

CITY OF AUSTIN ELECTRIC UTILITY DEPARTMENT



PURCHASE SPECIFICATION

FOR

MANHOLE, CONCRETE, PRE-CAST, 36INCH, 48INCH

DATE	PREPARED BY	ISSUANCE/REVISION	APPROVAL PROCESS SUPV. / MATERIALS SUPV.
9/2/11	Arthur Gonzalez	Revision	
7/21/20	Julius Heslop	Revision	
7/29/20	Julius Heslop	Revision	
12/29/21	Julius Heslop	Revision	

<i>REASON FOR REVISION</i>	<i>AFFECTED PARAGRAPHS</i>
9/2/11- Added burial depth criteria and reference to new drawings. Also added applicable standards.	3.0, 4.0, and Attachment 1
7/21/20-Added to applicable standards, design loading, vendor physical requirements.	3.0, 4.0, and 5.0
7/29/20- Added drawings	Attachment 1
12/29/21 Updated drawings	Attachment 1

This specification, until rescinded, shall apply to each future purchase and contract for the commodity described herein.
 Retain for future reference.

AUSTIN ENERGY
PURCHASE SPECIFICATION
FOR
MANHOLE, CONCRETE, PRE-CAST, 36INCH, 48INCH

1.0 SCOPE

- 1.1 The Electric Utility Department of the City of Austin hereinafter referred to as Austin Energy or AE. AE requires a qualified Vendor to supply precast concrete manholes. The precast concrete manholes shall be engineered and fabricated to provide a structurally safe design.

2.0 CLASSIFICATION

- 2.1 The precast concrete manholes will be used by AE for the underground transmission, distribution, and communication systems.

3.0 APPLICABLE STANDARDS

The Manholes shall conform to or exceed applicable requirements of the following standards and codes:

- 3.1 ASTM A-615 Grade 60 for Rebar
- 3.2 ASTM A-185 Grade 65 for Mesh
- 3.3 ASTM C-857 Minimum Structural Design Loading for Underground Precast Concrete Utility Structures
- 3.4 AASHTO HS 20 Loading
- 3.5 ACI 318 for Structural Concrete
- 3.6 ASTM C150 for Portland Cement
- 3.7 ASTM C478 for Standard Specification for Precast Reinforced Concrete Manhole Sections
- 3.8 ASTM C858 Standard Specification for Underground Precast Concrete Utility Structures

4.0 DESIGN LOADS

- 4.1 The precast concrete manholes (Attachment I) shall be rated for AASHTO HS-20 loading. Traffic (live load= 16,000lbs) shall approach the structure from any direction.
- 4.2 The precast concrete manholes shall be designed to be installed with the top of the vault to have a burial depth 3 feet or 5 feet below grade, whichever is specified.
- 4.3 Manholes designed for a burial depth of 3 feet require access openings of 36" in diameter.
- 4.4 Manholes designed for a burial depth of 5 feet require access openings of 48" in diameter.

5.0 PHYSICAL REQUIREMENTS

- 5.1 The Vendor shall fabricate precast concrete manholes in accordance with Attachment I.
- 5.2 The precast concrete manhole windows shall be a non-reinforced concrete membrane. The dimensions of the windows and thickness of the non-reinforced concrete membrane shall be as shown on the attached drawings (Attachment I).
- 5.3 Minimum compressive strength of concrete shall not be less than 4,000 psi in 28 days
- 5.4 The concrete cover for reinforcement shall be provided as shown in the attached drawings (Attachment I). If not noted on drawings, the concrete cover for reinforcement shall be 1.5 inches minimum for main reinforcing bars and $\frac{3}{4}$ inch for stirrups and ties.
- 5.5 The concrete finish shall be free of rock pockets and honeycombed areas.
- 5.6 The interior walls, ceiling and exterior surfaces exposed shall be smooth.
- 5.7 Knockout and duct openings shall be beveled on the exterior surface.
- 5.8 Inserts shall be provided as shown in the attached drawings (Attachment 1)

