



Janet T. Mills
GOVERNOR

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0016

Bruce A. Van Note
COMMISSIONER

July 1, 2019
Subject: Large Culvert Replacement
State WIN: 022930.00
Location: **Monson**
Amendment No. 1

Dear Sir/Ms.:

For your information and review:

An additional report is available for review by the Contractor. A Bridge Load Rating report, titled "Monson Bridge Load Rating", dated June 15, 2019, has been posted to the MaineDOT web site.

The following question has been received:

Question: Can the Department provide the design drawings for the DOT provided box culvert to aid in figuring equipment for setting the box?

Please provide the largest dimensional piece

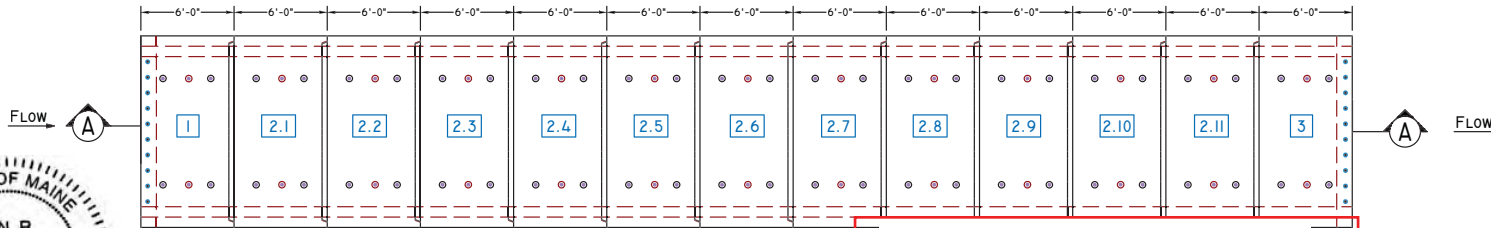
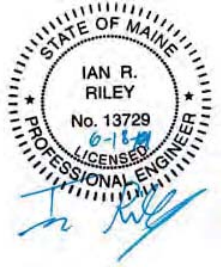
Please Provide the heaviest pick weight.

Response: The design drawings for the State supplied box culvert are attached and have been posted to the MaineDOT web site, titled "Monson Box Culvert Shop Drawings".

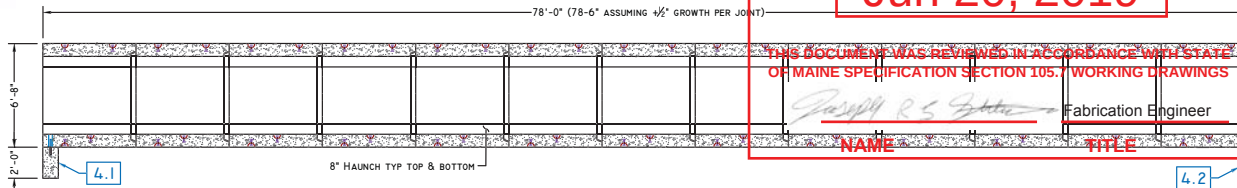
Consider these changes and information prior to submitting your bid on **July 10, 2019**.

Sincerely,

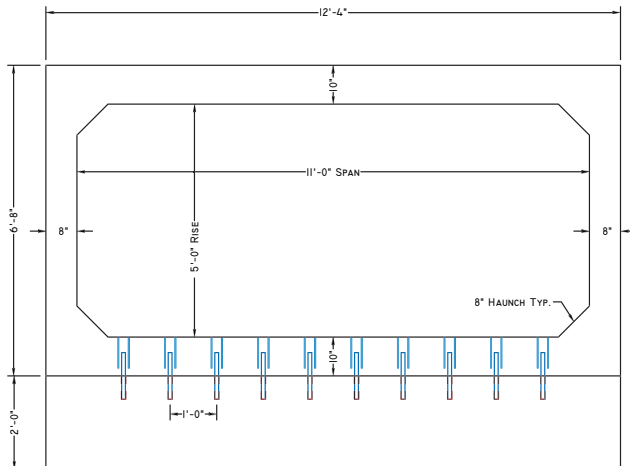
George M. A. Macdougall P.E.
Contracts & Specifications Engineer



PLAN VIEW



SECTION A-A



END VIEW

SCALE: 3/8" = 1'-0"

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
☐ REVIEWED ☒ REVIEWED WITH COMMENTS
☐ REJECTED ☐ RETURNED FOR CORRECTIONS

Jun 20, 2019

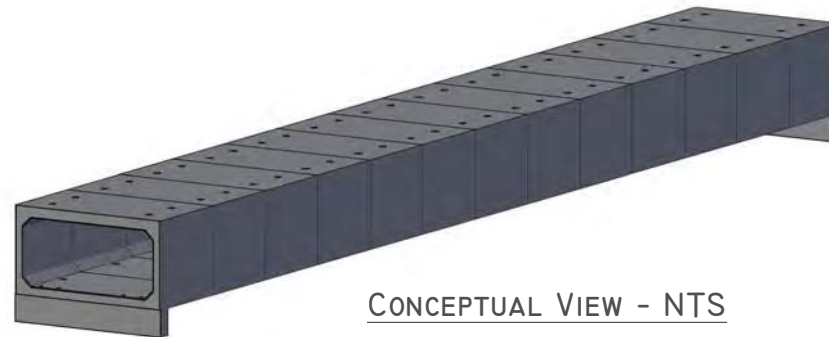
THIS DOCUMENT WAS REVIEWED IN ACCORDANCE WITH STATE
OF MAINE SPECIFICATION SECTION 105.1 WORKING DRAWINGS

