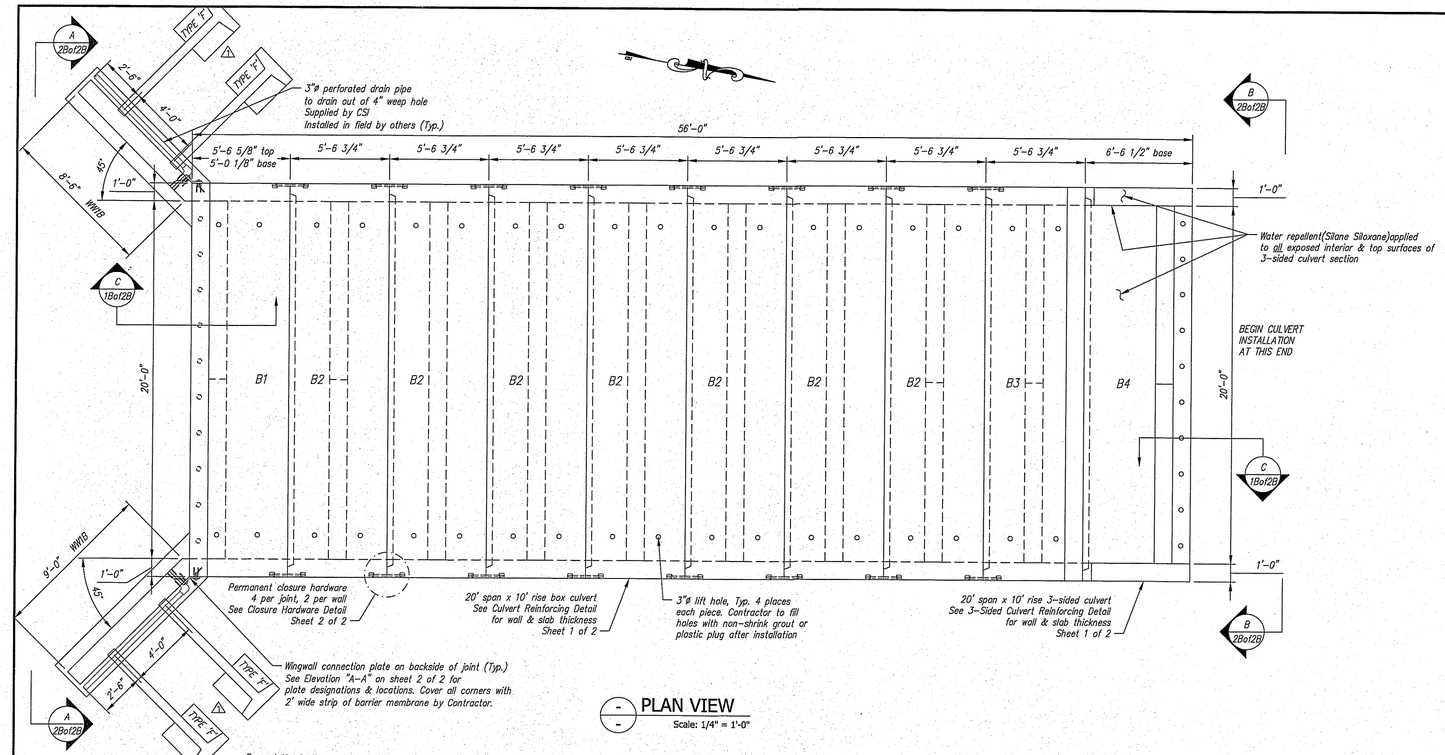
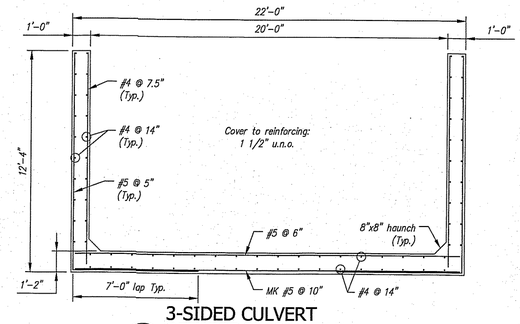


PLAN VIEW
Scale: 1/4" = 1'-0"

