



**REVIEW NOTES**  
**MIDDLEBURY RS 0174(8) - SAND HILL BRIDGE**  
**PRECAST ARCH FABRICATION DRAWINGS**  
**December 12, 2013**

**RE:** Precast Arch Fabrication Drawings received from T Buck on 11/27/2013 (drawings dated 10/9/2013).

**VHB Project No.:** 57438.00

*These notes accompany the review of the Precast Arch Fabrication Drawings reviewed by VHB on 12/12/2013.*

1. The mix design proposed for the fabrication of the precast arch should be submitted for approval prior to fabrication.
2. This review was completed prior to submittal of the fabrication drawings for the precast architectural panels, steel support beam, and other supporting information necessary for the fabrication of the arch system. Preliminary drawings of the architectural panel layout and details were submitted for information only, and were generally reviewed in their current form for coordination with the arch panels.
3. This review focused solely on the fabrication drawings and did not include review of any installation or erection procedures, including shoring, as this information was not available at the time of the review. It is possible that modifications to shoring or installation procedures could affect the fabrication of the arch. At the Contractor's request, the fabrication drawings were reviewed without the above referenced information. It is assumed that the Contractor will be able to satisfactorily erect the arch panels with the geometry, layout, and configuration of the panels as proposed.
4. Need to address cold weather storage of the product. These will be produced during winter period so outside temps could range 40+ to -20F. It won't be good for a new casted piece to go from 60F to 0F with a wind. Could thermal crack. Carrara's QSM does not address this topic. How will they do a controlled cool down of the product? Also if the product hasn't met the 6500 design strength before being moved outside sub freezing temps, the hydration process will pretty much stop, doing the same strength. Cylinders should stay with the pieces to represent curing conditions and be wise to make plenty of extra if they are moved outside prior to design strength.

Vermont Agency of Transportation

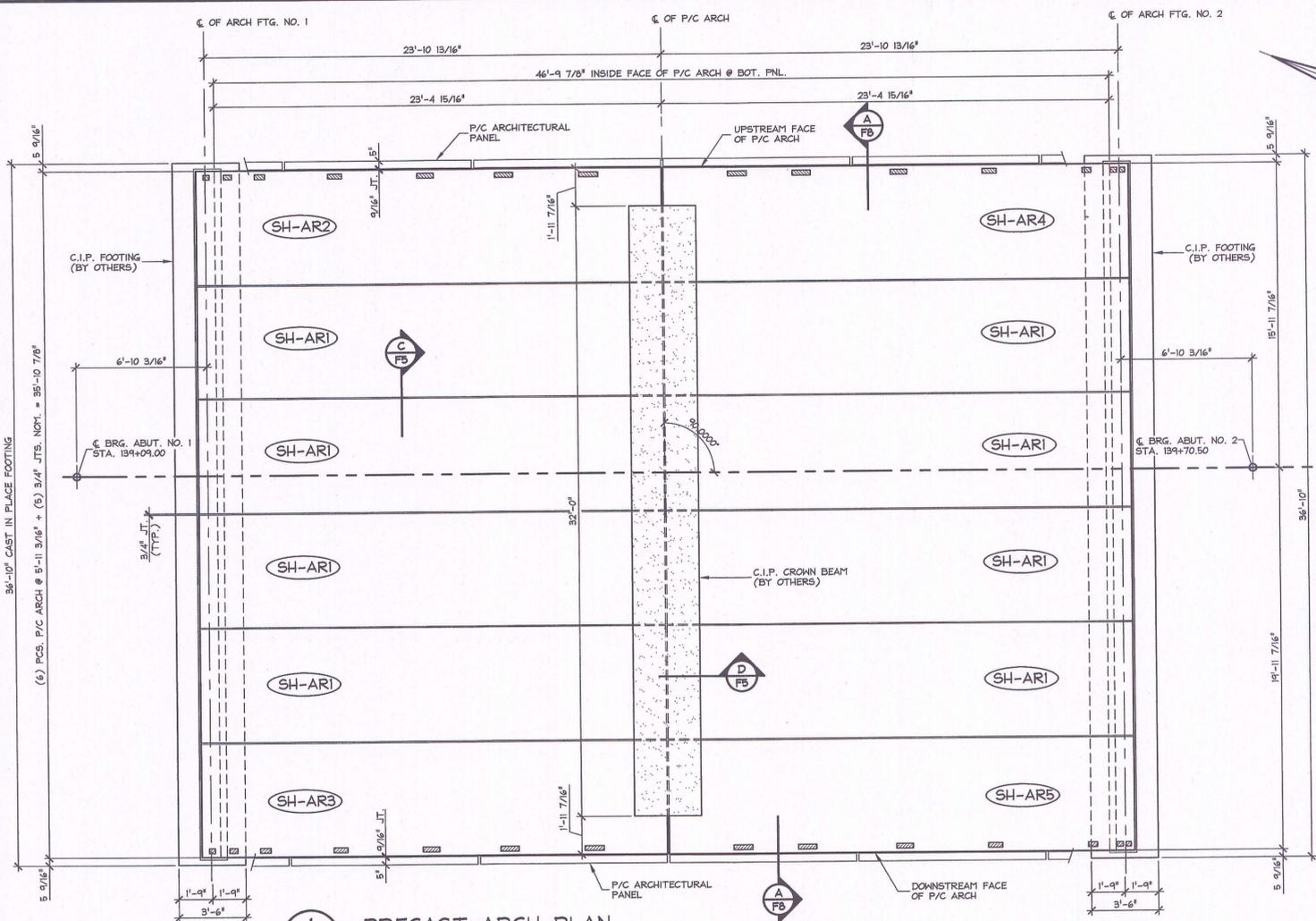
**RECEIVED**

ON: **November 27, 2013**

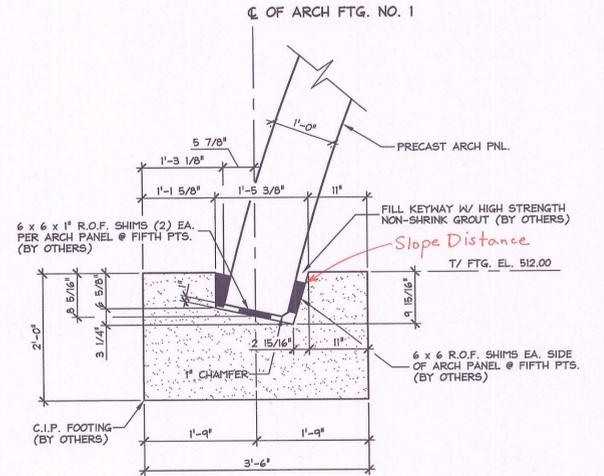
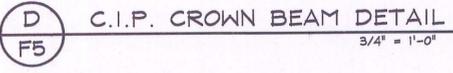
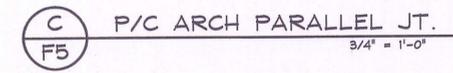
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**CONFORMANCE**

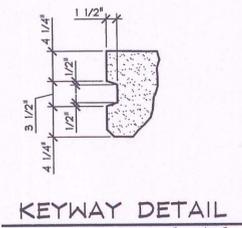
BY: **Jennifer Fitch** DATE: **12/13/2013**



1 PRECAST ARCH PLAN  
1/4" = 1'-0"



A P/C ARCH FOOTING DETAIL  
3/4" = 1'-0"



KEYWAY DETAIL  
1" = 1'-0"

