

Bridge Inspection Report Agnico Eagle

Bridge No. 2017-2318-44.8 Road Name Meadowbank to Amaruq Inspection Date 2017-07-14



Figure 22: SW bearing - back inside corner



Figure 24: SW bearing slotted hole









Bridge Inspection Report Agnico Eagle

Bridge No. 2017-2318- Road Name Meadowbank to Amaruq Inspection Date 2017-07-14



Figure 26: Temporary bridge to east of new structure



Figure 28: Typical back of bearing (SW outside)



Figure 25: Temporary access to abutment



Figure 27: Temporary bridge



Bridge Inspection Report Agnico Eagle

Bridge No. 2017-2318- Road Name Meadowbank to Amaruq Inspection Date 2017-07-14



Figure 30: Typical girder web bowing effect

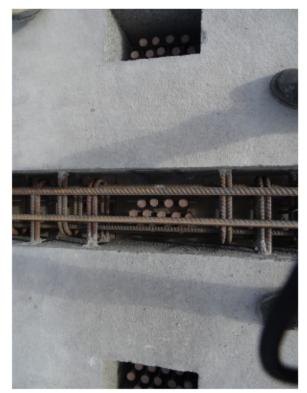


Figure 32: Ungrouted deck joints between precast panels



Figure 29: Typical front of bearing (SW outside)

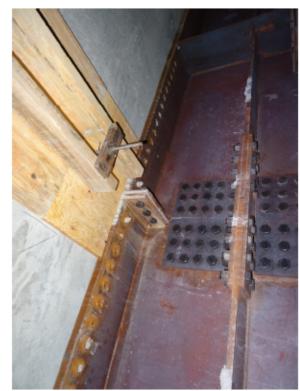


Figure 31: Typical splice and deck joint formwork

TECHNICAL MEMORANDUM

Appendix B - Bolted Inspection Summaries





APPENDIX

BRIDGES DRAWING

APPENDIX

F-1 ABUTMENT

06 JUL 16 BH ISSUED FOR CONSTRUCTION 24 JUN 16 BH ISSUED FOR APPROVAL

CALL TOLL FREE IN NORTH AMERICA 1-877-AIL-PIPE

AGNICO-EAGLE LTD. BRIDGE ABUTMENT 3.6 KM - AMARUO, NU COVER SHEET

RELEASE # DESIGNED BY OTHERS CUSTOMER REF. TOTAL DWGS DES. CHK BY OTHERS DRAWN BY BH 17 JUN 16 PROJECT 2016-00506A DWG. CHK LM 24 JUN 16 NUMBER 2016-00506A NO.

DRAWING INDEX DRAWING TITLE

A.I.L. BOLT-A-BIN ABUTMENTS DRAWINGS

DRAWING No.

2016-00506A-000 COVER SHEET

2016-00506A-S03 SECTIONS

2016-00506A-S01 DETAILS, BILL OF MATERIALS, NOTES

2016-00506A-S02 PLAN VIEW, ELEVATION VIEW

REV. ISSUE DATE

06 JUL 16

06 JUL 16

06 JUL 16

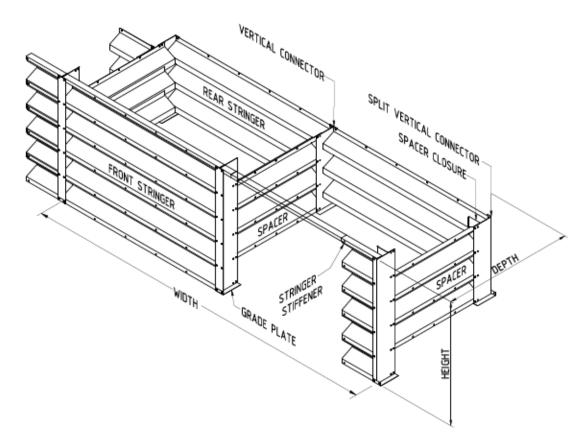
06 JUL 16

AGNICO-EAGLE LTD. BRIDGE ABUTMENT 3.6 KM -AMARUQ, NU



A.I.L. BOLT-A-BIN **ABUTMENTS**

> Atlantic Industries Limited www.atlanticindustries.us www.ail.ca



BOLT-A-I	BOLT-A-BIN COMPONENTS					
PART NAME	FUNCTION					
VERTICAL CONNECTOR	Connects stringers and spacers.					
SPLIT VERTICAL CONNECTOR	Connects stringers and spacers at end wall corners.					
STANDARD STRINGER	Forms front and rear walls.					
SPACER	Forms transverse and end walls.					
STRINGER STIFFENER	Stiffens top stringer (front wall).					
SPACER CLOSURE	Retains bin fill at end walls.					
GRADE PLATE	Assists in bin construction layout.					
16mm Ø (5/8" Ø) BOLT	Fastens all components.					

THIS ISOMETRIC ILLUSTRATION IS A REPRESENTATION OF A STANDARD BOLT-A-BIN STRUCTURE.

ACTUAL BOLT-A-BIN STRUCTURE MAY DIFFER FROM WHAT IS SHOWN IN THIS ILLUSTRATION.

	BILL OF MATERIALS						
QTY	PART ID	ITEM DESCRIPTION	NET LENGTH (mm)	THICKNESS (mm)			
6	BBF642486VC	#6 MOD. VERTICAL CONNECTOR (STANDARD)	2486	6.4			
6	BBF642893VC	#7 MOD. VERTICAL CONNECTOR (STANDARD)	2893	6.4			
4	BBF642486SVCA	#6 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	2486	6.4			
4	BBF642893SVCA	#7 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	2893	6.4			
104	BBF283036STR	STANDARD STRINGER	3036	2.8			
54	BBF283802SPA	# 8 SPACER	3802	2.8			
8	BBF283036SS	STRINGER STIFFENER (LONG)	3036	2.8			
4	BBF162486SC	#6 MOD. SPACER CLOSURE (STANDARD)	2486	1.6			
4	BBF162893SC	#7 MOD. SPACER CLOSURE (STANDARD)	2893	1.6			
20	BBF200395GP	GRADE PLATE	-	2.0			
1550	UP.625X1.5	16mm (g [∞]) ø STEEL BOLT & NUT	38	16mm Ø			

ASSEMBLY NOTES:

- 1.0 PRELIMINARY STEPS
 - 1.1 SEPARATE ALL COMPONENTS AND STACK LIKE PARTS TOGETHER FOR EASY ACCESS AND IDENTIFICATION. DO INVENTORY COUNT AGAINST BILL OF MATERIALS. BIN COMPONENTS TO BE POSITIONED SO THAT WATER WILL DRAIN OFF
 - 1.2 ESTABLISH FRONT AND REAR LINES OF BOLT-A-BIN WALLS AND LOCATION OF EACH VERTICAL CONNECTOR.
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 - 2.1 DISTRIBUTE GRADE PLATES AND VERTICAL CONNECTORS TO APPROPRIATE LOCATIONS. NOTE: ON MOST WALLS VERTICAL CONNECTORS ARE 812mm SHORTER THAN FRONT VERTICAL CONNECTORS (EXCEPT ON BRIDGE ABUTMENTS). FOR WALL HEIGHTS GREATER THAN 3.66m, VERTICAL CONNECTORS WILL CONSIST OF TWO OR MORE PIECES.
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GENERAL NOTES:

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- 3.0 GRADE PLATES, SUPPLIED BY A.I.L., ARE REQUIRED AT THE BOTTOM OF ALL VERTICAL CONNECTORS.
- 4.0 BRIDGE BEARING PAD MUST NOT COME INTO CONTACT WITH ANY METAL COMPONENTS. (150mm MIN.)
- 5.0 CONNECTION HARDWARE IN ACCORDANCE WITH ASTM A325 AND GALVANIZED TO ASTM A153/A153M
- 6.0 STEEL COMPONENTS MANUFACTURED IN ACCORDANCE WITH ASTM A568M AND HOT DIPPED GALVANIZED TO CSA G164 WITH A MINIMUM ZINC COATING OF Z610.
- 7.0 ASSEMBLE IN ACCORDANCE WITH MANUFACTURING DRAWINGS FROM ATLANTIC INDUSTRIES LTD.

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5	1	06 JUL 16	BH	ISSUED FOR CONSTRUCTION
١	0	24 JUN 16	BH	ISSUED FOR APPROVAL
	REV NO.	DATE	BY	DESCRIPTION

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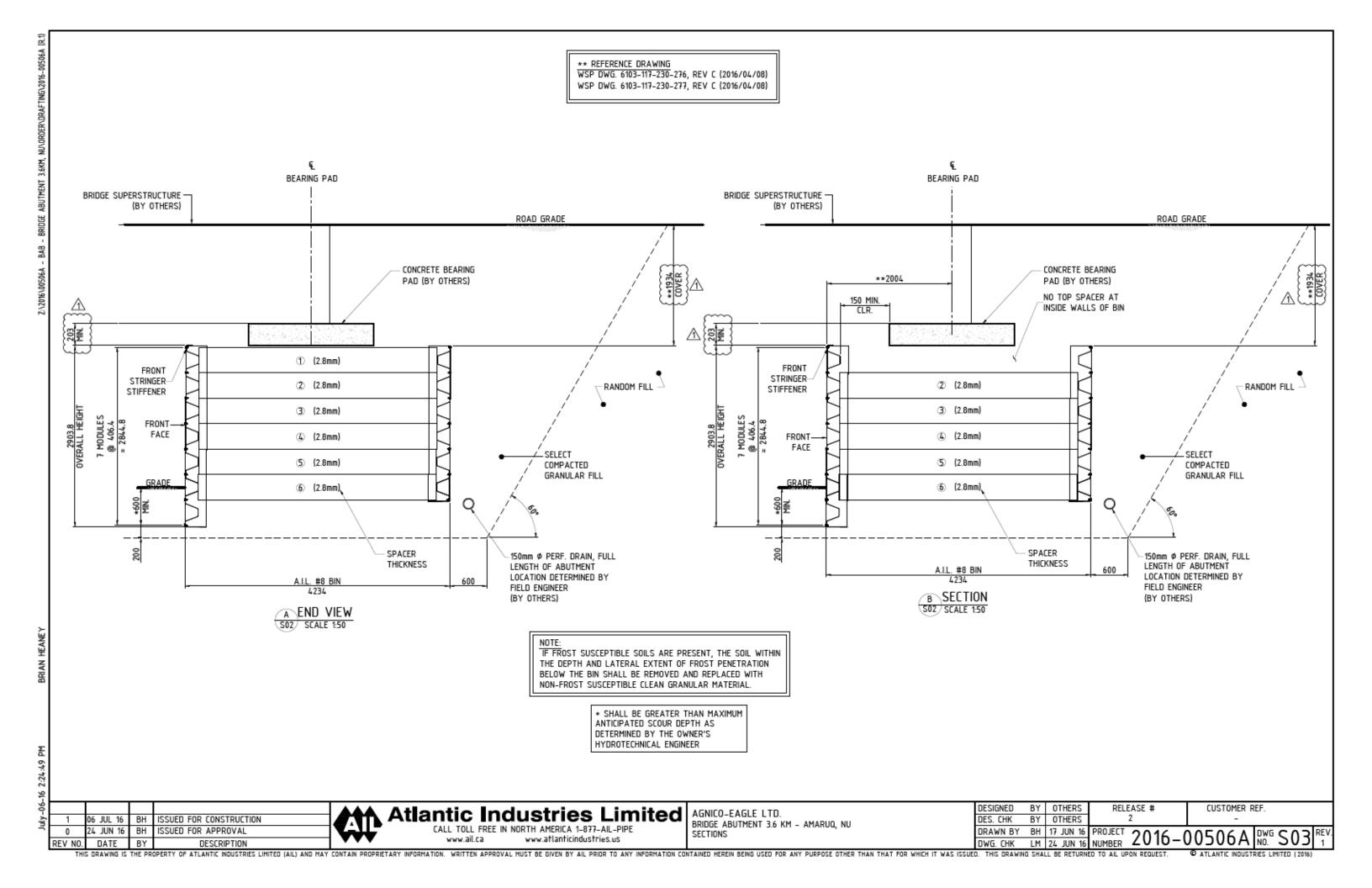
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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 3.6 KM - AMARUQ, NU DETAILS, BILL OF MATERIALS, NOTES

DESIGNED	BY	OTHERS	RELEASE #	CUSTOMER F	REF.
DES. CHK	BY	OTHERS	2	-	
DRAWN BY	ВН	17 JUN 16	PROJECT 2016-	0.0506λ	DWG C A 1 REV.
DWG. CHK	LM	24 JUN 16	NUMBER ZUID-	HUUUUU	NO. 301 1

VC @ VC @ NOTE: SVC @ SVC @ STRINGER 6 MOD. 6 MOD. VC - VERTICAL CONNECTOR 6 MOD. (TYP.) 6 MOD. SVC - SPLIT VERTICAL CONNECTOR #8 SPACERS-(TYP.) -SPACER SPACER-CLOSURES CLOSURES STRINGER-(TYP.) SVC @-7 MOD. _SVC @ 7 MOD. FRONT FACE VC @ VC @ OF BIN 7 MOD. 7 MOD. 3048 3048 3048 3048 12192 PLAN VIEW (TYP. BOTH ABUTMENTS) SCALE 1:75 -STRINGER VC @ -7 MOD. SVC @-VC @ STIFFENER _SVC @ 7 MOD. 7 MOD. 7 MOD. (FRONT TYP.) ① (2.8mm) ① (2.8mm) ① (2.8mm) ① (2.8mm) (2) (2.8mm) (2) (2.8mm) (2) (2.8mm) (2) (2.8mm) 3 (2.8mm) 3 (2.8mm) ③ (2.8mm) 3 (2.8mm) 4 (2.8mm) 4 (2.8mm) 4 (2.8mm) 4 (2.8mm) (5) (2.8mm) (5) (2.8mm) (5) (2.8mm) (5) (2.8mm) ⑥ (2.8mm) 6 (2.8mm) ⑥ (2.8mm) ⑥ (2.8mm) ② (2.8mm) ② (2.8mm) ② (2.8mm) (2.8mm) GRADE-PLATES 3048 3048 3048 3048 BRIAN HEANEY (TYP.) 12192 FRONT ELEVATION (TYP. BOTH ABUTMENTS) SCALE 1:75 CUSTOMER REF. DESIGNED BY OTHERS RELEASE # Atlantic Industries Limited AGNICO-EAGLE LTD. 06 JUL 16 BH ISSUED FOR CONSTRUCTION DES. CHK BY OTHERS BRIDGE ABUTMENT 3.6 KM - AMARUQ, NU CALL TOLL FREE IN NORTH AMERICA 1-877-AIL-PIPE 24 JUN 16 BH ISSUED FOR APPROVAL DRAWN BY BH 17 JUN 16 PROJECT 2016-00506A DWG S02 PLAN VIEW, ELEVATION VIEW www.atlanticindustries.us www.ail.ca DESCRIPTION



(2016)1005068 - BAB - BRIDGE ABUTHENT 10.7KM, NU\ORDER\DRAFTING\2016

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AGNICO-EAGLE LTD.

BRIDGE ABUTMENT 10.7 KM –

AMARUQ, NU



A.I.L. BOLT-A-BIN ABUTMENTS

DRAWING INDEX
DRAWING TITLE

A.I.L. BOLT-A-BIN ABUTMENTS DRAWINGS

DRAWING No.

2016-00506B-000 COVER SHEET

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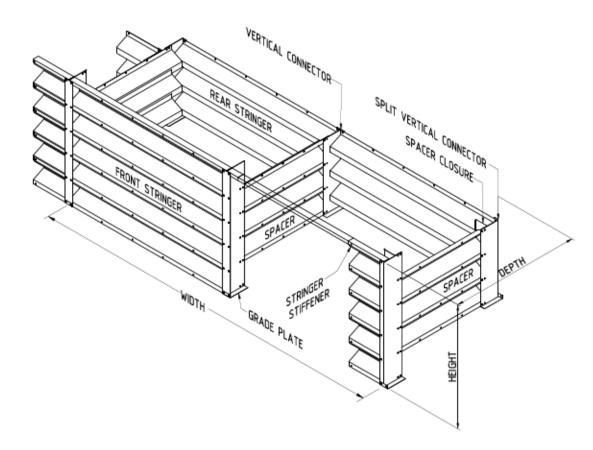
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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 10.7 KM – AMARUQ, NU COVER SHEET





