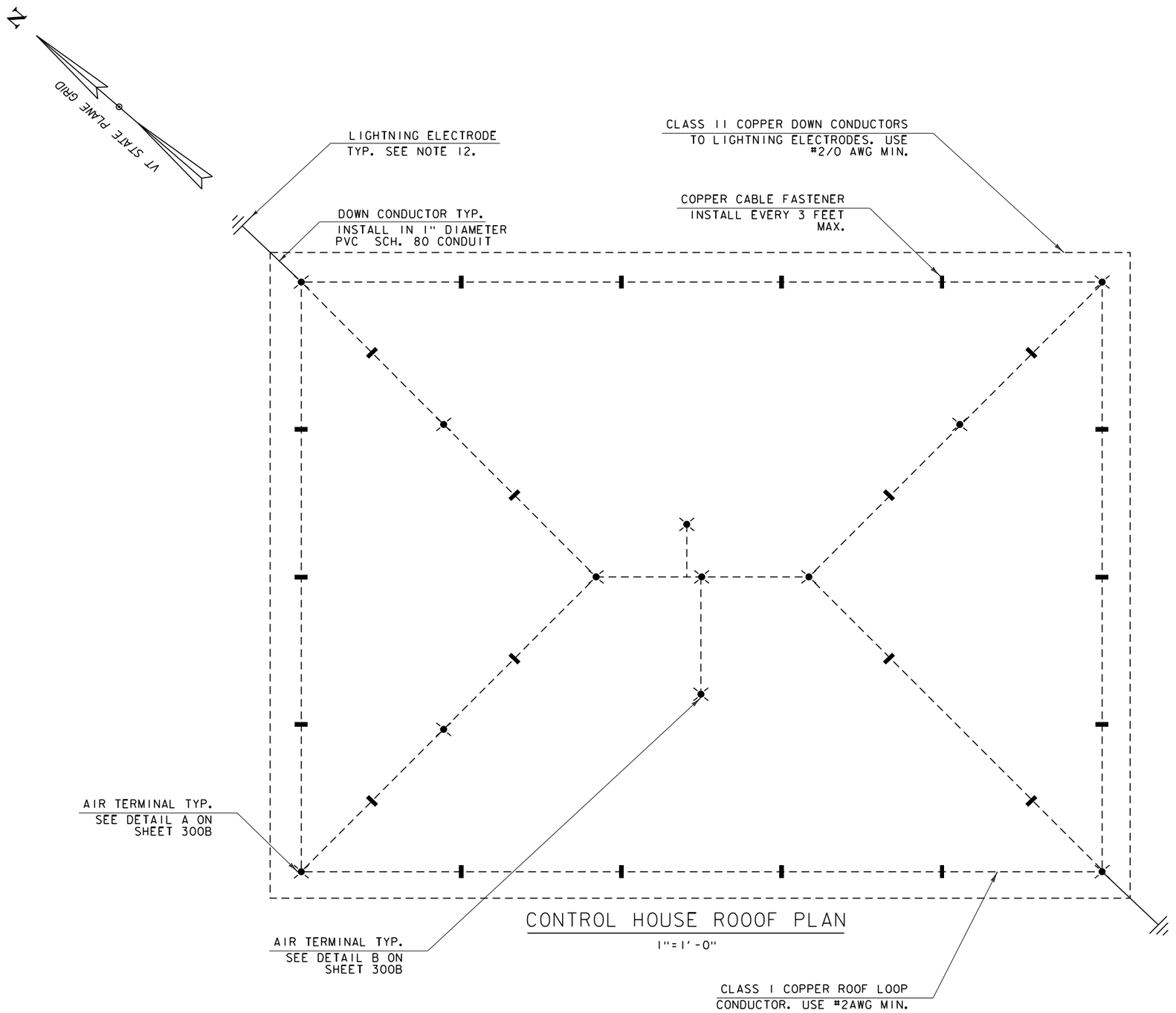
NTS



GROUND BUS BAR DETAIL

NTS

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142gnddet.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: C. SHEN
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
GROUNDING DETAILS	SHEET 300 OF 379



CONTROL HOUSE ROOOF PLAN

1"=1'-0"

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. THE COMPLETED INSTALLATION SHALL MEET THE REQUIREMENTS OF THE NATIONAL FIRE PROTECTION ASSOCIATION'S "STANDARD FOR THE INSTALLATION OF LIGHTNING PROTECTION SYSTEMS," (NFPA 780) LATEST EDITION
3. THE LIGHTNING PROTECTION SYSTEM SHALL BE IN ACCORDANCE WITH STANDARD UL96A AND UL MASTER LABEL CERTIFICATION REQUIREMENTS. DELIVER TO THE ENGINEER A MASTER LABEL CERTIFICATE PRIOR TO FINAL COMPLETION.
4. COPPER LIGHTNING PROTECTION SYSTEM COMPONENTS SHALL NOT BE MOUNTED TO ALUMINUM SURFACES.
5. GROUNDED METAL BOXES WITHIN THE BONDING DISTANCE, AND METALLIC CONDUIT ENTERING THE EQUIPMENT ROOM SHALL BE BONDED TO THE NEAREST DOWN CONDUCTOR OR GROUND ELECTRODE AS DIRECTED BY NFPA 780 LATEST EDITION
6. BOND THE LIGHTNING PROTECTION SYSTEM TO THE BRIDGE GROUNDING SYSTEM.
7. USE ADHESIVE TYPE CABLE FASTENER ON HVAC EQUIPMENT SURFACE ONLY. ADHESIVE USED SHALL BE COMPATIBLE WITH EQUIPMENT SURFACE.
8. EACH INDIVIDUAL ITEM OF THE LIGHTNING PROTECTION SYSTEM IS NOT LABELLED FOR THE SAKE OF CLARITY. ITEMS ARE INDICATED AT RANDOM LOCATIONS ONLY, BUT A COMPLETE SYSTEM SHALL BE PROVIDED TO MEET U.L. LIGHTNING PROTECTION INSPECTION CERTIFICATE REQUIREMENTS. ACTUAL JOB SITE CONDITIONS MAY REQUIRE ITEMS SHOWN ON THE DRAWING TO BE EITHER LOCATED IN DIFFERENT LOCATIONS OR MADE OF DIFFERENT MATERIALS. ALL CHANGES MADE TO THE LIGHTNING PROTECTION SYSTEM AND THE COMPLETED INSTALLATION SHALL MEET OR EXCEED THE REQUIREMENTS LISTED ABOVE.
9. ALL LIGHTNING CONDUCTORS ARE TO MAINTAIN A HORIZONTAL OR DOWNWARD PATH. ALL CONDUCTORS BENDS SHALL HAVE A MINIMUM BEND RADIUS OF 8 INCHES, AND HAVE A MINIMUM BEND ANGLE OF 90 DEGREES.
10. CABLE TO GROUND ROD CLAMP CONNECTION SHALL HAVE A MINIMUM 1-1/2" OF CONTACT BETWEEN CONDUCTOR AND GROUND ELECTRODE.
11. FURNISH AND INSTALL ROOF PADS, PAVERS, FLASHING OR ANY OTHER SPECIAL ROOFING MATERIALS REQUIRED FOR THE INSTALLATION OF THE LIGHTNING PROTECTIONS SYSTEM.
12. LIGHTNING PROTECTION SYSTEM IS SEPARATE FROM GROUNDING SYSTEM. THE PIER GROUND ROD CONNECTION AND BONDING DETAILS ON SHEET 300 ARE APPLICABLE TO THE LIGHTNING PROTECTION SYSTEM. BOND THE LIGHTNING GROUND CONDUCTOR TO THE LIGHTNING ELECTRODE AS SHOWN. THE INSTALLATION OF ALL LIGHTNING SYSTEMS SHALL BE IN COMPLIANCE WITH NEC NFPA 780 ARTICLES 4.8 THROUGH 4.16.

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

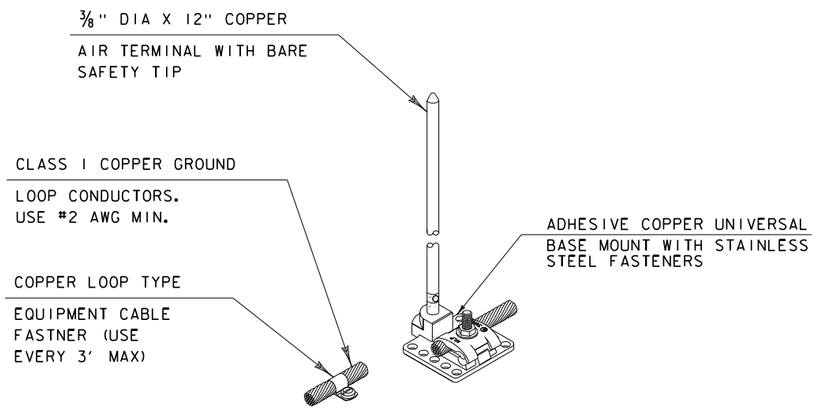
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl421tngplan.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
LIGHTNING PROTECTION PLAN

PLOT DATE: 2/6/2018
DRAWN BY: D.HAUGHEE
CHECKED BY: K. HAJJEH
SHEET 300A OF 379

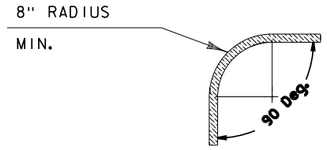
NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. ALL DEVICES, COMPONENTS AND EQUIPMENT OF THE LIGHTNING PROTECTION SYSTEM SHALL BE PRODUCTS OF THE SAME MANUFACTURER.

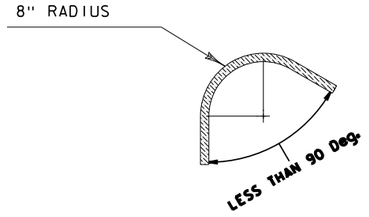


AIR TERMINAL DETAIL

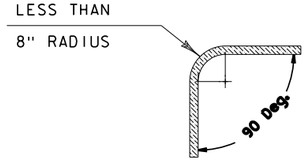
NTS



ACCEPTABLE



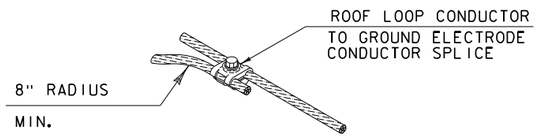
NOT ACCEPTABLE



NOT ACCEPTABLE

TYPICAL CABLE BENDS REQUIREMENT

NTS



TYPICAL CABLE SPLICE

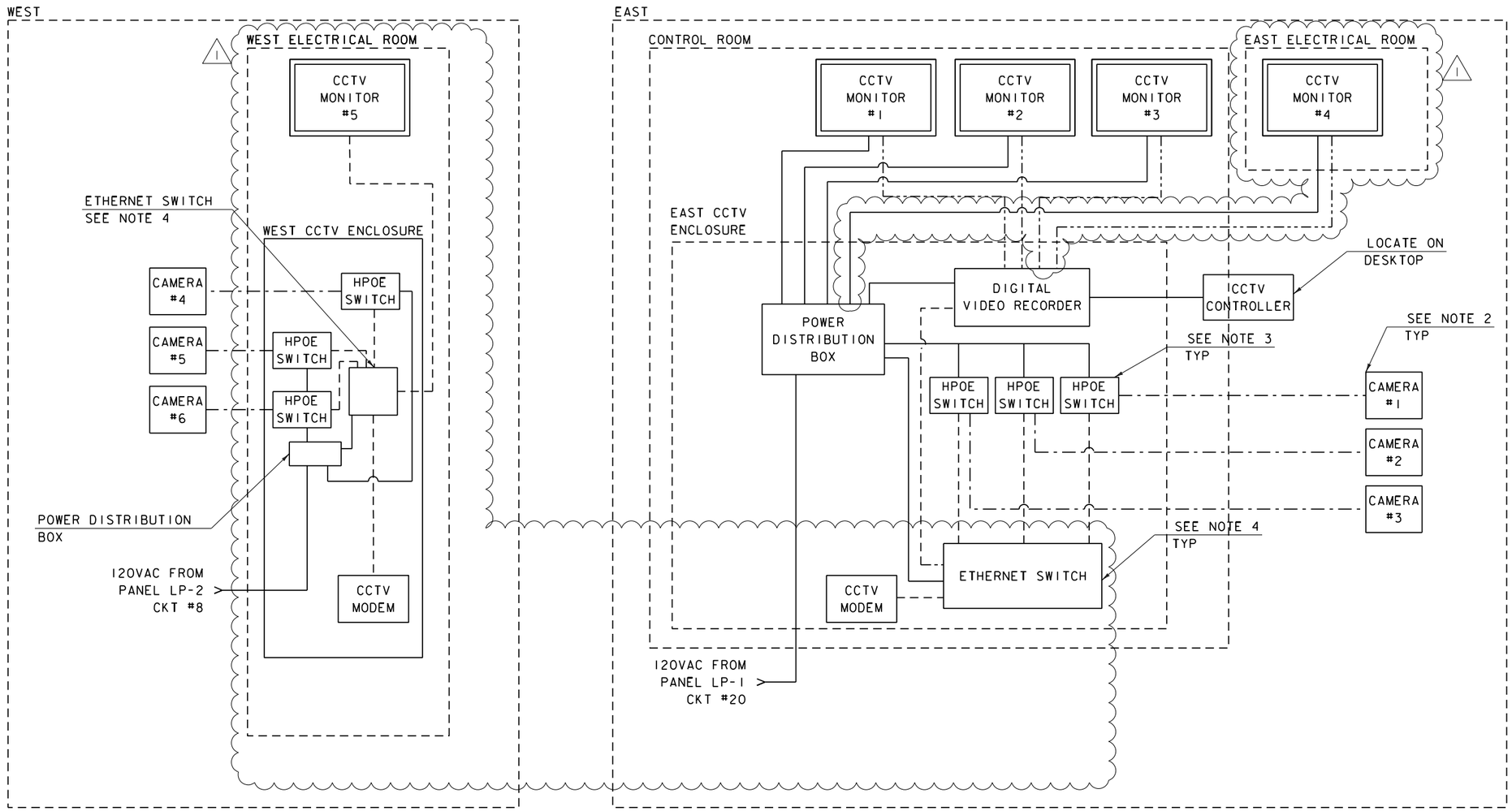
NTS

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b1421tngdet1.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
LIGHTNING PROTECTION DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: D. HAUGHEE
CHECKED BY: K. HAJJEH
SHEET 300B OF 379



NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. CAMERAS SHALL BE PTZ IP CAMERA WITH POE CONNECTION. FURNISH THE CAMERAS WITH ENCLOSURE EQUIPED WITH HEATER AND BLOWER FOR LOW TEMPERATURE ENVIRONMENT.
3. THE HIGH POWER OVER ETHERNET SWITCH SHALL PROVIDE SUFFICIENT POWER FOR THE WHOLE CAMERA UNIT INCLUDING THE CAMERA POWER AND POWER FOR DEFROSTER AND WIPER.
4. THE ETHERNET SWITCH SHALL HAVE AT SUFFICIENT PORTS TO ACCOMONDATE ALL REQUIRED CONNECTIONS.
5. CONTRACTOR SHALL SUBMIT SCREEN DEVELOPMENT FOR ENGINEER REVIEW.
6. SEE SHEET 302 FOR CCTV CAMERA LAYOUT AND FIELD OF VIEW. SUBMIT CCTV CAMERA MOUNTING DETAILS FOR REVIEW AND APPROVAL. THE MINIMUM FIELD OF VIEW ANGLES SHALL BE A 90 DEGREES HORIZONTAL AND 50 DEGREES VERTICAL.

LEGEND

- ETHERNET
- COPPER
- POE CABLE
- HDMI CABLE

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142CCTVdia.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
CCTV BLOCK DIAGRAM

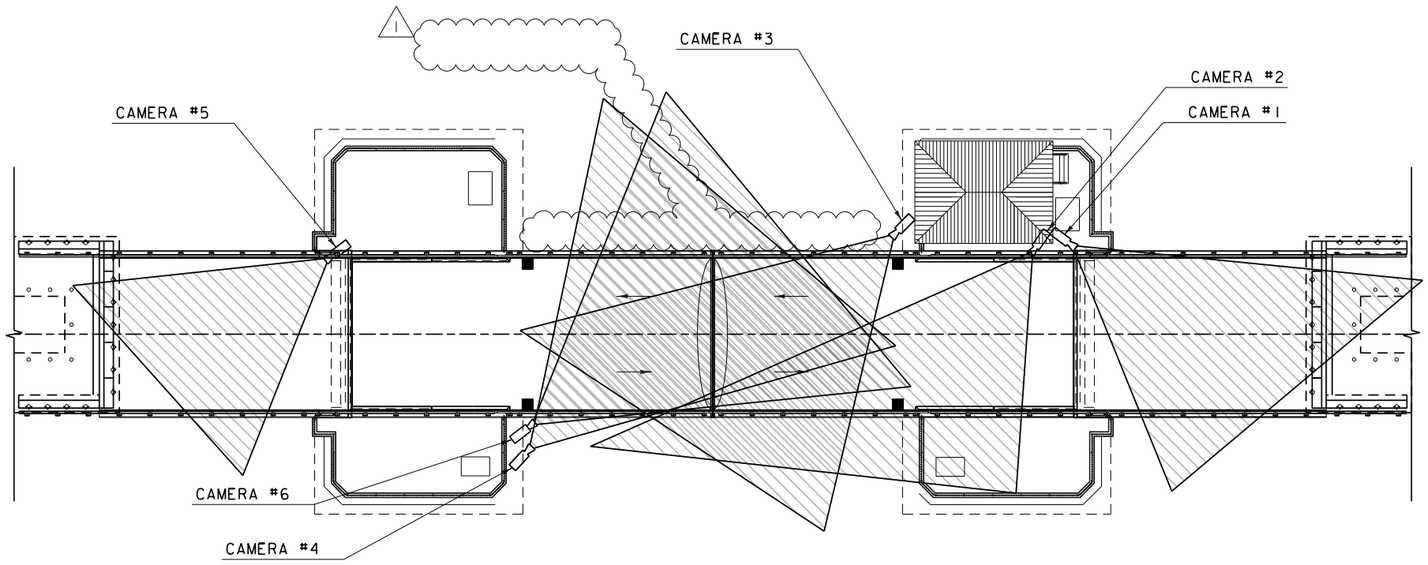
PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 301 OF 379

N

VT STATE PLANE GRID

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.



CCTV PLAN

SCALE 1/16" = 1'-0"

CAMERA	FIELD OF VIEW
1	EAST TRAFFIC
2	BRIDGE
3	SOUTH CHANNEL
4	NORTH CHANNEL
5	WEST TRAFFIC
6	BRIDGE

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

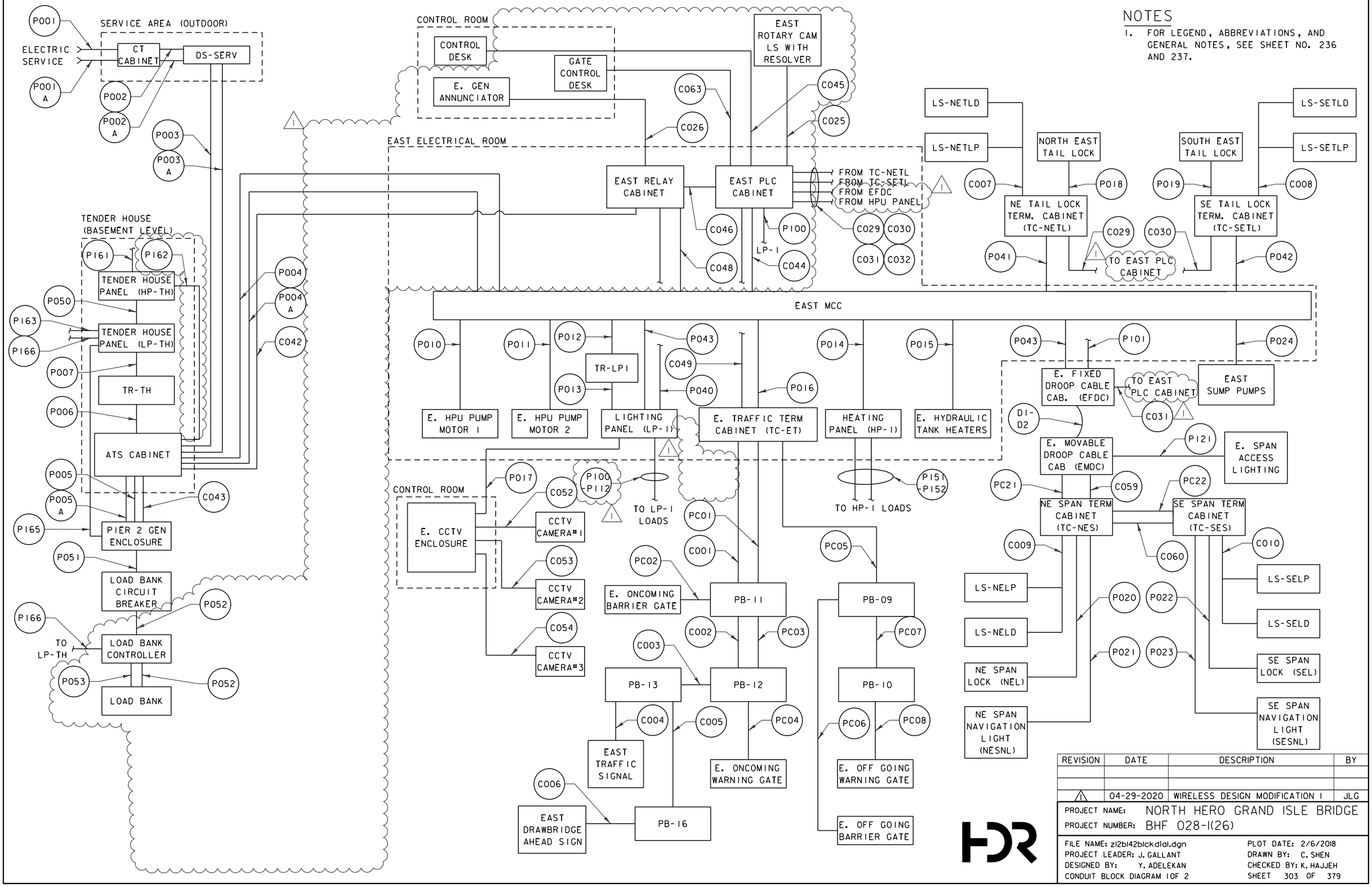
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cctvplan.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
CCTV PLAN

PLOT DATE: 2/6/2018
DRAWN BY: J. TAYLOR
CHECKED BY: K. HAJJEH
SHEET 302 OF 379

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.



REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

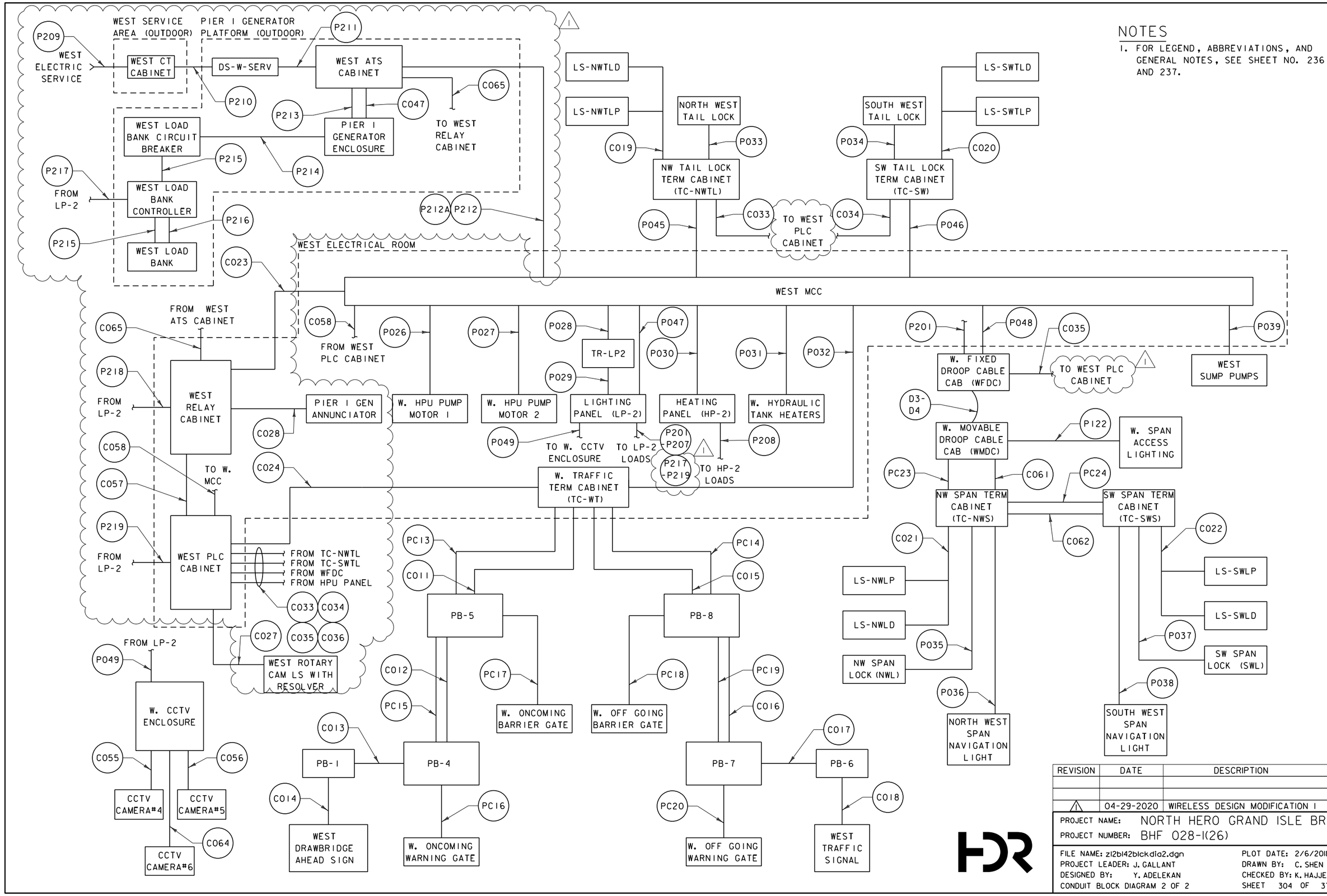
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42blckdial.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
CONDUIT BLOCK DIAGRAM 1OF 2

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 303 OF 379

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.

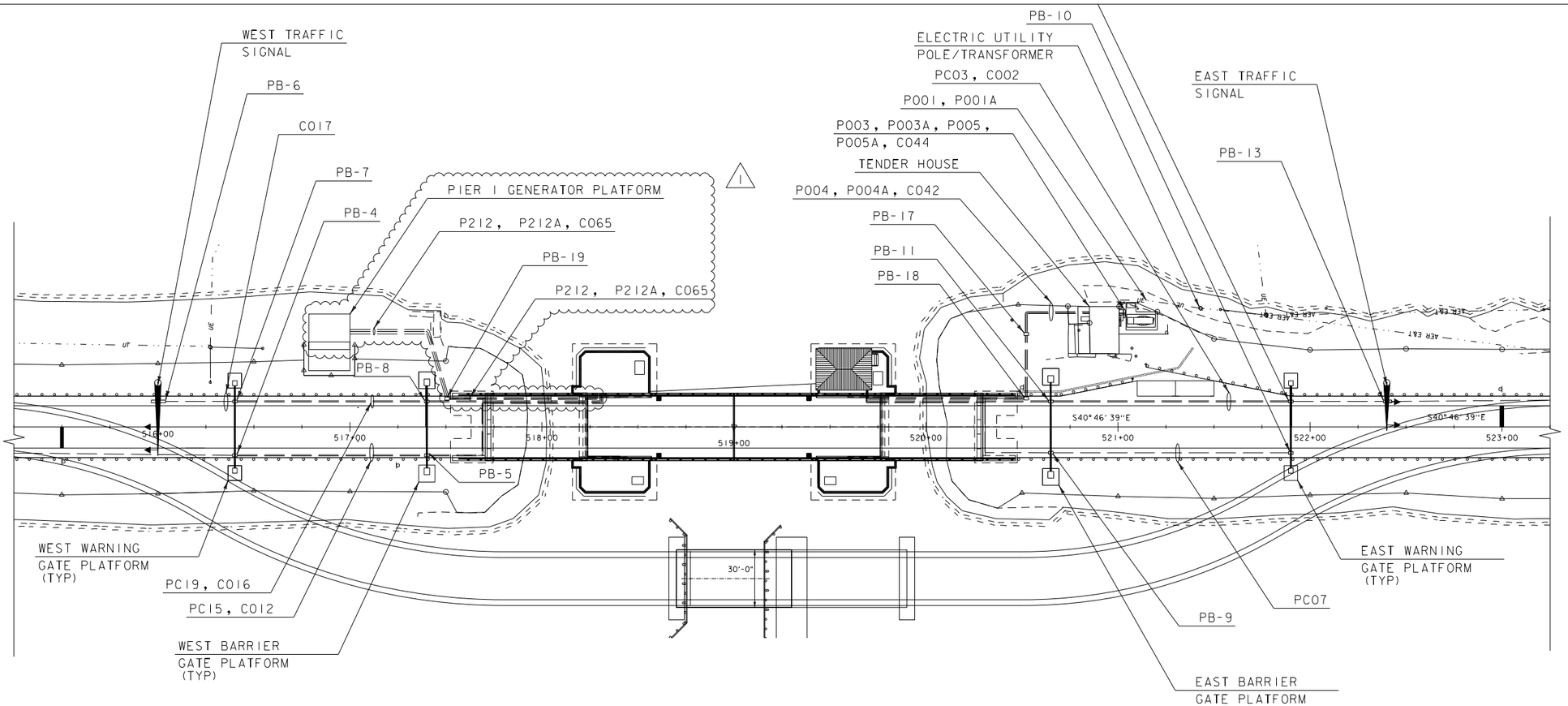


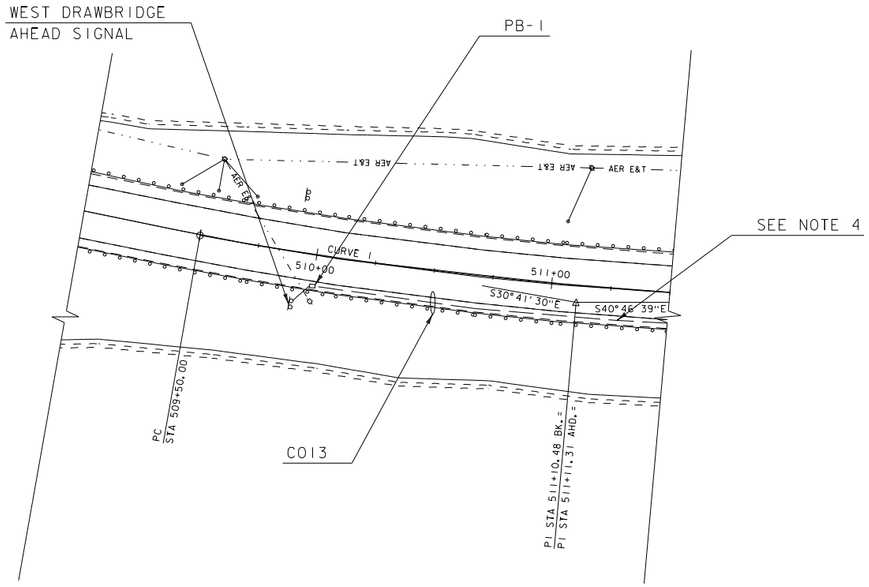
REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

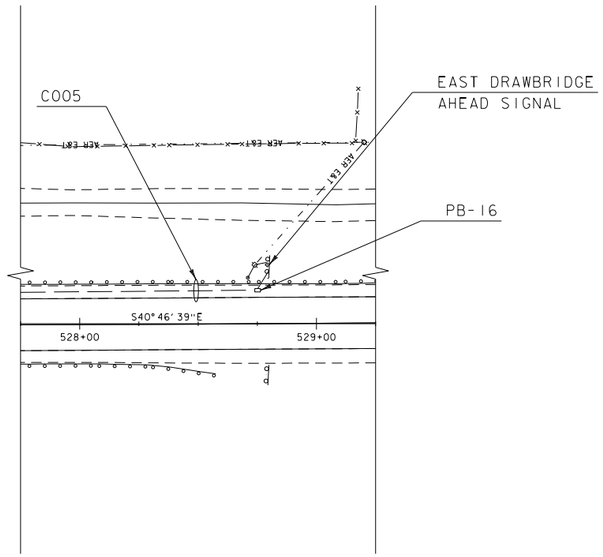
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42blckdia2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
CONDUIT BLOCK DIAGRAM 2 OF 2

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 304 OF 379





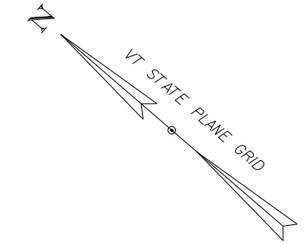


CONDUIT ROUTING PLAN

SCALE 1" = 200'-0"
200' 0 200'

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. CONDUIT ROUTING ARE SHOWN DIAGRAMMATICALLY.
3. INSTALL HANDHOLE ENCLOSURES EVERY 200 FEET IN BETWEEN TRAFFIC AND DRAWBRIDGE AHEAD SIGNALS.
4. PB-2, 3, 14, AND 15 NOT SHOWN. SEE TABLE FOR STATIONS AND SIZES.



PULL BOX ID	LOCATION	MINIMUM DIMENSION	RATING
PB-1	STA. 510+00.00	15" X 15" X 24"	ANSI TIER 15
PB-2	STA. 512+00.00	20" X 15" X 24"	ANSI TIER 15
PB-3	STA. 514+00.00	20" X 15" X 24"	ANSI TIER 15
PB-4	STA. 516+40.00	17.5" X 15" X 24"	ANSI TIER 15
PB-5	STA. 517+40.00	32" X 15" X 24"	ANSI TIER 15
PB-6	STA. 516+00.00	15" X 15" X 24"	ANSI TIER 15
PB-7	STA. 516+40.00	20" X 15" X 24"	ANSI TIER 15
PB-8	STA. 517+40.00	20" X 15" X 24"	ANSI TIER 15
PB-9	STA. 520+65.00	20" X 15" X 24"	ANSI TIER 15
PB-10	STA. 521+90.00	15" X 15" X 24"	ANSI TIER 15
PB-11	STA. 520+60.00	20" X 15" X 24"	ANSI TIER 15
PB-12	STA. 521+90.00	20" X 15" X 24"	ANSI TIER 15
PB-13	STA. 522+42.00	15" X 15" X 24"	ANSI TIER 15
PB-14	STA. 524+75.00	20" X 15" X 24"	ANSI TIER 15
PB-15	STA. 526+75.00	20" X 15" X 24"	ANSI TIER 15
PB-16	STA. 528+75.00	15" X 15" X 24"	ANSI TIER 15
PB-17	STA. 520+52.00	30" X 15" X 24"	ANSI TIER 8
PB-18	STA. 520+52.00	30" X 15" X 24"	ANSI TIER 8
1 PB-19	STA. 517+50.00	30" X 15" X 24"	ANSI TIER 8

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142cndtplan.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
ELECTRICAL CONDUIT ROUTING PLAN

PLOT DATE: 2/6/2018
DRAWN BY: J. TAYLOR
CHECKED BY: K. HAJJEH
SHEET 305 OF 379

CONDUIT TAG	FROM	TO	# OF CONDUCTORS	CONDUIT SIZE	TYPE	REMARKS
P001/P001A	EAST UTILITY POLE	EAST CT CABINET	8-1/C#300KCMIL AWG + 2-1/C#2GND	2-4"	PVC SCH 80	USE TYPE USE WIRING (RUN PARALLEL SETS)
P002/P002A	EAST CT CABINET	DS-E-SERV	8-1/C#300KCMIL AWG + 2-1/C#2GND	2-4"	PVC SCH 80	USE TYPE USE WIRING (RUN PARALLEL SETS)
P003/P003A	DS-E-SERV	EAST ATS CABINET	8-1/C#300KCMIL AWG + 2-1/C#2GND	2-4"	PVC/RGS	UTILITY POWER (RUN PARALLEL SETS)
P004/P004A	EAST ATS CABINET	EAST MCC	8-1/C#300KCMIL AWG + 2-1/C#2GND 2-1/C#2AWG + #2GND	2-4"	PVC SCH 80 PVC/RGS	BRIDGE POWER VIA PB-17 AND PB-18 (RUN PARALLEL SETS). RUN THE CONDUTORS TO THE CONTROL HOUSE RANGE RECEPTACLE IN P004 OR P004A
P005/P005A	PIER 2 GEN. ENCL.	EAST ATS CABINET	8-1/C#300KCMIL AWG + 2-1/C#2GND	2-4"	PVC/RGS	STANBY POWER (RUN PARALLEL SETS)
P006	EAST ATS CABINET	TR-TH	2-1/C#10 AWG + #10GND	1"	PVC/RGS	TR-TH INPUT POWER
P007	TR-TH	LP-TH	3-1/C#1 AWG + #10GND	2"	PVC/RGS	TENDER HOUSE PANEL
P008/P009	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	-
P010	EAST MCC	EM-1	3-1/C#8 AWG + #10GND	1-1/2"	PVC/RGS	E. HPU PUMP 1 POWER
P011	EAST MCC	EM-2	3-1/C#8 AWG + #10GND	1-1/2"	PVC/RGS	E. HPU PUMP 2 POWER
P012	EAST MCC	TR-LP1	3-1/C#2 AWG + #6GND	2"	PVC/RGS	TR-LP1 INPUT POWER
P013	TR-LP1	LP-1	4-1/C#4/0 AWG + #6GND	4"	PVC/RGS	PANEL LP-1
P014	EAST MCC	HP-1	4-1/C#2 AWG + #6GND	2"	PVC/RGS	PANEL HP-1
P015	EAST MCC	EHTR	6-1/C#10 AWG + #10GND	1-1/2"	PVC/RGS	E. HYDRAULIC TANK HEATERS
P016	EAST MCC	TC-ET	20-1/C#10 AWG + 4-1/C #10GND	2"	PVC/RGS	E. GATES MTR, HTR & RECP PWR
P017	LP-1	E. CCTV ENCLOSURE	2-1/C#8 AWG + #10GND	1"	PVC/RGS	E. CCTV POWER
P018	TC-NETL	NETL	5-1/C#10 AWG + #10GND	1"	PVC/RGS	NE TAIL LOCK MTR & HTR PWR
P019	TC-SETL	SETL	5-1/C#10 AWG + #10GND	1"	PVC/RGS	SE TAIL LOCK MTR & HTR PWR
P020	TC-NES	NEL	5-1/C#10 AWG + #10GND	1"	PVC/RGS	NE SPAN LOCK MTR & HTR PWR
P021	TC-NES	NESNL	4-1/C#10 AWG + #10GND	1"	PVC/RGS	NE SPAN NAV LIGHT POWER
P022	TC-SES	SEL	5-1/C#10 AWG + #10GND	1"	PVC/RGS	SE SPAN LOCK MTR & HTR PWR
P023	TC-SES	SESNL	4-1/C#10 AWG + #10GND	1"	PVC/RGS	SE SPAN NAV LIGHT POWER
P024	EAST MCC	ESPM	6-1/C#10 AWG + 2-1/C#10GND	1"	PVC/RGS	E. SUMP PUMPS POWER
P025	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	-
P026	WEST MCC	WM-1	3-1/C#8 AWG + #10GND	1-1/2"	PVC/RGS	W. HPU PUMP 1 POWER
P027	WEST MCC	WM-2	3-1/C#8 AWG + #10GND	1-1/2"	PVC/RGS	W. HPU PUMP 2 POWER
P028	WEST MCC	TR-LP2	3-1/C#8 AWG + #10GND	1"	PVC/RGS	TR-LP2 INPUT POWER
P029	TR-LP2	LP-2	4-1/C#2 AWG + #6GND	2"	PVC/RGS	PANEL LP-2
P030	WEST MCC	HP-2	4-1/C#2 AWG + #6GND	2"	PVC/RGS	PANEL HP-2
P031	WEST MCC	WHTR	6-1/C#10 AWG + #10GND	1-1/2"	PVC/RGS	W. HYDRAULIC TANK HEATERS
P032	WEST MCC	TC-WT	20-1/C#10 AWG + 4-1/C #10GND	2"	PVC/RGS	W GATES MTR, HTR & RECP PWR
P033	TC-NWTL	NWTL	5-1/C#10 AWG + #10GND	1-1/2"	PVC/RGS	NW TAIL LOCK MTR & HTR PWR
P034	TC-SWTL	SWTL	5-1/C#10 AWG + #10GND	1-1/2"	PVC/RGS	SW TAIL LOCK MTR & HTR PWR
P035	TC-NWS	NWL	5-1/C#10 AWG + #10GND	1-1/2"	PVC/RGS	NW SPAN LOCK MTR & HTR PWR
P036	TC-NWS	NWSNL	4-1/C#10 AWG + #10GND	1"	PVC/RGS	NW SPAN NAV LIGHT POWER
P037	TC-SWS	SWL	5-1/C#10 AWG + #10GND	1-1/2"	PVC/RGS	SW SPAN LOCK MTR & HTR PWR
P038	TC-SWS	SWSNL	4-1/C#10 AWG + #10GND	1"	PVC/RGS	SW SPAN NAV LIGHT POWER
P039	WEST MCC	WSPM	6-1/C#10 AWG + 2-1/C #10GND	1-1/2"	PVC/RGS	W. SUMP PUMPS POWER
P040	LP-1	RELAY CABINET	4-1/C#6 AWG + 2-1/C#8GND	1-1/2"	PVC/RGS	RELAY CONTROL POWER & MTR HTRS
P041	EAST MCC	TC-NETL	5-1/C#10 AWG + #10GND	1-1/2"	PVC/RGS	NE TAIL LOCK MTR & HTR PWR
P042	EAST MCC	TC-SETL	5-1/C#10 AWG + #10GND	1-1/2"	PVC/RGS	SE TAIL LOCK MTR & HTR PWR
P043	EAST MCC	LP-1	8-1/C#10 AWG + #10GND	1"	PVC/RGS	E. LOCK AND GATE HEATERS
P044	EAST MCC	EFDC	10-1/C#10 AWG + #10GND	1-1/2"	PVC/RGS	E. SPAN LOCK MTR & HTR PWR
P045	WEST MCC	TC-NWTL	5-1/C#10 AWG + #10GND	1-1/2"	PVC/RGS	NW TAIL LOCK MTR & HTR PWR
P046	WEST MCC	TC-SWTL	5-1/C#10 AWG + #10GND	1-1/2"	PVC/RGS	SW TAIL LOCK MTR & HTR PWR
P047	WEST MCC	LP-2	8-1/C#10 AWG + #10GND	1"	PVC/RGS	W. LOCK AND GATE HEATERS
P048	WEST MCC	WFDC	10-1/C#10 AWG + #10GND	1-1/2"	PVC/RGS	W. SPAN LOCK MTR & HTR PWR
P049	LP-2	W. CCTV ENCLOSURE	2-1/C#8 AWG + #10GND	1"	PVC/RGS	W. CCTV POWER
P050	LP-TH	HP-TH	2-1/C#6 AWG + #10GND	1-1/2"	PVC/RGS	HP-TH
P051	PIER 2 GEN. ENCL.	CB-E-LB	3-1/C#350 KCMIL + #2GND	4"	PVC/RGS	LOAD BANK CIRCUIT BREAKER
P052	CB-E-LB	EAST LOAD BANK	3-1/C#350 KCMIL + #2GND	4"	PVC/RGS	LOAD BANK POWER VIA LOAD BANK CONTROLLER SEE NOTE 3
P053	E. LOAD BANK CTRL	EAST LOAD BANK	20-1/C#10AWG + #10GND	2"	PVC/RGS	LOAD BANK CONTROL, SEE NOTE 3
P100	LP-1	EAST PLC CABINET	2-1/C#8AWG + #10GND	1"	PVC/RGS	PLC CABINET POWER
P101	LP-1	EFDC	2-1/C#10AWG + #10GND	1"	PVC/RGS	E. SPAN LOCK AREA ACCESS LIGHTING
P102	LP-1	EF-4 & EF-5	2-1/C#10AWG + #10GND	1"	PVC/RGS	EXHAUST FANS 4 & 5
P103	LP-1	EF-6 & EF-7	2-1/C#10AWG + #10GND	1"	PVC/RGS	EXHAUST FANS 6 & 7
P104	LP-1	HEAT PUMP - HP-1	2-1/C#10AWG + #10GND	1"	PVC/RGS	HEAT PUMP
P105	LP-1	FC-1	2-1/C#10AWG + #10GND	1"	PVC/RGS	FAN COIL UNIT (FC-1)
P106	LP-1	EJECTOR PUMP PB-1	2-1/C#10AWG + #10GND	1"	PVC/RGS	SEWAGE EJECTOR PUMP (PB-1)
P107	LP-1	LIGHTING CIRCUITS	16-1/C#10AWG + #10GND	2"	PVC/RGS	LIGHTING CIRCUITS (SEE NOTE 4)
P108	LP-1	EXIT/EMERG. LIGHTS	2-1/C#10AWG + #10GND	1"	PVC/RGS	EXIT & EMERGENCY LIGHTS
P109	LP-1	HOT WATER HTR	2-1/C#10AWG + #10GND	1"	PVC/RGS	HOT WATER HEATER
P110	LP-1	EXIT/EMERG. LIGHTS	2-1/C#10AWG + #10GND	1"	PVC/RGS	EXIT & EMERGENCY LIGHTS
P111	LP-1	OIL/WATER SEPARATOR	2-1/C#10AWG + #10GND	1"	PVC/RGS	E. BASCULE PIT OIL/WATER SEPARATOR
P112	LP-1	RECEPTACLES	6-1/C#10AWG + #10GND	1"	PVC/RGS	RECEPTACLES
P121	EFDC	ACCESS LIGHTING	2-1/C#10AWG + #10GND	1"	PVC/RGS	E. SPAN ACCESS LIGHTING
P122	WFDC	ACCESS LIGHTING	2-1/C#10AWG + #10GND	1"	PVC/RGS	W. SPAN ACCESS LIGHTING
P151	HP-1	UH-8 THRU UH-15	11-1/C#10AWG + #10GND	1-1/2"	PVC/RGS	UNIT HEATERS UH-8 THRU UH-15 (SEE NOTE 5)
P152	HP-1	HEAT TRACE	2-1/C#8AWG + #10GND	1"	PVC/RGS	HEAT TRACE CIRCUIT

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. ALL CONDUIT INSTALLED IN AN UNDERGROUND TRENCH SHALL BE PVC SCHEDULE 80 AND PVC-RGS ELSEWHERE, UNLESS OTHERWISE NOTED. TRANSITION FROM PVC-RGS TO PVC-SCHEDULE 80 IN A JUNCTION BOX.
3. HIGH TEMPERATURE SILICON BRAID TYPE WIRING (RATED FOR 200°C) SHALL BE USED BETWEEN THE LOAD BANK CIRCUIT BREAKER, LOAD BANK CONTROLLER AND LOAD BANK. (1)
4. RUN LIGHTING CIRCUIT IN SEPARATE CONDUITS AS NEEDED.
5. RUN CONDUCTORS TO ELECTRIC UNIT HEATERS IN SEPARATE CONDUITS AS NEEDED.
6. ALL CONDUITS PENETRATING THE TENDER HOUSE WALLS SHALL PENETRATE THE WALLS THROUGH A TYPE 316 STAINLESS STEEL PIPE SLEEVE. ALL EXPOSED CAVITIES FROM CONDUIT PENETRATIONS SHALL BE FIRESTOPPED.
7. SUPPORT CONDUITS VERTICALLY ON WALLS AND HORIZONTALLY UNDER THE FLOOR SLAB AS SHOWN ON DRAWING 296. SUPPORT CONDUITS EVERY 5 FEET AS SHOWN. USE APPROPRIATE CONDUIT FITTING FOR CONDUIT BENDS AND TRANSITIONS. CONDUIT EXPANSION AND DEFLECTION FITTINGS SHALL BE USED AS REQUIRED IN THE SPECIAL PROVISIONS.

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142condschedl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
CONDUIT AND CABLE SCHEDULE 1 OF 3

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 306 OF 379

CONDUIT TAG	FROM	TO	# OF CONDUCTORS	CONDUIT SIZE	TYPE	REMARKS
C001	TC-ET	PB-11	4-1/C#10 AWG + #10GND 2-1/C#6 AWG + #6GND	2"	PVC RGS PVC SCH 80	E. TRAFFIC SIGNAL AND DRAWBRIDGE SIGN. SEE NOTE 2
C002	PB-11	PB-12	4-1/C#10 AWG + #10GND 2-1/C#6 AWG + #6GND	2"	PVC SCH 80	E. TRAFFIC SIGNAL AND DRAWBRIDGE SIGN
C003	PB-12	PB-13	4-1/C#10 AWG + #10GND 2-1/C#6 AWG + #6GND	2"	PVC SCH 80	E. TRAFFIC SIGNAL AND DRAWBRIDGE SIGN
C004	PB-13	E. TRAFFIC SIGNAL	4-1/C#10 AWG + #10GND	1-1/2"	PVC SCH 80	E. TRAFFIC SIGNAL
C005	PB-13	PB-16	2-1/C#6 AWG + #6GND	2"	PVC SCH 80	VIA PB-14 AND PB-15
C006	PB-16	E. DRAWBRIDGE SIGN	2-1/C#6 AWG + #6GND	1-1/2"	PVC SCH 80	E. DRAWBRIDGE SIGN
C007	TC-NETL	LS-NETLP, LS-NETLD	8-1/C#12 AWG + #12GND	1"	PVC RGS	NE TAIL LOCK LIMIT SWITCHES
C008	TC-SETL	LS-SETLP, LS-SETLD	8-1/C#12 AWG + #12GND	1"	PVC RGS	SE TAIL LOCK LIMIT SWITCHES
C009	TC-NES	LS-NELP, LS-NELD	8-1/C#12 AWG + #12GND	1"	PVC RGS	NE SPAN LOCK LIMIT SWITCHES
C010	TC-SES	LS-SELP, LS-SELD	8-1/C#12 AWG + #12GND	1"	PVC RGS	SE SPAN LOCK LIMIT SWITCHES
C011	TC-WT	PB-5	2-1/C#6 AWG + #6GND	2"	PVC SCH 80	W. DRAWBRIDGE SIGN
C012	PB-5	PB-4	2-1/C#6 AWG + #6GND	2"	PVC SCH 80	W. DRAWBRIDGE SIGN
C013	PB-4	PB-1	2-1/C#6 AWG + #6GND	2"	PVC SCH 80	VIA PB-2 AND PB-3
C014	PB-1	W. DRAWBRIDGE SIGN	2-1/C#4 AWG + #6GND	1-1/2"	PVC SCH 80	W. DRAWBRIDGE SIGN
C015	TC-WT	PB-8	4-1/C#10 AWG + #10GND	2"	PVC SCH 80	W. TRAFFIC SIGNAL (SEE NOTE 2)
C016	PB-8	PB-7	4-1/C#10 AWG + #10GND	2"	PVC SCH 80	W. TRAFFIC SIGNAL
C017	PB-7	PB-6	4-1/C#10 AWG + #10GND	2"	PVC SCH 80	W. TRAFFIC SIGNAL
C018	PB-6	W. TRAFFIC SIGNAL	4-1/C#10 AWG + #12GND	1-1/2"	PVC SCH 80	W. TRAFFIC SIGNAL (SEE NOTE 2)
C019	TC-NWTL	LS-NWTLP, LS-NWTLD	8-1/C#12 AWG + #12GND	1"	PVC RGS	NW TAIL LOCK LIMIT SWITCHES
C020	TC-SWTL	LS-SWTLP, LS-SWTLD	8-1/C#12 AWG + #12GND	1"	PVC RGS	SW TAIL LOCK LIMIT SWITCHES
C021	TC-NWS	LS-NWLP, LS-NWLD	8-1/C#12 AWG + #12GND	1"	PVC RGS	NW SPAN LOCK LIMIT SWITCHES
C022	TC-SWS	LS-SWLP, LS-SWLD	8-1/C#12 AWG + #12GND	1"	PVC RGS	SW SPAN LOCK LIMIT SWITCHES
C023	W. RELAY CABINET	WEST MCC	38-1/C#12 AWG + #8GND	2"	PVC-RGS	W. MCC CONTROL SIGNAL
C024	W. PLC CABINET	TC-WT	50-1/C#12 AWG + #8GND 2-1/C #6AWG + #6GND	4"	PVC-RGS	W. TRAFFIC CONTROLS
C025	E. ROTARY CAM LIMIT SWITCH	E. PLC CABINET	13-1/C#12 AWG + #12GND 1-#14 TSP	1-1/2"	PVC-RGS	E. ROTARY CAM SIGNALS AND RESOLVER POWER E. RESOLVER FEEDBACK
C026	E. RELAY CABINET	PIER 2 ANNUNCIATOR	ANNUNCIATOR CABLE	3/4"	PVC-RGS	PROVIDE AS PER MANUFACTURER'S RECOMMENDATION
C027	W. ROTARY CAM LIMIT SWITCH	W. PLC CABINET	13-1/C#12 AWG + #12GND 1-#14 TSP	1-1/2"	PVC-RGS	W. ROTARY CAM SIGNALS AND RESOLVER POWER W. RESOLVER FEEDBACK
C028	W. RELAY CABINET	PIER 1 ANNUNCIATOR	ANNUNCIATOR CABLE	3/4"	PVC-RGS	PROVIDE AS PER MANUFACTURER'S RECOMMENDATION
C029	TC-NETL	EAST PLC CABINET	8-1/C#12 AWG + #12GND	1"	PVC-RGS	NE TAIL LOCK LIMIT SWITCHES
C030	TC-SETL	EAST PLC CABINET	8-1/C#12 AWG + #12GND	1"	PVC-RGS	SE TAIL LOCK LIMIT SWITCHES
C031	EFDC	EAST PLC CABINET	8-1/C#12 AWG + #12GND	1"	PVC-RGS	SPAN LOCK LIMIT SWITCHES
C032	EAST HPU CABINET	EAST PLC CABINET	30-1/C#12 AWG + #12GND	2"	PVC-RGS	EAST HPU CONTROLS
C033	TC-NWTL	WEST PLC CABINET	8-1/C#12 AWG + #12GND	1"	PVC-RGS	NW TAIL LOCK LIMIT SWITCHES
C034	TC-SWTL	WEST PLC CABINET	8-1/C#12 AWG + #12GND	1"	PVC-RGS	SW TAIL LOCK LIMIT SWITCHES
C035	WFDC	WEST PLC CABINET	8-1/C#12 AWG + #12GND	1"	PVC-RGS	NW SPAN LOCK LIMIT SWITCHES
C036	WEST HPU CABINET	WEST PLC CABINET	30-1/C#12 AWG + #12GND	2"	PVC-RGS	WEST HPU CONTROLS
C042	EAST ATS CABINET	EAST RELAY CABINET	26-1/C#12 AWG + #8GND RS485 CABLE	4"	PVC-RGS	VIA PB-17 AND PB-18 (SEE NOTE 2)
C043	EAST ATS CABINET	E. GEN. ENCLOSURE	4-1/C#12 AWG + #8GND RS485 CABLE	1"	PVC/RGS	GENERATOR CONTROL AND ANNUNCIATION
C044	EAST MCC	E. PLC CABINET	1-CAT 6 ETHERNET CABLE 26-1/C#12 AWG + 2-#14 TSP	2"	PVC/RGS	POWER MONITOR UNIT COMMUNICATION OVERLOADS AND PUMP MOTOR CURRENT TRANSDUCER
C045	CONTROL DESK	EAST PLC CABINET	6-1/C#10 AWG + #10GND 4-CAT 6 ETHERNET CABLE	1-1/2"	PVC/RGS	CONTROL DESK CONTROL SIGNALS
C046	E. PLC CABINET	EAST RELAY CABINET	50-1/C#12 AWG + #8GND	2-1/2"	PVC-RGS	INTERPOSING RELAYS AND OTHER CONTROL WIRING
C047	WEST ATS CABINET	W. GEN. ENCLOSURE	4-1/C#12 AWG + #8GND RS485 CABLE	1"	PVC/RGS	GENERATOR CONTROL AND ANNUNCIATION
C048	E. RELAY CABINET	EAST MCC	38-1/C#12 AWG + #8GND	2"	PVC/RGS	E. MCC CONTROL SIGNALS
C049	E. PLC CABINET	TC-ET	50-1/C#12 AWG + #8GND 2-1/C #6AWG + #6GND	4"	PVC-RGS	E. TRAFFIC CONTROLS
C052	E. CCTV ENCLOSURE	CCTV CAMERA #1	HPOE	3/4"	PVC-RGS	CCTV CAMERA POWER AND COMMUNICATION
C053	E. CCTV ENCLOSURE	CCTV CAMERA #2	HPOE	3/4"	PVC-RGS	CCTV CAMERA POWER AND COMMUNICATION
C054	E. CCTV ENCLOSURE	CCTV CAMERA #3	HPOE	3/4"	PVC-RGS	CCTV CAMERA POWER AND COMMUNICATION
C055	W. CCTV ENCLOSURE	CCTV CAMERA #4	HPOE	3/4"	PVC-RGS	CCTV CAMERA POWER AND COMMUNICATION
C056	W. CCTV ENCLOSURE	CCTV CAMERA #5	HPOE	3/4"	PVC-RGS	CCTV CAMERA POWER AND COMMUNICATION
C057	W. PLC CABINET	WEST RELAY CABINET	50-1/C#12 AWG + #8GND	2-1/2"	PVC-RGS	INTERPOSING RELAYS AND OTHER CONTROL WIRING
C058	WEST MCC	WEST PLC CABINET	6-1/C#10 AWG + #10GND 4-CAT 6 ETHERNET CABLE	2"	PVC/RGS	POWER MONITOR UNIT COMMUNICATION OVERLOADS AND PUMP MOTOR CURRENT TRANSDUCER
C059	EMDC	TC-NES	16-1/C#12 AWG + #12GND	1"	PVC-RGS	NE SPAN LOCK LIMIT SWITCHES
C060	TC-NES	TC-SES	8-1/C#12 AWG + #12GND	1"	PVC-RGS	SE SPAN LOCK LIMIT SWITCHES
C061	WMDC	TC-NWS	16-1/C#12 AWG + #12GND	1"	PVC-RGS	NW SPAN LOCK LIMIT SWITCHES
C062	TC-NWS	TC-SWS	8-1/C#12 AWG + #12GND	1"	PVC-RGS	SW SPAN LOCK LIMIT SWITCHES
C063	E. PLC CABINET	GATE CONTROL DESK	50-1/C#12 AWG + #12GND	2"	PVC-RGS	GATE REMOTE CONTROL AND INDICATION
C064	W. CCTV ENCLOSURE	CCTV CAMERA #6	HPOE	1"	PVC-RGS	MULTI-MODE FIBER OPTIC
C065	W. ATS CABINET	WEST RELAY CABINET	26 - 1/C #12AWG + #8GND RS485 CABLE	4"	PVC-RGS	VIA PB-19

NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. PVC SCHEDULE 80 CONDUIT SHALL BE USED IN ALL UNDERGROUND TRENCH/DUCTBANK AND PVC-RGS CONDUIT SHALL BE USED ELSEWHERE, UNLESS OTHERWISE NOTED. TRANSITION FROM PVC-RGS TO PVC-SCHEDULE 80 IN A JUNCTION BOX.
3. ALL CONDUITS PENETRATING THE TENDER HOUSE WALLS SHALL PENETRATE THE WALLS THROUGH A 316 STAINLESS STEEL PIPE SLEEVE AND HOLES SHALL BE FILLED AND FIRE-STOPPED.
4. INSTALL CONDUIT SUPPORTS EVERY 5 FEET.
5. ALL CONDUITS PENETRATING THE TENDER HOUSE WALLS SHALL PENETRATE THE WALLS THROUGH A TYPE 316 STAINLESS STEEL PIPE SLEEVE. ALL EXPOSED CAVITIES FROM CONDUIT PENETRATIONS SHALL BE FIRESTOPPED.
6. SUPPORT CONDUITS VERTICALLY ON WALLS AND HORIZONTALLY UNDER THE FLOOR SLAB AS SHOWN ON DRAWING 296. SUPPORT CONDUITS EVERY 5 FEET AS SHOWN. USE APPROPRIATE CONDUIT FITTING FOR CONDUIT BENDS AND TRANSITIONS. CONDUIT EXPANSION AND DEFLECTION FITTINGS SHALL BE USED AS REQUIRED IN THE SPECIAL PROVISIONS.

