



construction managers

general contractors

design builders

SUBMITTAL REVIEW

Date: August 25, 2017

Submittal # 4R REVISED PreCast Private Storm Boxes

Subm # 33 4000 04 b

Subcontractor: Kat Excavation
Bart Fisher

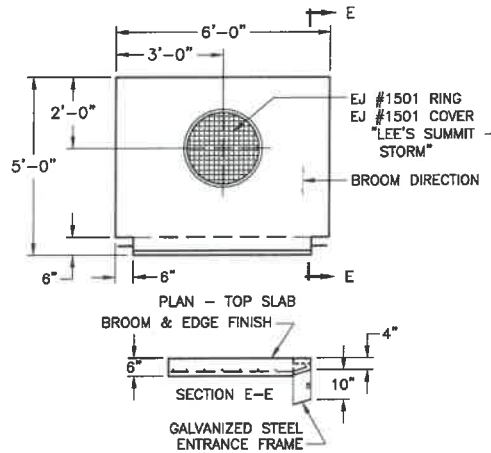
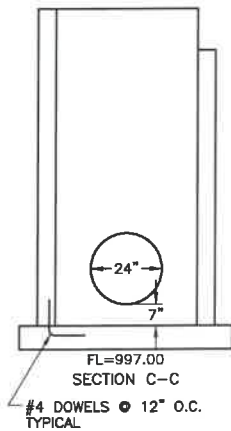
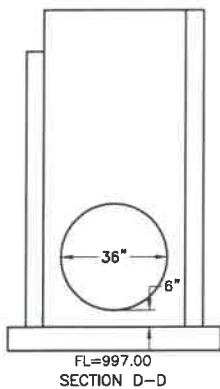
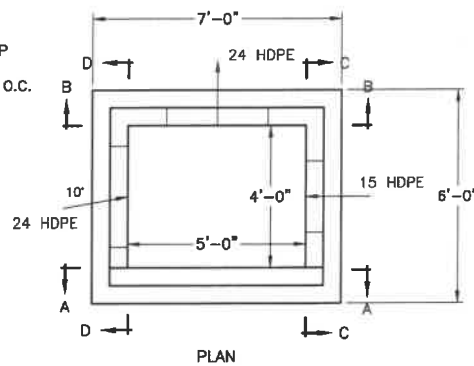
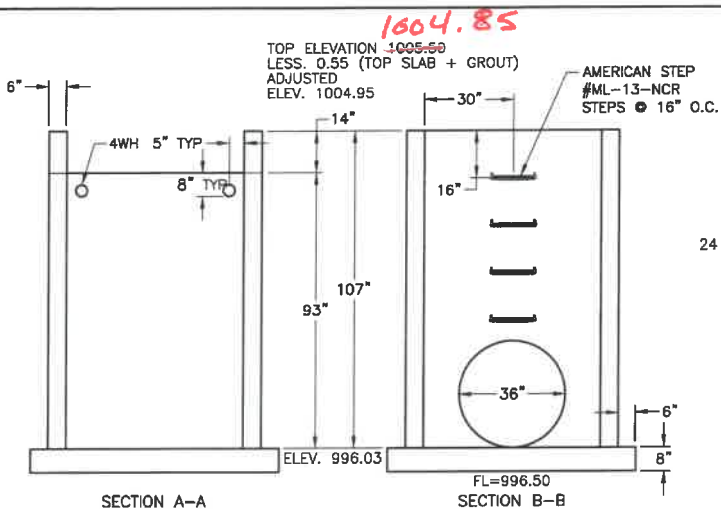
Project#: 417 The Residence at Echelon

Submit To: NSPJ Architects
Tim Hauschild
Clint Evans

SUBMITTAL FOR APPROVAL	
Job Name/No: 408 The Residences at Echelon	
☒ REVIEWED	☐ REVISE & RESUBMIT
☐ REVIEWED & NOTED	☐ REJECTED
Submittal received for general compliance with the Contract Documents. Contractor's review does not relieve sub/vendor of responsibility for dimension, quantities, accuracy or completion of submittals or from any responsibilities required by terms and conditions of Subcontract/PO with Luke Draily Construction Co., Inc.. Sub/Vendors shall follow all manufacturer installation instructions. Installing contractor shall be responsible to coordinate with trades for hookup, supports, routing, etc.	
By: J Wilcox	Date: 8-25-17

Engineering Solutions	Shop Drawing Review
Project: The Residences @ Echelon	Date: 9/14/17
Submittal #: _____	By: RPM
☒ APPROVED	☐ REJECTED
☒ APPROVED AS NOTED	

1-4- Top = 1604.85
1-5- Top = 1603.32
1-6- 24" Orifice
5-1- Top = 1603.32
7-2- Nyloplast
7-6- Open On Both Sides As Shown
8-2- Grate Inlet, FL 15" = 1662.05
8-7 Top = 1619.50, FL's Out = 1611.50, In = 1612.00
8-8- Top = 1622.50, FL 24" = 1613.15
10-1- FL = 1613.35
10-5- Open On Both Sides
10-6- Open On Both Sides
11-2- 4' Dia. MH / Junction MH, Top = 1632.30
11-3- Open On Both Sides
12-1- Top = 1619.00
13-1- Top = 1607.00



REVISIONS

REV.	DATE	BY	DESCRIPTION
01	08/17/16	MB	UPDATED PER ENGINEER SET 07/26/17

Subm #334000-04-b

TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	11,560
BASE SLAB	4,148
TOTAL BASE WT	15,708

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM

NOTE
CONTRACTOR TO OFFLOAD STRUCTURE
ONSITE DUE TO WEIGHT OF STRUCTURE.

BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
INDEPENDENCE, MO 64056
(816) 796-3344
FAX (816) 796-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

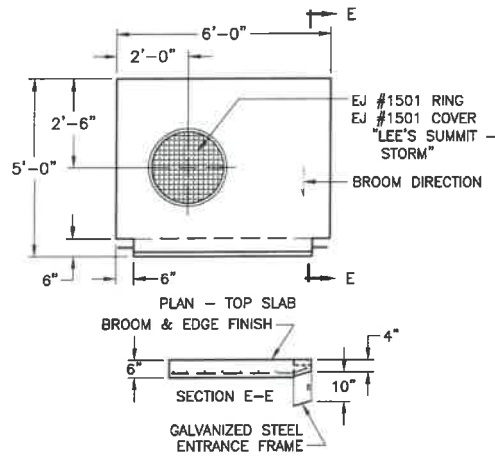
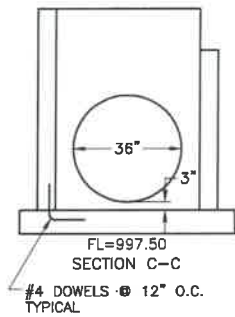
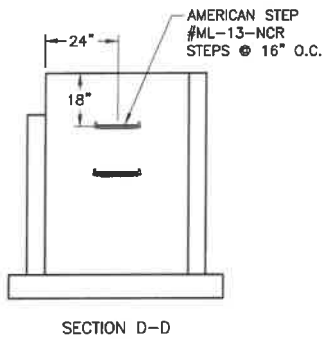
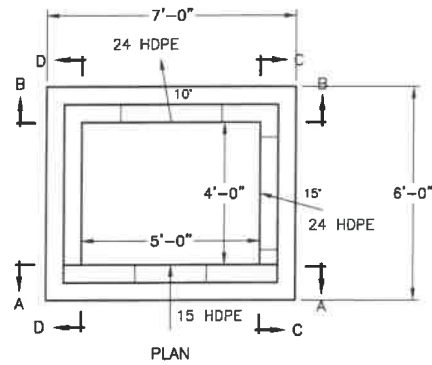
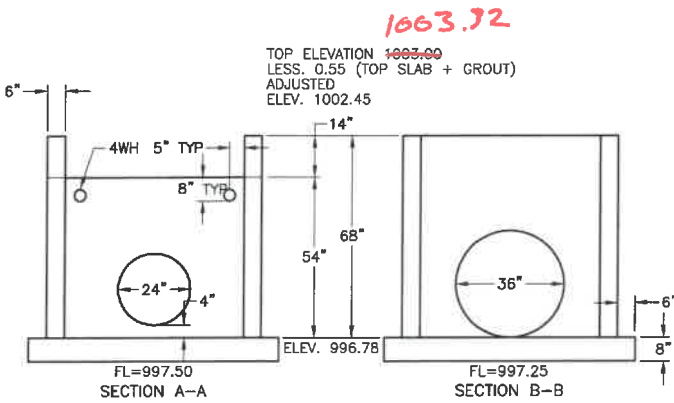
BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

STRUCTURE 1-4		DESCRIPTION	
DRAWN	DATE	SCALE	MIX DESIGN
MB	06/21/17	NTS	4000 PSI
CHECKED	DATE	INSPECTION	SHR 1 OF 1
N/A	N/A	N/A	

17-1299

PLOT DATE: 8/17/2017



TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING	
1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
W/D SECTION 2	
W/D SECTION 1	
BASE SECTION	6,597
BASE SLAB	4,148
TOTAL BASE WT	10,745

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM

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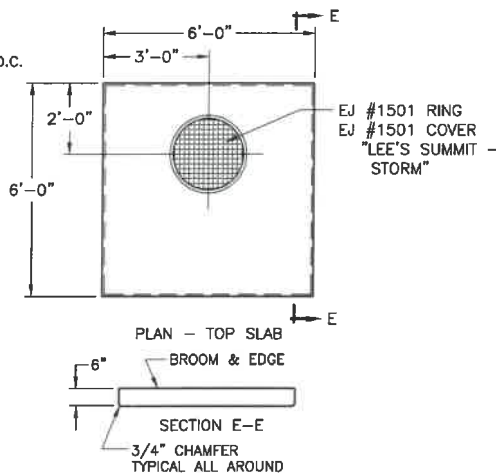
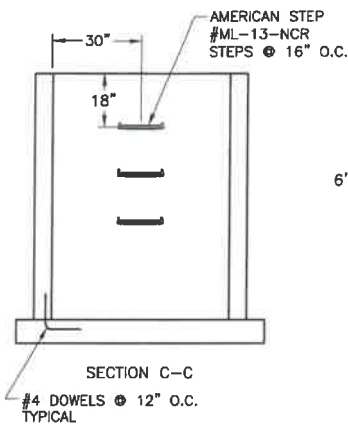
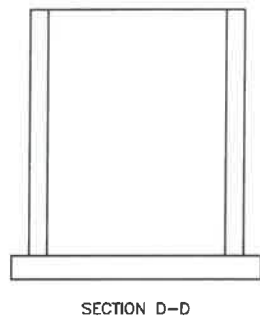
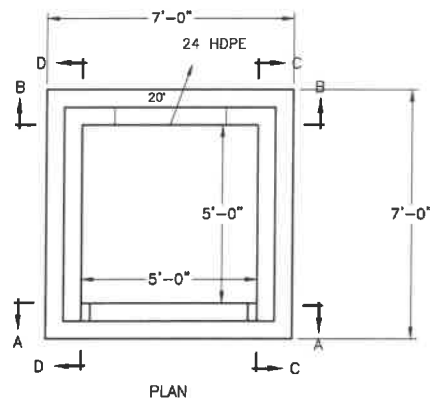
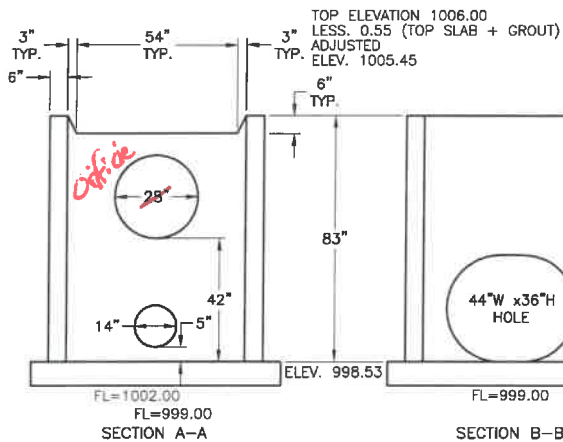
WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

STRUCTURE		DESCRIPTION	
1-5		CURB INLET	
DRAWN	DATE	SCALE	REV. NO.
MS	06/21/17	NTS	4000 PSI
CHECKED	DATE	REVISION	SHT 1 OF 1
N/A	N/A	N/A	17-1299

PRINT DATE: 8/17/2017



SHIP WITH INLET
(1) EJ CUSTOM TRASH RACK
PER ENGINEER PROVIDED
DETAIL

TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,667
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	10,019
BASE SLAB	4,840
TOTAL BASE WT.	14,858

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM



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WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

1-6
DATE 06/21/17
CHECKED N/A

DESCRIPTION
FIELD INLET (OUTLET STRUCTURE)
SCALE NTS
INSPECTION N/A

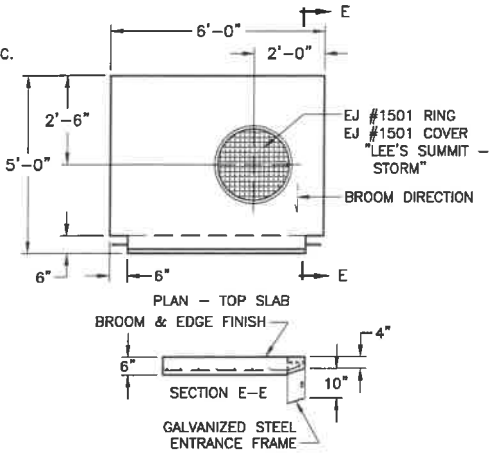
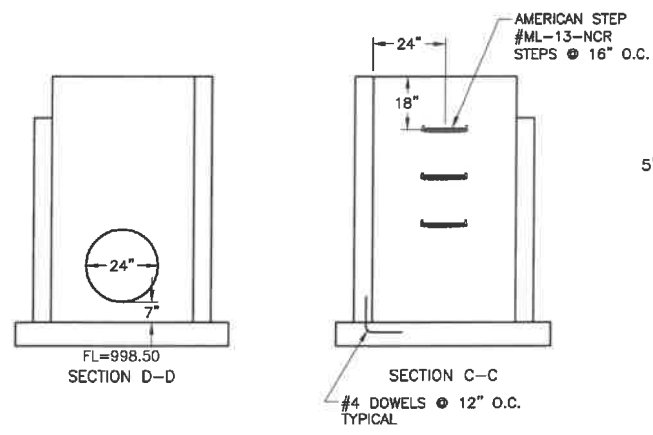
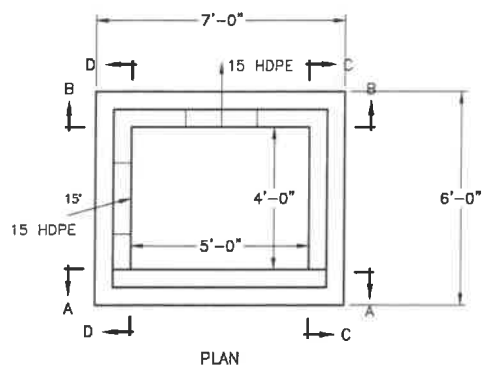
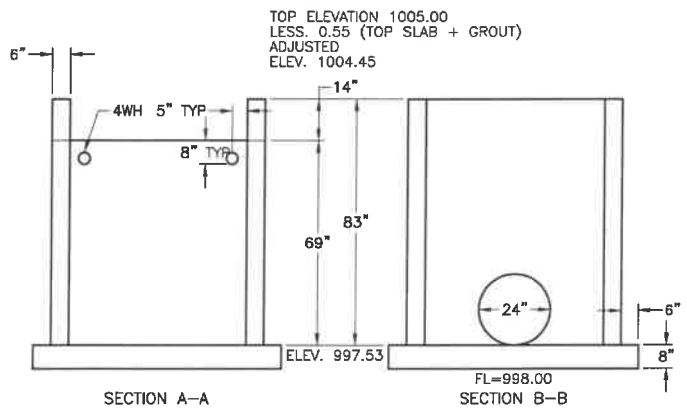
17-1299
PLOT DATE: 8/17/2017