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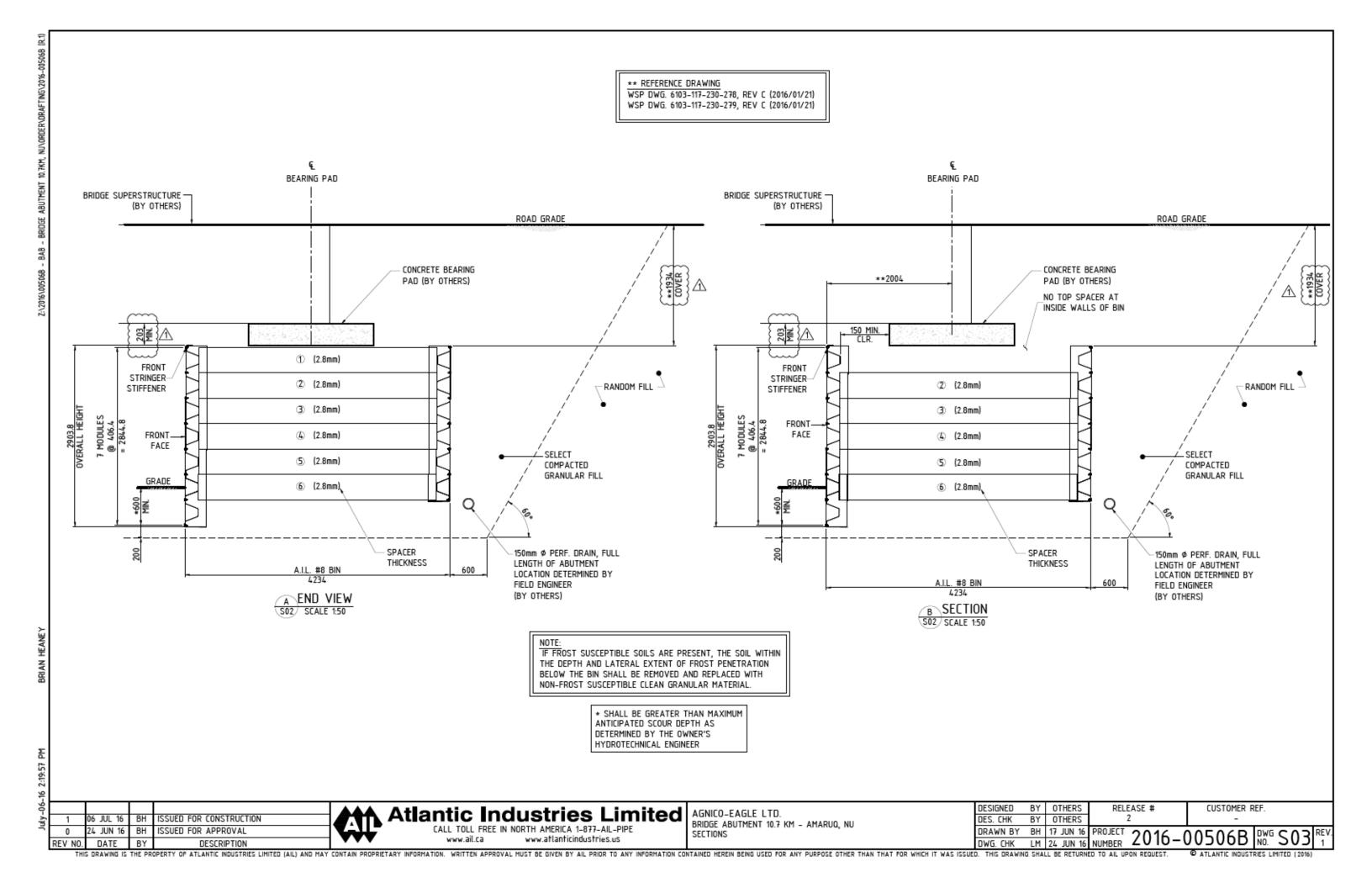
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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 10.7 KM - AMARUQ, NU DETAILS, BILL OF MATERIALS, NOTES

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DES. CHK		OTHERS	2		-			
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DWG. CHK	LM	24 JUN 16	NUMBER ZUIO	- (סטטכטנ	NO.	201	1

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08 JUL 16 BH ISSUED FOR CONSTRUCTION 24 JUN 16 BH ISSUED FOR APPROVAL

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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 16 KM - AMARUQ, NU COVER SHEET

RELEASE # CUSTOMER REF. DESIGNED BY OTHERS TOTAL DWGS DES. CHK BY OTHERS DRAWN BY BH 20 JUN 16 PROJECT 2016-00506C

DRAWING INDEX DRAWING TITLE

A.I.L. BOLT-A-BIN ABUTMENTS DRAWINGS

DRAWING No.

2016-00506C-000 COVER SHEET

2016-00506C-S03 SECTION

2016-00506C-S04 SECTION

2016-00506C-S01 DETAILS, BILL OF MATERIALS, NOTES

2016-00506C-S02 PLAN VIEW, ELEVATION VIEW

REV. ISSUE DATE

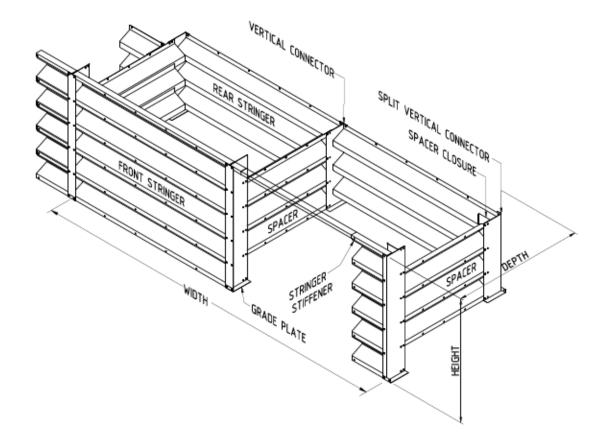
08 JUL 16

AGNICO-EAGLE LTD. BRIDGE ABUTMENT 16 KM -AMARUQ, NU



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8	BBF643299VC	#8 MOD. VERTICAL CONNECTOR (STANDARD)	3299	6.4
16	BBF641267SVCA	#3 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	1267	6.4
4	BBF642893SVCA	#7 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	2893	6.4
4	BBF643299SVCA	#8 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	3299	6.4
174	BBF283036STR	STANDARD STRINGER	3036	2.8
24	BBF281363SPA	# 2 SPACER	1363	2.8
76	BBF284614SPA	# 10 SPACER	4614	2.8
14	BBF283036SS	STRINGER STIFFENER (LONG)	3036	2.8
16	BBF161267SC	#3 MOD. SPACER CLOSURE (STANDARD)	1267	1.6
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- 5.0 CONNECTION HARDWARE IN ACCORDANCE WITH ASTM A325 AND GALVANIZED TO ASTM A153/A153M
- 6.0 STEEL COMPONENTS MANUFACTURED IN ACCORDANCE WITH ASTM A568M AND HOT DIPPED GALVANIZED TO CSA G164 WITH A MINIMUM ZINC COATING OF Z610.
- 7.0 ASSEMBLE IN ACCORDANCE WITH MANUFACTURING DRAWINGS FROM ATLANTIC INDUSTRIES LTD.

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Ė	1	08 JUL 16	BH	ISSUED FOR CONSTRUCTION
5	0	24 JUN 16	BH	ISSUED FOR APPROVAL
	REV NO.	DATE	BY	DESCRIPTION

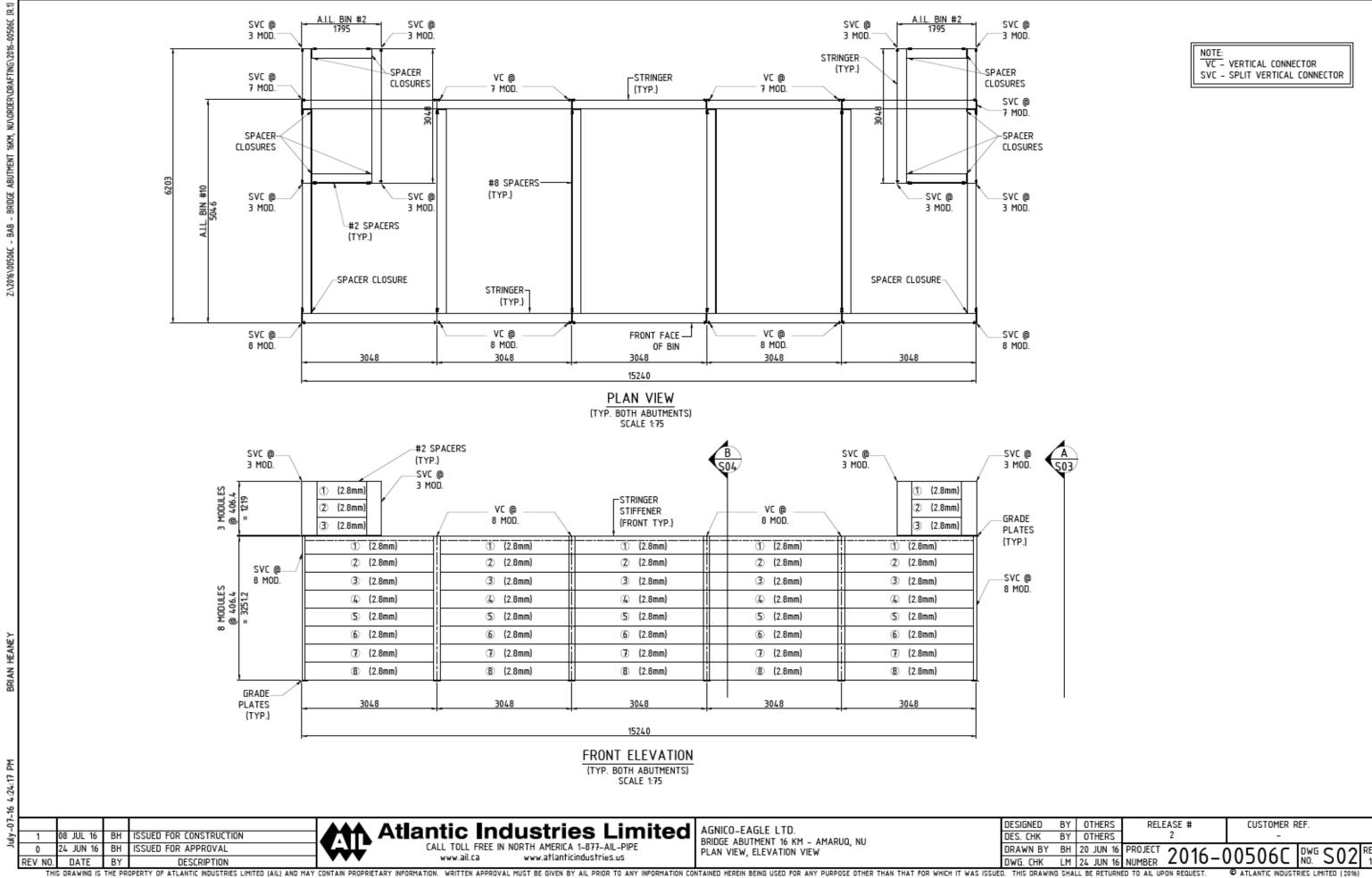
Atlantic Industries Limited
CALL TOLL FREE IN NORTH AMERICA 1-877-AIL-PIPE

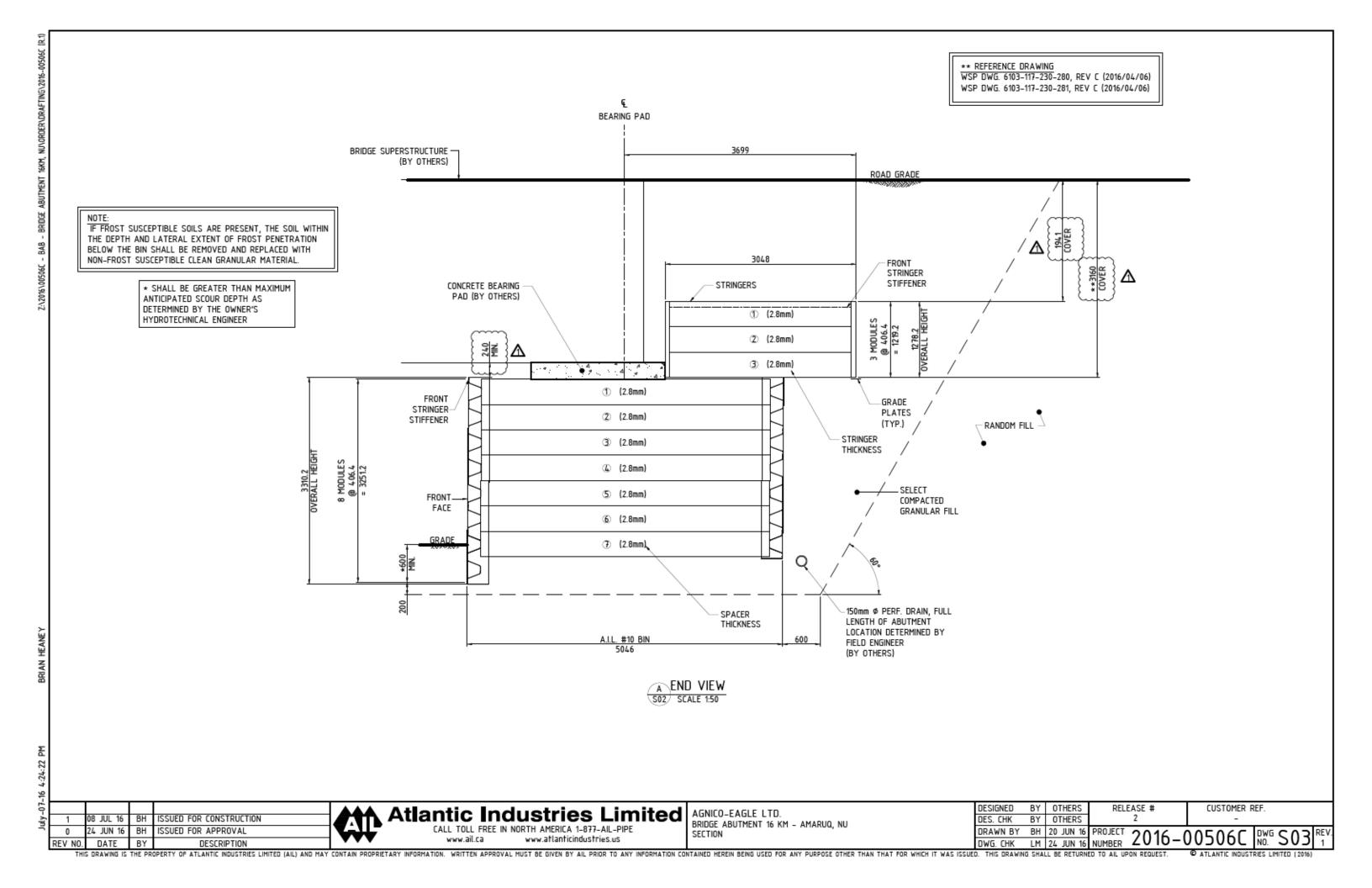
www.atlanticindustries.us

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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 16 KM - AMARUQ, NU DETAILS, BILL OF MATERIALS, NOTES

DESIGNED	BY	OTHERS	RELEASE #	CUSTOMER F	REF.
DES. CHK	BY	OTHERS	2	-	
DRAWN BY	ВН	20 JUN 16	PROJECT 2016-0	חבחגר	DWG C A 1 REV.
DWG. CHK	LM	24 JUN 16	NUMBER ZUID-	JUJUUL	NO. 301 1





** REFERENCE DRAWING WSP DWG. 6103-117-230-280, REV C (2016/04/06) WSP DWG. 6103-117-230-281, REV C (2016/04/06) Æ BEARING PAD BRIDGE SUPERSTRUCTURE (BY OTHERS) **2500 ROAD GRADE IF FROST SUSCEPTIBLE SOILS ARE PRESENT, THE SOIL WITHIN THE DEPTH AND LATERAL EXTENT OF FROST PENETRATION BELOW THE BIN SHALL BE REMOVED AND REPLACED WITH NON-FROST SUSCEPTIBLE CLEAN GRANULAR MATERIAL. * SHALL BE GREATER THAN MAXIMUM ANTICIPATED SCOUR DEPTH AS DETERMINED BY THE OWNER'S HYDROTECHNICAL ENGINEER CONCRETE BEARING PAD (BY OTHERS) NO TOP SPACER AT INSIDE WALLS OF BIN 150 MIN. FRONT STRINGER-② (2.8mm) STIFFENER RANDOM FILL ③ (2.8mm) 4 (2.8mm) SELECT (5) (2.8mm) FRONT COMPACTED FACE GRANULAR FILL 6 (2.8mm) GRADE ② (2.8mm) 150mm Ø PERF. DRAIN, FULL SPACER LENGTH OF ABUTMENT THICKNESS LOCATION DETERMINED BY FIELD ENGINEER (BY OTHERS) B SECTION S02 SCALE 1:50 DESIGNED BY OTHERS RELEASE # CUSTOMER REF. Atlantic Industries Limited AGNICO-EAGLE LTD. 08 JUL 16 BH ISSUED FOR CONSTRUCTION DES. CHK BY OTHERS BRIDGE ABUTMENT 16 KM - AMARUQ, NU CALL TOLL FREE IN NORTH AMERICA 1-877-AIL-PIPE 24 JUN 16 BH ISSUED FOR APPROVAL DRAWN BY BH 20 JUN 16 PROJECT 2016-00506C DWG S04 SECTION www.ail.ca www.atlanticindustries.us ATLANTIC INDUSTRIES LIMITED (2016) THIS DRAWING IS THE PROPERTY OF ATLANTIC INDUSTRIES LIMITED (AIL) AND MAY CONTAIN PROPRIETARY INFORMATION. WRITTEN APPROVAL MUST BE GIVEN BY AIL PRIOR TO ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS ISSUED. THIS DRAWING SHALL BE RETURNED TO AIL UPON REQUEST.

08 JUL 16 BH ISSUED FOR CONSTRUCTION 24 JUN 16 BH ISSUED FOR APPROVAL

AGNICO-EAGLE LTD. BRIDGE ABUTMENT 20 KM - AMARUQ, NU COVER SHEET

RELEASE # CUSTOMER REF. DESIGNED BY OTHERS TOTAL DWGS DES. CHK BY OTHERS DRAWN BY BH 20 JUN 16 PROJECT 2016-00506D

DRAWING INDEX DRAWING TITLE

A.I.L. BOLT-A-BIN ABUTMENTS DRAWINGS

DRAWING No.

2016-00506D-000 COVER SHEET

2016-00506D-S03 SECTIONS

2016-00506D-S01 DETAILS, BILL OF MATERIALS, NOTES

2016-00506D-S02 PLAN VIEW, ELEVATION VIEW

REV. ISSUE DATE

08 JUL 16

08 JUL 16

08 JUL 16

08 JUL 16

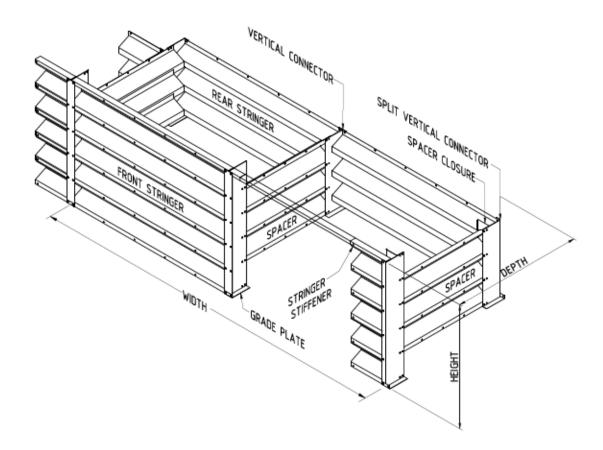
AGNICO-EAGLE LTD. BRIDGE ABUTMENT 20 KM -AMARUQ, NU



A.I.L. BOLT-A-BIN **ABUTMENTS**

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BOLT-A-BIN COMPONENTS					
PART NAME	FUNCTION				
VERTICAL CONNECTOR	Connects stringers and spacers.				
SPLIT VERTICAL CONNECTOR	Connects stringers and spacers at end wall corners.				
STANDARD STRINGER	Forms front and rear walls.				
SPACER	Forms transverse and end walls.				
STRINGER STIFFENER	Stiffens top stringer (front wall).				
SPACER CLOSURE	Retains bin fill at end walls.				
GRADE PLATE	Assists in bin construction layout.				
16mm Ø (5/8" Ø) BOLT	Fastens all components.				

