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140 WALNUT STREET
KANSAS CITY, MO 64108

WWW.EMERYSAPP.COM

Letter of Transmittal

Attention: Ryan McGinnis, P.E.
Schlagel & Associates, P.A.
14200 W 107th Street
Lenexa, KS 66215

Project: Winterset 13th Plat ESS JOB# 17-W-20 Date: 6/30/2020

New Submittal 1

Transmittal No. 1

Resubmittal

Previous Transmittal No.

Specification Section	Description	Supplier	Action
City Of Lee Summit MO Specification 3500	Sanitary Precast Manhole Shop drawings	Forterra Pipe & Precast	For Review

Signed: Dustin Levell

Contractor: Emery Sapp and Sons, Inc.

Remarks:

☒ Reviewed ☐ Not Required for Our Review
☐ Rejected ☐ Revise and Resubmit
☐ Revise Where Noted. Resubmittal Not Required
By: PM SCHLAGEL & ASSOCIATES, P.A.
Date:

Reviewed By:

Date: 06/30/2020

0.0 GENERAL NOTES:

0.1 THE FOLLOWING GENERAL NOTES PERTAIN TO SHOP DRAWING OF PRECAST DRAINAGE STRUCTURES TO BE MANUFACTURED FOR INSTALLATION ON THE WINTERSET VALLEY 13TH PLAT--SANITARY-- PROJECT IN LEE'S SUMMIT, MO.

0.2 GENERAL NOTES PERTAIN TO TYPICAL ASPECTS OF MATERIALS, CONSTRUCTION AND DIMENSIONING. ITEMS UNIQUE TO SPECIFIC UNITS ARE IDENTIFIED ON THE INDIVIDUAL SHOP DRAWING OF THE SPECIFIC UNIT.

1.0 MANNER OF PRESENTATION:

1.1 PLAN DRAWINGS ASSIGN EACH DRAINAGE STRUCTURE A UNIQUE "STRUCTURE NUMBER". THE ATTACHED SHOP DRAWINGS HAVE BEEN ASSIGNED A "DRAWING NUMBER" WHICH CORRESPONDS WITH THE "STRUCTURE NUMBER" IDENTIFIED IN THE PLANS. ADDITIONALLY, EACH SHOP DRAWING IDENTIFIES THE STRUCTURE BY TYPE, STATION LOCATION, AND ELEVATION.

2.0 CEMENT

2.1 PRECAST STRUCTURES FROM THE OSKALOOSA PLANT SHALL BE MADE OF TYPE III PORTLAND CEMENT SUPPLIED BY ASH GROVE CEMENT CO. FROM THEIR CHANUTE, KS PLANT.

2.2 PRECAST STRUCTURES FROM THE BONNER SPRINGS PLANT SHALL BE MADE OF TYPE I/II PORTLAND CEMENT SUPPLIED BY EAGLE MATERIALS FROM THEIR SUGAR CREEK PLANT.

3.0 AGGREGATES

3.1 AGGREGATES SHALL CONFORM TO THE ASTM C-33 SPECIFICATIONS FOR CONCRETE AGGREGATES. FINE AGGREGATE SHALL CONFORM TO MODOT SPECIFICATION FA-A. COARSE AGGREGATE WILL CONFORM TO THE CA-5 SPECIFICATION. ALL AGGREGATE TO BE SOURCED FROM MODOT PRE-APPROVED PRODUCERS.

4.0 WATER

4.1 WATER SHALL BE FREE FROM INJURIOUS AMOUNTS OF IMPURITIES, SUPPLIED AS POTABLE WATER BY JEFFERSON COUNTY, KS OR JOHNSON COUNTY, KS.

5.0 CONCRETE

5.1 CONCRETE SHALL YIELD A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF MIN. 5,000 psi, AND BE MADE WITH AN APPROVED MCIB MIX DESIGN.

5.2 AIR ENTRAINED CONCRETE TO BE USED IN THE CONCRETE MIX, W.R. GRACE PRODUCT DARAVAIR AT60, (PRE-QUALIFIED BY MODOT) TO YIELD AN AIR CONTENT OF 6.5% \pm 1.5%.

5.3 SLUMP OF CONCRETE SHALL BE 2 TO 4 INCHES, DETERMINED IN ACCORDANCE WITH ASTM METHOD OF TESTING PORTLAND CEMENT CONCRETE C-143. THE SLUMP OF THE CONCRETE MAY BE INCREASED TO A MAXIMUM OF 8 INCHES BY THE ADDITION OF THE SUPER-PLASTICIZING ADMIXTURE ADVA 575, FURNISHED BY W.R. GRACE (PRE-APPROVED BY MODOT), AT A DOSAGE RATE RECOMMENDED BY THE MANUFACTURER.

6.0 REINFORCING STEEL

6.1 REINFORCING RODS SHALL CONFORM TO ASTM A-615, GRADE 60 AS FURNISHED WITH CERTIFICATIONS FROM MODOT PRE-QUALIFIED MILLS.

6.2 ALL REINFORCING STEEL SHALL BE CUT AND FORMED TO THE DIMENSIONAL TOLERANCES SPECIFIED IN ACI 318 OR ACI STANDARD 315 EXCEPT WHERE NOTED ON SHOP DRAWINGS.

6.3 ALL REINFORCEMENT SHALL BE CLEAN AND FREE OF LOOSE RUST, SCALE, OIL AND OTHER MATTER WHICH MAY DESTROY OR REDUCE THE BOND.

6.4 REINFORCING BAR PLACEMENT IN STRUCTURES SHALL BE AS DIMENSIONED IN "TYPICAL REINFORCING BAR DETAILS" DRAWINGS, UNLESS NOTED ON THE INDIVIDUAL SHOP DRAWING.

7.0 FABRICATION

7.1 ALL SURFACES SHALL BE SOUND. ONLY A MINIMUM OF PATCHING AND FINISHING SHOULD BE NECESSARY AS REQUIRED TO REMOVE NON-STRUCTURAL IRREGULARITIES.

7.2 CONCRETE SHALL BE VIBRATED DURING THE POURING OPERATION SO THAT THE FORM IS COMPLETELY FILLED AND CONCRETE THOROUGHLY CONSOLIDATED. THE CONCRETE MAY BE VIBRATED DIRECTLY OR THE FORMS MAY BE VIBRATED. EXCESSIVE VIBRATION IS TO BE AVOIDED.


7.3 ALL PRECAST CONCRETE SECTIONS SHALL BE CURED BY ANY METHOD OR COMBINATION OF METHODS APPROVED BY MODOT WHICH WILL DEVELOP THE SPECIFIED COMPRESSIVE STRENGTH AT 28 DAYS OR LESS.

7.4 RISERS AND BASES SHALL BE CAST TOGETHER AS ONE MONOLITHIC STRUCTURE. TOPS OF STRUCTURES, WHERE SPECIFICATIONS ALLOW, WILL BE FURNISHED SEPARATELY FOR INSTALLATION BY THE CONTRACTOR AFTER PLACEMENT OF PIPE AND INVERT. TOPS OF STRUCTURES SHALL BE SET ON GROUT. ELEVATION OF SCREEDED BASE SHALL BE ADJUSTED BY THE CONTRACTOR TO ACCOMMODATE GROUT THICKNESS INTENDED TO BE USED.

7.5 IN THE CASE THAT SPECIFICATIONS CALL FOR A FIELD CAST COVER, EXPOSED REINFORCING STEEL SHALL BE PROVIDED FOR THE CONTRACTOR TO TIE INTO.

7.6 MONOLITHIC BASES AND RISERS EXCEEDING 15,000 POUNDS OR A 9'-6" INTERIOR HEIGHT MAY HAVE THE RISER SECTION DIVIDED INTO TWO OR MORE SEPARATE RISER SECTIONS, JOINED WITH A SEALING JOINT, SO THAT THE PRECAST SECTION MAY BE SAFELY HANDLED WITH ON-SITE EQUIPMENT. MANHOLE TOPS WILL ALSO BE CAST WITH A SEALING JOINT.

7.7 JOINT SEALANT USED IN MULTIPLE RISER SECTIONS AND MANHOLE LIDS SHALL BE RUB'R-NEK FLEXIBLE GASKET SEALANT, K.T. SYNDER CO., HOUSTON, TX, KENT SEAL #2, HAMILTON-KENT MFG. CO., KENT, OHIO, OR A MODOT APPROVED EQUAL. (SEE SEALANT INSTALLATION PROCEDURE.)

		Kansas / Missouri 23600 West 40th Street Bonner Springs, KS 66221 (913) 422-3631
SCALE: NONE	LOCATION: LEE'S SUMMIT, MO	
DATE: 6/29/2020	PROJECT: WINTERSET VALLEY 13TH PLAT--SANITARY	
DR'N BY: RH	CONTRACTOR: EMERY SAPP & SONS	
REV: -	DWG NAME: 001 - GENERAL NOTES	

7.8 REINFORCING STEEL SHALL BE SECURED IN SUCH A MANNER THAT SHIFTING WILL NOT OCCUR DURING THE PLACEMENT OF THE CONCRETE. STEEL OR PLASTIC BAR SUPPORTS AND WIRE TIES WILL BE USED TO ASSURE MINIMUM CONCRETE COVER.

7.9 MONOLITHIC BASE AND RISER MAY BE CAST UPSIDE DOWN IN ONE POUR. AFTER REMOVING THE STRUCTURES FROM THEIR FORMS, THEY WILL BE ROTATED 180 DEGREES. ALTERNATIVELY, STRUCTURES MAY BE CAST RIGHT-SIDE-UP IN TWO POURS, SIMILAR TO THE FORMING METHOD USED FOR CAST-IN-PLACE APPLICATIONS. TO FACILITATE THE TWO-POUR FORMING REQUIREMENTS, STRUCTURES MAY BE CAST WITH AN ADDITIONAL 2 INCH WIDTH ADDED TO EACH SIDE OF THE BASE, AS SHOWN IN THE SHOP DRAWINGS.

8.0 STEPS

8.1 STEPS FURNISHED SHALL BE MODEL PS2-PF, MANUFACTURED BY M.A. INDUSTRIES, 9 1/4" x 14 1/4" (FOR STRUCTURES UP TO 12' IN DEPTH).

9.0 JOINT SEALANT APPLICATION

9.1 JOINT SEALANT INDICATED IN 7.6 SHALL BE APPLIED TO FORM A CONTINUOUS WATER TIGHT SEAL AROUND THE PERIMETER OF THE RISER JOINT.

9.2 REMOVE THE SEALANT FROM THE CARTON AND POSITION IT IN THE JOINT AREA, AS SHOWN IN SKETCH A. WHEN POSITIONED, PRESS FIRMLY IN PLACE, PROTECTIVE PAPER WRAPPERS SHOULD BE LEFT IN PLACE UNTIL THE MATING SECTIONS ARE READY TO BE PLACED.

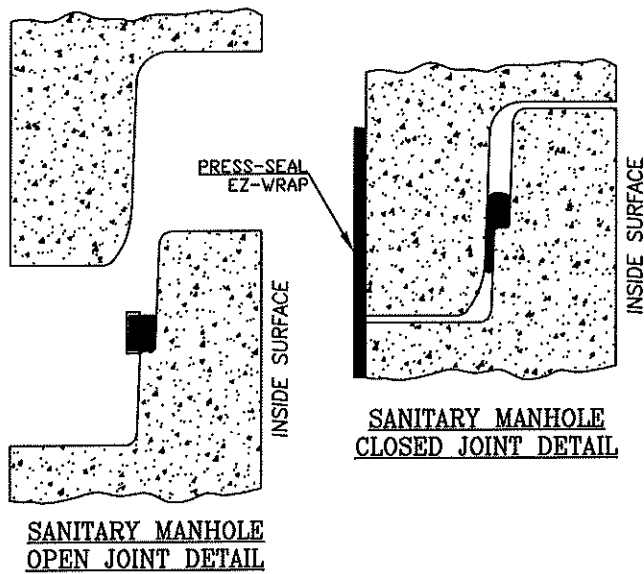
9.3 BUTT JOINTS SHOULD BE MADE TO CONNECT SECTIONS OF THE SEALANT MATERIAL TOGETHER (CORNERS, ETC.). CAUTION, LAP JOINTS ARE NOT PERMITTED.


9.4 THE SEALANT SHOULD NOT BE STRETCHED TO MAKE ENDS MEET OR FOR ANY OTHER REASONS. "STRETCHING" REDUCES THE CROSS-SECTIONAL AREA OF THE MATERIAL AND A GOOD SEAL WILL NOT BE OBTAINED.

