



Transmittal of Drawings

DATE: May 29, 2015

CSI Job #	C22312	Submittal No:	C22312 - Submittal-002217 - BC/CS-BOX CULVERT W/CS WW
		Revision No:	
Attn:	Mr. Jay Lafontaine (jlafontaine@gwtatro.com) Phone: (802) 644-8875; Fax: (802) 644-5020 Mr. Cody Marsh (cmarsh@gwtatro.com) Phone: (802) 644-8875; Fax: (802) 644-5020	Owner:	
Customer Name:	G W Tatro Construction Inc Jct Rtes 15 & 108, Jeffersonville, VT 05464	Engineer:	
Project:	VT/DOT Bridge Replacement - Roadway Improvements TH 3 FAS 0302 in RICHFORD, VT	Project No / Contract No(s):	BRF030229 /
		Federal Aid No(s):	

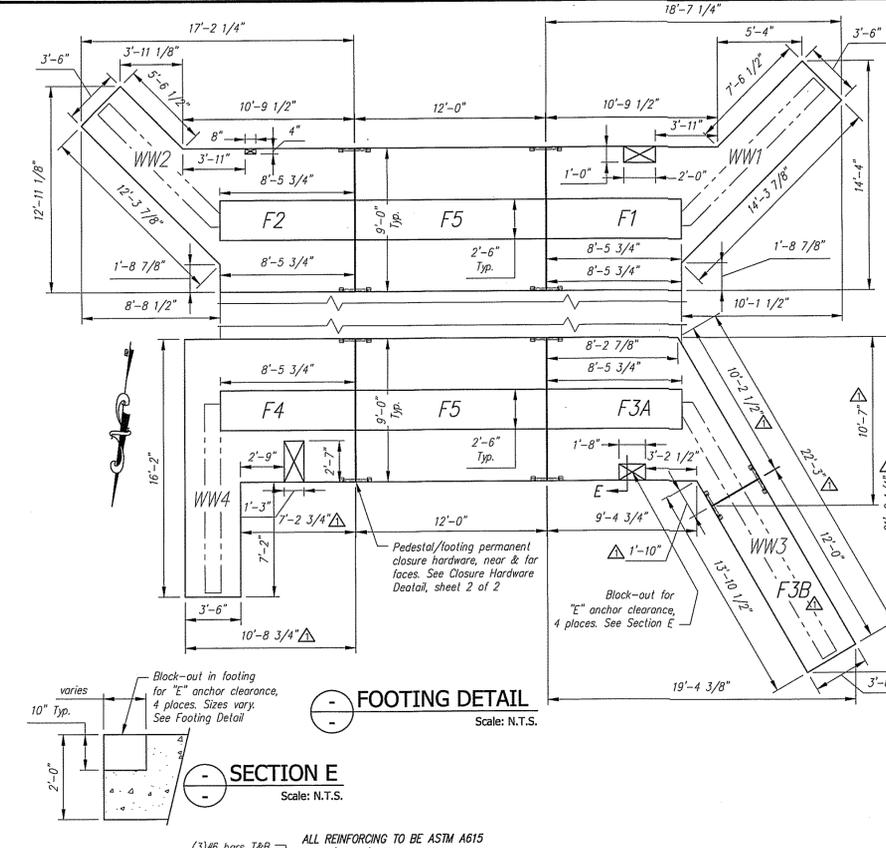
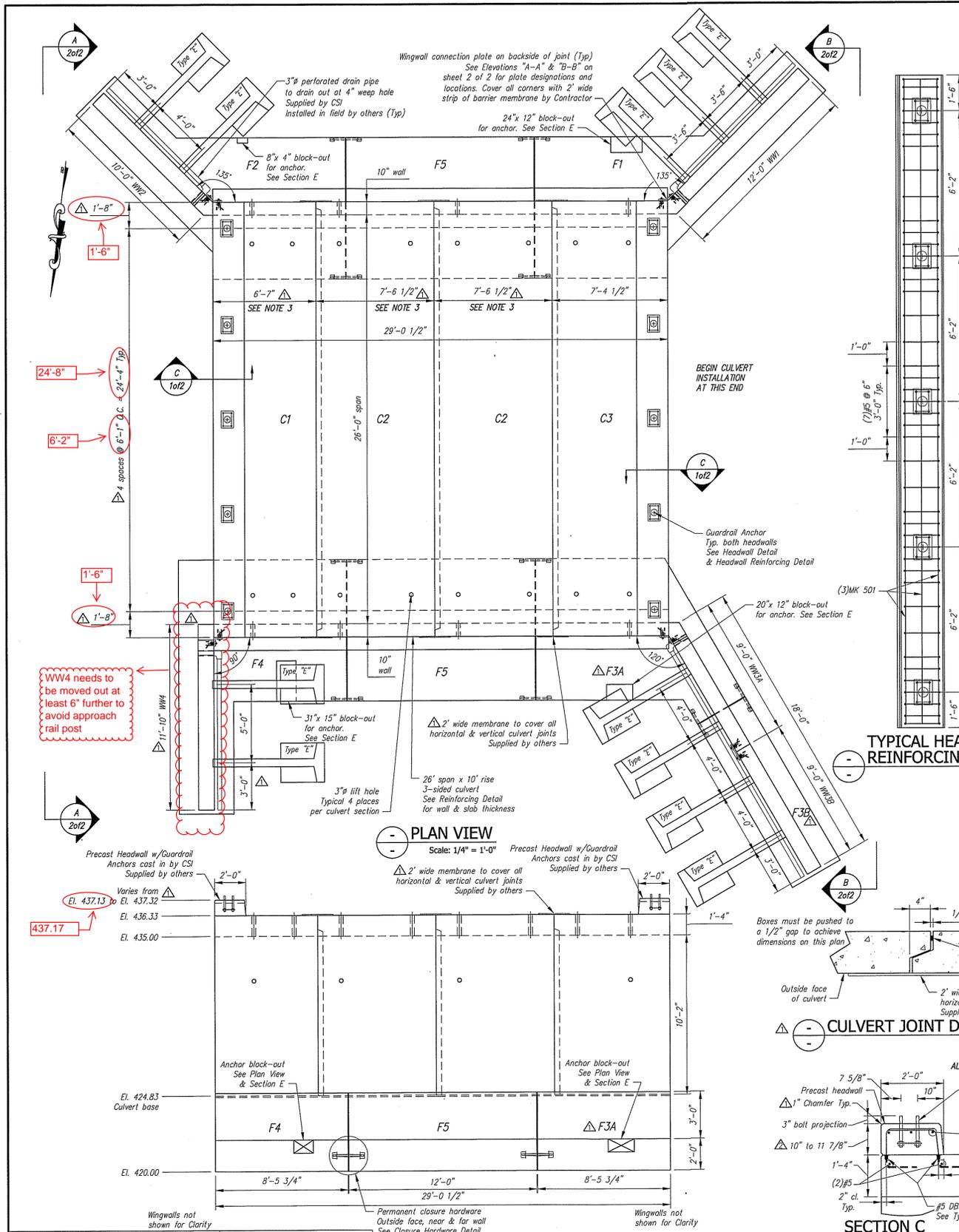
Reason for submittal: For your files and distribution	
Enclosed herein please find submittal for:	1 copy of shop drawings;1 copy of specification sheets;1 copy of structural calculations;1 copy of Layout drawing
LO1A-B, C1-F5	
After your review:	For approval return 1 copy for our files

Standard Submittal Remarks: The following is included: 1 copy of LO1A-B (Rev 2) LAYOUT, C1-F5 (Rev 2) SHOP, Calculations LO1, CSI Memo, Bolt Pocket Former, Closed Cell Gasket JS-00002, Dayton-Richmond DBS, Dayton-Richmond DI, F41-WINGWALL INSERT, P93 - P94 lift inserts - FL119, Silane-Siloxane CT-00005, Utility Anchors - Dayton,

Revision Remarks: 5/20/15 R1- Revised, moved WW4. added F3A,F3B, rev GA
5/29/15 R2- Revised, sect C-10" Dim was 9 1/2, exted WW even with HD

Respectfully submitted,
Concrete Systems, Inc.

Stivale Saavedra
(ssaavedra@csigroup.com), Extn: 471
Engineering Assistant

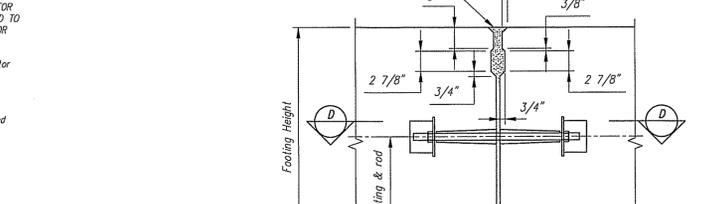
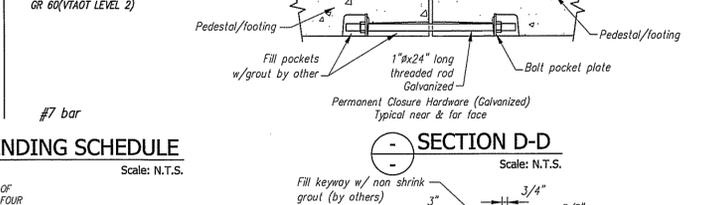
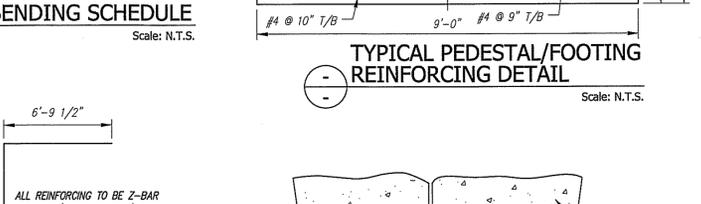
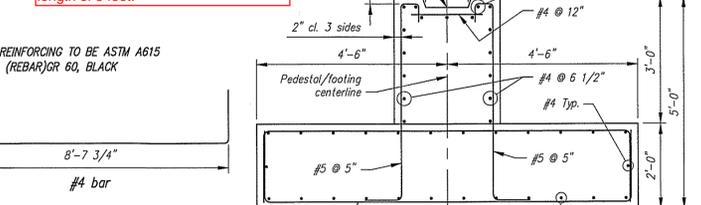
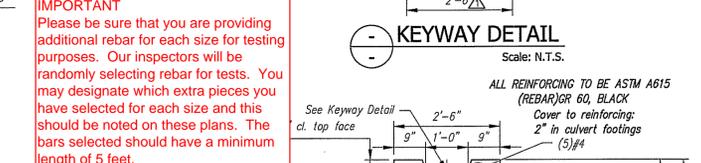


GENERAL NOTES:

- Reference Standards:
AASHTO "LRFD Bridge Design Specifications"
ASTM C1577
- Design Parameters:
Live load: HL-93
Earth Cover: 0.5' to 1.0'
Concrete: Design strength $f'_c = 5000$ psi
Unit weight = 150 pcf
Reinforcing: Pedestal/Footing - ASTM A615 (rebar) GR 60, plain (VTAOT Level I) Δ
Culvert/Headwall/Wingwall - Z-Bar (rebar), GR 60 (VTAOT Level II)
Soil: Minimum lateral pressure coefficient .25
Maximum lateral pressure coefficient .50
Cover to reinforcing: 2" Top of top slab & outside faces of walls
1 1/2" elsewhere u.o.
- Dimensions include a joint gap. Actual culvert piece length is 1/2" shorter (i.e. C2 = 7'-6").
- DBS are Dowel Bar Splicers and DI are Dowel Ins. Both are supplied by CSI. DI's are to be installed and cut/bent in the field by others as required.
- Headwall design taken from contract drawing S-360A.
- Water repellent by CSI on all exposed faces of culvert to 1' in, headwalls and Δ wingwalls. Water repellent to be Silane-Siloxane.
- Provide engineer a minimum fourteen (14) days notice prior to the start of fabrication and a detailed casting schedule.

CULVERT PIECE SCHEDULE (MX-FAS010USC30)

MARK	QTY	LENGTH	YDS	WEIGHT
C1	1	6.54	15.40	31.19 TONS
C2	2	7.50	15.20	30.78 TONS
C3	1	7.38	16.50	33.41 TONS
WW1	1	12.00	7.77	15.73 TONS
WW2	1	10.00	6.35	12.86 TONS
WW3A	1	9.00	6.03	12.21 TONS
WW3B	1	9.00	5.31	10.75 TONS
WW4	1	11.83	7.70	15.59 TONS
F1	1	18.58	11.37	23.02 TONS
F2	1	17.17	10.85	21.97 TONS
F3A	1	13.33	9.80	19.85 TONS
F3B	1	12.00	3.11	6.30 TONS
F4	1	16.17	11.27	22.82 TONS
F5	2	12.00	11.19	22.66 TONS



RECEIVED
MAY 29 2015
RESUBMIT Yes Rejected
DATE 06/03/15

CONTRACTOR'S CHECKLIST

Rev.	Date	DESCRIPTION	REVISIONS
7			
6			
5			
4			
3	28MAY2015	REVISED PER CUSTOMER REVIEW, SECTION C-10" DIM WAS 9 1/2", EXTENDED WINGWALLS EVEN WITH HDWALL	RY
2	14MAY2015	REVISED PER CUSTOMER REVIEW, MOVED WW4, ADDED F3A & F3B, REVISED GUARDRAIL ANCHORS	RY
1			

SECTION C TYPICAL HEADWALL DETAIL
Scale: N.T.S.

SECTION E
Scale: N.T.S.

WINGWALL FOOTING REINFORCING DETAIL
Scale: N.T.S.

BENDING SCHEDULE
Scale: N.T.S.

BENDING SCHEDULE
Scale: N.T.S.

TYPICAL HEADWALL REINFORCING DETAIL
Scale: N.T.S.

WINGWALL FOOTING REINFORCING DETAIL
Scale: N.T.S.

BENDING SCHEDULE
Scale: N.T.S.

TYPICAL PEDESTAL/FOOTING REINFORCING DETAIL
Scale: N.T.S.

BENDING SCHEDULE
Scale: N.T.S.

SECTION D-D
Scale: N.T.S.

CULVERT REINFORCING DETAIL
Scale: 3/8" = 1'-0"

BENDING SCHEDULE
Scale: N.T.S.

CULVERT SECTION LIFTING DETAIL
Scale: N.T.S.

CLOSURE HARDWARE DETAIL
Scale: N.T.S.

This drawing is based upon information provided from the following documents and/or sources:
 Engineer: STATE OF VT/AOT PROGRAM DEVELOPMENT
 Project No: STATE OF VT/AOT PROPOSED IMPROVEMENT BRIDGE PROJECT, TOWN OF RICHFORD
 Drawings: SHEETS 1,2,4,22,23,24 OF 36
 Specifications: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
 Other Sources: -----

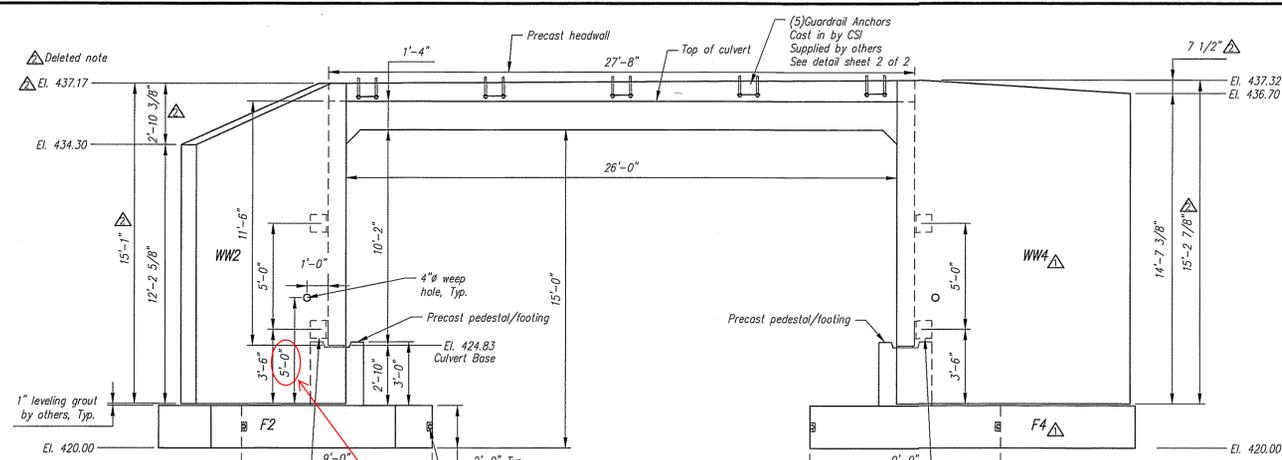
CSI
Concrete Systems Inc.
9 Commercial St., Hudson, NH, 03051
Phone 603-889-4165
Fax 603-889-2417

STATE AGENCY
VTTrans

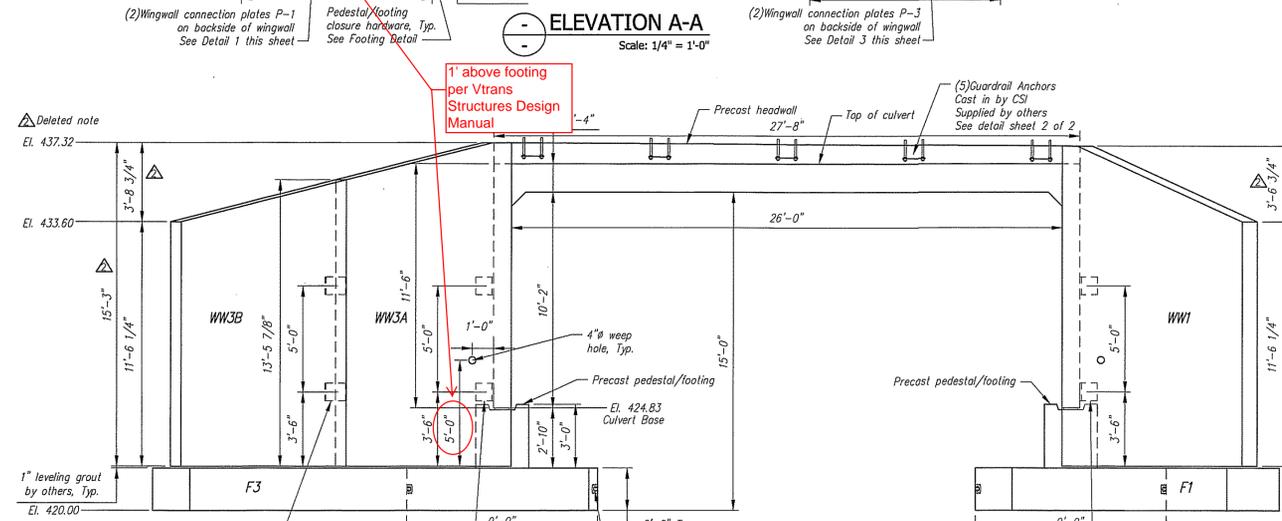
G.W. TATRO CONSTRUCTION, INC.
VT/AOT BRIDGE REPLACEMENT - ROAD IMPROVEMENT
RICHFORD, VT.

26' SPAN X 10' RISE 3-SIDED CULVERT
C22312-L01A

REV 2
SHEET 1 OF 2

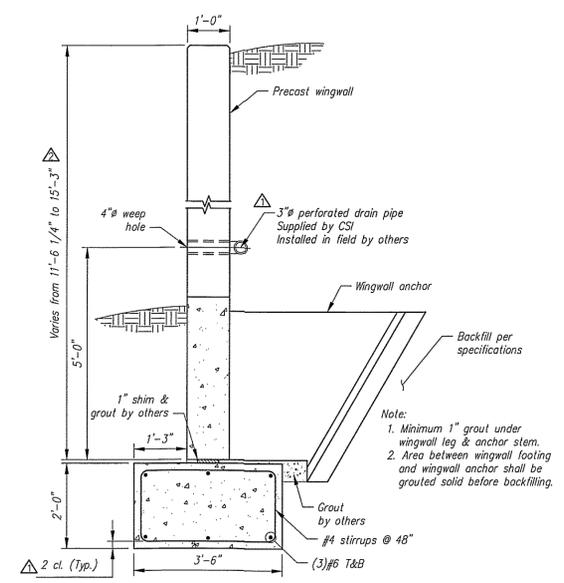


ELEVATION A-A
Scale: 1/4" = 1'-0"



ELEVATION B-B
Scale: 1/4" = 1'-0"

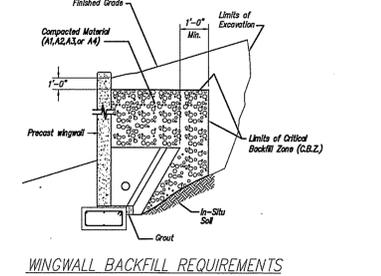
WINGWALL GENERAL NOTES:
 1. Reference standard: AASHTO LRFD Specifications
 2. Design Parameters:
 Nominal Bearing Resistance: 10 ksf (Footing width > 6ft.)
 Earth Cover: 1.0'±
 Concrete: Design strength $f'_c = 5000$ psi
 Unit weight = 150 pcf
 Reinforcing: Z-BAR(rebar), GR 60(VIAOT Level II)
 Soil: Minimum lateral pressure coefficient .25
 Maximum lateral pressure coefficient .50
 Cover to reinforcing: 2" u.n.o.
 3. The wingwalls have been designed for general site conditions. The project engineer shall be responsible for the structure's suitability to the existing site conditions and for the hydraulic evolution, including scour and confirmation of soil conditions.
 4. Prior to construction, contractor must verify all elevations shown through the engineer.



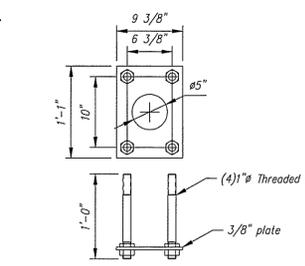
TYPICAL WINGWALL DETAILS
Scale: N.T.S.

Group Classification	A-1		A-3		A-2-4		A-2-5		A-2-6		A-2-7	
	A-1-a	A-1-b	A-3	A-3	A-2-4	A-2-5	A-2-6	A-2-6	A-2-7	A-2-7	A-2-7	A-2-7
Sieve Analysis, Percent Passing												
No. 10	50 max.	50 max.	51 min.	51 min.	35 max.							
No. 40	30 max.	30 max.	25 min.	25 min.	10 max.							
No. 200	15 max.	15 max.	10 max.	10 max.								
Characteristics of Fraction Passing No. 40												
Liquid Limit	6 max.	6 max.	N.P.	N.P.	40 max.	41 min.						
Plasticity Index					10 max.	10 max.	11 min.	11 min.	10 max.	11 min.	11 min.	11 min.
Usual Types of Significant Constituent Materials	Stone Fragments, Gravel & Sand	Stone Fragments, Gravel & Sand	Fine Sand	Fine Sand	Silty or Clayey Gravel and Sand	Silty or Clayey Gravel and Sand	Silty or Clayey Gravel and Sand	Silty or Clayey Gravel and Sand	Silty or Clayey Gravel and Sand	Silty or Clayey Gravel and Sand	Silty or Clayey Gravel and Sand	Silty or Clayey Gravel and Sand
General Rating as Subgrade			Excellent to Good	Excellent to Good								

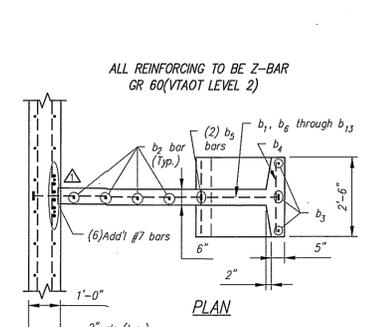
NOTES:
 1. BACKFILLING OPERATIONS WITHIN THE C.B.Z. SHALL BE PERFORMED IN LIFTS OF 8" OR LESS (LOOSE DEPTH).
 2. MAXIMUM DRY DENSITY SHALL BE DETERMINED BY AASHTO T-99 OR OTHER APPROVED METHOD.
 3. BACKFILL SHALL BE COMPACTED IN LAYERS UNTIL THE DENSITY IS NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY.



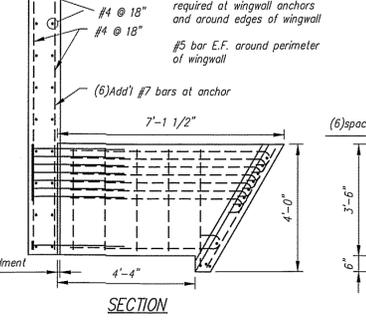
WINGWALL BACKFILL REQUIREMENTS



GUARDRAIL ANCHOR DETAIL
Scale: N.T.S.



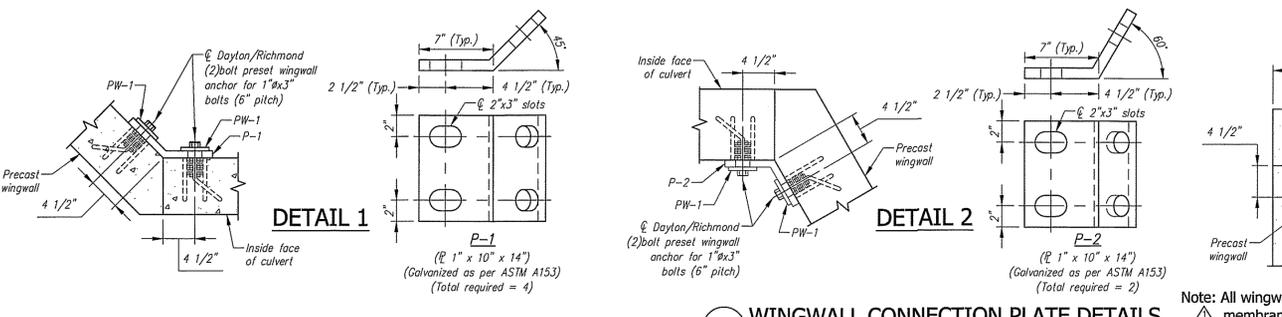
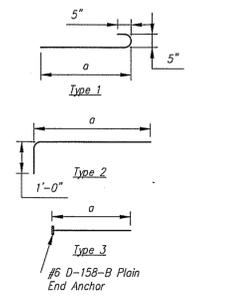
PLAN



SECTION

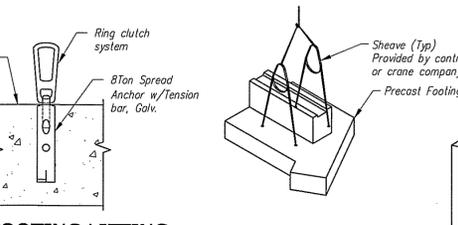
MARK	QTY.	SIZE	a	TYPE	LENGTH
b ₁	8	#5	3'-0"	3	
b ₂	4	#5		Str.	3'-2"
b ₃	4	#5		Str.	4'-3"
b ₄	11	#5		Str.	2'-2"
b ₅	2	#5	3'-8"	2	
b ₆	1	#5	4'-9"	1	
b ₇	1	#5	5'-4"	1	
b ₈	1	#5	5'-6"	1	
b ₉	1	#5	5'-8"	1	
b ₁₀	1	#5	5'-10"	1	
b ₁₁	1	#5	6'-0"	1	
b ₁₂	1	#5	6'-1"	1	
b ₁₃	1	#5	6'-3"	1	

Note: "Str." denotes straight bar. Standard clearance = 2"

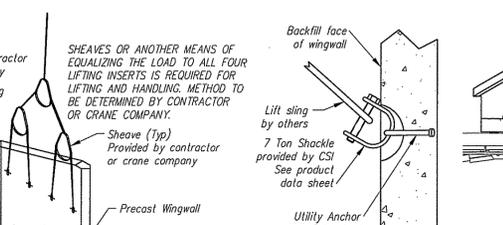


WINGWALL CONNECTION PLATE DETAILS
Scale: N.T.S.

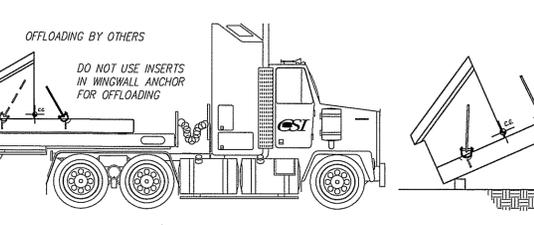
Note: All wingwall joints are covered with 2' wide strip of barrier membrane by others. See note, Sheet 1, Plan View.



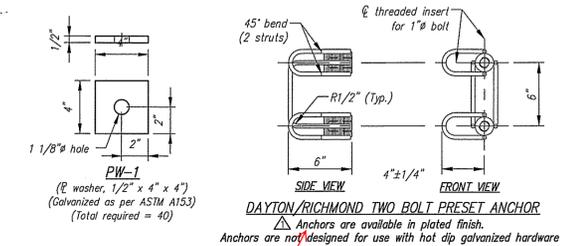
FOOTING LIFTING HARDWARE DETAIL
Scale: N.T.S.