THIS ISOMETRIC ILLUSTRATION IS A REPRESENTATION OF A STANDARD BOLT-A-BIN STRUCTURE.

ACTUAL BOLT-A-BIN STRUCTURE MAY DIFFER FROM WHAT IS SHOWN IN THIS ILLUSTRATION.

	BILL OF MATERIALS							
QTY PART ID ITEM DESCRIPTION RET LENGTH THICK (mm)				THICKNESS (mm)				
6	BBF642080VC	#5 MOD. VERTICAL CONNECTOR (STANDARD)	2080	6.4				
6	BBF642486VC	#6 MOD. VERTICAL CONNECTOR (STANDARD)	2486	6.4				
4	BBF642080SVCA	#5 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	2080	6.4				
4	BBF642486SVCA	#6 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	2486	6.4				
88	BBF283036STR	STANDARD STRINGER	3036	2.8				
44	BBF283802SPA	# 8 SPACER	3802	2.8				
8	BBF283036SS	STRINGER STIFFENER (LONG)	3036	2.8				
4	BBF162080SC	#5 MOD. SPACER CLOSURE (STANDARD)	2080	1.6				
4	BBF162486SC	#6 MOD. SPACER CLOSURE (STANDARD)	2486	1.6				
20	BBF200395GP	GRADE PLATE	-	2.0				
1325	UP.625X1.5	16mm (8″) Ø STEEL BOLT & NUT	38	16mm Ø				

ASSEMBLY NOTES:

- 1.0 PRELIMINARY STEPS
 - 1.1 SEPARATE ALL COMPONENTS AND STACK LIKE PARTS TOGETHER FOR EASY ACCESS AND IDENTIFICATION. DO INVENTORY COUNT AGAINST BILL OF MATERIALS. BIN COMPONENTS TO BE POSITIONED SO THAT WATER WILL DRAIN OFF.
- 1.2 ESTABLISH FRONT AND REAR LINES OF BOLT-A-BIN WALLS AND LOCATION OF EACH VERTICAL CONNECTOR.
- 2.0 ASSEMBLY
 - 2.1 DISTRIBUTE GRADE PLATES AND VERTICAL CONNECTORS TO APPROPRIATE LOCATIONS. NOTE: ON MOST WALLS VERTICAL CONNECTORS ARE 812mm SHORTER THAN FRONT VERTICAL CONNECTORS (EXCEPT ON BRIDGE ABUTMENTS). FOR WALL HEIGHTS GREATER THAN 3.66m, VERTICAL CONNECTORS WILL CONSIST OF TWO OR MORE PIECES.
 - 2.2 LOCATE AND PLACE GRADE PLATES IN EXACT LOCATIONS. SET VERTICAL CONNECTORS ONTO GRADE PLATES AND ATTACH WITH BOLTS. ATTACH TWO LOWER SPACERS TO FRONT AND REAR VERTICAL CONNECTORS.
 - 2.3 ATTACH TWO STRINGERS AT THE LOWEST HEIGHT IN THE FRONT AND REAR FACE. ONCE A BIN IS FORMED, CHECK FRONT FACE ALIGNMENT. CHECK BACK BIN TO ENSURE BIN IS SQUARE DIAGONALLY. ENSURE VERTICAL CONNECTORS ARE PLUMB IF BIN IS A VERTICAL INSTALLATION. CONTINUE TO ASSEMBLE BIN TOGETHER ALTERNATING STRINGERS AND SPACERS UNTIL BIN IS COMPLETED FULL HEIGHT. ASSEMBLING OF ADJACENT BINS MAY BE STARTED AFTER SUFFICIENT STRINGERS AND SPACERS ARE ASSEMBLED IN FIRST BIN TO ENSURE STABILITY. ALL BINS IN INSTALLATION ARE COMPLETED IN AN ALTERNATING STEP FASHION. FOR END BINS, INSTALL SPACER CLOSURE AT ENDS OF SPACERS OF EXPOSED END WALL PANEL.
 - 2.4 STRINGERS ON FRONT FACE OF WALL ARE TO BE INSTALLED WITH THE OVERLAP ON THE INSIDE OF PRECEDING LOWER STRINGER INSTALLED.

GENERAL NOTES:

- 1.0 ALL DIMENSIONS ARE IN MILLIMETRES.
- 2.0 VERTICAL DIMENSIONS ARE FROM THE CENTRE OF THE BOLT HOLES. OVERALL HEIGHT IS EQUAL TO THE BIN HEIGHT PLUS 59mm.
- 3.0 GRADE PLATES, SUPPLIED BY A.I.L., ARE REQUIRED AT THE BOTTOM OF ALL VERTICAL CONNECTORS.
- 4.0 BRIDGE BEARING PAD MUST NOT COME INTO CONTACT WITH ANY METAL COMPONENTS. (150mm MIN.)
- 5.0 CONNECTION HARDWARE IN ACCORDANCE WITH ASTM A325 AND GALVANIZED TO ASTM A153/A153M
- 6.0 STEEL COMPONENTS MANUFACTURED IN ACCORDANCE WITH ASTM A568M AND HOT DIPPED GALVANIZED TO CSA G164 WITH A MINIMUM ZINC COATING OF Z610.
- 7.0 ASSEMBLE IN ACCORDANCE WITH MANUFACTURING DRAWINGS FROM ATLANTIC INDUSTRIES LTD.

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5	1	08 JUL 16	BH	ISSUED FOR CONSTRUCTION
•	0	24 JUN 16	BH	ISSUED FOR APPROVAL
	REV NO.	DATE	BY	DESCRIPTION

Atlantic Industries Limited

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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 20 KM - AMARUQ, NU DETAILS, BILL OF MATERIALS, NOTES

DESIGNED	BY	OTHERS	RELEASE #	CUSTOMER REF.		
DES. CHK	BY	OTHERS	2	-		
DRAWN BY	ВН	20 JUN 16	PROJECT 2016-	<u> </u>	DWG C A 1 REV.	
DWG. CHK	LM	24 JUN 16	NUMBER ZUID-	טטטכטט	NO. 301 1	

VC @ VC @ NOTE: SVC @ SVC @ STRINGER 5 MOD. 5 MOD. VC - VERTICAL CONNECTOR 5 MOD. (TYP.) -5 MOD. SVC - SPLIT VERTICAL CONNECTOR #8 SPACERS-(TYP.) -SPACER SPACER-CLOSURES CLOSURES STRINGER-(TYP.) SVC @-6 MOD. _SVC @ 6 MOD. FRONT FACE VC @ VC @ OF BIN 6 MOD. 6 MOD. 3048 3048 3048 3048 12192 PLAN VIEW (TYP. BOTH ABUTMENTS) SCALE 1:75 STRINGER VC @ -6 MOD. SVC @-VC @ STIFFENER _SVC @ 6 MOD. 6 MOD. 6 MOD. (FRONT TYP.) ① (2.8mm) ① (2.8mm) ① (2.8mm) ① (2.8mm) (2) (2.8mm) (2) (2.8mm) ② (2.8mm) (2) (2.8mm) 3 (2.8mm) 3 (2.8mm) 3 (2.8mm) 3 (2.8mm) (4) (2.8mm) (4) (2.8mm) (4) (2.8mm) (4) (2.8mm) (5) (2.8mm) (5) (2.8mm) (5) (2.8mm) (5) (2.8mm) ⑥ (2.8mm) ⑥ (2.8mm) ⑥ (2.8mm) ⑥ (2.8mm) GRADE-PLATES 3048 3048 3048 3048 BRIAN HEANEY (TYP.) 12192 FRONT ELEVATION (TYP. BOTH ABUTMENTS) SCALE 1:75 CUSTOMER REF. DESIGNED BY OTHERS RELEASE # Atlantic Industries Limited AGNICO-EAGLE LTD. 08 JUL 16 BH ISSUED FOR CONSTRUCTION DES. CHK BY OTHERS BRIDGE ABUTMENT 20 KM - AMARUQ, NU CALL TOLL FREE IN NORTH AMERICA 1-877-AIL-PIPE 24 JUN 16 BH ISSUED FOR APPROVAL DRAWN BY BH 20 JUN 16 PROJECT 2016-00506D DWG S02 PLAN VIEW, ELEVATION VIEW www.atlanticindustries.us www.ail.ca DESCRIPTION THIS DRAWING IS THE PROPERTY OF ATLANTIC INDUSTRIES LIMITED (AIL) AND MAY CONTAIN PROPRIETARY INFORMATION. WRITTEN APPROVAL MUST BE GIVEN BY AIL PRIOR TO ANY INFORMATION CONTAINED HEREIN BEING USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS ISSUED. THIS DRAWING SHALL BE RETURNED TO AIL UPON REQUEST. ATLANTIC INDUSTRIES LIMITED (2016)

** REFERENCE DRAWING WSP DWG. 6103-117-230-282, REV C (2016/04/08) WSP DWG. 6103-117-230-283, REV C (2016/04/08) Æ BEARING PAD BEARING PAD BRIDGE SUPERSTRUCTURE -BRIDGE SUPERSTRUCTURE -(BY OTHERS) (BY OTHERS) ROAD GRADE ROAD GRADE CONCRETE BEARING CONCRETE BEARING Δ **2004 PAD (BY OTHERS) PAD (BY OTHERS) 150 MIN. CLR. NO TOP SPACER AT Δ INSIDE WALLS OF BIN ① (2.8mm) FRONT FRONT STRINGER STRINGER-(2) (2.8mm) (2) (2.8mm) STIFFENER STIFFENER 2497.4 OVERALL HEIGHT 2497,4 OVERALL HEIGHT -random fill $\stackrel{
ightharpoonup}{}$ RANDOM FILL ③ (2.8mm) 3 (2.8mm) FRONT FRONT FACE FACE 4 (2.8mm) 4 (2.8mm) COMPACTED COMPACTED GRADE (5) (2.8mm) GRANULAR FILL (2.8mm), GRANULAR FILL 150mm Ø PERF. DRAIN, FULL 150mm Ø PERF. DRAIN, FULL - SPACER - SPACER LENGTH OF ABUTMENT LENGTH OF ABUTMENT THICKNESS THICKNESS LOCATION DETERMINED BY LOCATION DETERMINED BY FIELD ENGINEER FIELD ENGINEER (BY OTHERS) (BY OTHERS) B SECTION S02 SCALE 1:50 A END VIEW S02 SCALE 1:50 NOTE:

IF FROST SUSCEPTIBLE SOILS ARE PRESENT, THE SOIL WITHIN BRIAN THE DEPTH AND LATERAL EXTENT OF FROST PENETRATION BELOW THE BIN SHALL BE REMOVED AND REPLACED WITH NON-FROST SUSCEPTIBLE CLEAN GRANULAR MATERIAL. * SHALL BE GREATER THAN MAXIMUM ANTICIPATED SCOUR DEPTH AS DETERMINED BY THE OWNER'S HYDROTECHNICAL ENGINEER DESIGNED BY OTHERS RELEASE # CUSTOMER REF. Atlantic Industries Limited AGNICO-EAGLE LTD. 08 JUL 16 BH ISSUED FOR CONSTRUCTION DES. CHK BY OTHERS BRIDGE ABUTMENT 20 KM - AMARUQ, NU CALL TOLL FREE IN NORTH AMERICA 1-877-AIL-PIPE 24 JUN 16 BH ISSUED FOR APPROVAL DRAWN BY BH 20 JUN 16 PROJECT 2016-00506D DWG S03 SECTIONS www.ail.ca www.atlanticindustries.us © ATLANTIC INDUSTRIES LIMITED (2016) THIS DRAWING IS THE PROPERTY OF ATLANTIC INDUSTRIES LIMITED (AIL) AND MAY CONTAIN PROPRIETARY INFORMATION. WRITTEN APPROVAL MUST BE GIVEN BY AIL PRIOR TO ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS ISSUED. THIS DRAWING SHALL BE RETURNED TO AIL UPON REQUEST.

AGNICO-EAGLE LTD. BRIDGE ABUTMENT 23.9 KM -AMARUQ, NU



A.I.L. BOLT-A-BIN **ABUTMENTS**

					Atlantia In	dustries Limited	ACNICO EAGLE LTD	DESIGNED	BY	OTHERS	RELEASE #	CUSTOMER REF	F. TOTAL DWGS
1	08 JUL 16	BH	ISSUED FOR CONSTRUCTION				AGNICO-EAGLE LTD. BRIDGE ABUTMENT 23.9 KM - AMARUQ, NU	DES. CHK	BY	OTHERS	2	-	5
0	24 JUN 16	BH	ISSUED FOR APPROVAL	€JL.		IN NORTH AMERICA 1-877-AIL-PIPE	COVER SHEET	DRAWN BY	BH	21 JUN 16	PROJECT 2016		IWG 000 REV.
REV NO	DATE	BY	DESCRIPTION	***	www.ail.ca	www.atlanticindustries.us		DWG. CHK	LM	24 JUN 16	NUMBER 2016-	00506E 🛭	0. UUU 1
TI-	IS DRAWING IS	THE PR	OPERTY OF ATLANTIC INDUSTRIES LIMITED (AIL) AND MAY	CONTAIN PROPRI	ETARY INFORMATION. WRITTEN APPROV	VAL MUST BE GIVEN BY AIL PRIOR TO ANY INFORMATION CO	INTAINED HEREIN BEING USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT W.	S ISSUED. THIS DRAW	NG SHAL	L BE RETURN	ED TO AIL UPON REQUEST.	@ ATLANTIC INDUSTRIES	S LIMITED (2012)

DRAWING INDEX DRAWING TITLE

A.I.L. BOLT-A-BIN ABUTMENTS DRAWINGS

DRAWING No.

2016-00506E-000 COVER SHEET

2016-00506E-S03 SECTION

2016-00506E-S04 SECTION

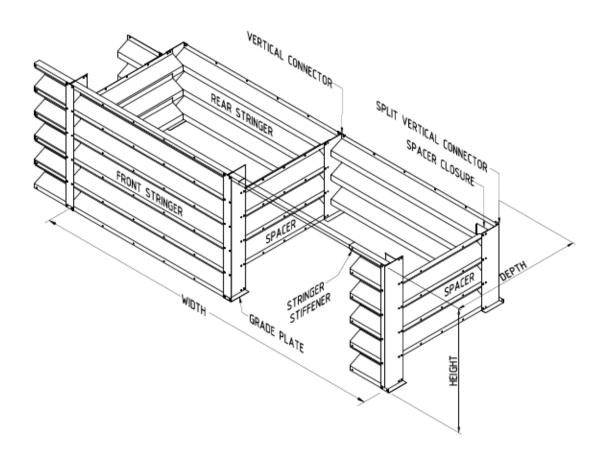
2016-00506E-S01 DETAILS, BILL OF MATERIALS, NOTES

2016-00506E-S02 PLAN VIEW, ELEVATION VIEW

REV. ISSUE DATE

08 JUL 16





BOLT-A-BIN COMPONENTS					
PART NAME	FUNCTION				
VERTICAL CONNECTOR	Connects stringers and spacers.				
SPLIT VERTICAL CONNECTOR	Connects stringers and spacers at end wall corners.				
STANDARD STRINGER	Forms front and rear walls.				
SPACER	Forms transverse and end walls.				
STRINGER STIFFENER	Stiffens top stringer (front wall).				
SPACER CLOSURE	Retains bin fill at end walls.				
GRADE PLATE	Assists in bin construction layout.				
16mm Ø (5/8" Ø) BOLT	Fastens all components.				

THIS ISOMETRIC ILLUSTRATION IS A REPRESENTATION OF A STANDARD BOLT-A-BIN STRUCTURE.

ACTUAL BOLT-A-BIN STRUCTURE MAY DIFFER FROM WHAT IS SHOWN IN THIS ILLUSTRATION.