REVISIONS

REV.	DATE	BY	DESCRIPTION
01	06/17/17	MB	UPDATED PER ENGINEER SET 07/26/17

17-1299 KAT THE RESIDENCES AT ECHELON - PRIVATE (STORM) LEE'S SUMMIT, MO

1:17-1299 KAT THE RESIDENCES AT ECHELON - PRIVATE (STORM) THE RESIDENCES AT ECHELON - PRIVATE (STORM) DMC



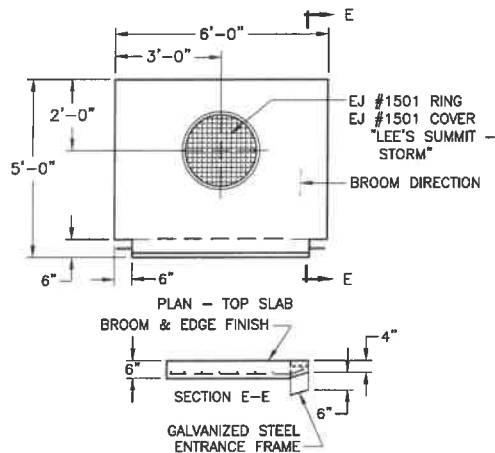
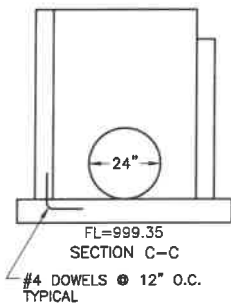
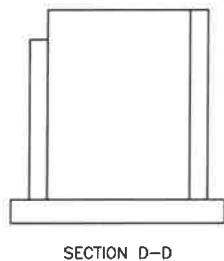
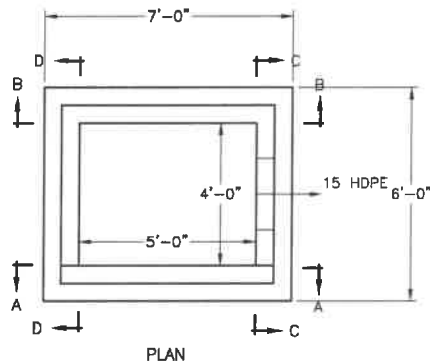
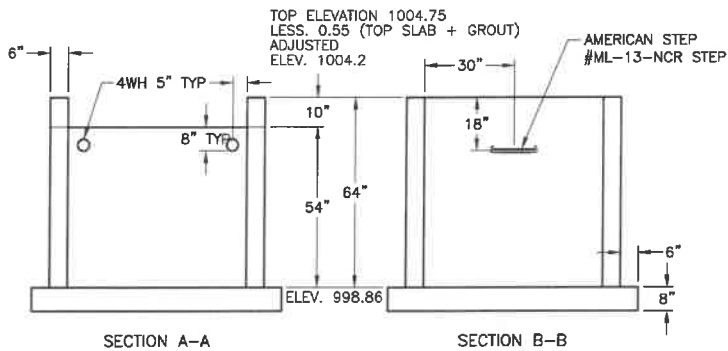
REVISIONS	
REV	DESCRIPTION

TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING	2,222
UNIT WEIGHTS	(LBS)
TOP SLAB	
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	9,263
BASE SLAB	4,148
TOTAL BASE WT	13,411

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM

 BARBOUR CONCRETE COMPANY 21421 E. TRUMAN ROAD INDEPENDENCE, MO 64056 (816) 796-3344 FAX (816) 796-3518	WALL REINFORCING: PER DRAWING R1-A #4 @ 12" O.C.E.W.		BASE REINFORCING: #4 @ 6" O.C.E.W.		KAT EXCAVATING THE RESIDENCES AT ECHELON - PRIVATE LEE'S SUMMIT, MO		SHEET 4-2 DATE 06/21/17 CHECKED N/A N/A		DESCRIPTION CURB INLET SCALE NTS 4000 PSI SHT 1 OF 1 17-1299	

8/17/2017



REVISIONS	
NO.	DESCRIPTION

TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	7,150
BASE SLAB	4,148
TOTAL BASE WT.	11,298

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615, GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM



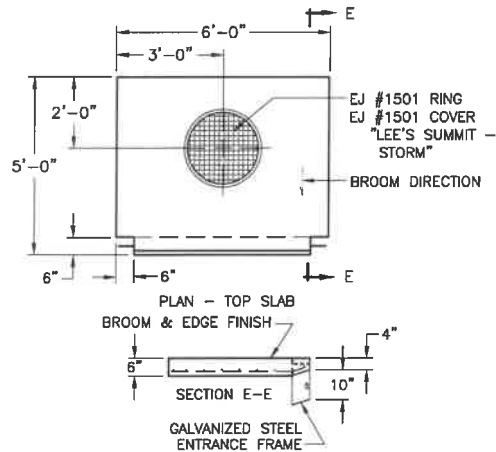
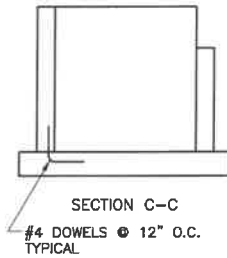
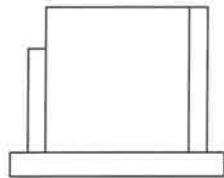
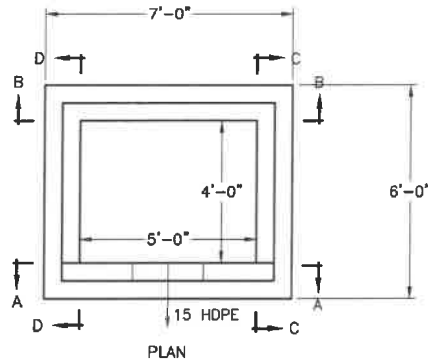
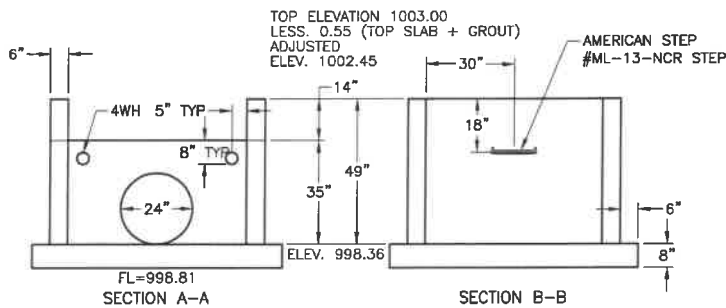
BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
INDEPENDENCE, MO 64056
(816) 796-3344
FAX (816) 796-3518

WALL REINFORCING	BASE REINFORCING
PER DRAWING R1-A #4 @ 12" O.C.E.W.	#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

STRUCTURE		DESCRIPTION	
4-3		NON-SETBACK CURB INLET	
DRAWN	DATE	SCALE	MIX DESIGN
MB	06/21/12	NTS	4000 PSI
CHECKED	SITE	INSPECTION	SHI 1 OF 1
N/A	N/A	N/A	17-1299

PLST DATE: 8/17/2017



TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	5,298
BASE SLAB	4,148
TOTAL BASE WT	9,446

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM



BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
INDEPENDENCE, MO 64056
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FAX (816) 796-3516

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

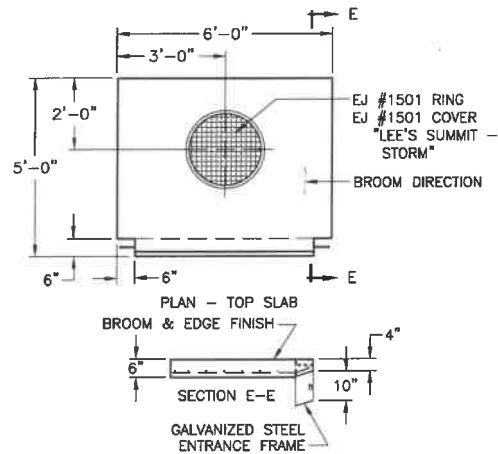
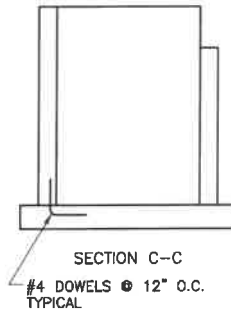
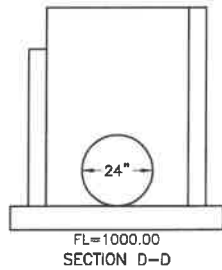
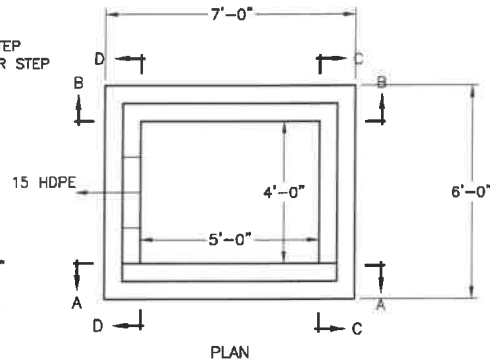
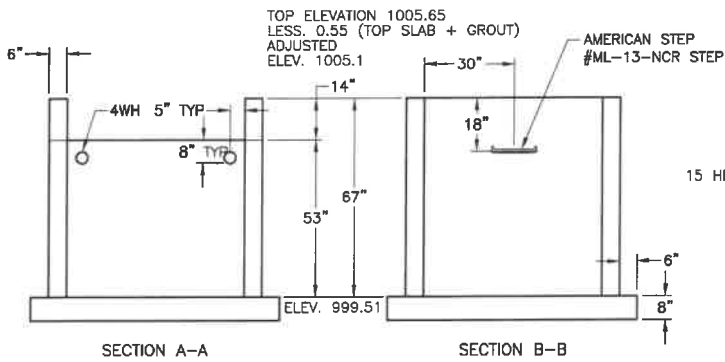
STRUCTURE		DESCRIPTION	
5-1		CURB INLET	
DRAWN MB	DATE 06/21/17	SCALE NTS	MIX DESIGN 4000 PSI
CHECKED N/A		INSPECTION N/A	SHEET 1 OF 1

PLT DATE: 8/17/2017

REVISIONS

REV.	DATE	DESCRIPTION
1		

17-1299-KAT THE RESIDENCES AT ECHELON - PRIVATE (STORM) THE RESIDENCES AT ECHELON - PRIVATE (STORM) DWG



REVISIONS	
NO.	DESCRIPTION
1	DATE
2	DATE
3	DATE
4	DATE
5	DATE
6	DATE
7	DATE
8	DATE
9	DATE
10	DATE

TOP SLAB REINFORCING	
#4 @ 8" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING	2,222
UNIT WEIGHTS	(LBS)
TOP SLAB	
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	7,520
BASE SLAB	4,148
TOTAL BASE WT	11,669

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615, GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM



BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
INDEPENDENCE, MO 64055
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(816) 796-3518

WALL REINFORCING:	BASE REINFORCING:
PER DRAWING R1-A #4 @ 12" O.C.E.W.	#4 @ 6" O.C.E.W.

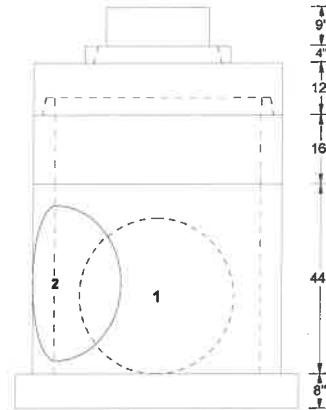
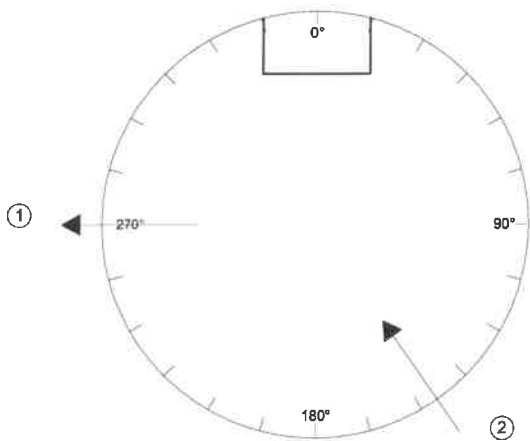
KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

STRUCTURE	6-1	DESCRIPTION	CURB INLET
DRAWN	WS	DATE	06/21/17
CHECKED	N/A	DATE	N/A
SCALE	NTS	SCALE	NTS
APPRECIATION	N/A	APPRECIATION	N/A
MIX DESIGN	4000 PSI	MIX DESIGN	4000 PSI
BCNO NUMBER	17-1299	BCNO NUMBER	17-1299

DATE: 8/17/2017

Job Name: THE RESIDENCE @ ECHELON PRIVATE STORM
 Job #: 17-1299
 Customer: KAT EXCAVATION INC 1038
 Structure ID: 7-2
 Type: 4' DIA DEV BASE STORM MANHOLES

Rim: 1006.75'
 Invert: 1000.15'
 Rim to Invert: 6.60'
 Precast Height: 6.33'
 Overall Height: 7.77'

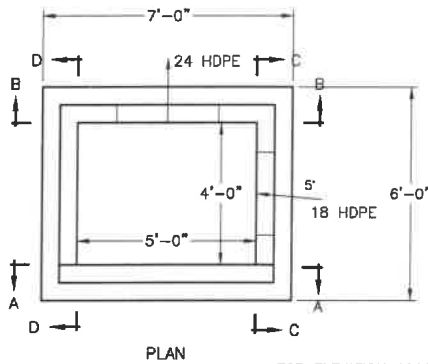


Barbour Concrete Company
 816.796.3344

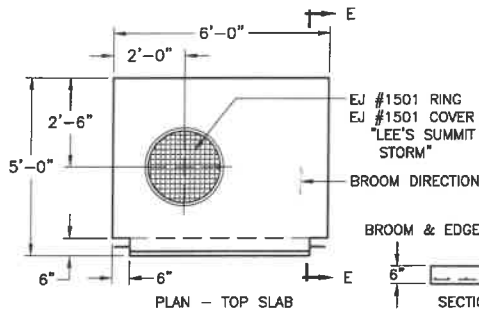
06/21/2017

Pipe#	Elevation	Pipe	Hole Type	UptoCenter	OverInside	Hole_Height	Hole_Width	Description	UOM	Quantity	Weight
(1)	1000.15	24 HDPE	HOLE	18	113	36	36	00150215 1502 MUDRING ONLY	EA	1	302
(2)	1000.4	24 HDPE	HOLE	21	60.75	36	36	ADJUSTMENT RING 24" X 4"H WITH TG JOINT	EA	1	140
								MANHOLE FLAT LID 4'ID X 12"H WITH TG TOP JOINT	EA	1	1,700
								MANHOLE RISER 4'ID X 16"H	EA	1	1,143
								DEV BASE MH 4'DIA X 52"H W/1 STEP AND GASKET CAST IN	EA	1	4,528
								00150246 1502 COVER LEE'S SUMMIT STORM LS101B	EA	1	161
								JOINT SEALANT 1" SQ X 14.5'	CS	0.9	43
								Total Structure			8,017

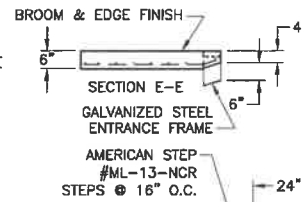
MH REINFORCING IN ACCORDANCE WITH ASTM C-478
 BASE REINFORCING
 4' DIA MH = #4 @ 12" OCEW
 5, 6, 7, 8, AND 10 FT DIA = #5 @ 6 OCEW
 WALL THICKNESS = (ID DIA / 12) + 1
 AIR ENTRAINED CONCRETE = 4000 PSI IN 28 DAYS



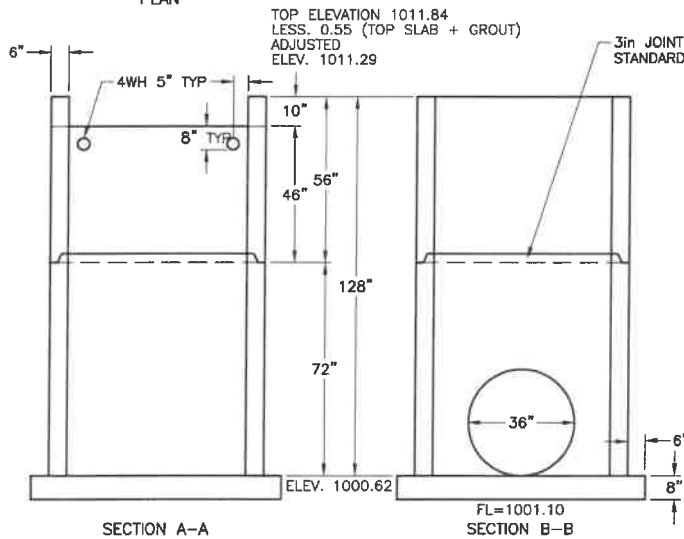
PLAN



PLAN - TOP SLAB

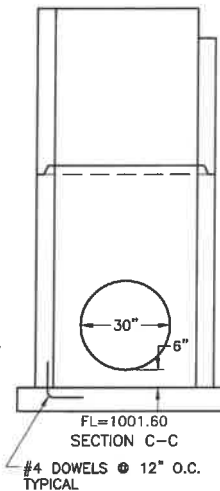


SECTION E-E

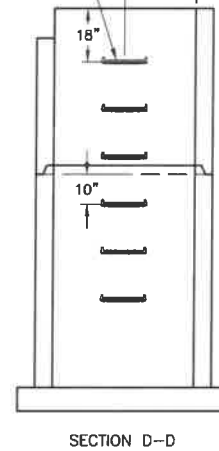


SECTION A-A

SECTION B-B



SECTION C-C



SECTION D-D

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM

TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING	
1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	8,002
BASE SLAB	4,148
TOTAL BASE WT	12,150



BARBOUR CONCRETE COMPANY
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WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