WINGWALL LIFTING DETAIL
Scale: N.T.S.



WINGWALL OFFLOADING & TRIPPING DETAIL
Scale: N.T.S.



DAYTON/RICHMOND TWO BOLT PRESET ANCHOR
Anchors are not designed for use with hot dip galvanized hardware



DETAIL 4
Scale: N.T.S.

Contractor is to verify that all information shown on drawings has been thoroughly checked against field conditions. These anchors need to be galvanized. If these are not designed for use with hot dip galvanized hardware they should not be used with the plates that are galvanized per ASTM A153.

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 Project No: STATE OF VT/AOT PROPOSED IMPROVEMENT BRIDGE PROJECT, TOWN OF RICHFORD SHEETS 1,2,4,22,23,24 OF 36
 Drawings: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
 Other Sources: -----

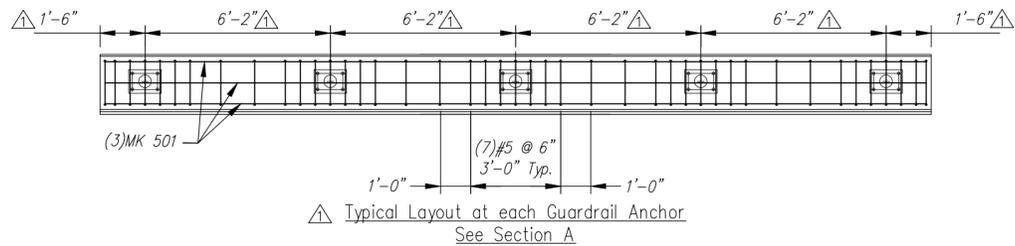
CSI
Concrete Systems Inc.
9 Commercial St., Hudson, NH 03051
Phone 603-889-4153
Fax 603-889-2417

STATE AGENCY
VTrans
Drawn by: R. YEAGER
Reviewed by: B. KOLAWOLE
Date: 31MAR2015

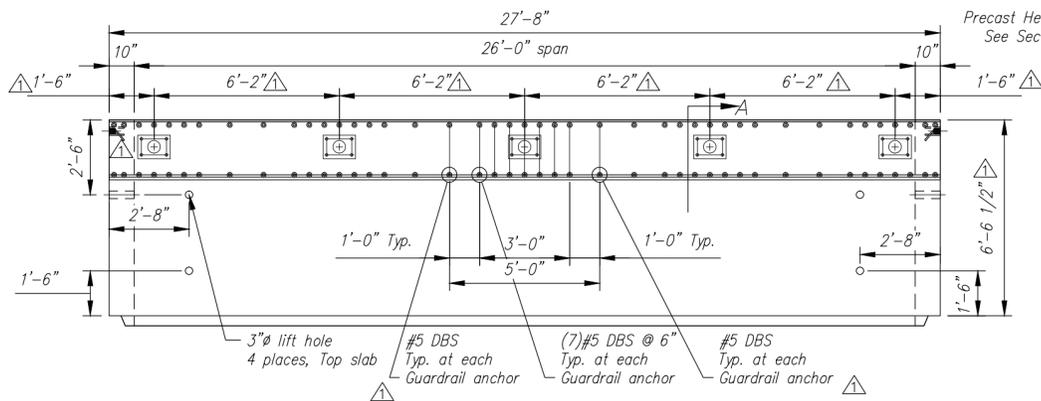
G.W. TATRO CONSTRUCTION, INC.
VT/AOT BRIDGE REPLACEMENT - ROAD IMPROVEMENT RICHFORD, VT.
26' SPAN X 10' RISE 3-SIDED CULVERT
Drawing No: C22312-01B
Quantity: 1
Project No: BRF030229
REV 2

RECEIVED
VERMONT DEPARTMENT OF TRANSPORTATION
NO. 77888
STRUCTURAL ENGINEER
MAY 29, 2015
Stamp for structural design only

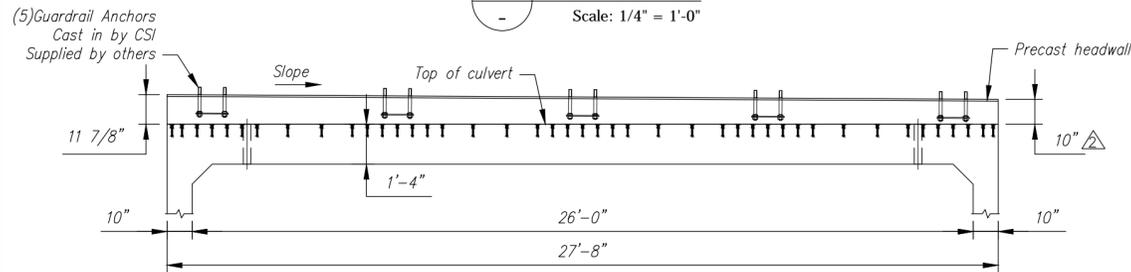
RESUBMIT Yes Rejected
BY Carolyn Carlson DATE 06/03/15



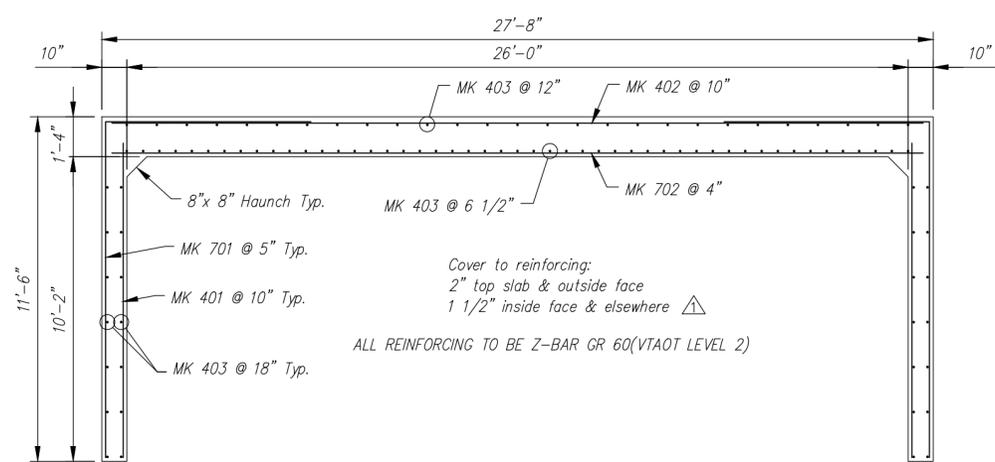
PLAN VIEW HEADWALL REINFORCING DETAIL
Scale: 1/4" = 1'-0"



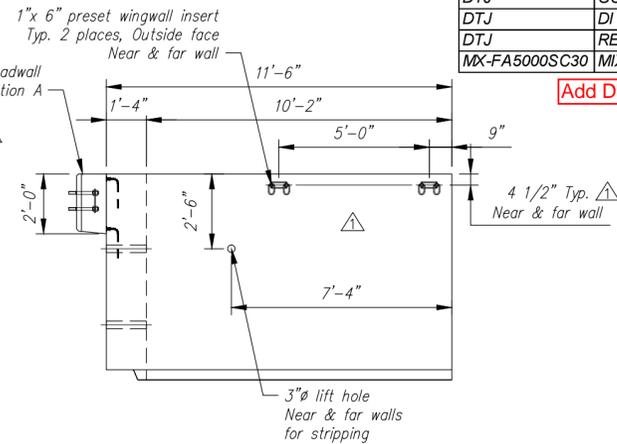
PLAN VIEW
Scale: 1/4" = 1'-0"



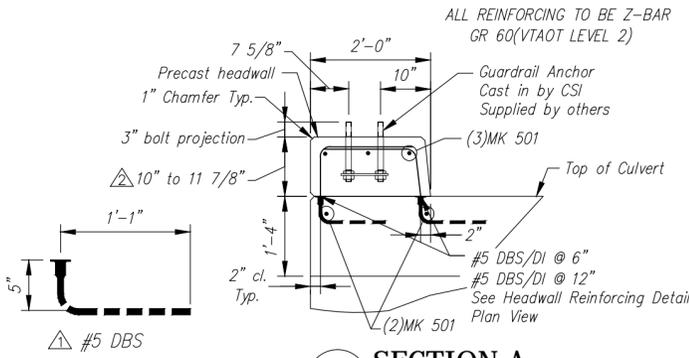
PARTIAL ELEVATION
Scale: 1/4" = 1'-0"



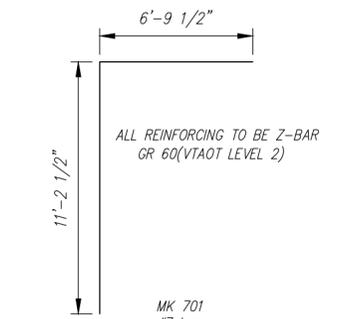
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Scale: N.T.S.



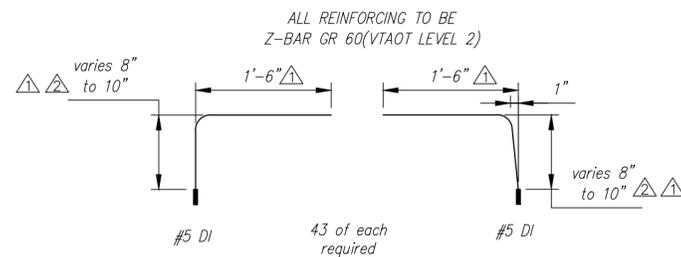
R. SIDE ELEVATION
Scale: 1/4" = 1'-0"



SECTION A
Scale: N.T.S.



BENDING SCHEDULE
Scale: N.T.S.



HEADWALL BENDING SCHEDULE
Scale: N.T.S.

This Silane is not on the Vtrans approved products list

QUANTITY = 1
WEIGHT = 31.19 TONS

C1 - BILL OF MATERIALS / EMBEDS				
CSI ID#	DESCRIPTION	QTY	UM	COMMENTS
CT-00005	CONSOLIDECK SALTGUARD (SILANE SILOXANE)	1.30	GA	
EM-0005A	1" X 6" PRESET WING INSERTS	4	EA	
EM-00033	3" FOAM CORE PVC	7	FT	
DTJ	DBSAE #5 X 18" Z-BAR GR 60 VTAOT LEVEL II	86	EA	DOWEL BAR SPLICER
DTJ	REBAR #4 Z-BAR GR 60 VTAOT LEVEL II	696	LB	
DTJ	REBAR #5 Z-BAR GR 60 VTAOT LEVEL II	57	LB	
DTJ	REBAR #7 Z-BAR GR 60 VTAOT LEVEL II	2281	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	13.62	CY	
C1 HEADWALL - BILL OF MATERIALS / EMBEDS				
DTJ	GUARDRAIL ANCHOR	5	EA	SUPPLIED BY OTHERS
DTJ	DI #5 X 28" Z-BAR GR 60 VTAOT LEVEL II	86	EA	DOWEL IN
DTJ	REBAR #5 Z-BAR GR 60 VTAOT LEVEL II	86	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	1.78	CY	

Why is there only one length, this does not seem like a piece that can be cut to fit in field

Add DBS bars

C1 Culvert Rebar Schedule		
MK	QTY	LENGTH
401 #4	16	10' - 6"
402 #4	8	27' - 0"
403 #4	104	6' - 4"
501 #5	2	27' - 4"
701 #7	32	18' - 0"
702 #7	20	27' - 0"

C1 HW Rebar Schedule		
MK	QTY	LENGTH
501 #5	3	27' - 4"

Culvert piece length is 1/2" shorter on shop drawing than on layout drawing. Layout dimension includes joint gap.

Vermont Agency of Transportation
RECEIVED
CK'D BY FDB OK'D BY HIS
May 29, 2015
RESUBMIT Yes Rejected
BY Carolyn Carlson DATE 06/03/15

Rev.	Date	Description
10		
9		
8		
7		
6		
5		
4		
3	28MAY2015	10" WAS 9 1/2" HDWALL BEND SCHED - 8" WAS 7 1/2"
2	14MAY2015	REVISED PER CUSTOMER REVIEW, MOVED WINGWALL ANCHOR, ADDED NOTE
1		

Contractor is to verify that all information shown on drawings has been thoroughly checked, complies with the contract documents and is adequate to meet the field conditions. Some dimensions and details may differ slightly from contract drawings to accommodate the manufacturing or design process. Approval of this drawing indicates that any deviation from the contract documents has been reviewed and found to be acceptable. Production will not commence until receipt of signed, approved shop drawings.

This drawing contains information proprietary to CONCRETE SYSTEMS, INC. This drawing is disclosed with the understanding that it will be retained in confidence and its use limited solely to the purpose for which it is disclosed. It is understood that no reproduction of this drawing is authorized without permission from CONCRETE SYSTEMS, INC. and that it will be returned to CONCRETE SYSTEMS, INC. upon request.

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 Specifications: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
 Other: -----

STATE AGENCY

Concrete Systems Inc.
 9 Commercial St., Hudson, NH, 03051
 Phone 603-889-4163
 Fax 603-889-2417

Drawn By R. YEAGER	Date 16APR2015
Reviewed By B. KOLAWOLE	Date
Approved By	Date

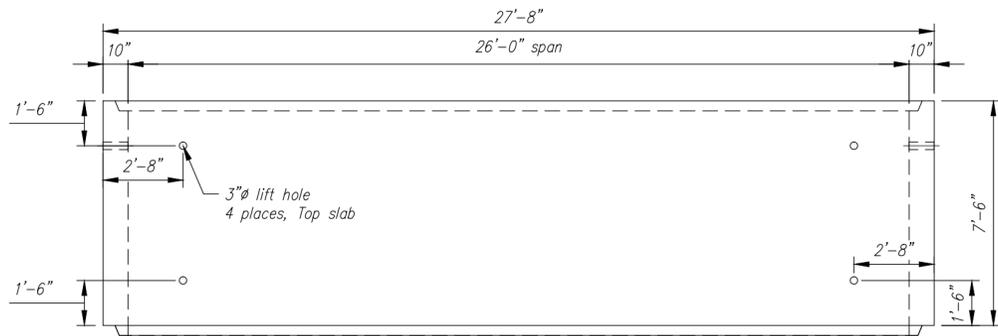
G.W. TATRO CONSTRUCTION, INC. VT/AOT BRIDGE REPLACEMENT- ROAD IMPROVEMENT RICHFORD, VT.	
C	SHOP DRAWING C1
Drawing No.	C22312-C1
Quantity: 1	Project No: BRF030229
SHEET 1 OF 14	

REVISIONS

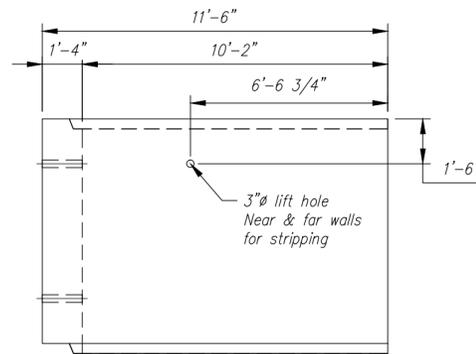
QUANTITY = 2
WEIGHT = 30.78 TONS

C2 - BILL OF MATERIALS / EMBEDS				
CSI ID#	DESCRIPTION	QTY	UM	COMMENTS
EM-00033	3" FOAM CORE PVC	7	FT	
JS-00002	1"X1"CLOSED NEOP GASKET	49	FT	AROUND BELL
DTJ	REBAR #4 Z-BAR GR 60 VTAOT LEVEL II	824	LB	
DTJ	REBAR #7 Z-BAR GR 60 VTAOT LEVEL II	2667	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	15.2	CY	

C2 Culvert Rebar Schedule		
MK	QTY	LENGTH
401 #4	20	10' - 6"
402 #4	10	27' - 0"
403 #4	104	7' - 3"
701 #7	38	18' - 0"
702 #7	23	27' - 0"

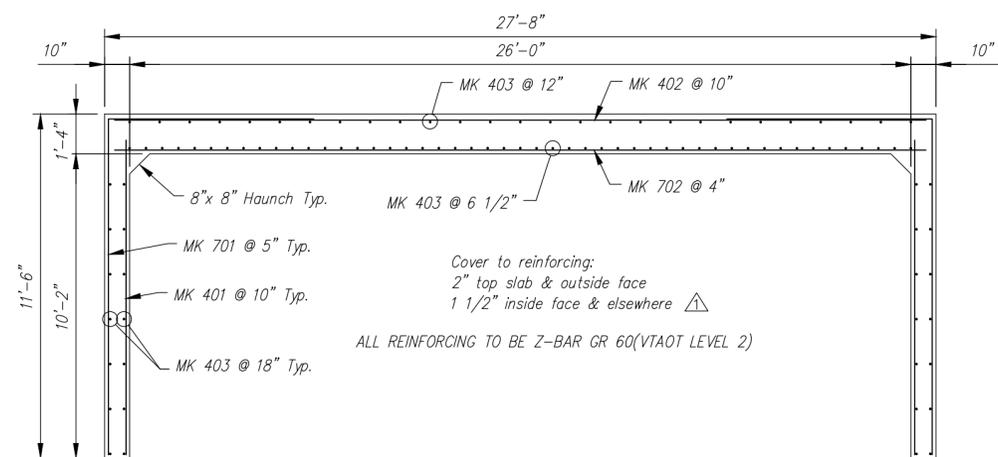


PLAN VIEW
Scale: 1/4" = 1'-0"

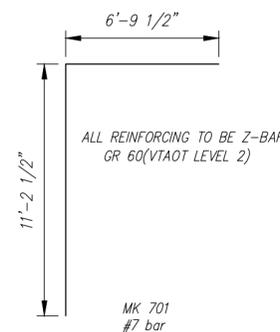


R. SIDE ELEVATION
Scale: 1/4" = 1'-0"

△ Culvert piece length is 1/2" shorter on shop drawing than on layout drawing. Layout dimension includes joint gap.



REINFORCING DETAIL
Scale: N.T.S.



BENDING SCHEDULE
Scale: N.T.S.

Vermont Agency of Transportation
RECEIVED

CK'D BY FDB OK'D BY HIS

May 29, 2015

RESUBMIT Yes Rejected _____
BY Carolyn Carlson DATE 06/03/15

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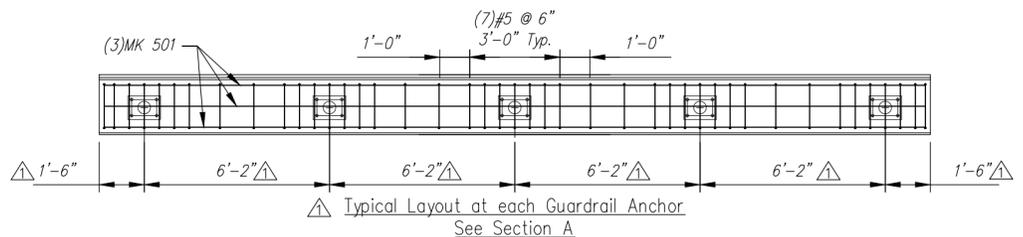
This drawing contains information proprietary to CONCRETE SYSTEMS, INC. This drawing is disclosed with the understanding that it will be retained in confidence and its use limited solely to the purpose for which it is disclosed. It is understood that no reproduction of this drawing is authorized without permission from CONCRETE SYSTEMS, INC. and that it will be returned to CONCRETE SYSTEMS, INC. upon request.

This drawing is based upon information provided from the following documents and/or sources:
 Engineer: STATE OF VT/AOT PROGRAM DEVELOPMENT
 Project No: -----
 Drawings: STATE OF VT/AOT PROPOSED IMPROVEMENT BRIDGE PROJECT, TOWN OF RICHFORD SHEETS 1,2,4,22,23,24 OF 36
 Specifications: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
 Other: -----

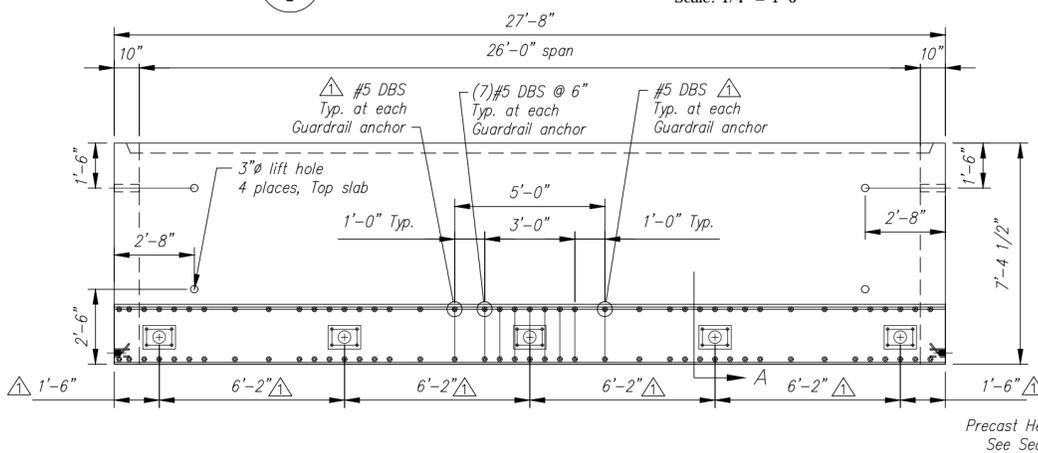
 Concrete Systems Inc. 9 Commercial St., Hudson, NH, 03051 Phone 603-889-4163 Fax 603-889-2417	STATE AGENCY	
	 Working to Get You There <small>Member since 1998</small>	
	Drawn By R. YEAGER	Date 16APR2015
	Reviewed By B. KOLAWOLE	Date _____

G.W. TATRO CONSTRUCTION, INC.	
VT/AOT BRIDGE REPLACEMENT— ROAD IMPROVEMENT RICHFORD, VT.	
Drawing No. C22312-C2	REV 1
	Quantity: 2 Project No: BRF030229
SHEET 2 OF 14	

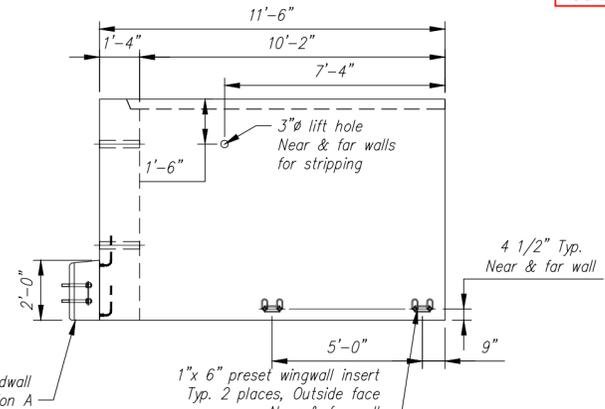
Rev.	Date	DESCRIPTION	BY
1	14MAY2015	REVISED PER CUSTOMER REVIEW, ADDED NOTE	RY
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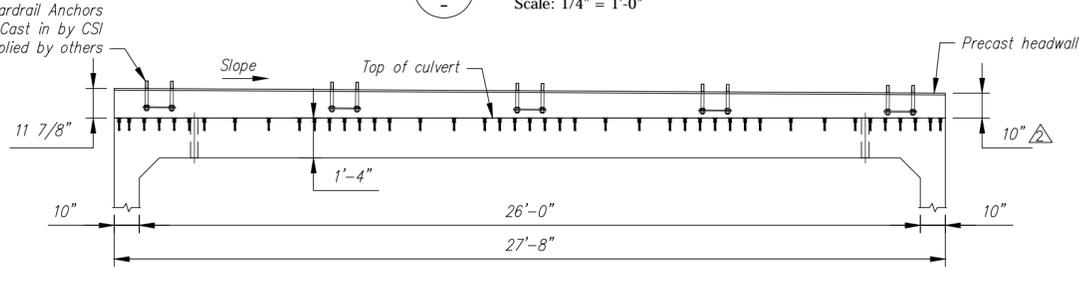
PLAN VIEW HEADWALL REINFORCING DETAIL
Scale: 1/4" = 1'-0"



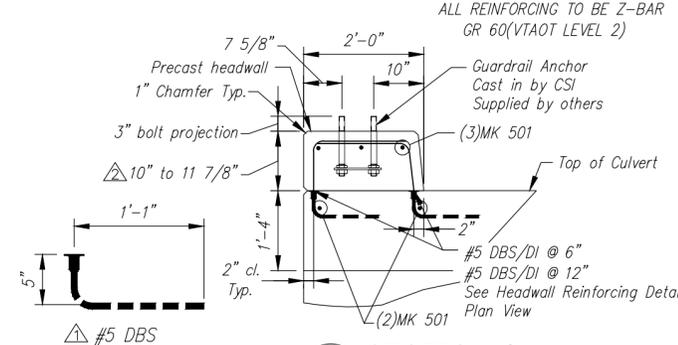
PLAN VIEW
Scale: 1/4" = 1'-0"



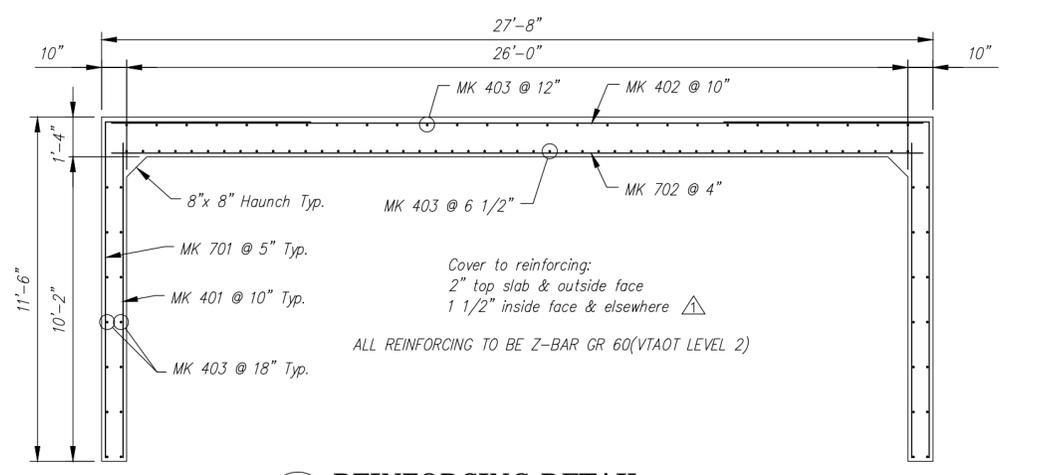
R. SIDE ELEVATION
Scale: 1/4" = 1'-0"



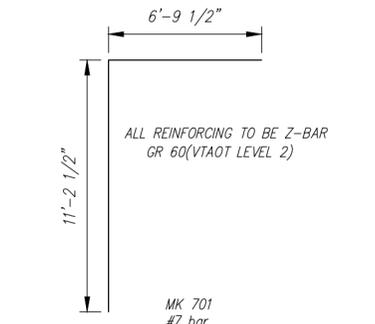
PARTIAL ELEVATION
Scale: 1/4" = 1'-0"



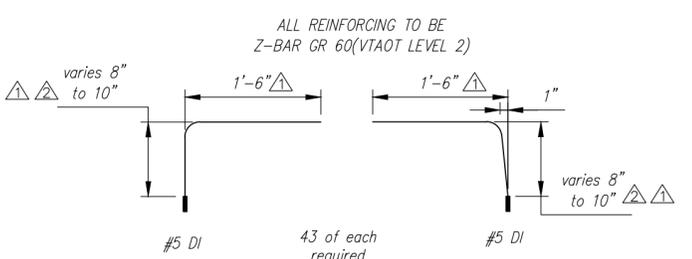
SECTION A
Scale: N.T.S.



REINFORCING DETAIL
Scale: N.T.S.



BENDING SCHEDULE
Scale: N.T.S.



HEADWALL BENDING SCHEDULE
Scale: N.T.S.

