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 PARK RIDGE 6TH PLAT 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 SHALL BE MADE OF TYPE III PORTLAND CEMENT SUPPLIED BY ASH GROVE CEMENT CO. FROM THEIR CHANUTE, KS 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, KANSAS WATER DISTRICT NO. 7.

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% ± 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 AND FREE OF HONEYCOMB. 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 EZ-STIK PREFORMED BUTYL SEALANTS SUPPLIED BY PRESS-SEAL CORPORATION. (SEE SEALANT INSTALLATION PROCEDURE.)

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. TO AVOID EMBRITTLEMENT OF THE REINFORCING STEEL, NO BAR SHALL BE WELDED.

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(913) 422-3634

SCALE: NONE	LOCATION: LEE'S SUMMIT, MO
DATE: 02/08/18	PROJECT: PARK RIDGE 6TH PLAT
DR'N BY: CRG	CONTRACTOR: WALTERS EXCAVATING
REV: -	DWG NAME: 001 - GENERAL NOTES

7.8 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, 9¼" x 14¾".

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.

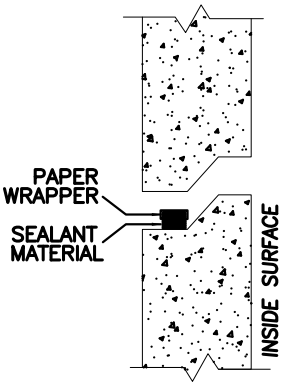
9.3 BUTT JOINTS SHOULD BE MADE TO CONNECT SECTIONS OF THE SEALANT MATERIAL TOGETHER (CORNERS, ETC.). CAUTION, LAP JOINTS ARE NOT PERMITTED.

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.

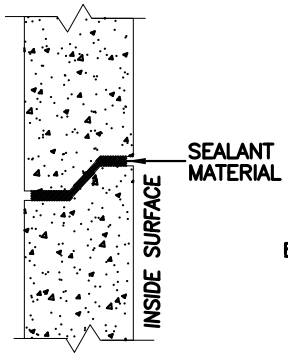
10.0 LIFTING INSERTS

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.

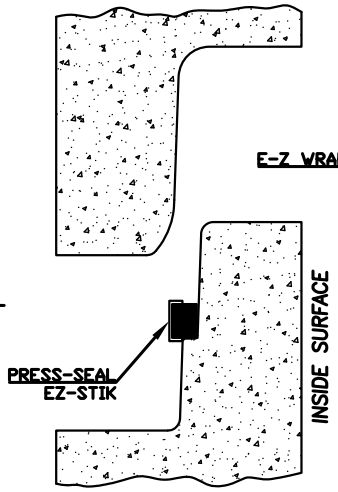
10.2 UNDER NO CIRCUMSTANCES WILL BENT REBAR OR OTHER "HOMEMADE" NON-OSHA COMPLIANT LIFTING DEVICES BE CAST INTO STRUCTURES FOR USE ON THE JOB SITE.



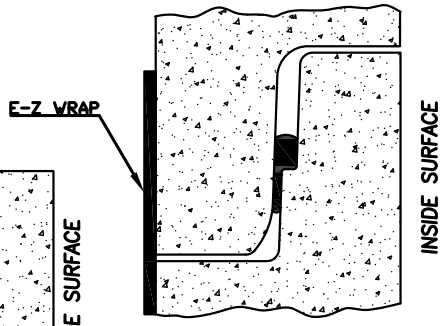
RECTANGULAR STRUCTURE OPEN JOINT DETAIL



RECTANGULAR STRUCTURE CLOSED JOINT DETAIL



SANITARY MANHOLE OPEN JOINT DETAIL



SANITARY MANHOLE CLOSED JOINT DETAIL

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SCALE: NONE	LOCATION: LEE'S SUMMIT, MO
DATE: 02/08/18	PROJECT: PARK RIDGE 6TH PLAT
DR'N BY: CRG	CONTRACTOR: WALTERS EXCAVATING
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.

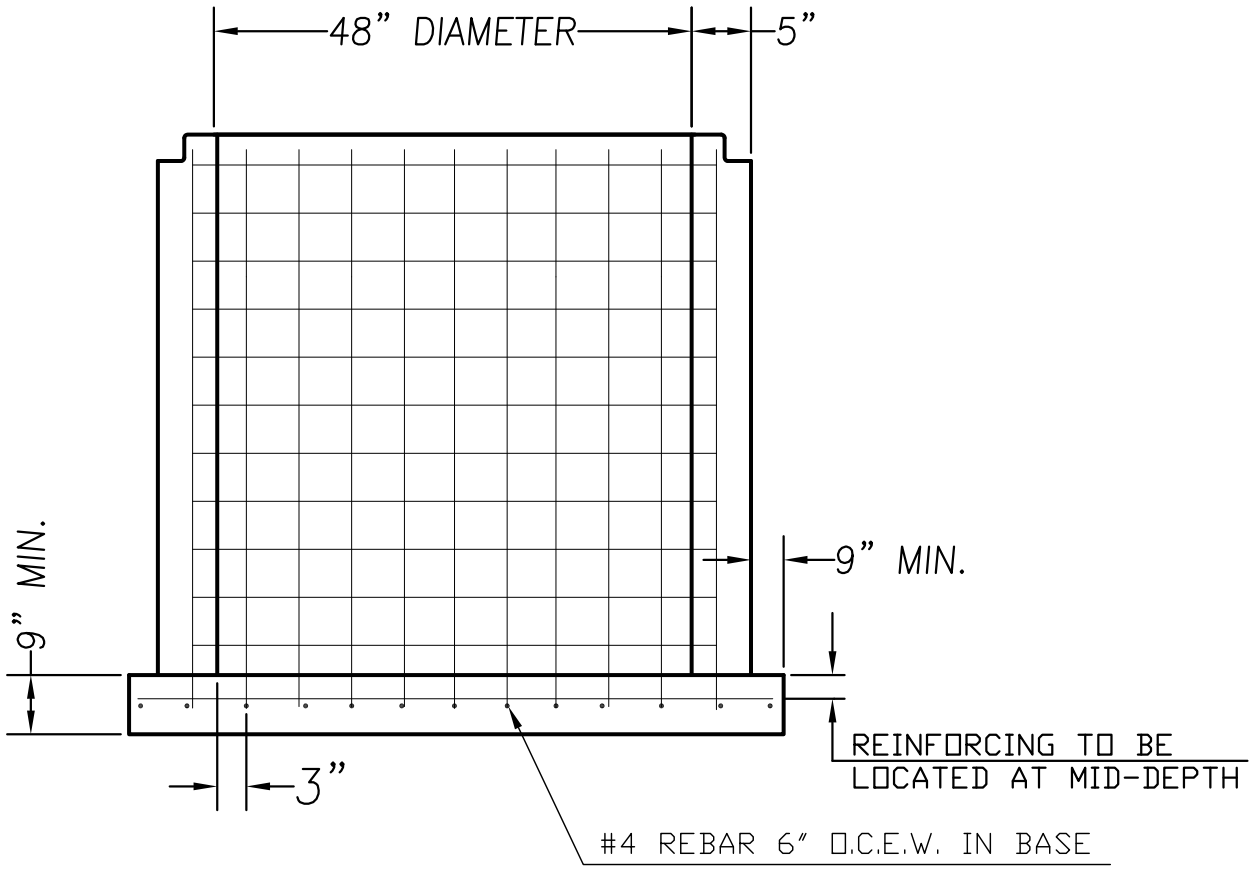
2. ALL REINFORCING STEEL SHALL BE CUT AND FORMED TO THE DIMENSIONAL TOLERANCES SPECIFIED IN ACI 318 OR ACI STANDARD 315 EXCEPT WHERE NOTED ON SHOP DRAWINGS.

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. TO AVOID EMBRITTLEMENT OF THE REINFORCING STEEL, NO BAR SHALL BE WELDED.

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

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DATE: 02/08/18	PROJECT: PARK RIDGE 6TH PLAT
DR'N BY: CRG	CONTRACTOR: WALTERS EXCAVATING
REV: -	DWG NAME: 003 - 48" MANHOLE - BASE & WALLS

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.

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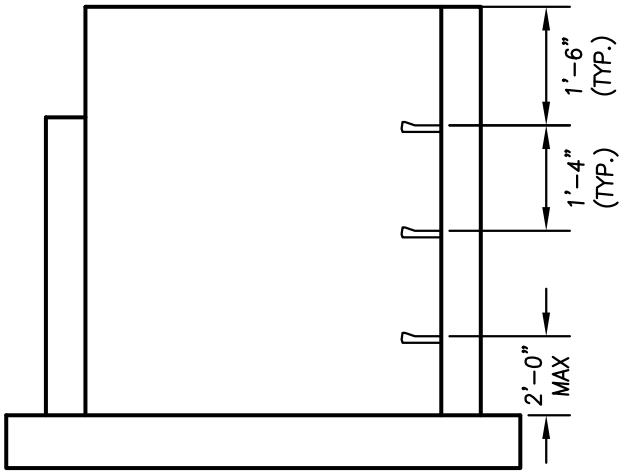
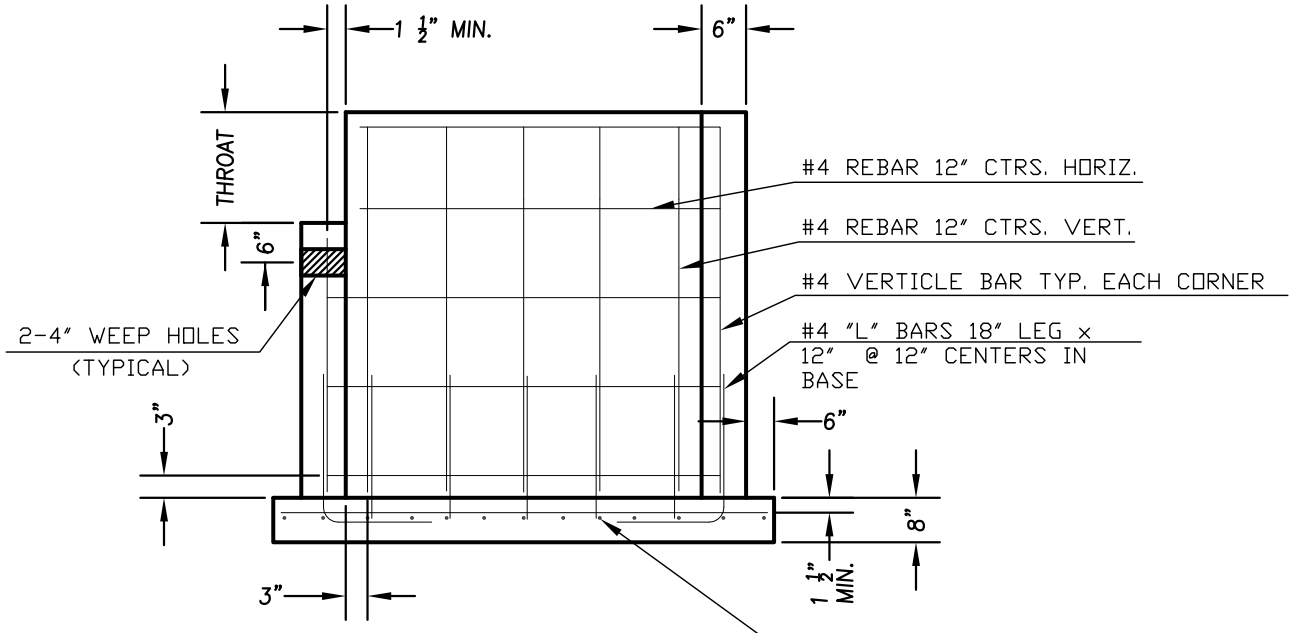
5. RADIUS OF BENDS SHALL CONFORM TO ACI AND ARSI REQUIREMENTS.

6. CUT MAT OF REINFORCING STEEL AS REQUIRED TO ACCEPT DOGHOUSE OR PIPE PENETRATION HOLES. #4 BAR DIAGONALS AROUND OPENINGS.



STEP DETAIL



SECTION VIEW

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SCALE: NONE	LOCATION: LEE'S SUMMIT, MO
DATE: 02/08/18	PROJECT: PARK RIDGE 6TH PLAT
DR'N BY: CRG	CONTRACTOR: WALTERS EXCAVATING
REV: -	DWG NAME: 004 - CURB INLET - BASE & WALLS

NOTES:

1. REINFORCING RODS SHALL CONFORM TO ASTM A-615, GRADE 60, AS FURNISHED WITH CERTIFICATIONS FROM PREQUALIFIED MILLS.

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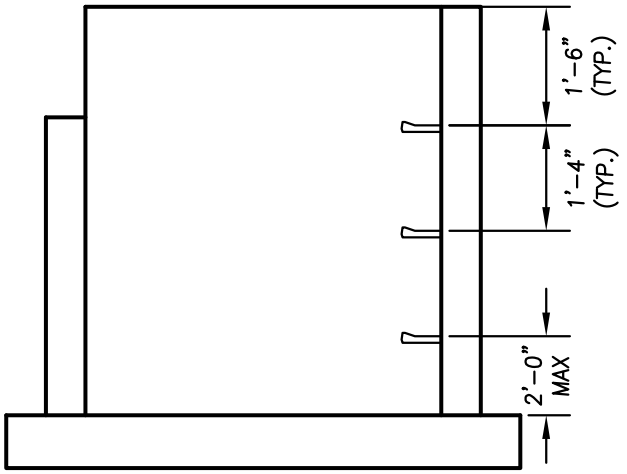
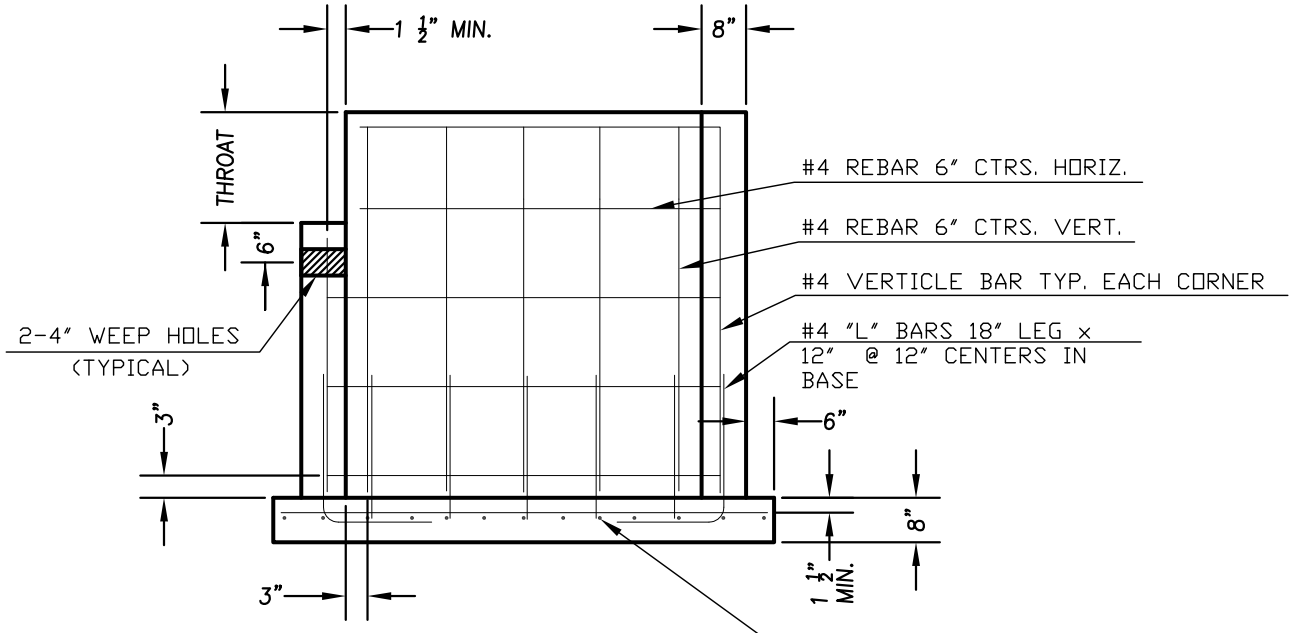


STEP DETAIL



SECTION VIEW

THIS DETAIL FOR STRUCTURES: 1-4 & 1-5

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SCALE: NONE	LOCATION: LEE'S SUMMIT, MO
DATE: 02/08/18	PROJECT: PARK RIDGE 6TH PLAT
DR'N BY: CRG	CONTRACTOR: WALTERS EXCAVATING
REV: -	DWG NAME: 005 - CURB INLET - BASE & WALLS

NOTES:

1. REINFORCING RODS SHALL CONFORM TO ASTM A-615, GRADE 60, AS FURNISHED WITH CERTIFICATIONS FROM PREQUALIFIED MILLS.

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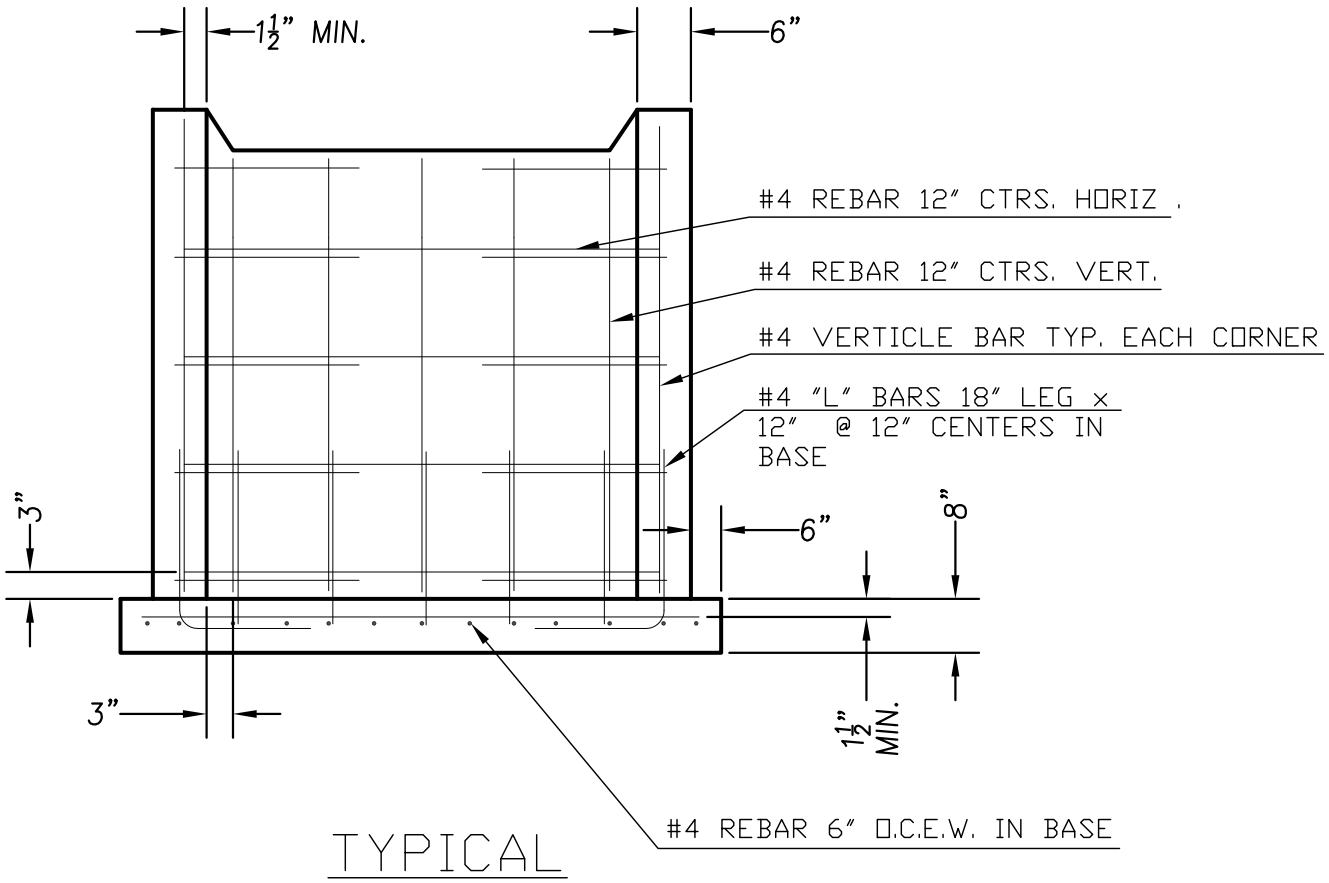
6. CUT MAT OF REINFORCING STEEL AS REQUIRED TO ACCEPT DOGHOUSE OR PIPE PENETRATION HOLES. #4 BAR DIAGONALS AROUND OPENINGS.



TYPICAL

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SCALE: NONE	LOCATION: LEE'S SUMMIT, MO
DATE: 02/08/18	PROJECT: PARK RIDGE 6TH PLAT
DR'N BY: CRG	CONTRACTOR: WALTERS EXCAVATING
REV: -	DWG NAME: 006 - AREA INLET - BASE & WALLS

NOTES:

1. REINFORCING RODS SHALL CONFORM TO ASTM A-615, GRADE 60, AS FURNISHED WITH CERTIFICATIONS FROM PREQUALIFIED MILLS.

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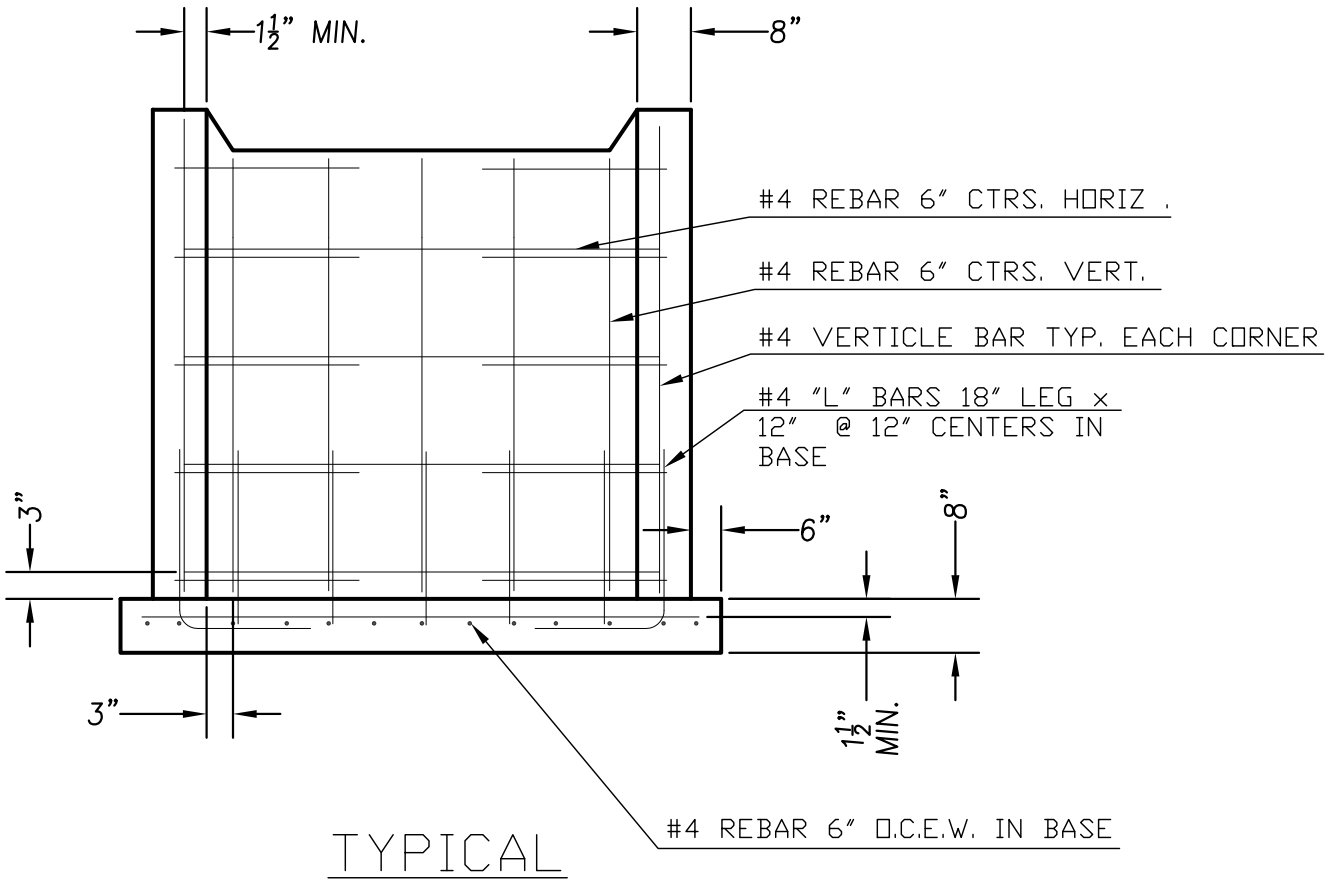

TYPICAL

THIS DETAIL FOR STRUCTURES: 1-3 & 1-6

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SCALE: NONE	LOCATION: LEE'S SUMMIT, MO
DATE: 02/08/18	PROJECT: PARK RIDGE 6TH PLAT
DR'N BY: CRG	CONTRACTOR: WALTERS EXCAVATING
REV: -	DWG NAME: 007 - AREA INLET - BASE & WALLS

NOTES:

1. REINFORCING RODS SHALL BE FURNISHED WITH CERTIFICATIONS FROM PREQUALIFIED MILLS.

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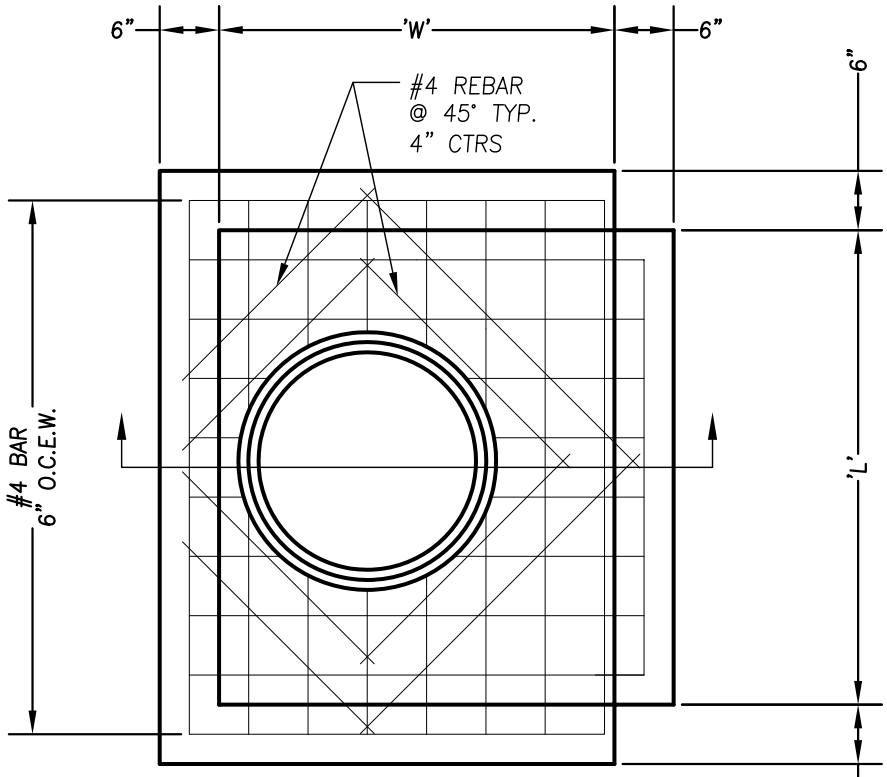
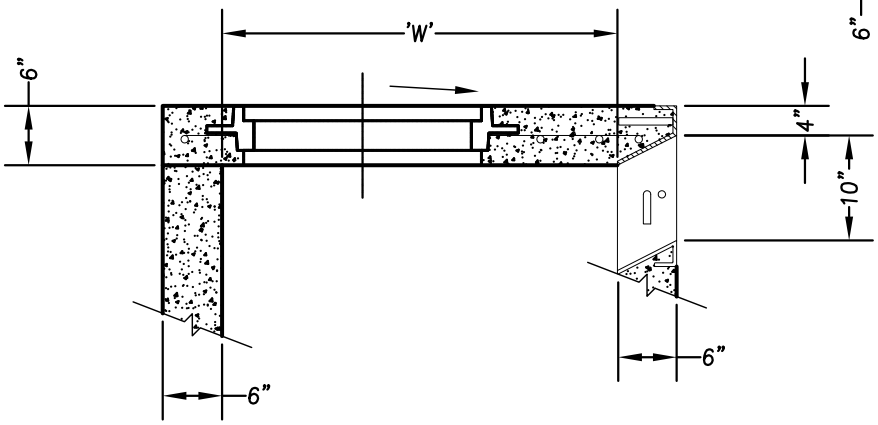
5 EAST JORDAN 1500Z FRAME AND 1502A "STORM" COVER WITH TO BE CAST IN TOP.