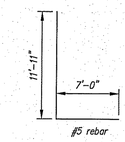
PIECE SCHEDULE (MX-FA5000SC30)					
MARK	QTY	LENGTH	YDS	WEIGHT	
B1	1	5.28 '	16.78	33.99	TONS
B2	7	5.56 '	15.39	31.16	TONS
B3	1	5.56 '	16.06	32.52	TONS
B4	1	6.27 '	11.91	24.12	TONS
△1 WW1B	1	8.50 '	5.24	10.61	TONS
△1 WW2B	1	9.00 '	5.39	10.91	TONS
△1 F1B	1	19.18 '	3.74	7.57	TONS
△1 F2B	1	19.86 '	3.88	7.86	TONS
△1 F3B	1	22.00 '	2.44	4.94	TONS

WINGWALL GENERAL NOTES:
1. Reference standard:
   AASHTO LRFD Specifications
2. Design Parameters:
   Soil Bearing: 3300 psf
   Earth Cover: 1.00 ft max.
   Concrete: Design strength f'c = 5000 psi
   Unit weight = 150 pcf
   Reinforcing: ASTM A615 (rebar), grade 60, Black
   Soil: Unit weight = 140 pcf
   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 evaluation, including scour and confirmation of soil conditions.
4. Prior to construction, contractor must verify all elevations shown through the engineer.

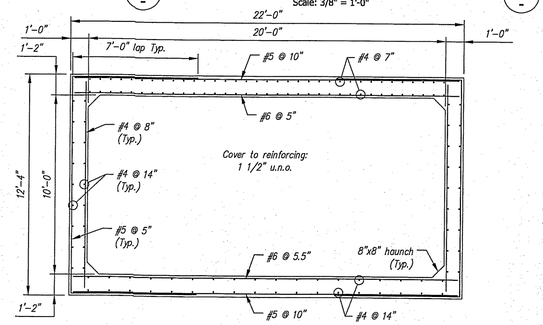
GENERAL NOTES:
1. Reference Standards:
   AASHTO "LRFD Bridge Design Specifications"
   ASTM C1577
2. Design Parameters:
   Live load: HL-93
   Earth Cover: 3' to 4'
   Concrete: Design strength f'c = 5000 psi
   Unit weight = 150 pcf
   Reinforcing: ASTM A615 (rebar) GR 60, Black
   Soil: Unit weight = 140 pcf
   Minimum lateral pressure coefficient .25
   Maximum lateral pressure coefficient .50
   Cover to reinforcing: 2" headwalls
   1 1/2" culvert walls
   1 1/2" elsewhere u.n.o.
3. Dimensions include a joint gap. Actual culvert piece length is ½" shorter (i.e. B2 = 5'-6 1/4").
4. No dampproofing or waterproofing supplied by CSI.
5. 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.
6. Headwalls are not designed for impact load.
7. Water repellant(Silane Siloxane) by CSI on all exposed faces of culvert, headwalls, and wingwalls.
8. Provide engineer a minimum fourteen (14) days notice prior to the start of fabrication and a detailed casting schedule.



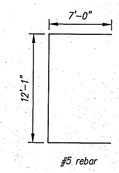
3-SIDED CULVERT REINFORCING DETAIL
Scale: 3/8" = 1'-0"