Need Mix Design for VTrans Approval  
Add Rebar Schedule and Bar Bend Dimensions

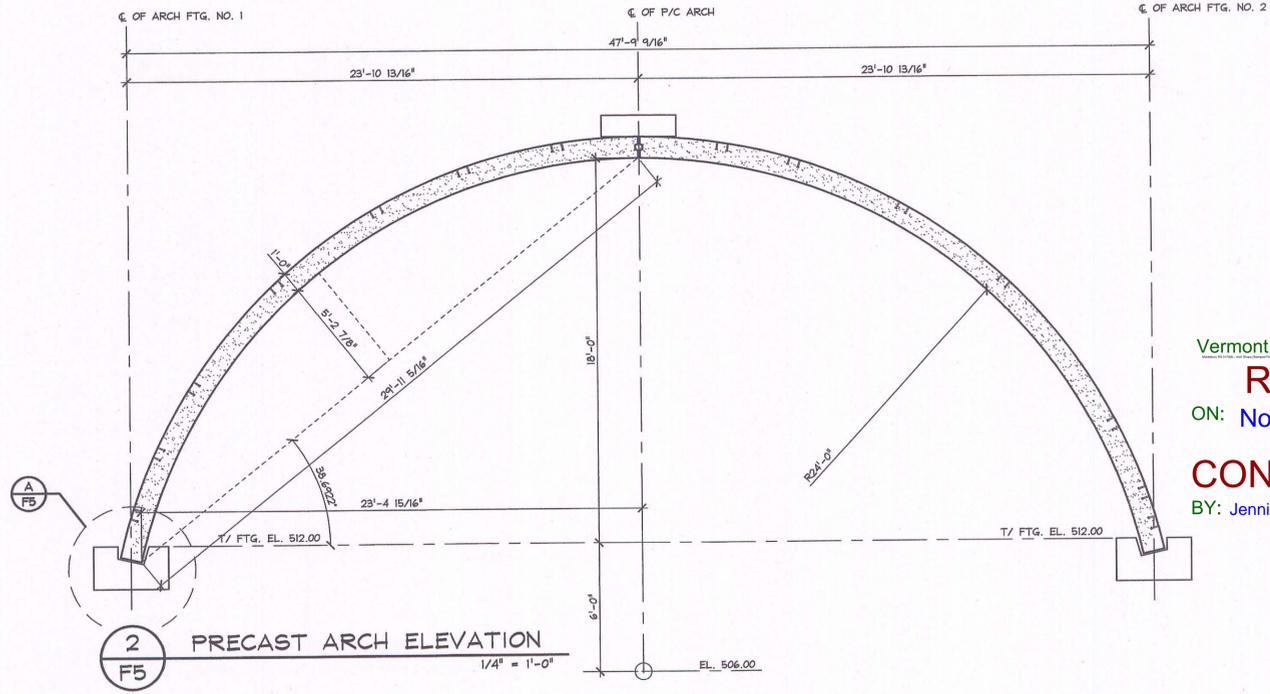
**SHOP DRAWING REVIEW**

REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

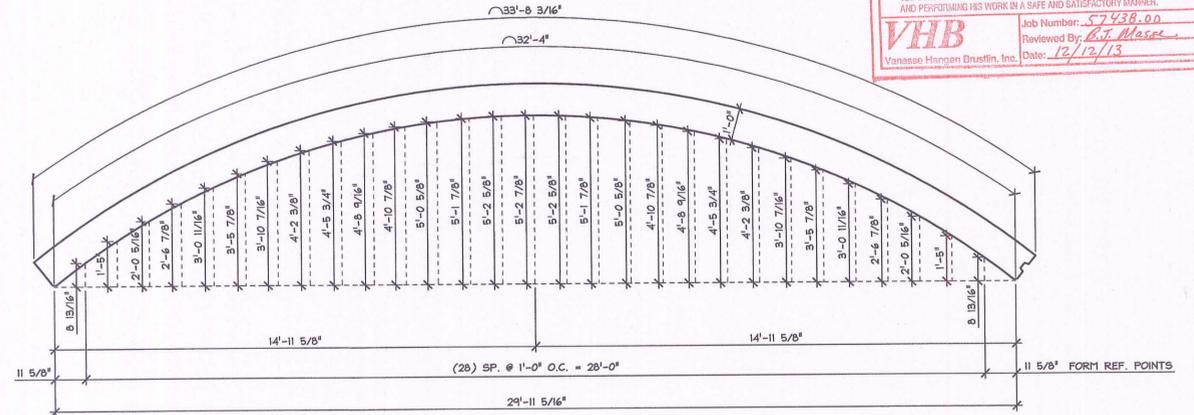
REJECTED  REVISE AND RESUBMIT  FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTING AND CONFIRMING ALL QUANTITIES AND DIMENSIONS, SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES, AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

**VHB** Vermont Hanigan Branstetter, Inc.  
Job Number: 57438.00  
Reviewed By: *Bob Massey*  
Date: 12/12/13

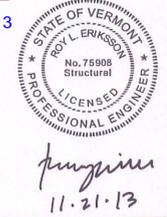


2 PRECAST ARCH ELEVATION  
1/4" = 1'-0"



B ARCH PANEL ELEV. IN FORM  
3/8" = 1'-0"

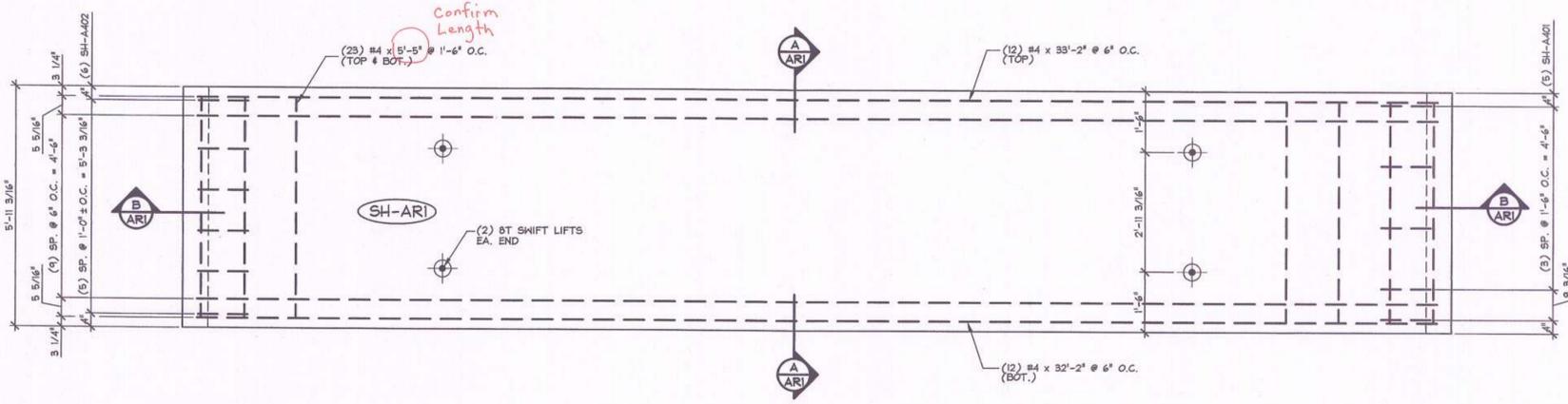
Vermont Agency of Transportation  
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BY: Jennifer Fitch DATE: 12/13/2013



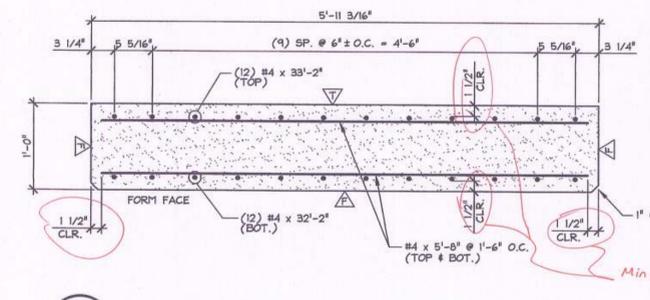
APPROVAL STAMP:

<b>J.P. CARRARA &amp; SONS INC.</b> Precast & Prestress Manufacturer 2484 CASE ST., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010	<b>T. BUCK CONSTRUCTION</b> CONTRACTOR AUBURN, MAINE	
	STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF ADDISON	DATE: OCT. 9, 2013 SCALE: NOTED
	TOWN OF MIDDLEBURY ROUTE NO. VT 125, EAST MIDDLEBURY GORGE BRIDGE NO.: PROJECT NO.: RS 0174(b)	CHKD: DFTM: T.D. JOB NO:
	<b>P/C ARCH LAYOUT &amp; DETAILS</b>	DWG. NO: <b>F5</b>

SUBMITTED  
NOV 22 2013  
J. P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753