TYPICAL PLAN



TYP. ELEVATION SECTION

[ACCESS HOLE TO BE LOCATED ABOVE STEPS IN EACH UNIQUE STRUCTURE]

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SCALE: NONE	LOCATION: LEE'S SUMMIT, MO
DATE: 02/08/18	PROJECT: PARK RIDGE 6TH PLAT
DR'N BY: CRG	CONTRACTOR: WALTERS EXCAVATING
REV: –	DWG NAME: 008 – CURB INLET – COVER

NOTES:

1. REINFORCING RODS SHALL BE FURNISHED WITH CERTIFICATIONS FROM PREQUALIFIED MILLS.

2. ALL REINFORCING STEEL SHALL BE CUT AND FORMED TO THE DIMENSIONAL TOLERANCES SPECIFIED EXCEPT WHERE NOTED ON SHOP DRAWINGS.

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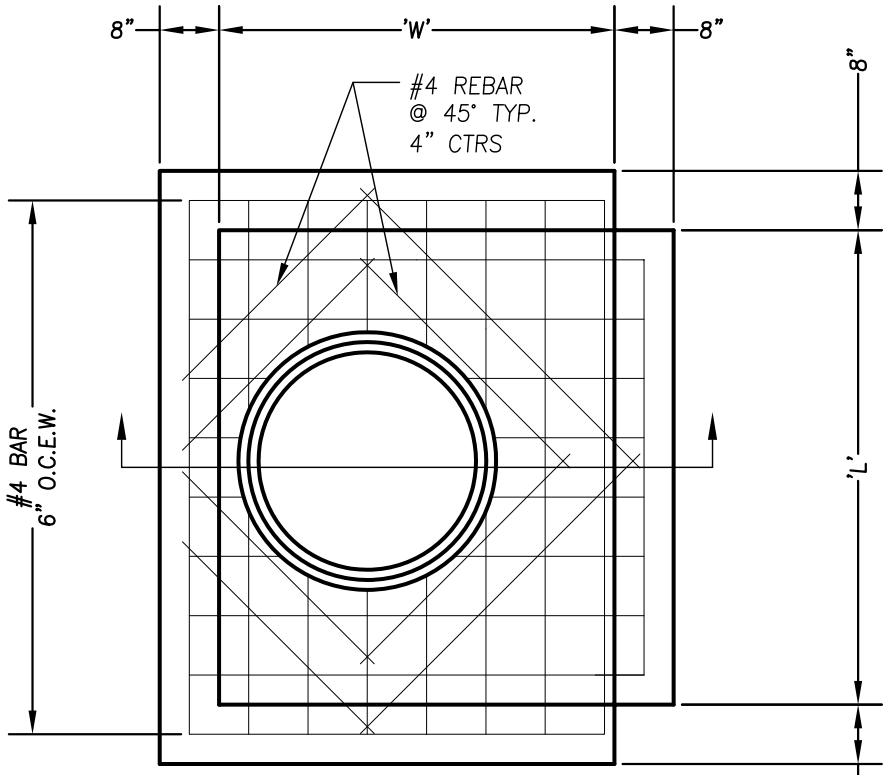
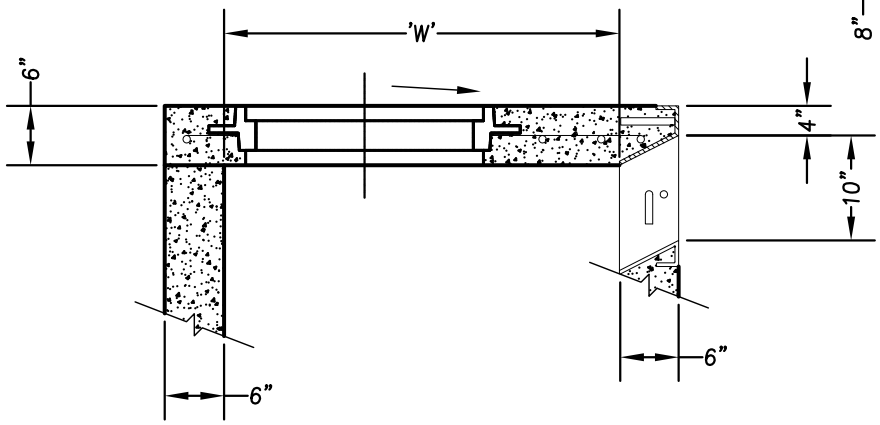


TYPICAL PLAN



TYP. ELEVATION SECTION

[ACCESS HOLE TO BE LOCATED ABOVE STEPS IN EACH UNIQUE STRUCTURE]

THIS DETAIL FOR STRUCTURES: 1-4 & 1-5

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SCALE: NONE	LOCATION: LEE'S SUMMIT, MO
DATE: 02/08/18	PROJECT: PARK RIDGE 6TH PLAT
DR'N BY: CRG	CONTRACTOR: WALTERS EXCAVATING
REV: –	DWG NAME: 009 – CURB INLET – COVER

NOTES:

1. REINFORCING RODS SHALL CONFORM TO ASTM A-615, GRADE 60, AS FURNISHED WITH CERTIIFICATIONS 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.

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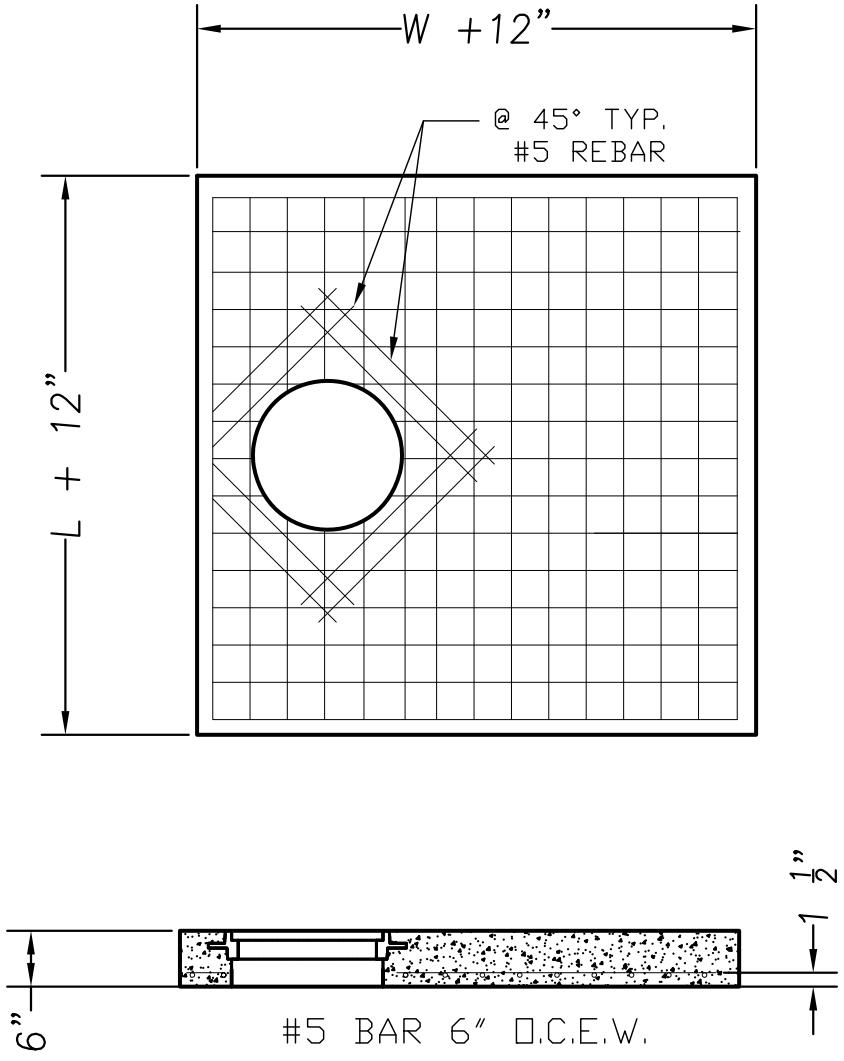
4. REINFORCING STEEL SHALL BE SECURED IN SUCH A MANNER THAT SHIFTING WILL NOT OCCUR DURING THE PLACEMENT OF THE CONCRETE. STEEL OR PLASTIC BAR SUPPORTS AND WIRE TIES WILL BE USED TO ASSURE MINUMUM CONCRETE COVER, TO AVOID EMBRITTLEMENT OF THE REINFORCING STEEL, NO. BAR SHALL BE WELDED.

5. EJIW 1500Z FRAME AND 1502A "STORM" COVER TO BE CAST IN TOP.



TYPICAL

[ACCESS HOLE TO BE LOCATED ABOVE STEPS IN EACH UNIQUE STRUCTURE]

FORTERRA™
Kansas / Missouri
23600 West 40th Street
Bonner Springs, KS 66226
(913) 422-3634

SCALE: NONE	LOCATION: LEE'S SUMMIT, MO
DATE: 02/08/18	PROJECT: PARK RIDGE 6TH PLAT
DR'N BY: CRG	CONTRACTOR: WALTERS EXCAVATING
REV: -	DWG NAME: 010 - AREA INLET - COVER

NOTES:

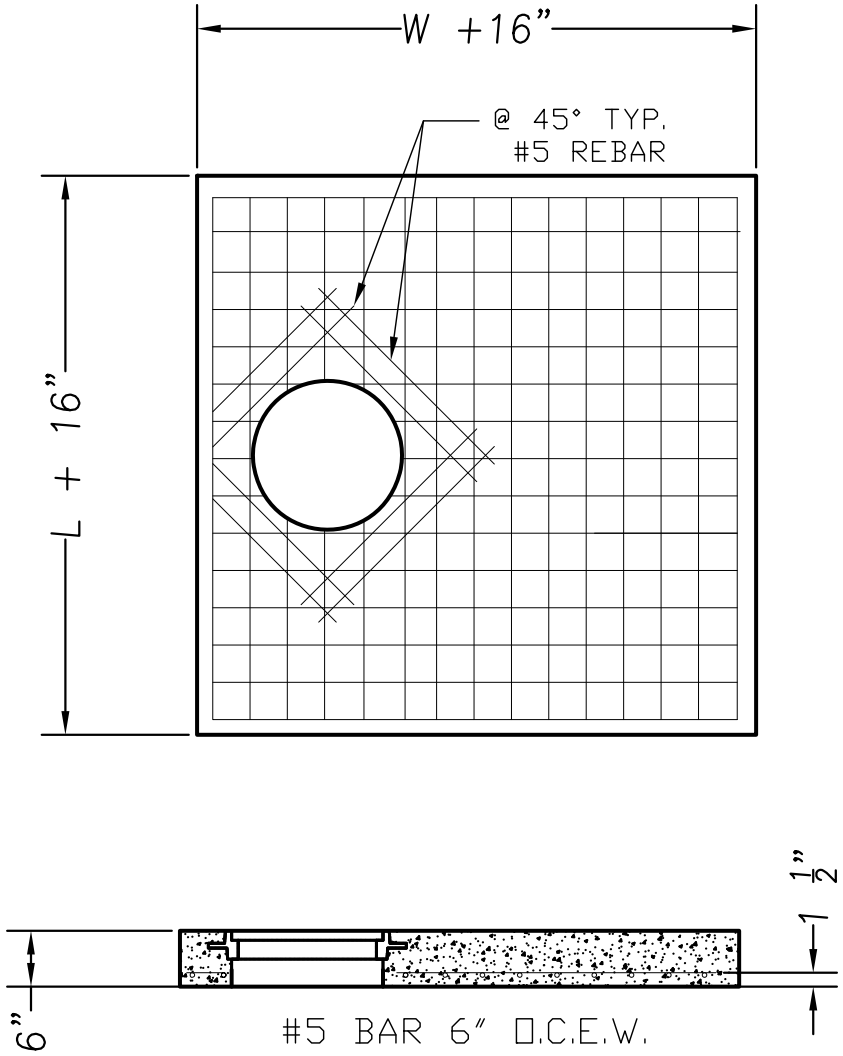
1. REINFORCING RODS SHALL CONFORM TO ASTM A-615, GRADE 60, AS FURNISHED WITH CERTIIFICATIONS FROM PREQUALIFIED MILLS.

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 REINFORCMENT 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 MINUMUM CONCRETE COVER, TO AVOID EMBRITTLEMENT OF THE REINFORCING STEEL, NO. BAR SHALL BE WELDED.

5. EJIW 1500Z FRAME AND 1502A "STORM" COVER TO BE CAST IN TOP.



TYPICAL

[ACCESS HOLE TO BE LOCATED ABOVE STEPS IN EACH UNIQUE STRUCTURE]

THIS DETAIL FOR STRUCTURES: 1-3 & 1-6

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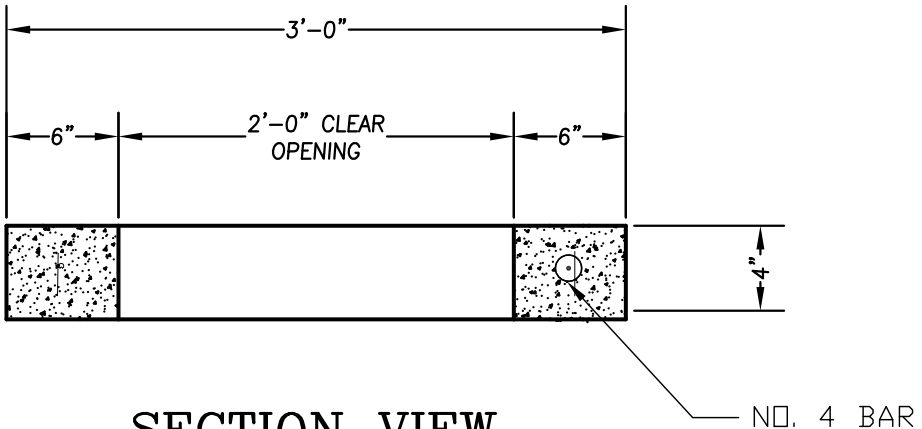
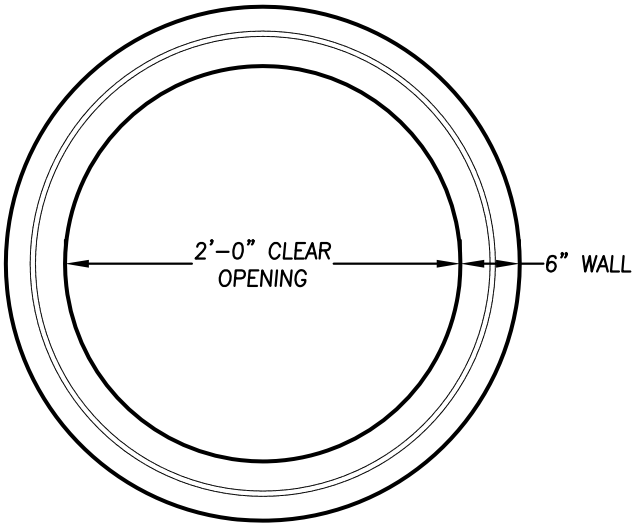
Bonner Springs, KS 66226
(913) 422-3634

SCALE: NONE	LOCATION: LEE'S SUMMIT, MO
DATE: 02/08/18	PROJECT: PARK RIDGE 6TH PLAT
DR'N BY: CRG	CONTRACTOR: WALTERS EXCAVATING
REV: -	DWG NAME: 011 - AREA INLET - COVER



SECTION VIEW



TOP VIEW

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Bonner Springs, KS 66226
(913) 422-3634

SCALE: NONE	LOCATION: LEE'S SUMMIT, MO
DATE: 02/08/18	PROJECT: PARK RIDGE 6TH PLAT
DR'N BY: CRG	CONTRACTOR: WALTERS EXCAVATING
REV: –	DWG NAME: 012 – ADJUSTMENT RING DETAIL

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Phone: (763) 545-7473
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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Storm Sewer
5'x5' (I.D.) Field Inlet
FI-1-2 - Field Inl
Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	931.50
Outlet Invert	–	923.60
Wall Thk/Inv Adj	+	.38
Design Height	=	8.28
Casting/Adj Ring	–	.00
Manhole Hgt	=	8.28

Stack Build Height

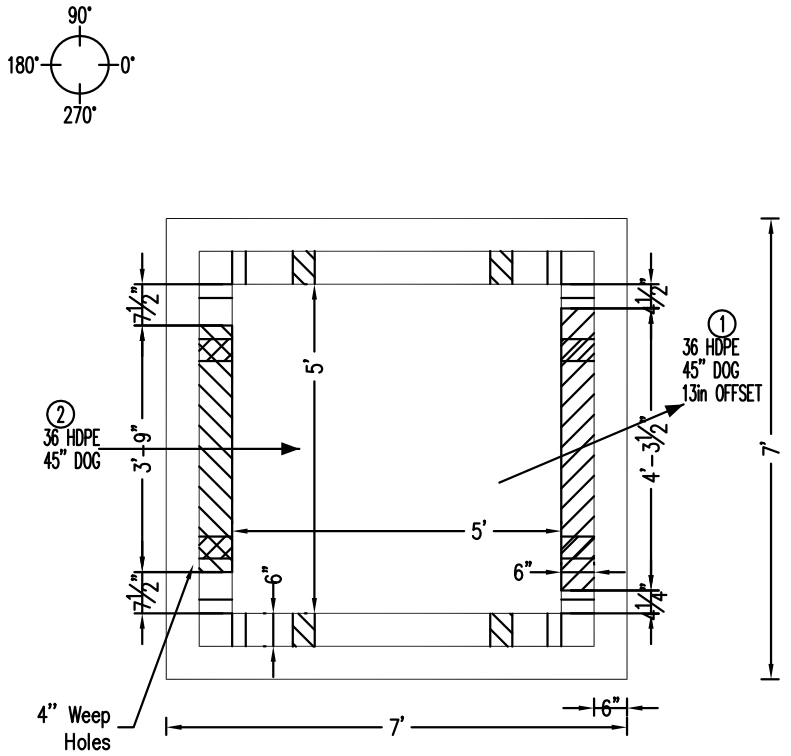
Cover Slab	+	.50
Mono Base	+	7.75
Base Thickness	+	.67
Outside Height	=	8.92

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	36 HDPE	923.60	.00	41in	45" DOG	45in	22.5in	0in
#2	36 HDPE	923.85	.25	41in	45" DOG	48in	25.5in	3in

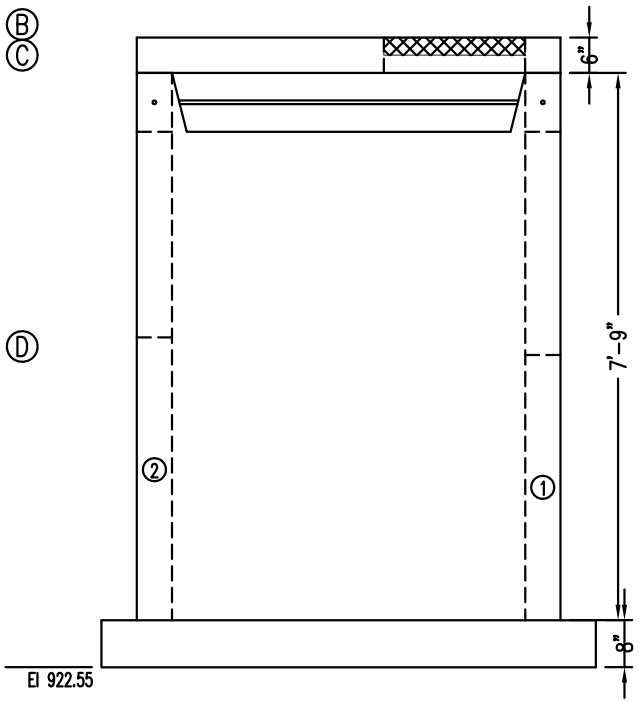
Plan View



Lifting Device: Swift Lift
Steps: None

Elevation

Location: Sta. 0+61.61



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "STORM" Cover	9000100000176	.00	1	0
B	EJIW 1500Z Frame	9000100000225	.33	1	0
C	6.0x6.0x6 Cvr Cast (5x5)	C060060060C0000	.50	1	2,464
D	5.0x5.0x7.8 Mono 6Ext 8B 6W	3050050206080600000078	7.75	1	16,490
		Total Weight (lbs)			18,954

Misc. Items

Description	Qty

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Storm Sewer
5'x5' (I.D.) Field Inlet
FI-1-3 - Field Inl
Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	937.50
Outlet Invert	–	925.82
Wall Thk/Inv Adj	+	.38
Design Height	=	12.06
Casting/Adj Ring	–	.00
Manhole Hgt	=	12.06

Stack Build Height

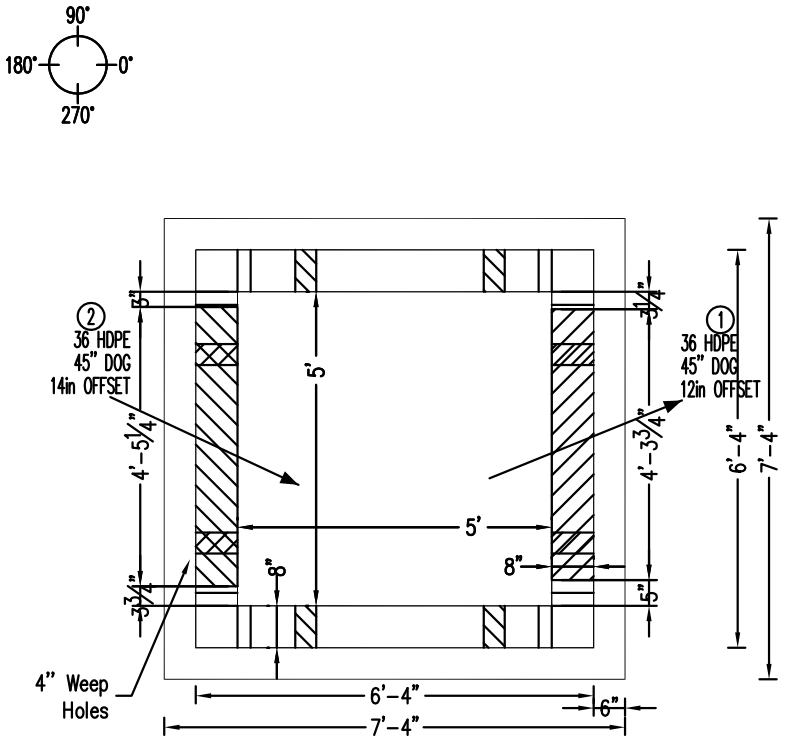
Cover Slab	+	.50
Riser	+	6.00
Mono Base	+	5.58
Base Thickness	+	.67
Outside Height	=	12.75

Opening Schedule

(HF=Hole Former, DO=Dig Out)

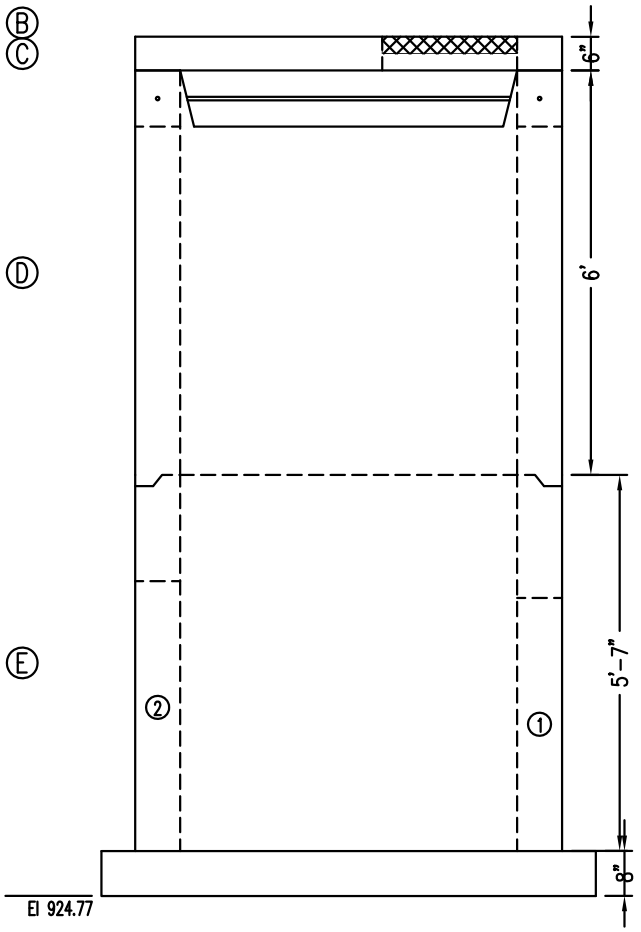
ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	36 HDPE	925.82	.00	41in	45" DOG	45in	22.5in	0in
#2	36 HDPE	926.07	.25	41in	45" DOG	48in	25.5in	3in

Plan View



Elevation

Location: Sta. 1+33.83



Notes

MCIB MIX DESIGN

Lifting Device: Swift Lift
Steps: None

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "STORM" Cover	9000100000176	.00	1	0
B	EJIW 1500Z Frame	9000100000225	.33	1	0
C	6.3x6.3x6 Cvr Cast (5x5)	C06306306080C0000	.50	1	2,773
D	5.0x5.0x6.0 Ris GxB 8W	3050050008000000GB00060	6.00	1	12,003
E	5.0x5.0x5.6 Mono T 6Ext 8B 8W	3050050208080600OT00056	5.58	1	18,026
		Total Weight (lbs)			32,802

Misc. Items

Description	Qty
1.2in x14.5ft JOINT SEAL	3.49

Production Use

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

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www.ForterraBP.com

Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Storm Sewer
5'x4' (I.D.) Curb Inlet
CI-1-4 - Curb Inl
Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	941.63
Outlet Invert	–	926.78
Wall Thk/Inv Adj	+	.38
Design Height	=	15.23
Casting/Adj Ring	–	.00
Manhole Hgt	=	15.23

Stack Build Height

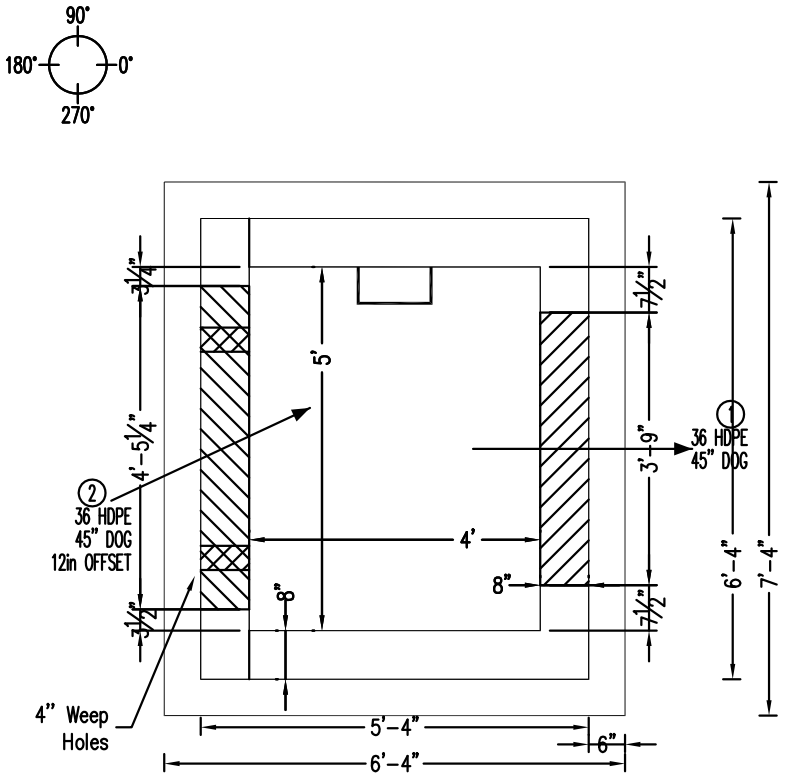
Cover Slab	+	.50
Riser	+	8.00
Mono Base	+	6.75
Base Thickness	+	.67
Outside Height	=	15.92

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	36 HDPE	926.78	.00	41in	45" DOG	45in	22.5in	0in
#2	36 HDPE	927.03	.25	41in	45" DOG	48in	25.5in	3in

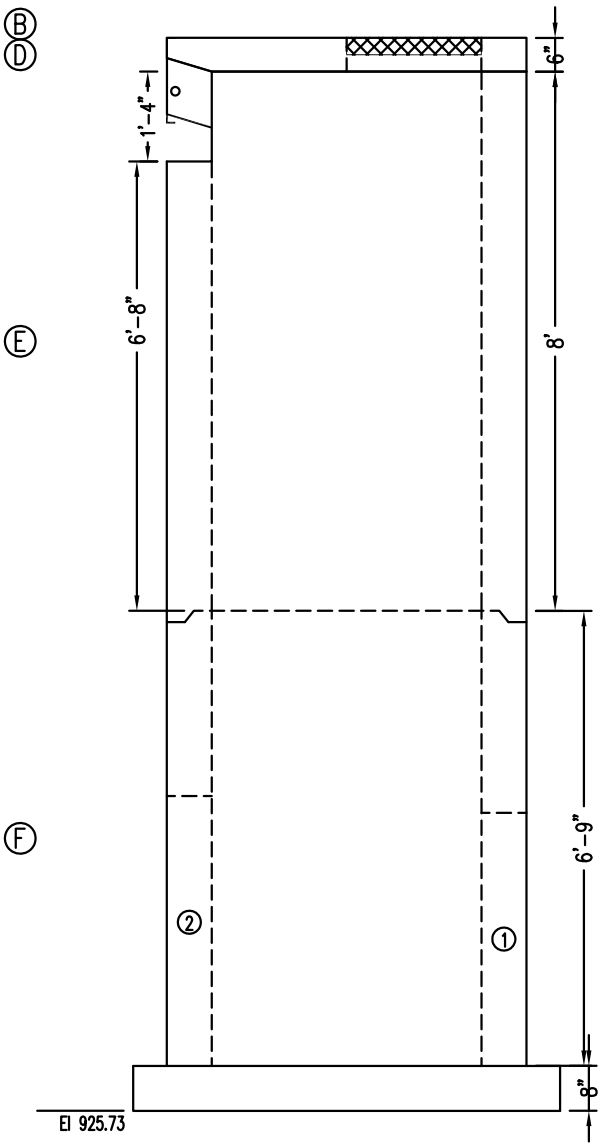
Plan View



Lifting Device: Swift Lift
Steps: YES 90°

Elevation

Location: Sta. 2+56.44



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "STORM" Cover	9000100000176	.00	1	0
B	EJIW 1500Z Frame	9000100000225	.33	1	0
C	5' x 10" Steel Throat	9000700000048	.00	1	0
D	6.3x5.3x6 Cvr Cast (5x4)	C06305306080C0000	.50	1	2,298
E	5.0x4.0x8.0 Ris GxB S 8W	3050040008000010GB00080	8.00	1	15,689
F	5.0x4.0x6.8 Mono T S 6Ext 8B 8W	3050040208080610OT00068	6.75	1	18,594
		Total Weight (lbs)			36,581