10.0 LIFTING INSERTS

10.1 FOUR DAYTON-SUPERIOR "SWIFT-LIFT" INSERTS, MODEL P52 SL STEEL ANCHORS, 4-TON CAPACITY OR CONAC "A" ANCHORS, WILL BE CAST IN THE INTERIOR OF EACH STRUCTURE TO PERMIT SAFE AND EFFICIENT HANDLING. ADDITIONALLY, THE STRUCTURES CAST UPSIDE DOWN WILL HAVE FOUR 4-TON SWIFT-LIFT STEEL ANCHORS CAST IN THE BOTTOM SIDE OF THE STRUCTURE FLOOR TO FACILITATE REMOVAL FROM FORMS. DAYTON SUPERIOR COIL INSERTS MAY ALSO BE USED TO FACILITATE HANDLING OF THE STRUCTURE.

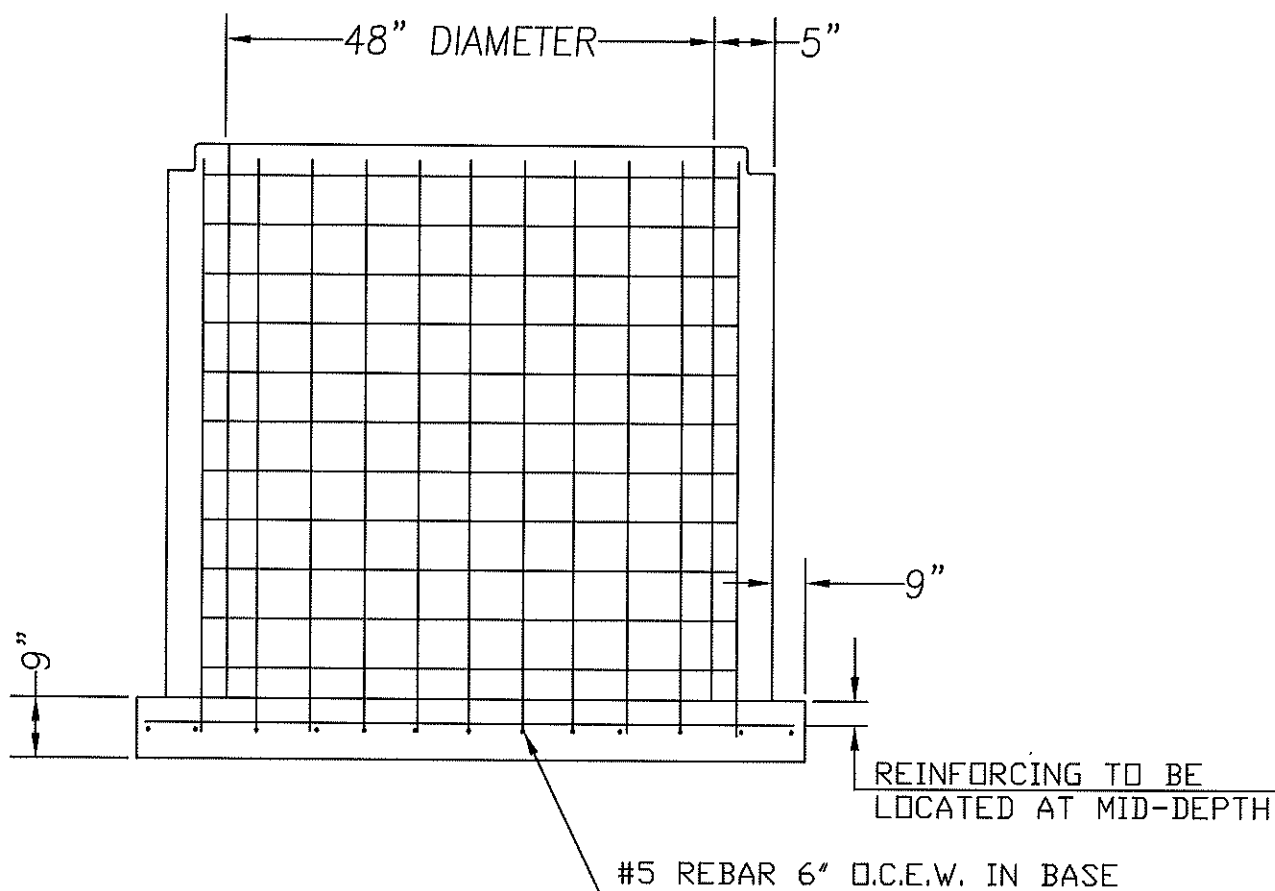
10.2 UNDER NO CIRCUMSTANCES WILL BENT REBAR OR OTHER "HOMEMADE" NON-OSHA COMPLIANT LIFTING DEVICES BE CAST INTO STRUCTURES FOR USE ON THE JOB SITE.



 FORTERRA™		Kansas / Missouri 23600 West 40th Street Bonner Springs, KS 66221 (913) 422-3634	
SCALE:	NONE	LOCATION:	LEE'S SUMMIT, MO
DATE:	6/29/2020	PROJECT:	WINTERSET VALLEY 13TH PLAT
DR'N BY:	RH	CONTRACTOR:	EMERY SAPP & SONS
REV:	-	DWG NAME:	002 - GENERAL NOTES

NOTES:

1. REINFORCING RODS SHALL CONFORM TO ASTM A-615, GRADE 60, AS FURNISHED WITH CERTIFICATIONS FROM PREQUALIFIED MILLS.
2. ALL REINFORCING STEEL SHALL BE CUT AND FORMED TO THE DIMENSIONAL TOLERANCES SPECIFIED IN ACI 318 OR ACI STANDARD 315 EXCEPT WHERE NOTED ON SHOP DRAWINGS.
3. ALL REINFORCEMENT SHALL BE CLEAN AND FREE OF LOOSE RUST, SCALE, OIL AND OTHER MATTER WHICH MAY DESTROY OR REDUCE THE BOND.
4. REINFORCING STEEL SHALL BE SECURED IN SUCH A MANNER THAT SHIFTING WILL NOT OCCUR DURING THE PLACEMENT OF THE CONCRETE. STEEL OR PLASTIC BAR SUPPORTS AND WIRE TIES WILL BE USED TO ASSURE MINIMUM CONCRETE COVER.
5. RADIUS OF BENDS SHALL CONFORM TO ACI AND ARSI REQUIREMENTS.
6. CUT MAT OF REINFORCING STEEL AS REQUIRED TO ACCEPT DOG-HOUSE OR PIPE PENETRATION HOLES. #4 BAR DIAGONALS AROUND OPENINGS.



TYPICAL

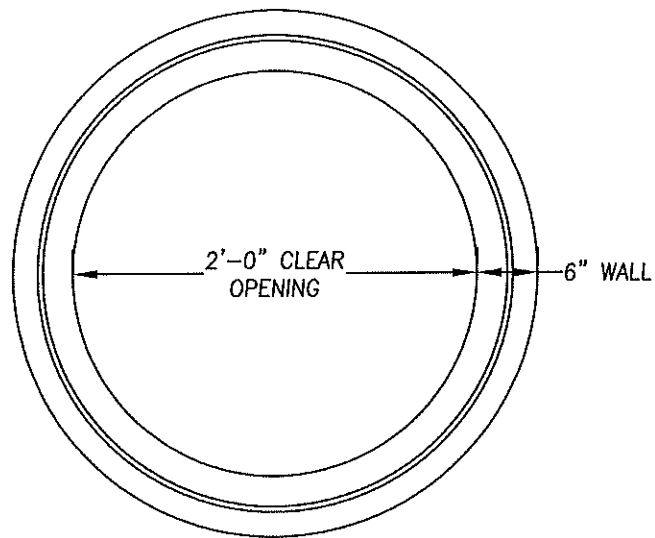
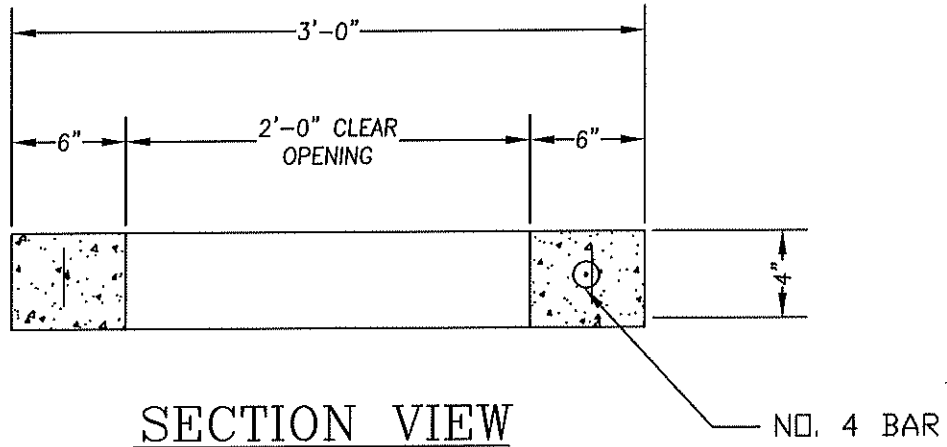
ALL REINFORCING IN PRECAST
MANHOLE TO MEET OR EXCEED
ASTM C478 STANDARDS




FORTERRA

Kansas / Missouri
23600 West 40th Street
Bonner Springs, KS 66221
(913) 422-3631

SCALE: NONE	LOCATION: LEE'S SUMMIT, MO
DATE: 6/29/2020	PROJECT: WINTERSET VALLEY 13TH PLAT
DR'N BY: RH	CONTRACTOR: EMERY SAPP & SONS
REV: -	DWG NAME: 003 - 48" SANITARY MANHOLE - BASE & WALLS



 FORTERRA		Kansas / Missouri 23600 West 40th Street Bonner Springs, KS 66221 (913) 422-3634	
SCALE:	NONE	LOCATION:	LEE'S SUMMIT, MO
DATE:	6/29/2020	PROJECT:	WINTERSET VALLEY 13TH PLAT
DR'N BY:	RH	CONTRACTOR:	EMERY SAPP & SONS
REV:	-	DWG NAME:	004 - ADJUSTMENT RING DETAIL



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 Ikalooosa, KS
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Contractor: Emery Sapp & Sons, Inc., MO
Project: Lee's Summit, MO - Winterset
Valley 13th Plat
Location: MO Lees Summit
Order Nbr: 6919453PM1
Remarks:

**Sanitary Sewer
48" (I.D.) Manhole
SA A1**

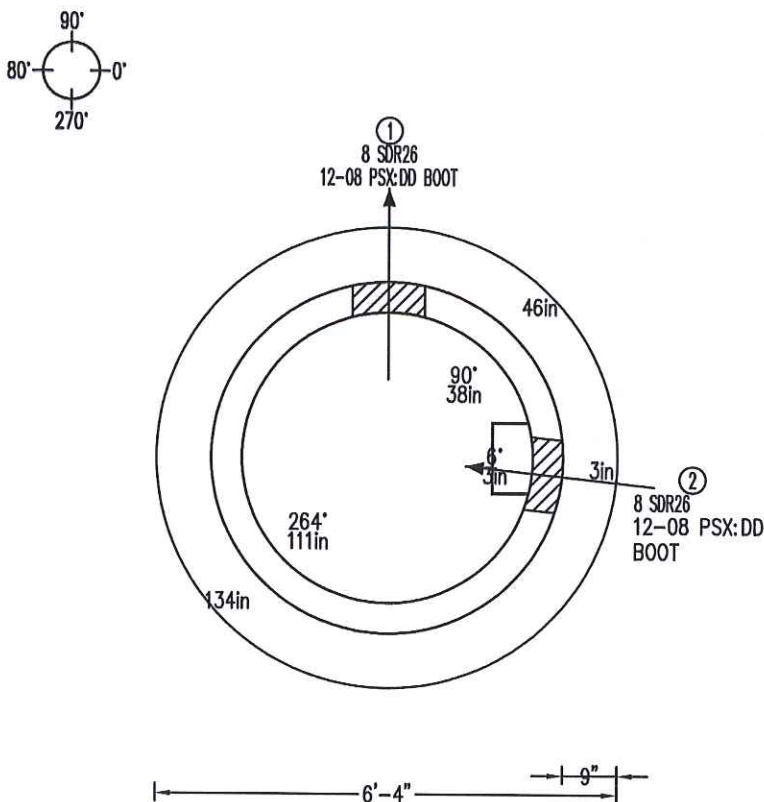
Date: 06/29/2020
Plant: 96 LAWRENCE
Coordinator: Rachel Hirt