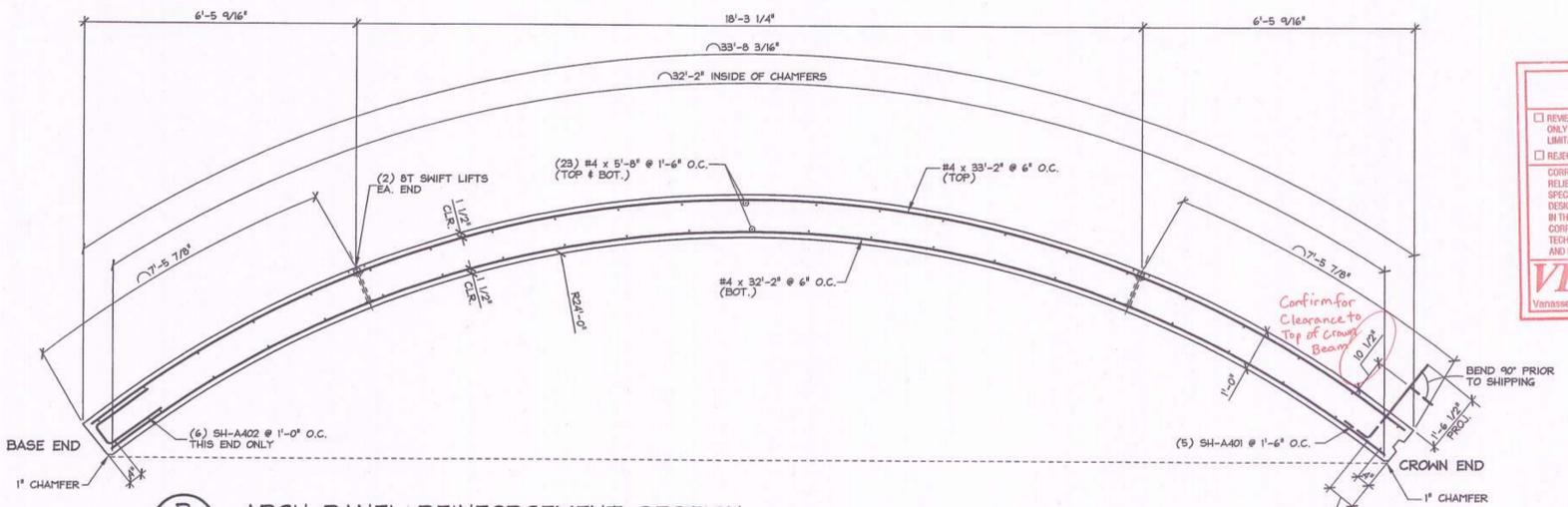


1 ARCH PANEL PLAN IN FORM W/ REINF.  
1/2" = 1'-0"



A ARCH PANEL REINFORCEMENT SECTION  
1/2" = 1'-0"

▲ PLYWOOD FORM FINISH MEETING VT SECTION 540  
▲ COMBINATION FORM / FLOAT FINISH



B ARCH PANEL REINFORCEMENT SECTION  
1/2" = 1'-0"

**SHOP DRAWING REVIEW**

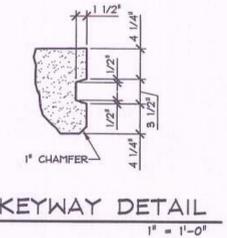
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**VHB**  
Vermont Hangan Bruntin, Inc.

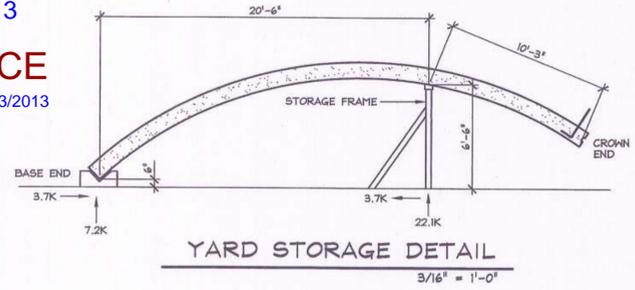
Job Number: 57438.00  
Reviewed By: B.J. Meier  
Date: 12/12/13



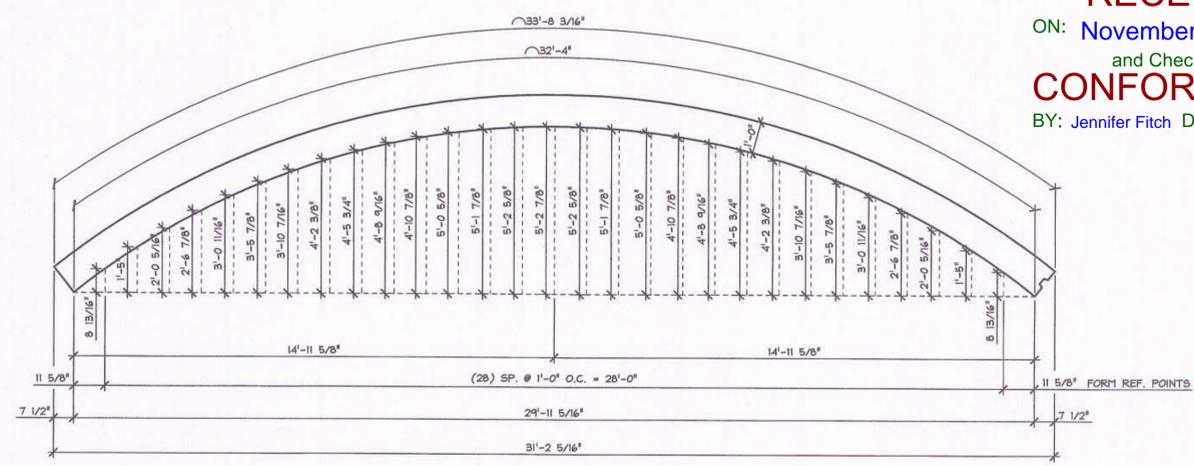
KEYWAY DETAIL  
1" = 1'-0"

**HANDLING NOTES:**

1. ARCH PANEL SHALL BE HANDLED USING (4) 8T x 10' SL ANCHORS AT FIFTH POINTS.
2. ARCH PANEL SHALL BE STRIPPED USING (4) 8T x 10' SL ANCHORS.
3. FOR YARD STORAGE, ARCH PANEL SHALL BE LOWERED USING (4) 8T x 10' SL ANCHORS UNTIL PANEL CONTACTS THE STORAGE FRAME. PLACED 10'-3" FROM THE PANEL END AS SHOWN. THE BASE OF THE PANEL SHALL THEN BE LOWERED TO THE HARDWOOD SUPPORT.
4. THE PANEL SHALL BE HOISTED FROM THE STORAGE POSITION IN THE REVERSE SEQUENCE SPECIFIED ABOVE.
5. THE ARCH PANEL SHALL BE SHIPPED WITH A SUPPORT CONFIGURATION MATCHING THE "YARD STORAGE DETAIL" AND SHALL BE INSTALLED FOLLOWING THE ABOVE PROCEDURE, USING (4) 8T x 10' SL ANCHORS.



YARD STORAGE DETAIL  
3/16" = 1'-0"



ARCH PANEL ELEV. IN FORM  
3/8" = 1'-0"

Vermont Agency of Transportation  
**RECEIVED**  
ON: November 27, 2013  
and Checked for  
**CONFORMANCE**  
BY: Jennifer Fitch DATE: 12/13/2013



APPROVAL STAMP:  
*J. Carrara*  
11.21.13

**J.P. CARRARA & SONS INC.**  
Precast & Prestress Manufacturer  
244 CASE ST., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010