6.0 VENDOR REQUIREMENTS

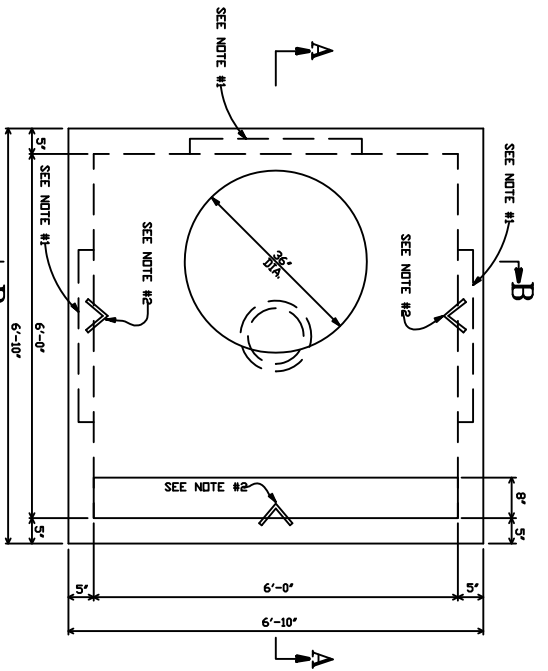
- 6.1 The Vendor shall supply all vehicles, equipment and accessories required to safely lift and place the manhole in the excavation for the manhole at the AE job site.
- 6.2 The Vendor shall present AE with the engineering data for the manholes, certified by the Vendor's registered professional engineer. The certified engineering data shall state the structural integrity for the manhole configurations listed in Attachment I.

ATTACHMENT I

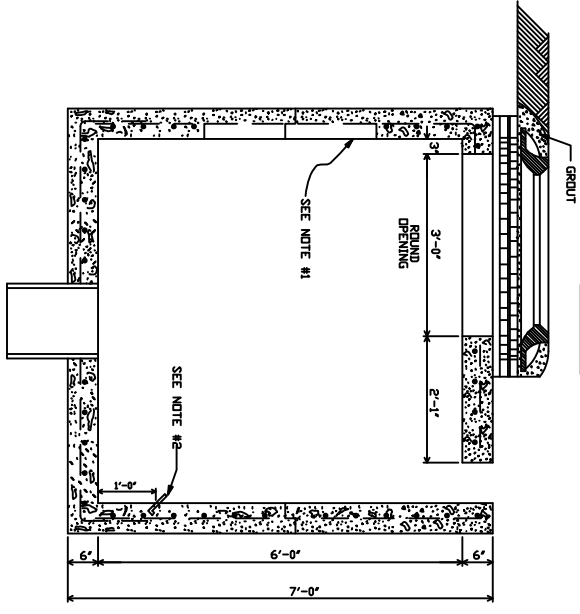
AUSTIN ENERGY PRECAST CONCRETE MANHOLE DRAWINGS

DRAWING NUMBERS:

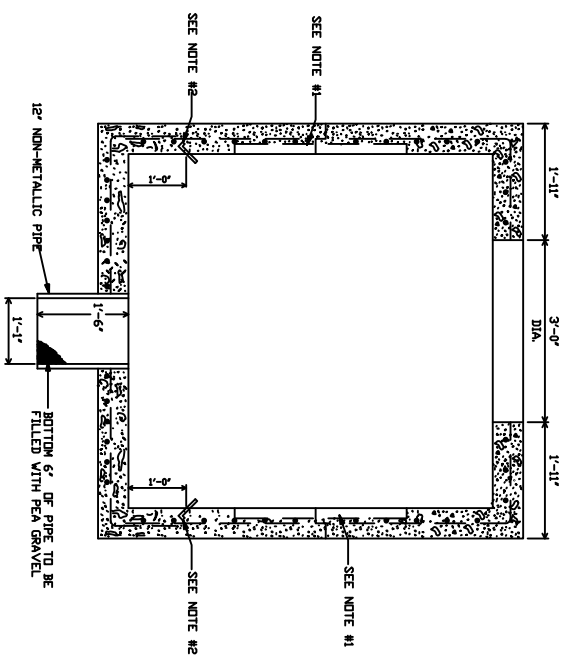
- 7B 1098 1, 5 X 5, designed for 3 ft burial depth
- 7B 1098 2, 6 X 6, designed for 3 ft burial depth
- 7B 1098 3, 12 X 12, designed for 3 ft burial depth
- 7B 1098 4, 6 X 12 X 7, designed for 3 ft burial depth
- 7B 1098 5, 6 X 12 Center Section, designed for 3 ft burial depth
- 7B 1098 6, 4 X 4, designed for 3 ft burial depth
- 7B 1098 7, 6 X 8, designed for 3 ft burial depth
- 7B 1098 8, 5 X 5, designed for 5 ft burial depth
- 7B 1098 9, 6 X 6, designed for 5 ft burial depth
- 7B 1098 10, 12 X 12, designed for 5 ft burial depth
- 7B 1098 11, 6 X 12 X 7, designed for 5 ft burial depth
- 7B 1098 12, 6 X 12 Center Section 2 ft Height, designed for 5 ft burial depth
- 7B 1098 13, 6 X 12 Center Section 2.5 Ft Height, designed for 5 ft burial depth
- 7B 1098 14, STD 6X12 Manhole
- 7B 1098 15, STD 12X12 Manhole
- 7B 1098 16, STD 6X8X5H Cable Vault