C3 - BILL OF MATERIALS / EMBEDS				
CSI ID#	DESCRIPTION	QTY	UM	COMMENTS
CT-00005	CONSOLIDATECK SALTGUARD (SILANE SILOXANE)	1.30	GA	
EM-0005A	1" X 6" PRESET WING INSERTS	4	EA	
EM-00033	3" FOAM CORE PVC	7	FT	
JS-00002	1"X1" CLOSED NEOP GASKET	49	FT	AROUND BELL
DTJ	DBSAE #5 X 18" Z-BAR GR 60 VTAOT LEVEL II	86	EA	DOWEL BAR SPLICER
DTJ	REBAR #4 Z-BAR GR 60 VTAOT LEVEL II	784	LB	
DTJ	REBAR #5 Z-BAR GR 60 VTAOT LEVEL II	57	LB	
DTJ	REBAR #7 Z-BAR GR 60 VTAOT LEVEL II	2539	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	14.72	CY	
C3 HEADWALL - BILL OF MATERIALS / EMBEDS				
DTJ	GUARDRAIL ANCHOR	5	EA	SUPPLIED BY OTHERS
DTJ	DI #5 X 28" Z-BAR GR 60 VTAOT LEVEL II	86	EA	DOWEL IN
DTJ	REBAR #5 Z-BAR GR 60 VTAOT LEVEL II	86	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	1.78	CY	

Why is there only one length, this does not seem like a piece that can be cut to fit in field

Add DBS bars

C3 Culvert Rebar Schedule		
MK	QTY	LENGTH
401 #4	18	10' - 6"
402 #4	9	27' - 0"
403 #4	104	7' - 1.5"
501 #5	2	27' - 4"
701 #7	36	18' - 0"
702 #7	22	27' - 0"

C3 HW Rebar Schedule		
MK	QTY	LENGTH
501 #5	3	27' - 4"

QUANTITY = 1
WEIGHT = 33.41 TONS

Vermont Agency of Transportation
RECEIVED
CK'D BY FDB OK'D BY HIS
May 29, 2015
RESUBMIT Yes Rejected
BY Carolyn Carlson DATE 06/03/15

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Specifications: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
Other: -----

CSI
Concrete Systems Inc.
9 Commercial St., Hudson, NH, 03051
Phone 603-889-4163
Fax 603-889-2417

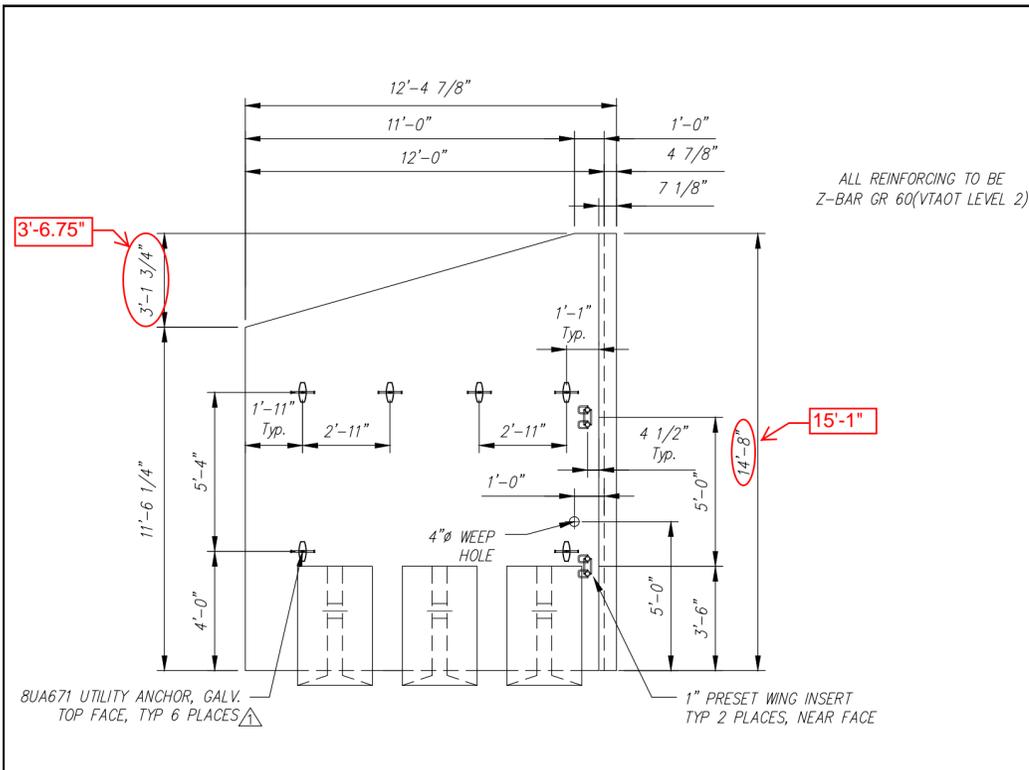
STATE AGENCY
VTrans
Working to Get You There
Drawn By: R. YEAGER Date: 16APR2015
Reviewed By: B. KOLAWOLE Date: -----
Approved By: ----- Date: -----

G.W. TATRO CONSTRUCTION, INC.
VT/AOT BRIDGE REPLACEMENT— ROAD IMPROVEMENT
RICHFORD, VT.
SHOP DRAWING C3
Drawing No. C22312-C3
Quantity: 1 Project No: BRF030229 SHEET 3 OF 14
REV 2

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1
Rev. Date

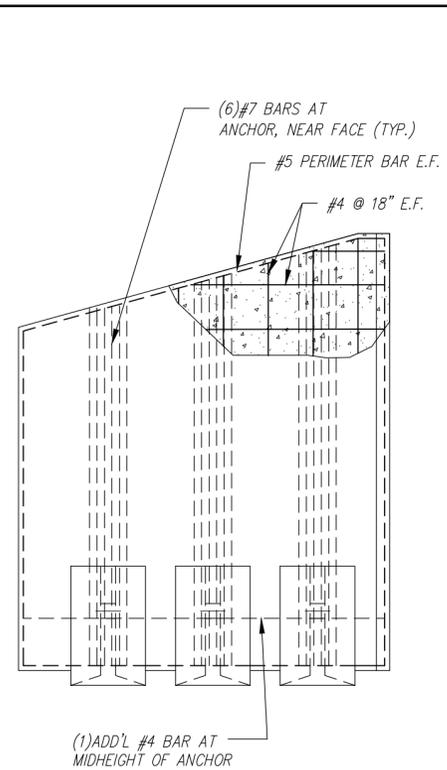
RY
Date

DESCRIPTION
REVISIONS



PLAN VIEW
Scale: 1/4" = 1'-0"

ALL EXPOSED EDGES OF CONCRETE TO RECEIVE 1" CHAMFER

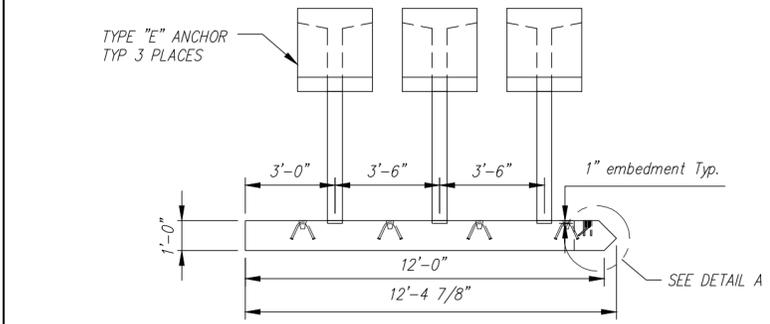


REINFORCING DETAIL
Scale: 1/4" = 1'-0"

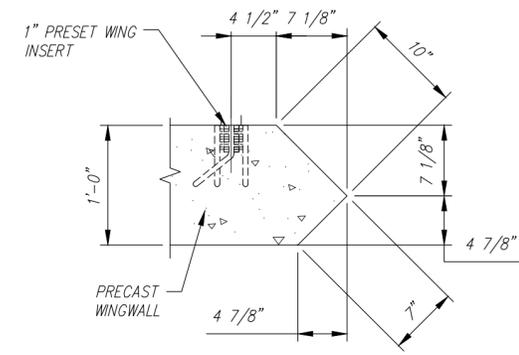
This Silane is not on the Vtrans approved products list

QUANTITY = 1
WEIGHT = 15.65 TONS

WW1 - BILL OF MATERIALS / EMBEDS			
CSI ID#	DESCRIPTION	QTY	UM COMMENTS
CSANC-E	CON/SPAN WINGWALL ANCHOR (E)	3	EA
CT-00005	CONSOLIDECK SALTGUARD (SILANE SILOXANE)	1.20	GA
EM-00034	4" FOAM CORE PVC	1	FT
EM-0005A	1" X 6" PRESET WING INSERT	2	EA
EM-00115	UTILITY ANCHOR #8UA671-GALVANIZED	6	EA
DTJ	REBAR #4 Z-BAR GR 60 VTAOT LEVEL II	331	LB
DTJ	REBAR #5 Z-BAR GR 60 VTAOT LEVEL II	105	LB
DTJ	REBAR #7 Z-BAR GR 60 VTAOT LEVEL II	521	LB
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	6.02	CY



FRONT ELEVATION
Scale: 1/4" = 1'-0"



DETAIL A
Scale: N.T.S.

Rev.	Date	Description	By
1	14MAY2015	REVISED PER CUSTOMER REVIEW	RY
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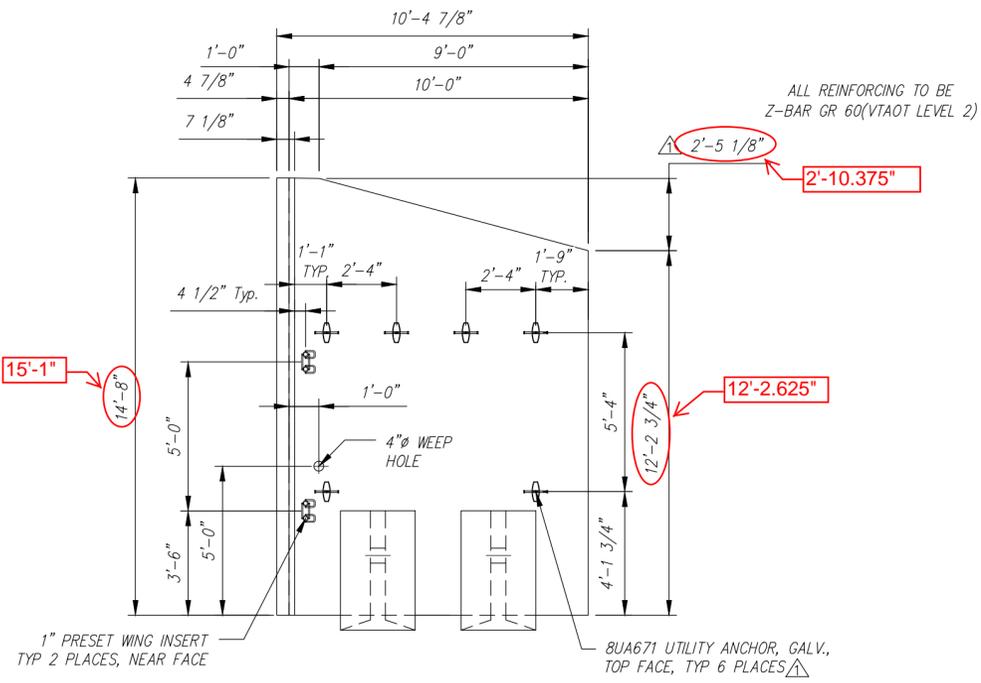
Vermont Agency of Transportation
RECEIVED
CK'D BY FDB OK'D BY HIS
May 29, 2015
RESUBMIT Yes Rejected Rejected
BY Carolyn Carlson DATE 06/03/15

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Project No: -----
Drawings: STATE OF VT/AOT PROPOSED IMPROVEMENT BRIDGE PROJECT, TOWN OF RICHFORD SHEETS 1,2,4,22,23,24 OF 36
Specifications: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
Other: -----

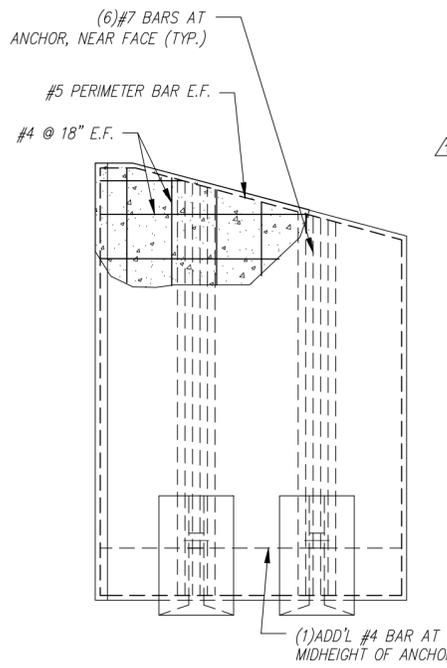
CSI
Concrete Systems Inc.
9 Commercial St., Hudson, NH, 03051
Phone 603-889-4163
Fax 603-889-2417

STATE AGENCY	
Drawn By B. SKELTON/RY	Date 04/17/2015
Reviewed By B. KOLAWOLE	Date
Approved By	Date

G.W. TATRO CONSTRUCTION, INC.	
VT/AOT BRIDGE REPLACEMENT— ROAD IMPROVEMENT RICHFORD, VT.	
Drawing No. C22312-WW1	REV 1
Quantity: 1	Project No: BRF030229
SHEET 4 OF 14	



PLAN VIEW
Scale: 1/4" = 1'-0"

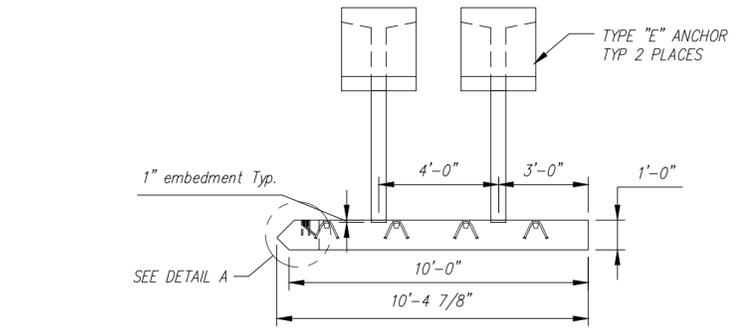


REINFORCING DETAIL
Scale: 1/4" = 1'-0"

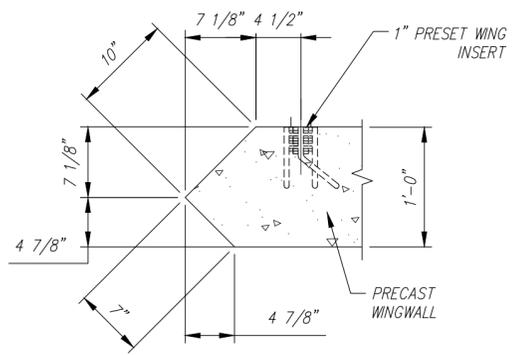
QUANTITY = 1
WEIGHT = 12.94 TONS

This Silane is not on the Vtrans approved products list

WW2 - BILL OF MATERIALS / EMBEDS			
CSI ID#	DESCRIPTION	QTY	UM COMMENTS
CSANC-E	CON/SPAN WINGWALL ANCHOR (E)	2	EA
CT-00005	CONSOLIDECK SALTGUARD (SILANE SILOXANE)	1.10	GA
EM-00034	4" FOAM CORE PVC	1	FT
EM-0005A	1" X 6" PRESET WING INSERT	2	EA
EM-00115	UTILITY ANCHOR #8UA671-GALVANIZED	6	EA
DTJ	REBAR #4 Z-BAR GR 60 VTAOT LEVEL II	282	LB
DTJ	REBAR #5 Z-BAR GR 60 VTAOT LEVEL II	98	LB
DTJ	REBAR #7 Z-BAR GR 60 VTAOT LEVEL II	343	LB
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	5.25	CY



FRONT ELEVATION
Scale: 1/4" = 1'-0"



DETAIL A
Scale: N.T.S.

ALL EXPOSED EDGES OF CONCRETE TO RECEIVE 1" CHAMFER

Vermont Agency of Transportation
RECEIVED

CK'D BY FDB OK'D BY HIS
May 29, 2015
RESUBMIT Yes Rejected
BY Carolyn Carlson DATE 06/03/15

Rev.	Date	DESCRIPTION	REVISIONS
10			
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1	14MAY2015	REVISED PER CUSTOMER REVIEW	RY
			BY

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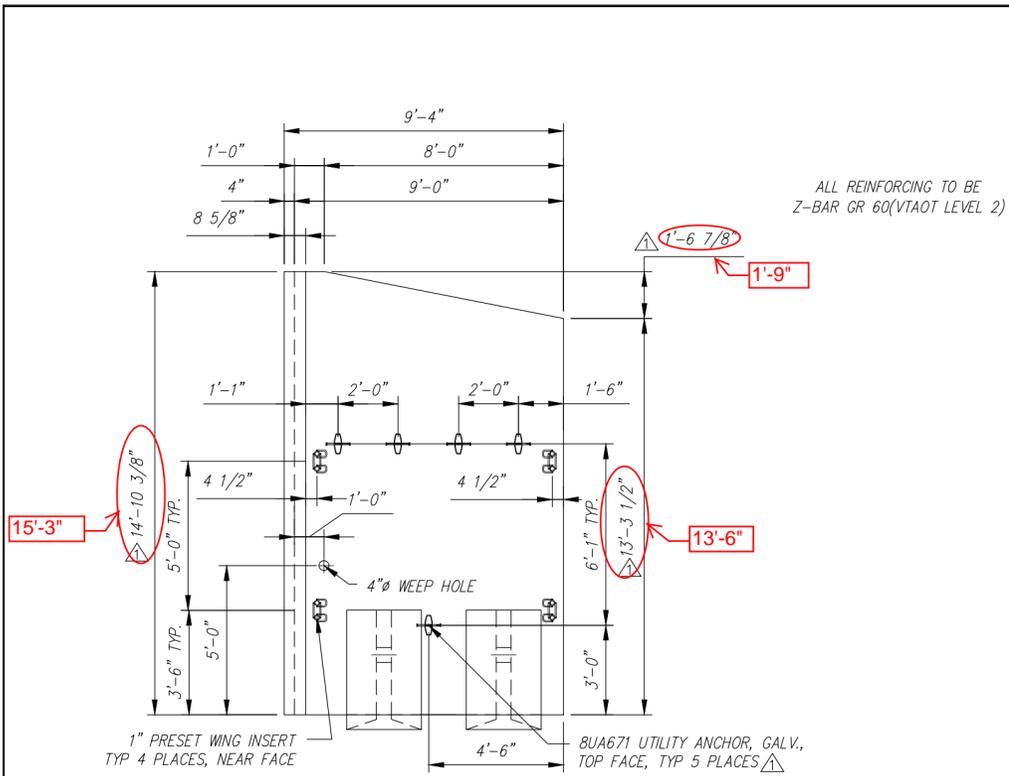
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 Project No: -----
 Drawings: STATE OF VT/AOT PROPOSED IMPROVEMENT BRIDGE PROJECT, TOWN OF RICHFORD SHEETS 1,2,4,22,23,24 OF 36
 Specifications: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
 Other: -----

STATE AGENCY

Concrete Systems Inc.
 9 Commercial St., Hudson, NH, 03051
 Phone 603-889-4163
 Fax 603-889-2417

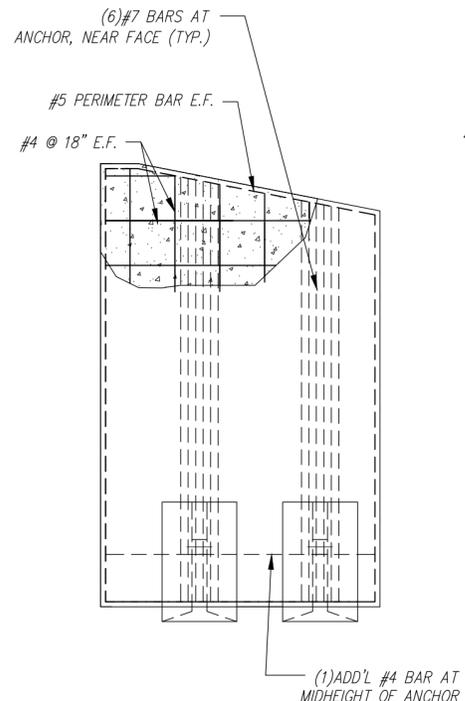
Drawn By	Date
B. SKELTON/RY	04/17/2015
Reviewed By	Date
B. KOLAWOLE	
Approved By	Date

G.W. TATRO CONSTRUCTION, INC. VT/AOT BRIDGE REPLACEMENT— ROAD IMPROVEMENT RICHFORD, VT.	
Drawing No.	SHOP DRAWING WW2 C22312-WW2
Quantity:	1
Project No:	BRF030229
SHEET	5 OF 14



PLAN VIEW
Scale: 1/4" = 1'-0"

ALL EXPOSED EDGES OF CONCRETE TO RECEIVE 1" CHAMFER

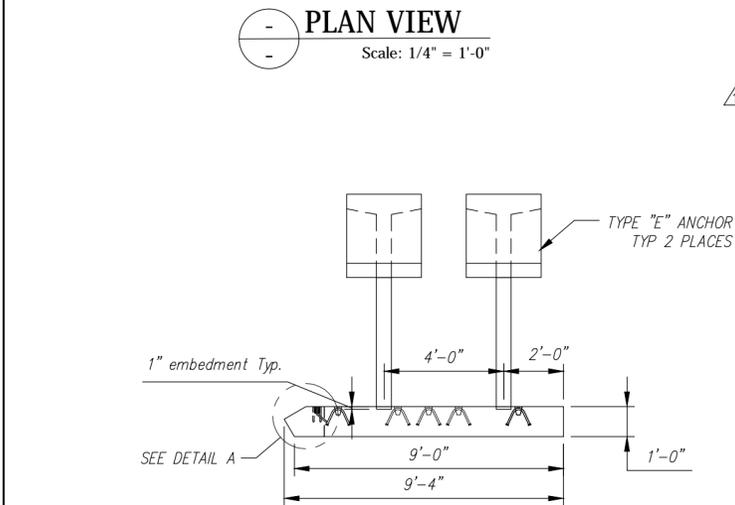


REINFORCING DETAIL
Scale: 1/4" = 1'-0"

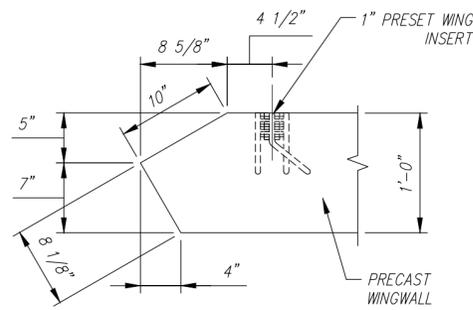
This Silane is not on the Vtrans approved products list

QUANTITY = 1
WEIGHT = 12.23 TONS

WW3A - BILL OF MATERIALS / EMBEDS				
CSI ID#	DESCRIPTION	QTY	UM	COMMENTS
CSANC-E	CON/SPAN WINGWALL ANCHOR (E)	2	EA	
CT-00005	CONSOLIDECK SALTGUARD (SILANE SILOXANE)	1.00	GA	
EM-00034	4" FOAM CORE PVC	1	FT	
EM-0005A	1" X 6" PRESET WING INSERT	4	EA	
EM-00115	UTILITY ANCHOR #8UA671-GALVANIZED	5	EA	
DTJ	REBAR #4 Z-BAR GR 60 VTAOT LEVEL II	248	LB	
DTJ	REBAR #5 Z-BAR GR 60 VTAOT LEVEL II	95	LB	
DTJ	REBAR #7 Z-BAR GR 60 VTAOT LEVEL II	350	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	4.90	CY	



FRONT ELEVATION
Scale: 1/4" = 1'-0"



DETAIL A
Scale: N.T.S.

Rev.	Date	DESCRIPTION	BY
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1	14MAY2015	REVISED PER CUSTOMER REVIEW	RY

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Vermont Agency of Transportation
RECEIVED

CK'D BY FDB OK'D BY HIS
May 29, 2015
RESUBMIT Yes Rejected _____
BY Carolyn Carlson DATE 06/03/15

This drawing is based upon information provided from the following documents and/or sources:
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Project No: -----
Drawings: STATE OF VT/AOT PROPOSED IMPROVEMENT BRIDGE PROJECT, TOWN OF RICHFORD SHEETS 1,2,4,22,23,24 OF 36
Specifications: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
Other: -----

CSI
Concrete Systems Inc.
9 Commercial St., Hudson, NH, 03051
Phone 603-889-4163
Fax 603-889-2417

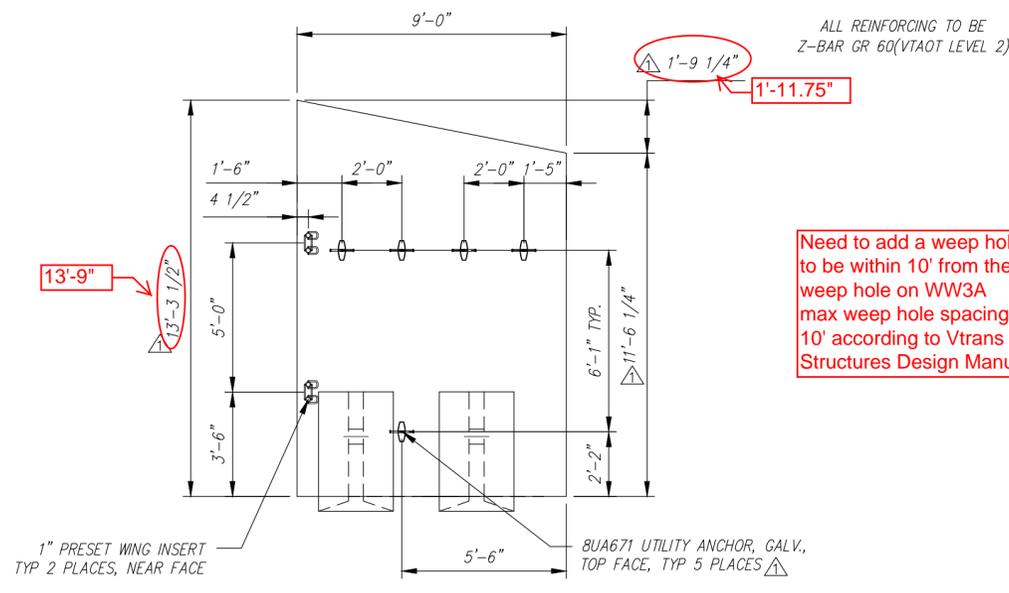
STATE AGENCY
VTrans
Working to Get You There
Drawn By: B. SKELTON/RY Date: 04/17/2015
Reviewed By: B. KOLAWOLE Date: _____
Approved By: _____ Date: _____

G.W. TATRO CONSTRUCTION, INC.
VT/AOT BRIDGE REPLACEMENT— ROAD IMPROVEMENT
RICHFORD, VT.
Drawing No. SHOP DRAWING WW3A
C22312--WW3A
Quantity: 1 Project No: BRF030229 SHEET 6 OF 14
REV 1

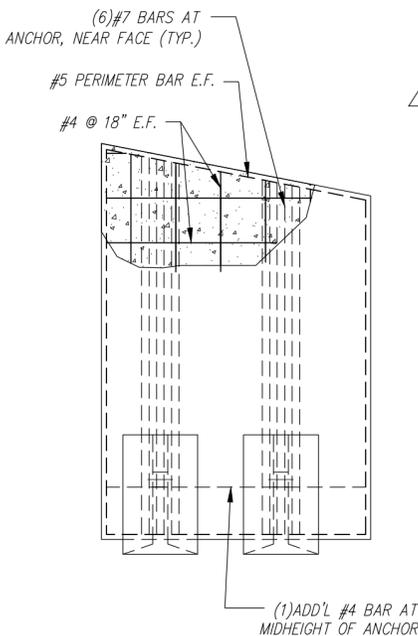
This Silane is not on the Vtrans approved products list

QUANTITY = 1
WEIGHT = 10.67 TONS

WW3B - BILL OF MATERIALS / EMBEDS				
CSI ID#	DESCRIPTION	QTY	UM	COMMENTS
CSANC-E	CON/SPAN WINGWALL ANCHOR (E)	2	EA	
CT-00005	CONSOLIDECK SALTGUARD (SILANE SILOXANE)	1.00	GA	
EM-00034	4" FOAM CORE PVC	1	FT	
EM-0005A	1" X 6" PRESET WING INSERT	2	EA	
EM-00115	UTILITY ANCHOR #8UA671-GALVANIZED	5	EA	
DTJ	REBAR #4 Z-BAR GR 60 VTAOT LEVEL II	206	LB	
DTJ	REBAR #5 Z-BAR GR 60 VTAOT LEVEL II	95	LB	
DTJ	REBAR #7 Z-BAR GR 60 VTAOT LEVEL II	307	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	4.13	CY	



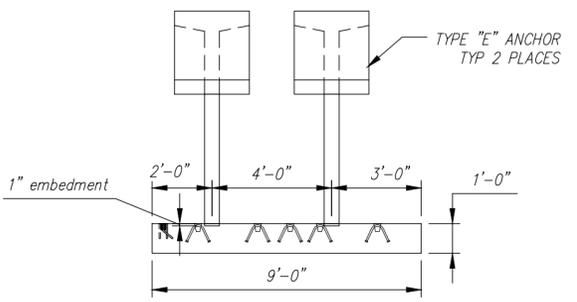
PLAN VIEW
Scale: 1/4" = 1'-0"



REINFORCING DETAIL
Scale: 1/4" = 1'-0"

Need to add a weep hole to be within 10' from the weep hole on WW3A max weep hole spacing is 10' according to Vtrans Structures Design Manual

ALL EXPOSED EDGES OF CONCRETE TO RECEIVE 1" CHAMFER



FRONT ELEVATION
Scale: 1/4" = 1'-0"