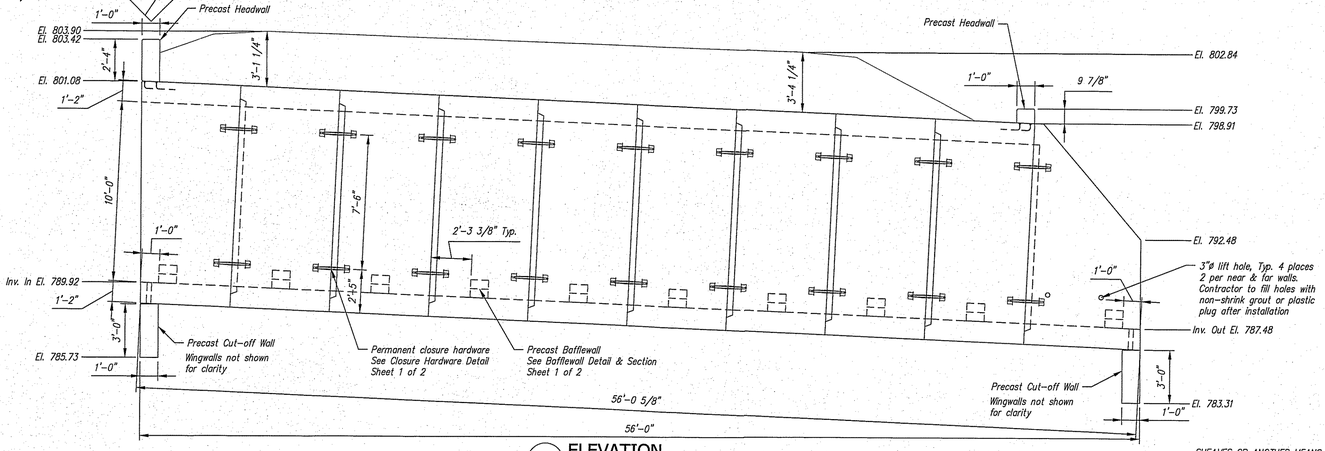
3-SIDED CULVERT BENDING SCHEDULE
Scale: N.T.S.



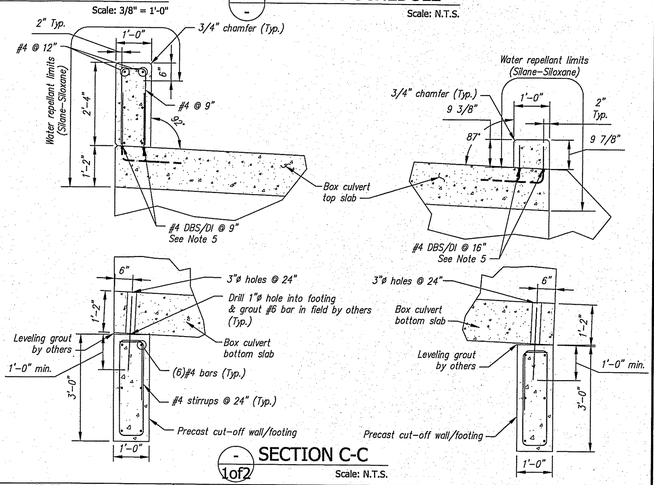
CULVERT REINFORCING DETAIL
Scale: 3/8" = 1'-0"



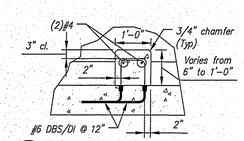
BENDING SCHEDULE
Scale: N.T.S.



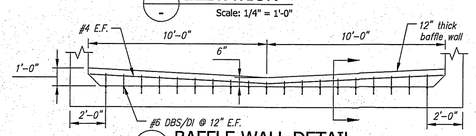
ELEVATION
Scale: 1/4" = 1'-0"



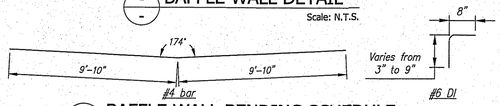
SECTION C-C
1of2
Scale: N.T.S.



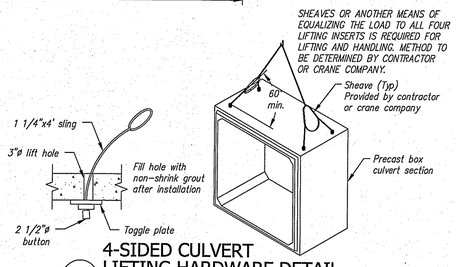
BAFFLE WALL SECTION
Scale: N.T.S.



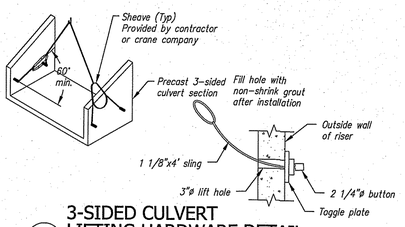
BAFFLE WALL DETAIL
Scale: N.T.S.



BAFFLE WALL BENDING SCHEDULE
Scale: N.T.S.



4-SIDED CULVERT LIFTING HARDWARE DETAIL
Scale: N.T.S.