Design Build Height		Stack Build Height	
Top of Casting	+ 929.83	Casting	+ .75
Outlet Invert	- 915.48	Adjusting Ring	+ .75
Wall Thk/Inv Adj	+ .35	Cone	+ 3.00
Design Height	= 14.70	Riser	+ 4.00
Casting/Adj Ring	- 1.50	Mono Base	+ 6.17
Manhole Hgt	= 13.20	Base Thickness	+ .75
		Outside Height	= 15.42

Opening Schedule

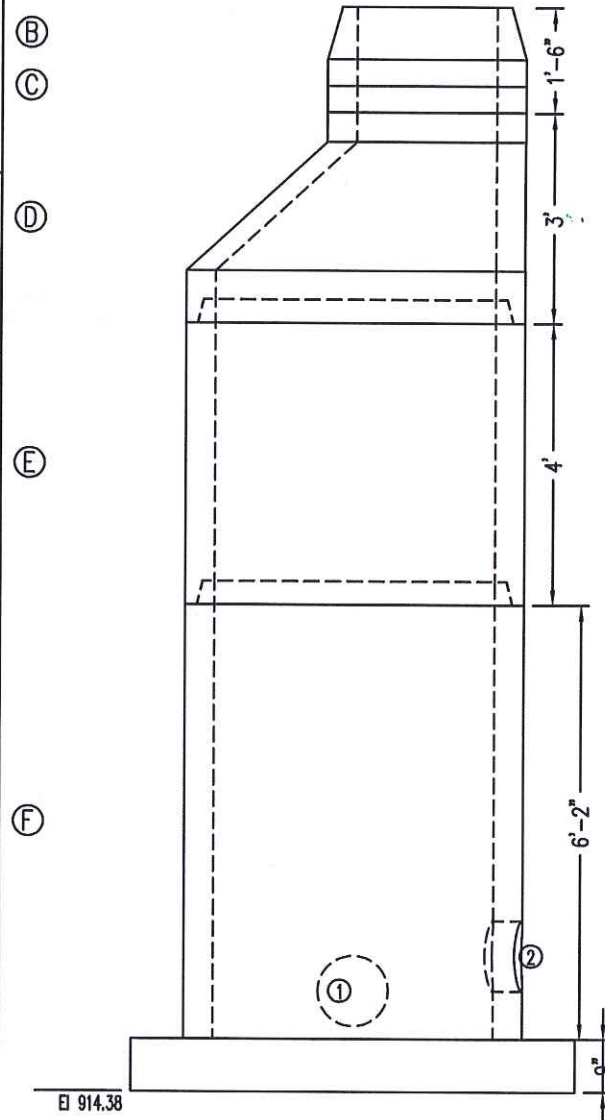
Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/Connector	Top of Hole Up	C-Line Hole Up	Btm of Hole Up
8 SDR26	915.48	✓.00	8.4in	12-08 PSX:DD BOOT	14.25in	8.25in	2.25in
8 SDR26	915.98	✓.50	8.4in	12-08 PSX:DD BOOT	20.25in	14.25in	8.25in

an View



Elevation

Location: Sta 1+75.53
COATED REQUIRED



Notes

MCIB MIX DESIGN

ting Device: 4UA444
aps: YES 0'

em List

Description	Product No	Hgt	Qty	Weight
EJIW 1502A Cover – Lee's Summit Sewer	9000100000503	.00	1	0
EJIW 1502Z Frame w/ Centering Lugs	9000100000226	.75	1	0
24x4 Adjusting Ring	9090100240400	.38	2	300
48x3.0 24 Ecc Cone P2 S Ctd	20480932130000030	3.00	1	2,475
48x4.0 BBL P2 S Ctd	20480130130000040	4.00	1	3,520
48x6.2 Mono Ext P2 S Ctd	20481330130760962	6.17	1	8,895
Total Weight (lbs)				15,190

Misc. Items

Description	Qty
MH Connector PSX:DD 12-08	2
Joint Seal Ezstik 1.25X14.5	2.09
Ext Wrap Ezwrap 6"X100'	.3

Production Use

Mfg. Date:	
Ship Date:	
Frame/Ring:	
Grate/Cover:	
PREPOUR:	
POSTPOUR:	



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 ikaaloosa, KS
 one:
 Fax:
 ww.ForterraBP.com

Contractor: Emery Sapp & Sons, Inc., MO
 Project: Lee's Summit, MO - Winterset
 Valley 13th Plat
 Location: MO Lees Summit
 Order Nbr: 6919453PM1
 Remarks:

Sanitary Sewer
 48" (I.D.) Manhole
 SA A2

Date: 06/29/2020
 Plant: 96 LAWRENCE
 Coordinator: Rachel Hirt

Design Build Height

Top of Casting	+	✓ 933.25
Outlet Invert	-	✓ 918.30
Wall Thk/Inv Adj	+	.35
Design Height	=	15.30
Casting/Adj Ring	-	1.50
Manhole Hgt	=	13.80

Stack Build Height

Casting	+	.75
Adjusting Ring	+	.75
Cone	+	3.00
Riser	+	6.83
Mono Base	+	4.00
Base Thickness	+	.75
Outside Height	=	16.08

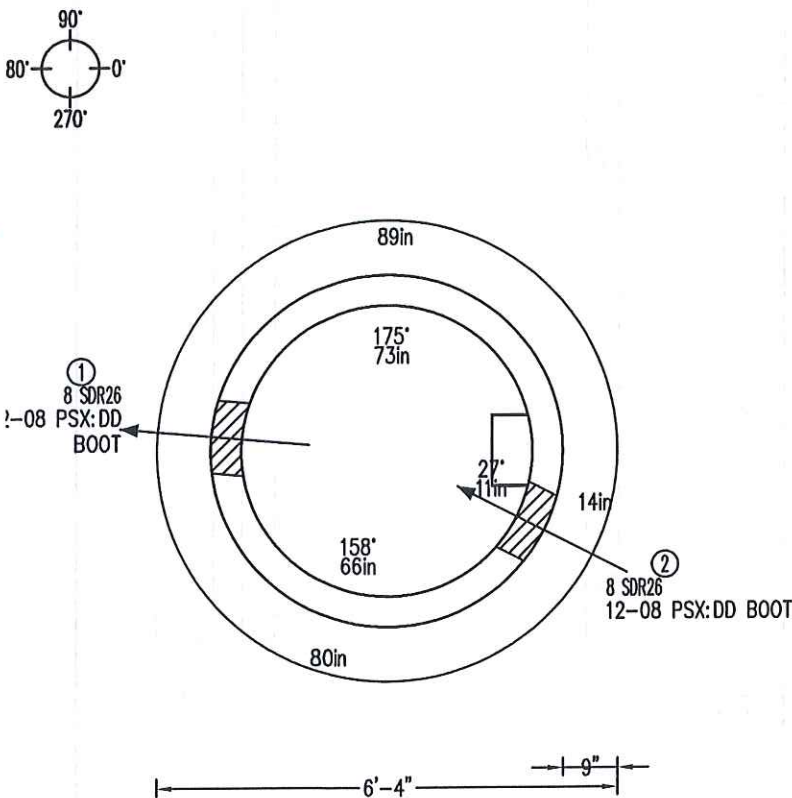
Elevation

Location: Sta 3+12.05
 COATED REQUIRED

Opening Schedule

Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/Connector	(HF=Hole Former, DO=Dig Out)	Top of Hole Up	C-Line Hole Up	Btm of Hole Up
8 SDR26	918.30	✓ .00	8.4in	12-08 PSX:DD BOOT		14.25in	8.25in	2.25in
8 SDR26	918.50	✓ .20	8.4in	12-08 PSX:DD BOOT		16.5in	10.5in	4.5in

Plan View



(B)

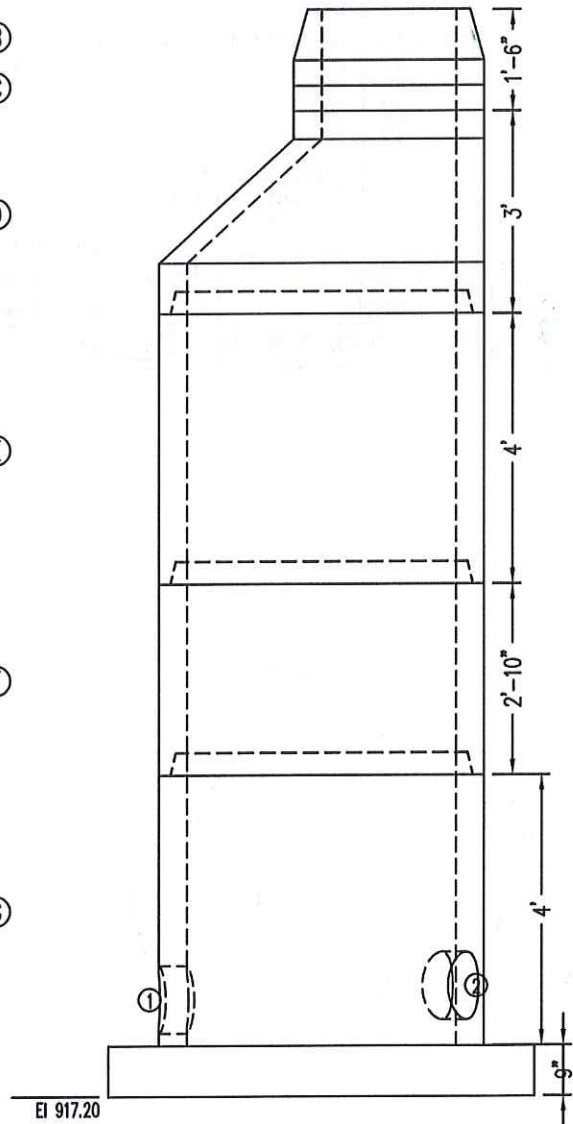
(C)

(D)

(E)

(F)

(G)



Notes

MCIB MIX DESIGN

ting Device: 4UA444
 pps: YES 0'

Item List

Description	Product No	Hgt	Qty	Weight
EJW 1502A Cover - Lee's Summit Sewer	9000100000503	.00	1	0
EJW 1502Z Frame w/ Centering Lugs	9000100000226	.75	1	0
24x4 Adjusting Ring	9090100240400	.38	2	300
48x3.0 24 Ecc Cone P2 S Ctd	20480932130000030	3.00	1	2,475
48x4.0 BBL P2 S Ctd	20480130130000040	4.00	1	3,520
48x2.8 BBL P2 S Ctd	20480130130000028	2.83	1	2,454
48x4.0 Mono Ext P2 S Ctd	20481330130760940	4.00	1	7,007
Total Weight (lbs)				15,756

Misc. Items

Description	Qty
MH Connector PSX:DD 12-08	2
Joint Seal Ezstik 1.25X14.5	3.14
Ext Wrap Ezwrap 6"X100'	.46

Production Use

Mfg. Date:	
Ship Date:	
Frame/Ring:	
Grate/Cover:	
PREPOUR:	
POSTPOUR:	



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 Ikaalooa, KS
 one:
 Fax:
 www.ForterraBP.com

Contractor: Emery Sapp & Sons, Inc., MO
 Project: Lee's Summit, MO - Winterset
 Valley 13th Plat
 Location: MO Lees Summit
 Order Nbr: 6919453PM1
 Remarks:

Sanitary Sewer
 48" (I.D.) Manhole
 SA A3

Date: 06/29/2020
 Plant: 96 LAWRENCE
 Coordinator: Rachel Hirt

Design Build Height

Top of Casting	+	✓ 941.32
Outlet Invert	-	✓ 929.45
Wall Thk/Inv Adj	+	.35
Design Height	=	12.22
Casting/Adj Ring	-	1.13
Manhole Hgt	=	11.10

Stack Build Height

Casting	+	.75
Adjusting Ring	+	.38
Cone	+	3.00
Riser	+	2.08
Mono Base	+	6.00
Base Thickness	+	.75
Outside Height	=	12.96