Rev.	Date	DESCRIPTION	REVISIONS
10			
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2	14MAY2015		
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Vermont Agency of Transportation
RECEIVED
CK'D BY FDB OK'D BY HIS
May 29, 2015
RESUBMIT Yes Rejected
BY Carolyn Carlson DATE 06/03/15

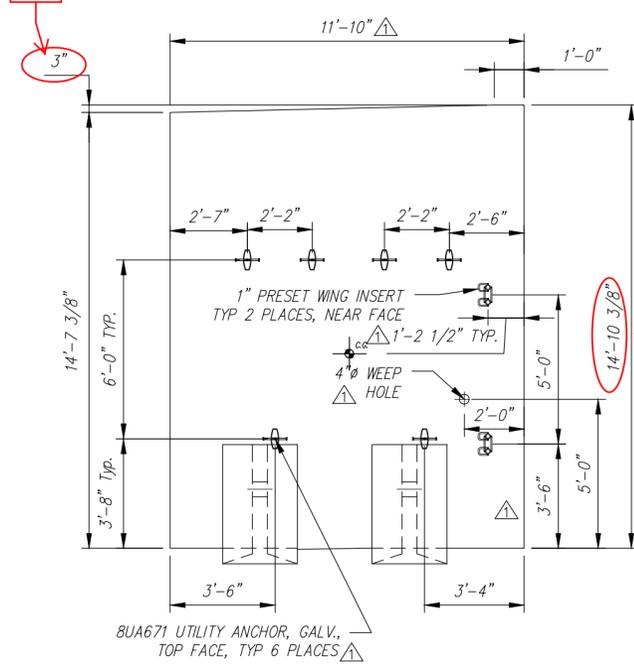
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Specifications: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
Other: ----

CSI
Concrete Systems Inc.
9 Commercial St., Hudson, NH, 03051
Phone 603-889-4163
Fax 603-889-2417

STATE AGENCY	
Drawn By B. SKELTON/RY	Date 04/17/2015
Reviewed By B. KOLAWOLE	Date
Approved By	Date

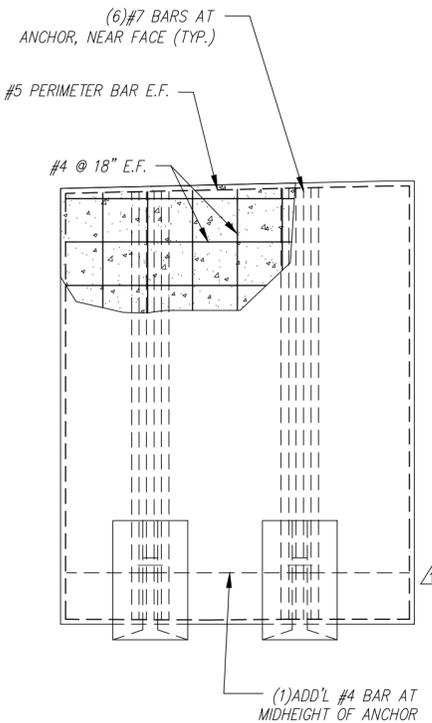
G.W. TATRO CONSTRUCTION, INC.	
VT/AOT BRIDGE REPLACEMENT— ROAD IMPROVEMENT RICHFORD, VT.	
Drawing No. C22312-WW3B	REV 1
Quantity: 1	Project No: BRF030229
SHEET 7 OF 14	

7.5"



PLAN VIEW
Scale: 1/4" = 1'-0"

ALL EXPOSED EDGES OF CONCRETE TO RECEIVE 1" CHAMFER

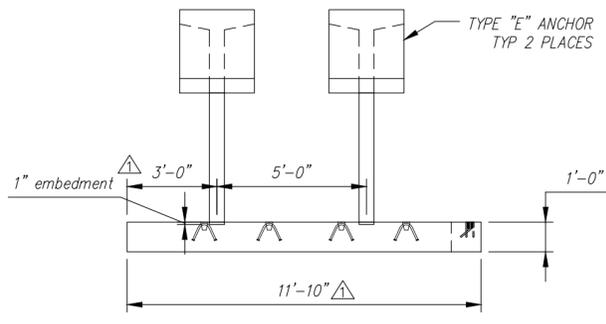


REINFORCING DETAIL
Scale: 1/4" = 1'-0"

This Silane is not on the Vtrans approved products list

QUANTITY = 1
WEIGHT = 15.41 TONS

WW4 - BILL OF MATERIALS / EMBEDS			
CSI ID#	DESCRIPTION	QTY	UM COMMENTS
CSANC-E	CON/SPAN WINGWALL ANCHOR (E)	2	EA
CT-00005	CONSOLIDECK SALTGUARD (SILANE SILOXANE)	1.20	GA
EM-00034	4" FOAM CORE PVC	1	FT
EM-0005A	1" X 6" PRESET WING INSERT	2	EA
EM-00115	UTILITY ANCHOR #8UA671-GALVANIZED	6	EA
DTJ	REBAR #4 Z-BAR GR 60 VTAOT LEVEL II	305	LB
DTJ	REBAR #5 Z-BAR GR 60 VTAOT LEVEL II	108	LB
DTJ	REBAR #7 Z-BAR GR 60 VTAOT LEVEL II	356	LB
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	6.47	CY



FRONT ELEVATION
Scale: 1/4" = 1'-0"

Rev.	Date	Description	By
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1	14MAY2015	REVISED PER CUSTOMER REVIEW	RY

Contractor is to verify that all information shown on drawings has been thoroughly checked, complies with the contract documents and is adequate to meet the field conditions. Some dimensions and details may differ slightly from contract drawings to accommodate the manufacturing or design process. Approval of this drawing indicates that any deviation from the contract documents has been reviewed and found to be acceptable. Production will not commence until receipt of signed, approved shop drawings.

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Vermont Agency of Transportation
RECEIVED

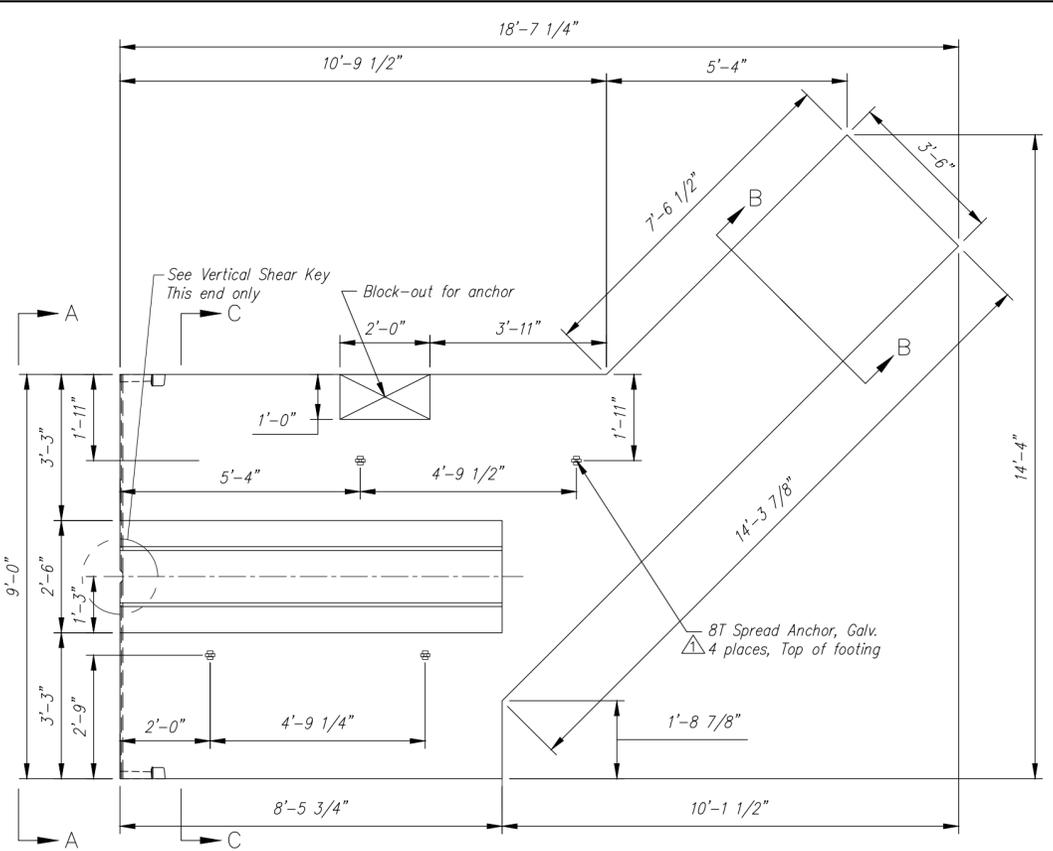
CK'D BY FDB OK'D BY HIS
May 29, 2015
RESUBMIT Yes Rejected _____
BY Carolyn Carlson DATE 06/03/15

This drawing is based upon information provided from the following documents and/or sources:
 Engineer: STATE OF VT/AOT PROGRAM DEVELOPMENT
 Project No: -----
 Drawings: STATE OF VT/AOT PROPOSED IMPROVEMENT BRIDGE PROJECT, TOWN OF RICHFORD SHEETS 1,2,4,22,23,24 OF 36
 Specifications: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
 Other: -----

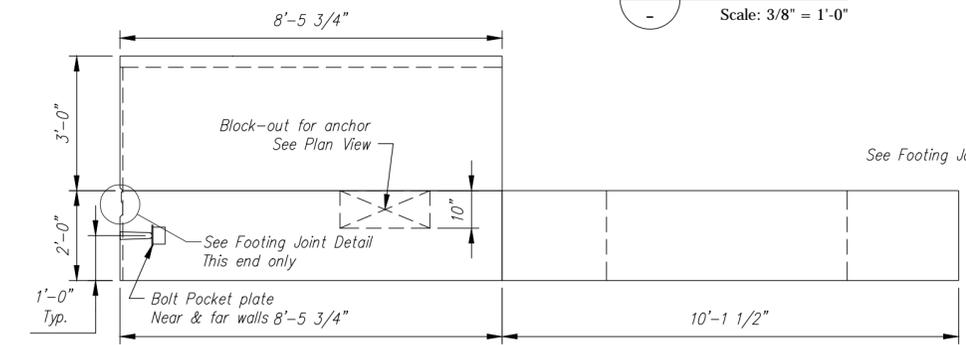
CSI
Concrete Systems Inc.
9 Commercial St., Hudson, NH, 03051
Phone 603-889-4163
Fax 603-889-2417

STATE AGENCY
VTrans
Working to Get You There
Drawn By: B. SKELTON/RY Date: 04/17/2015
Reviewed By: B. KOLAWOLE Date: _____
Approved By: _____ Date: _____

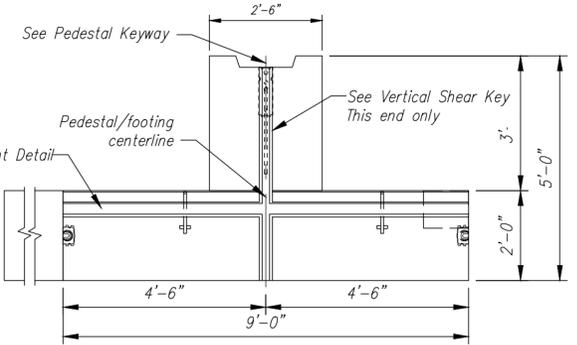
G.W. TATRO CONSTRUCTION, INC.
VT/AOT BRIDGE REPLACEMENT— ROAD IMPROVEMENT
RICHFORD, VT.
Drawing No. C22312-WW4
Quantity: 1 Project No: BRF030229 SHEET 8 OF 14



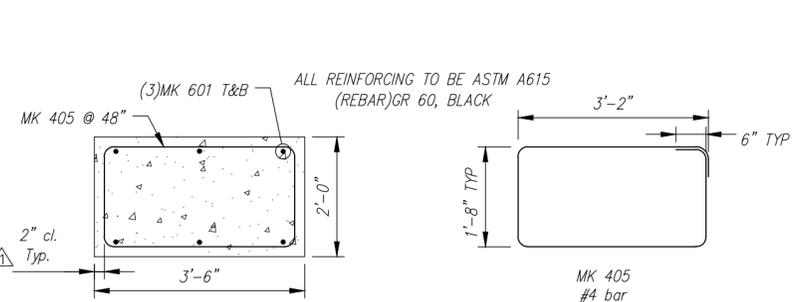
PLAN VIEW
Scale: 3/8" = 1'-0"



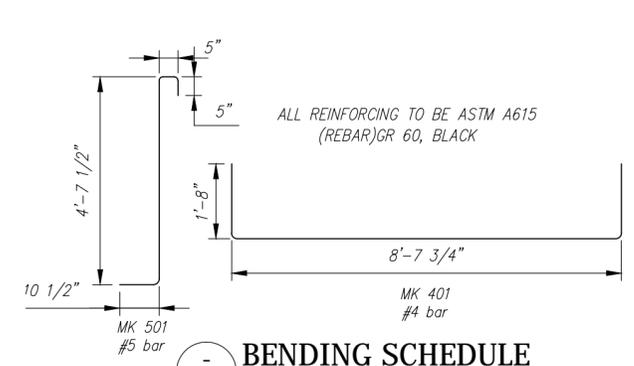
ELEVATION
Scale: 3/8" = 1'-0"



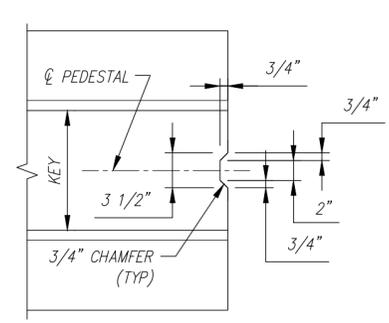
ELEVATION A-A
Scale: 3/8" = 1'-0"



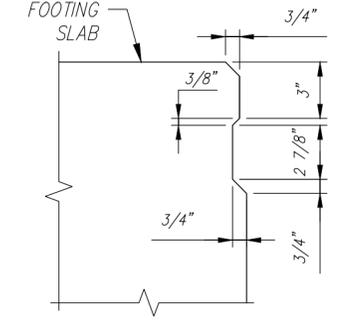
SECTION B-B REINFORCING DETAIL
Scale: N.T.S.



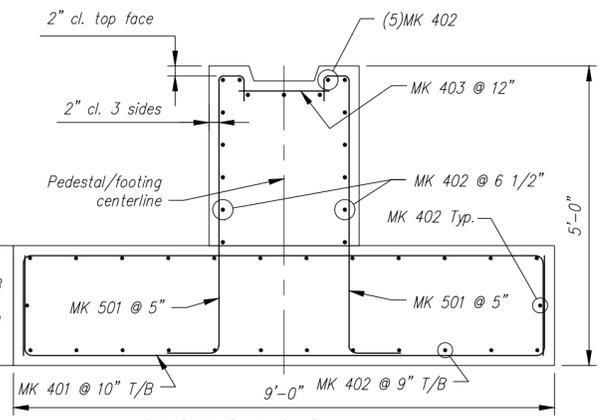
BENDING SCHEDULE
Scale: N.T.S.



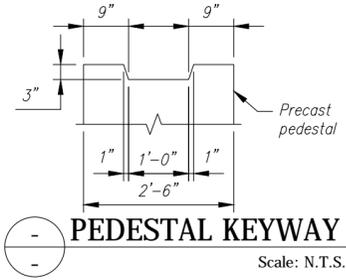
VERTICAL SHEAR KEY
Scale: N.T.S.



JOINT DETAIL
Scale: N.T.S.



SECTION C-C REINFORCING DETAIL
Scale: N.T.S.



PEDESTAL KEYWAY
Scale: N.T.S.

FOOTING SLAB - F1 - BILL OF MATERIALS / EMBEDS				
CSI ID#	DESCRIPTION	QTY	UM	COMMENTS
EM-00078	8T SPREAD ANCHOR #FL119/P94	4	EA	
EM-00125	BOLT POCKET PLATE (GALVANIZED)	2	EA	
RM-00013	REBAR #4 BLACK- GR 60	424	LB	
RM-00015	REBAR #5 BLACK-GR 60 40'	264	LB	
RM-00017	REBAR #6 BLACK-GR 60 40'	128	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	9.11	CY	
FOOTING PEDESTAL - F1 - BILL OF MATERIALS / EMBEDS				
RM-00013	REBAR #4 BLACK- GR 60	104	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	2.26	CY	

Ftg. Slab - F1 Rebar Schedule			
MK	QTY	LENGTH	
401 #4	26	12' - 0"	
402 #4	26	10' - 9"	
405 #4	4	10' - 8"	MAX
501 #5	40	6' - 4"	
601 #6	6	14' - 3"	MAX

Ftg. Pedestal-F1 Rebar Schedule			
MK	QTY	LENGTH	
402 #4	17	8' - 3"	
403 #4	9	1' - 8"	

QUANTITY = 1
WEIGHT = 23.02 TONS

Vermont Agency of Transportation
RECEIVED
CK'D BY FDB OK'D BY HIS
May 29, 2015
RESUBMIT Yes Rejected
BY Carolyn Carlson DATE 06/03/15

Rev.	Date	DESCRIPTION	BY
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1	14MAY2015	REVISED PER CUSTOMER REVIEW, REVISED ANCHOR LOCATIONS	

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This drawing is based upon information provided from the following documents and/or sources:
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 Project No: -----
 Drawings: STATE OF VT/AOT PROPOSED IMPROVEMENT BRIDGE PROJECT, TOWN OF RICHFORD SHEETS 1,2,4,22,23,24 OF 36
 Specifications: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
 Other: -----

Concrete Systems Inc.
9 Commercial St., Hudson, NH, 03051
Phone 603-889-4163
Fax 603-889-2417

STATE AGENCY
VTrans
Working to Get You There
Drawn By: R. YEAGER Date: 16APR2015
Reviewed By: B. KOLAWOLE Date: -----
Approved By: ----- Date: -----

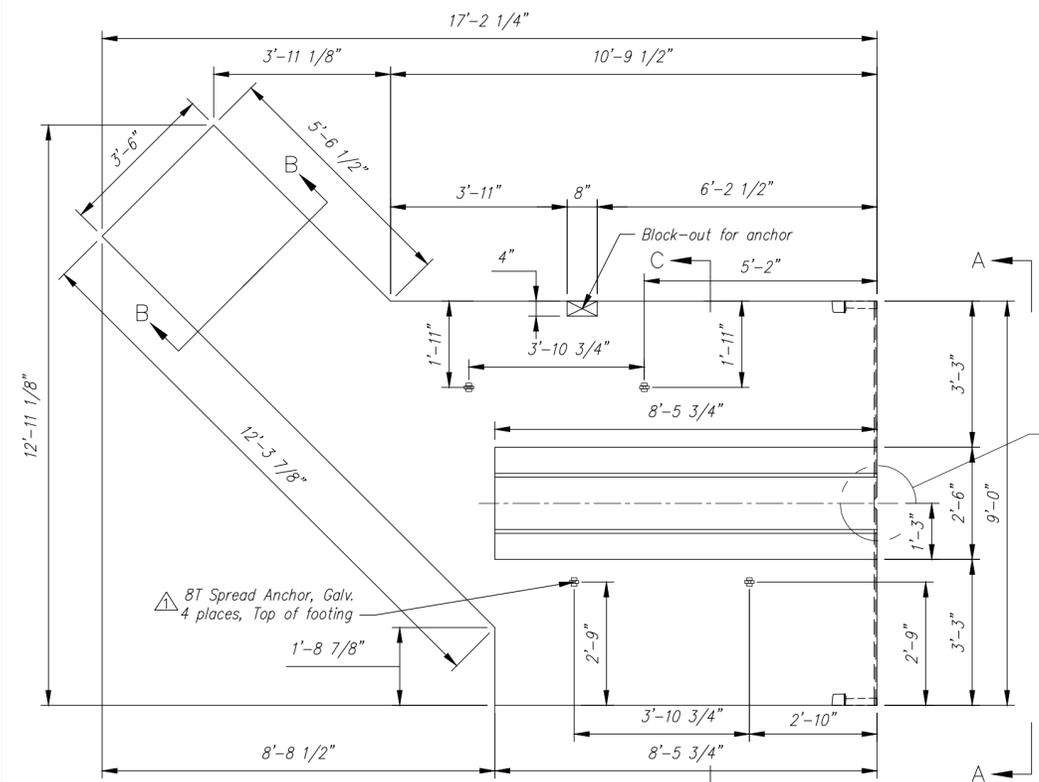
G.W. TATRO CONSTRUCTION, INC.
VT/AOT BRIDGE REPLACEMENT— ROAD IMPROVEMENT
RICHFORD, VT.
Drawing No. C22312-F1
Quantity: 1 Project No: BRF030229 SHEET 9 OF 14

QUANTITY = 1
WEIGHT = 21.97 TONS

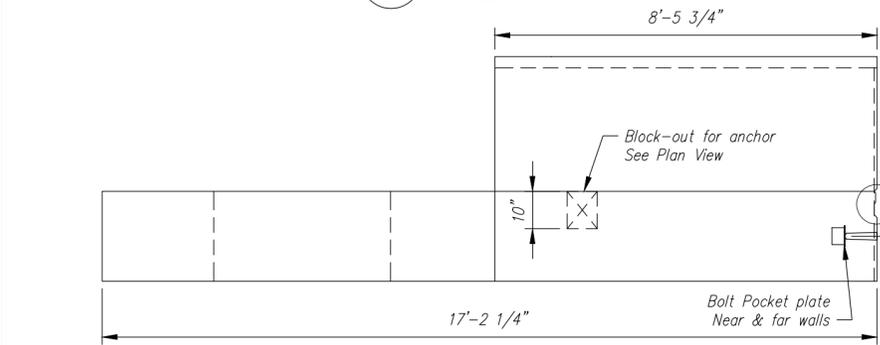
Ftg. Slab - F2 Rebar Schedule			
MK	QTY	LENGTH	
401 #4	26	12' - 0"	MAX
402 #4	26	10' - 9"	
405 #4	4	10' - 8"	
501 #5	40	6' - 4"	
601 #6	6	12' - 3"	MAX

Ftg. Pedestal-F2 Rebar Schedule			
MK	QTY	LENGTH	
402 #4	17	8' - 3"	
403 #4	9	1' - 8"	

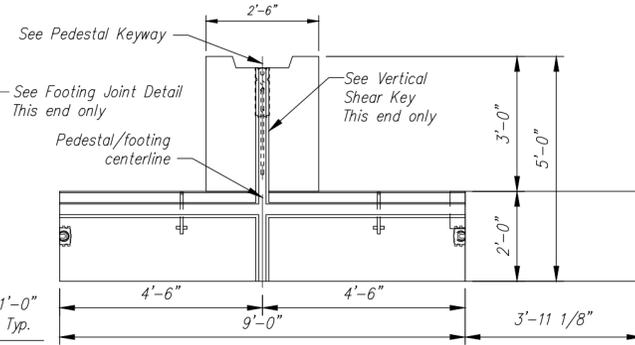
FOOTING SLAB - F2 - BILL OF MATERIALS / EMBEDS				
CSI ID#	DESCRIPTION	QTY	UM	COMMENTS
EM-00078	8T SPREAD ANCHOR #FL119/P94	4	EA	
EM-00125	BOLT POCKET PLATE (GALVANIZED)	2	EA	
RM-00013	REBAR #4 BLACK- GR 60	424	LB	
RM-00015	REBAR #5 BLACK-GR 60 40'	264	LB	
RM-00017	REBAR #6 BLACK-GR 60 40'	110	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	8.59	CY	
FOOTING PEDESTAL - F2 - BILL OF MATERIALS / EMBEDS				
RM-00013	REBAR #4 BLACK- GR 60	104	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	2.26	CY	



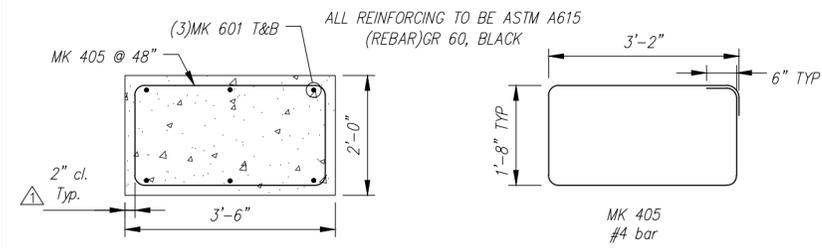
PLAN VIEW
Scale: 3/8" = 1'-0"



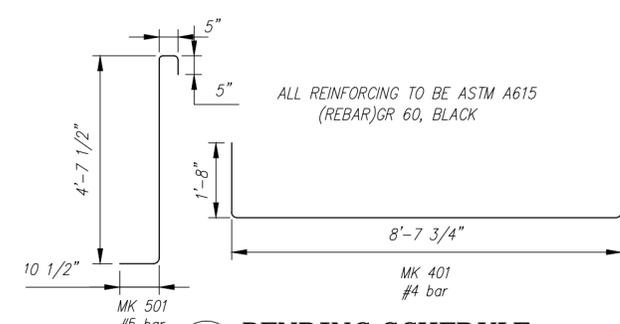
ELEVATION
Scale: 3/8" = 1'-0"



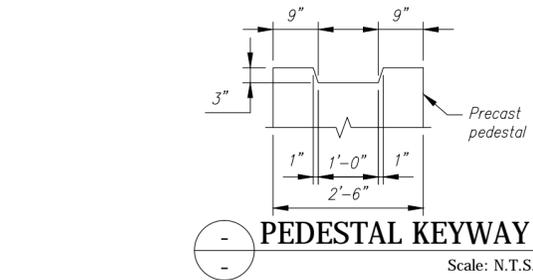
ELEVATION A-A
Scale: 3/8" = 1'-0"



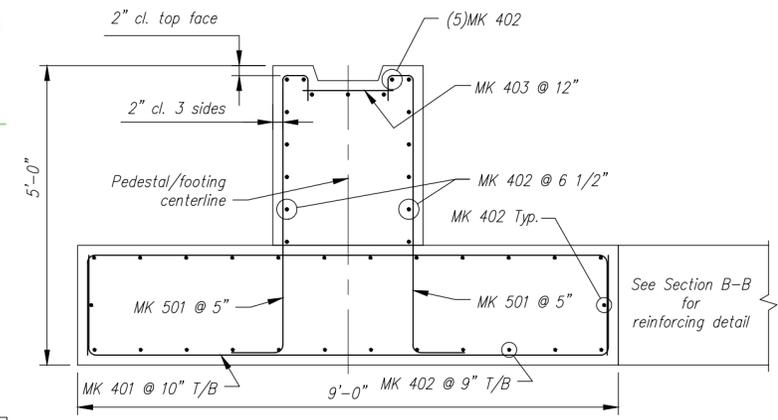
SECTION B-B REINFORCING DETAIL
Scale: N.T.S.



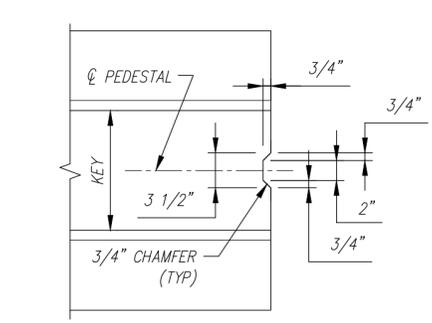
BENDING SCHEDULE
Scale: N.T.S.



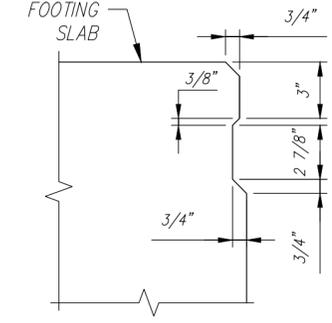
PEDESTAL KEYWAY
Scale: N.T.S.



SECTION C-C REINFORCING DETAIL
Scale: N.T.S.



VERTICAL SHEAR KEY
Scale: N.T.S.



JOINT DETAIL
Scale: N.T.S.