Misc. Items

Description	Qty
5' x 10" Steel Throat	1
1.2in x14.5ft JOINT SEAL	3.22

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Storm Sewer
5'x4' (I.D.) Curb Inlet
CI-1-5 - Curb Inl
Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	941.61
Outlet Invert	–	927.23
Wall Thk/Inv Adj	+	.38
Design Height	=	14.76
Casting/Adj Ring	–	.00
Manhole Hgt	=	14.76

Stack Build Height

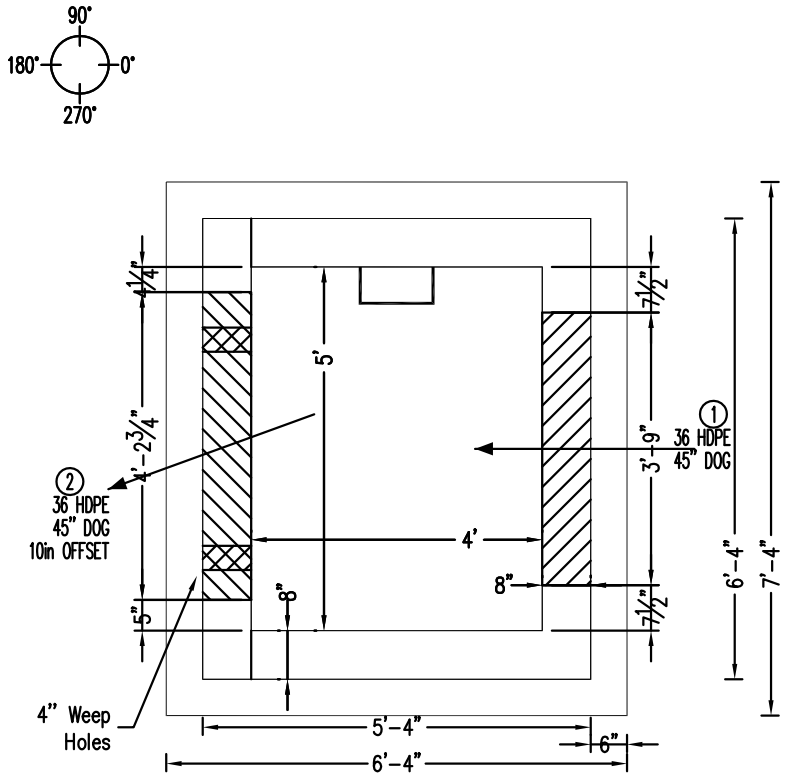
Cover Slab	+	.50
Riser	+	7.75
Mono Base	+	6.50
Base Thickness	+	.67
Outside Height	=	15.42

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	36 HDPE	927.48	.25	41in	45" DOG	48in	25.5in	3in
#2	36 HDPE	927.23	.00	41in	45" DOG	45in	22.5in	0in

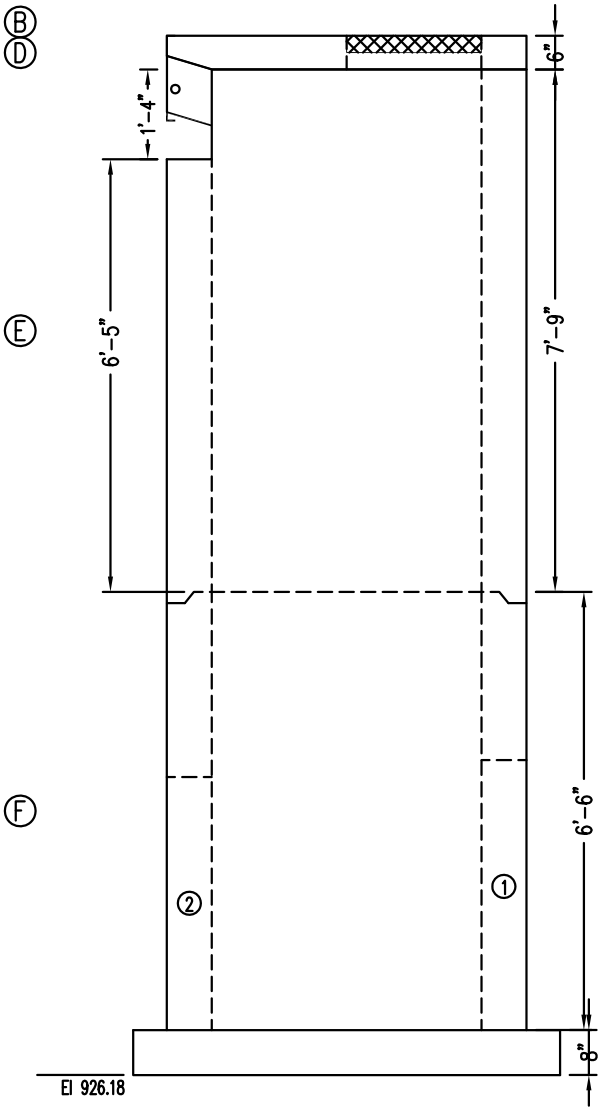
Plan View



Lifting Device: Swift Lift
Steps: YES 90°

Elevation

Location: Sta. 2+93.16



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "STORM" Cover	9000100000176	.00	1	0
B	EJIW 1500Z Frame	9000100000225	.33	1	0
C	5' x 10" Steel Throat	9000700000048	.00	1	0
D	6.3x5.3x6 Cvr Cast (5x4)	C06305306080C0000	.50	1	2,298
E	5.0x4.0x7.8 Ris GxB S 8W	3050040008000010GB00078	7.75	1	15,172
F	5.0x4.0x6.5 Mono T S 6Ext 8B 8W	3050040208080610OT00065	6.50	1	18,063
		Total Weight (lbs)			35,533

Misc. Items

Description	Qty
1.2in x14.5ft JOINT SEAL	3.22

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Storm Sewer
5'x5' (I.D.) Field Inlet
FI-1-6 - Field Inl
Date: 02/08/2018 Revised: 02/12/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	941.00
Outlet Invert	–	928.33
Wall Thk/Inv Adj	+	.38
Design Height	=	13.05
Casting/Adj Ring	–	.00
Manhole Hgt	=	13.05

Stack Build Height

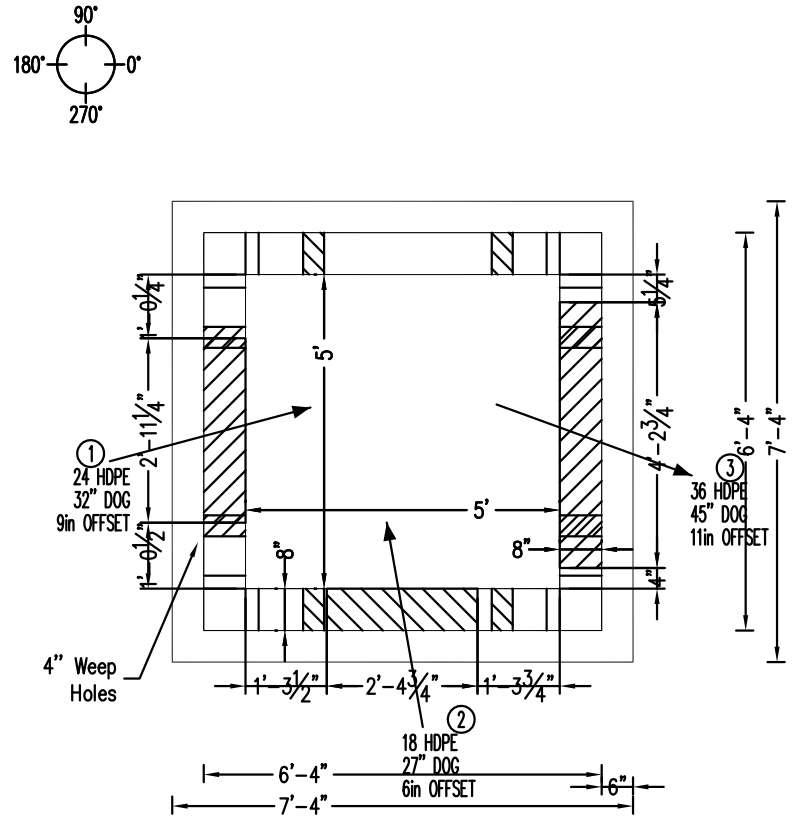
Cover Slab	+	.50
Riser	+	7.17
Mono Base	+	5.42
Base Thickness	+	.67
Outside Height	=	13.76

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	24 HDPE	928.58	.25	27.76in	32" DOG	35.5in	19.5in	3.5in
#2	18 HDPE	928.75	.42	21.16in	27" DOG	32in	18.5in	5in
#3	36 HDPE	928.33	.00	41in	45" DOG	45in	22.5in	0in

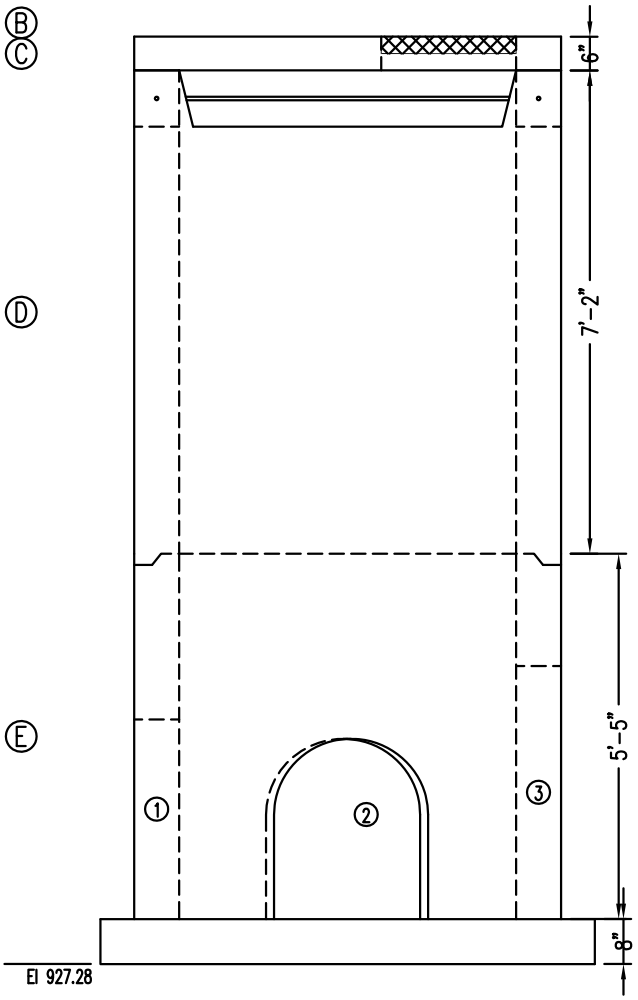
Plan View



Lifting Device: Swift Lift
Steps: None

Elevation

Location: Sta. 4+66.48



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "STORM" Cover	9000100000176	.00	1	0
B	EJIW 1500Z Frame	9000100000225	.33	1	0
C	6.3x6.3x6 Cvr Cast (5x5)	C06306306080C0000	.50	1	2,773
D	5.0x5.0x7.2 Ris GxB 8W	3050050008000000GB00072	7.17	1	16,465
E	5.0x5.0x5.4 Mono T 6Ext 8B 8W	3050050208080600OT00054	5.42	1	17,663
		Total Weight (lbs)			36,901

Misc. Items

Description	Qty
1.2in x14.5ft JOINT SEAL	3.49

Production Use

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

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www.ForterraBP.com

Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Storm Sewer
5'x4' (I.D.) Curb Inlet
CI-1-7 - Curb Inl
Date: 02/08/2018 Revised: 02/12/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	938.98
Outlet Invert	–	929.22
Wall Thk/Inv Adj	+	.33
Design Height	=	10.09
Casting/Adj Ring	–	.00
Manhole Hgt	=	10.09

Stack Build Height

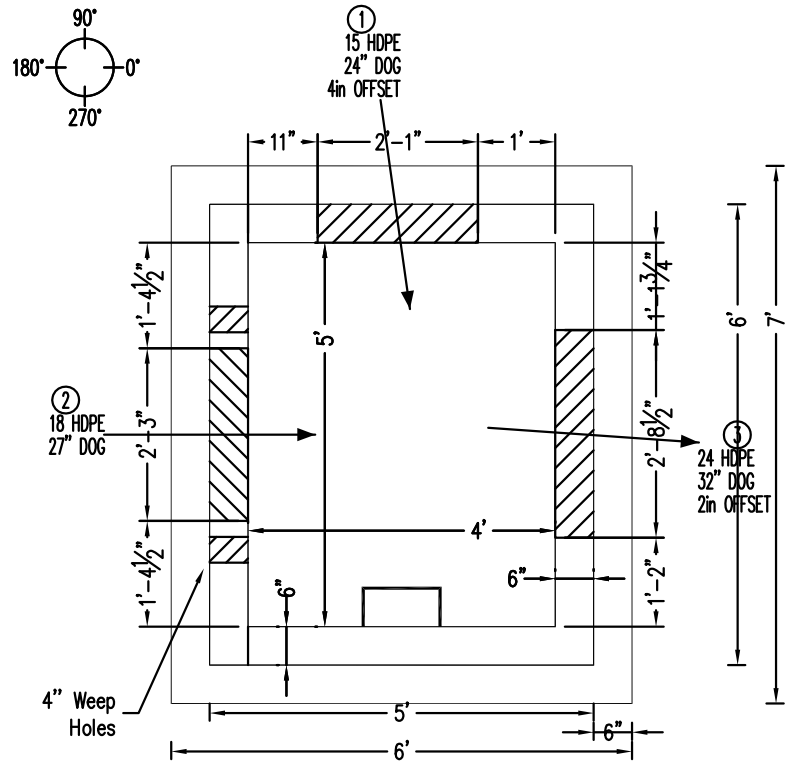
Cover Slab	+	.50
Riser	+	4.33
Mono Base	+	5.25
Base Thickness	+	.67
Outside Height	=	10.75

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	15 HDPE	929.47	.25	17.7in	24" DOG	26.5in	14.5in	2.5in
#2	18 HDPE	929.47	.25	21.16in	27" DOG	29.5in	16in	2.5in
#3	24 HDPE	929.22	.00	27.76in	32" DOG	32in	16in	0in

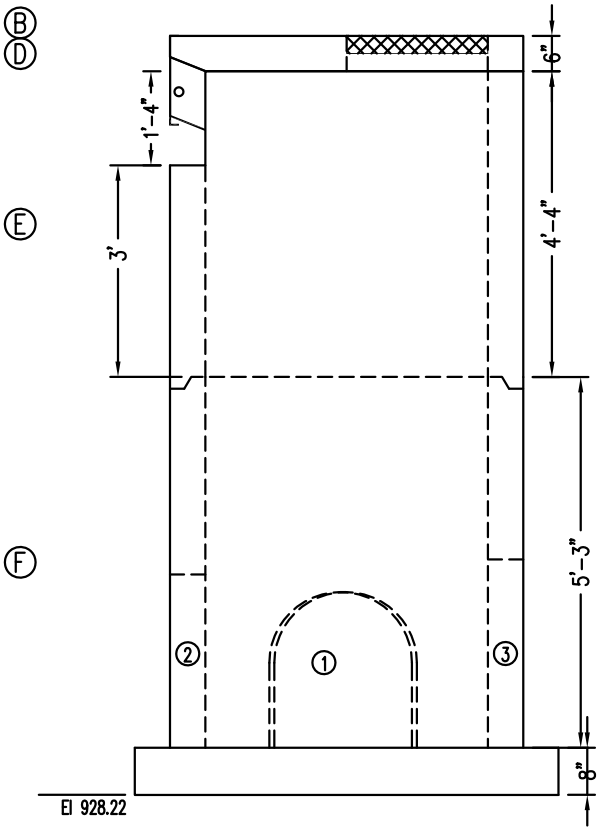
Plan View



Lifting Device: Swift Lift
Steps: YES 270°

Elevation

Location: Sta. 5+97.71



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "STORM" Cover	9000100000176	.00	1	0
B	EJIW 1500Z Frame	9000100000225	.33	1	0
C	5' x 10" Steel Throat	9000700000048	.00	1	0
D	6.0x5.0x6 Cvr Cast (5x4)	C060050060600000	.50	1	2,014
E	5.0x4.0x4.3 Ris GxB S 6W	3050040006000010GB00043	4.33	1	5,994
F	5.0x4.0x5.3 Mono T S 6Ext 8B 6W	3050040206080610OT00052	5.25	1	12,069
		Total Weight (lbs)			20,077

Misc. Items

Description	Qty
1.2in x14.5ft JOINT SEAL	3.03

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Storm Sewer
5'x4' (I.D.) Curb Inlet
CI-1-8 - Curb Inl
Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	938.98
Outlet Invert	–	930.00
Wall Thk/Inv Adj	+	.30
Design Height	=	9.28
Casting/Adj Ring	–	.00
Manhole Hgt	=	9.28

Stack Build Height

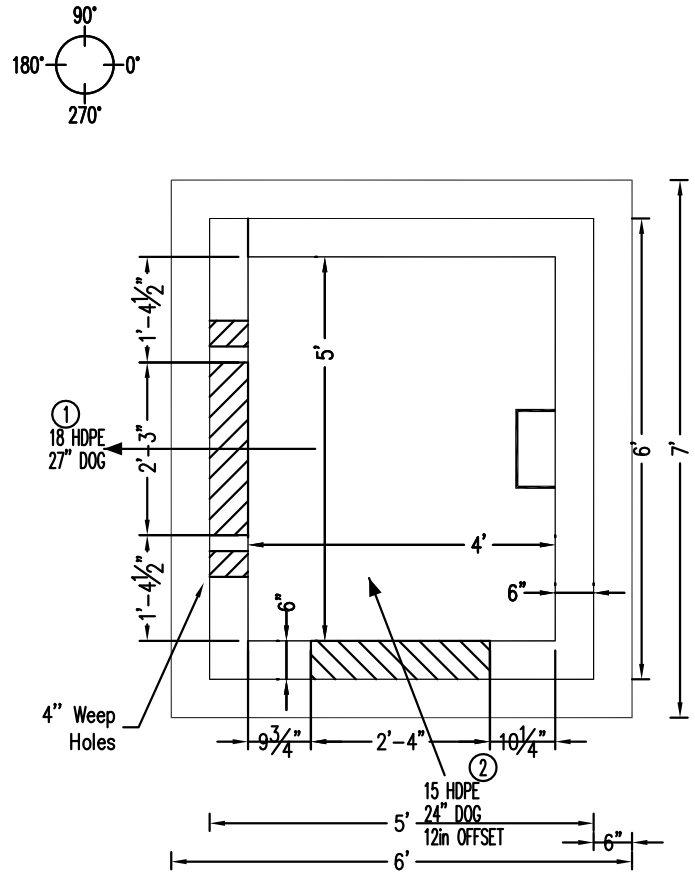
Cover Slab	+	.50
Riser	+	3.00
Mono Base	+	5.75
Base Thickness	+	.67
Outside Height	=	9.92

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	18 HDPE	930.00	.00	21.16in	27" DOG	27in	13.5in	0in
#2	15 HDPE	930.50	.50	17.7in	24" DOG	29in	17in	5in

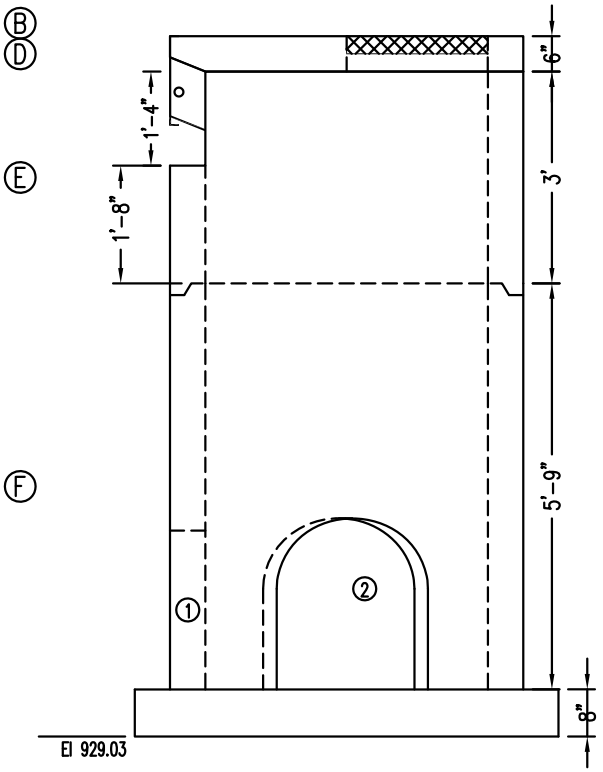
Plan View



Lifting Device: Swift Lift
Steps: YES 0°

Elevation

Location: Sta. 6+38.71



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "STORM" Cover	9000100000176	.00	1	0
B	EJIW 1500Z Frame	9000100000225	.33	1	0
C	5' x 10" Steel Throat	9000700000048	.00	1	0
D	6.0x5.0x6 Cvr Cast (5x4)	C060050060600000	.50	1	2,014
E	5.0x4.0x3.0 Ris GxB S 6W	3050040006000010GB00030	3.00	1	4,555
F	5.0x4.0x5.8 Mono T S 6Ext 8B 6W	3050040206080610OT00058	5.75	1	12,839
		Total Weight (lbs)			19,408

Misc. Items

Description	Qty
1.2in x14.5ft JOINT SEAL	3.03

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Storm Sewer
5'x4' (I.D.) Curb Inlet
CI-1-9 - Curb Inl

Date: 02/08/2018 Revised: 02/12/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	936.41
Outlet Invert	–	931.15
Wall Thk/Inv Adj	+	.28
Design Height	=	5.54
Casting/Adj Ring	–	.00
Manhole Hgt	=	5.54

Stack Build Height

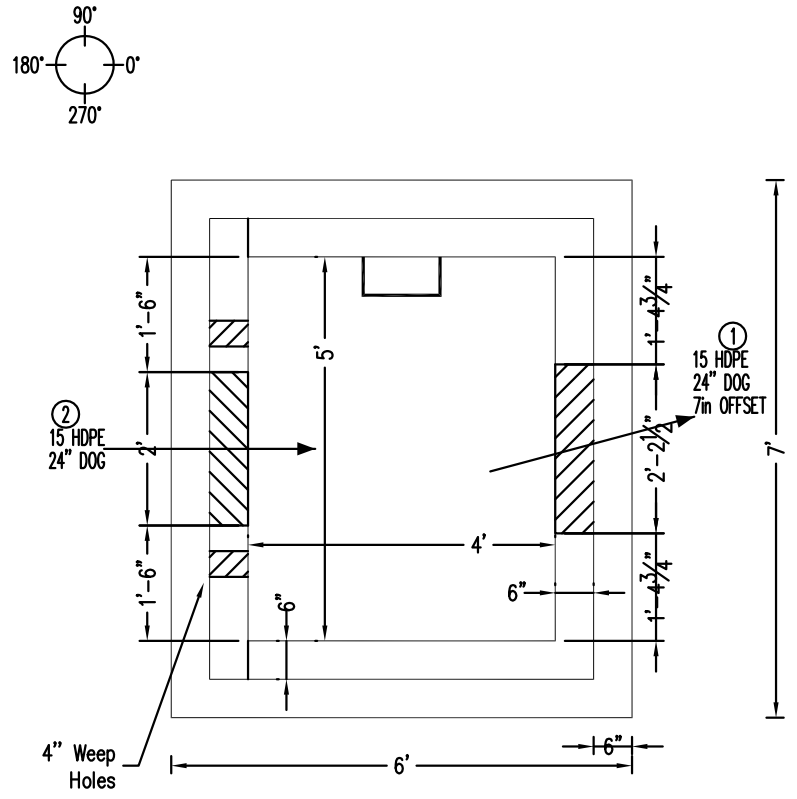
Cover Slab	+	.50
Mono Base	+	5.00
Base Thickness	+	.67
Outside Height	=	6.17

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	15 HDPE	931.15	.00	17.7in	24" DOG	24in	12in	0in
#2	15 HDPE	931.40	.25	17.7in	24" DOG	25.75in	13.75in	1.75in

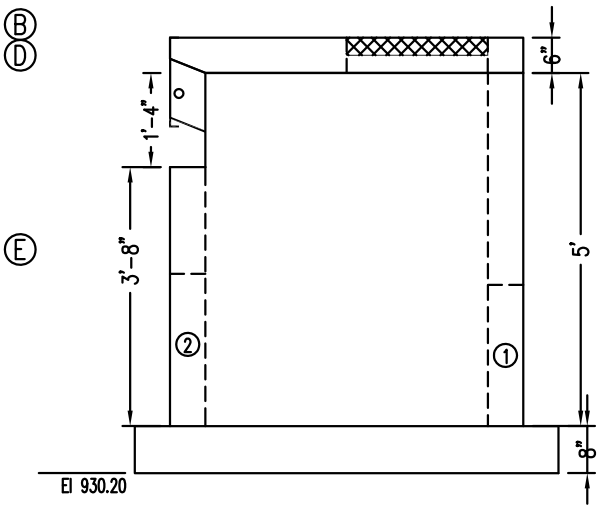
Plan View



Lifting Device: Swift Lift
Steps: YES 90°

Elevation

Location: Sta. 7+50.50



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "STORM" Cover	9000100000176	.00	1	0
B	EJIW 1500Z Frame	9000100000225	.33	1	0
C	5' x 10" Steel Throat	9000700000048	.00	1	0
D	6.0x5.0x6 Cvr Cast (5x4)	C060050060600000	.50	1	2,014
E	5.0x4.0x5.0 Mono S 6Ext 8B 6W	30500402060806100000050	5.00	1	11,097
		Total Weight (lbs)			13,111

Misc. Items

Description	Qty

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Storm Sewer
5'x4' (I.D.) Curb Inlet
CI-1-10 - Curb Inl
Date: 02/08/2018 Revised: 02/12/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

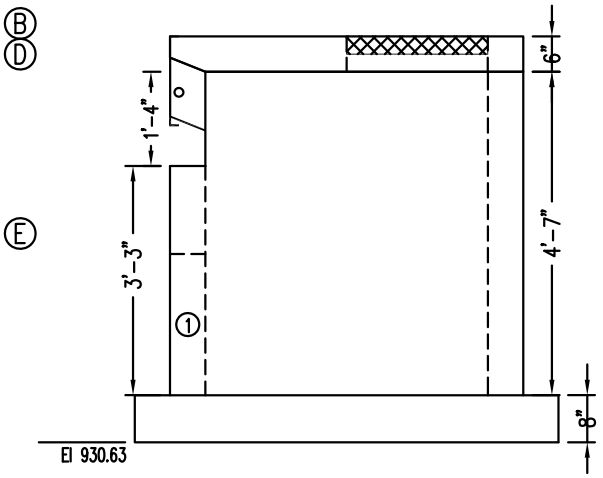
Top of Casting	+	936.41
Outlet Invert	–	931.58
Wall Thk/Inv Adj	+	.28
Design Height	=	5.11
Casting/Adj Ring	–	.00
Manhole Hgt	=	5.11

Stack Build Height

Cover Slab	+	.50
Mono Base	+	4.58
Base Thickness	+	.67
Outside Height	=	5.75

Elevation

Location: Sta. 7+83.50

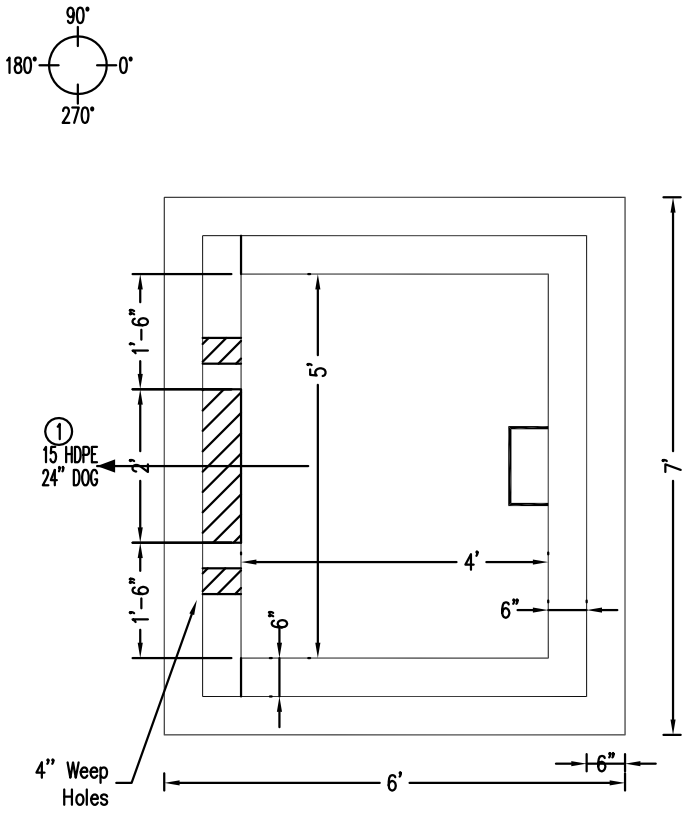


Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	15 HDPE	931.58	.00	17.7in	24" DOG	24in	12in	0in