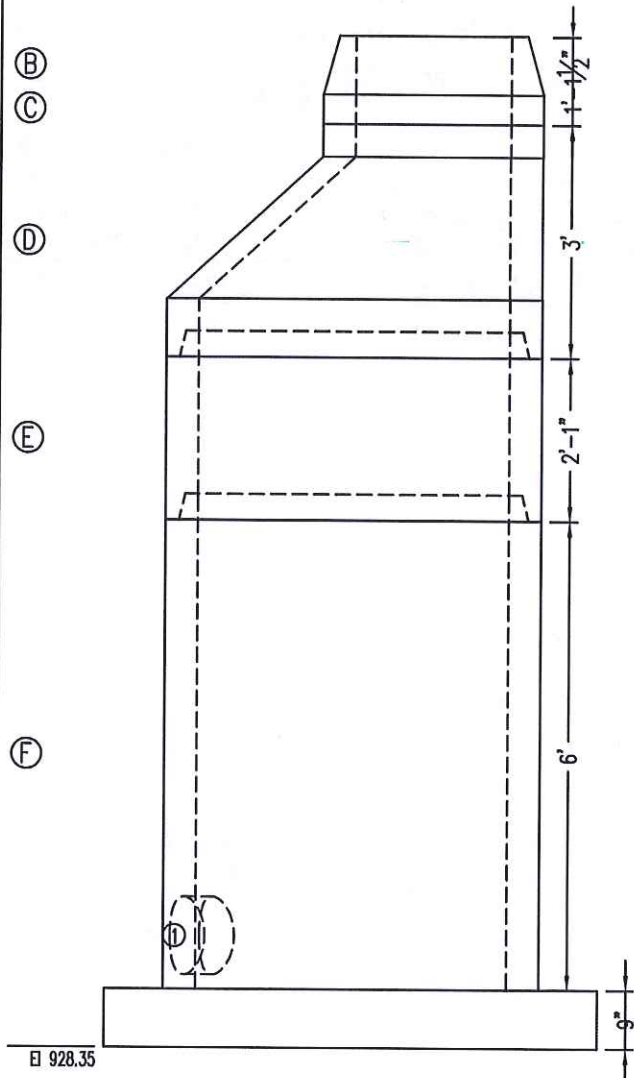
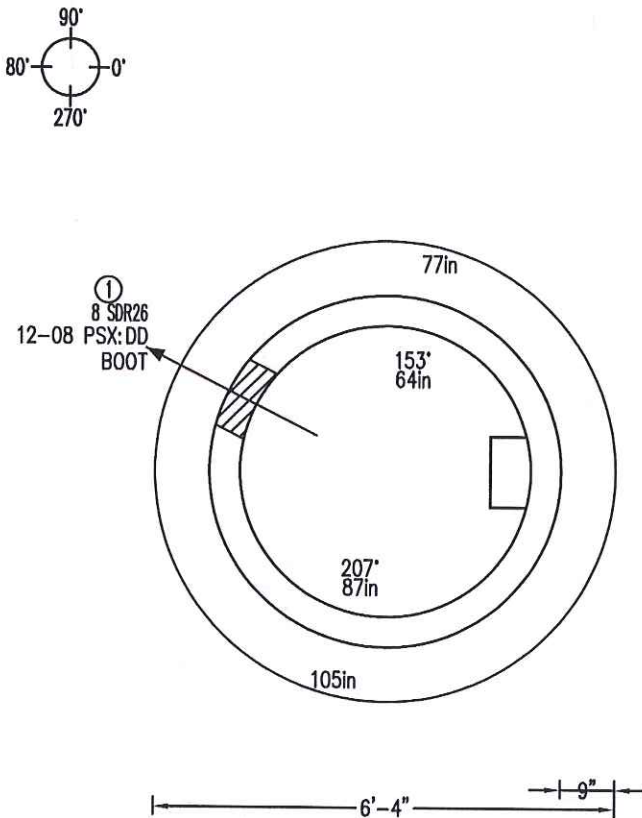
Elevation

Location: Sta 5+19.70
 COATED REQUIRED

Opening Schedule

Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/Connector	(HF=Hole Former, DO=Dig Out)	Top of Hole Up	C-Line Hole Up	Btm of Hole Up
8 SDR26	929.45	✓ .00	8.4in	12-08 PSX:DD BOOT		14.25in	8.25in	2.25in

Plan View



Notes

MCIB MIX DESIGN

ting Device: 4UA444
 eps: YES 0'

Item List

Description	Product No	Hgt	Qty	Weight
EJIW 1502A Cover - Lee's Summit Sewer	9000100000503	.00	1	0
EJIW 1502Z Frame w/ Centering Lugs	9000100000226	.75	1	0
24x4 Adjusting Ring	9090100240400	.38	1	150
48x3.0 24 Ecc Cone P2 S Ctd	20480932130000030	3.00	1	2,475
48x2.1 BBL P2 S Ctd	20480130130000021	2.08	1	1,823
48x6.0 Mono Ext P2 S Ctd	20481330130760960	6.00	1	8,747
Total Weight (lbs)				13,195

Misc. Items

Description	Qty
MH Connector PSX:DD 12-08	1
Joint Seal Ezstik 1.25X14.5	2.09
Ext Wrap Ezwrap 6"X100'	.3

Production Use

Mfg. Date:	
Ship Date:	
Frame/Ring:	
Grate/Cover:	
PREPOUR:	
POSTPOUR:	



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 Kaloosa, KS
 Phone:
 Fax:
 www.ForterraBP.com

Contractor: Emery Sapp & Sons, Inc., MO
 Project: Lee's Summit, MO - Winterset
 Valley 13th Plat
 Location: MO Lees Summit
 Order Nbr: 6919453PM1
 Remarks:

Sanitary Sewer
 48" (I.D.) Manhole
 SA B1

Date: 06/29/2020
 Plant: 96 LAWRENCE
 Coordinator: Rachel Hirt

Design Build Height

Top of Casting	+	920.78
Outlet Invert	-	911.48
Wall Thk/Inv Adj	+	.35
Design Height	=	9.65
Casting/Adj Ring	-	1.50
Manhole Hgt	=	8.15

Stack Build Height

Casting	+	.75
Adjusting Ring	+	.75
Cone	+	3.00
Mono Base	+	5.17
Base Thickness	+	.75
Outside Height	=	10.42

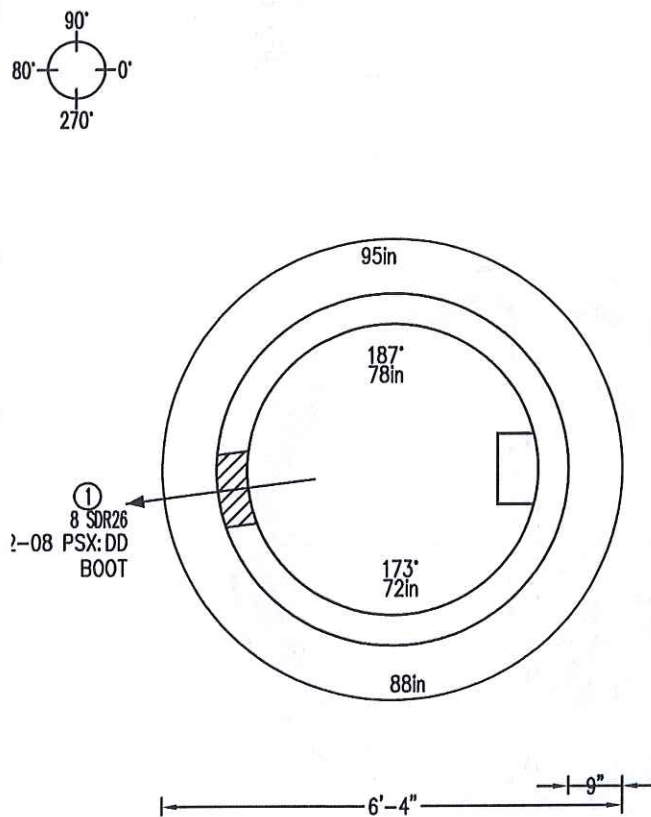
Elevation

Location: Sta 1+84.83
 COATED REQUIRED

Opening Schedule

Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/Connector	(HF=Hole Former, DO=Dig Out)	Top of Hole Up	C-Line Hole Up	Btm of Hole Up
8 SDR26	911.48	.00	8.4in	12-08 PSX:DD BOOT		14.25in	8.25in	2.25in

Plan View

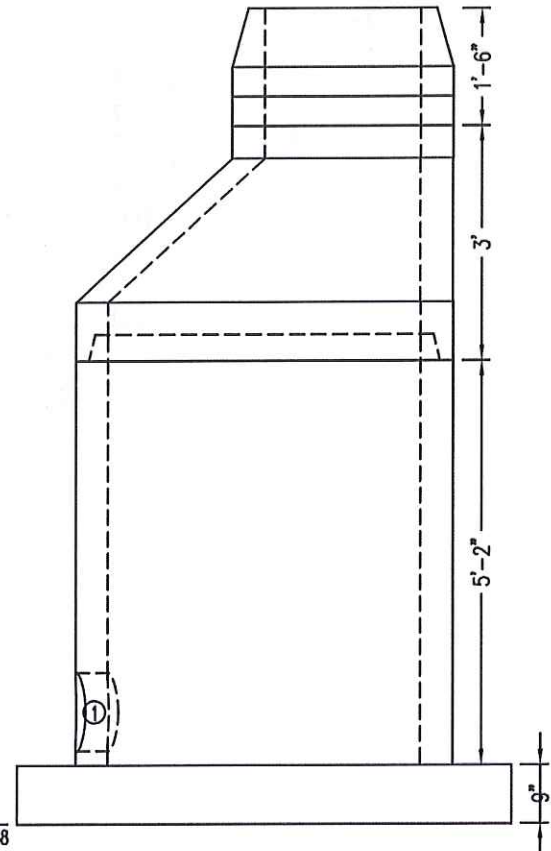


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Notes

MCIB MIX DESIGN

Testing Device: 4UA444
 Tests: YES 0'

Item List

Description	Product No	Hgt	Qty	Weight
EJW 1502A Cover - Lee's Summit Sewer	9000100000503	.00	1	0
EJW 1502Z Frame w/ Centering Lugs	9000100000226	.75	1	0
24x4 Adjusting Ring	9090100240400	.38	2	300
48x3.0 24 Ecc Cone P2 S Ctd	20480932130000030	3.00	1	2,475
48x5.2 Mono Ext P2 S Ctd	20481330130760952	5.17	1	8,019
Total Weight (lbs)				10,794

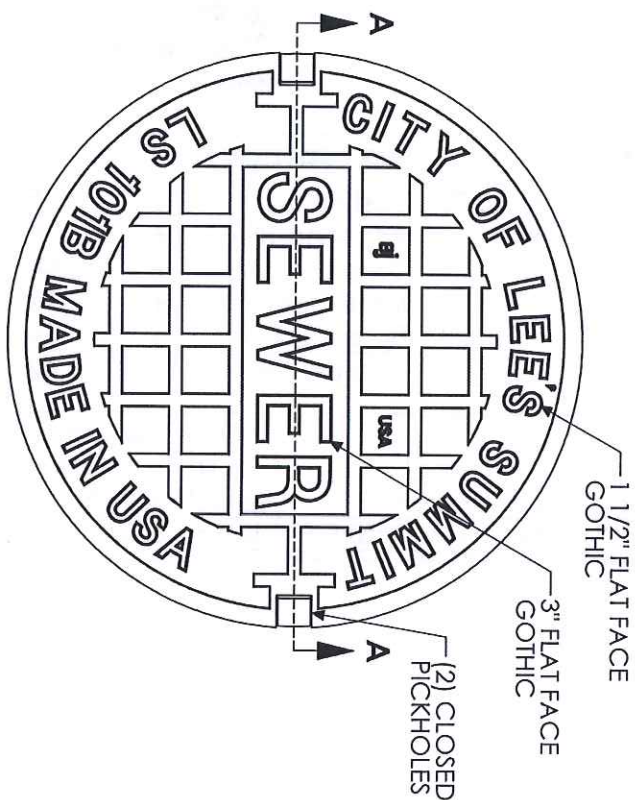
Misc. Items

Description	Qty
MH Connector PSX:DD 12-08	1
Joint Seal Ezstik 1.25X14.5	1.05
Ext Wrap Ezwrap 6"X100'	.15

