

CAVENDISH ER BRF 0146 (13)

CONTRACTOR FABRICATED PBU UNITS

SHEET1:PBU PLAN
 SHEET2:PBU PLAN UNITS 1&2
 SHEET3:PBU PLAN UNITS 3&4
 SHEET4:PBU TYPICAL DETAILS
 SHEET5:CLOSURE POUR DETAILS
 SHEET6:PBU INSERT-LAYOUT
 SHEET7:PBU RE-BAR
~~SHEET7A:PBU RE BAR~~
 SHEET8:QC PROCEDURES/PLAN
 SHEET9:QC PROCEDURES/PLANS
 SHEET10:PBU CASTING PLAN
 SHEET11: CONCRETE MIX DESIGNS
 SHEET12: BRIDGE ANCHORAGE
 (ADDED 2-19-14)

T.Y. LIN INTERNATIONAL
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JOSH OLUND 03/21/2014
 REVIEWER DATE

Vermont Agency of Transportation

RECEIVED

ON: **March 17, 2014**

and Checked for

CONFORMANCE

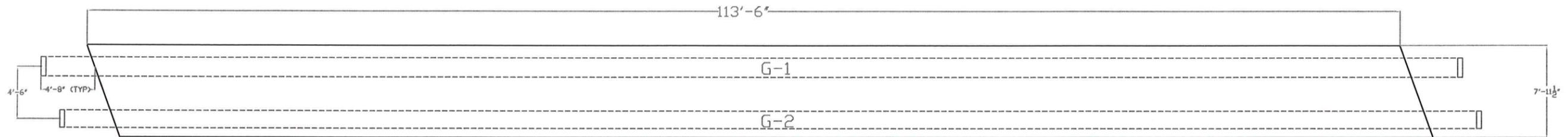
BY: Rob Young DATE: 03/24/2014

It should be understood that the Erection plan needs to be submitted and accepted before the structural steel gets to the site.

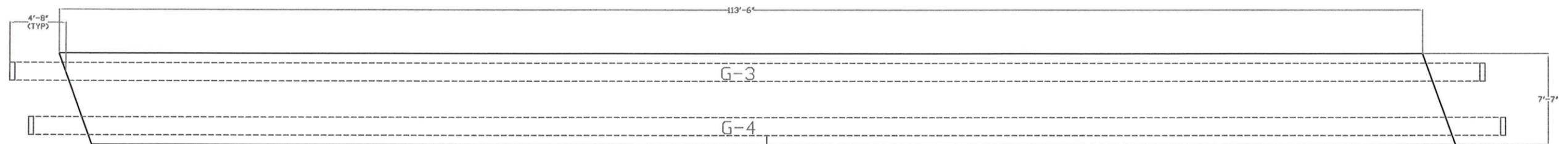
(REVISION #1 2/17/2014)

(REVISION #2 3/17/2014)

COLD RIVER BRIDGES, LLC 10 LANBRO LANE TEL 603-756-9300 WALPOLE, NH FAX 603-756-9303	
CAVENDISH ER BRF 0146(13)	
COVER SHEET/INDEX	SHEET NUMBER COVER
DATE: 2-17-14	Scale:



PBU #1 EXTERIOR UNIT



PBU #2 INTERIOR UNIT

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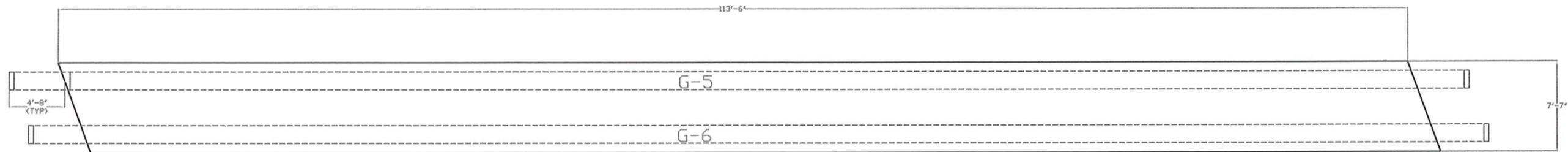
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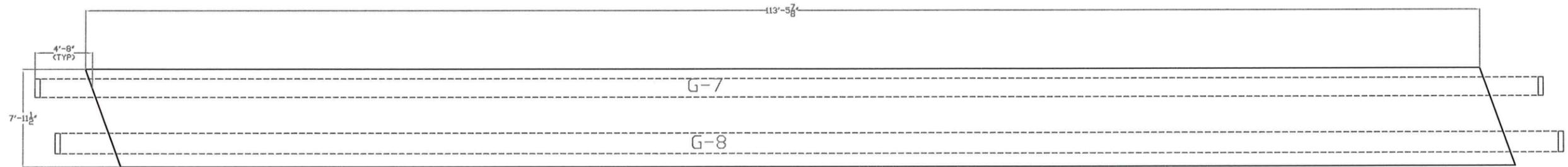
BY: **Rob Young** DATE: **03/24/2014**