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42condsched2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
CONDUIT AND CABLE SCHEDULE 2 OF 3

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 307 OF 379

CONDUIT TAG	FROM	TO	# OF CONDUCTORS	CONDUIT SIZE	TYPE	REMARKS
P161	HP-TH	ELECTRIC HEATER	4-1/C#10AWG + #10GND	1"	PVC RGS	TENDER HOUSE ELECTRIC HEATERS
P162	HP-TH	E. ATS CABINET	2-1/C#2AWG + #8GND	1-1/2"	PVC RGS	CONTROL HOUSE RANGE RECEPTACLE
P163	LP-TH	EXISTING LOADS	22-1/C#10 AWG + #10GND	2"	PVC RGS	PVC-RGS (SEE NOTE 3)
P164	GATE CONTROL DESK	CONTROL DESK	5-1/C#10 AWG + #10GND	1"	PVC RGS	POWER FOR REMOTE GATE CONTROL DESK
P165	LP-TH	PIER 2 GEN ENCLOSURE	6-1/C#10 AWG + #10GND	1"	PVC RGS	GEN ENCL EXT LTG, , BATTERY CHARGER, GEN HTR
P166	LP-TH	E. LOAD BANK CTRLLER	2-1/C#10 AWG + #10GND	1"	PVC RGS	LOAD BANK CONTROL POWER
P201	LP-2	WFDC	2-1/C#10 AWG + #10GND	1"	PVC RGS	W. SPAN LOCK AREA ACCESS LIGHTING
P202	LP-2	LIGHTING CIRCUITS	6-1/C#10 AWG + #10GND	1"	PVC RGS	LIGHTING CIRCUITS (SEE NOTE 4)
P203	LP-2	EF-1, EF-2 & EF-3	6-1/C#10 AWG + #10GND	1"	PVC RGS	EXHAUST FANS EF-1, EF-2 & EF-3
P204	LP-2	EXIT/EMERGENCY LTG	2-1/C#10 AWG + #10GND	1"	PVC RGS	EXIT/EMERGENCY LIGHTING
P205	LP-2	RECEPTACLES	4-1/C#10 AWG + #10GND	1"	PVC RGS	RECEPTACLES
P206	LP-2	DC POWER SUPPLY	2-1/C#10 AWG + #10GND	1"	PVC RGS	WEST RESOLVER DC POWER SUPPLY
P207	LP-2	OIL/WATER SEPARATOR	2-1/C#10 AWG + #10GND	1"	PVC RGS	W. BASCULE PIT OIL/WATER SEPARATOR
P208	HP-2	UH-1 THRU UH-7	9-1/C#10AWG + #10GND	1-1/2"	PVC RGS	UNIT HEATERS UH-1 THRU UH-7 (SEE NOTE 5)
P209	WEST UTILITY POLE	WEST CT CABINET	4-1/C#250KCMIL AWG + #2GND	4"	PVC SCH 80	USE TYPE USE WIRE
P210	WEST CT CABINET	WEST DS-SERV	4-1/C#250KCMIL AWG + #2GND	4"	PVC SCH 80	USE TYPE USE WIRE
P211	WEST DS-SERV	WEST ATS CABINET	4-1/C#250KCMIL AWG + #2GND	4"	PVC SCH 80	WEST UTILITY POWER
P212/P212A	WEST ATS CABINET	WEST MCC	4-1/C#250KCMIL AWG + #2GND 2-1/C#10AWG + #10GND	2-4"	PVC SCH 80 PVC/RGS	RUN A SPARE 4" CONDUIT (P212A) FROM THE ATS TO THE MCC. RUN THE WEST LOAD BANK CONTROLLER POWER CONDUCTORS FROM LP-2 VIA THE MCC CONDUIT (P212) TO THE LOAD BANK
P213	WEST ATS CABINET	PIER 1 GEN. ENCL.	4-1/C#250KCMIL AWG + #2GND	4"	PVC RGS	STANDBY POWER
P214	PIER 1 GEN. ENCL.	CB-W-LB	4-1/C#250KCMIL AWG + #2GND	4"	PVC RGS	LOAD BANK CIRCUIT BREAKER
P215	CB-W-LB	WEST LOAD BANK	4-1/C#250KCMIL AWG + #2GND	4"	PVC RGS	WEST LOAD BANK POWER VIA LOAD BANK CONTROLLER, SEE NOTE 9
P216	W LOAD BANK CTRL	WEST LOAD BANK	20-1/C#10AWG + #10GND	2"	PVC RGS	WEST LOAD BANK CONTROL, SEE NOTE 9
P217	LP-2	W LOAD BANK CTRL	2-1/C#10AWG + #10GND	1"	PVC RGS	WEST LOAD BANK CONTROL POWER VIA WEST MCC
P218	LP-2	W. RELAY CABINET	4-1/C# 8AWG + #10GND	1-1/2"	PVC RGS	WEST CONTROL CIRCUIT POWER AND MTR HTRS
P219	LP-2	W. PLC CABINET	2-1/C# 8AWG + #10GND	1"	PVC RGS	WEST PLC CABINET POWER
PC01	TC-ET	PB-11	34-1/C#10 AWG + #10GND	2-1/2"	PVC SCH 80	E. ONCOMING GATES (SEE NOTE 2)
PC02	PB-11	ENBG	22-1/C#10 AWG + #10GND	2"	PVC SCH 80	E. ONCOMING BARRIER GATE
PC03	PB-11	PB-12	22-1/C#10 AWG + #10GND	2"	PVC SCH 80	E. ONCOMING WARNING GATE
PC04	PB-12	ENWG	22-1/C#10 AWG + #10GND	2"	PVC SCH 80	E. ONCOMING WARNING GATE
PC05	TC-ET	PB-09	34-1/C#10 AWG + #10GND	2-1/2"	PVC RGS/ PVC SCH 80	E. OFFGOING GATES (SEE NOTE 2)
PC06	PB-9	EFBG	22-1/C#10 AWG + #10GND	2"	PVC SCH 80	E. OFFGOING BARRIER GATE
PC07	PB-9	PB-10	22-1/C#10 AWG + #10GND	2"	PVC SCH 80	E. OFFGOING WARNING GATE
PC08	PB-9	EFBG	22-1/C#10 AWG + #10GND	2"	PVC SCH 80	E. OFFGOING WARNING GATE
PC09-PC12	NOT USED	NOT USED	-	-	-	-
PC13	TC-WT	PB-5	34-1/C#10 AWG + #10GND	2-1/2"	PVC RGS/ PVC SCH 80	W. ONCOMING GATES (SEE NOTE 2)
PC14	TC-WT	PB-8	34-1/C#10 AWG + #10GND	2-1/2"	PVC RGS/ PVC SCH 80	W. OFFGOING GATES (SEE NOTE 2)
PC15	PB-5	PB-4	22-1/C#10 AWG + #10GND	2"	PVC SCH 80	W. ONCOMING WARNING GATE
PC16	PB-4	WNWG	22-1/C#10 AWG + #10GND	2"	PVC SCH 80	W. ONCOMING WARNING GATE
PC17	PB-5	WNBG	22-1/C#10 AWG + #10GND	2"	PVC SCH 80	W. ONCOMING BARRIER GATE
PC18	PB-8	WFBG	22-1/C#10 AWG + #10GND	2"	PVC SCH 80	W. OFFGOING BARRIER GATE
PC19	PB-8	PB-7	22-1/C#10 AWG + #10GND	2"	PVC SCH 80	W. OFFGOING WARNING GATE
PC20	PB-7	WFWG	22-1/C#10 AWG + #10GND	2"	PVC SCH 80	W. OFFGOING WARNING GATE
PC21	EMDC	TC-NES	18-1/C#10 AWG + #10GND	1-1/2"	PVC RGS	NE SPAN LOCK AND LIGHT POWER
PC22	TC-NES	TC-SES	9-1/C#10 AWG + #10GND	1-1/2"	PVC RGS	SE SPAN LOCK AND LIGHT POWER
PC23	WMDC	TC-NWS	18-1/C#10 AWG + #10GND	1-1/2"	PVC RGS	NW SPAN LOCK AND LIGHT POWER
PC24	TC-NWS	TC-SWS	9-1/C#10 AWG + #10GND	1-1/2"	PVC RGS	SW SPAN LOCK AND LIGHT POWER
D1	EFDC	EMDC	1-20/C#10 AWG + #10GND	N/A	DROOP CABLE	EAST SPAN LOCK MOTOR & HEATER POWER, ACCESS LIGHTING (SEE NOTE 6)
D2	EFDC	EMDC	1-20/C#12 AWG + #12GND	N/A	DROOP CABLE	EAST SPAN LOCK LIMIT SWITCHES & NAVIGATION LIGHTING (SEE NOTE 6)
D3	WFDC	WMDC	1-20/C#10 AWG + #10GND	N/A	DROOP CABLE	WEST SPAN LOCK MOTOR & HEATER POWER, ACCESS LIGHTING (SEE NOTE 6)
D4	WFDC	WMDC	1-20/C#12 AWG + #12GND	N/A	DROOP CABLE	WEST SPAN LOCK LIMIT SWITCHES & NAVIGATION LIGHTING (SEE NOTE 6)

NOTES

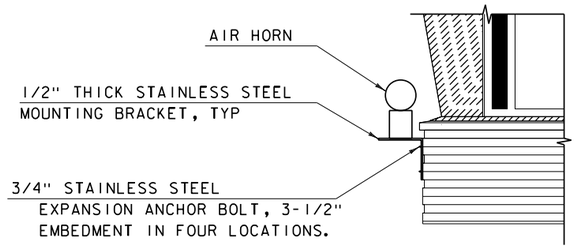
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. ALL CONDUIT INSTALL IN AN UNDERGROUND TRENCH SHALL BE PVC SCHEDULE 80 AND PVC-RGS ELSEWHERE, UNLESS OTHERWISE NOTED. TRANSITION FROM PVC-RGS TO PVC-SCHEDULE 80 IN A JUNCTION BOX.
3. RUN CONDUCTORS IN SEPARATE CONDUITS TO EXISITING LOADS NEEDED.
4. RUN LIGHTING CIRCUIT IN SEPARATE CONDUITS AS NEEDED.
5. RUN CONDUCTORS TO ELECTRIC UNIT HEATERS IN SEPARATE CONDUITS AS NEEDED.
6. DROOP CABLES SHALL BE FURNISHED WITH A MINIMUM OF 25% SPARE CONDUCTORS.
7. ALL CONDUITS PENETRATING THE TENDER HOUSE WALLS SHALL PENETRATE THE WALLS THROUGH A TYPE 316 STAINLESS STEEL PIPE SLEEVE. ALL EXPOSED CAVITIES FROM CONDUIT PENETRATIONS SHALL BE FIRESTOPPED.
8. SUPPORT CONDUITS VERTICALLY ON WALLS AND HORIZONTALLY UNDER THE FLOOR SLAB AS SHOWN ON DRAWING 296. SUPPORT CONDUITS EVERY 5 FEET AS SHOWN. USE APPROPRIATE CONDUIT FITTING FOR CONDUIT BENDS AND TRANSITIONS. CONDUIT EXPANSION AND DEFLECTION FITTINGS SHALL BE USED AS REQUIRED IN THE SPECIAL PROVISIONS.
9. HIGH TEMPERATURE SILICON BRAID TYPE WIRING (RATED FOR 200°C) SHALL BE USED BETWEEN THE LOAD BANK CIRCUIT BREAKER, LOAD BANK CONTROLLER AND LOAD BANK.

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

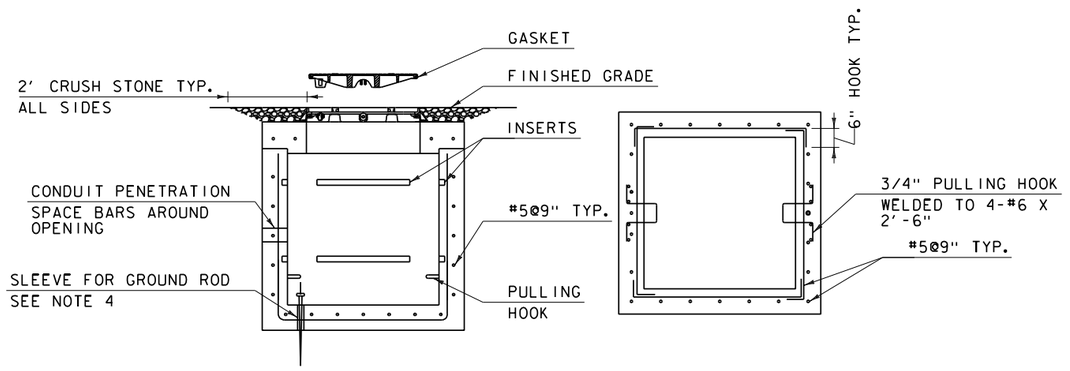
FILE NAME: z12bl42condsched3.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: Y. ADELEKAN
CONDUIT AND CABLE SCHEDULE 3 OF 3

PLOT DATE: 2/6/2018
DRAWN BY: C. SHEN
CHECKED BY: K. HAJJEH
SHEET 308 OF 379



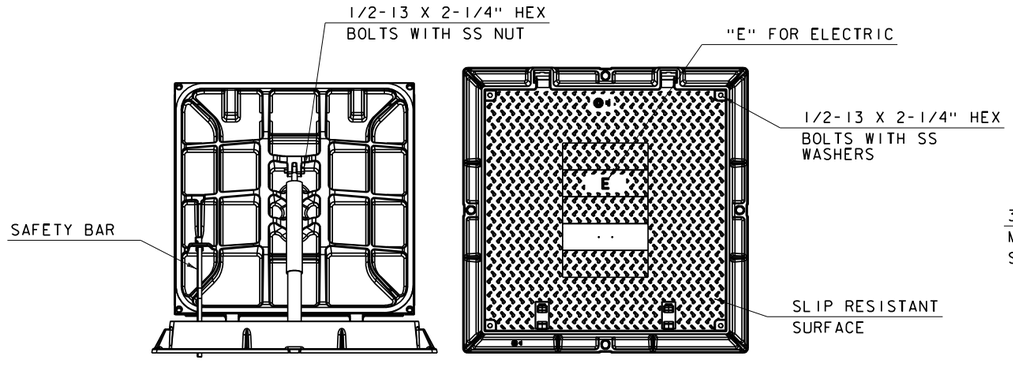
AIR HORN MOUNTING DETAIL
(ELEVATION VIEW)

SCALE: NTS



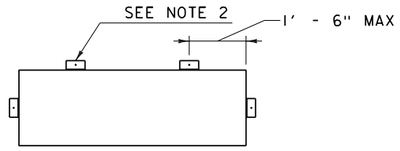
BOTTOM AND TOP SLAB SECTION DETAIL
(ELEVATION AND PLAN VIEW)

SCALE: NTS



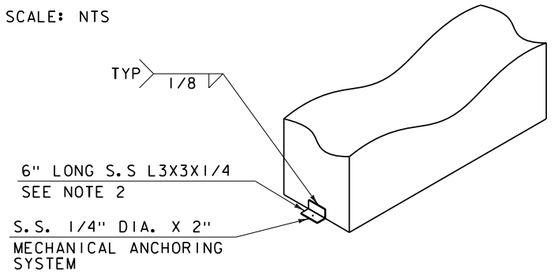
TYPICAL HANDHOLE FRAME AND COVER DETAIL
(ELEVATION AND PLAN VIEW)

SCALE: NTS



TYPICAL FREE STANDING CABINET ANCHOR DETAILS
(PLAN VIEW)

SCALE: NTS

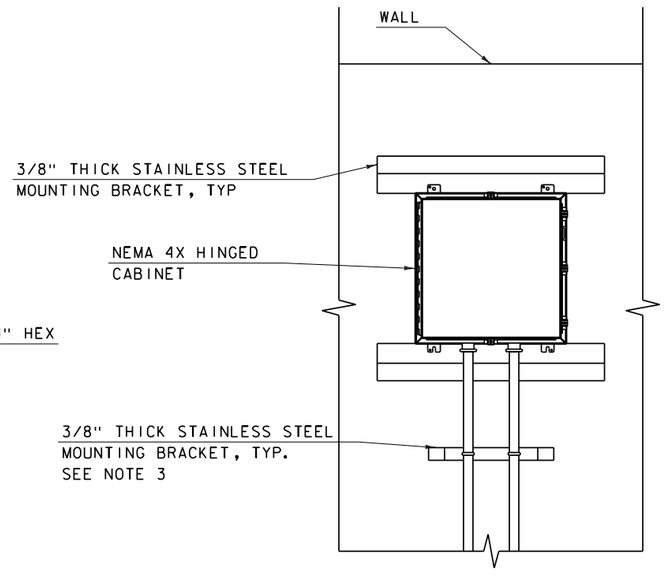


TYPICAL FREE STANDING CABINET ANCHOR DETALS
(ISOMETRIC VIEW)

SCALE: NTS

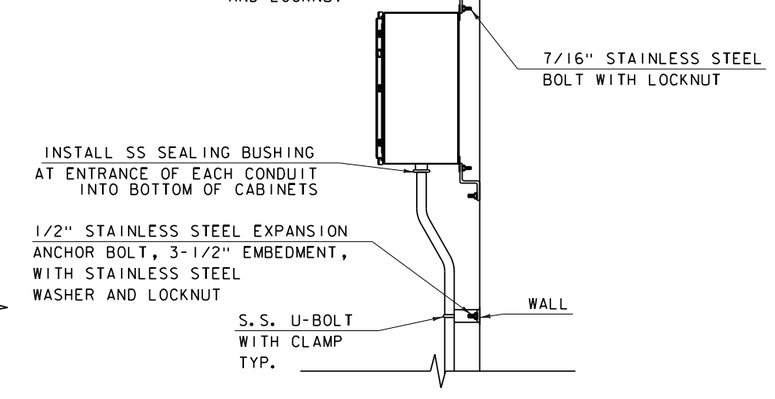
NOTES

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET NO. 236 AND 237.
2. ALL FREE STANDING CABINETS SHALL BE ATTACHED TO THE FLOOR AS PER THE DETAILS SHOWN. SUBMIT MOUNTING DETAIL FOR APPROVAL.
3. INSTALL SUPPORTS EVERY 5 FEET ON VERTICAL RUNS.
4. ALL METAL PIECES INCLUDING THE LID SHALL BE GROUNDED AND BONDED TO THE GROUND ROD.
5. ALL CONDUIT ENTRIES INTO ALL CABINETS AND EQUIPMENT SHALL BE BOTTOM ENTRY UNLESS ADVISED OTHERWISE.



TYPICAL WALL MOUNTED CABINET
FRONT ELEVATION

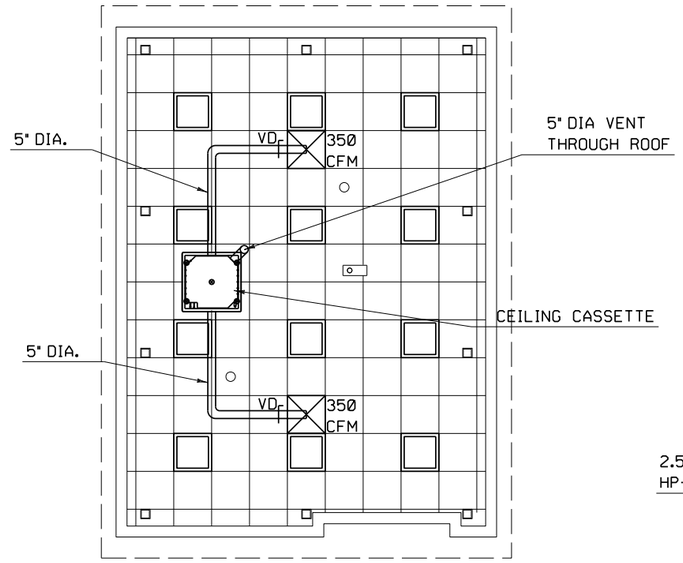
SCALE: NTS



TYPICAL WALL MOUNTED CABINET
SIDE ELEVATION

SCALE: NTS

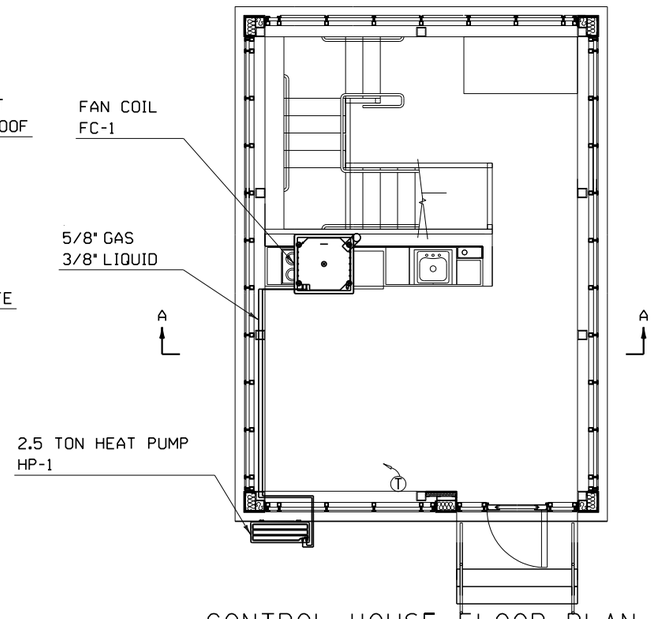
PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12bl42condmntdet.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: J. TAYLOR
DESIGNED BY: Y. ADELEKAN	CHECKED BY: K. HAJJEH
HANDHOLE AND MISC. CABINET MOUNTING DET.	SHEET 309 OF 379



CONTROL HOUSE REFLECTED CEILING PLAN

SCALE 1/4" = 1'-0"

4' 0 4'



CONTROL HOUSE FLOOR PLAN

SCALE 1/4" = 1'-0"

4' 0 4'

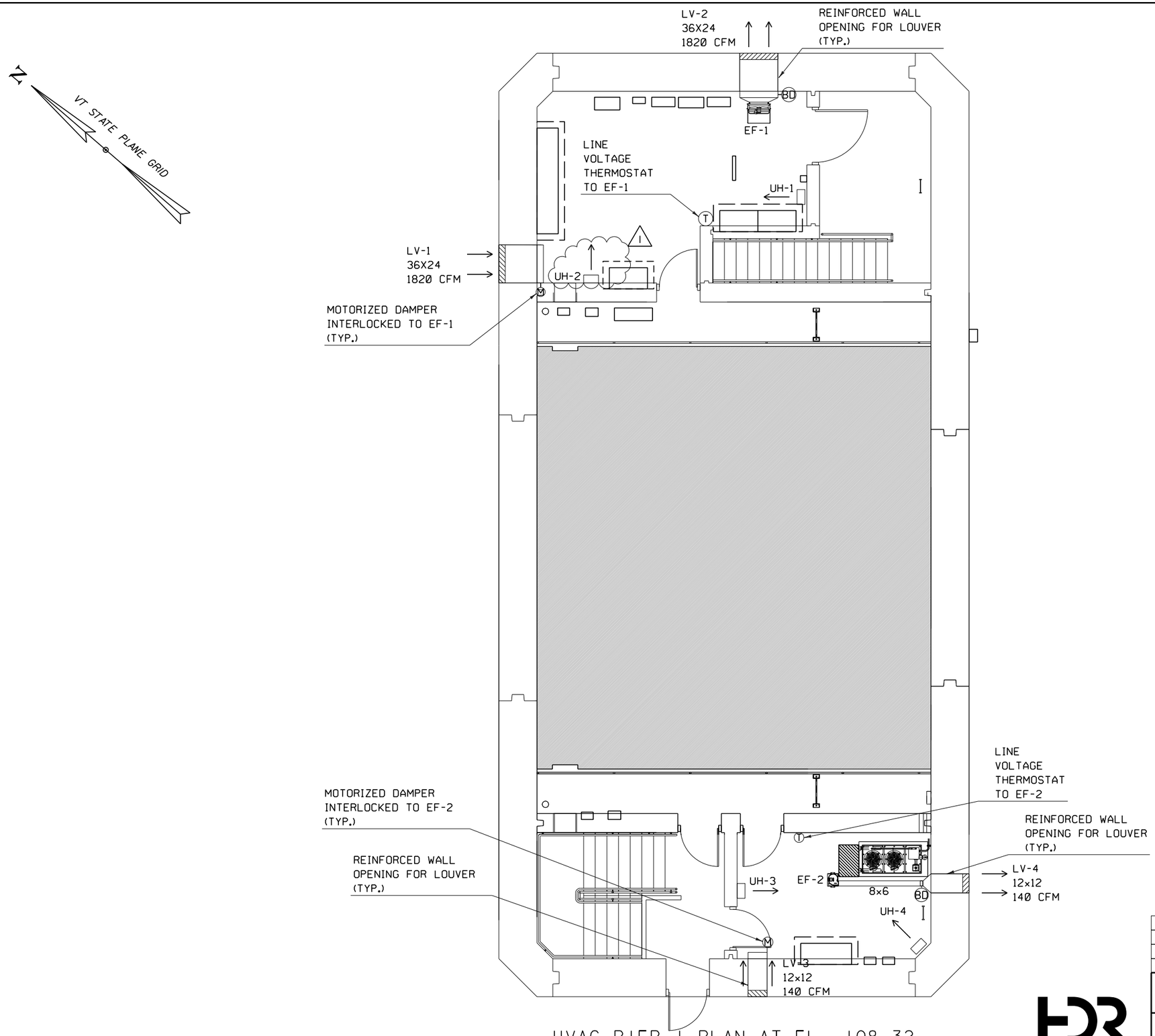
SECTION A-A

SCALE 1/4" = 1'-0"

4' 0 4'

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)

FILE NAME: z12b142_HVACch.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: A. LEM
DESIGNED BY: A. LEM	CHECKED BY: M. WHALEN
HVAC CONTROL HOUSE	SHEET 310 OF 379



HVAC PIER 1 PLAN AT EL. 108.32

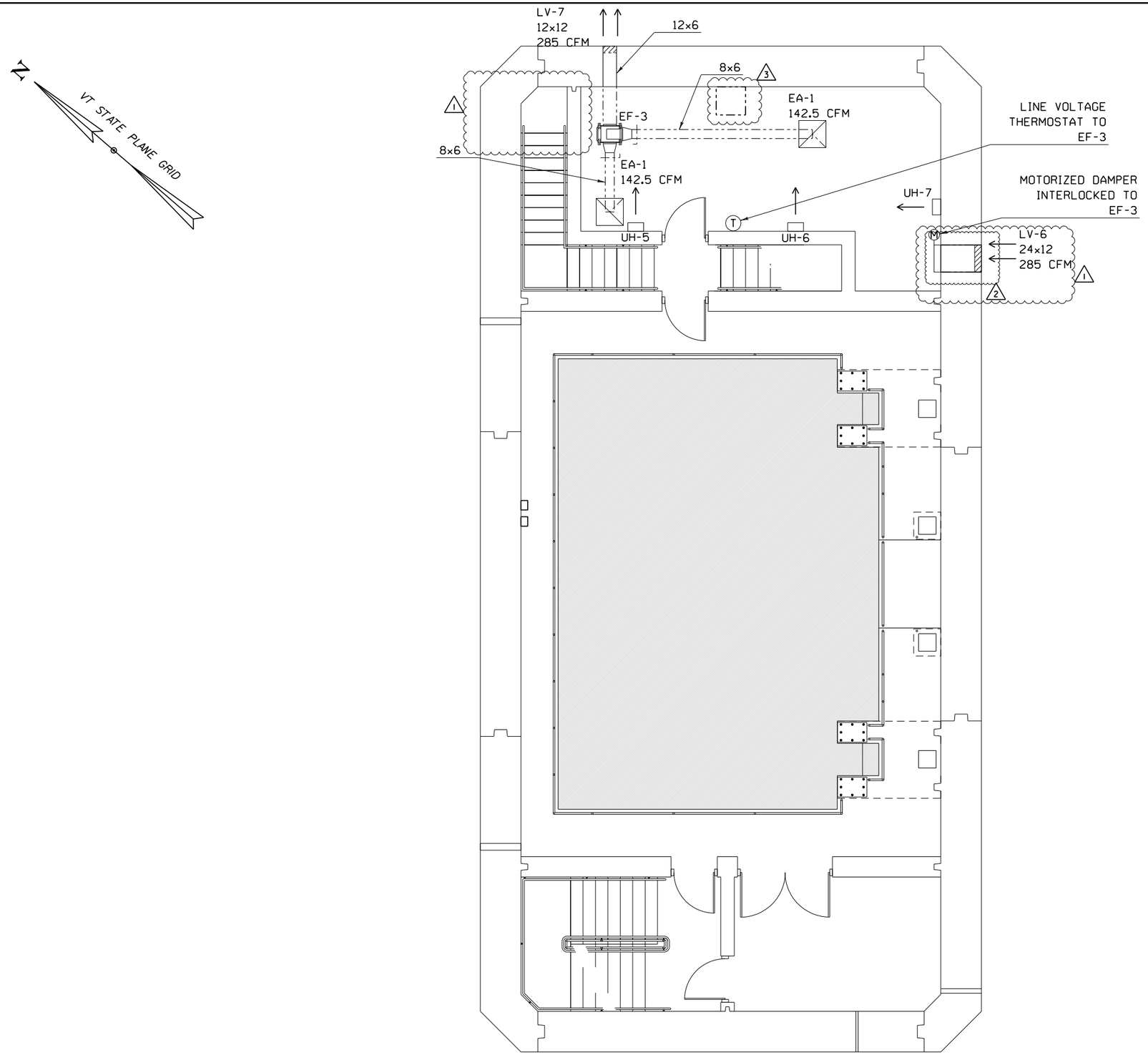
SCALE 1/4" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
1	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142plhvaclevel1.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: A. LEM
HVAC PIER 1PLAN AT EL.108.32

PLOT DATE: 2/6/2018
DRAWN BY: A. LEM
CHECKED BY: M. WHALEN
SHEET 311 OF 379



HVAC PIER 1 PLAN AT EL.99.80

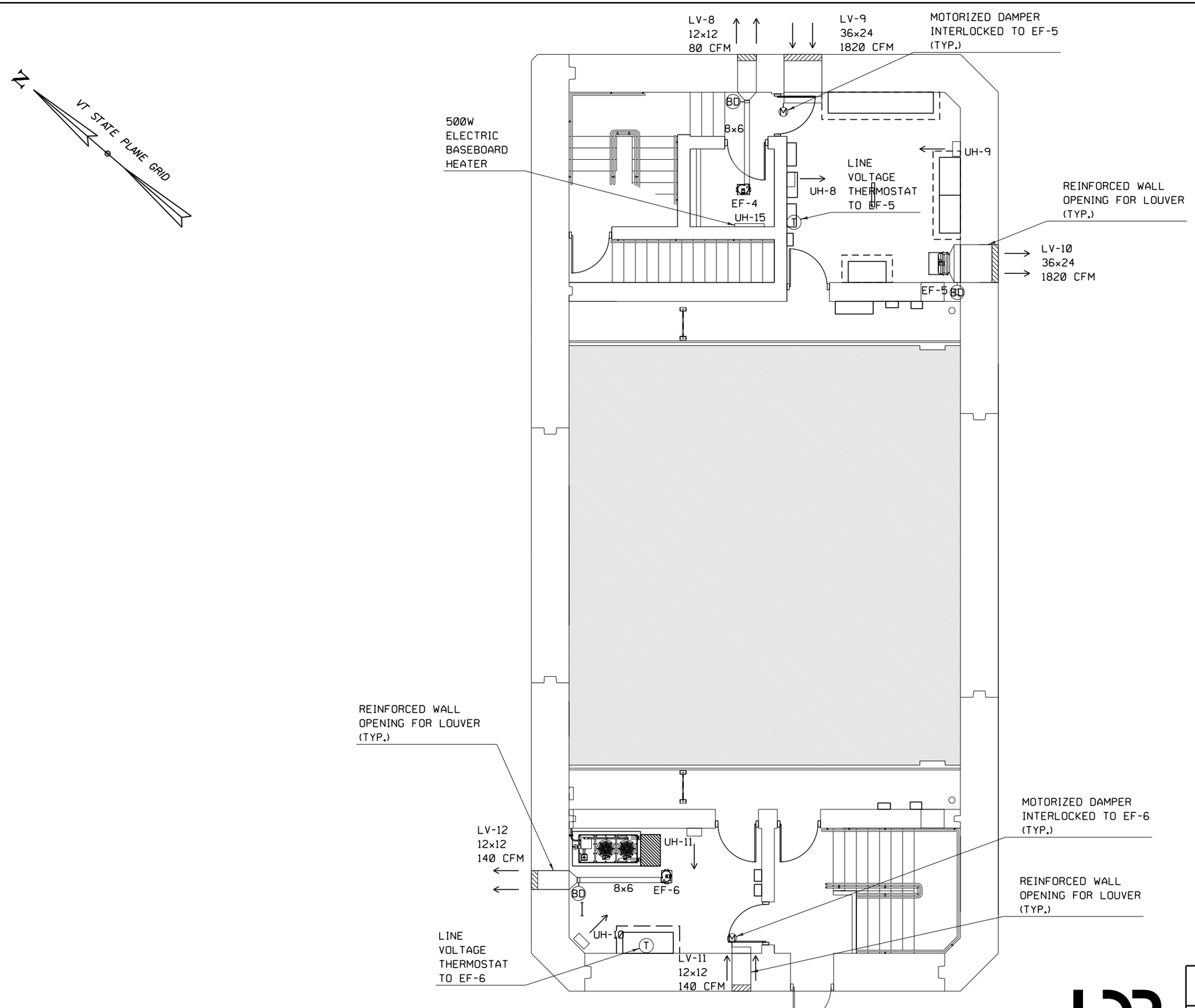
SCALE 1/4" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
3	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG
2	04-29-2020	POST-AWARD RFI'S 037-114	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P1hvaclevel2.dgn
PROJECT LEADER: T. FRENCH
DESIGNED BY: A. LEM
HVAC PIER 1PLAN AT EL.98.99

PLOT DATE: 2/20/2018
DRAWN BY: A. LEM
CHECKED BY: M. WHALEN
SHEET 312 OF 379

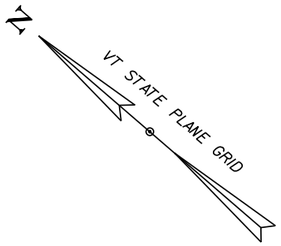


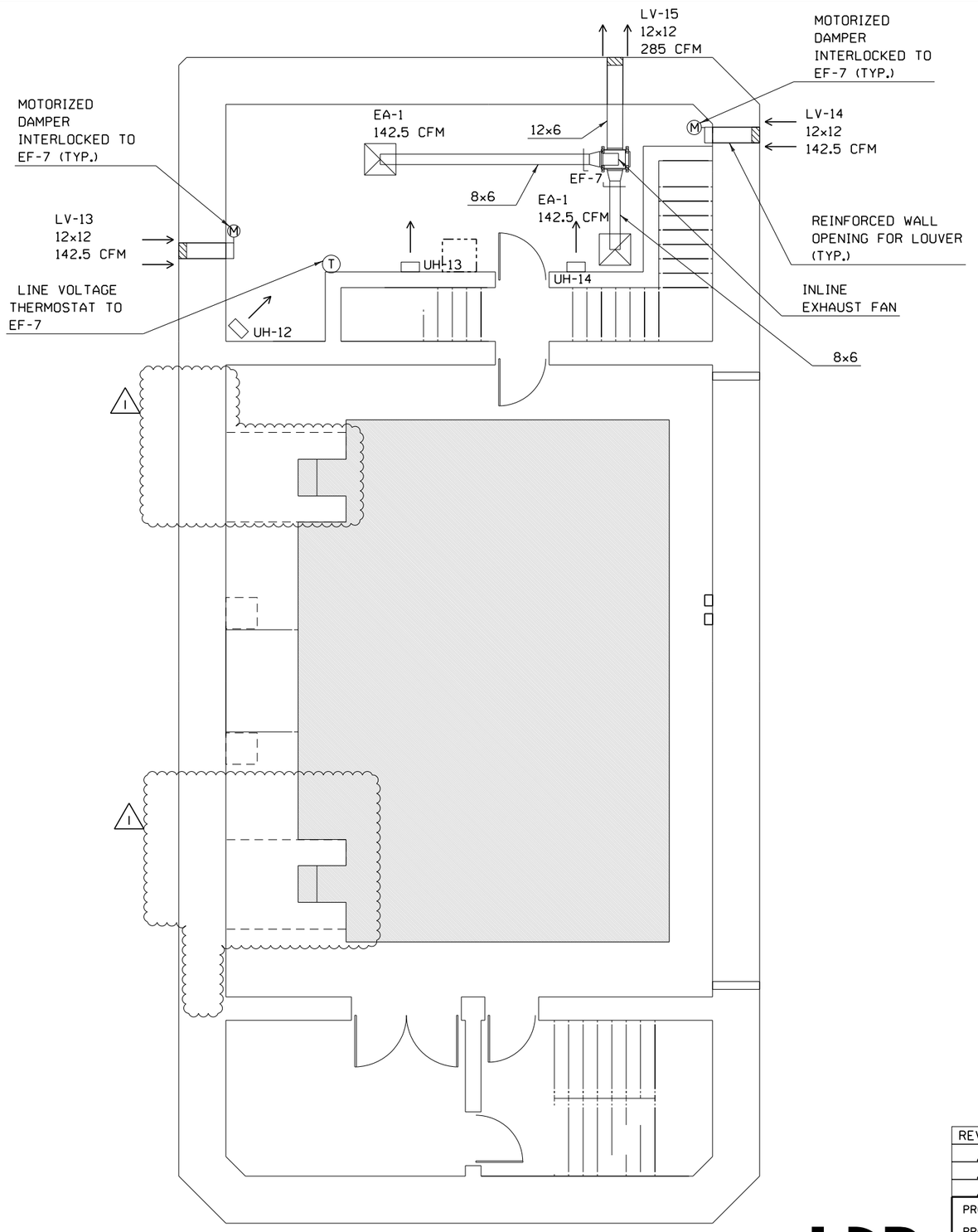
VT STATE PLANE GRID

HVAC PIER 2 PLAN AT EL. 108.32

SCALE 1/4" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142p2hvaclevel1.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: A. LEM
DESIGNED BY: A. LEM	CHECKED BY: M. WHALEN
HVAC PIER 2 PLAN AT EL.108.32	SHEET 313 OF 379





HVAC PIER 2 PLAN AT EL. 99.80

SCALE 1/4" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE

PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P2hvaclevel2.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: A. LEM
HVAC PIER 2 PLAN AT EL.98.99

PLOT DATE: 2/6/2018
DRAWN BY: A. LEM
CHECKED BY: M. WHALEN
SHEET 314 OF 379

UNIT HEATER SCHEDULE

MARK	SERVES	CFM	E.A.T. (DEG F)	L.A.T. (DEG F)	HEATING OUTPUT (BTUH)	ELECTRICAL DATA					MOUNTING HEIGHT (FT)	THROW (FT)	BASIS OF DESIGN	REMARKS		
						KW	VOLTS	PH	HZ	AMPS						
UH-1	PIER 1 ELECTRICAL ROOM	350	70	97	10,200	3	480	3	60	3.6	8	12	QMARK MUH-03	1	2	
UH-2	PIER 1 ELECTRICAL ROOM	350	70	97	10,200	3	480	3	60	3.6	8	12	QMARK MUH-03	1	2	
UH-3	PIER 1 MECHANICAL ROOM	350	70	97	10,200	3	480	3	60	3.6	8	12	QMARK MUH-03	1	2	
UH-4	PIER 1 MECHANICAL ROOM	350	70	97	10,200	3	480	3	60	3.6	8	12	QMARK MUH-03	1	2	
UH-5	PIER 1 STORAGE ROOM	350	70	97	10,200	3	480	3	60	3.6	8	12	QMARK MUH-03	1	2	
UH-6	PIER 1 STORAGE ROOM	350	70	97	10,200	3	480	3	60	3.6	8	12	QMARK MUH-03	1	2	
UH-7	PIER 1 STORAGE ROOM	350	70	97	10,200	3	480	3	60	3.6	8	12	QMARK MUH-03	1	2	
UH-8	PIER 2 ELECTRICAL ROOM	350	70	97	10,200	3	480	3	60	3.6	8	12	QMARK MUH-03	1	2	
UH-9	PIER 2 ELECTRICAL ROOM	350	70	97	10,200	3	480	3	60	3.6	8	12	QMARK MUH-03	1	2	
UH-10	PIER 2 MECHANICAL ROOM	350	70	97	10,200	3	480	3	60	3.6	8	12	QMARK MUH-03	1	2	
UH-11	PIER 2 MECHANICAL ROOM	350	70	97	10,200	3	480	3	60	3.6	8	12	QMARK MUH-03	1	2	
UH-12	PIER 2 STORAGE ROOM	350	70	97	10,200	3	480	3	60	3.6	8	12	QMARK MUH-03	1	2	
UH-13	PIER 2 STORAGE ROOM	350	70	97	10,200	3	480	3	60	3.6	8	12	QMARK MUH-03	1	2	
UH-14	PIER 2 STORAGE ROOM	350	70	97	10,200	3	480	3	60	3.6	8	12	QMARK MUH-03	1	2	
UH-15	BATHROOM	-	70	97	1706	0.5	277	1	60	1.8	FLOOR	12	QMARK CBD507	1	2	

REMARKS
1. ELECTRIC UNIT HEATER W/EPOXY COATED CABINET, FACTORY DISCONNECT, LINE VOLTAGE CONTROL, ADJUSTABLE ALUMINUM LOUVERS, AND HIGH LIMIT RESET.
2. APPROVED EQUAL MANUFACTURERS: TRANE, CHROMALOX

UNIT HEATER SEQUENCE OF OPERATIONS
1. ALL UNIT HEATERS SHALL TURN ON IN THE EVENT THE TEMPERATURE IN THE ROOM DROPS BELOW 55 DEGREES.

HEAT PUMP UNIT SCHEDULE

MARK	LOCATION	NOMINAL TON	TOTAL AIRFLOW (CFM)	COOLING DATA					HEATING DATA			ELECTRICAL DATA			BASIS OF DESIGN	REMARKS		
				TOTAL CAP. MBH	SENS. CAP. MBH	E.A.T. DB/WB (°F)	KW INPUT	MIN. EER	TOTAL CAP. MBH	KW INPUT	MIN. COP	VOLT	PH	HZ				
HP-1	CONTROL HOUSE	2.5	705	30.0	12.0	95/75	3.76	8.0	32.0	3.21	12.0	208/230	1	60	MITSUBISHI PUZ-HA36NHA4	1	2	3

REMARKS
1. MOUNTING BASE. MOUNTING PAD.
2. INDOOR UNIT RECEIVES POWER FROM OUTDOOR UNIT THROUGH FIELD SUPPLIED INTERCONNECT WIRING.
3. UNIT SHALL MEET ITS RATED HEATING CAPACITY AT A 0°F OUTDOOR AIR TEMPERATURE.

FAN COIL UNIT SCHEDULE

MARK	LOCATION	TYPE	CFM	COIL DATA							HEATING (MBH)	MOTOR DATA			BASIS OF DESIGN	REMARKS				
				MEDIA	TC (MBH)	SC (MBH)	AIR ON		AIR OFF			VOLT	PH	HZ						
							DB	WB	DB	WB										
FC-1	CONTROL HOUSE	CEILING MOUNTED	570-640-740	R-410A	30.0	12.0	80	67	55	55	32.0	208/230	1	60	MITSUBISHI PLA-A30BA4	1	2	3	4	5

REMARKS
1. WALL MOUNTED CONTROLLER.
2. INDOOR UNIT RECEIVES POWER FROM OUTDOOR UNIT THROUGH FIELD SUPPLIED INTERCONNECT WIRING.
3. HIGH EFFICIENCY FILTER.
4 OUTSIDE AIR KIT.
5. UNIT TO BE CONTROLLED BY A LOCAL DIGITAL PROGRAMMABLE THERMOSTAT.

HDR

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42hvacsch.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: A. LEM
HVAC SCHEDULE 1

PLOT DATE: 2/6/2018
DRAWN BY: A. LEM
CHECKED BY: M. WHALEN
SHEET 315 OF 379

EXHAUST FAN SCHEDULE

MARK	SERVES	FAN DATA					ELECTRICAL					BASIS OF DESIGN	REMARKS			
		TYPE	CFM	EXT. S.P. (IN. W.G.)	OPENING (IN.)	DRIVE	RPM	HP	VOLTS	PH	HZ					
EF-1	PIER 1 ELECTRICAL ROOM	WALL MOUNT EXHAUST FAN	1820	0.10	21-¼"x21-¼"	DIRECT	1300	1/4	115	1	60	COOK 14XP32D132	1	2	3	5
EF-2	PIER 1 MECHANICAL ROOM	CEILING MOUNT EXHAUST FAN	140	0.125	6" DIA	DIRECT	1075	1/4	115	1	60	COOK GC-148	1	2	4	5
EF-3	PIER 1 STORAGE ROOM	INLINE EXHAUST FAN	285	0.25	15"x15"	BELT	1577	1/4	115	1	60	COOK BSQ 70-4	1	2	4	5
EF-4	BATHROOM	CEILING MOUNT EXHAUST FAN	80	0.125	6" DIA	DIRECT	750	1/8	115	1	60	COOK GC-128	1	2	4	
EF-5	PIER 2 ELECTRICAL ROOM	WALL MOUNT EXHAUST FAN	1820	0.10	21-¼"x21-¼"	DIRECT	1300	1/4	115	1	60	COOK 14XP32D132	1	2	3	5
EF-6	PIER 2 MECHANICAL ROOM	CEILING MOUNT EXHAUST FAN	140	0.125	6" DIA	DIRECT	1075	1/4	115	1	60	COOK GC-148	1	2	4	5
EF-7	PIER 2 STORAGE ROOM	INLINE EXHAUST FAN	285	0.25	15"x15"	BELT	1577	1/4	115	1	60	COOK BSQ 70-4	1	2	4	5

REMARKS
1. FURNISH AND INSTALL FAN WITH DAMPER AND WITH CORRESPONDING WALL LOUVER.
2. APPROVED EQUAL MANUFACTURERS: GREENHECK, PENN BARRY.
3. WALL MOUNT BRACKET.
4. SUSPEND FROM CEILING.
5. UNIT IS TO BE CONTROLLED BY A REVERSE ACTING LINE VOLTAGE THERMOSTAT.

EXHAUST FAN SEQUENCE OF OPERATIONS
1. EXHAUST FANS EF-1, EF-2, EF-3, EF-5, EF-6 AND EF-7 SHALL TURN ON WHEN THE TEMERATURE IN THE ROOM REACHES ABOVE 90 DEGREES.
2. EXHAUST FAN EF-4 SHALL TURN ON WITH THE BATHROOM LIGHT.

LOUVER SCHEDULE

MARK	SERVES	AIR FLOW CFM	SIZE (LxH) IN.	MAXIMUM PERMITTED VELOCITY (FPM)	REMARKS			
LV-1	INTAKE PIER 1 ELECTRICAL ROOM	1820	36x24	500	1	2	3	
LV-2	EXHAUST PIER 1 ELECTRICAL ROOM	1820	36x24	500	1	2	3	
LV-3	INTAKE PIER 1 MECHANICAL ROOM	140	12x12	500	1	2	3	
LV-4	EXHAUST PIER 1 MECHANICAL ROOM	140	12x12	500	1	2	3	
LV-5	INTAKE PIER 1 STORAGE ROOM	142.5	12x12	500	1	2	3	
LV-6	INTAKE PIER 1 STORAGE ROOM	285	24x12	500	1	2	3	
LV-7	EXHAUST PIER 1 STORAGE ROOM	285	12x12	500	1	2	3	
LV-8	EXHAUST PIER 2 BATHROOM	80	12x12	500	1	2	3	
LV-9	INTAKE PIER 2 ELECTRICAL ROOM	1820	36x24	500	1	2	3	
LV-10	EXHAUST PIER 2 ELECTRICAL ROOM	1820	36x24	500	1	2	3	
LV-11	INTAKE PIER 2 MECHANICAL ROOM	140	12x12	500	1	2	3	
LV-12	EXHAUST PIER 2 MECHANICAL ROOM	140	12x12	500	1	2	3	
LV-13	INTAKE PIER 2 STORAGE ROOM	142.5	12x12	500	1	2	3	
LV-14	INTAKE PIER 2 STORAGE ROOM	142.5	12x12	500	1	2	3	
LV-15	EXHAUST PIER 2 STORAGE ROOM	285	12x12	500	1	2	3	

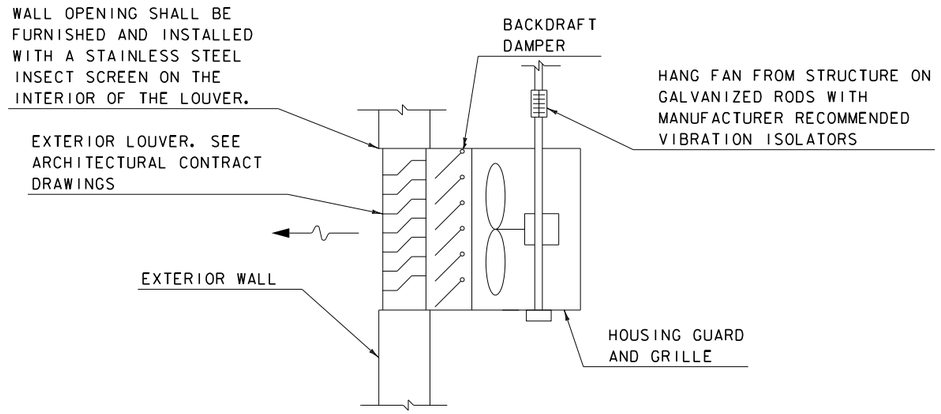
REMARKS
1. FOR INFORMATION ONLY. LOUVER SIZES ARE SHOWN ON ARCHITECTURAL CONTRACT DRAWING. THIS TABLE IS FOR AIR FLOW SIZING AND MAXIMUM PERMITTED VELOCITIES THROUGH THE LOUVER FACE. VELOCITY AT SPECIFIED AIRFLOWS SHALL BE INCLUDED AS PART OF THE SUBMITTAL PROVING NO WATER PENETRATION. REFER TO THE ARCHITECTURAL CONTRACT DRAWINGS FOR LOCATIONS.
2. SEE THE ARCHITECTURAL CONTRACT DRAWINGS FOR COLOR.
3. FURNISH AND INSTALL WITH DAMPER AND BIRD SCREEN.