3-SIDED CULVERT LIFTING HARDWARE DETAIL
Scale: N.T.S.

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STATE OF VERMONT CHRISTOPHER M. WORK NO. 77585 Structural LICENSED PROFESSIONAL ENGINEER 4/6/15
Stamp for structural design only

Rev.	Date	DESCRIPTION	By
5			
4			
3			
2			
1	01apr2015	WINGWALL ANCHORS WERE TYPE 'D', WINGWALLS WERE 10" THK	RY

REVISIONS

This drawing is based upon information provided from the following documents and/or sources:
Engineer: STATE OF VT AOT PROGRAM DEVELOPMENT
Project No: STPCULV30
Drawings: VT/AOT PROPOSED INPROVEMENT BRIDGE PROJECT SHEETS 1 THRU 24 & 32 OF 55
Specifications: ----

Other Sources: ----

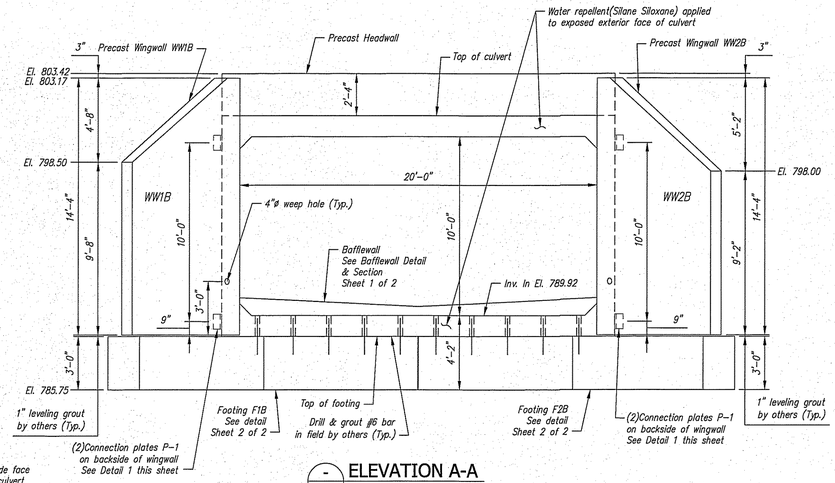
CSI Concrete Systems Inc.
9 Commercial St., Hudson, NH,03051
Phone 603-889-4163
Fax 603-889-2417

STATE AGENCY
VTrans Working to Get You There

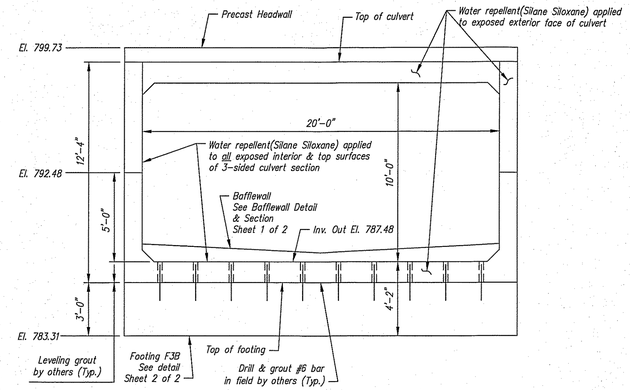
Drawn By R. YEAGER	Date 09MAR2015
Reviewed By	Date
Approved By	Date

J A MCDONALD, INC.
VT/AOT BRIDGE – STEEL CULVERT REPLACEMENT
BRIDGE #7, VT ROUTE 58, IRASBURG, VT

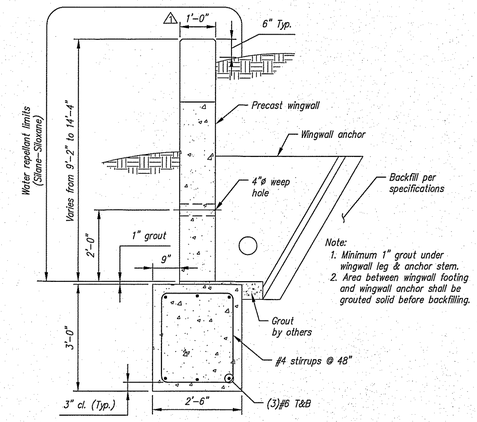
D — 20' SPAN x 10' RISE BOX CULVERT LAYOUT — REV 1
Drawing No. C22283-L02A
Quantity: 1 | Project No: STPCULV30 | SHEET 1B OF 2B



