



S.D. Ireland Companies *Precast Division*



193 Industrial Ave. Williston, VT 05495
P.O. Box 2286 South Burlington, VT 05407
p: 802-863-6222 f: 802-860-1528
www.sdireland.com

Attention: Brian Richardson
Company: C.C.S. Constructors
Address: 138 Munson Ave
City, St, Zip: Morrisville, VT 05661
Ph: / Fax: 802-888-7701

Date: 1/12/2015
Job Name: Stowe BRF 0235(11)
Job Number: #15163
Regarding: Approach Slab Submittal #2

WE ARE SENDING: Quote Details Other: _____
 Submittals Prints Plans Specifications
 Copy Of Letter Change Order Samples Revised Submittals

Copies	Date	Pages	Description
1	1/12/2015	1	Transmittal Cover Page
1	1/7/2015	5	S.D.I. Approach Slab Drawings
1	1/12/2015	2	Dimension Fabricators Reinforcement Drawings
1	4/17/2014	1	State Concrete Mix Design
1		1	Oxford Lift System Sheet
1		2	Grace Chemical Surface Retarder Sheet

These Are Submitted as Checked Below:

For Approval Approved as Submitted Resubmit __ 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 Prints Returned After Loan to Us
 For Bids Due: _____ Other: _____

Notes/Remarks:

Brian,

Please pass on to the state for approvals. I still need to know the block out dimensions needed in approach slab #1 for the water main. All longitudinal bars required for the closure pour are to be provided and instaled by CCS, as stated in our proposal.

Let me know if you have any questions.

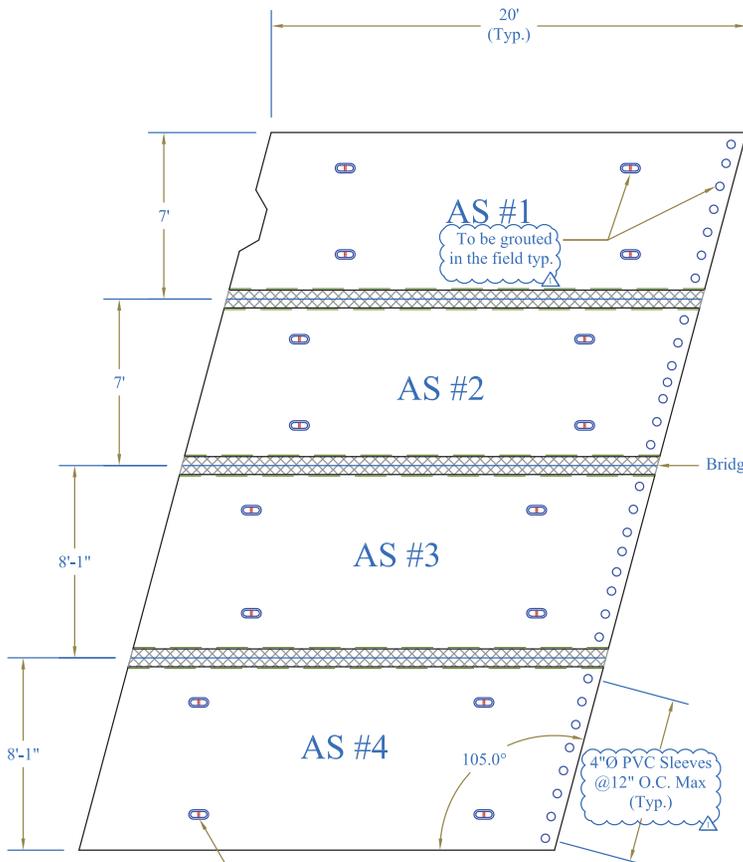
Thank you.

Eric Barendse x265

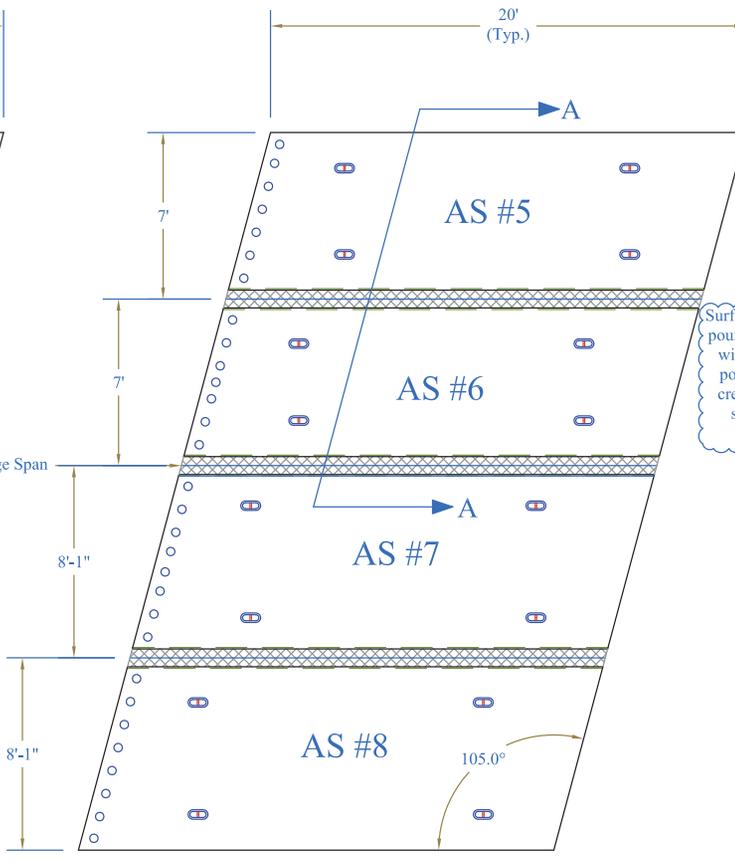
Copy To: _____

Signed: *Eric Barendse*

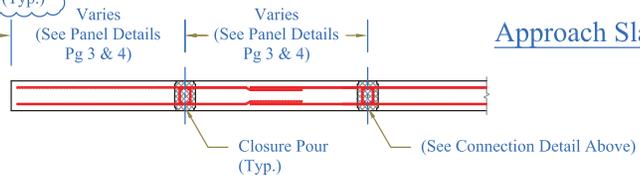
If enclosures are not as noted, kindly notify us at once.



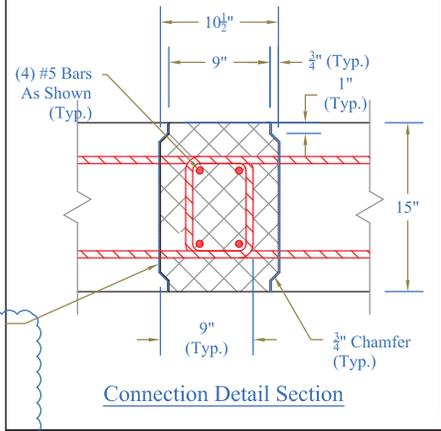
Approach Slab 1: Plan



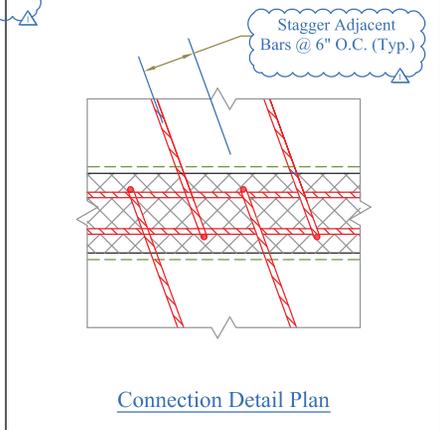
Approach Slab 2: Plan



Section A-A



Connection Detail Section



Connection Detail Plan

Table of Pieces

Name	Qty	Thickness	Vol (Cu Yd)	Wt (lbs)
As#1	1	1'-3"	6.07	24,300
As#2	1	1'-3"	5.79	23,200
As#3	1	1'-3"	6.79	27,200
As#4	1	1'-3"	7.14	28,600
As#5	1	1'-3"	6.13	24,500
As#6	1	1'-3"	5.79	23,200
As#7	1	1'-3"	6.79	27,200
As#8	1	1'-3"	7.14	28,600

Vermont Agency of Transportation
RECEIVED

CK'D BY CLB OK'D BY DRP

January 13, 2015

RESUBMIT NO Approved
BY C. CARLSON DATE 01/15/15

PRECAST CONCRETE APPROACH SLAB SHOP DRAWINGS (SDI JOB #15163)
SUPERVISOR: M. WHEELER
DETAILER: I. ADAMS
CHECKER: E. Borendse
ENGINEER:

PROJECT NAME:
Stowe BR# 0235 (II)
PROJECT #: 0235 (II)
LOCATION: Stowe, VT

INSTALLER:
CCS Construction
138 Munson Ave
Morrisville, VT 05661
PH: 802-888-7701