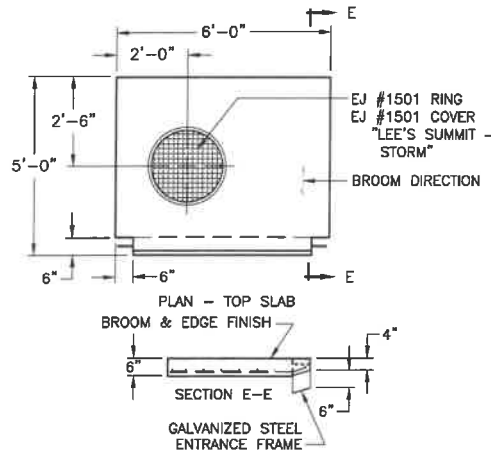
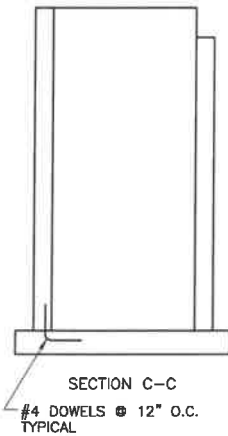
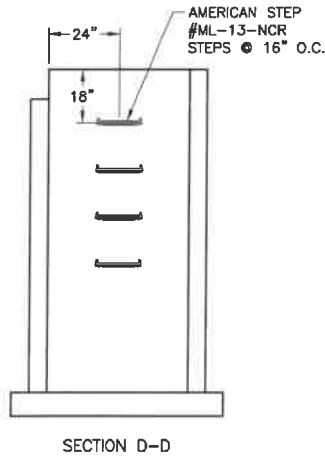
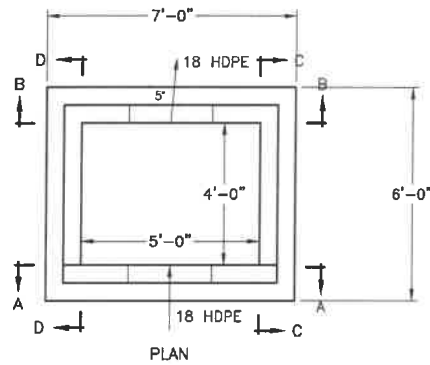
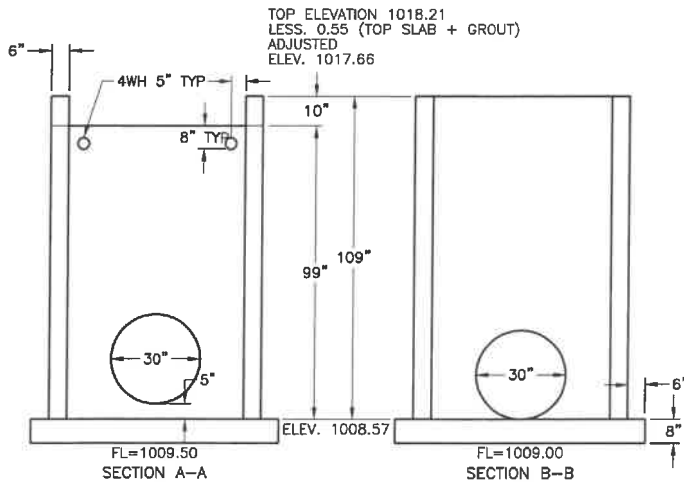
KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

STRUCTURE		DESCRIPTION	
7-4		NON-SETBACK CURB INLET	
DRAWN	DATE	SCALE	MIX DESIGN
MD	8/17/17	1/4" = 1'-0"	4000 PSI
CHIEF	DATE	INSPECTION	BCRD NUMBER
N/A	N/A	N/A	17-1299
		SHEET 1 OF 1	

PRINT DATE 8/17/2017

REVISIONS

REV	DATE	DESCRIPTION
01	08/17/17	UPDATED PER ENGINEER SET 07/26/17



REVISIONS	
REV.	DESCRIPTION

TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	12,359
BASE SLAB	4,148
TOTAL BASE WT.	16,507**

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615, GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM

NOTE
CONTRACTOR TO OFFLOAD STRUCTURE
ONSITE DUE TO WEIGHT OF STRUCTURE.

BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
INDEPENDENCE, MO 64056
(816) 796-5344
FAX (816) 796-3518

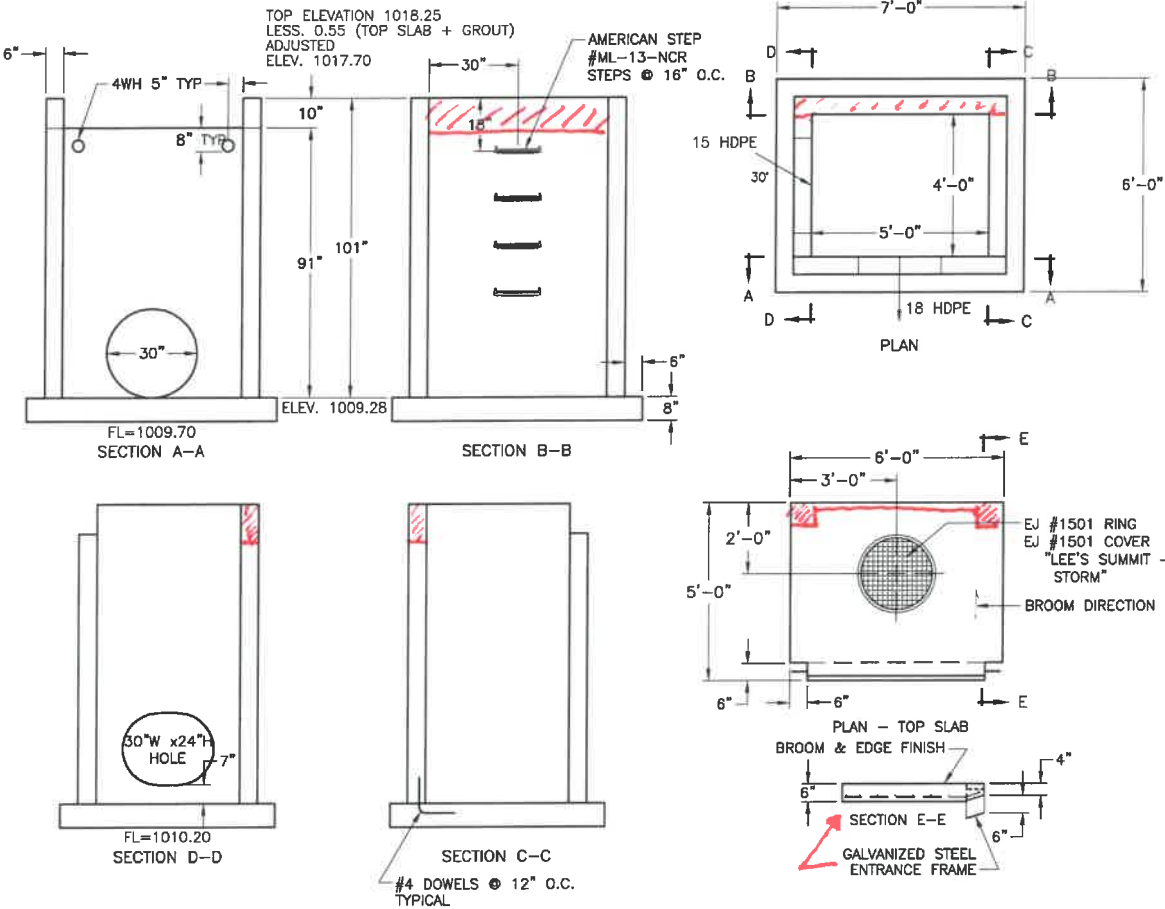
WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

DRAWING		DESCRIPTION	
DATE	7-5	SCALE	NON-SETBACK CURB INLET
DRW	MB	SCALE	NTS
CHECKED	N/A	REVISION	N/A
DATE	8/17/2017	MAX DESIGN	4000 PSI
		SHT 1 OF 1	17-1299

DATE: 8/17/2017



NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINMENT 4000 PSI @ 28 DAYS MINIMUM

NOTE
CONTRACTOR TO OFFLOAD STRUCTURE
ONSITE DUE TO WEIGHT OF STRUCTURE.



BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
INDEPENDENCE, MO 64266 (816) 796-3344
(816) 796-3518 FAX (816) 796-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

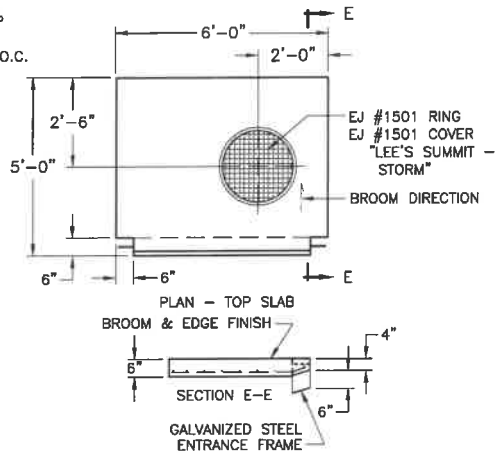
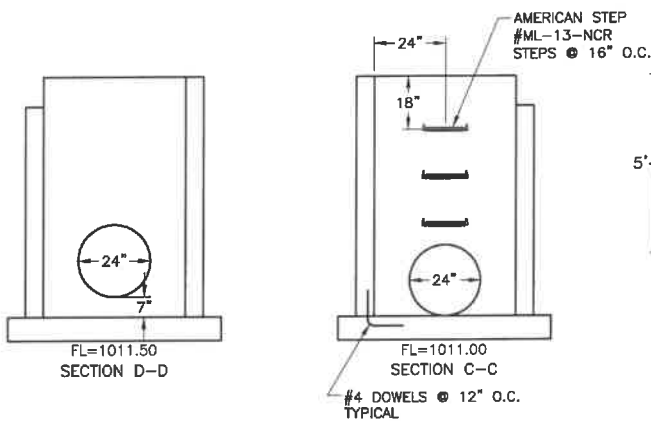
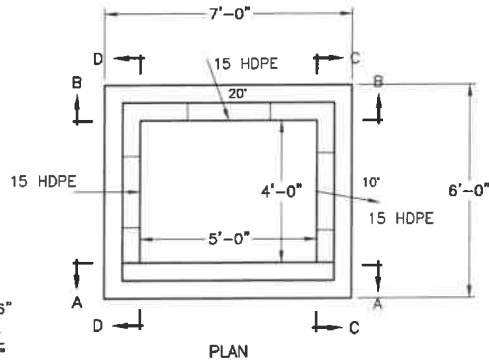
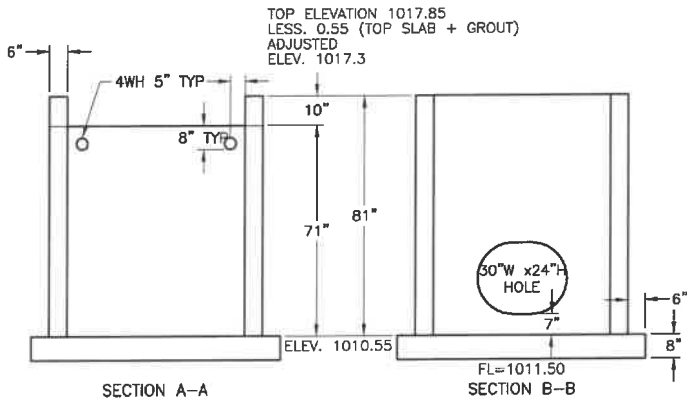
KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

STRUCTURE		DESCRIPTION	
7-6		NON-SETBACK CURB INLET	
DRAWN BY	DATE	SCALE	DATE
UP/CLAS	DATE	INSPECTION	DATE
N/A	N/A	N/A	N/A
UNIT WEIGHTS (LBS)		4000 PSI	
TOP SLAB		2,222	
TOP SECTION			
MID SECTION 2			
MID SECTION 1			
BASE SECTION		11,428	
BASE SLAB		4,148	
TOTAL BASE WT		15,576**	

PLOT DATE: 8/17/2017

REVISIONS

REV.	DATE	BY	DESCRIPTION



NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM



BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
INDEPENDENCE, MO 64055 (816) 796-3344
FAX (816) 796-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

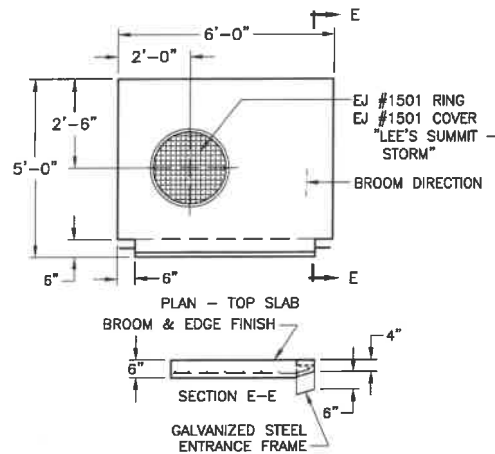
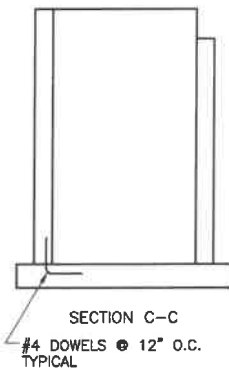
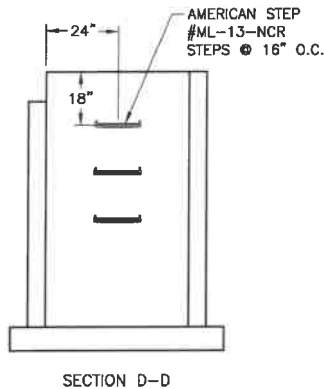
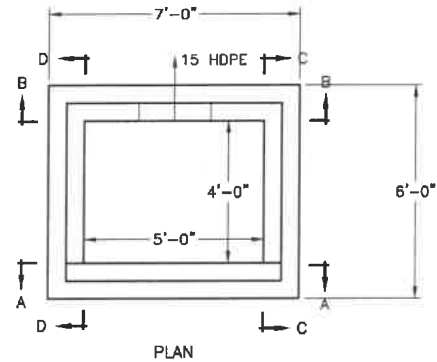
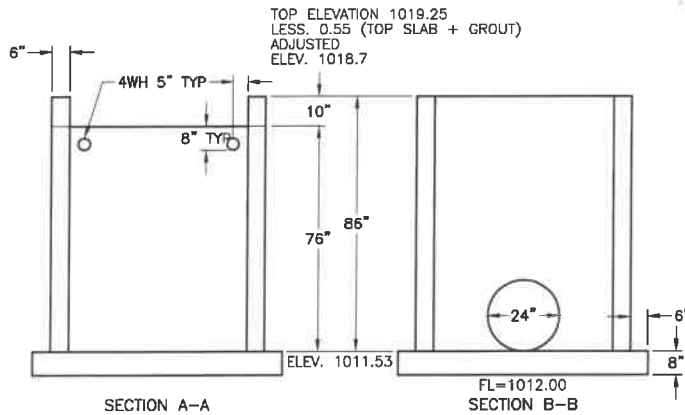
KAT EXCAVATING
THE RESIDENCES AT ECHOLON - PRIVATE
LEE'S SUMMIT, MO

STRUCTURE		DESCRIPTION	
7-7		NON-SETBACK CURB INLET	
DRAWN	DATE	SCALE	REVISION
MB	06/21/17	NTS	4000 PSI
CHECKED	DATE	REVISION	SHT 1 OF 1
N/A	N/A	N/A	17-1299

PRINT DATE: 8/17/2017

REVISIONS

REV. DATE BY



TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING	
1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	10,014
BASE SLAB	4,145
TOTAL BASE WT	14,162

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM



BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
INDEPENDENCE, MO 64056
(816) 796-3344
FAX (816) 796-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

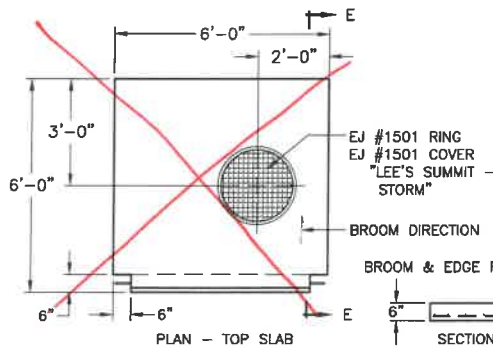
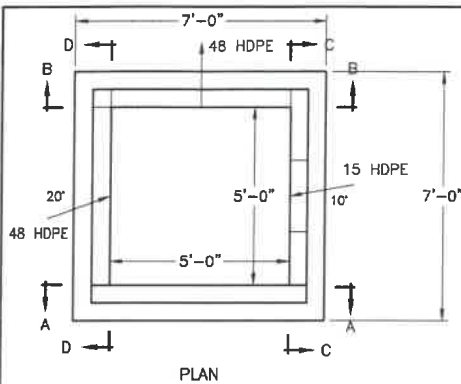
BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

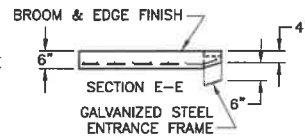
STRUCTURE		DESCRIPTION	
7-8		NON-SETBACK CURB INLET	
DATE	06/21/17	SCALE	NTS
DATE	N/A	PROJECTION	N/A
DATE	N/A	SHR	1 OF 1

PLOT 8/17/2017

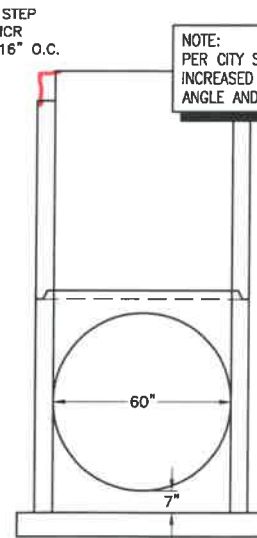
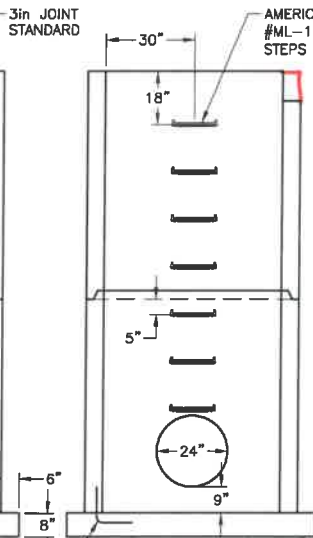
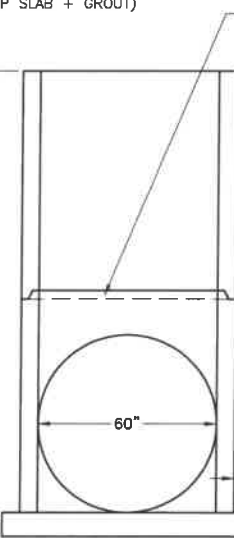
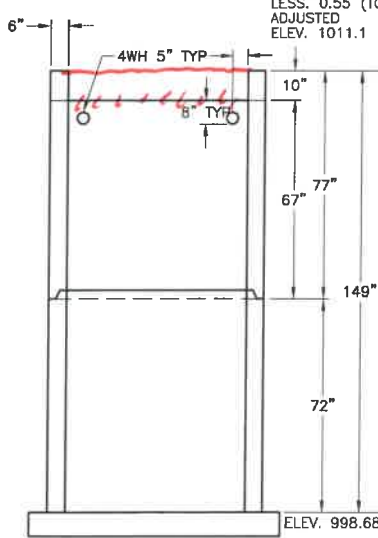
Grate Inlet



NOTE:
ENGINEER TO PROVIDE DESIGN
INFORMATION DUE TO INLET
LOCATION BASED OFF OF CURB.