PLAN



SECTION A-A



SECTION B-B

- NOTES:**
1. INSTALL 3/4" X 3/4" VINDIV CENTERED IN WALL
 2. PULLING IRONS (3 REQUIRED).
 3. SHALL BE DESIGNED FOR A BURIAL DEPTH OF 3 FEET BELOW GRADE OF TOP OF VAULT.
 4. SHALL BE RATED FOR AASHTO HS 20 LOADING.

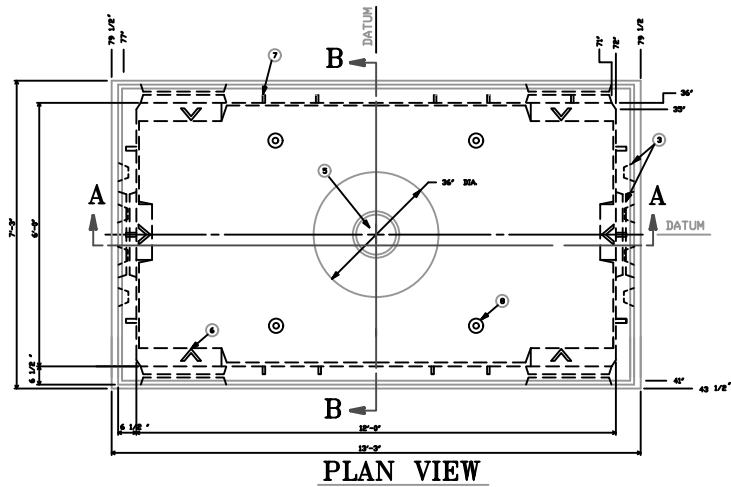
REV.	DATE	DESCRIPTION	DESIGNED	CHECKED	BRANN	CHECKED	CLM	VIA	MD	ENGR.	APP'D	CONSTR.	APP'D
A		ORIGINAL DRAWING											

CITY OF AUSTIN, TEXAS
ELECTRIC DEPARTMENT
SUBSTATION ENGINEERING & DESIGN



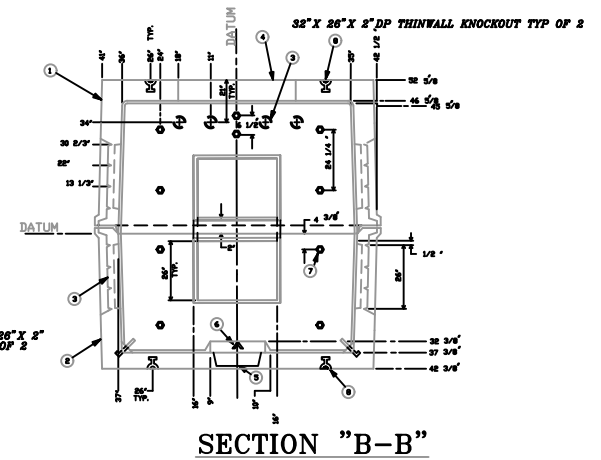
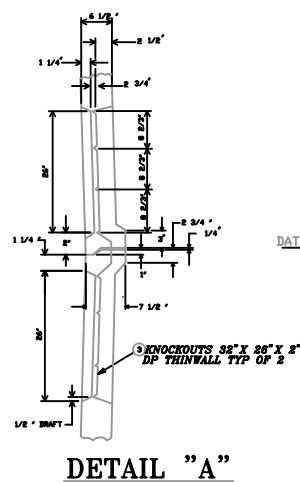
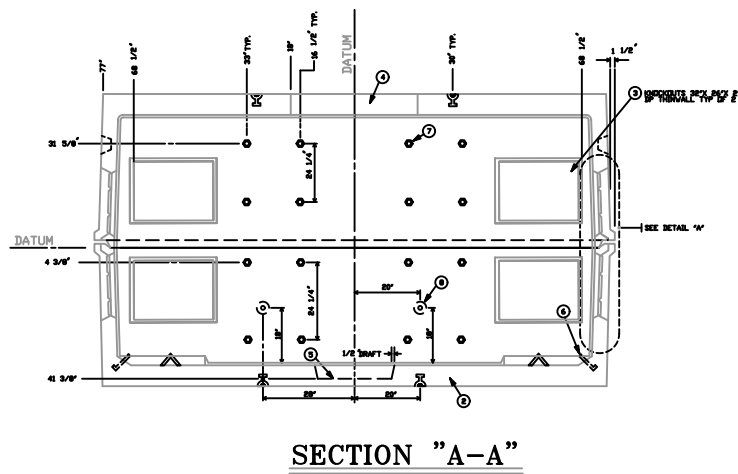
CITY OF AUSTIN
PRECAST & BOX TUBULAR BOX