**T. BUCK CONSTRUCTION**  
CONTRACTOR  
AUBURN, MAINE

STATE OF VERMONT AGENCY OF TRANSPORTATION  
COUNTY OF ADDISON

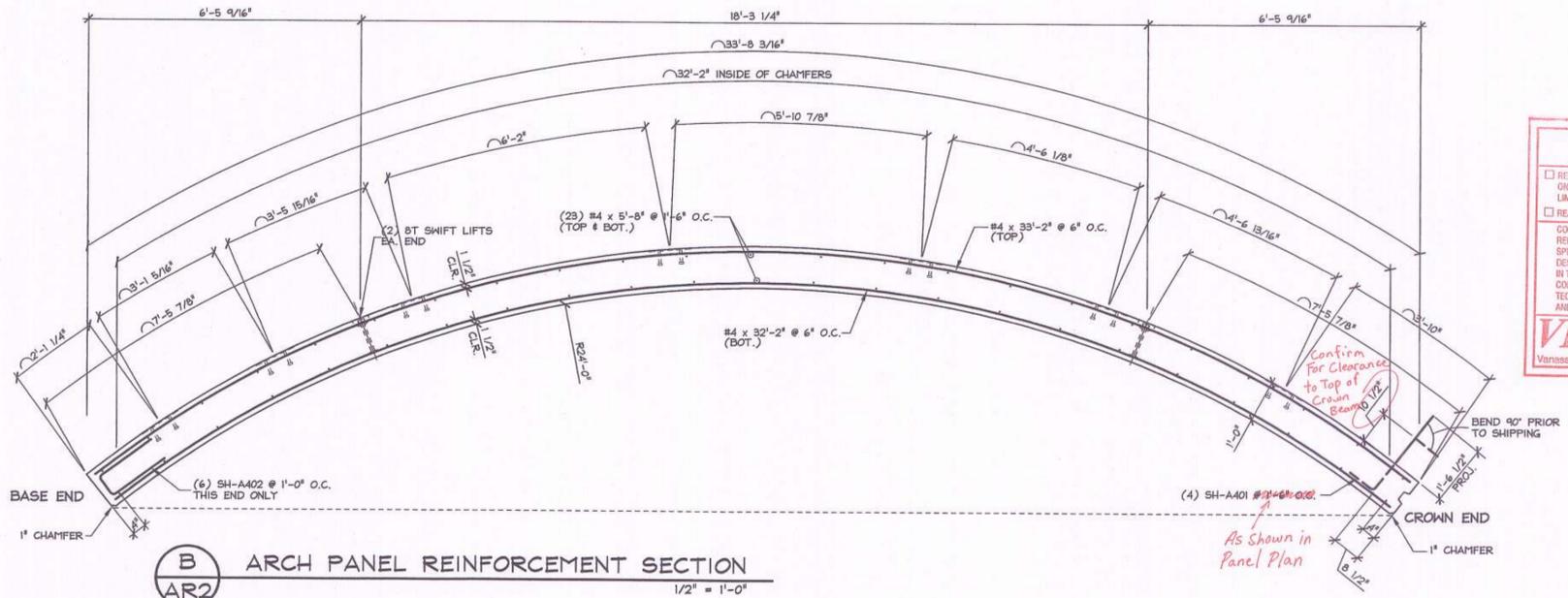
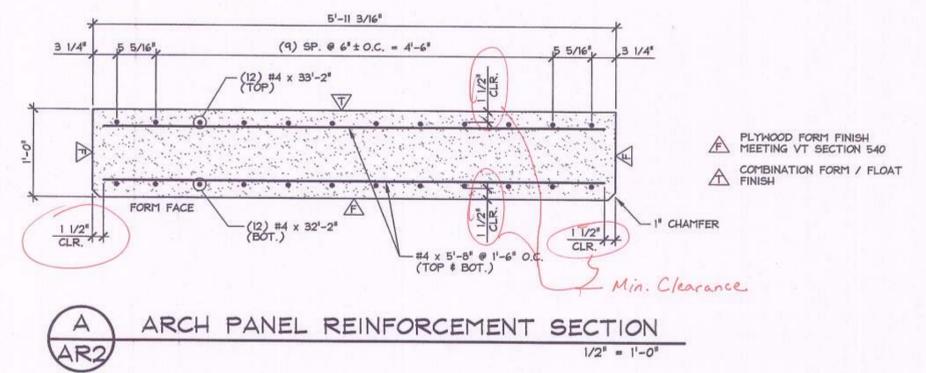
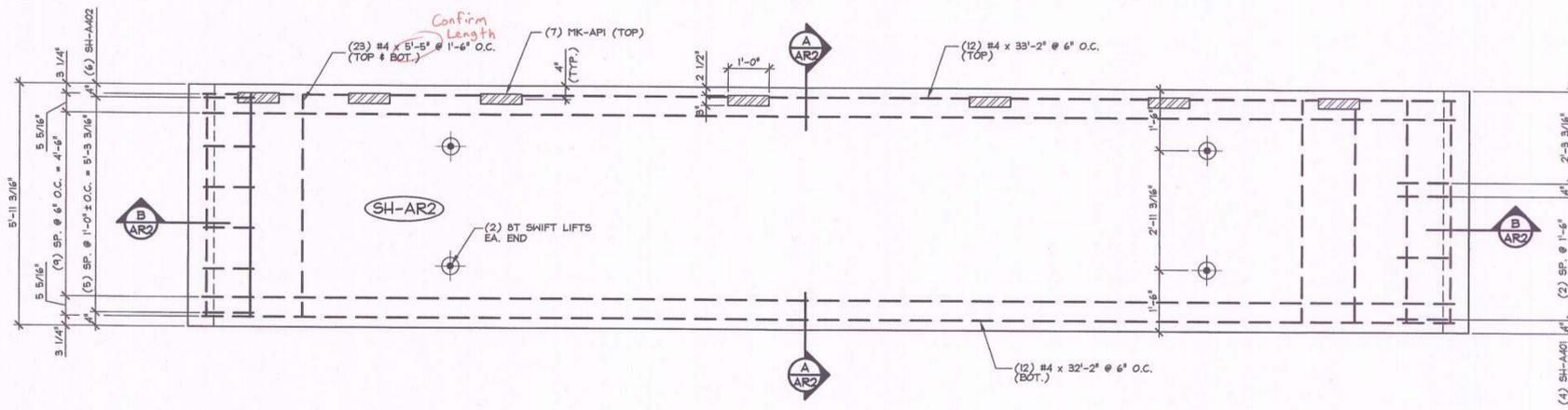
ROUTE NO. VT 125, EAST MIDDLEBURY GORGE  
BRIDGE NO.: PROJECT NO.: RS 0174(B)

DATE: OCT. 9, 2013  
SCALE: NOTED  
CHKD: DFTM: T.D.  
JOB NO:  
DWG. NO: ARI

SUBMITTED  
NOV 22 2013  
J.P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753

Shipping Strength Also  
4000 PSI @ RELEASE  
6500 PSI @ 28 DAYS  
MIX DESIGN: 445M NO DCI

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MATERIAL LIST / ARCH PANEL							
ITEM	MARK	DESCRIPTION	QTY.				
1		#4 x 33'-2" BLACK	12				
2		#4 x 32'-2" BLACK	12				
3		#4 x 5'-8" BLACK	46				
4							
5	SH-A401	#4 BENT BAR BLACK	5				
6	SH-A402	#4 BENT BAR BLACK	6				
7							
8							
9							
10		DAYTON 8T x 10' SWIFT LIFT ANCHORS (WITH RECESS PLUG)	4				
11							
12							
13							
14							
15							



**SHOP DRAWING REVIEW**

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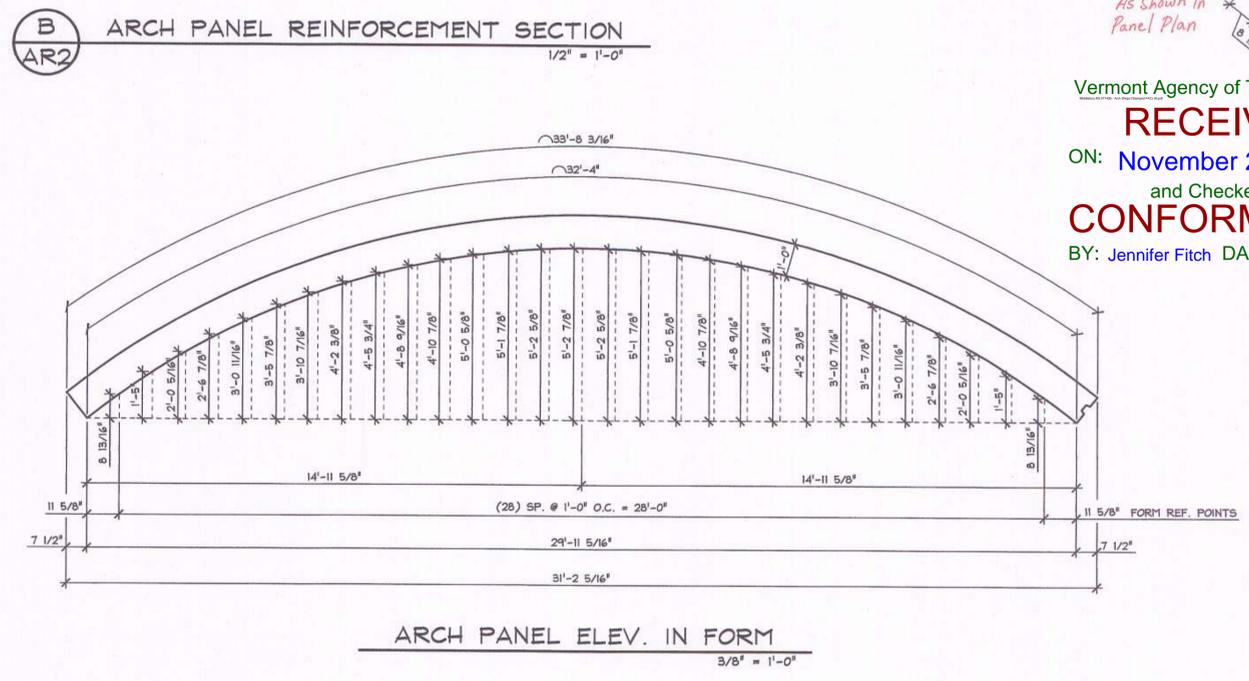
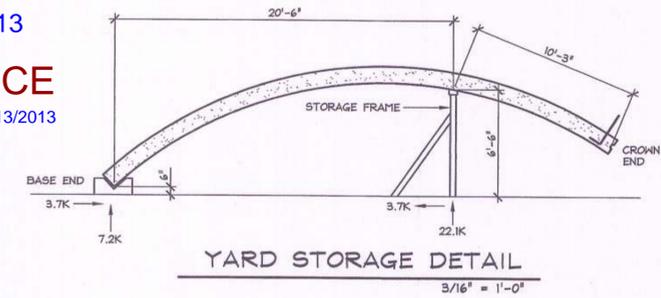
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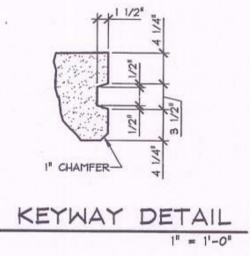
**VHB**  
Vermont Hergen Brunner, Inc.