	BILL OF MATERIALS							
QTY	PART ID	ITEM DESCRIPTION	NET LENGTH (mm)	THICKNESS (mm)				
8	BBF642893VC	#7 MOD. VERTICAL CONNECTOR (STANDARD)	2893	6.4				
8	BBF643299VC	#8 MOD. VERTICAL CONNECTOR (STANDARD)	3299	6.4				
16	BBF642080SVCA	#5 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	2080	6.4				
4	BBF642893SVCA	#7 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	2893	6.4				
4	BBF643299SVCA	#8 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	3299	6.4				
190	BBF283036STR	STANDARD STRINGER	3036	2.8				
40	BBF281363SPA	# 2 SPACER	1363	2.8				
76	BBF285021SPA	# 11 SPACER	5021	2.8				
14	BBF283036SS	STRINGER STIFFENER (LONG)	3036	2.8				
16	BBF162080SC	#5 MOD. SPACER CLOSURE (STANDARD)	2080	1.6				
4	BBF162893SC	#7 MOD. SPACER CLOSURE (STANDARD)	2893	1.6				
4	BBF163299SC	#8 MOD. SPACER CLOSURE (STANDARD)	3299	1.6				
40	BBF200395GP	GRADE PLATE	-	2.0				
3000	UP.625X1.5	16mm (§") Ø STEEL BOLT & NUT	38	16mm Ø				

ASSEMBLY NOTES:

- 1.0 PRELIMINARY STEPS
 - 1.1 SEPARATE ALL COMPONENTS AND STACK LIKE PARTS TOGETHER FOR EASY ACCESS AND IDENTIFICATION. DO INVENTORY COUNT AGAINST BILL OF MATERIALS. BIN COMPONENTS TO BE POSITIONED SO THAT WATER WILL DRAIN OFF
- 1.2 ESTABLISH FRONT AND REAR LINES OF BOLT-A-BIN WALLS AND LOCATION OF EACH VERTICAL CONNECTOR.
- 2.0 ASSEMBLY
 - 2.1 DISTRIBUTE GRADE PLATES AND VERTICAL CONNECTORS TO APPROPRIATE LOCATIONS. NOTE: ON MOST WALLS VERTICAL CONNECTORS ARE 812mm SHORTER THAN FRONT VERTICAL CONNECTORS (EXCEPT ON BRIDGE ABUTMENTS). FOR WALL HEIGHTS GREATER THAN 3.66m, VERTICAL CONNECTORS WILL CONSIST OF TWO OR MORE PIECES.
 - 2.2 LOCATE AND PLACE GRADE PLATES IN EXACT LOCATIONS. SET VERTICAL CONNECTORS ONTO GRADE PLATES AND ATTACH WITH BOLTS. ATTACH TWO LOWER SPACERS TO FRONT AND REAR VERTICAL CONNECTORS.
 - 2.3 ATTACH TWO STRINGERS AT THE LOWEST HEIGHT IN THE FRONT AND REAR FACE. ONCE A BIN IS FORMED, CHECK FRONT FACE ALIGNMENT. CHECK BACK BIN TO ENSURE BIN IS SQUARE DIAGONALLY. ENSURE VERTICAL CONNECTORS ARE PLUMB IF BIN IS A VERTICAL INSTALLATION. CONTINUE TO ASSEMBLE BIN TOGETHER ALTERNATING STRINGERS AND SPACERS UNTIL BIN IS COMPLETED FULL HEIGHT. ASSEMBLING OF ADJACENT BINS MAY BE STARTED AFTER SUFFICIENT STRINGERS AND SPACERS ARE ASSEMBLED IN FIRST BIN TO ENSURE STABILITY. ALL BINS IN INSTALLATION ARE COMPLETED IN AN ALTERNATING STEP FASHION. FOR END BINS, INSTALL SPACER CLOSURE AT ENDS OF SPACERS OF EXPOSED END WALL PANEL.
 - 2.4 STRINGER'S ON FRONT FACE OF WALL ARE TO BE INSTALLED WITH THE OVERLAP ON THE INSIDE OF PRECEDING LOWER STRINGER INSTALLED.

GENERAL NOTES:

- 1.0 ALL DIMENSIONS ARE IN MILLIMETRES.
- 2.0 VERTICAL DIMENSIONS ARE FROM THE CENTRE OF THE BOLT HOLES. OVERALL HEIGHT IS EQUAL TO THE BIN HEIGHT PLUS 59mm.
- 3.0 GRADE PLATES, SUPPLIED BY A.I.L., ARE REQUIRED AT THE BOTTOM OF ALL VERTICAL CONNECTORS.
- 4.0 BRIDGE BEARING PAD MUST NOT COME INTO CONTACT WITH ANY METAL COMPONENTS. (150mm MIN.)
- 5.0 CONNECTION HARDWARE IN ACCORDANCE WITH ASTM A325 AND GALVANIZED TO ASTM A153/A153M
- 6.0 STEEL COMPONENTS MANUFACTURED IN ACCORDANCE WITH ASTM A568M AND HOT DIPPED GALVANIZED TO CSA G164 WITH A MINIMUM ZINC COATING OF Z610.
- 7.0 ASSEMBLE IN ACCORDANCE WITH MANUFACTURING DRAWINGS FROM ATLANTIC INDUSTRIES LTD.

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'n	1	08 JUL 16	BH	ISSUED FOR CONSTRUCTION
5	0	24 JUN 16	BH	ISSUED FOR APPROVAL
	REV NO.	DATE	BY	DESCRIPTION

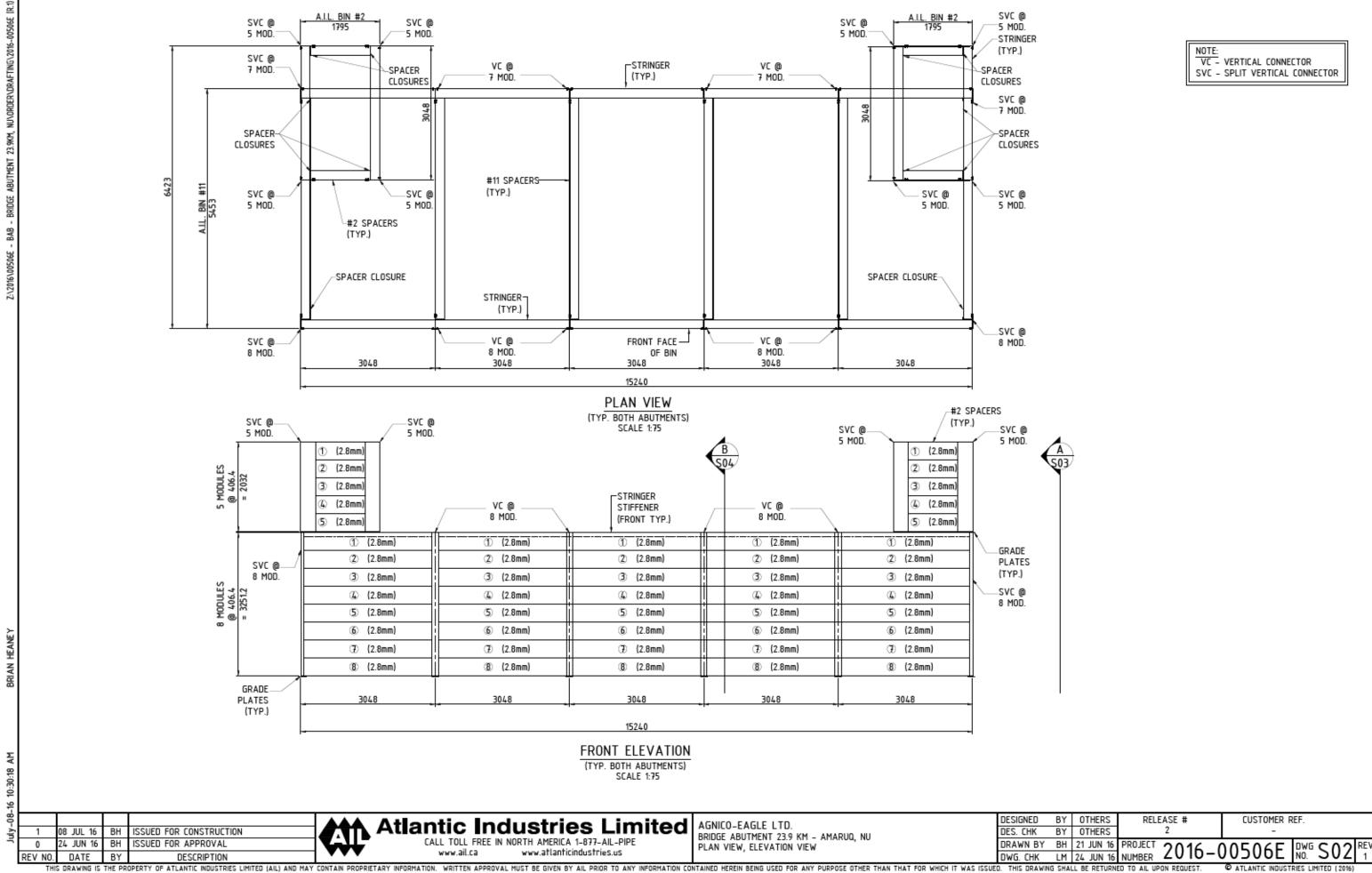
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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 23.9 KM - AMARUQ, NU DETAILS, BILL OF MATERIALS, NOTES

DESIGNED	BY	OTHERS	RELEASE #	CUSTOMER REF.				
DES. CHK	BY	OTHERS	2	-				
DRAWN BY	ВН	21 JUN 16	PROJECT 2016-0	705065	DWG C A 1 REV.			
DWG. CHK	LM	24 JUN 16	NUMBER ZUID-	JUJUUL	NO. 301 1			



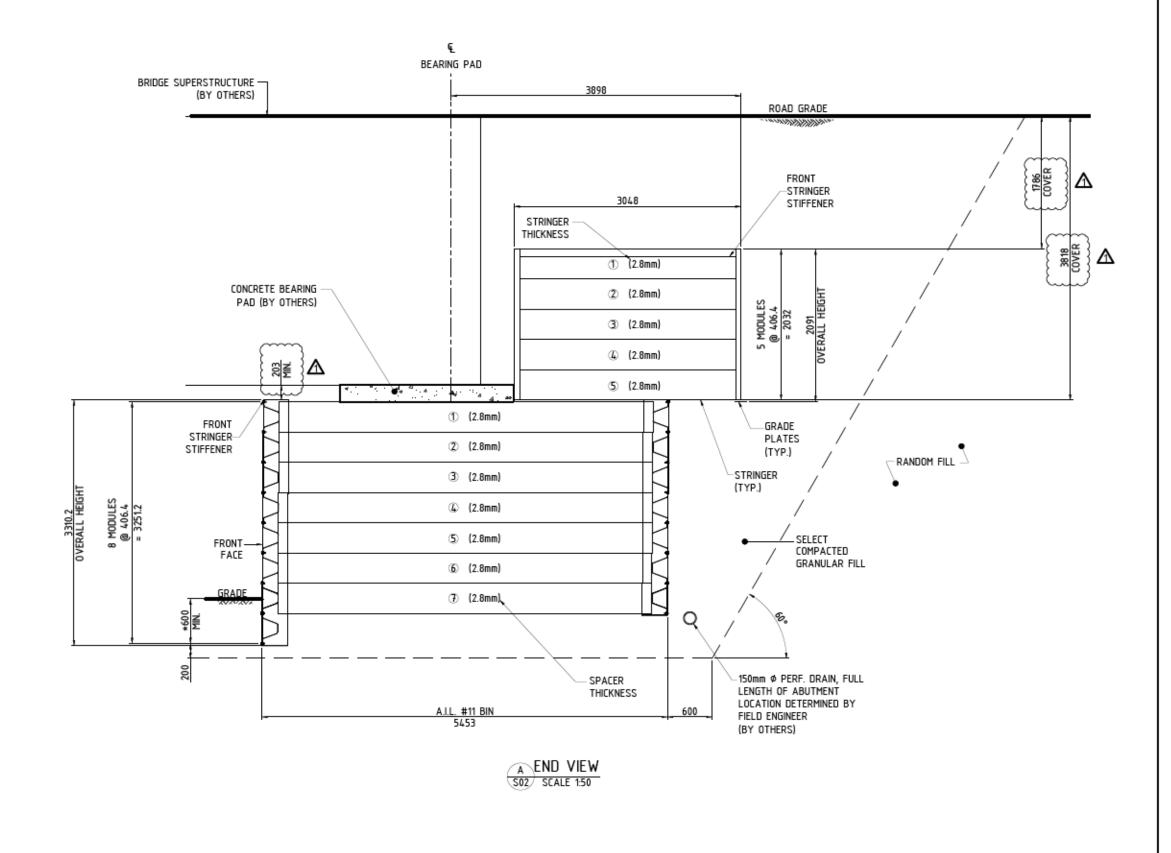
** REFERENCE DRAWING WSP DWG 6103-117-230-284 REV

WSP DWG. 6103-117-230-284, REV C (2016/04/08) WSP DWG. 6103-117-230-285, REV C (2016/04/08)

NOTE

IF FROST SUSCEPTIBLE SOILS ARE PRESENT, THE SOIL WITHIN THE DEPTH AND LATERAL EXTENT OF FROST PENETRATION BELOW THE BIN SHALL BE REMOVED AND REPLACED WITH NON-FROST SUSCEPTIBLE CLEAN GRANULAR MATERIAL.

* SHALL BE GREATER THAN MAXIMUM ANTICIPATED SCOUR DEPTH AS DETERMINED BY THE OWNER'S HYDROTECHNICAL ENGINEER



1 08 JUL 16 BH ISSUED FOR CONSTRUCTION
0 24 JUN 16 BH ISSUED FOR APPROVAL
REV NO DATE BY DESCRIPTION

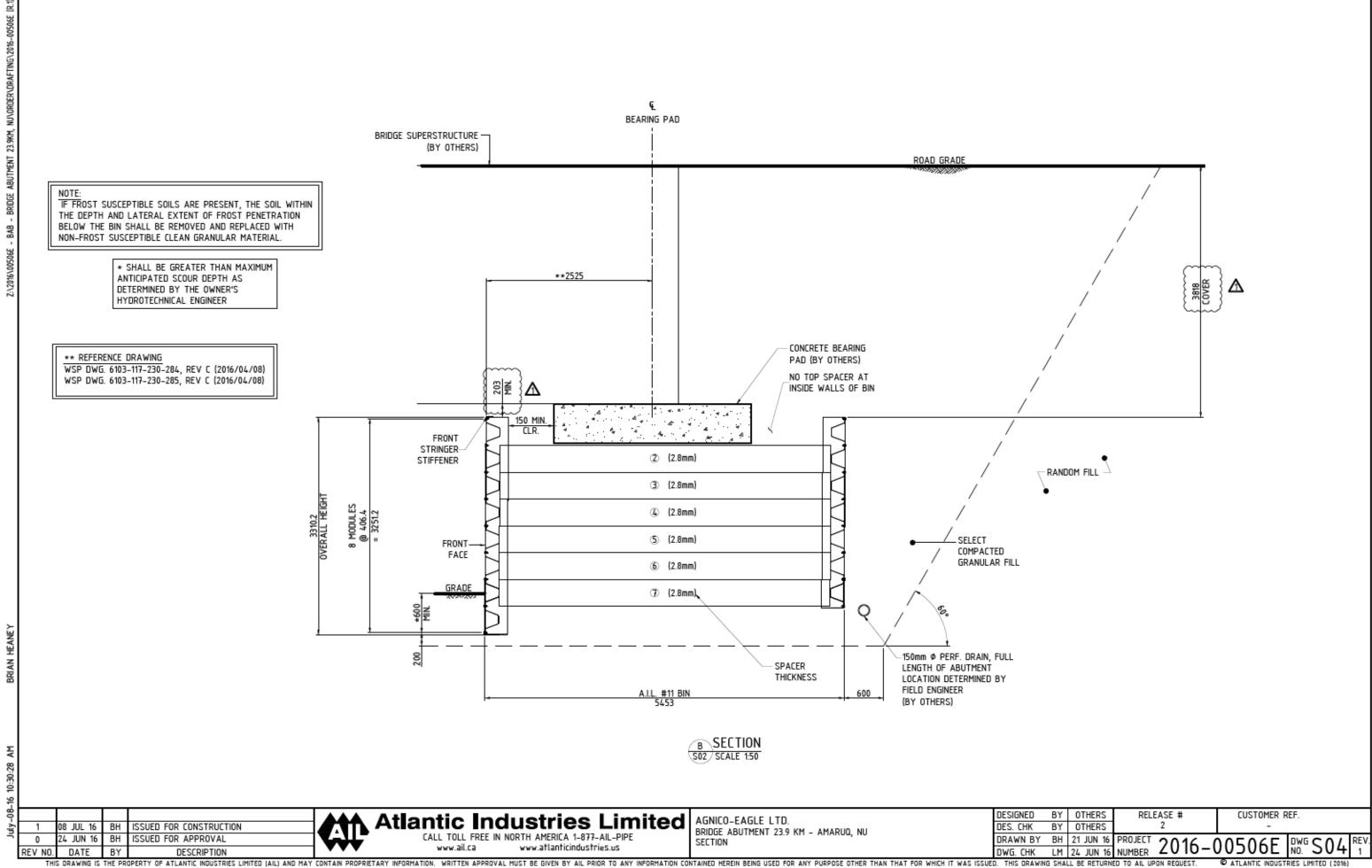
Atlantic Industries Limited

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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 23.9 KM - AMARUQ, NU SECTION



08 JUL 16 BH ISSUED FOR CONSTRUCTION 07 JUL 16 BH RE-ISSUED FOR APPROVAL 24 JUN 16 BH ISSUED FOR APPROVAL

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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 26.1 KM - AMARUQ, NU COVER SHEET

DESIGNED BY OTHERS RELEASE # CUSTOMER REF. TOTAL DWGS DES. CHK BY OTHERS DRAWN BY BH 21 JUN 16 PROJECT 2016-00506F DWG NO.

DRAWING INDEX DRAWING TITLE

A.I.L. BOLT-A-BIN ABUTMENTS DRAWINGS

DRAWING No.

2016-00506F-000 COVER SHEET

2016-00506F-S03 SECTION

2016-00506F-S04 SECTION

2016-00506F-S01 DETAILS, BILL OF MATERIALS, NOTES

2016-00506F-S02 PLAN VIEW, ELEVATION VIEW

REV. ISSUE DATE

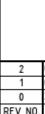
08 JUL 16

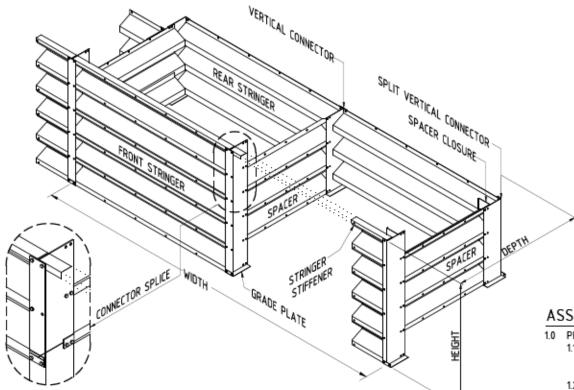
AGNICO-EAGLE LTD. BRIDGE ABUTMENT 26.1 KM -AMARUQ, NU



A.I.L. BOLT-A-BIN **ABUTMENTS**

> Atlantic Industries Limited www.atlanticindustries.us www.ail.ca





BOLT-A-BIN COMPONENTS						
PART NAME	FUNCTION					
VERTICAL CONNECTOR	Connects stringers and spacers.					
SPLIT VERTICAL CONNECTOR	Connects stringers and spacers at end wall corners.					
STANDARD STRINGER	Forms front and rear walls.					
SPACER	Forms transverse and end walls.					
STRINGER STIFFENER	Stiffens top stringer (front wall).					
SPACER CLOSURE	Retains bin fill at end walls.					
GRADE PLATE	Assists in bin construction layout.					
16mm Ø (5/8" Ø) BOLT	Fastens all components.					