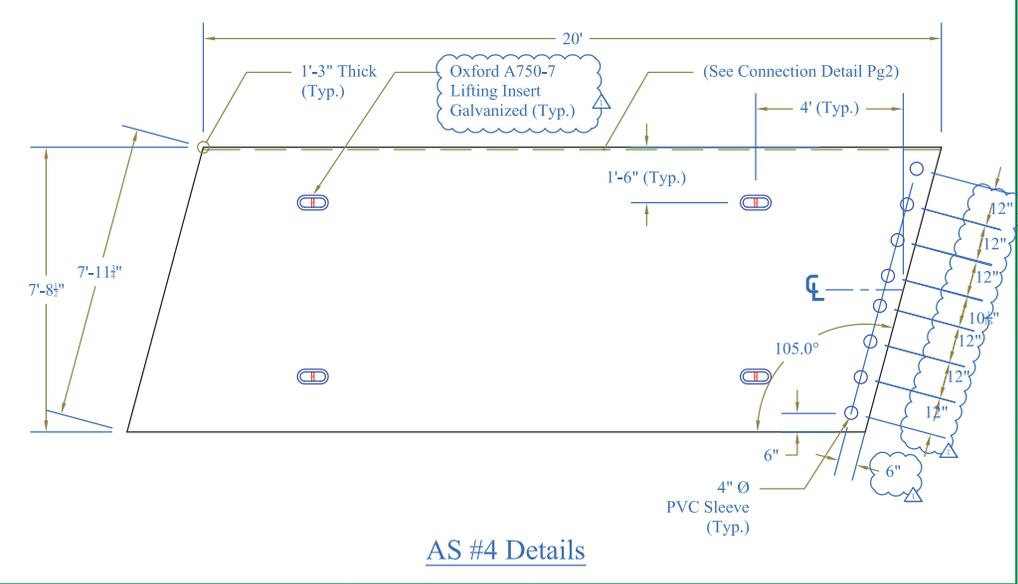
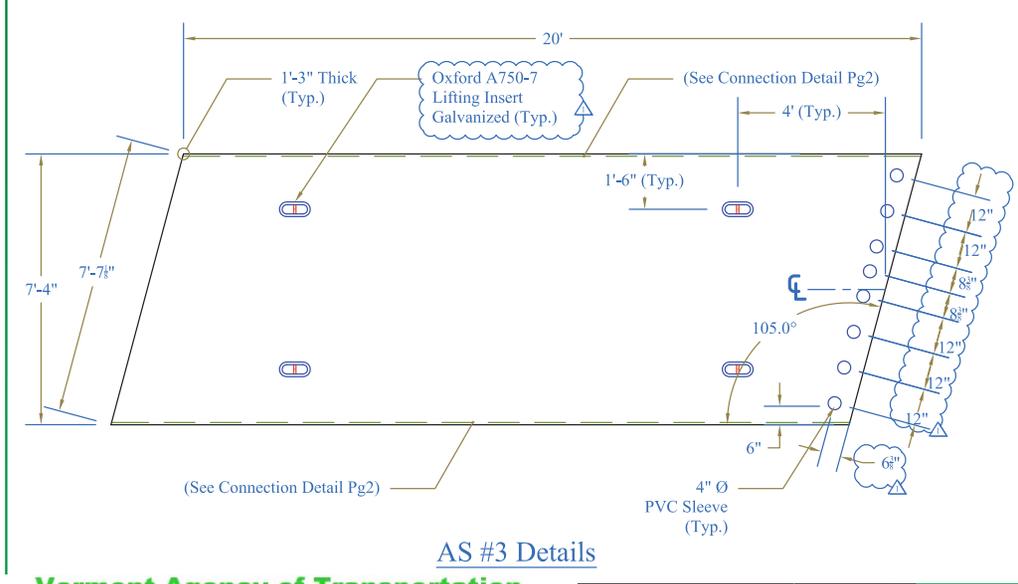
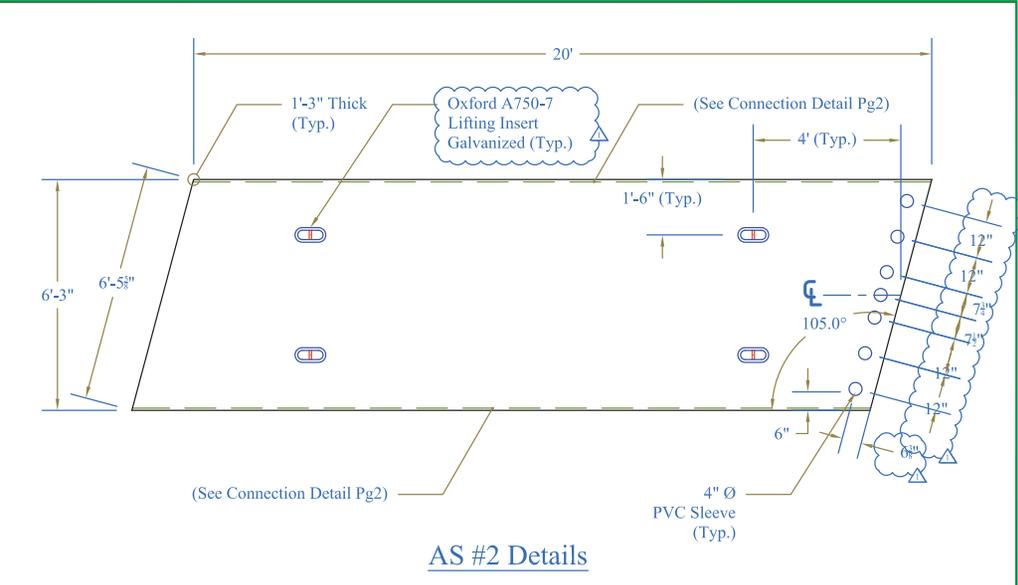
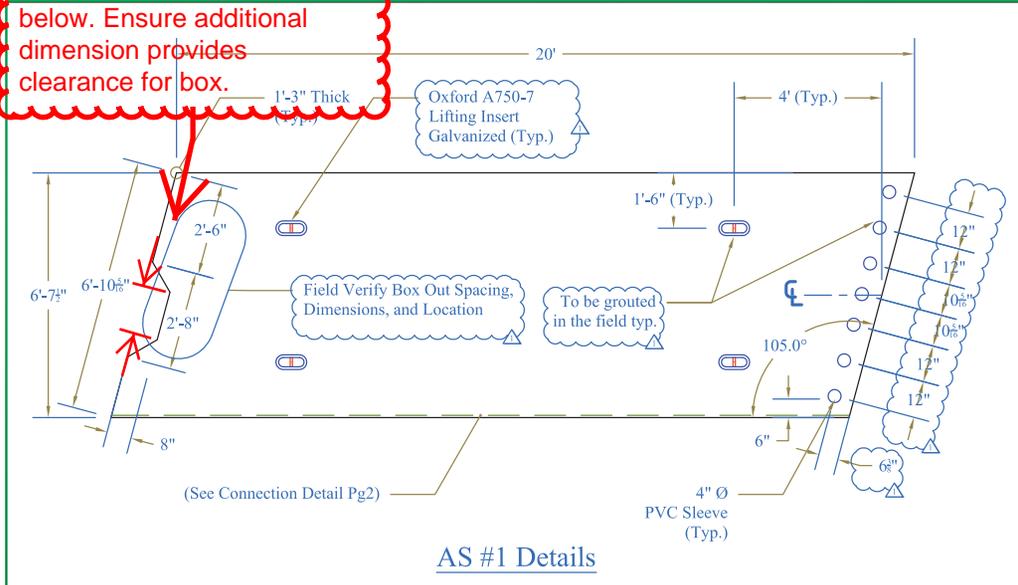
11/20/14

FABRICATOR:
193 INDUSTRIAL AVE.
WILLISTON, VT 05495
Ph: (802) 658-0201



Plan 2 of 4

Per email, blockout dimensions will follow contract plan dimensions which are the same as below. Ensure additional dimension provides clearance for box.



