



CONSTRUCTION LEADERS

LETTER OF TRANSMITTAL	
DATE: May 20, 2015	PCL JOB NO: 5515002
ATTN: Chris Barker	TRANSMITTAL NO: 070

To: **State of Vermont Agency of Transportation**
 One National Life Drive
 Montpelier, VT 05633-5001
 (802) 828-0053

Re: Hartford Lateral Slide
 Project No.: IM 091-2(79)
 Contract ID.: 12A132

County: Windsor

PCL FILE NO: 5515002-46

WE ARE SENDING Attached Under separate cover via **Email & SP** the following:
 Shop drawings Prints Plans Samples Specifications
 Copy of Letter Change Order Other

COPIES	SPEC.	REVISION	DESCRIPTION
1	Spec. Prov. #113		Precast Deck Panel Erection Plans

TRANSMITTED for as checked below:

For approval Approved as submitted Resubmit **1** Copies for approval
 For your use Approved as noted Submit Copies for distribution
 As requested Returned for corrections Return Corrected prints
 For review and comment

Remarks:

Please return an email of this approved submittal to Erich Heymann (ewheymann@pcl.com) and Jeremy Mackling (jmackling@pcl.com).

We request the review and return of this submittal within **10 days**. Please advise if this request cannot be met so we can plan accordingly.

By: **Erich Heymann**, Project Engineer

COPY TO: Project Files



CONSTRUCTION LEADERS

SUBMITTAL NO. : 46
Precast Deck Panel Erection Plans

Item No.	Specification	Description
1	Spec. Prov. #113	Precast Deck Panel Erection Plans

PROJECT:
HARTFORD LATERAL SLIDE
PROJECT NO.: IM 091-2(79)
CONTRACT ID.: 12A132

OWNER:
STATE OF VERMONT AGENCY OF TRANSPORTATION

ENGINEER OF RECORD:
STATE OF VERMONT AGENCY OF TRANSPORTATION

CONTRACTOR:
PCL CIVIL CONSTRUCTORS, INC.

MAY 20, 2015

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Precast Deck Panel Quality Control Procedures

1. Inspection of Precast Deck Panels

Prior to being shipped, panels will be inspected for damage at the plant by the JP Carrara & Sons, Inc. (fabricator) and VTrans inspection staff.

- Minor defects will be repaired by the manufacturer using an approved patch material from the VTrans APL. Minor defects are defined as holes, honeycombing, or spalls, which are 6" or less in diameter, that do not penetrate deeper than 1" into the concrete.
- Surface voids or "bugholes" that are less than 5/8" in diameter and less than 1/4" deep are not required to be repaired.
- Cracks less than .01" in width shall be sealed by a method approved by the Engineer. Cracks in excess of .01" may be cause for rejection. Any necessary repairs will be performed by the fabricator.

Deck Panel Rejection Criteria:

- Any crack transverse or diagonal to strand pattern and crossing more than one strand
- Any crack parallel to a strand and longer than 33% of the panel length
- Cracks shorter than 33% of the panel length and present at more than 12% of the total number of strands in the panel
- Voids or honeycombed areas with exposed strands

Upon arrival on site, and prior to offloading from the truck, panels will be inspected for damage by PCL. Any panels that do not meet the required standards will be sent back to the fabricator for repair.

2. Installation Procedure

The deck panels are to be cast by JP Carrara & Sons, Inc. and will be trucked to the jobsite. Panels will be offloaded from trucks and set into final position. Storage of panels on site is not anticipated. Installation drawings are included for reference.

Note: Prior to installation of deck panels, polystyrene will be secured to exterior edges of girder flanges. Foamular 1000 Extruded Polystyrene (min. compressive strength = 100 PSI) and Liquid Nails Heavy Duty Construction Adhesive will be used. Survey will shoot elevations at increments called out in the Contract Drawings to determine the required heights of the polystyrene. Contract drawings are attached for reference.

3. Concrete Production

Concrete will be supplied by Carroll Concrete (HPC Class AA 4000 PSI Precast). The approved mix design is included for reference. Concrete will be inspected at the plant and again when it arrives on site to ensure that it meets all requirements of the specifications.

VTrans will be responsible for Quality Assurance Testing.

The Contractor will be responsible for making additional cylinders for early breaks. Cylinders will be broken by S.W. Cole Engineering, Inc.

Concrete will be placed using a pump truck and will be vibrated using pencil vibrators to ensure sound concrete throughout.

4. Concrete Curing

Concrete will be cured until a minimum of 85% of 28 day design strength (4000 PSI x 0.85 = 3400 PSI) is achieved.

CRANE LIFT STUDY ANALYSIS - SHORT FORM

Project: Hartford Lateral Slide

Name: Erich Heymann

Date/Time: 5/1/2015

Crane Configuration

Model/Serial # GR-750 XL Boom Length/Type: 114.3

Maximum Capacity 75 TN Jib Length/Type: N/A

Anti-two block device: Yes X No _____ Barge/Crane List: 0

Ground Conditions: Nature of Soil (Soil Type) _____ Pads _____

Are the uses of crane mats, or compacted fill required? Yes _____ No X

Calculations

Load Description: Deck Panels Load Weight: 2,712 LBS

Rigging:

75 Ton Main Block = 1600 LBS

6.2 Ton Ball = 330 LBS

Main Line = 499 LBS * Assumed 4-part

Whip Line = 21 LBS

Other Rigging: 5/8" 4-Ways = 50 LBS

1 Ton Shackles = 20 LBS * anticipate using 8 ton shackles

D-Ring = 10 LBS

Lifting Attachments = 20 LBS

_____ = _____ LBS

_____ = _____ LBS

Total Rigging: = 2550 LBS

Load Weight + Rigging = 5,262 LBS CSX FACTOR X 1.5 _____ lbs

Maximum Crane Radius = 90, Associated Boom Angle = _____

Unfactored Load 73.1% of Chart Factored CSX load _____ of Chart

Final Checks Prior to Start

- Verify Gross Weight and Load Chart Capacities, (De-rated if Crane on Barge)
- Inspected Crane and Verified Components (Daily Logs and Annual Certification Checked)
- Inspected Rigging for Condition and Size
- Ground Stability. Outrigger pads/blocking sized correctly? Barge/Crane List, (Derated Chart?)
- Distance to Nearest Utility _____ (above and below ground)
- Weather and wind load considerations, checked and verified at time of lift.
- Pre-Lift Meeting and Rigging Crew, Operator, and Signal Person (Attach sign-in sheet)
- Rigging Drawings Attached
- Method of Communication, (radios, hand signals etc.) checked & verified
- Lift Abort Procedures, checked and verified. JHA/PSI conducted

Responsible Personnel (Print Name & Sign)

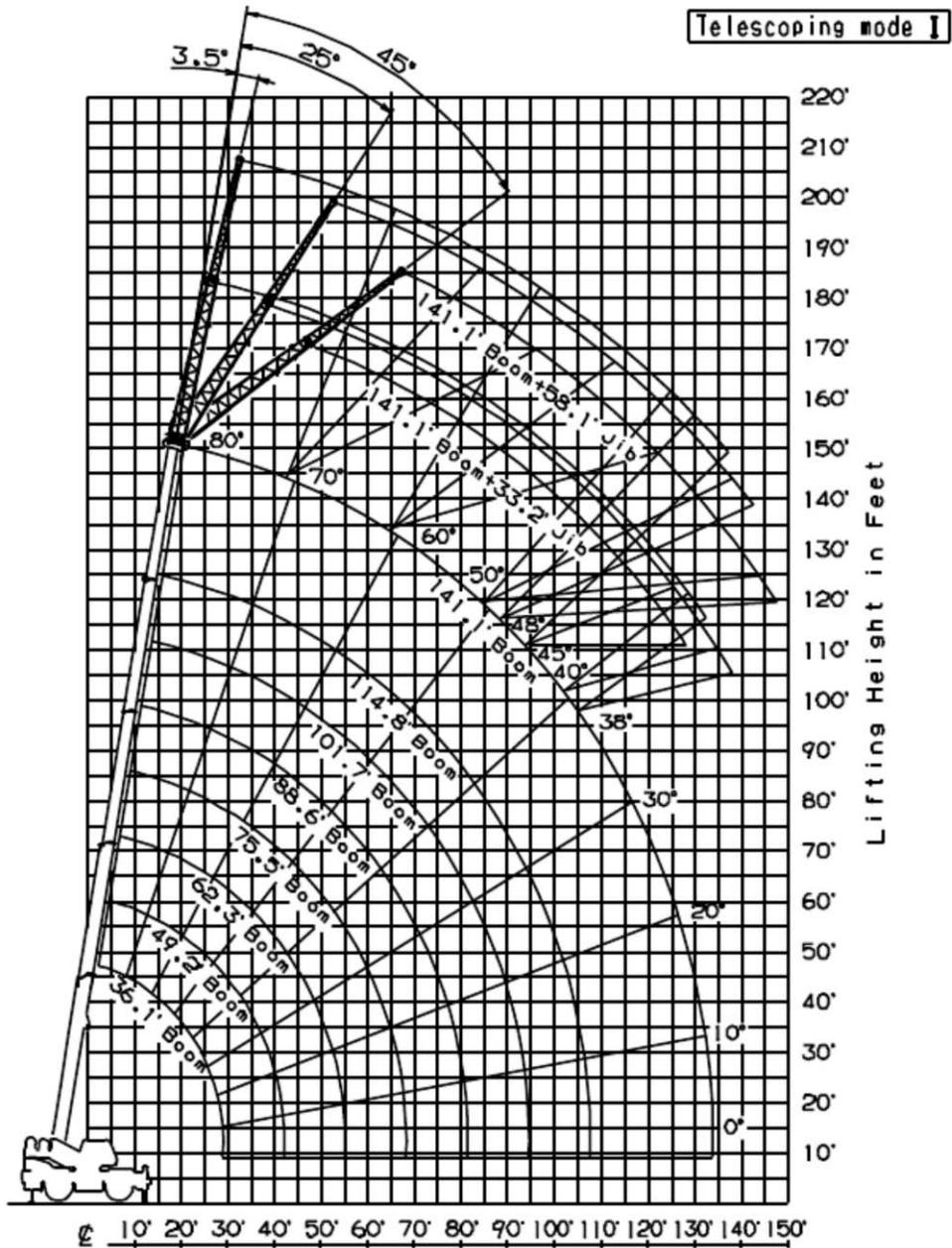
Level 1 or 2 Lift Specialist: _____

Superintendent: _____

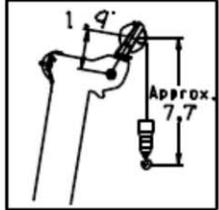
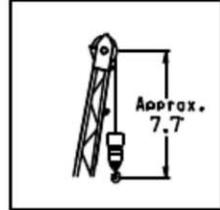
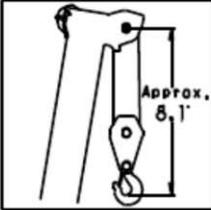
Operator: _____