Vermont Agency of Transportation
RECEIVED
CK'D BY FDB OK'D BY HIS
May 29, 2015
RESUBMIT Yes Rejected
BY Carolyn Carlson DATE 06/03/15

Rev.	Date	Description	By
10			
9			
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1	14MAY2015	REVISED PER CUSTOMER REVIEW, REVISED ANCHOR LOCATIONS	RY

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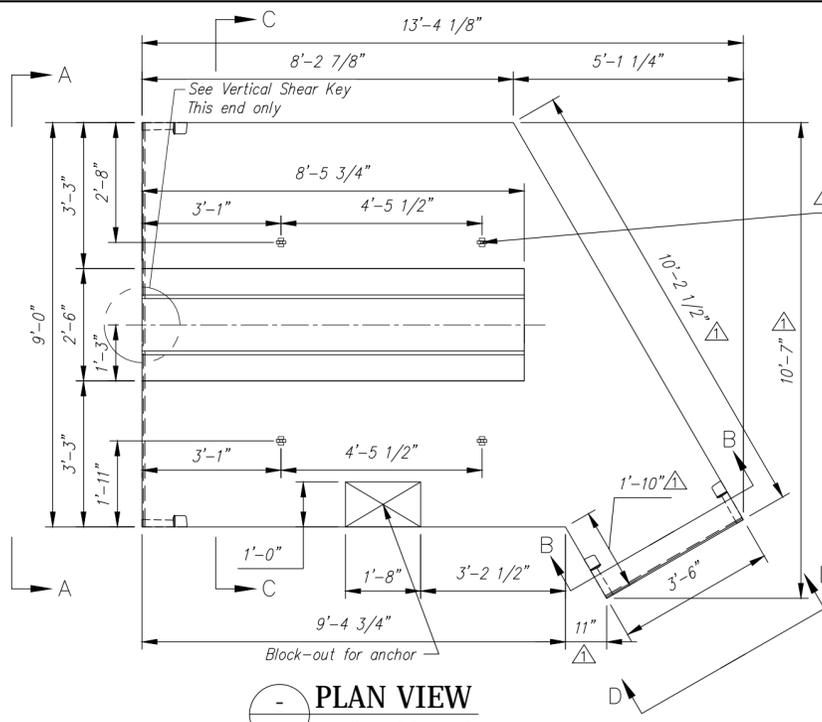
This drawing is based upon information provided from the following documents and/or sources:
 Engineer: STATE OF VT/AOT PROGRAM DEVELOPMENT
 Project No: -----
 Drawings: STATE OF VT/AOT PROPOSED IMPROVEMENT BRIDGE PROJECT, TOWN OF RICHFORD SHEETS 1,2,4,22,23,24 OF 36
 Specifications: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
 Other: -----

STATE AGENCY

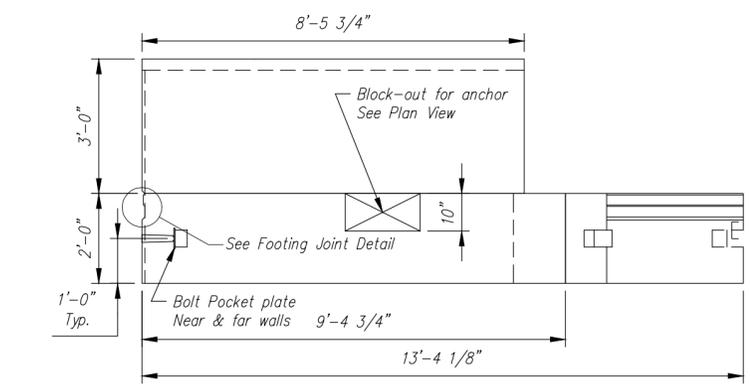
Concrete Systems Inc.
 9 Commercial St., Hudson, NH, 03051
 Phone 603-889-4163
 Fax 603-889-2417

Drawn By	Date
R. YEAGER	16APR2015
B. KOLAWOLE	
Approved By	

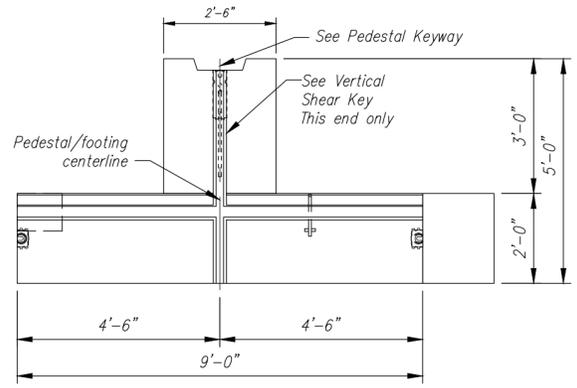
G.W. TATRO CONSTRUCTION, INC.	
VT/AOT BRIDGE REPLACEMENT— ROAD IMPROVEMENT RICHFORD, VT.	
Quantity: 1	Project No: BRF030229
Drawing No. C22312-F2	REV 1
SHOP DRAWING F2	
SHEET 10 OF 14	



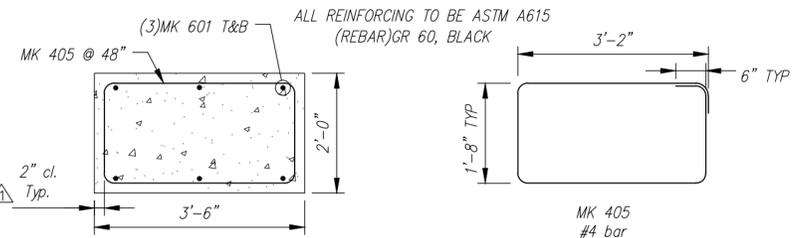
PLAN VIEW
Scale: 3/8" = 1'-0"



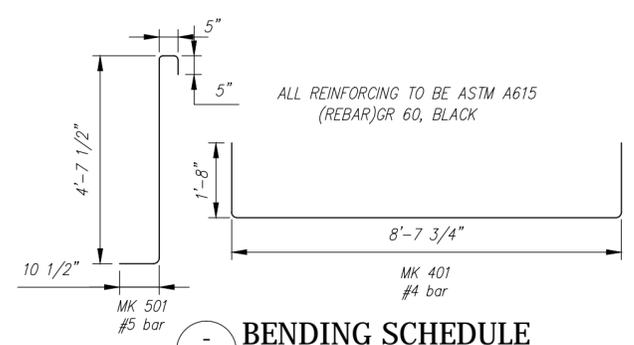
ELEVATION
Scale: 3/8" = 1'-0"



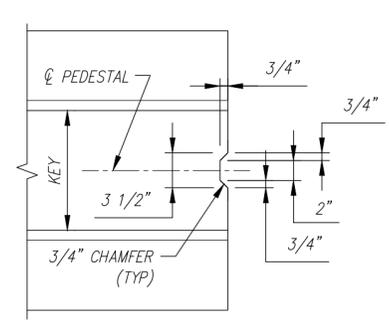
ELEVATION A-A
Scale: 3/8" = 1'-0"



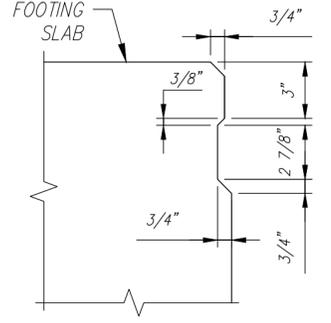
SECTION B-B REINFORCING DETAIL
Scale: N.T.S.



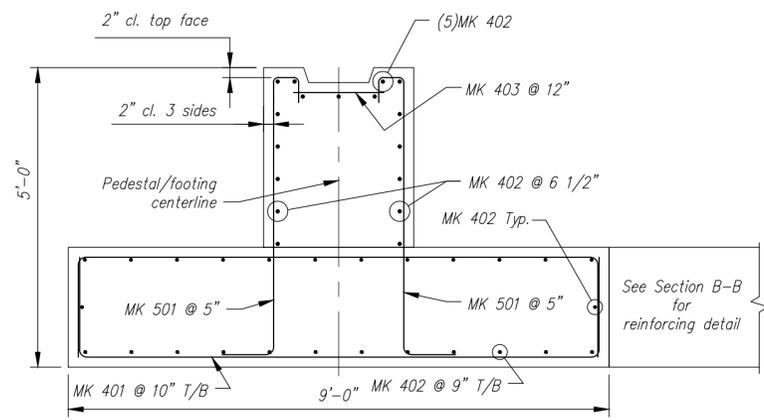
BENDING SCHEDULE
Scale: N.T.S.



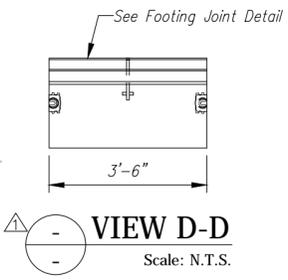
VERTICAL SHEAR KEY
Scale: N.T.S.



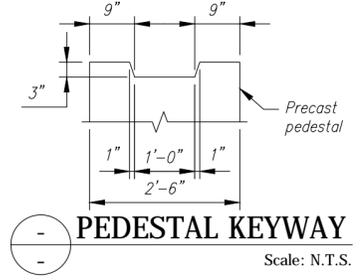
JOINT DETAIL
Scale: N.T.S.



SECTION C-C REINFORCING DETAIL
Scale: N.T.S.



VIEW D-D
Scale: N.T.S.



PEDESTAL KEYWAY
Scale: N.T.S.

Ftg. Slab - F3A Rebar Schedule			
MK	QTY	LENGTH	
401 #4	22	12' 0"	
402 #4	26	9' 4"	
405 #4	2	10' 8"	
501 #5	40	6' 4"	
601 #6	6	9' 10"	MAX

Ftg. Pedestal-F3A Rebar Schedule			
MK	QTY	LENGTH	
402 #4	17	8' 3"	
403 #4	9	1' 8"	

FOOTING SLAB - F3A - BILL OF MATERIALS / EMBEDS				
CSI ID#	DESCRIPTION	QTY	UM	COMMENTS
EM-00078	8T SPREAD ANCHOR #FL119/P94	4	EA	
EM-00125	BOLT POCKET PLATE (GALVANIZED)	4	EA	
RM-00013	REBAR #4 BLACK-GR 60	353	LB	
RM-00015	REBAR #5 BLACK-GR 60 40'	264	LB	
RM-00017	REBAR #6 BLACK-GR 60 40'	89	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	7.44	CY	

FOOTING PEDESTAL - F3A - BILL OF MATERIALS / EMBEDS				
CSI ID#	DESCRIPTION	QTY	UM	COMMENTS
RM-00013	REBAR #4 BLACK-GR 60	104	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	2.26	CY	

QUANTITY = 1
WEIGHT = 19.85 TONS

Vermont Agency of Transportation
RECEIVED
CK'D BY FDB OK'D BY HIS
May 29, 2015
RESUBMIT Yes Rejected
BY Carolyn Carlson DATE 06/03/15

This drawing is based upon information provided from the following documents and/or sources:
 Engineer: STATE OF VT/AOT PROGRAM DEVELOPMENT
 Project No: -----
 Drawings: STATE OF VT/AOT PROPOSED IMPROVEMENT BRIDGE PROJECT, TOWN OF RICHFORD SHEETS 1,2,4,22,23,24 OF 36
 Specifications: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
 Other: -----

STATE AGENCY
VTrans
Concrete Systems Inc.
9 Commercial St., Hudson, NH, 03051
Phone 603-889-4163
Fax 603-889-2417

Drawn By: R. YEAGER
Reviewed By: B. KOLAWOLE
Approved By: -----
 Date: 16APR2015

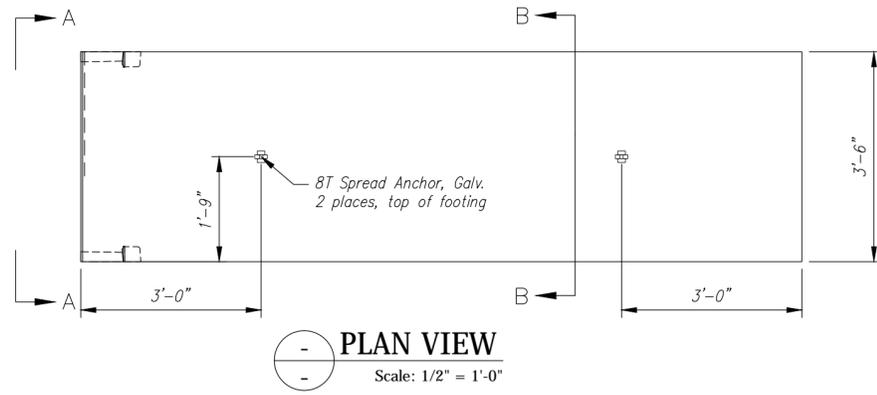
G.W. TATRO CONSTRUCTION, INC.
VT/AOT BRIDGE REPLACEMENT— ROAD IMPROVEMENT
RICHFORD, VT.
SHOP DRAWING F3A
Drawing No. C22312-F3A
Quantity: 1 Project No: BRF030229
REV 1 SHEET 11 OF 14

Rev.	Date	DESCRIPTION	BY
1	14MAY2015	REVISED PER CUSTOMER REVIEW, REVISED FOOTING, ADDED BOLT POCKETS, REVISED ANCHOR LOCATIONS	
2			
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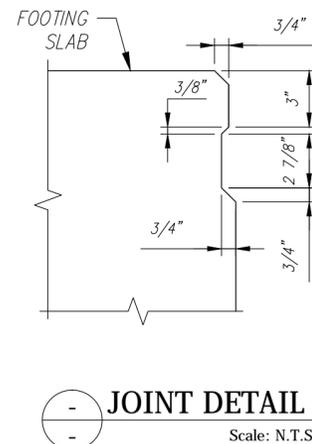
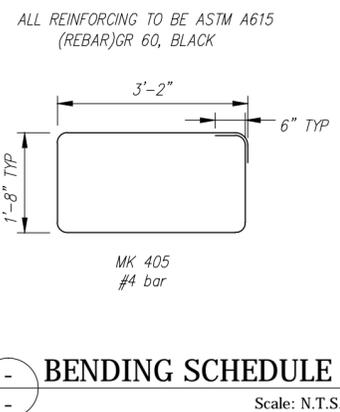
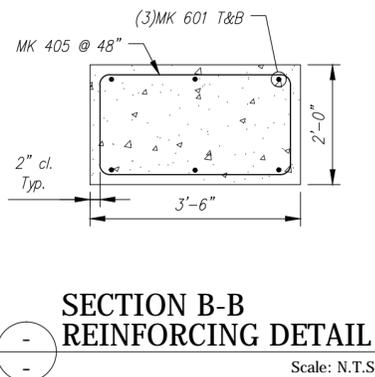
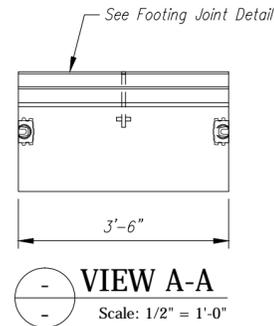
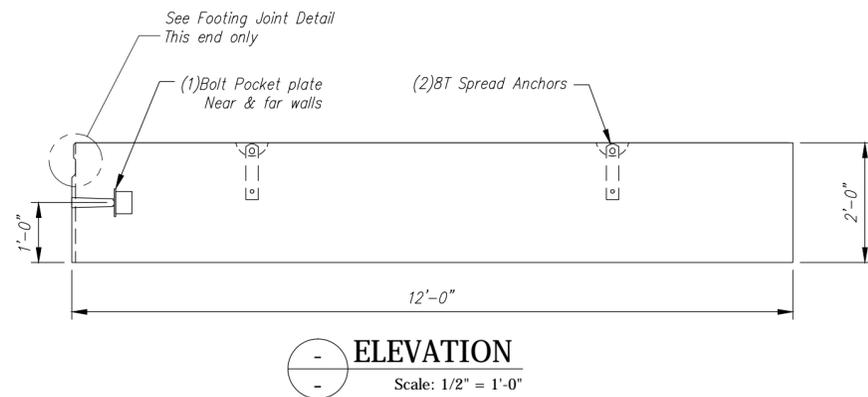
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QUANTITY = 1
WEIGHT = 6.30 TONS



FOOTING SLAB - F3B - BILL OF MATERIALS / EMBEDS				
CSI ID#	DESCRIPTION	QTY	UM	COMMENTS
EM-00078	8T SPREAD ANCHOR #FL119/P94	2	EA	
EM-00125	BOLT POCKET PLATE (GALVANIZED)	2	EA	
RM-00013	REBAR #4 BLACK- GR 60	29	LB	
RM-00017	REBAR #6 BLACK-GR 60 40'	105	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	3.11	CY	

Ftg. Slab - F3B Rebar Schedule		
MK	QTY	LENGTH
405 #4	4	10' - 8"
601 #6	6	11' - 8"



Vermont Agency of Transportation
RECEIVED
CK'D BY FDB OK'D BY HIS
May 29, 2015
RESUBMIT Yes Rejected
BY Carolyn Carlson DATE 06/03/15

Contractor is to verify that all information shown on drawings has been thoroughly checked, complies with the contract documents and is adequate to meet the field conditions. Some dimensions and details may differ slightly from contract drawings to accommodate the manufacturing or design process. Approval of this drawing indicates that any deviation from the contract documents has been reviewed and found to be acceptable. Production will not commence until receipt of signed, approved shop drawings.

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Rev.	Date	DESCRIPTION	REVISIONS
10			
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3			
2	14MAY2015	REVISED PER CUSTOMER REVIEW, NEW FOOTING SECTION	RY
1			By

This drawing is based upon information provided from the following documents and/or sources:
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 Project No: -----
 Drawings: STATE OF VT/AOT PROPOSED IMPROVEMENT BRIDGE PROJECT, TOWN OF RICHFORD SHEETS 1,2,4,22,23,24 OF 36
 Specifications: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
 Other: -----

CSI
Concrete Systems Inc.
9 Commercial St., Hudson, NH, 03051
Phone 603-889-4163
Fax 603-889-2417

STATE AGENCY
VTrans
Working to Get You There
Drawn By: R. YEAGER Date: 14MAY2015
Reviewed By: Date: _____
Approved By: Date: _____

G.W. TATRO CONSTRUCTION, INC.
VT/AOT BRIDGE REPLACEMENT— ROAD IMPROVEMENT
RICHFORD, VT.
Drawing No. C22312-F3B
Quantity: 1 Project No: BRF030229 SHEET 14 OF 14

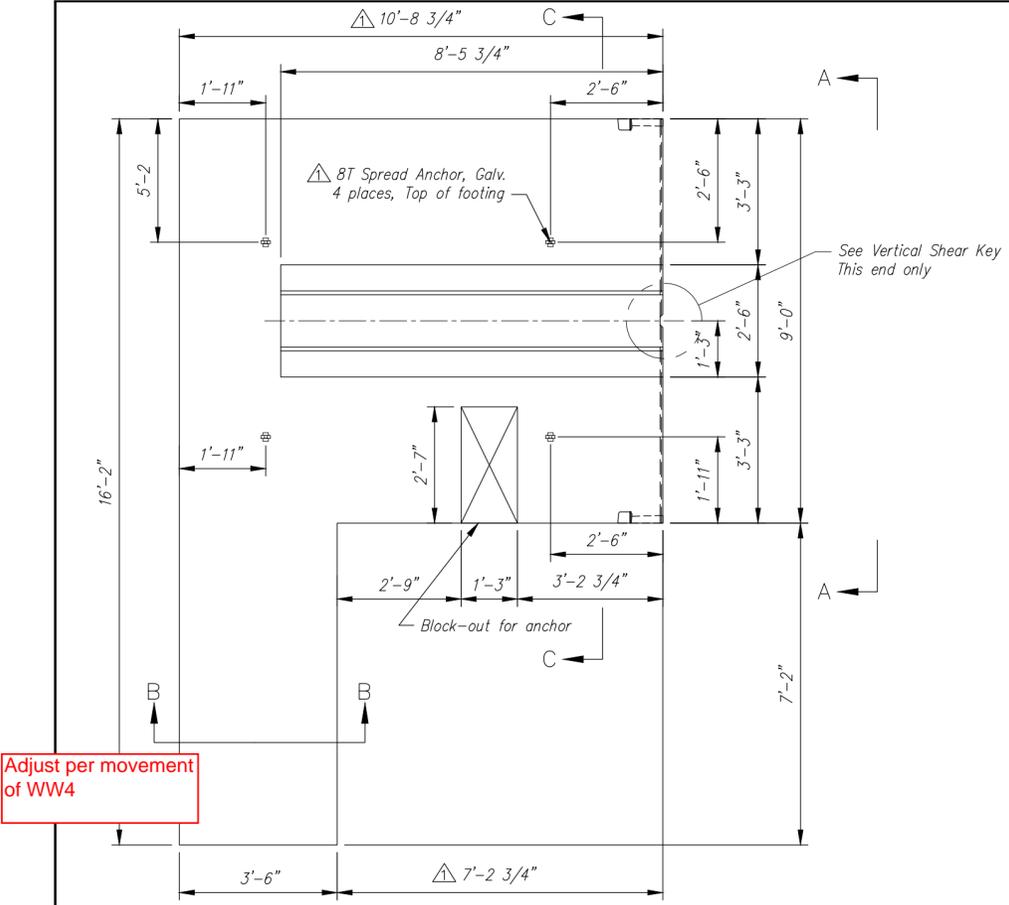
QUANTITY = 1
WEIGHT = 22.82 TONS Δ

Ftg. Slab - F4 Rebar Schedule		
MK	QTY	LENGTH
401 #4	26	12' - 0"
402 #4	26	10' - 6"
405 #4	3	10' - 8"
MAX		
501 #5	40	6' - 4"
601 #6	6	8' - 0"
MAX		

Ftg. Pedestal-F4 Rebar Schedule		
MK	QTY	LENGTH
402 #4	17	8' - 3"
403 #4	9	1' - 8"

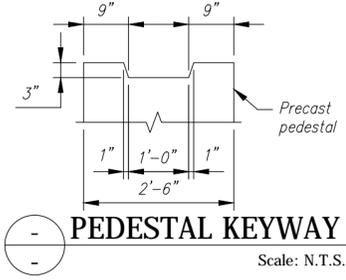
FOOTING SLAB - F4 - BILL OF MATERIALS / EMBEDS				
CSI ID#	DESCRIPTION	QTY	UM	COMMENTS
EM-00078	8T SPREAD ANCHOR #FL119/P94	4	EA	
EM-00125	BOLT POCKET PLATE (GALVANIZED)	2	EA	
RM-00013	REBAR #4 BLACK- GR 60	412	LB	
RM-00015	REBAR #5 BLACK-GR 60 40'	264	LB	
RM-00017	REBAR #6 BLACK-GR 60 40'	72	LB	
Δ MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	9.01	CY	
FOOTING PEDESTAL - F4 - BILL OF MATERIALS / EMBEDS				
RM-00013	REBAR #4 BLACK- GR 60	104	LB	
Δ MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	2.26	CY	

Vermont Agency of Transportation
RECEIVED
CK'D BY FDB OK'D BY HIS
May 29, 2015
RESUBMIT Yes Rejected
BY Carolyn Carlson DATE 06/03/15

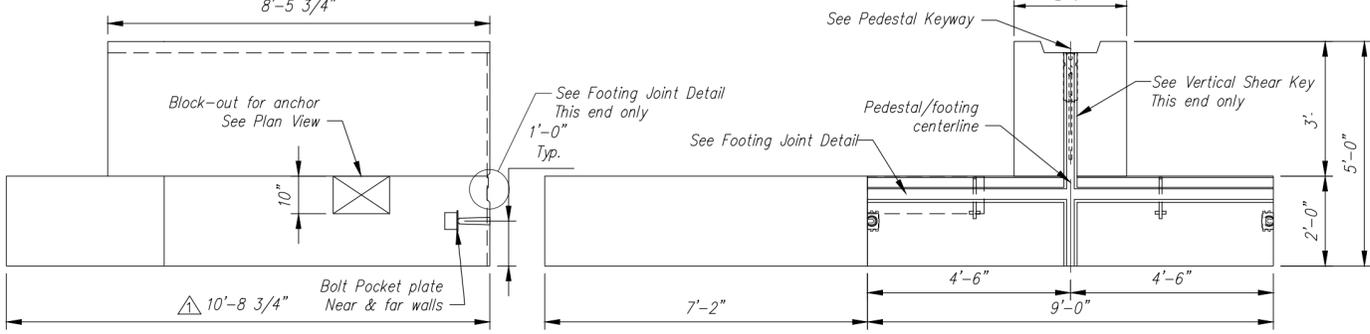


PLAN VIEW
Scale: 3/8" = 1'-0"
8'-5 3/4"

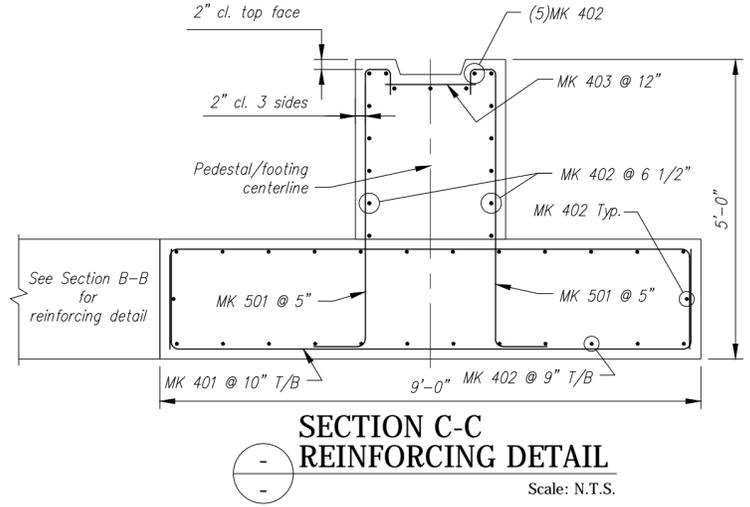
Adjust per movement of WW4



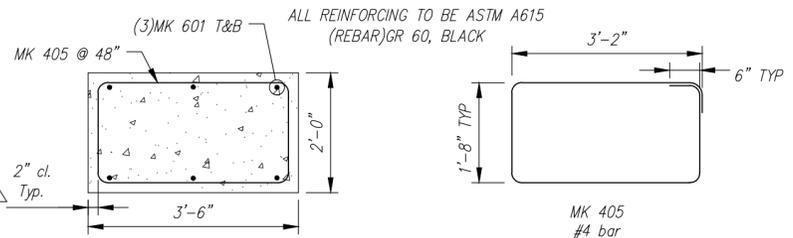
PEDESTAL KEYWAY
Scale: N.T.S.



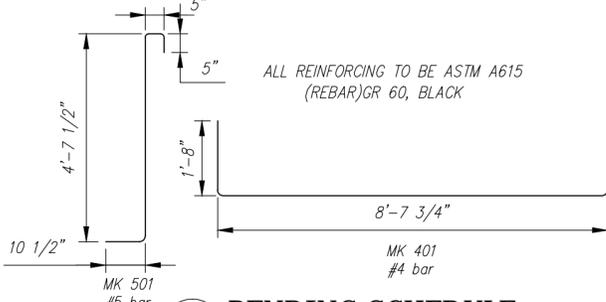
ELEVATION A-A
Scale: 3/8" = 1'-0"



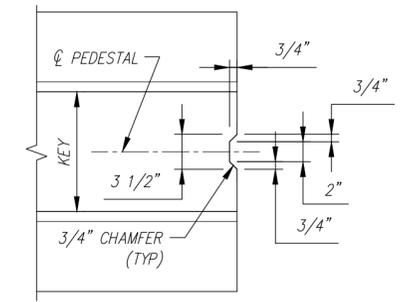
SECTION C-C REINFORCING DETAIL
Scale: N.T.S.



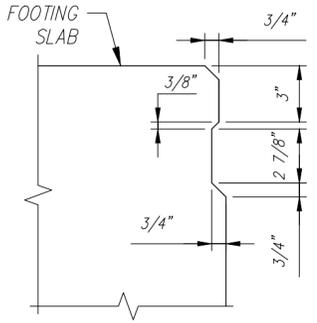
SECTION B-B REINFORCING DETAIL
Scale: N.T.S.



BENDING SCHEDULE
Scale: N.T.S.



VERTICAL SHEAR KEY
Scale: N.T.S.



JOINT DETAIL
Scale: N.T.S.

Contractor is to verify that all information shown on drawings has been thoroughly checked, complies with the contract documents and is adequate to meet the field conditions. Some dimensions and details may differ slightly from contract drawings to accommodate the manufacturing or design process. Approval of this drawing indicates that any deviation from the contract documents has been reviewed and found to be acceptable. Production will not commence until receipt of signed, approved shop drawings.

This drawing contains information proprietary to CONCRETE SYSTEMS, INC. This drawing is disclosed with the understanding that it will be retained in confidence and its use limited solely to the purpose for which it is disclosed. It is understood that no reproduction of this drawing is authorized without permission from CONCRETE SYSTEMS, INC. and that it will be returned to CONCRETE SYSTEMS, INC. upon request.