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

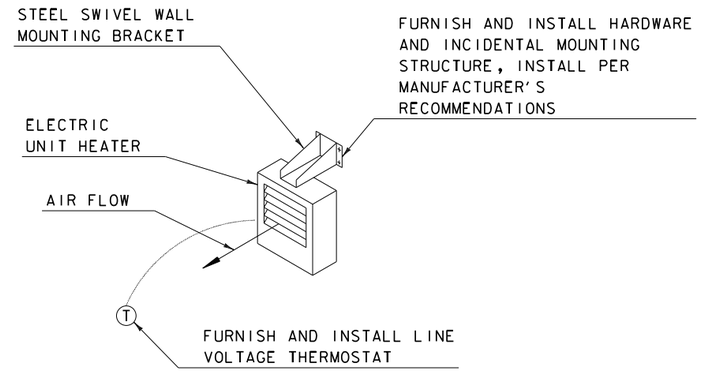
FILE NAME: z12b142hvacsch2.dgn
PROJECT LEADER: T. FRENCH
DESIGNED BY: A. LEM
HVAC SCHEDULE 2

PLOT DATE: 2/20/2018
DRAWN BY: A. LEM
CHECKED BY: M. WHALEN
SHEET 316 OF 379



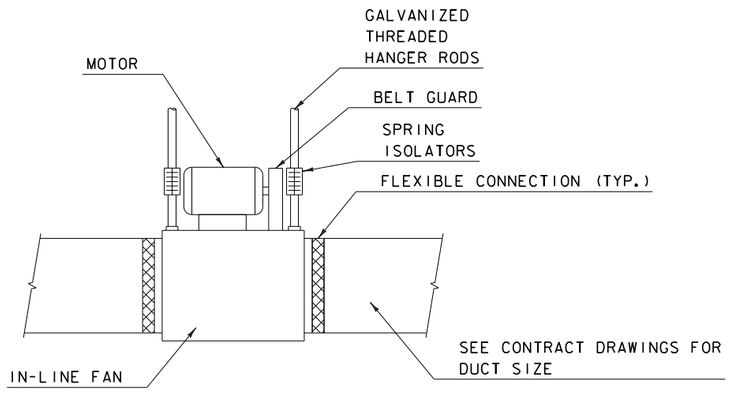
WALL MOUNTED EXHAUST FAN DETAIL

NOT TO SCALE



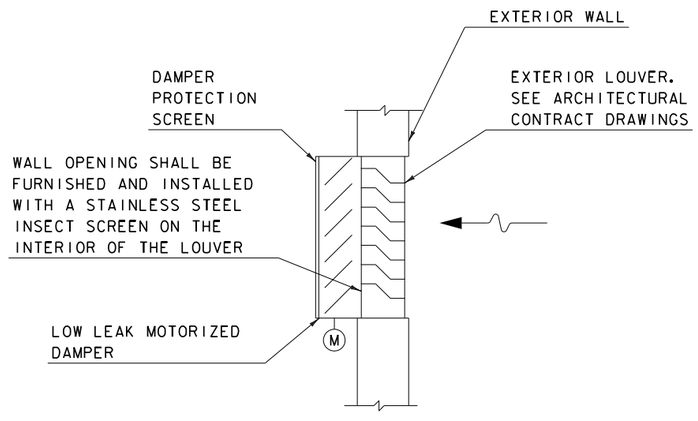
ELECTRIC UNIT HEATER DETAIL

NOT TO SCALE



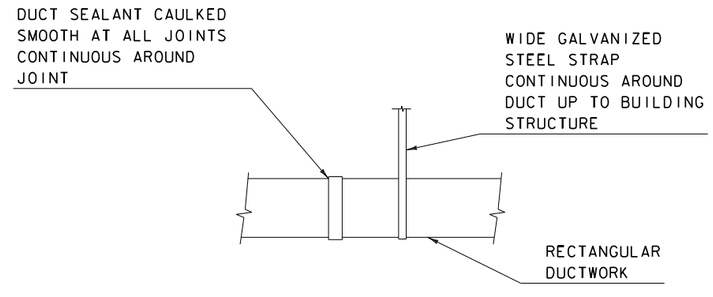
INLINE FAN DETAIL

NOT TO SCALE



INTAKE LOUVER DETAIL

NOT TO SCALE

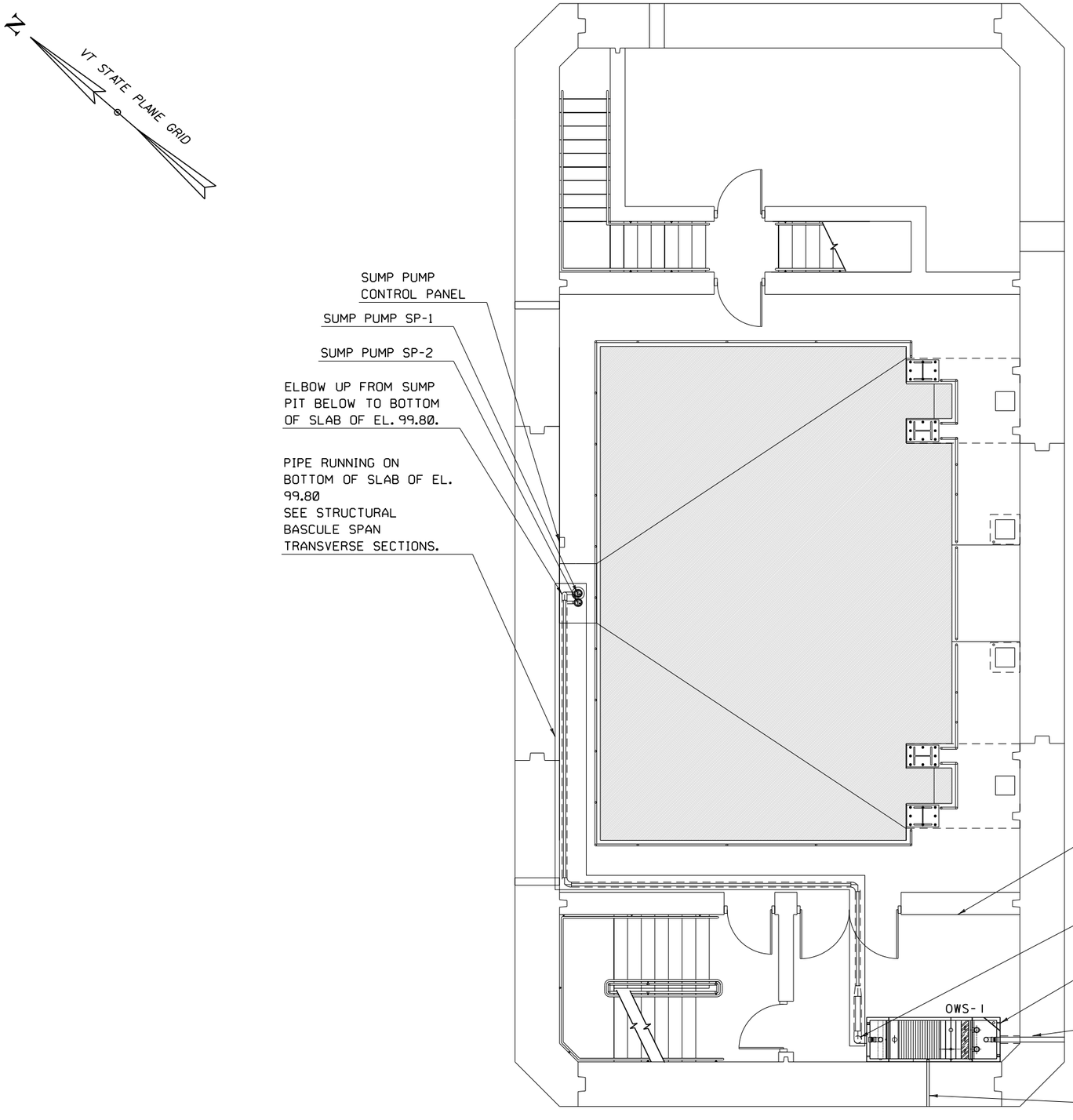


EXPOSED RECTANGULAR DUCT SUPPORT DETAIL

NOT TO SCALE

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)

FILE NAME: z12b142hvacdtl.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: A. LEM
DESIGNED BY: A. LEM	CHECKED BY: M. WHALEN
HVAC DETAILS	SHEET 317 OF 379



PIER 1 PLUMBING PLAN AT EL. 99.80

SCALE 1/4" = 1'-0"

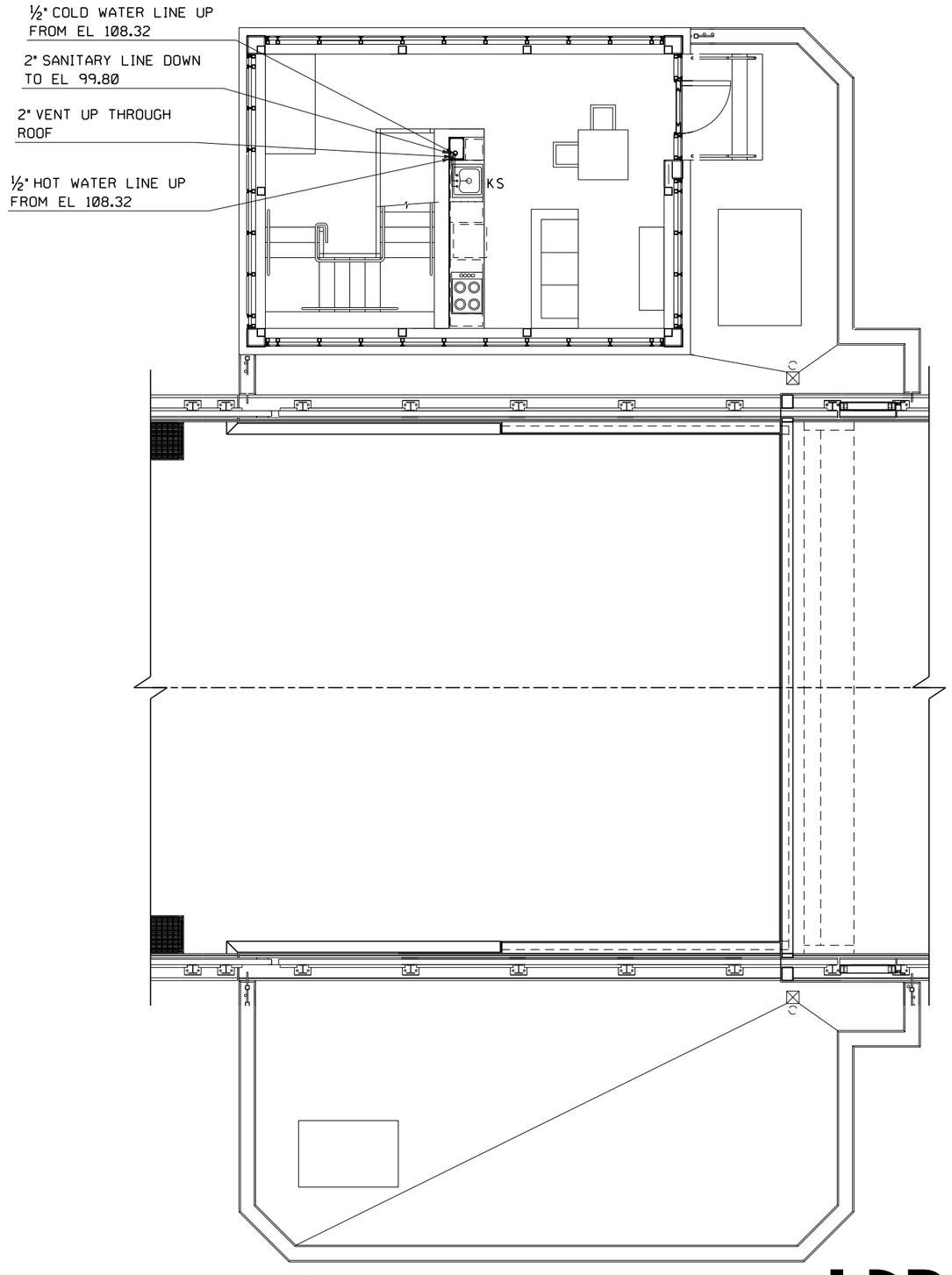
NOTES

1. ALL PIPING IN UNHEATED AREAS SHALL RECEIVE 2" INSULATION AND HEAT TRACE.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DEVISE AN INSTALLATION AND REMOVAL PLAN FOR THE OIL WATER SEPARATOR.

LEGEND

2" INSULATION AND HEAT TRACE

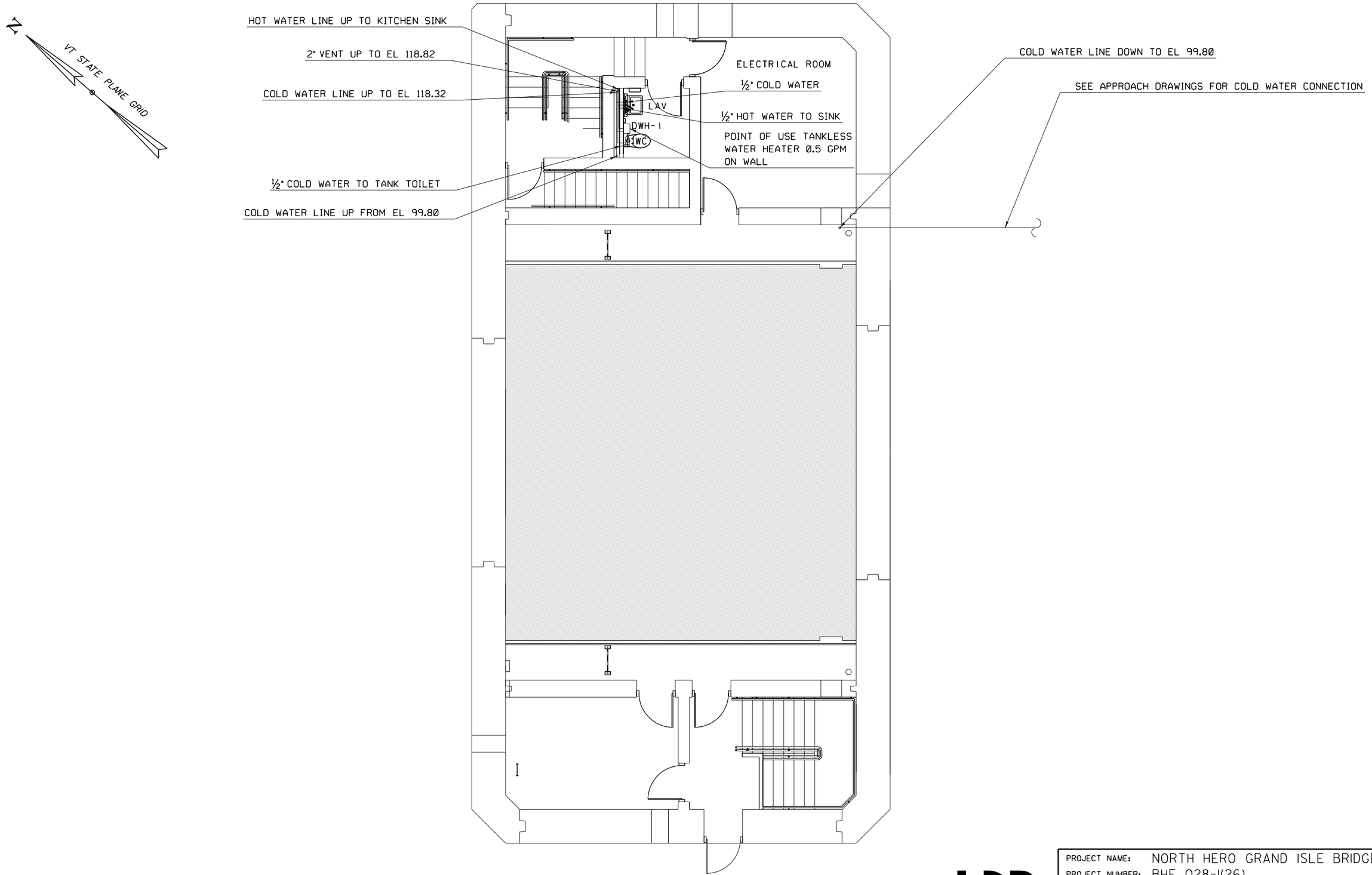
PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142plplumbinglevel2.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: A. LEM
DESIGNED BY: A. LEM	CHECKED BY: M. WHALEN
PLUMBING PIER 1PLAN AT EL. 99.80	SHEET 318 OF 379



PIER 2 PLUMBING PLAN AT EL. 118.82

SCALE 1/4" = 1'-0"

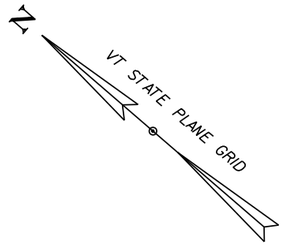
PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142p2plumbinglevel0.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: A. LEM
DESIGNED BY: A. LEM	CHECKED BY: M. WHALEN
PLUMBING PIER 2 PLAN AT EL. 118.82	SHEET 319 OF 379

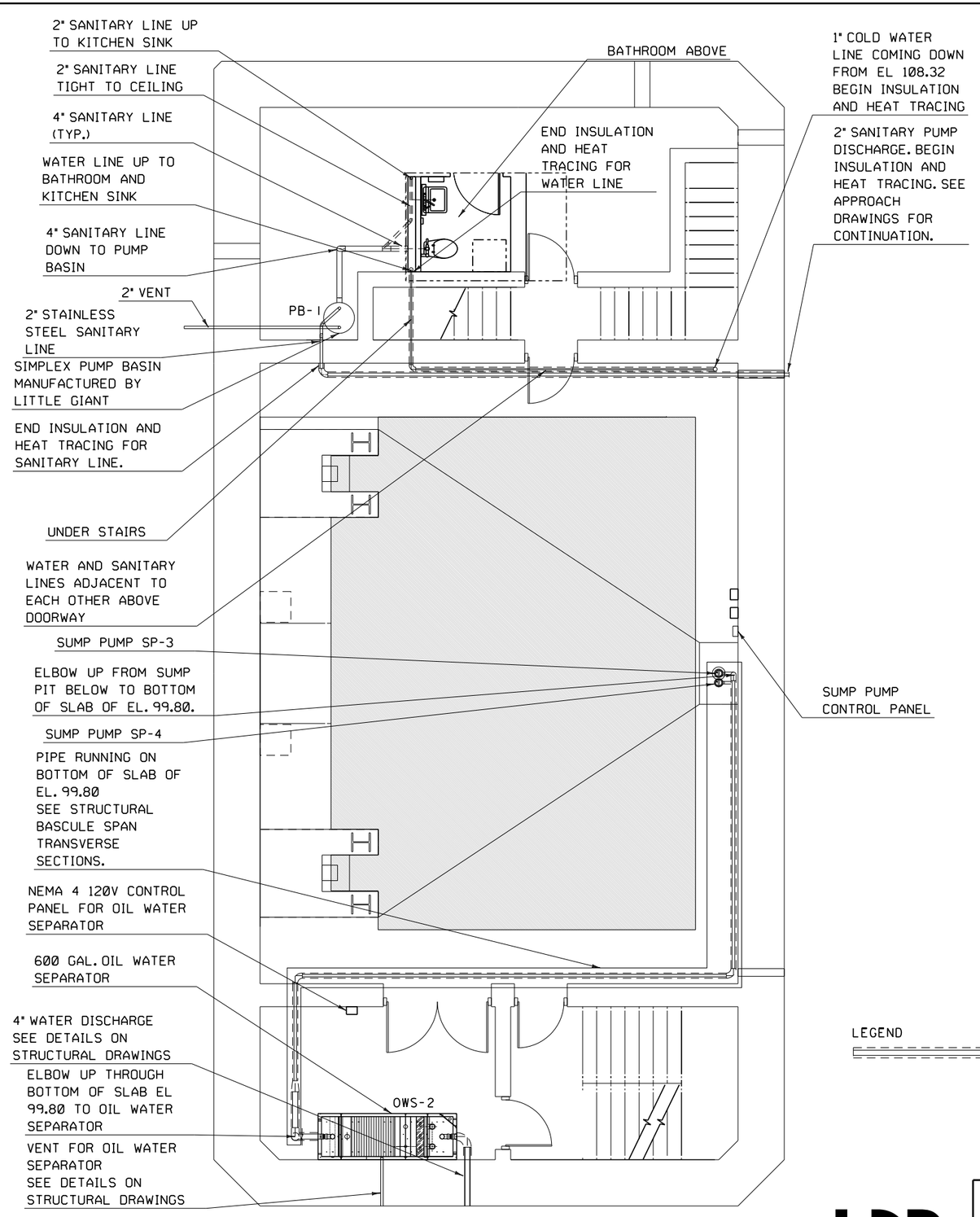


DOMESTIC HOT & COLD WATER PIER 2 PLUMBING PLAN AT EL. 108.32

SCALE 1/4" = 1'-0"

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142p2plumbinglevel1.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: A. LEM
DESIGNED BY: A. LEM	CHECKED BY: M. WHALEN
PLUMBING PIER 2 PLAN AT EL.108.32	SHEET 320 OF 379





PIER 2 SANITARY PLUMBING PLAN AT EL. 99.80

SCALE 1/4" = 1'-0"

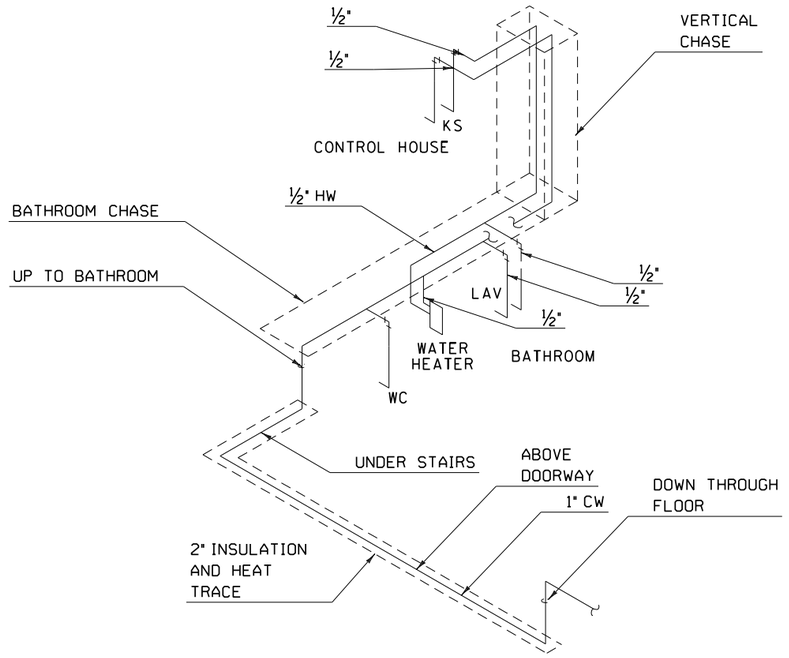
NOTES

1. ALL PIPING IN UNHEATED AREAS SHALL RECEIVE 2" INSULATION AND HEAT TRACE.
2. IT IS THE CONTRACTOR'S RESPONSIBIILTY TO DEVISE AN INSTALLATION AND REMOVAL PLAN FOR THE OIL WATER SEPARATOR.

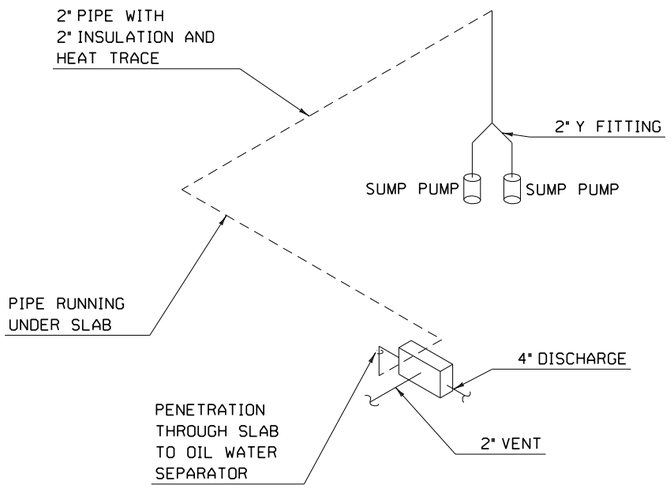
LEGEND

2" INSULATION AND HEAT TRACE

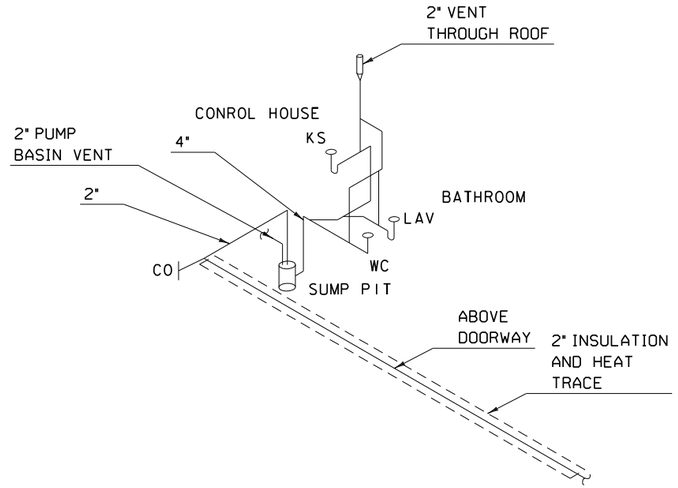
PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12bl42P2plumbinglevel2.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: A. LEM
DESIGNED BY: A. LEM	CHECKED BY: M. WHALEN
PLUMBING PIER 2 PLAN AT EL.99.80	SHEET 321 OF 379



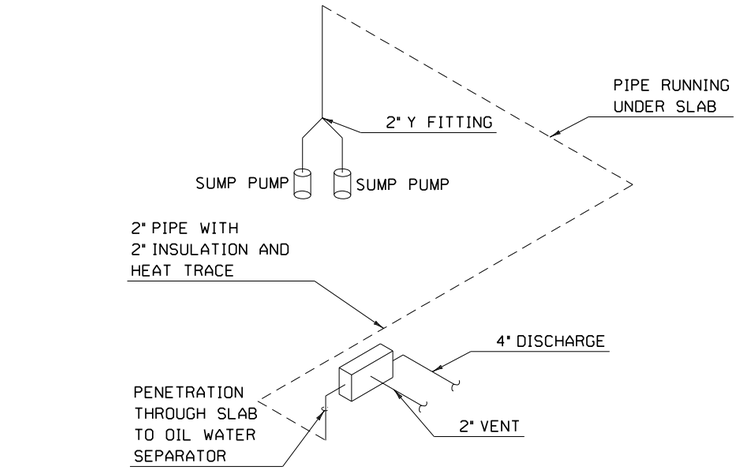
PIER 2 DOMESTIC HOT AND COLD WATER SERVICE



PIER 1 OIL WATER SEPARATOR SERVICE



PIER 2 SANITARY SERVICE



PIER 2 OIL WATER SEPARATOR SERVICE

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142P2plumbingriser.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: A. LEM
DESIGNED BY: A. LEM	CHECKED BY: M. WHALEN
PLUMBING RISER DIAGRAMS	SHEET 322 OF 379

DOMESTIC HOT WATER HEATER SCHEDULE

MARK NO.	DWH-1
TEMP RISE F°	100.0
EWT F°	40
LWT F°	140
VOLTAGE	120
PHASE	1
FUEL	ELECTRIC
INPUT (kW)	1.5
TYPE	POINT-OF-USE
RECOVERY PER HOUR	7.0
DELIVERY REQUIRED	2.0
MINIMUM ACTIVATION FLOW	.40 GPM
GPM AT TEMP. RISE	3.8
AMP	2
CONNECTIONS	½"
NOTES	1,2,3
MANUF.	A.O. SMITH
MODEL	EJC-2

EQUAL MANUF.
RHEEM
TAKAGI
PALOMA
APPROVED EQUAL

NOTES

1. UNIT REQUIRED P&T RELIEF VALVE
2. ASME CONSTRUCTION
3. DIELECTRIC UNIONS

FIXTURE SCHEDULE

FIXTURE	MARK	HW CONN.	CW CONN.	WASTE CONN.	VENT	DESCRIPTION	# OF EACH
LAVATORY	LAV	½"	½"	1-¼"	1-¼"	WALL HUNG AMERICAN STANDARD 0124.131 COMRADE, 2 HANDLE, CROME AND 605XTMV MIXING VALVE, OR APPROVED EQUAL. 34" MOUNTING HEIGHT.	1
WATER CLOSET	WC	-	½"	4"	2"	AMERICAN STANDARD COMPACT CADET 2403.128 ELONGATED ONE-PIECE HIGH EFFICIENCY 1.28 GPF, WHITE.	1
KITCHEN SINK	KS	½"	½"	1-½"	1-½"	ELKAY CR2521 WITH 1.5 GPM LOW FLOW FAUCET, OR EQUAL.	1

REMARKS

1. SUBMIT ALL CUT SHEETS OF PROPOSED TO ARCHITECT FOR APPROVAL.
2. SUBMIT EQUALS OR SUBSTITUTIONS FOR ENGINEER'S REVIEW AND APPROVAL.
3. ALL LAVATORY SINKS TO BE PROVIDED WITH MIXING VALVE.

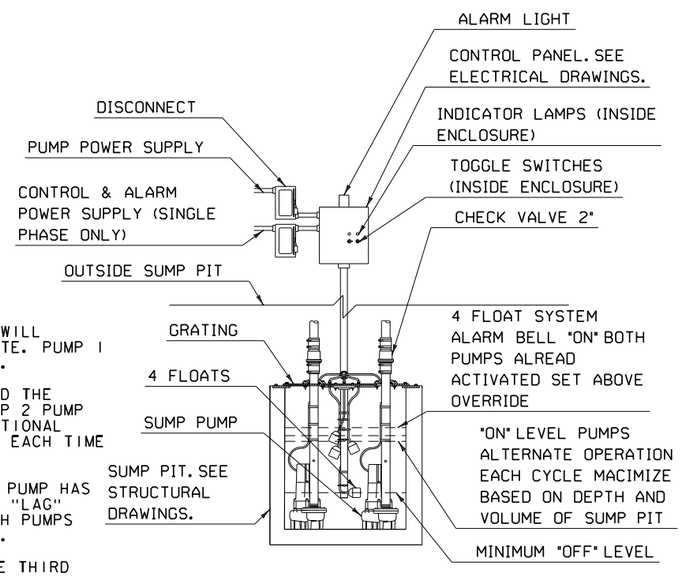
OIL WATER SEPARATOR

MARK NO.	OWS-1, OWS-2
SERVING	BASCULE PIT
MANUFACTURER	HIGHLAND TANK
TYPE	RECTANGLE, HTC, ABOVEGROUND, SINGLEWALL
FLOWRATE	50 GPM
GAUGE	SHELL - 7 GA HEADS - 7 GA
SURFACE PREP	SSPC NO. 10 BLAST ALL INTERIOR SURFACES SSPC NO. 6 BLAST ALL EXTERIOR SURFACES
COATING	EXTERIOR - FINISH PAINT WHITE, 3 MIL THICK INTERIOR - POLYURETHANE, 15 MILS THICK
QUANTITY	2
DISCHARGE SIZE	4" DIA
NOTES	1,2,3

EQUAL MANUF.
HYDROFLOTECH
MERCER
INTERNATIONAL
APPROVED EQUAL.

NOTES

1. ALL INTERNAL MATERIAL IS 10 GA.
2. ALL DRAINS MUST SHIP WITH STEEL PLUGS INSTALLED.
3. LIFTING LUGS HAVE REINFORCING PLATES.



SUMP PUMP INSTALLATION DETAIL

PUMP SEQUENCE OF OPERATION

1. WHEN THE "STOP" AND "LEAD" FLOATS ARE CLOSED PUMP 1 WILL ENERGIZE AND THE PUMP 1 PUMP RUN LIGHT WILL ILLUMINATE. PUMP 1 WILL REMAIN OPERATIONAL UNTIL THE "STOP" FLOAT OPENS.

   THE NEXT TIME THE "STOP" AND "LEAD" FLOATS ARE CLOSED THE ALTERNATING CIRCUIT WILL ENERGIZE PUMP 2 AND THE PUMP 2 PUMP RUN LIGHT WILL ILLUMINATE. PUMP 2 WILL REMAIN OPERATIONAL UNTIL THE "STOP" FLOAT OPENS. THIS CYCLE WILL REPEAT EACH TIME THE FLUID LEVEL RISES AND FALLS.

2. IF THE FLUID LEVEL CONTINUES TO RISE AFTER THE FIRST PUMP HAS BEEN ENERGIZED THE "LAG" FLOAT WILL CLOSE. WHEN THE "LAG" FLOAT HAS CLOSED THE SECOND PUMP WILL ENERGIZE. BOTH PUMPS WILL REMAIN OPERATIONAL UNTIL THE "STOP" FLOAT OPENS.

3. IN A FOUR FLOAT SYSTEM, THE ALARM FLOAT SHOULD BE THE THIRD FLOAT CAUSING AN ALARM TO SOUND WHEN THE LEAD PUMP FAILS TO OPERATE OR THE RATE OF IN FLOW INTO THE BASIN EXCEEDS THE CAPACITY OF ONE PUMP. WHEN THE ALARM FLOAT IS CLOSED THE FOLLOWING WILL OCCUR.

   - THE EXTERNAL HIGH WATER LIGHT WILL ILLUMINATE
   - THE AUDIBLE HIGH WATER ALARM WILL SOUND
   - THE AUXILIARY DRY CONTACTS WILL CLOSE

   AS THE LIQUID LEVEL CONTINUES TO RISE THE FOURTH FLOAT WILL CLOSE, ENERGIZING THE LAG PUMP. THE LAG PUMP AND THE LEAD PUMP WILL REMAIN ENERGIZED UNTIL THE "STOP" FLOAT OPENS.

4. THE AUDIBLE HIGH WATER HORN CAN BE SILENCED BY PRESSING THE ALARM SILENCE BUTTON. WHEN THE "ALARM" FLOAT OPENS THE EXTERNAL HIGH WATER LIGHT, AUDIBLE HIGH WATER HORN AND DRY AUXILIARY CONTACTS WILL BE RESET.

SUBMERSIBLE SEWAGE PUMP SCHEDULE

MARK NO.	SP-1, SP-2, SP-3, SP-4
SERVING	PIER 1, PIER 2
MANUFACTURER	GOULDS
MODEL	2DM51E4NA
GALLONS PER MINUTE	50
FT HEAD	30
HORSEPOWER	1 HP
VOLTAGE	460V
NO. OF PUMPS	2
DISCHARGE SIZE	2" DIA
NOTES	1

EQUAL MANUF.
GRUNDFOS
TSURUMI PUMP
WAYNE
APPROVED EQUAL

NOTES

1. OUTFIT WITH MANUFACTURER FLOAT KIT AND REQUIRED CONTROL UNIT.

PUMP BASIN SCHEDULE

MARK NO.	PB-1
SERVING	BATHROOM
MANUFACTURER	LITTLE GIANT
MODEL	10SF2V2DA3
GALLONS PER MINUTE	20
FT HEAD	22
HORSEPOWER	½ HP
VOLTAGE	115
NO. OF PUMPS	1
DISCHARGE SIZE	2" DIA
NOTES	1

EQUAL MANUF.
GOULDS
ZOELLER
LIBERTY PUMPS
APPROVED EQUAL

NOTES

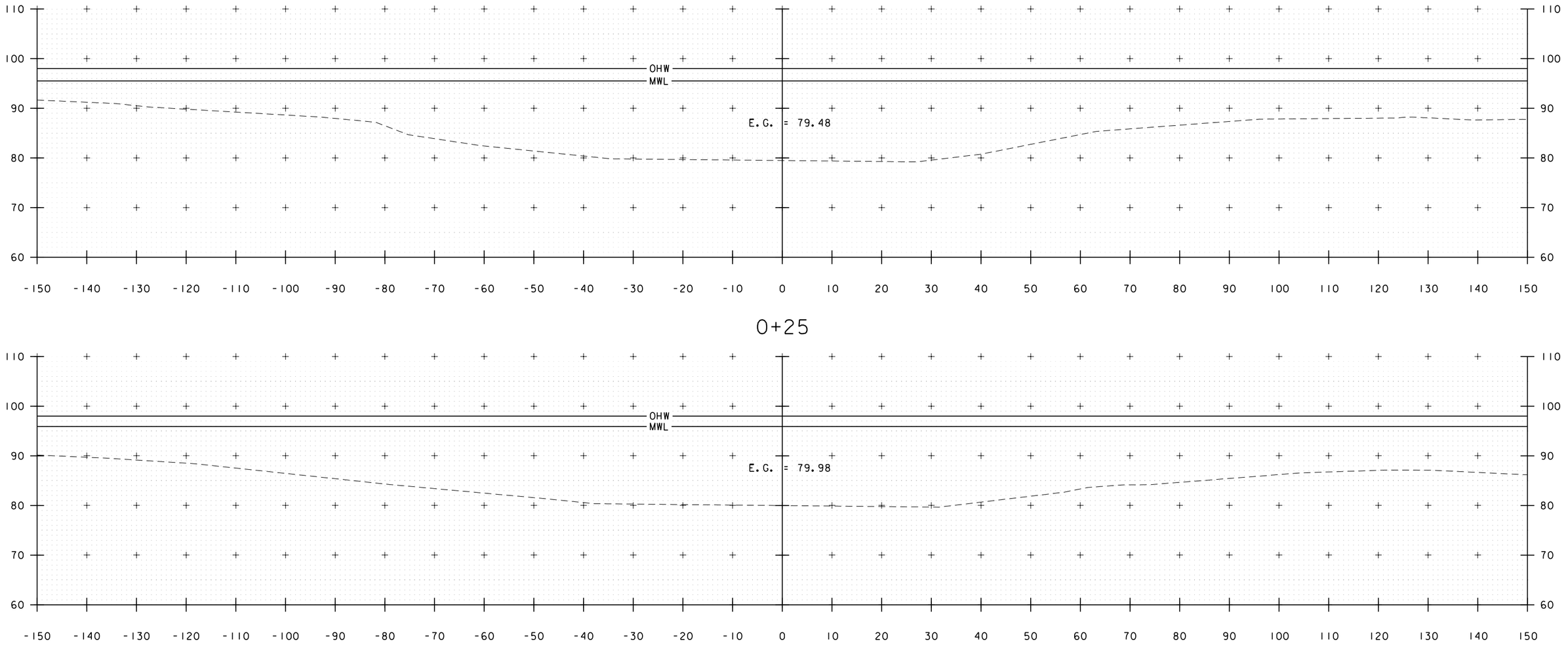
1. OUTFIT WITH MANUFACTURER FLOAT KIT AND REQUIRED CONTROL UNIT.

HDR

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142P2plumbingschdtl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: A. LEM
PLUMBING SCHEDULE AND DETAILS

PLOT DATE: 2/6/2018
DRAWN BY: A. LEM
CHECKED BY: M. WHALEN
SHEET 323 OF 379



0+25

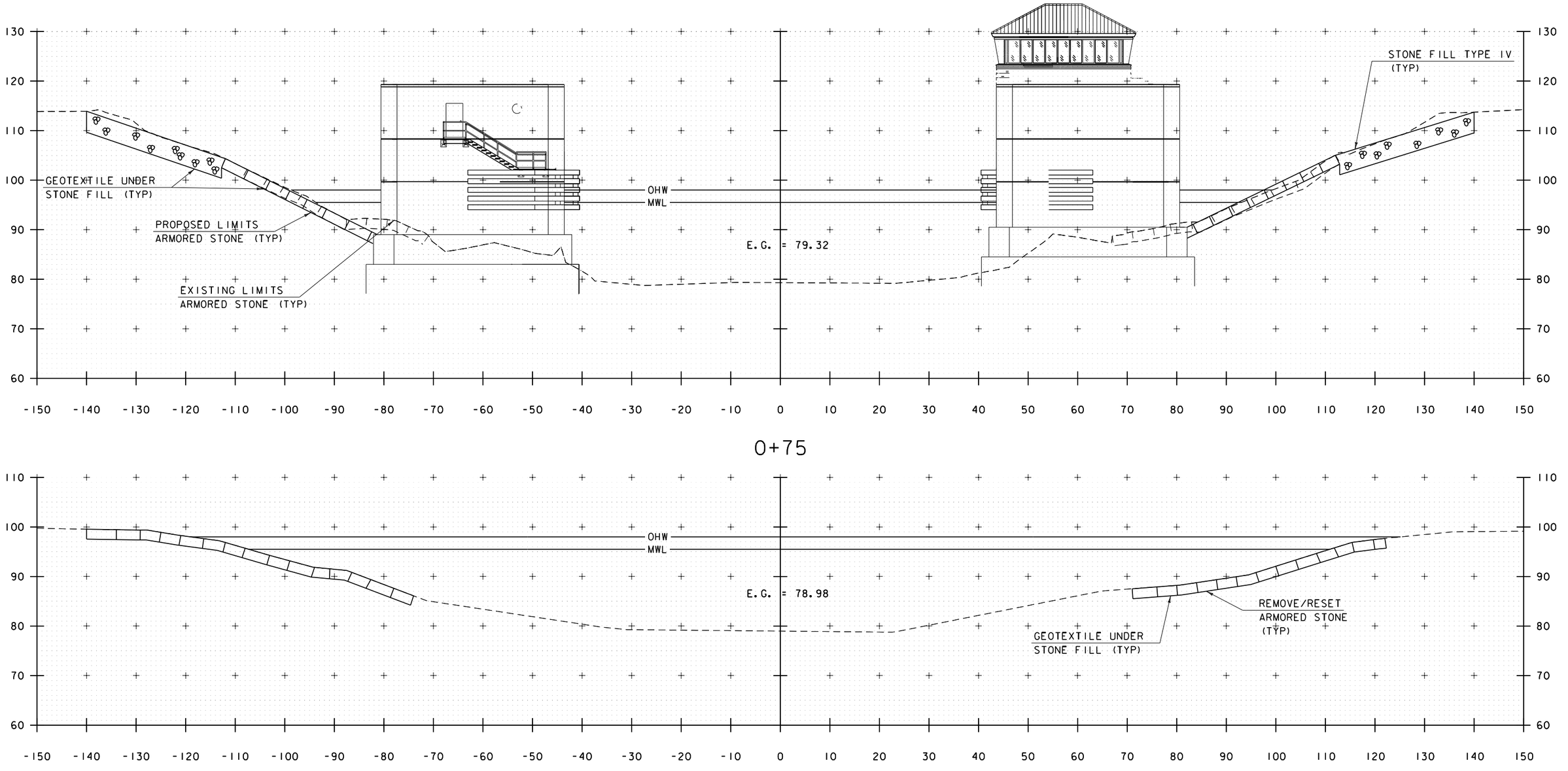
0+00

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

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142xcchanl.dgn
PROJECT LEADER: J. GALLANT
DESIGNED BY: H. PROTIN
CHANNEL CROSS SECTIONS 1

PLOT DATE: 2/6/2018
DRAWN BY: P LEFEBVRE
CHECKED BY: M MOZER
SHEET 324 OF 379

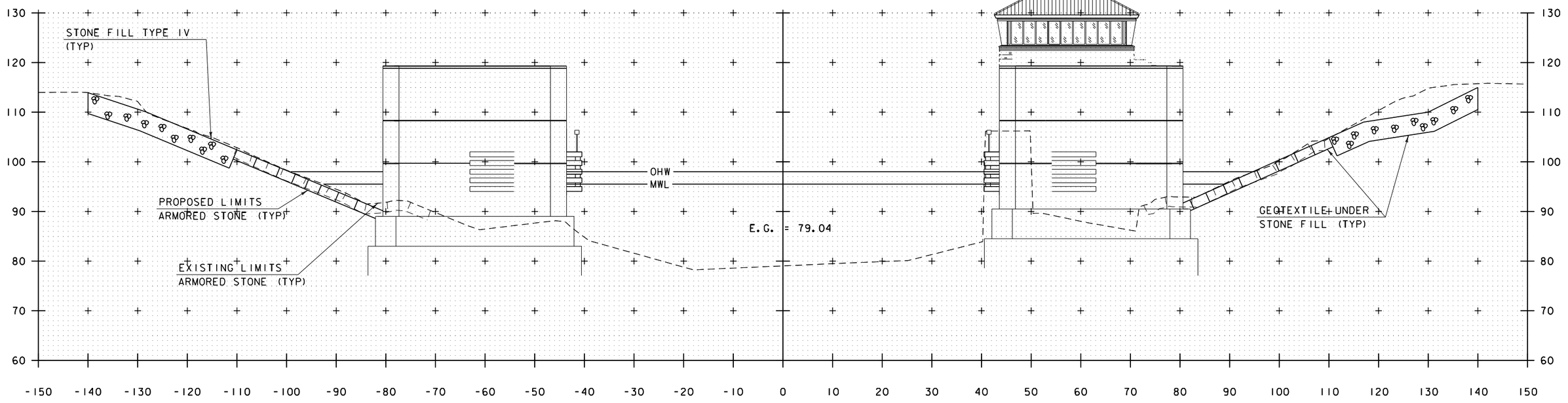


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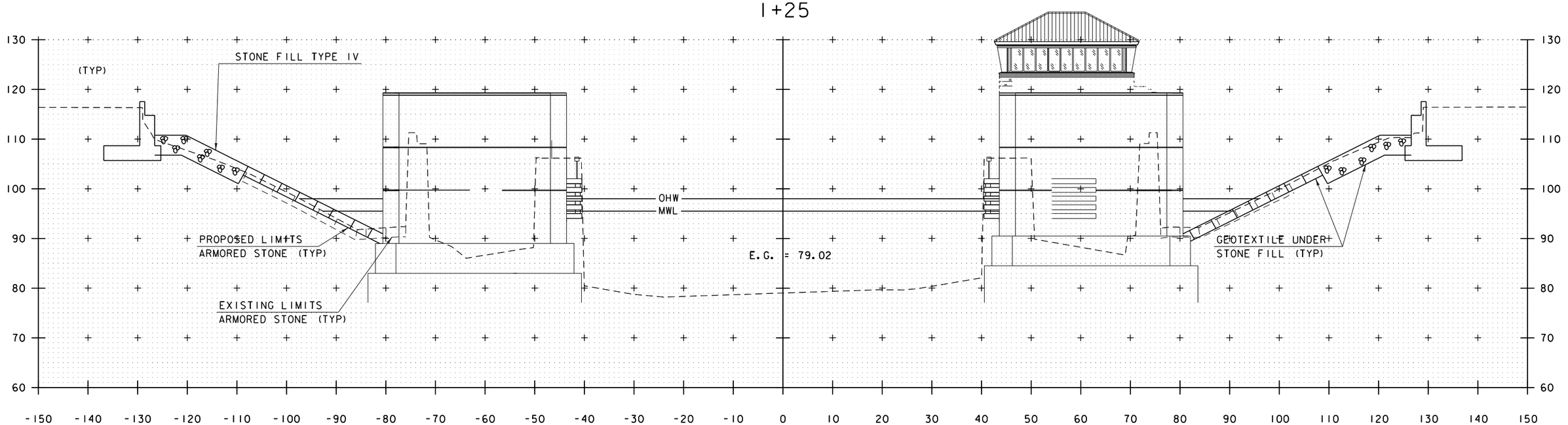
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SCALE 1" = 10'-0"
10 0 10

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142xcchan2.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P LEFEBVRE
DESIGNED BY: H. PROTIN	CHECKED BY: M MOZER
CHANNEL CROSS SECTIONS 2	SHEET 325 OF 379



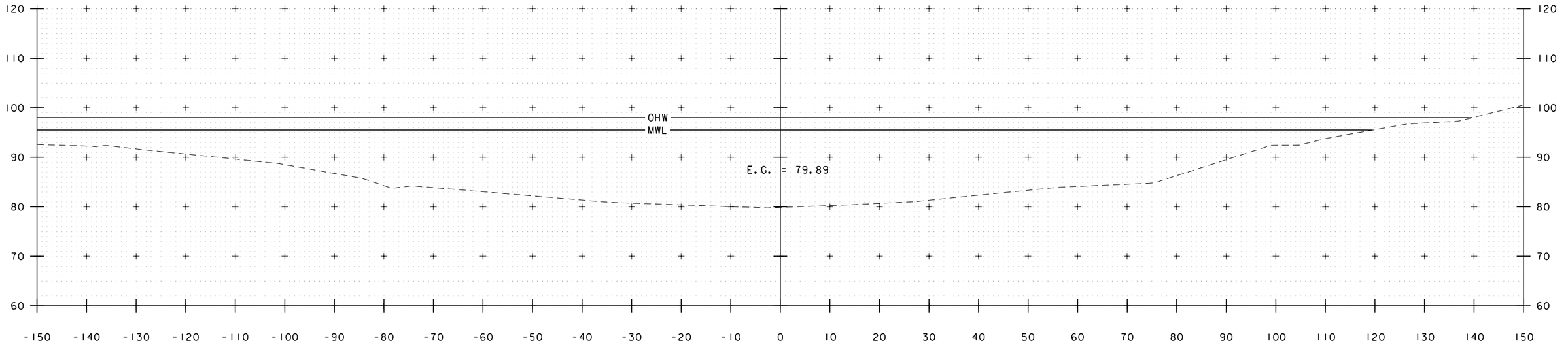
1+25



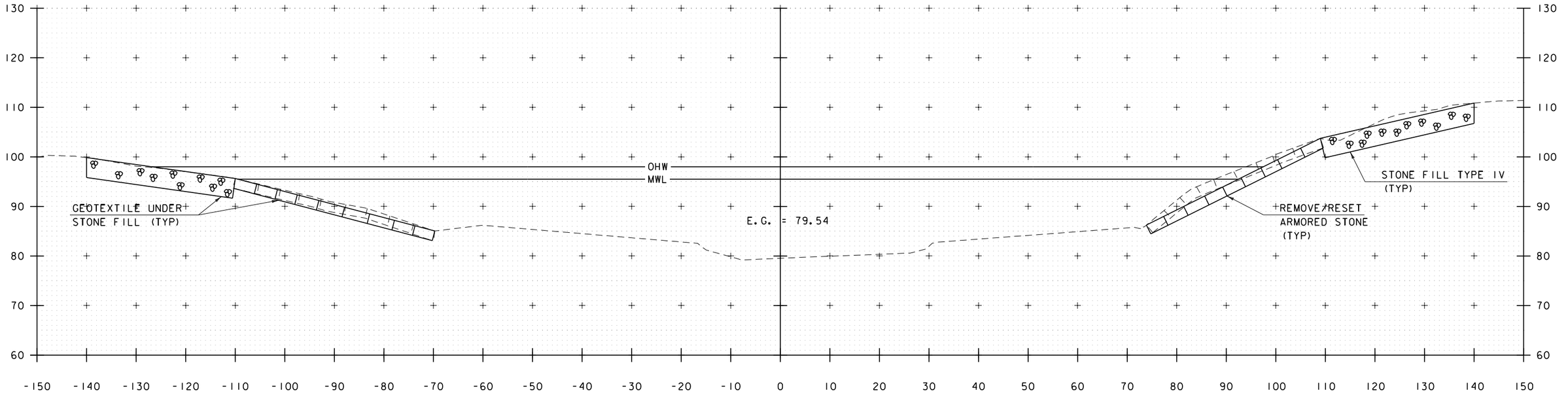
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SCALE 1" = 10'-0"
10 0 10

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142xcchan3.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P LEFEBVRE
DESIGNED BY: H. PROTIN	CHECKED BY: M MOZER
CHANNEL CROSS SECTIONS 3	SHEET 326 OF 379



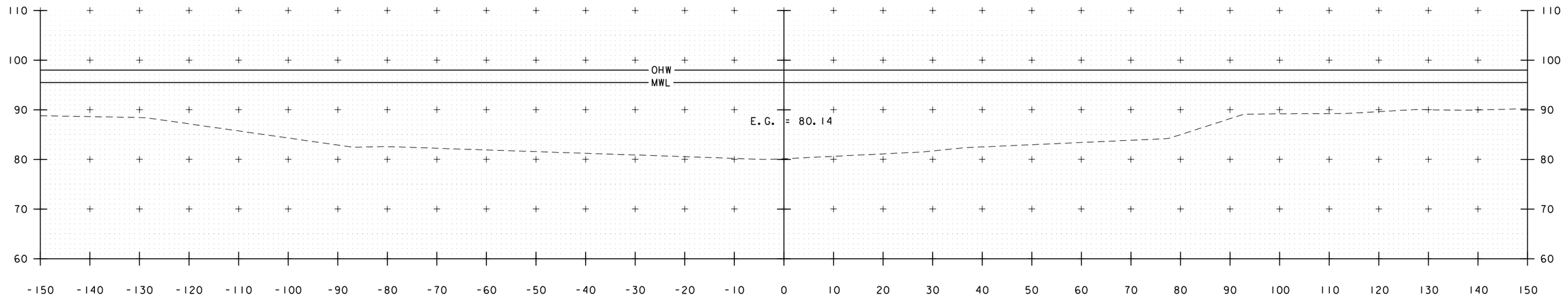
1+75



1+50

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10 0 10

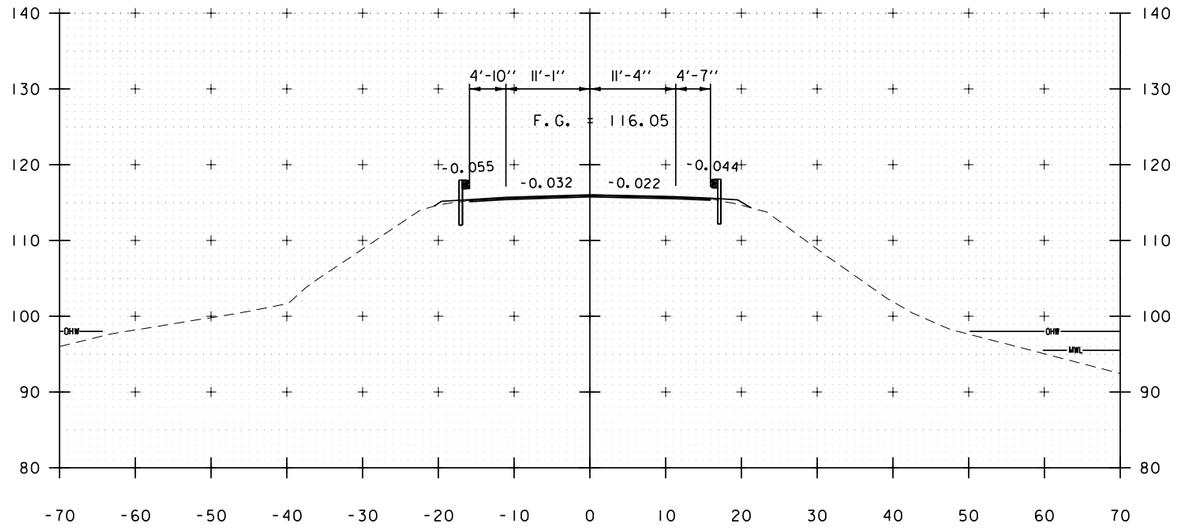
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PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142xcchan4.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P LEFEBVRE
DESIGNED BY: H. PROTIN	CHECKED BY: M MOZER
CHANNEL CROSS SECTIONS 4	SHEET 327 OF 379



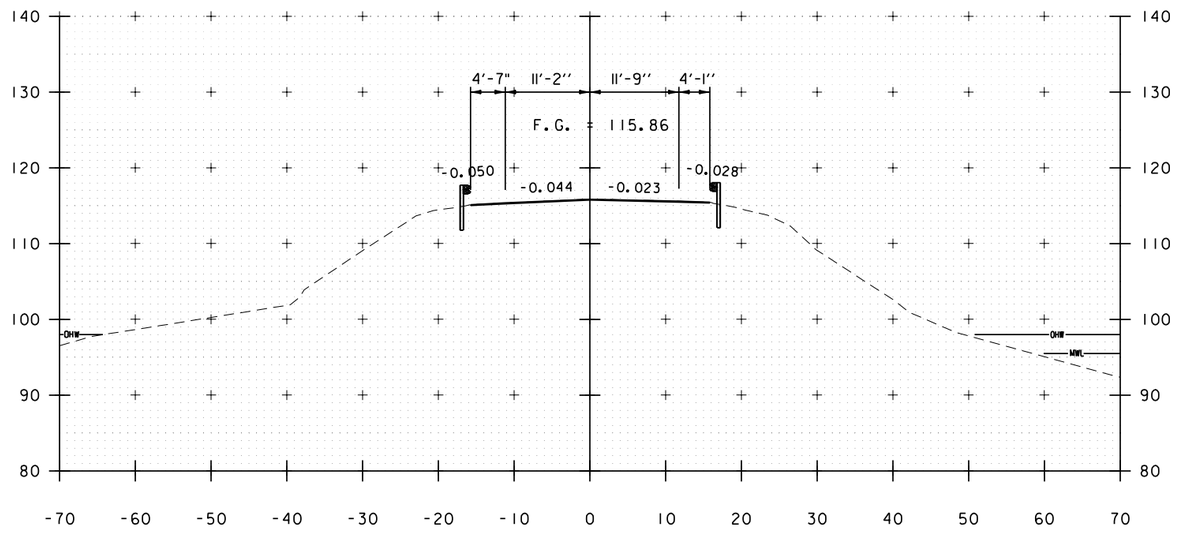
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PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142xcchan5.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: J. GALLANT	DRAWN BY: P LEFEBVRE
DESIGNED BY: H. PROTIN	CHECKED BY: M. MOZER
CHANNEL CROSS SECTIONS 5	SHEET 328 OF 379