TOP ELEVATION 1011.65
LESS: 0.55 (TOP SLAB + GROUT)
ADJUSTED
ELEV. 1011.1



NOTE:
PER CITY SPECIFICATION STRUCTURE
INCREASED IN SIZE PER PIPE
ANGLE AND PIPE SIZE.

TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,667
TOP SECTION	10,086
W/D SECTION 2	
W/D SECTION 1	
BASE SECTION	6,636
BASE SLAB	4,840
TOTAL BASE WT	11,476

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM

BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
INDEPENDENCE, MO 64056
(816) 796-3344
FAX (816) 796-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

STRUCTURE	8-2	DESCRIPTION	NON-SETBACK CURB INLET
DRAWN	MB	DATE	06/22/17
CHECKED	N/A	DATE	N/A
DESIGNED	NTS	DATE	N/A
SCALE	4000 PSI	DATE	N/A
SHEET	1 OF 1	DATE	N/A

PLOT DATE: 8/17/2017

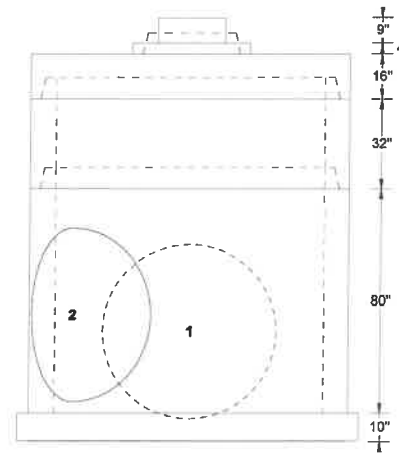
REV	DATE	DESCRIPTION
01	08/17/17	CREATE FILE NUMBER 17-1299

REVISIONS

1\17-1299 KAT THE RESIDENCES AT ECHELON - PRIVATE (STORM).DWG

Job Name: THE RESIDENCE @ ECHELON PRIVATE STORM
 Job #: 17-1299
 Customer: KAT EXCAVATION INC 1038
 Structure ID: 8-3
 Type: 8' DIA MH ATT BASE STORM SEWER

Rim: 1018.8'
 Invert: 1007.5'
 Rim to Invert: 11.30'
 Precast Height: 11.00'
 Overall Height: 12.72'

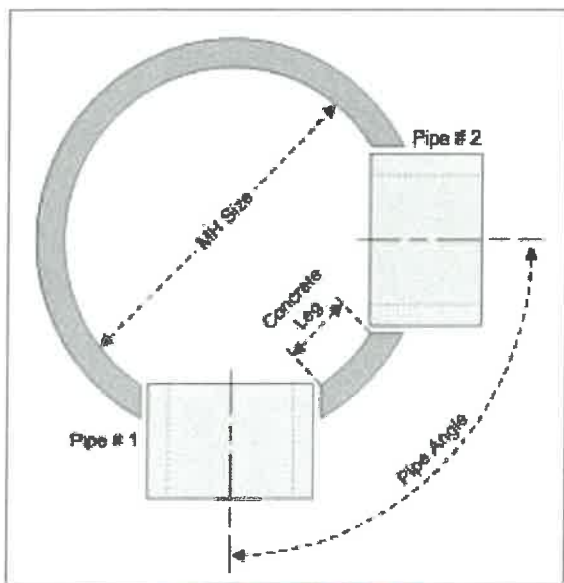


B
 Barbour Concrete Company
 816.796.3344

08/16/2017

Pipe#	Elevation	Pipe	Hole Type	Hole_Height	Hole_Width	UptoBottomIn cludeFloor	OverInside	Description	UOM	Quantity	Weight
(1)	1007.5	48HDPE	HOLE	62	62	8	226	00150215 1502 MUDRING ONLY	EA	1	302
(2)	1008	48HDPE	HOLE	62	62	14	114.75	ADJUSTMENT RING 24" X 4"H WITH TG JOINT	EA	1	140
								MANHOLE FLAT LID 8'D X 16"H WITH TG TOP J	EA	1	7,000
								MANHOLE RISER 8'DIA X 32"H	EA	1	8,144
								ATTACHED BASE W/ 4 STEPS 8' DIA X 90"H W/1	EA	1	27,940
								MANHOLE BASE SLAB 8'DIA X 10"TH ATTACHED	EA	1	
								00150246 1502 COVER LEE'S SUMMIT STORM L	EA	1	161
								JOINT SEALANT 1" SQ X 14.5'	CS	2.14	103
								Total Structure			43,790

MH REINFORCING IN ACCORDANCE WITH ASTM C-478
 BASE REINFORCING
 4' DIA MH = #4 @ 12" OCEW
 5, 6, 7, 8, AND 10 FT DIA = #5 @ 6 OCEW
 WALL THICKNESS = (ID DIA / 12) + 1
 AIR ENTRAINED CONCRETE = 4000 PSI IN 28 DAYS



84" MANHOLE

Minimum Diameter Required

Leg Width (inches): 27.7

STR. 8-3
CALCULATION

Pipe 1 Type:

RCP ▾

84" Minimum Manhole
Required For Size
Specified

Size (inches):

48 ▾

Hole Req'd (inches):

64

Pipe 2 Type:

RCP ▾

84" Minimum Manhole
Required For Size
Specified

Size (inches):

48 ▾

Hole Req'd (inches):

64

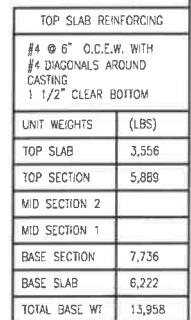
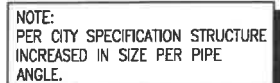
Pipe Angle (degrees):

137

Print

Calculate

Reset



REV.	DATE	BY	DESCRIPTION
01	06/17/17	MB	UPDATED WITH FINANCIALS SET 07/26/17

T:\17-1299 NAT - RESIDENCES AT ECHOLON - PRIVATE (STORM)\THE RESIDENCES AT ECHOLON - PRIVATE (STORM).DWG

B **BARBOUR CONCRETE COMPANY**
21421 E. TRUMAN ROAD (816) 796-3344
INDEPENDENCE, MO 64056 FAX (816) 796-3518

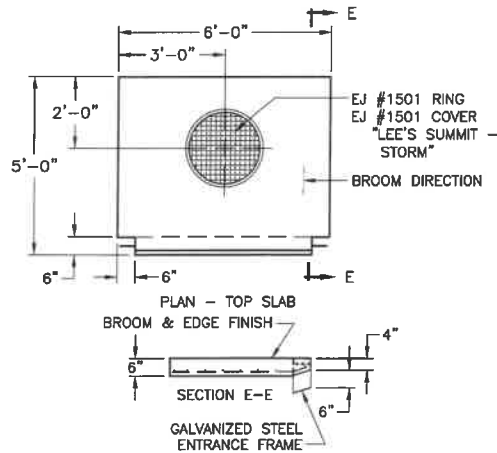
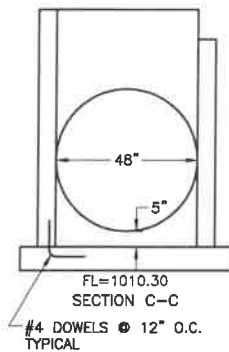
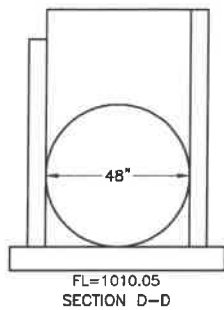
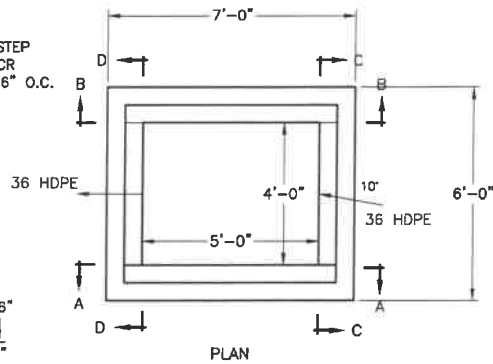
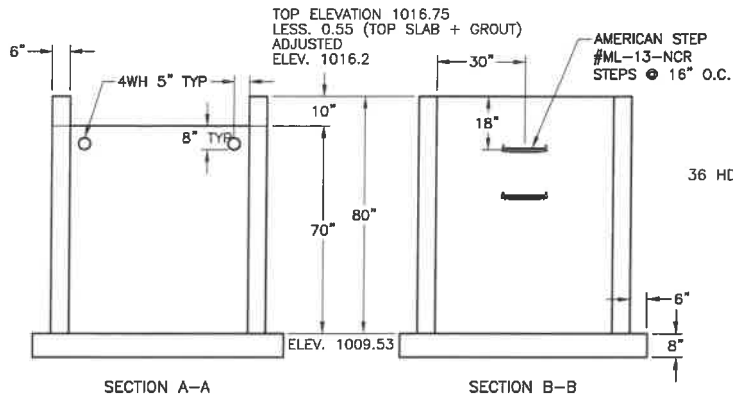
WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

ID NUMBER 8-4		DESCRIPTION NON-SETBACK CURB INLET	
ISSUED ME	DATE 6/27/90	SCALE NTS	MAX. DESIGN 4000 PSI
DESIGNED ME	DATE N/A	INSPECTION N/A	ROW NUMBER 17-1299
		SHEET 1 OF 1	

PLOT DATE: 8/17/2017



TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	7,644
BASE SLAB	4,148
TOTAL BASE WT	11,793

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM

B BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
INDEPENDENCE, MO 64055
(816) 796-3344
FAX (816) 796-3519

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

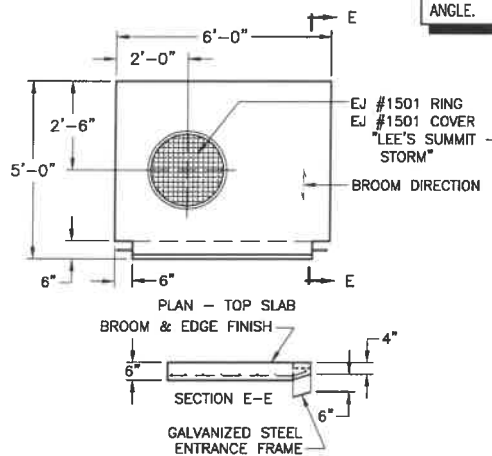
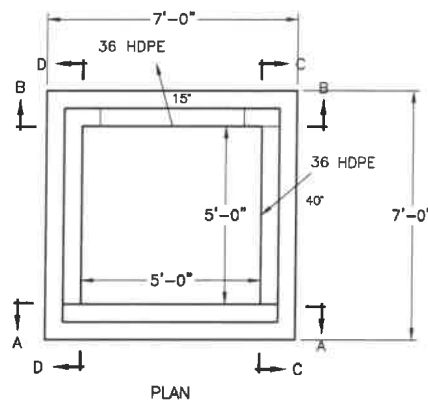
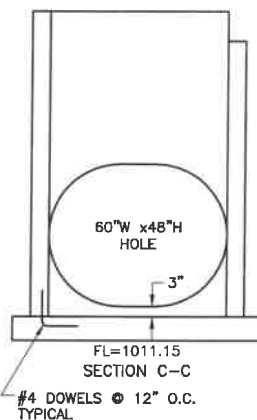
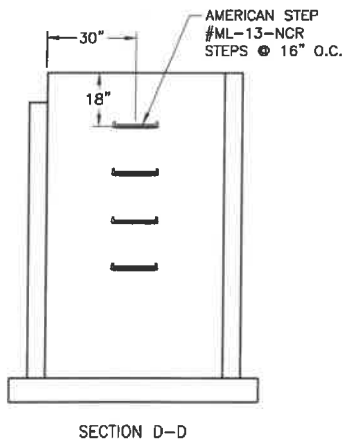
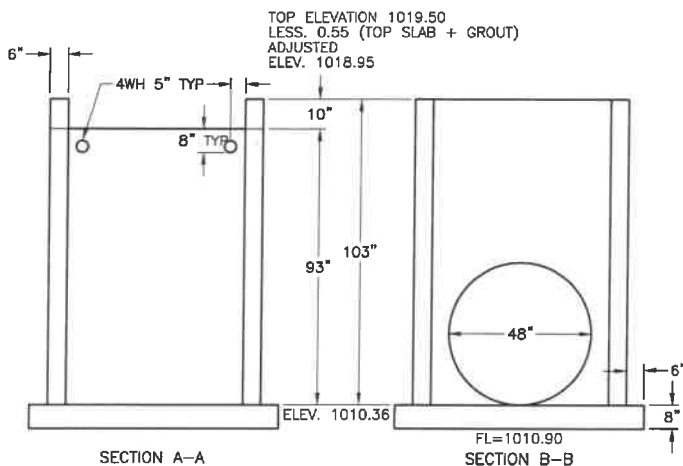
STRUCTURE		DESCRIPTION	
8-5		NON-SETBACK CURB INLET	
DATE	08/22/17	SCALE	NTS
DESIGNED	N/A	INSPECTION	N/A
		MIX DESIGN	4000 PSI
		BOVD NUMBER	17-1299
		SHT	1 OF 1

PLOT DATE: 8/17/2017

REVISIONS

REV.	DATE	DESCRIPTION
01	08/17/17	UPDATED PER ENGINEER SET 07/26/17

1\17-1299.MAI RESIDENCES AT ECHELON - PRIVATE (STORM) THE RESIDENCES AT ECHELON - PRIVATE (STORM).DWG



NOTE:
PER CITY SPECIFICATION STRUCTURE
INCREASED IN SIZE PER PIPE
ANGLE.

TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	11,459
BASE SLAB	4,840
TOTAL BASE WT	16,299**

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM

NOTE:
CONTRACTOR TO OFFLOAD STRUCTURE
ONSITE DUE TO WEIGHT OF STRUCTURE.



BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
INDEPENDENCE, MO 64056
(816) 796-3344
FAX (816) 796-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

STRUCTURE
8-6
DATE 08/22/17
SCALE NTS
PROJECTION N/A

DESCRIPTION
NON-SETBACK CURB INLET
SCALE NTS
MIX DESIGN 4000 PSI
BORD NUMBER
SHT 1 OF 1
17-1299

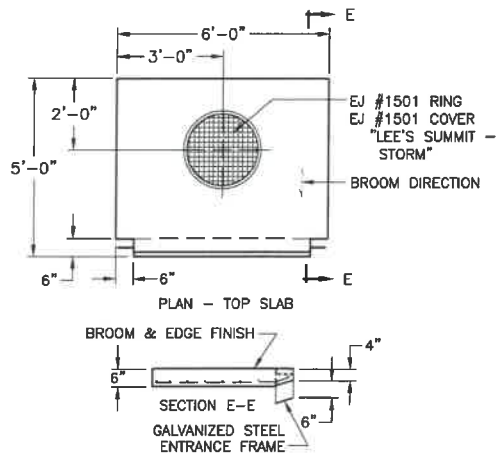
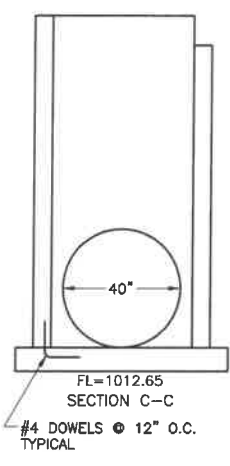
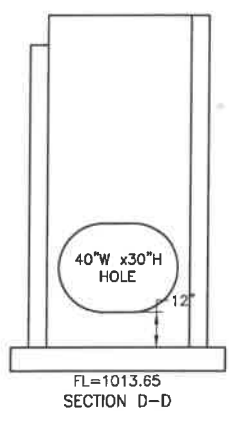
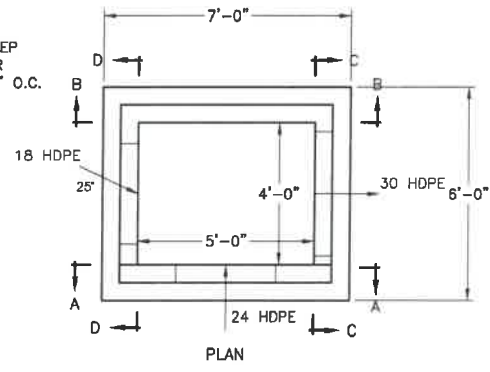
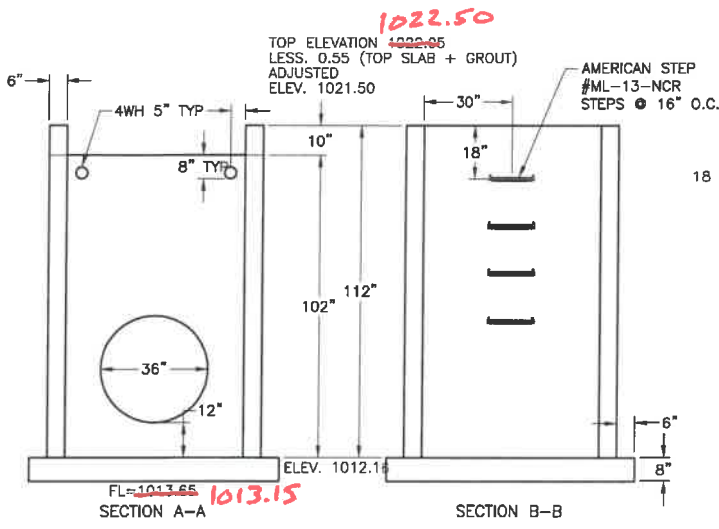
PLOT DATE: 8/17/2017

REVISIONS

REV.	DATE	DESCRIPTION
01	08/17/17	UPDATED PER ENGINEER SET 07/26/17

1\17-1299 KAT THE RESIDENCES AT ECHELON - PRIVATE (STORM).DWG

PLOT DATE: 8/17/2017



TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
W/D SECTION 2	
W/D SECTION 1	
BASE SECTION	11,769
BASE SLAB	4,148
TOTAL BASE WT	15,917**

NOTES:
 CEMENT TO BE PER ASTM C-150
 REINFORCING TO BE PER ASTM A-615 GRADE 60
 CONCRETE TO BE AIR ENTRAINMENT 4000 PSI @ 28 DAYS MINIMUM

NOTE
 CONTRACTOR TO OFFLOAD STRUCTURE
 ONSITE DUE TO WEIGHT OF STRUCTURE.

BARBOUR CONCRETE COMPANY
 21421 E. TRUMAN ROAD (816) 796-3344
 INDEPENDENCE, MO 64056 FAX (816) 796-3518

WALL REINFORCING: PER DRAWING R1-A #4 @ 12" O.C.E.W.	BASE REINFORCING: #4 @ 6" O.C.E.W.
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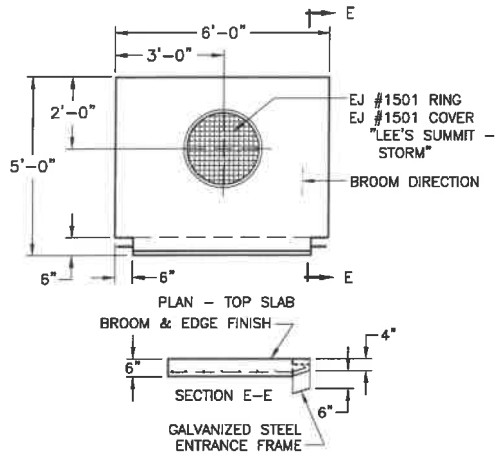
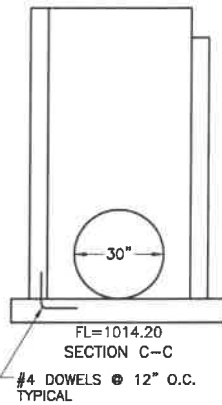
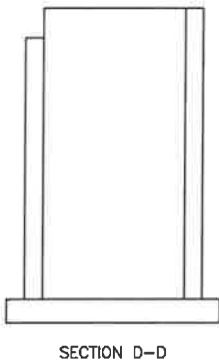
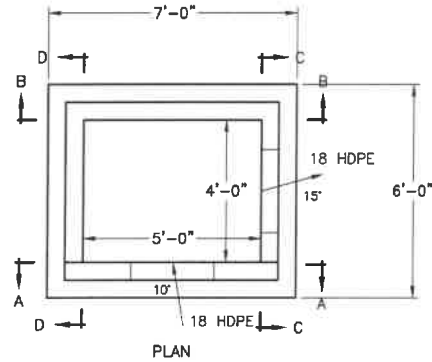
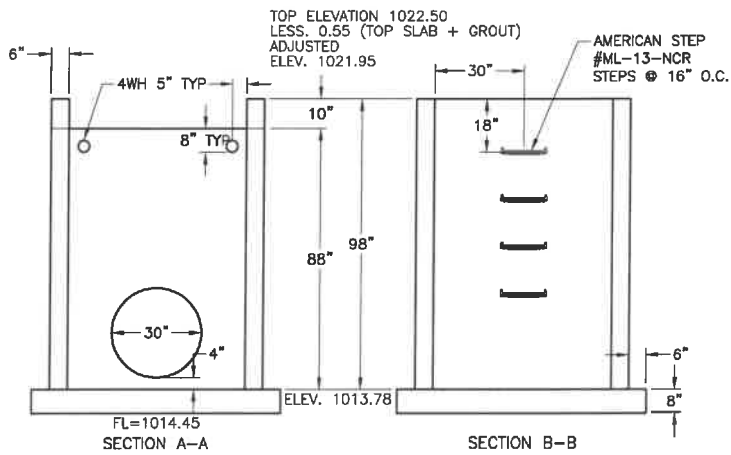
KAT EXCAVATING
 THE RESIDENCES AT ECHELON - PRIVATE
 LEE'S SUMMIT, MO

STRUCTURE		DESCRIPTION	
8-8		NON-SETBACK CURB INLET	
DRAWN MB	DATE 08/22/17	SCALE NTS	4000 PSI
CHECKED N/A	DATE N/A	INSPECTION N/A	SHT 1 OF 1

PLOT DATE: 8/17/2017

REVISIONS	
REV.	DESCRIPTION
01	DATE 08/17/17 BY UPDATED PER ENGINEER S.J. DZ 7/26/17

17-1299 KAT THE RESIDENCES AT ECHELON PRIVATE (STORM).DWG



REVISIONS

REV.	DATE	BY	DESCRIPTION
01	08/17/17	MB	ISSUED PER ENGINEER SET 07.26.17

TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,272
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	11,001
BASE SLAB	4,148
TOTAL BASE WT	15,149**

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM

NOTE
CONTRACTOR TO OFFLOAD STRUCTURE
ON SITE DUE TO WEIGHT OF STRUCTURE



WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

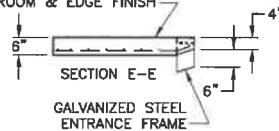
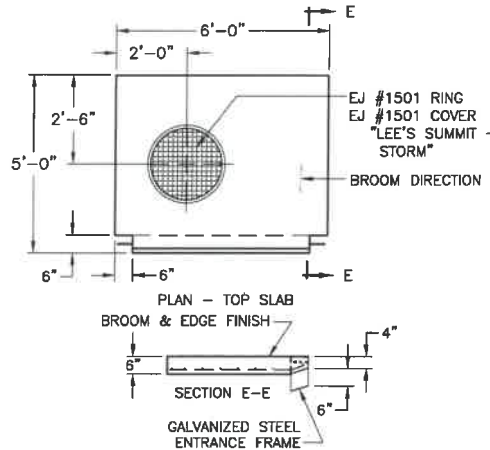
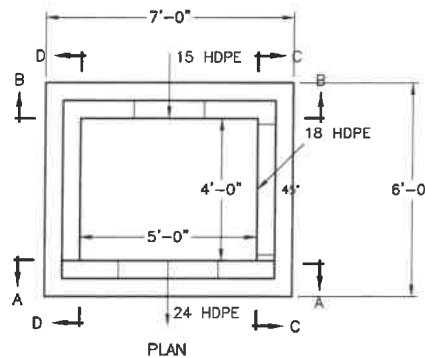
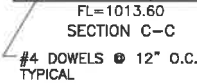
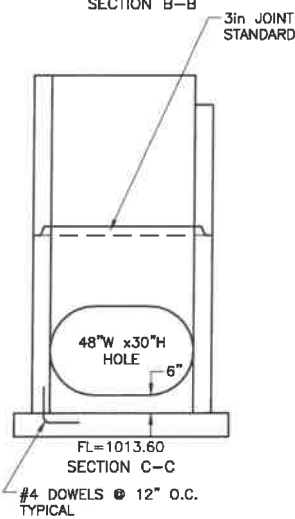
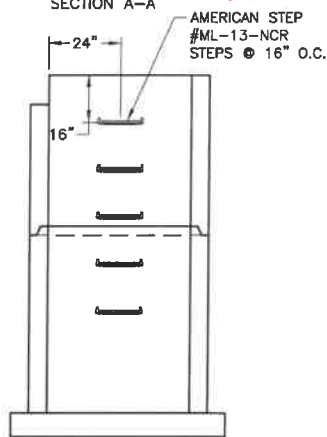
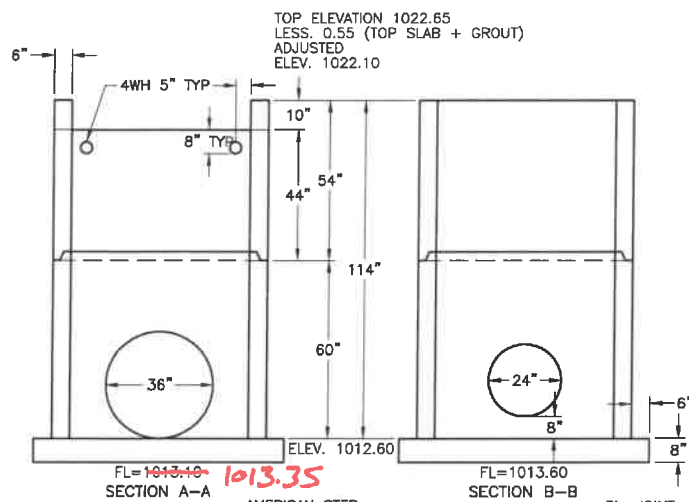
BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

STRUCTURE 8-9		DESCRIPTION NON-SETBACK CURB INLET	
DATE	06/22/17	SCALE	4000 PSI
CHECKED	N/A	INSPECTION	N/A
DATE	N/A	SHR	1 OF 1

PLOT DATE: 8/17/2017

PLOT DATE: 8/17/2017



REVISIONS

REV.	DATE	BY	DESCRIPTION
01	05/17/17	MB	UPDATED PER ENGINEER SET 07/28/17

TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	6,296
MID SECTION 2	
MID SECTION 1	
BASE SECTION	6,010
BASE SLAB	4,148
TOTAL BASE WT	10,158

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM



WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

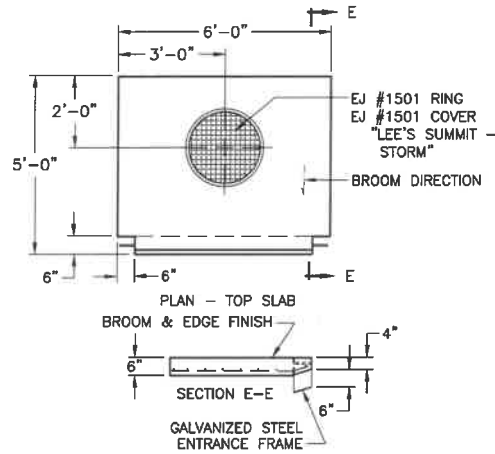
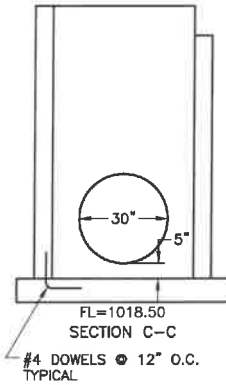
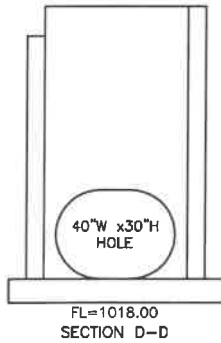
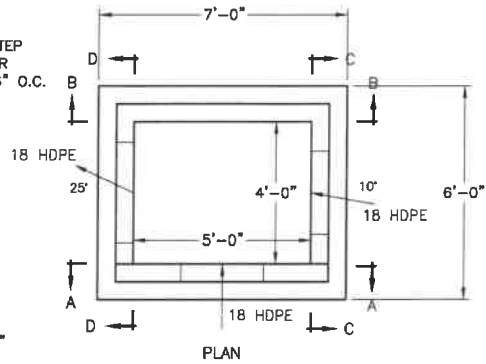
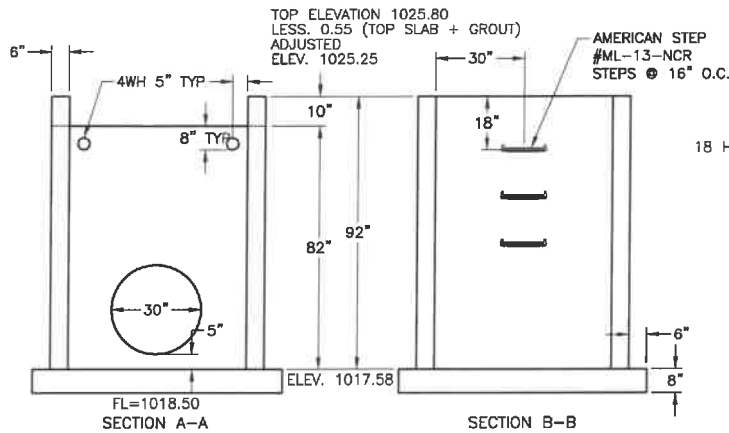
KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

SHEET	
10-1	DATE
DATE	05/17/17
DATE	05/17/17

DESCRIPTION			
NON-SETBACK CURB INLET			
SCALE	AS	MIX DESIGN	4000 PSI
INSPECTION	N/A	SHR	1 OF 1

PLOT DATE: 8/17/2017

17-1299



TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	9,743
BASE SLAB	4,148
TOTAL BASE WT	13,891

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM

BARBOUR CONCRETE COMPANY
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(816) 786-3344
FAX (816) 786-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

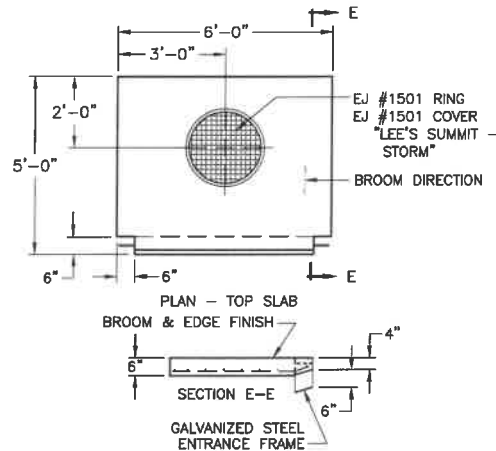
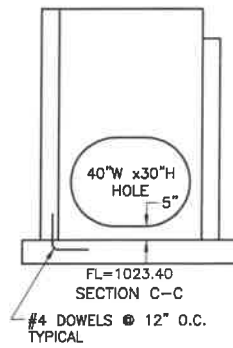
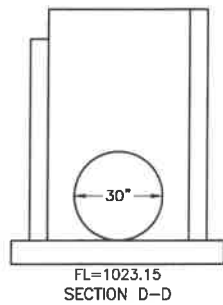
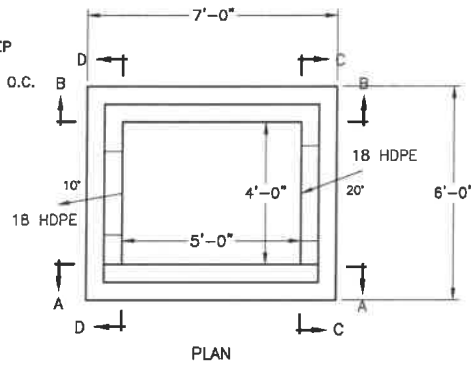
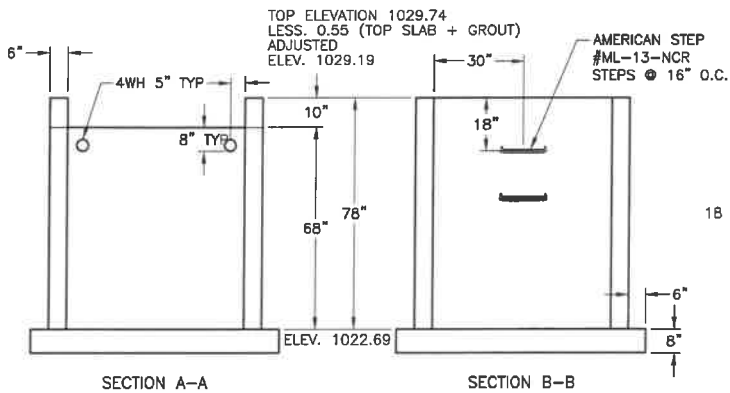
SHEET		DESCRIPTION	
10-2	DATE 06/27/17	NON-SETBACK CURB INLET	
SCALE NTS	INSPECTION N/A	MIX DESIGN 4000 PSI	BOWO NUMBER
17-1299			