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COLD RIVER BRIDGES, LLC	
10 LANBRO LANE	
TEL 603-756-9300	WALPOLE, NH FAX 603-756-9303
CAVENDISH ER BRF 0146(13)	
PBU #1, AND #2	SHEET NUMBER
DATE: 2-17-14	2
scale:	



PBU #3 INTERIOR UNIT



PBU #4 EXTERIOR UNIT

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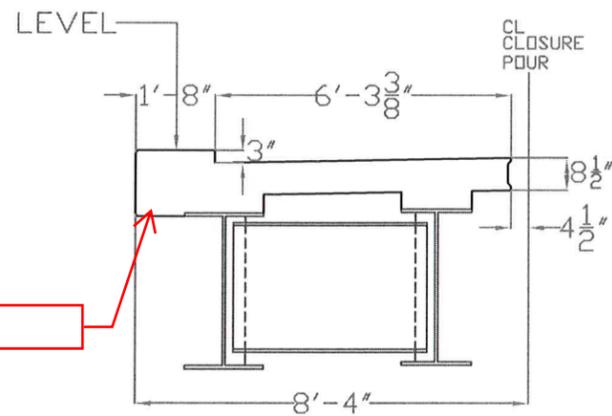
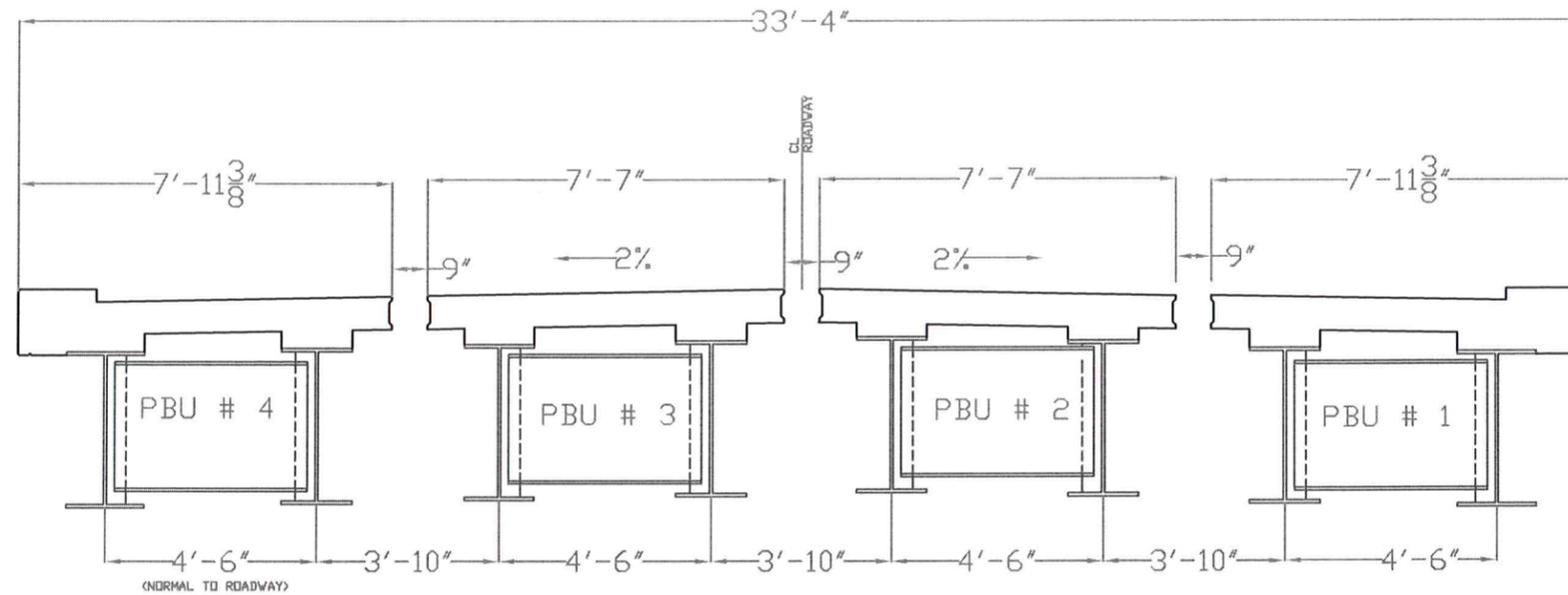
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TEL 603-756-9300	FAX 603-756-9303
CAVENDISH ER BRF 0146(13)	
PBU #3 AND #4	SHEET NUMBER
DATE: 2-17-14	3
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TYPICAL EXTERIOR PBU