GR-750XL WORKING RANGE CHART

Telescoping mode I



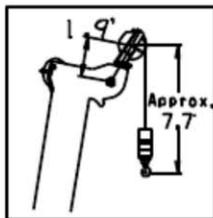
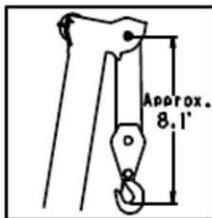
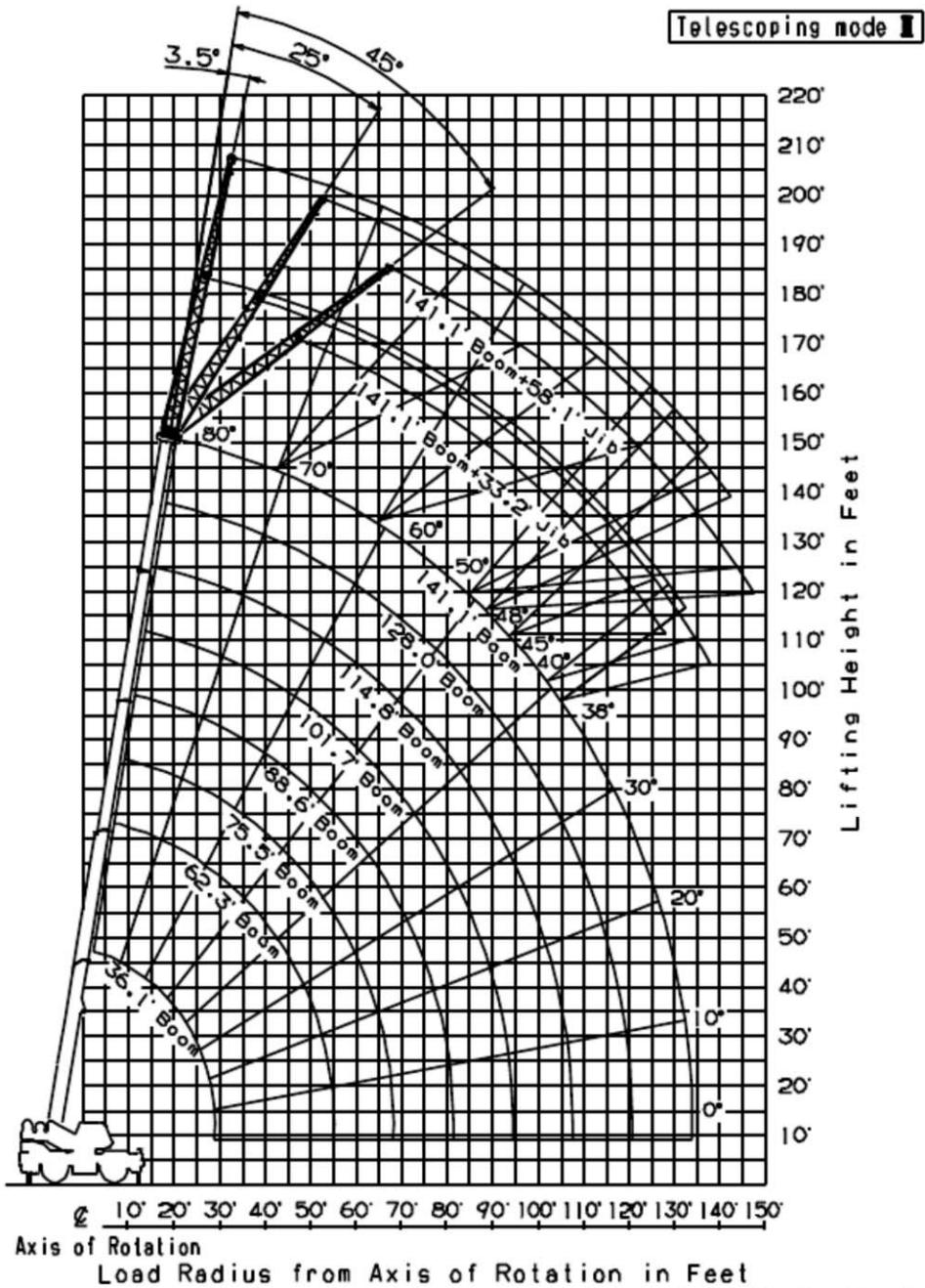
Axis of Rotation
Load Radius from Axis of Rotation in Feet



- Boom Length in Feet
- 36.1' (11m)
 - 49.2' (15m)
 - 62.3' (19m)
 - 75.5' (23m)
 - 88.6' (27m)
 - 101.7' (31m)
 - 114.8' (35m)
 - 141.1' (43m)

NOTE: 1. Boom and jib geometry shown are for unloaded condition and machine standing level on firm supporting surface. Boom deflection and subsequent radius and boom angle change must be accounted for when applying load to hook.

GR-750XL WORKING RANGE CHART



NOTE: 1. Boom and jib geometry shown are for unloaded condition and machine standing level on firm supporting surface. Boom deflection and subsequent radius and boom angle change must be accounted for when applying load to hook.

Boom Length in Feet

36.1'	(11m)
62.3'	(19m)
75.5'	(23m)
88.6'	(27m)
101.7'	(31m)
114.8'	(35m)
128.0'	(39m)
141.1'	(43m)

GR-750XL RATED LIFTING CAPACITIES (IN POUNDS)

ON OUTRIGGERS FULLY EXTENDED 23' 11-3/8"(7.3m) SPREAD																
360° ROTATION																
B \ A	36.1'		49.2'		62.3' (19m)		75.5' (23m)		88.6' (27m)		101.7' (31m)		114.8' (35m)		128.0'	141.1'
	C	(11m)	C	(15m)	C	C	C	C	C	C	C	C	C	C	C (39m)	C (43m)
8'	72	150,000	77	90,000												
10'	68	132,300	75	90,000	79	70,500	78	44,100								
12'	64	117,100	72	90,000	77	70,500	76	44,100	79	44,100	79	44,100				
15'	59	98,000	68	90,000	73	70,500	73	44,100	77	44,100	77	44,100	79	44,100	79	37,500
20'	48	75,600	62	75,100	69	69,600	69	44,100	73	44,100	73	44,100	76	42,400	76	37,100
25'	33	60,000	54	59,400	64	59,100	63	44,100	69	44,100	69	43,300	73	39,100	73	32,600
30'			46	45,900	59	45,000	58	44,100	65	44,100	65	37,200	70	38,800	69	29,500
35'			36	33,900	52	32,900	52	38,300	60	34,600	60	32,400	66	34,700	66	25,900
40'			21	26,100	45	25,300	45	30,200	55	26,800	55	28,500	62	27,700	62	23,100
45'					38	19,900	38	24,600	50	21,300	50	24,800	58	22,200	58	20,900
50'					29	15,900	28	20,500	45	17,300	45	20,700	54	18,100	54	19,000
55'					13	11,100	11	14,000	38	14,200	38	17,500	49	15,000	49	17,400
60'								31	11,700	31	15,000	45	12,500	45	15,200	
65'								22	9,700	22	13,000	40	10,500	40	13,200	
70'												34	8,900	34	11,500	
75'												26	7,500	26	10,100	
80'												15	6,300	18	9,000	
85'														29	5,800	
90'														21	5,000	
95'																
100'																
105'																
110'																
115'																
120'																
125'																
130'																
D	0															
Telescoping conditions (%)																
Tele. mode	I, II	I	I	II	I	II	I	II	I	II	I	II	I	II	I, II	
2nd boom	0	50	100	0	100	0	100	0	100	0	100	0	100	0	50	100
3rd boom	0	0	0	33	16	50	33	66	50	83	66	100	100	100	100	100
4th boom	0	0	0	33	16	50	33	66	50	83	66	100	100	100	100	100
Top boom	0	0	0	33	16	50	33	66	50	83	66	100	100	100	100	100

LIFTING CAPACITIES AT ZERO DEGREE BOOM ANGLE ON OUTRIGGERS FULLY EXTENDED																
23' 11-3/8"(7.3m) SPREAD 360° ROTATION																
C \ A	36.1'		49.2'		62.3' (19m)		75.5' (23m)		88.6' (27m)		101.7' (31m)		114.8' (35m)		128.0'	141.1'
	B	(11m)	B	(15m)	B	B	B	B	B	B	B	B	B	B	B (39m)	B (43m)
0	28.9'	26,000	42.0'	16,800	55.4'	10,800	55.4'	13,700	68.6'	7,900	68.6'	10,100	81.7'	6,000	81.7'	8,400
Tele. mode	I, II	I	I	II	I	II	I	II	I	II	I	II	I	II	II	I, II

- A : Boom length in feet
- B : Load radius in feet
- C : Loaded boom angle (°)
- D : Minimum boom angle (°) for indicated length (no load)

NOTE: The lifting capacity data stored in the LOAD MOMENT INDICATOR (AML-C) is based on the standard number of parts of line listed in the chart. Standard number of parts of line for each boom length should be according to the following table.

Boom length in feet (meters)	36.1' (11m)	36.1' to 49.2' (11m to 15m)	49.2' to 62.3' (15m to 19m)	62.3' to 141.1' (19m to 43m)	Single top Jib
Telescoping mode	I, II	I	I	II	I, II
Number of parts of line	14	8	6	4	1

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

STRUCTURAL CONCRETE MIX DESIGN SUBMISSION

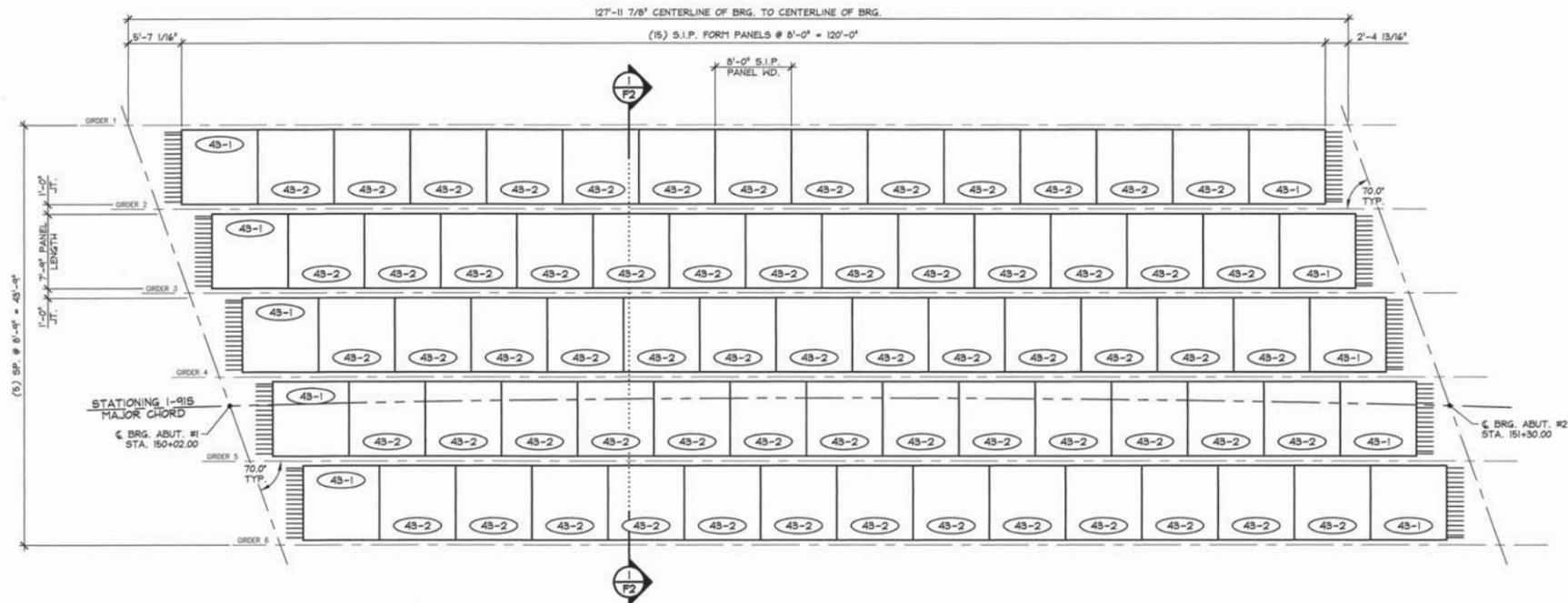
Concrete class: HPC AA
 Additional Description _____
 Ready Mix Supplier: CARROLL CONCRETE - W LEBANON, NH - RT 12A
 Designed By Scott Jordan
 Design strength 4000 PSI
 Mix Design Style: Conventional
 Agg weight - SSD or Dry: SSD

Agency Use Only	
Mix ID	HP00-AA-0
Mix Design #	
Approved by	
Approved Date	
Spec Book Year	2011

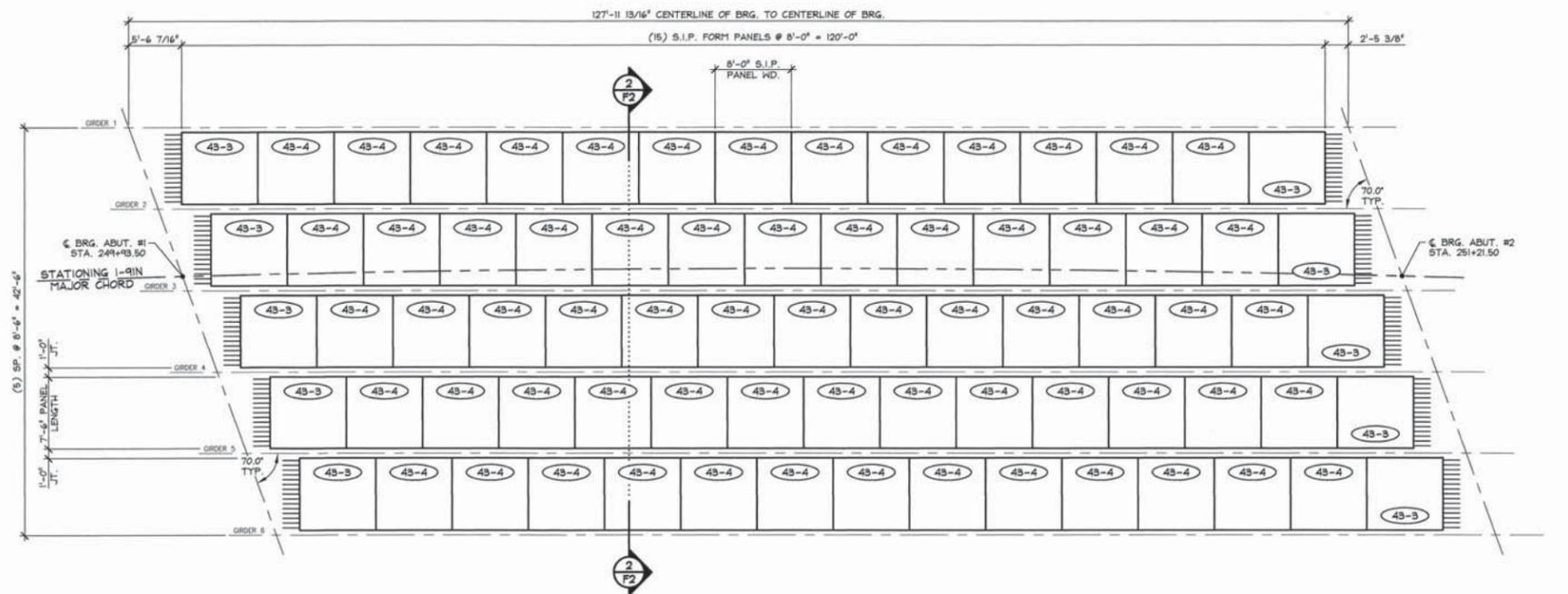
Mix designs are valid for a 12 month period from date of approval or unless there is a change in material, material property or design parameter.