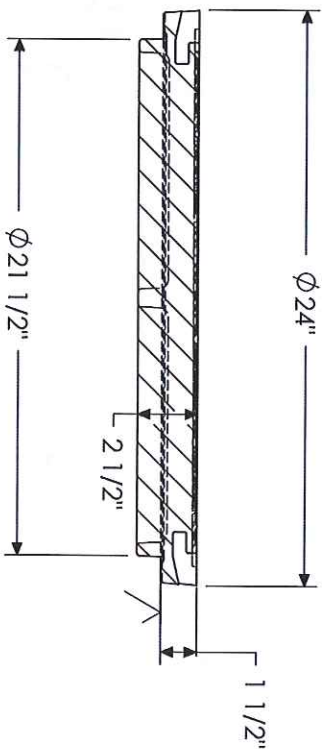
Production Use

Mfg. Date:	
Ship Date:	
Frame/Ring:	
Grate/Cover:	
PREPOUR:	
POSTPOUR:	

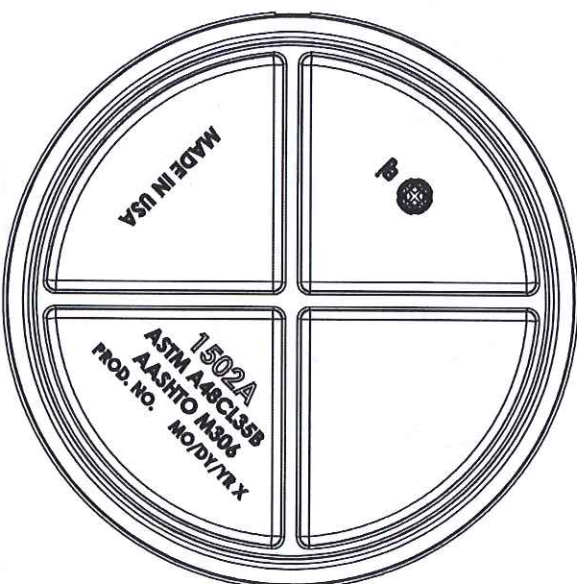
1502A Cover



SECTION A-A



BOTTOM VIEW



Product Number
00150245

Design Features

- Materials
Gray Iron (CL35B)
- Design Load
Heavy Duty
- Open Area
n/a
- Coating
Undipped
- ✓ Designates Machined Surface

Certification
-ASTM A48

-Country of Origin: USA

Drawing Revision
9/8/2011 Designer: JIJ
9/12/2014 Revised By: DAE

Disclaimer

Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

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Contact

800 626 4653
ejco.com

1502Z Frame



Product Number
00150211

Design Features

- Materials
Gray Iron (CL35B)
- Design Load
Heavy Duty
- Open Area
n/a
- Coating
Undipped
- V Designates Machined Surface

Certification
-ASTM A48

-Country of Origin: USA

Drawing Revision
2/15/2006 Designer: JJJ
10/12/2012 Revised By: DJH

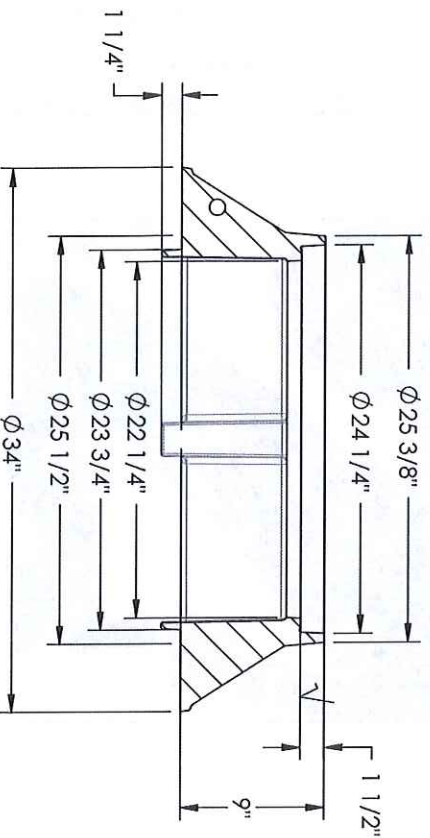
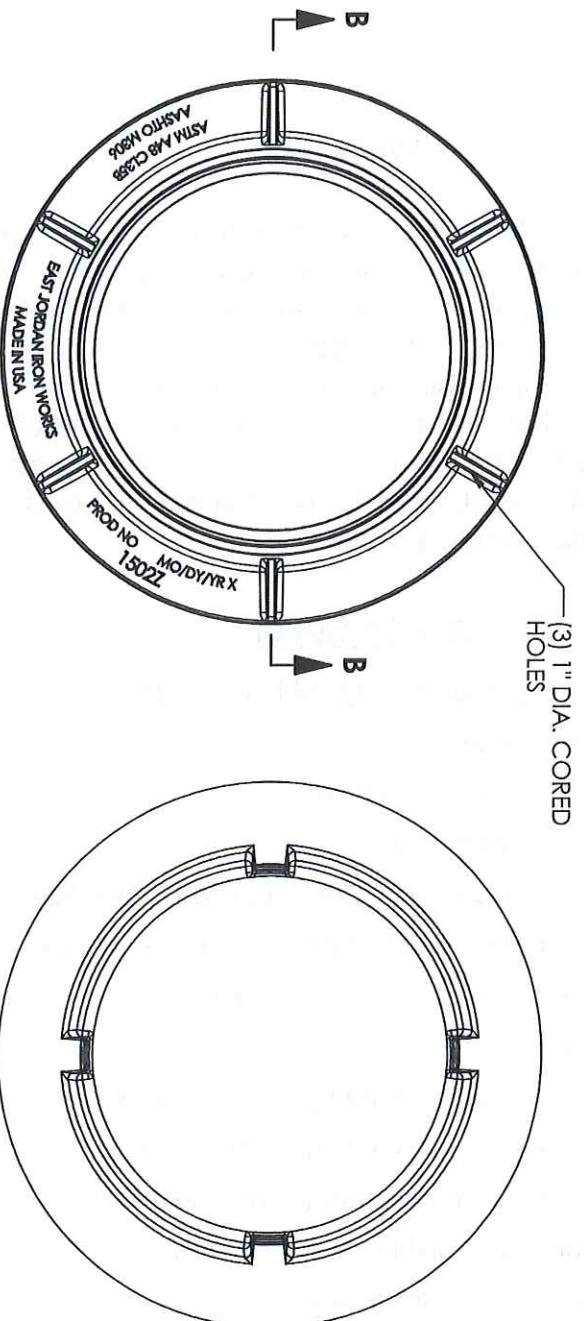
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SECTION B-B



EZ-STIK

PREMIUM BUTYL JOINT SEALANT

What It Is

EZ-STIK is a premium preformed butyl joint sealant that is supplied in rope form. Containing a higher proportion of butyl rubber, EZ-STIK It is carefully blended from uncured butyl rubber and other solids and will not shrink, crack, or dry out. Although clean to handle, it provides excellent adhesion and cohesion to a wide variety of surfaces - concrete, metal, most concrete coatings, glass, wood, and painted surfaces.

Why It's Better

- Increased proportion of butyl rubber content.
- Premium packaging.
- Wide variety of sizes and styles.
- All-weather performance.
- Good adhesion to dry concrete, commonly specified concrete coatings, steel, glass, or painted surfaces.
- Coated release paper for easy installation.
- Long service life.
- Cohesive properties allow for joint movement.
- Compatible for use with rubber O-Ring designs.
- Low moisture vapor transmission rate (MVTR).
- Special primers available for use on damp, contaminated, or difficult surfaces.

Typical Applications

- | | |
|-----------------------------------|-----------------------------------|
| • Sanitary Manhole Joints | • Underground Utility Vaults |
| • Stormwater Manhole Joints | • Stormwater Treatment Structures |
| • Irrigation and Drainage Systems | • Stormwater Inlet Structures |
| • Box Culverts | • On-Site Treatment Tanks |
| • Elliptical/Arch Pipe | • Grease Interceptors |
| • Architectural Foundations | • Wet Wells |



How It Performs

EZ-STIK BUTYL JOINT SEALANT meets or exceeds all requirements of the following Standards, Specifications and/or Test Methods:

ASTM C 990 - Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants; Section 6.2 Butyl Rubber Sealants

AASHTO M 198 - Joints for Circular Concrete Sewer and Culvert Pipe Using Flexible Watertight Gaskets

Scan (or click) Here To View More Info
On This Product On The Web!



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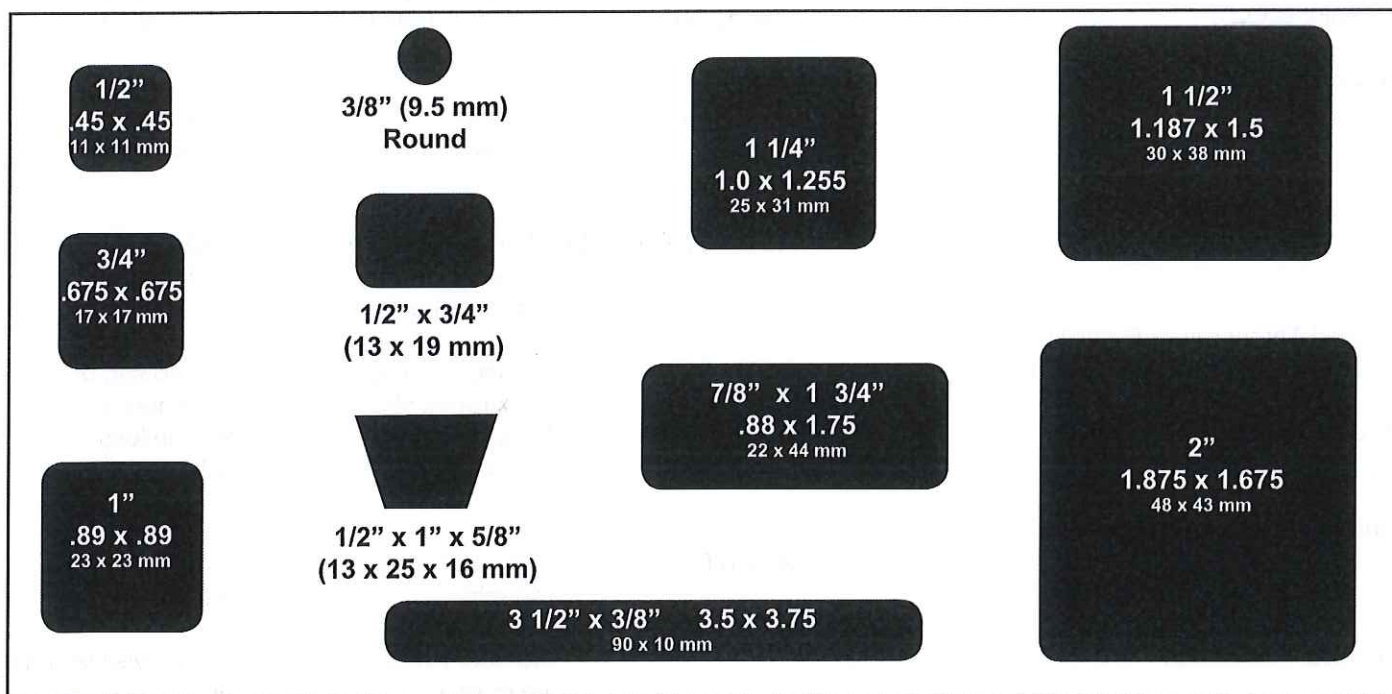


Submittal Specification

The joints and/or joint surfaces of the structures shall be sealed with a butyl-rubber-based preformed flexible sealant conforming to ASTM C-990, paragraph 6.2. The material shall be PRO-STIK or EZ-STIK as supplied by PRESS-SEAL CORPORATION, Fort Wayne, Indiana, or approved equal. The butyl material shall consist of 50% (min.) butyl rubber and shall contain 2% or less volatile matter.

For preformed joint sealants, the sealant shall be sized such that the joint is filled to 50% (min.) of its annular volume when fully assembled, and the sealant shall have the ends kneaded together at the overlap. Primer and/or adhesive as recommended by the sealant supplier shall be employed for adverse, critical, or other applications.

Testing of joints and compliance with construction requirements shall be conducted in strict conformance with the requirements of the sealant supplier.



Custom Sizes Available Upon Request

Also Available in Trowelable Bulk and Easy to Pump Bulk

All sizes sold 40 cartons per pallet. All pallets are shrink wrapped for outside storage. Quantity discounts available - contact our Customer Service Department.

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Description

EZ-STIK is a butyl-rubber-based sealant designed to be permanently flexible, tacky and resistant to moisture and deterioration by exposure to dilute chemical solutions. EZ-STIK meets ASTM C-990, Section 6.2 requirements for Butyl Rubber Sealant, and AASHTO M 198.