Plan View



Lifting Device: Swift Lift
Steps: YES 0°

Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "STORM" Cover	9000100000176	.00	1	0
B	EJIW 1500Z Frame	9000100000225	.33	1	0
C	5' x 10" Steel Throat	9000700000048	.00	1	0
D	6.0x5.0x6 Cvr Cast (5x4)	C060050060600000	.50	1	2,014
E	5.0x4.0x4.6 Mono S 6Ext 8B 6W	3050040206080610000046	4.58	1	10,490
		Total Weight (lbs)			12,504

Misc. Items

Description	Qty

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Storm Sewer
5'x5' (I.D.) Field Inlet
FI-2-1 - Field Inl

Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	941.00
Outlet Invert	–	931.85
Wall Thk/Inv Adj	+	.30
Design Height	=	9.45
Casting/Adj Ring	–	.00
Manhole Hgt	=	9.45

Stack Build Height

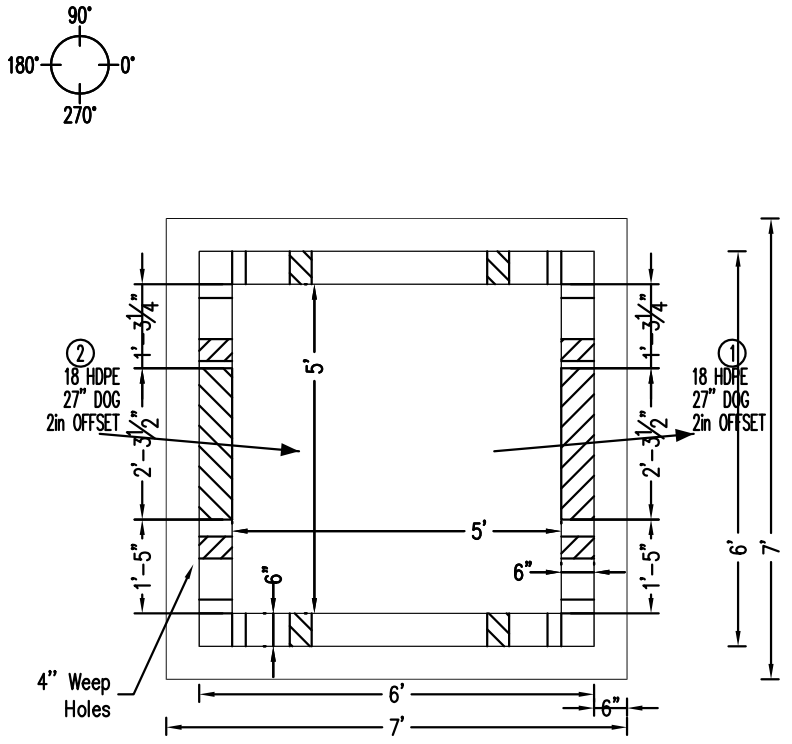
Cover Slab	+	.50
Riser	+	3.00
Mono Base	+	5.92
Base Thickness	+	.67
Outside Height	=	10.09

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	18 HDPE	931.85	.00	21.16in	27" DOG	27in	13.5in	0in
#2	18 HDPE	932.10	.25	21.16in	27" DOG	29in	15.5in	2in

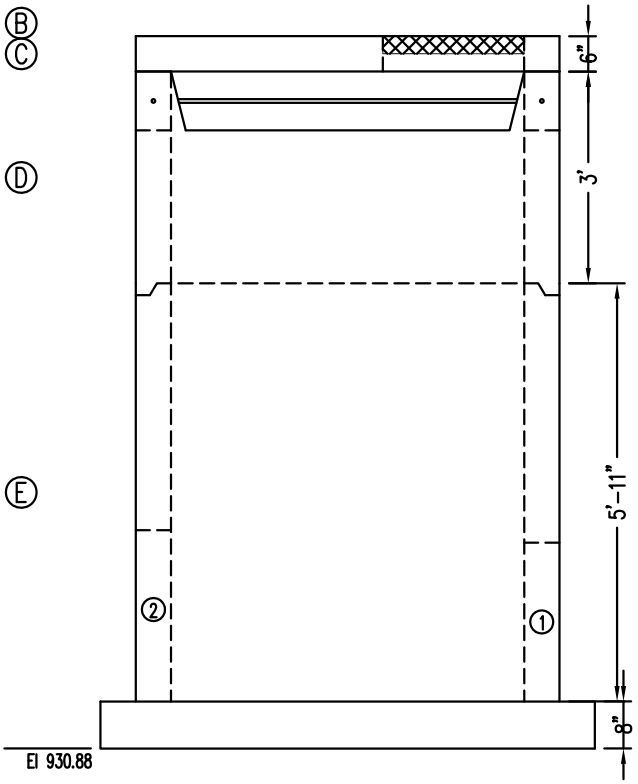
Plan View



Lifting Device: Swift Lift
Steps: None

Elevation

Location: Sta. 1+21.73



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "STORM" Cover	9000100000176	.00	1	0
B	EJIW 1500Z Frame	9000100000225	.33	1	0
C	6.0x6.0x6 Cvr Cast (5x5)	C06006006060C0000	.50	1	2,464
D	5.0x5.0x3.0 Ris GxB 6W	3050050006000000GB00030	3.00	1	4,536
E	5.0x5.0x5.9 Mono T 6Ext 8B 6W	3050050206080600OT00059	5.92	1	14,661
		Total Weight (lbs)			21,661

Misc. Items

Description	Qty
1.2in x14.5ft JOINT SEAL	3.31

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Storm Sewer
5'x5' (I.D.) Field Inlet
FI-2-2 - Field Inl
Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	941.00
Outlet Invert	–	933.07
Wall Thk/Inv Adj	+	.30
Design Height	=	8.23
Casting/Adj Ring	–	.00
Manhole Hgt	=	8.23

Stack Build Height

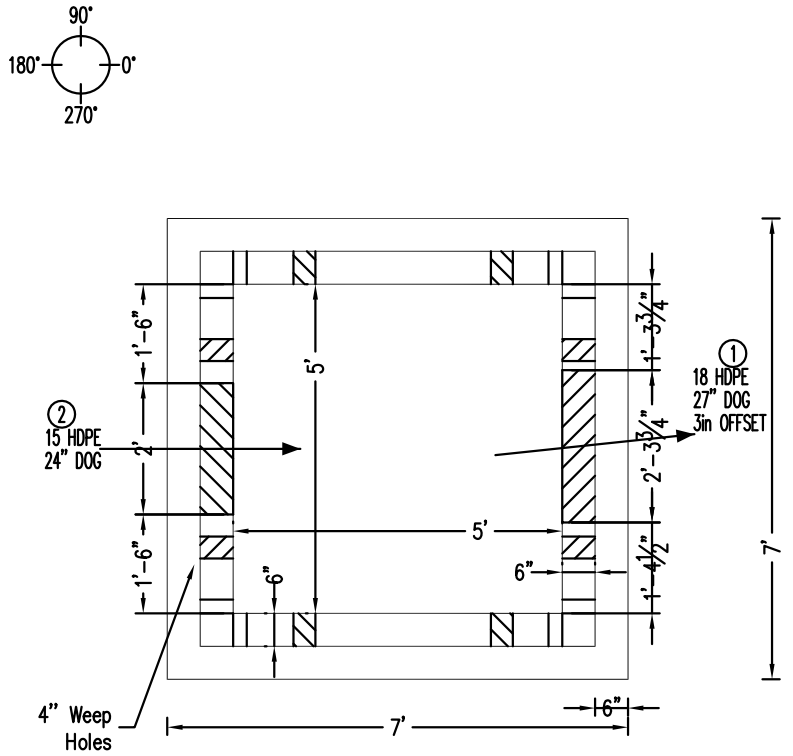
Cover Slab	+	.50
Mono Base	+	7.75
Base Thickness	+	.67
Outside Height	=	8.92

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	18 HDPE	933.07	.00	21.16in	27" DOG	27in	13.5in	0in
#2	15 HDPE	933.32	.25	17.7in	24" DOG	26in	14in	2in

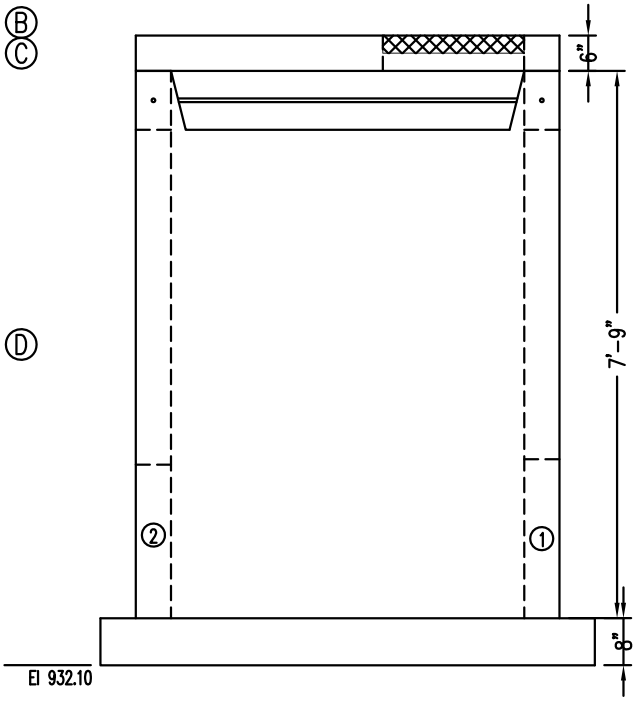
Plan View



Lifting Device: Swift Lift
Steps: None

Elevation

Location: Sta. 2+55.17



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "STORM" Cover	9000100000176	.00	1	0
B	EJIW 1500Z Frame	9000100000225	.33	1	0
C	6.0x6.0x6 Cvr Cast (5x5)	C060060060C0000	.50	1	2,464
D	5.0x5.0x7.8 Mono 6Ext 8B 6W	3050050206080600000078	7.75	1	16,490
		Total Weight (lbs)			18,954

Misc. Items

Description	Qty

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Storm Sewer
5'x4' (I.D.) Curb Inlet
CI-2-3 - Curb Inl
Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

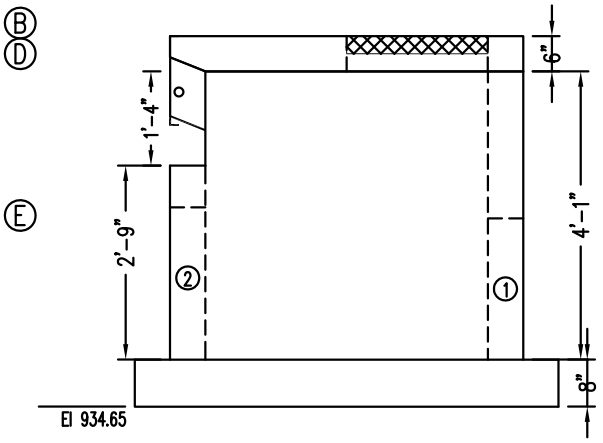
Top of Casting	+	939.93
Outlet Invert	–	935.60
Wall Thk/Inv Adj	+	.28
Design Height	=	4.61
Casting/Adj Ring	–	.00
Manhole Hgt	=	4.61

Stack Build Height

Cover Slab	+	.50
Mono Base	+	4.08
Base Thickness	+	.67
Outside Height	=	5.25

Elevation

Location: Sta. 3+81.93

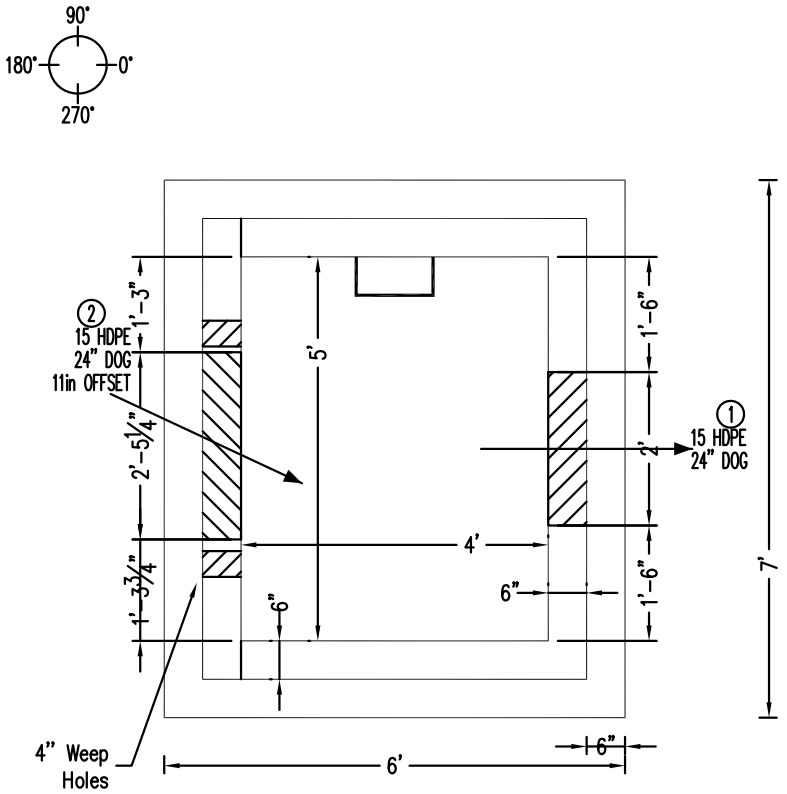


Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	15 HDPE	935.60	.00	17.7in	24" DOG	24in	12in	0in
#2	15 HDPE	935.85	.25	17.7in	24" DOG	25.75in	13.75in	1.75in

Plan View



Lifting Device: Swift Lift
Steps: YES 90°

Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "STORM" Cover	9000100000176	.00	1	0
B	EJIW 1500Z Frame	9000100000225	.33	1	0
C	5' x 10" Steel Throat	9000700000048	.00	1	0
D	6.0x5.0x6 Cvr Cast (5x4)	C060050060600000	.50	1	2,014
E	5.0x4.0x4.1 Mono S 6Ext 8B 6W	30500402060806100000041	4.08	1	9,720
		Total Weight (lbs)			11,734

Misc. Items

Description	Qty

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Storm Sewer
5'x4' (I.D.) Curb Inlet
CI-2-4 - Curb Inl
Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

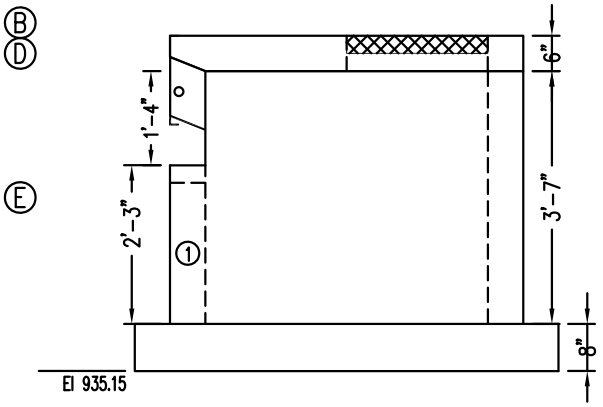
Top of Casting	+	939.93
Outlet Invert	–	936.10
Wall Thk/Inv Adj	+	.28
Design Height	=	4.11
Casting/Adj Ring	–	.00
Manhole Hgt	=	4.11

Stack Build Height

Cover Slab	+	.50
Mono Base	+	3.58
Base Thickness	+	.67
Outside Height	=	4.75

Elevation

Location: Sta. 4+18.55

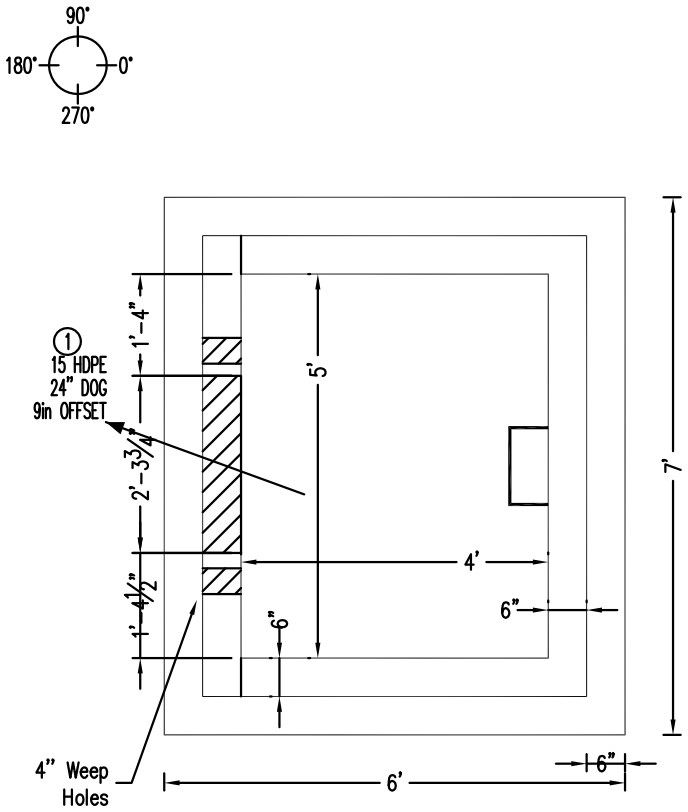


Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	15 HDPE	936.10	.00	17.7in	24" DOG	24in	12in	0in

Plan View



Lifting Device: Swift Lift
Steps: YES 0°

Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "STORM" Cover	9000100000176	.00	1	0
B	EJIW 1500Z Frame	9000100000225	.33	1	0
C	5' x 10" Steel Throat	9000700000048	.00	1	0
D	6.0x5.0x6 Cvr Cast (5x4)	C060050060600000	.50	1	2,014
E	5.0x4.0x3.6 Mono S 6Ext 8B 6W	3050040206080610000036	3.58	1	8,951
		Total Weight (lbs)			10,965

Misc. Items

Description	Qty

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Storm Sewer
5'x4' (I.D.) Curb Inlet
CI-3-1 - Curb Inl
Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	936.82
Outlet Invert	–	930.50
Wall Thk/Inv Adj	+	.28
Design Height	=	6.60
Casting/Adj Ring	–	.00
Manhole Hgt	=	6.60

Stack Build Height

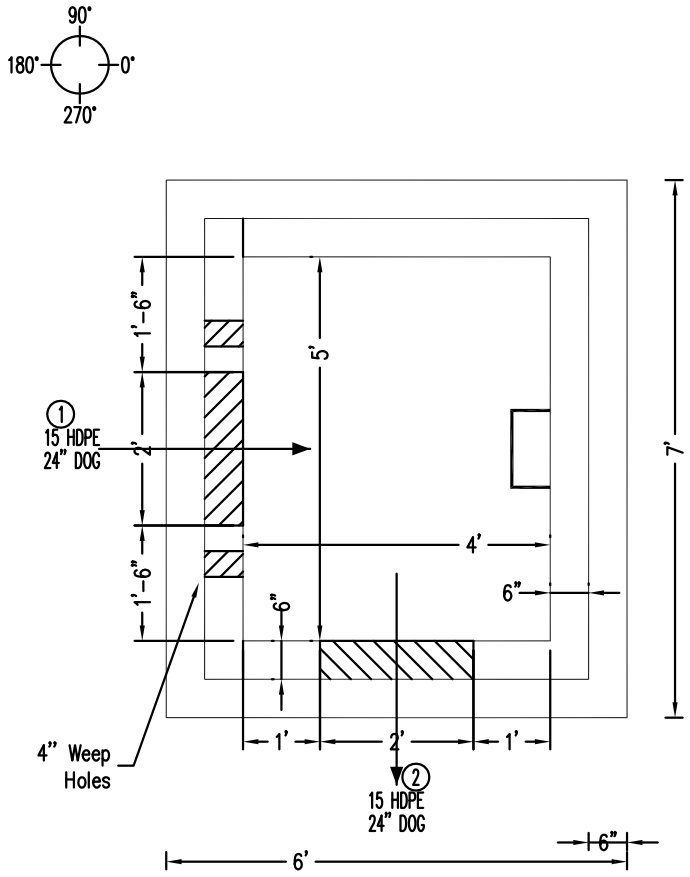
Cover Slab	+	.50
Mono Base	+	6.08
Base Thickness	+	.67
Outside Height	=	7.25

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	15 HDPE	931.00	.50	17.7in	24" DOG	28.75in	16.75in	4.75in
#2	15 HDPE	930.50	.00	17.7in	24" DOG	24in	12in	0in

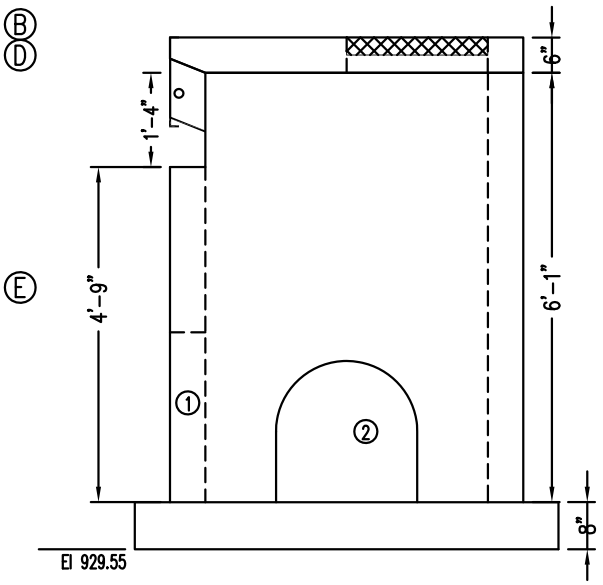
Plan View



Lifting Device: Swift Lift
Steps: YES 0°

Elevation

Location: Sta. 7+83.50



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "STORM" Cover	9000100000176	.00	1	0
B	EJIW 1500Z Frame	9000100000225	.33	1	0
C	5' x 10" Steel Throat	9000700000048	.00	1	0
D	6.0x5.0x6 Cvr Cast (5x4)	C060050060600000	.50	1	2,014
E	5.0x4.0x6.1 Mono S 6Ext 8B 6W	30500402060806100000061	6.08	1	12,717
		Total Weight (lbs)			14,731

Misc. Items

Description	Qty

Production Use

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

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www.ForterraBP.com

Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Storm Sewer
5'x4' (I.D.) Curb Inlet
CI-3-2 - Curb Inl
Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	936.82
Outlet Invert	–	931.50
Wall Thk/Inv Adj	+	.28
Design Height	=	5.60
Casting/Adj Ring	–	.00
Manhole Hgt	=	5.60

Stack Build Height

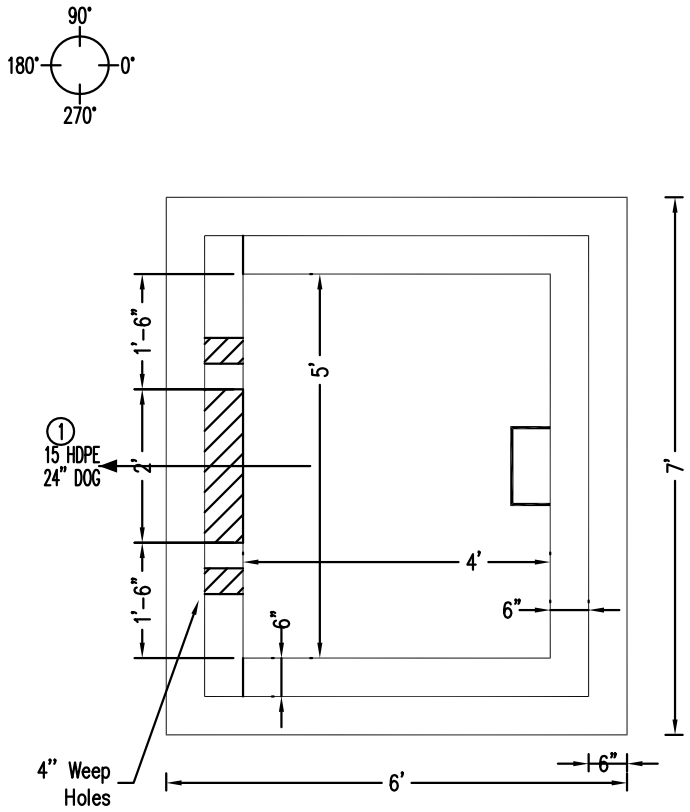
Cover Slab	+	.50
Mono Base	+	5.08
Base Thickness	+	.67
Outside Height	=	6.25

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	15 HDPE	931.50	.00	17.7in	24" DOG	24in	12in	0in

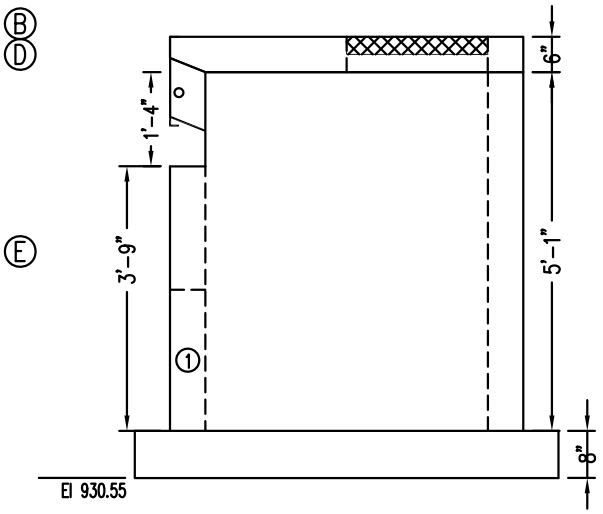
Plan View



Lifting Device: Swift Lift
Steps: YES 0°

Elevation

Location: Sta. 7+83.50



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "STORM" Cover	9000100000176	.00	1	0
B	EJIW 1500Z Frame	9000100000225	.33	1	0
C	5' x 10" Steel Throat	9000700000048	.00	1	0
D	6.0x5.0x6 Cvr Cast (5x4)	C060050060600000	.50	1	2,014
E	5.0x4.0x5.1 Mono S 6Ext 8B 6W	30500402060806100000051	5.08	1	11,219
		Total Weight (lbs)			13,233

Misc. Items

Description	Qty

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Sanitary Sewer
48" (I.D.) Manhole
SAA1 - San MH

Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	942.00
Outlet Invert	–	928.18
Wall Thk/Inv Adj	+	.35
Design Height	=	14.17
Casting/Adj Ring	–	1.13
Manhole Hgt	=	13.05

Stack Build Height

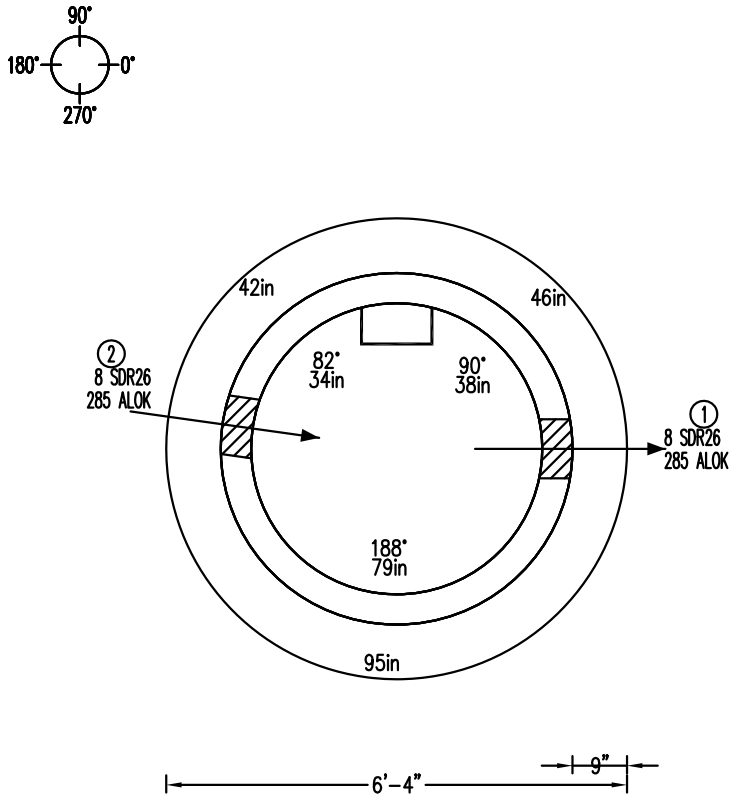
Casting	+	.75
Adjusting Ring	+	.38
Cone	+	3.00
Riser	+	7.00
Mono Base	+	3.08
Base Thickness	+	.75
Outside Height	=	14.96