NAME

Fabrication Engineer

TITLE

add haunch bars



CONCEPTUAL VIEW - NTS



American Concrete Industries

1717 STILLWATER AVE. VEAZIE, ME. 04401

TEL: 207-947-8334

FAX: 207-947-3580

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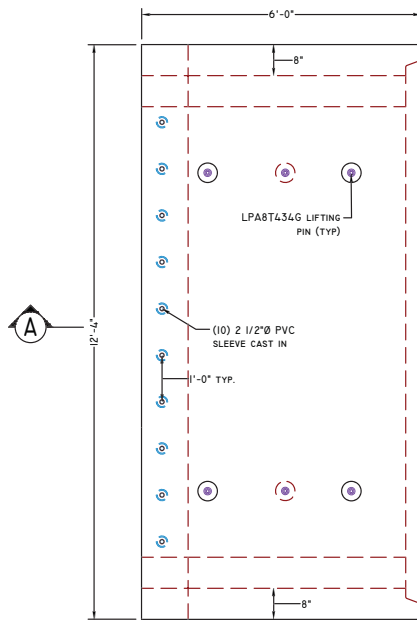
ITEM	QTY	BILL OF MATERIALS
1	(1)	6'-0" DOWNSTREAM END (16,545 #)
2	(11)	6'-0" MID SECTION (15,615 # EA)
3	(1)	6'-0" UPSTREAM END (17,160 #)
4	(2)	1' x 2' x 12'-4" TOEWALL (4,000 # EA)
(20)		#8 x 26' @ 12" O.C. TOEWALL PIN

DESIGN NOTES:

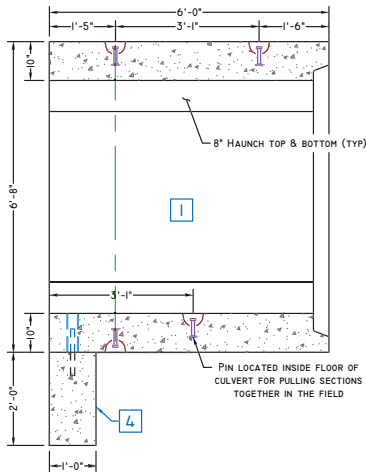
- Concrete
 - 1.1. COMP. STRENGTH MIN. 5,000PSI @ 28 DAYS
 - 1.2. AIR-EXTRACTION: MIN. 5.5%
- Structural Reinforcement:
 - 2.1. BAR PER ASTM A615, GRADE 60
 - 2.2. WWF PER ASTM A1064, GRADE 70
 - 2.3. INTEGRATE REBAR WITH LIFTING INSERT(S)
 - 2.4. INTERRUPTED BAR AREAS WILL BE REPLACED EACH SIDE WITH HALF THE AFFECTED AREA
 - 2.5. DESIGNED FOR 125% HL-93 WHEEL LOAD RATING
 - 2.6. 2" CLR EXTERIOR, 1 1/2" CLR INTERIOR
- Manufacturing / Installation:
 - 3.1. JOINTS SEALED WITH BUTYL RUBBER SEALANT (JOINT GROWTH OF 1/2" ± IS EXPECTED PER JOINT)
 - 3.2. EACH EXTERIOR JOINT TO BE WRAPPED IN MIN. 12" WIDE MEMBRANE FROM MDOT QPL PER 534.20 BY CONTRACTOR
 - 3.3. MINIMUM ALLOWABLE SOIL COVER = 1.5'
 - 3.4. MAXIMUM ALLOWABLE SOIL COVER = 3'

Note: Some details not shown for clarity
SCALE: 1/8" = 1'-0" Unless otherwise noted

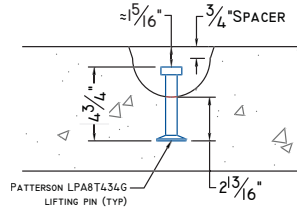
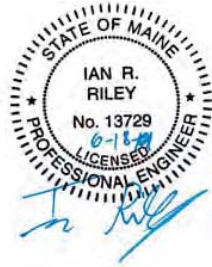
STRUCTURE NAME:	5' x 11' x 78' BOX CULVERT	
JOB NAME:	MONSON BOX CULVERT (WIN: 22930.00)	
LOCATION:	MONSON, ME	
CONTRACTOR:	MDOT	
DRAWN BY:	DATE:	CI.0
AAG	05/13/2019	
REV. #:	DATE:	
0.01	06/06/2019	



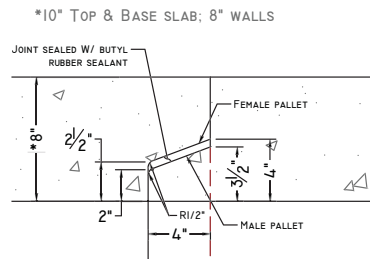
PLAN VIEW



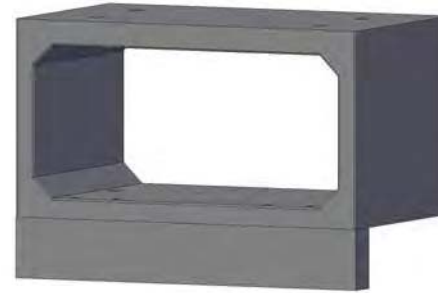
SECTION A-A



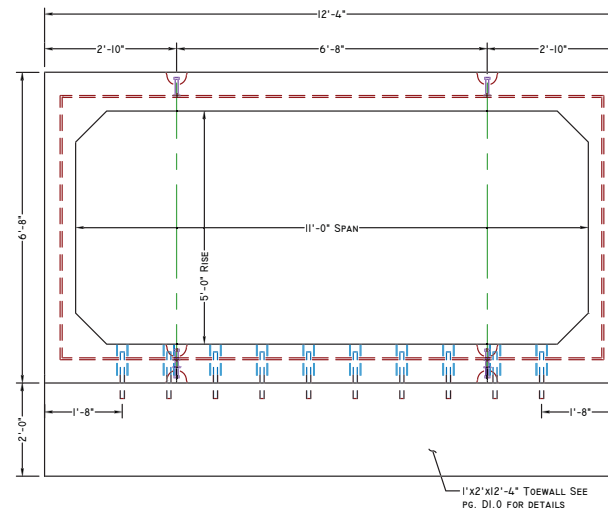
LIFTING PIN DETAIL
SCALE: 1 1/2" = 1'-0"



CULVERT JOINT DETAIL
SCALE: 1 1/2" = 1'-0"