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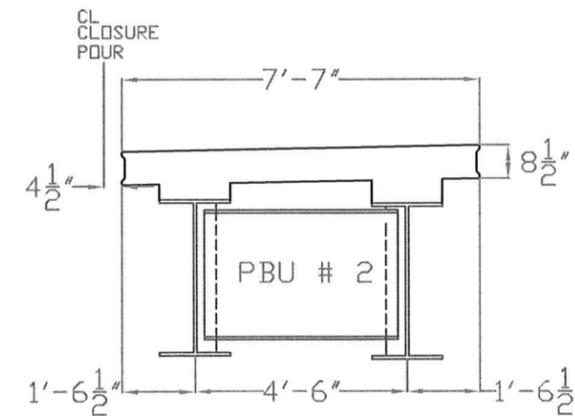
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TYPICAL INTERIOR PBU

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** SEE STRUCTURAL STEEL DRAWINGS FOR GIRDER INFORMATION AND LAY-OUT

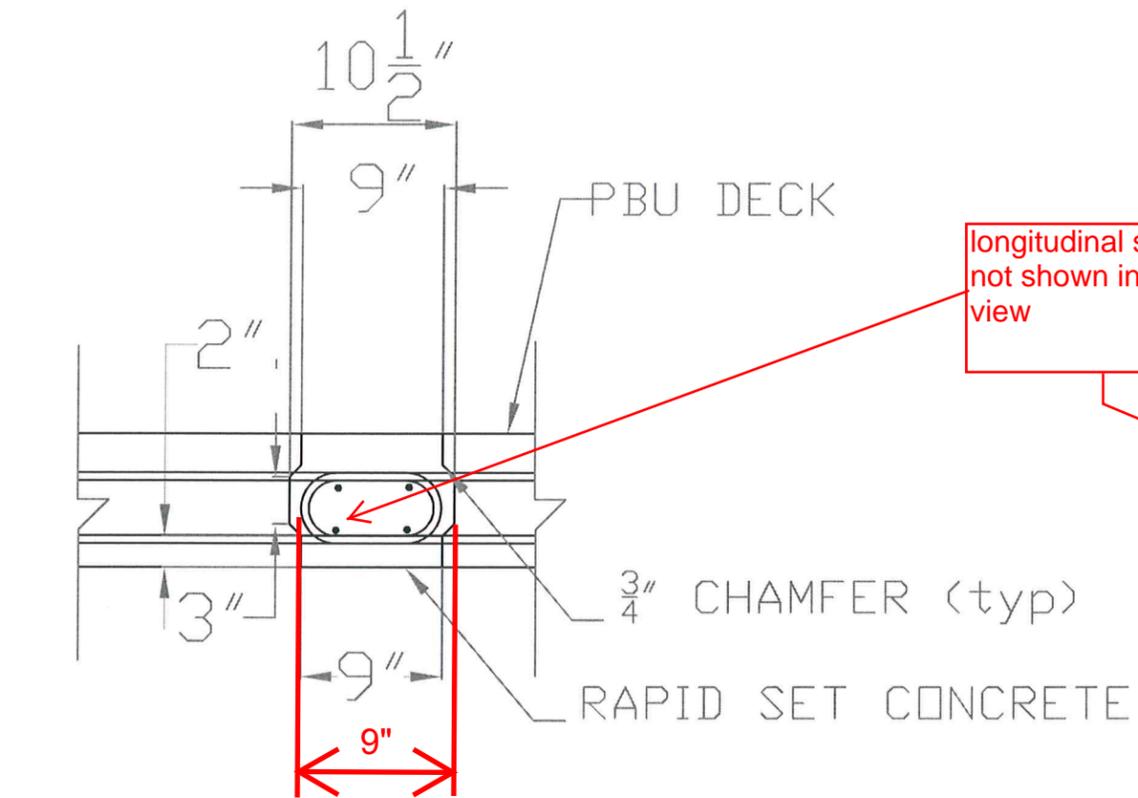
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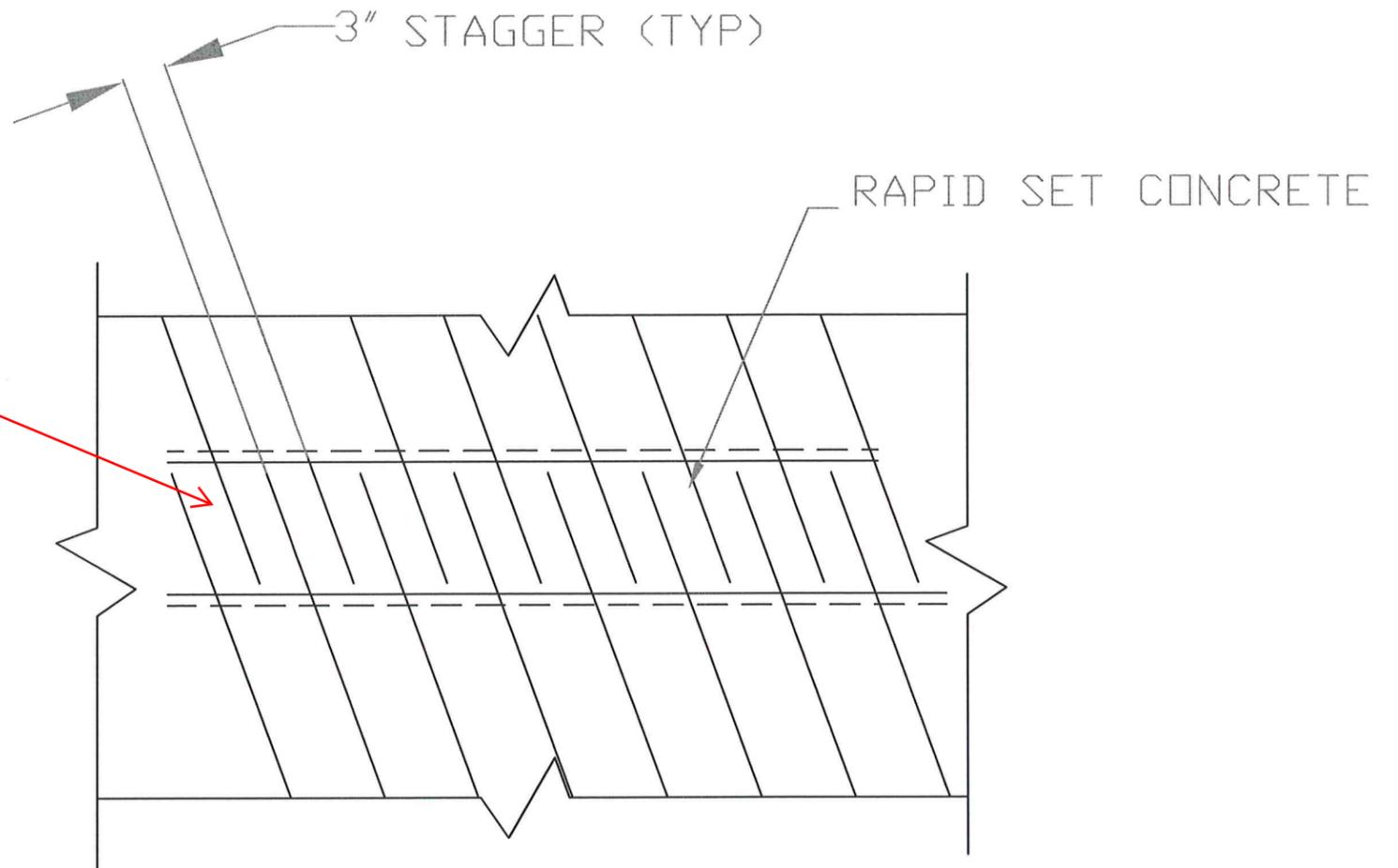
COLD RIVER BRIDGES, LLC
10 LANBRO LANE
WALPOLE, NH
TEL 603-756-9300 FAX 603-756-9303

CAVENDISH ER BRF 0146(13)

PBU DETAILS	SHEET NUMBER
DATE: 2/17/14	4
scale:	



CLOSURE POUR SECTION



CLOSURE POUR PLAN

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CAVENDISH ER BRF 0146(13)

CLOSURE POUR DETAILS	SHEET NUMBER
DATE: 2-17-14	5
scale:	