Vermont Agency of Transportation

RECEIVED

Approach Slab Submittal 2 011215_Markup.pdf

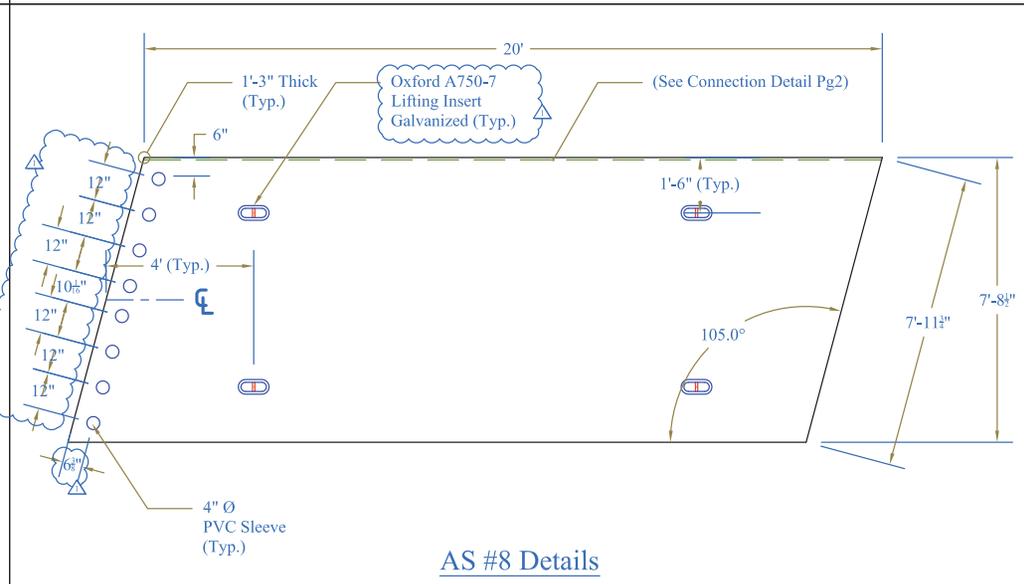
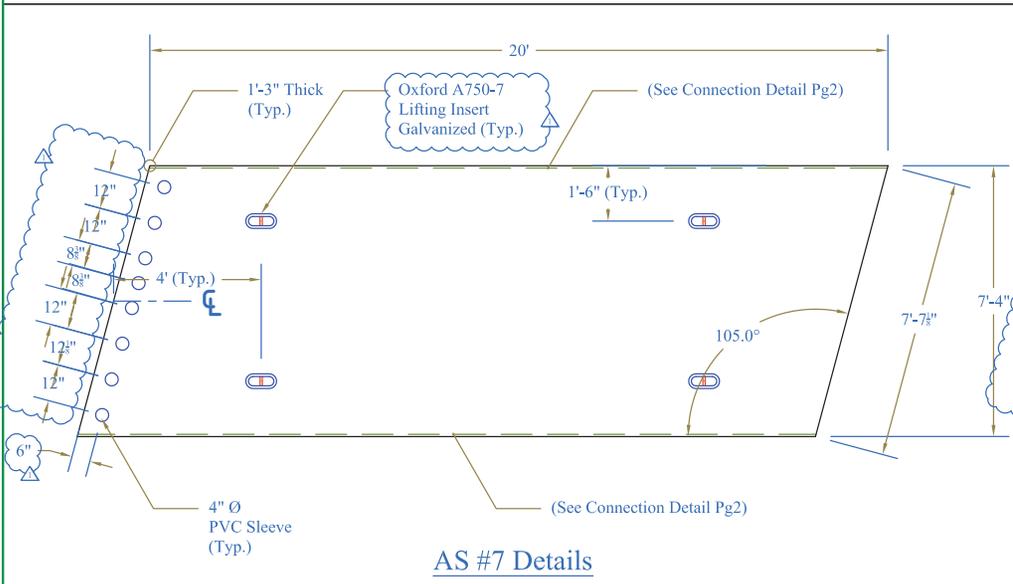
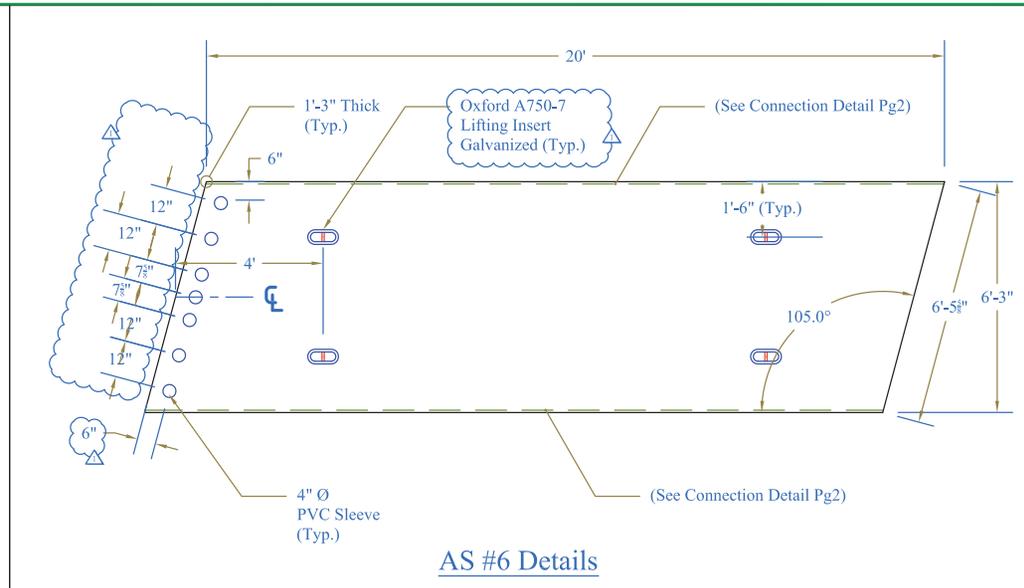
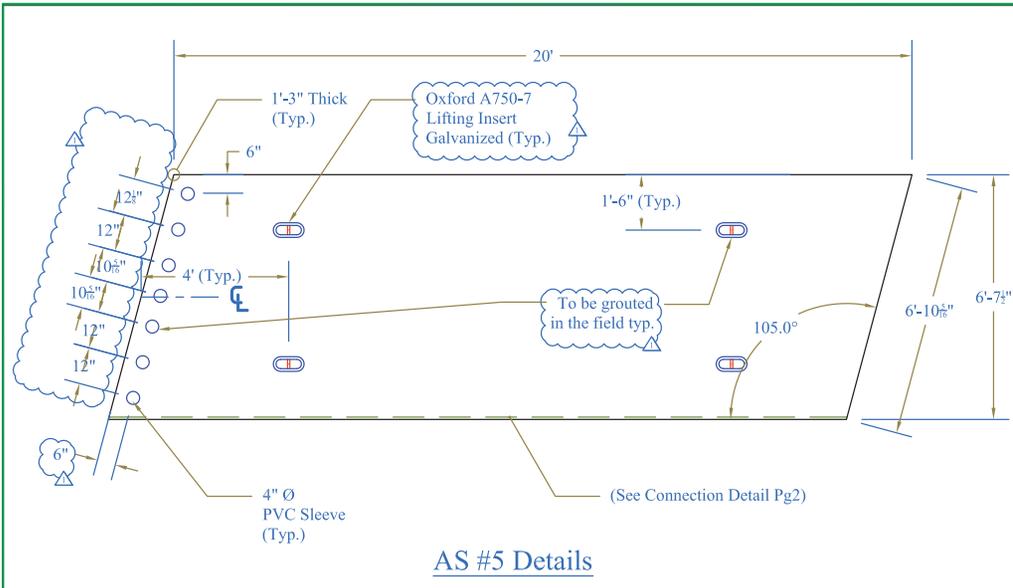
CK'D BY CLB OK'D BY DRP

January 13, 2015

RESUBMIT NO Approved AsNoted
 BY C. CARLSON DATE 01/15/15

PRECAST CONCRETE APPROACH SLAB SHOP DRAWINGS (SDI JOB #15163)		INSTALLER: CCS Construction 138 Munson Ave Morrisville, VT 05661 Ph: 802-888-7701	FABRICATOR: 193 INDUSTRIAL AVE. WILLISTON, VT 05495 Ph: (802) 658-0201
SUPERVISOR: M. WHEELER DETAILER: I. ADAMS CHECKER: E. Barendse ENGINEER:	PROJECT NAME: Stowe BR# 0235 (II) PROJECT #: 0235 (II) LOCATION: Stowe, VT	11/20/14	South Approach Slabs





Vermont Agency of Transportation

RECEIVED

Approach Slab Submittal 2 011215_Markup.pdf

iew	PRECAST CONCRETE APPROACH SLAB SHOP DRAWINGS (SDI JOB #15163)		INSTALLER: CCS Construction 138 Munson Ave Morrisville, VT 05661 PH: 802-888-7701	FABRICATOR: 193 INDUSTRIAL AVE. WILLISTON, VT 05495 Ph: (802) 658-0201	
	SUPERVISOR: M. WHEELER	PROJECT NAME: Stowe BR# 0235 (II)			
	DETAILER: I. ADAMS	PROJECT #: 0235 (II)			
	CHECKER: E. Barendse	LOCATION: Stowe, VT	11/20/14	North Approach Slabs	
ENGINEER:					