Cement:		Specific Gravity _____	_____ lb/cy	_____ 0.00 cf
701.02	Source: _____			
	Brand Name: _____			
Cement Type III:		Specific Gravity _____	_____ lb/cy	_____ 0.00 cf
701.04	Source: _____			
	Brand Name: _____			
Blended Cement:		Specific Gravity <u>2.980</u>	<u>705</u> lb/cy	<u>3.79</u> cf
701.06	Source: <u>LAFARGE - TERCEM - MONTREAL, EAST PLANT</u>			
	Brand Name: _____			
Cement with Slag:		Specific Gravity _____	_____ lb/cy	_____ 0.00 cf
701.07	Source: _____			
	Brand Name: _____			
Pozzolan:		Specific Gravity _____	_____ lb/cy	_____ 0.00 cf
725.03(a)	Source: _____			
	Brand Name: _____			
Fly Ash:		Specific Gravity _____	_____ lb/cy	_____ 0.00 cf
725.03(a)	Source: _____			
	Brand Name: _____			
Silica Fume:		Specific Gravity _____	_____ lb/cy	_____ 0.00 cf
725.03(b)	Source: _____			
	Brand Name: _____			
Slag:		Specific Gravity _____	_____ lb/cy	_____ 0.00 cf
725.03(c)	Source: _____			
	Brand Name: _____			
Water				
Air Content Target			<u>32</u> gals	<u>267.04</u> lb/cy
			<u>7.0</u> %	<u>4.28</u> cf
Coarse Aggregate 3/8"	Absorption <u>0.90</u>	Specific Gravity <u>2.880</u>	<u>1365</u> lb/cy	<u>7.60</u> cf
704.02A	Source: <u>LEBANON CRUSHED STONE - W LEBANON, NH</u>			
Coarse Aggregate 3/4"	Absorption _____	Specific Gravity _____	_____ lb/cy	_____ 0.00 cf
704.02B	Source: _____			
Coarse Aggregate 1 1/2"	Absorption _____	Specific Gravity _____	_____ lb/cy	_____ 0.00 cf
704.02C	Source: _____			
Fine Aggregate:	Absorption <u>1.40</u>	Specific Gravity <u>2.700</u>	<u>1590</u> lb/cy	<u>9.44</u> cf
704.01	Source: <u>LEBANON CRUSHED STONE - W LEBANON, N</u>	Fineness Modulus <u>2.78</u>		
Air Entrainment Admixture		Specific Gravity _____	<u>1</u> oz/cy	
725.02(b)	Source: <u>MASTER BUILDERS INC - MESQUITE, TX</u>			
	Brand Name: <u>MasterAir AE 200/MicroAir</u>			
Retarder Admixture:		Specific Gravity _____	<u>0.5</u> oz/cwt	
725.02(c)	Source: <u>MASTER BUILDERS INC - MESQUITE, TX</u>			
	Brand Name: <u>MasterSet R100</u>			
High Range Water Reducer Admixture:		Specific Gravity _____	<u>4</u> oz/cwt	
725.02(h)	Source: <u>MASTER BUILDERS INC - MESQUITE, TX</u>			
	Brand Name: <u>MasterGlenium 7500</u>			
Other Admixtures:		Specific Gravity _____	_____ gal/cy	_____ 0.00 cf
	Source: _____			
	Brand Name: _____			
		Specific Gravity _____	_____ oz/cwt	_____ 0.00 cf
	Source: _____			
	Brand Name: _____			
		Specific Gravity _____	_____	_____ 0.00 cf
	Source: _____			
	Brand Name: _____			
		TOTAL	<u>47.560</u>	<u>3927</u> lb
				<u>27.00</u> cf
		Maximum Water/Cementitious Ratio	<u>0.40</u>	
		Maximum Water (gal/cy)	<u>33.8</u>	
		Slump Min/Max (inch)	<u>4.0</u> min	<u>7.0</u> max
		Air Content Min/Max (%)	<u>5.5</u> min	<u>8.5</u> max
		Design Unit Wt. (lb/cf)	<u>145.45</u>	

Notes:



1
F1
PRESTRESSED STAY-IN-PLACE FORM PANEL LAYOUT (BRIDGE 43S)
1/8" = 1'-0"



2
F1
PRESTRESSED STAY-IN-PLACE FORM PANEL LAYOUT (BRIDGE 43N)
1/8" = 1'-0"

ASTM A 955 (See 2011 General Special Provisions Section 713.01(f) for allowable UNS Designations)

GENERAL NOTES

- MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 5,000 PSI.
- MIN. CONCRETE STRENGTH AT STRESS TRANSFER SHALL BE 4,000 PSI.
- REINFORCING STEEL SHALL BE GR-60 ASTM A-615 (AASHTO-PSI), AND SHALL BE STAINLESS STEEL.
- PRESTRESSING STRANDS SHALL CONFORM TO ASTM A-416 (AASHTO M203M), AND SHALL CONSIST OF 3/8" x 270 KSI 7 WIRE LOW RELAXATION STRANDS.
- PRESTRESSING STRANDS SHALL EACH BE PULLED TO HAVE A NET TENSION OF 17.2 K (U.N.O.) AFTER ACCOUNTING FOR CHUCK SLIPPAGE. TENSION SHALL BE VERIFIED BY MEASURING STRAND ELONGATION, (SEE EXAMPLE ELONGATION CALCULATION AND TENSIONING PROCEDURE, THIS SHEET).
- ENDS OF PRESTRESSING STRANDS SHALL PROJECT 6" MIN. FROM EACH END OF PANEL.
- THE TOPS OF THE PANELS SHALL BE BROOMED TO A SURFACE ROUGHNESS OF 1/16" (U.N.O.) (BROOM DIRECTION PARALLEL TO STRANDS).
- PANELS SHALL BE HANDLED AND ERECTED USING THE LIFTING INSERTS ONLY. THE MINIMUM SLING ANGLE FROM THE HORIZONTAL SHALL BE 60°. PANELS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS WITHIN 2'-0" OF THE PANEL ENDS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.
- DESIGN MIX: J.P.C. BRIDGE MIX #425M (NO DCI)
- QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS, CONTRACT DOCUMENTS & SPECIFICATIONS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
- THE ENGINEER WILL BE NOTIFIED AT LEAST 14 DAYS PRIOR TO THE SCHEDULED START OF CASTING AND AT LEAST 2 DAYS BEFORE THE ACTUAL WORK BEGINS.
- CURING METHOD: AS SOON AS THE TOP OF THE PANEL IS FINISHED A COVER OF POLY AND A LAYER OF HOMOSOTE, (OR BLUEBOARD) WILL BE PLACED OVER THE PANEL IN A MANNER THAT WILL NOT DISTURB THE BROOM FINISH. THE DESIRED CURING TEMPERATURE RANGE SHALL NOT DROP BELOW 70°F. THE TEMPERATURE SHALL BE RECORDED BY AUTOMATIC SENSOR INSTRUMENTS ON GRAPH CHARTS SPACED NOT MORE THAN 50 FEET APART & WILL CONTINUE UNTIL RELEASE STRENGTH IS ACHIEVED (NATURAL CURE WITH NO EXTERNAL HEAT APPLIED). EACH CHART SHALL BE MARKED AND GIVEN TO THE INSPECTOR (IF APPLICABLE).
- THE DRILLING OF HOLES OR USE OF POWER ACTUATED TOOLS ON PANELS SHALL NOT BE PERMITTED.
- THE PANELS SHALL BE ORIENTED AND ERECTED WITH THE MARK-END AS SHOWN ON PLANS.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR FORMING THE END OF THE DECK SLAB PRIOR TO CASTING DECK.

EXAMPLE PRESTRESSING STRAND ELONGATION CALC. AND TENSIONING
(NOT TO BE USED FOR CONSTRUCTION)

SIZE & GRADE: 3/8" x 270 KSI
 AREA: 0.085 IN²
 TENSION: 17,200 LBS. EACH STRAND
 GRIP TO GRIP: 120'-6" = 120.5'
 E_s = 29,600,000 PSI (ASSUMED FOR THESE CALCULATIONS; VALUE TO BE OBTAINED FOR STRAND SPOOL ACTUALLY USED)

EXAMPLE: $\Delta = \frac{PL}{AE} = \frac{(17,200 \text{ LBS.} \times 120.5 \text{'} \times 12 \text{'})}{0.085 \text{'} \times 29,600,000} = 8.45 \text{'}$

THEREFORE: TOLERANCES: ± 5%
 Δ UPPER LIMIT = 1.05 x 8.45' = 8.87' = 8 7/8"
 Δ LOWER LIMIT = 0.95 x 8.45' = 8.03' = 8"

EXTRA FORCE REQUIRED TO COMPENSATE FOR 1/2" CHUCK SLIPPAGE:
 $\Delta P = \frac{0.5 \times 14,200 \text{ LBS.}}{8.45} = 840 \text{ LBS.}$

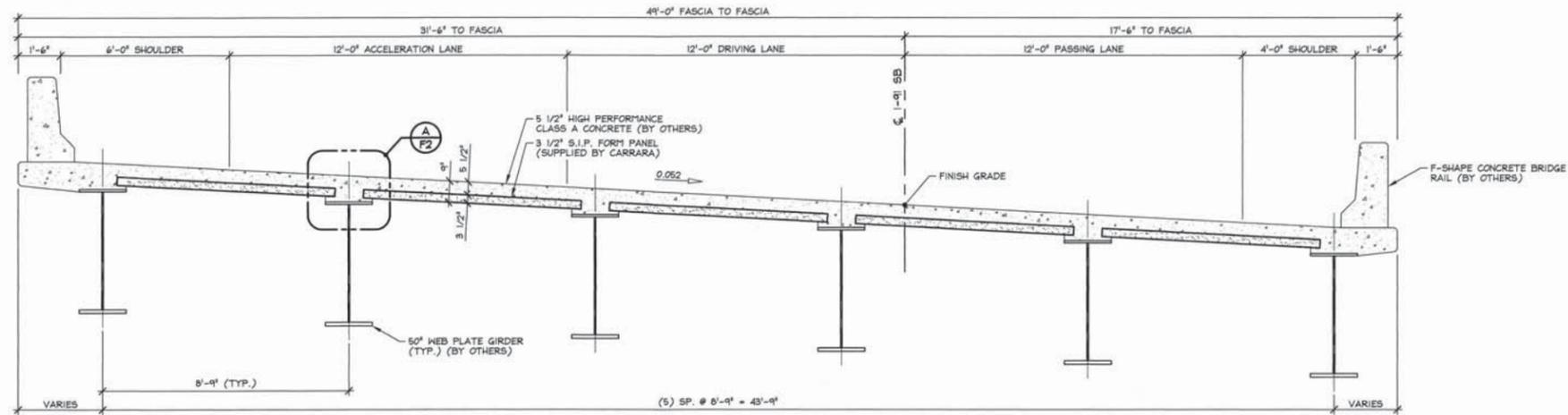
TOTAL TENSIONING FORCE = 17,200 + 840 = 18,040 LBS.