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	8 SDR26	928.18	.00	8.4in	285 ALOK	13in	8.25in	3.25in
#2	8 SDR26	928.38	.20	8.4in	285 ALOK	15.5in	10.5in	5.75in

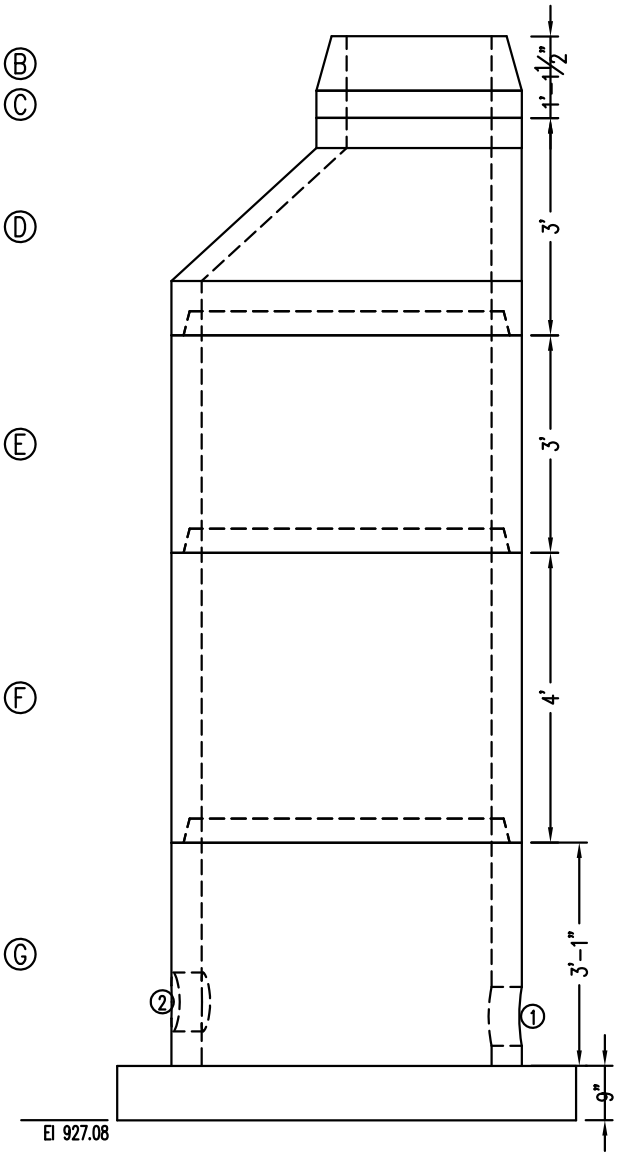
Plan View



Lifting Device: EZ LiftPin
Steps: YES 90° 38in

Elevation

Location: Sta. 3+35.57
COATED REQUIRED



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "SEWER" Cover	9000100000029	.00	1	0
B	EJIW 1502Z Frame w/ Mud Ring	9000100000226	.75	1	0
C	24x4 Adjusting Ring	9090100240400	.38	1	150
D	48x3.0 24 Ecc Cone P2 S Ctd	20480932130000030	3.00	1	2,475
E	48x3.0 BBL P2 S Ctd	20480130130000030	3.00	1	2,640
F	48x4.0 BBL P2 S Ctd	20480130130000040	4.00	1	3,520
G	48x3.1 Mono Ext P2 S Ctd	20481330130760931	3.08	1	6,197
		Total Weight (lbs)			14,982

Misc. Items

Description	Qty
285 ALOK	2
1.2in x14.5ft JOINT SEAL	3.14
6in x 100ft E–Z WRAP	.46

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Sanitary Sewer
48" (I.D.) Manhole
SAA2 - San MH

Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	940.96
Outlet Invert	–	930.90
Wall Thk/Inv Adj	+	.35
Design Height	=	10.41
Casting/Adj Ring	–	1.13
Manhole Hgt	=	9.29

Stack Build Height

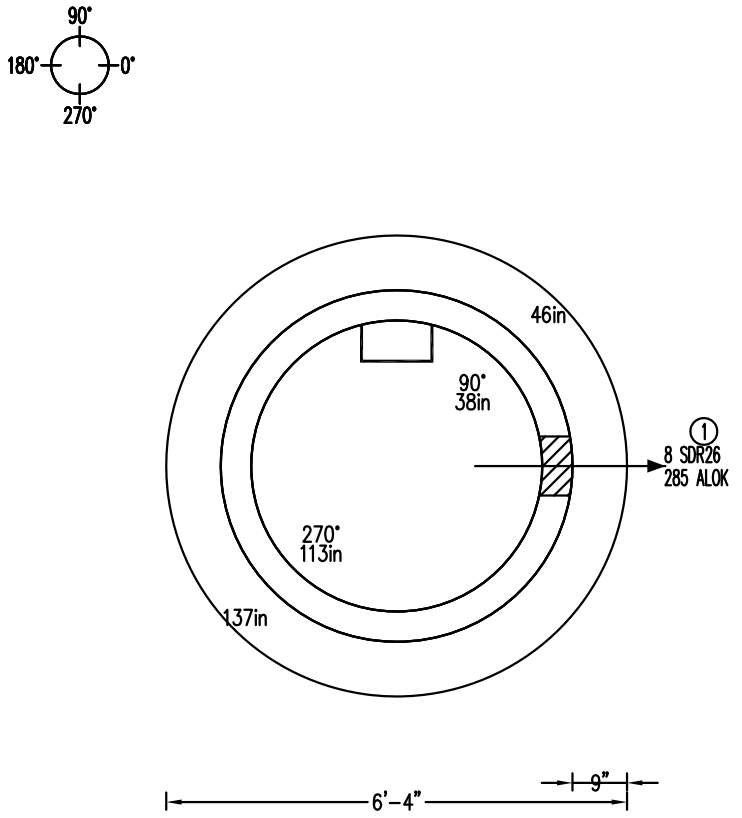
Casting	+	.75
Adjusting Ring	+	.38
Cone	+	3.00
Riser	+	3.00
Mono Base	+	3.25
Base Thickness	+	.75
Outside Height	=	11.13

Opening Schedule

(HF=Hole Former, DO=Dig Out)

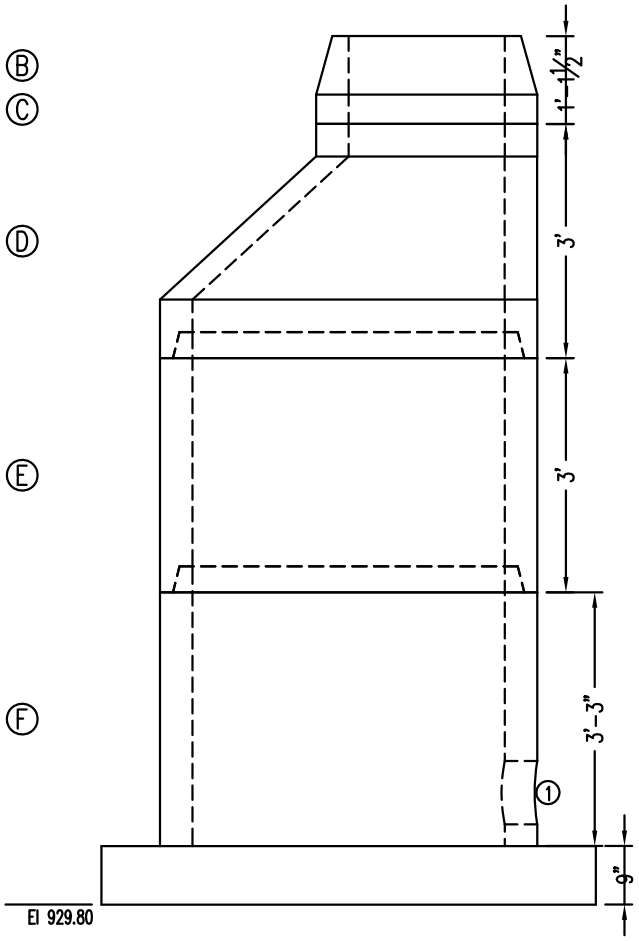
ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	8 SDR26	930.90	.00	8.4in	285 ALOK	13in	8.25in	3.25in

Plan View



Elevation

Location: Sta. 5+87.13
COATED REQUIRED



Notes

MCIB MIX DESIGN

Lifting Device: EZ LiftPin
Steps: YES 90° 38in

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "SEWER" Cover	9000100000029	.00	1	0
B	EJIW 1502Z Frame w/ Mud Ring	9000100000226	.75	1	0
C	24x4 Adjusting Ring	9090100240400	.38	1	150
D	48x3.0 24 Ecc Cone P2 S Ctd	20480932130000030	3.00	1	2,475
E	48x3.0 BBL P2 S Ctd	20480130130000030	3.00	1	2,640
F	48x3.3 Mono Ext P2 S Ctd	20481330130760932	3.25	1	6,359
		Total Weight (lbs)			11,624

Misc. Items

Description	Qty
285 ALOK	1
1.2in x14.5ft JOINT SEAL	2.09
6in x 100ft E–Z WRAP	.3

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Sanitary Sewer
48" (I.D.) Manhole
SAB1 - San MH

Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	944.25
Outlet Invert	–	929.06
Wall Thk/Inv Adj	+	.35
Design Height	=	15.54
Casting/Adj Ring	–	1.13
Manhole Hgt	=	14.42

Stack Build Height

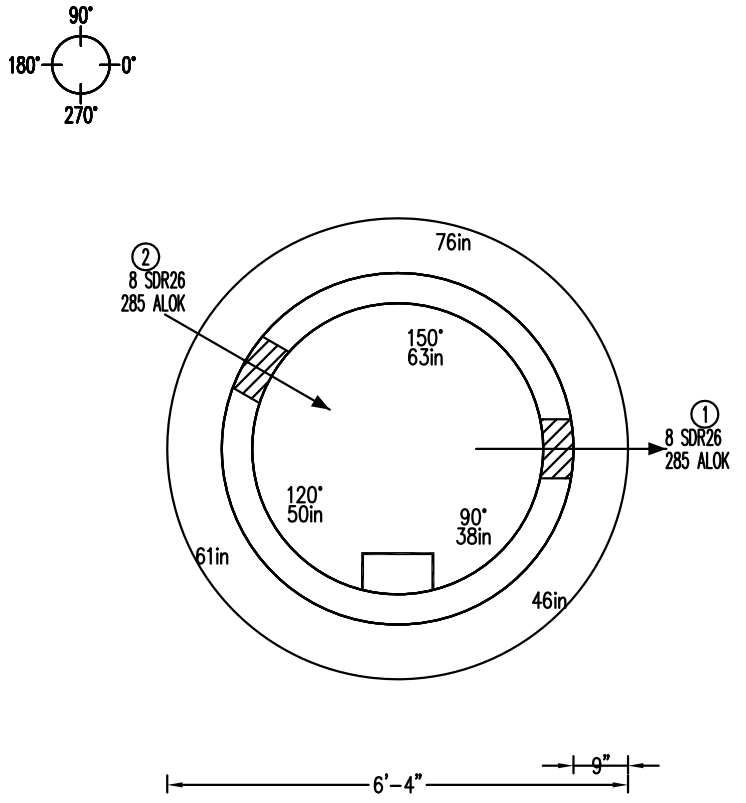
Casting	+	.75
Adjusting Ring	+	.38
Cone	+	3.00
Riser	+	8.00
Mono Base	+	3.42
Base Thickness	+	.75
Outside Height	=	16.30

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	8 SDR26	929.06	.00	8.4in	285 ALOK	13in	8.25in	3.25in
#2	8 SDR26	929.26	.20	8.4in	285 ALOK	15.5in	10.5in	5.75in

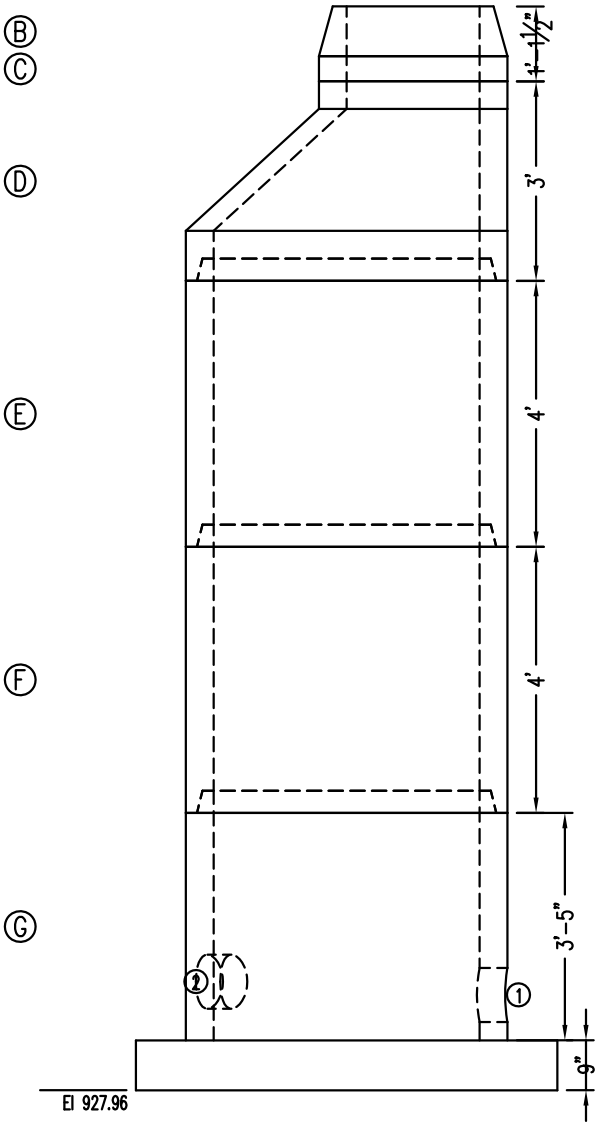
Plan View



Lifting Device: EZ LiftPin
Steps: YES 270° 113in

Elevation

Location: Sta. 1+31.48
COATED REQUIRED



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "SEWER" Cover	9000100000029	.00	1	0
B	EJIW 1502Z Frame w/ Mud Ring	9000100000226	.75	1	0
C	24x4 Adjusting Ring	9090100240400	.38	1	150
D	48x3.0 24 Ecc Cone P2 S Ctd	20480932130000030	3.00	1	2,475
E	48x4.0 BBL P2 S Ctd	20480130130000040	4.00	1	3,520
F	48x4.0 BBL P2 S Ctd	20480130130000040	4.00	1	3,520
G	48x3.4 Mono Ext P2 S Ctd	20481330130760934	3.42	1	6,480
		Total Weight (lbs)			16,145

Misc. Items

Description	Qty
285 ALOK	2
1.2in x14.5ft JOINT SEAL	3.14
6in x 100ft E–Z WRAP	.46

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Sanitary Sewer
48" (I.D.) Manhole
SAB2 - San MH

Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	942.96
Outlet Invert	–	930.65
Wall Thk/Inv Adj	+	.35
Design Height	=	12.66
Casting/Adj Ring	–	1.13
Manhole Hgt	=	11.54

Stack Build Height

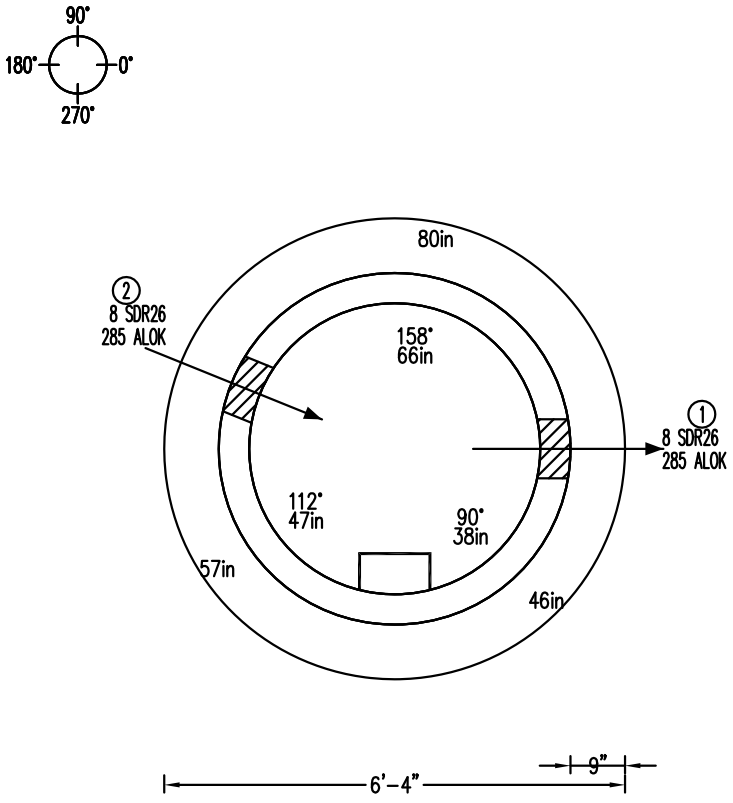
Casting	+	.75
Adjusting Ring	+	.38
Cone	+	3.00
Riser	+	4.00
Mono Base	+	4.50
Base Thickness	+	.75
Outside Height	=	13.38

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	8 SDR26	930.65	.00	8.4in	285 ALOK	13in	8.25in	3.25in
#2	8 SDR26	930.85	.20	8.4in	285 ALOK	15.5in	10.5in	5.75in

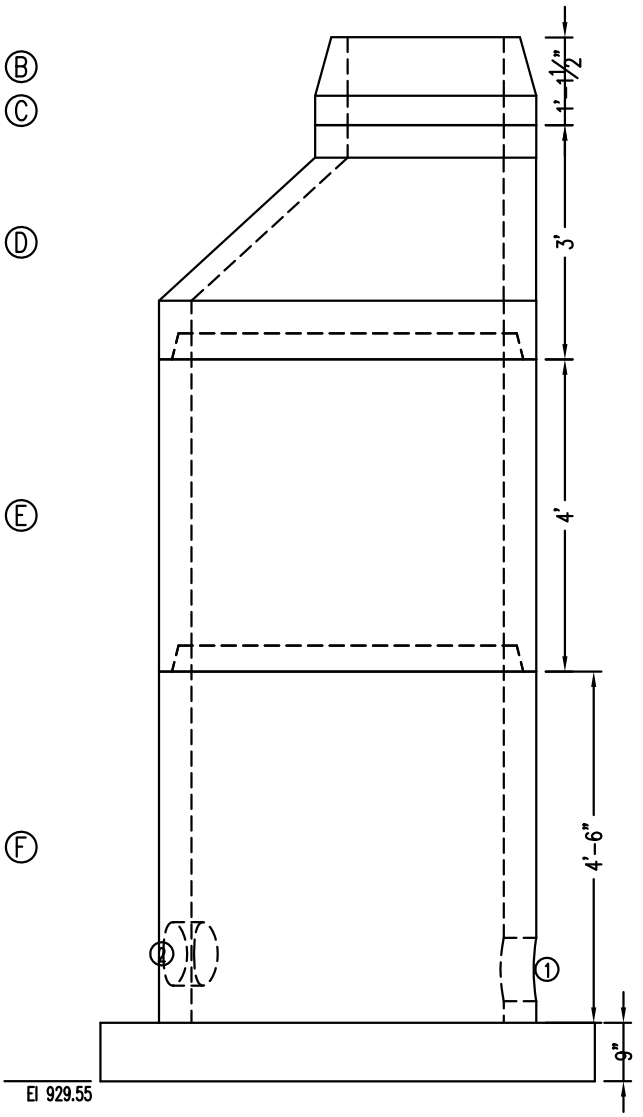
Plan View



Lifting Device: EZ LiftPin
Steps: YES 270° 113in

Elevation

Location: Sta. 2+70.77
COATED REQUIRED



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "SEWER" Cover	9000100000029	.00	1	0
B	EJIW 1502Z Frame w/ Mud Ring	9000100000226	.75	1	0
C	24x4 Adjusting Ring	9090100240400	.38	1	150
D	48x3.0 24 Ecc Cone P2 S Ctd	20480932130000030	3.00	1	2,475
E	48x4.0 BBL P2 S Ctd	20480130130000040	4.00	1	3,520
F	48x4.5 Mono Ext P2 S Ctd	20481330130760945	4.50	1	7,452
		Total Weight (lbs)			13,597

Misc. Items

Description	Qty
285 ALOK	2
1.2in x14.5ft JOINT SEAL	2.09
6in x 100ft E–Z WRAP	.3

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Sanitary Sewer
48" (I.D.) Manhole
SAB3 - San MH

Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	942.35
Outlet Invert	–	931.73
Wall Thk/Inv Adj	+	.35
Design Height	=	10.97
Casting/Adj Ring	–	1.13
Manhole Hgt	=	9.85

Stack Build Height

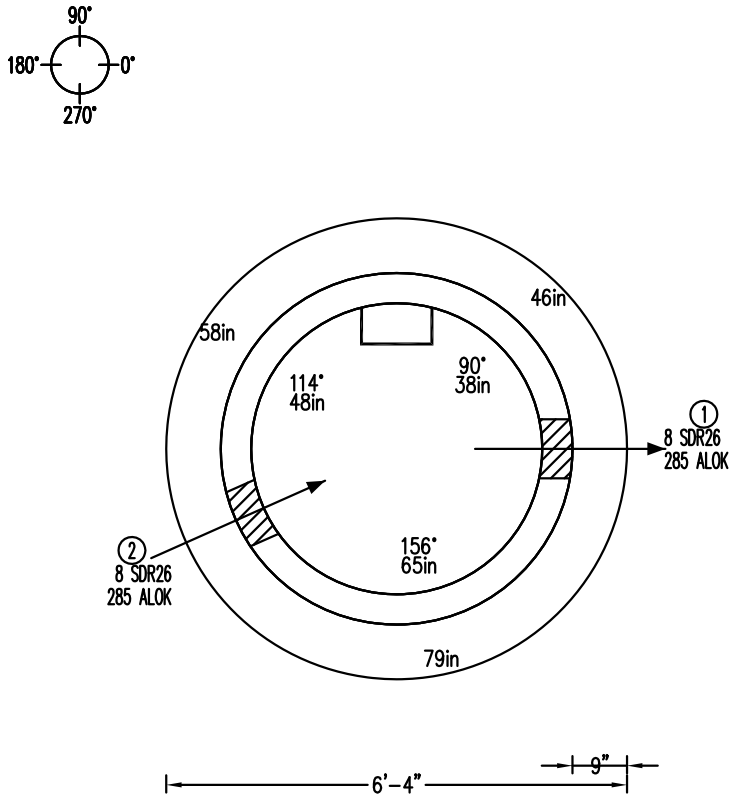
Casting	+	.75
Adjusting Ring	+	.38
Cone	+	3.00
Riser	+	3.00
Mono Base	+	3.83
Base Thickness	+	.75
Outside Height	=	11.71

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	8 SDR26	931.73	.00	8.4in	285 ALOK	13in	8.25in	3.25in
#2	8 SDR26	931.93	.20	8.4in	285 ALOK	15.5in	10.5in	5.75in

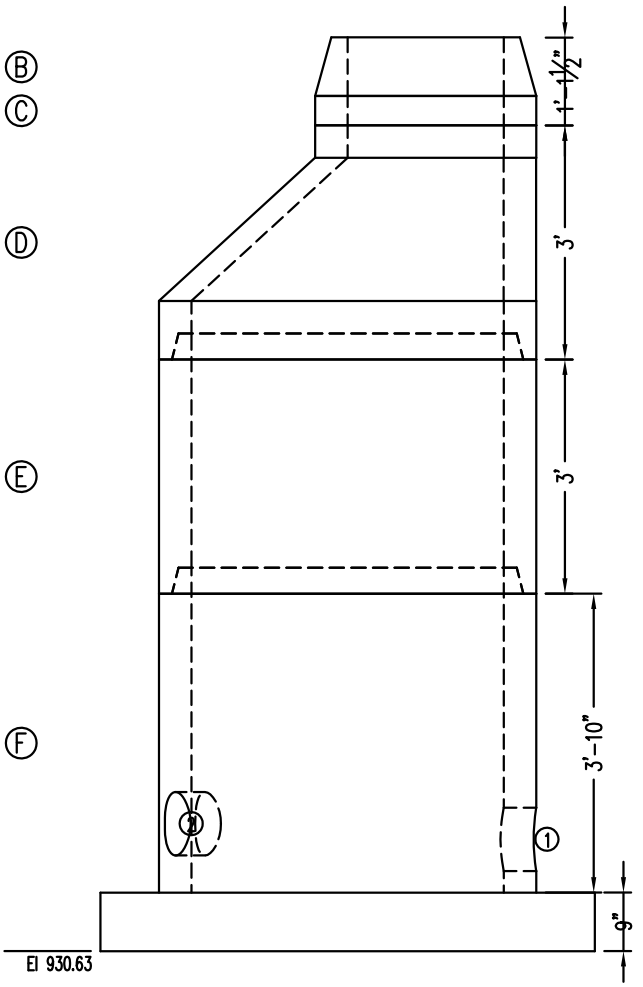
Plan View



Lifting Device: EZ LiftPin
Steps: YES 90° 38in

Elevation

Location: Sta. 3+57.90
COATED REQUIRED



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "SEWER" Cover	9000100000029	.00	1	0
B	EJIW 1502Z Frame w/ Mud Ring	9000100000226	.75	1	0
C	24x4 Adjusting Ring	9090100240400	.38	1	150
D	48x3.0 24 Ecc Cone P2 S Ctd	20480932130000030	3.00	1	2,475
E	48x3.0 BBL P2 S Ctd	20480130130000030	3.00	1	2,640
F	48x3.8 Mono Ext P2 S Ctd	20481330130760938	3.83	1	6,845
		Total Weight (lbs)			12,110

Misc. Items

Description	Qty
285 ALOK	2
1.2in x14.5ft JOINT SEAL	2.09
6in x 100ft E–Z WRAP	.3

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Sanitary Sewer
48" (I.D.) Manhole
SAB4 - San MH

Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	943.19
Outlet Invert	–	933.19
Wall Thk/Inv Adj	+	.35
Design Height	=	10.35
Casting/Adj Ring	–	1.13
Manhole Hgt	=	9.23

Stack Build Height

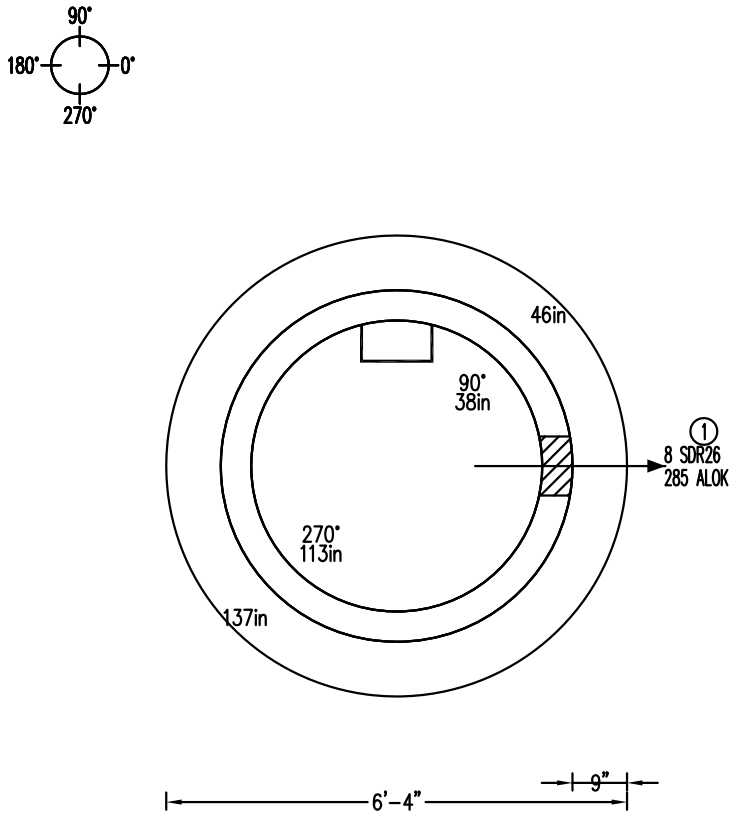
Casting	+	.75
Adjusting Ring	+	.38
Cone	+	3.00
Riser	+	3.00
Mono Base	+	3.25
Base Thickness	+	.75
Outside Height	=	11.13

Opening Schedule

(HF=Hole Former, DO=Dig Out)