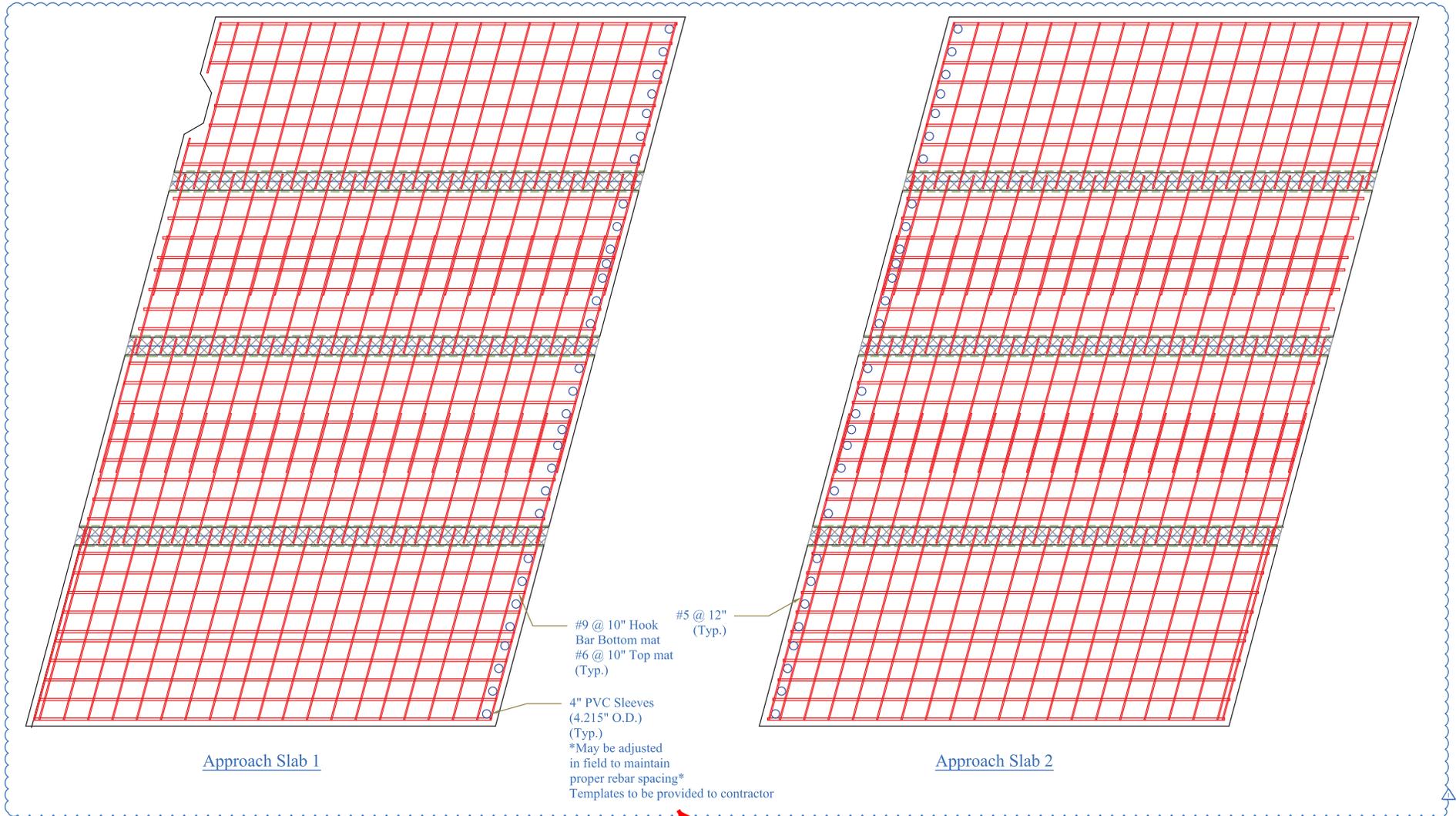
CK'D BY CLB OK'D BY DRP

January 13, 2015

RESUBMIT NO Approved
BY C. CARLSON DATE 01/15/15

Approach Slab 1 & 2 Rebar at closure pour

*See Dimension Fabricators Drawings A & B for bar type, size & schedule



Vermont Agency of Transportation

RECEIVED

Approach Slab Submittal 2 011215_Markup.pdf

CK'D BY CLB OK'D BY DRP

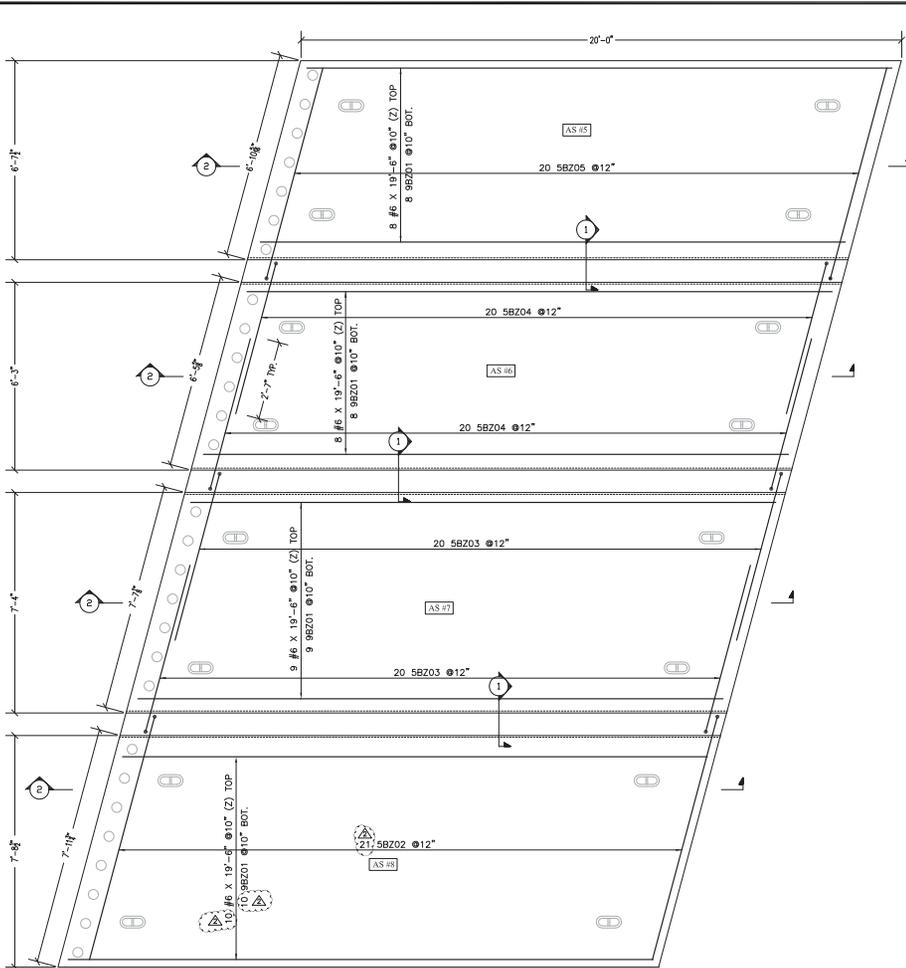
January 13, 2015

RESUBMIT NO Approved AsNoted

BY C. CARLSON DATE 01/15/15

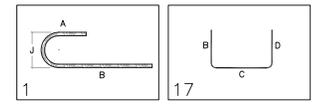
PRECAST CONCRETE APPROACH SLAB SHOP DRAWINGS (SDI JOB #15163) SUPERVISOR: M. WHEELER DETAILER: I. ADAMS CHECKER: E. Barendse ENGINEER:	PROJECT NAME: Stowe BR# 0235 (II) PROJECT #: 0235 (II) LOCATION: Stowe, VT	INSTALLER: CCS Construction 138 Munson Ave Morrisville, VT 05661 PH: 802-888-7701	FABRICATOR: 193 INDUSTRIAL AVE. WILLISTON, VT 05495 Ph: (802) 658-0201	12/05/14	Rebar at Closure Pour
--	---	---	---	----------	-----------------------

Vertical #8 bars in the cast-in-place closure pour of the abutments can be adjusted to match the pvc sleeves if necessary, but pvc sleeves cannot be adjusted once cast in the approach slab.