STRAND TENSIONING PROCEDURE:

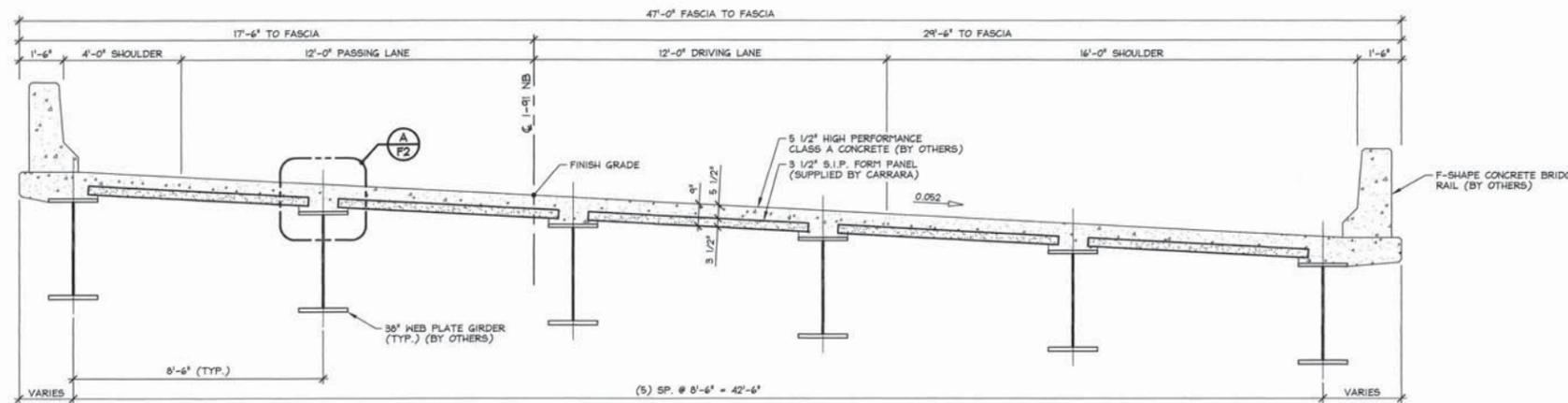
- PULL EACH STRAND INITIALLY TO 3,000 LBS. AND MARK STRAND.
 - THEN PULL EACH STRAND TO A TOTAL TENSION OF 18,040 LBS. AND MEASURE ELONGATION AFTER SEATING. IT MUST BE BETWEEN 8" AND 8 7/8".
- *NOTE: FORCES READ ON STRESSING JACK GAUGES MUST BE MADE TO CORRESPOND TO ABOVE VALUES BASED ON CALIBRATION DATA FOR SPECIFIC JACK USED.

APPROVAL STAMP:
 Vermont Agency of Transportation
RECEIVED
 CK'D BY RK OK'D BY WL
 January 23, 2015
 RESUBMIT NO Approved AsNoted
 BY KH DATE 2-18-2015

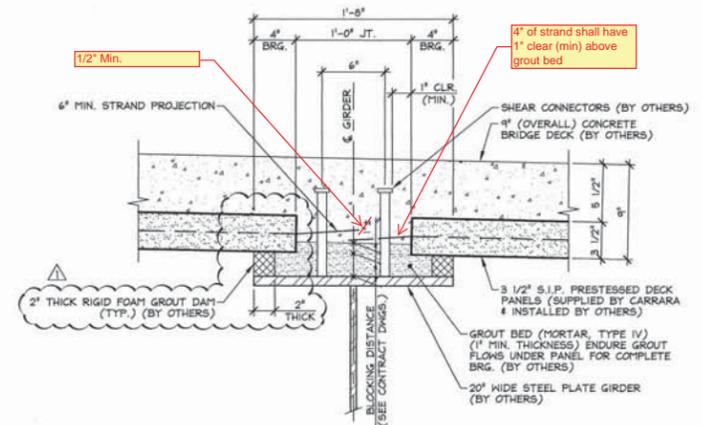
J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 1044 ODE ST., WOODBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010		PCL CONSTRUCTION CONTRACTOR TAMPA, FLORIDA	
STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF WINDSOR		DATE: JAN. 20, 2015	SCALE: NOTED
TOWN OF HARTFORD INTERSTATE 91 EXIT 11 BRIDGE NO.: 43 N/S PROJECT NO.: IM 091-2(79)		CHKD: -	DTM: B.L.
SUPERSTRUCTURE PLANS		JOB NO: 23455-015	DWG. NO: F1



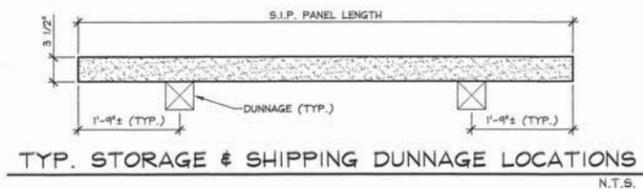
1 TRANSVERSE SECTION (BRIDGE 43S)
 F2 3/8" = 1'-0"



2 TRANSVERSE SECTION (BRIDGE 43N)
 F2 3/8" = 1'-0"



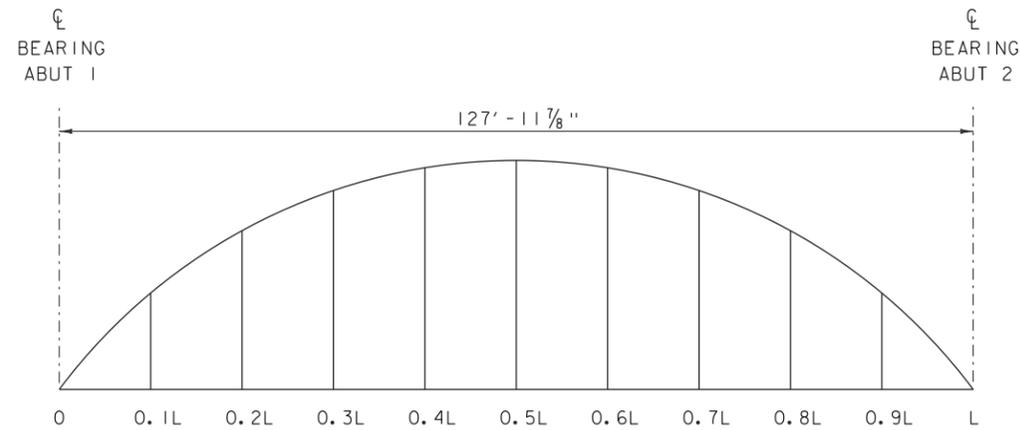
A SECTION
 F2 1 1/2" = 1'-0"



1-23-15 REVISED AS NOTED

APPROVAL STAMP:
 Vermont Agency of Transportation
RECEIVED
 CK'D BY RK OK'D BY WL
 January 23, 2015
 RESUBMIT NO Approved AsNoted
 BY KH DATE 2-18-2015

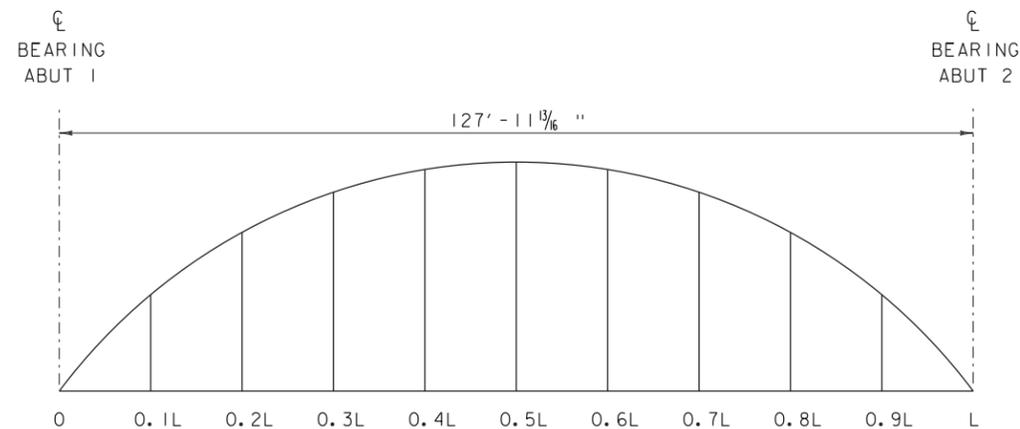
J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer <small>244 ONE STR. MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010</small>		PCL CONSTRUCTION CONTRACTOR TAMPA, FLORIDA
STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF WINDSOR		DATE: JAN. 20, 2015 SCALE: NOTED
TOWN OF HARTFORD INTERSTATE 91 EXIT 11 BRIDGE NO.: 43 N/S PROJECT NO.: 1M 091-2(79)		CHKD: - DFTM: B.L. JOB NO: 23455-015
SUPERSTRUCTURE SECTIONS & DETAILS		DWG. NO: F2



BRIDGE 43S CAMBER DIAGRAM
NOT TO SCALE

	0	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	L
Steel Deflection	0	9/16	1 1/8	1 1/2	1 13/16	1 7/8	1 13/16	1 1/2	1 1/8	9/16	0
Precast Deck Panel Deflection	0	9/16	1 1/16	1 1/2	1 3/4	1 13/16	1 3/4	1 1/2	1 1/16	9/16	0
Cast-in-Place Slab Deflection	0	1 1/8	2 1/8	2 15/16	3 3/8	3 9/16	3 3/8	2 15/16	2 1/8	1 1/8	0
Superimposed Deflection	0	3/16	3/8	1/2	5/8	5/8	5/8	1/2	3/8	3/16	0
Total Slab & Super Deflection	0	1 5/16	2 1/2	3 7/16	4	4 3/16	4	3 7/16	2 1/2	1 5/16	0
Total Panel, Slab & Super Deflection	0	1 7/8	3 9/16	4 15/16	5 3/4	6	5 3/4	4 15/16	3 9/16	1 7/8	0
Total Deflection	0	2 7/16	4 11/16	6 7/16	7 9/16	7 7/8	7 9/16	6 7/16	4 11/16	2 7/16	0
Residual Camber	0	9/16	1	1 5/16	1 9/16	1 5/8	1 9/16	1 5/16	1	9/16	0
Total Camber	0	3	5 11/16	7 3/4	9 1/8	9 1/2	9 1/8	7 3/4	5 11/16	3	0