THIS ISOMETRIC ILLUSTRATION IS A REPRESENTATION OF A STANDARD BOLT-A-BIN STRUCTURE.

ACTUAL BOLT-A-BIN STRUCTURE MAY DIFFER FROM WHAT IS SHOWN IN THIS ILLUSTRATION.

T	BILL OF MATERIALS							
QTY	PART ID	ITEM DESCRIPTION	NET LENGTH (mm)	H THICKNESS (mm)				
16	BBF643655VC	#9 MOD. VERTICAL CONNECTOR (c/w SPLICE TABS)	3655	6.4				
8	BBF640861VC	#2 MOD. VERTICAL CONNECTOR (STANDARD)	861	6.4				
8	BBF641267VC	#3 MOD. VERTICAL CONNECTOR (STANDARD)	1267	6.4				
8	BBF643655SVCA	#9 MOD. SPLIT VERTICAL CONNECTOR (c/w SPLICE TABS)	3655	6.4				
4	BBF640861SVCA	#2 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	861	6.4				
4	BBF641267SVCA	#3 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	1267	6.4				
230	BBF283036STR	STANDARD STRINGER	3036	2.8				
124	BBF285021SPA	# 11 SPACER	5021	2.8				
10	BBF283036SS	STRINGER STIFFENER (LONG)	3036	2.8				
4	BBF160861SC	#2 MOD. SPACER CLOSURE (STANDARD)	861	1.6				
4	BBF161267SC	#3 MOD. SPACER CLOSURE (STANDARD)	1267	1.6				
8	BBF163655SC	#9 MOD. SPACER CLOSURE (STANDARD) LOWER	3655	1.6				
24	BBF200395GP	GRADE PLATE	-	2.0				
3350	UP.625X1.5	16mm (§") Ø STEEL BOLT & NUT	38	16mm Ø				

ASSEMBLY NOTES:

- 1.0 PRELIMINARY STEPS
 - 1.1 SEPARATE ALL COMPONENTS AND STACK LIKE PARTS TOGETHER FOR EASY ACCESS AND IDENTIFICATION. DO INVENTORY COUNT AGAINST BILL OF MATERIALS. BIN COMPONENTS TO BE POSITIONED SO THAT WATER WILL
- 1.2 ESTABLISH FRONT AND REAR LINES OF BOLT-A-BIN WALLS AND LOCATION OF EACH VERTICAL CONNECTOR.
- ASSEMBLY
 - 2.1 DISTRIBUTE GRADE PLATES AND VERTICAL CONNECTORS TO APPROPRIATE LOCATIONS. NOTE: ON MOST WALLS VERTICAL CONNECTORS ARE 812mm SHORTER THAN FRONT VERTICAL CONNECTORS (EXCEPT ON BRIDGE ABUTMENTS). FOR WALL HEIGHTS GREATER THAN 3.66m, VERTICAL CONNECTORS WILL CONSIST OF TWO OR MORE PIECES.
 - 2.2 LOCATE AND PLACE GRADE PLATES IN EXACT LOCATIONS. SET VERTICAL CONNECTORS ONTO GRADE PLATES AND ATTACH WITH BOLTS. ATTACH TWO LOWER SPACERS TO FRONT AND REAR VERTICAL CONNECTORS.
 - 2.3 ATTACH TWO STRINGERS AT THE LOWEST HEIGHT IN THE FRONT AND REAR FACE. ONCE A BIN IS FORMED. CHECK FRONT FACE ALIGNMENT. CHECK BACK BIN TO ENSURE BIN IS SQUARE DIAGONALLY. ENSURE VERTICAL CONNECTORS ARE PLUMB IF BIN IS A VERTICAL INSTALLATION. CONTINUE TO ASSEMBLE BIN TOGETHER ALTERNATING STRINGERS AND SPACERS UNTIL BIN IS COMPLETED FULL HEIGHT. ASSEMBLING OF ADJACENT BINS MAY BE STARTED AFTER SUFFICIENT STRINGERS AND SPACERS ARE ASSEMBLED IN FIRST BIN TO ENSURE STABILITY. ALL BINS IN INSTALLATION ARE COMPLETED IN AN ALTERNATING STEP FASHION. FOR END BINS, INSTALL SPACER CLOSURE AT ENDS OF SPACERS OF EXPOSED END WALL PANEL.
 - 2.4 STRINGERS ON FRONT FACE OF WALL ARE TO BE INSTALLED WITH THE OVERLAP ON THE INSIDE OF PRECEDING LOWER STRINGER INSTALLED.

GENERAL NOTES:

- 1.0 ALL DIMENSIONS ARE IN MILLIMETRES.
- 2.0 VERTICAL DIMENSIONS ARE FROM THE CENTRE OF THE BOLT HOLES. OVERALL HEIGHT IS EQUAL TO THE BIN HEIGHT PLUS 59mm.
- 3.0 GRADE PLATES, SUPPLIED BY A.I.L., ARE REQUIRED AT THE BOTTOM OF ALL VERTICAL CONNECTORS.
- 4.0 BRIDGE BEARING PAD MUST NOT COME INTO CONTACT WITH ANY METAL COMPONENTS. (150mm MIN.)
- 5.0 CONNECTION HARDWARE IN ACCORDANCE WITH ASTM A325 AND GALVANIZED TO ASTM A153/A153M
- 6.0 STEEL COMPONENTS MANUFACTURED IN ACCORDANCE WITH ASTM A568M AND HOT DIPPED GALVANIZED TO CSA G164 WITH A MINIMUM ZINC COATING OF Z610.
- 7.0 ASSEMBLE IN ACCORDANCE WITH MANUFACTURING DRAWINGS FROM ATLANTIC INDUSTRIES LTD.

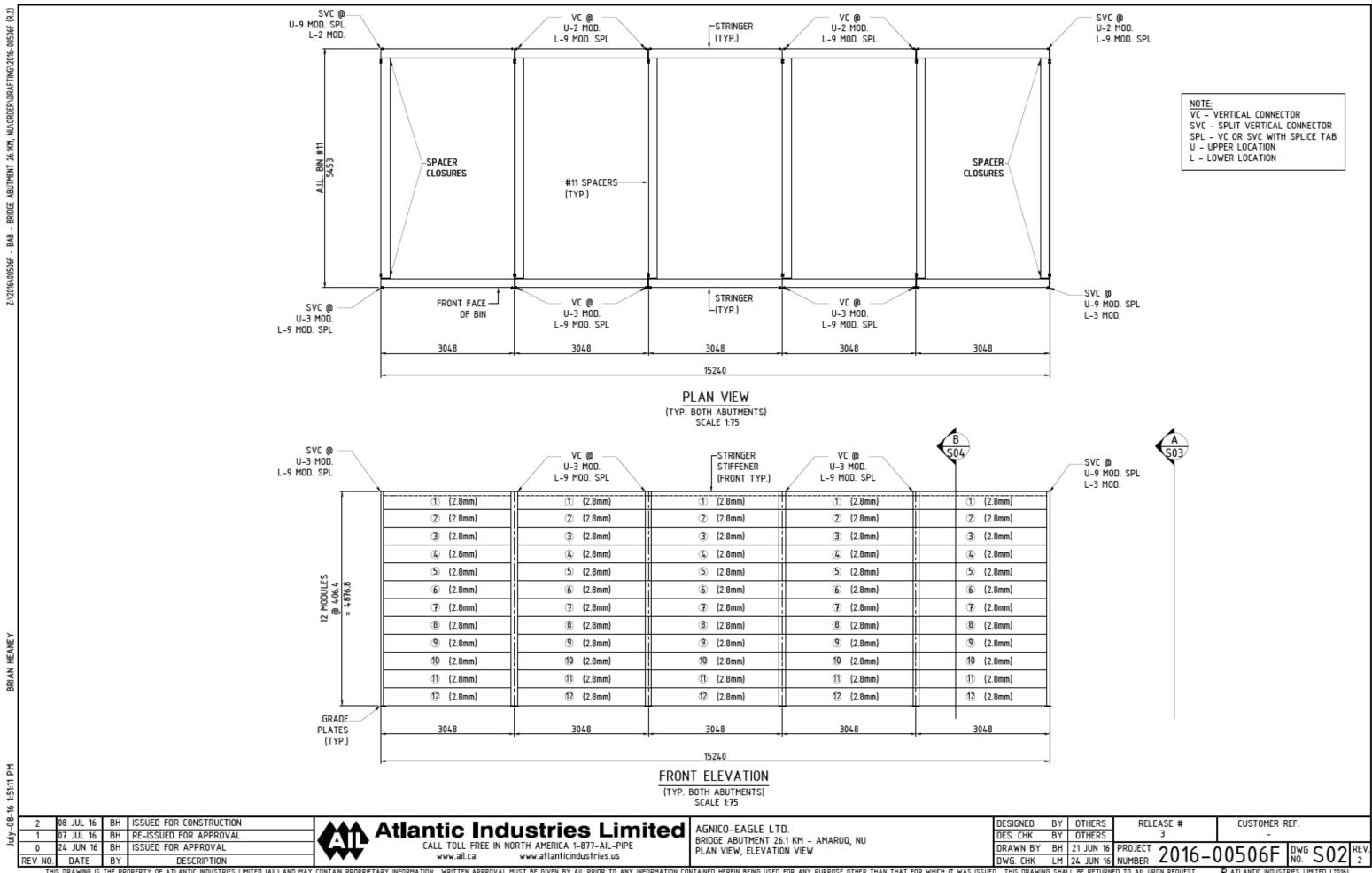
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9	2	08 JUL 16	BH	ISSUED FOR CONSTRUCTION
Ė	1	07 JUL 16	BH	RE-ISSUED FOR APPROVAL
5	0	24 JUN 16	BH	ISSUED FOR APPROVAL
	REV NO.	DATE	BY	DESCRIPTION

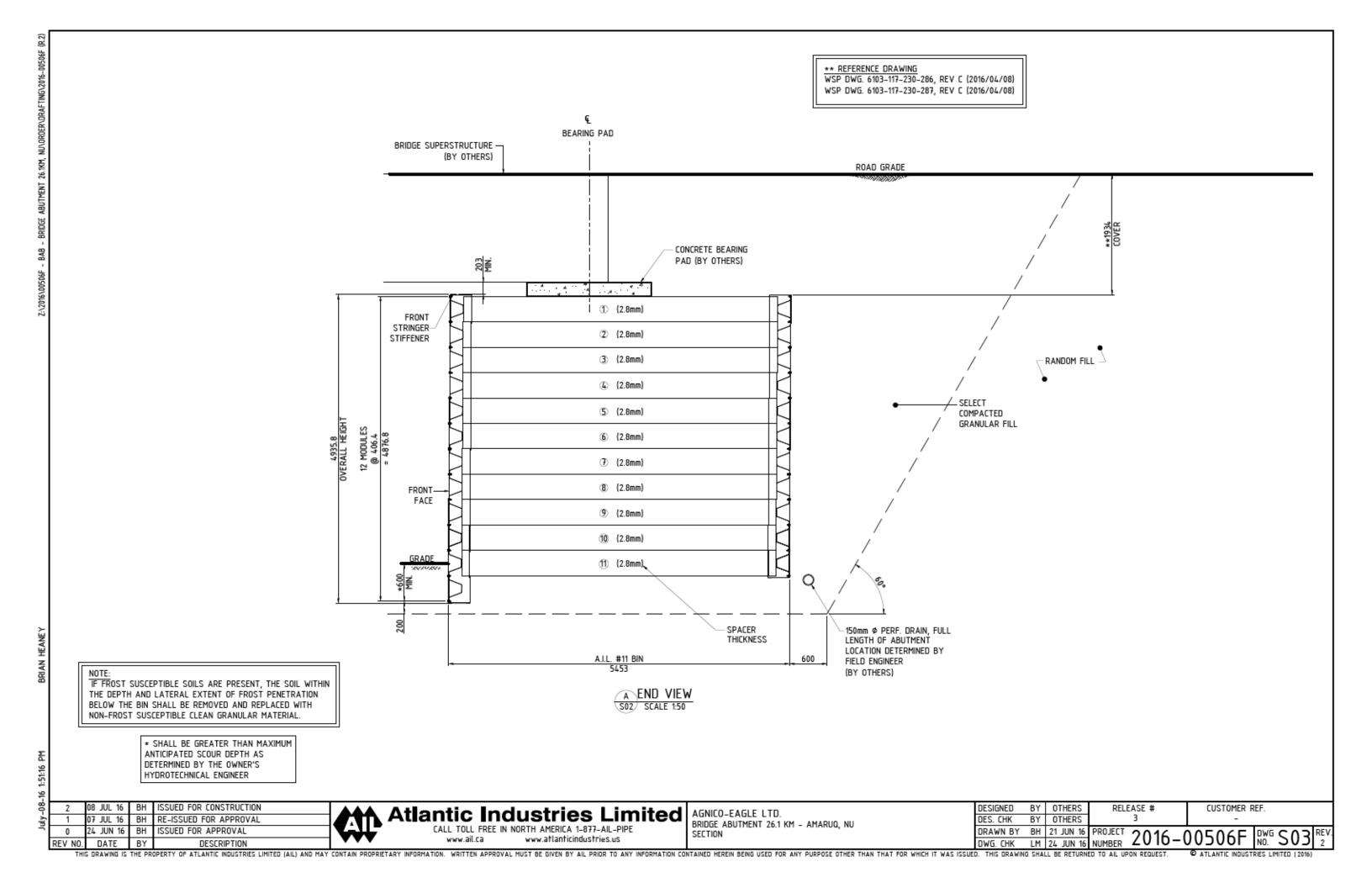
Atlantic Industries Limited CALL TOLL FREE IN NORTH AMERICA 1-877-AIL-PIPE www.atlanticindustries.us

www.ail.ca

AGNICO-EAGLE LTD. BRIDGE ABUTMENT 26.1 KM - AMARUQ. NU DETAILS, BILL OF MATERIALS, NOTES

DESIGNED BY OTHERS RELEASE # CUSTOMER REF. DES. CHK BY OTHERS DRAWN BY BH 21 JUN 16 PROJECT 2016-00506F





** REFERENCE DRAWING WSP DWG. 6103-117-230-286, REV C (2016/04/08) WSP DWG. 6103-117-230-287, REV C (2016/04/08) BEARING PAD BRIDGE SUPERSTRUCTURE -(BY OTHERS) ROAD GRADE **2225 CONCRETE BEARING PAD (BY OTHERS) NO TOP SPACER AT 203 MIN. INSIDE WALLS OF BIN 150 MIN. CLR. FRONT STRINGER-(2) (2.8mm) STIFFENER ③ (2.8mm) RANDOM FILL 4 (2.8mm) SELECT (5) (2.8mm) COMPACTED 4935.8 OVERALL HEIGHT GRANULAR FILL ⑥ (2.8mm) ② (2.8mm) (8) (2.8mm) FRONT-FACE (9) (2.8mm) 10 (2.8mm) ① (2.8mm), - SPACER BRIAN HEANE -150mm Ø PERF. DRAIN, FULL THICKNESS LENGTH OF ABUTMENT LOCATION DETERMINED BY A.I.L. #11 BIN FIELD ENGINEER 5453 (BY OTHERS) IF FROST SUSCEPTIBLE SOILS ARE PRESENT, THE SOIL WITHIN THE DEPTH AND LATERAL EXTENT OF FROST PENETRATION **B** SECTION BELOW THE BIN SHALL BE REMOVED AND REPLACED WITH S02 SCALE 1:50 NON-FROST SUSCEPTIBLE CLEAN GRANULAR MATERIAL. * SHALL BE GREATER THAN MAXIMUM ANTICIPATED SCOUR DEPTH AS DETERMINED BY THE OWNER'S HYDROTECHNICAL ENGINEER 08 JUL 16 BH ISSUED FOR CONSTRUCTION DESIGNED BY OTHERS RELEASE # CUSTOMER REF. Atlantic Industries Limited AGNICO-EAGLE LTD. 07 JUL 16 BH RE-ISSUED FOR APPROVAL DES. CHK BY OTHERS BRIDGE ABUTMENT 26.1 KM - AMARUQ, NU CALL TOLL FREE IN NORTH AMERICA 1-877-AIL-PIPE 24 JUN 16 BH ISSUED FOR APPROVAL DRAWN BY BH 21 JUN 16 PROJECT 2016-00506F DWG S04 www.ail.ca www.atlanticindustries.us ATLANTIC INDUSTRIES LIMITED (2016) THIS DRAWING IS THE PROPERTY OF ATLANTIC INDUSTRIES LIMITED (AIL) AND MAY CONTAIN PROPRIETARY INFORMATION. WRITTEN APPROVAL MUST BE GIVEN BY AIL PRIOR TO ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS ISSUED. THIS DRAWING SHALL BE RETURNED TO AIL UPON REQUEST.

08 JUL 16 BH ISSUED FOR CONSTRUCTION 24 JUN 16 BH ISSUED FOR APPROVAL

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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 32.3 KM - AMARUQ, NU COVER SHEET

RELEASE # DESIGNED BY OTHERS CUSTOMER REF. TOTAL DWGS DES. CHK BY OTHERS DRAWN BY BH 21 JUN 16 PROJECT 2016-00506G DWG NO.

DRAWING INDEX DRAWING TITLE

A.I.L. BOLT-A-BIN ABUTMENTS DRAWINGS

DRAWING No.