514+50



514+00

BEGIN APPROACH STA 514+00.00

0 10 20

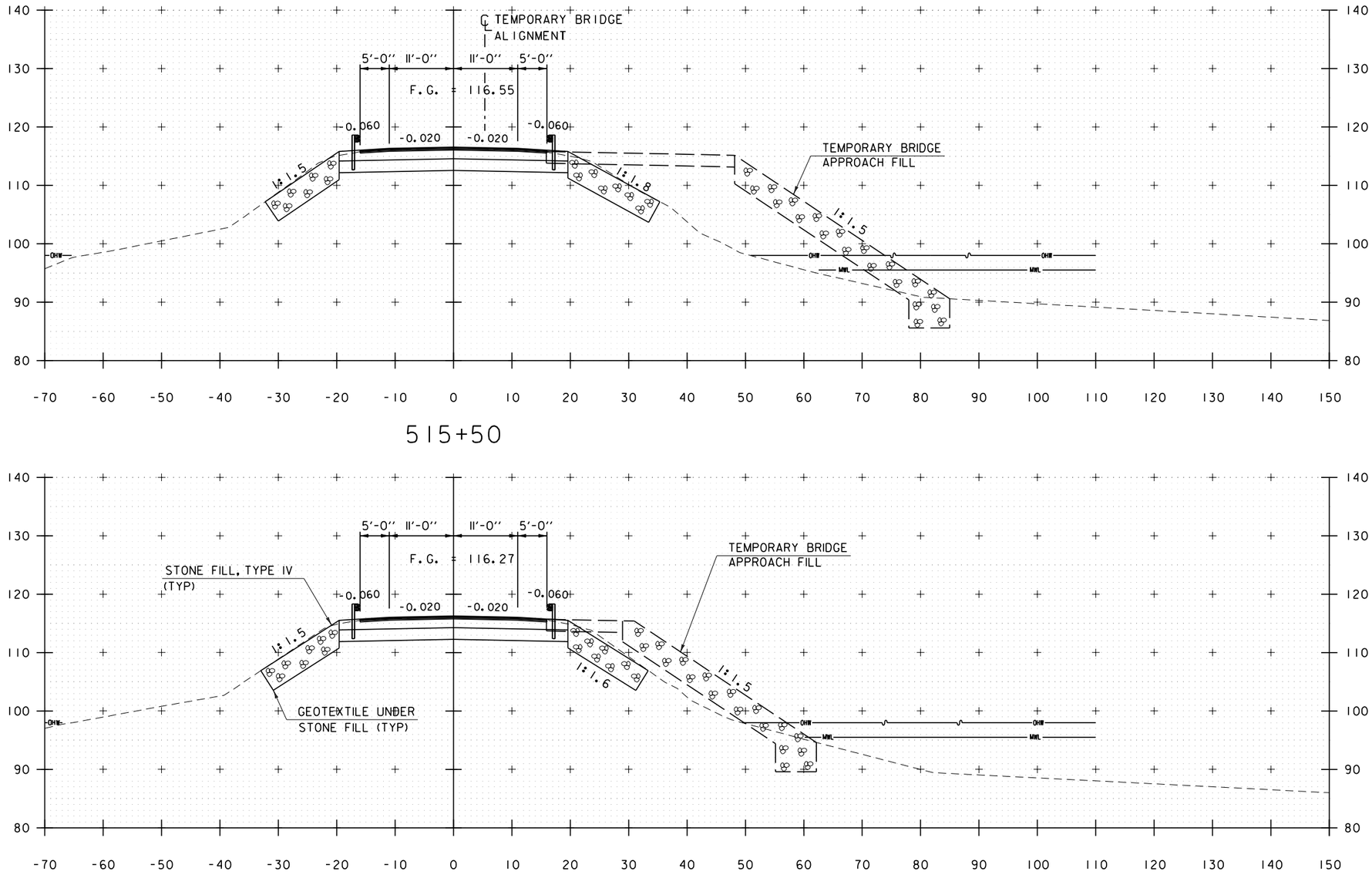
SCALE IN FEET

STA. 514+00 TO STA. 514+50

CHA

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE	
PROJECT NUMBER: BHF 028-1(26)	
FILE NAME: z12b142xc.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
CROSS SECTION SHEET 1	SHEET 329 OF 379

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515+50

515+00

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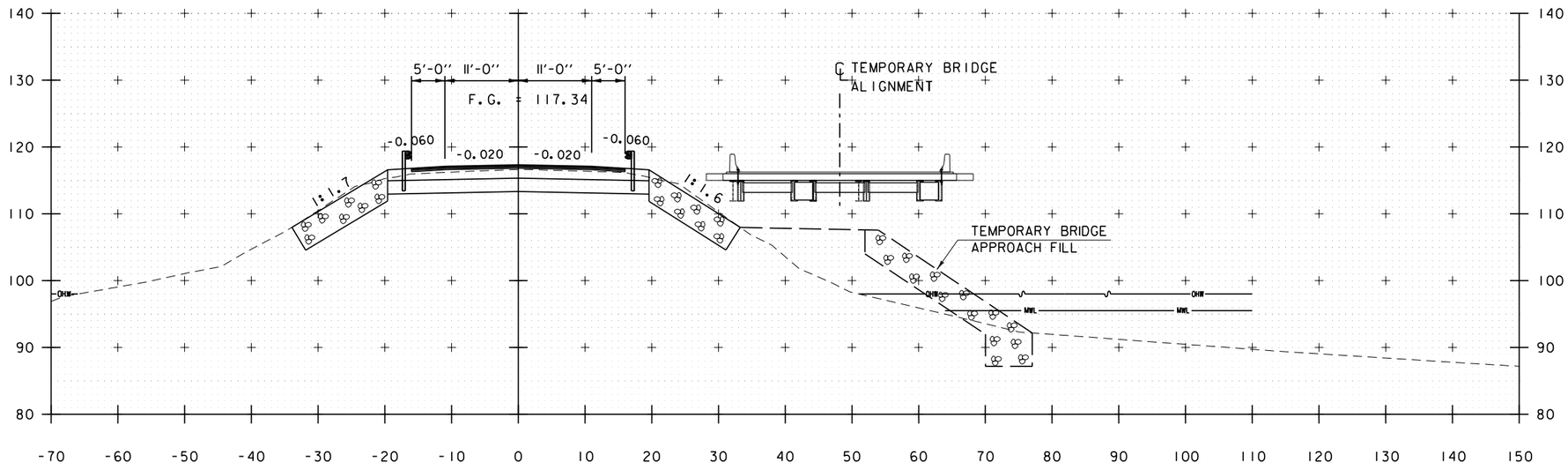
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SCALE IN FEET

STA. 515+00 TO STA. 515+50

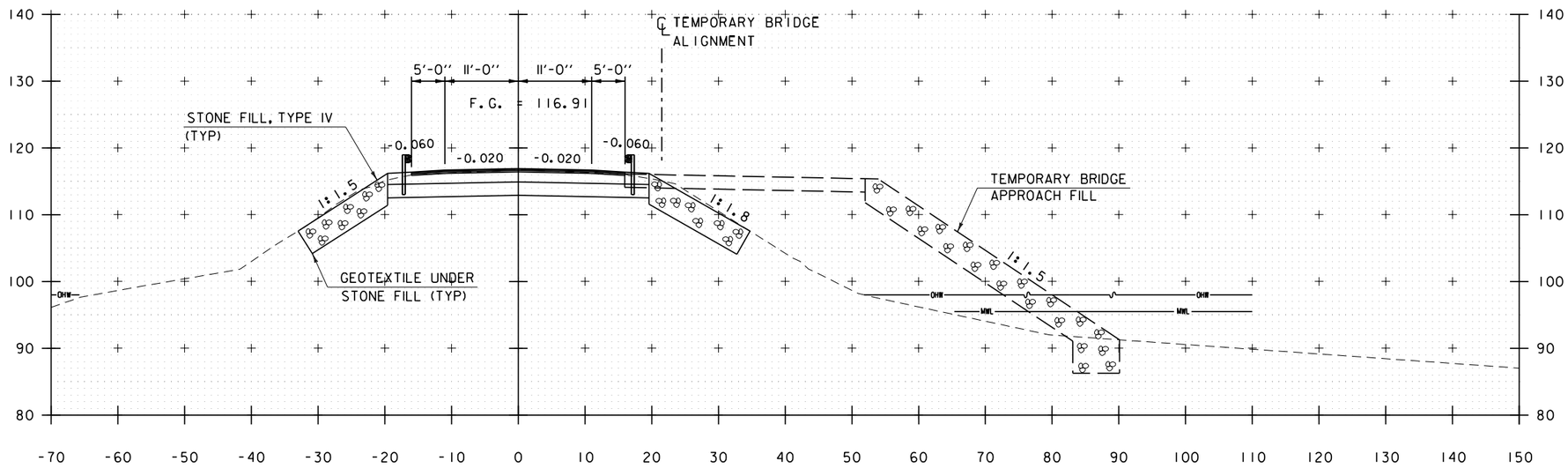
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PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142xc.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
CROSS SECTION SHEET 2	SHEET 330 OF 379

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516+50



516+00

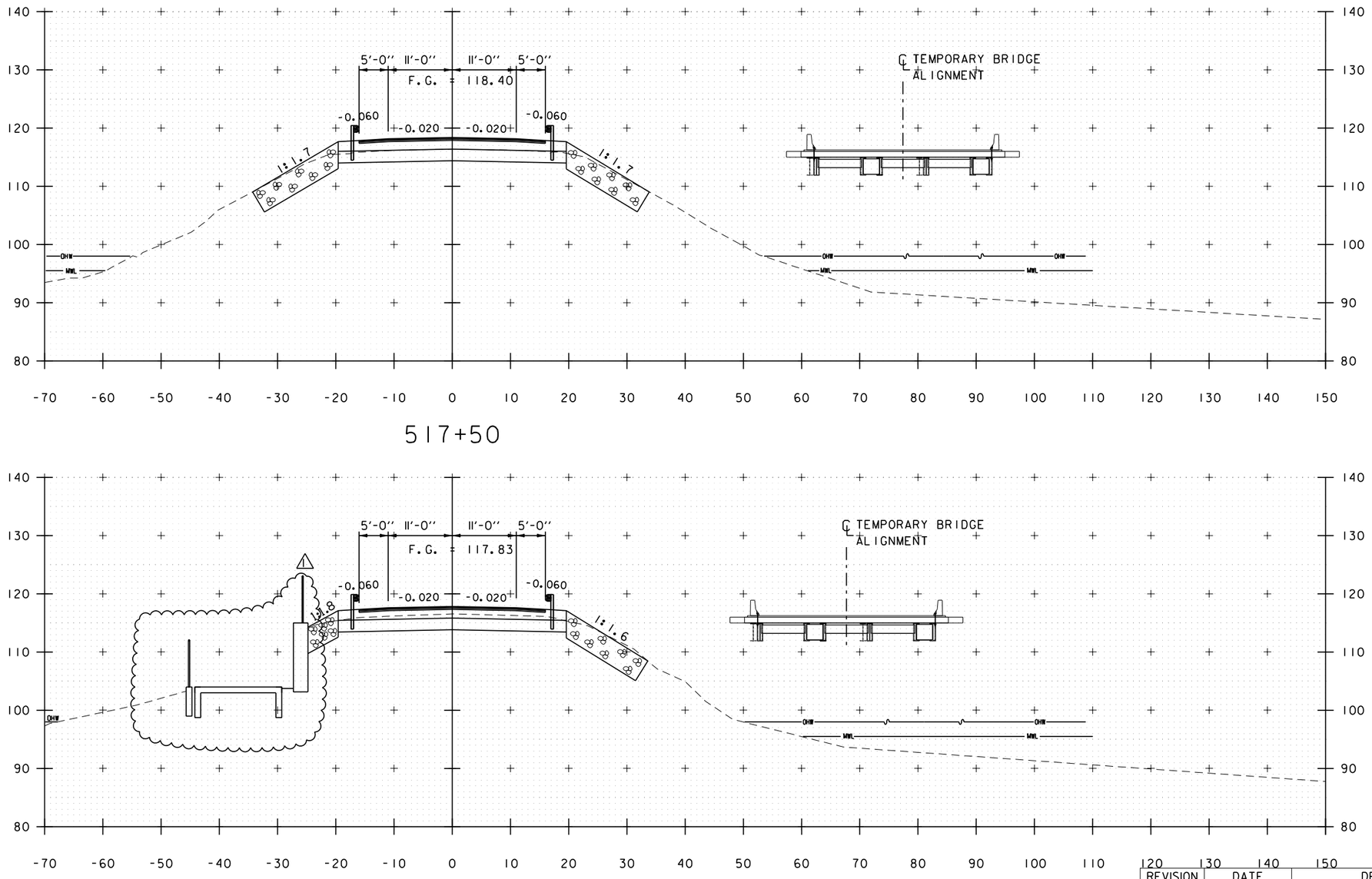
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SCALE IN FEET

STA. 516+00 TO STA. 516+50

CHA

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142xc.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
CROSS SECTION SHEET 3	SHEET 331 OF 379

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517+50

517+00

0 10 20
SCALE IN FEET

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	WIRELESS DESIGN MODIFICATION I	JLG

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

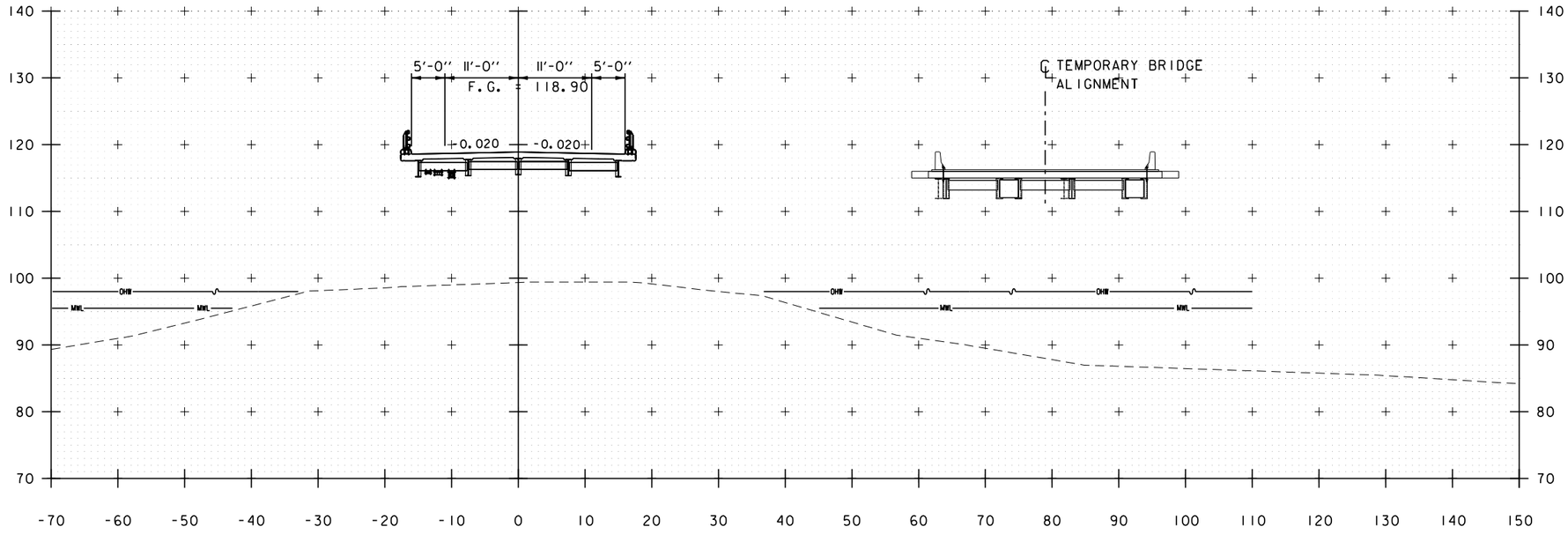
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PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
CROSS SECTION SHEET 4

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 332 OF 379

STA. 517+00 TO STA. 517+50

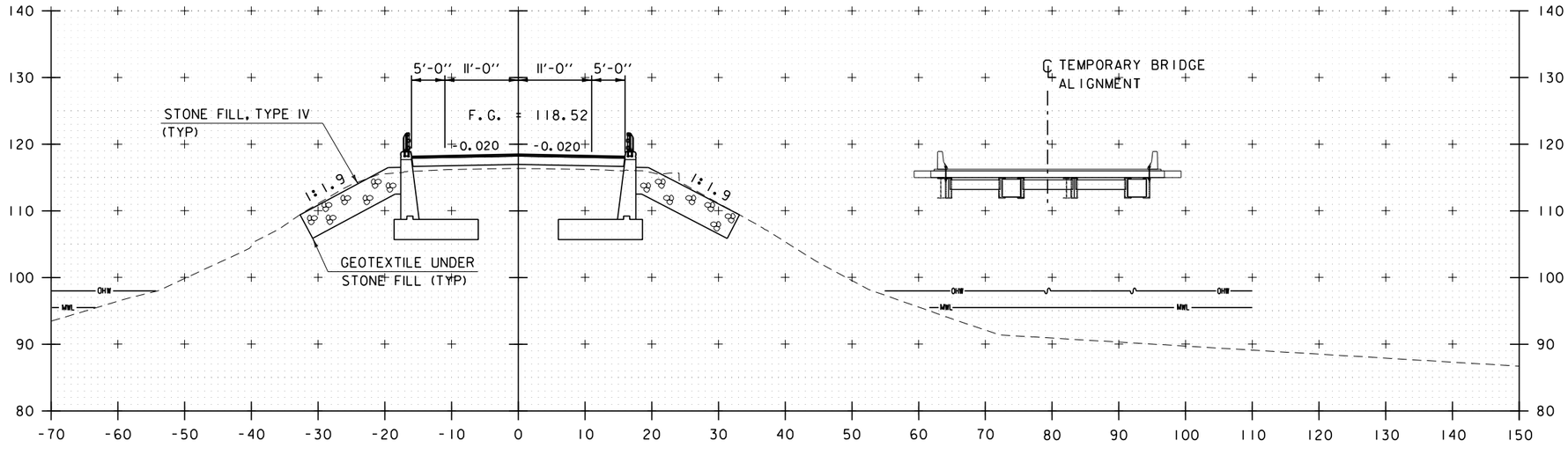
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518+00

BEGIN BRIDGE STA 517+70.41



517+60

0 10 20
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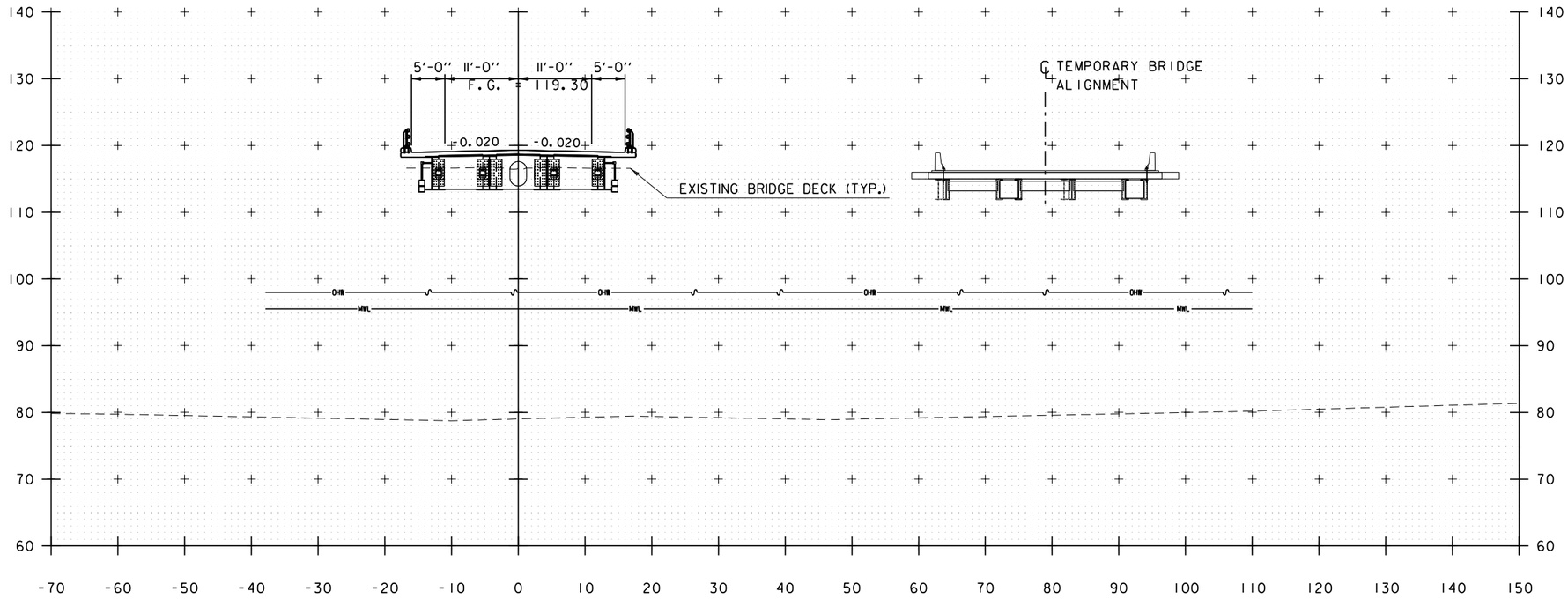
STA. 517+60 TO STA. 518+00

CHA

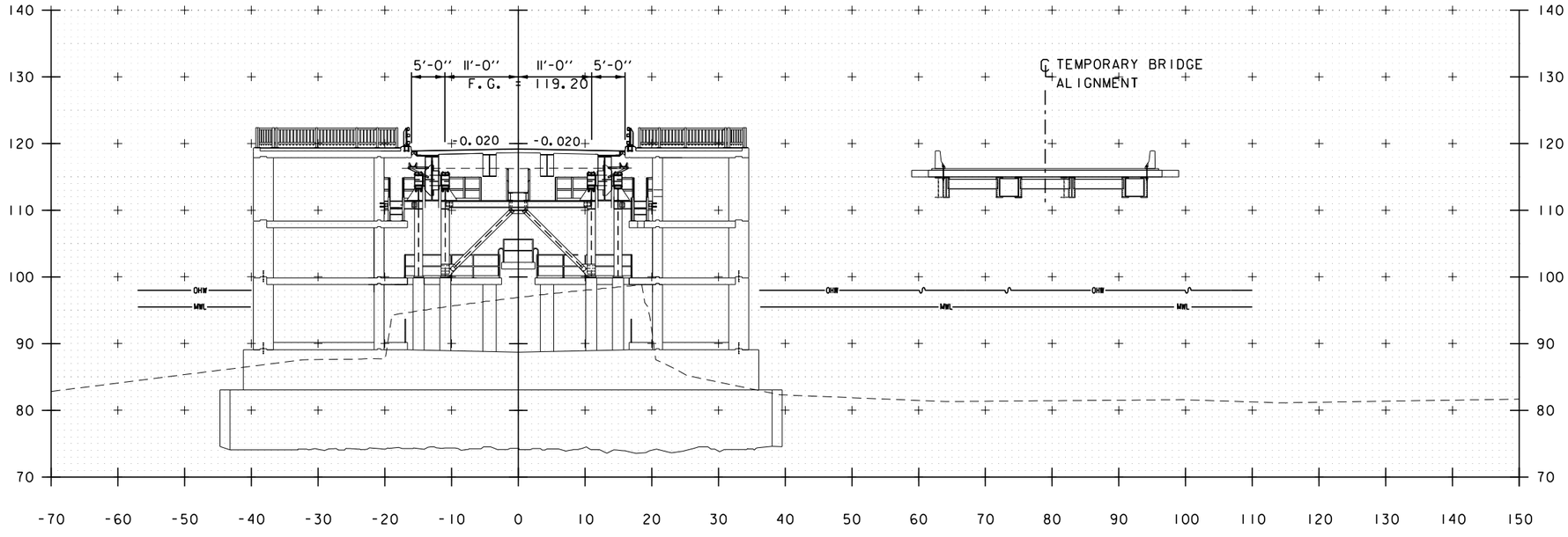
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42xc.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
CROSS SECTION SHEET 5

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 333 OF 379



519+00



518+50

0 10 20
SCALE IN FEET

STA. 518+50 TO STA. 519+00

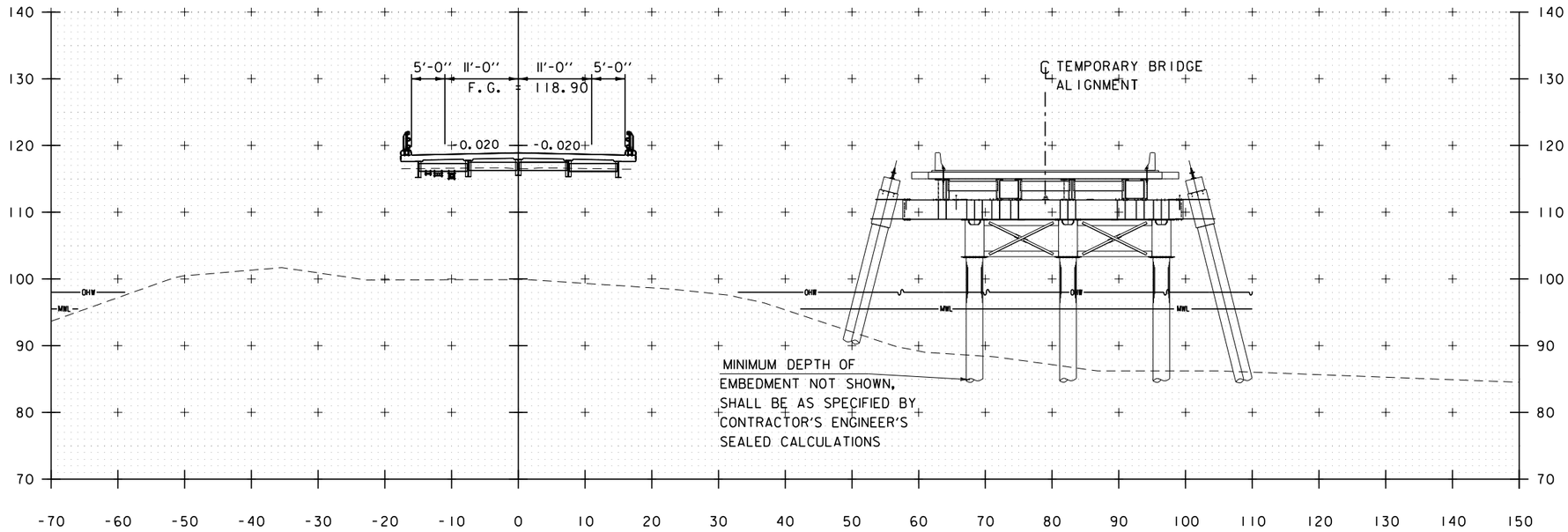
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PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: zl2bl42xc.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
CROSS SECTION SHEET 6

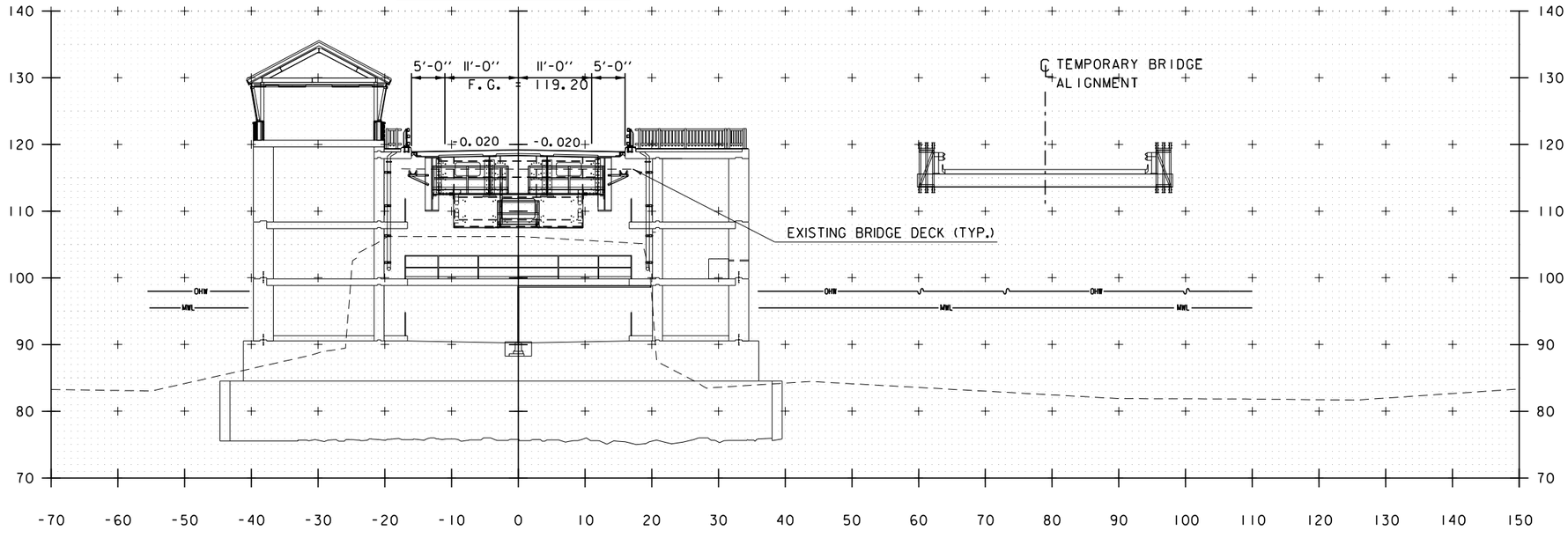
PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 334 OF 379

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520+00

END BRIDGE STA 520+29.59



519+50

0 10 20
SCALE IN FEET

STA. 519+50 TO STA. 520+00

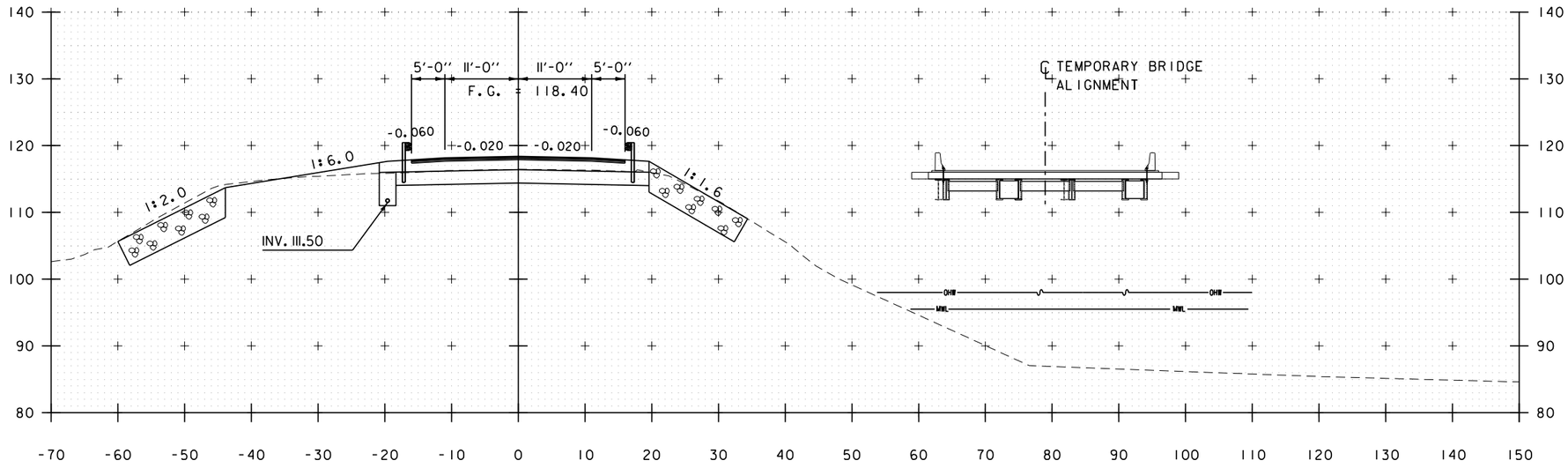
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PROJECT NUMBER: BHF 028-1(26)

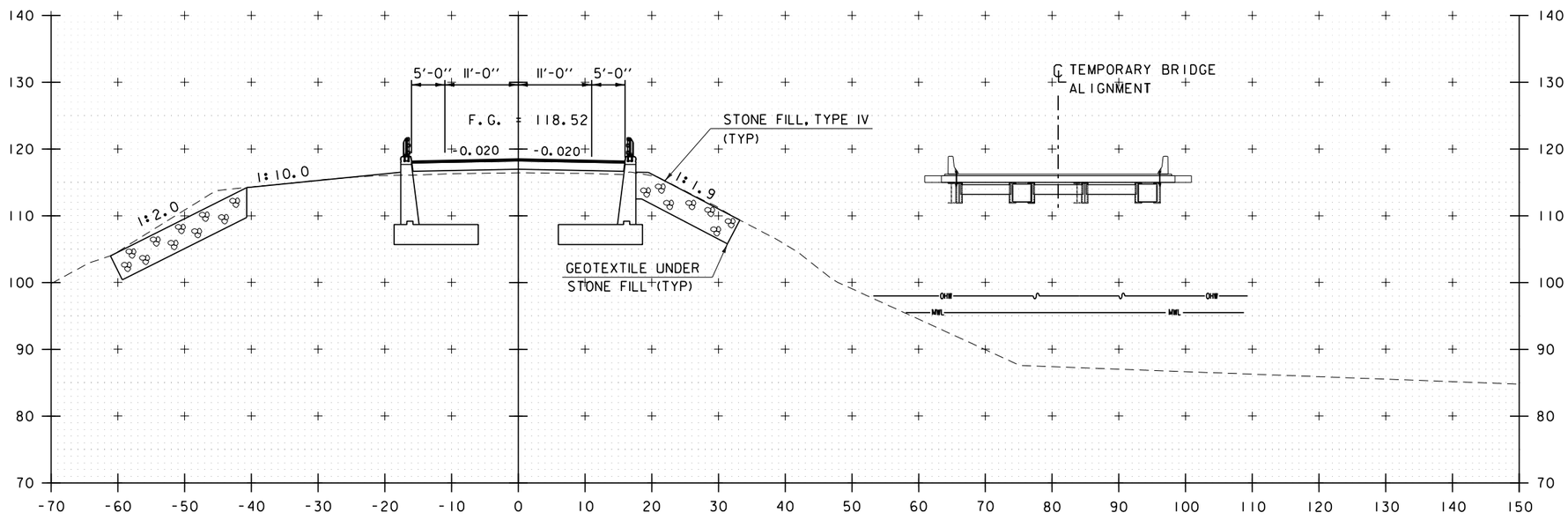
FILE NAME: z12b142xc.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
CROSS SECTION SHEET 7

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 335 OF 379

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520+50



520+40

0 10 20
SCALE IN FEET

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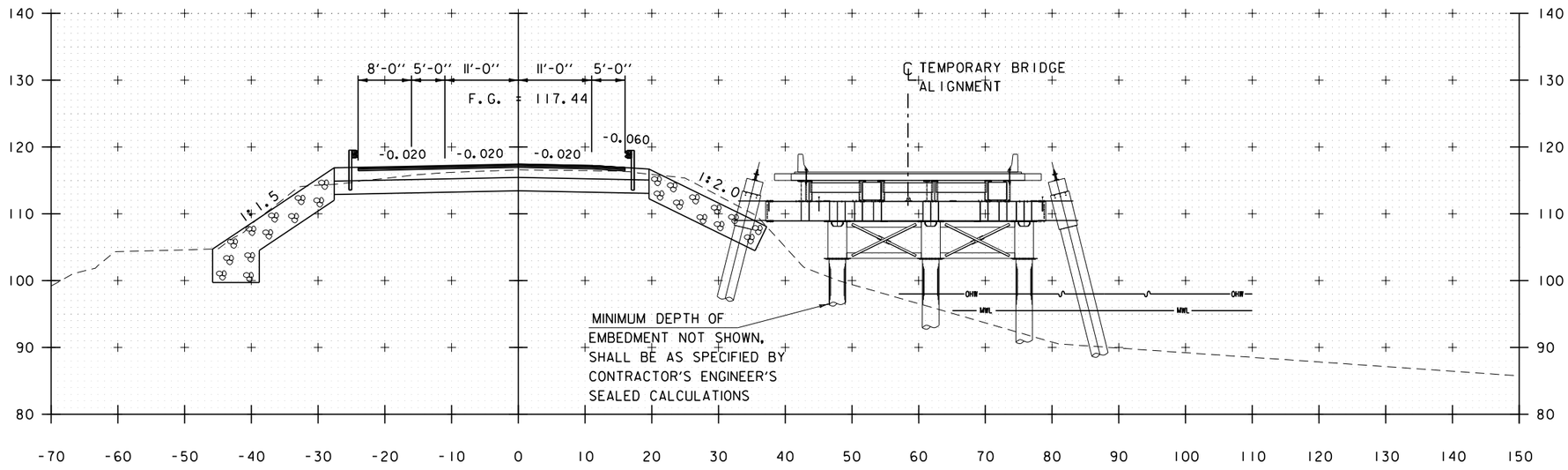
STA. 520+40 TO STA. 520+50

CHA

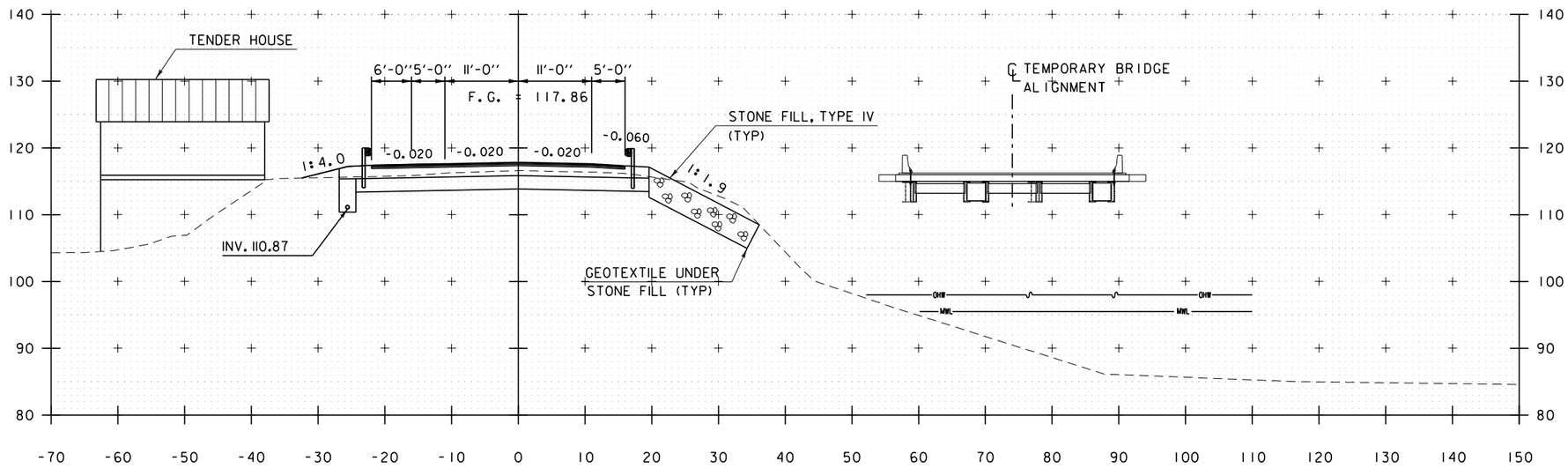
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142xc.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
CROSS SECTION SHEET 8

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 336 OF 379



521+50



521+00

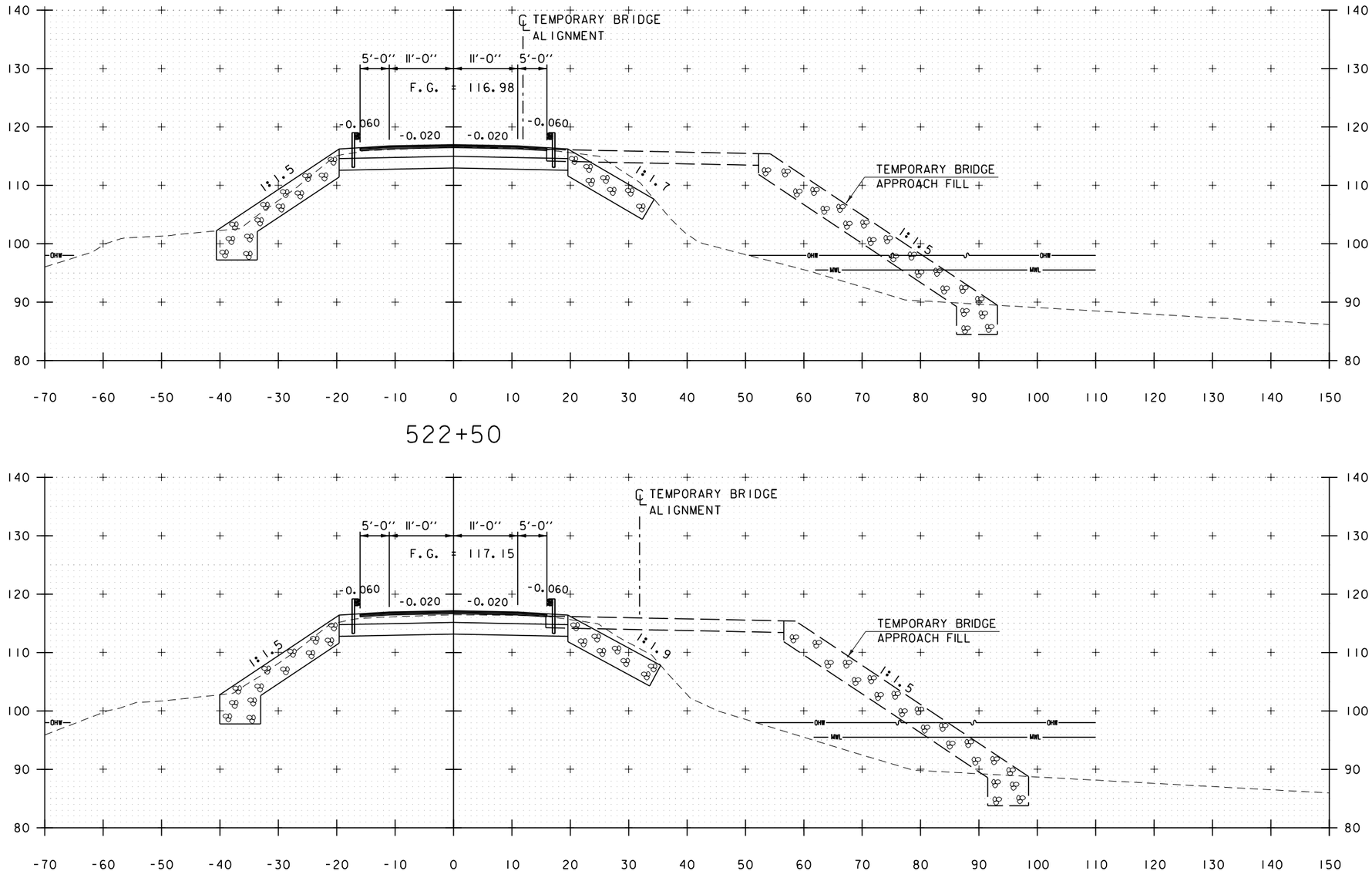
0 10 20
SCALE IN FEET

STA. 521+00 TO STA. 521+50

CHA

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE	
PROJECT NUMBER: BHF 028-1(26)	
FILE NAME: z12b142xc.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
CROSS SECTION SHEET 9	SHEET 337 OF 379

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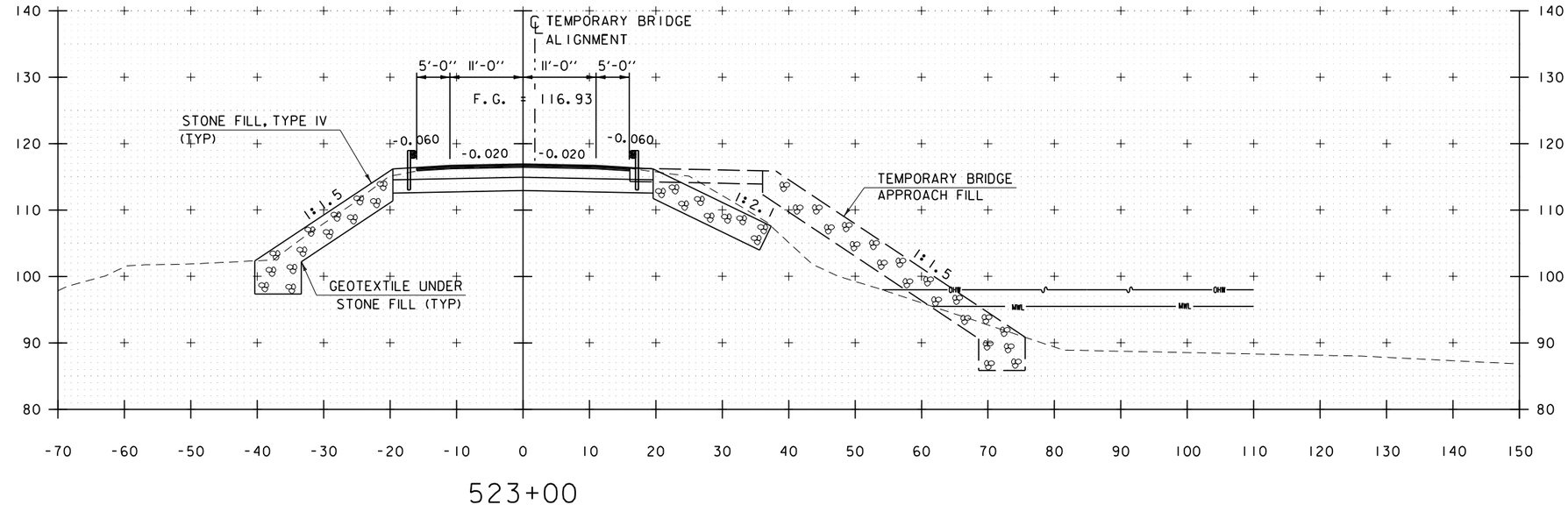
0 10 20
SCALE IN FEET

STA. 522+00 TO STA. 522+50

CHA

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE	
PROJECT NUMBER: BHF 028-1(26)	
FILE NAME: z12b142xc.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
CROSS SECTION SHEET 10	SHEET 338 OF 379

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523+00

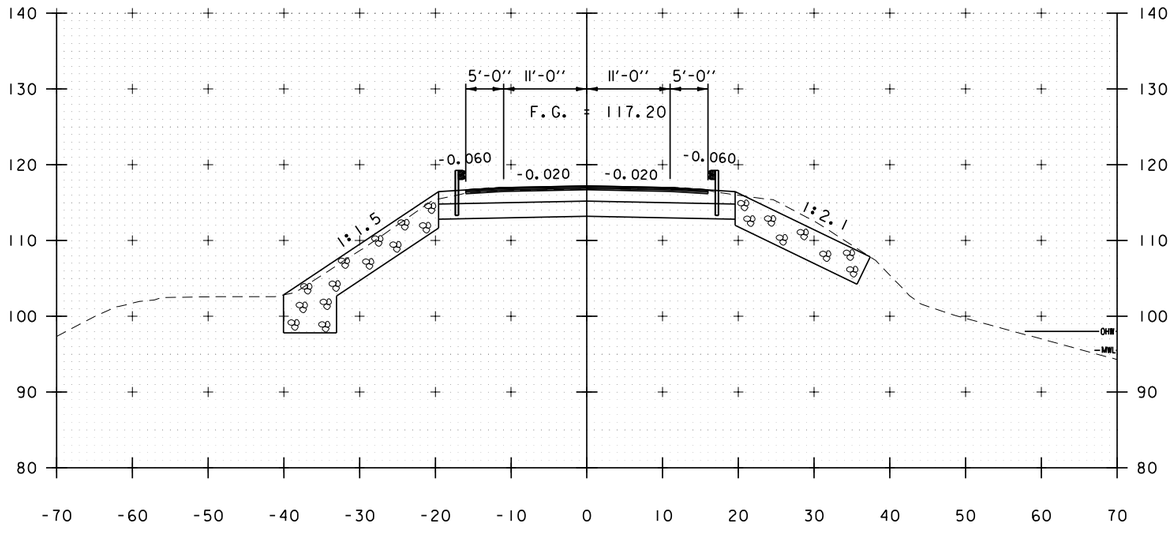
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SCALE IN FEET

STA. 523+00

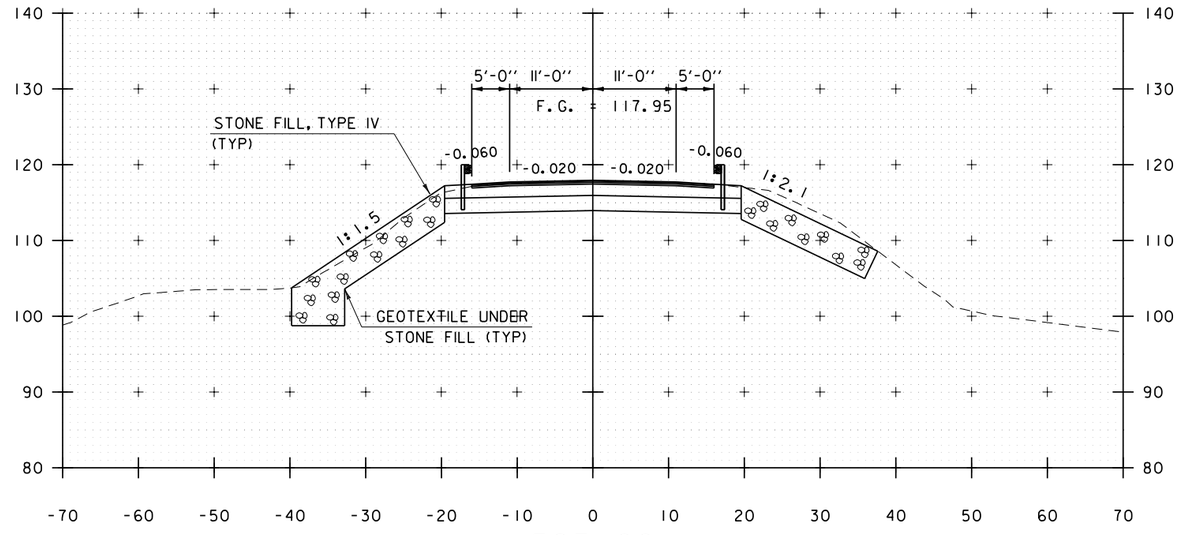
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PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142xc.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
CROSS SECTION SHEET II	SHEET 339 OF 379

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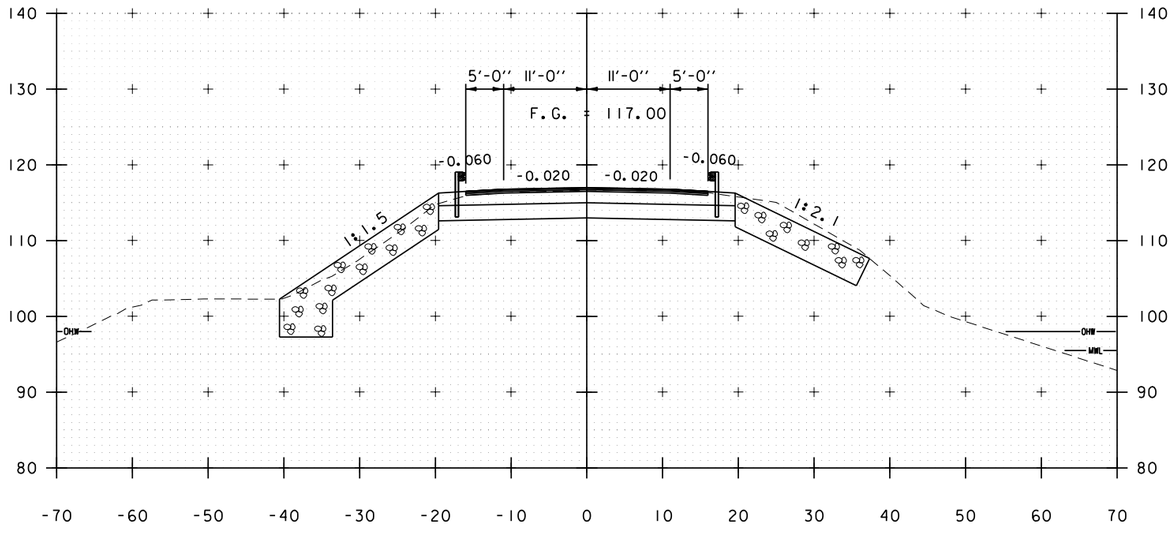


524+00

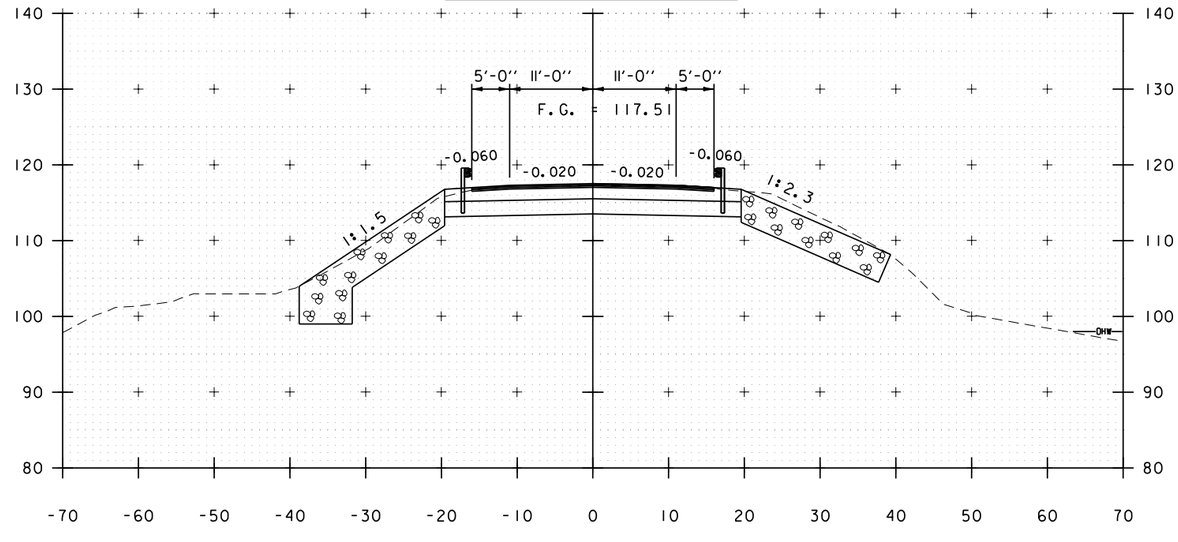


525+00

END PROJECT STA 525+00.00



523+50



524+50

0 10 20
SCALE IN FEET

STA. 523+50 TO STA. 525+00

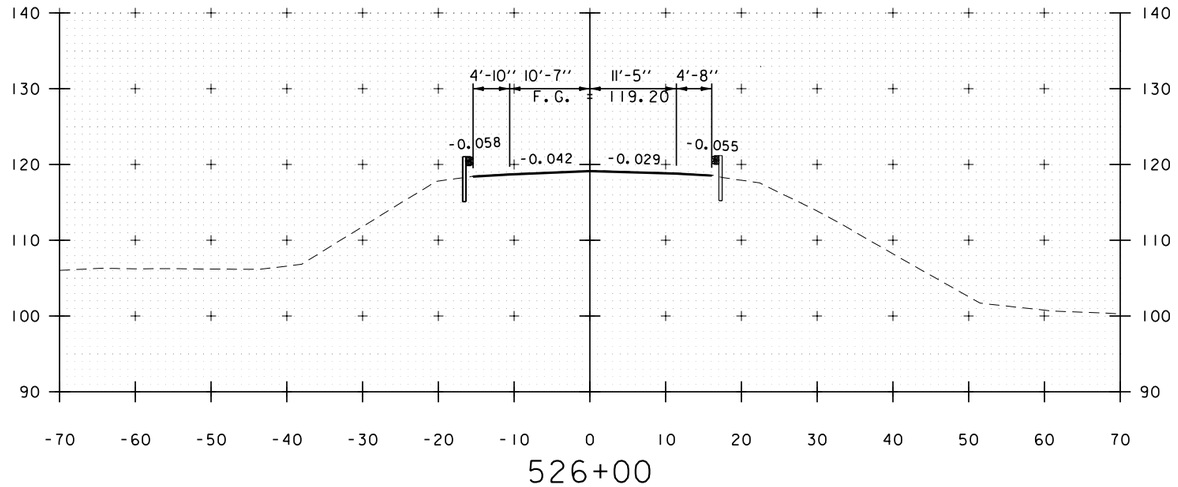
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PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142xc.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
CROSS SECTION SHEET 12

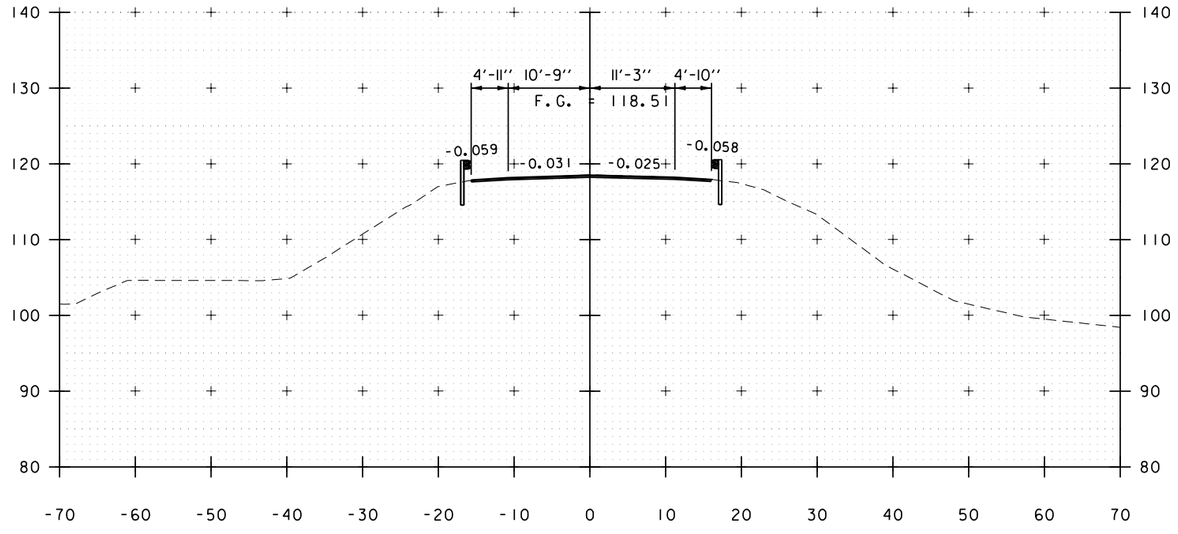
PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 340 OF 379

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526+00

END APPROACH STA 526+00.00



525+50

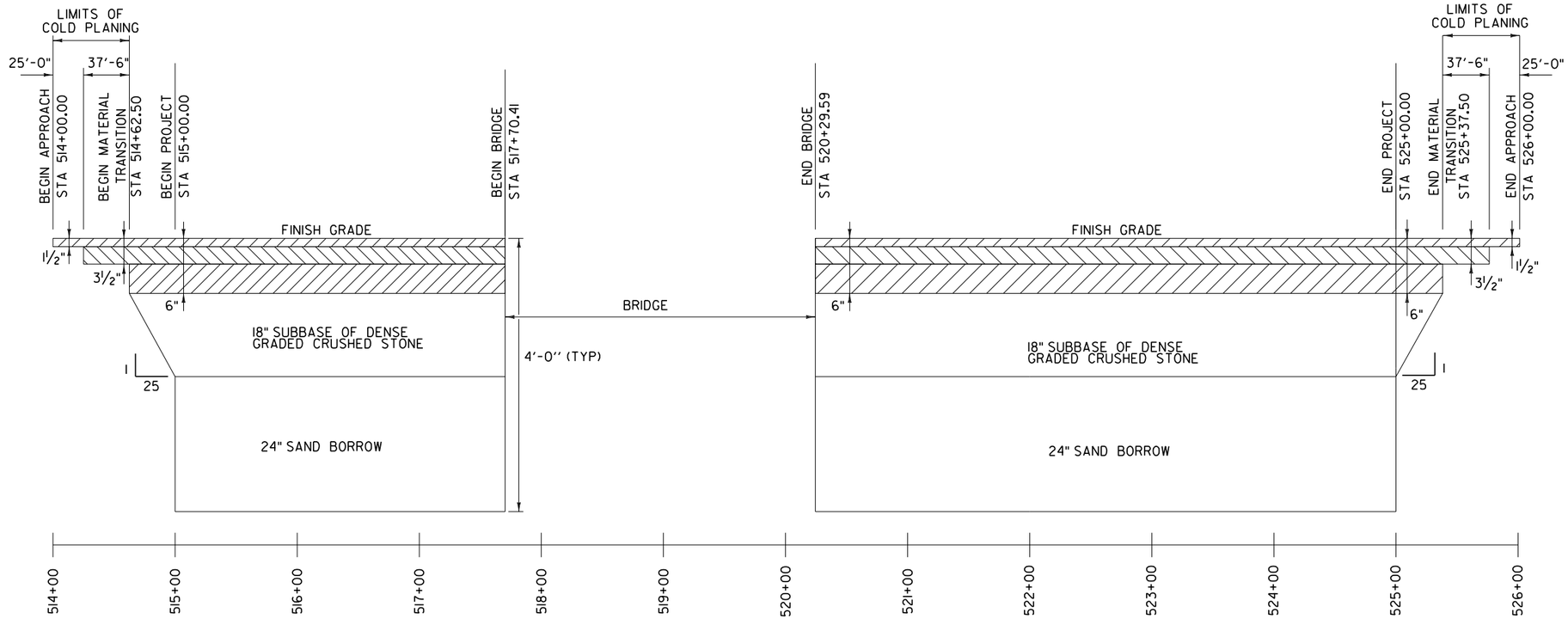
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SCALE IN FEET

STA. 525+50 TO STA. 526+00

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142xc.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
CROSS SECTION SHEET 13	SHEET 341 OF 379

FILE NAME = $FILE$
DATE/TIME = Monday, May 18, 2020 04:24:15 PM
USER = $NTUSER$



US ROUTE 2 MATERIAL TRANSITION DIAGRAM

NOT TO SCALE

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: zl2bl42mts.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: M. TAYLOR
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
MATERIAL TRANSITION DETAIL SHEET	SHEET 342 OF 379

FILE NAME = $FILE$
DATE/TIME = Monday, May 18, 2020 04:24:18 PM
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EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE 8, A DOUBLE LEAF BASCULE BRIDGE THAT PROVIDES THE ONLY VEHICULAR CONNECTION BETWEEN NORTH HERO AND GRAND ISLE, VT. THE BRIDGE WILL BE REPLACED WITH A TWIN LEAF BASCULE BRIDGE. THE BRIDGE WILL BE ON NEW FOUNDATIONS ALONG THE SAME ALIGNMENT. A SIMILAR AESTHETIC WILL BE MAINTAINED. BRIDGE 8 IS LOCATED BETWEEN THE TOWNS OF NORTH HERO AND GRAND ISLE, ALONG US ROUTE 2, AND CROSSES OVER LAKE CHAMPLAIN.