Release Number: 002

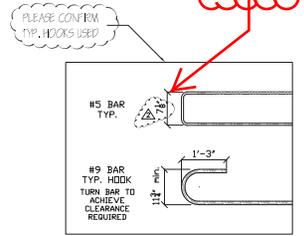
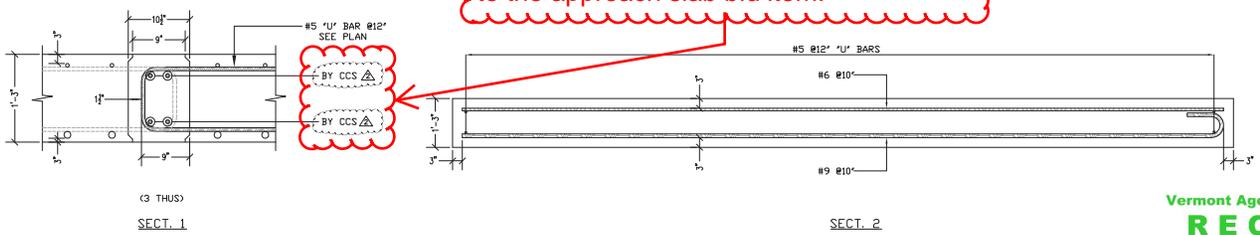
				BAR LIST												
Bar Mark	Qty	Size	Total Length	Type	'x'	'y'	'c'	'd'	'e'	'f'	'g'	'h'	'j'	'k'	'o'	'r'
5BZ02	21	#5	17'-6"	17		8'-5 1/2"	0'-7 1/2"	8'-5 1/2"								
5BZ03	40	#5	12'-3"	17		5'-10"	0'-7 1/2"	5'-10"								
5BZ04	40	#5	11'-1"	17		5'-3"	0'-7 1/2"	5'-3"								
5BZ05	20	#5	15'-3"	17		7'-4"	0'-7 1/2"	7'-4"								
9BZ01	35	#9	20'-9"	1	1'-3"	19'-6"									0'-11 1/2"	



(2) 5'-0" LONG SAMPLE BARS WILL BE PROVIDED FOR EACH BAR SIZE

Agree must provide two, 5-foot test bars per each bar size. Just make sure it is understood that the quantities at the top of this sheet do not account for the test bars.

Okay that CCS is providing additional bars in the closure pour but it should be understood that these bars are incidental to the approach slab bid item.



ALL DUAL COATED REINF. DENOTED (Z)

LAP CHART

#5	2'-7"
----	-------

LEGEND:
 CONT.-CONTINUOUS
 TRANS.-TRANSVERSE
 DWLS.-DOWELS
 VERTS.-VERTICAL
 HORIZ.-HORIZONTAL
 T&B -TOP & BOTTOM
 I.F.-INNER FACE
 O.F.-OUTER FACE
 E.E.-EACH END
 E.F.-EACH FACE
 F.F.-FRONT FACE
 R.F.-REAR FACE
 E.W.-EACH WAY
 D.C.-ON CENTER
 L.W.-LONG WAY
 S.W.-SHORT WAY

FOR APPROVAL

ELEVATIONS & DIMENSIONS SHOWN ON THIS DWG. ARE FOR REINF. DETAILING PURPOSES ONLY AND ARE NOT INTENDED FOR CONSTRUCTION.

REINF. BARS ASTM A615 GRADE 60 DUAL COATED

VERIFICATION OF UNCLEAR INFORMATION MAY BE REQUESTED ON THIS DRAWING. SHOULD VERIFICATION BE LEFT UN-ADDRESSED IT WILL REMAIN AS SHOWN AND ASSUME TO BE CORRECT.

6			
5			
4			
3	1/12/15	REVISD/ENG. COM/ FOR APPROVAL	
2	12/3/14	REVISD/SDI COM/ FOR APPROVAL	
1	12/2/14	FOR APPROVAL	
DATE	REV#	STATUS	
DIMENSION			
2005 7TH STREET DORCHESTER, MA 01928 TEL: (508) 324-1800 WWW.DIMENSIONDRILLING.COM			
STRUCTURE	VT/ADT STOWE BRG 0235(C1)		
LOCATION			
ARCHITECT			
ENGINEER			
OWNER	SD IRELAND CONCRETE CONST. CORP.		
DRAWN BY	DATE	REV#	
ED	12/2/14	9117	
DRAWING CODES	APPROACH SLAB #2		DRAWING #
DUAL COATED REINFORCING			B

Vermont Agency of Transportation
RECEIVED
 CK'D BY CLB OK'D BY DRP
 January 13, 2015
 RESUBMIT NO Approved AsNoted
 BY C. CARLSON DATE 01/15/15

RECEIVED

Approach Slab Submittal 2 011215_Markup.pdf



Concrete Construction Corporation

CK'D BY CLB OK'D BY DRP

January 13, 2015

RESUBMIT NO
BY C. CARLSONApproved
DATE 01/15/15**CONCRETE MIX DESIGN****6000 psi**

SCC

SDI MIX CODE: P60TER

6,000 psi mix will be used to gain higher, early strength

DATE: March 28, 2014 PLANT: Burlington/Williston, VT

PROJECT: General DOT Precast - 2014

FINE AGGREGATE:
ASTM C 33Source: Hinesburg Sand & Gravel
Specific Gravity: 2.67 (Abs.: 1.3%)
Fineness Modulus: ≥ 2.6 COARSE AGGREGATE:
ASTM C 33Source: S.D. Ireland, Brownell Quarry
Specific Gravity: 2.80 (Abs.: 0.30%)
Description: 3/4" 100% Crushed Stone (Size #67)

CEMENT:

Ternary Blend Cement; Lefarge North America Lakes and Seaway Re
St. Constant, Quebec (Sp. Gvty. 3.02)

ADMIXTURES:

Water Reducer (HRWR): Glenium 7500; BASF
Air Entraining Agent: Darex II AEA; Grace Concrete Chemicals**CONSTITUENTS (LBS. /YD³)**

		<u>Abs. Vol.</u>
Coarse Aggregate (SSD)	1750	10.02
Fine Aggregate (SSD)	1017	6.10
Cement	800	4.25
Water	304.6	4.88
Air Content (Entrained)	6.5%	1.75
Total	3872	27.00ft ³

MIX PROPERTIESWater Cement Ratios: 0.38
Entrained Air Content: 5.0 % - 9.0%
Dry Unit Weight: 144.2 \pm pcf
Spread: 20" to 28"
VSI ≤ 1 **ADMIXTURE(S) DOSEAGE (OZ. /YD³)**

Glenium 7500 (HRWR)	56 - 64
Darex II AEA	2.8

BREAK HISTORY \pm

24-HR.	3400 PSI
7-DAYS	6000 PSI
28-DAYS	6700 PSI

Approved by James Walsh, VDOT Composite
Materials Engineer 7/17/14

*Admixture dosage rates are subject to change.