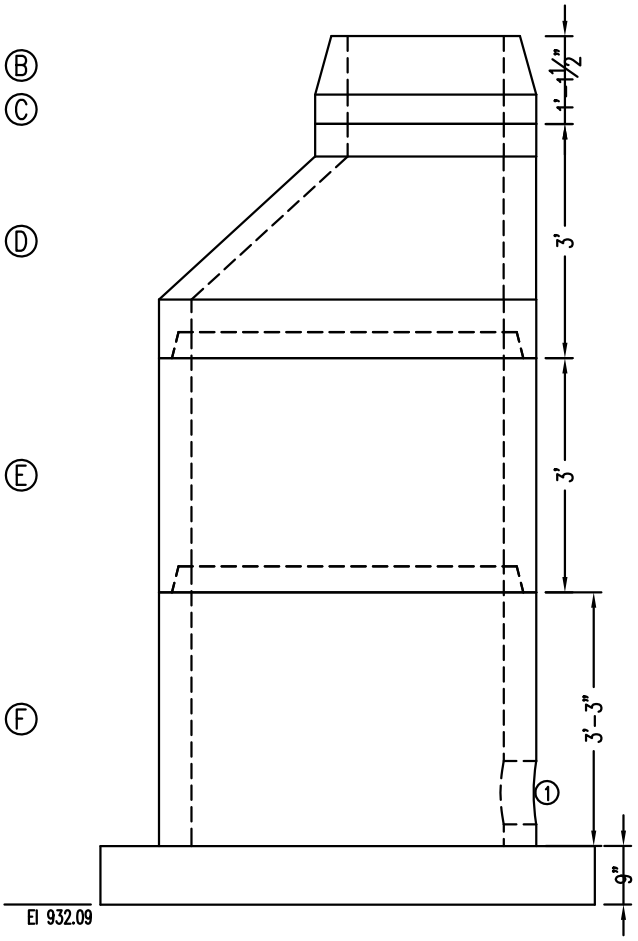
ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	8 SDR26	933.19	.00	8.4in	285 ALOK	13in	8.25in	3.25in

Plan View



Elevation

Location: Sta. 4+83.82
COATED REQUIRED



Lifting Device: EZ LiftPin
Steps: YES 90° 38in

Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "SEWER" Cover	9000100000029	.00	1	0
B	EJIW 1502Z Frame w/ Mud Ring	9000100000226	.75	1	0
C	24x4 Adjusting Ring	9090100240400	.38	1	150
D	48x3.0 24 Ecc Cone P2 S Ctd	20480932130000030	3.00	1	2,475
E	48x3.0 BBL P2 S Ctd	20480130130000030	3.00	1	2,640
F	48x3.3 Mono Ext P2 S Ctd	20481330130760932	3.25	1	6,359
		Total Weight (lbs)			11,624

Misc. Items

Description	Qty
285 ALOK	1
1.2in x14.5ft JOINT SEAL	2.09
6in x 100ft E–Z WRAP	.3

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Sanitary Sewer
48" (I.D.) Manhole
SAC1 - San MH

Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	941.53
Outlet Invert	–	926.55
Wall Thk/Inv Adj	+	.35
Design Height	=	15.33
Casting/Adj Ring	–	1.13
Manhole Hgt	=	14.21

Stack Build Height

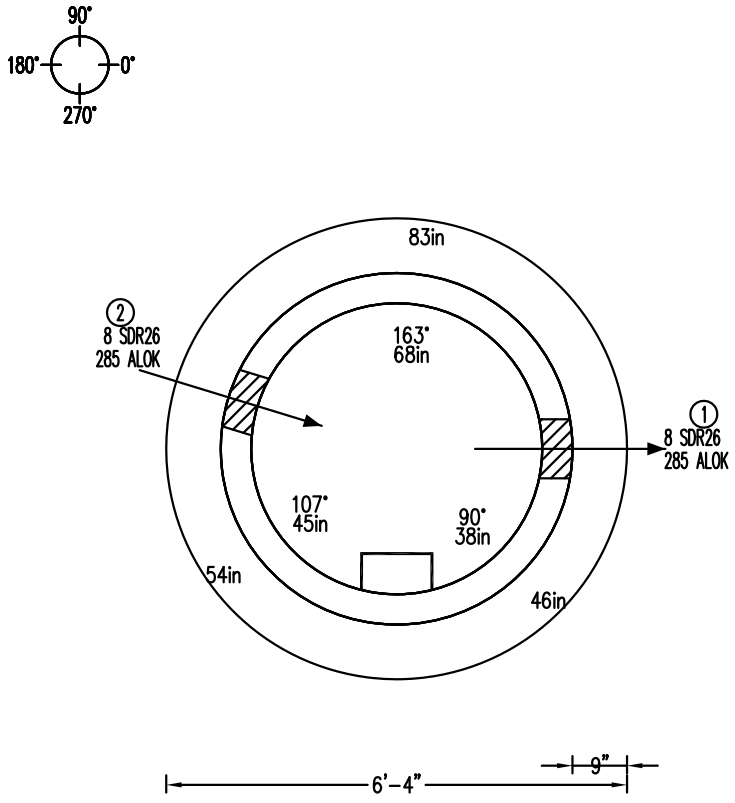
Casting	+	.75
Adjusting Ring	+	.38
Cone	+	3.00
Riser	+	8.00
Mono Base	+	3.17
Base Thickness	+	.75
Outside Height	=	16.05

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	8 SDR26	926.55	.00	8.4in	285 ALOK	13in	8.25in	3.25in
#2	8 SDR26	926.75	.20	8.4in	285 ALOK	15.5in	10.5in	5.75in

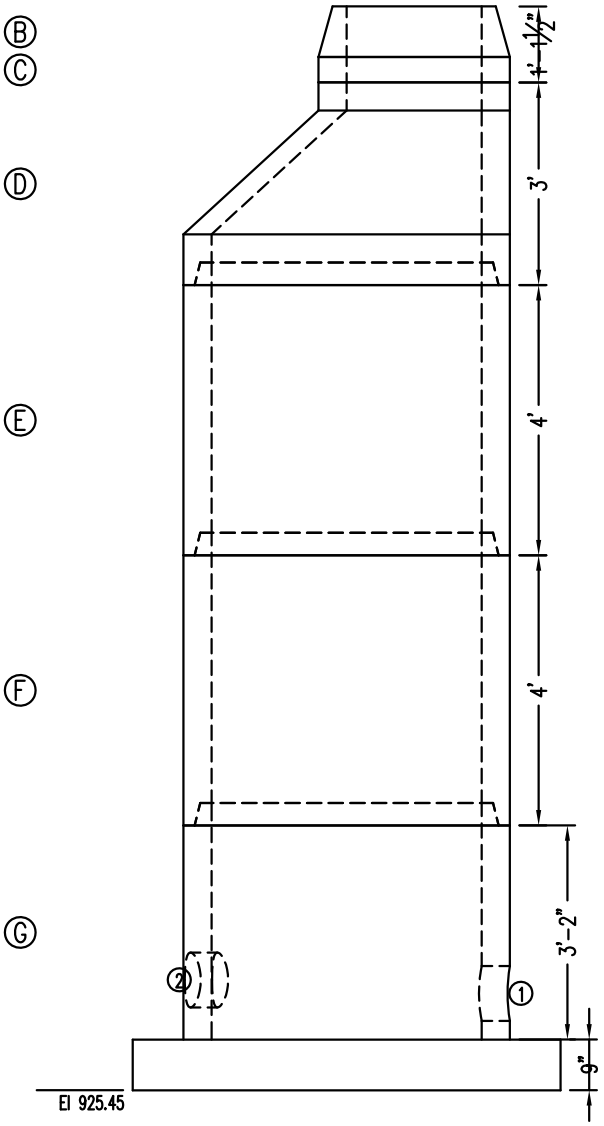
Plan View



Lifting Device: EZ LiftPin
Steps: YES 270° 113in

Elevation

Location: Sta. 1+18.28
COATED REQUIRED



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "SEWER" Cover	9000100000029	.00	1	0
B	EJIW 1502Z Frame w/ Mud Ring	9000100000226	.75	1	0
C	24x4 Adjusting Ring	9090100240400	.38	1	150
D	48x3.0 24 Ecc Cone P2 S Ctd	20480932130000030	3.00	1	2,475
E	48x4.0 BBL P2 S Ctd	20480130130000040	4.00	1	3,520
F	48x4.0 BBL P2 S Ctd	20480130130000040	4.00	1	3,520
G	48x3.2 Mono Ext P2 S Ctd	20481330130760932	3.17	1	6,359
		Total Weight (lbs)			16,024

Misc. Items

Description	Qty
285 ALOK	2
1.2in x14.5ft JOINT SEAL	3.14
6in x 100ft E–Z WRAP	.46

Production Use

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

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Fax: (763) 416-1633
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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Sanitary Sewer
48" (I.D.) Manhole
SAC2 - San MH

Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	937.10
Outlet Invert	–	927.99
Wall Thk/Inv Adj	+	.35
Design Height	=	9.46
Casting/Adj Ring	–	1.13
Manhole Hgt	=	8.34

Stack Build Height

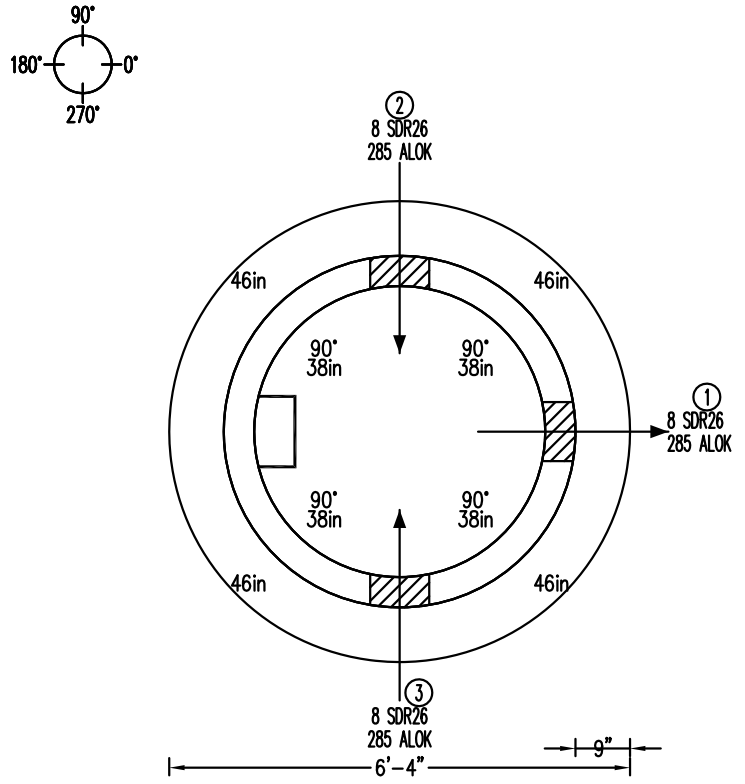
Casting	+	.75
Adjusting Ring	+	.38
Cone	+	3.00
Riser	+	2.00
Mono Base	+	3.33
Base Thickness	+	.75
Outside Height	=	10.21

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	8 SDR26	927.99	.00	8.4in	285 ALOK	13in	8.25in	3.25in
#2	8 SDR26	928.49	.50	8.4in	285 ALOK	19in	14.25in	9.25in
#3	8 SDR26	928.49	.50	8.4in	285 ALOK	19in	14.25in	9.25in

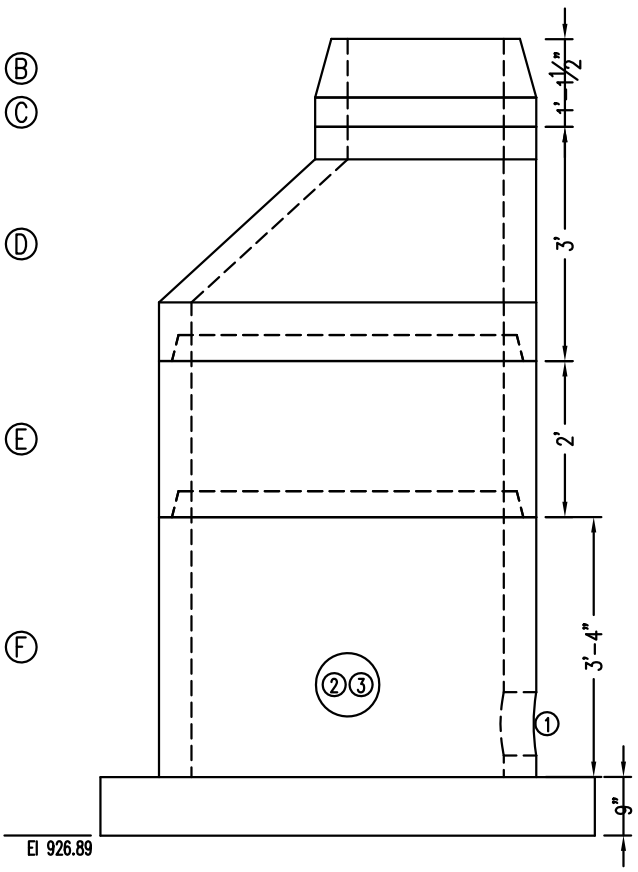
Plan View



Lifting Device: EZ LiftPin
Steps: YES 180° 75in

Elevation

Location: Sta. 3+08.40
COATED REQUIRED



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "SEWER" Cover	9000100000029	.00	1	0
B	EJIW 1502Z Frame w/ Mud Ring	9000100000226	.75	1	0
C	24x4 Adjusting Ring	9090100240400	.38	1	150
D	48x3.0 24 Ecc Cone P2 S Ctd	20480932130000030	3.00	1	2,475
E	48x2.0 BBL P2 S Ctd	20480130130000020	2.00	1	1,760
F	48x3.3 Mono Ext P2 S Ctd	20481330130760933	3.33	1	6,440
		Total Weight (lbs)			10,825

Misc. Items

Description	Qty
285 ALOK	3
1.2in x14.5ft JOINT SEAL	2.09
6in x 100ft E–Z WRAP	.3

Production Use

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

FORTERRA™
6655 Wedgwood Road, Suite 130
Maple Grove, MN 55311-6660
Phone: (763) 545-7473
Fax: (763) 416-1633
www.ForterraBP.com

Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Sanitary Sewer
48" (I.D.) Manhole
SAC3 - San MH

Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	938.07
Outlet Invert	–	929.43
Wall Thk/Inv Adj	+	.35
Design Height	=	8.99
Casting/Adj Ring	–	1.13
Manhole Hgt	=	7.87

Stack Build Height

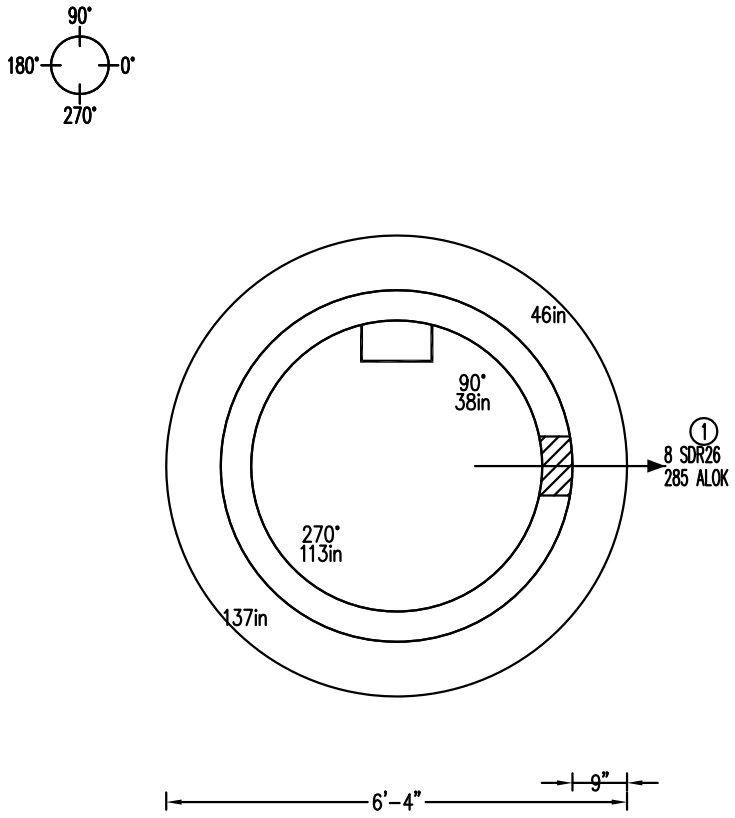
Casting	+	.75
Adjusting Ring	+	.38
Cone	+	3.00
Mono Base	+	4.83
Base Thickness	+	.75
Outside Height	=	9.71

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	8 SDR26	929.43	.00	8.4in	285 ALOK	13in	8.25in	3.25in

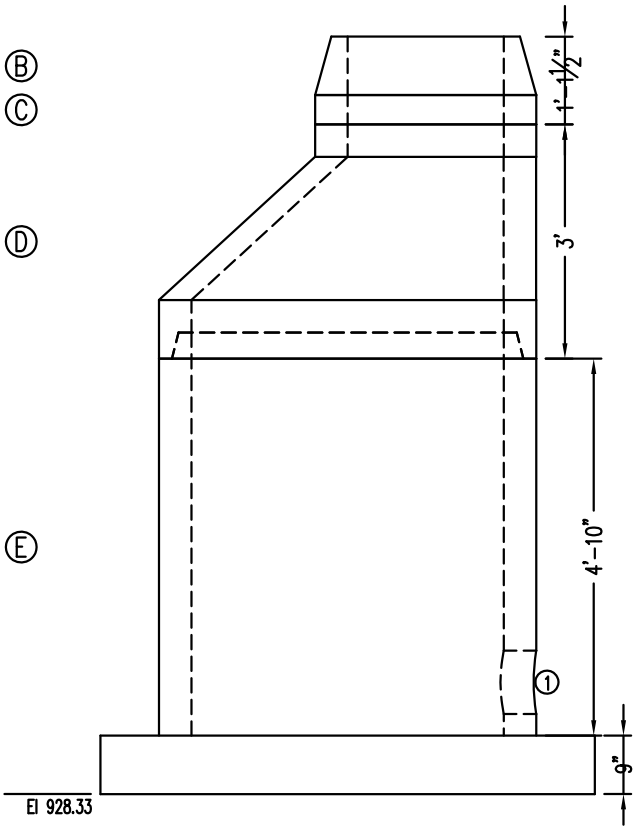
Plan View



Lifting Device: EZ LiftPin
Steps: YES 90° 38in

Elevation

Location: Sta. 3+91.74
COATED REQUIRED



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "SEWER" Cover	9000100000029	.00	1	0
B	EJIW 1502Z Frame w/ Mud Ring	9000100000226	.75	1	0
C	24x4 Adjusting Ring	9090100240400	.38	1	150
D	48x3.0 24 Ecc Cone P2 S Ctd	20480932130000030	3.00	1	2,475
E	48x4.8 Mono Ext P2 S Ctd	20481330130760948	4.83	1	5,594
		Total Weight (lbs)			8,219

Misc. Items

Description	Qty
285 ALOK	1
1.2in x14.5ft JOINT SEAL	1.05
6in x 100ft E–Z WRAP	.15

Production Use

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

FORTERRA™

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Maple Grove, MN 55311-6660
Phone: (763) 545-7473
Fax: (763) 416-1633
www.ForterraBP.com

Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Sanitary Sewer
48" (I.D.) Manhole
SAD1 - San MH

Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	940.19
Outlet Invert	–	929.64
Wall Thk/Inv Adj	+	.35
Design Height	=	10.90
Casting/Adj Ring	–	1.13
Manhole Hgt	=	9.78

Stack Build Height

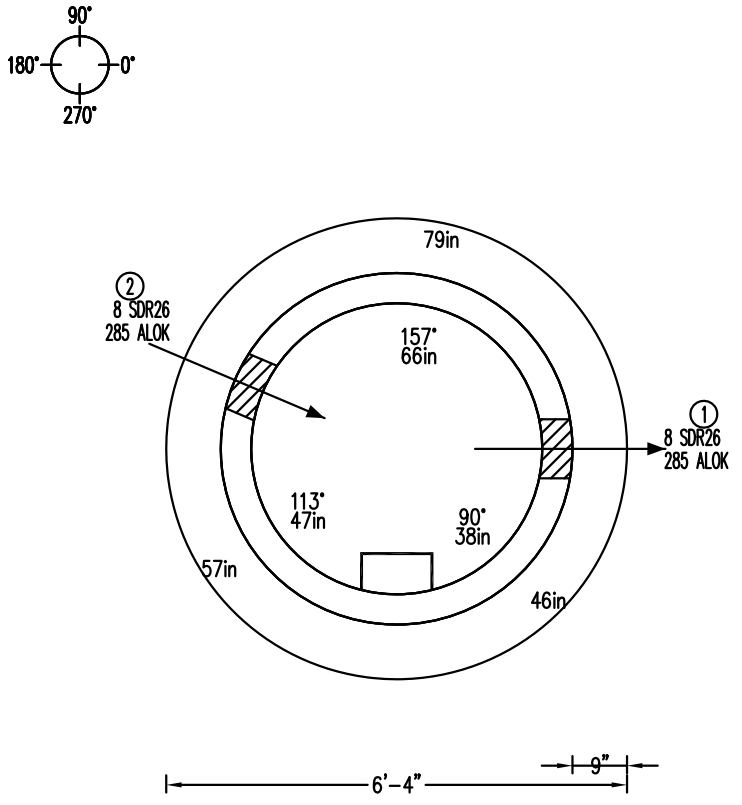
Casting	+	.75
Adjusting Ring	+	.38
Cone	+	3.00
Riser	+	3.00
Mono Base	+	3.75
Base Thickness	+	.75
Outside Height	=	11.63

Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	8 SDR26	929.64	.00	8.4in	285 ALOK	13in	8.25in	3.25in
#2	8 SDR26	929.84	.20	8.4in	285 ALOK	15.5in	10.5in	5.75in

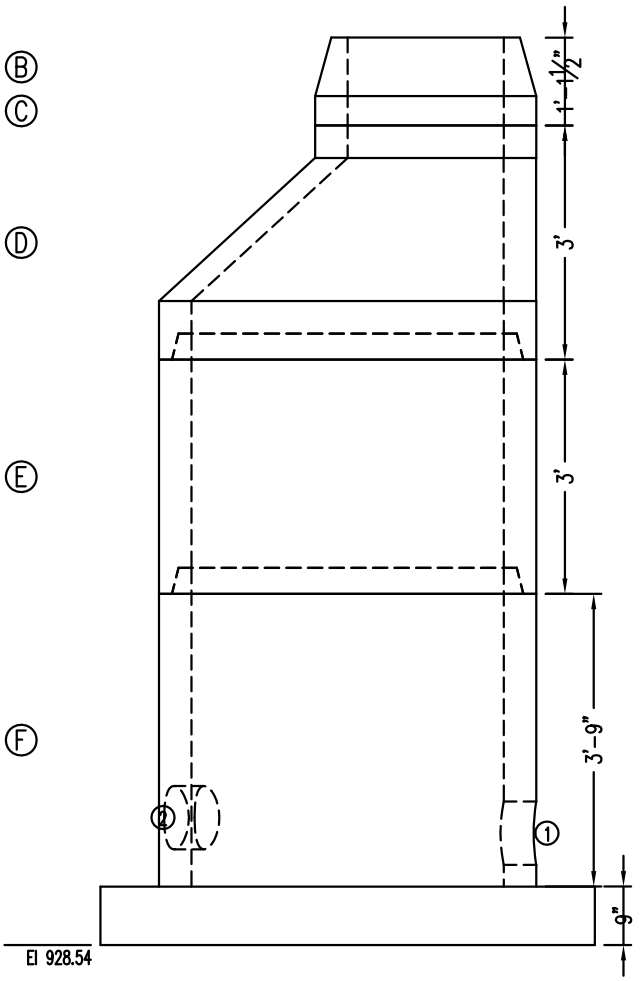
Plan View



Lifting Device: EZ LiftPin
Steps: YES 270° 113in

Elevation

Location: Sta. 1+76.42
COATED REQUIRED



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "SEWER" Cover	9000100000029	.00	1	0
B	EJIW 1502Z Frame w/ Mud Ring	9000100000226	.75	1	0
C	24x4 Adjusting Ring	9090100240400	.38	1	150
D	48x3.0 24 Ecc Cone P2 S Ctd	20480932130000030	3.00	1	2,475
E	48x3.0 BBL P2 S Ctd	20480130130000030	3.00	1	2,640
F	48x3.8 Mono Ext P2 S Ctd	20481330130760938	3.75	1	6,845
		Total Weight (lbs)			12,110

Misc. Items

Description	Qty
285 ALOK	2
1.2in x14.5ft JOINT SEAL	2.09
6in x 100ft E–Z WRAP	.3

Production Use

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

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Contractor: Walters Excavating llc, KS
Project: Lee's Summit, MO – Park Ridge 6th Plat
Location: MO Lees Summit
Order Nbr: 6418040PM1
Remarks:

Sanitary Sewer
48" (I.D.) Manhole
SAD2 - San MH

Date: 02/08/2018
Plant: 96 LAWRENCE
Coordinator: Chance Gier

Design Build Height

Top of Casting	+	943.41
Outlet Invert	–	933.40
Wall Thk/Inv Adj	+	.35
Design Height	=	10.36
Casting/Adj Ring	–	1.13
Manhole Hgt	=	9.23

Stack Build Height

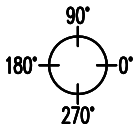
Casting	+	.75
Adjusting Ring	+	.38
Cone	+	3.00
Riser	+	3.00
Mono Base	+	3.25
Base Thickness	+	.75
Outside Height	=	11.13

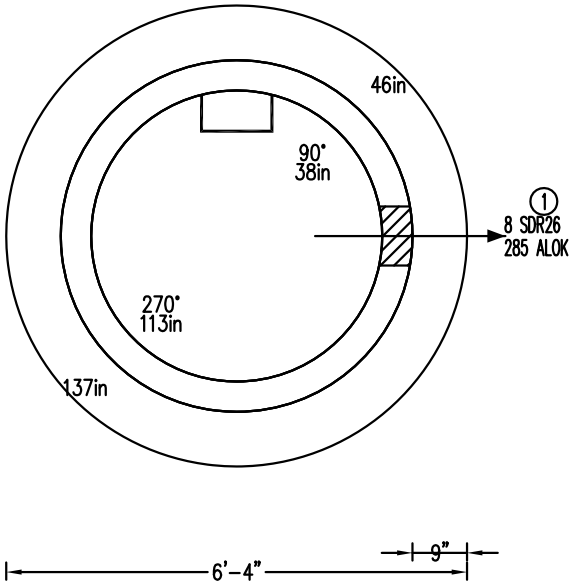
Opening Schedule

(HF=Hole Former, DO=Dig Out)

ID	Pipe Size	Invert	Invert Up	Pipe O.D.	Opening/ Connector	Top of Hole Up	C–Line Hole Up	Btm of Hole Up
#1	8 SDR26	933.40	.00	8.4in	285 ALOK	13in	8.25in	3.25in

Plan View

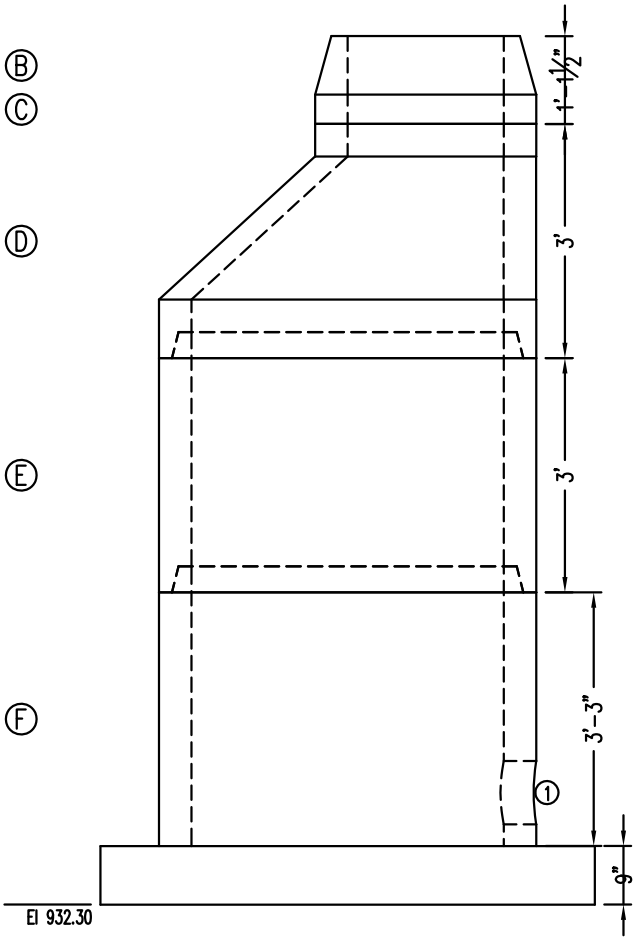




Lifting Device: EZ LiftPin
Steps: YES 90° 38in

Elevation

Location: Sta. 3+42.17
COATED REQUIRED



Notes

MCIB MIX DESIGN

Item List

ID	Description	Product No	Hgt	Qty	Weight
A	EJIW 1502A "SEWER" Cover	9000100000029	.00	1	0
B	EJIW 1502Z Frame w/ Mud Ring	9000100000226	.75	1	0
C	24x4 Adjusting Ring	9090100240400	.38	1	150
D	48x3.0 24 Ecc Cone P2 S Ctd	20480932130000030	3.00	1	2,475
E	48x3.0 BBL P2 S Ctd	20480130130000030	3.00	1	2,640
F	48x3.3 Mono Ext P2 S Ctd	20481330130760932	3.25	1	6,359
		Total Weight (lbs)			11,624