2016-00506G-000 COVER SHEET

2016-00506G-S03 SECTION

2016-00506G-S04 SECTION

2016-00506G-S01 DETAILS, BILL OF MATERIALS, NOTES

2016-00506G-S02 PLAN VIEW, ELEVATION VIEW

REV. ISSUE DATE

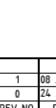
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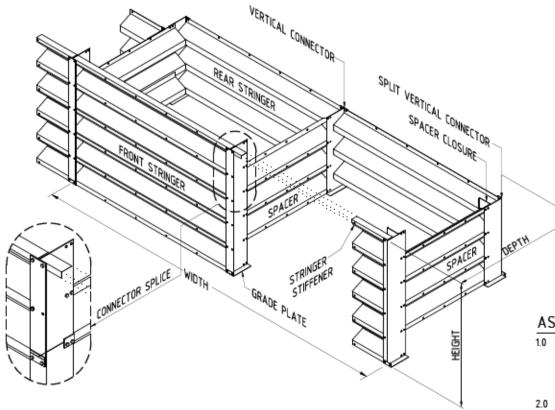
AGNICO-EAGLE LTD. BRIDGE ABUTMENT 32.3 KM -AMARUQ, NU



A.I.L. BOLT-A-BIN **ABUTMENTS**

> Atlantic Industries Limited CALL TOLL FREE IN NORTH AMERICA 1-877-AIL-PIPE





BOLT-A-	BIN COMPONENTS
PART NAME	FUNCTION
VERTICAL CONNECTOR	Connects stringers and spacers.
SPLIT VERTICAL CONNECTOR	Connects stringers and spacers at end wall corners.
STANDARD STRINGER	Forms front and rear walls.
SPACER	Forms transverse and end walls.
STRINGER STIFFENER	Stiffens top stringer (front wall).
SPACER CLOSURE	Retains bin fill at end walls.
GRADE PLATE	Assists in bin construction layout.
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TYPICAL BOLT-A-BIN DETAILS - ISOMETRIC

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254	BBF283036STR	STANDARD STRINGER	3036	2.8					
24	BBF281363SPA	# 2 SPACER	1363	2.8					
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14	BBF283036SS	STRINGER STIFFENER (LONG)	3036	2.8					
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4050	UP.625X1.5	16mm (⁵") Ø STEEL BOLT & NUT	38	16mm Ø					

ASSEMBLY NOTES:

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- 7.0 ASSEMBLE IN ACCORDANCE WITH MANUFACTURING DRAWINGS FROM ATLANTIC INDUSTRIES LTD.

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7	1	08 JUL 16	BH	ISSUED FOR CONSTRUCTION
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	REV NO.	DATE	BY	DESCRIPTION

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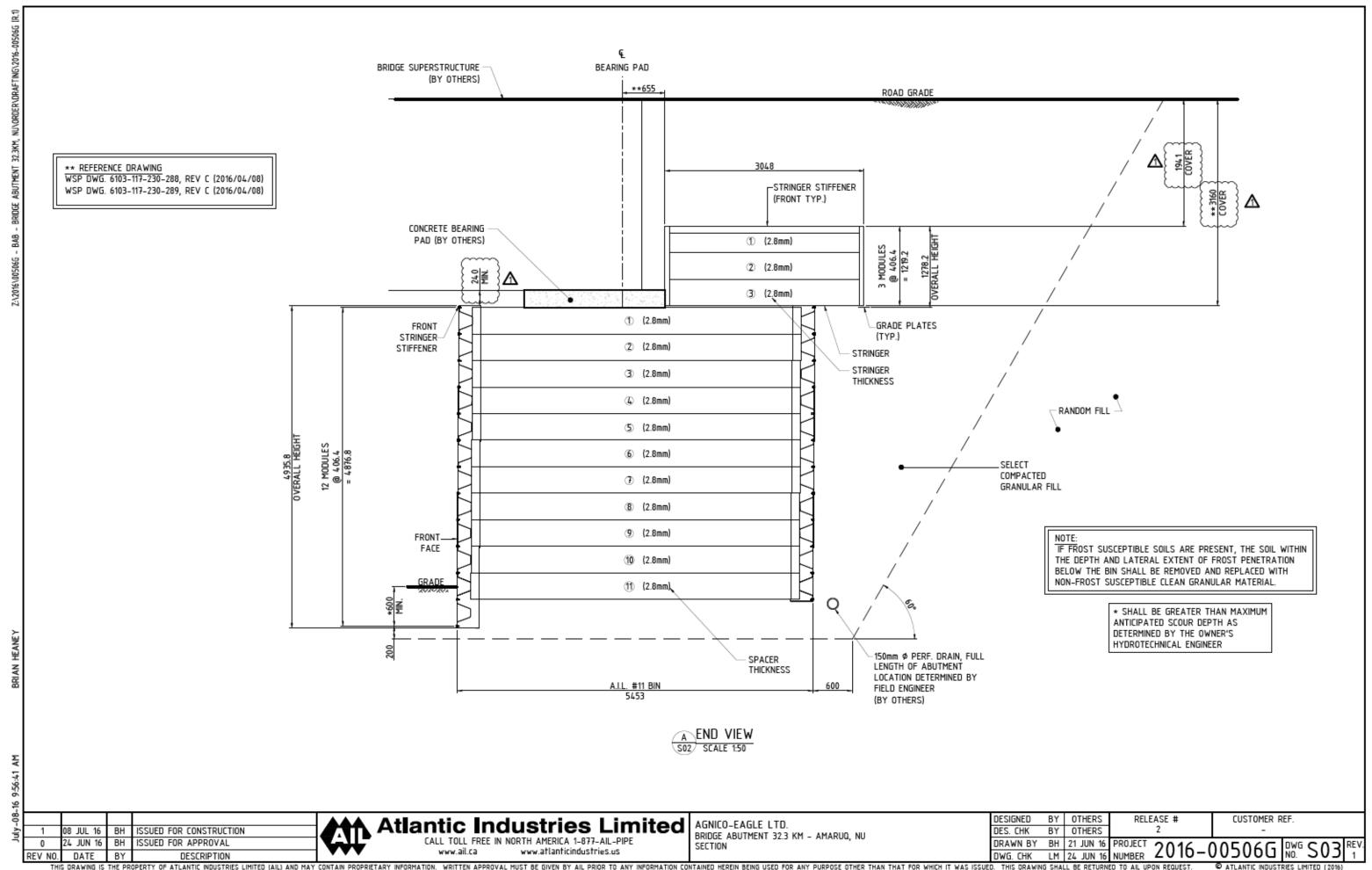
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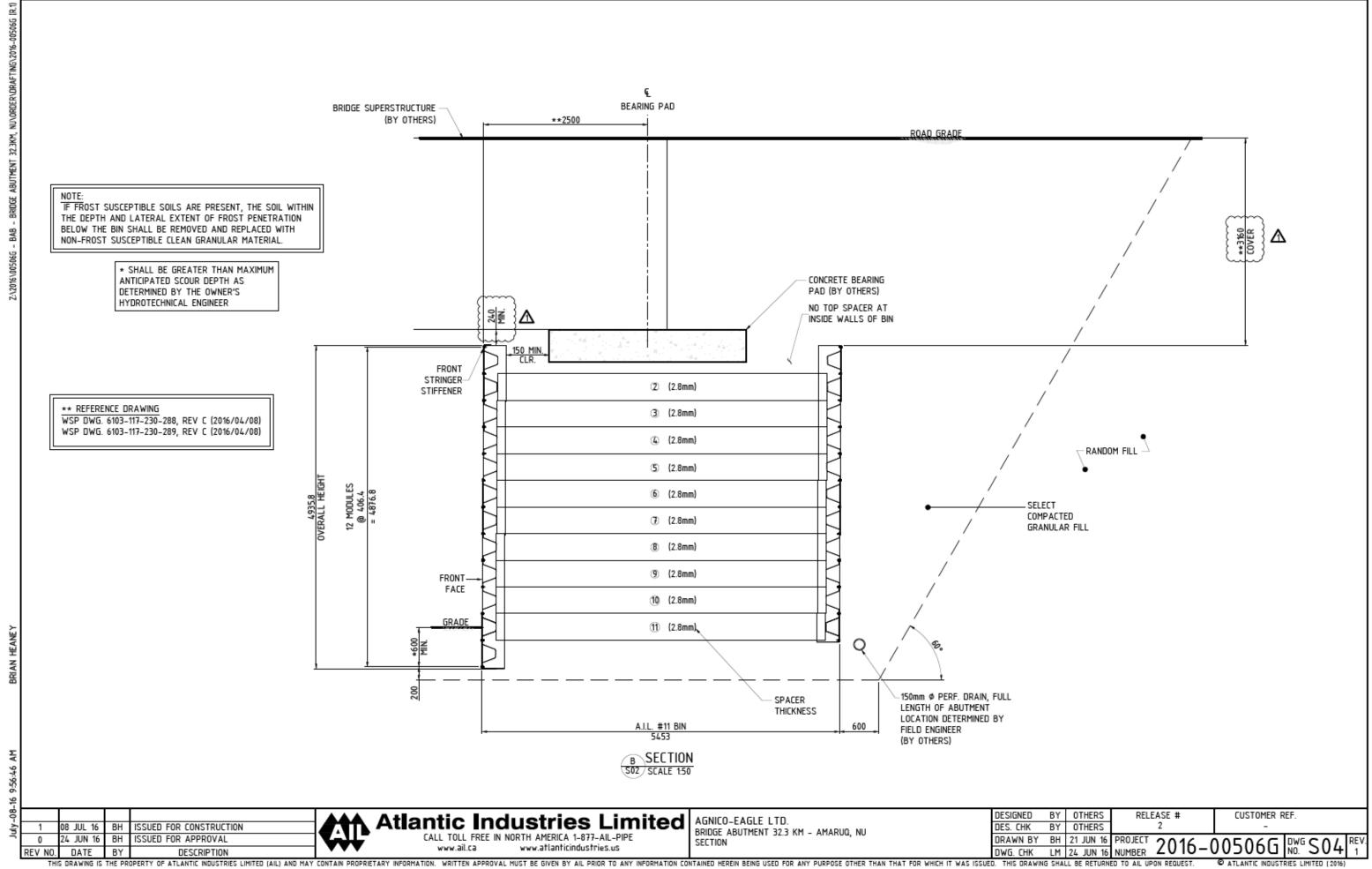
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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 32.3 KM - AMARUQ, NU DETAILS, BILL OF MATERIALS, NOTES

DESIGNED	BY	OTHERS	RELEASE #	CUSTOMER R	REF.
DES. CHK	BY	OTHERS	2	-	
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A.I.L. BIN #2 _A.I.L. BIN #2_ VC - VERTICAL CONNECTOR -SPACER CLOSURE SPACER CLOSURE-SVC - SPLIT VERTICAL CONNECTOR SVC @ SPL - VC OR SVC WITH SPLICE TAB 3 MOD. SVC @ VC @ VC @ 3 MOD. U - UPPER LOCATION U-2 MOD. -STRINGER U-2 MOD. L - LOWER LOCATION L-9 MOD. SPL (TYP.) L-9 MOD. SPL SVC @ U-2 MOD. SVC @-L-9 MOD. SPL U-9 MOD. SPL L-2 MOD. SPACER--SPACER CLOSURES #11 SPACERS-STRINGER CLOSURES (TYP.) (TYP.) SVC @-_SVC @ _SVC @ SVC @-3 MOD. 3 MOD. 3 MOD. 3 MOD. -#2 SPACERS #2 SPACERS-(TYP.) (TYP.) SPACER STRINGER-CLOSURE (TYP.) SVC @ VC @ FRONT FACE VC @ U-9 MOD. SPL SVC @ OF BIN U-3 MOD. U-3 MOD. L-3 MOD. U-3 MOD. L-9 MOD. SPL L-9 MOD. SPL L-9 MOD. SPL 3048 3048 3048 3048 3048 15240 PLAN VIEW (TYP. BOTH ABUTMENTS) SCALE 1:100 #2 SPACERS #2 SPACERS-(TYP.) (TYP.) SVC @ SVC @-_SVC @ _SVC @ 3 MOD. 3 MOD. 3 MOD. 3 MOD. -STRINGER ① (2.8mm) (2.8mm) VC @ VC @ STIFFENER (2.8mm) U-3 MOD. U-3 MOD. (2.8mm) (FRONT TYP.) L-9 MOD. SPL L-9 MOD. SPL (2.8mm) (2.8mm) (1) (2.8mm) ① (2.8mm) ① (2.8mm) (2.8mm) ① (2.8mm) GRADE ② (2.8mm) (2) (2.8mm) ② (2.8mm) (2) (2.8mm) (2) (2.8mm) PLATES SVC @ (TYP.) U-3 MOD. (3) (2.8mm) (3) (2.8mm) (3) (2.8mm) (3) (2.8mm) (3) (2.8mm) L-9 MOD. SPL 4 (2.8mm) 4 (2.8mm) 4 (2.8mm) (4) (2.8mm) 4 (2.8mm) SVC @ 12 MODULES @ 406.4 = 4876.8 (5) (2.8mm) (5) (2.8mm) (5) (2.8mm) U-9 MOD. SPL (5) (2.8mm) (5) (2.8mm) L-3 MOD. ⑥ (2.8mm) ⑥ (2.8mm) ⑥ (2.8mm) 6 (2.8mm) ⑥ (2.8mm) ② (2.8mm) ② (2.8mm) ② (2.8mm) ② (2.8mm) ② (2.8mm) (8) (2.8mm) (8) (2.8mm) (2.8mm) (2.8mm) (8) (2.8mm) (2.8mm) (9) (2.8mm) (2.8mm) (9) (2.8mm) (9) (2.8mm) (10) (2.8mm) (10) (2.8mm) (10) (2.8mm) (10) (2.8mm) (10) (2.8mm) BRIAN (11) (2.8mm) (1) (2.8mm) (11) (2.8mm) (11) (2.8mm) (1) (2.8mm) (12) (2.8mm) (12) (2.8mm) (12) (2.8mm) (12) (2.8mm) (12) (2.8mm) GRADE 3048 3048 3048 3048 3048 PLATES 15240 (TYP.) FRONT ELEVATION (TYP. BOTH ABUTMENTS) SCALE 1:100 DESIGNED BY OTHERS RELEASE # CUSTOMER REF. Atlantic Industries Limited AGNICO-EAGLE LTD. 08 JUL 16 BH ISSUED FOR CONSTRUCTION DES. CHK BY OTHERS BRIDGE ABUTMENT 32.3 KM - AMARUQ, NU CALL TOLL FREE IN NORTH AMERICA 1-877-AIL-PIPE 24 JUN 16 BH ISSUED FOR APPROVAL DRAWN BY BH 21 JUN 16 PROJECT 2016-00506G NO. S02 PLAN VIEW, ELEVATION VIEW www.ail.ca www.atlanticindustries.us DATE BY DESCRIPTION





2015/00506H - BAB - BRIDGE ABUTMENT 43.5KM, NU/ORDER/DRAFTING\.2016-1

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 DRAWING INDEX

 DRAWING No.
 DRAWING TITLE
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 ISSUE DATE

 2016-00506H-000
 COVER SHEET
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 08 JUL 16

 A.I.L. BOLT-A-BIN ABUTMENTS DRAWINGS

 2016-00506H-S01
 DETAILS, BILL OF MATERIALS, NOTES
 1
 08 JUL 16

 2016-00506H-S02
 PLAN VIEW, ELEVATION VIEW
 1
 08 JUL 16

 2016-00506H-S03
 SECTIONS
 1
 08 JUL 16

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BRIDGE ABUTMENT 43.5 KM –

AMARUQ, NU



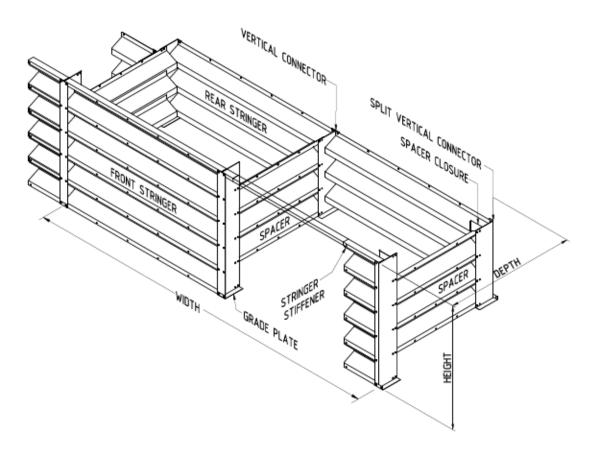
A.I.L. BOLT-A-BIN ABUTMENTS

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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 43.5 KM - AMARUQ, NU COVER SHEET

DESIGNED	BY	OTHERS	RELEASE #	CUSTOMER REF.	TOTAL DWG
DES. CHK	BY	OTHERS	2	-	4
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B0LT-A-I	BIN COMPONENTS
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VERTICAL CONNECTOR	Connects stringers and spacers.
SPLIT VERTICAL CONNECTOR	Connects stringers and spacers at end wall corners.
STANDARD STRINGER	Forms front and rear walls.
SPACER	Forms transverse and end walls.
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SPACER CLOSURE	Retains bin fill at end walls.
GRADE PLATE	Assists in bin construction layout.
16mm Ø (5/8" Ø) BOLT	Fastens all components.

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		BILL OF MATERIALS		
QTY	PART ID	ITEM DESCRIPTION	NET LENGTH (mm)	THICKNESS (mm)
6	BBF642486VC	#6 MOD. VERTICAL CONNECTOR (STANDARD)	2486	6.4
6	BBF642893VC	#7 MOD. VERTICAL CONNECTOR (STANDARD)	2893	6.4
4	BBF642486SVCA	#6 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	2486	6.4
4	BBF642893SVCA	#7 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	2893	6.4
104	BBF283036STR	STANDARD STRINGER	3036	2.8
54	BBF283802SPA	# 8 SPACER	3802	2.8
8	BBF283036SS	STRINGER STIFFENER (LONG)	3036	2.8
4	BBF162486SC	#6 MOD. SPACER CLOSURE (STANDARD)	2486	1.6
4	BBF162893SC	#7 MOD. SPACER CLOSURE (STANDARD)	2893	1.6
20	BBF200395GP	GRADE PLATE	-	2.0
1550	UP.625X1.5	16mm (5") Ø STEEL BOLT & NUT	38	16mm Ø

ASSEMBLY NOTES:

- 1.0 PRELIMINARY STEPS
 - 1.1 SEPARATE ALL COMPONENTS AND STACK LIKE PARTS TOGETHER FOR EASY ACCESS AND IDENTIFICATION. DO INVENTORY COUNT AGAINST BILL OF MATERIALS. BIN COMPONENTS TO BE POSITIONED SO THAT WATER WILL DRAIN OFF
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 - 2.4 STRINGERS ON FRONT FACE OF WALL ARE TO BE INSTALLED WITH THE OVERLAP ON THE INSIDE OF PRECEDING LOWER STRINGER INSTALLED.