Job Number: 57938-00  
Reviewed By: B.J. Messer  
Date: 12/13/13

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- ARCH PANEL SHALL BE HANDLED USING (4) 8T x 10" SL ANCHORS AT FIFTH POINTS.
  - ARCH PANEL SHALL BE STRIPPED USING (4) 8T x 10" SL ANCHORS.
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BY: Jennifer Fitch DATE: 12/13/2013



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NOV 22 2013  
J. P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753

Shipping Strength Also  
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6500 PSI @ 28 DAYS  
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7	MK-API	2 3/8" x 3" x 1'-0" W/ (2) 5/8" x 3" HS (GALV.)	7
8			
9			
10		DAYTON 8T x 10" SHIFT LIFT ANCHORS (WITH RECESS PLUG)	4
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15			



APPROVAL STAMP:  
DATE: OCT. 9, 2013  
SCALE: NOTED  
CHKD: DFTM: T.D.  
JOB NO:  
DWG. NO: AR2

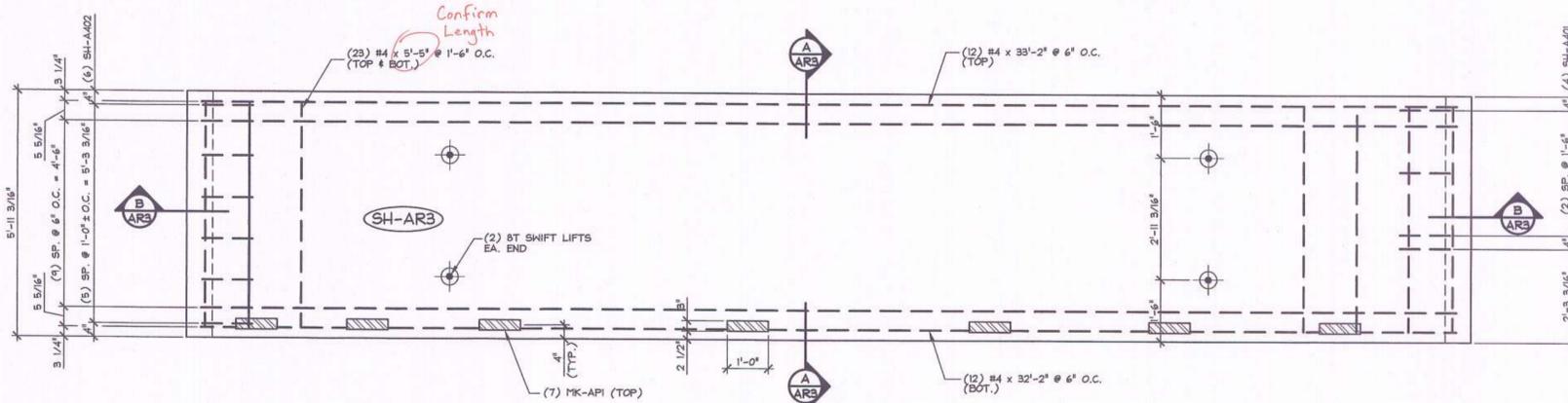
**J.P. CARRARA & SONS INC.**  
Precast & Prestress Manufacturer  
244 ONE ST., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010

**T. BUCK CONSTRUCTION**  
CONTRACTOR  
AUBURN, MAINE

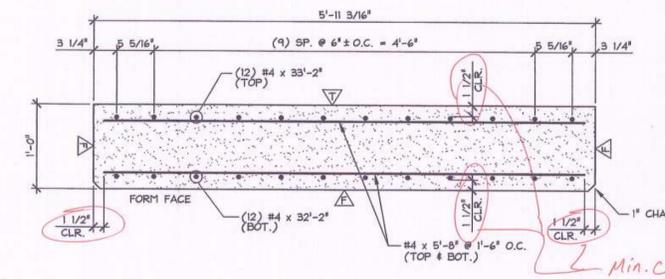
STATE OF VERMONT AGENCY OF TRANSPORTATION  
COUNTY OF ADDISON

TOWN OF MIDDLEBURY  
ROUTE NO. VT 125, EAST MIDDLEBURY GORGE  
BRIDGE NO.: PROJECT NO.: RS 0174(8)

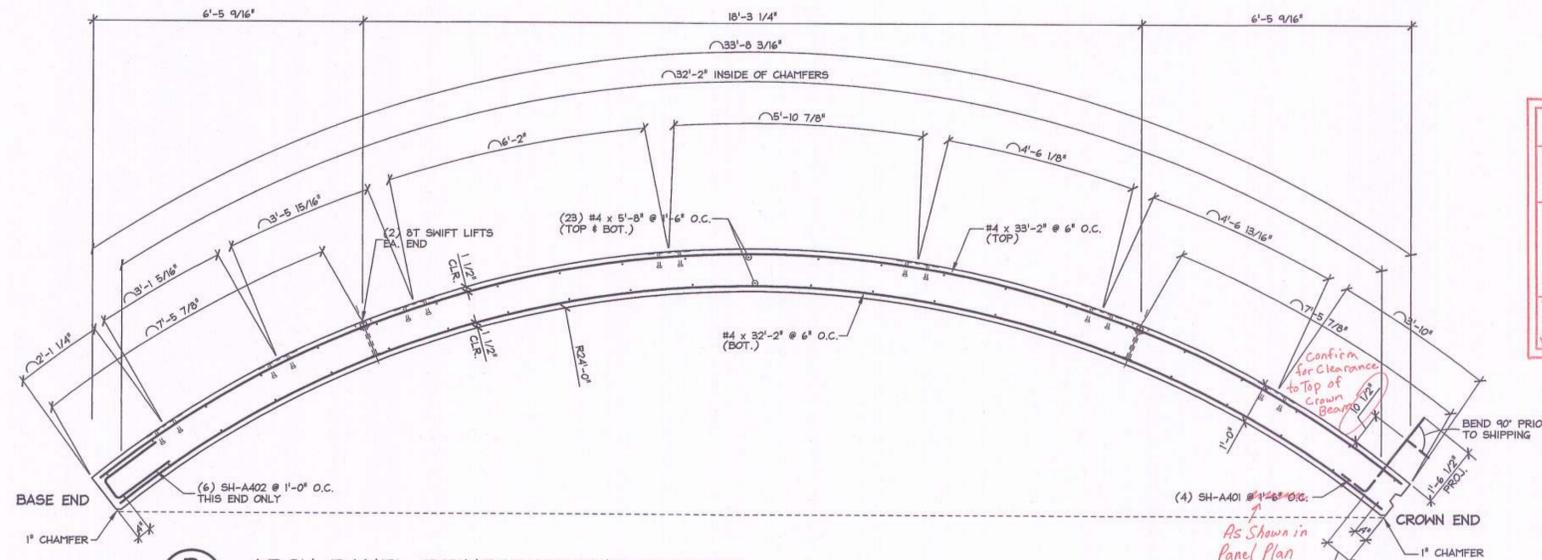
**PRECAST ARCH PANEL DETAILS**



**1 ARCH PANEL PLAN IN FORM W/ REINF.**  
 AR3  
 1/2" = 1'-0"



**A ARCH PANEL REINFORCEMENT SECTION**  
 AR3  
 1/2" = 1'-0"



**B ARCH PANEL REINFORCEMENT SECTION**  
 AR3  
 1/2" = 1'-0"

**SHOP DRAWING REVIEW**

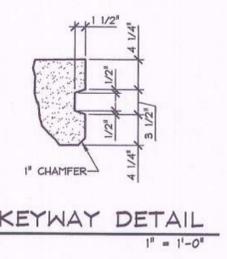
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**VHB**  
 Vanessa Hangan Brustlin, Inc.