Typical Properties

The following values represent typical test results and are manufacturing specifications.

	<u>SPEC.</u>	<u>REQUIRED</u>	<u>EZ-STIK</u>
Butyl Rubber (Hydrocarbon Content %)	ASTM D4	50% min.	62%
Ash Inert Mineral Filler %	AASHTO T111	30% min.	45-48%
Volatile Matter (AASHTO T47)	ASTM D6	2% max.	0.5-1.0%
Specific Gravity @ 77°F (25 C) (AASHTO T229)	ASTM D71	1.15 - 1.50	1.25 - 1.35
Ductility @ 77°F (25 C), cm (AASHTO T51)	ASTM D113	5.0 min.	meets requirement
Flash Point C.O.C.	ASTM D92	350° (177 C) min.	375°F (191 C)
Fire Point C.O.C.	ASTM D92	375° min. (191 C)	385°F (196 C)
Compression Test			
@77°F (25 C), lbf/in ³	ASTM C972	100 max.	40 - 55 lbf/in ³
@32°F (0 C), lbf/in ³		200 max.	130 - 160 lbf/in ³
Low Temperature Flexibility			
@-10°F (-23 C)	ASTM C765	180° bend, no cracking, nor loss of adhesion.	Pass - no cracking or adhesion loss.
Elevated Temperature Flexibility			
14 days @ 157°F (69 C)	ASTM C776	No sag, nor change in extruded shape.	Pass - no sag or shape change.
Adhesion After Impact	ASTM C776-84	No greater loss than 50% of adhesion.	Pass - no loss of adhesion.
Cone Penetration			
@ 77°F (25 C), dmm	ASTM D217	50 - 100 dmm	55 - 85 dmm
@ 32°F (0 C), dmm		40 min.	45 - 55 dmm
Chemical Resistance		No deterioration, no cracking, no swelling.	Pass - no visible change after 30 days immersion in 5% solutions HCl, H ₂ SO ₄ , NaOH, KOH, H ₂ S

Application Properties

Service Temperature Range	-40F to 250F (-40 to 121 C)
Application Temperature	20F to 120F (-7 to 49 C)
Storage Temperature	Under 120F (49 C)
Shelf Life	2 Years minimum

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What It Is

EZ-WRAP is an extruded butyl adhesive tape designed to provide high strength, watertight seals on properly primed concrete surfaces and concrete structure joints. The butyl compound is soft, tacky, and bonded to either a plastic backing or an EPDM rubber backing. Both kinds of tape are wound in rolls on a release liner for easy application.



Why It's Better

- High quality butyl rubber base.
- Available with EPDM Rubber or HDPE Plastic backing.
- All-weather performance.
- Good adhesion to dry concrete, commonly specified concrete coatings, steel, glass, or painted surfaces.
- Coated release paper for easy installation.
- Long service life.
- Primers recommended for use on damp, contaminated, or difficult surfaces.

How It Performs

EZ-WRAP BUTYL JOINT WRAP meets or exceeds all requirements of the following Standards, Specifications and/or Test Methods:

ASTM C 877 (Type III) - Standard Specification for External Sealing Bands for Concrete Pipe, Manholes, and Precast Box Sections

Typical Applications

- Sanitary Manhole Joints
- Grade Ring Joints
- Stormwater Manhole Joints
- Irrigation and Drainage Systems
- Box Culverts
- Elliptical/Arch Pipe
- Architectural Foundations
- Underground Utility Vaults
- Stormwater Treatment Structures
- Stormwater Inlet Structures
- On-Site Treatment Tanks
- Grease Interceptors
- Wet Wells
- Concrete Bridge Spans

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EZ-WRAP

BUTYL JOINT WRAP WITH PLASTIC BACKING

The joints and/or joining surfaces of the structures shall be sealed with a butyl-rubber-based tape. The material shall be EZ-WRAP Plastic as supplied by PRESS-SEAL CORPORATION, Fort Wayne, Indiana, or approved equal. The butyl component of the tape shall consist of 50% (min.) butyl rubber, shall contain 2% or less volatile matter, and shall be .050" (1.3 mm) thick. The backing component shall be high-density polyethylene film. A release paper may be utilized.

For manholes, the tape width shall be 6" (150 mm) wide. The tape shall be overlapped at least twice its width. The tape shall not be stretched during application. Primer and/or adhesive as recommended by the tape supplier shall be employed for adverse, critical, or other applications.

Testing of joints and compliance with construction requirements shall be conducted in strict conformance with the requirements of the sealant supplier.

SPECIFICATION and SELECTION GUIDE

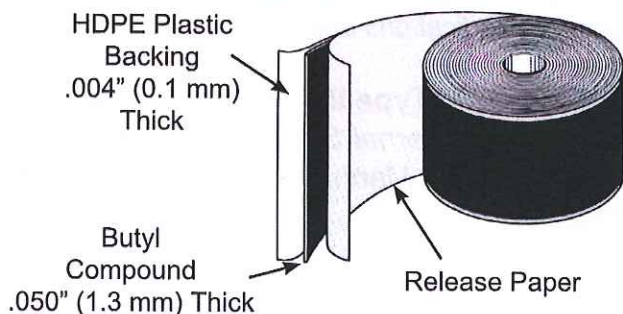
BUTYL JOINT WRAP WITH RUBBER BACKING

The joints and/or joining surfaces of the structures shall be sealed with a butyl-rubber-based tape. The material shall be EZ-WRAP Rubber as supplied by PRESS-SEAL CORPORATION, Fort Wayne, Indiana, or approved equal. The butyl component of the tape shall consist of 50% (min.) butyl rubber, shall contain 2% or less volatile matter, and shall be .030" (0.75 mm) thick. The backing component shall be EPDM rubber, and shall be .045" (1.1 mm) thick. A release paper may be utilized.

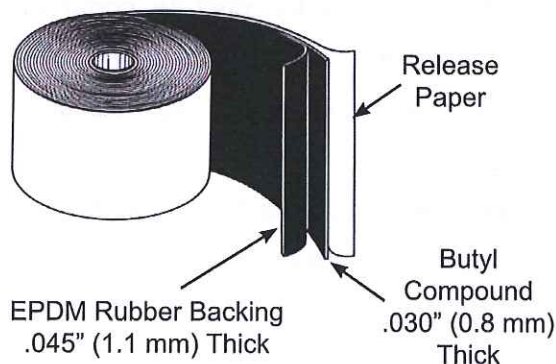
For manholes, the tape width shall be 6" (150 mm) wide. The tape shall be overlapped at least twice its width. The tape shall not be stretched during application. Primer and/or adhesive as recommended by the tape supplier shall be employed for adverse, critical, or other applications.

Testing of joints and compliance with construction requirements shall be conducted in strict conformance with the requirements of the sealant supplier.

EZ-WRAP PLASTIC



EZ-WRAP RUBBER



Width 73.12	Width	Length	Length	Backing	Part Number	Width 11.12	Width	Length	Length	Backing	Part Number
6"	150 mm	100'	30.5 m	HDPE	276.773.6	6"	150 mm	100'	30.5 m	EPDM	276.911.6
9"	225 mm	100'	30.5 m	HDPE	276.773.9	9"	225 mm	100'	30.5 m	EPDM	276.511.9
12"	300 mm	50'	15.25 m	HDPE	276.773.12	12"	300 mm	50'	15.25 m	EPDM	276.511.12

ALSO AVAILABLE: EZ-WRAP PAKS are pre-cut packages of EZ-WRAP designed specifically to seal manhole joints. Each **EZ-WRAP PAK** includes an easy-to-use spray adhesive and pre-cut wraps for standard 48" (1200 mm), 60" (1500 mm), or 72" (1800 mm) manhole joints.

NOTE:

- EZ-WRAP is designed to be used with EZ-STIK No. 4 primer, or our spray adhesive.
- EZ-WRAP should not be stretched during installation.
- 12" EZ-WRAP is recommended for Box Culverts

If you have any questions, please contact our Customer Service Department or your Press-Seal representative.

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1. Clean the exterior surfaces of the joint area. Make sure that the cleaned area is at least 2" wider than the width of the EZ-WRAP used and that the cleaned area is centered on the joint. The concrete must be dry before applying wrap or primer. Primer is most important when installing in cold temperatures.
2. Stir primer thoroughly before application to ensure rubber solids are equally dispensed throughout the solution. Using a paint brush or roller apply a thin even coat of EZ-STIK #4 PRIMER all the way around the joint. Prime the area at least 2" wider than the width of the EZ-WRAP used.
3. Allow the solvents disperse from the primed surface (10-30 minutes depending on temperature), so that a clean, smooth surface is ready for installation of the EZ-WRAP.

Never apply EZ-WRAP to wet #4 EZ STIK Primer.

4. Cut the EZ-Wrap to the correct length prior to applying it to the joint. The below table will give you an idea of the most common lengths.

48" ID X 5" wall	16 feet
60" ID X 6" wall	20 feet
72" ID X 7" wall	24 feet

5. The butyl sealant side of EZ-WRAP is protected by release paper. Apply the EZ-WRAP to the structure, taking care to centering it so both sides of the joint are equally covered; remove the release paper as you apply the EZ-WRAP. Press the EZ-WRAP down firmly and evenly as you cover the joint area. A rubber roller may be used to assist in applying even pressure.
6. Complete the seal by overlapping the EZ-WRAP 6 to 9 inches. Apply #4 EZ STIK Primer to the section of EZ-Wrap attached to the manhole that will be covered by the overlap; let the solvents disperse from the #4 EZ STIK Primer; press the overlapped end firmly against the installed EZ-WRAP.

Storage/Application Notes:

EZ-WRAP - Store and apply at temperatures from 32 F (0 C) to 110 F (43 C).

EZ-PRIMER #4 - Store and apply at temperatures from 32 F (0 C) to 110 F (43 C).

Shelf life of 12 months when stored in unopened original container. After opening, keep container covered when not in use.

SAFETY PRECAUTIONS - Keep both products away from heat, sparks or open flame.

Use only with adequate ventilation. Avoid breathing vapors. Refer to MSDS for additional information

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HIGH-PERFORMANCE PIPE-TO-MANHOLE CONNECTOR

What It Is

PSX: Direct Drive is a high-performance flexible pipe- to-manhole connector that offers easy installation and long-term performance in one convenient product. Whether you core or cast your holes, **PSX:Direct Drive** fits right into your production methods, ready to seal your toughest applications every time.



How It Works

PSX:Direct Drive has superior materials and technology

- Specially developed synthetic rubber is continuously tested and lab-certified
- Power Sleeve made from tempered Series 304 stainless steel
- Installation Mechanism made from Series 300 stainless steel
- Installation Mechanism is infinitely adjustable
- Installation tools are calibrated and certified
- Take-up clamps made from Series 304 stainless steel with quick-adjusting screws



Why It's Better

- Installs quickly and easily from outside the manhole
- Requires no retightening or adjustment
- All stainless-steel components
- No plastic parts to crack or break
- Accurately compensates for hole size variation
- Available for pipes from 1.7"- 44" OD
- Additional torque and multiple adjusters on larger diameters
- Use in manholes, wet wells, pump and lift stations, stormwater structures, on-site treatment structures, grease interceptors, or any application requiring a flexible watertight connector

How It Performs

***PSX:Direct Drive** meets or exceeds all requirements of the following Specifications and/or Test Methods:*

ASTM C 923
ASTM C 1244
ASTM C 1478
ASTM F 2510

Protected by one or more of the following patents: 6805359, 7146689, 7263746

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Submittal Specification

A watertight flexible pipe-to-manhole connector shall be employed in the connection of the sanitary sewer and/or stormwater pipe to precast manholes or other structures.

The connector shall be PSX:DIRECT DRIVE as manufactured by Press-Seal Gasket Corporation, Fort Wayne, Indiana, or approved equal.

The connector assembly shall be the sole element relied on to assure a flexible watertight seal of the pipe to the structure. The connector shall consist of a rubber gasket, an internal expansion sleeve, and one or more external compression take-up clamps. Approved materials for the connector shall be natural or synthetic rubber and Series 300 non-magnetic stainless steel. No plastic components shall be permitted.

The rubber gasket element shall be constructed solely of synthetic or natural rubber, and shall meet/exceed the requirements of ASTM C 923, and shall have a minimum tensile strength of 1600 PSI. Minimum thickness of the cross-section shall be 0.275 inches.

The internal expansion sleeve components shall be made of Series 300 non-magnetic stainless steel and shall utilize no welds in their construction.