DATE: JULY 1993
SCALE: 1/4" = 1'-0"
DRAWING NUMBER: 7B 1098 2/A




- ① TOP SECTION WEIGHT APPROX. 14,000#
- ② BOTTOM SECTION WEIGHT APPROX. 13,500#
- ③ MANHOLE WINDOWS 32" X 26" X 2" DP THINWALL KNOCKOUT TYP OF 2
- ④ 36" MANHOLE OPENING
- ⑤ SUMP 15" DIA. BY 4" DEEP (1)REQ'D. (SEE NOTES 4 AND 5 BELOW)
- ⑥ FULL IRONS (6)REQ'D.
- ⑦ INSERTS 1/2" DIA. (62)REQ'D.
- ⑧ 2-TON RISS HANDLING ANCHOR (12)REQ'D.
- ⑨ SHALL BE DESIGNED FOR A BURIAL DEPTH OF 3 FEET BELOW GRADE TO TOP OF VAULT
- ⑩ SHALL BE RATED FOR AASHTO HS 20 LOADING

- FOR INFORMATION ONLY -



NO.	DATE	DESCRIPTION	BY	CHK	APP	DATE
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

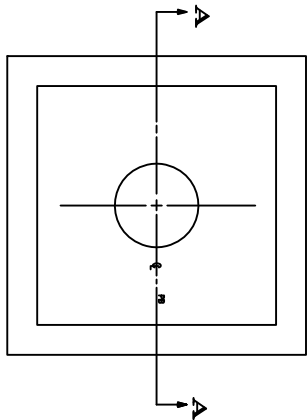
NOTICE
The data in this document
incorporates proprietary rights of
AUSTIN ENERGY. Any party
acquiring this document does so
in confidence and agrees that it
shall not be disclosed to other
parties, nor disclosed to others
without the consent of AUSTIN
ENERGY.



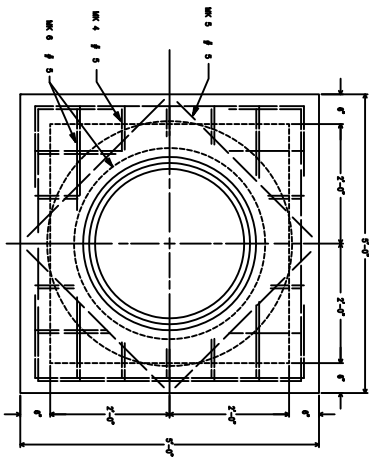
ELECTRIC SERVICE DELIVERY
SUBSTATION ENGINEERING

TITLE: CITY OF AUSTIN
CITY OF AUSTIN STANDARD
6' X 12' X 7' PRECAST MANHOLE

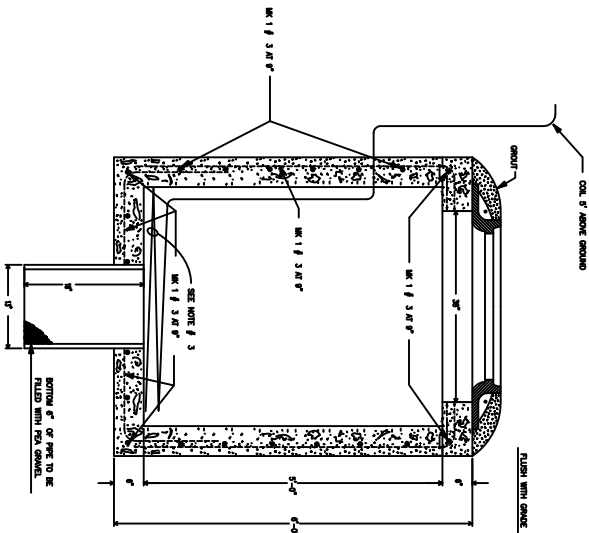
DESIGN NO.	SCALE
	N.T.S.
FILE NO.	
ISSUED NUMBER	
7B 1098 4	