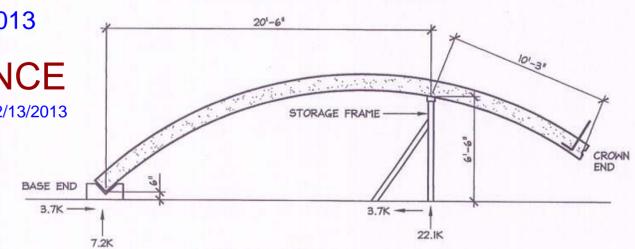
Job Number: 57438.00  
 Reviewed By: *[Signature]*  
 Date: 12/13/13



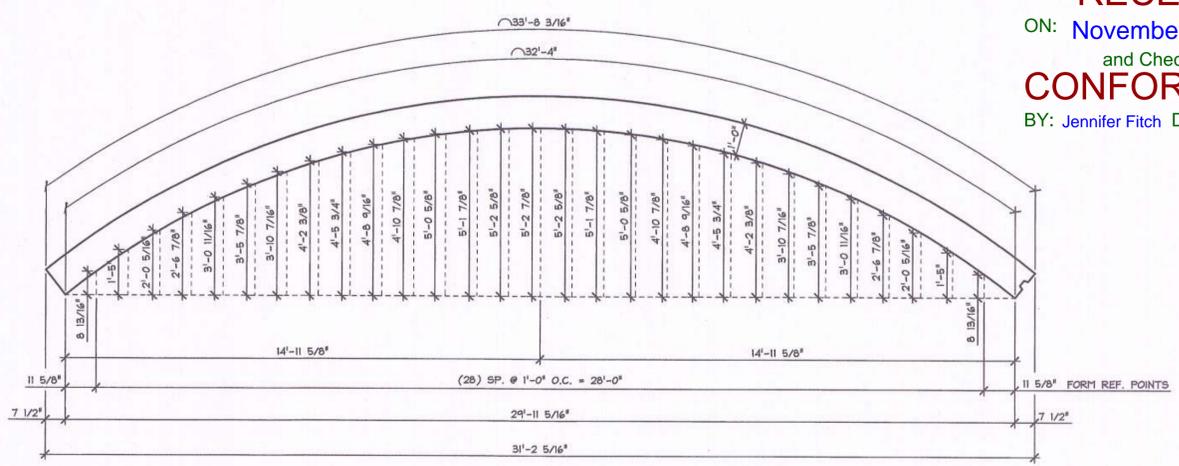
**KEYWAY DETAIL**  
 1" = 1'-0"

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**YARD STORAGE DETAIL**  
 3/16" = 1'-0"



**ARCH PANEL ELEV. IN FORM**  
 3/8" = 1'-0"

Shipping Strength Also

4000 PSI @ RELEASE
6500 PSI @ 28 DAYS
MIX DESIGN: 4451 NO DCI

SUBMITTED
NOV 22 2013
J.P. CARRARA & SONS, INC. MIDDLEBURY, VT 05753

MARK: SH-AR3	QTY.: 1	WT.: 14.93 T	VOL.: 7.37 cy
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15			

*These Galvanized?*

Vermont Agency of Transportation  
**RECEIVED**  
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 BY: Jennifer Fitch DATE: 12/13/2013



APPROVAL STAMP:

**J.P. CARRARA & SONS INC.**  
 Precast & Prestress Manufacturer  
 2444 DEX STR., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010

**T. BUCK CONSTRUCTION**  
 CONTRACTOR  
 AUBURN, MAINE

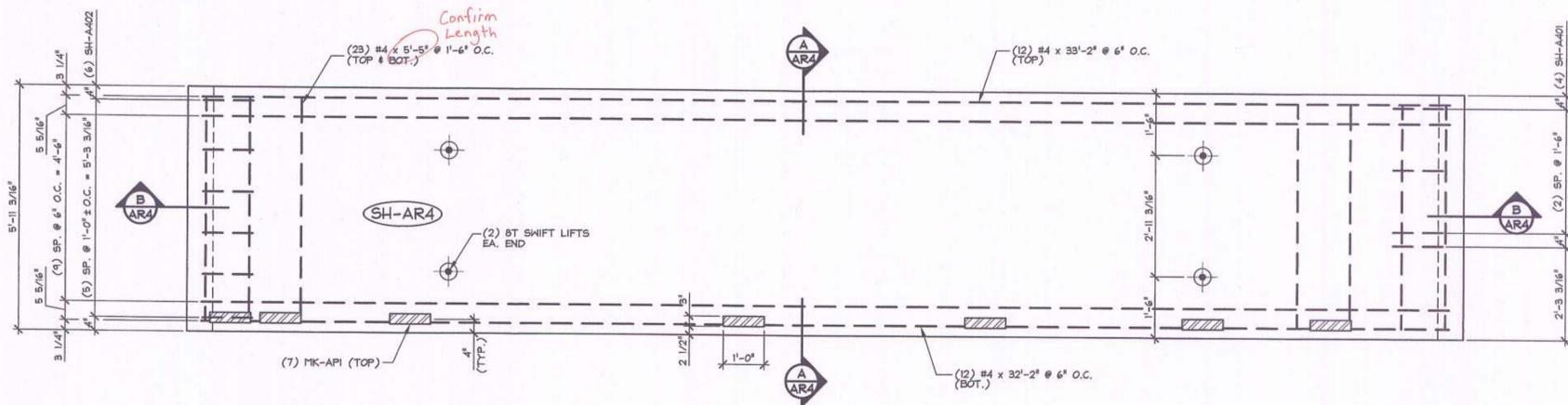
STATE OF VERMONT AGENCY OF TRANSPORTATION  
 COUNTY OF ADDISON

DATE: OCT. 9, 2013  
 SCALE: NOTED

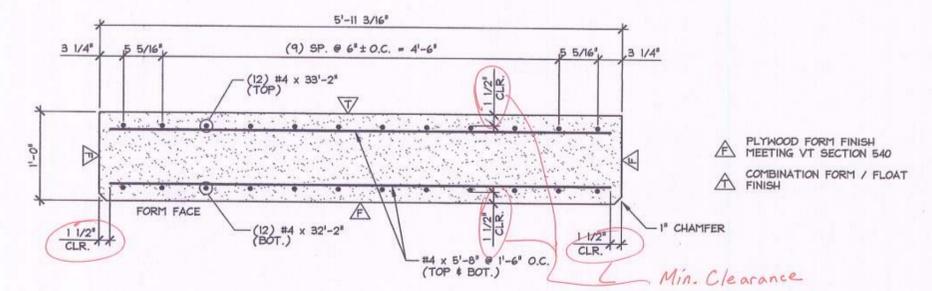
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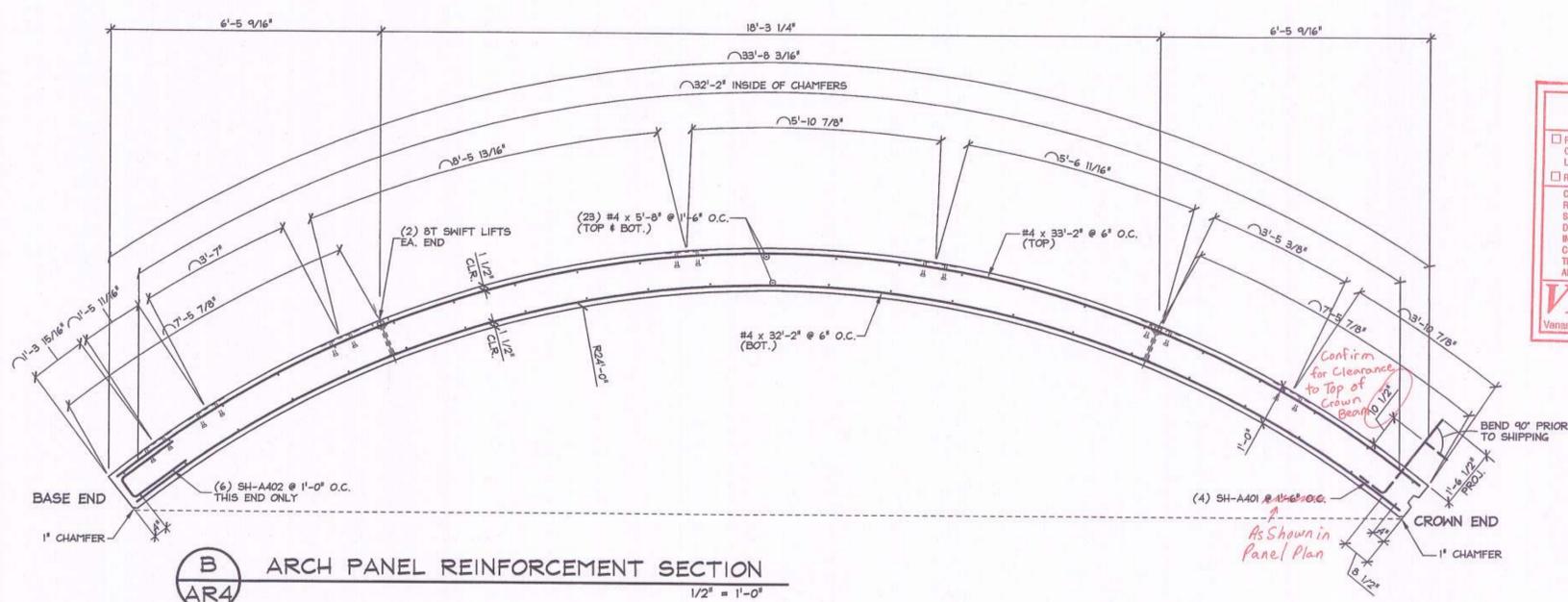
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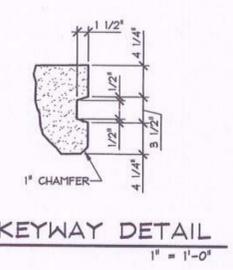
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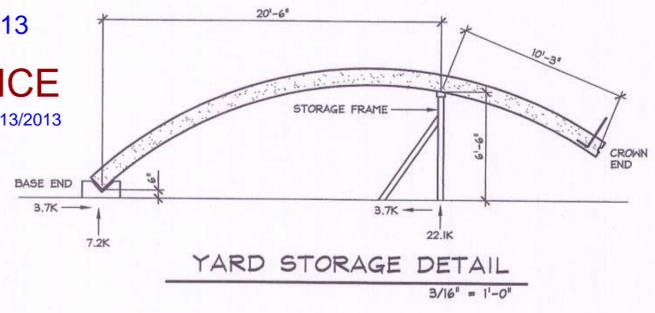
**VHB** Vermont Hanger Brackets, Inc.  
Job Number: 57438.00  
Reviewed By: B.J. Moore  
Date: 12/12/13