PLOT DATE: 8/17/2017

REVISIONS

REV.	DATE	DESCRIPTION

1:\17-1299.MAT THE RESIDENCES AT ECHELON - PRIVATE (STORM)\THE RESIDENCES AT ECHELON - PRIVATE (STORM).DWG



TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
W/D SECTION 2	
W/D SECTION 1	
BASE SECTION	8,378
BASE SLAB	4,148
TOTAL BASE WT	12,526

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM



BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
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FAX (816) 796-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

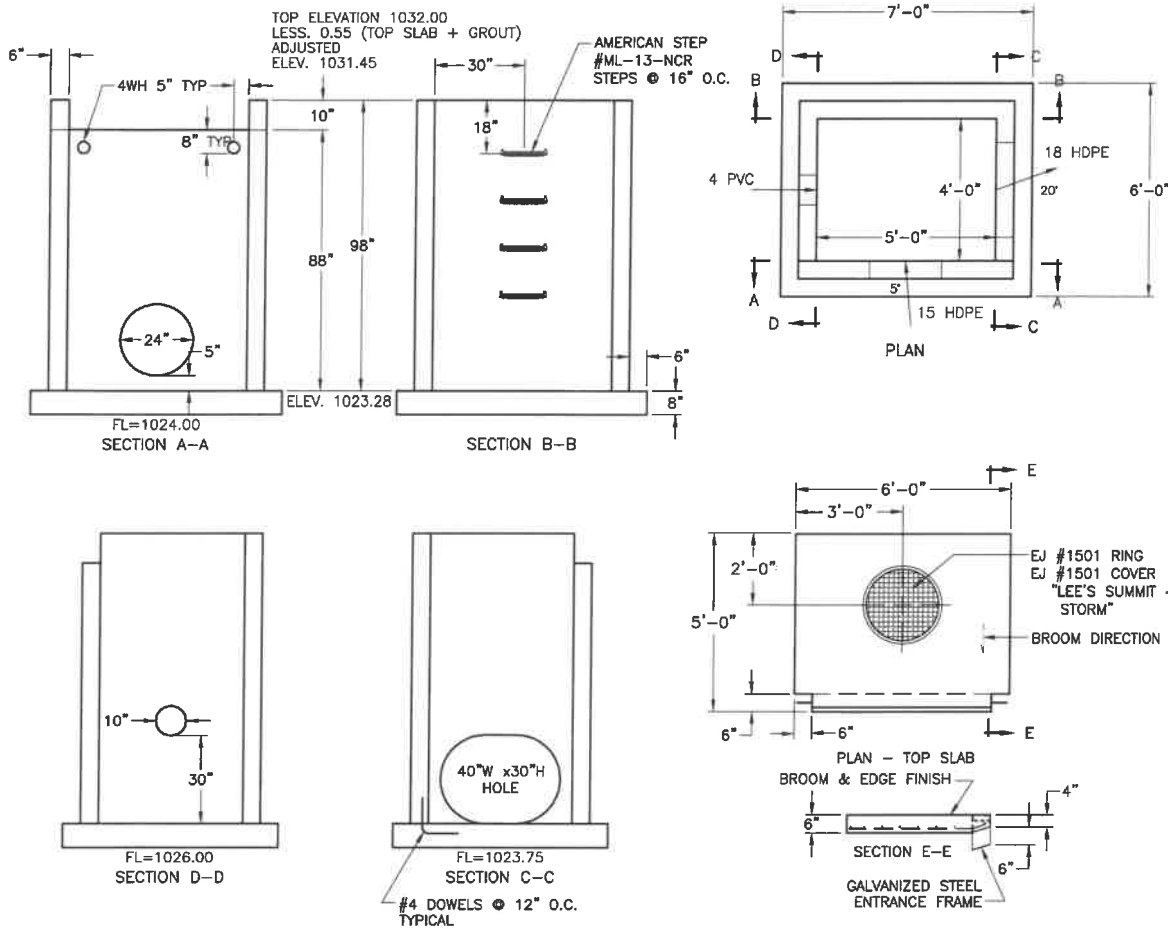
KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

STRUCTURE		DESCRIPTION	
10-3		NON-SETBACK CURB INLET	
DRAWN BY	DATE	SCALE	MIX DESIGN
MB	06/21/17	NTS	4000 PSI
CHECKED BY	DATE	INSPECTION	BC&D NUMBER
N/A	N/A	N/A	17-1299
			SHT 1 OF 1

PLOT DATE: 8/17/2017

REVISIONS	
NO.	DESCRIPTION

1:\17-1299 KAT - THE RESIDENCES AT ECHELON - PRIVATE (STORM)\THE RESIDENCES AT ECHELON - PRIVATE (STORM).DWG



REVISIONS		
REV.	DATE	DESCRIPTION
01	08/17/17	UPDATED PER ENGINEER SET 07/26/17

TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	10,937
BASE SLAB	4,148
TOTAL BASE WT.	15,086**

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM

NOTE
CONTRACTOR TO OFFLOAD STRUCTURE
ONSITE DUE TO WEIGHT OF STRUCTURE.

B BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
INDEPENDENCE, MO 64056
(816) 796-3344
FAX (816) 796-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

10-4		NON-SETBACK CURB INLET	
DRAWN	DATE	SCALE	NTS
MB	06/21/17		
CHECKED	DATE	INSPECTION	N/A
N/A	N/A		
		MIX DESIGN	BCNO NUMBER
		4000 PSI	17-1299
		SHT 1 OF 1	

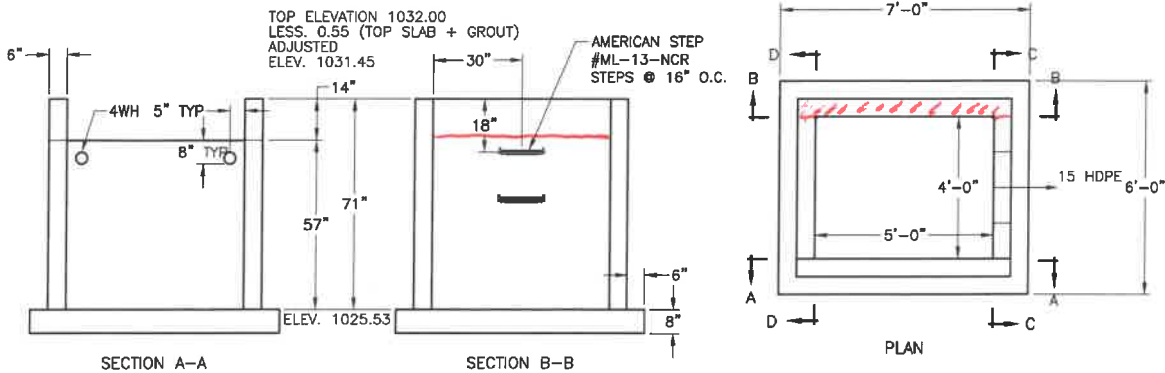
PLOT DATE: 8/17/2017



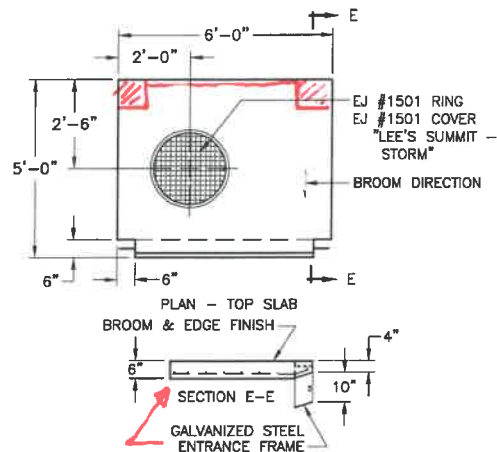
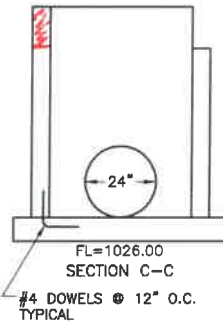
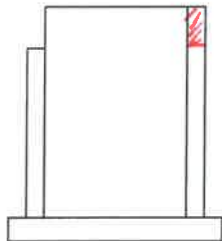
TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	10,152
BASE SLAB	4,148
TOTAL BASE W7	14,300

STRUCTURE		REVISION		
10-5		NON-SETBACK CURB INLET		
OWNER	DATE	SCALE	MAX. DRAIN	BOARD NUMBER
MS	06/21/18	NTS	4000 PSI	17-1299
CHECKED	DRAWN	INSPECTION	SHT. 1 OF 1	
N/A	N/A	N/A		

PLOT DATE: 8/17/2017



NOTE:
ENGINEER TO PROVIDE MORE INFORMATION ON INLET
DUE TO PLACEMENT ON CURB LINE IN ISLAND.



REVISIONS	
REV.	DATE

TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	8,014
BASE SLAB	4,148
TOTAL BASE WT	12,162

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4200 PSI @ 28 DAYS MINIMUM

BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
INDEPENDENCE, MO 64055
(816) 796-3344
FAX (816) 796-3518

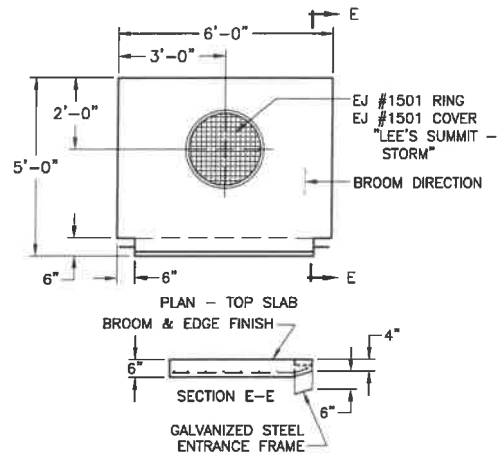
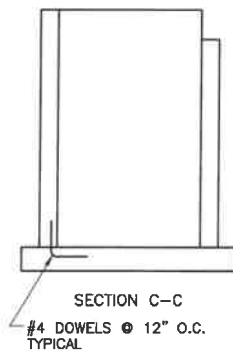
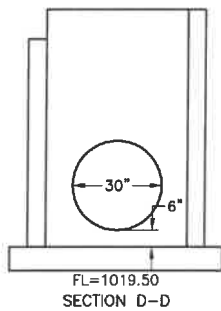
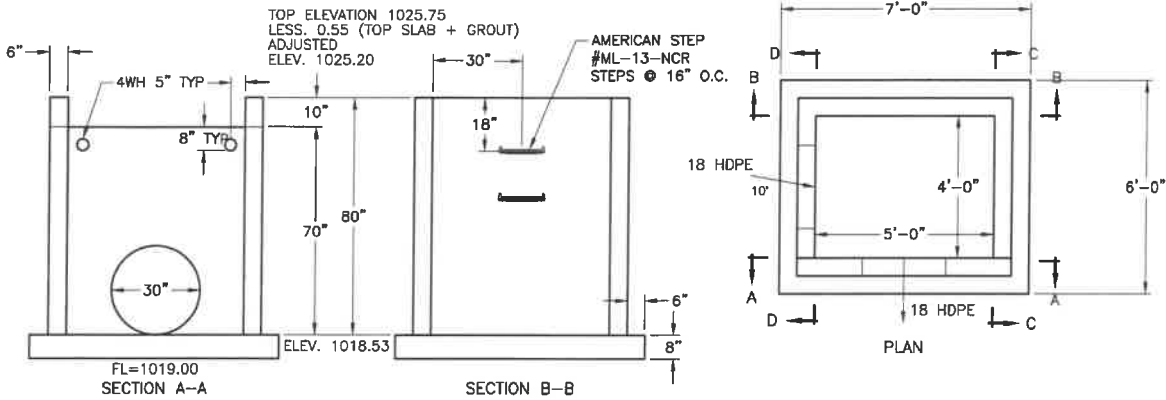
WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

SHEET NO.		DESCRIPTION	
10-6		CURB INLET	
DRAWN	DATE	SCALE	NTS
MB	06/21/17		
CHECKED	SAT	INSPECTION	N/A
N/A	N/A		

17-1299



TOP SLAB REINFORCING	
#4 @ 8" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	8,779
BASE SLAB	4,148
TOTAL BASE WT	12,927

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM

B BARBOUR CONCRETE COMPANY
21421 E. IRUMAN ROAD
INDEPENDENCE, MO 64056
(816) 786-3344
FAX (816) 786-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

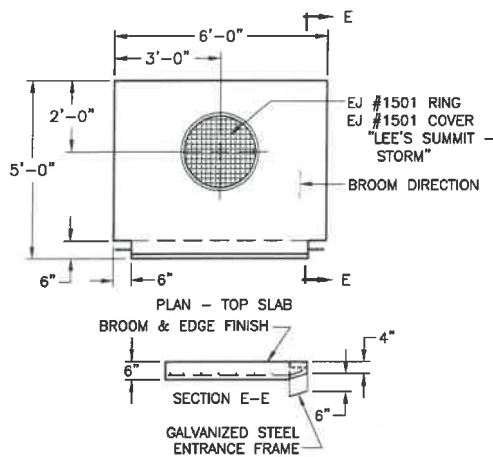
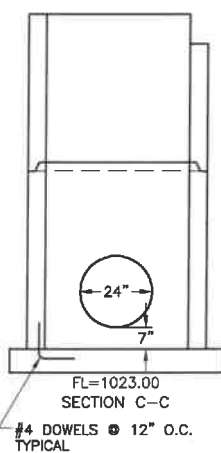
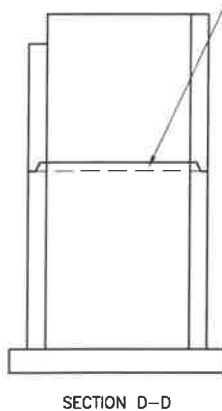
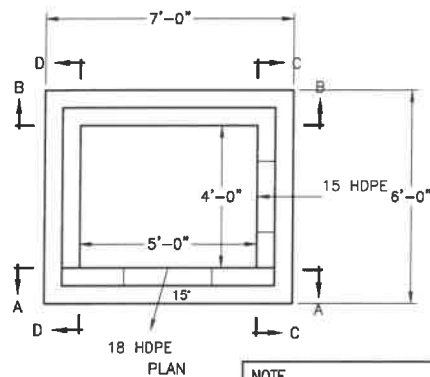
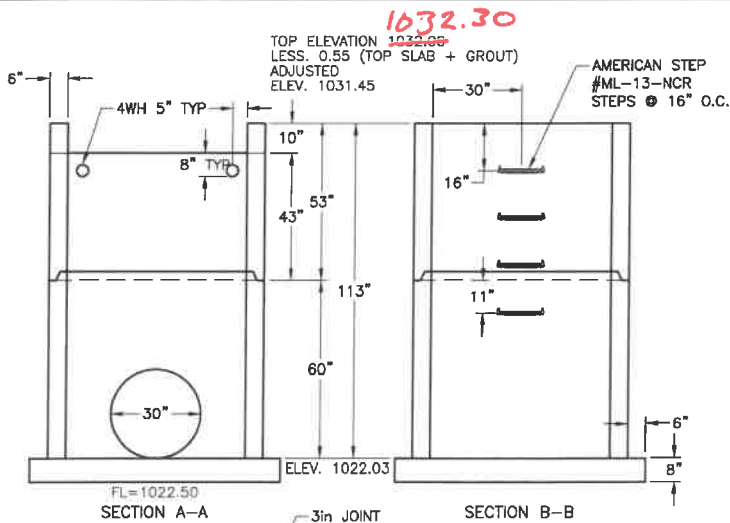
KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

11-1
DATE 06/21/17
CHECKED N/A

NON-SETBACK CURB INLET
SCALE NTS
INSPECTION N/A
SHT 1 OF 1
17-1299

PRINT DATE: 8/17/2017

17-1299 KAT - THE RESIDENCES AT ECHELON - PRIVATE (STORM) THE RESIDENCES AT ECHELON - PRIVATE (STORM) DWG



REVISIONS	
REV.	DESCRIPTION

TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	6,173
MID SECTION 2	
MID SECTION 1	
BASE SECTION	6,811
BASE SLAB	4,148
TOTAL BASE WT	10,959

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM



BARBOUR CONCRETE COMPANY
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INDEPENDENCE, MO 64056
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WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