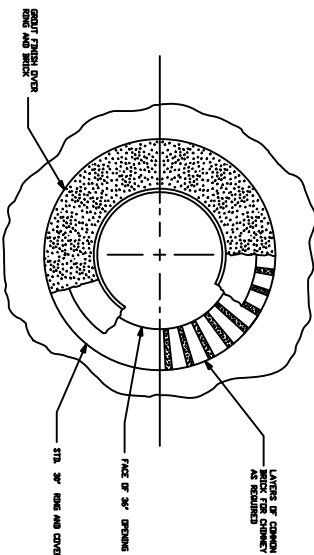
PLAN VIEW
SCALE 1/4"



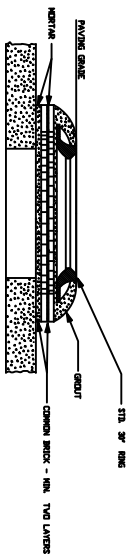
COVER DETAIL
SCALE 1/4"



SECTION A-A
SCALE 1/4"



PLAN VIEW
SCALE 3/4"



SECTION D-D
SCALE 3/4"

NOTES :

1. USE 3/4" TYPICAL TYPE III RING AND COVER.
2. CUT AND ADJUST REINFORCING STEEL AS SHOWN TO FIT OVER CONCRETE ENTRANCE AND PROVIDE 2" MIN. COVER.
3. INSTALL 2 TURNS OF 1/4" GALV. OR 2/0 BARE COPPER WIRE IN BOTTOM OF RING AND COVER TO PROVIDE PROTECTIVE POLYMER CONCRETE.
4. SHALL BE DESIGNED FOR 3 FEET BELOW GRADE TO TOP OF VAULT.
5. SHALL BE RATED FOR MINIMUM 90 LBS.

ESTIMATED CONCRETE REQUIRED - 2.7 CU. YDS.

STEEL SCHEDULE

MARK	REQD	SIZE	LENGTH	DESCRIPTION	TOT LENGTH
1	4	#3	7'-6"	4'-6"	105'-0"
2	24	#3	4'-6"	STRAIGHT	108'-0"
3	20	#3	6'-6"	5'-3"	182'-0"
4	8	#3	1'-4"	STRAIGHT	12'-0"
5	4	#3	3'-3"	STRAIGHT	13'-0"
6	8	#3	4'-6"	STRAIGHT	36'-0"
TOTAL WEIGHT #3					637 1/2
TOTAL WEIGHT #5					148 1/2