GENERAL NOTES:

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- 2.0 VERTICAL DIMENSIONS ARE FROM THE CENTRE OF THE BOLT HOLES. OVERALL HEIGHT IS EQUAL TO THE BIN HEIGHT PLUS 59mm.
- 3.0 GRADE PLATES, SUPPLIED BY A.I.L., ARE REQUIRED AT THE BOTTOM OF ALL VERTICAL CONNECTORS.
- 4.0 BRIDGE BEARING PAD MUST NOT COME INTO CONTACT WITH ANY METAL COMPONENTS. (150mm MIN.)
- 5.0 CONNECTION HARDWARE IN ACCORDANCE WITH ASTM A325 AND GALVANIZED TO ASTM A153/A153M
- 6.0 STEEL COMPONENTS MANUFACTURED IN ACCORDANCE WITH ASTM A568M AND HOT DIPPED GALVANIZED TO CSA G164 WITH A MINIMUM ZINC COATING OF Z610.
- 7.0 ASSEMBLE IN ACCORDANCE WITH MANUFACTURING DRAWINGS FROM ATLANTIC INDUSTRIES LTD.

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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 43.5 KM - AMARUQ, NU DETAILS, BILL OF MATERIALS, NOTES

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VC @ VC @ NOTE: SVC @ SVC @ STRINGER 6 MOD. 6 MOD. VC - VERTICAL CONNECTOR 6 MOD. (TYP.) 6 MOD. SVC - SPLIT VERTICAL CONNECTOR #8 SPACERS-(TYP.) -SPACER SPACER-CLOSURES CLOSURES STRINGER-(TYP.) SVC @-7 MOD. _SVC @ 7 MOD. FRONT FACE VC @ VC @ OF BIN 7 MOD. 7 MOD. 3048 3048 3048 PLAN VIEW (TYP. BOTH ABUTMENTS) SCALE 1:75 -STRINGER VC @ -7 MOD. SVC @-VC @ STIFFENER _SVC @ 7 MOD. 7 MOD. 7 MOD. (FRONT TYP.) ① (2.8mm) ① (2.8mm) ① (2.8mm) ① (2.8mm) (2) (2.8mm) (2) (2.8mm) (2) (2.8mm) (2) (2.8mm) 3 (2.8mm) 3 (2.8mm) ③ (2.8mm) 3 (2.8mm) 4 (2.8mm) 4 (2.8mm) 4 (2.8mm) 4 (2.8mm) (5) (2.8mm) (5) (2.8mm) (5) (2.8mm) (5) (2.8mm) ⑥ (2.8mm) 6 (2.8mm) ⑥ (2.8mm) ⑥ (2.8mm) ② (2.8mm) ② (2.8mm) ② (2.8mm) (2.8mm) GRADE-PLATES 3048 9144 BRIAN HEANEY (TYP.) 12192 FRONT ELEVATION (TYP. BOTH ABUTMENTS) SCALE 1:75 CUSTOMER REF. DESIGNED BY OTHERS RELEASE # Atlantic Industries Limited AGNICO-EAGLE LTD. 08 JUL 16 BH ISSUED FOR CONSTRUCTION DES. CHK BY OTHERS BRIDGE ABUTMENT 43.5 KM - AMARUQ, NU CALL TOLL FREE IN NORTH AMERICA 1-877-AIL-PIPE 24 JUN 16 BH ISSUED FOR APPROVAL DRAWN BY BH 21 JUN 16 PROJECT 2016-00506H DWG S02 PLAN VIEW, ELEVATION VIEW www.atlanticindustries.us www.ail.ca DESCRIPTION THIS DRAWING IS THE PROPERTY OF ATLANTIC INDUSTRIES LIMITED (AIL) AND MAY CONTAIN PROPRIETARY INFORMATION. WRITTEN APPROVAL MUST BE GIVEN BY AIL PRIOR TO ANY INFORMATION CONTAINED HEREIN BEING USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS ISSUED. THIS DRAWING SHALL BE RETURNED TO AIL UPON REQUEST. C ATLANTIC INDUSTRIES LIMITED (2016)

** REFERENCE DRAWING WSP DWG. 6103-117-230-290, REV C (2016/04/08) WSP DWG. 6103-117-230-291, REV C (2016/04/08) Æ BEARING PAD BEARING PAD BRIDGE SUPERSTRUCTURE -BRIDGE SUPERSTRUCTURE -(BY OTHERS) (BY OTHERS) ROAD GRADE ROAD GRADE **1934 COVER CONCRETE BEARING CONCRETE BEARING **2004 PAD (BY OTHERS) PAD (BY OTHERS) NO TOP SPACER AT INSIDE WALLS OF BIN _150 MIN. CLR. ① (2.8mm) FRONT FRONT STRINGER STRINGER-(2) (2.8mm) (2) (2.8mm) STIFFENER STIFFENER - RANDOM FILL --random fill $^{-}$ 2903.8 OVERALL HEIGHT ③ (2.8mm) 3 (2.8mm) (a) 406.4 (a) 406.4 (b) 2844.8 FRONT-4 (2.8mm) FRONT-4 (2.8mm) FACE FACE (5) (2.8mm) (5) (2.8mm) SELECT SELECT COMPACTED COMPACTED 6 (2.8mm), GRANULAR FILL ⑥ (2.8mm), GRANULAR FILL 150mm Ø PERF. DRAIN, FULL - SPACER SPACER 150mm Ø PERF. DRAIN, FULL LENGTH OF ABUTMENT THICKNESS THICKNESS LENGTH OF ABUTMENT LOCATION DETERMINED BY LOCATION DETERMINED BY FIELD ENGINEER A.I.L. #8 BIN A.I.L. #8 BIN FIELD ENGINEER 4234 4234 (BY OTHERS) (BY OTHERS) B SECTION S02 SCALE 1:50 A END VIEW S02 SCALE 1:50 NOTE:

IF FROST SUSCEPTIBLE SOILS ARE PRESENT, THE SOIL WITHIN THE DEPTH AND LATERAL EXTENT OF FROST PENETRATION BELOW THE BIN SHALL BE REMOVED AND REPLACED WITH NON-FROST SUSCEPTIBLE CLEAN GRANULAR MATERIAL. * SHALL BE GREATER THAN MAXIMUM ANTICIPATED SCOUR DEPTH AS DETERMINED BY THE OWNER'S HYDROTECHNICAL ENGINEER DESIGNED BY OTHERS RELEASE # CUSTOMER REF. Atlantic Industries Limited AGNICO-EAGLE LTD. 08 JUL 16 BH ISSUED FOR CONSTRUCTION DES. CHK BY OTHERS BRIDGE ABUTMENT 43.5 KM - AMARUQ, NU CALL TOLL FREE IN NORTH AMERICA 1-877-AIL-PIPE 24 JUN 16 BH ISSUED FOR APPROVAL DRAWN BY BH 21 JUN 16 PROJECT 2016-00506H DWG S03 www.ail.ca www.atlanticindustries.us ATLANTIC INDUSTRIES LIMITED (2016) THIS DRAWING IS THE PROPERTY OF ATLANTIC INDUSTRIES LIMITED (AIL) AND MAY CONTAIN PROPRIETARY INFORMATION. WRITTEN APPROVAL MUST BE GIVEN BY AIL PRIOR TO ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS ISSUED. THIS DRAWING SHALL BE RETURNED TO AIL UPON REQUEST.

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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 44.8 KM - AMARUQ, NU COVER SHEET

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DRAWING INDEX DRAWING TITLE

A.I.L. BOLT-A-BIN ABUTMENTS DRAWINGS

DRAWING No.

2016-00506I-S03

2016-00506I-S04 SECTION

2016-00506I-000 COVER SHEET

2016-00506I-S01 DETAILS, BILL OF MATERIALS, NOTES

2016-00506I-S02 PLAN VIEW, ELEVATION VIEW

SECTION

REV. ISSUE DATE

08 JUL 16

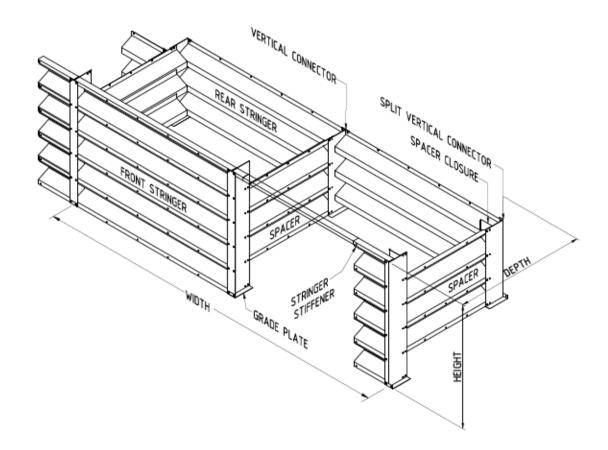
AGNICO-EAGLE LTD. BRIDGE ABUTMENT 44.8 KM -AMARUQ, NU



A.I.L. BOLT-A-BIN **ABUTMENTS**

> Atlantic Industries Limited CALL TOLL FREE IN NORTH AMERICA 1-877-AIL-PIPE





BOLT-A-	BOLT-A-BIN COMPONENTS					
PART NAME	FUNCTION					
VERTICAL CONNECTOR	Connects stringers and spacers.					
SPLIT VERTICAL CONNECTOR	Connects stringers and spacers at end wall corners.					
STANDARD STRINGER	Forms front and rear walls.					
SPACER	Forms transverse and end walls.					
STRINGER STIFFENER	Stiffens top stringer (front wall).					
SPACER CLOSURE	Retains bin fill at end walls.					
GRADE PLATE	Assists in bin construction layout.					
16mm Ø (5/8" Ø) BOLT	Fastens all components.					

TYPICAL BOLT-A-BIN DETAILS - ISOMETRIC

THIS ISOMETRIC ILLUSTRATION IS A REPRESENTATION OF A STANDARD BOLT-A-BIN STRUCTURE.

ACTUAL BOLT-A-BIN STRUCTURE MAY DIFFER FROM WHAT IS SHOWN IN THIS ILLUSTRATION.

	BILL OF MATERIALS							
QTY	PART ID	ITEM DESCRIPTION	NET LENGTH (mm)	THICKNESS (mm)				
8	BBF642486VC	#6 MOD. VERTICAL CONNECTOR (STANDARD)	2486	6.4				
8	BBF642893VC	#7 MOD. VERTICAL CONNECTOR (STANDARD)	2893	6.4				
4	BBF642486SVCA	#6 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	2486	6.4				
4	BBF642893SVCA	#7 MOD. SPLIT VERTICAL CONNECTOR (STANDARD)	2893	6.4				
130	BBF283036STR	STANDARD STRINGER	3036	2.8				
64	BBF284208SPA	# 9 SPACER	4208	2.8				
10	BBF283036SS	STRINGER STIFFENER (LONG)	3036	2.8				
4	BBF162486SC	#6 MOD. SPACER CLOSURE (STANDARD)	2486	1.6				
4	BBF162893SC	#7 MOD. SPACER CLOSURE (STANDARD)	2893	1.6				
24	BBF200395GP	GRADE PLATE	-	2.0				
1950	UP.625X1.5	16mm (∰") Ø STEEL BOLT & NUT	38	16mm Ø				

ASSEMBLY NOTES:

- 1.0 PRELIMINARY STEPS
 - 1.1 SEPARATE ALL COMPONENTS AND STACK LIKE PARTS TOGETHER FOR EASY ACCESS AND IDENTIFICATION. DO INVENTORY COUNT AGAINST BILL OF MATERIALS. BIN COMPONENTS TO BE POSITIONED SO THAT WATER WILL DRAIN OFF.
- 1.2 ESTABLISH FRONT AND REAR LINES OF BOLT-A-BIN WALLS AND LOCATION OF EACH VERTICAL CONNECTOR.
- 2.0 ASSEMBLY
 - 2.1 DISTRIBUTE GRADE PLATES AND VERTICAL CONNECTORS TO APPROPRIATE LOCATIONS. NOTE: ON MOST WALLS VERTICAL CONNECTORS ARE 812mm SHORTER THAN FRONT VERTICAL CONNECTORS (EXCEPT ON BRIDGE ABUTMENTS). FOR WALL HEIGHTS GREATER THAN 3.66m, VERTICAL CONNECTORS WILL CONSIST OF TWO OR MORE PIECES.
 - 2.2 LOCATE AND PLACE GRADE PLATES IN EXACT LOCATIONS. SET VERTICAL CONNECTORS ONTO GRADE PLATES AND ATTACH WITH BOLTS. ATTACH TWO LOWER SPACERS TO FRONT AND REAR VERTICAL CONNECTORS.
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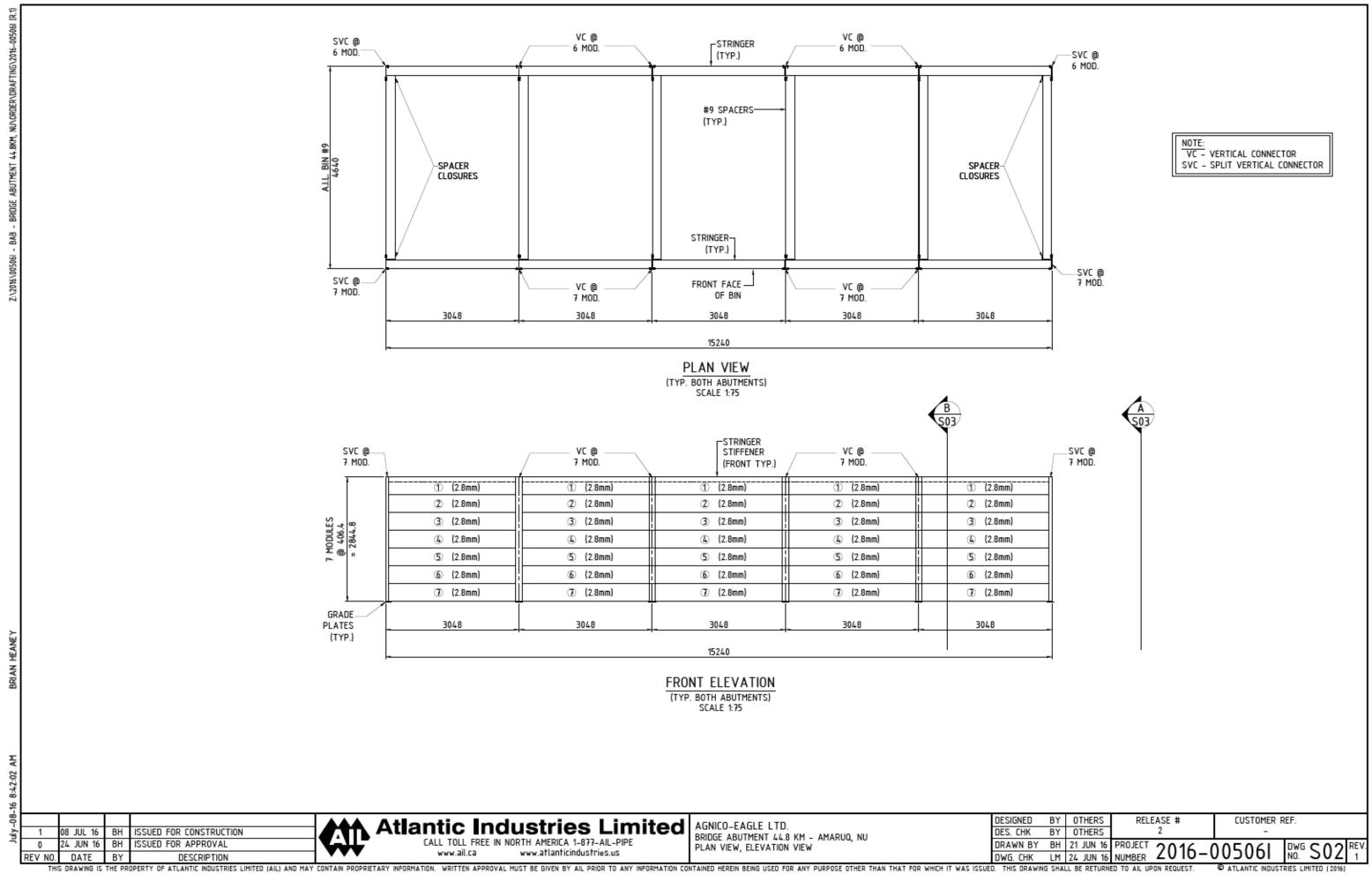
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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 44.8 KM - AMARUQ, NU DETAILS, BILL OF MATERIALS, NOTES

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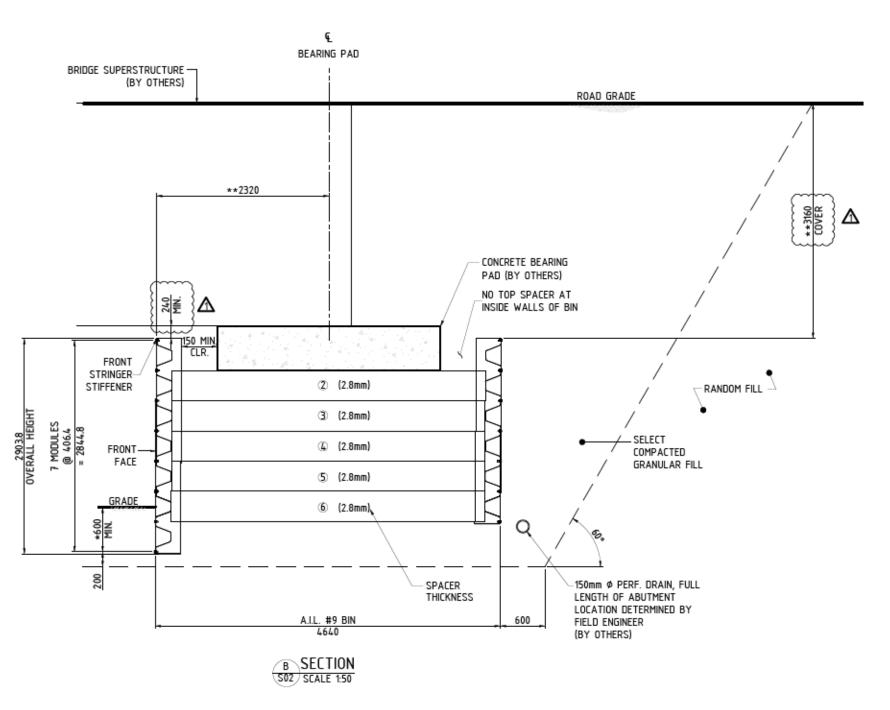


NOTE:
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** REFERENCE DRAWING WSP DWG. 6103-117-230-292, REV C (2016/04/08) WSP DWG. 6103-117-230-293, REV C (2016/04/08)

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> * SHALL BE GREATER THAN MAXIMUM ANTICIPATED SCOUR DEPTH AS DETERMINED BY THE OWNER'S HYDROTECHNICAL ENGINEER



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AGNICO-EAGLE LTD. BRIDGE ABUTMENT 44.8 KM - AMARUO, NU SECTION

DESIGNED BY OTHERS RELEASE # CUSTOMER REF. DES. CHK BY OTHERS DRAWN BY BH 21 JUN 16 PROJECT 2016-005061 ATLANTIC INDUSTRIES LIMITED (2016)



Installation Guide

Bolt-A-Bin®

Retaining Walls



Table of Contents

1.0	Introduction	2
1.1.	Purpose	2
1.2.		
1.3.	-	
2.0	Materials, Tools & Equipment	2
2.1.	Components, Material & tools Supplied by AIL	2
2.2.		
2.3.	Tools Supplied by Contractor:	3
2.4.		
2.5.	Bolts	5
3.0	Construction Procedures	5
3.1.	Foundation/Bedding Preparation	5
3.2.	Drainage	5
3.3.	. Assembly	6
3.	.3.1. Methods of Assembly	6
3.	.3.2. Bridge Abutments	9
3.	.3.3. Threaded Tie Rods	9
3.4.	Backfill	10
3.	.4.1. Backfill requirements	10
3.	.4.2. Backfill Placement	10
3.	.4.3. Compaction	11
3.	.4.4. Shape Monitoring	11



1.0 Introduction

1.1. PURPOSE

The purpose of this manual is to provide the Owner, Engineer, Contractor & Inspection Staff with the necessary information to properly assemble and install Bolt-A-Bin retaining walls. This manual shall be used in conjunction with the plans, specifications and contract documents. The procedures explained in this manual are based on past experience, and are not intended to limit the contractor to only these practices.