Telephone 215-855-8713

FAX 215-855-8714

GARY K. MUNKELT & ASSOCIATES

Consulting Engineers
Precast Concrete, Structural, Civil

1180 Welsh Rd. Suite 190 North Wales, PA 19454

PROJECT: CHECK CAPACITY OF LIFT SYSTEM
COMPONENTS TO LIFT PRECAST CONCRETE
SLABS

CLIENT: S.D. IRELAND
WILLISTON, VT

LOCATION: STOWE BRP 0235
STOWE, VT

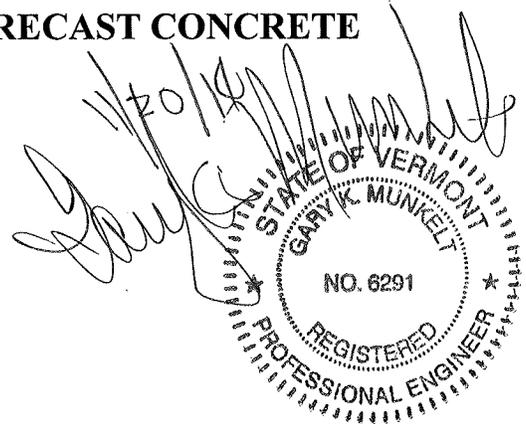


TABLE OF CONTENTS

<u>Title</u>	<u>Sheet</u>
Description of Product	2
Calculations & Conclusion	3

Appendix A: Catalog Drawings for Components

Appendix B: Construction Drawin

Vermont Agency of Transportation

RECEIVED

Approach Slabs Submittal 1 120914_Resubmit 12.18.14.pdf

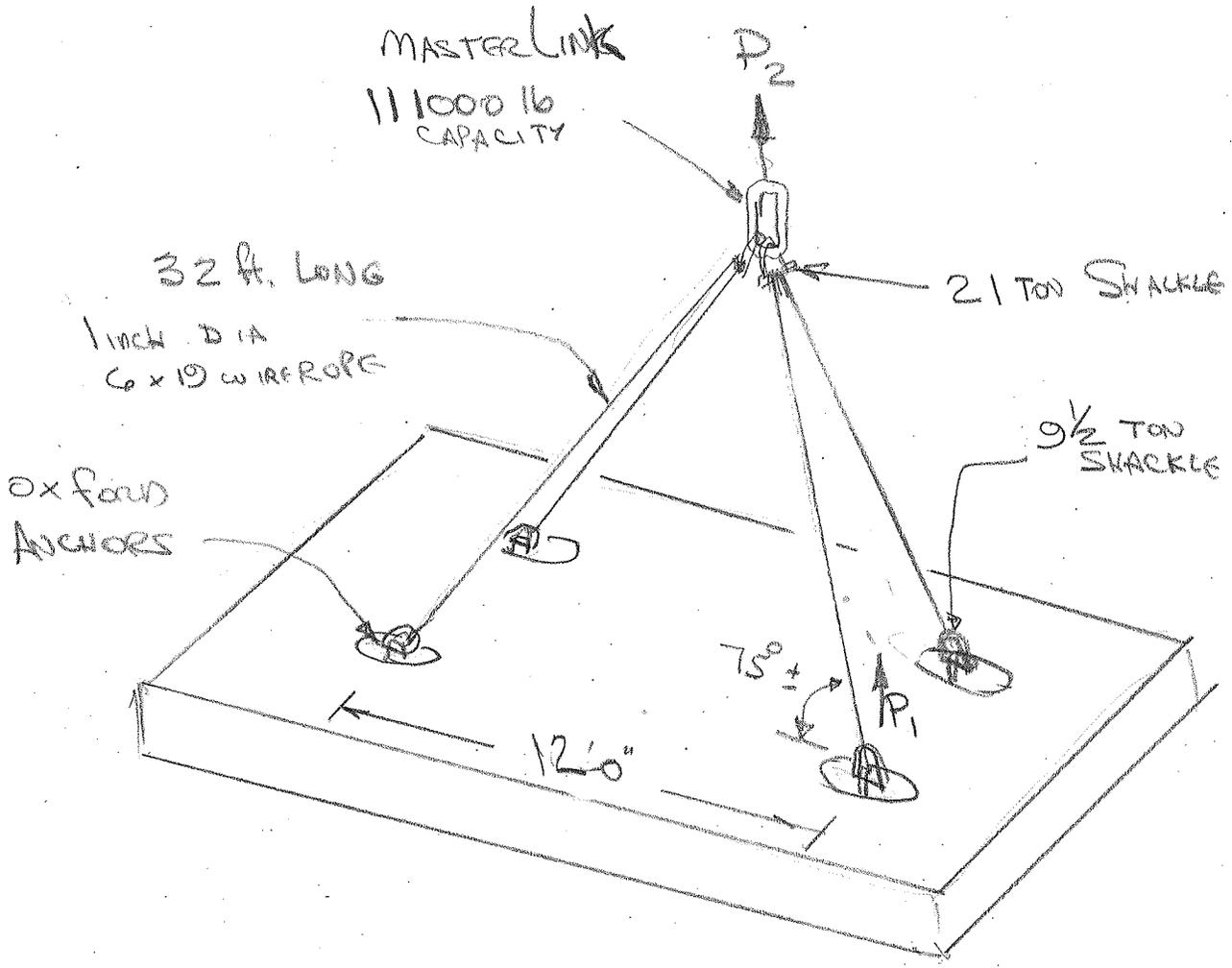
CK'D BY CLB OK'D BY DRP

December 9, 2014

RESUBMIT NO Approved
BY C. CARLSON DATE 12/18/14

Job No. 141165

DESCRIPTION OF PRODUCT



DETAIL of LIFTING SYSTEM

MAX. WT. 28600 lb

Vermont Agency of Transportation

RECEIVED

Approach Slab Submittal 1 120814_Resubmit 12.18.14.pdf

CK'D BY CLB OK'D BY DRP

December 9, 2014

RESUBMIT NO Approved

BY C. CARLSON DATE 12/18/14

RECEIVEDSHEET NO. 3 OF 3CK'D BY CLBOK'D BY DRP

PROJECT: _____

January 13, 2015

RESUBMIT NO

Approved AsNoted

BY C. CARLSON

DATE 01/15/15

CONNECTION AT SLAB: - $LOAD = P_1 = \frac{28600}{4} = 7200 \text{ lb}$

From APPENDIX A1 For CODE A750-7

For F.S. = 4 IN 4000 PSI CONCRETE CAP = 10000 lb

For 5000 PSI CONCRETE CAP = $10000 \times \frac{5}{4} = 12500 \text{ lb}$

For 6000 PSI: concrete capacity = $10000 \times (6/4) = 15,000 \text{ lb}$

From APPENDIX A2 USE $9\frac{1}{2}$ TON WORKING LOAD LIMIT SHACKLE

For F.S. = 5 CAPACITY = 19000 lb

F.S. for $P_1 = \frac{5 \times 19000}{7200} = 13$

CABLE - TENSION = $\frac{P_1}{\sin 75^\circ} = 7500 \text{ lb}$

From APPENDIX A3 USE 1" DIA 6x19 WIRE ROPE

RATED CAPACITY = 9.8 TONS = 19600 lb

From APPENDIX A2 USE 21 TON WORKING LOAD LIMIT SHACKLE

ONE SHACKLE HOLDS 2 CABLES

\therefore SHACKLE CAPACITY MUST BE 15000 lb

From TABLE $1\frac{3}{8}$ G209A SHACKLE HAS

CAPACITY OF 42000 lbs

LINK - MUST HAVE CAPACITY OF 28600 lb

From APPENDIX A4 CAPACITY = 110000 lb.

CONCLUSION: LIFT SYSTEM MEETS O.SHA. REQUIREMENTS

HOOK FIXED IN CONCRETE FS > 4

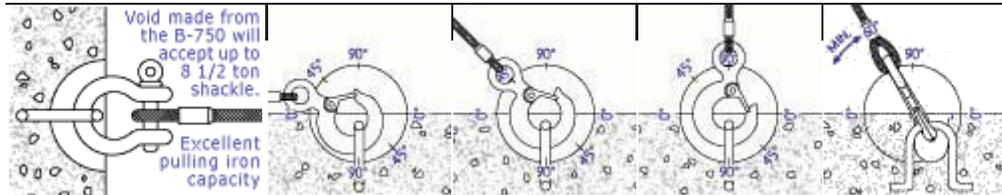
ALL OTHER CONNECTIONS FS > 5

APPENDIX A1



PO Box 736 • Stevenson, CT 06491
 www.oxfordtechusa.com
 Phone: (203) 268-6030
 Fax: (203) 445-1240
 info@oxfordtechusa.com

Oxford Lift System®



Anchor Product Code	Slab Min. Inches	Safe Working Load @ 90 degree Shear-0 degree Pull	Safe Working Load @ 90 degree Shear-45 degree Pull	Safe Working Load @ 90 degree Tension-90 degree Pull	Safe Working Load @ 90 degree Shear-60 degree Pull
A 500-3	4.00"	4,500	4,000	3,500	4,000
A 500-4	5.00"	8,000	5,500	4,000	5,000
A 500-5	6.00"	10,500	6,500	5,000	5,500
A 750-5	6.00"	12,500	8,000	7,000	7,000
A 750-7	8.00"	15,000	12,500	10,000	10,000

Note: Safe Working Load provides a factor of safety of approximately 4:1
 Test Results are based on a minimum concrete compressive strength of 4,000 psi.

[<back](#) [next>](#)

Home	B-500 & B-750	S-150	S-300	Lift Anchor & Order Form	Concrete Products
Pull Iron Capacity	Anchors & Accessories	Toggle-Lok	Insert/Lift Anchor	Grid-Lok/Rebar Chair	Helpful Calculations <small>COMING SOON!</small>

Oxford Lifts will be ordered as hot dipped galvanized for approach slabs.

Vermont Agency of Transportation
RECEIVED

CK'D BY CLB OK'D BY DRP
 January 13, 2015
 RESUBMIT NO Approved **AsNoted**
 BY C. CARLSON DATE 01/15/15

Crosby® Alloy Screw Pin Shackles

Load Rated



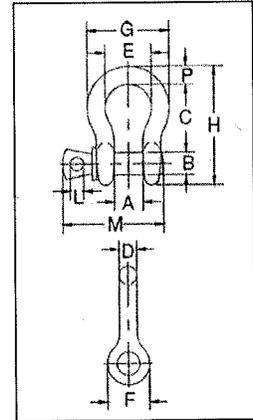
APPLICATION INSTRUCTIONS
SEE PAGE 89 OF THE GENERAL CATALOG

G-209A



G-209A Screw pin anchor shackles meet the performance requirements of Federal Specification RR-C-271F Type IVA, Grade B, Class 2, except for those provisions required of the contractor. For additional information, see page 444.

- Capacities 2 thru 21 metric tons. Meets performance requirements of Grade 8 shackles.
- Forged Alloy Steel – Quenched and Tempered, with alloy pins.
- Working Load Limit permanently shown on every shackle.
- Hot Dip Galvanized.
- Shackles can be furnished proof tested with certificates to designated standards, such as ABS, DNV, Lloyds, or other certification. Charges for proof testing and certification available when requested at the time of order.
- Approved for use at -40 degree C (-40 degree F) to 204 degree C (400 degree F).
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these shackles meet other critical performance requirements including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.