CONCEPTUAL VIEW - NTS



END VIEW



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ITEM	QTY	BILL OF MATERIALS
1	(1)	6'-0" DOWNSTREAM END (16,545 #)
4	(1)	1' x 2' x 12'-4" TOEWALL (4,000 # EA)
	(10)	#8 x 26" @ 12" O.C. TOEWALL PIN

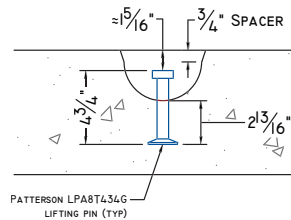
DESIGN NOTES:

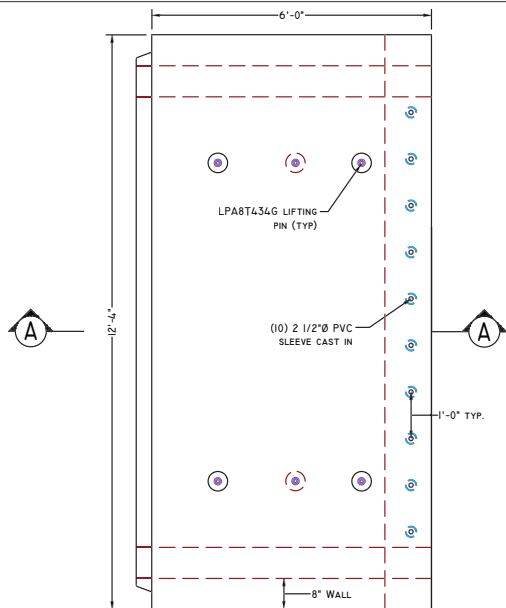
- Concrete
 - COMP. STRENGTH MIN. 5,000PSI @ 28 DAYS
 - AIR-ENTRAINMENT: MIN. 5.5%
- Structural Reinforcement:
 - BAR PER ASTM A615, GRADE 60
 - WWF PER ASTM A1064, GRADE 70
 - INTEGRATE REBAR WITH LIFTING INSERT(S)
 - INTERRUPTED BAR AREAS WILL BE REPLACED EACH SIDE WITH HALF THE AFFECTED AREA
 - DESIGNED FOR 125% HL-93 WHEEL LOAD RATING
 - 2" CLR EXTERIOR, 1 1/2" CLR INTERIOR
- Manufacturing / Installation:
 - JOINTS SEALED WITH BUTYL RUBBER SEALANT (JOINT GROWTH OF 1/2"± IS EXPECTED PER JOINT)
 - EACH EXTERIOR JOINT TO BE WRAPPED IN MIN. 12" WIDE MEMBRANE FROM MDOT OPL PER 534.20 BY CONTRACTOR
 - MINIMUM ALLOWABLE SOIL COVER = 1.5'
 - MAXIMUM ALLOWABLE SOIL COVER = 3'

Note: Some details not shown for clarity
SCALE: 3/8" = 1'-0" Unless otherwise noted

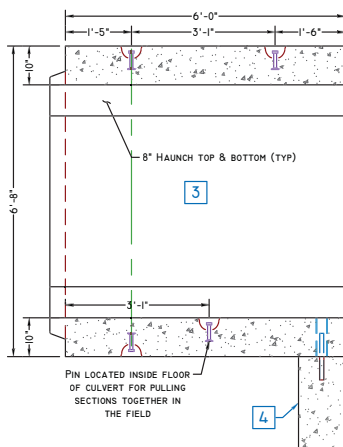
STRUCTURE NAME:		5' x 11' x 78" Box CULVERT	
JOB NAME:		MONSON Box CULVERT (WIN: 22930.00)	
LOCATION:		MONSON, ME	
CONTRACTOR:		MDOT	
DRAWN BY:	DATE:	CL.I	
AAG	05/13/2019		
REV. #:	DATE:		
0.01	06/06/2019		

CI.1

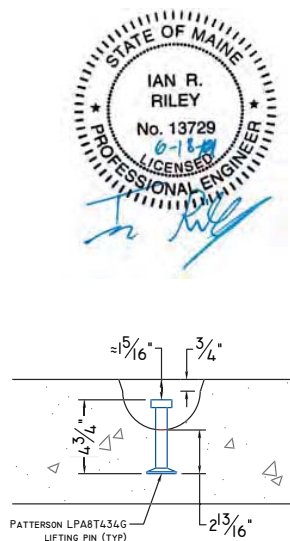




PLAN VIEW

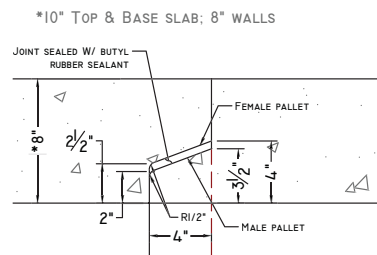


SECTION A-A



LIFTING PIN DETAIL

SCALE: 1 1/2" = 1'-0"

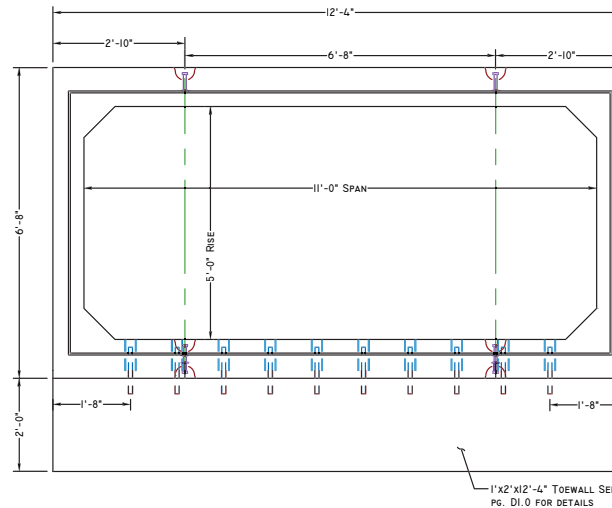


CULVERT JOINT DETAIL

SCALE: 1 1/2" = 1'-0"