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 2.95 ACRES.
IMPACTS BELOW THE MWL ARE APPROXIMATELY 0.71 ACRE (0.18 ACRE PERM. & 0.53 ACRE TEMP.)
IMPACTS BELOW THE OHW ARE APPROXIMATELY 0.83 ACRE (0.18 ACRE PERM. & 0.65 ACRE TEMP.)

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST FOUR CONSTRUCTION SEASONS.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS A SADDLE THAT IS MOSTLY OPEN AREAS AND BANK WITH SOME WOODED AREAS. US ROUTE 2, LANDING LANE, DRAWBRIDGE LANE, AND TWO PAVED DRIVEWAYS ARE WITHIN THE PROJECT SITE. THERE IS A RESIDENCE ON THE SOUTH SIDE OF THE PROJECT.

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

LAKE CHAMPLAIN IS THE ONLY WATER SOURCE ON THE PROJECT SITE.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF DECIDUOUS AND CONIFEROUS TREES, AS WELL AS SOME ADDITIONAL MINOR GROWTH. UPON PROJECT COMPLETION, AREAS OF THE CAUSEWAY WILL BE ARMORED WITH STONE FILL AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

THE SOIL IN THE PROJECT AREA IS MOSTLY FILL PLACED FOR THE CONSTRUCTION OF THE EXISTING BRIDGE. THE NORTHERNMOST AREA CONTAINS COVINGTON SILTY CLAY LOAM, K=0.49. THE SOUTHERN AREA CONTAINS AMENIA SILT LOAM, K=0.37 AND BENSON ROCKY LOAM, K=0.32.

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

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: YES - THE PROJECT AREA IS AN EXCELLENT WILDLIFE HABITAT. NUMEROUS SPECIES COULD OCCUR WITHIN THE PROJECT AREA INCLUDE INVERTEBRATES, FISH, BOTTOM DWELLING ORGANISMS, WATERFOWL, BIRDS OF PREY, MIGRATORY BIRDS, MAMMALS, REPTILES, AND AMPHIBIANS.
HISTORICAL OR ARCHEOLOGICAL AREAS: YES
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: YES - GIANT FLOATER (PYGANODON GRANDIS) WAS THE ONLY SPECIES FOUND BY A SURVEY TARGETING FIVE SPECIES OF FRESHWATER MUSSEL. IT HAS BEEN RECOMMENDED THAT A RESAMPLE BE TAKEN CLOSER TO CONSTRUCTION AND THAT ALL MUSSELS FOUND BE RELOCATED TO ANOTHER SUITABLE AREA BEFORE JULY 2018.
WATER RESOURCE: LAKE CHAMPLAIN
WETLANDS: NO - NO IMPACTS ARE ANTICIPATED TO THE WETLANDS, WHICH ARE LOCATED WITHIN THE NORTHWESTERN QUADRANT OF THE CAUSEWAY, DUE TO THE LIMITED SCOPE OF THE PROJECT.

1.3 RISK EVALUATION

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

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

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

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

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED. PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES. BECAUSE THIS PROJECT FALLS UNDER THE CGP 3-9020, BARRIER FENCE SHALL BE USED INSTEAD OF PROJECT DEMARCATION FENCE WITHIN 100 FEET OF A WATER RESOURCE (STREAM, BROOK, LAKE, POND, WETLAND, ETC.

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 3-9020, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

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

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

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

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

1.4.4 INSTALL SEDIMENT BARRIERS

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

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN. BECAUSE THIS PROJECT FALLS UNDER THE CONSTRUCTION GENERAL PERMIT 3-9020, WOVEN WIRE REINFORCED SILT FENCE SHALL BE USED INSTEAD OF SILT FENCE WITHIN 100 FEET UPSLOPE OF RECEIVING WATERS.

FILTER CURTAINS WILL BE INSTALLED AS PROPOSED ON THE EPSC PLANS AND DETAIL. FILTER CURTAINS WILL ALSO BE INSTALLED AROUND THE TEMPORARY BRIDGE PIERS. THE INITIAL INSTALLATION OF THE CURTAIN, FOR EARTH EXCAVATION AND BRIDGE CONSTRUCTION, SHALL CONSIST OF A DOUBLE ROW. THE SECOND INSTALLATION, FOR THE COFFERDAM REMOVAL, SHALL CONSIST OF A SINGLE ROW. EACH ROW SHALL BE PAID BY THE SQUARE FOOT UNDER ITEM 649.61 GEOTEXTILE FOR FILTER CURTAIN.

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.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

THIS PROJECT IS NOT EXPECTED TO PRODUCE ANY CHANNELIZED RUNOFF.

1.4.7 CONSTRUCT PERMANENT CONTROLS

THIS PROJECT DOES NOT REQUIRE ANY PERMANENT STORMWATER TREATMENT DEVICES.

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

IF CONSTRUCTION ACTIVITIES INVOLVING EARTH DISTURBANCE CONTINUE PAST OCTOBER 15 OR BEGIN BEFORE APRIL 15, THE FOLLOWING MUST BE INCORPORATED INTO THE EPSC PLAN:

1. ENLARGED ACCESS POINTS, STABILIZE TO PROVIDE FOR SNOW STOCKPILING.
2. LIMITS OF DISTURBANCE MOVED OR REPLACED TO REFLECT BOUNDARY OF WINTER WORK.
3. A SNOW MANAGEMENT PLAN INCLUDING ADEQUATE STORAGE AND CONTROL OF SNOWMELT, REQUIRING CLEARED SNOW TO BE STORED DOWN GRADIENT OF ALL AREA OF DISTURBANCE AND PROHIBITING STORAGE OF SNOW IN STORMWATER TREATMENT STRUCTURES.
4. A MINIMUM 25 FOOT BUFFER SHALL BE MAINTAINED FROM PERIMETER CONTROLS SUCH AS SILT FENCE TO ALLOW FOR SNOW CLEARING AND MAINTENANCE.
5. IN AREAS OF DISTURBANCE WITHIN 100 FEET OF A RECEIVING WATER, SILT FENCE SHALL BE REINFORCED OR ELSE REPLACED WITH PERIMETER DIKES, SWALES, OR OTHER PRACTICES RESISTANT TO THE FORCES OF SNOW LOADS.
6. DRAINAGE STRUCTURES SHALL BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS.
7. THE CONTRACTOR SHALL INSTALL SILT FENCE AND OTHER PRACTICES REQUIRING EARTH DISTURBANCE AHEAD OF GROUND FREEZING.
8. WHERE MULCH IS THE SELECTED STABILIZATION MEASURE, USE DOUBLE THE STANDARD RATE OF MULCH.
9. THE REQUIREMENT FOR NETTING OR OTHER APPROACH TO ANCHOR MULCH TO PREVENT REMOVAL BY WIND.
10. TO ENSURE COVER OF DISTURBED SOIL IN ADVANCE OF A MELT EVENT, AREAS OF DISTURBED SOIL MUST BE STABILIZED AT THE END OF EACH WORK DAY, WITH THE FOLLOWING EXCEPTIONS:
    a. IF NO PRECIPITATION WITHIN 24 HOURS IS FORECAST AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS, DAILY STABILIZATION IS NOT NECESSARY.
    b. DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS HOUSE FOUNDATIONS OR OPEN UTILITY TRENCHES.
11. REMOVE SNOW OR ICE TO LESS THAN 1 INCH THICKNESS PRIOR TO STABILIZATION.

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 ANTICIPATED. FILTER BAGS SHALL BE USED FOR TREATMENT OF DISCHARGE DURING DEWATERING OPERATIONS. LOCATIONS FOR TREATMENT HAVE BEEN PROPOSED AND ARE SHOWN ON THE PLANS.

1.4.12 INSPECT YOUR SITE

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

1.5 SEQUENCE AND STAGING

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

1.5.1 CONSTRUCTION SEQUENCE

1.5.2 OFF-SITE ACTIVITIES

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

1.5.3 UPDATES

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:18:02 PM
USER = $NTUSER$

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142erogn.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC NARRATIVE SHEET

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 343 OF 379

N

VT STATE PLANE GRID

SOIL TYPE: WATER

COVINGTON SILTY CLAY LOAM
0%-3% SLOPES
NOT HIGHLY ERODIBLE
K = 0.49

MWL

OHW

100

AER

AER E&T

EXISTING R.O.W.

US ROUTE 2

WESTBOUND
EASTBOUND

MATCH LINE SEE NEXT SHEET

100

OHW

MWL

THE GUT

SOIL TYPE: WATER

90

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

CHA

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE	
PROJECT NUMBER: BHF 028-1(26)	
FILE NAME: z12bl42erobdr_ex.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
EPSC EXISTING SITE PLAN SHEET 1	SHEET 344 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:18:44 PM
USER = $NTUSER$

N

VT STATE PLANE GRID

LAKE CHAMPLAIN

SOIL TYPE: WATER

EXISTING R.O.W.

MWL

OHW

AER E&T

US ROUTE 2

WESTBOUND

EASTBOUND

510+00

511+00

512+00

MATCH LINE STA 512+25, SEE NEXT SHEET

MATCH LINE SEE PREVIOUS SHEET

COVINGTON SILTY CLAY LOAM
0%-3% SLOPES
NOT HIGHLY ERODIBLE
K = 0.49

THE GUT

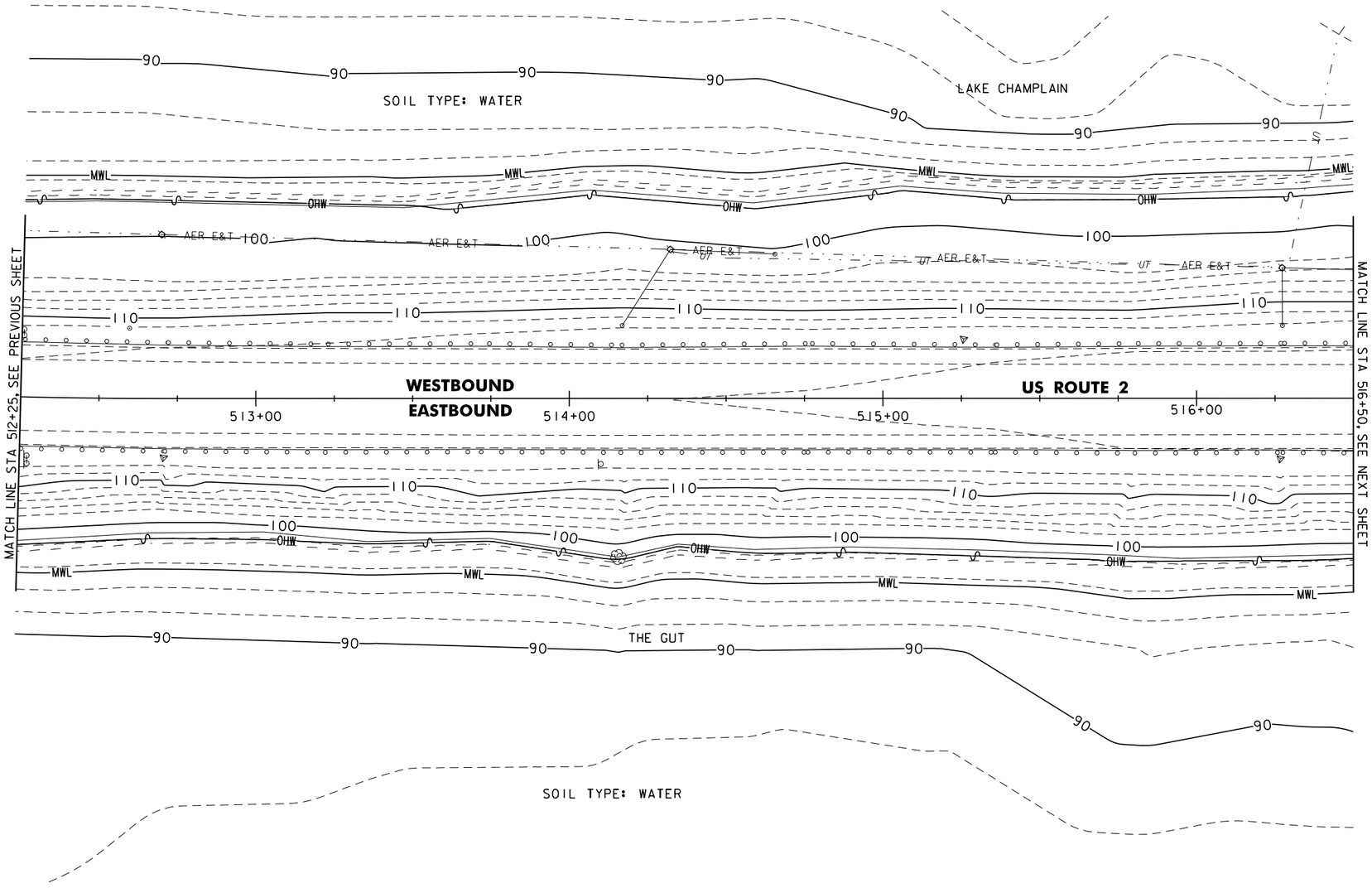
SOIL TYPE: WATER

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

CHA

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142erobdr_ex.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
EPSC EXISTING SITE PLAN SHEET 2	SHEET 345 OF 379

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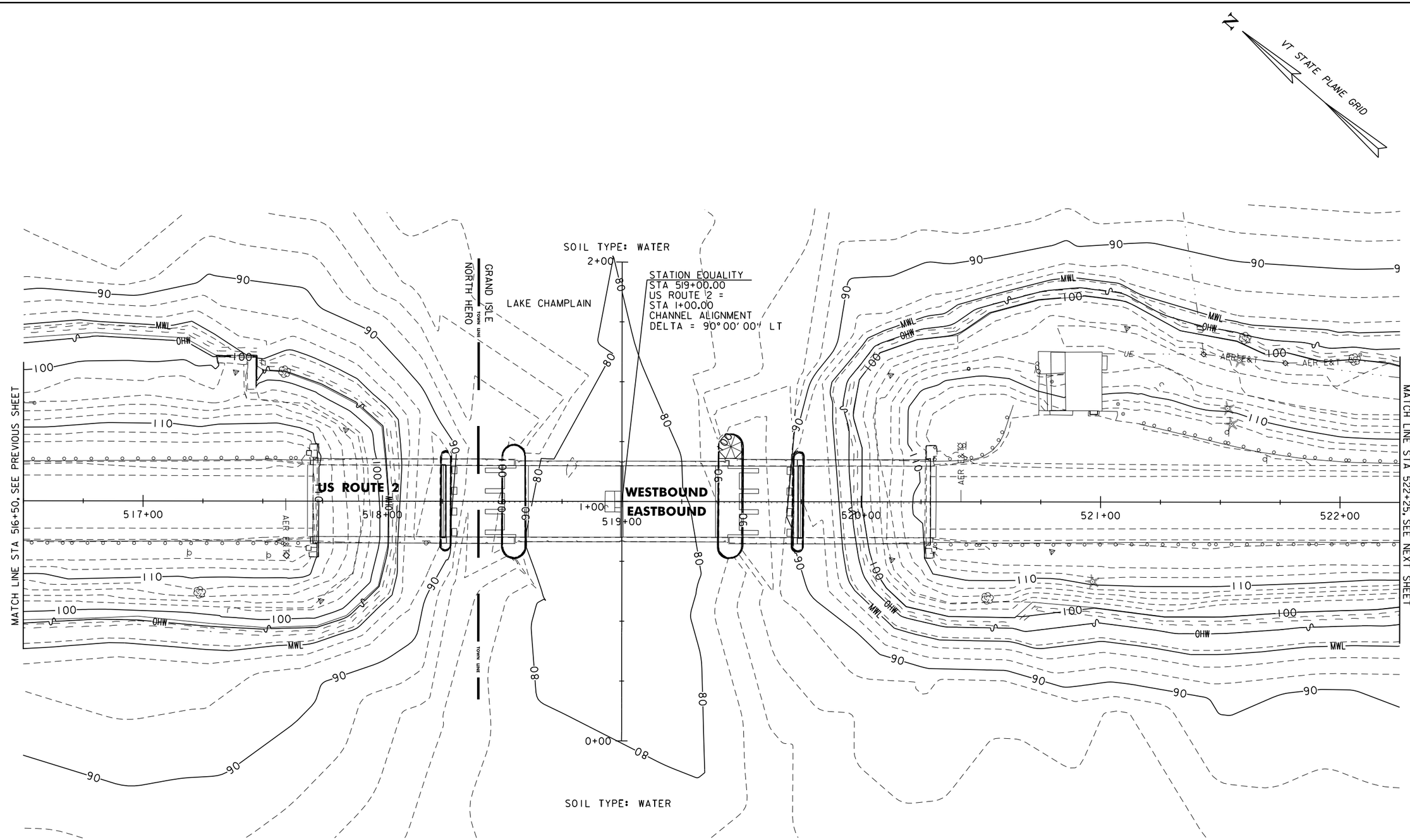


SCALE 1" = 20'-0"
20 0 20

CHA

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE	
PROJECT NUMBER: BHF 028-1(26)	
FILE NAME: z12b142erobdr_ex.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
EPSC EXISTING SITE PLAN SHEET 3	SHEET 346 OF 379

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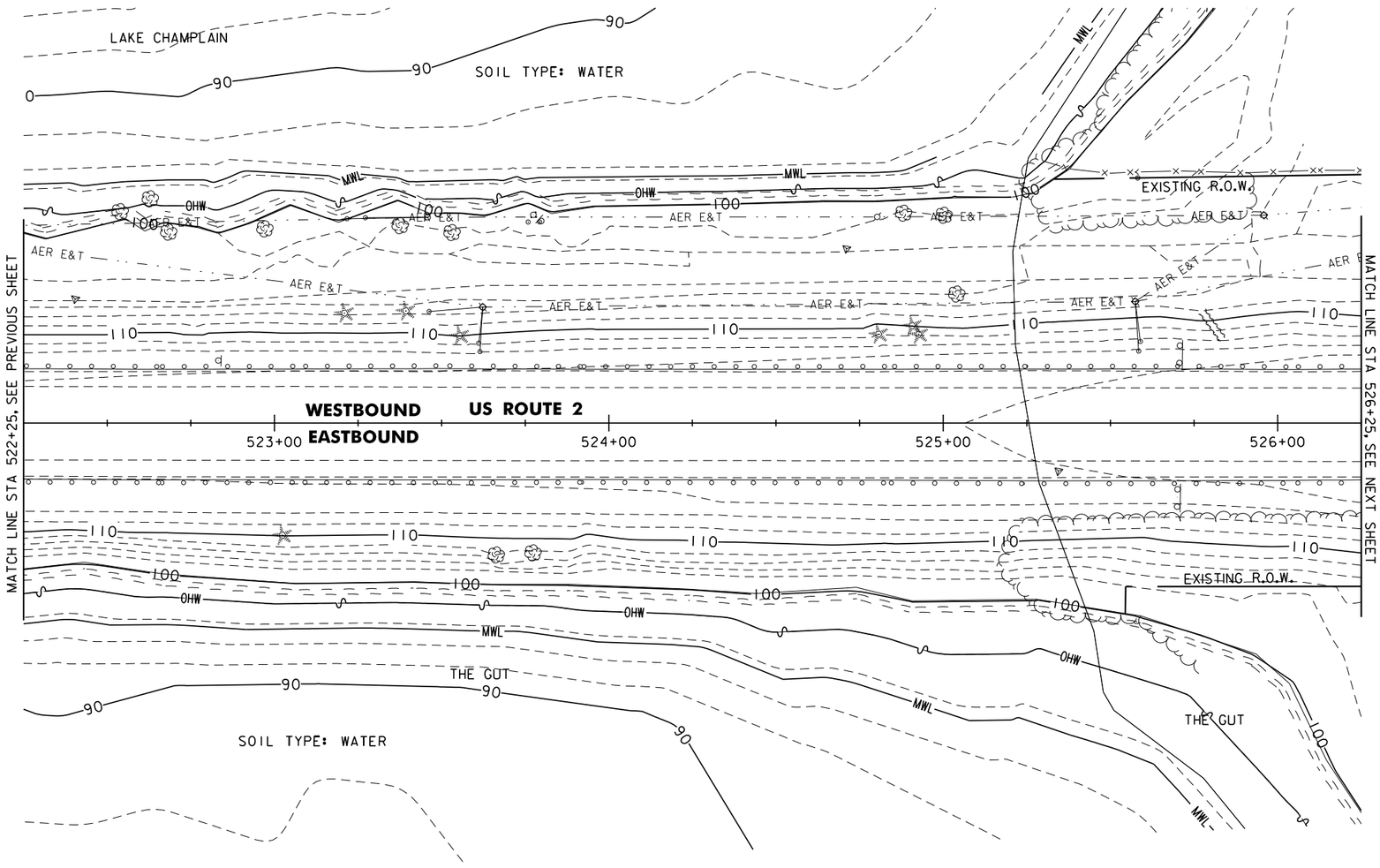


SCALE 1" = 20'-0"
20 0 20

CHA

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12bl42erobdr_ex.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
EPSC EXISTING SITE PLAN SHEET 4	SHEET 347 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:18:46 PM
USER = $NTUSER$



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

CHA

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142erobdr_ex.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
EPSC EXISTING SITE PLAN SHEET 5	SHEET 348 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:18:49 PM
USER = $NTUSER$

CLARK MARINE PROPERTIES, LLC

N

VT STATE PLANE GRID

BENSON ROCKY SILT LOAM,
OVER SHALY LIMESTONE
15%-25% SLOPES
HIGHLY ERODIBLE
K = 0.32

LANDING LANE

EXISTING R.O.W.

AER E&T

110

120

130

MATCH LINE STA 526+25, SEE PREVIOUS SHEET

WESTBOUND
EASTBOUND

US ROUTE 2

527+00

528+00

529+00

530+00

EXISTING R.O.W.

DRAWBRIDGE LANE

BENSON ROCKY SILT LOAM,
OVER SHALY LIMESTONE
3%-8% SLOPES
NOT HIGHLY ERODIBLE
K=0.32

BENSON ROCKY SILT LOAM,
OVER SHALY LIMESTONE
3%-8% SLOPES
NOT HIGHLY ERODIBLE
K = 0.32

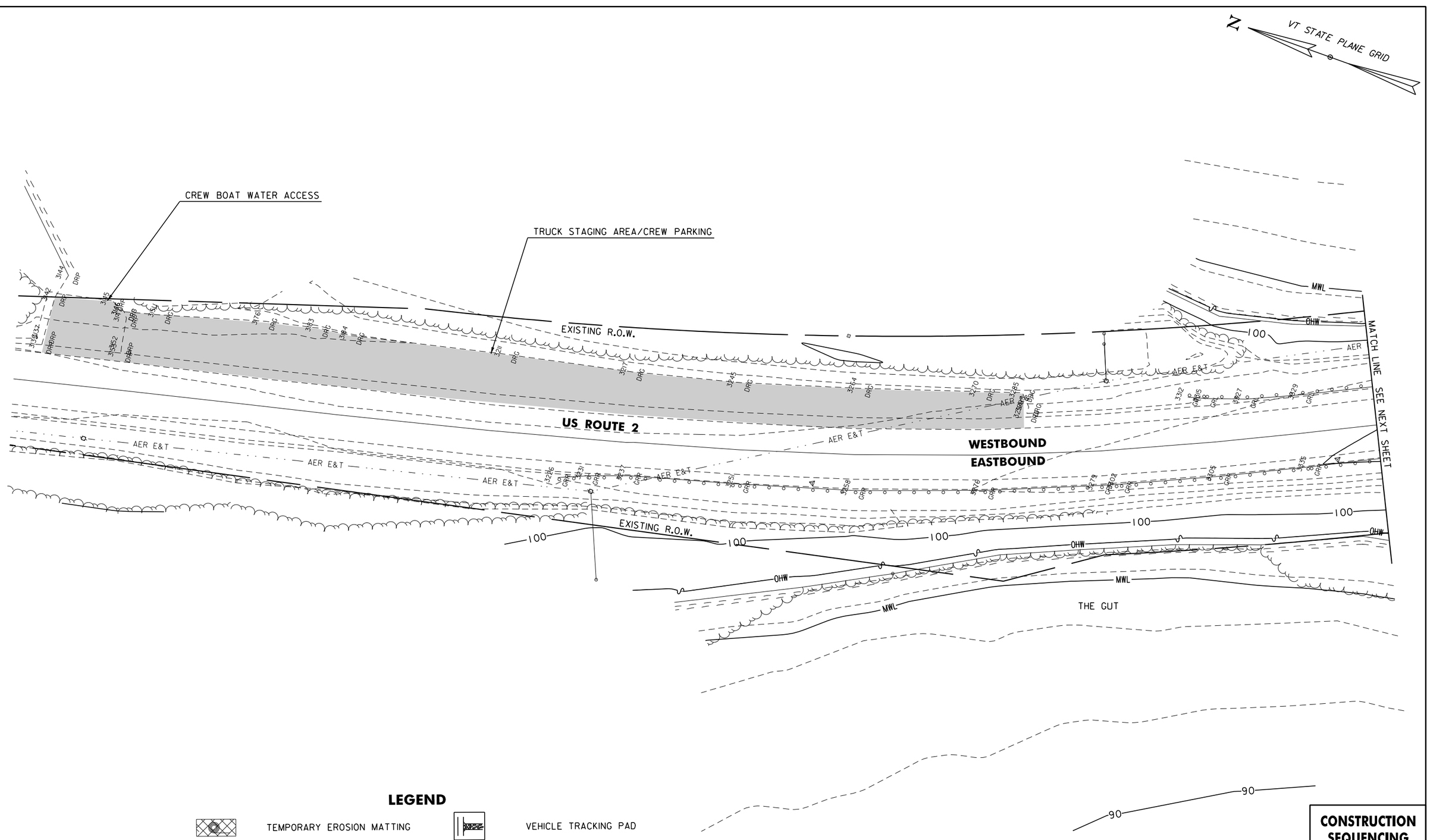
WHITEMAN CHARITABLE REMAINDER UNITRUST
C/O JOSEPH BAUER, ESQ.

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

CHA

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE	
PROJECT NUMBER: BHF 028-1(26)	
FILE NAME: z12b142erobdr_ex.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
EPSC EXISTING SITE PLAN SHEET 6	SHEET 349 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:18:50 PM
USER = $NTUSER$



LEGEND

- TEMPORARY EROSION MATTING
- WOVEN WIRE REINFORCED
- BF — BF — BARRIER FENCE
- GEOTEXTILE FOR FILTER CURTAIN
- VEHICLE TRACKING PAD
- DEWATERING OPERATION
- FILTER BAG
- TEMPORARY DETOUR, CONSTRUCTION ACCESS, OR STAGING AREA

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

CONSTRUCTION SEQUENCING PHASE 1

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42erobdr_con.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC CONSTRUCTION PLAN SHEET 1

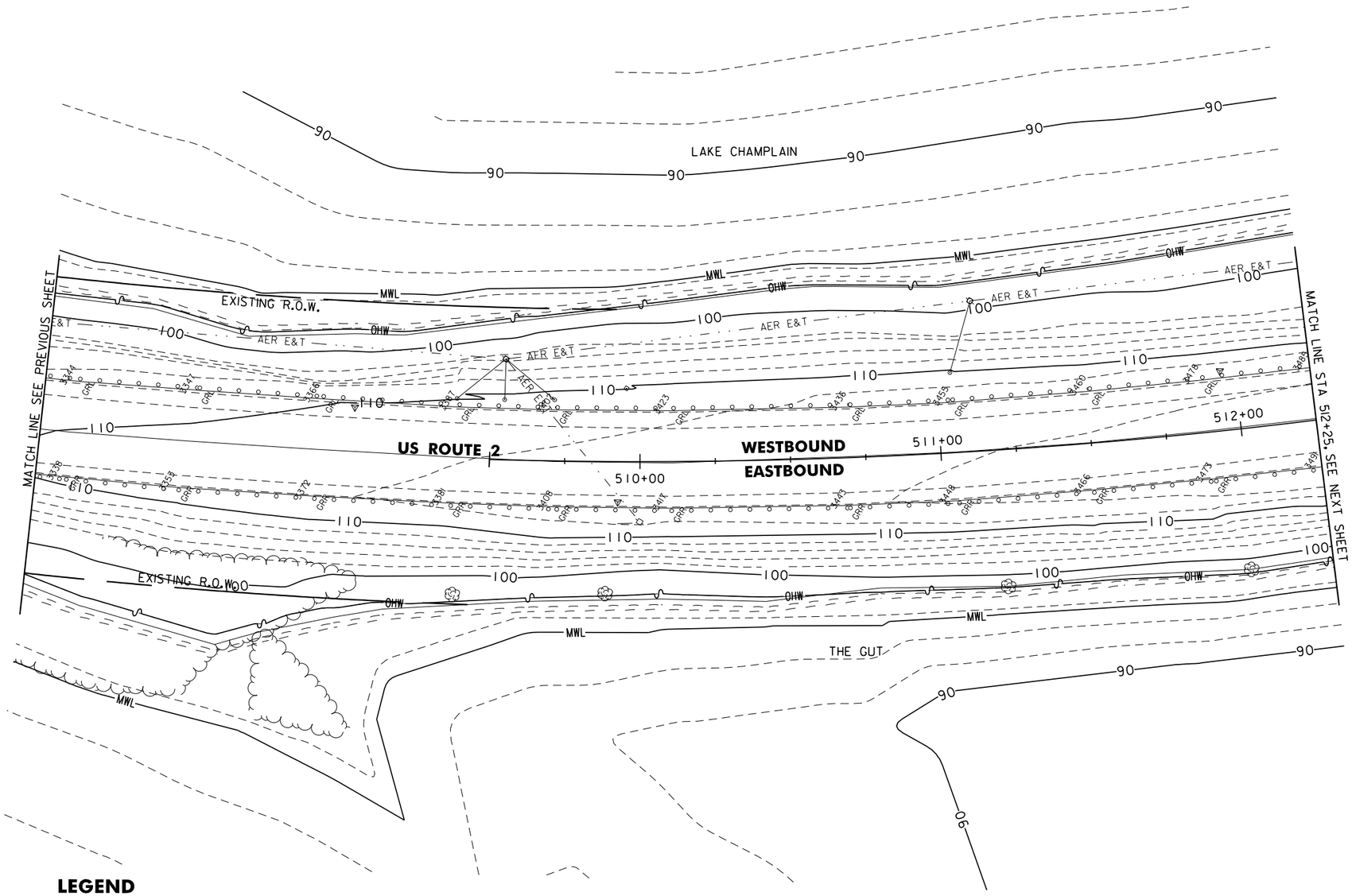
PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 350 OF 379

CHA

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:18:58 PM
USER = $NTUSER$

N

VT STATE PLANE GRID



LEGEND

- TEMPORARY EROSION MATTING
- WOVEN WIRE REINFORCED
- BF — BARRIER FENCE
- GEOTEXTILE FOR FILTER CURTAIN
- VEHICLE TRACKING PAD
- DEWATERING OPERATION
- FILTER BAG
- TEMPORARY DETOUR, CONSTRUCTION ACCESS, OR STAGING AREA

CONSTRUCTION SEQUENCING PHASE 1

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

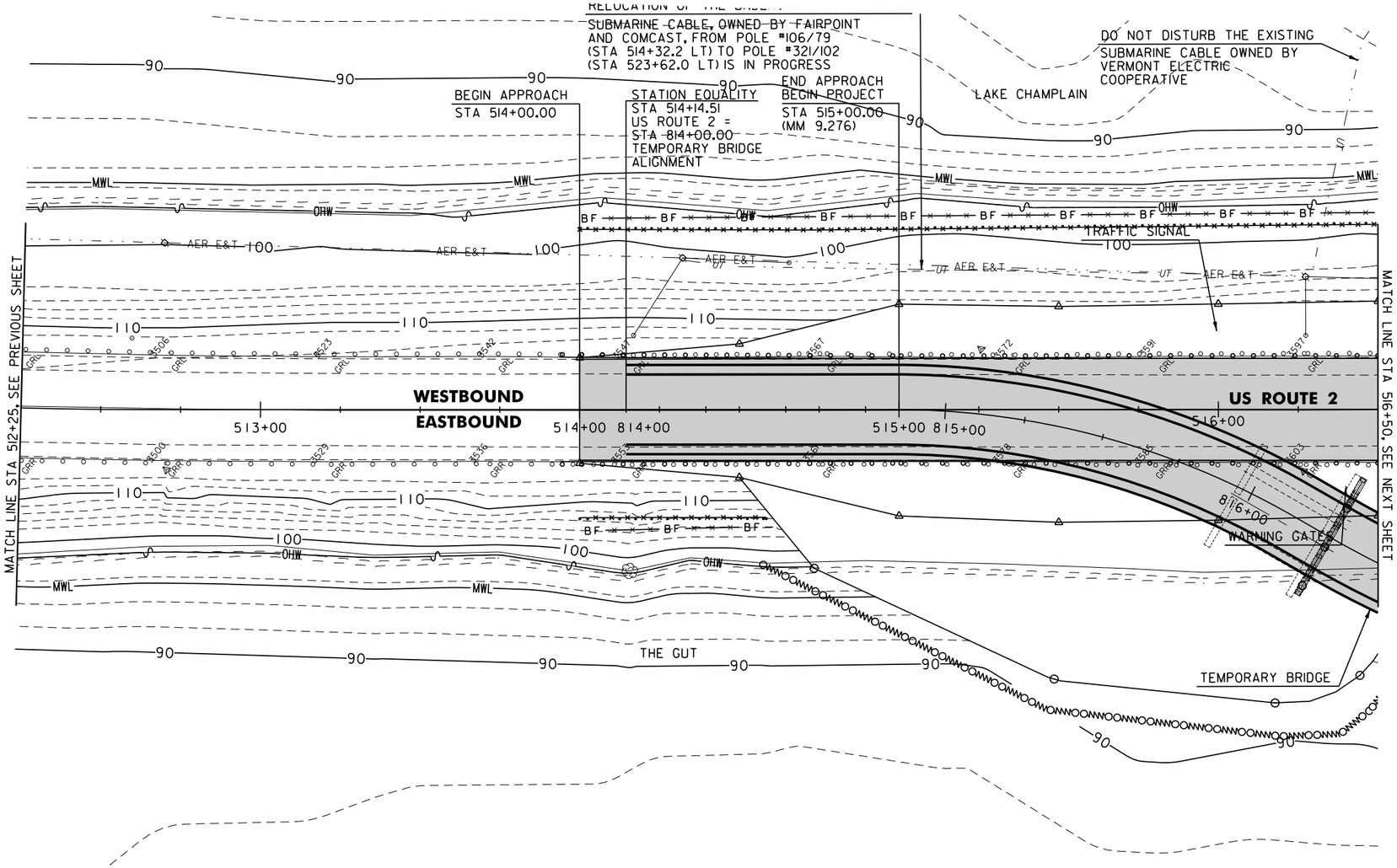
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PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142erobdr_con.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC CONSTRUCTION PLAN SHEET 2

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 351 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:01 PM
USER = $NTUSER$



LEGEND

- TEMPORARY EROSION MATTING
- WOVEN WIRE REINFORCED
- BF — BARRIER FENCE
- GEOTEXTILE FOR FILTER CURTAIN
- VEHICLE TRACKING PAD
- DEWATERING OPERATION
- FILTER BAG
- TEMPORARY DETOUR, CONSTRUCTION ACCESS, OR STAGING AREA

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

CHA

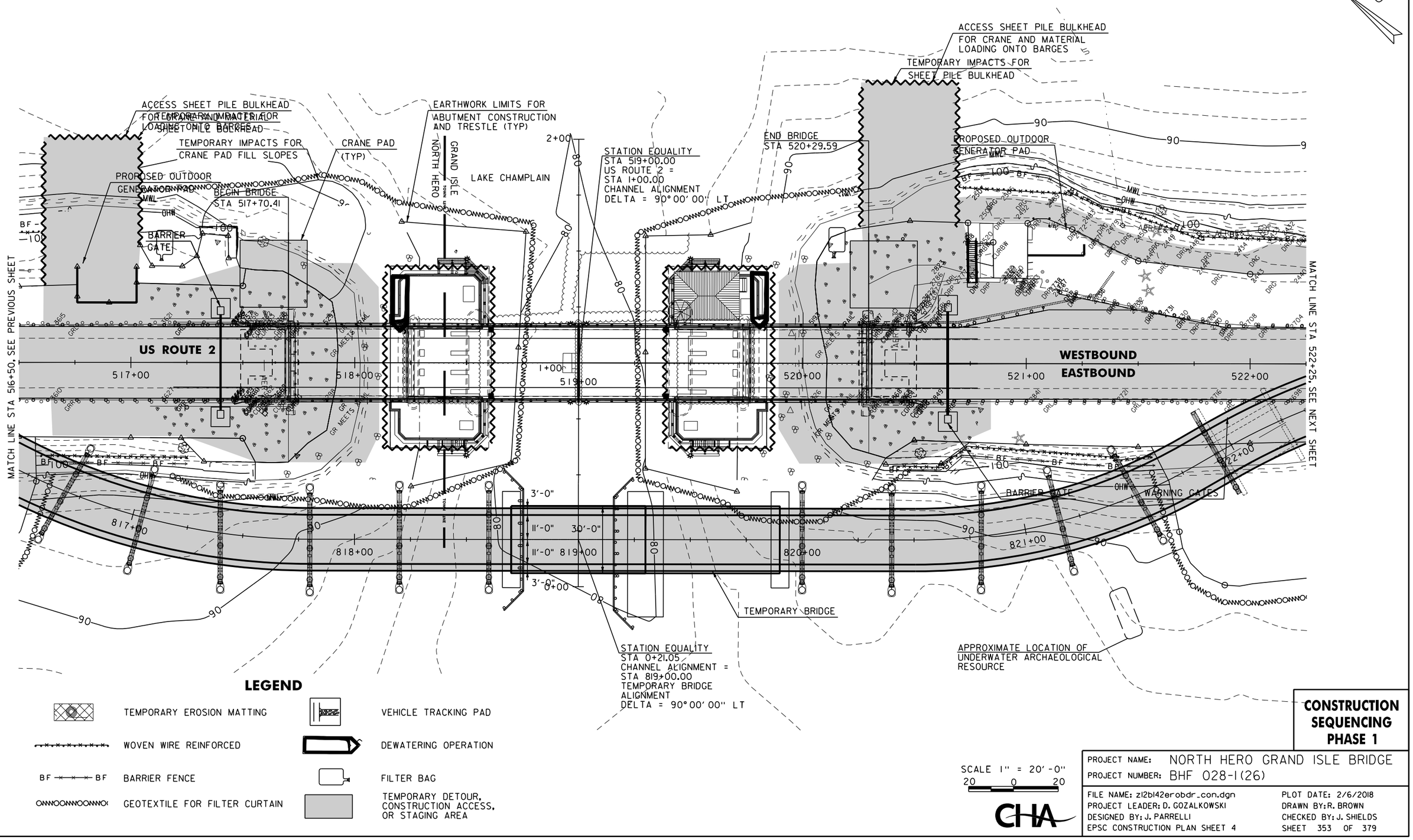
CONSTRUCTION SEQUENCING PHASE 1

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142erobdr_con.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC CONSTRUCTION PLAN SHEET 3

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 352 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:02 PM
USER = $NTUSER$



LEGEND

- TEMPORARY EROSION MATTING
- WOVEN WIRE REINFORCED
- BF — BARRIER FENCE — BF
- GEOTEXTILE FOR FILTER CURTAIN
- VEHICLE TRACKING PAD
- DEWATERING OPERATION
- FILTER BAG
- TEMPORARY DETOUR, CONSTRUCTION ACCESS, OR STAGING AREA

CONSTRUCTION SEQUENCING PHASE 1

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

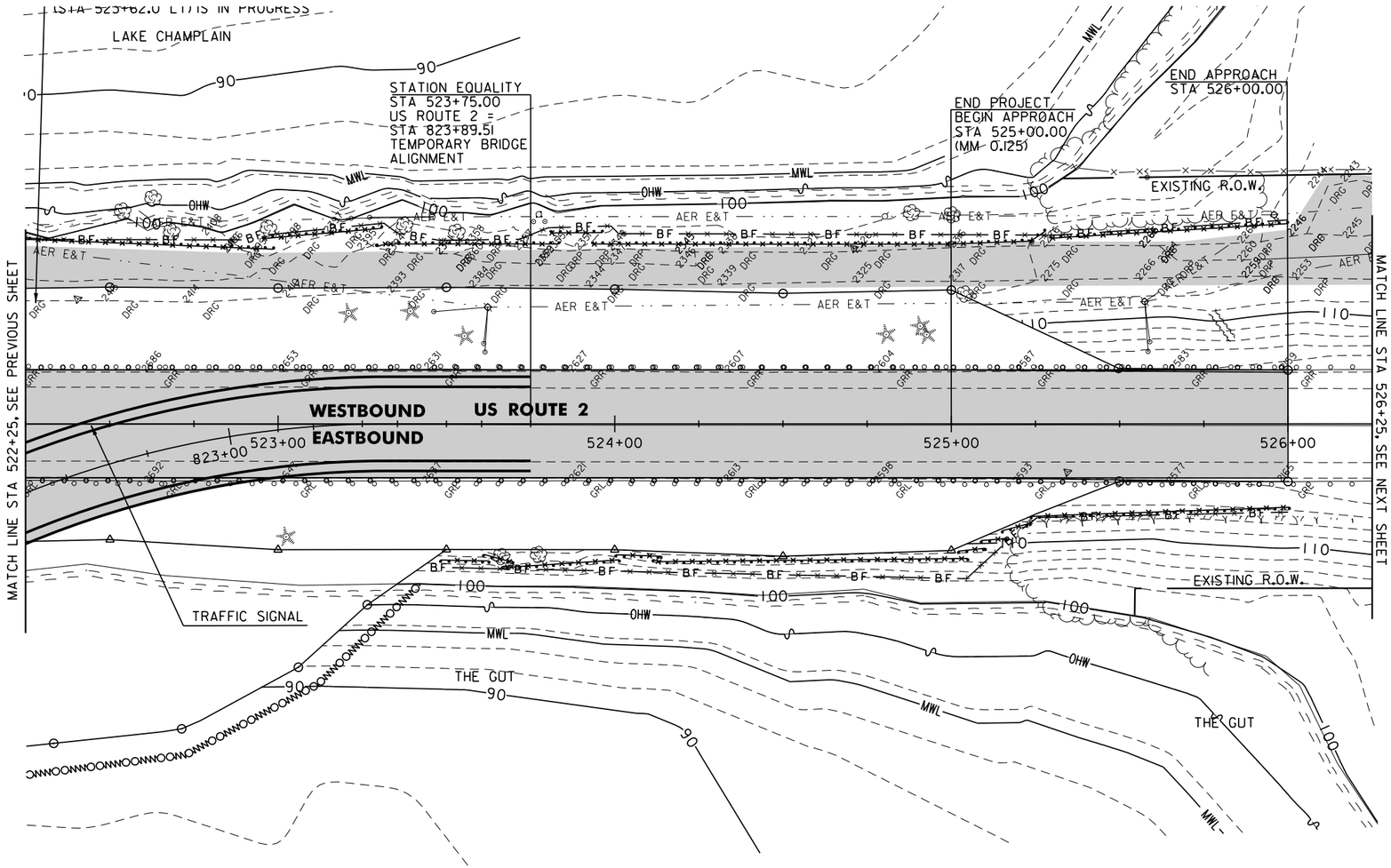
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PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142erobdr_con.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC CONSTRUCTION PLAN SHEET 4

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 353 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:05 PM
USER = $NTUSER$



LEGEND

- TEMPORARY EROSION MATTING
- WOVEN WIRE REINFORCED
- BF — BARRIER FENCE
- GEOTEXTILE FOR FILTER CURTAIN
- VEHICLE TRACKING PAD
- DEWATERING OPERATION
- FILTER BAG
- TEMPORARY DETOUR, CONSTRUCTION ACCESS, OR STAGING AREA

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

CHA

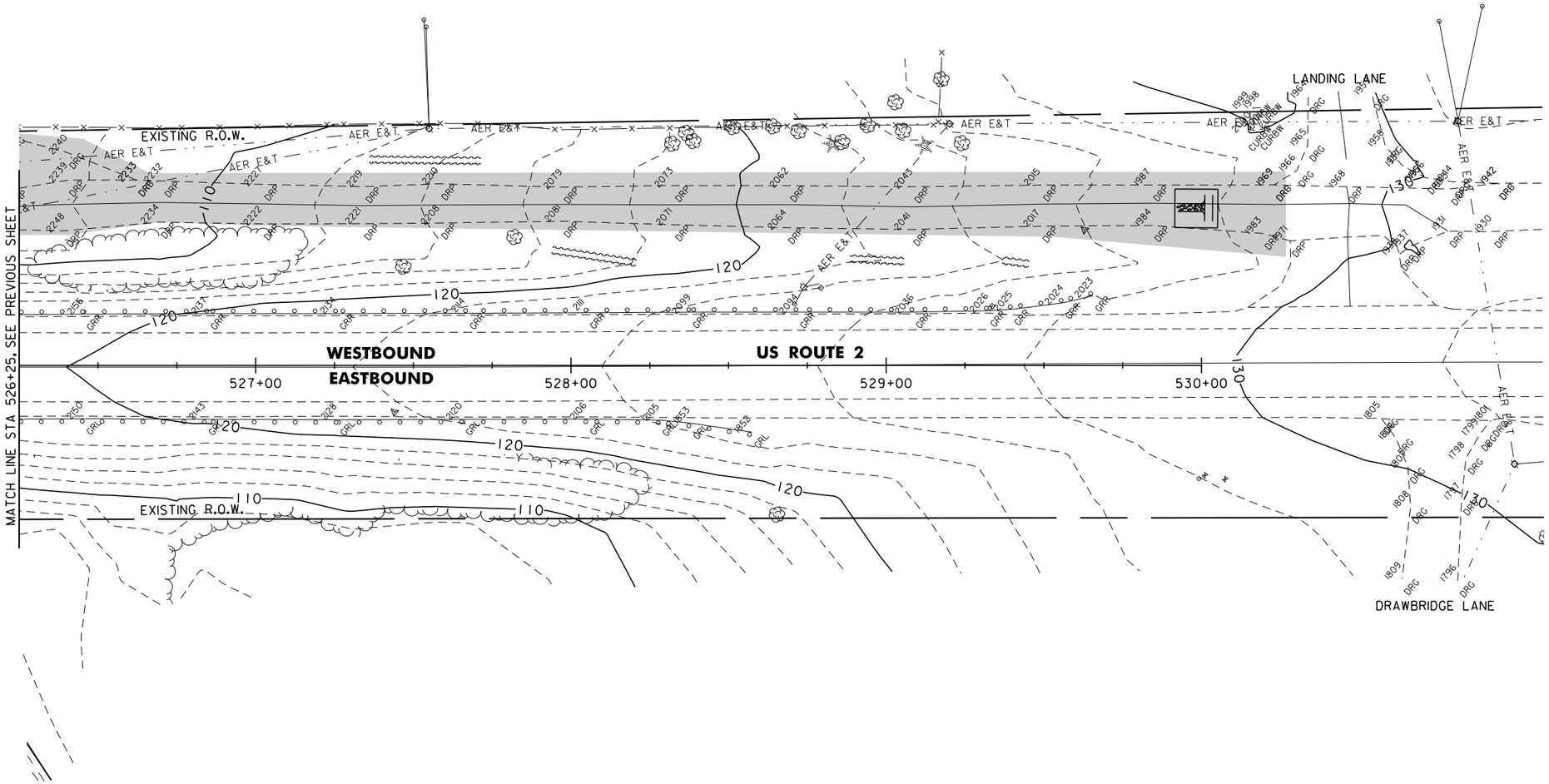
CONSTRUCTION SEQUENCING PHASE 1

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142erobdr_con.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC CONSTRUCTION PLAN SHEET 5

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 354 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:09 PM
USER = $NTUSER$



LEGEND

- TEMPORARY EROSION MATTING
- WOVEN WIRE REINFORCED
- BF — BF — BARRIER FENCE
- GEOTEXTILE FOR FILTER CURTAIN
- VEHICLE TRACKING PAD
- DEWATERING OPERATION
- FILTER BAG
- TEMPORARY DETOUR, CONSTRUCTION ACCESS, OR STAGING AREA