BY: Rob Young
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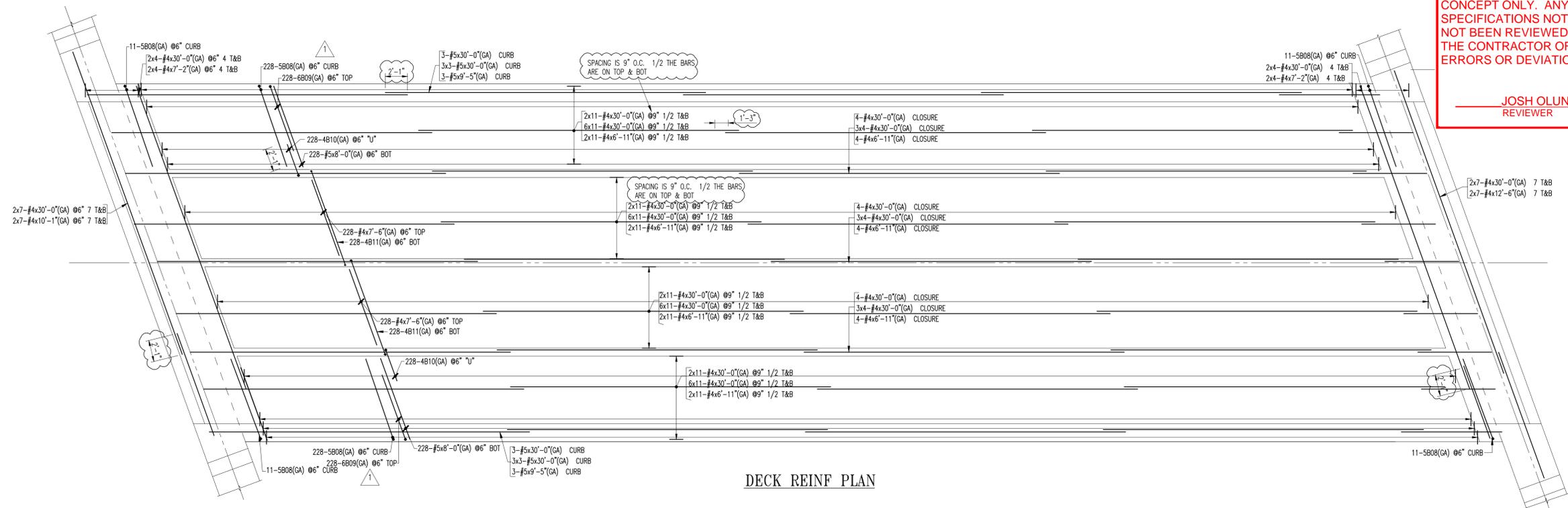
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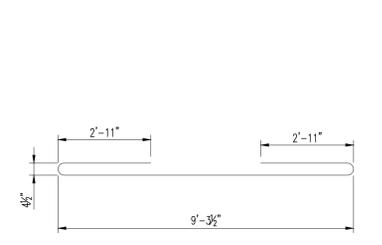
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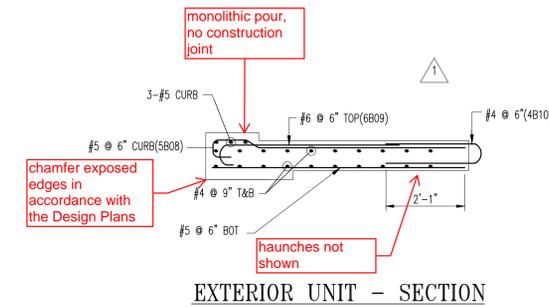


DECK REINF PLAN

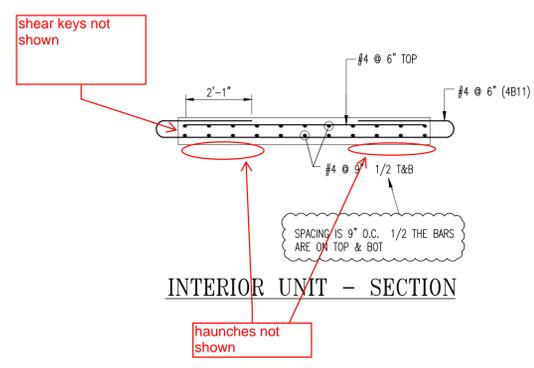
Bar Mark	Qty	Size	Total Length	Type	X	Y	Z	BAR LIST
4B10	456	#4	6'-6 3/4"	17		3'-1"	4 3/4"	3'-1"
4B11	456	#4	15'-7 1/2"	H10		15'-7 1/2"		4 3/4"
5B08	500	#5	9'-2 3/4"	H10	7"	1'-1"	5 3/4"	6'-6"
6B09	456	#6	7'-2 1/2"	1	9"	6'-5"		0"