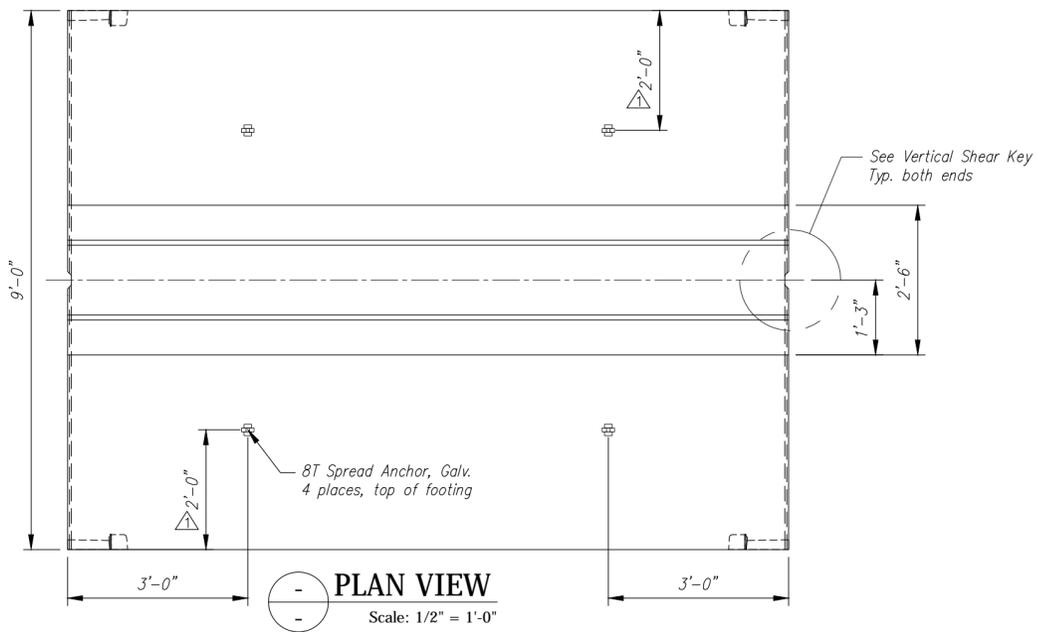
Rev.	Date	Description	By
10			
9			
8			
7			
6			
5			
4			
3			
2			
1	14MAY2015	REVISED PER CUSTOMER REVIEW, REVISED FOOTING DUE TO WINGWALL RELOCATION	

This drawing is based upon information provided from the following documents and/or sources:
 Engineer: STATE OF VT/AOT PROGRAM DEVELOPMENT
 Project No: -----
 Drawings: STATE OF VT/AOT PROPOSED IMPROVEMENT BRIDGE PROJECT, TOWN OF RICHFORD SHEETS 1,2,4,22,23,24 OF 36
 Specifications: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
 Other: -----

Concrete Systems Inc.
9 Commercial St., Hudson, NH, 03051
Phone 603-889-4163
Fax 603-889-2417

STATE AGENCY
VTrans
Working to Get You There
Drawn By: R. YEAGER Date: 16APR2015
Reviewed By: B. KOLAWOLE Date: -----
Approved By: ----- Date: -----

G.W. TATRO CONSTRUCTION, INC.
VT/AOT BRIDGE REPLACEMENT- ROAD IMPROVEMENT
RICHFORD, VT.
Drawing No. C22312-F4
Quantity: 1 Project No: BRF030229 SHEET 12 OF 14

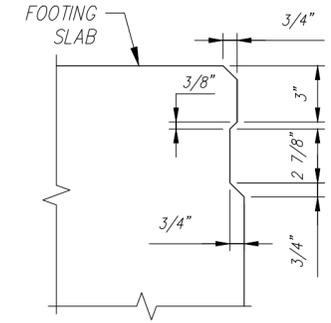
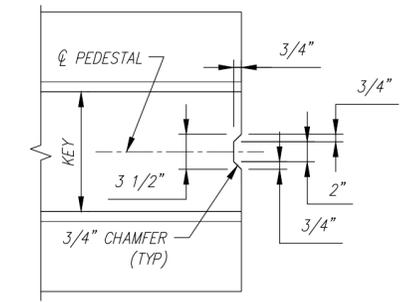
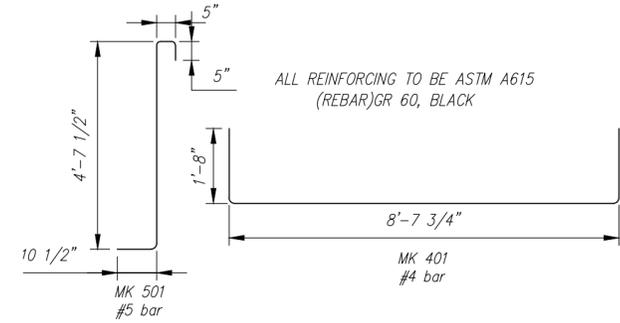
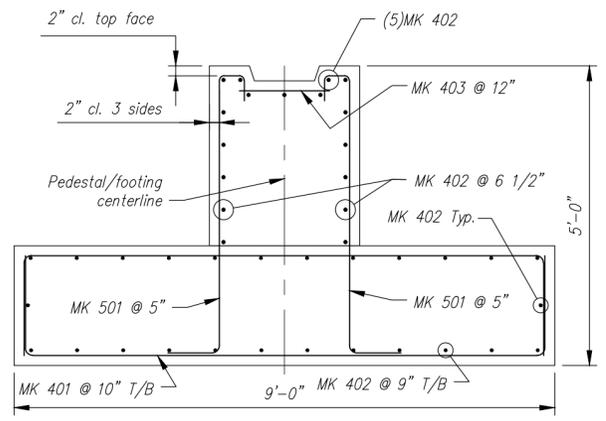
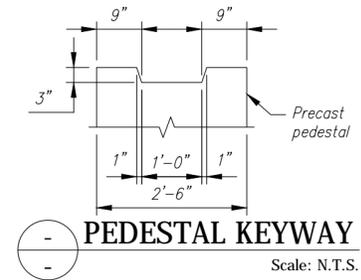
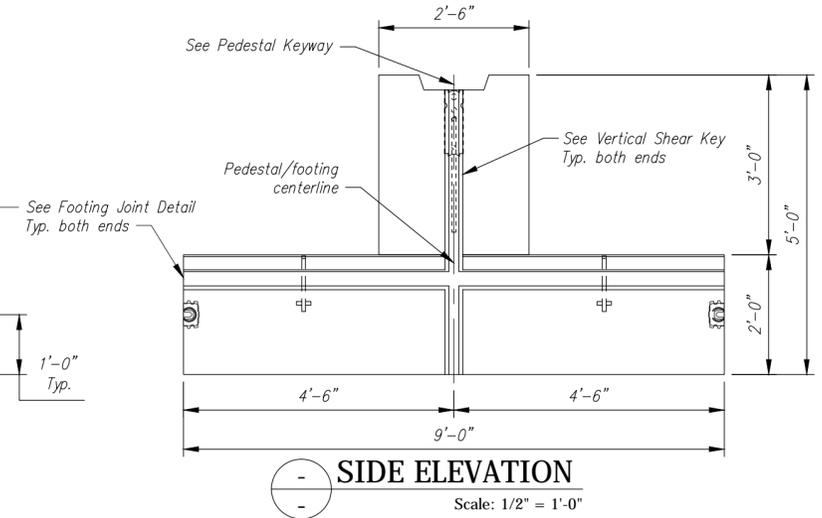
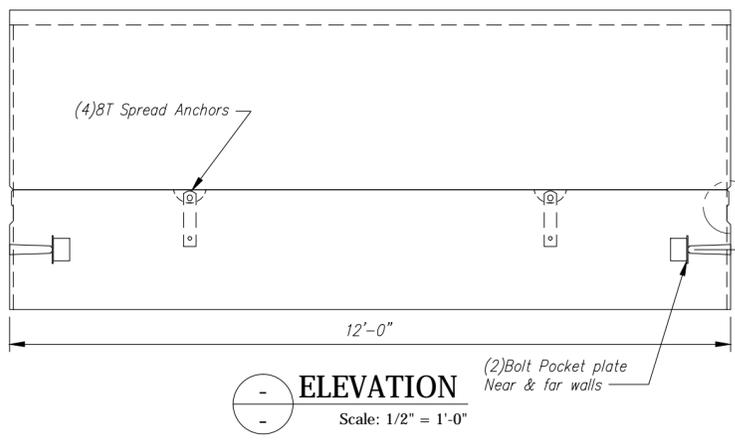


QUANTITY = 1
WEIGHT = 22.66 TONS

FOOTING SLAB - F5 - BILL OF MATERIALS / EMBEDS				
CSI ID#	DESCRIPTION	QTY	UM	COMMENTS
EM-00078	8T SPREAD ANCHOR #FL119/P94	4	EA	
EM-00125	BOLT POCKET PLATE (GALVANIZED)	4	EA	
RM-00013	REBAR #4 BLACK-GR 60	445	LB	
RM-00015	REBAR #5 BLACK-GR 60 40'	383	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	7.86	CY	
FOOTING PEDESTAL - F5 - BILL OF MATERIALS / EMBEDS				
RM-00013	REBAR #4 BLACK-GR 60	147	LB	
MX-FA5000SC30	MIX DESIGN - FLY ASH 5000 SELF CONSOLIDATING	3.33	CY	

Ftg. Slab - F5 Rebar Schedule			Ftg. Pedestal-F5 Rebar Schedule		
MK	QTY	LENGTH	MK	QTY	LENGTH
401 #4	30	12' - 0"	402 #4	17	11' - 9"
402 #4	26	11' - 9"	403 #4	12	1' - 8"
501 #5	58	6' - 4"			

Vermont Agency of Transportation
RECEIVED
CK'D BY FDB OK'D BY HIS
May 29, 2015
RESUBMIT Yes Rejected
BY Carolyn Carlson DATE 06/03/15



Contractor is to verify that all information shown on drawings has been thoroughly checked, complies with the contract documents and is adequate to meet the field conditions. Some dimensions and details may differ slightly from contract drawings to accommodate the manufacturing or design process. Approval of this drawing indicates that any deviation from the contract documents has been reviewed and found to be acceptable. Production will not commence until receipt of signed, approved shop drawings.

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 Project No: -----
 Drawings: STATE OF VT/AOT PROPOSED IMPROVEMENT BRIDGE PROJECT, TOWN OF RICHFORD SHEETS 1,2,4,22,23,24 OF 36
 Specifications: STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011
 Other: -----

CSI
Concrete Systems Inc.
9 Commercial St., Hudson, NH, 03051
Phone 603-889-4163
Fax 603-889-2417

STATE AGENCY
VTtrans
Working to Get You There

Drawn By: R. YEAGER Date: 16APR2015
 Reviewed By: B. KOLAWOLE Date: _____
 Approved By: _____ Date: _____

G.W. TATRO CONSTRUCTION, INC.
VT/AOT BRIDGE REPLACEMENT— ROAD IMPROVEMENT
RICHFORD, VT.

SHOP DRAWING F5
C22312-F5

Quantity: 2 Project No: BRF030229 SHEET 13 OF 14

Rev.	Date	DESCRIPTION	REVISIONS
1	14MAY2015	REVISED PER CUSTOMER REVIEW, REVISED ANCHOR LOCATIONS	RY
2			BY
3			
4			
5			
6			
7			
8			
9			
10			

LIFT INSERT CAPACITY CALCULATIONS

$W := 23.02 \text{ tonf}$ maximum piece weight $No_{inserts} := 3$

Field Lift Condition: Dayton FL119/P-94

$SALF := 1.16$ sling angle load factor at 60 deg

$CSAF := 1.12$ concrete strength adjustment factor 4000psi to 5000psi

$W_{effective} := SALF \cdot 1.0 \cdot W = (5.341 \cdot 10^4) \text{ lbf}$ 100% lifting weight

$Allow_{4000} := 16000 \text{ lbf}$

$Allow_{5000} := Allow_{4000} \cdot CSAF = (1.792 \cdot 10^4) \text{ lbf}$ allowable safe working load per insert at 5000 psi

$LiftCap := Allow_{5000} \cdot No_{inserts} = (5.376 \cdot 10^4) \text{ lbf}$

$$SF := \frac{LiftCap \cdot 4}{W_{effective}} = 4.026$$



LIFT INSERT CAPACITY CALCULATIONS

$$W := 15.65 \text{ tonf} \quad \text{maximum piece weight} \quad N_{o_{inserts}} := 2$$

Field Lift Erection Condition: Dayton 8UA671 Utility Anchor

$$SALF := 1.16 \quad \text{slings angle load factor at 60 deg}$$

$$CSAF := 1.12 \quad \text{concrete strength adjustment factor 4000psi to 5000psi}$$

$$W_{effective} := SALF \cdot 1.0 \cdot W = (3.631 \cdot 10^4) \text{ lbf} \quad 100\% \text{ lifting weight}$$

$$Allow_{4000} := 18850 \text{ lbf} \quad \text{SWL shear}$$

$$Allow_{5000} := Allow_{4000} \cdot CSAF = (2.111 \cdot 10^4) \text{ lbf} \quad \text{allowable safe working load per insert at 5000 psi}$$

$$LiftCap := Allow_{5000} \cdot N_{o_{inserts}} = (4.222 \cdot 10^4) \text{ lbf}$$

$$SF := \frac{LiftCap \cdot 4}{W_{effective}} = 4.652$$

Plant Lift/Field Lift Unloading Condition: Dayton 8UA671 Utility Anchor

$$4 \text{ point pick: } W := 15.65 \text{ tonf} \quad \text{maximum piece weight} \quad N_{o_{inserts}} := 4$$

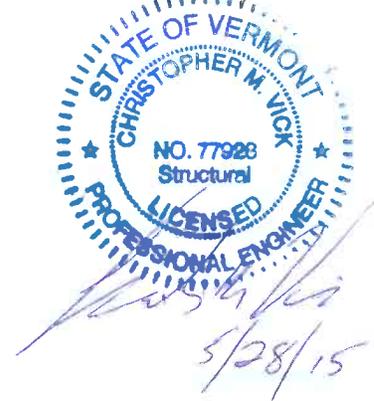
$$W_{effective} := SALF \cdot 1.0 \cdot W = (3.631 \cdot 10^4) \text{ lbf} \quad 100\% \text{ lifting weight}$$

$$Allow_{4000} := 10830 \text{ lbf} \quad \text{SWL tension}$$

$$Allow_{5000} := Allow_{4000} \cdot CSAF = (1.213 \cdot 10^4) \text{ lbf} \quad \text{allowable safe working load per insert at 5000 psi}$$

$$LiftCap := Allow_{5000} \cdot N_{o_{inserts}} = (4.852 \cdot 10^4) \text{ lbf}$$

$$SF := \frac{LiftCap \cdot 4}{W_{effective}} = 5.345$$



05/28/2015

3 point pick: $W := 14.30 \text{ tonf}$ maximum piece weight $No_{inserts} := 3$

$$W_{effective} := SALF \cdot 1.0 \cdot W = (3.318 \cdot 10^4) \text{ lbf} \quad 100\% \text{ lifting weight}$$

$$Allow_{5000} := Allow_{4000} \cdot CSAF = (1.213 \cdot 10^4) \text{ lbf} \quad \text{allowable safe working load per insert at 5000 psi}$$

$$Allow_{4000} := 10830 \text{ lbf} \quad \text{SWL tension}$$

$$LiftCap := Allow_{5000} \cdot No_{inserts} = (3.639 \cdot 10^4) \text{ lbf}$$

$$SF := \frac{LiftCap \cdot 4}{W_{effective}} = 4.387$$

LIFTING WEIGHT:

$$W_{piece} := 33.41 \text{ tonf} \quad \text{maximum panel weight} \quad N_{inserts} := 4$$

$$SALF := 1.16 \quad \text{sling angle load factor at 60 deg}$$

$$W_{effective} := SALF \cdot 1.0 \cdot W_{piece} = (7.751 \cdot 10^4) \text{ lbf} \quad 100\% \text{ lifting weight}$$

LIFT HOLE CAPACITY:

$$f_c := 5000 \text{ psi} \quad \phi := 1 \quad t := 16 \text{ in} \quad \text{slab thickness}$$

$$d_h := 3 \text{ in} \quad \text{diameter of hole} \quad K := 4 \quad \text{mix design constant}$$

$$A_c := 4.44288 \cdot t \cdot (t + d_h) = (1.351 \cdot 10^3) \text{ in}^2$$

$$P_{concrete} := \frac{\phi \cdot A_c \cdot K \cdot \sqrt{f_c} \cdot \frac{\text{lbf}}{\text{in}^2}}{\sqrt{2}} = (2.701 \cdot 10^5) \text{ lbf}$$

$$LiftCap := P_{concrete} \cdot N_{inserts} = (1.081 \cdot 10^6) \text{ lbf}$$

SAFETY FACTOR:

$$SF := \frac{LiftCap}{W_{effective}} = 13.94$$

$$Check := \begin{cases} \text{if } SF \geq 4 \\ \quad \parallel \text{ "OK" } \\ \text{else} \\ \quad \parallel \text{ "No Good" } \end{cases} = \text{ "OK" }$$



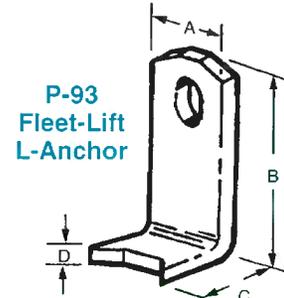
Christopher M. Wick
5/28/15

P-93 Fleet-Lift L-Anchor

The Dayton Superior P-93 Fleet-Lift L-Anchor is a very efficient anchor. This anchor is used for both stripping and erection carrying tension and/or shear loads (except for edge shear in thin panels). The L-Anchor produces exceptionally high pullout strength for its size, due to its foot design.

The L-Anchor can be placed on the face, back, or thicker panel edge allowing for back-stripping and their rotation from horizontal to vertical.

The P-93 anchor is available in plain or hot-dipped galvanized finish. This anchor requires the use of the 2/5-ton range ring clutch and the 2/3-ton load range recess plug.



To Order:
Specify: (1) quantity, (2) name, (3) product code, (4) finish.

Example:
200, P-93 Fleet-Lift L-Anchor, FL050, hot-dipped finish.

P-93 Fleet-Lift L-Anchor (ton x length)	Product Code	Precast Concrete Panel Thickness	Minimum Edge or Corner Distance	Shear Safe Working Load	Tension Safe Working Load	A	B	C	D
1-ton x 4" long	FL050	5" Min.	12"	2,000 lbs.	2,000 lbs.	1-1/4"	4"	1-7/16"	3/16"

- Notes:
- 1) Safe Working Load provides an approximate factor of safety of 4 to 1 in 3,500 psi normal weight concrete.
 - 2) Anchor is not designed for use in thin edge shear conditions.
 - 3) Anchor must use FL051 (P99) Reusable Recess Plug

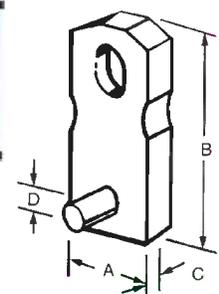
P-94 Fleet-Lift T-Anchor

The P-94 Fleet-Lift T-Anchor is a versatile anchor available in many sizes and lengths. Its high pullout strength allows it to be used for back-stripping and erection. T-Anchors can be placed on the face, back or edge of panels allowing for back-stripping and rotation from horizontal to vertical.

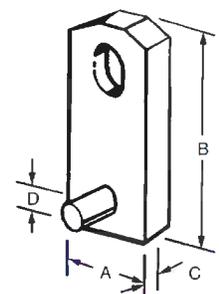
P-94 anchors are available in plain or hot-dipped galvanized finish.

To Order:
Specify: (1) quantity, (2) name, (3) product code, (4) finish.

Example:
200, P-94 Fleet-Lift T-Anchors, FL 850, hot-dipped galvanized.



P-94 Fleet-Lift T-Anchor 4-ton

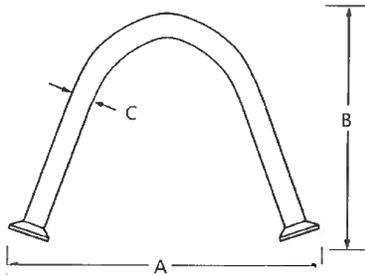


P-94 Fleet-Lift T-Anchor 2, 6 and 8-ton

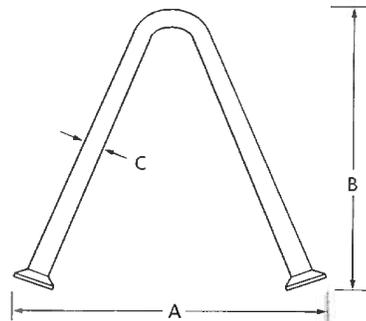
P-94 Fleet-Lift L-Anchor (ton x length)	Product Code	Precast Concrete Minimum Panel Thickness	Minimum Edge or Corner Distance	Shear Safe Working Load	Tension Safe Working Load	A	B	C	D
2-ton x 4" long	FL110	4-3/4"	8"	4,000 lbs.	4,000 lbs.	1-1/4"	4"	3/8"	1/2"
2-ton x 5-1/2" long	FL059	5-7/8"	11"	4,000 lbs.	4,000 lbs.	1-1/4"	5-1/2"	3/8"	1/2"
4-ton x 4-1/4" long	FL848	4-5/8"	8-1/2"	5,500 lbs.	5,500 lbs.	1-1/2"	4-1/4"	5/8"	1/2"
4-ton x 4-3/4" long	FL849	5-1/8"	9-1/2"	7,100 lbs.	7,100 lbs.	1-1/2"	4-3/4"	5/8"	1/2"
4-ton x 5-1/4" long	FL850	5-5/8"	10-1/2"	8,000 lbs.	8,000 lbs.	1-1/2"	5-1/4"	5/8"	1/2"
4-ton x 5-3/4" long	FL851	6-1/8"	11-1/2"	8,000 lbs.	8,000 lbs.	1-1/2"	5-3/4"	5/8"	1/2"
4-ton x 6-1/4" long	FL852	6-5/8"	12-1/2"	8,000 lbs.	8,000 lbs.	1-1/2"	6-1/4"	5/8"	1/2"
4-ton x 6-3/4" long	FL853	7-1/8"	13-1/2"	8,000 lbs.	8,000 lbs.	1-1/2"	6-3/4"	5/8"	1/2"
4-ton x 7-1/4" long	FL854	7-5/8"	14-1/2"	8,000 lbs.	8,000 lbs.	1-1/2"	7-1/4"	5/8"	1/2"
4-ton x 7-3/4" long	FL855	8-1/8"	15-1/2"	8,000 lbs.	8,000 lbs.	1-1/2"	7-3/4"	5/8"	1/2"
6-ton x 11-1/8" long	FL319*	11-1/2"	23"	12,000 lbs.	12,000 lbs.	2-1/2"	11-1/8"	5/8"	3/4"
8-ton x 6-1/8" long	FL055	6-1/8"	12-1/4"	7,950 lbs.	7,950 lbs.	2-1/2"	6-1/8"	3/4"	3/4"
8-ton x 11-1/8" long	FL119	11-1/2"	23"	16,000 lbs.	16,000 lbs.	2-1/2"	11-1/8"	3/4"	3/4"

- 1) Safe Working Load provides a factor of safety of approximately 4 to 1 in 3,500 psi normal weight concrete.
- 2) Side notches are provided on 4-ton T-Anchors only.
- 3) No side notches are provided on 2, 6 and 8-ton T-Anchors.
- 4) Use 8-10T P99 Recess and P91 Ring Clutch with FL319*.

P-75 AND P-75-H UTILITY ANCHOR



P-75 Utility Anchor



P-75-H Utility Anchor

The Dayton Superior Utility Anchors are available in three diameters and a series of lengths for specific concrete thickness. The utility anchor can be set in either a 90° or a 45° anchor orientation using the appropriate setting plug.

To Order:

Specify: (1) quantity, (2) name, (3) product code.

Example:

200, P-75 Utility Anchors, 5UA444.

P-75 and P-75-H Utility Anchor							
Anchor	Type	Product Code No.	A	B	C	End Shape	Minimum Edge Distance
P-75	4UA444	121877	5-1/4"	3-1/8"	0.444"	Swift Lift	9"
	5UA444	123442	6"	3-3/4"	0.444"	Swift Lift	11"
	6UA444	121888	7-3/8"	4-3/4"	0.444"	Swift Lift	15"
	5UA671	123441	6 7/16"	3-3/4"	0.671"	Swift Lift	11"
	6UA671	121889	7-3/8"	4-3/4"	0.671"	Swift Lift	15"
	8UA671	121891	9-3/4"	6-3/4"	0.671"	Swift Lift	20"
P-75-H	12UA875	124738	15-7/8"	11"	0.875"	Swift Lift	30"

Anchor	Type	Product Code No.	Minimum Panel Thickness	Safe Working Load Tension 90	Safe Working Load Shear 90	Safe Working Load Tension/Shear 45	Edge Distance
P-75	4UA444	121877	4"	3,200	5,800	2,260	9"
	5UA444	123442	5"	3,860	7,710	2,730	10"
	6UA444	121888	5 5/8"	4,460	9,460	3,150	12"
	5UA671	123441	5"	4,560	8,430	3,220	10"
	6UA671	121889	5 5/8"	7,320	15,780	5,170	12"
	8UA671	121891	7 5/8"	10,830	18,850	7,660	16"
P-75-H	12UA875	124738	12"	24,000	---	24,000	---

Safe Working Loads are based on 4:1 safety factors in 4000 psi concrete

Note:

- 1) Compressive strength of normal weight concrete to be 4,000 psi at time of initial lift.
- 2) Safe working loads provide an approximate factor of safety of 4 to 1.
- 3) Utility anchors to be installed at 90° to surface of the concrete.
- 4) Shear safe working loads are based on loading in the direction of the top of the precast concrete element.

Refer to www.daytonsuperior.com for latest Technical Data Sheet and MSDS
 7777 Washington Village Dr., Suite 130, Dayton OH 45459
 Customer Service: (888) 977-9600
 Technical Assistance: (866) 329-8724



MEMO

Date: May 28, 2015

Subject: VAOT Bridge Replacement Richford, VT

MEANS AND METHODS OF TRANSPORTATION, STORAGE, HANDLING AND CURING OF PRECAST PRODUCTS

CURING

- Within 2 hours of finishing product will be covered
- Product will be left covered overnight in forms
- Per CSI QC manual product will be stripped when cylinder strength reaches 2500 psi

HANDLING

- Product will be stripped and handled in plant with overhead crane utilizing pick points specified on drawings
- Product will be moved from plant on trailers
- Product will be handled in yard with travel lift utilizing pick points specified on drawing

STORAGE

- Product will be dunned on level ground in CSI storage yard until ready for delivery

TRANSPORT

- Product will be placed on trailers utilizing softeners at contact points
- Product will be properly strapped and secured to trailer
- Product will be offloaded at site per shop drawings and/or direction of CSI technical representative



April 21, 2015

Attn: Mr. Cody Marsh
G W Tatro Constrcution Inc
Jct Rtes 15 & 108
Jeffersonville, VT

RE: VT/DOT Bridge Replacement- Roadway improvement- C22312

For your records, please note that we would like to use the following concrete mix design (self-consolidating) in manufacturing.

Proportion indicated is per cubic yard basis:

Cement (Type III) Dragon	527#
Fly Ash	225#
½" Crushed Stone (Dracut)	1,522#
Sand (Decato)	1,360#
Water	275#
Glennium 7710	85 oz
MBAE 90	7 oz
Maximum Slump Spread	23" to 26"
Entrained Air	6%±1%
Concrete Strength (28 days)	5,000 psi
Water/Cement Ratio	0.36 max.

Please call me if you have any questions.

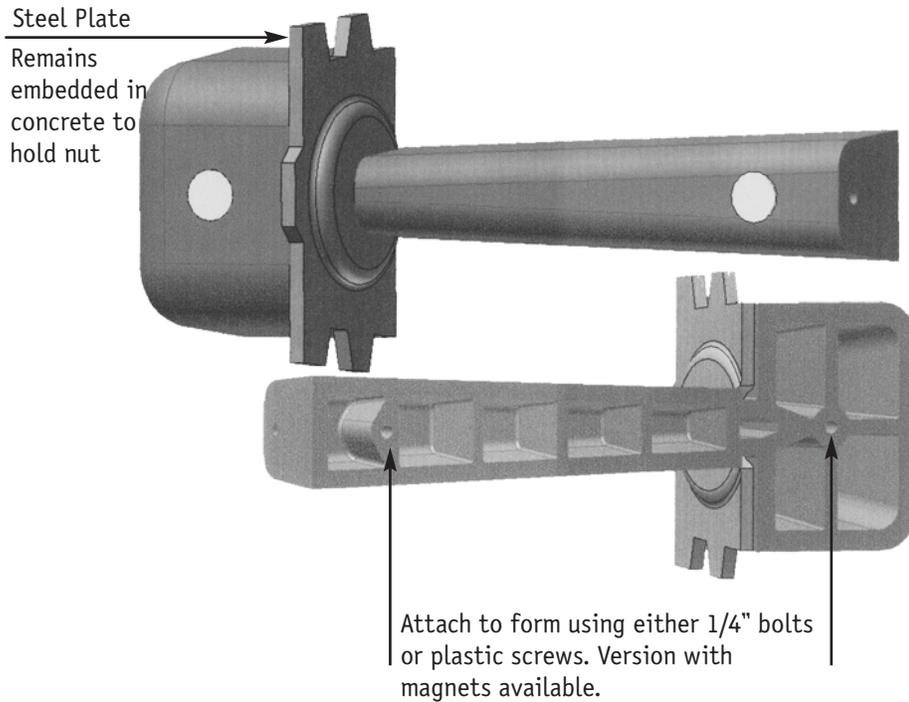
Very truly yours,

Concrete Systems, Inc.
Mr. Kanti Patel
Quality Control Manager

MX-FA5000SC30

9 Commercial Street Hudson, New Hampshire 03051 Phone (603) 889-4163
Fax Number: Precast Sales (603) 889-0039
Fax Number: Manhole Design and Engineering (603) 598-1344

> BOLT POCKET FORMER



Introducing our Bolt Pocket Former - the ideal solution for tying together sections of box culvert or precast walls. This dual purpose forming device creates both a groove through the joint and a pocket for the bolt. The steel plate that remains embedded in the concrete accepts up to 1" rod. Molded out of a specially formulated urethane, our bolt pocket former will last for at least 50 pours when properly maintained. Call for more details and pricing information.