CONCEPTUAL VIEW - NTS



END VIEW



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BILL OF MATERIALS

ITEM	QTY	
3	(1)	6'-0" UPSTREAM END (17,160 #)
4	(1)	1' x 2' x 12'-4" TOEWALL (4,000 # EA)
	(10)	#8 x 26" @ 12" O.C. TOEWALL PIN

DESIGN NOTES:

- Concrete
 - COMP. STRENGTH MIN. 5,000PSI @ 28 DAYS
 - AIR-ENTRAINMENT: MIN. 5.5%
- Structural Reinforcement:
 - BAR PER ASTM A615, GRADE 60
 - WWF PER ASTM A1064, GRADE 70
 - INTEGRATE REBAR WITH LIFTING INSERT(S)
 - INTERRUPTED BAR AREAS WILL BE REPLACED EACH SIDE WITH HALF THE AFFECTED AREA
 - DESIGNED FOR 125% HL-93 WHEEL LOAD RATING
 - 2" CLR EXTERIOR, 1 1/2" CLR INTERIOR
- Manufacturing / Installation:
 - JOINTS SEALED WITH BUTYL RUBBER SEALANT (JOINT GROWTH OF 1/2"± IS EXPECTED PER JOINT)
 - EACH EXTERIOR JOINT TO BE WRAPPED IN MIN. 12" WIDE MEMBRANE FROM MDOT QPL PER 534.20 BY CONTRACTOR
 - MINIMUM ALLOWABLE SOIL COVER = 1.5'
 - MAXIMUM ALLOWABLE SOIL COVER = 3'

Note: Some details not shown for clarity
SCALE: 3/8" = 1'-0" Unless otherwise noted

STRUCTURE NAME:
5' x 11' x 78' Box Culvert

JOB NAME:
Monson Box Culvert (WIN: 22930.00)

LOCATION:
Monson, ME

CONTRACTOR:
MDOT

DRAWN BY: AAG DATE: 05/13/2019

REV.#: 0.01 DATE: 06/06/2019

CI.3

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[illegible]

DESIGN NOTES:

- DESIGN NOTES:**
1. **Concrete**
 - 1.1. COMP. STRENGTH MIN. 5,000PSI @ 28 DAYS
 - 1.2. AIR-ENTRAINMENT: MIN. 5.5%
 2. **Structural Reinforcement:**
 - 2.1. BAR PER ASTM A615, GRADE 60
 - 2.2. WWF PER ASTM A1064, GRADE 70
 - 2.3. INTEGRATE REBAR WITH LIFTING INSERT(S)
 - 2.4. INTERRUPTED BAR AREAS WILL BE REPLACED EACH SIDE WITH HALF THE AFFECTED AREA
 - 2.5. DESIGNED FOR 125% HL-93 WHEEL LOAD RATING
 - 2.6. 2" CLR EXTERIOR, 1 1/2" CLR INTERIOR
 3. **Manufacturing / Installation:**
 - 3.1. JOINTS SEALED WITH BUTYL RUBBER SEALANT (JOINT GROWTH OF 1/2"± IS EXPECTED PER JOINT)
 - 3.2. EACH EXTERIOR JOINT TO BE WRAPPED IN MIN. 1/2" WIDE MEMBRANE FROM ADJUT OPL PER S34.20 BY CONTRACTOR
 - 3.3. MINIMUM ALLOWABLE SOIL COVER = 1'5"
 - 3.4. MAXIMUM ALLOWABLE SOIL COVER = 3'

*ACI RECOMMENDS DEWALT/POWERS ACI00+ GOLD EPOXY WITH AN EMBEDMENT DEPTH OF 6" (4" MIN. / 12" MAX) INTO TOE WALL, PER PRODUCT MANUFACTURER'S GUIDELINES FOR #8 REBAR

Note: Some details not shown for clarity
SCALE: 1" = 1'-0" Unless otherwise noted

STRUCTURE NAME:
5' x 11' x 78' Box CULVERT

JOB NAME:
MONSON BOX CULVERT (WIN: 22930.00)

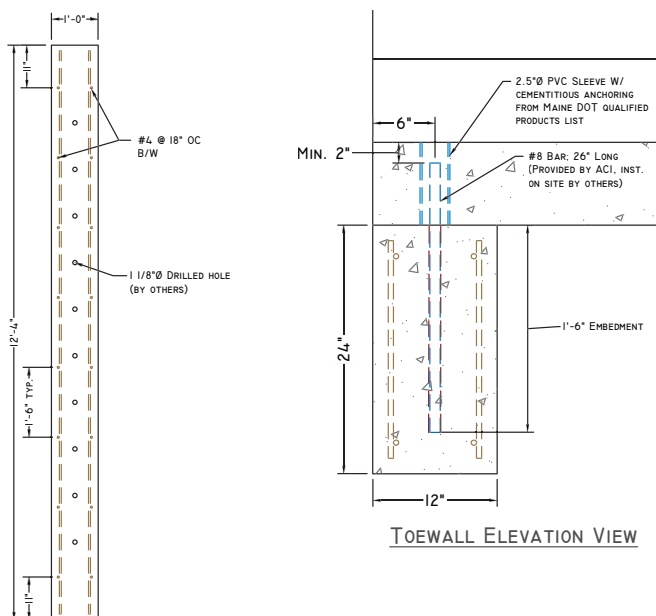
LOCATION: MONSON, ME

CONTRACTOR:	MDOT
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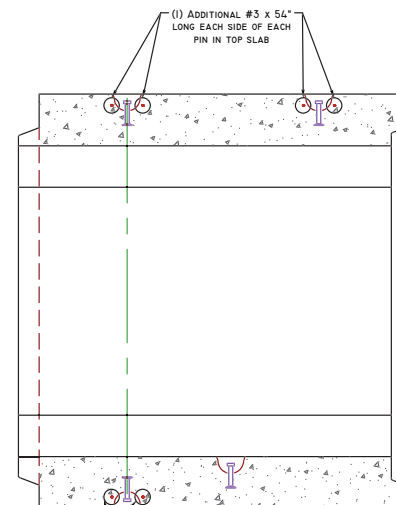
DRAWN BY: AAG	DATE: 05/13/2019
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REV.#:	DATE:
0.01	06/06/2019