G-209A Crosby® Alloy Screw Pin Shackles

Nominal Size (in.)	Working Load Limit (t)*	G-209A Stock No.	Weight Each (lbs.)	Dimensions (in.)												Tolerance +/-	
				A	B	C	D	E	F	G	H	L	M	P	C	A	
3/8	2	1017450	.31	.66	.44	1.44	.38	1.03	.91	1.78	2.49	.25	2.03	.38	.13	.06	
7/16	2-2/3	1017472	.38	.75	.50	1.69	.44	1.16	1.06	2.03	2.91	.31	2.38	.44	.13	.06	
1/2	3-1/3	1017494	.63	.81	.63	1.88	.50	1.31	1.19	2.31	3.28	.38	2.69	.50	.13	.06	
5/8	5	1017516	1.38	1.06	.75	2.38	.63	1.69	1.50	2.94	4.19	.44	3.34	.69	.13	.06	
3/4	7	1017538	2.35	1.25	.88	2.81	.75	2.00	1.81	3.50	4.97	.50	3.97	.81	.25	.06	
7/8	9-1/2	1017560	3.61	1.44	1.00	3.31	.88	2.28	2.09	4.03	5.83	.50	4.50	.97	.25	.06	
1	12-1/2	1017582	5.32	1.69	1.13	3.75	1.00	2.69	2.38	4.69	6.56	.56	5.07	1.06	.25	.06	
1-1/8	15	1017604	7.25	1.81	1.25	4.25	1.16	2.91	2.69	5.16	7.47	.63	5.59	1.25	.25	.06	
1-1/4	18	1017626	9.88	2.03	1.38	4.69	1.29	3.25	3.00	5.75	8.25	.69	6.16	1.38	.25	.06	
1-3/8	21	1017648	13.25	2.25	1.50	5.25	1.42	3.63	3.31	6.38	9.16	.75	6.84	1.50	.25	.13	

* Maximum Proof Load is 2 times the Working Load Limit (metric tons) and 2.2 times the Working Load Limit (short tons). Minimum Ultimate Strength is 4.5 times the Working Load Limit for metric tonnes, and 5 times the Working Load Limit for short tons. For Working Load Limit reduction due to side loading applications, see page 91.

APPLICATION INSTRUCTIONS
SEE PAGE 89 OF THE GENERAL CATALOG

Load Rated



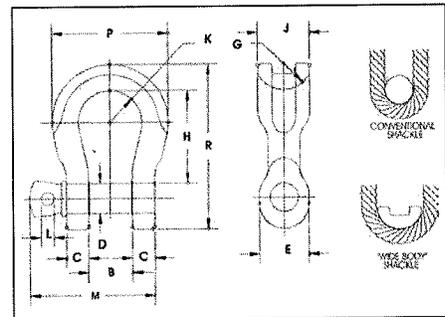
G-2169



S-2169



- Capacities of 7, 12.5 and 18 metric tons.
- Quenched and Tempered for maximum strength.
- Forged Alloy Steel.
- Available in galvanized and self colored finished.
- Individually proof tested and magnetic particle inspected. Crosby certification available at time of order.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these shackles meet other critical performance requirements including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.
- Look for the Red Pin® . . . the mark of genuine Crosby quality.



G-2169 / S-2169 Screw Pin "Wide Body" Shackles

Working Load Limit (t)*	G-2169 Stock No.	S-2169 Stock No.	Weight Each (lbs.)	Dimensions (in.)					
				B +/- .25	C	D +/- .02	E	G	H
7	1021655	1021664	3.5	1.25	.69	.88	1.82	1.25	3.56
12.5	1021673	1021682	8.8	1.69	.92	1.13	2.38	1.37	4.63
18	1021691	1021699	13	2.03	1.16	1.38	2.69	1.50	5.81

* Ultimate Load is 5 times the Working Load Limit. Forged Alloy Steel. Proof Load is 2 times the Working Load Limit.

Vermont Agency of Transportation

RECEIVED

Approach Slabs Submittal 1 120814_Resubmit 12.18.14.pdf

CK'D BY CLB

OK'D BY DRP

December 9, 2014

RESUBMIT NO
BY C. CARLSON

Approved
DATE 12/18/14

PERMALOC WIRE ROPE SLINGS

Lift-All Permaloc Slings are made using the flemish splice technique to form the eyes. Unlike the simple return loop method that places 100% of its strength on the swaged sleeve, Permaloc slings have reserve strength should the sleeve become damaged in use.

Features, Advantages and Benefits

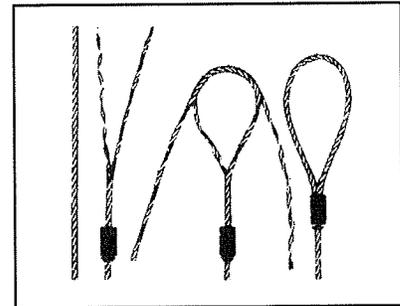
Maintains all the basic Lift-All wire rope sling features plus ...

Promotes Safety

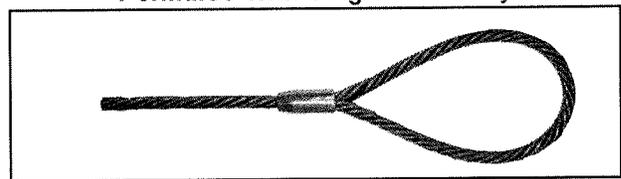
- Reserve strength - integrity of eyes not solely dependent upon steel sleeves
- IWRC resists crushing better than FC ropes

Saves Money

- When specified, thimble eyes protect wire rope from wear for increased life
- Good abrasion resistance for longer life



Permaloc With Single Part Body



Mechanically swaged, flemish eye splice wire rope slings

IWRC (Independent Wire Rope Core) Fiber core available at reduced capacities

Wire Rope

Wire Rope Class	Rope Dia. (in.)	EIP, IWRC			2 Min. Sling Length	Standard Eye Size (in.) W x L	Thimble Eye Size (in.) W x L	Eye Hook Cap. (tons)	Crescent Thimble Eye Size (in.) W x L	Slip Thru Thimble Eye Size (in.) W x L	Sliding Choker Hook (in.)
		1 Rated Capacity (tons)*									
		Vertical	Choker	V. Basket							
6 x 19 EIP, IWRC	1/4	.65	.48	1.3	1' 6"	2 x 4	7/8 x 1 5/8	1	2 x 4	2 1/8 x 4 1/8	3/8
	5/16	1.0	.74	2.0	1' 9"	2 1/2 x 5	1 1/16 x 1 7/8	1	2 x 4	2 1/2 x 4 1/8	3/8
	3/8	1.4	1.1	2.9	2' 0"	3 x 6	1 1/8 x 2 1/8	1 1/2	2 x 4	2 1/2 x 4 1/8	3/8
	7/16	1.9	1.4	3.9	2' 3"	3 1/2 x 7	1 1/4 x 2 1/4	2	2 x 5	2 3/8 x 4 3/8	1/2
	1/2	2.5	1.9	5.1	2' 6"	4 x 8	1 1/2 x 2 3/4	3	2 1/4 x 6	2 3/8 x 4 3/8	1/2 **
	9/16	3.2	2.4	6.4	2' 9"	4 1/2 x 9	1 1/2 x 2 3/4	4 1/2	2 1/4 x 7	2 3/8 x 4 3/8	5/8
	5/8	3.9	2.9	7.8	3' 0"	5 x 10	1 3/4 x 3 1/4	4 1/2	2 3/4 x 7	3 3/8 x 6 5/8	5/8 **
	3/4	5.6	4.1	11	3' 6"	6 x 12	2 x 3 3/4	7	3 1/4 x 8 1/2	3 3/8 x 6 5/8	3/4 **
	7/8	7.6	5.6	15	4' 0"	7 x 14	2 1/4 x 4 1/4	11	4 1/2 x 10	3 3/4 x 7 1/8	7/8
	1	9.8	7.2	20	4' 6"	8 x 16	2 1/2 x 4 1/2	11	4 1/2 x 11 1/2	3 3/4 x 7 1/8	1
6 x 37 EIP, IWRC	1 1/8	12	9.1	24	5' 0"	9 x 18	2 7/8 x 5 1/8	15	4 7/8 x 13	4 3/8 x 8 3/8	1 1/8
	1 1/4	15	11	30	5' 6"	10 x 20	3 1/2 x 6 1/2	15	5 1/2 x 14 1/2	4 3/8 x 8 3/8	1 1/4
	1 3/8	18	13	36	6' 0"	11 x 22	3 1/2 x 6 1/4	22	6 x 16	5 x 9 1/2	1 3/8
	1 1/2	21	16	42	7' 0"	12 x 24	3 1/2 x 6 1/4	22	6 x 17 1/2	5 x 9 1/2	1 1/2 **
	1 3/4	28	21	57	8' 0"	14 x 28					
	2	37	28	73	9' 0"	16 x 32					
	2 1/4	44	35	89	10' 0"	18 x 36					
	2 1/2	54	42	109	11' 0"	20 x 40					

(4) 32' long wire rope

Vermont Agency of Transportation

RECEIVED

Approach Slabs Submittal 1 120814_Resubmit 12.18.14.pdf

CK'D BY CLB

OK'D BY DRP

December 9, 2014

RESUBMIT NO
BY C. CARLSON

Approved
DATE 12/18/14

Note: Larger diameter slings available. Basket ratings are based on a minimum D/d of 25.