NO.	DATE	DESCRIPTION	BY	CHECKED
1		ORIGINAL DRAWING		
2				
3				
4				
5				
6				
7				
8				
9				
10				

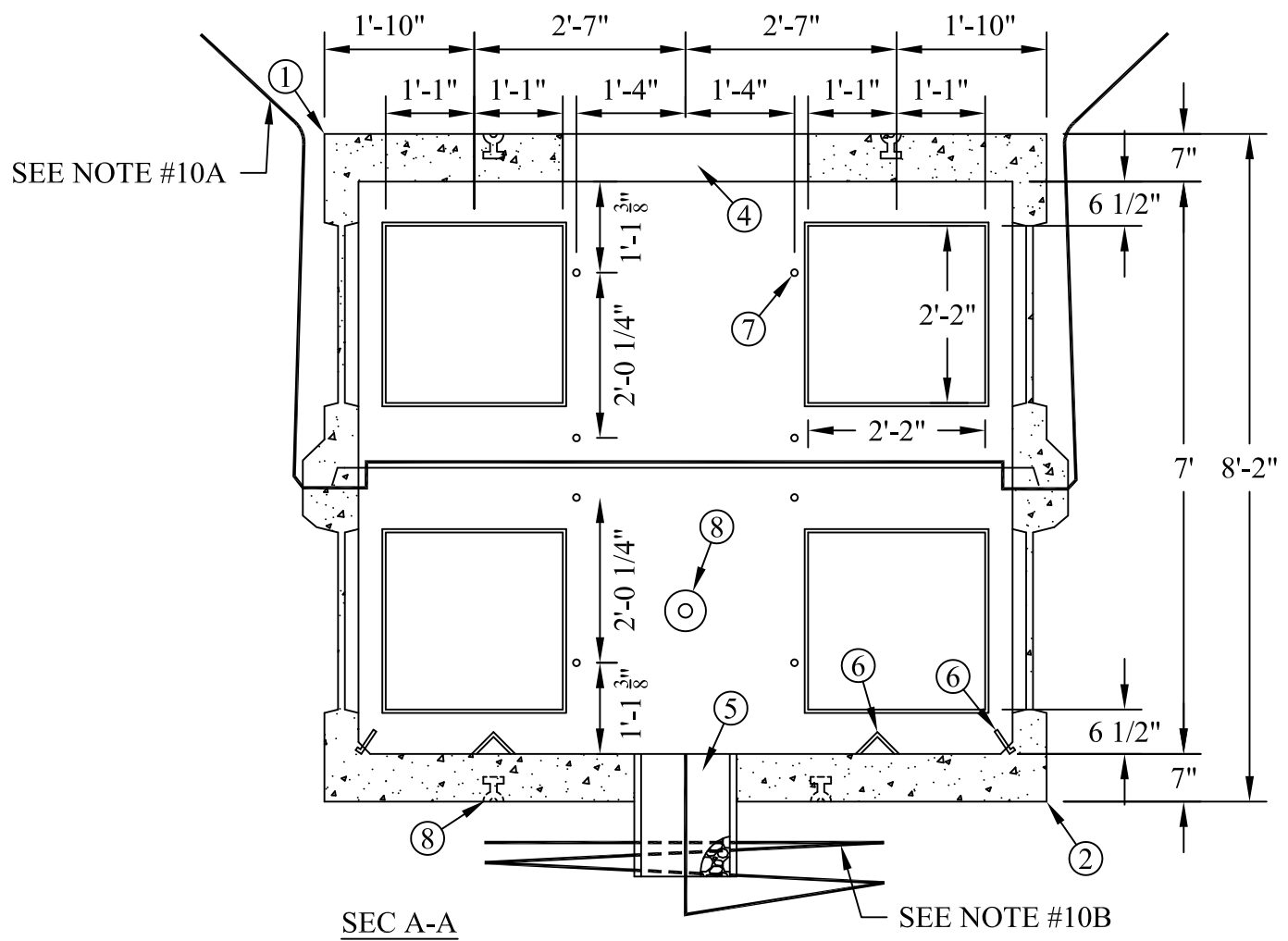
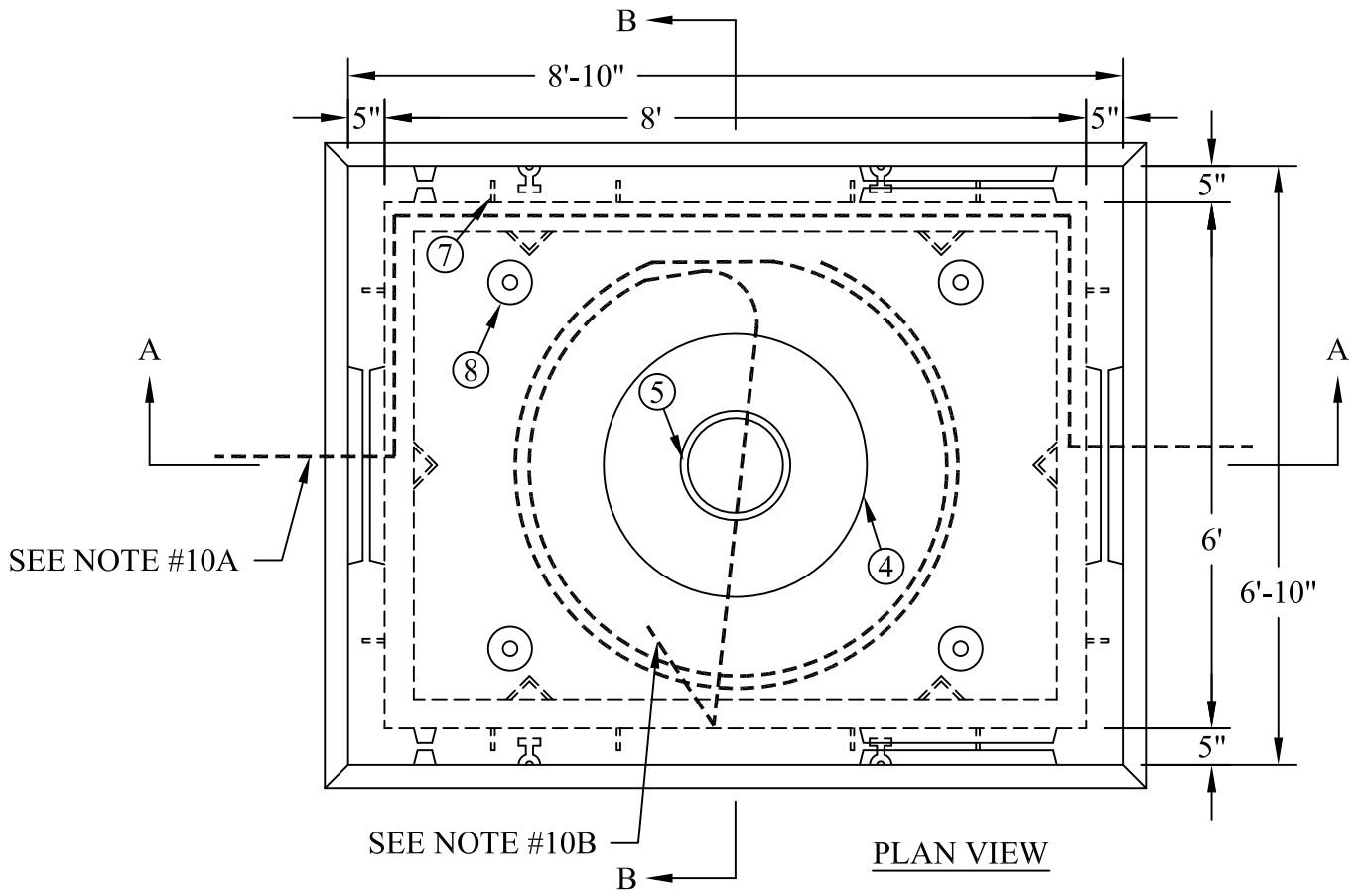
The data is hereby acknowledged as correct. Any person who uses this drawing in connection with any project, for purposes not intended by the engineer, shall be responsible for any errors or omissions.