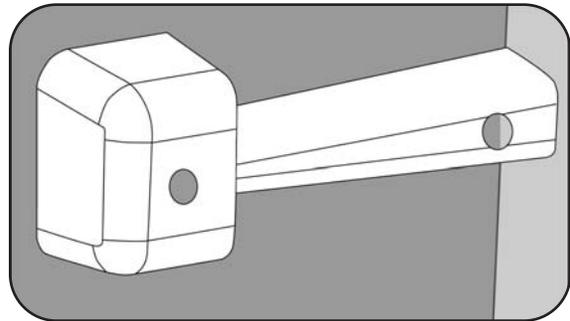
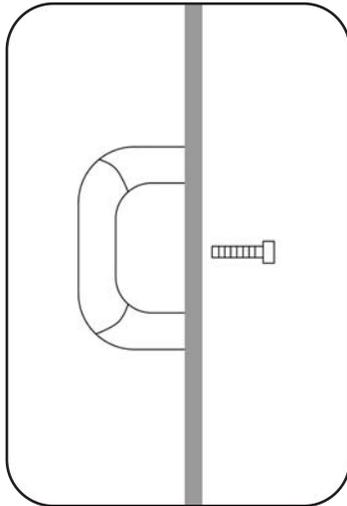
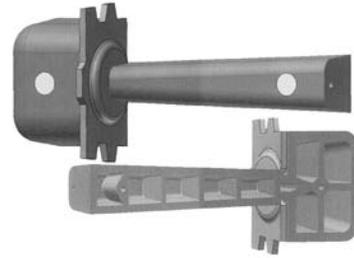


phone: 800.220.4857 sales@pennsylvaniainsert.com fax: 610.948.9750

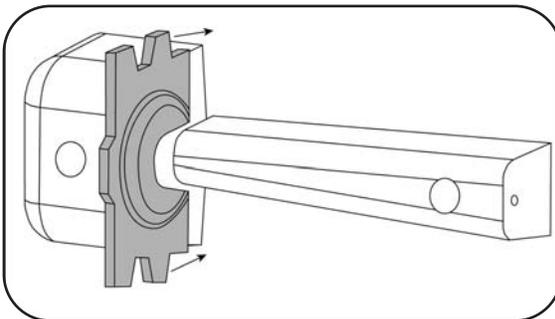
> serving concrete producers for over 30 years

BOLT POCKET FORMER

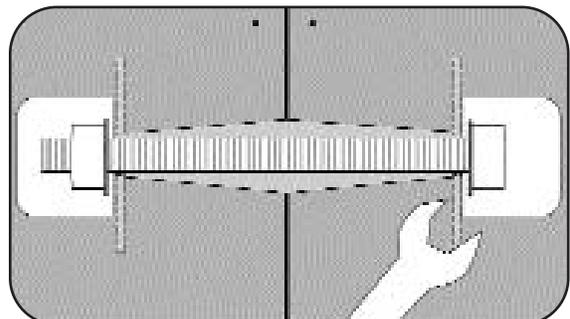
The simple forming solution for tying together sections of box culvert or precast walls.



1. Attach Bolt Pocket Former to form using either 1/4" bolts or plastic screws for non collapsing forms. The inserts are replaceable should the threads show signs of wear after numerous uses.



2. Slide steel plate onto Bolt Pocket Former. Pour.



3. After stripping form, slide Bolt Pocket Former out using pliers. Steel plate remains embedded in concrete. A groove through the joint and bolt pocket are formed. For field installation*, the steel plate accepts up to 1" rod.
*We provide a field installation kit consisting of rod, 2 nuts, and 2 washers for an additional charge.



FOR INFO. CALL 1-800-220-4857
or sales@pennsylvaniainsert.com

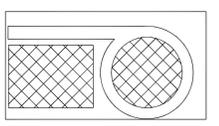
Fax to:	Customer	PA Insert Quote/Order#	Page ____ of ____
Fax#	Project		
From	Job#	Ship Date	
Date			

Approved/Notes

PA Insert Corp

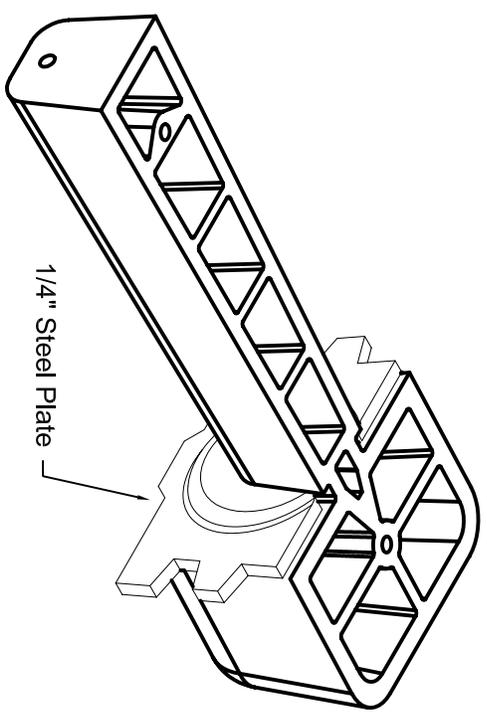
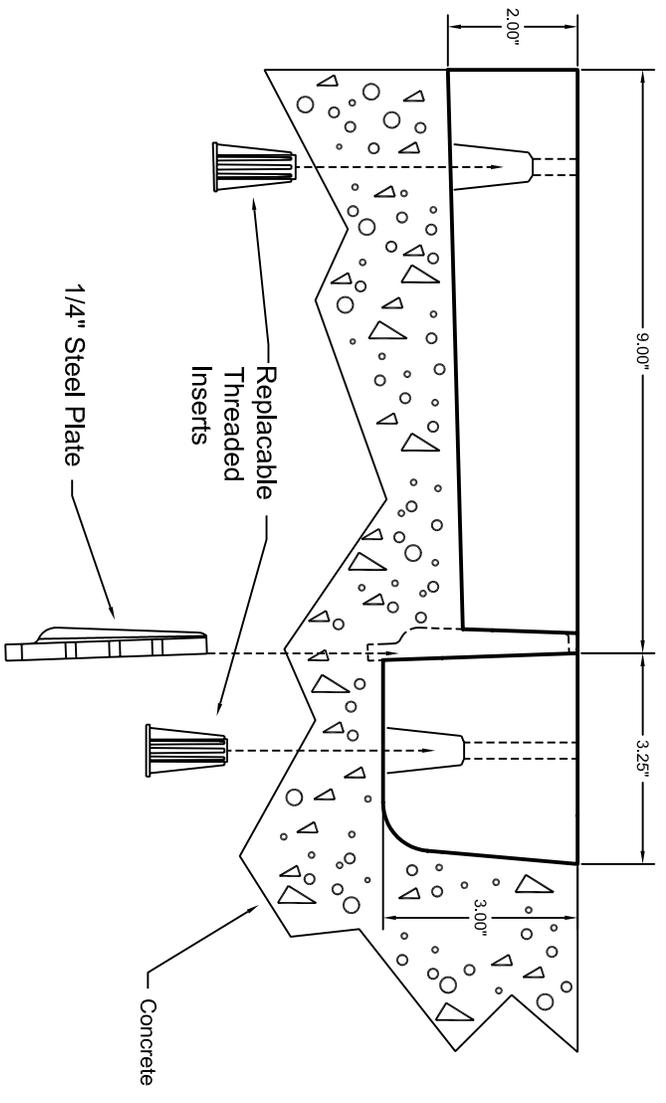
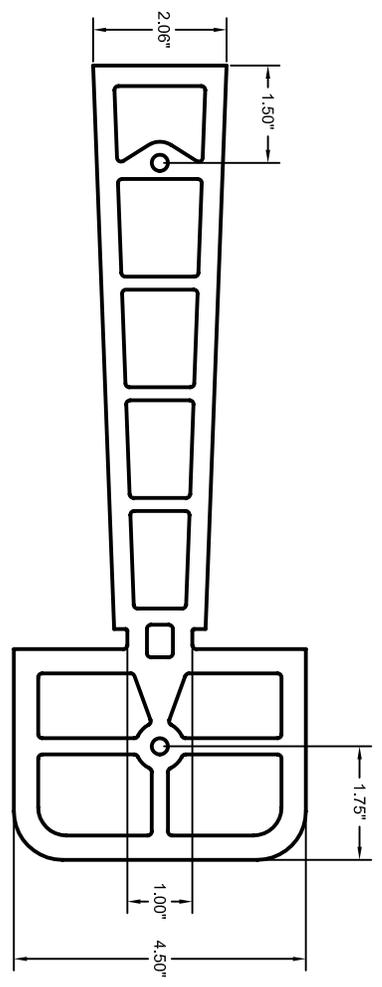
PO Box 199
Spring City PA 19475
tel: 610-948-9688
fax: 610-948-9750

email: sales@pennsylvaniainsert.com
web: www.pennsylvaniainsert.com



BOLT POCKET FORMER (for up to 1" bolt)

- Made from durable Urethane for reusability
- Ribbed construction increases strength
- *Replacable 1/4" Threaded Inserts
- **1/4" Galvanized Steel Plate Standard
- Available with magnets to attach to form



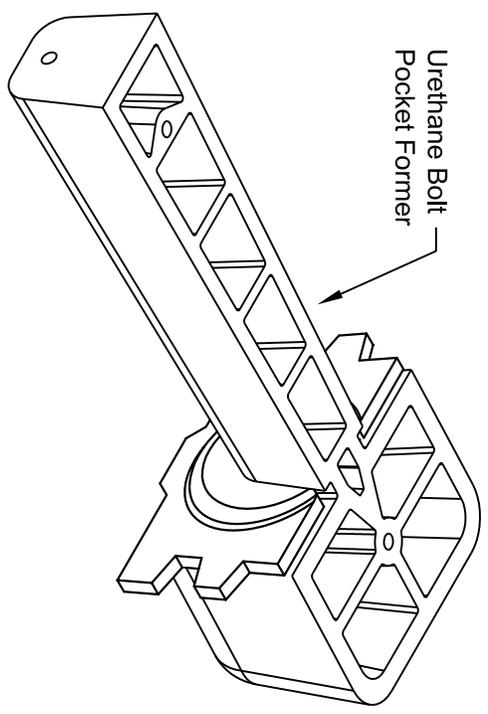
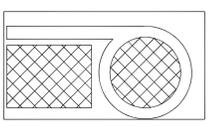
*Threaded Inserts sold separately (Part Number 1200)

**Steel Plate stays in concrete, sold separately (Part Number 4024)

Fax to:	Customer	Approved/Notes
Fax#	Project	
From	Job#	Ship Date
Date	PA Insert Quote/Order#	Page ____ of ____

PA Insert Corp
 PO Box 199
 Spring City, PA 19475
 tel: 610-948-9688
 fax: 610-948-9750

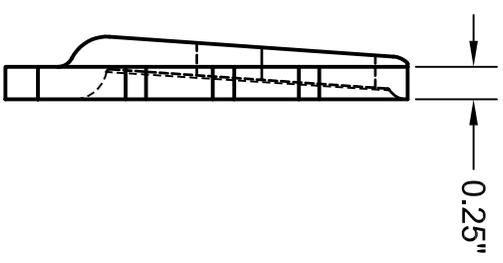
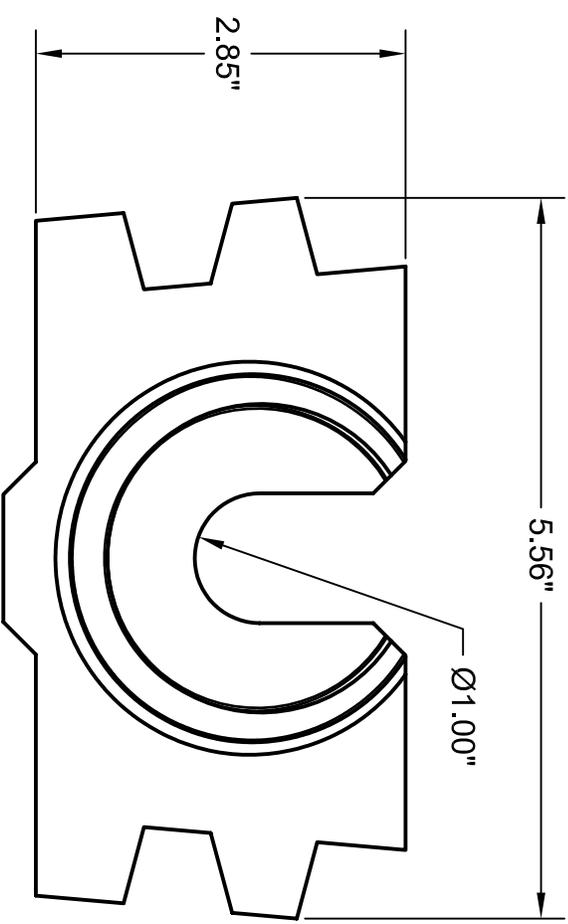
email: sales@pennsylvaniainsert.com
 web: www.pennsylvaniainsert.com



Urethane Bolt
 Pocket Former

BOLT POCKET PLATE (use with bolt pocket former)

- *1/4" Galvanized Steel Plate Standard, distributes bolt load
- Teeth anchor plate securely in concrete
- Pressed center keeps bolt in position
- **Fits securely into reusable bolt pocket former



*Plain Steel or Stainless Steel Optional
 **Urethane Bolt Pocket Former sold separately (part number 4023)
 06/03/04



CELLULAR JOINT FILLER

CLOSED-CELL GASKET MATERIAL

What It Is

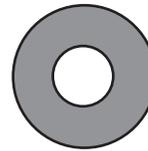
CLOSED CELL JOINT FILLER is a flexible, compressible material that easily fills difficult joints in concrete pipes and structures. Whether glued onto the joint or placed between the structures, it quickly conforms to the joint profile. Closed Cell Joint Filler can be supplied as cut and spliced gaskets, or as bulk material for field fabrication of gaskets. It has excellent compressibility and is resistant to weather, ozone, acids, and alkalis.



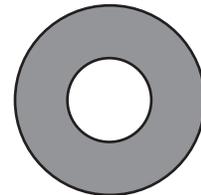
1" x 1"
25 FT. ROLLS



1" x 2"
25 FT. ROLLS



ROUND 3/8" WALL
250 FT. ROLLS



ROUND 1/2" WALL
250 FT. ROLLS

Why It's Better

- Works with Round, Elliptical & Arch Pipe
- Works with Box Culverts and Manholes
- Available in 25' or 250' rolls, or by the foot
- Also available as cut and spliced gaskets
- Manufactured of high-quality synthetic rubber
- Easily compresses to fill irregular joints
- Clean and easy to use.
- May be used in place of trowelable sealants
- Easily cut and spliced in the field or in your yard
- May be glued directly to the joint

How It Performs

CLOSED CELL JOINT FILLER MATERIAL meets or exceeds all requirements of:

ASTM D-1056 - Flexible Cellular Materials - Sponge or Expanded Rubber

Virginia and New York DOT approved.
Complies with NYDOT Std. 706.17

RECTANGULAR CROSS-SECTIONS are made from a Neoprene/EPDM Blend.

CIRCULAR TUBING CROSS-SECTIONS are made from a Nitrile/PVC blend.

Typical Physical Properties

Color	Black	Water Absorption by Weight (Max.).....	10%
Compression Deflection (psi)	5 - 9	Temperature Range (F)	
Tensile Strength (psi Min.)	30	Low (Flex without cracking)	-70
Elongation (%Min.)	125	High (Continuous)	150
Resilience - Bashore (% rebound Average)		High (Intermittent)	200
(1/2" thickness @ 72°F)	25 - 40	Heat Aging (7 days @ 158°F)	
Shore 00 Durometer	45 - 60	Lineal Shrinkage (Max.)	10%
Density (pcf) average	5.5 - 7.5		

Press-Seal believes all information is accurate as of its publication date. Information, specifications, and prices are all subject to change without notice. Press-Seal is not responsible for any inadvertent errors. Copyright 2011.



Dowel Bar Splicer System

D-101-A Straight Dowel Bar Splicer DB-SAE, D-102-A 90° Hooked Dowel Bar Splicer, D-103-A 180° Hooked Dowel Bar Splicer, D-104-A Double-Ended Dowel Bar Splicer

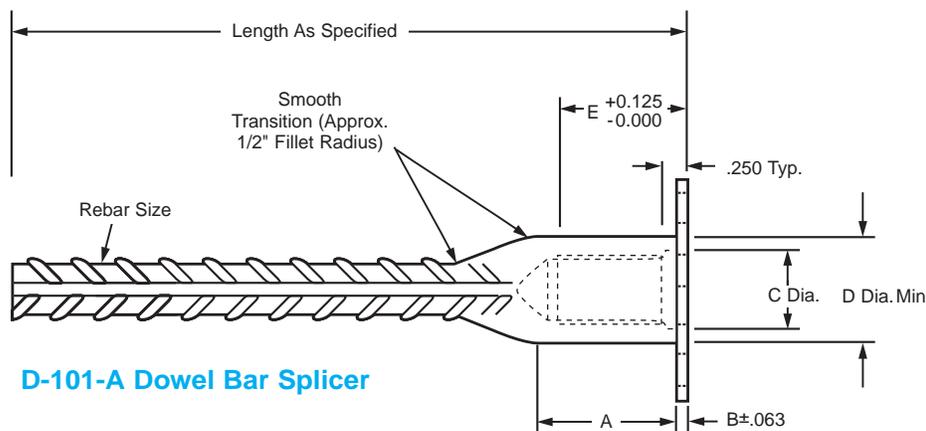
The Dayton/Richmond Dowel Bar Splicer is a one-piece unit, integrally forged from ASTM A615 grade 60 deformed rebar material. The splicers are available in #4 through #11 rebar sizes to be used in conjunction with the corresponding size dowel-in to accomplish a mechanical splice designed to achieve 160% of specified yield (full mechanical ultimate).

The splicer can be furnished straight (D-101-A) cut to length, 90° and 180° hooked (D-102-A and D-103-A) and double-ended (D-104-A) in plain or epoxy coated finish. The splicer can also be special-ordered with a reduced diameter washer flange or with the washer flange clipped (in more than one direction, if required) to provide adequate concrete cover, or to avoid interference.

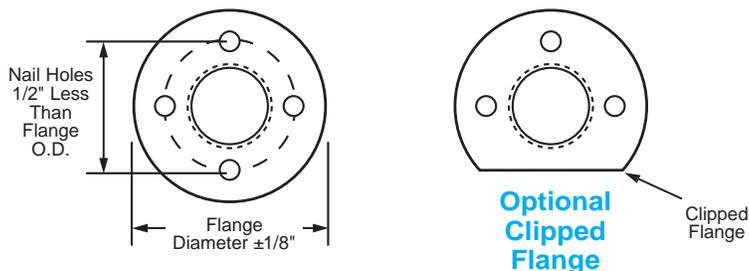
The D-104-A Double-Ended Dowel Bar Splicer is used to establish a direct load path through a concrete section, thus avoiding multiple hooked rebar and eliminating rebar congestion. The double-ended unit can be configured in a "U" shape for special applications.

Bar Size	Thread Size	A	B	C	D	E	Flange Diameter	Minimum P _{Ult} Range = 95% F _U Actual or 160% F _y Specified*
#4 [#13]	5/8"-11 UNC	1-1/8"	1/8"	11/16"	55/64"	1"	1-7/8"	19,200 lbs.
#5 [#16]	3/4"-10 UNC	1-9/16"	1/8"	13/16"	1-3/64"	1-1/8"	2-1/16"	29,760 lbs.
#6 [#19]	7/8"-9 UNC	1-11/16"	1/8"	15/16"	1-15/64"	1-1/4"	2-1/4"	42,400 lbs.
#7 [#22]	1"-8 UNC	1-27/32"	1/8"	1-1/16"	1-27/64"	1-3/8"	2-7/16"	57,600 lbs.
#8 [#25]	1-1/8"-8 UN	2-1/16"	1/8"	1-3/16"	1-19/32"	1-1/2"	2-5/8"	75,840 lbs.
#9 [#29]	1-1/4"-8 UN	2-3/16"	1/8"	1-5/16"	1-25/32"	1-5/8"	2-13/16"	96,000 lbs.
#10 [#32]	1-7/16"-8 UN	2-7/16"	1/8"	1-1/2"	2"	1-13/16"	3"	121,920 lbs.
#11 [#36]	1-9/16"-8 UN	2-9/16"	1/8"	1-5/8"	2-7/32"	1-15/16"	3-1/4"	149,760 lbs.

*Loads shown based on 160% f_y specified



D-101-A Dowel Bar Splicer



Note: No. 4, 5 and 6 splicers, 18", 24" and 36" long will usually have a stamped metal plug to protect threads; all other sizes will have a plastic cap plug.

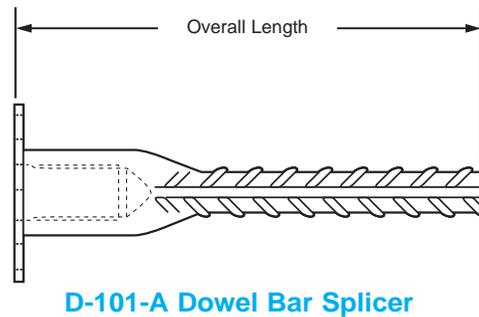
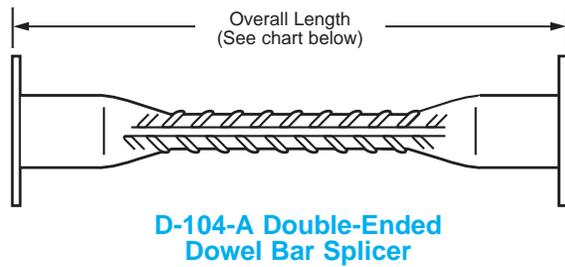
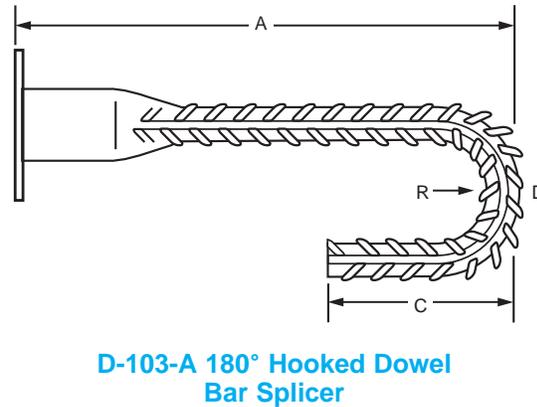
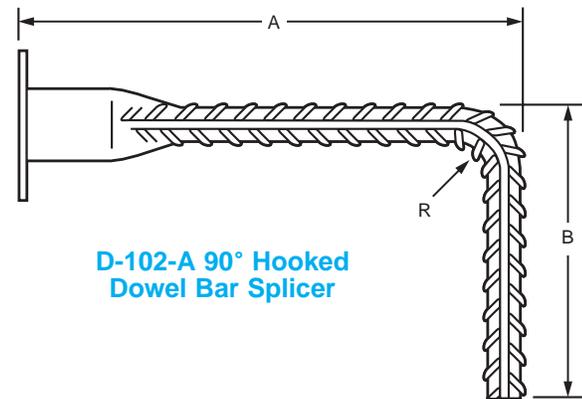
Dowel Bar Splicer System

Specified or Required Dowel Bar				Recommended Dowel Bar Splicer and Dowel-In						
Bar Size	Grade 60 Rebar Loads (lbs.)			System Thread Size*	DB-SAE Bar Size	Dowel-In Bar Size	System Stress Area (min.)	Completed Splice (lbs.)		
	P_y	$1.25 P_y$	P_{ult}					P_y	$1.25 P_y$	Minimum P_{ult} Range = 95% F_u Actual or 160% F_y Specified**
#4 [#13]	12,000	15,000	18,000	5/8"-11	#4	#4	.20	12,000	15,000	19,200
#5 [#16]	18,600	23,250	27,900	3/4"-10	#5	#5	.31	18,600	23,250	29,760
#6 [#19]	26,400	33,000	39,600	7/8"-9	#6	#6	.44	26,400	33,000	42,400
#7 [#22]	36,000	45,000	54,000	1"-8	#7	#7	.60	36,000	45,000	57,600
#8 [#25]	47,400	59,250	71,100	1-1/8"-8	#8	#8	.79	47,400	59,250	75,840
#9 [#29]	60,000	75,000	90,000	1-1/4"-8	#9	#9	1.00	60,000	75,000	96,000
#10 [#32]	76,200	95,250	114,000	1-7/16"-8	#10	#10	1.27	76,200	95,250	121,920
#11 [#36]	93,600	117,000	140,400	1-9/16"-8	#11	#11	1.56	93,600	117,000	149,760

P_y =Minimum Yield Strength of bar.

*5/8", 3/4", 7/8" and 1" sizes have UNC Threads. 1-1/8" and larger sizes are equipped with UN Threads.

**Loads shown based on 160% f_y specified.



D-104-A Double-Ended Min. Lengths		Tolerance Overall Length
#4 [#13]	12" O.A.	+0 - 3/8"
#5 [#16]	12" O.A.	+0 - 3/8"
#6 [#19]	14" O.A.	+0 - 1/2"
#7 [#22]	16" O.A.	+0 - 5/8"
#8 [#25]	16" O.A.	+0 - 3/4"
#9 [#29]	16" O.A.	+0 - 1"
#10 [#32]	16" O.A.	+0 - 1"
#11 [#36]	16" O.A.	+0 - 1"

See D-108 Headed Dowel Bar Splicer on page 17.

To Order:

Specify: (1) quantity, (2) name, (3) bar size (should be equivalent to the rebar being substituted for on the structural drawings), (4) dimensions required.

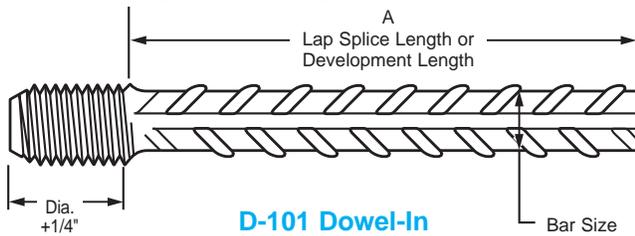
Example:

600, D-101-A Dowel Bar Splicers, #5 rebar, 36" long.

Dowel Bar Splicer System

D-101 Dowel-in, D-102 90° Hooked Dowel-in, D-103 180° Hooked Dowel-in, D-104 Double-Ended Dowel-in

The Dayton/Richmond Dowel-In is available Straight (D-101), 90° and 180° Hooked (D-102 and D-103) and Double-Ended (D-104). Each is manufactured from grade 60 deformed rebar material and is available in rebar sizes #4 through #11 in plain or epoxy coated finish. The threaded end of the Dowel-In is enlarged by forging, before threading, to ensure that the cross-sectional area of the bar is not reduced by the threading operation. This design feature assures full ultimate strength of the rebar. Dowel-ins are configured to facilitate easy installation and can be easily assembled by hand. On larger projects, such as highway paving, a centrifugal chuck on an electric or air-powered drill motor can be employed to speed installation. See the D-49 Magna Jaw on Page 65.



To Order:

Specify: (1) quantity, (2) name, (3) bar size (should be equivalent to the rebar being substituted for on the structural drawings), (4) dimensions required (see below).