SPECIAL SKETCH 4B11 TYPE H10



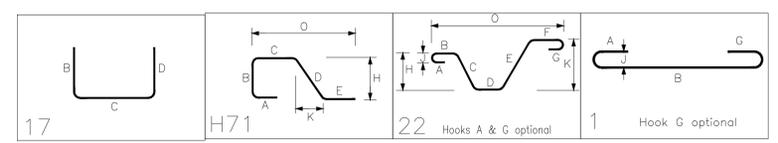
EXTERIOR UNIT - SECTION



INTERIOR UNIT - SECTION

ENG. AND ARCH. PLEASE VERIFY ALL CLOUDED AREAS

(GA) IS DUAL COATED REINF



SIZE	TOP BARS	OTHER BARS
#11		
#10		
#9		
#8		
#7		
#6		
#5		
#4		
#3		

* Top bars are horiz. bars with more than 12" of concrete cast below the bars.

No.	Description	Date	By
3	CORRECTIONS/ APPROVAL	3-14-14	TRH
2	CORRECTIONS/APPROVAL	2-17-14	TRH
1	CORRECTIONS/ APPROVAL	1-16-14	TRH
0	APPROVAL	12-18-13	TRH

Revisions and Issue Record

The full intent and purpose of this drawing is the placing of reinforcing steel bars ONLY. It is NOT to be used as a means of communication between the Architect, Engineer, Contractor or any other Sub-trades.

THIS DRAWING IS NOT TO BE SCALED.

HarrisRebar
National Strength. Local Service.

DETAILED AT:
CANAAN
NEW HAMPSHIRE

Project: BRIDGE REPLACEMENT #1
CAVENDISH, VT

Drawing: DECK REINF

Customer: COLD RIVER BRIDGES

Engineer:

Refer to Release:

Date	Drawn	Chkd.	JOB No.	Dwg. No.
12-16-13	TRH		10050769	R02

M:\hml\Projects\10050769\Placing Drawings\DWGs\R02.dwg

REPAIR OF UNITS:

1. Minor defects in the PBU units shall be fixed using an overhead and vertical repair material from the Vermont Agency of Transportation Approved Products list.

2. Cracking .01" or less shall be sealed with a penetrating sealing from the Vermont Agency of Transportation Approved Products list.

Crack widths measuring .01"-.08" shall be filled with an epoxy injected crack filler from the Vermont Agency of Transportation Approved Products List.

Production Site Handling: Units shall not be lifted or moved until design strength has been met.

Pre-Assembly: Cold River Bridges will be casting the PBU Units on site. Each unit will be constructed adjacent to the location of the new bridge. PBU units will be cast simultaneously. The unit will be cast at the same time with only 19" between bulk-heads

pre-assembly will not be required.

Shipping and Handling: PBU units will be constructed on site and laterally moved into place on rollers. The PBU Units will be jacked down onto the final bearing.

Do to time restrictions during the BCP any repair work (if needed) will be repaired before the pbu units are in final placement.

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BY: Rob Young DATE: 03/24/2014

Repairs prior to final placement of PBU's does not relieve the Contractor from repairing defects or damage (if necessary) to the PBU's during placement and subsequent construction activities.

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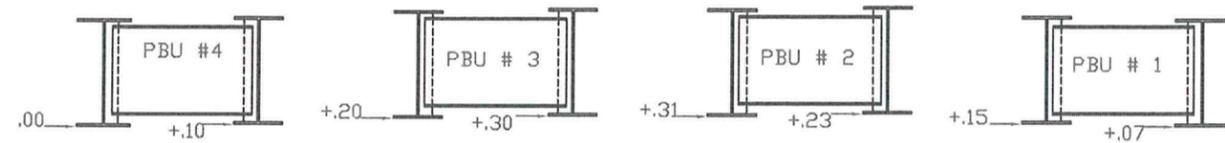
JOSH OLUND
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COLD RIVER BRIDGES, LLC	
10 LANBRO LANE	
TEL 603-756-9300	WALPOLE, NH FAX 603-756-9303
CAVENDISH ER BRF 0146<13>	
QC PROCEDURES/PLAN	SHEET NUMBER
	9
DATE: 1-7-14	Scale:



BEARING ADJUSTMENT FOR CASTING BED

CASTING SEQUENCE:
 1.SET CONCRETE BLOCKS ON COMPACTED SUB-GRADE
 2.INSTALL HARDWOOD BLOCKING, DOUBLE BEAMS,AND 12X25 CHANNEL TRACK.
 3.SET INDIVIDUAL PLATE GIRDERS,SHIM TO GRADE.
 5.BOLT AND TORQUE INDIVIDUAL PBU SECTIONS.
 6.PROFILE INDIVIDUAL GIRDERS AND CALCULATE BLOCKING DISTANCE****
 6.TIE R-BAR, BUILD BULK-HEADS PBU-UNITS 1-4
 7.SET SCREED, TEST RUN
 8.CAST PBU DECK SECTIONS 1-4,SIMUTANEOUSLY