Installation shall be performed using a calibrated installation tool available from the connector manufacturer. Installation of the sleeve shall require no retightening after the initial installation.

The external compression take-up clamp(s) shall be constructed of Series 300 non-magnetic stainless steel and shall utilize no welds in its constructions. The clamp(s) shall be installed by torquing the adjusting screw using a torque-setting wrench available from the connector manufacturer.

Selection of the proper size connector for the manhole and pipe requirement, and installation thereof, shall be in strict conformance with the recommendations of the connector manufacturer. Any dead end pipe stubs installed in connectors shall be restrained from movement per ASTM C 923.

The finished connection shall provide sealing to 13 psi (minimum), and shall accommodate deflection of pipe to 7 degrees (minimum) without loss of seal.

Vacuum testing shall be conducted in strict conformance with ASTM C 1244 prior to backfill. Other testing shall be conducted in strict conformance with the requirements of the connector manufacturer.

PRODUCT PERFORMANCE

PSX:Direct Drive meets and/or exceeds all requirements of ASTM C 923, including physical properties of materials and performance testing. Performance testing includes:

- 13 psi minimum in straight alignment
- 10 psi at minimum 7° angle
- 10 psi minimum under shear load of 150 lbs/in. pipe diameter

PSX:Direct Drive meets and/or exceeds the following specifications:

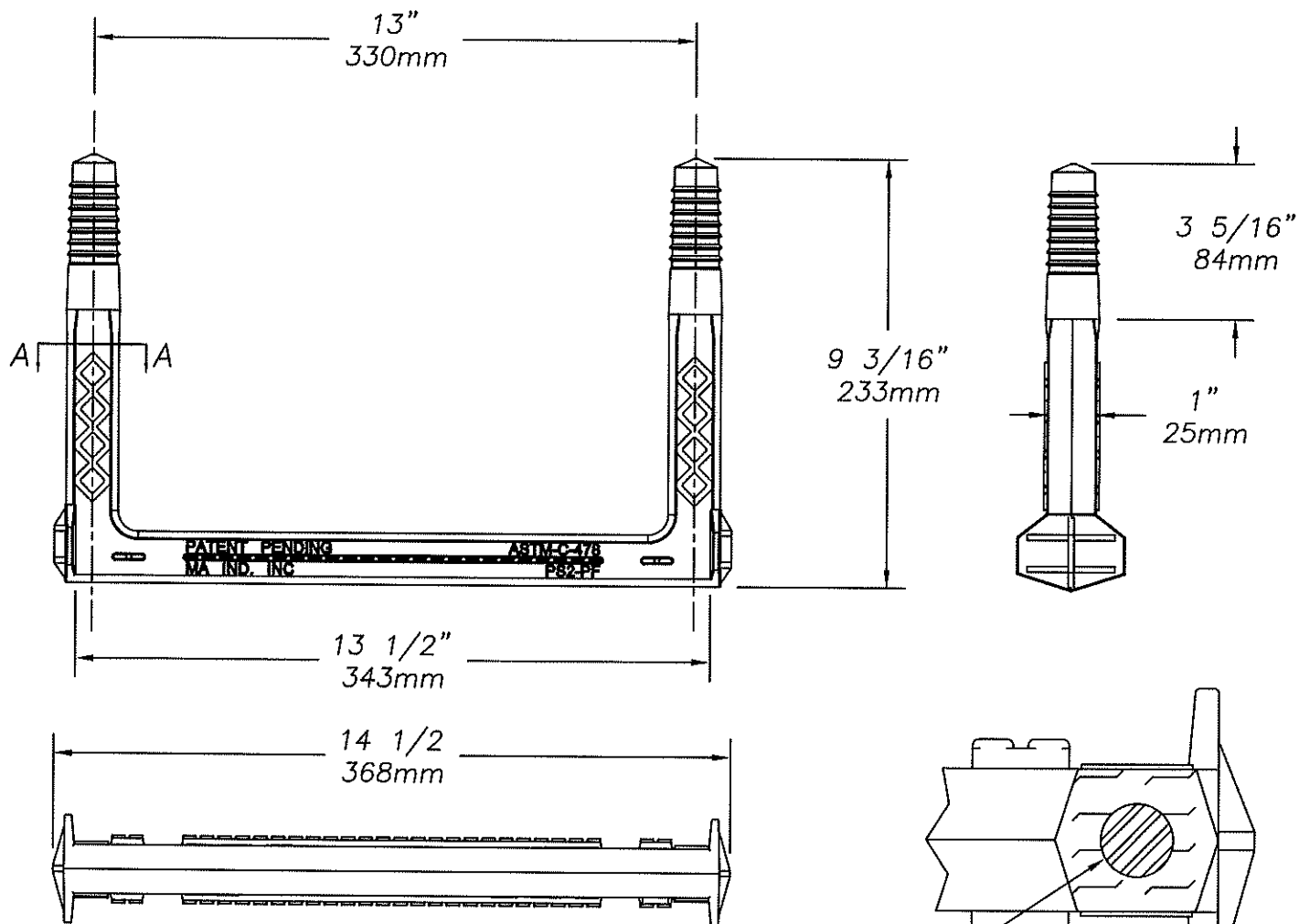
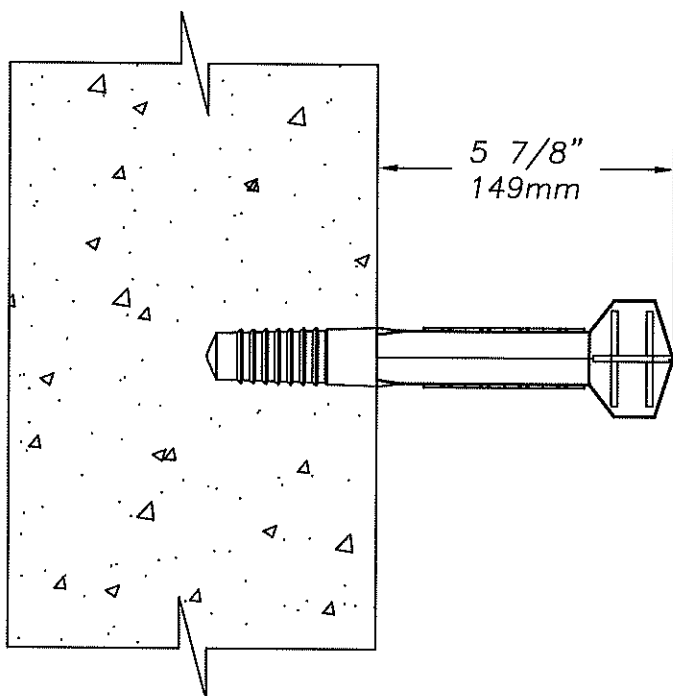
- ASTM C 923 *Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals*
- ASTM C 1478 *Standard Specification for Storm Drain Resilient Connectors Between Reinforced Concrete Storm Sewer Structures, Pipes and Laterals*
- ASTM F 2510 *Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures and Corrugated High Density Polyethylene Drainage Pipes*
- ASTM C 1244 *Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test*

TYPICAL TEST RESULTS for PSX:Direct Drive (as in ASTM C 923 and C 1478)			
Test	ASTM Test Method	Test Requirements	Typical Result
CHEMICAL RESISTANCE; 1N SULFURIC ACID and 1N HYDROCHLORIC ACID	D 534, AT 22°C FOR 48 HRS	NO WEIGHT LOSS NO WEIGHT LOSS	NO WEIGHT LOSS NO WEIGHT LOSS
TENSILE STRENGTH	D 412	1200 PSI, MIN.	2100 PSI
ELONGATION AT BREAK	D 412	350%, MIN.	525%
HARDNESS	D 2240 (SHORE A DUROMETER)	±5 FROM THE MANUFACTURER'S SPECIFIED HARDNESS	<2
ACCELERATED OVEN-AGING	D 573, 70±1°C FOR 7 DAYS	DECREASE OF 15%, MAX. OF ORIGINAL TENSILE STRENGTH, DECREASE OF 20%, MAX. OF ELONGATION	-13% TENSILE CHANGE, -14% ELONGATION CHANGE
COMPRESSION TEST	D 395, METHOD B, AT 70°C FOR 22 HRS	DECREASE OF 25%, MAX. OF ORIGINAL DEFLECTION	13%
WATER ABSORPTION	D 471 IMMERSE 0.75 BY 2-IN. SPECIMEN IN DISTILLED WATER AT 70°C FOR 48 hrs	INCREASE OF 10%, MAX. OR ORIGINAL BY WEIGHT	3.50%
OZONE RESISTANCE	D 1171	RATING 0	PASS
LOW-TEMP, BRITTLE POINT	D 746	NO FRACTURE AT -40°C	PASS
TEAR RESISTANCE	D 624, METHOD B	200 LBF/IN. (MIN.)	450 LBF/IN.

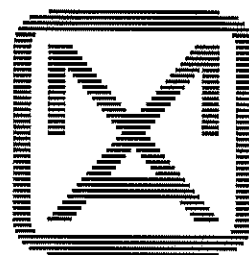
Protected by one or more of the following patents: 6805359, 7146689, 7263746

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PS2-PF-DF**004-510-DF****Manhole Step****Copolymer Polypropylene Plastic**13mm
1/2"**GRADE 60 STEEL REINFORCEMENT****SECTION-A**

**MEETS: ASTM C-478
ASTM D-4101
ASTM A-615
AASHTO M-199**

**M . A . I N D U S T R I E S , I N C .**



H.B. TNEMECOL

SERIES 46-465

PRODUCT PROFILE

GENERIC DESCRIPTION	Coal Tar
COMMON USAGE	Versatile coal tar coating for use in immersion, splash and spillage, chemical fumes and below-grade environments.
COLORS	Black
FINISH	Semi-gloss

COATING SYSTEM

PRIMERS	Self-priming
---------	--------------

SURFACE PREPARATION

	Prepare by method suitable for exposure and service.
STEEL	Immersion Service: SSPC-SP6 Commercial Blast Cleaning
CONCRETE	Allow new concrete to cure 28 days. For optimum results and/or immersion service, abrasive blast referencing SSPC-SP13/NACE 6 Surface Preparation of Concrete and Tnemec's Surface Preparation and Application Guide.
ALL SURFACES	Must be clean, dry and free of oil, grease and other contaminants. Concrete surfaces must also be free of all form release agents, curing compounds/sealers, hardeners and membranes.

TECHNICAL DATA

VOLUME SOLIDS	64.0 ± 2.0%
RECOMMENDED DFT	8.0 to 12.0 mils (205 to 305 microns) per coat. Note: Number of coats and thickness requirements will vary with substrate, application method and exposure. Contact your Tnemec representative.

CURING TIME	Temperature	To Touch	To Recoat	Immersion
	75°F (24°C)	2 hours	24 hours	7 days

Curing time varies with surface temperature, air movement, humidity and film thickness.

VOLATILE ORGANIC COMPOUNDS	Unthinned: 2.56 lbs/gallon (306 grams/litre) Thinned 5%: 2.78 lbs/gallon (333 grams/litre)
THEORETICAL COVERAGE	1,026 mil sq ft/gal (25.2 m ² /L at 25 microns). See APPLICATION for coverage rates.
NUMBER OF COMPONENTS	One
PACKAGING	55 gallon (208.2L) drums, 5 gallon (18.9L) pails and 1 gallon (3.79L) cans.
NET WEIGHT PER GALLON	13.08 ± 0.25 lbs (5.93 ± .11 kg)
STORAGE TEMPERATURE	Minimum 20°F (-7°C) Maximum 120°F (49°C)
TEMPERATURE RESISTANCE	(Dry) Continuous 140°F (60°C) Immersion Service 120°F (49°C)
SHELF LIFE	12 months at recommended storage temperature.
FLASH POINT - SETA	80°F (27°C)
HEALTH & SAFETY	Paint products contain chemical ingredients which are considered hazardous. Read container label warning and Material Safety Data Sheet for important health and safety information prior to the use of this product. Keep out of the reach of children.

APPLICATION

COVERAGE RATES		Dry Mills (Microns)	Wet Mills (Microns)	Sq Ft/Gal (m ² /Gal)
	Suggested	10.0 (255)	15.5 (395)	103 (9.5)
	Minimum	8.0 (205)	12.5 (320)	128 (11.9)
	Maximum	12.0 (305)	19.0 (480)	86 (7.9)

Allow for overspray and surface irregularities. Film thickness is rounded to the nearest 0.5 mil or 5 microns. Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance.