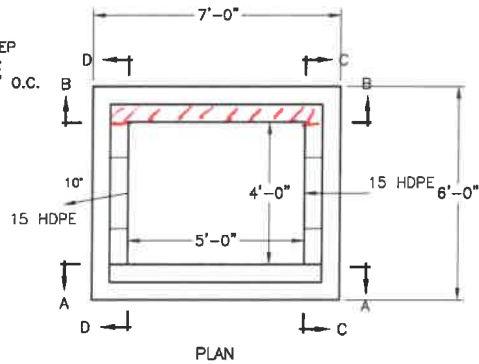
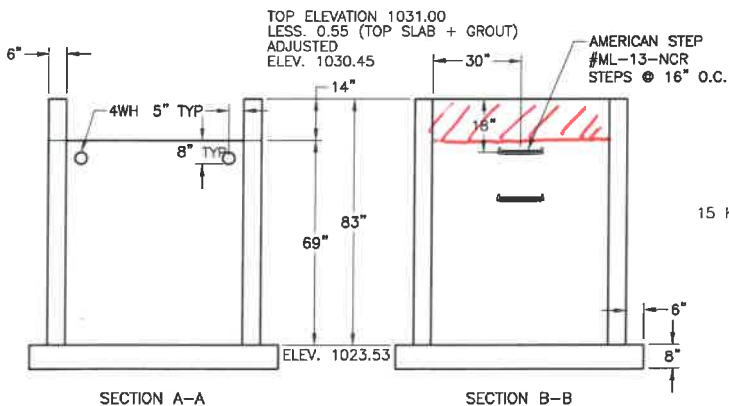
KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

STRUCTURE
11-2
DATE
06/21/17
N/A

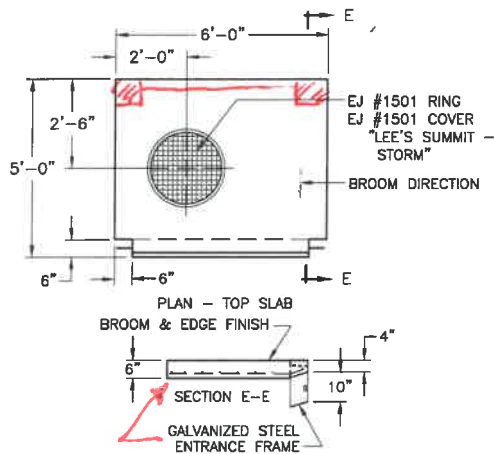
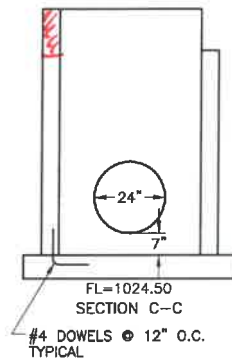
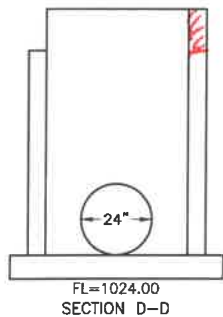
DESCRIPTION
NON-SETBACK CURB INLET
SCALE
NTS
MIX DESIGN
4000 PSI
BOLD NUMBER
17-1299

PLOT DATE: 8/17/2017

T:\17-1299 KAT EXCAVATING THE RESIDENCES AT ECHELON - PRIVATE (STORM).DWG



NOTE:
ENGINEER TO PROVIDE MORE INFORMATION ON INLET
DUE TO PLACEMENT ON CURB LINE IN ISLAND.



TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	9,263
BASE SLAB	4,148
TOTAL BASE WT	13,411

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM



BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
INDEPENDENCE, MO 64056
(816) 796-3344
(816) 796-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

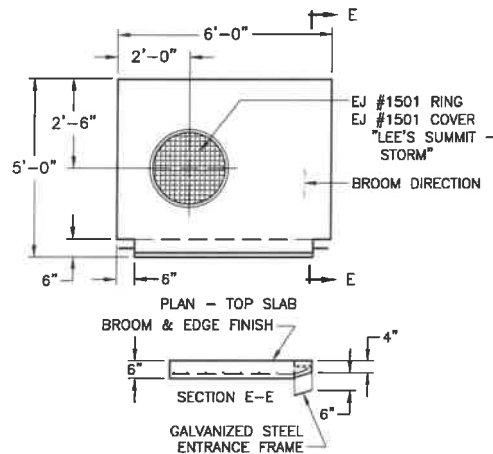
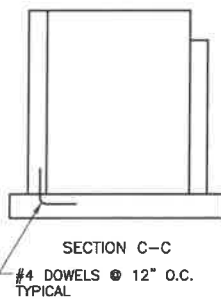
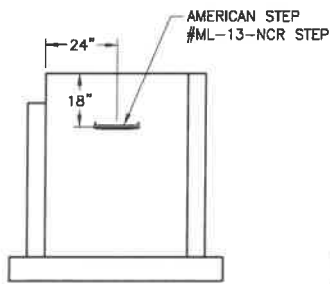
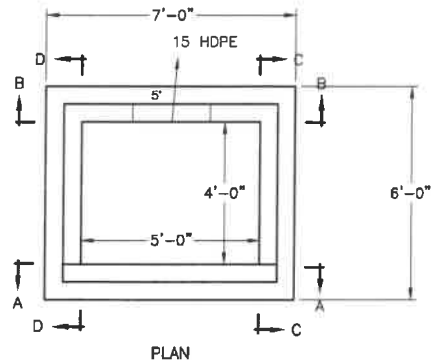
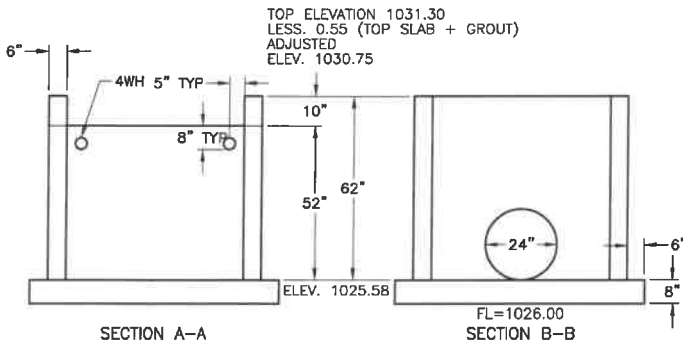
KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

STRUCTURE		DESCRIPTION	
11-3		CURB INLET	
DRAWN MB	DATE 08/31/17	SCALE NTS	WPA DESIGN 4000 PSI
CHECKED N/A	SAY N/A	INSPECTION N/A	SHEET NUMBER 17-1299

PLOT DATE: 8/17/2017

REVISIONS	
REV.	DATE

17-1299 KAT - THE RESIDENCES AT ECHELON - PRIVATE (STORM) THE RESIDENCES AT ECHELON - PRIVATE (STORM).DWG



TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING	
1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	7,051
BASE SLAB	4,148
TOTAL BASE WT	11,199

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM

B BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD
INDEPENDENCE, MO 64056
(816) 796-3344
FAX (816) 796-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

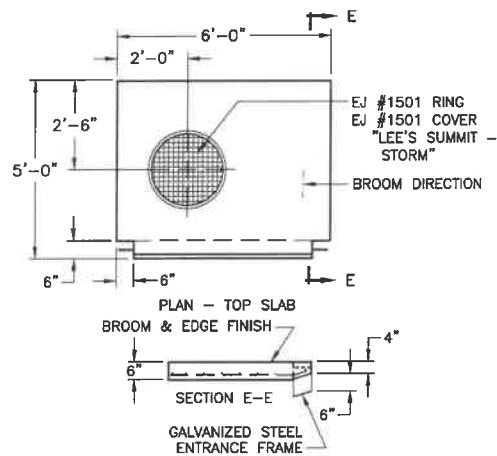
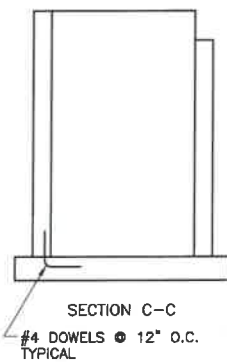
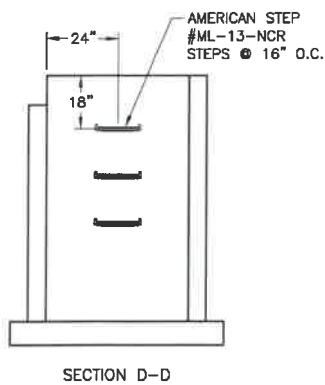
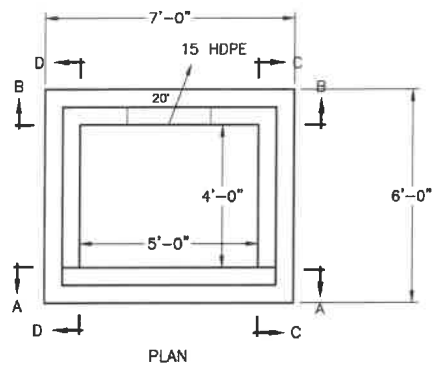
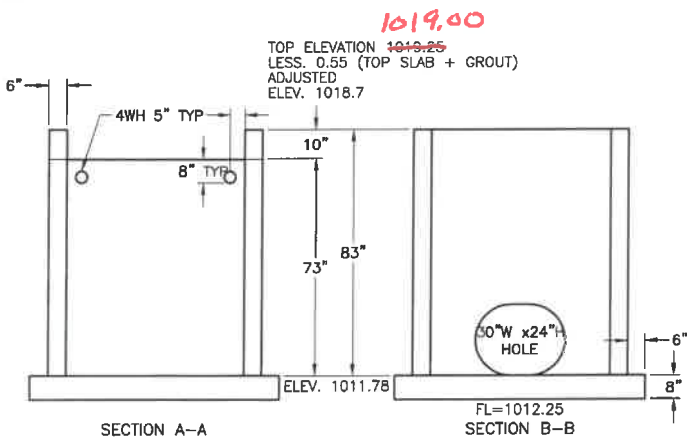
STRUCTURE		DESCRIPTION	
11-4		NON-SETBACK CURB INLET	
DRAWN	DATE	SCALE	MIX DESIGN
MB	06/21/17	NTS	4000 PSI
CHECKED	DATE	APPROVAL	SHEET
N/A	N/A	N/A	1 OF 1

PLOT DATE: 8/17/2017

REVISIONS

NO.	DATE	DESCRIPTION
1		

1\17-1299 KAT THE RESIDENCES AT ECHELON PRIVATE (STORM) THE RESIDENCES AT ECHELON PRIVATE (STORM).DWG



TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	9,570
BASE SLAB	4,148
TOTAL BASE WT	13,718

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM



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FAX (816) 796-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

SCALE: 12-1
DATE: 06/21/17
CHECKED: N/A
DATE: 7/5/17

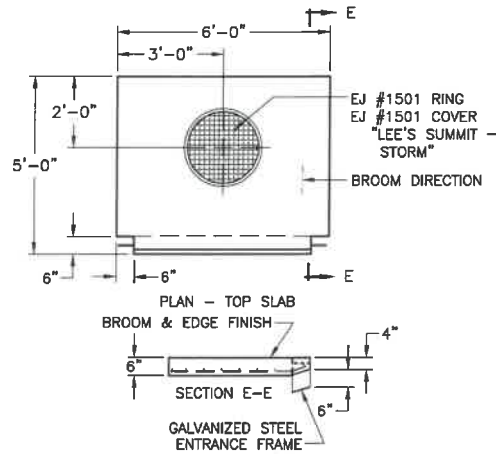
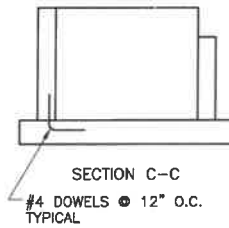
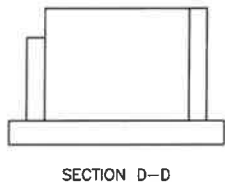
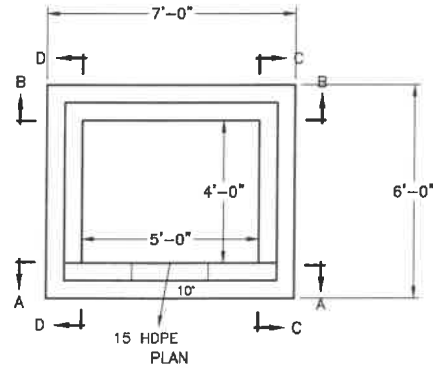
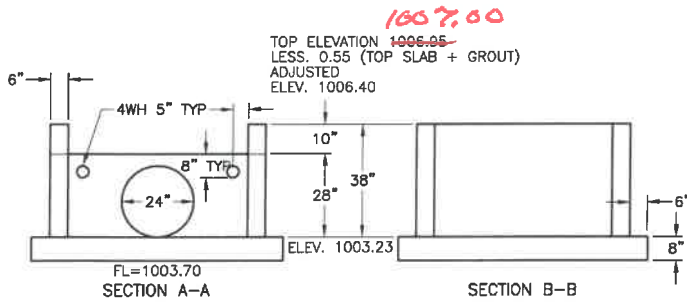
DESCRIPTION: NON-SETBACK CURB INLET
SCALE: NTS
UNIT WEIGHT: 4000 PSI
SHEET: 1 OF 1
17-1299

PLOT DATE: 8/17/2017

REVISIONS

DATE BY DESCRIPTION

T:\17-1299 KAT THE RESIDENCES AT ECHELON - PRIVATE (STORM)\THE RESIDENCES AT ECHELON - PRIVATE (STORM).DWG



TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	6,928
BASE SLAB	4,148
TOTAL BASE WT.	11,076

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM

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INDEPENDENCE, MO 64056
(816) 796-3344
FAX (816) 796-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

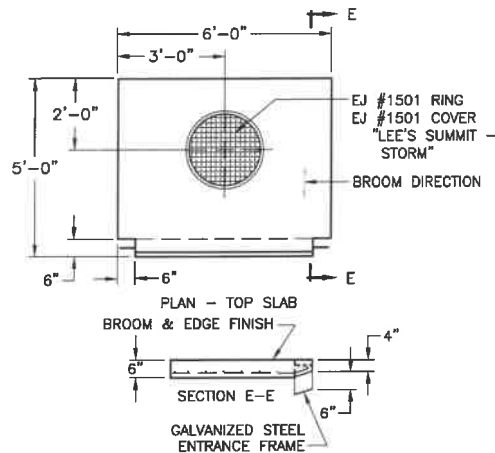
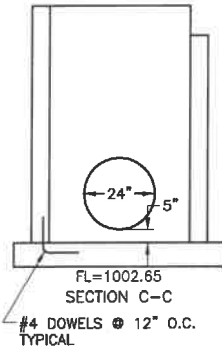
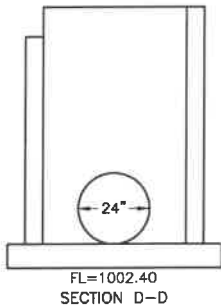
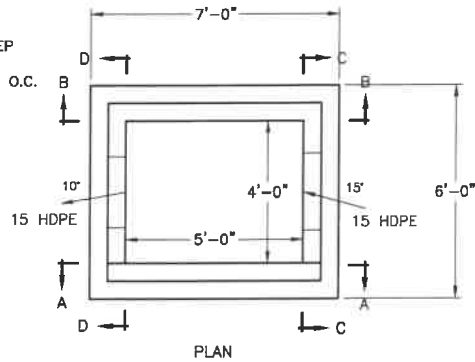
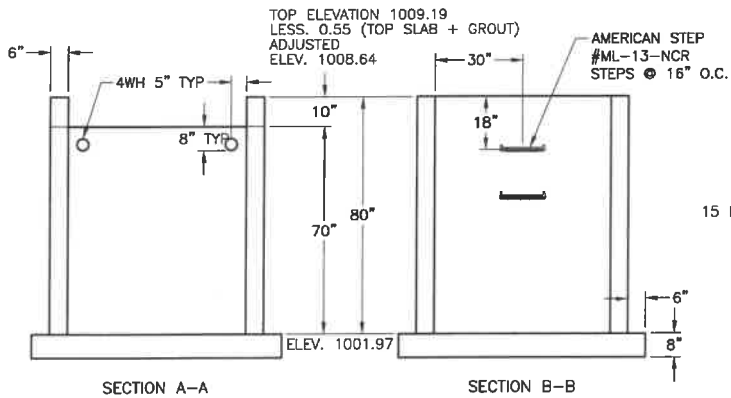
BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

PROJECT		DESCRIPTION	
13-1		NON-SETBACK CURB INLET	
DATE	DATE/REV	SCALE	NTS
MB	DATE	INSPECTION	N/A
N/A	N/A		

4000 PSI
SHT 1 OF 1
17-1299

8/17/2017



TOP SLAB REINFORCING	
#4 @ 6" O.C.E.W. WITH #4 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(LBS)
TOP SLAB	2,222
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	10,399
BASE SLAB	4,148
TOTAL BASE WT	14,547

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM

BARBOUR CONCRETE COMPANY
21421 E. TRUMAN ROAD (616) 796-3344
INDEPENDENCE, MO 64056 FAX (816) 796-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

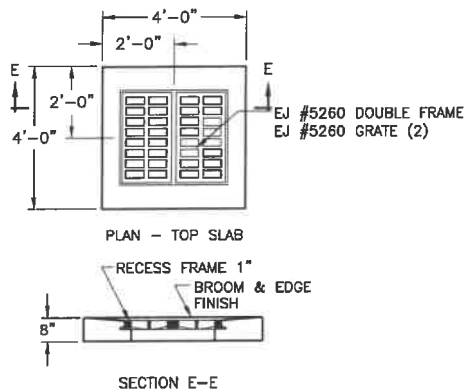
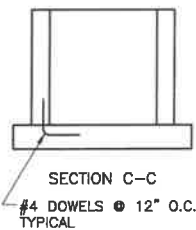
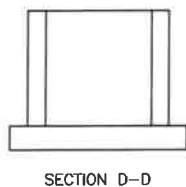
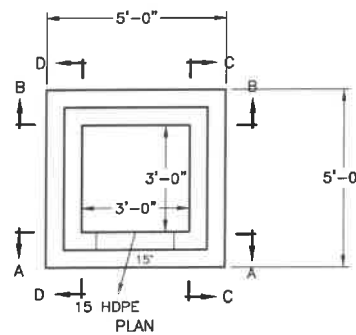
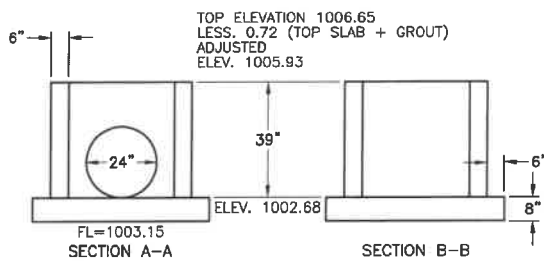
KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

STRUCTURE		DESCRIPTION	
15-1		NON-SETBACK CURB INLET	
DATE	06/27/18	SCALE	NTS
DESIGNED BY		INSPECTED BY	N/A
CHECKED BY		DATE	8/17/2017
PROJECT NO.	17-1299	SHEET NO.	1 OF 1

PLOT DATE: 8/17/2017

REVISIONS

REV.	DATE	BY	DESCRIPTION
01	08/17/17	WB	UPDATED PER ENGINEER SET 07/26/17



REVISIONS

REV.	DATE	BY	DESCRIPTION
01	08/17/17	ME	UPDATED PER ENGINEER SET 07/26/17

TOP SLAB REINFORCING	
#5 @ 6" O.C.E.W. WITH #5 DIAGONALS AROUND CASTING 1 1/2" CLEAR BOTTOM	
UNIT WEIGHTS	(.35)
TOP SLAB	1,580
TOP SECTION	
MID SECTION 2	
MID SECTION 1	
BASE SECTION	3,138
BASE SLAB	2,469
TOTAL BASE WT	5,607

NOTES:
CEMENT TO BE PER ASTM C-150
REINFORCING TO BE PER ASTM A-615 GRADE 60
CONCRETE TO BE AIR ENTRAINED 4000 PSI @ 28 DAYS MINIMUM



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INDEPENDENCE, MO 64056
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(816) 796-3518

WALL REINFORCING:
PER DRAWING R1-A
#4 @ 12" O.C.E.W.