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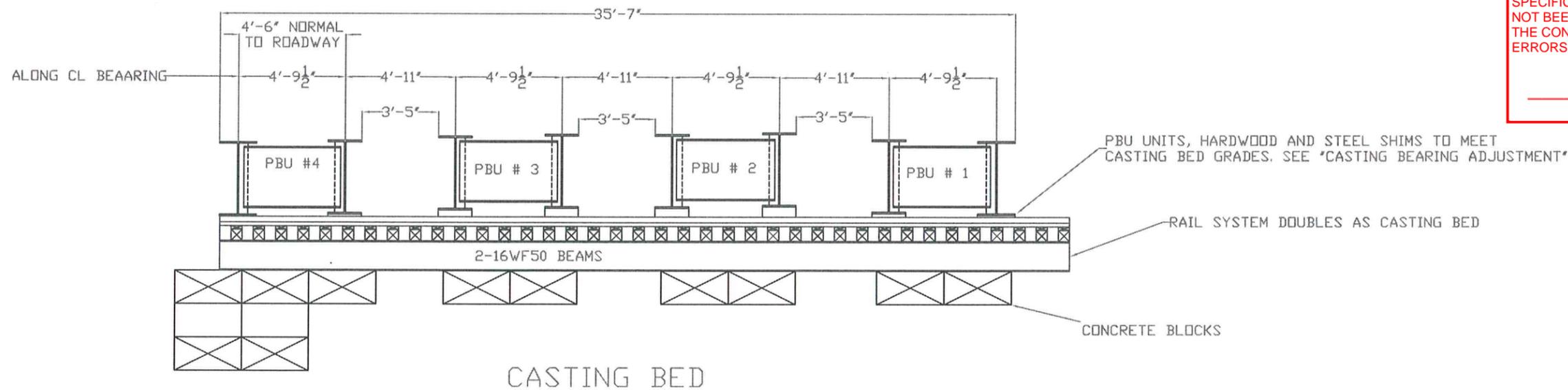
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CASTING BED

(REVISION #1 2/17/2014)

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 10 LANBRO LANE
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CAVENDISH ER BRF 0146(13)

PBU-CASTING PLAN	SHEET NUMBER
DATE: 2-17-14	10
scale:	