MIXING	Stir thoroughly, making sure no pigment remains on the bottom of the can.
THINNING	Use No. 2 Thinner. For air or airless spray, brush or roller, thin up to 5% or 1/4 pint (190 mL) per gallon if necessary. Drum heaters or inline heaters may be necessary to maintain application viscosity during cool weather.

H.B. TNEMECOL | SERIES 46-465

APPLICATION EQUIPMENT

Air Spray

Gun	Fluid Tip	Air Cap	Air Hose ID	Mat'l Hose ID	Atomizing Pressure	Pot Pressure
DeVilbiss MBC or JGA	E	704	3/8" or 1/2" (9.5 or 12.7 mm)	1/2" or 3/4" (12.7 or 19 mm)	50 psi (3.4 bar)	20 psi (1.4 bar)

Low temperatures or longer hoses require higher pot pressure.

Airless Spray

Tip Orifice	Atomizing Pressure	Mat'l Hose ID	Manifold Filter
0.017"-0.031" (430-785 microns)	2400-3000 psi (165-207 bar)	3/8" or 1/2" (9.5 or 12.7 mm)	60 mesh (250 microns)

Use appropriate tip/atomizing pressure for equipment, applicator technique and weather conditions.

Roller: Use high quality synthetic nap covers. Short nap for smooth surfaces. Long nap for rough surfaces. **Note:** Two or more coats may be required to obtain recommended film thicknesses.

Brush: Use high quality nylon or synthetic bristle brushes. **Note:** Two or more coats may be required to obtain recommended film thicknesses.

SURFACE TEMPERATURE

Minimum 40°F (4°C) Maximum 135°F (57°C)

The surface should be dry and at least 5°F (3°C) above the dew point.

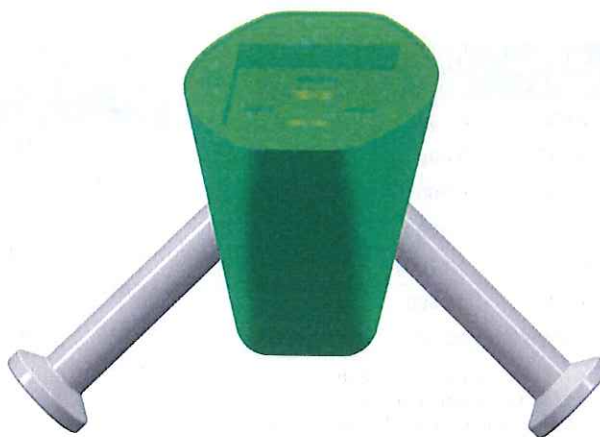
CLEANUP

Flush and clean all equipment immediately after use with the recommended thinner or xylol.

WARRANTY & LIMITATION OF SELLER'S LIABILITY: Tnemec Company, Inc. warrants only that its coatings represented herein meet the formulation standards of Tnemec Company, Inc. THE WARRANTY DESCRIBED IN THE ABOVE PARAGRAPH SHALL BE IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. The buyer's sole and exclusive remedy against Tnemec Company, Inc. shall be for replacement of the product in the event a defective condition of the product should be found to exist and the exclusive remedy shall not have failed its essential purpose as long as Tnemec is willing to provide comparable replacement product to the buyer. NO OTHER REMEDY (INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR LOST PROFITS, LOST SALES, INJURY TO PERSON OR PROPERTY, ENVIRONMENTAL INJURIES OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS) SHALL BE AVAILABLE TO THE BUYER. Technical and application information herein is provided for the purpose of establishing a general profile of the coating and proper coating application procedures. Test performance results were obtained in a controlled environment and Tnemec Company makes no claim that these tests or any other tests, accurately represent all environments. As application, environmental and design factors can vary significantly, due care should be exercised in the selection and use of the coating.

A-Anchor™

Lifting System

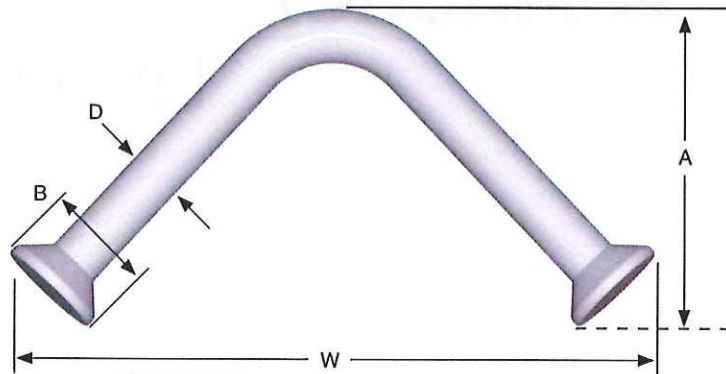


The CONAC A-Anchor Lifting System is versatile and economical, easy to work with in precast concrete plants as well as in the field. The system allows the use of a standard hook or clevis, eliminating the need for specialized lifting hardware.

A-ANCHOR

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Concrete Product Solutions

14 AND 18 MM A-ANCHORS

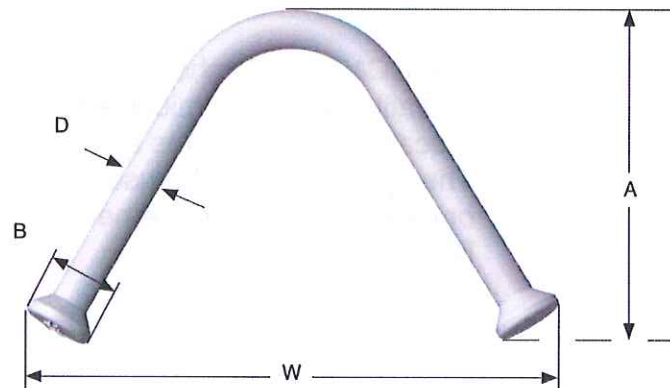


PRODUCT CODE	SLAB MIN. 90°	SWL TENSION	SWL AT 90° SHEAR	END DISTANCE
4CA12	4"	2,600	4,000	
4CA14	4"	3,500	5,400	9"
5CA14	5"	5,500	8,500	10"
5CA18	5"	6,000	9,300	10"
6CA14	6"	6,500	10,100	12 1/2"
6CA18	6"	7,500	11,600	12 1/2 "
8CA18	8"	13,000	20,000	15 1/2 "

PRODUCT CODE	ANCHOR DEPTH (A)	ANCHOR WIDTH (W)	BODY DIAMETER (D)	BASE DIAMETER (B)	PANEL DEPTH
4CA12	3-1/4"	5-1/8"	1/2"	1-3/16"	4"
4CA14	3-1/8"	6-5/16"	9/16"	1-3/16"	4"
5CA14	3-3/4"	8-1/4"	9/16"	1-3/16"	5"
5CA18	3-3/4"	8-11/16"	11/16"	2"	5"
6CA14	4-3/4"	10-9/16"	9/16"	1-3/16"	6"
6CA18	4-3/4"	9-1/16"	11/16"	2"	6"
8CA18	6-3/4"	12-1/4"	11/16"	2"	8"

Note: Safe working Load provides a factor of safety of approximately 4:1 based on a minimum concrete strength of 4,000 psi. For use as pulling iron load maybe increased by 33% with 3 to 1 Safety Factor.

.444" AND .671" A-ANCHORS



PRODUCT CODE	SLAB MIN. 90°	SWL TENSION	SWL AT 90° SHEAR	END DISTANCE
4CA44	4"	3,200	5,800	9"
5CA44	5"	3,860	7,710	11"
6CA44	6"	4,460	9,460	15"
5CA67	5"	4,560	8,430	11"
6CA67	6"	7,320	15,780	15"
8CA67	8"	10,830	18,850	20 "

PRODUCT CODE	ANCHOR DEPTH (A)	ANCHOR WIDTH (W)	BODY DIAMETER (D)	BASE DIAMETER (B)	PANEL DEPTH
4CA44	3-1/8"	5-1/4"	0.444"	3/4"	4"
5CA44	3-3/4"	6"	0.444"	3/4"	5"
6CA44	4-3/4"	7-3/8"	0.444"	3/4"	6"
5CA67	3-3/4"	6-7/16"	0.671"	1-5/8"	5"
6CA67	4-3/4"	7-3/8"	0.671"	1-5/8"	6"
8CA67	6-3/4"	9-3/4"	0.671"	1-5/8"	8"

Note: Safe working Load provides a factor of safety of approximately 4:1 based on a minimum concrete strength of 4,000 psi. For use as pulling iron load maybe increased by 33% with 3 to 1 Safety Factor.

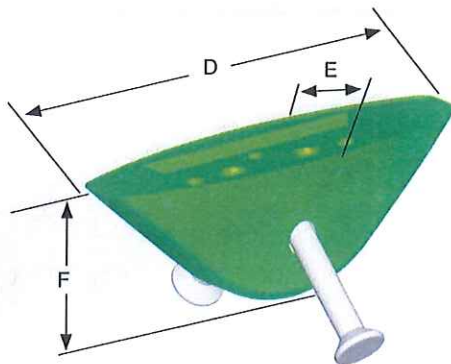
48" - 72" DIA. MANHOL.
84"+ DIA. MANHOLES

A-ANCHOR

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A-ANCHOR RUBBER RECESS FORMERS

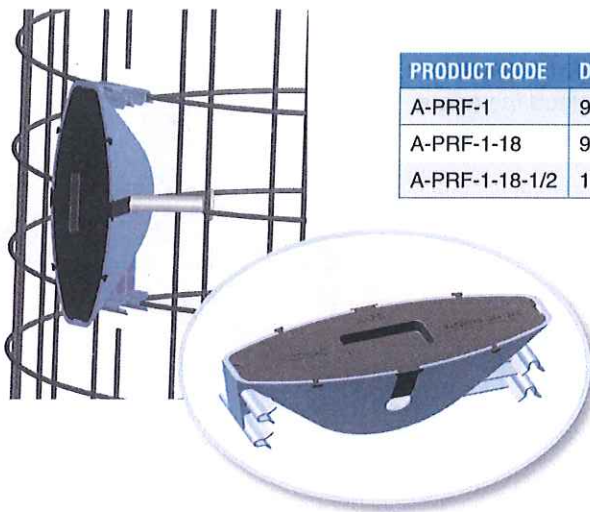
The A Anchor Rubber Recess Formers are manufactured in 90° angles. The recess former properly sets the top of the anchor 3/4" below the surface of the concrete.



PRODUCT CODE	D	E	F	COLOR
CRRF9014	9.00"	3"	3.25"	Red
CRRF9018	9.00"	3"	3.25"	Black
CRRF9014-4	9.00"	3"	4"	Yellow
CRRF9018-4	9.00"	3"	4"	Green

A-ANCHOR PLASTIC RECESS FORMERS

A-Anchor single use plastic recess formers attach to mesh or rebar cages. Patent # 8,024,896



PRODUCT CODE	D	E	F	QTY/BOX
A-PRF-1	9.00"	3"	3.25"	130 PCS
A-PRF-1-18	9.00"	3"	3.25"	130 PCS
A-PRF-1-18-1/2	11.00"	4-1/8"	4"	60 PCS

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A-ANCHOR MAGNETIC RECESS PLATE

The A Anchor Magnetic Recess Plate allows attachment of the Rubber Recess Former to any steel form, eliminating bolting or welding. Threaded holes in magnet (3/8"-16 NC) allow easy release of magnet from form.

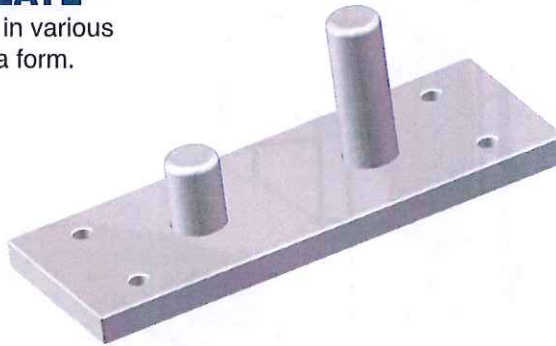


PART NO.

A-Magnetic Plate

A-ANCHOR SETTING PLATE

The A-Anchor Setting Plate is used in various applications to install A-Anchors in a form.



PART NO.

A-Setting Plate

A-ANCHOR SETTING ROD

The Setting Rod is used to set the recess former in place by way of a predilled hole in the form.



PART NO.

A-Setting Rod

3/8"-16 NC thread, For use with rubber Recess Formers.