DI.0

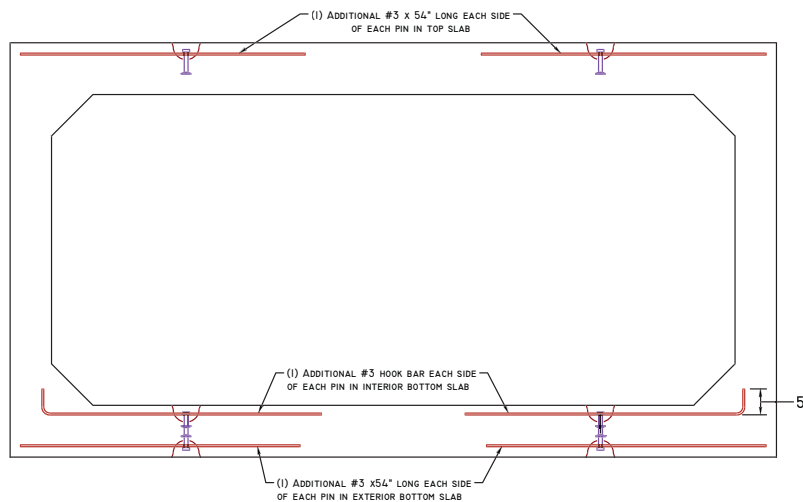


TOEWALL ELEVATION VIEW



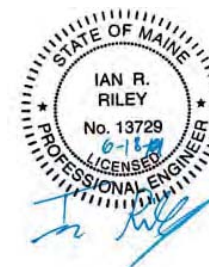
ADDITIONAL REINFORCING @ LIFT POINTS
ELEVATION VIEW

SCALE: 1/2" = 1'-0"



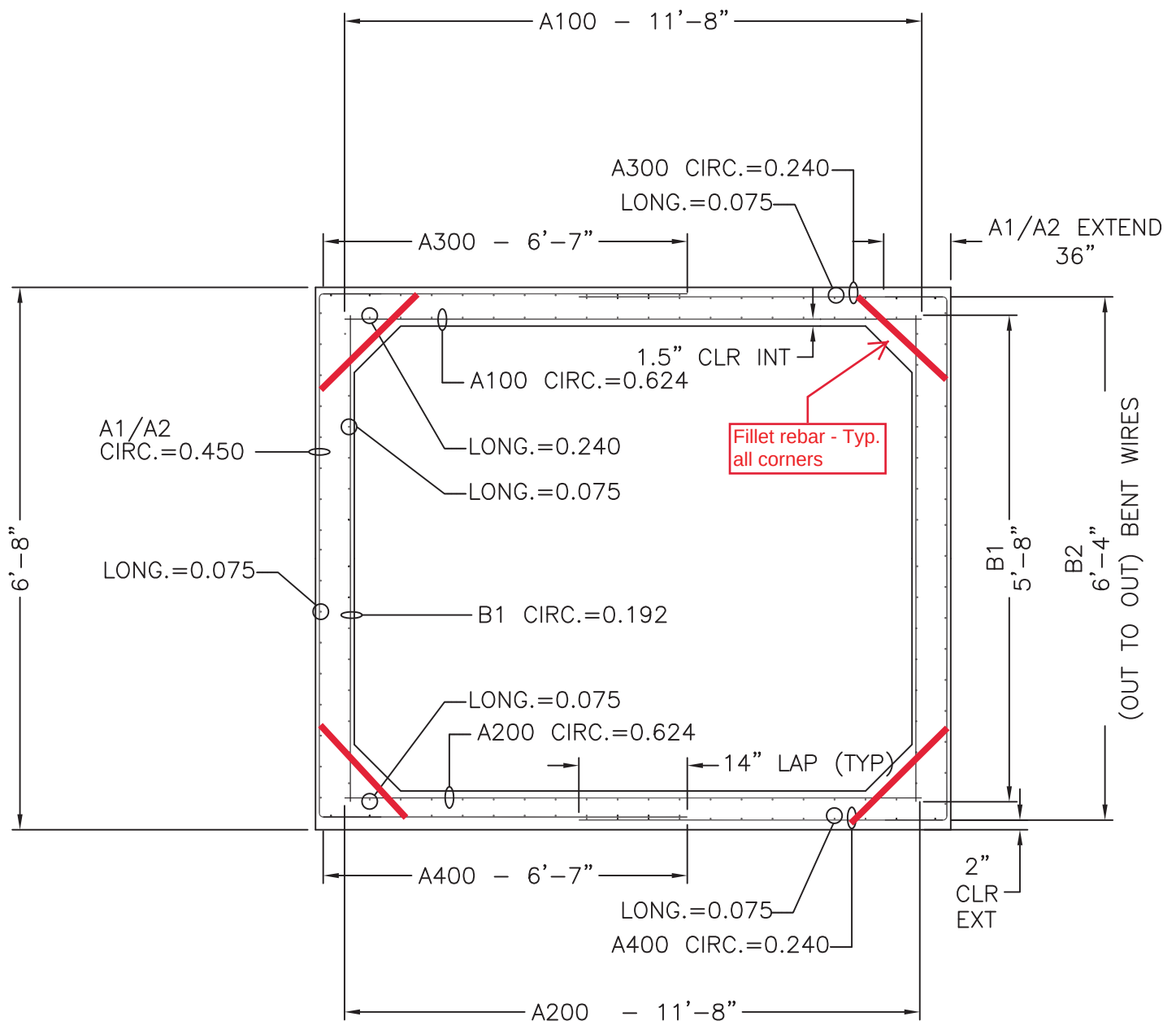
ADDITIONAL REINFORCING @ LIFT POINTS
PLAN VIEW

SCALE: $\frac{3}{4}" = 1'-0"$



TOEWALL PLAN VIEW

SCALE: 1/2" = 1'-0"



11' x 5' x 6'
CROSS SECTION WITH AREAS OF STEEL

SLAB THICKNESS	
TOP	10"
BOTTOM	10"
WALLS	8"

CAGE WEIGHT PER 6'-0" JOINT = 776.6 lbs

MECHANICAL DIMENSIONS	
DIM. 'L'	= N/A
DIM. 'M'	= N/A
DIM. 'R'	= N/A
DIM. 'S'	= N/A

BOX SIZE:	ASTM:	TABLE:	FILL:
11' X 5' X 6'	ETCUL		1.5'-4'



Concrete Reinforcements, Inc.