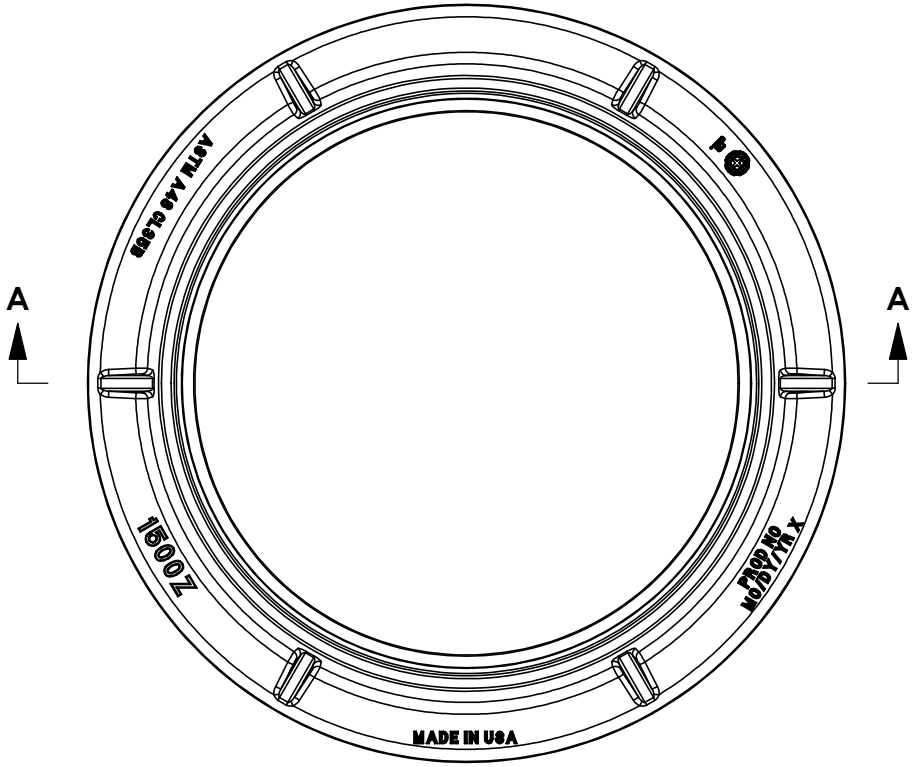
Misc. Items

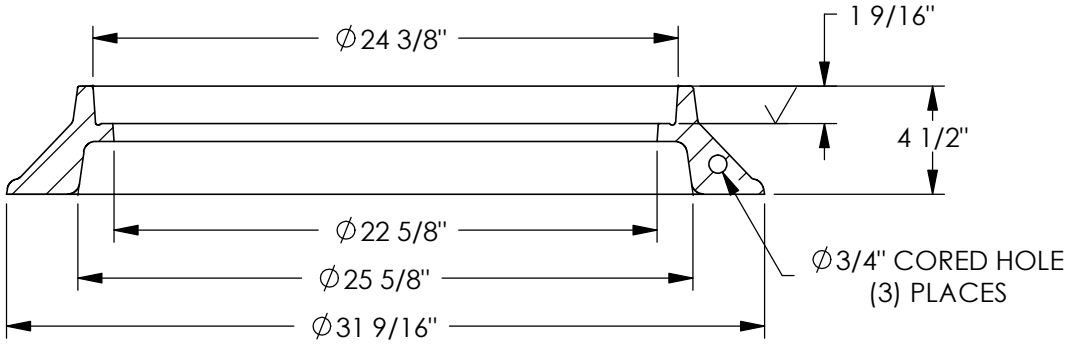
Description	Qty
285 ALOK	1
1.2in x14.5ft JOINT SEAL	2.09
6in x 100ft E–Z WRAP	.3

Production Use

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

1500Z Frame





SECTION A-A

Product Number

00150011

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

Weight:

120.00 LBS

Drawing Revision

4/8/2002 Designer: DEW
1/21/2015 Revised By: DAE

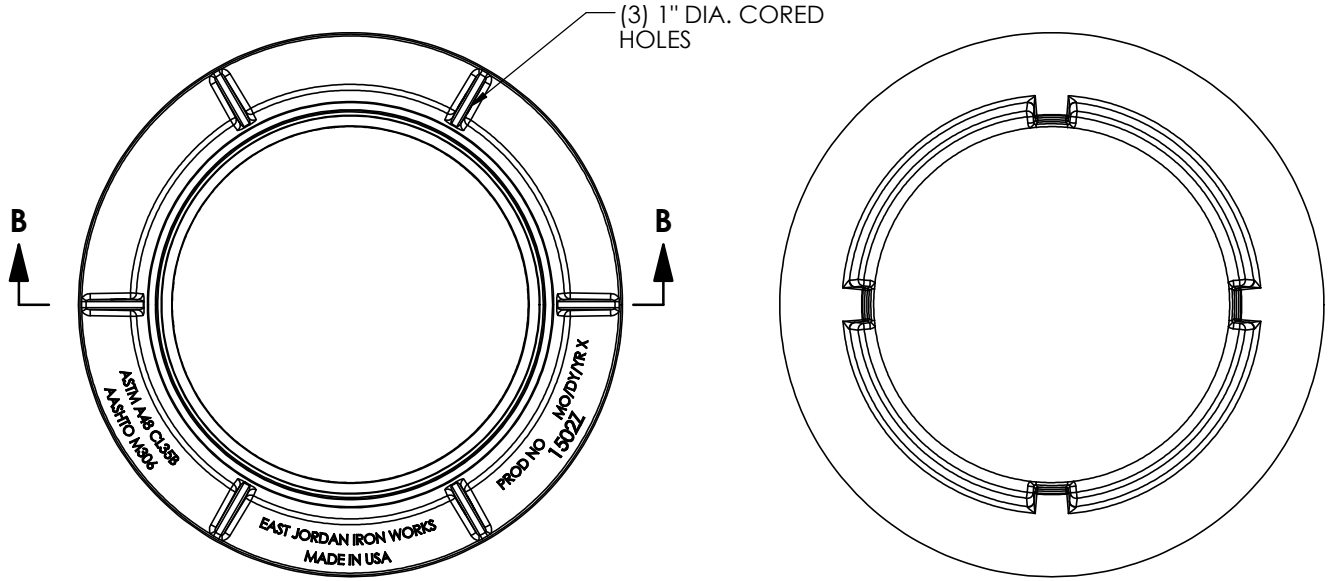
Disclaimer

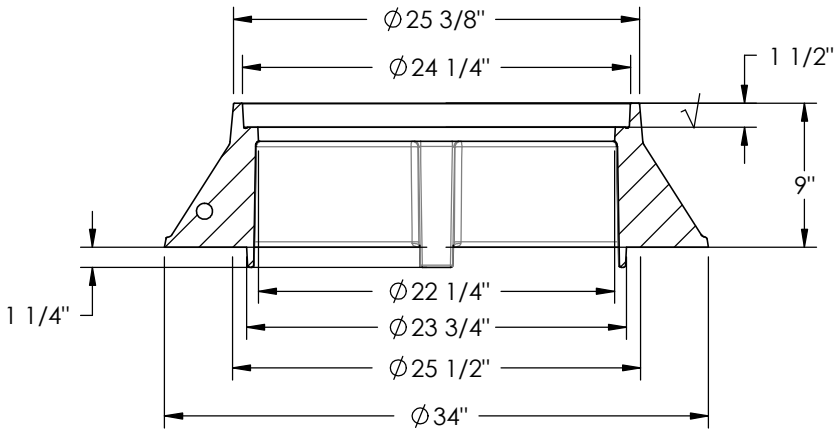
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

Contact

800 626 4653
ejco.com

1502Z Frame





SECTION B-B

Product Number

00150211

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

2/15/2006 Designer: JIJ
10/12/2012 Revised By: DJH

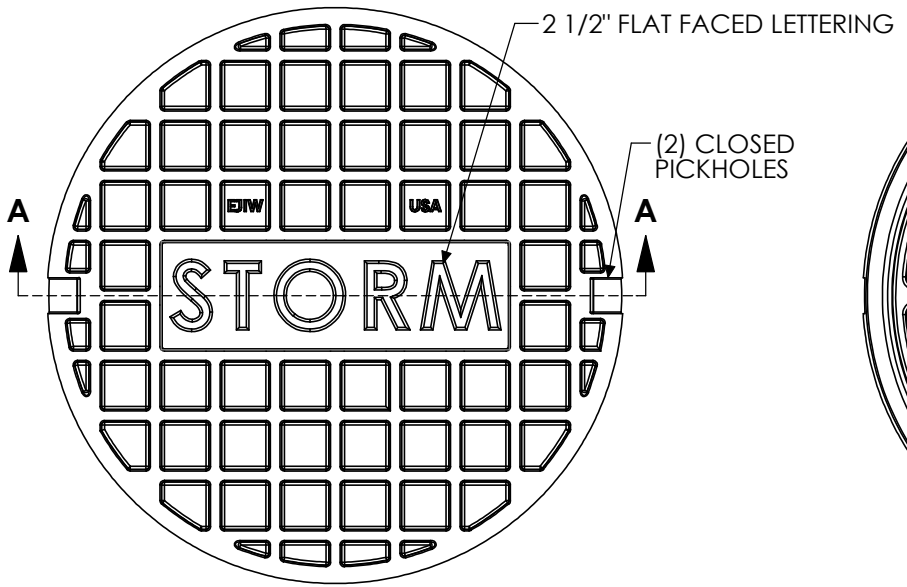
Disclaimer

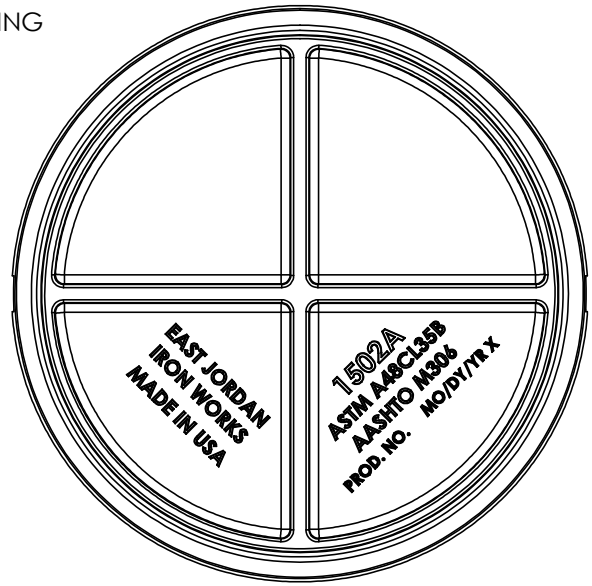
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

Contact

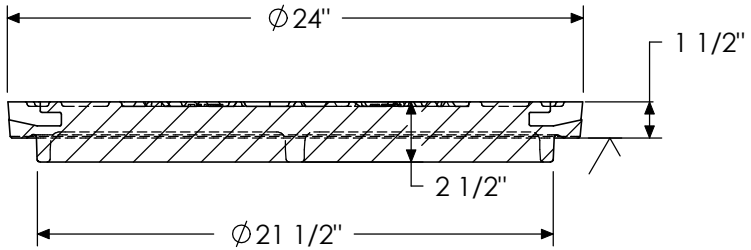
800 626 4653
ejco.com

1502A MANHOLE COVER





BOTTOM VIEW



SECTION A-A

PRODUCT NUMBER

00150243

DESIGN FEATURES

MATERIALS
COVER-GRAY IRON
ASTM A48 CL35B

DESIGN LOAD
HEAVY DUTY

COATING
UNDIPPED

OPEN AREA
N/A

✓ **DESIGNATES MACHINE SURFACE**

Corporate
Headquarters
301 Spring Street
PO Box 439
East Jordan, MI
49727-0439
800.874.4100

EJ GROUP®

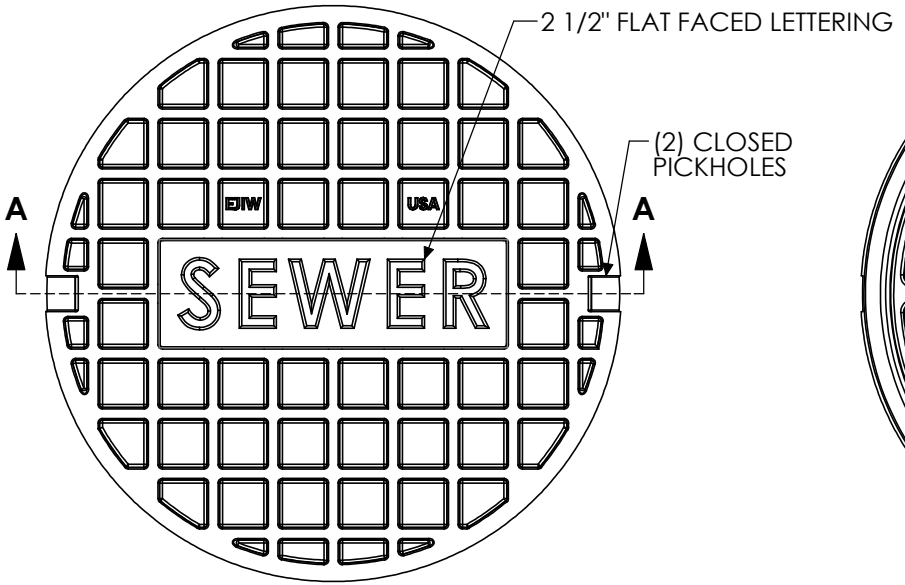
- Weights (lbs./kg.) dimensions (inches/mm., and drawings provided for your guidance.
- We reserve the right to modify specifications without prior notice.
- Uncontrolled distribution.

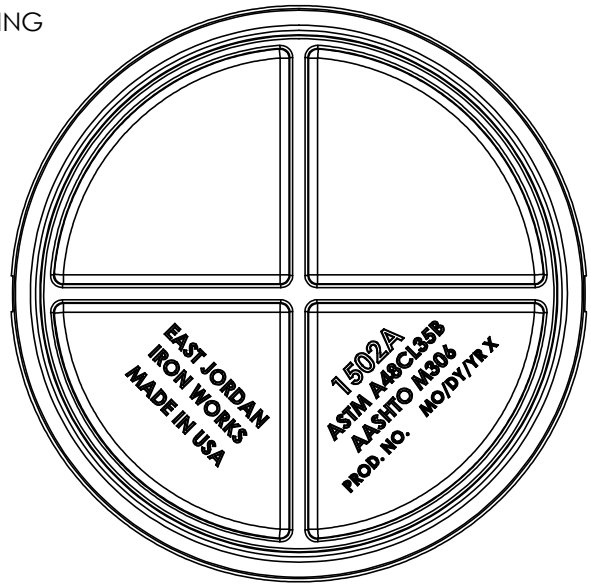
DRAWING DETAILS

ORIGINAL DRAWING: JIJ 2/1/2011

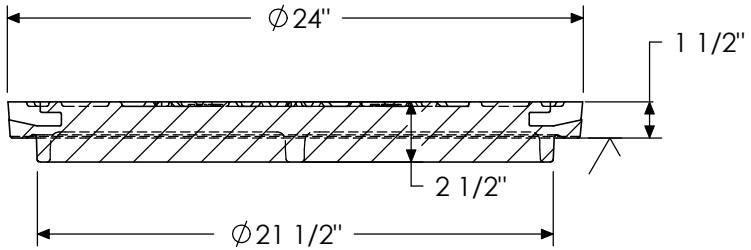
REVISED BY:

1502A MANHOLE COVER





BOTTOM VIEW



SECTION A-A

PRODUCT NUMBER

00150241

DESIGN FEATURES

MATERIALS
COVER-GRAY IRON
ASTM A48 CL35B

DESIGN LOAD
HEAVY DUTY

COATING
UNDIPPED

OPEN AREA
N/A

✓ **DESIGNATES MACHINE SURFACE**

Corporate
Headquarters
301 Spring Street
PO Box 439
East Jordan, MI
49727-0439
800.874.4100

EJ GROUP®

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

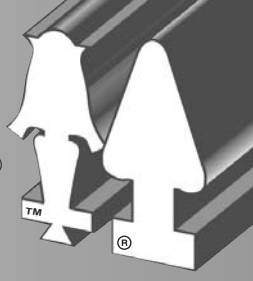
DRAWING DETAILS

ORIGINAL DRAWING: JIJ 2/1/2011

REVISED BY:

A-LOK® PRODUCTS, INC.

The Company With Connections®

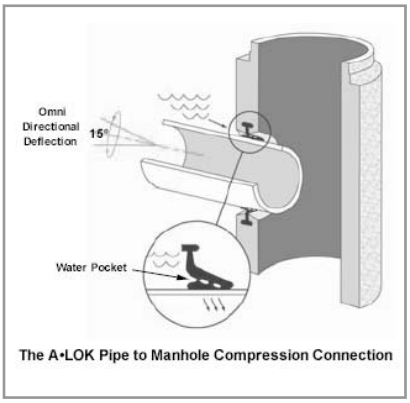


INCOMPARABLE PIPE-TO-MANHOLE CONNECTORS FOR SANITARY SYSTEMS

X-CEL

A•LOK X-CEL

Designed to produce a guaranteed watertight seal between pipe and concrete, the **A•LOK X-CEL** flexible pipe-to-manhole connector provides maximum performance on the job site. Its unique design not only saves valuable project time, but also ensures longevity and offers unsurpassed environmental benefits.



The A•LOK Pipe to Manhole Compression Connection

A•LOK X-CEL connectors prevent infiltration and ex-filtration into wastewater or stormwater systems, and are installed in the precast structure in a way that does not require coring or placement after the base component is cast. This eliminates residual waste from coring, disposal of the slugs or wasted raw material utilization or energy. Once cast-in, the connector becomes an integral component of the structure wall.

Based on the traditional **A•LOK** connector, the **X-CEL's** enhanced features improve performance. Take the patented "water pocket" for example, which utilizes the untapped pressure of ground water to exert a clamping force around the connector and pipe, allowing the connector to perform in deeper installations.

Demonstrated in tests higher than 15 psi of hydrostatic water pressure, the **X-CEL's** unique design provides 45 percent more rubber contact with the pipe, allowing for greater pipe deflection.

MATERIAL

Molded or extruded from compounds formulated for wastewater applications and engineered to conform to the requirements of section 4.1.1 of ASTM C-923, the standard rubber connector is available in alternative compounds upon request. Contact an **A•LOK** representative regarding special applications, such as the presence of hydrocarbons.

KEY ADVANTAGES

The **A•LOK X-CEL** offers distinct advantages for engineers, specifiers, precasters and municipalities. An enhanced profile gives the connector 45% greater rubber contact with the pipe, thus allowing the pipe to be deflected in excess of 10 degrees of omnidirectional deflection, all the while maintaining a watertight seal. These enhancements allow for more flexibility to compensate for pipe shear due to settlement or ground movement.

KEY ADVANTAGES (continued)

On larger-diameter pipe, where size prohibits a gasket from being installed in a flat plane, the **X-CEL** can be configured for casting in a curve with the connector staying perpendicular to the center line of the pipe. Discovered through years of extensive research and development, the configurations cause no loss of compression or deflection.

Functioning on pure compression, the **X-CEL** allows for fast and easy field installation. After the connector and pipe are cleaned and lubricated, the pipe is simply centered in the connector and inserted. Backfilling can be done immediately, thus enhancing project safety and overcoming the typical problems of water, running sand and other unstable trench conditions.

For Specifiers, the **X-CEL** connector offers a guaranteed solution to the age-old containment system problem of the best way to connect pipes and concrete structures. Precasters using **X-CEL** connectors experience increased satisfaction due to their ability to offer a complete watertight, guaranteed product, while municipalities that install **X-CEL** will ultimately spend less on road repair by avoiding the possibility of pot/sink holes that are often the result of leaking, non-connected, systems.

PRODUCT REFERENCES

A.) ASTM C-923
Resilient Connector Between Reinforced Concrete Manholes Structures, Pipe and Laterals.

B.) ASTM C-1244
Standard Test Method For Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test

C.) ASTM C-478
Standard Specification for Precast Reinforced Concrete Manhole Sections

PERFORMANCE STANDARD

The A•LOK X-CEL guaranteed Connector meets or exceeds all material and test requirements outlined in ASTM C-923: *"Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals."*

Molded or extruded from compounds formulated for wastewater applications, the standard rubber connector is engineered to confirm with the requirements of section 4.1.1 of ASTM C-923. Alternative compounds are available upon special request.

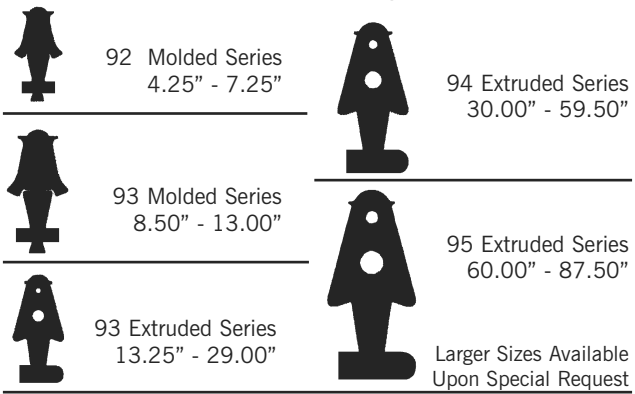
PERFORMANCE STANDARD (continued)

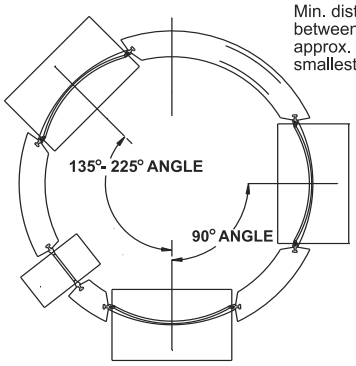
RESILIENT TEST REQUIREMENTS OF A.S.T.M. C-923

TEST	RESULTS	ASTM METHOD
Chemical resistance 1 N Sulfuric acid 1 N Hydrochloric Acid	 no weight loss no weight loss	 at 22°C for 48h
Tensile strength	1200 psi or 8.5 MPa, min	D 412
Elongation at break	350% min.	
Hardness	±5 from mfg's. specified hardness	D 2240 (Shore A durometer)
Accelerated oven-aging	decr. of 15%, max. of original tensile strength, decr. of 20% max. of elongation	D 573, 70±1°C for 7 days
Compression set	decr. of 25%, max. of original deflection	D 395, Method B, at 70°C for 22h
Water absorption	increase of 10%, max. of original by weight	D 471, immerse 0.75 by 2-in. or 19 by 25-mm Specimen in distilled water at 70°C for 48h
Ozone resistance	rating 0	D 1171
Low-temp brittle point	no fracture at -40°C	D 746
Tear resistance	200 lbf/in. or 34 kn/m	D 624, Method B

DIMENSIONAL DATA

A•LOK X-CEL Cross Sections / Pipe Size OD's





MAX. PIPE SIZE OD's

MAX. PIPE SIZE OD's

Manhole Diameter	135° - 225° Pipe Angle	90° Pipe Angle
42″	26.5″	22.0″
48″	31.5″	25.0″
60″	42.0″	32.0″
72″	52.5″	38.0″
84″	59.5″	44.0″
96″	73.5″	50.0″
108″	76.0″	56.0″
120″	85.0″	62.0″

PRODUCT SPECIFICATIONS

A flexible pipe to manhole connector shall be used whenever a pipe penetrates into a precast concrete manhole or structure. The connector shall be the **A•LOK X-CEL CONNECTOR** as manufactured by **A•LOK PRODUCTS, INC.**, Tullytown, PA, or approved equal.

The design of the connector shall provide a flexible, watertight seal between the pipe and concrete structure. The connector shall assure that a seal is made between:

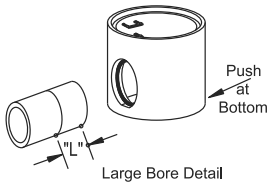
(1) The connector and the structure wall by casting the connector integrally with the structure wall during the manufacturing process in a manner that it will not pull out during pipe coupling. The connector shall also be capable of being cast into a round structure by curving the connector in a manner that allows it to remain centrally located within the structure wall and perpendicular to the pipe. This configuration will result in no loss of seal or deflection of pipe entering a concrete structure.

(2) The seal between the connector and the pipe shall be made by the compression of the connector between the outside circumference of the pipe and the interior hole opening of the structure. The connector shall be the only component to affect the seal between the pipe and structure.

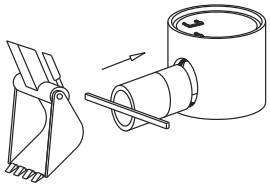
The connector shall be made from materials that conform to the physical and chemical requirements outlined in Section 4, *"Materials and Manufacture"* of ASTM C-923 Standard Specification for Resilient Connectors between Reinforced Concrete Manhole Structures, Pipes, and Laterals, and the overall design will meet or exceed Section 7, *"Test Methods and Requirements"* of ASTM C-923.

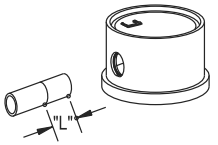
The connector shall be sized specifically for the type of pipe being used and shall be installed in accordance with the recommendations of the manufacturer.

INSTALLATION INSTRUCTIONS

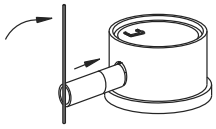


Large Bore Detail





Small Bore Detail



CAUTION:

When installing pipe stubs for future pipeline installation, all stubs must be properly restrained to prevent any movement by means other than the **A-LOK X-CEL** Connector.

STEP 1:
Confirm that the pipe surface is smooth, clean and free of foreign materials, chips, gouges and form seams due to manufacturing or handling. Slightly bevel any sharp or blunt edges caused by the cutting of the pipe.

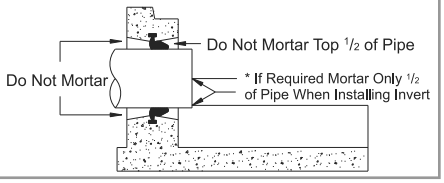
STEP 2:
Lubricate the connector and the entire section of the pipe that will be inserted into the connector. The chart below lists A-LOK's minimum lubrication length "L".

PIPE SIZE	MIN. LUBRICATION LENGTH "L"
4″ - 15″	12″
16″ - 18″	18″
21″ & Larger	24″

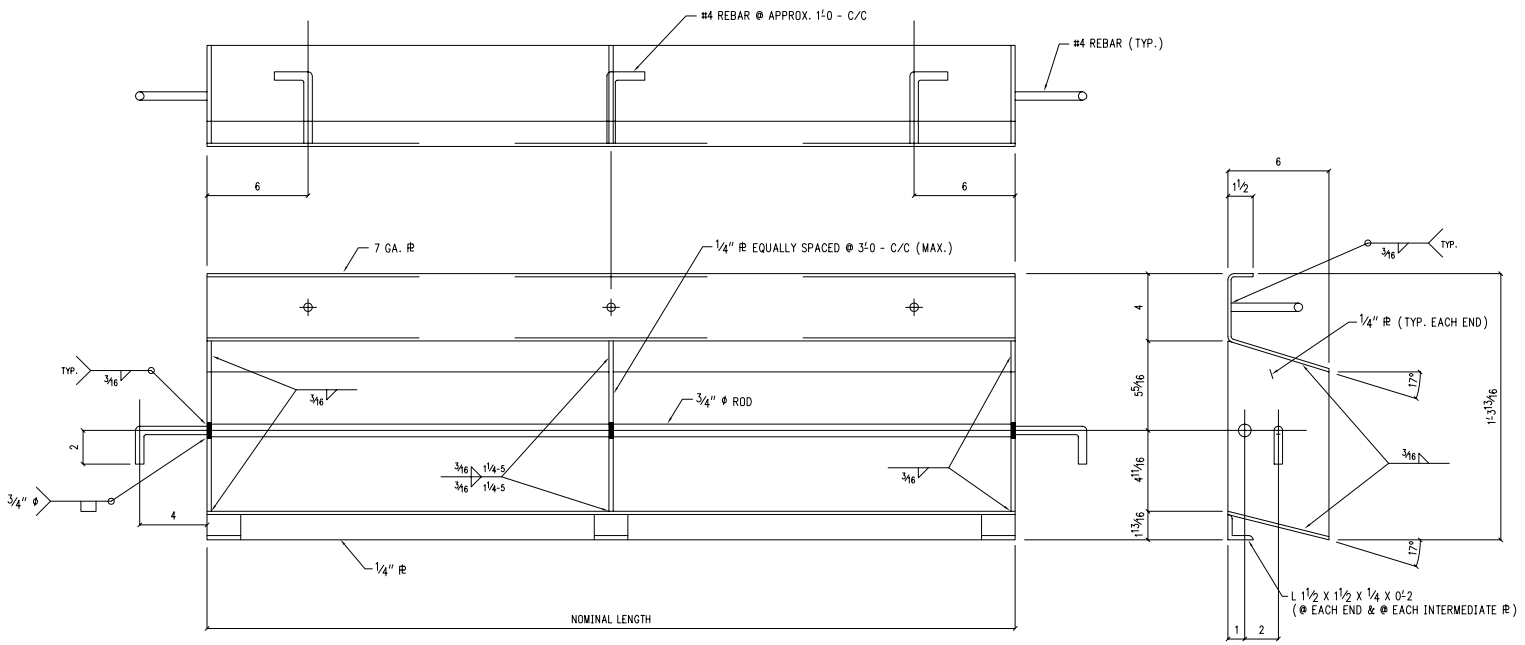
STEP 3:
Center the pipe and connector square to each other and insert the pipe into the connector using a bar or back hoe depending on the size. Once the pipe is coupled with the connector, deflect the structure or pipe to achieve the proper angle.

WARNING
To ensure the A-LOK X-CEL Connector remains a flexible watertight connector, it is A-LOK Products, Inc. strong recommendation that no mortar be placed between the pipe and wall of the concrete structure. The use of mortar in this area would decrease the effectiveness of the connector to compensate for shear caused by settlement or ground movement.