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

CHA

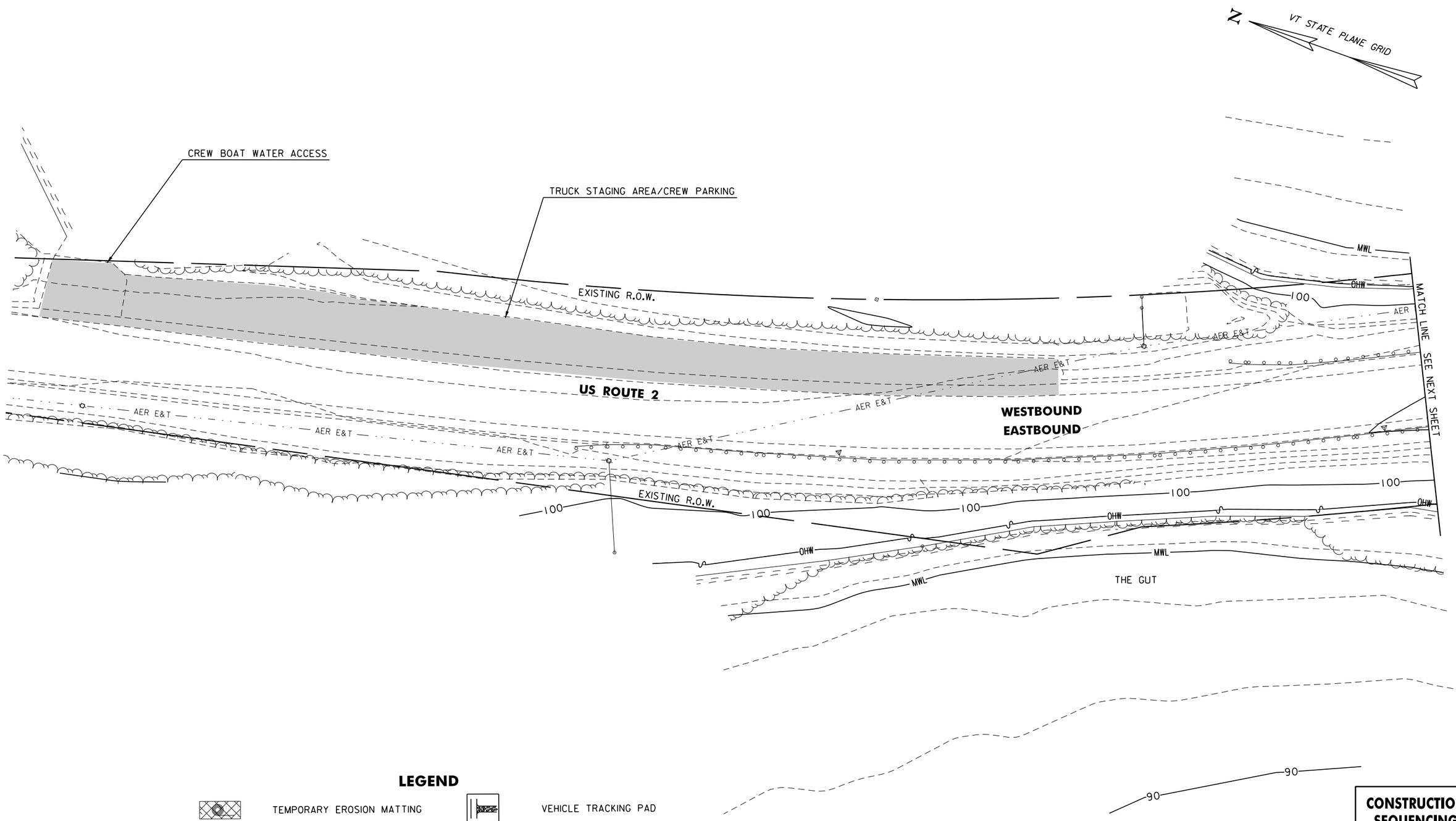
CONSTRUCTION SEQUENCING PHASE 1

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142erobdr_con.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC CONSTRUCTION PLAN SHEET 6

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 355 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:11 PM
USER = $NTUSER$



LEGEND

- TEMPORARY EROSION MATTING
- WOVEN WIRE REINFORCED
- BF — BARRIER FENCE — BF
- GEOTEXTILE FOR FILTER CURTAIN
- VEHICLE TRACKING PAD
- DEWATERING OPERATION
- FILTER BAG
- CONSTRUCTION ACCESS OR STAGING AREA

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

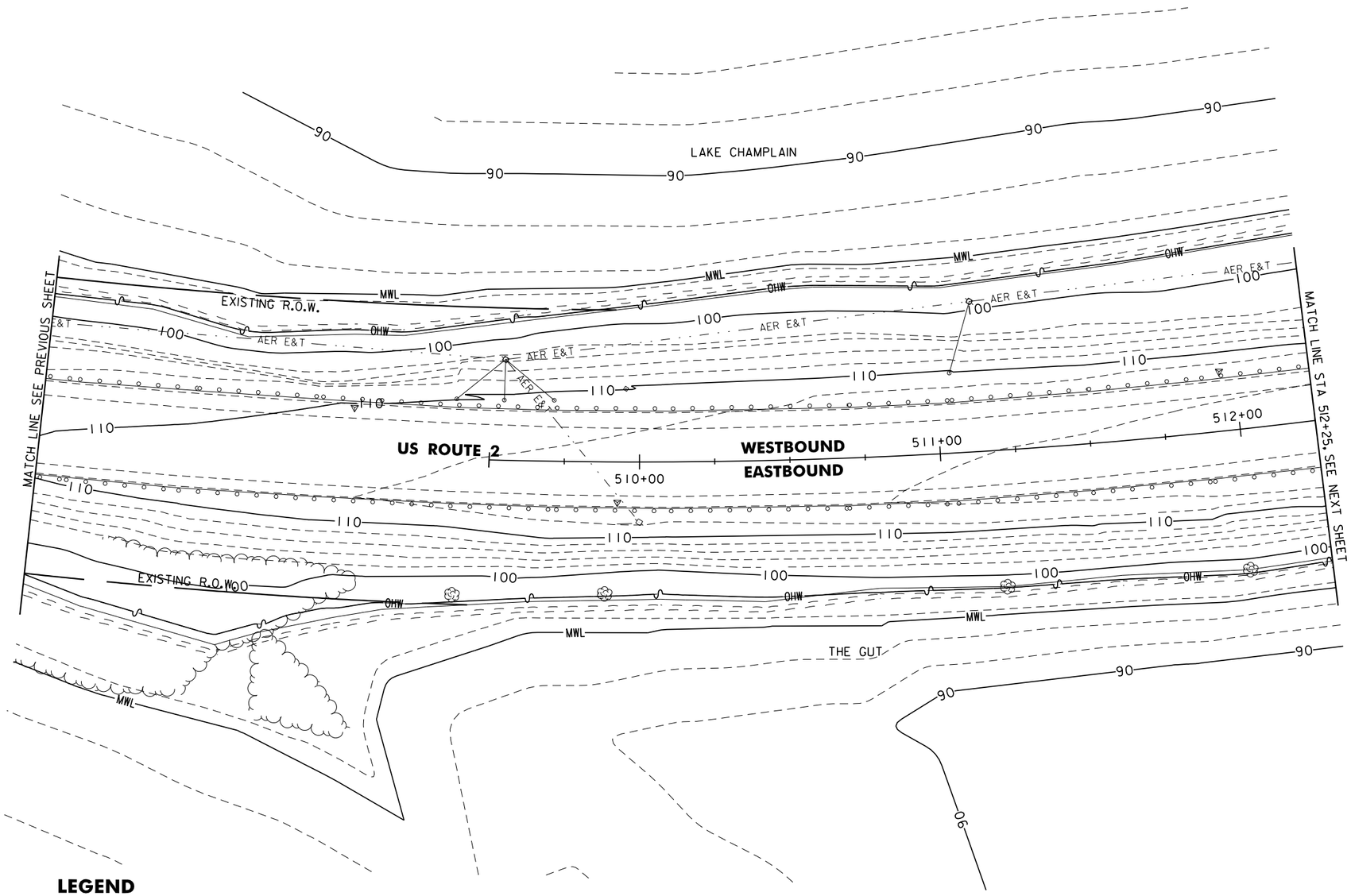
CONSTRUCTION SEQUENCING PHASE 2

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42erobdr_con2.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC CONSTRUCTION PLAN SHEET 7

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 356 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:19 PM
USER = $NTUSER$



LEGEND

- TEMPORARY EROSION MATTING
- WOVEN WIRE REINFORCED
- BF — BARRIER FENCE — BF
- GEOTEXTILE FOR FILTER CURTAIN
- VEHICLE TRACKING PAD
- DEWATERING OPERATION
- FILTER BAG
- CONSTRUCTION ACCESS OR STAGING AREA

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

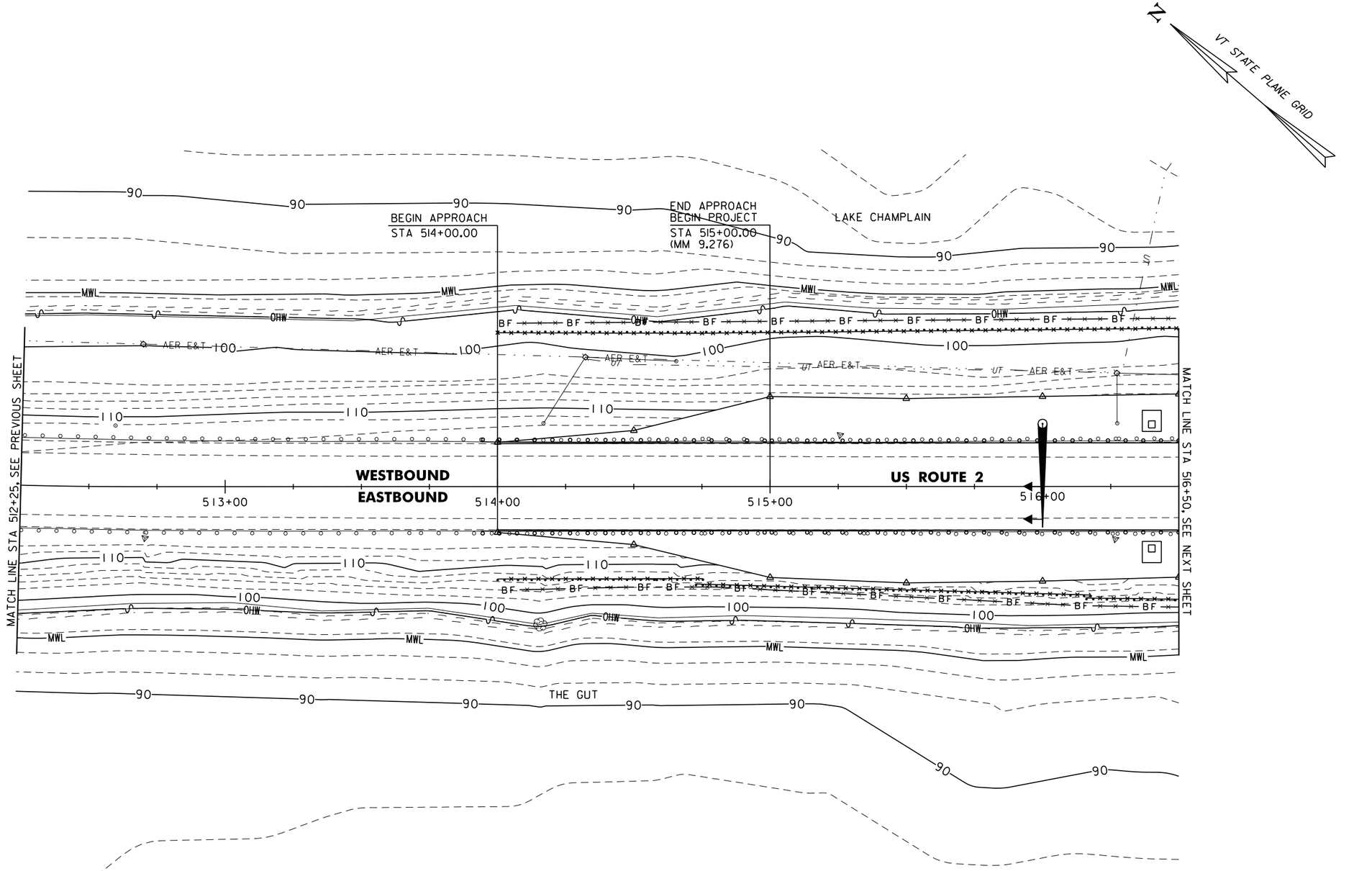
CONSTRUCTION SEQUENCING PHASE 2

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142erobdr_con2.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC CONSTRUCTION PLAN SHEET 8

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 357 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:22 PM
USER = $NTUSER$



LEGEND

- TEMPORARY EROSION MATTING
- WOVEN WIRE REINFORCED
- BF BARRIER FENCE
- GEOTEXTILE FOR FILTER CURTAIN
- VEHICLE TRACKING PAD
- DEWATERING OPERATION
- FILTER BAG
- CONSTRUCTION ACCESS OR STAGING AREA

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

CHA

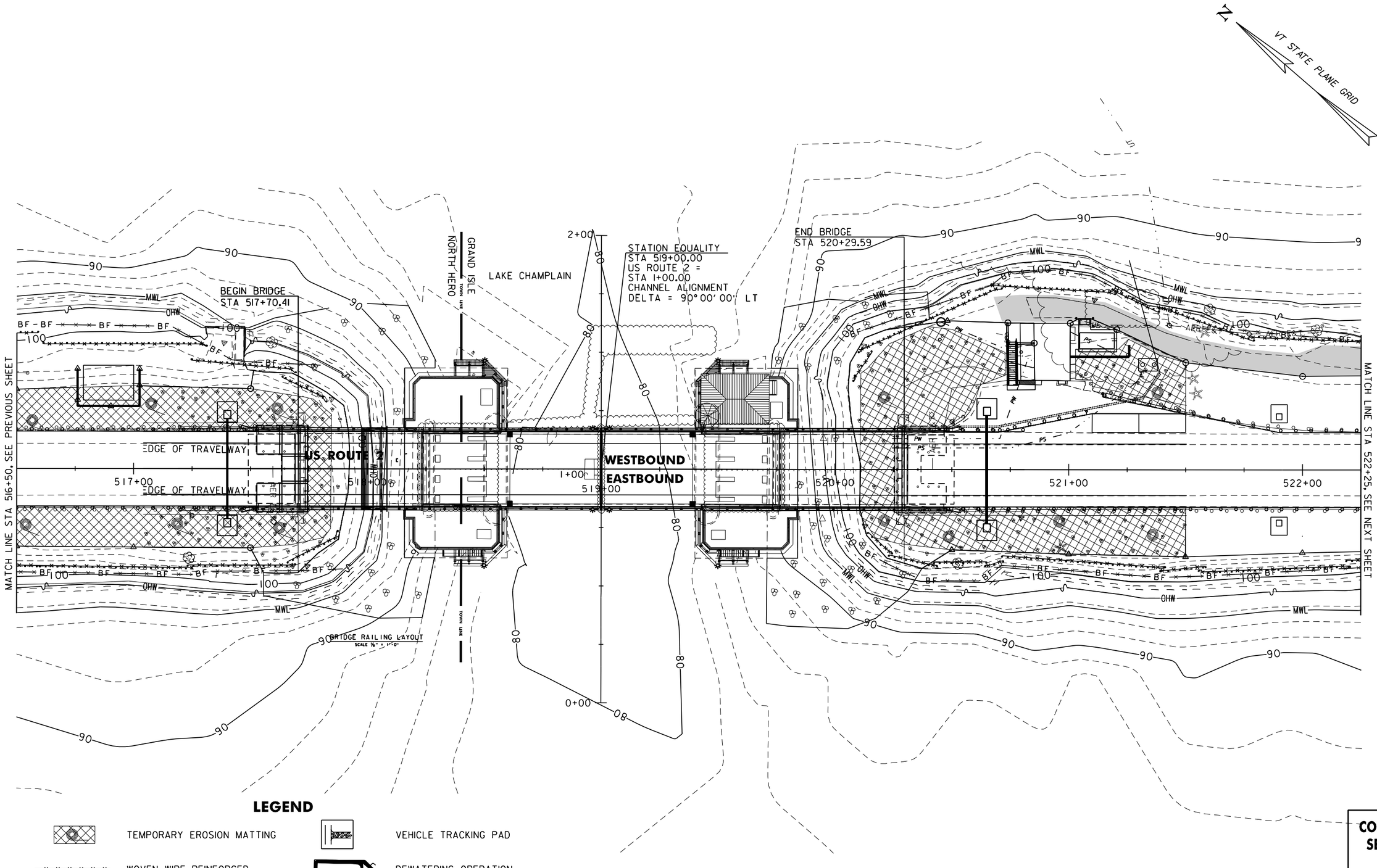
CONSTRUCTION SEQUENCING PHASE 2

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: zl2bl42erobdr_con2.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC CONSTRUCTION PLAN SHEET 9

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 358 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:24 PM
USER = $NTUSER$



LEGEND

- TEMPORARY EROSION MATTING
- WOVEN WIRE REINFORCED
- BF — BF — BARRIER FENCE
- GEOTEXTILE FOR FILTER CURTAIN
- VEHICLE TRACKING PAD
- DEWATERING OPERATION
- FILTER BAG
- CONSTRUCTION ACCESS OR STAGING AREA

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

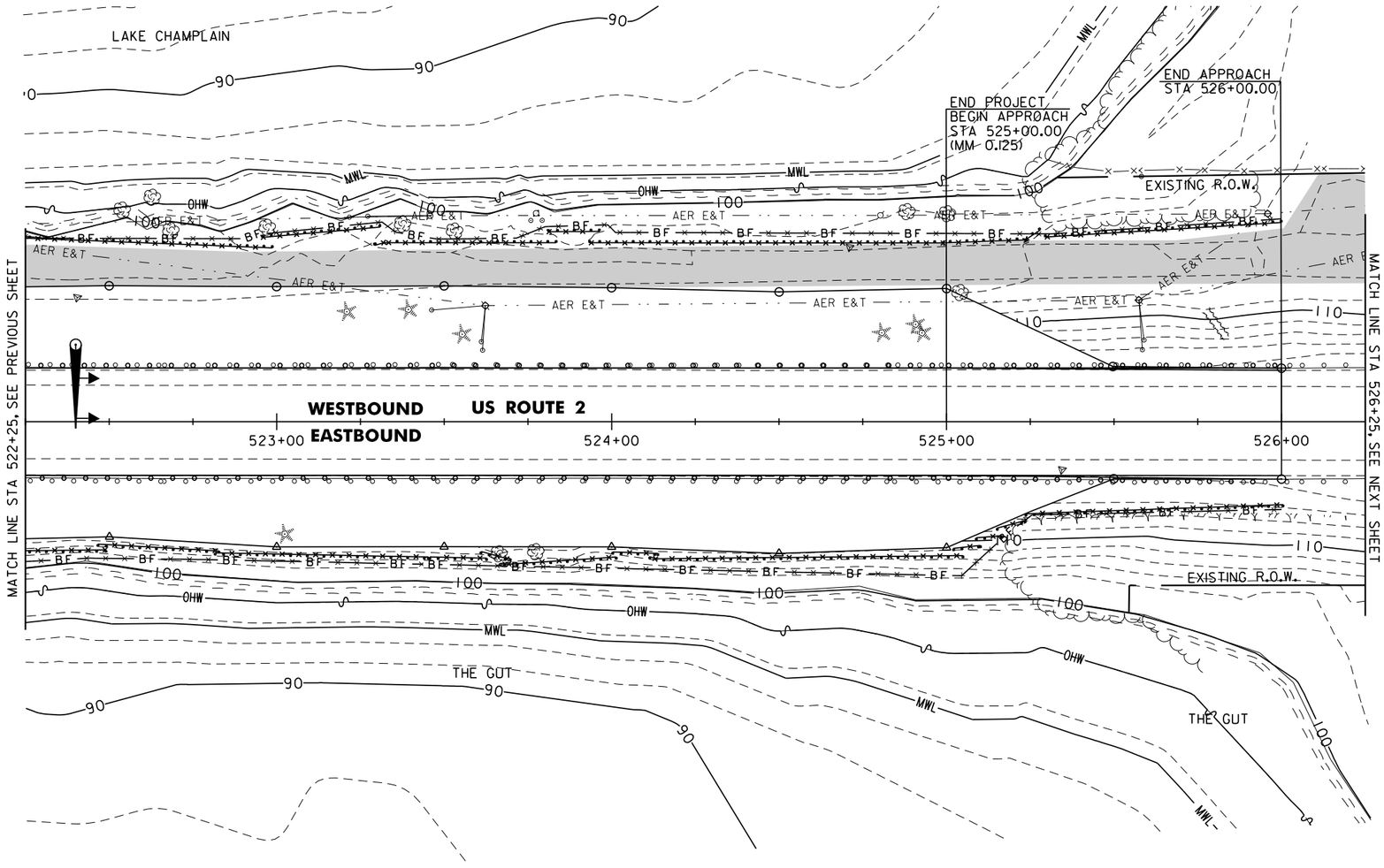
CONSTRUCTION SEQUENCING PHASE 2

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12bl42erobdr_con2.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC CONSTRUCTION PLAN SHEET 10

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 359 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:28 PM
USER = $NTUSER$



LEGEND

- TEMPORARY EROSION MATTING
- WOVEN WIRE REINFORCED
- BF — BARRIER FENCE
- GEOTEXTILE FOR FILTER CURTAIN
- VEHICLE TRACKING PAD
- DEWATERING OPERATION
- FILTER BAG
- CONSTRUCTION ACCESS OR STAGING AREA

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

CHA

CONSTRUCTION SEQUENCING PHASE 2

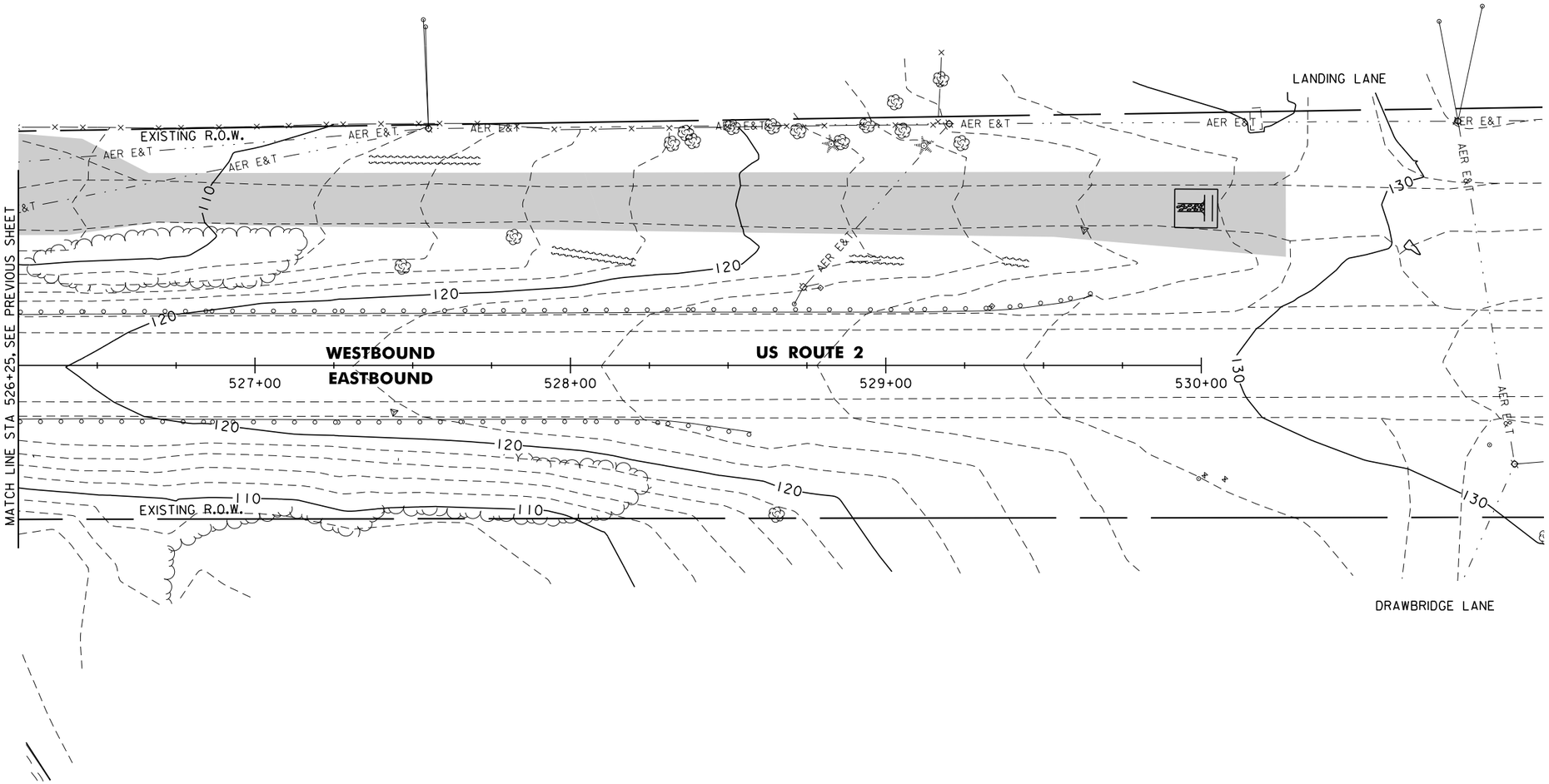
PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: zl2bl42erobdr_con2.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
EPSC CONSTRUCTION PLAN SHEET II	SHEET 360 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:30 PM
USER = $NTUSER$

N

VT STATE PLANE GRID



LEGEND

TEMPORARY EROSION MATTING	VEHICLE TRACKING PAD
WOVEN WIRE REINFORCED	DEWATERING OPERATION
BF BARRIER FENCE BF	FILTER BAG
GEOTEXTILE FOR FILTER CURTAIN	CONSTRUCTION ACCESS OR STAGING AREA

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

CHA

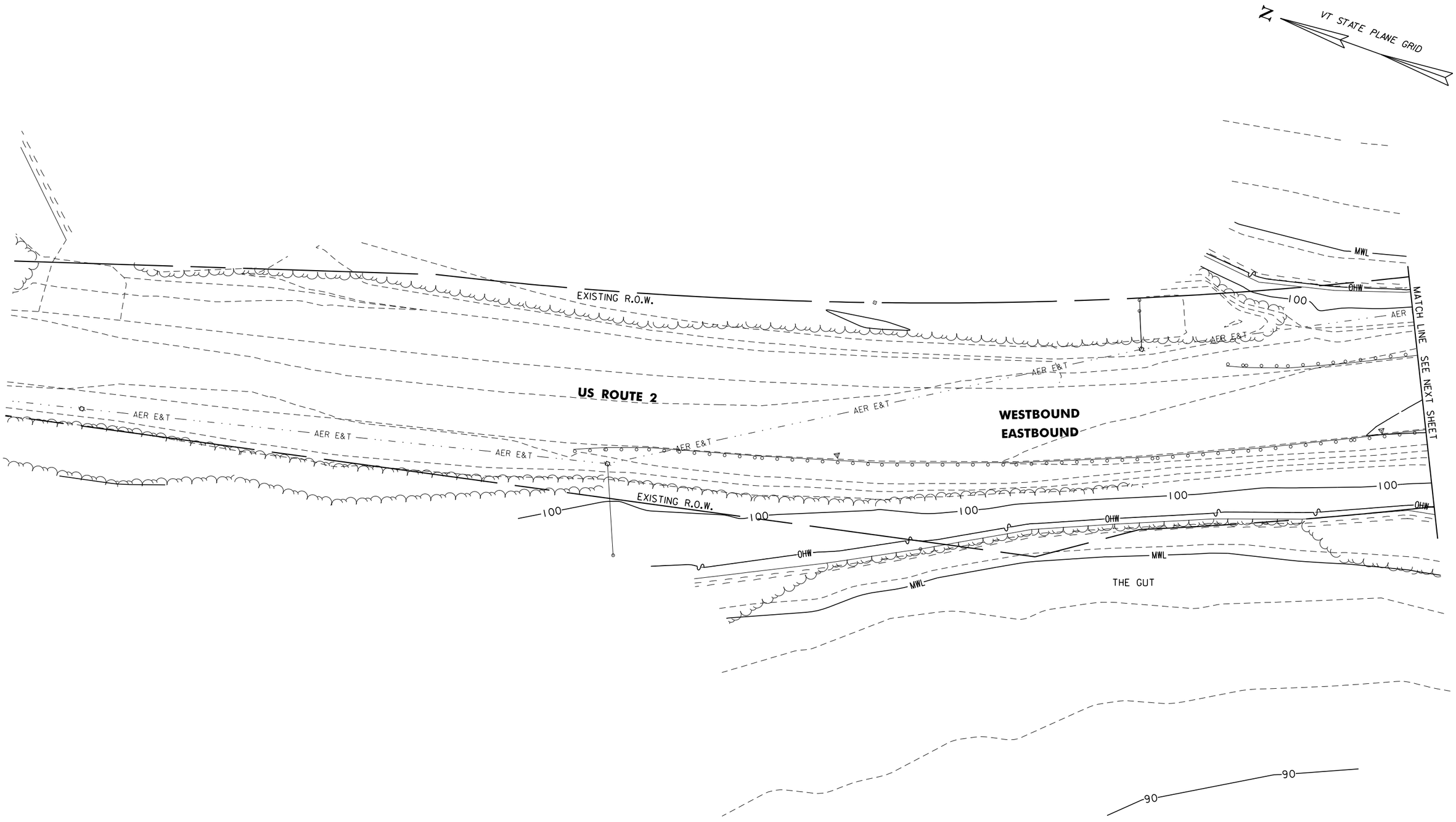
CONSTRUCTION SEQUENCING PHASE 2

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142erobdr_con2.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC CONSTRUCTION PLAN SHEET 12

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 361 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:34 PM
USER = $NTUSER$



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

CHA

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE	
PROJECT NUMBER: BHF 028-1(26)	
FILE NAME: z12b142erobdr_fin.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
EPSC FINAL SITE PLAN SHEET 1	SHEET 362 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:41 PM
USER = $NTUSER$

VT STATE PLANE GRID

LAKE CHAMPLAIN

MATCH LINE SEE PREVIOUS SHEET

MATCH LINE STA 512+25, SEE NEXT SHEET

EXISTING R.O.W.

EXISTING R.O.W.

US ROUTE 2

WESTBOUND

EASTBOUND

510+00

511+00

512+00

THE GUT

MWL

OHW

AER E&T

90

100

110

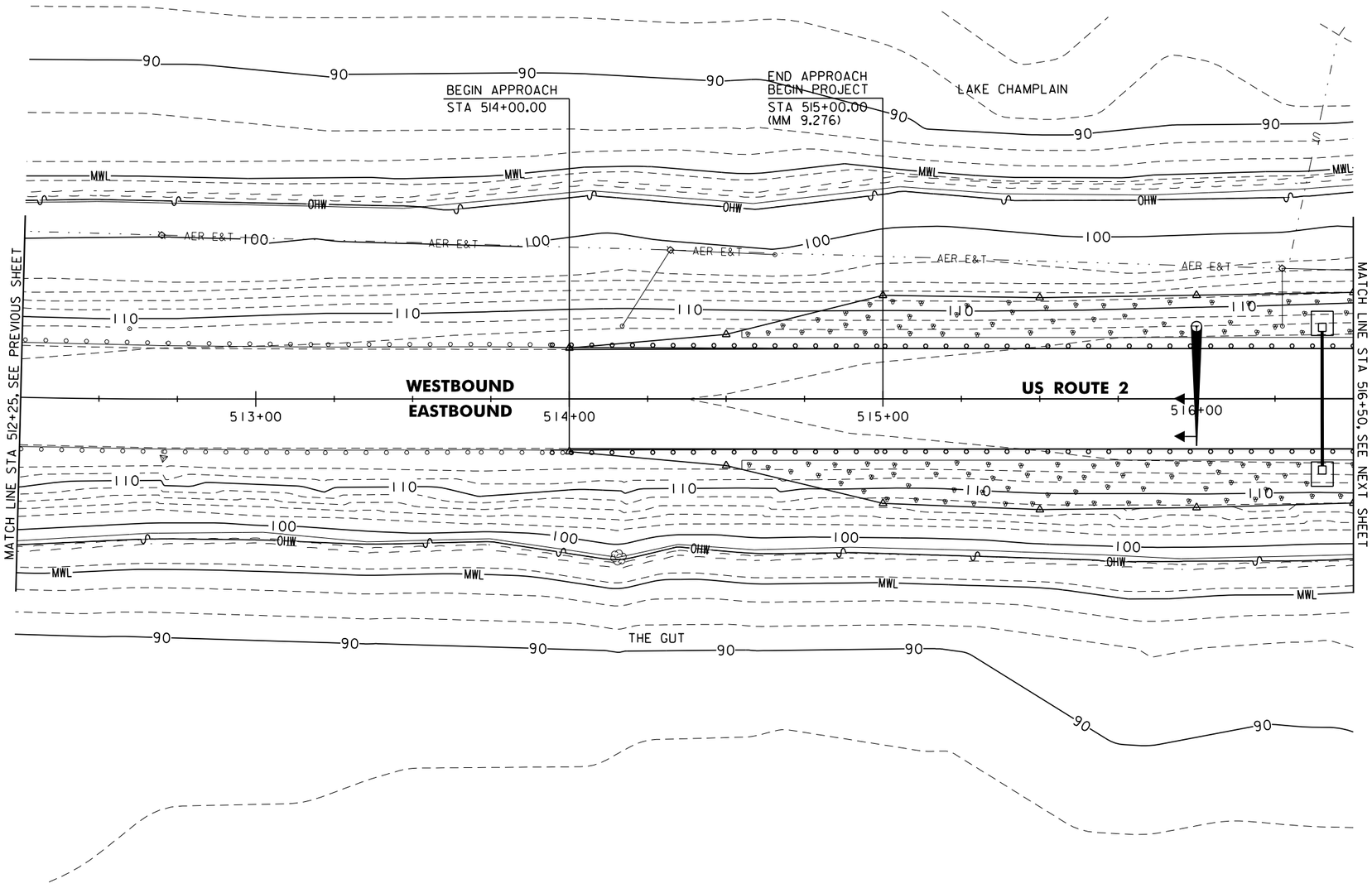
SCALE 1" = 20'-0"

20 0 20

CHA

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: z12b142erobdr_fin.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
EPSC FINAL SITE PLAN SHEET 2	SHEET 363 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:45 PM
USER = $NTUSER$



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

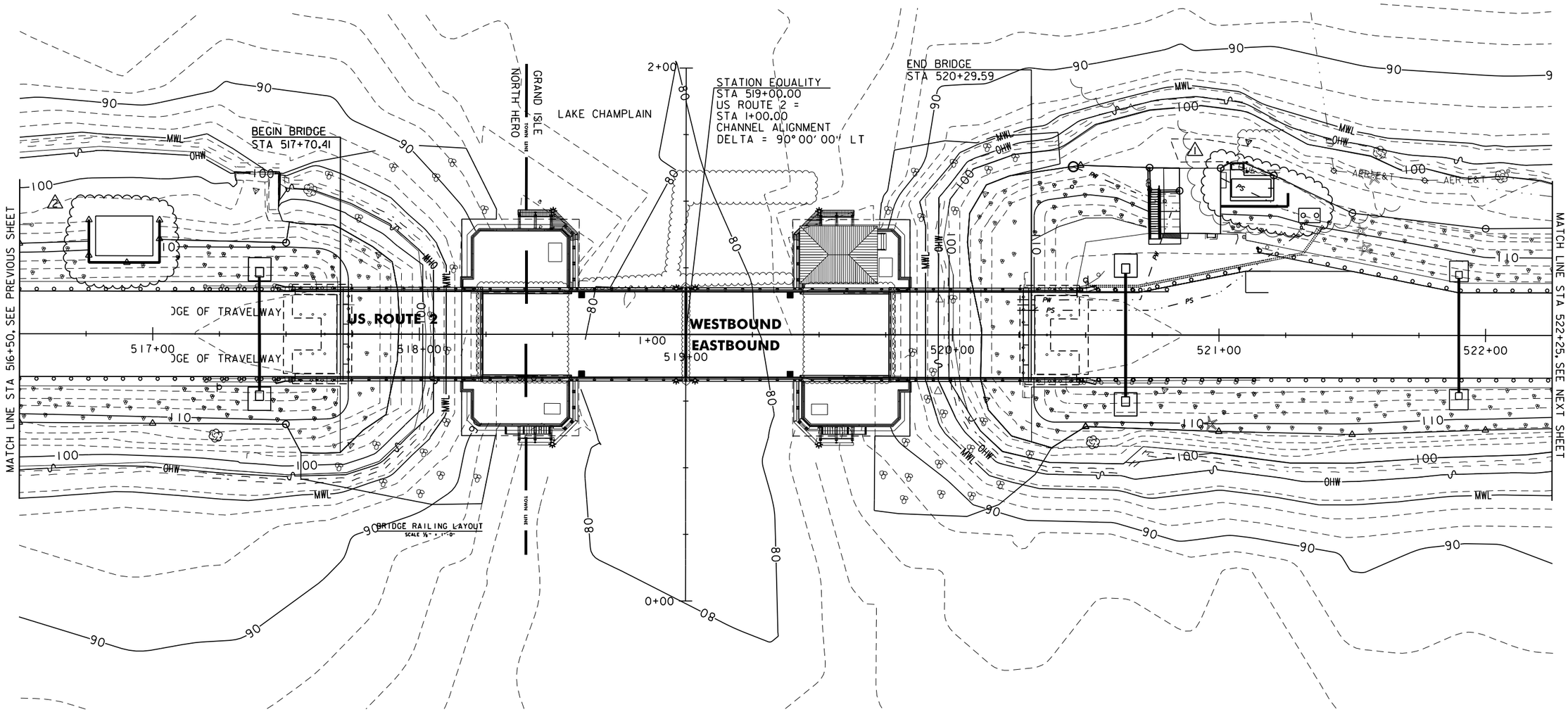
CHA

PROJECT NAME:	NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER:	BHF 028-1(26)
FILE NAME: zl2bl42erobdr_fin.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
EPSC FINAL SITE PLAN SHEET 3	SHEET 364 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:46 PM
USER = $NTUSER$

N

VT STATE PLANE GRID



REVISION	DATE	DESCRIPTION	BY
3			
2	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG
1	04-17-2020	POST-AWARD RFI'S 037-114	JLG

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

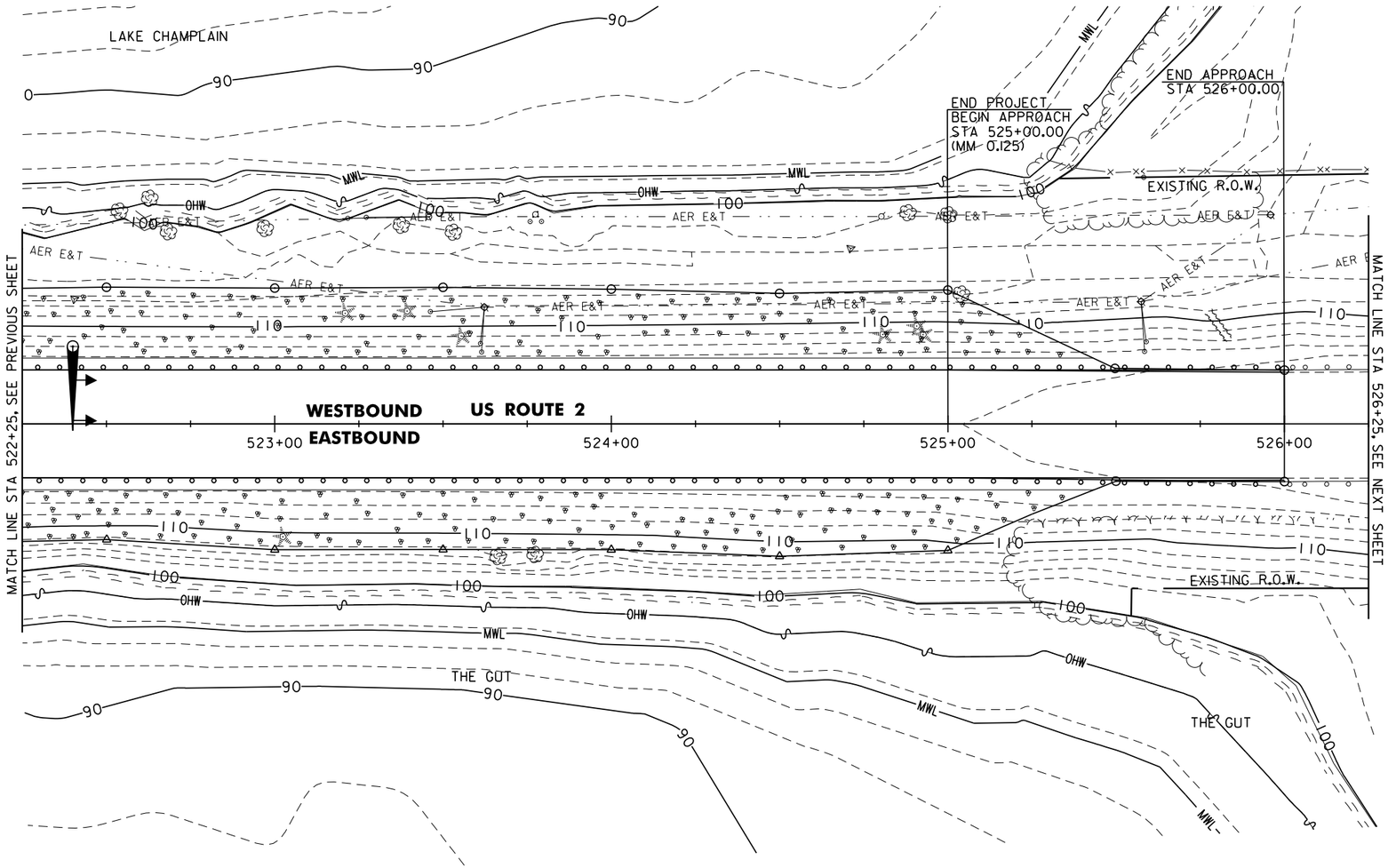
CHA

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142erobdr_fin.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC FINAL SITE PLAN SHEET 4

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 365 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:50 PM
USER = $NTUSER$

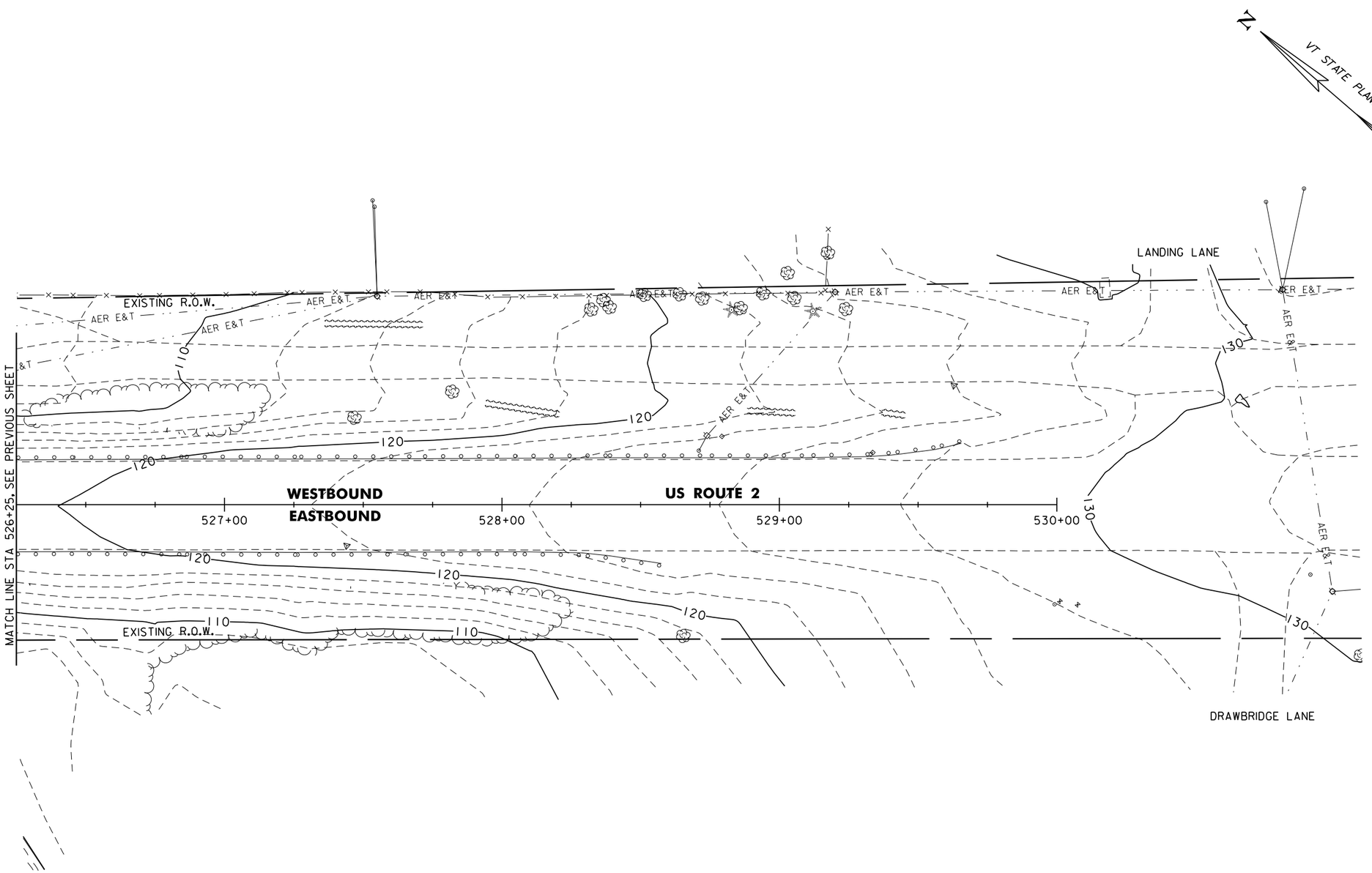


SCALE 1" = 20'-0"
20 0 20

CHA

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE	
PROJECT NUMBER: BHF 028-1(26)	
FILE NAME: zl2bl42erobdr_fln.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
EPSC FINAL SITE PLAN SHEET 5	SHEET 366 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:52 PM
USER = $NTUSER$



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

CHA

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE	
PROJECT NUMBER: BHF 028-1(26)	
FILE NAME: z12b142erobdr_fin.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
EPSC FINAL SITE PLAN SHEET 6	SHEET 367 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:56 PM
USER = $NTUSER$

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

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

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

CONSTRUCTION GUIDANCE

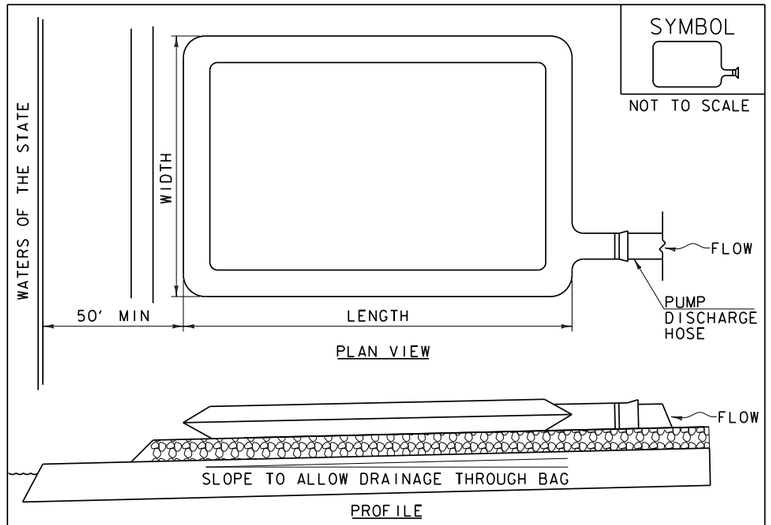
1. SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
2. SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT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

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR SEED (PAY ITEM 651.15)

REVISIONS	
JANUARY 12, 2015	WHF



CONSTRUCTION SPECIFICATIONS

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

FILTER BAG

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

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

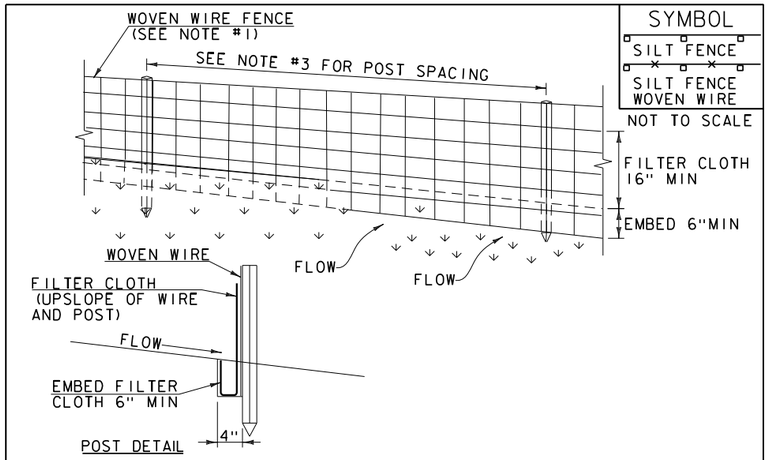
REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: zl2bl42erodet.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC DETAIL SHEET 1

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 368 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:19:59 PM
USER = $NTUSER$



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.

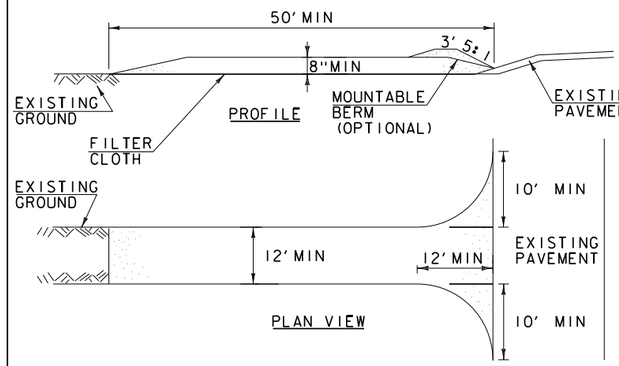
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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

CONSTRUCTION SPECIFICATIONS

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

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

STABILIZED CONSTRUCTION ENTRANCE

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

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

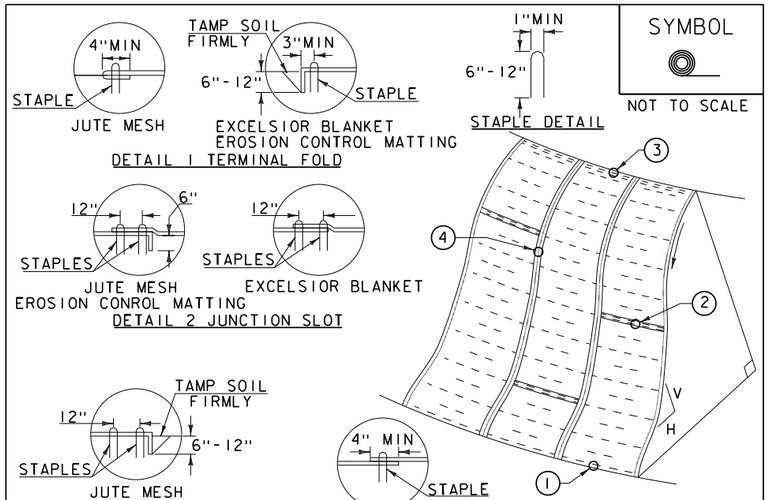
REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142erodet.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC DETAIL SHEET 2

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 369 OF 379

FILE NAME = $FILE$
DATE/TIME = Friday, May 15, 2020 04:20:08 PM
USER = $NTUSER$



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.

2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.

3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.

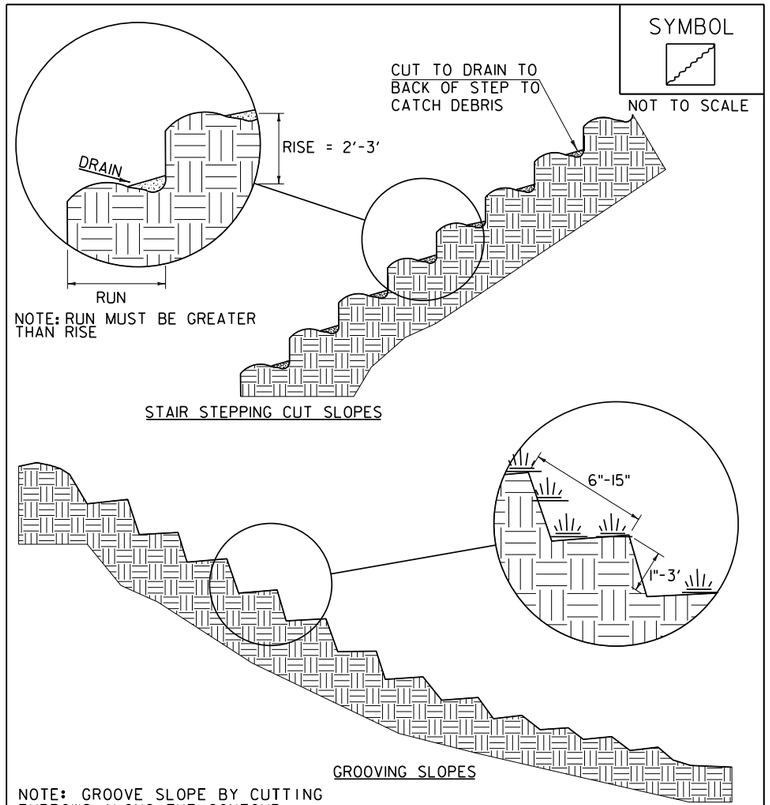
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.

5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

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

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF



NOTE: GROOVE SLOPE BY CUTTING FURROWS ALONG THE CONTOUR. IRREGULARITIES IN THE SOIL SURFACE CATCH RAINWATER AND RETAIN LIME, FERTILIZER AND SEED.