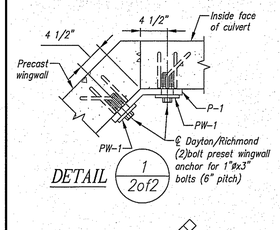
ELEVATION A-A
Scale: 1/4" = 1'-0"



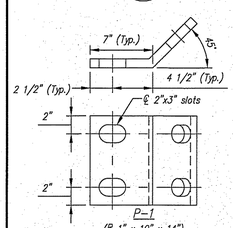
ELEVATION B-B
Scale: 1/4" = 1'-0"



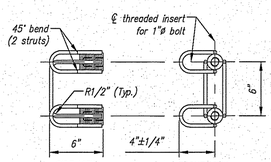
TYPICAL WINGWALL SECTION
Scale: N.T.S.



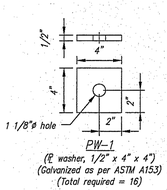
DETAIL 1 2of2



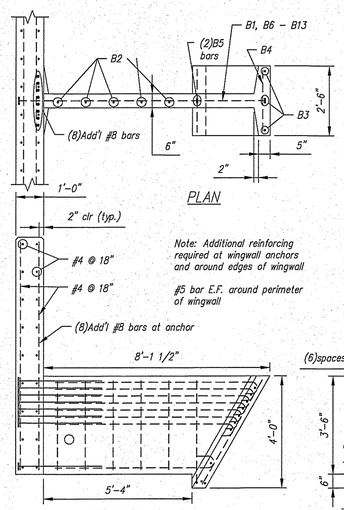
P-1
(℄ 1" x 10" x 14")
(Galvanized as per ASTM A153)
(Total required = 4)



DAYTON/RICHMOND TWO BOLT PRESET ANCHOR



PW-1
(℄ washer, 1/2" x 4" x 4")
(Galvanized as per ASTM A153)
(Total required = 16)



PLAN

Note: Additional reinforcing required at wingwall anchors and around edges of wingwall

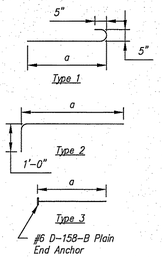
#5 bar E.F. around perimeter of wingwall

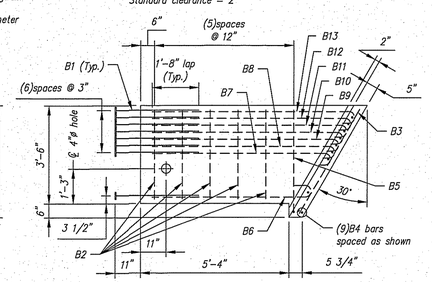
SECTION

BAR LIST

MARK	QTY.	SIZE	a	TYPE	LENGTH
B1	8	#6	3'-0"	3	——
B2	4	#5	——	Str.	3'-2"
B3	4	#5	——	Str.	4'-3"
B4	11	#5	——	Str.	2'-2"
B5	2	#5	3'-8"	2	——
B6	1	#5	6'-2"	1	——
B7	1	#5	6'-9"	1	——
B8	1	#5	6'-11"	1	——
B9	1	#5	7'-1"	1	——
B10	1	#5	7'-3"	1	——
B11	1	#5	7'-5"	1	——
B12	1	#5	7'-6"	1	——
B13	1	#5	7'-8"	1	——