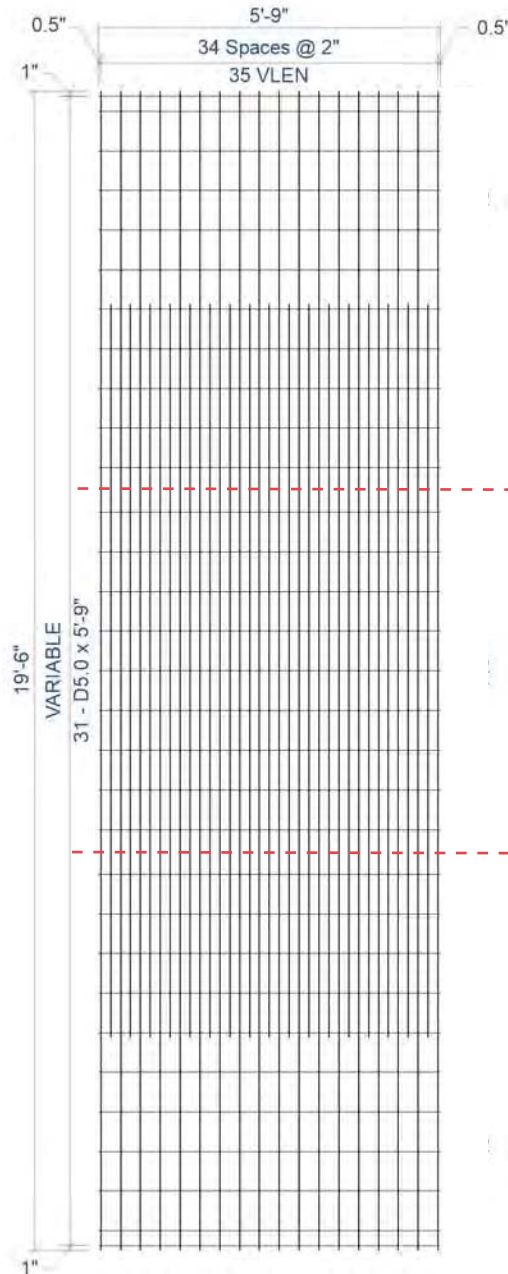
3830 Presidents Way
Jacksonville, FL 32220
PH. 904-520-7100 FAX. 904-520-7101

CUSTOMER:	DRAWN BY:	REVISION:	SHEET DESCRIPTION:
AMERICAN CONCRETE	BWA	5/28/2019	COVER
PROJECT:	DATE:	REVISION DATE:	FILE NAME:
11' X 5' X 6'	5/28/2019	R1	94280
MONSON	CHECKED BY:	SCALE:	PROJECT #:
	BWA	NTS	94280
			SHEET #:
			1 OF 5

SHEET DESIGN



Concrete Reinforcements, Inc.
3830 Presidents Way • Jacksonville, FL 32220
Phone: 904-520-7100 • Fax: 904-520-7101



BEND
LINE

BEND
LINE

CUSTOMER American Concrete

PROJECT 94280 - Drawings - 11x5 Monson - American Concrete - 5-28-2019

LOCATION Veazie, ME

DATE 05-28-2019 MARK NUMBER A1/A2/A300/A400(-01)

L.W.SPACE 2

C.W.SPACE VAR

L.W.1 SIZE D8.0

L.W.2 SIZE D7.0

C.W.SIZE D5.0

WIDTH 5'-9"

LENGTH 19'-6"

OH.LEFT 0.5"

OH.RIGHT 0.5"

OH.TOP 1"

OH.BOTTOM 1"

YIELD 70,000psi

BENT -

CUT -

ROLL -

W I R E S	LINE WIRE 1	LINE WIRE 2	CROSS WIRE
NO. PER SHEET	18	17	31
SIZE	D8.0	D7.0	D5.0
LENGTH	19'-6"	12'-4"	5'-9"
W.T./SHEET			
SHEET W.T.	175.70#		
QUANTITY	26		
SUB TOTAL WEIGHT			
TOTAL WEIGHT			
S.F./SHEET			
LBS./CSF			
Ast/LF			
ST.DENSITY			

SPECIAL REMARKS:
BEND DIMS: WALL=76", SLABS=79"

2 x VAR D8.0 / D7.0 / D5.0 (GRADE 70) 68"(+0.5", +0.5") x VLEN(1", 1")

VLEN = ALTERNATING LENGTH 12'-4" & 19'-6" WITH 19'-6" @ LHS & RHS

VAR = 1" OH, 1@3", 9@8", 1@9", 8@8", 1@9", 9@8", 1@3", 1" OH

APPROVED _____

SHEET DESIGN



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Phone: 904-520-7100 • Fax: 904-520-7101

CUSTOMER American Concrete

PROJECT 94280 - Drawings - 11x5 Monson - American Concrete - 5-28-2019

LOCATION Veazie, ME

DATE 05-28-2019 MARK NUMBER B1 (-02)

L.W.SPACE 4

C.W.SPACE VAR

L.W.1 SIZE D6.4

L.W.2 SIZE N/A

C.W.SIZE D5.0

WIDTH 5'-9"

LENGTH 5'-8"

OH.LEFT 0.5"

OH.RIGHT 0.5"

OH.TOP 4"

OH.BOTTOM 4"