**BRIDGE 43S
CAMBER AND DEFLECTION**
(INCHES)

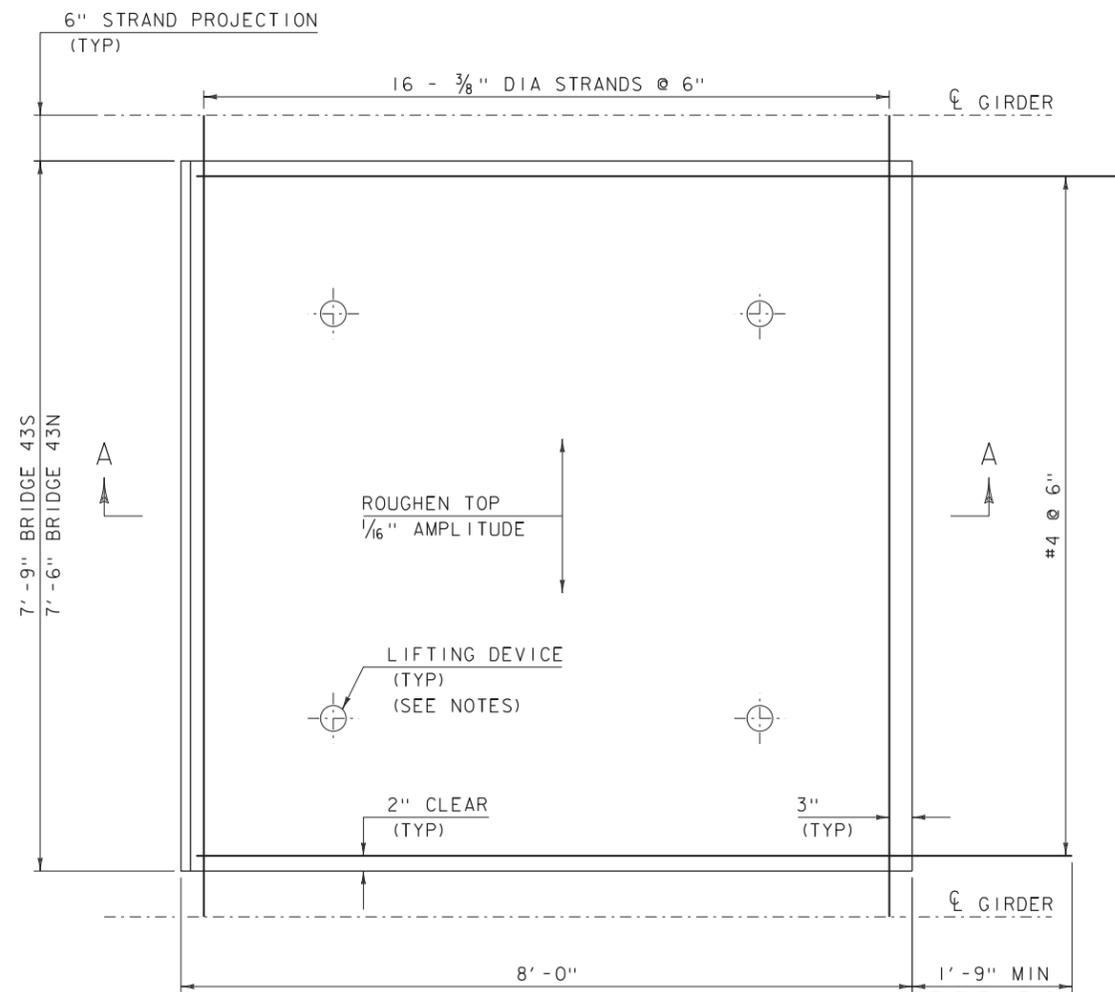


BRIDGE 43N CAMBER DIAGRAM
NOT TO SCALE

	0	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	L
Steel Deflection	0	7/8	1 5/8	2 1/4	2 5/8	2 3/4	2 5/8	2 1/4	1 5/8	7/8	0
Precast Deck Panel Deflection	0	7/8	1 5/8	2 1/4	2 5/8	2 3/4	2 5/8	2 1/4	1 5/8	7/8	0
Cast-in-Place Slab Deflection	0	1 11/16	3 3/16	4 3/8	5 1/8	5 3/8	5 1/8	4 3/8	3 3/16	1 11/16	0
Superimposed Deflection	0	5/16	9/16	13/16	1 5/16	1	15/16	13/16	9/16	5/16	0
Total Slab & Super Deflection	0	2	3 3/4	5 3/16	6 1/16	6 3/8	6 1/16	5 3/16	3 3/4	2	0
Total Panel, Slab & Super Deflection	0	2 7/8	5 3/8	7 7/16	8 11/16	9 1/8	8 11/16	7 7/16	5 3/8	2 7/8	0
Total Deflection	0	3 3/4	7	9 11/16	11 5/16	11 7/8	11 5/16	9 11/16	7	3 3/4	0
Residual Camber	0	9/16	1	1 5/16	1 9/16	1 5/8	1 9/16	1 5/16	1	9/16	0
Total Camber	0	4 5/16	8	11	12 7/8	13 1/2	12 7/8	11	8	4 5/16	0

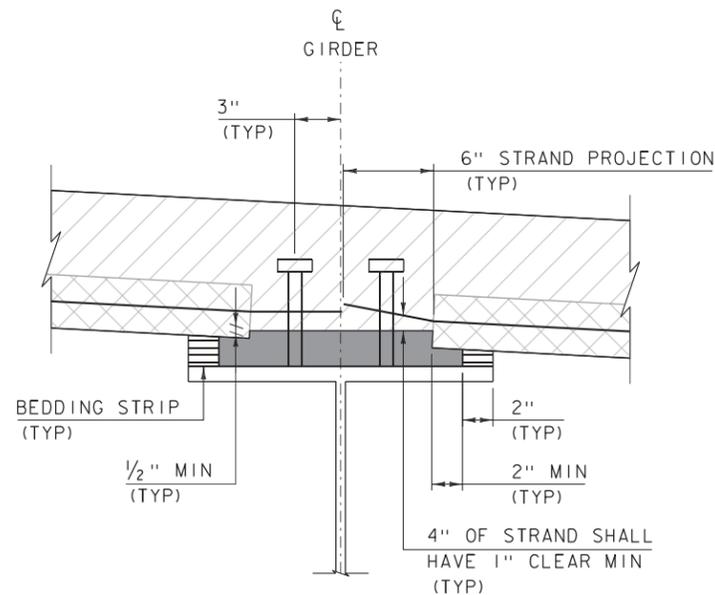
**BRIDGE 43N
CAMBER AND DEFLECTION**
(INCHES)

PROJECT NAME: HARTFORD	PLOT DATE: 16-DEC-2014
PROJECT NUMBER: IM 091-2(79)	DRAWN BY: K. FRIEDLAND
FILE NAME: sl2al32cam.dgn	CHECKED BY: W. LAMMER
PROJECT LEADER: K. HIGGINS	SHEET 89 OF 166
DESIGNED BY: R. KLINEFELTER	
CAMBER & DEFLECTION	



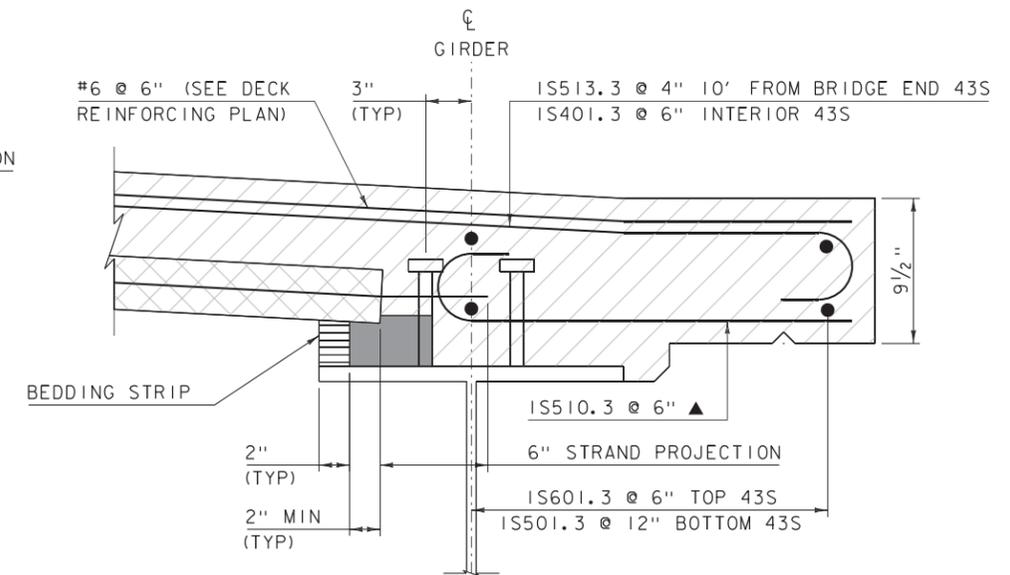
**PRECAST PRESTRESSED
CONCRETE DECK PANEL PLAN**

SCALE 1"=1'-0"



HAUNCH DETAIL

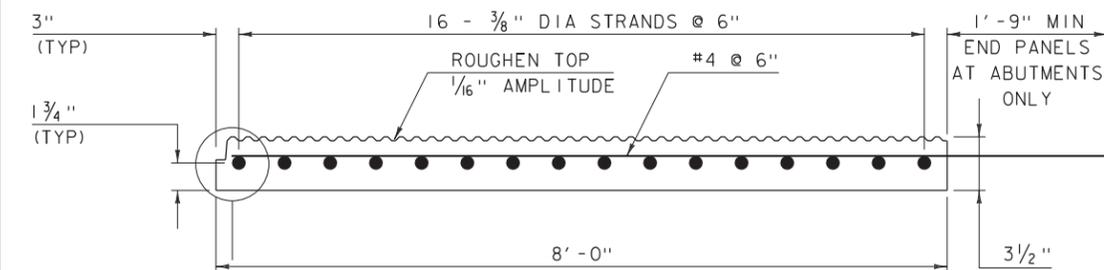
SCALE 2"=1'-0"



BRIDGE 43S SHOWN, BRIDGE 43N SIMILAR.

TYPICAL OVERHANG

SCALE 2"=1'-0"



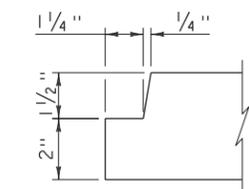
SECTION A-A

HOR. SCALE 1"=1'-0"
VER. SCALE 2"=1'-0"

SEE TRANSVERSE
NOTCH DETAIL
(SEE NOTES)

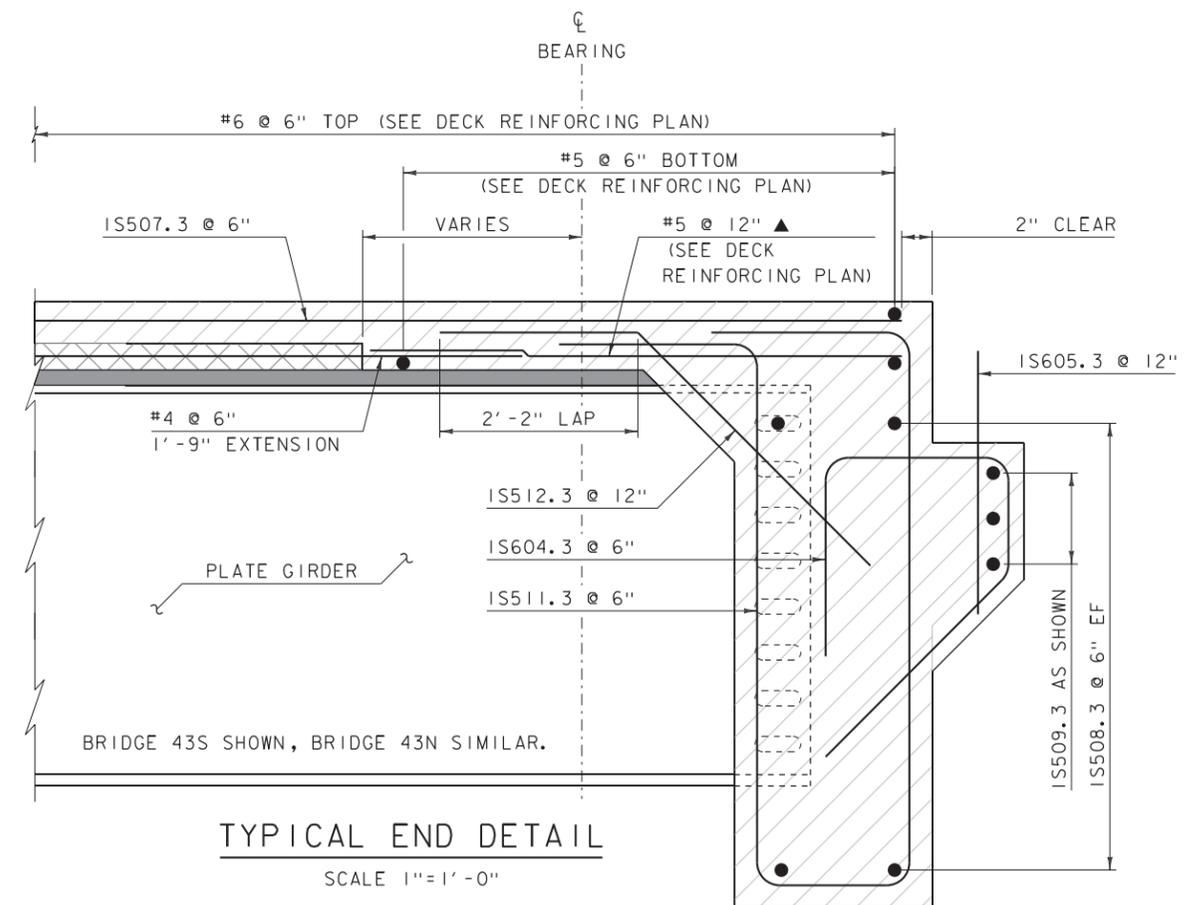
NOTES:

- 1) LIFTING DEVICE SHALL BE DESIGNED BY THE FABRICATOR.
- 2) SHEAR CONNECTORS AND STRANDS PROJECTING FROM PANELS SHALL BE CLEANED OF ANY EXCESS MORTAR AFTER GROUT BED PLACEMENT.
- 3) STRANDS PROJECTING FROM PANELS SHALL BE SECURED IN PLACE DURING DECK CONCRETE PLACEMENT.
- 4) OMIT TRANSVERSE NOTCH ON END PANELS AT ABUTMENTS.



**TRANSVERSE
NOTCH DETAIL**

SCALE 4"=1'-0"



TYPICAL END DETAIL

SCALE 1"=1'-0"

NOTE:

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

LEGEND

- CONCRETE, HPC CLASS A
- PRECAST PRESTRESSED CONCRETE DECK PANEL
- MORTAR, TYPE IV

PROJECT NAME: HARTFORD
PROJECT NUMBER: IM 091-2(79)

FILE NAME: sl2al32sup43S.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: R. KLINEFELTER
SUPERSTRUCTURE DETAILS

PLOT DATE: 15-DEC-2014
DRAWN BY: K. FRIEDLAND
CHECKED BY: W. LAMMER
SHEET 92 OF 166

LN-903/LNP-903

Interior & Exterior

This premium, versatile adhesive bridges gaps, offers 20 minutes working time, and forms a durable, flexible, and impact-resistant bond.