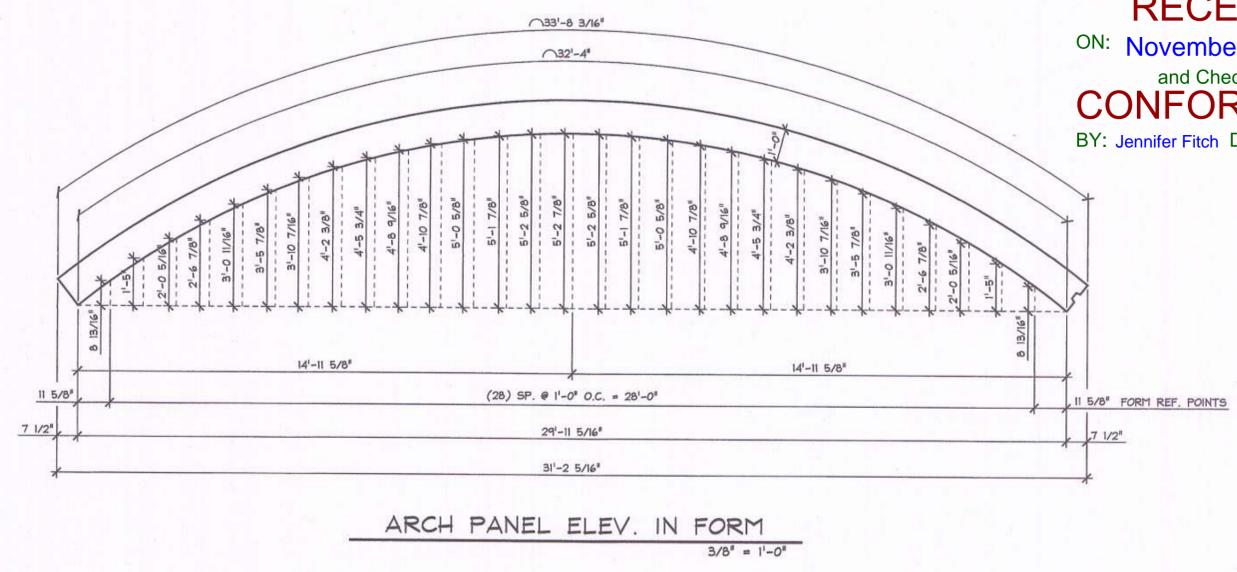
KEYWAY DETAIL  
1" = 1'-0"

**HANDLING NOTES:**

1. ARCH PANEL SHALL BE HANDLED USING (4) 8T x 10\"/>



YARD STORAGE DETAIL  
3/16" = 1'-0"



ARCH PANEL ELEV. IN FORM  
3/8" = 1'-0"

Vermont Agency of Transportation  
**RECEIVED**  
ON: November 27, 2013  
and Checked for  
**CONFORMANCE**  
BY: Jennifer Fitch DATE: 12/13/2013



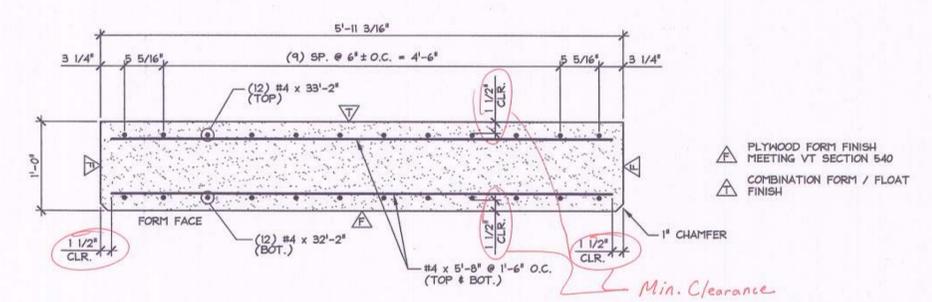
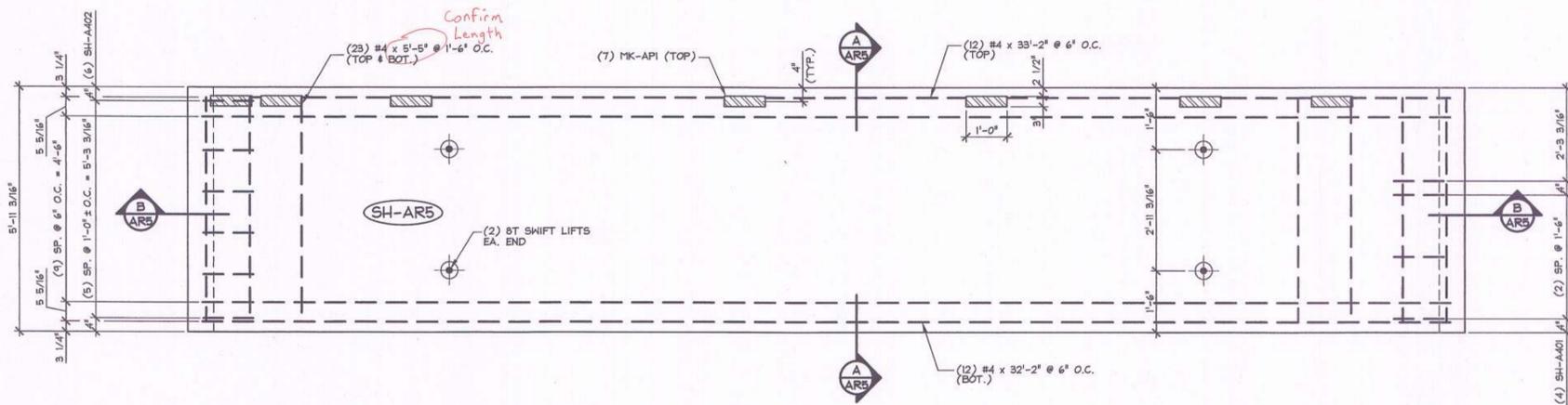
APPROVAL STAMP:  
J.P. CARRARA & SONS INC.  
Precast & Prestress Manufacturer  
244 DEXE STR., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010

STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF ADDISON		DATE: OCT. 9, 2013
TOWN OF MIDDLEBURY ROUTE NO. VT 125, EAST MIDDLEBURY GORGE BRIDGE NO.: PROJECT NO.: RS 0174(8)		SCALE: NOTED
PRECAST ARCH PANEL DETAILS		CHKD: DFTM: T.D. JOB NO: DWG. NO: AR4

SUBMITTED  
NOV 22 2013  
J.P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753