Example:

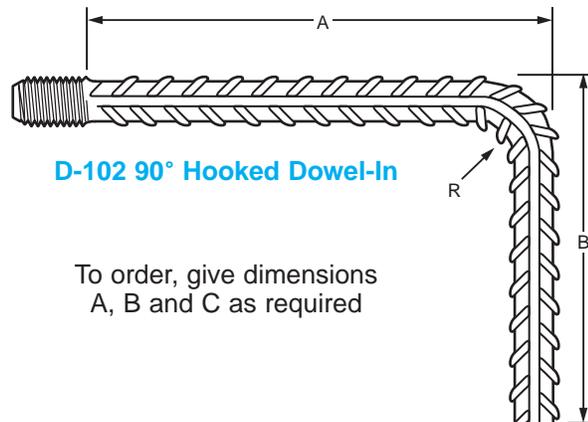
600, D-102 90° Hooked Dowel-Ins, #5 rebar, A=14", B=8"

Specified or Required Dowel Bar	Recommended Dowel Bar Splicer and Dowel-In										
	Grade 60 Rebar Loads (lbs.)			System Thread Size*	DB-SAE Bar Size	Dowel-In Bar Size	System Stress Area (min.)	Completed Splice (lbs.)			Minimum P_{ult} Range = 95% F_u Actual or 160% F_y Specified**
	Bar Size	P_y	$1.25 P_y$					P_{ult}	P_y	$1.25 P_y$	
#4 [#13]	12,000	15,000	18,000	5/8"-11	#4	#4	.20	12,000	15,000	19,200	
#5 [#16]	18,600	23,250	27,900	3/4"-10	#5	#5	.31	18,600	23,250	29,760	
#6 [#19]	26,400	33,000	39,600	7/8"-9	#6	#6	.44	26,400	33,000	42,400	
#7 [#22]	36,000	45,000	54,000	1"-8	#7	#7	.60	36,000	45,000	57,600	
#8 [#25]	47,400	59,250	71,100	1-1/8"-8	#8	#8	.79	47,400	59,250	75,840	
#9 [#29]	60,000	75,000	90,000	1-1/4"-8	#9	#9	1.00	60,000	75,000	96,000	
#10 [#32]	76,200	95,250	114,000	1-7/16"-8	#10	#10	1.27	76,200	95,250	121,920	
#11 [#36]	93,600	117,000	140,400	1-9/16"-8	#11	#11	1.56	93,600	117,000	149,760	

P_y =Minimum Yield Strength of bar.

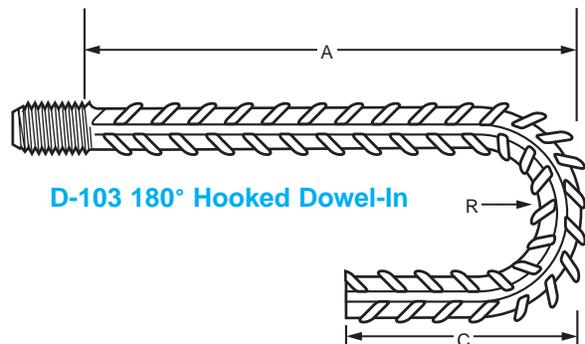
*5/8", 3/4", 7/8" and 1" sizes have UNC Threads. 1-1/8" and larger sizes are equipped with UN Threads.

**Loads shown based on 160% f_y specified.



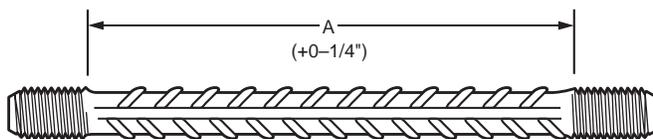
D-102 90° Hooked Dowel-In

To order, give dimensions A, B and C as required

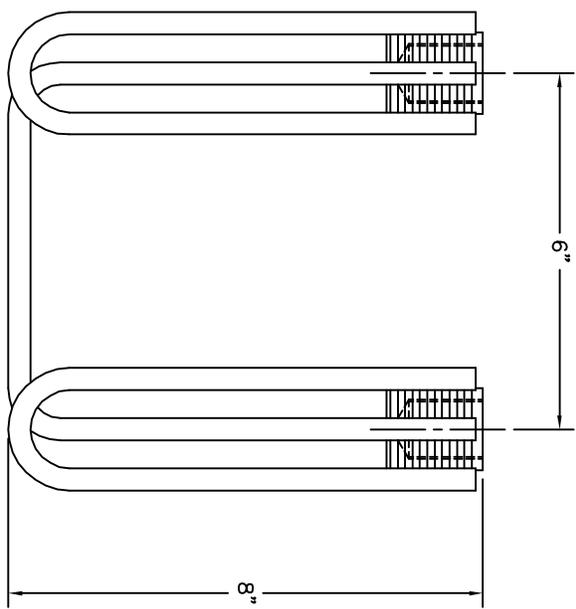
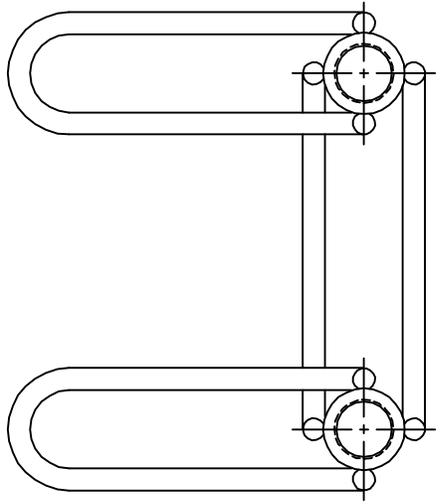


D-103 180° Hooked Dowel-In

See D-108 Headed Dowel-In on page 17.



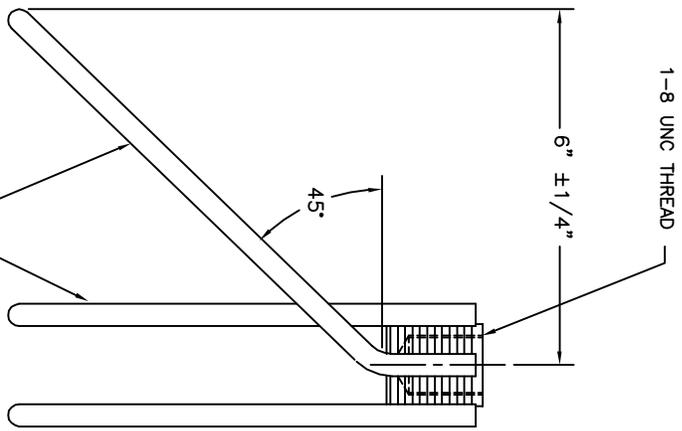
D-104 Double-Ended Dowel-In



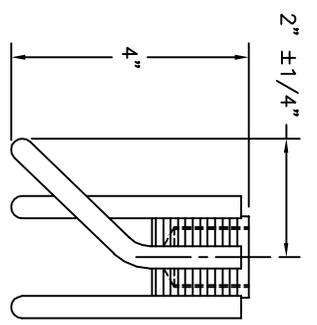
114670

.375 DIA WIRE C1018 (TYP.)

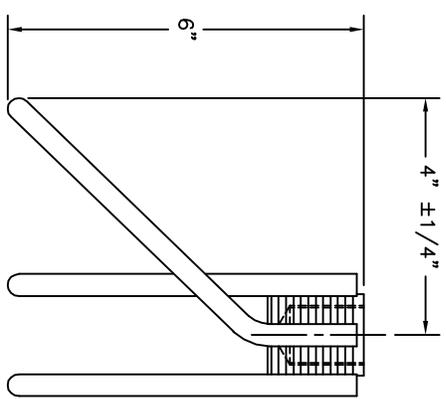
DEPTH	BENT LEG	PRODUCT CODE
8"	6"	114670
6"	4"	114320
4"	2"	124792



1-8 UNC THREAD



124792



114320

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721 RICHARD ST. - MAMISBURG, OH 45342
 PHONE NO. (937) 866-0711 - FAX NO. (937) 866-9768

TITLE: F-41 WINGWALL INSERT
 TWO BOLT - 1"-8 UNC THREAD

DRAWN BY: NAME	CHECKED BY: NAME	DWG. NO.	DWG. NO.	REV. REV
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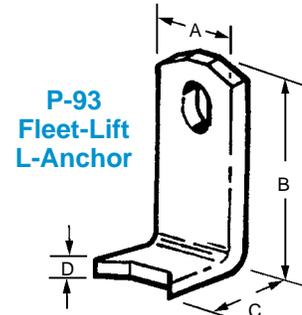
NOTES:
 1) CENTERLINE OF FERRULES MUST BE PARALLEL TO EACH OTHER

P-93 Fleet-Lift L-Anchor

The Dayton Superior P-93 Fleet-Lift L-Anchor is a very efficient anchor. This anchor is used for both stripping and erection carrying tension and/or shear loads (except for edge shear in thin panels). The L-Anchor produces exceptionally high pullout strength for its size, due to its foot design.

The L-Anchor can be placed on the face, back, or thicker panel edge allowing for back-stripping and their rotation from horizontal to vertical.

The P-93 anchor is available in plain or hot-dipped galvanized finish. This anchor requires the use of the 2/5-ton range ring clutch and the 2/3-ton load range recess plug.



To Order:

Specify: (1) quantity, (2) name, (3) product code, (4) finish.

Example:

200, P-93 Fleet-Lift L-Anchor, FL050, hot-dipped finish.

P-93 Fleet-Lift L-Anchor (ton x length)	Product Code	Precast Concrete Panel Thickness	Minimum Edge or Corner Distance	Shear Safe Working Load	Tension Safe Working Load	A	B	C	D
1-ton x 4" long	FL050	5" Min.	12"	2,000 lbs.	2,000 lbs.	1-1/4"	4"	1-7/16"	3/16"

Notes:

- 1) Safe Working Load provides an approximate factor of safety of 4 to 1 in 3,500 psi normal weight concrete.
- 2) Anchor is not designed for use in thin edge shear conditions.
- 3) Anchor must use FL051 (P99) Reusable Recess Plug

P-94 Fleet-Lift T-Anchor

The P-94 Fleet-Lift T-Anchor is a versatile anchor available in many sizes and lengths. Its high pullout strength allows it to be used for back-stripping and erection. T-Anchors can be placed on the face, back or edge of panels allowing for back-stripping and rotation from horizontal to vertical.

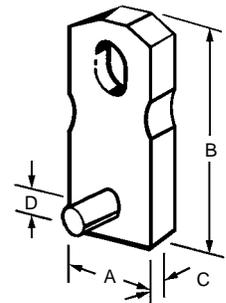
P-94 anchors are available in plain or hot-dipped galvanized finish.

To Order:

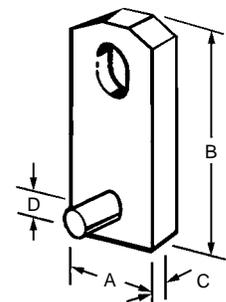
Specify: (1) quantity, (2) name, (3) product code, (4) finish.

Example:

200, P-94 Fleet-Lift T-Anchors, FL 850, hot-dipped galvanized.



P-94 Fleet-Lift T-Anchor 4-ton



P-94 Fleet-Lift T-Anchor 2, 6 and 8-ton

P-94 Fleet-Lift L-Anchor (ton x length)	Product Code	Precast Concrete Mininum Panel Thickness	Minimum Edge or Corner Distance	Shear Safe Working Load	Tension Safe Working Load	A	B	C	D
2-ton x 4" long	FL110	4-3/4"	8"	4,000 lbs.	4,000 lbs.	1-1/4"	4"	3/8"	1/2"
2-ton x 5-1/2" long	FL059	5-7/8"	11"	4,000 lbs.	4,000 lbs.	1-1/4"	5-1/2"	3/8"	1/2"
4-ton x 4-1/4" long	FL848	4-5/8"	8-1/2"	5,500 lbs.	5,500 lbs.	1-1/2"	4-1/4"	5/8"	1/2"
4-ton x 4-3/4" long	FL849	5-1/8"	9-1/2"	7,100 lbs.	7,100 lbs.	1-1/2"	4-3/4"	5/8"	1/2"
4-ton x 5-1/4" long	FL850	5-5/8"	10-1/2"	8,000 lbs.	8,000 lbs.	1-1/2"	5-1/4"	5/8"	1/2"
4-ton x 5-3/4" long	FL851	6-1/8"	11-1/2"	8,000 lbs.	8,000 lbs.	1-1/2"	5-3/4"	5/8"	1/2"
4-ton x 6-1/4" long	FL852	6-5/8"	12-1/2"	8,000 lbs.	8,000 lbs.	1-1/2"	6-1/4"	5/8"	1/2"
4-ton x 6-3/4" long	FL853	7-1/8"	13-1/2"	8,000 lbs.	8,000 lbs.	1-1/2"	6-3/4"	5/8"	1/2"
4-ton x 7-1/4" long	FL854	7-5/8"	14-1/2"	8,000 lbs.	8,000 lbs.	1-1/2"	7-1/4"	5/8"	1/2"
4-ton x 7-3/4" long	FL855	8-1/8"	15-1/2"	8,000 lbs.	8,000 lbs.	1-1/2"	7-3/4"	5/8"	1/2"
6-ton x 11-1/8" long	FL319*	11-1/2"	23"	12,000 lbs.	12,000 lbs.	2-1/2"	11-1/8"	5/8"	3/4"
8-ton x 6-1/8" long	FL055	6-1/8"	12-1/4"	7,950 lbs.	7,950 lbs.	2-1/2"	6-1/8"	3/4"	3/4"
8-ton x 11-1/8" long	FL119	11-1/2"	23"	16,000 lbs.	16,000 lbs.	2-1/2"	11-1/8"	3/4"	3/4"

- 1) Safe Working Load provides a factor of safety of approximately 4 to 1 in 3,500 psi normal weight concrete.
- 2) Side notches are provided on 4-ton T-Anchors only.
- 3) No side notches are provided on 2, 6 and 8-ton T-Anchors.
- 4) Use 8-10T P99 Recess and P91 Ring Clutch with FL319*.

DESCRIPTION AND USE

Consolideck® Saltguard® WB is a ready-to-use water-based, VOC compliant silane/siloxane water repellent and “chloride screen” for the protection of concrete and masonry surfaces. Saltguard® WB penetrates more deeply than conventional water- or solvent-based water repellents. Low odor and alkaline stable, Saltguard® WB is ideal for field or in-plant application to concrete and most masonry surfaces. Saltguard® WB protects horizontal and vertical surfaces from moisture intrusion and chemical attack of chloride salts.

Saltguard® WB’s Volatile Organic Compound (VOC) content is 194 grams/liter.

In coastal areas, Saltguard® WB protects against salt air by

screening chlorides from penetrating through concrete to the reinforcing steel. Saltguard® WB reduces rebar corrosion and surface spalling caused by water-carried salts. Use Saltguard® WB on horizontal surfaces such as driveways, sidewalks, tile or brick pavers. Provides excellent protection for retaining walls, bridge pilings and other vertical areas exposed to deicing salts.

Saltguard® WB is a ready-to-use effective alternative to conventional solvent-based silanes and siloxanes. Saltguard® WB penetrates and chemically bonds deep within the concrete or masonry substrate to provide long-lasting protection against moisture intrusion and water-related staining or deterioration.

Properly applied, Saltguard® WB produces no surface film. Treated surfaces keep their natural breathing characteristics and natural appearance.

Saltguard® WB is recommended for these substrates. Always test. Coverage is in square feet/meters per gallon.			
Substrate	Type	Use?	Coverage
Architectural Concrete Block	Burnished	❖	
	Smooth	❖	
	Split-faced	❖	
	Ribbed	❖	
Concrete	Brick	yes	150- 300 sq. ft. 14- 28 sq. m.
	Tile	yes	
	Precast Panels	yes	
	Pavers	yes	
	Cast-in-place	yes	
Fired Clay	Brick	yes	100- 175 sq. ft. 9- 16 sq. m.
	Tile	yes	
	Terra Cotta	yes	
	Pavers	yes	
Marble, Travertine, Limestone	Polished	no	NA
	Unpolished	no	NA
Granite	Polished	no	NA
	Unpolished	no	NA
Sandstone	Unpolished	yes	100- 175 sq. ft. 9- 16 sq. m.
Slate	Unpolished	no	NA

❖ Sure Klean® Custom Masonry Sealer or Weather Seal Blok-Guard® & Grafitti Control may be more appropriate. Always test to ensure desired results. Coverage estimates depend on surface texture and porosity.

ADVANTAGES

- Penetrates to produce long-lasting protection on vertical or horizontal surfaces.
- Water-based formula minimizes explosion and fire hazards associated with alcohol- or solvent-based water repellents.
- Easy soap-and-water cleanup from window glass, window frames and application equipment.
- Low odor reduces risk of application to occupied buildings.
- Alkaline stable — suitable for new “green” concrete, 14-28 days old.
- Effective protection against deicing salts and salt air.

Limitations

- Will not prevent water penetration through structural cracks, defects or open joints.
- Water repellency of treated surfaces will increase for up to 14 days after application.

TECHNICAL DATA

ACTIVE SUBSTANCE: Emulsion of silanes and oligomeric alkyl alkoxy siloxanes.
 ACTIVE MATERIAL CONTENT: 10%
 FORM: White, milky liquid
 SPECIFIC GRAVITY: 0.990
 FLASH POINT: >200°F (>93°C)
 FREEZE POINT: 32°F (0°C)
 VOC: 194 grams/liter (ASTM D 3960)
 WT. / GAL. : 8.24 lbs.

Performance Tests

Laboratory testing has shown this product to be a singularly effective general purpose water repellent/ chloride screen.

NCHRP 244 Series II Reduction of Water absorption (compared to untreated control) 89%

NCHRP 244 Series IV Reduction in total chloride ion concentration (as compared to untreated control specimens) 91%

AASHTO T259/260
Chloride penetration 2.8
Total chlorides, pcy 2.1

ASTM C 140 Reduction of water absorption (compared to untreated control) 92%

ASTM C 67 Reduction of water absorption (compared to untreated control) 94%

ASTM E 514 Wind-driven rain penetration (percent reduction of control) 89%

Surface deterioration/discoloration: None

Penetration (depending on substrate) 1- 10mm

Resistance to:
· Sunlight Excellent
· Alkalinity Excellent

Surface Appearance (after application) No change

Saltguard® WB is not suitable for application to synthetic resin paints, gypsum, or other nonmasonry surfaces. The product may not be suitable for surfaces to receive paints or coatings. Always test for compatibility.

PREPARATION

Protect people, property, vehicles, and (to minimize cleanup) all nonmasonry surfaces that may come into contact with the product, spray, wind drift or fumes. Protect and/or divert pedestrian and auto traffic.

Though Saltguard® WB has very little odor, avoid exposing building occupants to fumes. Maintain adequate ventilation when working on interior surfaces.

Surface Preparation

Thoroughly clean the surface using the appropriate Sure Klean® or Enviro Klean® product. Remove any curing compound or previous sealer. Though Saltguard® WB may be applied to slightly damp surfaces, best performance is achieved on clean, visibly dry and absorbent surfaces. Excessive moisture inhibits penetration and reduces the service life and performance of the treatment.

Clean newly constructed and repointed surfaces before application. Saltguard® WB won't impair adhesion of most sealing and caulking compounds. Always test for compatibility.

Surface and air temperatures must be at least 40°F (4°C) during application and above 40°F (4°C) for 8 hours following. If freezing conditions exist before application, let masonry thaw thoroughly. Subfreezing temperatures will freeze/crystallize Saltguard® WB, inhibiting penetration and significantly impairing results. Surface and air temperatures should not exceed 95°F (35°C). Higher temperatures evaporate the water carrier, reducing penetration.

Equipment

Apply with brush, roller or low-pressure spray (20 psi). Set sprayer to produce a wet stream. Avoid atomization of the material. Make sure all containers used for mixing or handling are clean and uncontaminated.

APPLICATION

Before use, read "Preparation" and "Safety Information."

ALWAYS TEST each type of surface for suitability and results before overall application. Test using the following application instructions. Let test dry thoroughly before inspection. Mix well before applying.

DO NOT DILUTE OR ALTER MATERIAL, OR USE FOR PURPOSES OTHER THAN SPECIFIED.

Vertical Application Instructions

For best results, apply Saltguard® WB "wet-on-wet" to a visibly dry and absorbent surface.

Spray: saturate from the bottom up. Apply enough for a 4" to 8" (15 to 20 cm) rundown below the spray contact point. Let the first application penetrate for 5-10 minutes. Reapply in the same saturating manner. Less material will be needed for the second application.

Brush or roller: apply uniformly. Saturate the surface. Let Saltguard® WB penetrate for 5 to 10 minutes. Brush out heavy runs and drips that don't penetrate.

Horizontal Application Instructions

1. Apply Saltguard® WB in a single saturating application. Use enough to keep the surface wet for 2 to 3 minutes before penetrating.
2. Broom out all puddles thoroughly until they penetrate the surface. Wipe up all excess material.

Treated surfaces will dry to touch within 1 hour. Protect surfaces from rainfall for a minimum of 6 hours following treatment. Treated surfaces will be ready for pedestrian and vehicle traffic in 24 hours. Many surfaces may require several days to achieve full water repellent effectiveness.

Dense Surface Application Instructions

Apply a single coat. Use enough Saltguard WB to completely wet the surface without creating drips, puddles or rundown. DO NOT OVERAPPLY. Test for application rate.

Cleanup

Clean tools, equipment, and surfaces affected by overspray with soap and warm water.

Paint Adhesion

Surfaces treated with Saltguard® WB may be coated with silicone emulsion paints and many oil-base paints. Always test to assure adhesion. Adhesion may be improved if surface is pressure-rinsed and allowed to dry before application.

Adhesion of some cementitious coatings, plaster, stucco, etc., may be adversely affected. Such surface treatments should be installed and allowed to thoroughly cure before installation of Saltguard® WB.

Always test to verify compatibility between Saltguard® WB and other proposed surface treatments.

SAFETY INFORMATION

Caution. May cause eye and skin irritation. For use by professional applicators only. Keep out of reach of children.

Precautions:

Contains: Oligomeric alkyl alkoxy siloxane. Avoid eye contact. Wear safety glasses or splash goggles depending on application procedures. Avoid prolonged skin contact. If skin is sensitive or becomes irritated, wear rubber gloves. Wear long-sleeved work clothing or splash-resistant clothing as needed. Do not breathe mists. May cause respiratory irritation. Wear a NIOSH-approved dust/mist respirator as needed. Wash thoroughly after handling. Generates ethyl and methyl alcohol during curing. Maintain adequate ventilation inside. **Storage and handling:** Store and transport upright with lid tightly in place. Store in a cool, dry place. Keep from freezing. Do not reuse or remove the label. **Do not alter**, dilute product or use for applications other than specified. **If spilled**, keep from drains and soil. Absorb with inert media. Dispose of contaminated absorbent, container and product in accordance with local, state and federal regulations. Read the MSDS and label for additional cautionary information.

First Aid

Ingestion: Call a physician, emergency room or poison control center immediately for instruction on properly inducing vomiting. Get medical assistance.

Eye Contact: Rinse thoroughly for 15 minutes. Get immediate medical assistance.

Skin Contact: Remove contaminated clothing and rinse thoroughly for 15 minutes. Seek medical assistance if persistent irritation develops. Launder contaminated clothing before reuse.

Inhalation: Seek medical attention if irritation develops.

Shelf Life: 1 year from the date of manufacture in tightly sealed, unopened container.

24 Hour Emergency Information: INFOTRAC at 1-800-535-5053

VOC content =194 g/L.

WARRANTY

The information and recommendations made are based on our own research and the research of others, and are believed to be accurate. However, no guarantee of their accuracy is made because we cannot cover every possible application of our products, nor anticipate every variation encountered in masonry surfaces, job conditions and methods used. The purchasers shall make their own tests to determine the suitability of such products for a particular purpose.

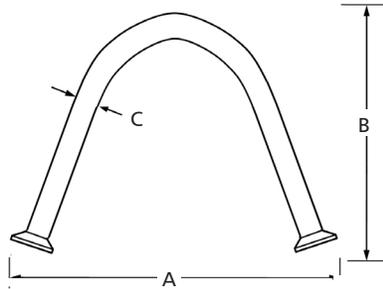
PROSOCO Inc. warrants this product to be free from defects. **Where permitted by law, PROSOCO makes no other warranties with respect to this product, express or implied, including without limitation the implied warranties of merchantability or fitness for particular purpose.** The purchaser shall be responsible to make his own tests to determine the suitability of this product for his particular purpose. PROSOCO's liability shall be limited in all events to supplying sufficient product to re-treat the specific areas to which defective product has been applied. Acceptance and use of this product absolves PROSOCO from any other liability, from whatever source, including liability for incidental, consequential or resultant damages whether due to breach of warranty, negligence or strict liability. This warranty may not be modified or extended by representatives of PROSOCO, its distributors or dealers.

CUSTOMER CARE

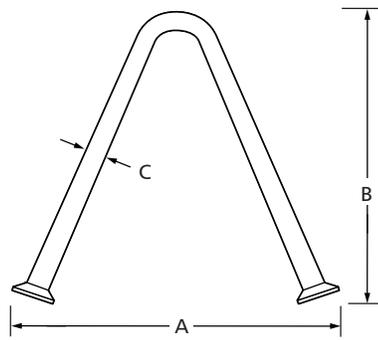
Factory personnel are available for product, environment and job-safety assistance with no obligation. Call 800-255-4255 and ask for Customer Care - technical support.

Factory-trained representatives are established in principal cities throughout the continental United States. Call Customer Care at 800-255-4255, or visit our website at www.prosoco.com, for the name of the Consolideck® representative in your area.

P-75 AND P-75-H UTILITY ANCHOR



P-75 Utility Anchor



P-75-H Utility Anchor

The Dayton Superior Utility Anchors are available in three diameters and a series of lengths for specific concrete thickness. The utility anchor can be set in either a 90° or a 45° anchor orientation using the appropriate setting plug.

To Order:

Specify: (1) quantity, (2) name, (3) product code.

Example:

200, P-75 Utility Anchors, 5UA444.

P-75 and P-75-H Utility Anchor							
Anchor	Type	Product Code No.	A	B	C	End Shape	Minimum Edge Distance
P-75	4UA444	121877	5-1/4"	3-1/8"	0.444"	Swift Lift	9"
	5UA444	123442	6"	3-3/4"	0.444"	Swift Lift	11"
	6UA444	121888	7-3/8"	4-3/4"	0.444"	Swift Lift	15"
	5UA671	123441	6 7/16"	3-3/4"	0.671"	Swift Lift	11"
	6UA671	121889	7-3/8"	4-3/4"	0.671"	Swift Lift	15"
	8UA671	121891	9-3/4"	6-3/4"	0.671"	Swift Lift	20"
P-75-H	12UA875	124738	15-7/8"	11"	0.875"	Swift Lift	30"

Anchor	Type	Product Code No.	Minimum Panel Thickness	Safe Working Load Tension 90	Safe Working Load Shear 90	Safe Working Load Tension/Shear 45	Edge Distance
P-75	4UA444	121877	4"	3,200	5,800	2,260	9"
	5UA444	123442	5"	3,860	7,710	2,730	10"
	6UA444	121888	5 5/8"	4,460	9,460	3,150	12"
	5UA671	123441	5"	4,560	8,430	3,220	10"
	6UA671	121889	5 5/8"	7,320	15,780	5,170	12"
	8UA671	121891	7 5/8"	10,830	18,850	7,660	16"
P-75-H	12UA875	124738	12"	24,000	---	24,000	---

Safe Working Loads are based on 4:1 safety factors in 4000 psi concrete

Note:

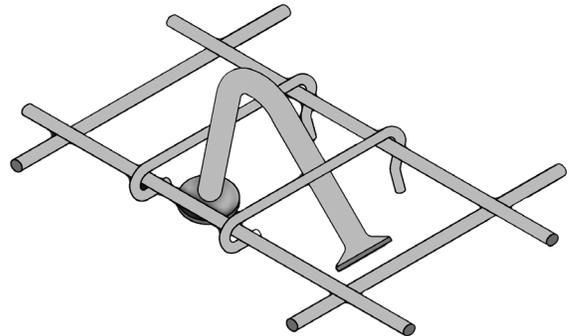
- 1) Compressive strength of normal weight concrete to be 4,000 psi at time of initial lift.
- 2) Safe working loads provide an approximate factor of safety of 4 to 1.
- 3) Utility anchors to be installed at 90° to surface of the concrete.
- 4) Shear safe working loads are based on loading in the direction of the top of the precast concrete element.

Refer to www.daytonsuperior.com for latest Technical Data Sheet and MSDS
 7777 Washington Village Dr., Suite 130, Dayton OH 45459
 Customer Service: (888) 977-9600
 Technical Assistance: (866) 329-8724

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P-75-C UTILITY ANCHOR WITH CLIP

The Dayton Superior Utility Anchor with Clip is designed to allow the Utility Anchor to be secured to the wire mesh cage. This product utilizes the P-75 Utility Anchors with 2 wire clips welded to opposite legs of the anchor. These wire clips are positioned to hold the utility anchor with Void to the wire mesh in the proper position in the wall for lifting your precast product. Both the 5UA and 6UA anchors in 0.444 and 0.671 diameters for 9" wire spacing are in stock. Other anchor and wire spacing are readily available from our Parsons KS plant.



Product Code	Utility Anchor	Wire Clip Lengths	Wall Thickness
123443	5UA444	9"	5"
121890	5UA671	9"	5"
121892	6UA444	9"	6"
121893	6UA671	9"	6"
127446	8UA671	9"	8"

To Order:

Specify: (1) quantity, (2) name, (3) product code (4) anchor size, (5) wire spacing (6) wall thickness.

Example:

200, P-75-C, #121443, 5UA444anchor, 9" wire spacing, 5" wall.



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