PRODUCT DESCRIPTION

LIQUID NAILS[®] Heavy Duty Construction Adhesive (LN-903) is a multi-purpose, low solvent, high strength construction adhesive specially formulated to provide the professional and do-it-yourselfer excellent adhesion and longer working time.

RECOMMENDED FOR

 a number of uses including:

- Plywood
- Particleboard
- Brick Veneers (Interior Only)
- Foamboard
- Waferboard
- Treated Lumber
- Imitation Stone (Interior Only)
- Ceiling Tiles
- Cementboard
- Drywall
- Tileboard
- 1/8" MDF Paneling

NOT RECOMMENDED FOR plastics, vinyl, ceramics, mirrors, flooring applications, underlayment, granite, marble and installing tileboard directly to studding.

Please research all installation instructions and read entire label for safety, health & environmental information prior to use.

Look for other LIQUID NAILS products which are right for your specific project.

PRODUCT ADVANTAGES

- Instant holding power
- Water-resistant
- Durable and flexible
- Weather-resistant
- Bonds a Wide Range of Construction Materials
- Superior bond will outlast project
- Bonds heaviest materials
- Superior technology
- Strong Initial Tack

WARNING! HARMFUL OR FATAL IF SWALLOWED.

Read Label and Material Safety Data Sheet Prior to Use.
See other cautions on last page. MDSF1-0292



DIRECTIONS:

Preparation: Surfaces must be clean, dry and structurally sound. Paneling must be conditioned per manufacturers instructions. Research all installation instructions and read label for safety, health, and environmental information. Place in caulk gun, cut nozzle, and puncture inner seal with nail or wire.

Cabinets and Countertops: Apply ¼" bead to contact areas. Press into place. Mechanical fasteners must also be used for wall cabinets.

Furring Strips or Studs: Apply ¼" zigzag bead to each strip or stud. Press into place. Use nails at top and bottom.

Drywall: Apply ¼" zigzag bead to each stud. Press drywall into place. Position panels so that edges meet at stud center. Nail as required.

CLEAN-UP

Water when wet, scraping and mineral spirits when dry.

DISPOSAL

Place **empty** containers in normal refuse for disposal. Remove residual product from the container, allow product to dry, and dispose of in conjunction with normal household waste. Contact your sanitation department or household hazardous waste coordinator for information concerning possible re-use of unused caulks and sealants. EAD-C8

LIMITED WARRANTY/LIMITED PROFESSIONAL WARRANTY

AkzoNobel warrants satisfaction with this product when handled and applied according to label instructions. If this product is not as warranted, please call 1-800-634-0015 for refund or product replacement details. This warranty excludes labor or the cost of labor and is given as the exclusive warranty and remedy. **No warranty of merchantability, fitness for purpose or other warranty, express or implied, is made.** AkzoNobel shall not be liable for any special, incidental or consequential damages. Some states do not allow the exclusion of incidental or consequential damages, so the limitations may not apply. This warranty gives specific legal rights. You may also have other rights that vary from state to state.

LN-903/LNP-903
TECHNICAL INFORMATION

Base: Latex

Color: Tan

Appearance: Smooth paste

Application Temperature: 40° to 100°F
(5° to 38°C)

Service Temperature: 0° to 140°F
(-18° to 60°C)

Sag (ASTM D 2202): <0.10"

Shear Strength: 24 hours – 150 psi
48 hours – 180 psi 1 week – 240 psi

Gallon Weight: 11.4 lbs. (5.13 kg)

Viscosity: 500,000 cps

Open Time: 20 minutes at room temperature

Cure Time: <24 hours at room temperature

Freeze Thaw Stability: No effect after cycles

Flammability: Non-flammable

Percent Volatile: 28%

Coverage: Using full round 1/4" (.64 cm)
bead: 28 oz. (858 ml): 88 lineal feet
(27 lineal meters);

Shelf Life: One year from date of purchase

Odor: Slight latex

Specifications: Exceeds ASTM C-557

MAX VOC: 43 g/L

WARNING! CAUSES EYE, SKIN AND RESPIRATORY TRACT IRRITATION. MAY BE HARMFUL IF SWALLOWED. POTENTIAL CANCER HAZARD. CONTAINS FORMALDEHYDE WHICH HAS BEEN SHOWN TO CAUSE UPPER RESPIRATORY TRACT CANCER AND ALLERGIC RESPIRATORY REACTION. MAY CAUSE ALLERGIC SKIN REACTION. USE ONLY WITH ADEQUATE VENTILATION.

KEEP OUT OF THE REACH OF CHILDREN. This product contains a chemical known to the state of California to cause cancer. Contains Crystalline Silica. If sanding, wear a dust mask to avoid breathing of sanding dust. Avoid contact with eyes and skin. **FIRST AID:** For skin contact, wash thoroughly with soap and water. If any product remains, gently rub with petroleum jelly, vegetable or mineral/baby oil then wash again with soap and water. Repeat as needed. Remove contaminated clothing. For eye contact, flush immediately with plenty of water for at least 15 minutes. **Get medical attention.** If swallowed, **get medical attention immediately.** If inhalation causes discomfort, remove to fresh air. If discomfort persists or breathing difficulty occurs, get medical attention. **For emergency information, customer service, MSDS or additional safety and chronic hazard information, call 1-800-634-0015. KEEP FROM FREEZING.** MAC62-1106



FOAMULAR® 400/600/1000 Extruded Polystyrene (XPS) Rigid Foam Insulation

Product Data Sheet



Energy-Saving¹, Moisture-Resistant XPS Insulation

High Compressive Strength

FOAMULAR® 400 XPS
Insulation: ASTM C578 Type VI,
40 psi minimum

FOAMULAR® 600 XPS
Insulation: ASTM C578 Type VII,
60 psi minimum

FOAMULAR® 1000 XPS
Insulation: ASTM C578 Type V,
100 psi minimum

Description

Owens Corning™ FOAMULAR® 400, 600 and 1000 are high strength Extruded Polystyrene (XPS) Insulation products designed for use in engineered applications requiring additional load-bearing capability such as under slab, concrete floors, foundations, roadways and rail beds, plaza and parking decks and cold storage installations.

The unique closed-cell structure of FOAMULAR® XPS Insulation helps to make it highly resistant to moisture, retaining its excellent

R-value year after year—even following prolonged exposure to moisture and freeze/thaw cycling.

Key Features

- Designed for use in high load bearing applications. High compressive strength helps resist damage from heavy loads. Available in 40, 60 and 100 psi compressive strengths.
- Excellent long-term stable insulating performance with an R-value² of R-5 per inch.
- Exceptional moisture resistance, long-term durability.
- Limited lifetime warranty³—maintains 90% of R-value and covers all ASTM C578 properties.
- GREENGUARD Gold Certified.
- The only XPS foam with certified recycled content—certified by SCS Global Services to contain a minimum 20% recycled content.
- Will not corrode, rot or support mold growth.
- Zero ozone depletion potential with 70% less global warming potential than our previous formula.
- Reusable
- Lightweight, durable rigid foam panels are easy to handle and install.
- Easy to saw, cut or score.

Product Applications

- Owens Corning FOAMULAR® 400, 600, and 1000 Extruded Polystyrene (XPS) Rigid Foam Insulation are great for under slab, cold storage installations, concrete floors, foundations, plaza and parking decks, roofing, roadways and rail beds, permafrost protection and other high load-bearing applications
- Designed for use in high load bearing applications. High compressive strength resists damage from heavy loads. Available in 40, 60, and 100 psi compressive strengths

Technical Information

This product is combustible. A protective barrier or thermal barrier is required as specified in the appropriate building code. For additional information, consult MSDS or contact Owens Corning World Headquarters at 1-800-GET-PINK®.

All construction should be evaluated for the necessity to provide vapor retarders. See current ASHRAE Handbook of Fundamentals.

FOAMULAR® XPS Insulation is a non-structural material and must be installed on framing which is independently braced and structurally adequate to meet required construction and service loading conditions.

FOAMULAR® XPS Insulation can be exposed to the exterior during normal construction cycles. During that time some fading of color may begin due to UV exposure, and, if exposed for extended periods of time, some

¹ Savings vary. Find out why in the seller's fact sheet on R-values. Higher R-values mean greater insulating power.

² R means the resistance to heat flow; the higher the R-value, the greater the insulating power.

³ See actual warranty for complete details, limitations and requirements.



FOAMULAR® 400/600/1000

Extruded Polystyrene (XPS) Rigid Foam Insulation

Product Data Sheet

degradation or “dusting” of the polystyrene surface may begin. It is best if the product is covered within 60 days to minimize degradation. Once covered, the deterioration stops, and damage is limited to the thin top surface layers of cells. Cells below are generally unharmed and still useful insulation.

FOAMULAR® Extruded Polystyrene Insulation has a maximum service temperature of 165°F. Taking simple precautions during construction can minimize the potential for heat related damage. Install only as much FOAMULAR® XPS Insulation as can be covered in the same day. For horizontal applications, always turn the print side down so the black print does not show to the sun which may at times act as a solar collector, raising the temperature of the foam under the print to an unacceptable level. Provide a final finish covering or temporary white opaque covering to avoid possible damage when dark (non-white) surfaces are used over FOAMULAR® XPS Insulation. Do not cover FOAMULAR® XPS Insulation either stored (factory wrapped or unwrapped), or partially installed, with dark colored (non-white), or clear (non-opaque) coverings and leave it exposed to the sun. Examples of such coverings include but are not limited to filter fabrics, membranes, temporary tarps, clear polyethylene, etc. If improperly covered, and exposed to the right combination of sun, time and temperature, FOAMULAR® XPS Insulation deformation damage may occur rapidly. See

Typical Physical Properties¹

FOAMULAR® 400/600/1000 Extruded Polystyrene (XPS) Rigid Foam Insulation

Property	Test Method ²	FOAMULAR® Insulation		
		400	600	1000
Thermal Resistance³, R-Value (180 day) minimum, hr•ft ² •°F/Btu (RSI, °C•m ² /W) @ 75°F (24°C) mean temperature	ASTM C518			
1" Thickness		5.0 (0.88)	5.0 (0.88)	—
1½" Thickness		—	7.5 (1.32)	7.5 (1.32)
2" Thickness		10.0 (1.76)	10.0 (1.76)	10.0 (1.76)
3" Thickness		15.0 (2.64)	15.0 (2.64)	15.0 (2.64)
@ 40°F (4.4°C) mean temperature				
1" Thickness		5.4 (0.95)	5.4 (0.95)	—
1½" Thickness		—	8.1 (1.43)	8.1 (1.43)
2" Thickness		10.8 (1.90)	10.8 (1.90)	10.8 (1.90)
3" Thickness		16.2 (2.85)	16.2 (2.85)	16.2 (2.85)
Long Term Thermal Resistance, LTTR-Value³, minimum hr•ft ² •°F/Btu (RSI, °C•m ² /W) @ 75°F (24°C) mean temperature	CAN/ULC S770-03			
1" Thickness		5.0 (0.88)	5.0 (0.88)	—
1½" Thickness		—	7.8 (1.37)	7.8 (1.37)
2" Thickness		10.6 (1.87)	10.6 (1.87)	10.6 (1.87)
3" Thickness		16.2 (2.85)	16.2 (2.85)	16.2 (2.85)
Compressive Strength⁴, minimum psi (kPa)	ASTM D1621	40 (276)	60 (414)	100 (689)
Flexural Strength⁵, minimum psi (kPa)	ASTM C203	115 (793)	140 (965)	140 (965)
Water Absorption⁶, maximum % by volume	ASTM C272	0.05	0.05	0.05
Water Vapor Permeance⁷, maximum perm (ng/Pa•s•m²)	ASTM E96	1.1 (63)	1.1 (63)	1.1 (63)
Dimensional Stability, maximum % linear change	ASTM D2126	2.0	2.0	2.0
Flame Spread^{8,9}	ASTM E84	5	5	5
Smoke Developed^{8,9,10}	ASTM E84	45-175	45-175	45-175
Oxygen Index⁸, minimum % by volume	ASTM D2863	24	24	24
Service Temperature, maximum °F (°C)	—	165 (74)	165 (74)	165 (74)
Linear Coefficient of Thermal Expansion, in/in/°F (m/m/°C)	ASTM E228	← 3.5 × 10 ⁻⁵ (6.3 × 10 ⁻⁵) →		

- Properties shown are representative values for 1" thick material, unless otherwise specified.
- Modified as required to meet ASTM C578.
- R means the resistance to heat flow; the higher the value, the greater the insulation power. This insulation must be installed properly to get the marked R-value. Follow the manufacturer's instructions carefully. If a manufacturer's fact sheet is not provided with the material shipment, request this and review it carefully. R-values vary depending on many factors including the mean temperature at which the test is conducted, and the age of the sample at the time of testing. Because rigid foam plastic insulation products are not all aged in accordance with the same standards, it is useful to publish comparison R-value data. The R-value for FOAMULAR® XPS Insulation is provided from testing at two mean temperatures, 40°F and 75°F, and from two aging (conditioning) techniques, 180 day real-time aged (as mandated by ASTM C578) and a method of accelerated aging sometimes called "Long Term Thermal Resistance" (LTTR) per CAN/ULC S770-03. The R-value at 180 day real-time age and 75°F mean temperature is commonly used to compare products and is the value printed on the product.
- Values at yield or 10% deflection, whichever occurs first.
- Value at yield or 5%, whichever occurs first.
- Data ranges from 0.00 to value shown due to the level of precision of the test method.
- Water vapor permeance decreases as thickness increases.
- These laboratory tests are not intended to describe the hazards presented by this material under actual fire conditions.
- Data from Underwriters Laboratories Inc.® classified. See Classification Certificate U-197.
- ASTM E84 is thickness-dependent, therefore a range of values is given.