1.2. PLANS & SPECIFICATIONS

The Contractor must ensure that on-site personnel have the most recent "approved for construction" plans and specifications relevant to the installation. These are typically packaged with the bolts, but may also be obtained from an AIL representative.

1.3. RESPONSIBILITY

It is the responsibility of the Contractor to erect the structure according to the plans, specifications and contract documents. The Contractor shall be responsible for all quality control.

It is the responsibility of the Contractor to inspect all materials against the packing slip upon arrival at the site to ensure complete delivery in good order. Any damaged materials must be set aside and AIL shall be notified immediately.

An Atlantic Industries Limited representative may be available to provide on-site assistance. The representative will **not** be responsible for inspection or quality control.

2.0 Materials, Tools & Equipment

2.1. COMPONENTS, MATERIAL & TOOLS SUPPLIED BY AIL:

- Engineering & Shop drawings
- Structural components (vertical connectors, split vertical connectors, stringers, spacers, grade plates, stringer stiffeners, spacer closures)
- Bolts
- 4) Nuts
- 5) Zinc rich paint (if required)
- 6) On-Site assistance (if required)



2.2. EQUIPMENT SUPPLIED BY CONTRACTOR:

Forklift or properly equipped front-end loader to unload bundles of structural components.

Lifting equipment such as a small crane, excavator or boom truck.

Backfill equipment including dump trucks, dozers, loaders and water trucks to haul, spread and place fill. Water may be needed to obtain optimum moisture content.

Small plate tampers or walk behind rollers are needed to compact the material inside and within 1m of the structure. Single drum vibratory rollers are needed to compact the remaining portion of the fill.

2.3. TOOLS SUPPLIED BY CONTRACTOR:

- Pry bars
- Acceptable chains, cables or straps for lifting components
- Impact gun (air driven, ¾" drive recommended, 85 CFM @ 100 psi)
- Ladders, Scaffolding, Safety harnesses
- 5) Spud wrench
- 6) 5-8 lbs. sledgehammer
- 7) Torque wrench (250 ft-lbs minimum capacity)
- Flat screwdriver.
- 9) 5/8 inch wrench for clamps
- 10) Snips
- 11) Tape measure
- Wooden blocks



2.4. STRUCTURAL COMPONENTS

Structural components should be handled carefully to prevent damage to the zinc coating. They are typically shipped in bundles.

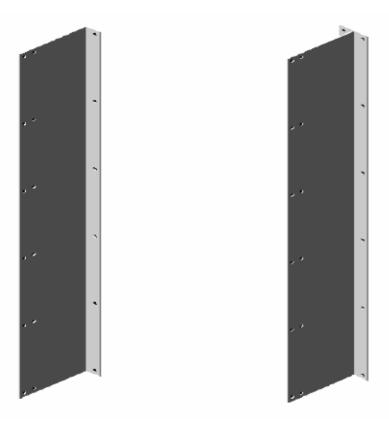


Figure 1 - Split vertical connector (left) used for corners and vertical connector (right) used for joining adjacent bins

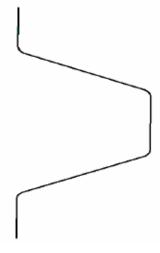


Figure 2 - Profile of stringer/spacer (Stringers have a single hole at the ends, spacers have 2)



Avoid abrasions from forks or chains when unloading and moving components, and avoid impacting panels being lifted against part of the structure that has already been erected.

When lifting and placing components NEVER put yourself or any part of your body between the structure and a section being lifted. Never stick a finger through an empty bolt hole, as the structure may shift and cause injury.

2.5. BOLTS

Bolts supplied are 15.9mm (5/8") \varnothing and 37mm (1.25") long with a 27mm (1-1/16") hex head. Bolts are used to connect all components.

Nuts should be placed with the flat side towards the plate.

Required torque on bolts is 203-338 N-m (150-250 ft-lb). The minimum torque must be met to maintain structural strength.

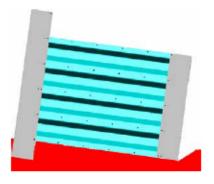
3.0 Construction Procedures

3.1. FOUNDATION/BEDDING PREPARATION

The foundation preparation is the responsibility of the Contractor. Excavate the site to the proper depth and length of structure to be constructed as per the contract drawings.

Any unsuitable foundation material below the structure or engineered backfill, as determined by the Owner's Geotechnical Engineer, should be excavated to a depth as directed by the Engineer. Unsuitable material must be excavated and replaced with acceptable granular material compacted as directed by the Owner's Geotechnical Engineer.

The foundation should be graded to match the grade of the wall, and to match the toe and heel elevations to accommodate the required batter (if any). The foundation should be fully compacted before installing the wall.



3.2. DRAINAGE

Drainage (when required) shall be installed as per the Contractor's Engineer. Typically, drainage is located at the rear toe of the wall, as indicated on the drawings.

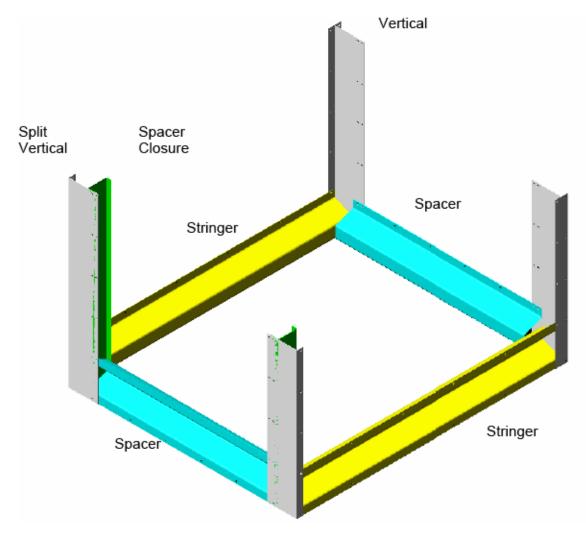


3.3. ASSEMBLY

3.3.1. Methods of Assembly

Method 1

Lay out required grade plates and vertical components at each corner, and required face panels (stringers and spacers) at each side. Spacer closures are required at the outside corners to prevent fill from migrating through the open end of the spacers. Bolt components into a square assembly (check by measuring diagonals). Temporary bracing may be required to hold verticals in place until more stringers and spacers are attached and the assembly is stable.

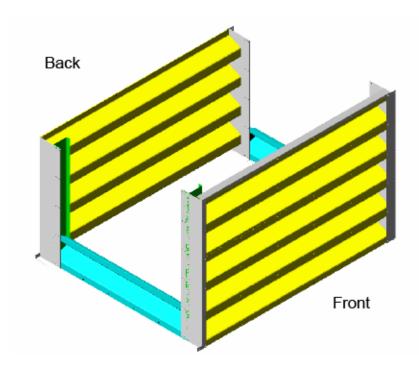


Add stringers and spacers row by row to complete the bin, keeping the bottom edge of each stringer or spacer inside of the top edge of the preceding piece.

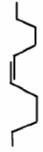


Method 2

Assemble panel-like sections of the front and back **or** sides. Attach grade plates to the base of the vertical components. Stand these sections up then attach remaining sides or front/back piece by piece. This method will require bracing for the first section of the bin, which will then support adjacent sections.

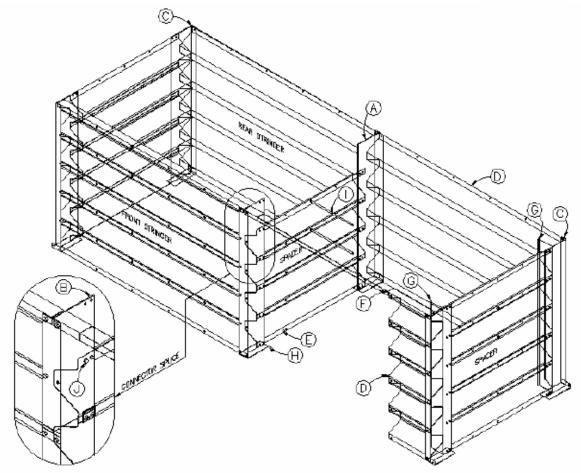


With either method, stringers should be lapped with the bottom edge inside the previous stringer to prevent water from staining the face of the bin.



The following page shows a cut away of a typical bin and labels all the components.





TYPICAL BOLT-A-BIN DETAILS - ISOMETRIC

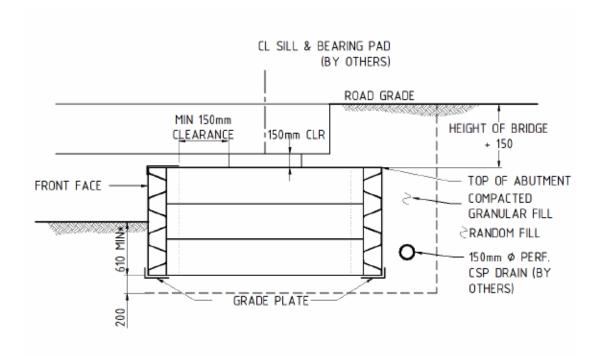
BOLT-A-BIN WALL COMPONENTS

A VERTICAL CONNECTOR	Connects stringers and spacers.
B UPPER VERTICAL CONNECTOR	Connects stringers and spacers above vertical connector splice.
SPLIT VERTICAL CONNECTOR	Connects stringers and spacers at end wall corners.
D STANDARD STRINGER	Forms front and rear walls.
E SPACER	Forms transverse and end walls.
F STRINGER STIFFENER	Stiffens top stringer (front wall).
G SPACER CLOSURE	Retains bin fill at end walls.
H GRADE PLATE	Assists in bin construction layout.
TIE ROD	Reinforces spacers at end.
J 15.9mm Ø (5/8" Ø) BOLT	Fastens all components.



3.3.2. Bridge Abutments

Bridge abutments must be constructed such that the bearing pad does not come in contact with any part of the Bolt-A-Bin structure. 150mm (6") clearance must be observed.



3.3.3. Threaded Tie Rods

For bins with depths greater than 3000mm (32'-4"), threaded tie rods are installed on the end bins to prevent the bin from bulging. Tie rods must be placed before placing fill in the bin.



3.4. BACKFILL

Before placing backfill ensure that all bolts have been tightened to the minimum torque of 203 N-m (150 ft-lbs).

3.4.1. Backfill requirements

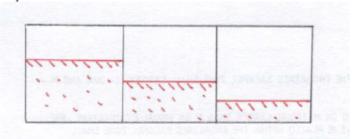
The backfill material structural characteristics are an integral part of soilsteel structure design. It is the responsibility of the Contractor to ensure that the backfill material meets the required parameters set out in the contract documents.

3.4.2. Backfill Placement

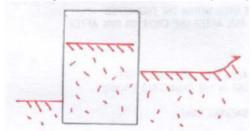
Before placing fill inside the bin, fill the area at the toe of the wall to a depth of 600mm (2') to prevent outward movement of the bin. After placing this fill, the fill in the bin should be brought above 600mm and maintained higher than the fill outside the bin. Material is not to be dumped or pushed perpendicular to bin but shall be placed in layers starting no closer than 1000mm (3'-4") from the side. Heavy construction vehicles should not approach within 1000mm (3'4") of the structure.

The depth of each un-compacted lift must not exceed 200mm (8 inches) unless otherwise specified in the contract documents. If there is difficulty reaching required compaction, this depth may be further reduced.

Fill depth shall be maintained approximately equal in adjacent bins at all times. The maximum difference in elevation adjacent bins shall not exceed 1000mm (3'-4").



The level of fill inside the bin must be higher than the fill outside the bin to maintain stability, but not by more than 1000mm (3'-4").





3.4.3. Compaction

When compacting the backfill material it is important not to allow any large vibratory equipment within 1 m (3.3 ft) of the structure. A small plate tamper is usually used within this area to ensure proper compaction without damaging the structure. Jumping jack compactors are typically used inside the bin. Heavy equipment should also veer away from the structure.

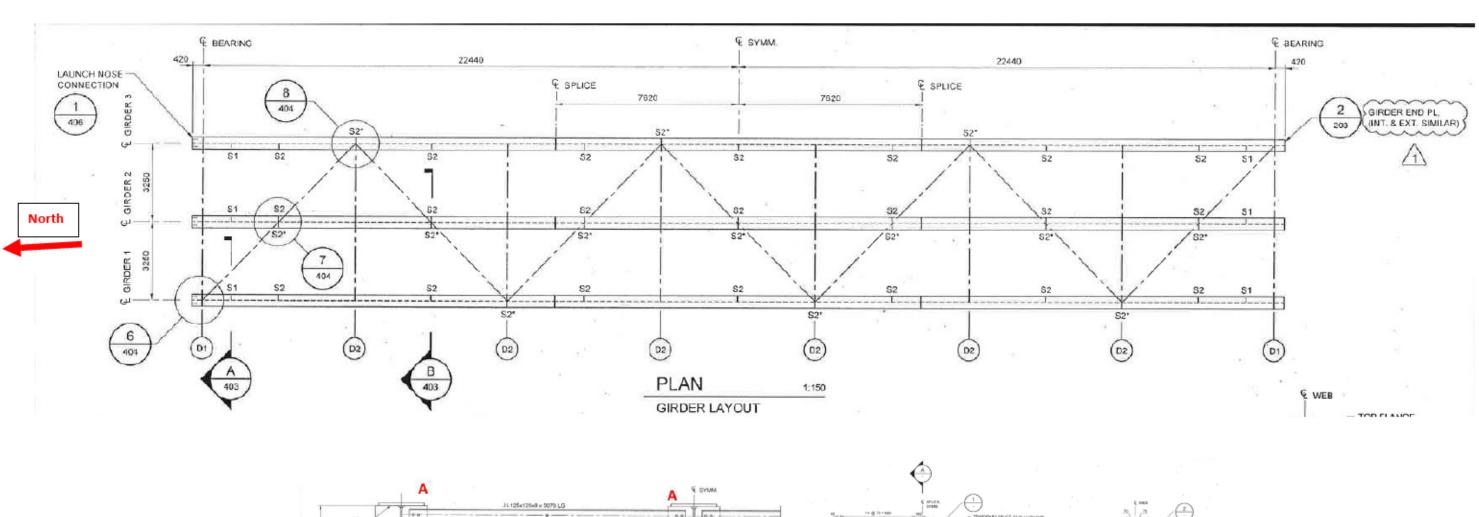
Select granular backfill material shall be compacted to a minimum of 95% Standard Proctor Maximum Dry Density unless otherwise specified in the contract documents.

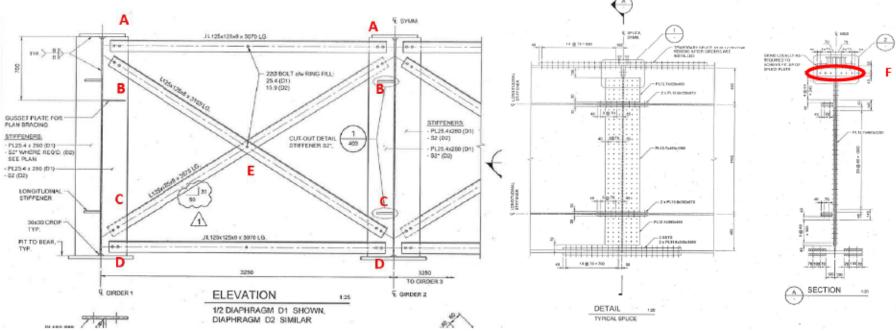
3.4.4. Shape Monitoring

The base and final elevation should be verified against the plans. Periodically check the horizontal and vertical alignment. Vertical tolerance is 12mm per 3000mm of wall height (1/2" per 32'-4"). Horizontal tolerance is 18mm per 3000mm length (3/4" per 32'-4").

APPENDIX

F-2 SUPERSTRUCTURE





Bridge at km 32.3 – Loose Bolts Found During Spot Checks

Observations of loose bolts: All 3 bolts in top compression splice (F), 6 locations, 2 sides - 36 bolts total