NOTE:
To find approximate subgrade, measure from the outside base of the structure to the junction of the connector and flat spot. Then add the wall thickness of the pipe plus 1/4 inch.



A•LOK PRODUCTS INCORPORATED P.O. BOX 1647 • 697 Main Street • Tullytown, PA 19007 • www.a-lok.com • email: info@a-lok.com
800-822-2565 • 215-547-3366 • 215-547-5260 FAX



SPECIFICATIONS

1. ALL MATERIAL TO BE A-36.

2. WELDING:
   A. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.1-2006.
   B. ALL WELDS ON EXPOSED SURFACES SHALL BE DRESSED SO AS TO PROVIDE A PLEASING FINISHED SURFACE.

3. FINISH:
   THE ENTIRE FRAME SHALL BE GALVANIZED PER ASTM A123.

REVISION		
NO.	DATE	DESCRIPTION
△		

PRINT RECORD								
FOR	NO.	DATE	FOR	NO.	DATE	FOR	NO.	DATE
								9-18-06

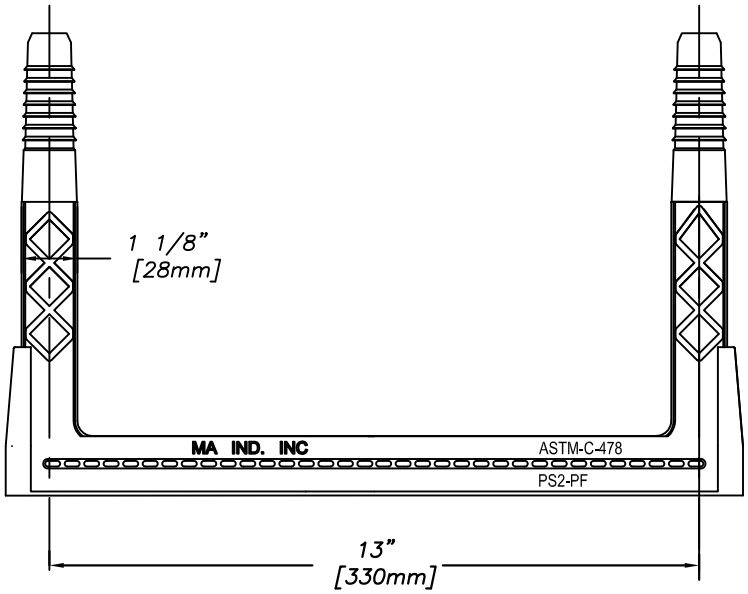
SHAWNEE STEEL & WELDING INC.

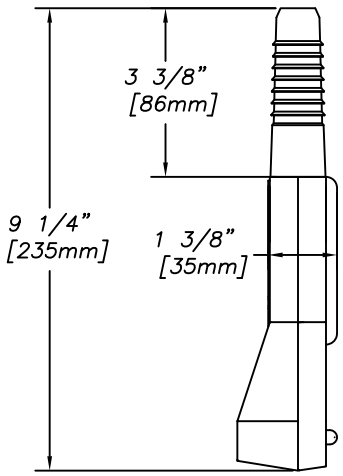
6124 MERRIAM DRIVE
MERRIAM, KANSAS 66203
(913) 432-8046

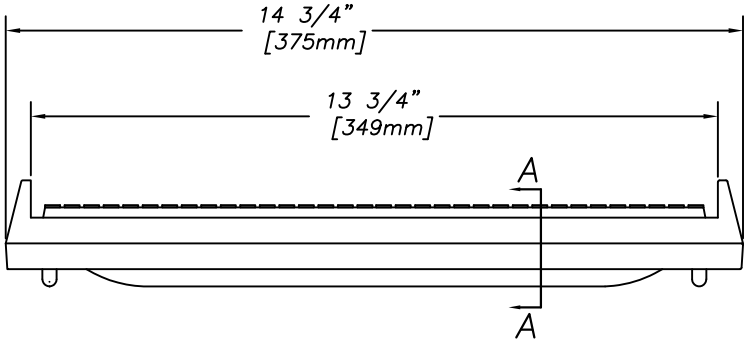
PROJECT:			
LOCATION:			
ARCHITECT:			
CUSTOMER:			
SUBJECT: 6" STEEL INLET FRAME, 10" VERT. OPENING W/TRASH ROD			
MATERIAL THIS SHEET: ☒ DELIVERED ☐ ERECTED		FIELD BOLT LIST: N/A	
PREP:		MATERIAL SPEC: A36	
FINISH: NOTED		ERECTION DWG. REF: N/A	
HOLES 13/16ø	DRAWN BY SAM CHECKED BY CEO/ TWC	JOB NO.	DWG. NO.

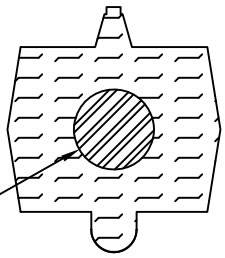
PS2-PF

Manhole Step





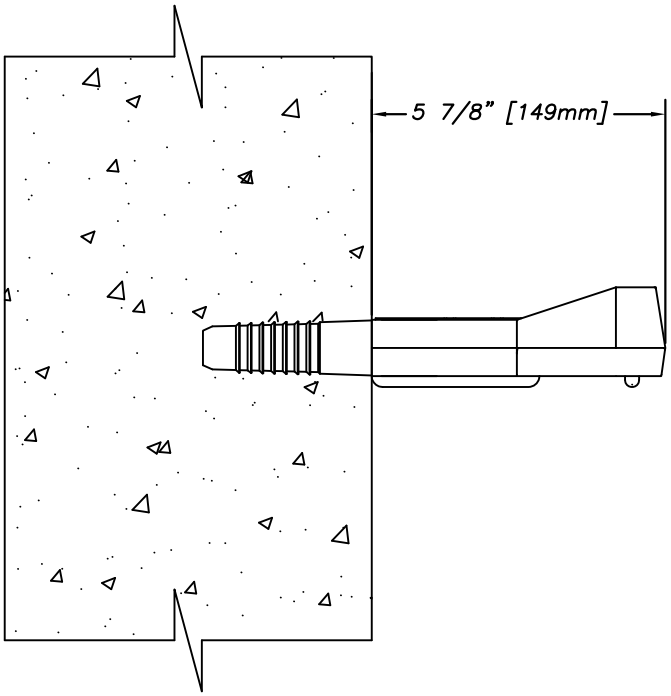




Copolymer Polypropylene Plastic

13mm 1/2" GRADE 60 STEEL REINFORCEMENT

SECTION-A



MEETS: ASTM C-478
ASTM D-4101
ASTM A-615
AASHT0 M-199

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

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Rev#: 1
Date: 09/22/09

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.

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*

Typical Applications

- Sanitary Manhole 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

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

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VERSION 2-16

EZ-STIK

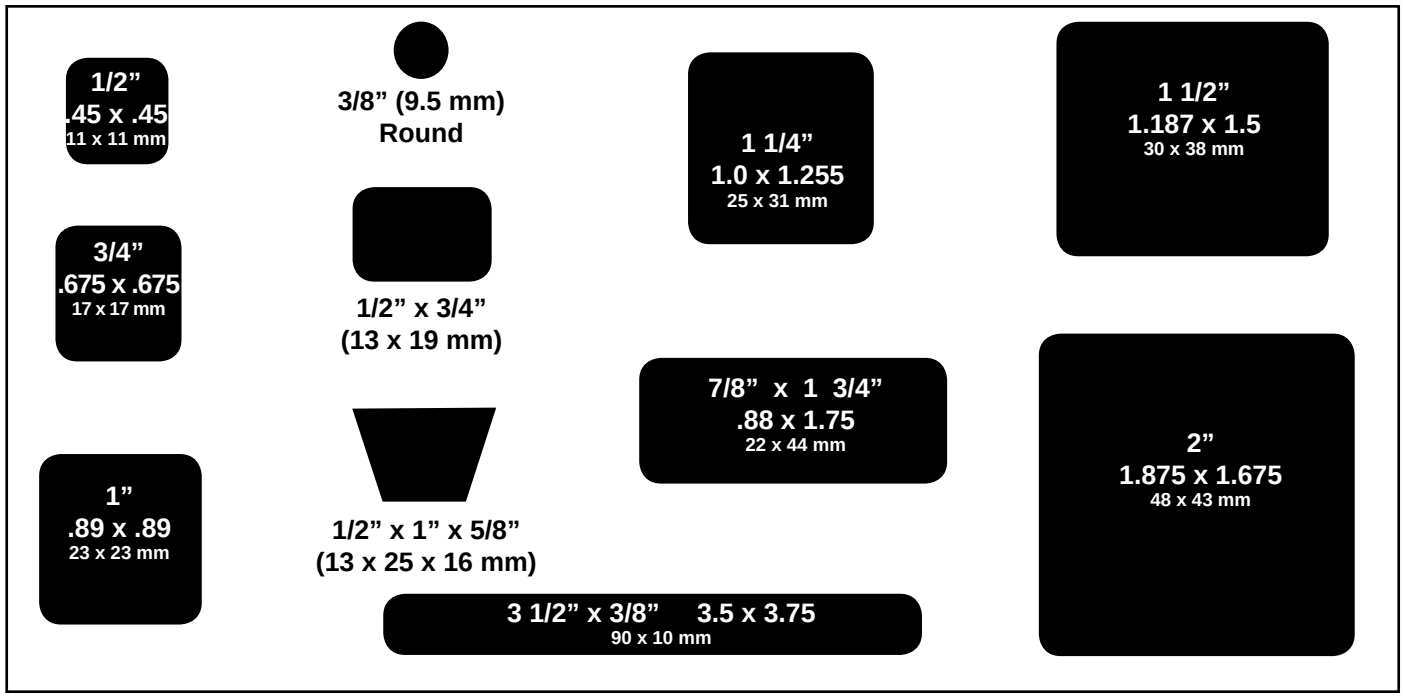
SPECIFICATION and SELECTION GUIDE

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 consists 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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VERSION 2-16

EZ-STIK

PHYSICAL PROPERTIES TEST RESULTS

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 requirementsfor Butyl Rubber Sealant, and AASHTO M 198.

Typical Properties

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

		SPEC.	REQUIRED	EZ-STIK
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 @ 77ºF (25 C)	(AASHTO T229)	ASTM D71	1.15 - 1.50	1.25 - 1.35
Ductility @ 77ºF (25 C), cm	(AASHTO T51)	ASTM D113	5.0 min.	meets requirement
Flash Point C.O.C.		ASTM D92	350º (177 C) min.	375ºF (191 C)
Fire Point C.O.C.		ASTM D92	375º min. (191 C)	385ºF (196 C)
Compression Test				
@77ºF (25 C), lbf/in^3		ASTM C972	100 max.	40 - 55 lbf/in^3
@32ºF (0 C), lbf.in^3			200 max.	130 - 160 lbf/in^3
Low Temperature Flexibility				
@-10ºF (-23 C)		ASTM C765	180º bend, no cracking, nor loss of adhesion.	Pass - no cracking or adhesion loss.
Elevated Temperature Flexibility				
14 days @ 157ºF (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				
@ 77ºF (25 C), dmm		ASTM D217	50 - 100 dmm	55 - 85 dmm
@ 32ºF (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_2SO_4,NaOH,KOH,H_2S

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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VERSION 2-16

EZ-WRAP

EXTERIOR BUTYL RUBBER JOINT WRAP

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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VERSION 9-16

EZ-WRAP

SPECIFICATION and SELECTION GUIDE

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.

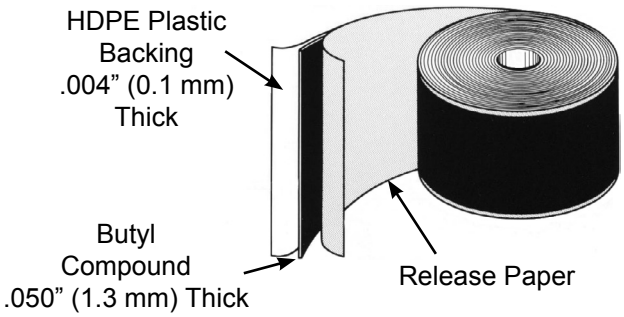
BUTYL JOINT WRAP WITH RUBBER BACKING

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.

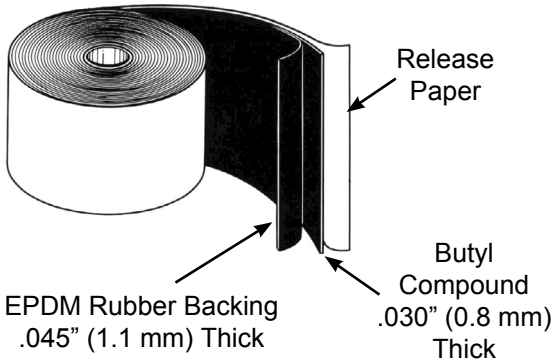
For manholes, the tape width shall be 6" (150 mm) wide. The tape shall be overlapped at least twice its width. The tape shall not be stretched during application. Primer and/or adhesive as recommended by the tape supplier shall be employed for adverse, critical, or other applications.

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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VERSION 9-16

EZ-WRAP

Exterior Joint Wrap

INSTALLATION INSTRUCTIONS

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 in stalling 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 dispense 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 dispense 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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VERSION 9-16

GENERAL PURPOSE SPRAY ADHESIVE

ADHESIVE SPRAY

What It Is

GENERAL PURPOSE SPRAY ADHESIVE is a fast drying, super strength adhesive for bonding rubber to concrete and other substrates. GENERAL PURPOSE SPRAY ADHESIVE is a great general purpose rubber cement that is packaged in a convenient 16 oz. aerosol can.

Why It's Better

- Fast drying.
- High strength.
- Adjustable spray nozzle.
- Convenient aerosol.
- Methylene chloride free formula.

Method of Application

- Shake well prior to use.
- Surfaces should be clean, dry and free of debris.
- Spray adhesive using a web pattern to insure coverage.
- Allow solvent to flash for 1 to 3 minutes, until tacky, and then press rubber to adhesive.

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VERSION 9-16

TNEMEC

PRODUCT DATA SHEET

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 m²/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 Mils (Microns)	Wet Mils (Microns)	Sq Ft/Gal (m²/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" (9.5or 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.

Swift Lift System

The Swift Lift System is a quick connect-disconnect system that allows precast concrete elements to be handled repeatedly, with speed, safety and economy. The System is a non-welded system and void of threaded connections. The quality, reusable Swift Lift Lifting Eye's heavy duty construction will provide years of good service.

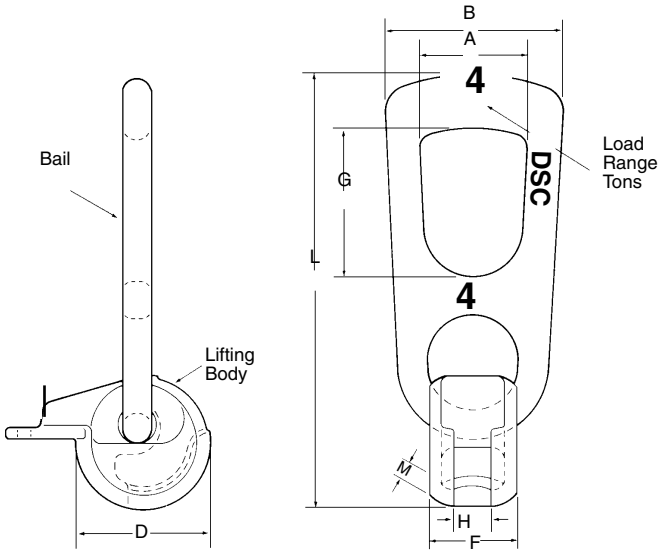
The Swift Lift System is available with safe load ratings of 1, 2, 4, 8 and 20 tons. Each component is clearly marked with its maximum safe working load. The System is extremely versatile and can be utilized for vertical and diagonal pulls. It can be used to lift concrete elements from a horizontal to a vertical position without the aid of a tilting table.

P-50 Swift Lift Universal Lifting Eye

The Swift Lift Universal Lifting Eye (P-50) consists of a flat-sided, spherical lifting body and a high strength bail. The lifting body has a T-shaped slot that permits rapid attachment and release of the head on Swift Lift Anchors.

The design of the P-50 Universal Lifting Eye permits the bail to freely rotate 180°, while the complete lifting eye may rotate through a 360° arc. This design feature allows precast concrete elements to be turned, tilted and/or rotated under load.

Dayton Superior does not recommend the use of this lifting eye for edge lifting of thin precast concrete panels.



P-50 Swift Lift Universal Lifting Eye Dimensions						
Rated Load Tons	A	B	D	F	G	L
1	1.87"	2.95"	2.20"	1.26"	2.80"	7.40"
2	2.34"	3.58"	2.68"	1.61"	3.41"	9.06"
4	2.76"	4.65"	3.46"	2.22"	3.46"	11.14"
8	3.47"	6.30"	4.41"	2.83"	4.52"	15.79"
20	4.18"	7.09"	6.00"	4.29"	5.31"	20.00"

The rated load provides a factor of safety of approximately 5 to 1 (ultimate to rated load).

Inspection and Maintenance

The P-50 Universal Lifting Eye may be subjected to wear, misuse, overloading and other factors that can affect the lifting eye's rated load. Therefore, it is imperative that the lifting eye be user-inspected at least once a month to determine its general condition and degree of wear.

During the user's monthly inspection, the lifting eye should be checked for evidence of heat application. If evidence of heat application is found, the unit must be scrapped. Check for a bent or twisted bail and discard all units found to have these flaws. Also, check to make certain that the bail rotates freely in all directions.

At least once every three months, dimensions "H" and "M" on each unit should be checked. The upper limits are shown in the chart. If either of these limits is exceeded, the P-50 Universal Lifting Eye must be removed from service and destroyed.

The proper method for scrapping a lifting eye is to cut through the bail with a cutting torch to render the unit useless as a lifting device.

No repairs or welding to the P-50 Swift Lift Universal Lifting Eye are permitted.

Limiting Dimensions on P-50 Swift Lift Universal Lifting Eye		
Rated Load (Tons)	H Maximum Width	M Minimum Thickness
1	0.512"	0.217"
2	0.709"	0.236"
4	0.984"	0.315"
8	1.260"	0.472"
20	1.811"	0.709"

Swift Lift System

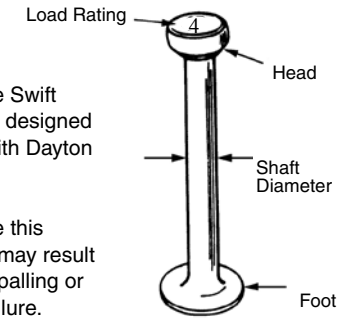
P-52 Swift Lift Anchor

The P-52 Swift Lift Anchor is hot forged from carbon steel. The formed head provides spherical seating that the Lifting Eye engages, while a disc-shaped foot is embedded in the concrete.

Due to its being a forged part, the Swift Lift Anchor does not depend on welds or thread engagement to develop its safe working load. Forging provides maximum safety with its advantageous material structure. This allows the anchor to easily meet the OSHA requirement of a 4 to 1 factor of safety.

In addition to the carbon steel anchors, Type 304 or 316 Stainless Steel Swift Lift Anchors are available on special order. Use stainless steel anchors when maximum protection against corrosion is required.

For safety, refer to the P-52 Swift Lift Anchor Selection Chart on page 31 to determine the actual safe working load of an individual anchor. The MAXIMUM safe working load is clearly visible on the head of the anchor for easy recognition of the appropriate hardware and accessories for-use with each Swift Lift Anchor.

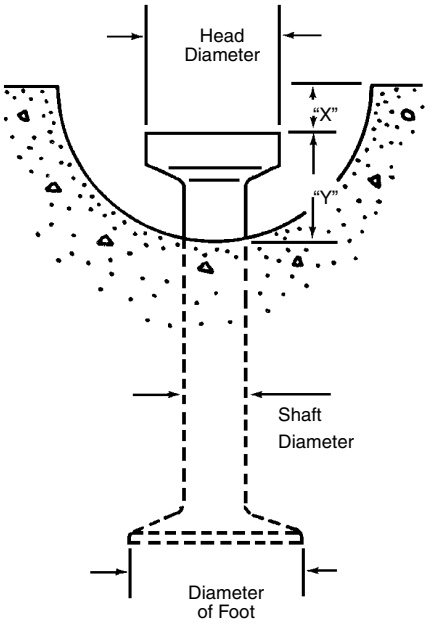


Caution: The Swift Lift Anchor is designed to be used with Dayton Superior components. Failure to use this combination may result in concrete spalling or premature failure.

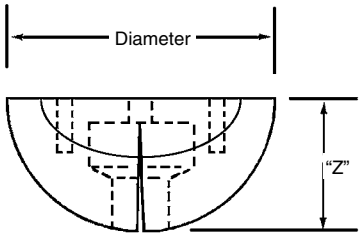
To Order:
Specify: (1) quantity, (2) name, (3) system size, (4) length

Example:
200, P-52 Swift Lift Anchors, 4 ton, 9-1/2" long

P-52 Swift Lift Anchor and Recess Plug Dimensions



P-52 Swift Lift Anchor



Swift Lift Round Recess Plug

Swift Lift Round Recess Plug Dimensions		
Swift Lift Anchor	Diameter of Recess Plug	Dimension "Z"
1	2-7/16"	1-3/16"
2	3-5/16"	1-7/16"
4	4"	1-13/16"
8	5"	2-5/16"
20 Tons	6-3/8"	3-1/8"

Note: The diameter of the narrow recess plug is the same as the diameter of the round recess plug.

P-52 Swift Lift Anchor Dimensions					
Swift Lift Anchor	**Dimension "X"**	**Dimension "Y"**	**Shaft Diameter**	**Foot Diameter**	**Head Diameter**
1	5/16"	7/8"	3/8"	1"	11/16"
2	7/16"	1-1/16"	9/16"	1-3/8"	1-1/32"
4	9/16"	1-5/16"	3/4"	1-7/8"	1-11/32"
8	9/16"	1-5/8"	1-3/32"	2-5/8"	1-7/8"
20 Tons	9/16"	2-5/8"	1-1/2"	3-3/4"	2-3/4"

Swift Lift System

DAYTON SUPERIOR

P-52 Swift Lift Anchor Tensile and Shear Capacity

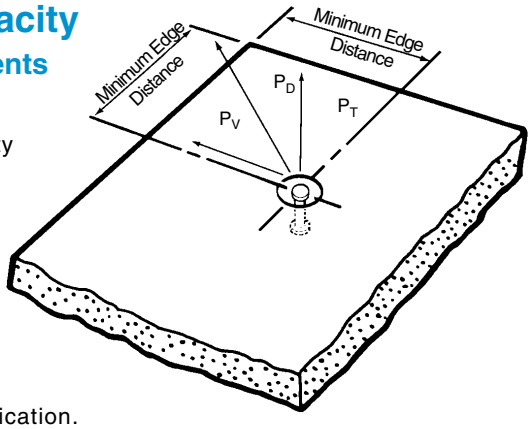
When anchors are used in the face of thin concrete elements

The following table lists the P-52 Swift Lift Anchors that are currently manufactured. Other sizes and lengths are available on special order. However, the sizes and lengths of anchors shown will handle the majority of flat precast concrete elements.

When the P-52 Swift Lift Anchor is properly embedded in normal weight concrete, the tabulated working loads are applicable for any direction of load. This applies even if the direction of load is parallel to the axis of the anchor, perpendicular to it or at any other angle.

Minimum distance between anchors is twice the minimum edge distance.

It is critical to remember that in order to obtain the safe working loads listed in the table below, the normal weight concrete must have obtained the minimum concrete strength shown, prior to initial load application.

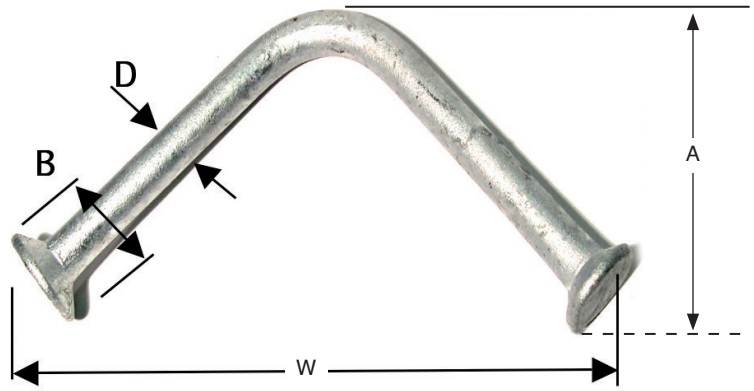


Swift Lift Anchor Ton x Length	Safe Working Load	Minimum Concrete Strength	Minimum Edge Distance
1 ton x 2-5/8"	1,700 lbs.	3,500 psi	8"
1 ton x 3-3/8"	2,000 lbs.	2,200 psi	10"
1 ton x 4-3/8"	2,000 lbs.	1,600 psi	10"
1 ton x 8"	2,000 lbs.	1,600 psi	10"
1 ton x 9-1/2"	2,000 lbs.	1,600 psi	10"
2 ton x 2-3/4"	2,100 lbs.	3,500 psi	8"
2 ton x 3-3/8"	2,900 lbs.	3,500 psi	10"
2 ton x 5-1/2"	4,000 lbs.	1,600 psi	13"
2 ton x 6"	4,000 lbs.	1,600 psi	13"
2 ton x 6-3/4"	4,000 lbs.	1,600 psi	13"
2 ton x 11"	4,000 lbs.	1,600 psi	14"
4 ton x 3-3/4"	4,000 lbs.	3,500 psi	12"
4 ton x 4-1/4"	4,900 lbs.	3,500 psi	13"
4 ton x 4-3/4"	5,800 lbs.	3,500 psi	14"
4 ton x 5-1/2"	7,400 lbs.	3,500 psi	17"
4 ton x 7-1/8"	8,000 lbs.	1,800 psi	20"
4 ton x 9-1/2"	8,000 lbs.	1,600 psi	17"
4 ton x 14"	8,000 lbs.	1,600 psi	18"
4 ton x 19"	8,000 lbs.	1,600 psi	20"
8 ton x 4-3/4"	6,400 lbs.	3,500 psi	16"
8 ton x 6-3/4"	11,200 lbs.	3,500 psi	21"
8 ton x 10"	16,000 lbs.	3,500 psi	19"
8 ton x 13-3/8"	16,000 lbs.	1,600 psi	23"
8 ton x 26-3/4"	16,000 lbs.	1,600 psi	27"
20 ton x 10"	25,000 lbs.	3,500 psi	24"
20 ton x 19-3/4"	40,000 lbs.	3,500 psi	31"

Safe Working Loads provide a factor of safety of approximately 4 to1 in normal weight concrete. Safe Working Load is based on anchor setback from face of concrete "X" dimension, as shown on page 28.

A-ANCHOR

CONAC
Concrete Product Solutions



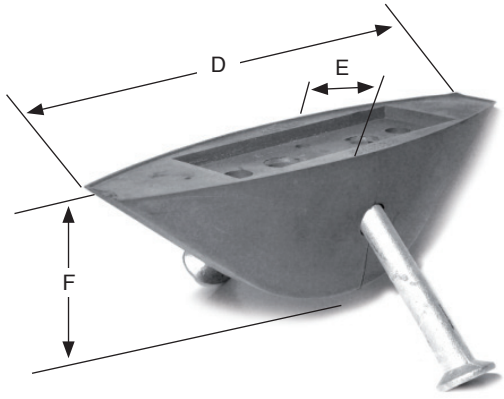
PRODUCT CODE	SLAB MIN. 90°	SWL TENSION	SWL AT 90° SHEAR	END DISTANCE
4CA12	4”	2,600	4,000	
4CA14	4”	3,500	5,400	9”
5CA14	5”	5,500	8,500	10”
5CA18	5”	6,000	9,300	10”
6CA14	6”	6,500	10,100	12 1/2”
6CA18	6”	7,500	11,600	12 1/2 “
8CA18	8”	13,000	20,000	15 1/2 “

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.

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”

A-ANCHOR RUBBER RECESS FORMERS

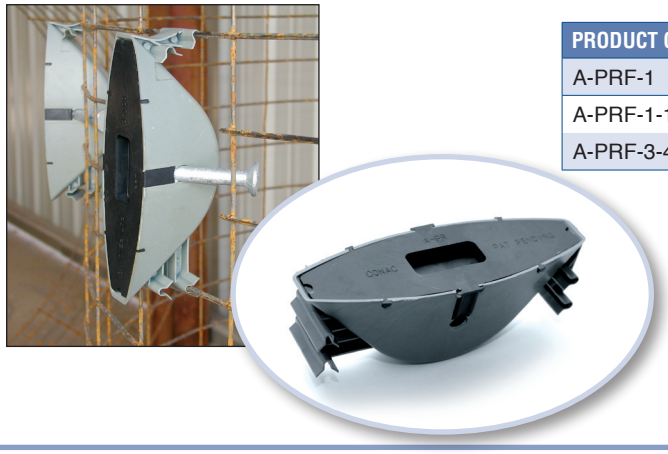
The A Anchor Rubber Recess Formers are manufactured in 90° angles. The recess former properly sets the top of the anchor 3/4" below the surface of the concrete.



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-3-4	11.00”	4-1/8”	4”	60 PCS