BASE REINFORCING:
#4 @ 6" O.C.E.W.

KAT EXCAVATING
THE RESIDENCES AT ECHELON - PRIVATE
LEE'S SUMMIT, MO

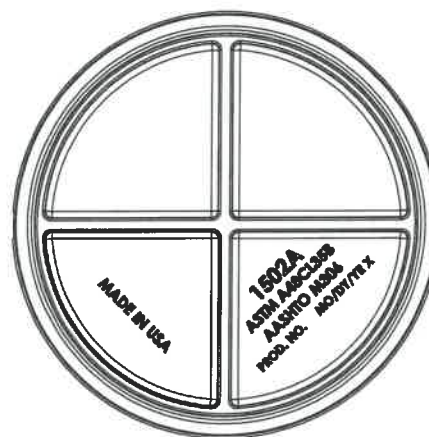
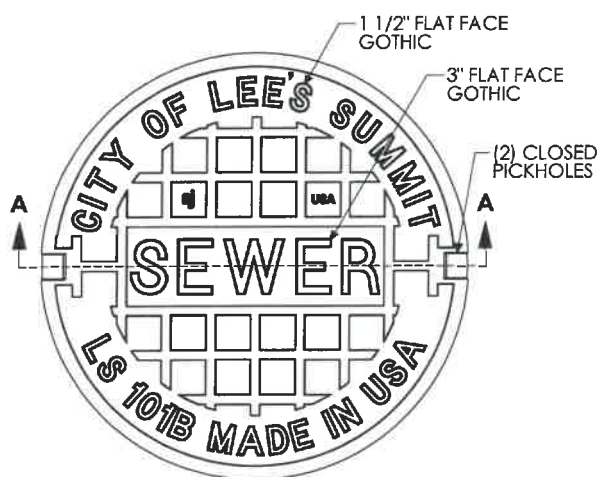
STRUCTURE
15-2
DATE
08/21/17
CHECKED
N/A

DESCRIPTION
SCALE
NTS
INSPECTION
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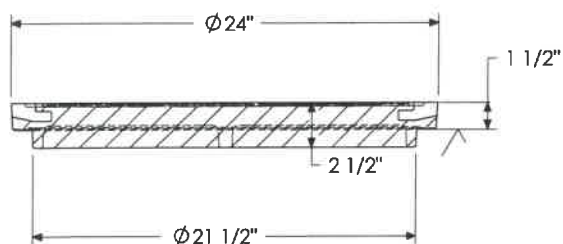
GRATE INLET
WIR DESIGN
4000 PSI
SHT 1 OF 1
BONO NUMBER
17-1299

PLOT DATE: 8/17/2017

1502A Cover



BOTTOM VIEW



SECTION A-A

Product Number

00150245

Design Features

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

Certification

- ASTM A48
-
- Country of Origin: USA

Drawing Revision

9/8/2011 Designer: JIJ
7/31/2013 Revised By: DAE

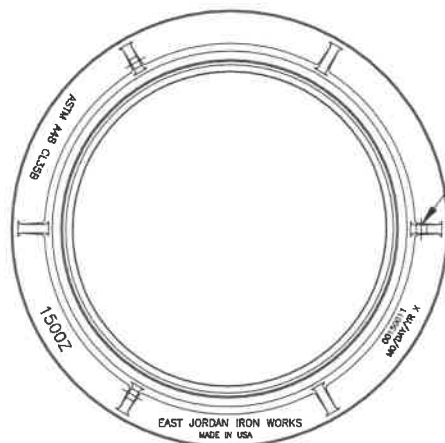
Disclaimer

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

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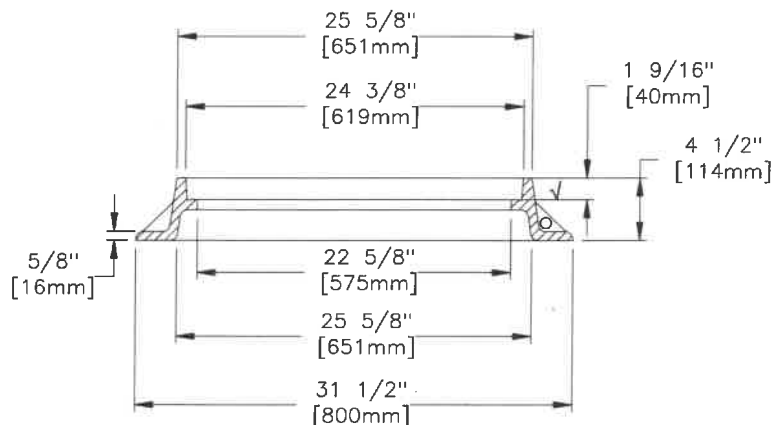
Contact

800 626 4653
ejco.com



(3) 3/4" DIA. HOLES
EQUALLY SPACED ON A
27 5/8" B.C.

PLAN VIEW



SECTION VIEW

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IRON WORKS EST. 1863

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www.ejiw.com
MADE IN USA

PRODUCT NUMBER

00150011

CATALOG NUMBER

1500Z

FRAME

LOAD RATING

HEAVY DUTY

COATING

UNDIPPED

ESTIMATED WEIGHT

FRAME: 120 LBS 55kg

MATERIAL SPECIFICATION

FRAME - GRAY IRON
ASTM A48 CL35B

OPEN AREA
N/A

DESIGNATES MACHINE SURFACE

DRAWN
TCL

DATE
04/08/02

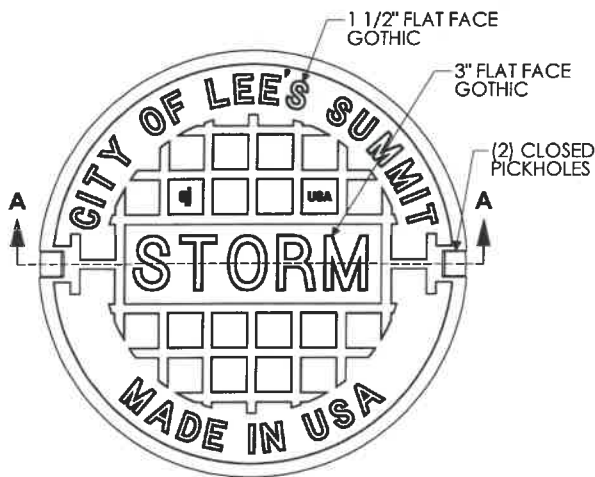
LAST REVISED
SMH

DATE
09/15/06

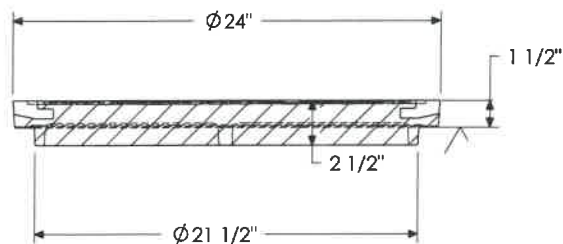
REFERENCE INFORMATION

00150011

1502A Cover



BOTTOM VIEW



SECTION A-A

Product Number

00150246

Design Features

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

Certification

- ASTM A48
-
- Country of Origin: USA

Drawing Revision

9/8/2011 Designer: JIJ
7/31/2013 Revised By: DAE

Disclaimer

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

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Contact

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1502Z FRAME

PRODUCT NUMBER

00150211

DESIGN FEATURES

MATERIALS

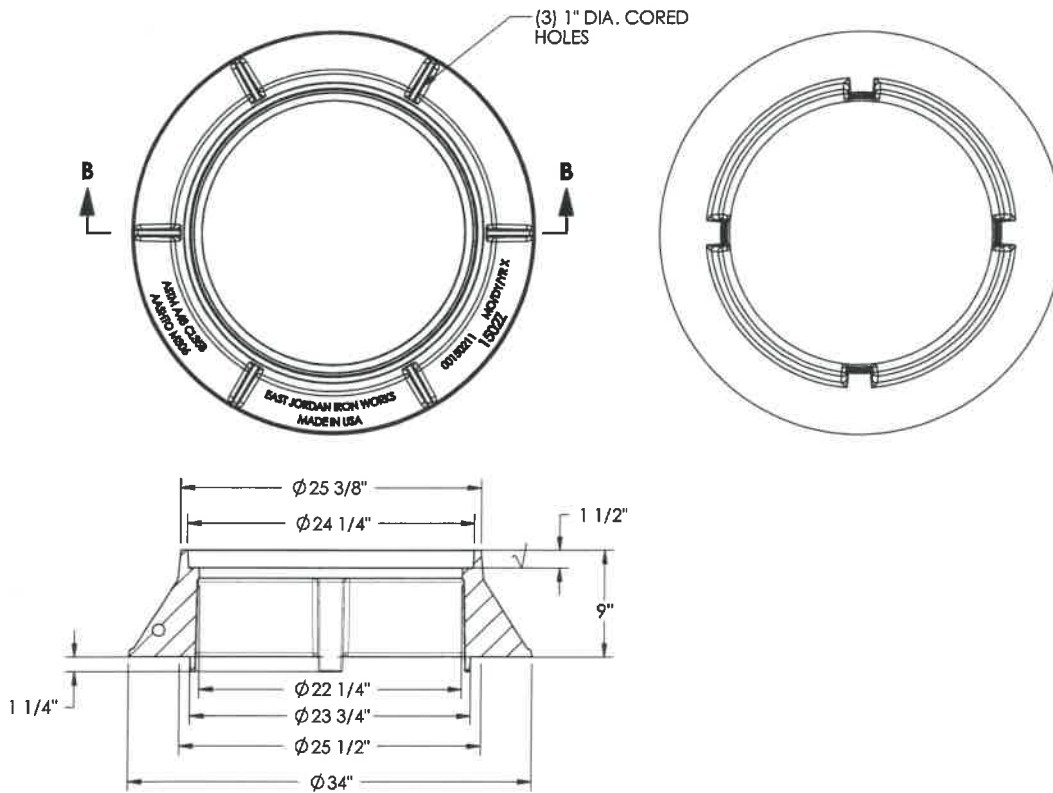
FRAME-GRAY IRON
ASTM A48 CL35B

DESIGN LOAD
HEAVY DUTY

COATING
UNDIPPED

OPEN AREA
N/A

✓ DESIGNATES MACHINE SURFACE



SECTION B-B

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

EJ GROUP

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More Information

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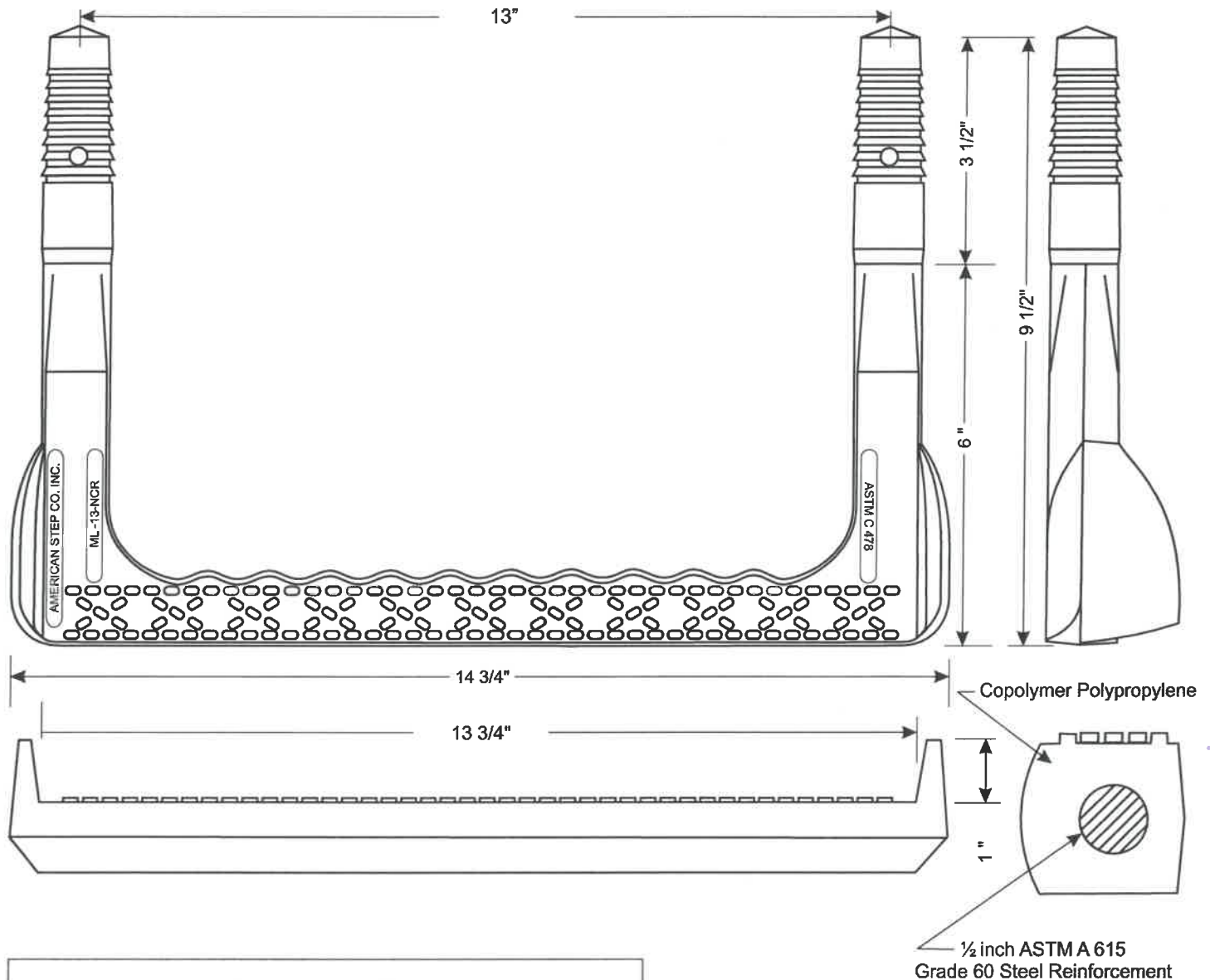
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DRAWING DETAILS

ORIGINAL DRAWING: JIJ 2/15/2006

REVISED BY: SBB 8/25/2011

ML-13-NCR



ML-13-NCR

Mechanical Lock Installation Methods
Minimum Concrete Strength Must Be 3000 psi.

Preformed Holes

Two preformed holes on 13" centers
Holes must be parallel
Diameter of holes are 1.1" tapering to 7/8" in 3 1/2" of depth

Drilled Holes

Drill two 1" holes on 13" centers with a minimum depth of 3 3/4"
Use 1" masonry bit for drilling.
Holes must be parallel.

Drive step with sledge hammer until both legs are completely seated

This step meets or exceeds ASTM C 478 and OSHA Standards when properly installed.



American Step Company, Inc.
P.O. Box 137
830 East Broadway
Griffin, GA 30224-0137

800-988-STEP
770-467-9844 (OFFICE)
770-467-8011 (FAX)