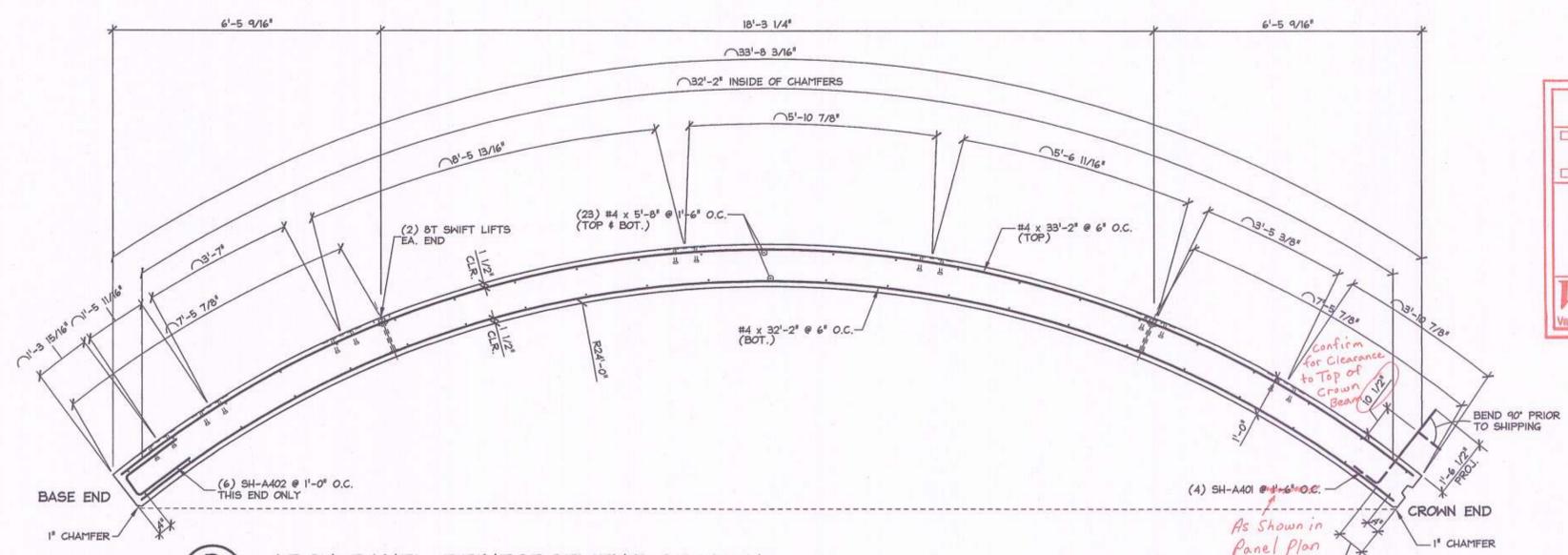
Shipping Strength Also  
4000 PSI @ RELEASE  
6500 PSI @ 28 DAYS  
MIX DESIGN: 445M NO DCI

MARK: SH-AR4	QTY.: 1	WT.: 14.93 T	VOL.: 7.37 cy
MATERIAL LIST / ARCH PANEL			
ITEM	MARK	DESCRIPTION	QTY.
1	#4 x 33'-2"	BLACK	12
2	#4 x 32'-2"	BLACK	12
3	#4 x 5'-8"	BLACK	46
4			
5	SH-A401	#4 BENT BAR BLACK	4
6	SH-A402	#4 BENT BAR BLACK	6
7	MK-API	3/8" x 3" x 1'-0" W/ (2) 5/8" x 3" HS (GALV.)	7
8			
9			
10		DAYTON 8T x 10" SHIFT LIFT ANCHORS (WITH RECESS PLUG)	4
11			
12			
13			
14			
15			



1 ARCH PANEL PLAN IN FORM W/ REINF.  
1/2" = 1'-0"

A ARCH PANEL REINFORCEMENT SECTION  
1/2" = 1'-0"



B ARCH PANEL REINFORCEMENT SECTION  
1/2" = 1'-0"

**SHOP DRAWING REVIEW**

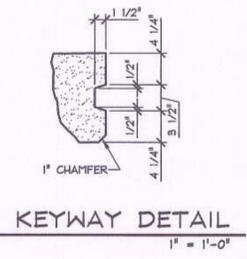
REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

REJECTED  REVISE AND RESUBMIT  FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

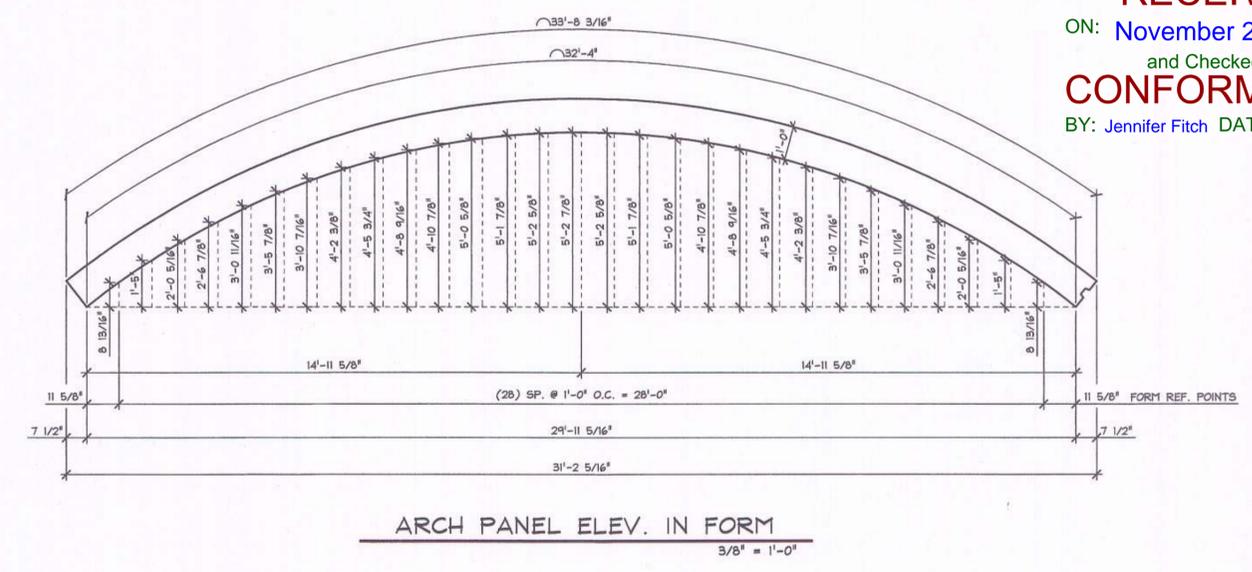
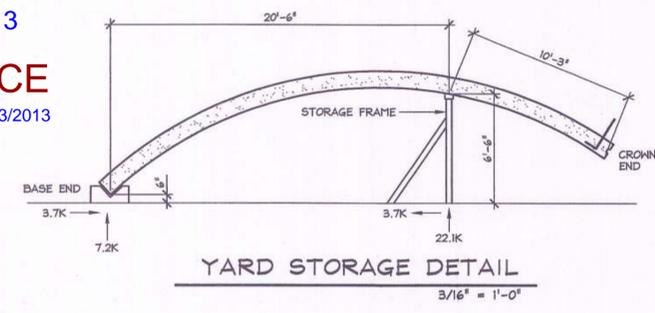
**VHB**  
Vermont Hanger Brackets, Inc.

Job Number: 5-7932 B-00  
Reviewed By: B.J. Massa  
Date: 12/12/13



**HANDLING NOTES:**

- ARCH PANEL SHALL BE HANDLED USING (4) 8T x 10" SL ANCHORS AT FIFTH POINTS.
- ARCH PANEL SHALL BE STRIPPED USING (4) 8T x 10" SL ANCHORS.
- FOR YARD STORAGE, ARCH PANEL SHALL BE LOWERED USING (4) 8T x 10" SL ANCHORS UNTIL PANEL CONTACTS THE STORAGE FRAME, PLACED 10'-3" FROM THE PANEL END AS SHOWN. THE BASE OF THE PANEL SHALL THEN BE LOWERED TO THE HARDWOOD SUPPORT.
- THE PANEL SHALL BE HOISTED FROM THE STORAGE POSITION IN THE REVERSE SEQUENCE SPECIFIED ABOVE.
- THE ARCH PANEL SHALL BE SHIPPED WITH A SUPPORT CONFIGURATION MATCHING THE "YARD STORAGE DETAIL" AND SHALL BE INSTALLED FOLLOWING THE ABOVE PROCEDURE, USING (4) 8T x 10" SL ANCHORS.



Vermont Agency of Transportation  
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BY: Jennifer Fitch DATE: 12/13/2013

Shipping Strength Also  
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6500 PSI @ 28 DAYS  
MIX DESIGN: 445M NO DCI

SUBMITTED  
NOV 22 2013  
J.P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753

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11			
12			
13			
14			
15			



APPROVAL STAMP:

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Precast & Prestress Manufacturer  
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010

**T. BUCK CONSTRUCTION**  
CONTRACTOR  
AUBURN, MAINE

**STATE OF VERMONT AGENCY OF TRANSPORTATION**  
COUNTY OF ADDISON

DATE: OCT. 9, 2013  
SCALE: NOTED

**TOWN OF MIDDLEBURY**  
ROUTE NO. VT 125, EAST MIDDLEBURY GORGE  
BRIDGE NO.: PROJECT NO.: RS 0174(B)

CHKD: DFTM: T.D.  
JOB NO:

**PRECAST ARCH PANEL DETAILS**  
DWG. NO: AR5