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

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 CONSIDERED INCIDENTAL TO THE CONTRACT

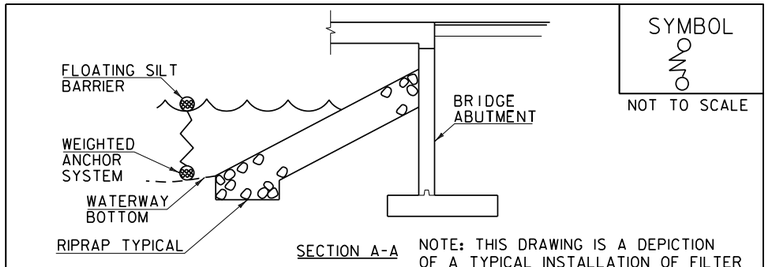
REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF

PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142erodet.dgn	PLOT DATE: 2/6/2018
PROJECT LEADER: D. GOZALKOWSKI	DRAWN BY: R. BROWN
DESIGNED BY: J. PARRELLI	CHECKED BY: J. SHIELDS
EPSC DETAIL SHEET 3	SHEET 370 OF 379

CHA

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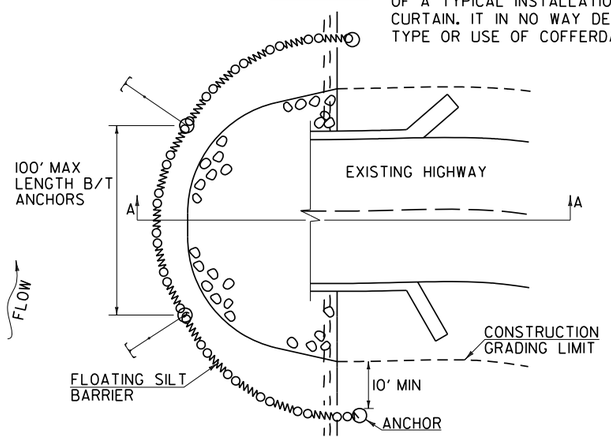


SYMBOL

NOT TO SCALE

SECTION A-A

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



CONSTRUCTION SPECIFICATIONS

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

FILTER CURTAIN

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

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

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PROJECT NAME: NORTH HERO GRAND ISLE BRIDGE
PROJECT NUMBER: BHF 028-1(26)

FILE NAME: z12b142erodet.dgn
PROJECT LEADER: D. GOZALKOWSKI
DESIGNED BY: J. PARRELLI
EPSC DETAIL SHEET 4

PLOT DATE: 2/6/2018
DRAWN BY: R. BROWN
CHECKED BY: J. SHIELDS
SHEET 371 OF 379

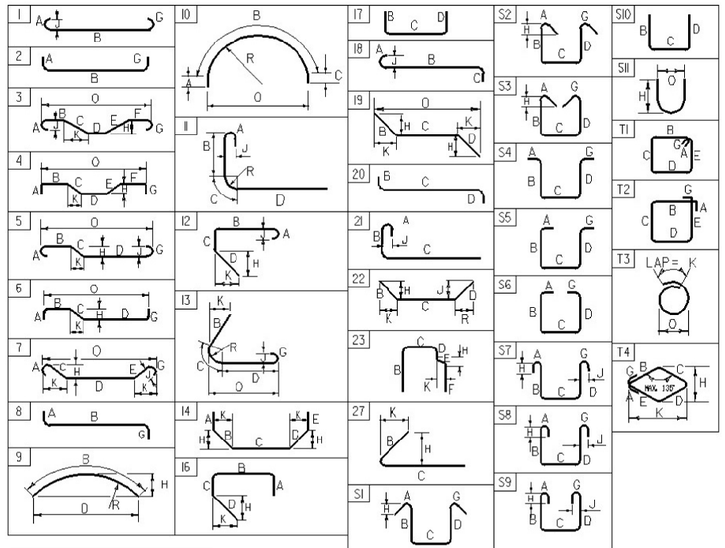
STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	ABUTMENT 1																
	24	5	11'- 0"	1A0501	STR	11'- 0"											
	52	5	21'- 9"	1A0502	STR	21'- 9"											
	24	5	21'- 9"	1A0503	STR	21'- 9"											
	72	5	6'- 0"	1A0504	STR	8'- 3"											
	14	5	34'- 9"	1A0505	STR	34'- 9"											
	6	5	34'- 9"	1A0506.3	STR	34'- 9"											
	36	5	3'- 7"	1A0507.3	STR	4'- 10"											
	72	5	5'- 11"	1A0508	2	1'- 0"	4'- 11"					0'- 0"					
	36	5	6'- 2"	1A0509.3	16	0'- 0"	1'- 7"	2'- 10"	1'- 9"				1'- 3"		1'- 3"		
	36	5	5'- 0"	1A0510	17		1'- 3"	3'- 9"	1' 3"								
✳	1	5	5'- 0"	1A0511.3	STR	5'- 0"											
	ABUTMENT 2																
	24	5	11'- 0"	2A0501	STR	11'- 0"											
	52	5	21'- 9"	2A0502	STR	21'- 9"											
	24	5	36'- 9"	2A0503	STR	36'- 9"											
	72	5	6'- 0"	2A0504	STR	8'- 3"											
	14	5	34'- 9"	2A0505	STR	34'- 9"											
	6	5	34'- 9"	2A0506.3	STR	34'- 9"											
	36	5	3'- 7"	2A0507.3	STR	4'- 10"											
	72	5	5'- 11"	2A0508	2	1'- 0"	4'- 11"					0'- 0"					
	36	5	6'- 2"	2A0509.3	16	0'- 0"	1'- 7"	2'- 10"	1'- 9"				1'- 3"		1'- 3"		
	36	5	5'- 0"	2A0510	17		1'- 3"	3'- 9"	1' 3"								
	WINGWALL 1																
	18	5	8'- 9"	1W0501	STR	8'- 9"											
	20	5	16'- 6"	1W0502	STR	16'- 6"											
	7	5	17'- 6"	1W0503.3	STR	17'- 6"											
	18	5	6'- 2"	1W0504	17		0'- 9"	5'- 5"									
	34	5	7'- 4"	1W0505.3	17		3'- 2"	1'- 0"	3'- 2"								
	4	5	3'- 11"	1W0506	17		1'- 0"	2'- 11"	0'- 0"								
	20	5	5'- 11"	1W0507	17		1'- 0"	4'- 11"	0'- 0"								
	44	6	12'- 1"	1W0601	STR	12'- 1"											
	34	7	7'- 3"	1W0701	22		1'- 0"	6'- 3"					1'- 0"	0'- 0"	0'- 1"	0'- 0"	
	34	7	9'- 7"	1W0702	22		1'- 0"	8'- 7"					1'- 0"	0'- 0"	0'- 2"	0'- 0"	
✳	1	6	5'- 0"	1W0602	STR	5'- 0"											
✳	1	7	5'- 0"	1W0703	STR	5'- 0"											
	WINGWALL 2																
	18	5	8'- 9"	2W0501	STR	8'- 9"											
	20	5	16'- 6"	2W0502	STR	16'- 6"											
	7	5	17'- 6"	2W0503.3	STR	17'- 6"											
	18	5	6'- 2"	2W0504	17		0'- 9"	5'- 5"									
	34	5	6'- 4"	2W0505.3	17		2'- 8"	1'- 0"	2'- 8"								
	4	5	3'- 11"	2W0506	17		1'- 0"	2'- 11"	0'- 0"								
	20	5	5'- 11"	2W0507	17		1'- 0"	4'- 11"	0'- 0"								
	44	6	12'- 1"	2W0601	STR	12'- 1"											
	34	7	7'- 3"	2W0701	22		1'- 0"	6'- 3"					1'- 0"	0'- 0"	0'- 1"	0'- 0"	
	34	7	9'- 7"	2W0702	22		1'- 0"	8'- 7"					1'- 0"	0'- 0"	0'- 2"	0'- 0"	
	WINGWALL 3																
	18	5	8'- 9"	3W0501	STR	8'- 9"											
	20	5	16'- 6"	3W0502	STR	16'- 6"											
	7	5	17'- 6"	3W0503.3	STR	17'- 6"											
	18	5	6'- 2"	3W0504	17		0'- 9"	5'- 5"									
	34	5	6'- 4"	3W0505.3	17		2'- 8"	1'- 0"	2'- 8"								
	4	5	3'- 11"	3W0506	17		1'- 0"	2'- 11"	0'- 0"								
	20	5	5'- 11"	3W0507	17		1'- 0"	4'- 11"	0'- 0"								
	44	6	12'- 1"	3W0601	STR	12'- 1"											
	34	7	7'- 3"	3W0701	22		1'- 0"	6'- 3"					1'- 0"	0'- 0"	0'- 1"	0'- 0"	
	34	7	9'- 7"	3W0702	22		1'- 0"	8'- 7"					1'- 0"	0'- 0"	0'- 2"	0'- 0"	
	WINGWALL 4																
	18	5	8'- 9"	4W0501	STR	8'- 9"											
	20	5	16'- 6"	4W0502	STR	16'- 6"											
	7	5	16'- 6"	4W0503.3	STR	16'- 6"											
	18	5	6'- 2"	4W0504	17		0'- 9"	5'- 5"									
	34	5	6'- 4"	4W0505.3	17		2'- 8"	1'- 0"	2'- 8"								
	4	5	3'- 11"	4W0506	17		1'- 0"	2'- 11"	0'- 0"								
	20	5	5'- 11"	4W0507	17		1'- 0"	4'- 11"	0'- 0"								
	44	6	12'- 1"	4W0601	STR	12'- 1"											
	34	7	7'- 3"	4W0701	22		1'- 0"	6'- 3"					1'- 0"	0'- 0"	0'- 1"	0'- 0"	
	34	7	9'- 7"	4W0702	22		1'- 0"	8'- 7"					1'- 0"	0'- 0"	0'- 2"	0'- 0"	
	BARRIER GATE FOUNDATION 1																
	32	5	9'- 11"	1BGF0501	STR	9'- 11"											
	9	4	10'- 0"	1BGF0406	17		1'- 0"	8'- 0"	1'- 0"								
	9	4	10'- 3"	1BGF0405	17		1'- 0"	8'- 3"	1'- 0"								
	14	4	33'- 0"	1BGF0404	T1	0'- 3"	8'- 3"	8'- 0"	8'- 3"	8'- 0"		0'- 3"					
	4	4	4'- 5"	1BGF0403	17		1'- 0"	2'- 5"	1'- 0"								
	4	4	4'- 11"	1BGF0402	17		1'- 0"	2'- 11"	1'- 0"								
	1	4	11'- 6"	1BGF0401	T1	0'- 3"	3'- 0"	2'- 6"	3'- 0"	2'- 6"		0'- 3"					
✳	1	4	5'- 0"	1BGF0407	STR	5'- 0"											
	BARRIER GATE FOUNDATION 2																
	32	5	9'- 11"	2BGF0501	STR	9'- 11"											
	9	4	10'- 0"	2BGF0406	17		1'- 0"	8'- 0"	1'- 0"								
	9	4	10'- 3"	2BGF0405	17		1'- 0"	8'- 3"	1'- 0"								
	14	4	33'- 0"	2BGF0404	T1	0'- 3"	8'- 3"	8'- 0"	8'- 3"	8'- 0"		0'- 3"					
	4	4	4'- 5"	2BGF0403	17		1'- 0"	2'- 5"	1'- 0"								
	4	4	4'- 11"	2BGF0402	17		1'- 0"	2'- 11"	1'- 0"								
	1	4	11'- 6"	2BGF0401	T1	0'- 3"	3'- 0"	2'- 6"	3'- 0"	2'- 6"		0'- 3"					
	BARRIER GATE FOUNDATION 3																
	32	5	9'- 11"	3BGF0501	STR	9'- 11"											
	9	4	10'- 0"	3BGF0406	17		1'- 0"	8'- 0"	1'- 0"								
	9	4	10'- 3"	3BGF0405	17		1'- 0"	8'- 3"	1'- 0"								
	14	4	33'- 0"	3BGF0404	T1	0'- 3"	8'- 3"	8'- 0"	8'- 3"	8'- 0"		0'- 3"					
	4	4	4'- 5"	3BGF0403	17		1'- 0"	2'- 5"	1'- 0"								
	4	4	4'- 11"	3BGF0402	17		1'- 0"	2'- 11"	1'- 0"								
	1	4	11'- 6"	3BGF0401	T1	0'- 3"	3'- 0"	2'- 6"	3'- 0"	2'- 6"		0'- 3"					
	BARRIER GATE FOUNDATION 4																
	32	5	9'- 11"	4BGF0501	STR	9'- 11"											
	9	4	10'- 0"	4BGF0406	17		1'- 0"	8'- 0"	1'- 0"								
	9	4	10'- 3"	4BGF0405	17		1'- 0"	8'- 3"	1'- 0"								
	14	4	33'- 0"	4BGF0404	T1	0'- 3"	8'- 3"	8'- 0"	8'- 3"	8'- 0"		0'- 3"					
	4	4	4'- 5"	4BGF0403	17		1'- 0"	2'- 5"	1'- 0"								
	4	4	4'- 11"	4BGF0402	17		1'- 0"	2'- 11"	1'- 0"								
	1	4	11'- 6"	4BGF0401	T1	0'- 3"	3'- 0"	2'- 6"	3'- 0"	2'- 6"		0'- 3"					
	WARNING GATE FOUNDATION 1																
	26	5	9'- 6"	1WGF0501	STR	9'- 6"											
	8	4	8'- 5"	1WGF0406	17		1'- 0"	6'- 5"	1'- 0"								
	7	4	9'- 2"	1WGF0405	17		1'- 0"	7'- 2"	1'- 0"								
	13	4	28'- 0"	1WGF0404	T1	0'- 3"	7'- 3"	6'- 6"	7'- 3"	6'- 6"		0'- 3"					
	3	4	3'- 10"	1WGF0403	17		1'- 0"	1'- 10"	1'- 0"								
	3	4	4'- 0"	1WGF0402	17		1'- 0"	2'- 0"	1'- 0"								
	1	4	8'- 6"	1WGF0401	T1	0'- 3"	2'- 1"	1'- 11"	2'- 1"	1'- 11"		0'- 3"					
	WARNING GATE FOUNDATION 2																
	26	5	9'- 6"	2WGF0501	STR	9'- 6"											
	8	4	8'- 5"	2WGF0406	17		1'- 0"	6'- 5"	1'- 0"								
	7	4	9'- 2"	2WGF0405	17		1'- 0"	7'- 2"	1'- 0"								
	13	4	28'- 0"	2WGF0404	T1	0'- 3"	7'- 3"	6'- 6"	7'- 3"	6'- 6"		0'- 3"					
	3	4	3'- 10"	2WGF0403	17		1'- 0"	1'- 10"	1'- 0"								
	3	4	4'- 0"	2WGF0402	17		1'- 0"	2'- 0"	1'- 0"								
	1	4	8'- 6"	2WGF0401	T1	0'- 3"	2'- 1"	1'- 11"	2'- 1"	1'- 11"		0'- 3"					
	WARNING GATE FOUNDATION 3																
	26	5	9'- 6"	3WGF0501	STR	9'- 6"											
	8	4	8'- 5"	3WGF0406	17		1'- 0"	6'- 5"	1'- 0"								
	7	4	9'- 2"	3WGF0405	17		1'- 0"	7'- 2"	1'- 0"								
	13	4	28'- 0"	3WGF0404	T1	0'- 3"	7'- 3"	6'- 6"	7'- 3"	6'- 6"		0'- 3"					
	3	4	3'- 10"	3WGF0403	17		1'- 0"	1'- 10"	1'- 0"								
	3	4	4'- 0"	3WGF0402	17		1'- 0"	2'- 0"	1'- 0"								
	1	4	8'- 6"	3WGF0401	T1	0'- 3"	2'- 1"	1'- 11"	2'- 1"	1'- 11"		0'- 3"					
	WARNING GATE FOUNDATION 4																
	26	5	9'- 6"	4WGF0501	STR	9'- 6"											
	8	4	8'- 5"	4WGF0406	17		1'- 0"	6'- 5"	1'- 0"								
	7	4	9'- 2"	4WGF0405	17		1'- 0"	7'- 2"	1'- 0"								
	13	4	28'- 0"	4WGF0404	T1	0'- 3"	7'- 3"	6'- 6"	7'- 3"	6'- 6"		0'- 3"					
	3	4	3'- 10"	4WGF0403	17		1'- 0"	1'- 10"	1'- 0"								
	3	4	4'- 0"	4WGF0402	17		1'- 0"	2'- 0"	1'- 0"								
	1	4	8'- 6"	4WGF0401	T1	0'- 3"	2'- 1"	1'- 11"	2'- 1"	1'- 11"		0'- 3"					

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-SI). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. .3 IN BAR MARK SUFFIX DENOTES LEVEL III REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION DIAMETER INCHES	AREA INCHES²	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.04	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.14
#9	3.400	1.13	1.00	3.54
#10	4.3	1.270	1.27	3.990
#11	5.31	1.410	1.56	4.430
#14	7.65	1.69	2.25	5.32
#18	13.60	2.26	4.00	7.09

HDR

PROJECT NAME: **NORTH HERO GRAND ISLE BRIDGE**
PROJECT NUMBER: **BHF 028-1(26)**

FILE NAME: **z12a142_rss01.xls** PLOT DATE: **2/16/2018**
PROJECT MANAGER: **T. FRENCH** DRAWN BY: **D. DOUGHERTY**
DESIGNED BY: **K. KRETSCH** CHECKED BY: **RJ XU**
REINFORCING STEEL SCHEDULE SHEET SHEET **372** OF **379**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

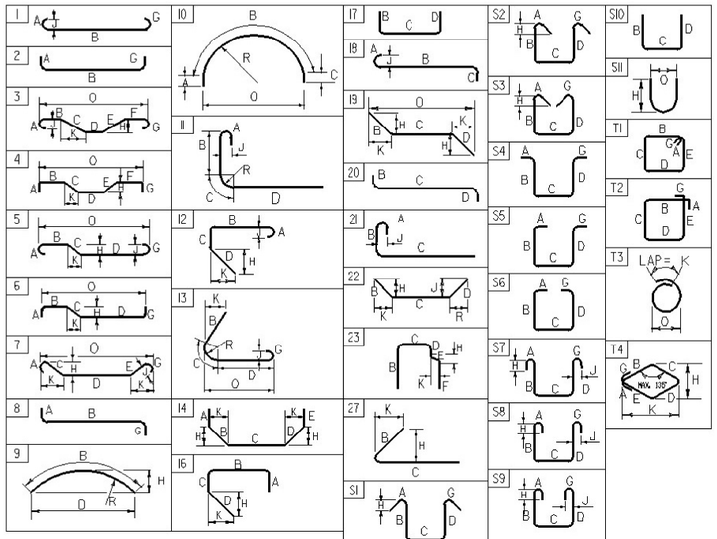
REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	TENDER HOUSE STAIR																
	9	6	21'- 1"	THS0601	19		0'- 11"	19'- 3"	0'- 11"				0'- 6"		0'- 9"		21'- 0"
	10	5	1'- 6"	THS0501	STR	1'- 6"											
	36	5	4'- 0"	THS0502	STR	4'- 0"											
	10	5	3'- 10"	THS0503	STR	3'- 10"											
	5	5	7'- 7"	THS0504	STR	7'- 7"											
	8	5	8'- 6"	THS0505	STR	8'- 6"											
	9	5	11'- 3"	THS0506	STR	11'- 3"											
✳	2	5	6'- 9"	THS0507	STR	6'- 9"											
	3	5	11'- 6"	THS0508	STR	11'- 6"											
	2	5	7'- 0"	THS0509	STR	7'- 0"											
	5	5	1'- 6"	THS0510	STR	1'- 6"											
	8	5	3'- 6"	THS0511	STR	3'- 6"											
	APPROACH SLAB 1																
	42	5	31'- 4"	1EAS0501	STR	31'- 4"											
	33	5	22'- 8"	1EAS0502	16	19'- 6"	1'- 3"	0'- 11"	1'- 1"								
	22	8	2'- 8"	1EAS0801	19		1'- 4"	1'- 4"									
✳	1	8	5'- 0"	1EAS0802	STR	5'- 0"											
	39	9	20'- 11"	1EAS0901	1	1'- 5"	19'- 6"										
✳	1	9	5'- 0"	1EAS0902	STR	5'- 0"											
	APPROACH SLAB 2																
	42	5	31'- 4"	2EAS0501	STR	31'- 4"											
	33	5	22'- 8"	2EAS0502	16	19'- 6"	1'- 3"	0'- 11"	1'- 1"								
	22	8	2'- 8"	2EAS0801	19		1'- 4"	1'- 4"									
	39	9	20'- 11"	2EAS0901	1	1'- 5"	19'- 6"										
	APPROACH SPAN 1																
	80	5	52'- 2"	1S0501.3	STR	52'- 2"											
	77	5	34'- 9"	1S0502.3	STR	34'- 9"											
	212	5	5'- 7"	1S0503.3	S5	0'- 11"	1'- 4"	1'- 2"	1'- 4"			0'- 11"					
	35	5	7'- 5"	1S0504.3	T2	0'- 11"	2'- 6"	0'- 7"	2'- 6"			0'- 11"					
	35	5	8'- 9"	1S0505.3	T2	0'- 11"	3'- 2"	0'- 7"	3'- 2"			0'- 11"					
	106	6	36'- 1"	1S0601.3	1	0'- 6"	34'- 4"					0'- 11"					
	212	6	5'- 0"	1S0602.3	1	0'- 6"	4'- 6"										
✳	1	6	5'- 0"	1S0603.3	STR	5'- 0"											
	APPROACH SPAN 4																
	80	5	52'- 2"	4S0501.3	STR	52'- 2"											
	77	5	34'- 9"	4S0502.3	STR	34'- 9"											
	212	5	5'- 7"	4S0503.3	S5	0'- 11"	1'- 4"	1'- 2"	1'- 4"			0'- 11"					
	35	5	7'- 5"	4S0504.3	T2	0'- 11"	2'- 6"	0'- 7"	2'- 6"			0'- 11"					
	35	5	8'- 9"	4S0505.3	T2	0'- 11"	3'- 2"	0'- 7"	3'- 2"			0'- 11"					
	106	6	36'- 1"	4S0601.3	1	0'- 6"	34'- 4"					0'- 11"					
	212	6	5'- 0"	4S0602.3	1	0'- 6"	4'- 6"										

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-SI). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E DENOTES EPOXY COATED REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER INCHES	AREA INCHES^2	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.04	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.14
#9	3.400	1.13	1.00	3.54
#10	4.3	1.270	1.27	3.990
#11	5.31	1.410	1.56	4.430
#14	7.65	1.69	2.25	5.32
#18	13.60	2.26	4.00	7.09

HDR

PROJECT NAME: **NORTH HERO GRAND ISLE BRIDGE**
PROJECT NUMBER: **BHF 028-1(26)**

FILE NAME: **z12a142_rss02.xls**
PROJECT MANAGER: **T. FRENCH**
DESIGNED BY: **J. PETERSON**
REINFORCING STEEL SCHEDULE SHEET 2

PLOT DATE: **12/12/2017**
DRAWN BY: **D. DOUGHERTY**
CHECKED BY: **RJ XU**
SHEET **373** OF **379**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

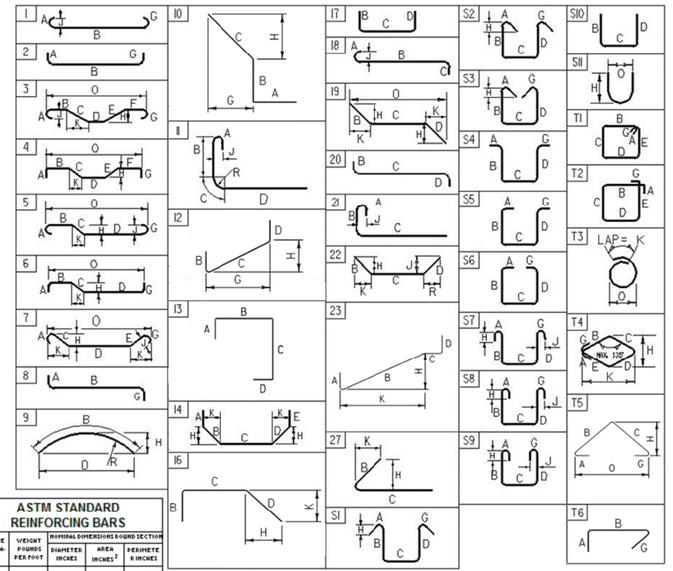
REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
PIER 1 FOOTING																	
	4	6	4'- 0"	1P0601.2	STR	4'- 0"											
	3	6	3'- 0"	1P0642.2	STR	3'- 0"											
	10	7	17'- 1"	1P0701.2	2			15'- 11"	1'- 2"								
	10	7	34'- 7"	1P0702.2	STR	34'- 7"											
	10	7	32'- 3"	1P0703.2	STR	32'- 3"											
	10	10	16'- 0"	1P1001.2	STR	16'- 0"											
	100	10	20'- 9"	1P1002.2	STR	20'- 9"											
✳	1	10	5'- 0"	1P1006.2	STR	5'- 0"											
	6	10	15'- 4"	1P1007.2	STR	15'- 4"											
✳	1	11	5'- 0"	1P1106.2	STR	5'- 0"											
	12	11	3'- 0"	1P1107.2	STR	3'- 0"											
	22	5	6'- 0"	1P0501.2	2	0'- 10"	5'- 2"										
	15	6	4'- 0"	1P0603.2	2	1'- 0"	2'- 0"					1'- 0"					
	4	6	17'- 8"	1P0604.2	T2	1'- 0"	4'- 8"	3'- 2"	4'- 8"	3'- 2"		1'- 0"					
	102	7	7'- 0"	1P0704.2	2	1'- 2"	5'- 10"										
	218	7	7'- 10"	1P0705.2	17		1'- 2"	5'- 6"	1'- 2"								
	28	7	14'- 11"	1P0706.2	22		5'- 1"	4'- 9"	5'- 1"				3'- 7"	3'- 7"	3'- 7"	3'- 7"	
	5	7	17'- 9"	1P0752.2	22			16'- 7"	1'- 2"								
	830	9	10'- 0"	1P0901.2	2	1'- 7"	8'- 5"										
	6	9	11'- 1"	1P0902.2	10	1'- 7"	2'- 4"	6'- 1"				1'- 1"	6'- 0"				
	200	10	40'- 0"	1P1003.2	2	1'- 10"	38'- 2"										
	6	10	42'- 4"	1P1004.2	17		1'- 10"	38'- 8"	1'- 10"								
	6	10	37'- 2"	1P1005.2	17		1'- 10"	33'- 6"	1'- 10"								
	13	11	15'- 7"	1P1101.2	2	2'- 0"	13'- 7"										
	297	11	40'- 0"	1P1102.2	2	2'- 0"	38'- 0"										
	297	11	13'- 7"	1P1103.2	2	2'- 0"	11'- 7"										
	8	11	8'- 0"	1P1104.2	2		2'- 0"	4'- 0"	2'- 0"								
	8	11	36'- 6"	1P1105.2	2		2'- 0"	32'- 6"	2'- 0"								
PIER 1 EAST WALL																	
	44	7	30'- 0"	1P0707.2	STR	30'- 0"											
	22	7	8'- 5"	1P0708.2	STR	8'- 5"											
	44	7	40'- 0"	1P0709.2	STR	40'- 0"											
	4	7	16'- 0"	1P0710.2	STR	16'- 0"											
	22	7	12'- 5"	1P0711.2	STR	12'- 5"											
	8	7	18'- 0"	1P0712.2	STR	18'- 0"											
	64	9	20'- 4"	1P0903.2	STR	20'- 4"											
	20	9	28'- 2"	1P0904.2	STR	28'- 2"											
	7	9	24'- 7"	1P0905.2	STR	24'- 7"											
	11	9	23'- 5"	1P0906.2	STR	23'- 5"											
	144	4	10'- 0"	1P0401.2	T1	0'- 5"	2'- 5"	2'- 2"	2'- 5"	2'- 2"		0'- 5"					
	96	4	9'- 0"	1P0402.2	T1	0'- 5"	2'- 5"	1'- 8"	2'- 5"	1'- 8"		0'- 5"					
	192	4	4'- 2"	1P0403.2	T5	0'- 5"	1'- 8"	1'- 8"				0'- 5"	1'- 4"				2'- 7"
	1375	4	3'- 5"	1P0404.2	T6	0'- 5"	2'- 4"					0'- 5"					
	44	4	6'- 2"	1P0405.2	T6	0'- 5"	5'- 4"					0'- 5"					
	12	5	4'- 3"	1P05109.2	13	0'- 6"	2'- 0"	1'- 3"				0'- 6"					
	18	5	2'- 8"	1P05110.2	S4	0'- 6"	1'- 3"	0'- 5"				0'- 6"					
	40	5	7'- 8"	1P05111.2	S10		2'- 7"	2'- 6"	2'- 7"								
	30	7	13'- 9"	1P0713.2	22		5'- 1"	3'- 7"	5'- 1"				3'- 7"	3'- 7"	3'- 7"	3'- 7"	
	10	7	18'- 4"	1P0714.2	2	1'- 2"	17'- 2"										
	10	7	14'- 5"	1P0715.2	2	1'- 2"	13'- 3"										
	40	7	8'- 2"	1P0716.2	2	1'- 2"	5'- 10"					1'- 2"					
	5	7	23'- 2"	1P0717.2	2	1'- 2"	22'- 0"										
	10	7	10'- 6"	1P0718.2	2	1'- 2"	9'- 4"										
	11	7	10'- 11"	1P0719.2	2	1'- 2"	9'- 9"										
	20	7	12'- 4"	1P0720.2	2	1'- 2"	11'- 2"										
	6	7	7'- 6"	1P0721.2	2	1'- 2"	6'- 4"										
	7	7	22'- 8"	1P0722.2	2	1'- 2"	21'- 6"										
	5	7	10'- 6"	1P0723.2	2	1'- 2"	9'- 4"										
	3	7	3'- 8"	1P0724.2	17		1'- 4"	1'- 2"	1'- 4"								
	6	7	4'- 8"	1P0725.2	17		1'- 9"	1'- 2"	1'- 9"								
	30	7	12'- 8"	1P0726.2	22		2'- 1"	8'- 6"	2'- 1"				1'- 5"	1'- 5"	1'- 5"	1'- 5"	
	47	9	21'- 11"	1P0907.2	STR	1'- 7"	20'- 4"										
	105	9	30'- 9"	1P0908.2	2	1'- 7"	29'- 2"										
PIER 1 NORTH WALL																	
	28	7	31'- 0"	1P0727.2	STR	31'- 0"											
	28	7	35'- 0"	1P0728.2	STR	35'- 0"											
	3	7	12'- 0"	1P0729.2	STR	12'- 0"											
	3	7	16'- 0"	1P0730.2	STR	16'- 0"											
	3	7	14'- 0"	1P0731.2	STR	14'- 0"											
	3	7	18'- 0"	1P0732.2	STR	18'- 0"											
	8	9	25'- 0"	1P0909.2	STR	25'- 0"											
	780	4	3'- 5"	1P0404.2	T6	0'- 5"	2'- 4"					0'- 5"					
	30	7	13'- 9"	1P0713.2	22		5'- 1"	3'- 7"	5'- 1"				3'- 7"	3'- 7"	3'- 7"	3'- 7"	
	30	7	12'- 8"	1P0726.2	22		2'- 1"	8'- 6"	2'- 1"				1'- 5"	1'- 5"	1'- 5"	1'- 5"	
	89	9	30'- 9"	1P0910.2	2	1'- 7"	29'- 2"										

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
PIER 1 WEST WALL																	
	54	7	40'- 0"	1P0735.2	STR	40'- 0"											
	27	7	8'- 5"	1P0736.2	STR	8'- 5"											
	54	7	30'- 0"	1P0737.2	STR	30'- 0"											
	27	7	12'- 5"	1P0738.2	STR	12'- 5"											
✳	5	7	5'- 5"	1P0739.2	STR	5'- 4"											
	4	7	11'- 10"	1P0740.2	STR	11'- 10"											
	6	7	30'- 11"	1P0741.2	STR	30'- 11"											
	30	9	25'- 7"	1P0910.2	STR	25'- 7"											
	53	9	25'- 9"	1P0911.2	STR	28'- 2"											
			0'- 0"														
	130	4	10'- 0"	1P0406.2	T1	0'- 5"	2'- 5"	2'- 2"	2'- 5"	2'- 2"		0'- 5"					
	1195	4	3'- 5"	1P0404.2	T6	0'- 5"	2'- 4"					0'- 5"	0'- 3"				
	130	4	7'- 6"	1P0407.2	T4	0'- 5"	1'- 8"	1'- 8"	1'- 8"	1'- 8"		0'- 5"	2'- 2"		2'- 5"		
	31	7	4'- 5"	1P0742.2	1	0'- 10"	3'- 7"							0'- 7"			
	2	7	21'- 10"	1P0743.2	2	1'- 2"	20'- 8"										
	6	7	16'- 8"	1P0744.2	2	1'- 2"	15'- 6"										
	30	7	13'- 9"	1P0713.2	22		5'- 1"	3'- 7"	5'- 1"				3'- 7"	3'- 7"	3'- 7"	3'- 7"	
	30	7	12'- 8"	1P0726.2	22		2'- 1"	8'- 6"	2'- 1"				1'- 5"	1'- 5"	1'- 5"	1'- 5"	
	113	9	30'- 9"	1P0908.2	2	1'- 7"	29'- 2"										
	53	9	27'- 2"	1P0912.2	2	1'- 7"	25'- 7"										
PIER 1 SOUTH WALL																	
	23	7	31'- 0"	1P0727.2	STR	31'- 0"											
	23	7	35'- 0"	1P0728.2	STR	35'- 0"											
	7	7	17'- 3"	1P0745.2	STR	17'- 3"											
	7	7	9'- 9"	1P0746.2	STR	9'- 9"											
	7	7	19'- 3"	1P0747.2	STR	19'- 3"											
	7	7	11'- 9"	1P0748.2	STR	11'- 9"											
	760	4	3'- 5"	1P0404.2	T6	0'- 5"	2'- 4"					0'- 5"					
	30	7	13'- 9"	1P0733.2	22		5'- 1"	3'- 7"	5'- 1"				3'- 7"	3'- 7"	3'- 7"	3'- 7"	
	30	7	12'- 8"	1P0734.2	22		2'- 1"	8'- 6"	2'- 1"				1'- 5"	1'- 5"	1'- 5"	1'- 5"	
	89	9	30'- 9"	1P0908.2	2	1'- 7"	29'- 2"										
	10	9	20'- 5"	1P0913.2	2	1'- 7"	18'- 10"										
	10	9	6'- 0"	1P0914.2	2	1'- 7"	2'- 10"					1'- 7"					
TRUNNION SUPPORT & CORBEL																	
	12	6	4'- 0"	1P0605.2	STR	4'- 0"											
	44	7	5'- 0"	1P0753.2	STR	5'- 0"											
	44	7	7'- 3"	1P0754.2	STR	7'- 3"											
	120	9	10'- 4"	1P0915.2	STR	10'- 4"											
	6	9	10'- 6"	1P0916.2	STR	10'- 6"											
	88	4	5'- 8"	1P0406.2	T1	0'- 5"	1'- 1"	1'- 4"	1'- 1"	1'- 4"		0'- 5"					
	2	4	8'- 0"	1P0407.2	T1	0'- 5"	0'- 6"	3'- 1"	0'- 6"	3'- 1"		0'- 5"					
	2	4	8'- 6"	1P0408.2	T1	0'- 5"	0'- 9"	3'- 1"	0'- 9"	3'- 1"		0'- 5"					
	2	4	9'- 0"	1P0409.2	T1	0'- 5"	1'- 0"	3'- 1"	1'- 0"	3'- 1"		0'- 5"					
	2	4	9'- 6"	1P0410.2	T1	0'- 5"	1'- 3"	3'- 1"	1'- 3"	3'- 1"		0'- 5"					
	2	4	10'- 0"	1P0411.2	T1	0'- 5"	1'- 6"	3'- 1"	1'- 6"	3'- 1"		0'- 5"					
	2	4	9'- 9"	1P0412.2	T1	0'- 5"	1'- 9"	3'- 1"	1'- 9"	3'- 1"		0'- 5"					
	2	4	11'- 0"	1P0413.2	T1	0'- 5"	2'- 0"	3'- 1"	2'- 0"	3'- 1"		0'- 5"					
	2	4	11'- 6"	1P0414.2	T1	0'- 5"	2'- 3"	3'- 1"	2'- 3"	3'- 1"		0'- 5"					
	22	4	13'- 2"	1P0415.2	T1	0'- 5"	3'- 1"	3'- 1"	3'- 1"	3'- 1"		0'- 5"					
	44	4	4'- 4"	1P0416.2	T5	0'- 5"	1'- 9"	1'- 9"				0'- 5"	0'- 9"				3'- 1"
	88	4	2'- 8"	1P0417.2	T5	0'- 5"	0'- 11"	0'- 11"				0'- 5"	0'- 7"				1'- 5"
	22	4	3'- 11"	1P0418.2	T6	0'- 5"	3'- 1"					0'- 5"	0'- 3"				
	176	4	2'- 3"	1P0419.2	T6	0'- 5"	1'- 4"					0'- 5"					
Ⅰ	20	5	7'- 7"	1P0502.2	1	0'- 7"	6'- 5"	0'- 7"						0'- 5"			
	16	6	6'- 10"	1P0606.2	17		2'- 7"	1'- 8"	2'- 7"								
	14	6	8'- 10"	1P0607.2	17		0'- 8"	7'- 1"	1'- 0"								
	14	6	8'- 2"	1P0602.2	17			7'- 1"	1'- 0"								
✳	9	6	5'- 1"	1P0608.2	17		1'- 0"	3'- 1"	1'- 0"								
Ⅰ	44	7	10'- 0"	1P0755.2	2	1'- 2"	8'- 10"										
	12	7	14'- 2"	1P0799.2	T1	0'- 9"	4'- 8"	1'- 8"	4'- 8"	1'- 8"		0'- 9"					
	16	9	9'- 2"	1P0917.2	21	1'- 3"	3'- 5"	4'- 6"						0'- 11"			
	16	9	7'- 4"	1P0918.2	12		1'- 7"	4'- 2"	1'- 11"		4'- 2"	1'- 0"					
	2	9	4'- 10"	1P0999.2	S10		1'- 7"	1'- 8"	1'- 7"								
PIER 1 SLAB REINFORCEMENT EL. 90.13																	
Ⅰ	54	4	14'- 9"	1P0420.2	STR	14'- 9"											
	82	4	3'- 1"	1P0421.2	STR	3'- 1"											
	6	4	19'- 7"	1P0422.2	STR	19'- 7"											
	46	4	9'- 5"	1P0423.2	STR	9'- 5"											
	16	4	14'- 6"	1P0424.2	STR	14'- 6"											
Ⅰ	50	4	30'- 7"	1P0425.2	STR	30'- 7"											
	8	4	23'- 7"	1P0426.2	STR	23'- 7"											
	8	4	24'- 5"	1P0427.2	STR	24'- 5"											
	8	6	3'- 11"	1P0698.2	STR		1'- 0"	1'- 11"	1'- 0"			0'- 6"		0'- 11"			

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-SI). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPCSES.
11. .3 IN BAR MARK SUFFIX DENOTES LEVEL III REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION DIAMETER INCHES	AREA INCHES²	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.04	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.14
#9	3.400	1.13	1.00	3.54
#10	4.3	1.270	1.27	3.990
#11	5.31	1.410	1.56	4.430
#14	7.65	1.69	2.25	5.32
#18	13.60	2.26	4.00	7.09

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: **NORTH HERO BRIDGE**
PROJECT NUMBER: **BHF 028-I(26)**

FILE NAME: **z12b142P1REINFSCHED3.xls**
PROJECT MANAGER: **J. GALLANT**
DESIGNED BY: **M. VARGAS**
REINFORCING STEEL SCHEDULE SHEET

PLOT DATE: **4/17/2020**
DRAWN BY: **B. BINOWSKI**
CHECKED BY: **H. PROTIN**
SHEET **374** OF **379**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

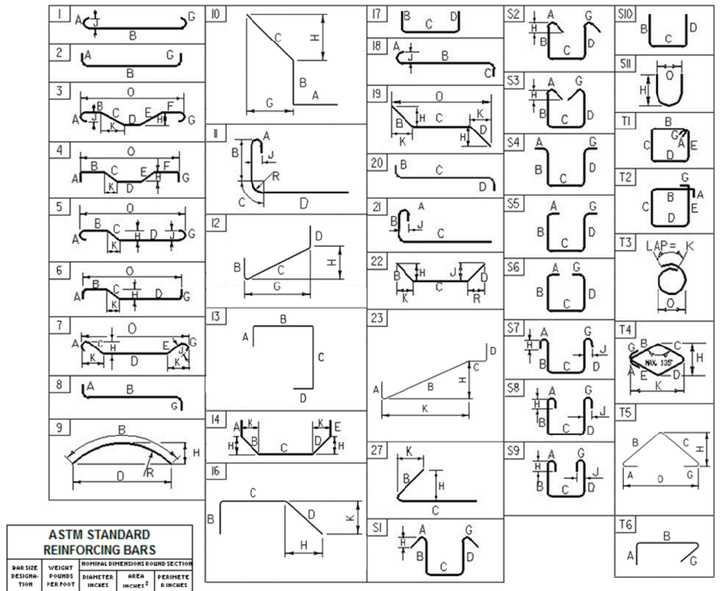
REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
PIER 1 SLAB REINFORCEMENT EL. 99.80																	
	36	5	30'- 0"	1P0504.2	STR	30'- 0"											
	5	5	20'- 6"	1P0505.2	STR	20'- 6"											
	8	5	4'- 0"	1P0506.2	STR	4'- 0"											
	32	5	20'- 11"	1P0507.2	1	0'- 7"	20'- 4"							0'- 5"			
	52	5	20'- 0"	1P0508.2	1	0'- 7"	19'- 5"							0'- 5"			
	24	5	11'- 7"	1P0509.2	1	0'- 7"	11'- 0"							0'- 5"			
	16	5	4'- 5"	1P0510.5	1	0'- 7"	3'- 10"							0'- 5"			
	32	5	15'- 10"	1P0511.2	1	0'- 7"	15'- 3"							0'- 5"			
	52	5	14'- 9"	1P0512.2	1	0'- 7"	14'- 2"							0'- 5"			
	14	5	27'- 5"	1P0513.2	1	0'- 7"	26'- 10"										
	4	5	21'- 3"	1P0514.2	1	0'- 7"	20'- 8"										
	10	5	21'- 8"	1P0515.2	1	0'- 7"	21'- 1"										
	280	5	6'- 0"	1P0516.2	2	1'- 0"	5'- 0"										
	8	5	44'- 7"	1P0517.2	17		0'- 10"	42'- 11"	0'- 10"								
	42	5	5'- 9"	1P0518.2	18		0'- 7"	4'- 4"	0'- 10"								
	100	5	6'- 7"	1P0519.2	18		0'- 7"	5'- 2"	0'- 10"								
	4	5	21'- 6"	1P0520.2	19			20'- 8"	0'- 10"				0'- 5"		0'- 9"		
	5	5	21'- 4"	1P0521.2	19			20'- 6"	0'- 10"				0'- 5"		0'- 9"		
	2	5	4'- 0"	1P0522.2	19			3'- 0"	1'- 0"				0'- 7"		0'- 7"		
PIER 1 SLAB REINFORCEMENT EL. 108.32																	
	50	5	30'- 0"	1P0504.2	STR	30'- 0"											
	4	5	13'- 6"	1P0524.2	STR	13'- 6"											
	5	5	20'- 6"	1P0525.2	STR	20'- 6"											
	5	5	22'- 5"	1P0526.2	STR	22'- 5"											
	12	5	4'- 0"	1P0506.2	STR	4'- 0"											
	54	5	11'- 6"	1P0527.2	1	0'- 7"	10'- 11"							0'- 5"			
	56	5	19'- 10"	1P0528.2	1	0'- 7"	19'- 3"							0'- 5"			
	84	5	14'- 7"	1P0529.2	1	0'- 7"	14'- 0"							0'- 5"			
	6	5	4'- 11"	1P0530.2	1	0'- 7"	4'- 4"							0'- 5"			
	340	5	6'- 0"	1P0516.2	2	1'- 0"	5'- 0"										
	12	5	7'- 1"	1P0531.2	17		0'- 7"	6'- 0"	0'- 7"								
	86	5	5'- 10"	1P0532.2	17		0'- 7"	4'- 5"	0'- 10"								
	4	5	14'- 4"	1P0533.2	19			13'- 6"	0'- 10"				0'- 5"		0'- 9"		
	5	5	21'- 4"	1P0534.2	19			20'- 6"	0'- 10"				0'- 5"		0'- 9"		
	5	5	23'- 3"	1P0535.2	19			22'- 5"	0'- 10"				0'- 5"		0'- 9"		
	7	6	7'- 0"	1P0609.2	16		1'- 0"	5'- 10"	1'- 0"				0'- 10"		0'- 7"		
	13	6	8'- 8"	1P0610.2	17		0'- 8"	7'- 0"	1'- 0"								
	7	6	7'- 12"	1P0611.2	17			7'- 0"	1'- 0"								
	7	6	6'- 10"	1P0612.2	17		1'- 0"	5'- 10"									
PIER 1 SLAB REINFORCEMENT EL. 118.85																	
	14	5	24'- 10"	1P0536.2	STR	24'- 10"											
	42	5	30'- 0"	1P0537.2	STR	30'- 0"											
	8	5	4'- 3"	1P0538.2	STR	4'- 3"											
	8	5	23'- 9"	1P0539.2	STR	23'- 9"											
	16	5	4'- 0"	1P0506.2	STR	4'- 0"											
	2	5	18'- 8"	1P0540.2	STR	18'- 8"											
	4	5	30'- 0"	1P0541.2	STR	30'- 0"											
	2	5	13'- 6"	1P0542.2	STR	13'- 6"											
	70	5	20'- 7"	1P0543.2	1	0'- 7"	20'- 0"										
	68	5	15'- 6"	1P0544.2	1	0'- 7"	14'- 11"							0'- 5"			
	12	5	30'- 7"	1P0545.2	1	0'- 7"	30'- 0"							0'- 5"			
	24	5	20'- 0"	1P0546.2	1	0'- 7"	19'- 5"							0'- 5"			
	2	5	7'- 0"	1P0547.2	2	4'- 0"	3'- 0"										
	2	5	8'- 2"	1P0548.2	2	4'- 6"	3'- 8"										
	51	5	16'- 9"	1P0549.2	2	0'- 10"	15'- 11"										
	46	5	11'- 6"	1P0550.2	2	0'- 10"	10'- 11"										
	14	5	4'- 5"	1P0551.2	2	0'- 10"	3'- 0"					0'- 7"					
	20	5	24'- 1"	1P0552.2	2	0'- 10"	23'- 3"										
	250	5	6'- 0"	1P0516.2	6	0'- 10"	5'- 2"										
	16	5	5'- 10"	1P0553.2	17		0'- 10"	5'- 0"									
	10	5	11'- 8"	1P0554.2	17		0'- 10"	10'- 10"									
	20	5	4'- 9"	1P0555.2	17		0'- 7"	3'- 7"	0'- 7"								
	24	5	4'- 10"	1P0556.2	17		0'- 10"	4'- 0"									
	12	5	10'- 10"	1P0557.2	17		0'- 7"	9'- 8"									
	305	5	3'- 0"	1P0558.2	17		1'- 2"	0'- 8"	1'- 2"								
	2	5	19'- 4"	1P0559.2	19			18'- 6"	0'- 10"				0'- 7"		0'- 7"		
	4	5	7'- 1"	1P0560.2	19		2'- 10"	4'- 3"					3'- 0"		3'- 0"		
	4	5	6'- 5"	1P0561.2	19		2'- 2"	3'- 7"					2'- 6"		2'- 6"		
	2	5	14'- 2"	1P0562.2	19		13'- 4"	0'- 10"					0'- 7"		0'- 7"		
	132	5	5'- 8"	1P0563.2	S5	0'- 10"	1'- 4"	1'- 4"	1'- 4"			0'- 10"					
	7	6	15'- 7"	1P0613.2	1	0'- 8"	14'- 11"							0'- 5"			
	7	6	20'- 7"	1P0614.2	1	0'- 8"	20'- 0"										
	10	6	11'- 8"	1P0616.2	17		1'- 0"	10'- 10"									
	12	6	10'- 11"	1P0617.2	17		0'- 8"	9'- 8"									
	132	6	7'- 0"	1P0618.2	18		0'- 8"	5'- 4"	1'- 0"								

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
NORTH INTERIOR WALLS																	
	32	5	9'- 11"	1P0564.2	STR	9'- 11"											
	32	5	16'- 5"	1P0565.2	STR	16'- 5"											
	16	5	6'- 8"	1P0566.2	STR	6'- 8"											
	16	5	10'- 6"	1P0567.2	STR	10'- 6"											
	9	5	4'- 9"	1P0568.2	STR	4'- 9"											
	9	5	8'- 10"	1P0569.2	STR	8'- 10"											
	9	5	5'- 5"	1P0570.2	STR	5'- 5"											
	66	5	10'- 8"	1P0571.2	STR	10'- 8"											
	4	5	30'- 0"	1P0572.2	STR	30'- 0"											
	20	5	17'- 6"	1P0573.2	STR	17'- 6"											
	20	5	8'- 9"	1P0574.2	STR	8'- 9"											
	20	4	3'- 6"	1P0428.2	T1	0'- 5"	0'- 8"	0'- 8"	0'- 3"	0'- 8"			0'- 5"				
	244	4	1'- 6"	1P0429.2	T6	0'- 5"	0'- 8"						0'- 5"	0'- 3"			
	450	4	2'- 0"	1P0430.2	T6	0'- 5"	1'- 2"						0'- 5"	0'- 3"			
	18	5	5'- 3"	1P0575.2	2	0'- 10"	3'- 7"	0'- 10"							0'- 5"		
	8	5	11'- 1"	1P0576.2	2	0'- 10"	10'- 3"										
	112	5	7'- 0"	1P0577.2	2	0'- 10"	6'- 2"										
	8	5	14'- 10"	1P0578.2	2	0'- 10"	14'- 0"										
	9	5	9'- 9"	1P0579.2	2	0'- 10"	8'- 11"										
	9	5	6'- 6"	1P0580.2	2	0'- 10"	5'- 8"										
	9	5	6'- 4"	1P0581.2	2	0'- 10"	5'- 6"										
	46	5	11'- 2"	1P0582.2	2	0'- 10"	10'- 4"										
	4	5	12'- 2"	1P0583.2	2	0'- 10"	11'- 4"										
	4	5	6'- 0"	1P0584.2	2	1'- 0"	5'- 0"										
	8	5	15'- 8"	1P0585.2	17		0'- 10"	14'- 0"	0'- 10"								
	8	5	6'- 3"	1P0586.2	17		0'- 10"	5'- 5"									
	8	5	7'- 1"	1P0587.2	17		0'- 10"	5'- 5"	0'- 10"								
			0'- 0"														
	54	7	30'- 3"	1P0756.2	2	1'- 2"	29'- 1"										
	2	7	12'- 7"	1P0757.2	2	1'- 2"	11'- 5"										
	2	7	20'- 1"	1P0758.2	2	1'- 2"	18'- 11"										
SOUTH INTERIOR WALLS																	
	56	5	10'- 5"	1P0588.2	STR	10'- 5"											
	40	5	10'- 11"	1P0589.2	STR	10'- 11"											
	16	5	7'- 4"	1P0590.2	STR	7'- 4"											
	14	5	13'- 0"	1P0591.2	STR	13'- 0"											
	14	5	10'- 8"	1P0592.2	STR	10'- 8"											
	8	7	10'- 1"	1P0759.2	STR	10'- 1"											
✳	29	4	5'- 6"	1P0431.2	T1	0'- 5"	1'- 2"	1'- 2"	1'- 2"	1'- 2"			0'- 5"				
	244	4	1'- 6"	1P0429.2	T6	0'- 5"	0'- 8"						0'- 5"	0'- 3"			
	94	4	2'- 0"	1P0430.2	T6	0'- 5"	1'- 2"						0'- 5"	0'- 3"			
	112	5	7'- 0"	1P0577.2	2	0'- 10"	6'- 2"										
	56	5	7'- 10"	1P0594.2	2	0'- 10"	7'- 0"										
	6	5	11'- 11"	1P0595.2	2	0'- 10"	11'- 1"										
	6	5	5'- 12"	1P0596.2	2	0'- 10"	5'- 2"										
	14	5	11'- 2"	1P0597.2	2	0'- 10"	10'- 4"										
	52	5	4'- 8"	1P0598.2	17		0'- 10"	3'- 0"	0'- 10"								
	44	7	30'- 3"	1P0760.2	2	1'- 2"	29'- 1"										
	8	7	11'- 3"	1P0761.2	2	1'- 2"	10'- 1"										
SOUTH STAIRS																	
EL. 89.00 - 95.25																	
	14	6	9'- 7"	1P0619.2	STR	9'- 7"											
	15	5	7'- 0"	1P0599.2	18	0'- 7"	5'- 7"	0'- 10"									
	28	6	6'- 7"	1P0620.2	2	1'- 0"	5'- 7"										
	7	6	8'- 0"	1P0628.2	10		1'- 0"	6'- 0"	1'- 0"						0'- 6"	0'- 10"	
	7	6	8'- 0"	1P0621.2	16		1'- 0"	6'- 0"	1'- 0"						0'- 6"	0'- 10"	
	7	6	14'- 4"	1P0622.2	19		2'- 2"	10'- 0"	2'- 2"						1'- 2"	1'- 10"	13'- 8"
	7	6	5'- 0"	1P0623.2	19		1'- 0"	4'- 0"							0'- 10"	0'- 6"	5'- 0"
	7	6	5'- 2"	1P0624.2	19			3'- 0"	2'- 2"						1'- 2"	1'- 10"	6'- 8"
EL. 95.25 - 99.80																	
	13	5	7'- 0"	1P0599.2	18	0'- 7"	5'- 7"	0'- 10"									
	14	6	5'- 2"	1P0624.2	19			3'- 0"	2'- 2"						1'- 2"	1'- 10"	6'- 8"
	7	6	13'- 10"	1P0625.2	19		2'- 2"	9'- 6"	2'- 2"						1'- 2"	1'- 10"	13'- 2"
EL. 99.80 - 103.78																	
	14	6	9'- 7"	1P0619.2	STR	9'- 7"											
	13	5	7'- 0"	1P0599.2	18	0'- 7"	5'- 7"	0'- 10"									
	28	6	6'- 7"	1P0620.2	2	1'- 0"	5'- 7"										
	7	6	8'- 0"	1P0628.2	10		1'- 0"	6'- 0"	1'- 0"						0'- 6"	0'- 10"	
	7	6	8'- 0"	1P0621.2	16		1'- 0"	6'- 0"	1'- 0"						0'- 6"	0'- 10"	
	14	6	5'- 2"	1P0624.2	19			3'- 0"	2'- 2"						1'- 2"	1'- 10"	6'- 8"
	7	6	12'- 1"	1P0626.2	19		2'- 2"	7'- 9"	2'- 2"						1'- 2"	1'- 10"	12'- 8"

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-SI). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E DENOTES EPOXY COATED REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION DIAMETER INCHES	AREA INCHES²	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.04	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.14
#9	3.400	1.13	1.00	3.54
#10	4.3	1.270	1.27	3.990
#11	5.31	1.410	1.56	4.430
#14	7.65	1.69	2.25	5.32
#18	13.60	2.26	4.00	7.09

HDR

PROJECT NAME: **NORTH HERO BRIDGE**
PROJECT NUMBER: **BHF 028-I(26)**

FILE NAME: **z12b142P1REINFSCHED4.xls** PLOT DATE: **4/17/2020**
PROJECT MANAGER: **J. GALLANT** DRAWN BY: **B. BINOWSKI**
DESIGNED BY: **M. VARGAS** CHECKED BY: **H. PROTIN**
REINFORCING STEEL SCHEDULE SHEET SHEET **375** OF **379**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

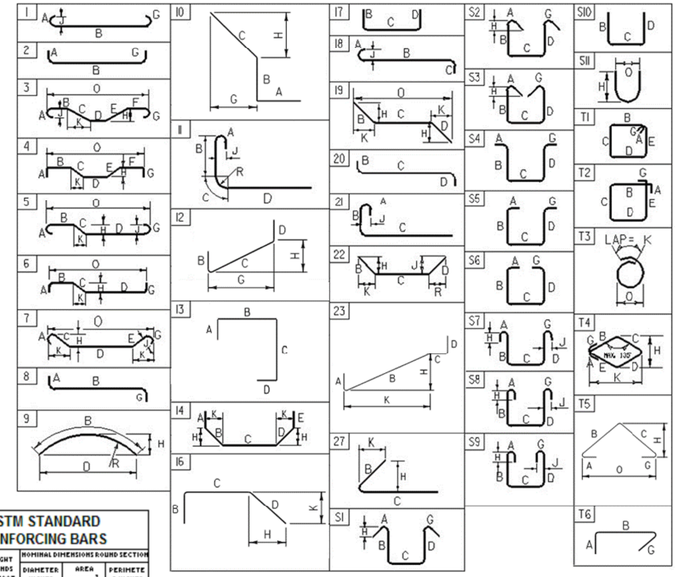
REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	EL. 103.78- 108.32																
	13	5	7'- 0"	1P0599.2	18	0'- 7"	5'- 7"	0'- 10"									
	14	6	5'- 2"	1P0624.2	19			3'- 0"	2'- 2"				1'- 2"		1'- 10"		6'- 8"
	7	6	13'- 10"	1P0625.2	19		2'- 2"	9'- 6"	2'- 2"				1'- 2"		1'- 10"		13'- 2"
	NORTH STAIRS																
	EL. 89.00 - 95.82																
	7	6	5'- 7"	1P0632.2	2	1'- 0"	4'- 7"										
	7	6	6'- 10"	1P0633.2	2	1'- 0"	5'- 10"										
	7	6	8'- 11"	1P0634.2	10	1'- 0"	6'- 5"	1'- 0"				0'- 6"	0'- 10"				
	7	6	6'- 7"	1P0635.2	16		1'- 0"	4'- 7"	1'- 0"				0'- 6"		0'- 10"		
	18	6	7'- 5"	1P0636.2	18	0'- 8"	5'- 9"	1'- 0"									
	7	6	5'- 0"	1P0623.2	19		1'- 0"	4'- 0"					0'- 10"		0'- 6"		5'- 0"
	7	6	5'- 2"	1P0624.2	19			3'- 0"	2'- 2"				1'- 2"		1'- 10"		6'- 8"
	7	6	16'- 6"	1P0627.2	19		2'- 2"	12'- 2"	2'- 2"				1'- 2"		1'- 10"		13'- 8"
	EL. 95.82 - 99.80																
	13	5	6'- 0"	1P05100.2	18	0'- 7"	4'- 7"	0'- 10"									
	14	6	5'- 2"	1P0624.2	19			3'- 0"	2'- 2"				1'- 2"		1'- 10"		6'- 8"
	7	6	12'- 7"	1P0629.2	19		2'- 2"	8'- 3"	2'- 2"				1'- 2"		1'- 10"		13'- 2"
	EL. 99.80 - 108.32																
	12	5	7'- 0"	1P0599.2	18	0'- 7"	5'- 7"	0'- 10"									
	6	5	6'- 0"	1P05100.2	18	0'- 7"	4'- 7"	0'- 10"									
	14	6	5'- 2"	1P0624.2	19			3'- 0"	2'- 2"				1'- 2"		1'- 10"		6'- 8"
	7	6	20'- 10"	1P0630.2	19		2'- 2"	16'- 6"	2'- 2"				1'- 2"		1'- 10"		12'- 8"
	OPENNINGS																
	56	5	6'- 0"	1P05101.2	STR	6'- 0"											
	104	5	4'- 0"	1P05102.2	STR	4'- 0"											
	16	5	3'- 2"	1P05103.2	STR	3'- 2"											
	4	5	11'- 4"	1P05104.2	STR	11'- 4"											
	4	5	15'- 0"	1P05105.2	STR	15'- 0"											
	40	5	9'- 0"	1P05106.2	STR	9'- 0"											
	24	6	6'- 0"	1P0631.2	STR	6'- 0"											
	16	6	7'- 6"	1P0633.2	STR	7'- 6"											
	124	6	4'- 0"	1P0634.2	STR	4'- 0"											
	48	6	12'- 0"	1P0635.2	STR	5'- 6"											
	48	7	9'- 0"	1P0762.2	STR	9'- 0"											
	15	7	8'- 0"	1P0763.2	STR	8'- 0"											
	20	7	5'- 6"	1P0765.2	STR	5'- 6"											
	10	7	7'- 6"	1P0766.2	STR	7'- 6"											
	53	4	4'- 0"	1P0431.2	S3	0'- 5"	1'- 0"	1'- 2"	1'- 0"			0'- 5"					
	25	4	3'- 4"	1P0432.2	S3	0'- 5"	1'- 0"	0'- 6"	1'- 0"			0'- 5"	0'- 3"				
	130	4	3'- 2"	1P0434.2	S10		1'- 0"	1'- 2"	1'- 0"								
	95	4	2'- 6"	1P0435.2	S10		1'- 0"	0'- 6"	1'- 0"								
	70	4	3'- 2"	1P0433.3	T1	0'- 5"	0'- 8"	0'- 6"	0'- 8"	0'- 6"		0'- 5"					
	168	4	5'- 2"	1P0436.2	T1	0'- 5"	1'- 0"	1'- 2"	1'- 0"	1'- 2"		0'- 5"					
	11	5	7'- 3"	1P05107.2	22		1'- 9"	3'- 5"	2'- 1"					1'- 3"	1'- 6"	1'- 3"	1'- 6"
	84	5	9'- 8"	1P05108.2	T1	0'- 6"	2'- 1"	2'- 3"	2'- 1"	2'- 3"		0'- 6"					
	14	6	9'- 2"	1P0636.2	2	1'- 0"	8'- 2"										
	4	6	4'- 6"	1P0637.3	S3	0'- 8"	1'- 0"	2'- 6"	1'- 0"			0'- 8"	0'- 5"				
	71	6	7'- 10"	1P0638.2	S3	0'- 8"	2'- 0"	1'- 2"	2'- 0"			0'- 8"	0'- 5"				
	7	6	6'- 10"	1P0639.2	S3	0'- 8"	2'- 0"	1'- 6"	2'- 0"			0'- 8"	0'- 5"				
	107	6	6'- 6"	1P0640.2	S10		2'- 0"	2'- 6"	2'- 0"								
	4	6	5'- 6"	1P0641.2	S10		2'- 0"	1'- 6"	2'- 0"								
	5	7	8'- 10"	1P0764.2	2	1'- 2"	7'- 8"										
	36	9	13'- 0"	1P0921.2	2	1'- 7"	11'- 5"										
	TRUNNION EMBEDED PLATE																
	32	7	6'- 0"	1P0751.2	STR	6'- 0"											
	REAR LOCK BEAM																
	42	4	6'- 2"	1P0437.2	T1	0'- 5"	1'- 9"	0'- 11"	1'- 9"	0'- 11"		0'- 5"					
✳	7	9	5'- 0"	1P0920.2	STR	5'- 0"											
	10	9	6'- 7"	1P0919.2	2	1'- 7"	5'- 0"										