Owens Corning publication number 10015704, "Heat Build Up Due to Solar Exposure" for more information.

Standards, Codes Compliance

- Meets ASTM C578 Type VI (FOAMULAR® 400 XPS Insulation), Type VII (FOAMULAR® 600 XPS Insulation), or Type V (FOAMULAR® 1000 XPS Insulation).



FOAMULAR® 400/600/1000 Extruded Polystyrene (XPS) Rigid Foam Insulation

Product Data Sheet

Product and Packaging Data

FOAMULAR® 400/600/1000 Extruded Polystyrene (XPS) Rigid Foam Insulation

Material		Packaging						
Extruded polystyrene closed-cell foam panel with continuous skin on face and back surface.		Shipped in poly-wrapped units with individually wrapped or banded bundles.						
Thickness (in)	Product Dimensions Thickness (in) x Width (in) x Length (in)	Pallet (Unit) Dimensions (typical) Width (ft) x Length (ft) x Height (ft)	Square feet per Pallet	Board feet per Pallet	Bundles per Pallet	Pieces per Bundle	Pieces per Pallet	Edges
FOAMULAR® 400 XPS Insulation								
1	1 x 24 x 96	4 x 8 x 8	3,072	3,072	8	24	192	
2	2 x 24 x 96	4 x 8 x 8	1,536	3,072	8	12	96	Square Edge
	2 x 48 x 96	4 x 8 x 8	1,536	3,072	8	6	48	
3	3 x 24 x 96	4 x 8 x 8	1,024	3,072	8	8	64	Square Edge
	3 x 48 x 96	4 x 8 x 8	1,024	3,072	8	4	32	
FOAMULAR® 600 XPS Insulation								
1	1 x 24 x 96	4 x 8 x 8	3,072	3,072	8	24	192	
1½	1.5 x 24 x 96	4 x 8 x 8	2,048	3,072	8	16	128	
2	2 x 24 x 96	4 x 8 x 8	1,536	3,072	8	12	96	Square Edge
	2 x 48 x 96	4 x 8 x 8	1,536	3,072	8	6	48	
3	3 x 24 x 96	4 x 8 x 8	1,024	3,072	8	8	64	Square Edge
	3 x 48 x 96	4 x 8 x 8	1,024	3,072	8	4	32	
FOAMULAR® 1000 XPS Insulation								
1.5	1.5 x 24 x 96 (Half unit)	4 x 8 x 4	1,024	1,536	4	16	64	Square Edge
2	2 x 24 x 96 (Half unit)	4 x 8 x 4	768	1,536	4	12	48	

1. Product availability and lead times vary by region and by product. Consult your local Owens Corning sales representative for availability and lead times.

- UL Classified. A copy of UL Classification Certificate U-197 is available at www.owenscorning.com
- See UL ER8811-01 at UL.com
- See www.foamular.com for details on listings, constructions and assemblies
- Meets California Quality Standards and HUD UM #71a
- Compliance verification by RADCO (AA-650)



Certifications and Sustainable Features of FOAMULAR® XPS Insulation

- FOAMULAR® XPS Insulation is reusable
- FOAMULAR® XPS Insulation is made with a zero ozone depletion formula
- Certified by SCS Global Services to contain a minimum of 20% recycled content
- Certified to meet indoor air quality standards under the stringent GREENGUARD Indoor Air Quality Certification Program, and the GREENGUARD Gold Certification

- Utilizing FOAMULAR® XPS Insulation can help achieve green building certifications including the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) certification

Environmental and Sustainability

Owens Corning is a worldwide leader in building material systems, insulation and composite solutions, delivering a broad range of high-quality products and services. Owens Corning is committed to driving sustainability by delivering solutions, transforming markets and enhancing lives. More information can be found at <http://sustainability.owenscorning.com>.



FOAMULAR® 400/600/1000 Extruded Polystyrene (XPS) Rigid Foam Insulation

Product Data Sheet

Warranty

FOAMULAR® XPS Insulation limited lifetime warranty maintains 90% of its R-value for the lifetime of the building and covers all ASTM C578 properties. See actual warranty for complete details, limitations and requirements at www.owenscorning.com.

All products described here may not be available in all geographic markets. Consult your local sales office representative for more information.

For more information on the Owens Corning family of building products, contact your Owens Corning dealer, call 1-800-GET-PINK®, or access www.owenscorning.com.

Disclaimer of Liability

Technical information contained herein is furnished without charge or obligation and is given and accepted at recipient's sole risk. Because conditions of use may vary and are beyond our control, Owens Corning makes no representation about, and is not responsible or liable for the accuracy or reliability of data associated with particular uses of any product described herein.

SCS Global Services provides independent verification of recycled content in building materials and verifies recycled content claims made by manufacturers. For more information, visit www.SCSglobalservices.com.

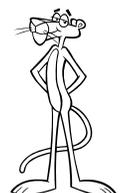
GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit ul.com/gg.

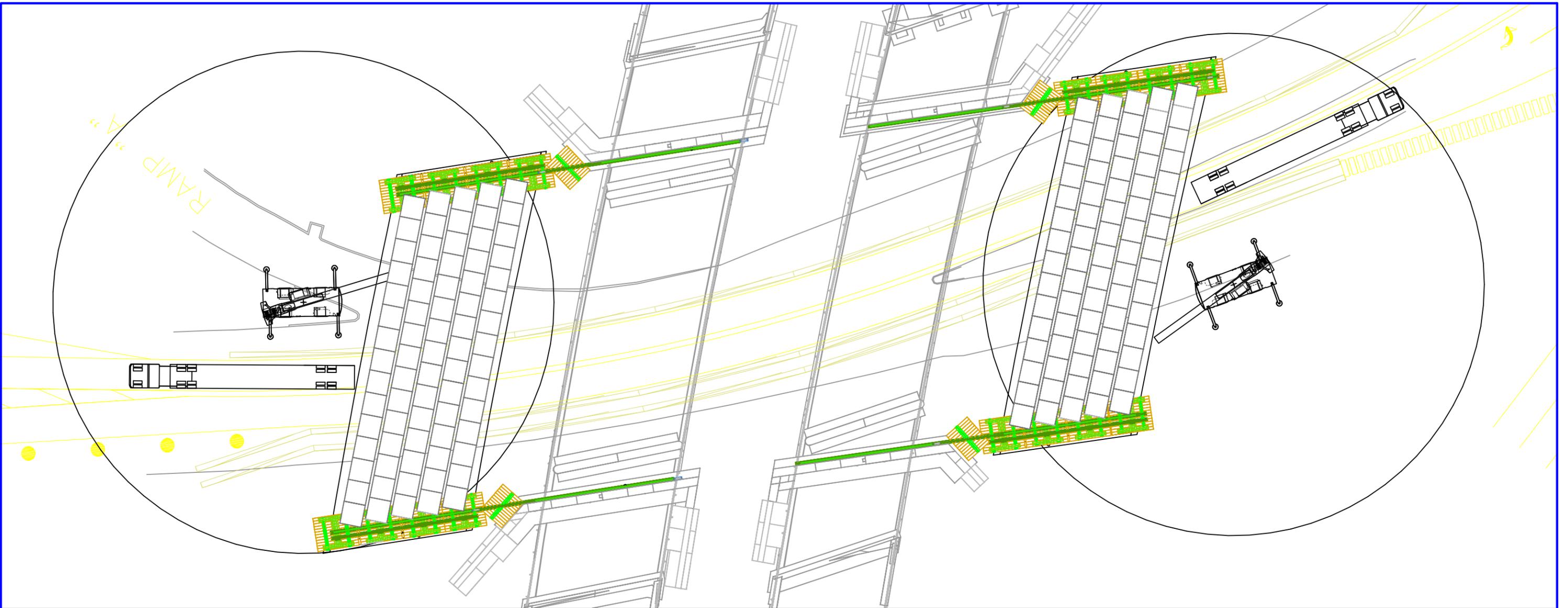
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PRECAST DECK PANEL ERECTION PLANS

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED

MATERIALS SHALL BE NEW OR IN GOOD CONDITION AND APPROVED BY THE DESIGN ENGINEER

ALL WORK OVER US-5 TO BE PERFORMED UNDER FLAGGING OPERATIONS PER THE TRAFFIC CONTROL PLAN

CONSTRUCTION LOADS SHALL NOT EXCEED 40 PSF

PANELS SHALL BE INSPECTED PRIOR TO OFFLOADING FROM TRUCK

MATERIAL PROPERTIES

CONCRETE (ABOVE HAUNCH - BETWEEN PANELS) - HPC AA 4000 PSI

POLYSTYRENE - FOAMULAR 1000 EXTRUDED POLYSTYRENE
- (MIN COMPRESSIVE STRENGTH = 100 PSI)