YIELD 70,000psi

BENT -

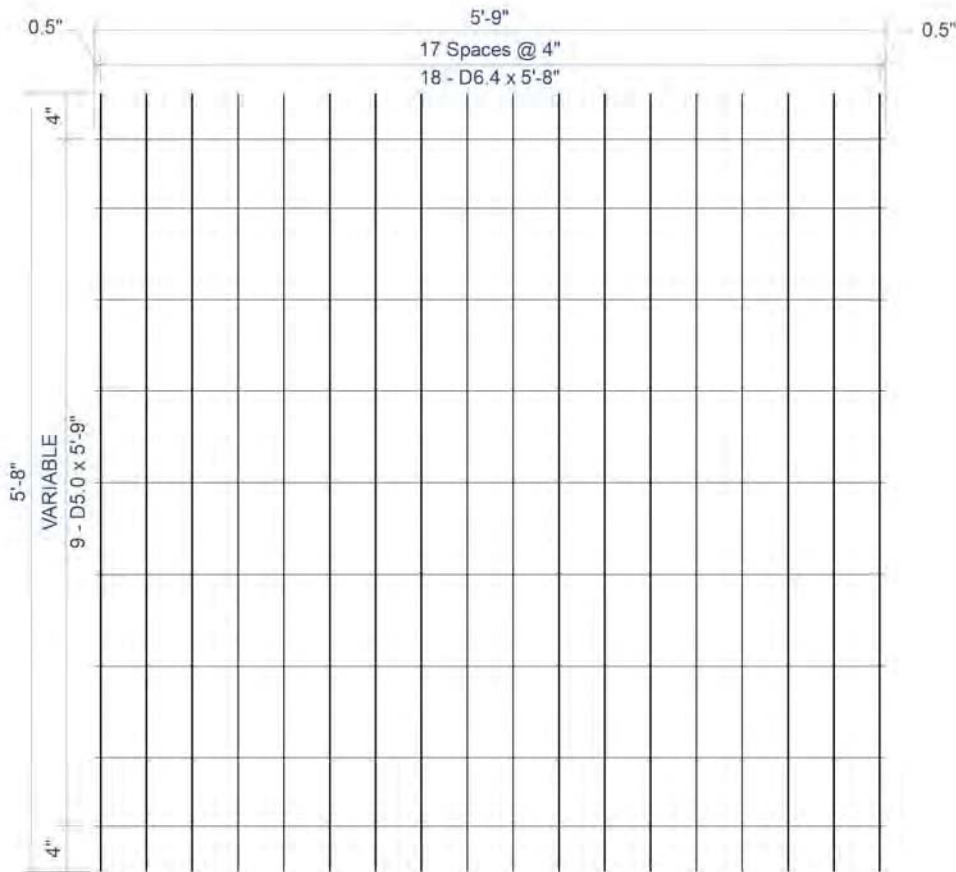
CUT -

ROLL -

W I R E S	LINE WIRE 1	LINE WIRE 2	CROSS WIRE
NO. PER SHEET	18	N/A	9
SIZE	D6.4	N/A	D5.0
LENGTH	5'-8"	-	5'-9"
W.T./SHEET			
SHEET W.T.	31.40#		
QUANTITY	26		
SUB TOTAL WEIGHT			
TOTAL WEIGHT			
S.F./SHEET			
LBS./CSF			
Ast/LF			
ST.DENSITY			

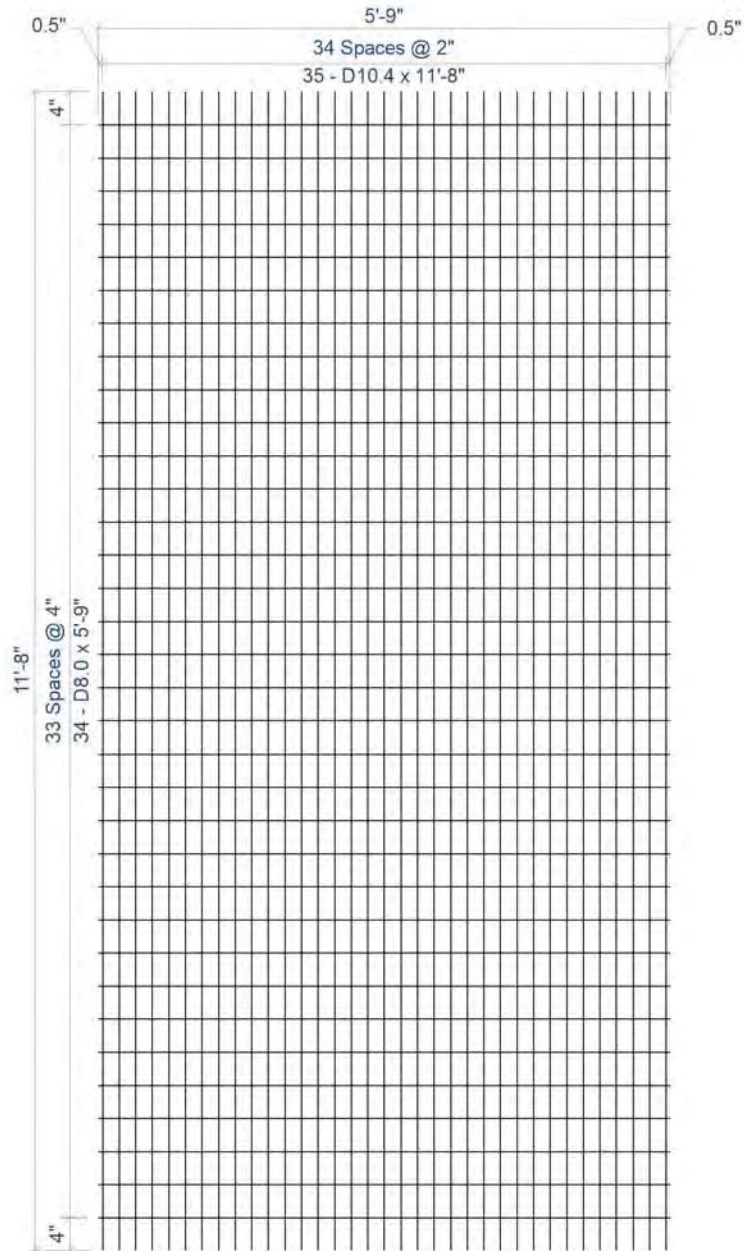
SPECIAL REMARKS:

APPROVED _____



4 x VAR D6.4 / D5.0 (GRADE 70) 68(+0.5, +0.5) x 5'-8"(4, 4)