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



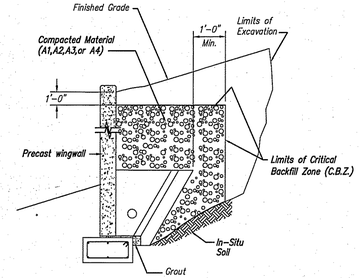


PRECAST ANCHOR TYPE F ⚠

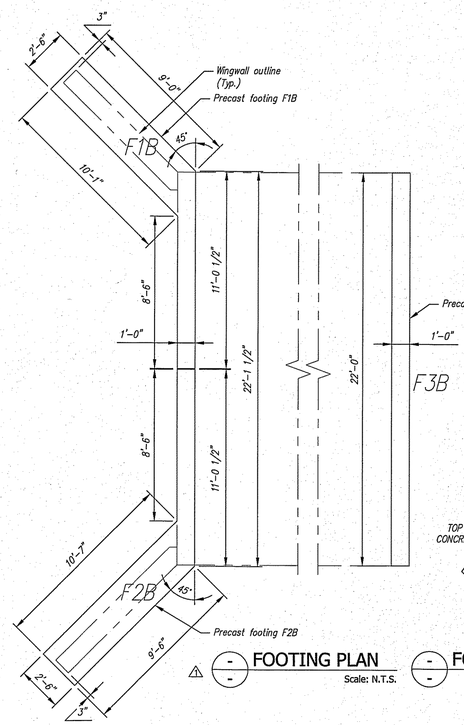
BACKFILL DESCRIPTION

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

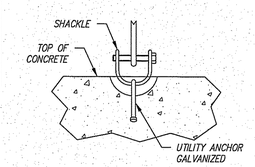
NOTES
1. BACKFILLING OPERATIONS WITHIN THE C.B.Z. SHALL BE PERFORMED IN LIFTS OF 8" OR LESS (LOOSE DEPTH).
2. MAXIMUM DRY DENSITY SHALL BE DETERMINED BY AASHTO T-99 OR OTHER APPROVED METHODS.
3. BACKFILL SHALL BE COMPACTED IN LAYERS UNTIL THE DENSITY IS NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY.



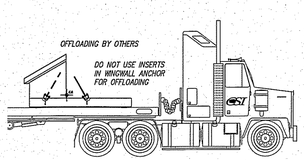
WINGWALL BACKFILL REQUIREMENTS



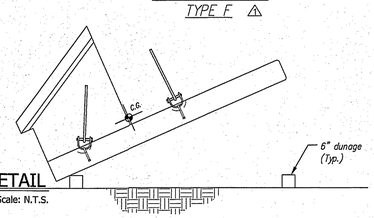
FOOTING PLAN
Scale: N.T.S.

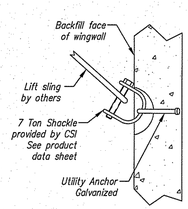


FOOTING LIFTING DETAIL
Scale: N.T.S.

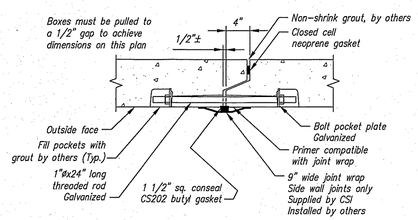


WINGWALL OFFLOADING & TRIPPING DETAIL
Scale: N.T.S.





WINGWALL LIFTING DETAIL
Scale: N.T.S.



CLOSURE HARDWARE DETAIL
Scale: N.T.S.

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STATE OF VERMONT
CHRISTOPHER M. YEAGER
NO. 7788
Structural
Licensed
PROFESSIONAL ENGINEER
4/6/15
Stamp for structural design only

Rev.	Date	DESCRIPTION	By
5			
4			
3			
2			
1	01APR2015	WINGWALL ANCHORS WERE TYPE 'D', WINGWALLS WERE 10" THK	RY

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Engineer: STATE OF VT AOT PROGRAM DEVELOPMENT
Project No: STPCULV30
Drawings: VT/AOT PROPOSED INPROVEMENT BRIDGE PROJECT SHEETS 1 THRU 24 & 32 OF 55
Specifications: ----

Other Sources: ----

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Fax 603-889-2417

STATE AGENCY
VTrans Working to Get You There

Drawn By R. YEAGER	Date 09MAR2015
Reviewed By	Date
Approved By	Date

J A MCDONALD, INC.
VT/AOT BRIDGE – STEEL CULVERT REPLACEMENT
BRIDGE #7, VT ROUTE 58, IRASBURG, VT

D — 20' SPAN x 10' RISE BOX CULVERT LAYOUT — REV 1
Drawing No. C22283-L02B
Quantity: 1 | Project No: STPCULV30 | SHEET 2B OF 2B