ADHESIVE - LIQUID NAILS HEAVY DUTY CONSTRUCTION ADHESIVE

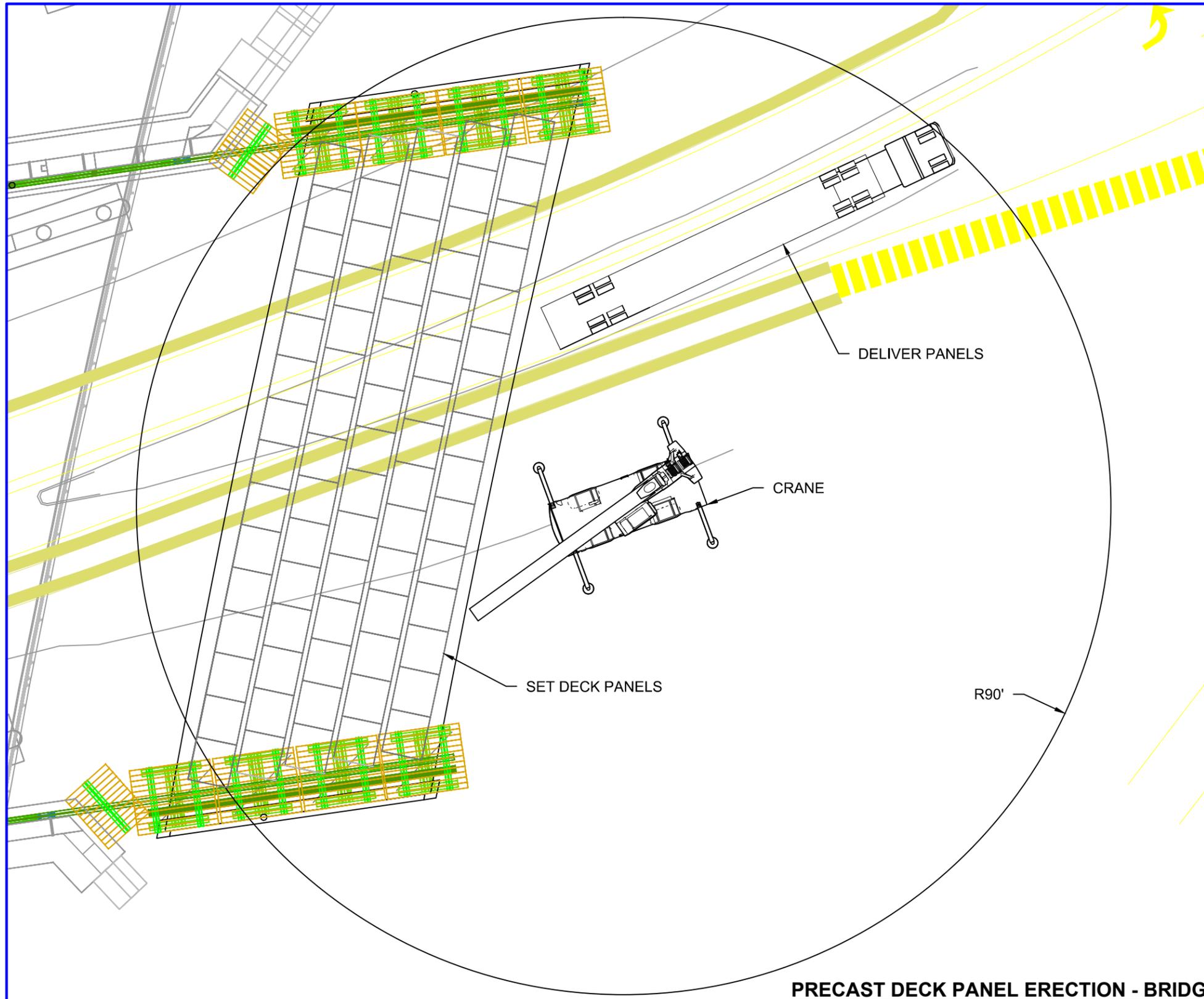
CURING

CONCRETE SHALL BE CURED UNTIL A MINIMUM OF 85% OF 28 DAY DESIGN STRENGTH (4000 PSI x 0.85 = 3400 PSI) IS ACHIEVED

LIST OF DRAWINGS

TITLE.....01
 ERECTION PLANS (BRIDGE 43N).....02
 ERECTION PLANS (BRIDGE 43S).....03
 RIGGING.....04

Revision No. & Date		Vermont Agency of Transportation		Engineer's Seal	Drawing Status	Name	Date	PCL Civil Constructors, Inc. 3810 Northdale Blvd. Suite 200, Tampa Florida 33624 (813)-264-9500 ; Fax: (813)-264-6689		
						Drawn By	EWH			04/13/2015
Road No.	County / City	Financial Project ID No.	FOR CONSTRUCTION			Design By	EWH	04/13/2015	Submittal DECK PANEL ERECTION PLANS	PCL Project / Job No. I-91 Hartford / 5514001
I-91	Hartford	IM 091-2(79)				Check By			Drawing Title TITLE PAGE	1



CRANE INFO:		GR-750XL
BOOM LENGTH:	FT	114.8'
PANEL WEIGHT:	LBS	2712
PICK WEIGHT + RIGGING:	LBS	5262
MAX. CRANE RADIUS:	FT	90
CRANE CAPACITY:	FT	7200
% OF CHART:		73%

PROCEDURE

1. SET UP FLAGGING OPERATION ON US-5.
2. CLOSE DOWN US-5 EASTBOUND AND ALTERNATE TRAFFIC IN WESTBOUND LANE
3. RIG TO PANELS PER DETAILS ON SHEET 4
4. ERECT PANELS BEGINNING AT ONE END AND WORKING UPSTATION/DOWNSTATION.
5. STOP TRAFFIC ON US-5 PRIOR TO ERECTING PANELS OVER ROADWAY
6. RELEASE TRAFFIC ON US-5 IN BETWEEN PICKS.

GENERAL NOTES

1. CRANE LOCATION IS APPROXIMATE, ACTUAL LOCATION WILL VARY.
2. TELESCOPING MODE II MUST BE USED TO ACHIEVE MAX CAPACITIES AT MAX RADIUS

PRECAST DECK PANEL ERECTION - BRIDGE 43N

Revision No. & Date		Vermont Agency of Transportation		Engineer's Seal	Drawing Status	Name	Date	PCL Civil Constructors, Inc. 3810 Northdale Blvd. Suite 200, Tampa Florida 33624 (813)-264-9500 ; Fax: (813)-264-6689	
						Drawn By	EWH		
Road No.	County / City	Financial Project ID No.		FOR CONSTRUCTION	Design By	EWH	04/13/2015	Submittal DECK PANEL ERECTION PLANS	PCL Project / Job No. I-91 Hartford / 5514001
I-91	Hartford	IM 091-2(79)			Check By			Drawing Title BRIDGE 43N	Sheet No. 2



CRANE INFO:		GR-750XL
BOOM LENGTH:	FT	114.8'
PANEL WEIGHT:	LBS	2712
PICK WEIGHT + RIGGING:	LBS	5262
MAX. CRANE RADIUS:	FT	90
CRANE CAPACITY:	FT	7200
% OF CHART:		73%

PROCEDURE

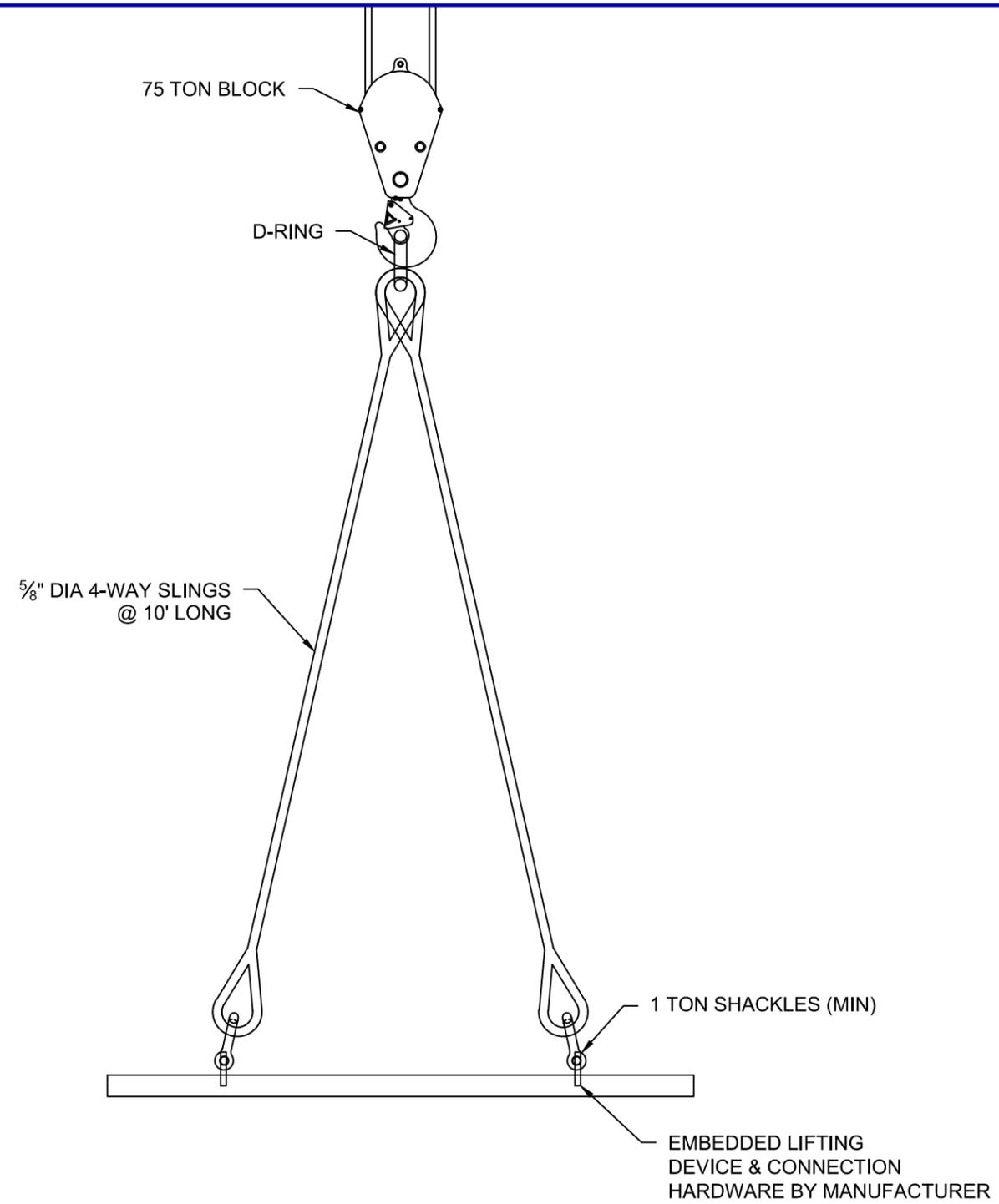
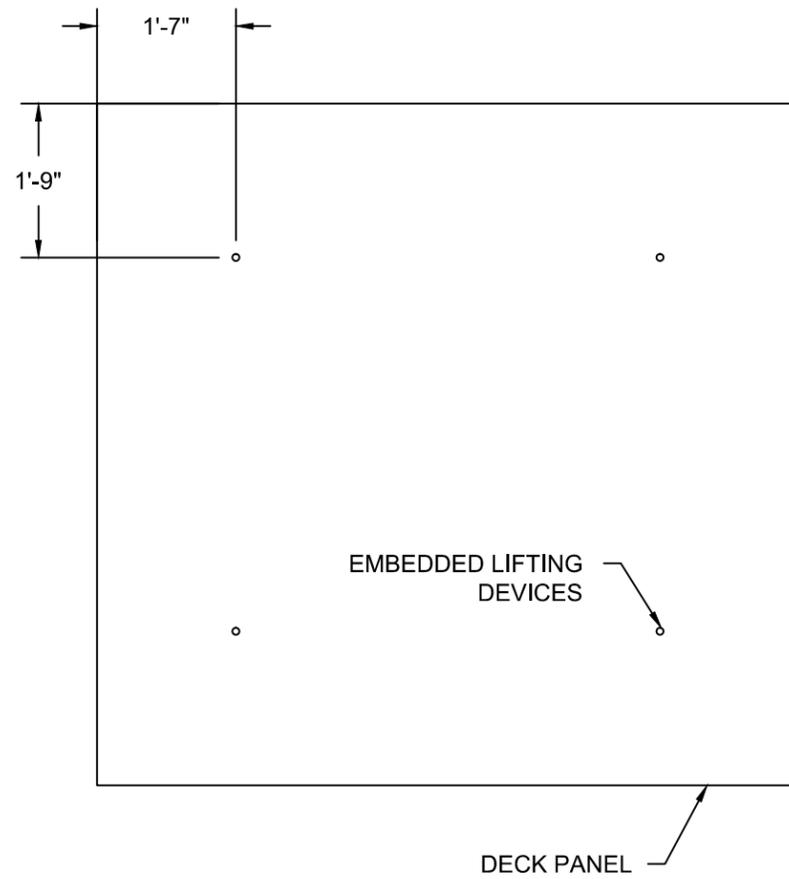
1. SET UP FLAGGING OPERATION ON US-5.
2. CLOSE DOWN US-5 WESTBOUND AND ALTERNATE TRAFFIC IN EASTBOUND LANE
3. RIG TO PANELS PER DETAILS ON SHEET 4
4. ERECT PANELS BEGINNING AT ONE END AND WORKING UPSTATION/DOWNSTATION.
5. STOP TRAFFIC ON US-5 PRIOR TO ERECTING PANELS OVER ROADWAY
6. RELEASE TRAFFIC ON US-5 IN BETWEEN PICKS.

GENERAL NOTES

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PRECAST DECK PANEL ERECTION - BRIDGE 43S

Revision No. & Date		Vermont Agency of Transportation		Engineer's Seal	Drawing Status	Name	Date	PCL Civil Constructors, Inc. 3810 Northdale Blvd. Suite 200, Tampa Florida 33624 (813)-264-9500 ; Fax: (813)-264-6689	
Road No.	County / City	Financial Project ID No.		FOR CONSTRUCTION	Drawn By	EWH	04/13/2015	Submittal DECK PANEL ERECTION PLANS	PCL Project / Job No.
I-91	Hartford	IM 091-2(79)			Design By	EWH	04/13/2015		I-91 Hartford / 5514001
					Check By			Drawing Title BRIDGE 43S	Sheet No. 3



PANEL RIGGING DETAILS

Revision No. & Date	Vermont Agency of Transportation			Engineer's Seal	Drawing Status	Name	Date	PCL Civil Constructors, Inc.		
						Drawn By	EWH	04/13/2015	3810 Northdale Blvd. Suite 200, Tampa Florida 33624 (813)-264-9500 ; Fax: (813)-264-6689	
	Road No.	County / City	Financial Project ID No.		FOR CONSTRUCTION	Design By	EWH	04/13/2015	Submittal DECK PANEL ERECTION PLANS	PCL Project / Job No. I-91 Hartford / 5514001
	I-91	Hartford	IM 091-2(79)			Check By			Drawing Title RIGGING DETAILS	Sheet No. 4