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	PIER 2 - GENERATOR PAD (2)																
	20	5	11'- 10"	GP0501	STR	11'- 10"											
	14	5	9'- 10"	GP0502	STR	9'- 10"											
✳	29	5	5'- 1"	GP0503	STR	5'- 1"											
	5	5	4'- 6"	GP0504	STR	4'- 6"											
	5	5	15'- 9"	GP0505	STR	15'- 9"											
	66	5	8'- 8"	GP0506	17		4'- 0"	0'- 8"	4'- 0"								
	4	5	6'- 1"	GP0507	17		2'- 8"	0'- 8"	2'- 8"								
	10	5	10'- 8"	GP0508	17		0'- 10"	9'- 0"	0'- 10"								
▲	10	5	15'- 5"	GP0509	17		0'- 10"	13'- 9"	0'- 10"								
	5	5	5'- 11"	GP0510	17		0'- 10"	4'- 3"	0'- 10"								
▲	10	5	12'- 2"	GP0511	17		0'- 10"	11'- 4"									
	10	5	17'- 1"	GP0512	17		0'- 10"	15'- 5"	0'- 10"								
▲	112	5	7'- 7"	GP0513	17		3'- 6"	0'- 7"	3'- 6"								
	10	5	6'- 11"	GP0514	17		0'- 10"	5'- 3"	0'- 10"								
	30	5	4'- 10"	GP0515	17		2'- 0"	0'- 10"	2'- 0"					1'- 5"	1'- 5"	1'- 5"	1'- 5"
	8	5	2'- 0"	GP0516	STR	2'- 0"											
	COUNTERWEIGHT																
✳	1	11	5'- 0"	CP1101.2	STR	5'- 0"											
	16	11	25'- 3"	CP1102.2	STR	25'- 3"											
✳	1	8	5'- 0"	CP0803.2	STR	5'- 0"											
	16	8	25'- 3"	CP0804.2	STR	25'- 3"											
	42	8	9'- 8"	CP0805.2	STR	9'- 8"											
	100	8	4'- 9"	CP0806.2	STR	4'- 9"											
	30	8	25'- 3"	CP0807.2	STR	25'- 3"											
	48	8	18'- 9"	CP0808.2	STR	18'- 9"											
	94	8	7'- 2"	CP0809.2	2	0'- 11"	5'- 4"					0'- 11"					
	50	8	5'- 5"	CP0810.2	2	0'- 11"	3'- 7"					0'- 11"					
	50	8	5'- 11"	CP0811.2	2	0'- 11"	4'- 1"					0'- 11"					
	28	8	4'- 6"	CP0812.2	2	0'- 11"	3'- 7"										
	CURB																
	EAST LEAF																
	20	5	23'- 10"	1C0504.3	STR	23'- 10"											
	172	5	4'- 2"	1C0505.3	S5	0'- 6"	1'- 0"	1'- 2"	1'- 0"			0'- 6"					
	WEST LEAF																
	20	5	23'- 10"	2C0504.3	STR	23'- 10"											
	172	5	4'- 2"	2C0505.3	S5	0'- 6"	1'- 0"	1'- 2"	1'- 0"			0'- 6"					
✳	1	5	5'- 0"	2C0506.3	STR	5'- 0"											
	PIER 1 - GENERATOR PAD (2)																
	30	5	18'- 1"	WGP0501	STR	18'- 1"											
	44	5	11'- 5"	WGP0502	STR	11'- 5"											
	44	5	8'- 5"	WGP0503	17		4'- 0"	0'- 5"	4'- 0"								
	132	5	7'- 6"	WGP0504	17		3'- 6"	0'- 6"	3'- 6"								
	20	5	5'- 0"	WGP0505	17		2'- 6"	2'- 6"									
	30	5	8'- 6"	WGP0506	17		4'- 0"	0'- 6"	4'- 0"								
	20	5	21'- 1"	WGP0507	STR	21'- 1"											
	20	5	14'- 5"	WGP0508	STR	14'- 5"											

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7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E DENOTES EPOXY COATED REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION DIAMETER INCHES	AREA INCHES²	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
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REVISION	DATE	DESCRIPTION	BY
3	04-29-2020	POST-AWARD RFI'S 037-114	JLG
2	04-29-2020	WIRELESS DESIGN MODIFICATION 1	JLG
1	12-19-2018	POST-AWARD RFI'S 001-036	TAF

PROJECT NAME: **NORTH HERO BRIDGE**
PROJECT NUMBER: **BHF 028-I26)**

FILE NAME: **z12b142P1REINFSCHED5.xls** PLOT DATE: **4/17/2020**
PROJECT MANAGER: **J. GALLANT** DRAWN BY: **B. BINOWSKI**
DESIGNED BY: **J. KRYSIEWICZ** CHECKED BY: **H. PROTIN**
REINFORCING STEEL SCHEDULE SHEET SHEET **376** OF **379**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

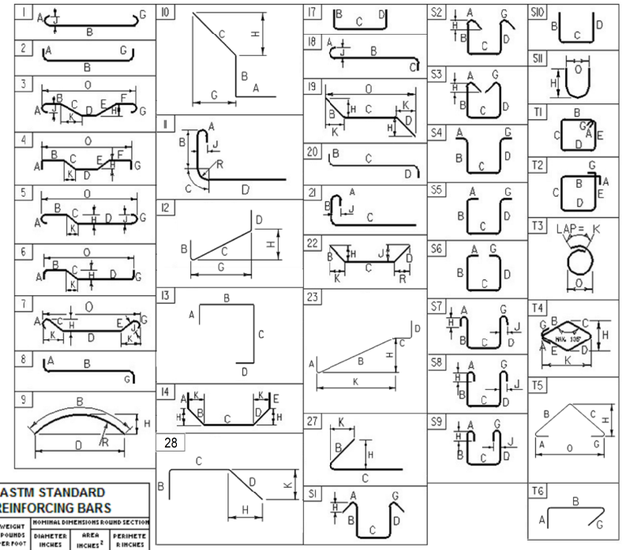
REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	PIER 2																
	PIER 2 FOOTING																
	4	6	4'- 6"	2P0601.2	STR												
	6	6	3'- 0"	2P0667.2	STR												
	15	6	4'- 0"	2P0602.2	17		1'- 0"	2'- 0"	1'- 0"								
	6	6	17'- 8"	2P0603.2	T2	1'- 0"	4'- 8"	3'- 2"	4'- 8"	3'- 2"		1'- 0"					
	5	7	40'- 0"	2P0701.2	STR												
	5	7	34'- 7"	2P0702.2	STR												
	5	7	32'- 3"	2P0703.2	STR												
	5	7	40'- 0"	2P0704.2	STR												
	5	7	18'- 7"	2P0705.2	17		2'- 6"	16'- 1"									
	5	7	38'- 8"	2P0706.2	17		2'- 6"	37'- 2"									
	227	7	7'- 10"	2P0707.2	17		1'- 2"	5'- 6"	1'- 2"								
	18	7	14'- 11"	2P0708.2	22		5'- 1"	4'- 9"	5'- 1"				3'- 7"	3'- 7"	3'- 7"	3'- 7"	
	5	7	21'- 0"	2P0770.2	17		1'- 2"	19'- 10"									
	6	9	10'- 0"	2P0901.2	10	1'- 7"	2'- 4"	6'- 1"				1'- 1"	6'- 0"				
	683	9	10'- 0"	2P0902.2	17		1'- 7"	8'- 5"									
	132	9	10'- 0"	2P0903.2	17		1'- 7"	8'- 5"									
✳	1	10	5'- 0"	2P1007.2	STR												
	119	10	20'- 9"	2P1001.2	STR												
	10	10	16'- 0"	2P1002.2	STR												
	6	10	15'- 4"	2P1008.2	STR												
	119	10	40'- 0"	2P1003.2	17		1'- 10"	38'- 2"									
	119	10	40'- 0"	2P1004.2	17		1'- 10"	38'- 2"									
	3	10	37'- 6"	2P1005.2	17		1'- 10"	33'- 6"	1'- 10"								
	3	10	42'- 8"	2P1006.2	17		2'- 0"	38'- 8"	2'- 0"								
✳	1	11	5'- 0"	2P0110.2	STR												
	12	11	3'- 0"	2P0117.2	STR												
	13	11	15'- 7"	2P1101.2	17			13'- 7"	2'- 0"								
	8	11	36'- 6"	2P1102.2	17		2'- 0"	32'- 6"	2'- 0"								
	300	11	40'- 0"	2P1103.2	17		2'- 0"	38'- 0"									
	300	11	13'- 7"	2P1104.2	17		2'- 0"	11'- 7"									
	8	11	8'- 0"	2P1105.2	17		2'- 0"	4'- 0"	2'- 0"								
	PIER 2 WEST WALL																
	45	4	6'- 4"	2P0401.2	18	0'- 6"	5'- 2"	0'- 8"				0'- 4"					
	133	4	10'- 0"	2P0402.2	T1	0'- 5"	2'- 5"	2'- 2"	2'- 5"	2'- 2"		0'- 5"					
	176	4	9'- 0"	2P0403.2	T1	0'- 5"	2'- 5"	1'- 8"	2'- 5"	1'- 8"		0'- 5"					
	176	4	4'- 2"	2P0404.2	T5	0'- 5"	1'- 8"	1'- 8"	2'- 5"			0'- 5"	1'- 1"				
	1075	4	3'- 2"	2P0405.2	T6	0'- 5"	2'- 4"					0'- 5"	0'- 3"				
✳	45	4	6'- 2"	2P0406.2	T6	0'- 5"	5'- 4"					0'- 5"					
	14	5	4'- 3"	2P0501.2	13	0'- 6"	2'- 0"	1'- 3"	0'- 6"								
	19	5	4'- 10"	2P0502.2	17	0'- 10"	4'- 0"										
	20	5	3'- 11"	2P0503.2	S4	0'- 6"	1'- 3"	0'- 5"	1'- 3"			0'- 6"					
	40	6	7'- 8"	2P0604.2	S10		2'- 7"	2'- 6"	2'- 7"								
	20	7	30'- 0"	2P0709.2	STR												
	20	7	30'- 0"	2P0710.2	STR												
	20	7	13'- 9"	2P0711.2	STR												
	20	7	40'- 0"	2P0712.2	STR												
	20	7	13'- 5"	2P0713.2	STR												
	40	7	8'- 2"	2P0714.2	17		1'- 2"	5'- 10"	1'- 2"								
	5	7	3'- 10"	2P0715.2	17		1'- 4"	1'- 2"	1'- 4"								
	11	7	18'- 4"	2P0716.2	17		1'- 2"	17'- 2"									
	20	7	40'- 0"	2P0717.2	17		2'- 7"	37'- 6"									
	4	7	28'- 10"	2P0718.2	17		1'- 2"	25'- 1"	2'- 7"								
	7	7	25'- 6"	2P0719.2	17		2'- 7"	23'- 9"									
	5	7	7'- 8"	2P0720.2	17		1'- 2"	6'- 6"									
	10	7	10'- 11"	2P0721.2	17		1'- 2"	9'- 9"									
	12	7	12'- 4"	2P0722.2	17		1'- 2"	11'- 2"									
	6	7	7'- 6"	2P0723.2	17		1'- 2"	6'- 4"									
	6	7	4'- 8"	2P0724.2	17		1'- 9"	1'- 2"	1'- 9"								
	10	7	20'- 2"	2P0725.2	17		1'- 2"	19'- 0"									
	12	7	14'- 10"	2P0726.2	17		1'- 2"	13'- 8"									
	18	7	10'- 6"	2P0727.2	17		1'- 2"	9'- 4"									
	30	7	13'- 9"	2P0728.2	22		5'- 1"	3'- 7"	5'- 1"				3'- 7"	3'- 7"	3'- 7"	3'- 7"	
	30	7	12'- 8"	2P0729.2	22		2'- 1"	8'- 6"	2'- 1"				1'- 5"	1'- 5"	1'- 5"	1'- 5"	
	9	9	23'- 3"	2P0904.2	STR												
	40	9	19'- 0"	2P0905.2	STR												
	6	9	22'- 1"	2P0906.2	STR												
	20	9	27'- 10"	2P0907.2	STR												
	6	9	27'- 10"	2P0908.2	STR												
	24	9	18'- 11"	2P0909.2	STR												
	9	9	25'- 9"	2P0910.2	17		1'- 7"	24'- 2"									
	50	9	31'- 3"	2P0911.2	17		1'- 7"	29'- 8"									
	5	9	29'- 11"	2P0912.2	17		1'- 7"	28'- 4"									
	58	9	20'- 7"	2P0913.2	17		1'- 7"	19'- 0"									
	49	9	29'- 11"	2P0914.2	17		1'- 7"	28'- 4"									
	10	9	21'- 7"	2P0915.2	17		1'- 7"	20'- 0"									
	9	9	23'- 1"	2P0916.2	17		1'- 7"	21'- 6"									

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	PIER 2 EAST WALL																
	125	4	10'- 0"	2P0402.2	T1	0'- 5"	2'- 5"	2'- 2"	2'- 5"	2'- 2"		0'- 5"					
	1195	4	3'- 2"	2P0405.2	T6	0'- 5"	2'- 4"					0'- 5"	0'- 3"				
	1195	4	7'- 6"	2P0407.2	T4	0'- 5"	1'- 8"	1'- 8"	1'- 8"	1'- 8"		0'- 5"	2'- 2"		2'- 5"		
	28	7	13'- 9"	2P0728.2	22		5'- 1"	3'- 7"	5'- 1"				3'- 7"	3'- 7"	3'- 7"	3'- 7"	
	29	7	12'- 8"	2P0729.2	22		2'- 1"	8'- 6"	2'- 1"				1'- 5"	1'- 5"	1'- 5"	1'- 5"	
	6	7	11'- 10"	2P0730.2	STR												
	53	7	30'- 0"	2P0731.2	STR												
	25	7	8'- 5"	2P0732.2	STR												
	53	7	40'- 0"	2P0733.2	STR												
	28	7	13'- 5"	2P0734.2	STR												
	32	7	4'- 5"	2P0735.2	1	0'- 10"	3'- 7"							0'- 7"			
	6	7	21'- 10"	2P0736.2	17		1'- 2"	20'- 8"									
	6	7	6'- 6"	2P0737.2	17		1'- 2"	5'- 4"									
	54	9	26'- 11"	2P0917.2	STR												
	30	9	24'- 4"	2P0918.2	STR												
	113	9	29'- 5"	2P0919.2	17		1'- 7"	27'- 10"									
	54	9	25'- 11"	2P0920.2	17		1'- 7"	24'- 4"									
	PIER 2 NORTH WALL																
	760	4	3'- 2"	2P0405.2	T6	0'- 5"	2'- 4"					0'- 5"	0'- 3"				
	771	4	3'- 2"	2P0405.2	T6	0'- 5"	2'- 4"					0'- 5"	0'- 3"				
	27	7	36'- 0"	2P0738.2	STR												
	2	7	10'- 9"	2P0739.2	STR												
	2	7	13'- 6"	2P0740.2	STR												
	2	7	19'- 3"	2P0741.2	STR												
	2	7	30'- 0"	2P0742.2	STR												
	27	7	36'- 0"	2P0743.2	17		2'- 6"	33'- 6"									
	2	7	22'- 0"	2P0744.2	17		2'- 6"	19'- 6"									
	2	7	32'- 8"	2P0745.2	17		2'- 6"	30'- 2"									
	89	9	31'- 1"	2P0921.2	17		1'- 7"	29'- 6"									
	7	9	29'- 5"	2P0922.2	17		1'- 7"	27'- 10"									
	PIER 2 SOUTH WALL																
	760	4	3'- 2"	2P0405.2	T6	0'- 5"	2'- 4"					0'- 5"	0'- 3"				
	28	7	13'- 9"	2P0728.2	22		5'- 1"	3'- 7"	5'- 1"				3'- 7"	3'- 7"	3'- 7"	3'- 7"	
	28	7	12'- 8"	2P0729.2	22		2'- 1"	8'- 6"	2'- 1"				1'- 5"	1'- 5"	1'- 5"	1'- 5"	
	22	7	31'- 0"	2P0746.2	STR												
	22	7	36'- 0"	2P0747.2	STR												
	7	7	17'- 3"	2P0748.2	STR												
	7	7	19'- 9"	2P0749.2	STR												
	7	7	9'- 9"	2P0750.2	STR												
	7	7	12'- 3"	2P0751.2	STR												
	79	9	29'- 5"	2P0923.2	17		1'- 7"	27'- 10"									
	10	9	18'- 11"	2P0924.2	17		1'- 7"	17'- 4"									
✳	11	9	6'- 0"	2P0925.2	17		1'- 7"	2'- 10"	1'- 7"								
	PIER 2 TRUNNION SUPPORT AND CORBEL																
	72	4	7'- 8"	2P0408.2	T1	0'- 5"	1'- 3"	2'- 2"	1'- 3"	2'- 2"		0'- 5"					
	18	4	13'- 2"	2P0409.2	T1	0'- 5"	3'- 1"	3'- 1"	3'- 1"	3'- 1"		0'- 5"					
	2	4	11'- 0"	2P0410.2	T1	0'- 5"	2'- 0"	3'- 1"	2'- 0"	3'- 1"		0'- 5"					
	2	4	10'- 6"	2P0411.2	T1	0'- 5"	1'- 9"	3'- 1"	1'- 9"	3'- 1"		0'- 5"					
	2	4	10'- 0"	2P0412.2	T1	0'- 5"	1'- 6"	3'- 1"	1'- 6"	3'- 1"		0'- 5"					
	2	4	9'- 6"	2P0413.2	T1	0'- 5"	1'- 3"	3'- 1"	1'- 3"	3'- 1"		0'- 5"					
	2	4	9'- 0"	2P0414.2	T1	0'- 5"	1'- 0"	3'- 1"	1'- 0"	3'- 1"		0'- 5"					
	2	4	8'- 6"	2P0415.2	T1	0'- 5"	0'- 9"	3'- 1"	0'- 9"	3'- 1"		0'- 5"					
	2	4	8'- 0"	2P0416.2	T1	0'- 5"	0'- 6"	3'- 1"	0'- 6"	3'- 1"		0'- 5"					
	72	4	2'- 8"	2P0417.2	T5	0'- 5"	0'- 11"	0'- 11"	1'- 4"			0'- 5"	0'- 7"				
	36	4	4'- 4"	2P0418.2	T5	0'- 5"	1'- 9"	1'- 9"	3'- 1"			0'- 5"	0'- 10"				
	72	4	1'- 9"	2P0419.2	T6	0'- 5"	1'- 4"					0'- 5"					
⚠1	18	4	3'- 11"	2P0420.2	T6	0'- 5"	3'- 1"					0'- 5"					
	12	6	4'- 0"	2P0605.2	STR												
✳	9	6	5'- 1"	2P0606.2	S10		1'- 0"	3'- 1"	1'- 0"								
	16	6	6'- 10"	2P0607.2	S10		2'- 7"	1'- 8"	2'- 7"								
✳	41	7	5'- 0"	2P0752.2	STR												
⚠1	40	7	7'- 3"	2P0753.2	STR												
	40	7	10'- 0"	2P0754.2	17		1'- 2"	8'- 10"									
	12	7	14'- 2"	2P0799.2	T1	0'- 9"	4'- 8"	1'- 8"	4'- 8"	1'- 8"		0'- 9"					
	6	9	9'- 0"	2P0926.2	STR												
⚠1	120	9	8'- 10"	2P0927.2	STR												
	16	9	7'- 4"	2P0928.2	12		1'- 7"	4'- 2"	1'- 7"			4'- 2"	1'- 10"				
	16	9	9'- 2"	2P0929.2	21	1'- 3"	3'- 5"	4'- 6"						0'- 11"			
	2	9	4'- 10"	2P0999.2	S10		1'- 7"	1'- 8"	1'- 7"								

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ASTM STANDARD REINFORCING BARS

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#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.04	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.14
#9	3.400	1.13	1.00	3.54
#10	4.3	1.270	1.27	3.990
#11	5.31	1.410	1.56	4.430
#14	7.65	1.69	2.25	5.32
#18	13.60	2.26	4.00	7.09

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: **NORTH HERO GRAND ISLE BRIDGE**
PROJECT NUMBER: **BHF 028-I(26)**

FILE NAME: **z12b142P1ReinfSched6.xls** PLOT DATE: **4/17/2020**
PROJECT MANAGER: **J. GALLANT** DRAWN BY: **S. SANTRICH**
DESIGNED BY: **M. VARGAS** CHECKED BY: **H. PROTIN**
REINFORCING STEEL SCHEDULE SHEET SHEET **377** OF **379**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

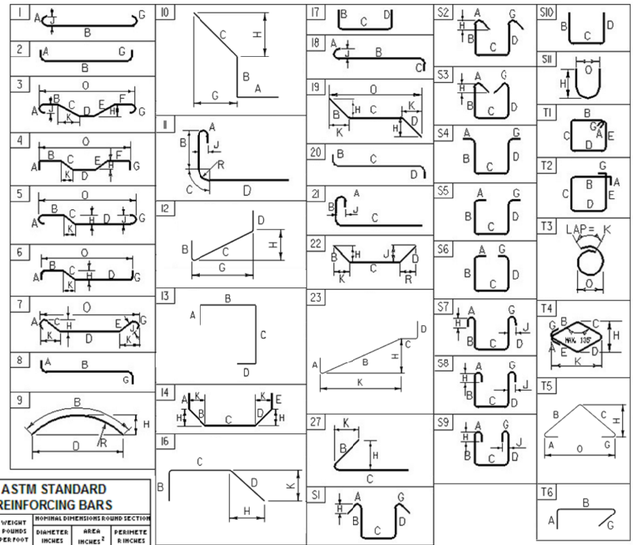
REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	PIER 2 SLAB REINFORCEMENT EL. 90.50																
I	58	4	14'- 9"	2P0421.2	STR												
	6	4	19'- 9"	2P0422.2	STR												
	88	4	3'- 2"	2P0423.2	STR												
	46	4	9'- 7"	2P0424.2	STR												
	16	4	14'- 7"	2P0425.2	STR												
I	52	4	30'- 8"	2P0426.2	STR												
	16	4	25'- 10"	2P0428.2	STR												
	PIER 2 SLAB REINFORCEMENT EL. 99.80																
	40	5	30'- 0"	2P0505.2	STR												
	4	5	21'- 5"	2P0506.2	STR												
	5	5	20'- 3"	2P0507.2	STR												
	5	5	21'- 10"	2P0508.2	STR												
	8	5	4'- 0"	2P0509.2	STR												
	20	5	27'- 6"	2P0510.2	1	0'- 7"	26'- 11"							0'- 5"			
	22	5	11'- 7"	2P0511.2	1	0'- 7"	11'- 0"							0'- 5"			
	58	5	20'- 0"	2P0512.2	1	0'- 7"	19'- 5"							0'- 5"			
	32	5	20'- 10"	2P0513.2	1	0'- 7"	20'- 3"							0'- 5"			
	20	5	7'- 8"	2P0514.2	1	0'- 7"	6'- 6"					0'- 7"		0'- 5"			
	34	5	15'- 8"	2P0515.2	1	0'- 7"	15'- 1"							0'- 5"			
	26	5	14'- 10"	2P0516.2	1	0'- 7"	14'- 3"							0'- 5"			
	272	5	6'- 0"	2P0517.2	17		0'- 10"	5'- 2"									
	100	5	6'- 6"	2P0518.2	18	0'- 7"	5'- 1"	0'- 10"						0'- 5"			
	16	5	7'- 5"	2P0519.2	18	0'- 7"	6'- 0"	0'- 10"						0'- 5"			
	49	5	6'- 0"	2P0520.2	18	0'- 7"	4'- 5"	0'- 10"						0'- 5"			
	8	5	44'- 7"	2P0521.2	18	0'- 7"	42'- 11"	0'- 10"						0'- 5"			
	4	5	22'- 2"	2P0522.2	19			21'- 5"	0'- 10"				0'- 5"		0'- 9"		
	5	5	21'- 1"	2P0523.2	19			20'- 3"	0'- 10"				0'- 5"		0'- 9"		
	5	5	23'- 1"	2P0524.2	19			22'- 3"	0'- 10"				0'- 5"		0'- 9"		
	2	5	4'- 0"	2P0525.2	19			3'- 0"	1'- 0"				0'- 9"		0'- 9"		
	40	6	8'- 8"	2P0608.2	18	0'- 8"	7'- 2"	1'- 0"						0'- 8"			
	PIER 2 SLAB REINFORCEMENT EL. 108.32																
	12	5	4'- 0"	2P0509.2	STR												
	332	5	6'- 0"	2P0517.2	17		0'- 10"	5'- 2"									
	48	5	30'- 0"	2P0526.2	STR												
	5	5	20'- 3"	2P0527.2	STR												
	10	5	22'- 1"	2P0528.2	STR												
	56	5	20'- 0"	2P0529.2	1	0'- 7"	19'- 5"							0'- 5"			
	52	5	11'- 7"	2P0530.2	1	0'- 7"	11'- 0"							0'- 5"			
	84	5	14'- 11"	2P0531.2	1	0'- 7"	14'- 3"							0'- 5"			
	6	5	8'- 9"	2P0532.2	1	0'- 7"	7'- 4"					0'- 10"		0'- 5"			
	12	5	16'- 10"	2P0533.2	1	0'- 7"	16'- 0"					0'- 10"		0'- 5"			
	10	5	7'- 4"	2P0534.2	1	0'- 7"	6'- 2"					0'- 7"		0'- 5"			
	8	5	14'- 8"	2P0535.2	18	0'- 7"	14'- 1"							0'- 5"			
	80	5	6'- 1"	2P0536.2	18	0'- 7"	4'- 8"	0'- 10"						0'- 5"			
	5	5	21'- 1"	2P0537.2	19			20'- 3"	0'- 10"				0'- 5"		0'- 9"		21'- 0"
	9	6	7'- 9"	2P0609.2	16		1'- 0"	5'- 9"	1'- 0"				0'- 10"		0'- 7"		
	9	6	6'- 9"	2P0610.2	17		1'- 0"	5'- 9"									
	13	6	8'- 7"	2P0611.2	18	0'- 8"	6'- 11"	1'- 0"						0'- 8"			
	7	6	7'- 11"	2P0612.2	18		6'- 11"	1'- 0"									
	PIER 2 SLAB REINFORCEMENT EL. 118.82																
	108	4	3'- 7"	2P0429.2	STR												
	313	5	6'- 0"	2P0517.2	17		0'- 10"	5'- 2"									
	18	5	23'- 6"	2P0538.2	STR												
	14	5	9'- 0"	2P0539.2	STR												
	6	5	4'- 1"	2P0540.2	STR												
	2	5	10'- 9"	2P0541.2	STR												
	8	5	3'- 8"	2P0542.2	STR												
	12	5	21'- 10"	2P0543.2	STR			20'- 8"									
	30	5	4'- 0"	2P0544.2	STR												
	2	5	13'- 9"	2P0545.2	STR												
	2	5	15'- 8"	2P0546.2	STR												
	2	5	30'- 10"	2P0547.2	STR												
	2	5	3'- 6"	2P05143.2	STR												
	26	5	3'- 7"	2P0548.2	1	0'- 7"	2'- 5"					0'- 7"		0'- 5"			
	34	5	8'- 5"	2P0549.2	1	0'- 7"	7'- 10"							0'- 5"			
	6	5	10'- 6"	2P0550.2	1	0'- 7"	9'- 4"					0'- 7"		0'- 5"			
	10	5	34'- 0"	2P0551.2	1	0'- 7"	32'- 10"					0'- 7"		0'- 5"			
	8	5	3'- 4"	2P0552.2	1	0'- 7"	2'- 2"					0'- 7"		0'- 5"			
	22	5	9'- 5"	2P0553.2	1	0'- 10"	8'- 0"					0'- 7"		0'- 5"			
	6	5	4'- 6"	2P0554.2	1	0'- 7"	3'- 4"					0'- 7"		0'- 5"			
	12	5	19'- 2"	2P0555.2	1	0'- 7"	18'- 7"							0'- 5"			
	8	5	20'- 7"	2P0556.2	1	0'- 7"	20'- 0"							0'- 5"			
	62	5	20'- 10"	2P0557.2	1	0'- 10"	19'- 2"					0'- 10"		0'- 5"			
	14	5	10'- 9"	2P0558.2	1	0'- 7"	10'- 2"							0'- 5"			
	12	5	13'- 10"	2P0559.2	1	0'- 7"	13'- 3"							0'- 5"			
	12	5	11'- 1"	2P0560.2	1	0'- 7"	9'- 11"					0'- 7"		0'- 5"			
	8	5	24'- 5"	2P0561.2	1	0'- 7"	23'- 10"							0'- 5"			
✳	3	5	5'- 6"	2P0562.2	10	0'- 7"	4'- 1"	0'- 10"						0'- 5"			
	14	5	9'- 6"	2P0563.2	16			8'- 6"	1'- 0"				0'- 9"		0'- 9"		
	24	5	20'- 0"	2P0564.2	17	0'- 10"	19'- 2"										
	24	5	24'- 6"	2P0565.2	17	0'- 10"	23'- 8"										
	5	5	3'- 3"	2P0566.2	17		1'- 0"	1'- 3"	1'- 0"								
	3	5	2'- 8"	2P0567.2	17		1'- 0"	0'- 8"	1'- 0"								

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	4	5	16'- 9"	2P0568.2	17		0'- 10"	15'- 11"									
	56	5	11'- 7"	2P0569.2	17		0'- 10"	10'- 9"									
	8	5	34'- 0"	2P0570.2	17		0'- 10"	33'- 2"									
	64	5	16'- 3"	2P0571.2	18	0'- 7"	15'- 1"							0'- 7"		0'- 5"	
	12	5	4'- 6"	2P0572.2	18	0'- 7"	3'- 1"							0'- 10"		0'- 5"	
	20	5	4'- 6"	2P0573.2	18	0'- 7"	3'- 8"							0'- 10"		0'- 5"	
	18	5	11'- 5"	2P0574.2	18	0'- 7"	10'- 0"							0'- 10"		0'- 5"	
	34	5	6'- 8"	2P0575.2	18	0'- 7"	5'- 3"							0'- 10"		0'- 5"	
	60	5	17'- 3"	2P0576.2	18	0'- 7"	15'- 10"							0'- 10"		0'- 5"	
	12	5	7'- 5"	2P0577.2	18	0'- 7"	6'- 0"							0'- 10"		0'- 5"	
	20	5	3'- 6"	2P0578.2	18	0'- 7"	2'- 2"	0'- 10"								0'- 5"	
	7	5	7'- 1"	2P0579.2	18	0'- 7"	5'- 8"	0'- 10"								0'- 5"	
	49	5	15'- 5"	2P0580.2	18	0'- 7"	14'- 10"									0'- 5"	
	24	5	5'- 4"	2P0581.2	18	0'- 7"	3'- 11"	0'- 10"								0'- 5"	
	132	5	9'- 0"	2P0582.2	S5	0'- 10"	1'- 4"	1'- 4"	1'- 4"					0'- 10"			
	20	5	8'- 2"	2P0583.3	T1		1'- 2"	2'- 5"	1'- 2"	2'- 5"		0'- 6"	0'- 6"				
	2	5	7'- 6"	2P05142.2	22			6'- 8"	0'- 10"				0'- 7"		0'- 7"		
	12	6	11'- 3"	2P0613.2	1	0'- 8"	9'- 11"							0'- 8"		0'- 6"	
	7	6	6'- 6"	2P0614.2	17		1'- 0"	5'- 6"									
	7	6	11'- 9"	2P0615.2	17		1'- 0"	10'- 9"									
	132	6	7'- 0"	2P0616.2	18	0'- 8"	5'- 4"	1'- 0"						0'- 6"			
	7	6	7'- 4"	2P0617.2	18	0'- 8"	5'- 8"	1'- 0"						0'- 6"			
	2	6	5'- 9"	2P0618.2	18	0'- 8"	4'- 1"	1'- 0"						0'- 6"			
	NORTH INTERIOR WALLS																
	390	4	2'- 4"	2P0430.2	T6	0'- 5"	1'- 2"					0'- 5"	0'- 3"				
	120	5	6'- 0"	2P0517.2	17		0'- 10"	5'- 2"									
	6	5	30'- 0"	2P0584.2	STR												
	16	5	17'- 6"	2P0585.2	STR												
	16	5	8'- 11"	2P0586.2	STR												
	32	5	16'- 6"	2P0587.2	STR												
	32	5	9'- 11"	2P0588.2	STR												
	16	5	6'- 0"	2P0589.2	STR												
	2	5	24'- 4"	2P0590.2	17		0'- 10"	23'- 6"									
	56	7	7'- 0"	2P0755.2	17		1'- 2"	5'- 10"									
	40	7	30'- 4"	2P0756.2	17		1'- 2"	29'- 2"									
	14	7	28'- 9"	2P0757.2	17		1'- 2"	27'- 7"									
	89	7	18'- 3"	2P0758.2	17		1'- 2"	17'- 1"									
	4	7	15'- 1"	2P0759.2	17		1'- 2"	12'- 9"	1'- 2"								
	NORTH PARTITION WALLS																
	16	4	3'- 6"	2P0431.2	T1	0'- 5"	0'- 8"	0'- 8"	0'- 8"	0'- 8"				0'- 5"			
	1	4	11'- 4"	2P0432.2	T1	0'- 5"	0'- 8"	4'- 7"	0'- 8"	4'- 7"				0'- 5"			
	1	4	10'- 6"	2P0433.2	T1	0'- 5"	0'- 8"	4'- 2"	0'- 8"	4'- 2"				0'- 5"			
	1	4	9'- 8"	2P0434.2	T1	0'- 5"	0'- 8"	3'- 9"	0'- 8"	3'- 9"				0'- 5"			
	1	4	8'- 10"	2P0435.2	T1	0'- 5"	0'- 8"	3'- 4"	0'- 8"	3'- 4"				0'- 5"			
	1	4	8'- 0"	2P0436.2	T1	0'- 5"	0'- 8"	2'- 11"	0'- 8"	2'- 11"				0'- 5"			
	1	4	7'- 2"	2P0437.2	T1	0'- 5"	0'- 8"	2'- 6"	0'- 8"	2'- 6"				0'- 5"			
	1	4	6'- 4"	2P0438.2	T1	0'- 5"	0'- 8"	2'- 1"	0'- 8"	2'- 1"				0'- 5"			
	2	4	5'- 6"	2P0439.2	T1	0'- 5"	0'- 8"	1'- 8"	0'- 8"	1'- 8"				0'- 5"			
	6	4	6'- 6"	2P0440.2	T1	0'- 5"	0'- 8"	2'- 2"	0'- 8"	2'- 2"				0'- 5"			
	352	4	1'- 6"	2P0441.2	T6	0'- 5"	0'- 8"							0'- 5"	0'- 3"		
	8	5	8'- 6"	2P0591.2	STR												
	16	5	6'- 8"	2P0592.2	STR												
	16	5	10'- 6"	2P0593.2	STR												
	11	5	12'- 11"	2P0594.2	STR			12'- 11"									
	11	5	3'- 5"	2P0595.2	STR												
	4	5	15'- 5"	2P0596.2	1		0'- 7"	14'- 10"							0'- 5"		
	6	5	11'- 10"	2P0597.2	1		0'- 7"	11'- 3"									
	8	5	7'- 8"	2P0598.2	16		0'- 10"	6'- 0"	0'- 10"					0'- 5"		0'- 9"	
	8	5	4'- 5"	2P0599.2	17			3'- 7"	0'- 10"								
	8	5	9'- 9"	2P05100.2	17			8'- 11"	0'- 10"								
	62	5	9'- 10"	2P05101.2	17			6'- 9"	0'- 10"								
	8	5	7'- 7"	2P05102.2	17			6'- 9"	0'- 10"								
	8	5	9'- 4"	2P05103.2	17			8'- 6"	0'- 10"								
	8	5	8'- 5"	2P05104.2	17		0'- 10"	6'- 9"	0'- 10"								
	8	5	7'- 1"	2P05105.2	17		0'- 10"	5'- 5"	0'- 10"								
	8	5	6'- 3"	2P05106.2	17			5'- 5"	0'- 10"								
	11	5	2'- 4"	2P05107.2	17			1'- 2"	1'- 2"								
	11	5	15'- 3"	2P05108.2	17		1'- 2"	12'- 11"	1'- 2"								
	22	5	14'- 4"	2P05109.2	17			13'- 6"	0'- 10"								
	22	5	8'- 8"	2P05110.2	17			7'- 10"	0'- 10"								
	11	5	4'- 3"	2P05111.2	17			3'- 5"	0'- 10"								
	80	5	13'- 6"	2P05112.2	17		0'- 10"	11'- 10"	0'- 10"								
	3	5	8'- 4"	2P05113.2	23	0'- 10"	5'- 1"	1'- 7"	0'- 10"					2'- 8"		4'- 4"	
	3	6	7'- 0"	2P0619.2	17		1'- 0"	6'- 0"									
	SOUTH INTERIOR WALLS																
	330	4	2'- 4"	2P0430.2	T6	0'- 5"	1'- 2"					0'- 5"	0'- 3"				
	116	5	6'- 0"	2P0517.2	17		0'- 10"	5'- 2"									
	54	5	10'- 5"	2P05114.2	STR												
	8	5	30'- 0"	2P05115.2	STR												
	36	5	10'- 11"	2P05116.2	STR												
	18	5	7'- 4"	2P05117.2	STR												
	51	7	7'- 0"	2P0755.2	17		1'- 2"	5'- 10"									
	44	7	28'- 9"	2P0760.2	17		1'- 2"	27'- 7"									
	8	7	13'- 6"	2P0761.2	17		1'- 2"	11'- 2"	1'- 2"								
	8	7	9'- 10"	2P0762.2	17		1'- 2"	8'- 8"									

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-SI). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E DENOTES EPOXY COATED REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION DIAMETER INCHES	AREA INCHES²	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.04	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.14
#9	3.400	1.13	1.00	3.54
#10	4.3	1.270	1.27	3.990
#11	5.31	1.410	1.56	4.430
#14	7.65	1.69	2.25	5.32
#18	13.60	2.26	4.00	7.09

REVISION	DATE	DESCRIPTION	BY
3			
2			
1	04-29-2020	POST-AWARD RFI'S 037-114	JLG

PROJECT NAME: **NORTH HERO GRAND ISLE BRIDGE**
PROJECT NUMBER: **BHF 028-I(26)**

FILE NAME: **z12b142P1ReinfSched7.xls** PLOT DATE: **2/16/2018**
PROJECT MANAGER: **T. FRENCH** DRAWN BY: **S. SANTRICH**
DESIGNED BY: **M. VARGAS** CHECKED BY: **H. PROTIN**
REINFORCING STEEL SCHEDULE SHEET SHEET **378** OF **379**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

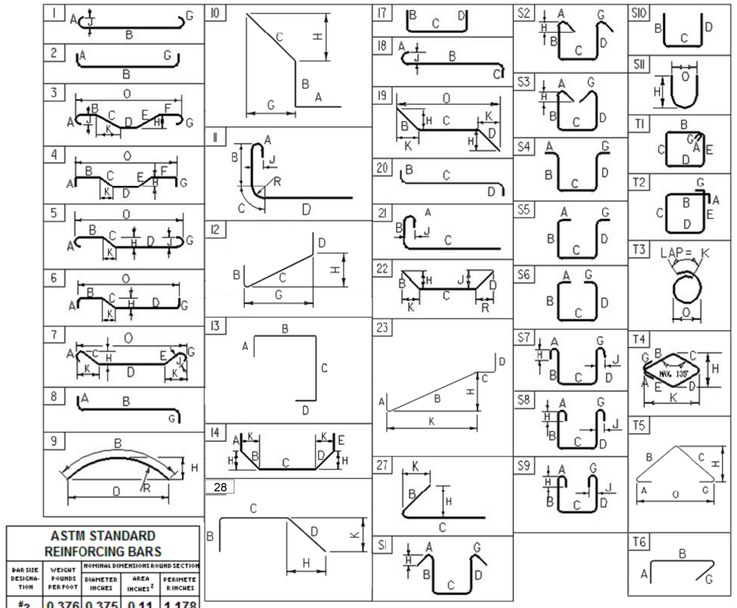
REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
SOUTH PARTITION WALLS																	
	90	4	1'- 6"	2P0441.2	T6	0'- 5"	0'- 8"					0'- 5"	0'- 3"				
	14	5	6'- 0"	2P05117.2	17		0'- 10"	5'- 2"									
	14	5	10'- 8"	2P05118.2	STR												
	14	5	11'- 6"	2P05119.2	STR												
	14	5	11'- 6"	2P05120.2	17		0'- 10"	10'- 4"									
	60	5	7'- 10"	2P05121.2	17		0'- 10"	7'- 0"									
	60	5	4'- 8"	2P05122.2	17		0'- 10"	3'- 0"	0'- 10"								
	18	5	5'- 6"	2P05123.2	T1	0'- 5"	1'- 2"	1'- 2"	1'- 2"	1'- 2"		0'- 5"					
REAR LOCK BEAM																	
	42	4	6'- 2"	2P0442.2	T1	0'- 5"	1'- 9"	0'- 11"	1'- 9"	0'- 11"		0'- 5"					
	6	9	5'- 0"	2P0930.2	STR												
	10	9	6'- 7"	2P0931.2	17		1'- 7"	5'- 0"									
TRUNNION EMBEDED PLATE																	
	32	7	6'- 0"	2P0763.2	STR												
OPENINGS																	
	28	4	4'- 0"	2P0443.2	S3	0'- 5"	1'- 0"	1'- 2"	1'- 0"			0'- 5"	0'- 3"				
	12	4	4'- 0"	2P0443.2	S3	0'- 5"	1'- 0"	1'- 2"	1'- 0"			0'- 5"	0'- 3"				
	64	4	3'- 2"	2P0444.2	S10		1'- 0"	1'- 2"	1'- 0"								
	84	4	5'- 4"	2P0445.2	T1	0'- 5"	1'- 1"	1'- 2"	1'- 1"	1'- 2"		0'- 5"					
	96	4	5'- 4"	2P0445.2	T1	0'- 5"	1'- 1"	1'- 2"	1'- 1"	1'- 2"		0'- 5"					
	30	4	5'- 6"	2P0446.2	T1	0'- 5"	1'- 2"	1'- 2"	1'- 2"	1'- 2"		0'- 5"					
	38	4	3'- 4"	2P0447.2	S3	0'- 5"	1'- 0"	0'- 6"	1'- 0"			0'- 5"	0'- 3"				
	38	4	2'- 6"	2P0448.2	S10		1'- 0"	0'- 6"	1'- 0"								
	12	5	6'- 0"	2P0584.2	STR												
	8	5	6'- 0"	2P0584.2	STR												
	4	5	14'- 11"	2P05124.2	STR												
	8	5	11'- 4"	2P05125.2	STR												
	16	5	4'- 0"	2P05126.2	STR												
	16	5	3'- 2"	2P05127.2	STR												
	24	5	4'- 0"	2P05128.2	STR												
	3	5	6'- 2"	2P05129.2	22		2'- 1"	3'- 5"	1'- 9"				1'- 6"	1'- 3"	1'- 6"	1'- 3"	
	28	5	9'- 8"	2P05130.2	T1	0'- 6"	2'- 1"	2'- 3"	2'- 1"	2'- 1"		0'- 6"					
	3	6	4'- 6"	2P0666.2	S3	0'- 8"	1'- 0"	1'- 2"	1'- 0"			0'- 8"	0'- 5"				
	128	6	4'- 0"	2P0620.2	STR												
	32	6	4'- 0"	2P0620.2	STR												
	16	6	4'- 0"	2P0620.2	STR												
	12	6	4'- 0"	2P0620.2	STR												
	96	6	5'- 6"	2P0621.2	STR												
	8	6	7'- 6"	2P0622.2	STR												
	16	6	6'- 0"	2P0623.2	STR												
	12	6	8'- 6"	2P0624.2	STR												
	16	6	7'- 10"	2P0625.2	S3	0'- 8"	2'- 0"	2'- 6"	2'- 0"			0'- 8"	0'- 5"				
	4	6	7'- 10"	2P0625.2	S3	0'- 8"	2'- 0"	2'- 6"	2'- 0"			0'- 8"	0'- 5"				
	7	6	7'- 10"	2P0625.2	S3	0'- 8"	2'- 0"	2'- 6"	2'- 0"			0'- 8"	0'- 5"				
	5	6	7'- 10"	2P0625.2	S3	0'- 8"	2'- 0"	2'- 6"	2'- 0"			0'- 8"	0'- 5"				
	32	6	6'- 6"	2P0626.2	S10		2'- 0"	2'- 6"	2'- 0"								
	16	6	7'- 10"	2P0626.2	S10		2'- 0"	2'- 6"	2'- 0"								
	16	6	6'- 6"	2P0626.2	S10		2'- 0"	2'- 6"	2'- 0"								
	19	6	7'- 10"	2P0626.2	S10		2'- 0"	2'- 6"	2'- 0"								
	8	7	7'- 0"	2P0755.2	17		1'- 2"	5'- 10"									
	40	7	5'- 6"	2P0764.2	STR												
	10	7	7'- 6"	2P0765.2	STR												
	5	7	8'- 6"	2P0766.2	STR												
	5	7	8'- 0"	2P0767.2	STR												
	8	7	18'- 3"	2P0768.2	17		1'- 2"	17'- 1"									
	12	9	13'- 0"	2P0932.2	17		1'- 7"	11'- 5"									
SOUTH STAIRS																	
	28	5	6'- 0"	2P0517.2	17		0'- 10"	5'- 2"									
	28	5	11'- 8"	2P05131.2	17		0'- 10"	10'- 9"									
	6	5	11'- 11"	2P05132.2	17		0'- 10"	11'- 1"									
	24	5	7'- 0"	2P05133.2	18	0'- 10"	5'- 7"	0'- 7"									
	26	5	5'- 10"	2P05134.2	18	0'- 10"	4'- 5"	0'- 7"									
	14	6	9'- 11"	2P0627.2	10		1'- 0"	6'- 9"	2'- 2"								
	14	6	8'- 7"	2P0628.2	16		1'- 0"	7'- 0"	1'- 0"								
	14	6	7'- 0"	2P0629.2	17			6'- 10"	1'- 0"								
	14	6	7'- 0"	2P0630.2	17		1'- 0"	6'- 0"									
	56	6	5'- 2"	2P0631.2	19			2'- 2"	3'- 0"								
	7	6	14'- 1"	2P0632.2	19		2'- 2"	9'- 6"	2'- 2"				1'- 2"		1'- 8"		
	14	6	12'- 1"	2P0633.2	19		2'- 2"	7'- 9"	2'- 2"								

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
STAIR FROM 91.50 TO 95.82																	
	7	6	6'- 7"	2P0634.2	16		1'- 0"	4'- 7"	1'- 0"				0'- 6"		0'- 10"		
	7	6	5'- 7"	2P0635.2	17		1'- 0"	4'- 7"									
	13	6	7'- 5"	2P0636.2	18	0'- 8"	5'- 9"	1'- 0"						0'- 6"			
	7	6	12'- 6"	2P0637.2	19		2'- 2"	9'- 4"	2'- 2"				1'- 2"		1'- 10"		13'- 0"
	7	6	5'- 2"	2P0638.2	19			2'- 2"	3'- 0"				1'- 7"		2'- 7"		4'- 9"
	7	6	4'- 0"	2P0639.2	22			1'- 0"	3'- 0"					1'- 7"		2'- 7"	
STAIR FROM 95.82 TO 99.80																	
	13	5	7'- 0"	2P05135.2	18	0'- 7"	5'- 7"	0'- 10"						0'- 5"			
	14	6	5'- 2"	2P0638.2	19			2'- 2"	3'- 0"				1'- 7"		2'- 7"		4'- 9"
	7	6	8'- 5"	2P0640.2	10	1'- 0"	6'- 5"	1'- 0"				0'- 6"	0'- 10"				
	7	6	6'- 10"	2P0641.2	17		5'- 10"	1'- 0"									
	7	6	11'- 11"	2P0642.2	19		2'- 2"	8'- 3"	2'- 2"				1'- 2"		1'- 10"		
STAIR FROM 99.80 TO 108.32																	
	13	5	7'- 0"	2P05135.2	18	0'- 7"	5'- 7"	0'- 10"						0'- 5"			
	6	5	6'- 10"	2P05136.2	18	0'- 7"	4'- 7"	0'- 10"						0'- 5"			
	14	6	5'- 2"	2P0638.2	19			2'- 2"	3'- 0"				1'- 7"		2'- 7"		4'- 9"
	7	6	12'- 7"	2P0643.2	19		2'- 2"	16'- 6"	2'- 2"				1'- 2"		1'- 10"		
STAIR FROM 108.32 TO 110.65													0'- 3"				
	12	5	7'- 3"	2P05137.2	18	0'- 7"	5'- 10"	0'- 10"						0'- 5"			
	7	6	8'- 11"	2P0644.2	STR												
	7	6	6'- 10"	2P0645.2	STR	5'- 10"		1'- 0"									
	7	6	7'- 10"	2P0646.2	10	1'- 0"	5'- 10"	1'- 0"					0'- 6"		0'- 10"		
	7	6	7'- 10"	2P0647.2	16	5'- 10"	1'- 0"	1'- 0"					0'- 6"		0'- 10"		
	14	6	6'- 6"	2P0648.2	17		1'- 0"	5'- 6"									
	7	6	7'- 0"	2P0649.2	17	1'- 0"	6'- 0"										
	12	6	7'- 6"	2P0650.2	18	0'- 8"	5'- 10"	1'- 0"						0'- 6"			
	14	6	9'- 0"	2P0651.2	19		2'- 2"	4'- 8"	2'- 2"				1'- 2"		1'- 10"		
	14	6	9'- 2"	2P0652.2	19		2'- 2"	4'- 10"	2'- 2"				1'- 2"		1'- 10"		
	7	6	9'- 11"	2P0653.2	19			8'- 11"	1'- 0"				0'- 6"		0'- 10"		
STAIR FROM 110.65 TO 115.90																	
	15	5	4'- 8"	2P05138.2	1			3'- 10"	0'- 10"								
	14	6	5'- 2"	2P0638.2	19			2'- 2"	3'- 0"				1'- 7"		2'- 7"		4'- 9"
	7	6	7'- 5"	2P0654.2	16		1'- 0"	5'- 5"	1'- 0"				0'- 6"		0'- 10"		
	7	6	6'- 5"	2P0655.2	17			5'- 5"	1'- 0"								
	7	6	15'- 2"	2P0656.2	19		2'- 2"	10'- 10"	2'- 2"				1'- 2"		1'- 10"		
STAIR FROM 115.90 TO 118.82																	
	11	5	6'- 10"	2P05139.2	18	0'- 7"	5'- 5"	0'- 10"						0'- 5"			
	9	6	6'- 10"	2P0657.2	16		1'- 0"	4'- 10"	1'- 0"				0'- 6"		0'- 10"		
	9	6	6'- 7"	2P0658.2	16		1'- 0"	4'- 7"	1'- 0"				0'- 6"		0'- 10"		
	9	6	5'- 2"	2P0659.2	17		4'- 2"	1'- 0"									
	9	6	5'- 5"	2P0660.2	17			4'- 5"	1'- 0"								
	9	6	9'- 11"	2P0661.2	19		2'- 2"	5'- 7"	2'- 2"				1'- 2"		1'- 10"		
	9	6	10'- 6"	2P0662.2	19		2'- 2"	6'- 2"	2'- 2"				1'- 2"		1'- 10"		
STAIR FROM 118.82 TO 120.57 (2)																	
	10	5	7'- 2"	2P05140.2	1	0'- 7"	6'- 0"	0'- 7"						0'- 5"			
	4	5	5'- 11"	2P05141.2	18	0'- 7"	4'- 6"	0'- 10"						0'- 5"			
	20	6	6'- 0"	2P0663.2	STR												
	20	6	4'- 9"	2P0664.2	28			6'- 0"	1'- 0"				0'- 6"		0'- 10"		
	40	6	8'- 2"	2P0665.2	19		2'- 2"	3'- 10"	2'- 2"								

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-SI). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E DENOTES EPOXY COATED REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION DIAMETER INCHES	AREA INCHES²	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.04	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.14
#9	3.400	1.13	1.00	3.54
#10	4.3	1.270	1.27	3.990
#11	5.31	1.410	1.56	4.430
#14	7.65	1.69	2.25	5.32
#18	13.60	2.26	4.00	7.09

PROJECT NAME: **NORTH HERO GRAND ISLE BRIDGE**
PROJECT NUMBER: **BHF 028-I(26)**

FILE NAME: **z12b142P1ReinfSched8.xls** PLOT DATE: **2/16/2018**
PROJECT MANAGER: **J. GALLANT** DRAWN BY: **S. SANTRICH**
DESIGNED BY: **M. VARGAS** CHECKED BY: **H. PROTIN**
REINFORCING STEEL SCHEDULE SHEET SHEET **379** OF **379**