VAR = 4" OH, 1@6", 6@8", 1@6", 4" OH



2 x 4 D10.4 / D8.0 (GRADE 70) 68(+0.5, +0.5) x 11'-8"(4, 4)

SHEET DESIGN



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Phone: 904-520-7100 • Fax: 904-520-7101

CUSTOMER American Concrete

PROJECT 94280 - Drawings - 11x5 Monson - American Concrete - 5-28-2019

LOCATION Veazie, ME

DATE 05-28-2019 MARK NUMBER A100/C100 (-03)

L.W.SPACE 2

C.W.SPACE 4

L.W.1 SIZE D10.4

L.W.2 SIZE N/A

C.W.SIZE D8.0

WIDTH 5'-9"

LENGTH 11'-8"

OH.LEFT 0.5"

OH.RIGHT 0.5"

OH.TOP 4"

OH.BOTTOM 4"

YIELD 70,000psi

BENT -

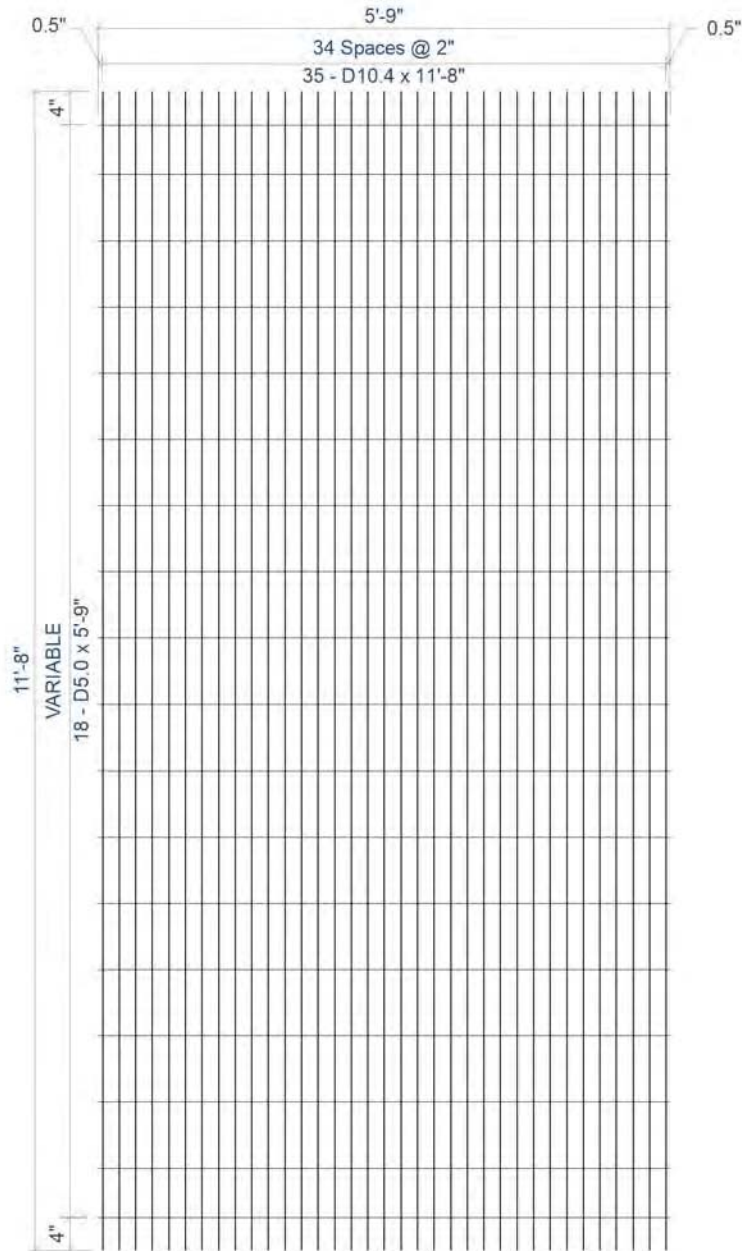
CUT -

ROLL -

W I R E S	LINE WIRE 1	LINE WIRE 2	CROSS WIRE
NO. PER SHEET	35	N/A	34
SIZE	D10.4	N/A	D8.0
LENGTH	11'-8"	-	5'-9"
W.T./SHEET			
SHEET W.T.	199.00#		
QUANTITY	13		
SUB TOTAL WEIGHT			
TOTAL WEIGHT			
S.F./SHEET			
LBS./CSF			
Ast/LF			
ST.DENSITY			

SPECIAL REMARKS:

APPROVED _____



2 x VAR D10.4 / D5.0 (GRADE 70) 68(+0.5, +0.5) x 11'-8"(4, 4)
VAR = 4" OH, 1@6", 15@8", 1@6", 4" OH

SHEET DESIGN



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3830 Presidents Way • Jacksonville, FL 32220
Phone: 904-520-7100 • Fax: 904-520-7101

CUSTOMER American Concrete

PROJECT 94280 - Drawings - 11x5 Monson - American Concrete - 5-28-2019

LOCATION Veazie, ME

DATE 05-28-2019 MARK NUMBER A200/C200 (-04)

L.W.SPACE 2

C.W.SPACE VAR

L.W.1 SIZE D10.4

L.W.2 SIZE N/A

C.W.SIZE D5.0

WIDTH 5'-9"

LENGTH 11'-8"

OH.LEFT 0.5"

OH.RIGHT 0.5"

OH.TOP 4"

OH.BOTTOM 4"

YIELD 70,000psi

BENT -

CUT -

ROLL -

W I R E S	LINE WIRE 1	LINE WIRE 2	CROSS WIRE
NO. PER SHEET	35	N/A	18
SIZE	D10.4	N/A	D5.0
LENGTH	11'-8"	-	5'-9"
W.T./SHEET			
SHEET W.T.	163.40#		
QUANTITY	13		
SUB TOTAL WEIGHT			
TOTAL WEIGHT			
S.F./SHEET			
LBS./CSF			
Ast/LF			
ST.DENSITY			

SPECIAL REMARKS:

APPROVED _____