1. 1 Ton = 2,000 lbs.

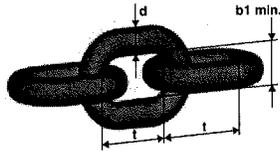
2. Minimum sling length when using standard eyes.

Note: **Length Tolerances** - Single Part Wire Rope Slings - Standard length tolerance is plus or minus two rope diameters, or plus or minus 0.5% of the sling length, whichever is

** See page 91 for reduced choker capacity when using these hook sizes.

NI | Round Steel Chain

Round steel chains for use in lifting. Maximum working temperature: 400°F. Standard surface: blasted, clear painted.

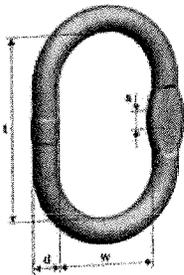


Code	Size	Nominal diameter d	Standard delivery length (feet)	Pitch t	Inside width b1 min.	Outside width b2 max.	WLL (lb)	Breaking force (lb)	Weight (lb/ft)
NI5.50	7/32"	0.217	400	0.67	0.31	0.83	2,700	10,800	0.470
NI70	9/32"	0.276	800	0.83	0.39	0.98	4,300	17,200	0.738
NI80	5/16"	0.315	500	0.94	0.43	1.14	5,700	22,800	0.939
NI100	3/8"	0.394	400	1.18	0.55	1.42	8,800	35,200	1.475
NI130	1/2"	0.512	200	1.54	0.71	1.85	15,000	60,000	2.548
NI160	5/8"	0.630	150	1.89	0.87	2.28	22,600	90,400	3.830
NI200	3/4"	0.787	100	2.44	1.02	2.80	35,300	141,200	5.780
NI220	7/8"	0.866	100	2.60	1.18	3.11	42,700	170,800	7.324
NI260	1"	1.024	100	3.07	1.38	3.70	59,700	238,800	10.214
NI320	1-1/4"	1.260	50	3.78	1.69	4.53	90,400	361,600	15.455



A | Master Link

Master link for 1 or 2 leg chain sling.



Code	WLL 0-45° (lb)	d (inch)	t (inch)	w (inch)	s (inch)	Weight (lb/pc)	Master link for chain	
							1-leg	2-leg
A100	3,800	0.39	3.15	1.97	0.39	0.31	7/32"	-
A130	5,800	0.51	4.33	2.36	0.39	0.75	9/32"	7/32"
A160	7,500	0.63	4.33	2.36	0.55	1.17	5/16"	9/32"
A180	10,000	0.75	5.31	2.95	0.55	2.03	3/8"	5/16"
A220	16,700	0.91	6.30	3.54	0.67	3.53	1/2"	3/8"
A260	26,000	1.06	7.09	3.94	0.79	5.42	5/8"	1/2"
A320	39,100	1.30	7.87	4.33	1.02	9.13	3/4"	5/8"
A360	61,100	1.42	10.24	5.51	-	13.72	7/8"	3/4"
A450	83,100	1.77	13.39	7.09	-	28.27	1"	7/8"
A500	111,000	1.97	13.78	7.48	-	36.49	1-1/4"	1"
A560	156,600	2.36	15.75	7.87	-	59.56	-	1-1/4"
A720	234,900	2.76	18.11	9.84	-	99.23	-	-

Vermont Agency of Transportation

RECEIVED

Approach Slabs Submittal 1 120814_Resubmit 12.18.14.pdf

CK'D BY CLB

OK'D BY DRP

December 9, 2014

RESUBMIT NO
 BY C. CARLSON

Approved
 DATE 12/18/14

January 13, 2015

SURFACE RETARDERS

Used on vertical edge of adjoining approach slabs.

Description

Grace Construction Products Surface Retarders offer unmatched reliability and control for exposed aggregate finishes. The beauty and durability of this high quality finish can be seen in landmarks worldwide: the grounds of the U.S. Capitol; Yamousoukro Basilica, Africa; and the new European Parliament to name a few.

Grace Produits de Construction S.A.S., a French division of W. R. Grace & Co.–Conn., brings thirty years experience in the surface retarder market, creating a range of products with an unprecedented level of control for depth-of-etch. This allows a uniquely controllable selection of surface finishes to add beauty to architectural concrete.

With over 60 years of expertise in the field of cement and concrete technology, Grace Construction Products has been serving the needs of the international construction industry with products that improve strength and

durability. The Grace combination of innovative products, sophisticated research and development, technical service and support at the job site deliver added value that is unmatched in the industry.

Product Uses

Grace Surface Retarders provide a comprehensive range of effect, from a light sand finish up to full exposure of 1¼ in. (32 mm) aggregate. The products are designed for use on cast-in-place walls, residential driveways, pool decks, golf course cart paths, sidewalks or large plaza decks and precast concrete. Review the Surface Retarder Guide below to determine the product which best matches your job requirements.

Product Advantages

- Comprehensive range of etch depth
- Excellent depth-of-etch control
- Improves flexibility of when you can wash
- Products available both for in-form and surface applications
- VOC compliant
- Easy application
- Excellent coverage rates
- Short drying times



Product Function

Each product creates a unique degree of reaction to produce the effect on the surface mortar. The retarding chemicals diffuse into the paste, due to the normal porosity of cement in the first hours of curing, and slow down the cement hydration reaction.

During the next 16–72 hours of curing, the bulk concrete hardens except where the matrix cement has been retarded. The retarded surface cement is then removed by water or sandblasting, revealing the aggregate in the concrete mix.

Surface Retarder Guide

Product	No. of Etches	Type of Base	Product Characteristics	Resistance to Abrasion (concrete placing time)	Heat Resist.	Application Methods	Approximate Coverage and Drying Time	Release Required
Top Surface Retarders								
Grace® TOP-CAST™	11	Water	A film-forming top surface retarder which prevents accelerated evaporation. Saves time by eliminating the need for covering the surface. Designed for large paving and hollow core applications.	NA	Up to 140°F (60°C)	Low pressure, garden-type sprayer	250–350 ft²/gal (6.1–8.6 m²/L)	NA
In-Form Retarders								
Pieri® EURO-TARD™	11	Solvent*	An in-form retarder, unique in not requiring an undercoating release. The depth-of-etch is highly uniform. The retarded matrix is designed not to transfer to the concrete and is easily brushed from the form.	Good 30–40 minutes	Up to 180°F (82°C)	Brush or roller: 2 light coats Spray: 1 full-bodied coat	400 ft²/gal (9.8 m²/L) 10 minutes	NA
Pieri® DURO-TARD™	9	Solvent*	An in-form retarder, unmatched for abrasion resistance. Recommended for vertical surfaces up to 10 ft, for spun poles and for multi-batch panels, where extended placing times are required.	Excellent 45–60 minutes	Up to 150°F (65°C)	Brush or roller: 2 light coats Spray: 1 full-bodied coat	250–300 ft²/gal (6.1–7.4 m²/L) 10 minutes	VMR
Pieri® VMR™	NA	Alcohol	An undercoat for use with DURO-TARD. Ensures transfer of retarder to the cast concrete. Dries fast. Reduces or eliminates form clean-up.	NA	NA	Brush or roller	450 ft²/gal (11 m²/L) 20 minutes	NA

etch depth to be 1/8" to 1/4" +/-

*Complies with U.S. E.P.A. Volatile Organic Compound Emission Standards for Architectural Coatings

Vermont Agency of Transportation

RECEIVED

Approach Sheet Submittal 2 011215_MarkUp.pdf

CK'D BY CLB OK'D BY DRP

January 13, 2015

RESUBMIT NO Approved
BY C. CARLSON DATE 01/15/15

www.graceconstruction.com

North American Customer Service: 1-877-4AD-MIX1 (1-877-423-6491)

PIERI, TOP-CAST, TOP FACE, EURO-TARD, DURO-TARD and UNDERCOAT VMR are trademarks of W. R. Grace & Co.–Conn.

We hope the information here will be helpful. It is based on data and knowledge considered to be true and accurate and is offered for the users' consideration, investigation and verification, but we do not warrant the results to be obtained. Please read all statements, recommendations or suggestions in conjunction with our conditions of sale, which apply to all goods supplied by us. No statement, recommendation or suggestion is intended for any use which would infringe any patent or copyright. W. R. Grace & Co.–Conn., 62 Whittemore Avenue, Cambridge, MA 02140. In Canada, Grace Canada, Inc., 294 Clements Road, West, Ajax, Ontario, Canada L1S 3C6.

This product may be covered by patents or patents pending.
AC-002D Printed in U.S.A. 02/12

Copyright 2012. W. R. Grace & Co.–Conn.
FA/PDF

GRACE