STATE OF VERMONT
 AGENCY OF TRANSPORTATION
 MATERIAL AND RESEARCH SECTION - STRUCTURAL CONCRETE UNIT

STRUCTURAL CONCRETE MIX DESIGN SUBMISSION

Concrete class: <u>Precast Prestressed</u>					
Additional Description: _____					
Ready Mix Supplier: <u>CARROLL CONCRETE - CHARLESTOWN, NH</u>					
Designed By: <u>Scott Jordan</u>					
Design strength: <u>5000</u> PSI					
Design by dry weight or saturated surface dry: <u>SSD</u>					
					Mix designs are valid for a 12 month period from date of approval or unless there is a change in material, material property or design parameter.
Cement:					
701.02 Source: _____	Specific Gravity	_____	lb/cy	_____	cf
Brand Name: _____					
Cement Type III:					
701.04 Source: _____	Specific Gravity	_____	lb/cy	_____	cf
Brand Name: _____					
Blended Cement:					
701.06 Source: <u>LAFARGE - TERCEM - MONTREAL, EAST PLANT</u>	Specific Gravity	<u>3.020</u>	<u>705</u> lb/cy	<u>3.74</u>	cf
Brand Name: _____					
Cement with Slag:					
701.07 Source: _____	Specific Gravity	_____	lb/cy	_____	cf
Brand Name: _____					
Pozzolan:					
725.03(a) Source: _____	Specific Gravity	_____	lb/cy	_____	cf
Brand Name: _____					
Fly Ash:					
725.03(a) Source: _____	Specific Gravity	_____	lb/cy	_____	cf
Brand Name: _____					
Silica Fume:					
725.03(b) Source: _____	Specific Gravity	_____	lb/cy	_____	cf
Brand Name: _____					
Slag:					
725.03(c) Source: _____	Specific Gravity	_____	lb/cy	_____	cf
Brand Name: _____					
Water					
Air Content Target		<u>32</u> gals	<u>267</u> lb/cy	<u>4.28</u>	cf
Coarse Aggregate 3/8"	Absorption	_____	Specific Gravity	_____	lb/cy
704.02A Source: _____					
Coarse Aggregate 3/4"	Absorption	<u>0.80</u>	Specific Gravity	<u>2.880</u>	<u>1888</u> lb/cy
704.02B Source: <u>COLD RIVER MATERIALS PIT - N WALPOLE, NH</u>					
Coarse Aggregate 1 1/2"	Absorption	_____	Specific Gravity	_____	lb/cy
704.02C Source: _____					
Fine Aggregate:					
704.01 Source: <u>NEWPORT SAND & GRAVEL - NEWPORT, NH</u>	Absorption	<u>0.90</u>	Specific Gravity	<u>2.670</u>	<u>1283</u> lb/cy
			Fineness Modulus	<u>2.83</u>	<u>7.70</u> cf
Air Entrainment Admixture					
725.02(b) Source: <u>MASTER BUILDERS INC - MESQUITE, TX</u>			Specific Gravity	_____	<u>1.5</u> oz/cy
Brand Name: <u>MasterAir AE 200 / Micro Air</u>					
Retarder Admixture:					
725.02(c) Source: <u>MASTER BUILDERS INC - MESQUITE, TX</u>			Specific Gravity	_____	<u>1</u> oz/cwt
Brand Name: <u>MasterSet R100 / Pozzolith 100XR</u>					
High Range Water Reducer Admixture:					
725.02(h) Source: <u>MASTER BUILDERS INC - MESQUITE, TX</u>			Specific Gravity	_____	<u>3</u> oz/cwt
Brand Name: <u>MasterGlenium 7500</u>					
Other Admixtures:					
Source: _____			Specific Gravity	_____	<u>2</u> oz/cwt <u>0.00</u> cf
Brand Name: <u>BASF, MasterSure Z60</u>					
Source: _____			Specific Gravity	_____	<u>0.00</u> cf
Brand Name: _____					
Source: _____			Specific Gravity	_____	<u>0.00</u> cf
Brand Name: _____					
Source: _____			Specific Gravity	_____	<u>0.00</u> cf
Brand Name: _____					
			TOTAL	<u>47.570</u>	<u>3943</u> lb <u>27.00</u> cf
			Maximum Water/Cementitious Ratio	<u>0.44</u>	
			Maximum Water (gal/cy)	<u>37.2</u>	
			Slump Min/Max (inch)	<u>4.0</u> min <u>7.0</u> max	
			Air Content Min/Max (%)	<u>5.0</u> min <u>9.0</u> max	
			Design Unit Wt. (lb/cf)	<u>146.04</u>	

Approved by Justin Wild, Composite Materials Engineer 2/11/14 for use on Cavendish ER BRF 0146(13) contractor self performing. receipt. Supplied strength data is design content does not represent expected on project air content and not sum of admix design make up. Based on cementitious amount, and favorable curing notes: conditions, mix should obtain 5000psi in 28 days

2014 Construction season 2011 specification 5000-psi precast 2-10-14

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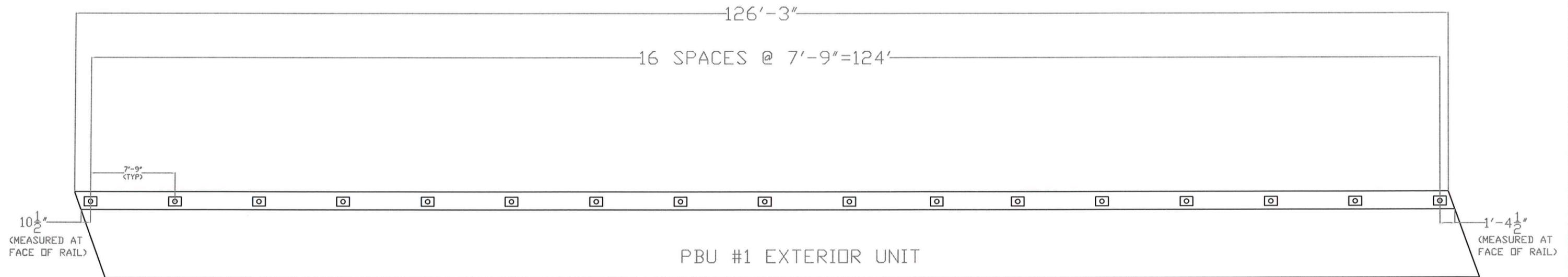
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SHEET NUMBER	
PBU CONCRETE MIX DESIGN	11
DATE: 2-17-14	Scale:

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WEST RAILING PLAN VIEW
(EAST RAIL SIMILAR)

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ANCHORAGE LAY-OUT	SHEET NUMBER
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scale:	