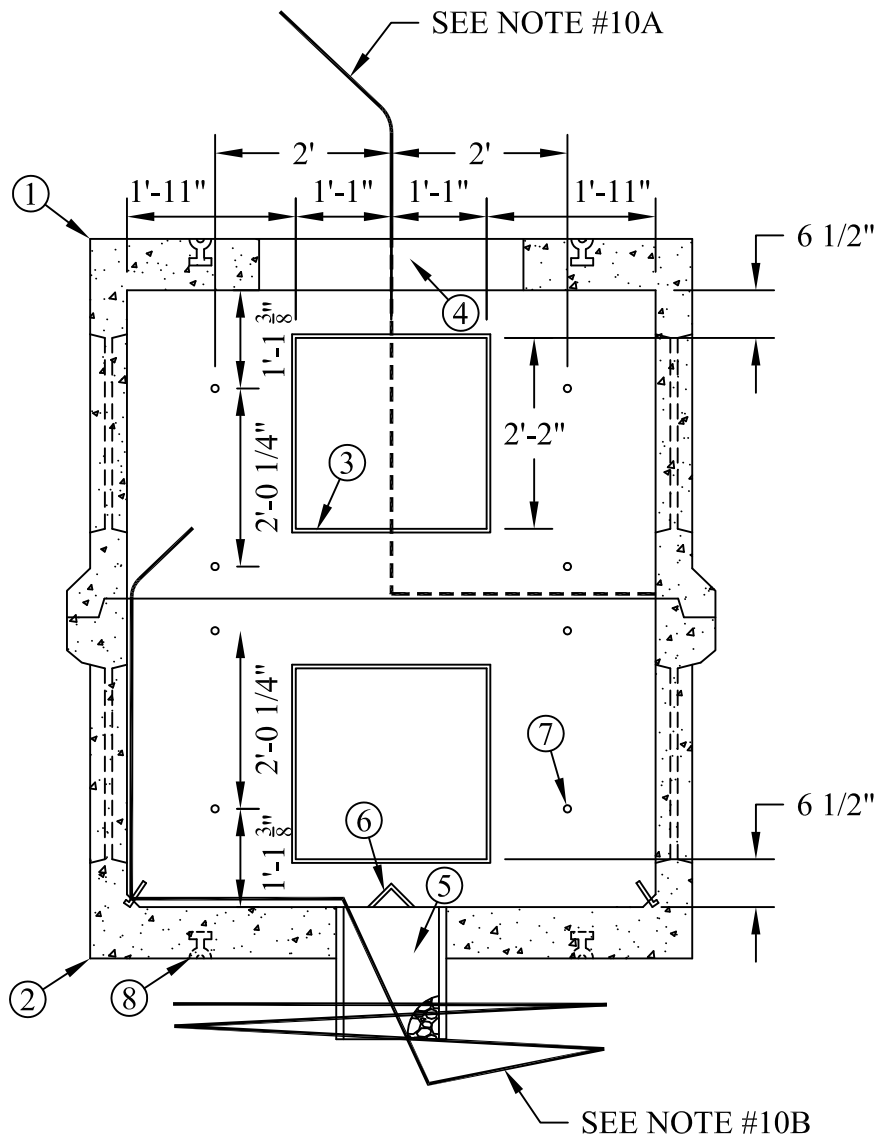


POWER DELIVERY DIVISION
TRANSMISSION ENGINEERING

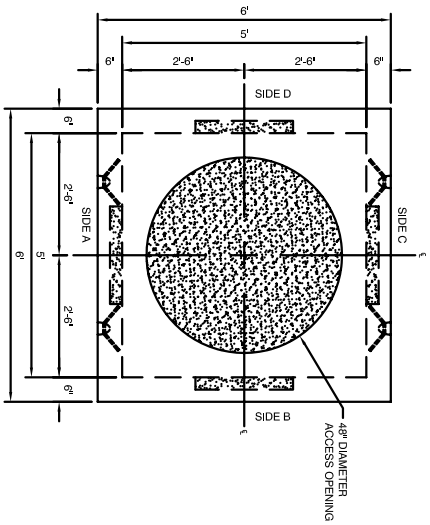
CITY OF AUSTIN
PRECAST 4 X 4 PULLBOX

NO.	DATE	DESCRIPTION	BY	CHECKED
1		7B 1098 6		
2				
3				
4				
5				
6				
7				
8				
9				
10				

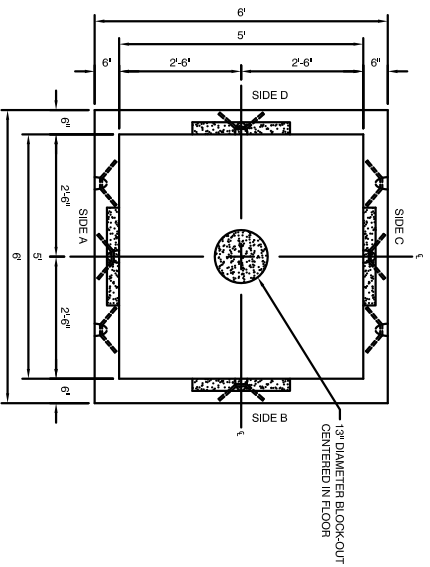




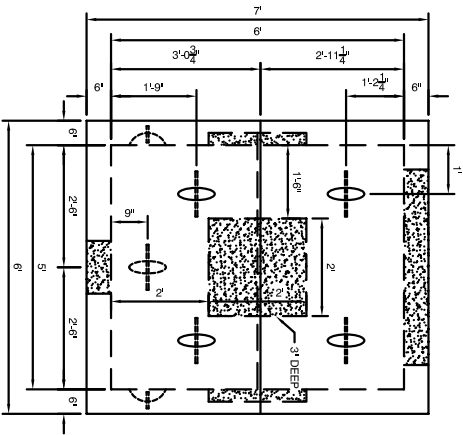
- ① TOP SECTION WEIGHT 16,400 LBS. (SEE NOTE 2)
- ② BOTTOM SECTION WEIGHT 16,175 LBS. (SEE NOTE 2)
- ③ KNOCKOUT (12) REQUIRED
- ④ 36" MANHOLE OPENING
- ⑤ 13" DIAMETER OPENING FOR SUMP. (SEE NOTE 4 & 5)
- ⑥ PULL IRONS (6) REQUIRED
- ⑦ INSERTS 1/2" DIAMETER (48) REQUIRED
- ⑧ 2 TON RISS HANDLING ANCHOR (12) REQUIRED
- ⑨ SHALL BE DESIGNED FOR A BURIAL DEPTH OF 3 FEET BELOW GRADE TO TOP OF VAULT
- ⑩ SHALL BE RATED FOR AASHTO HS 20 LOADING



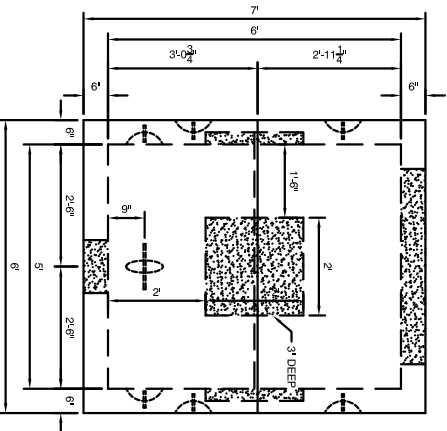
TOP VIEW



BOTTOM VIEW



SIDE A & C

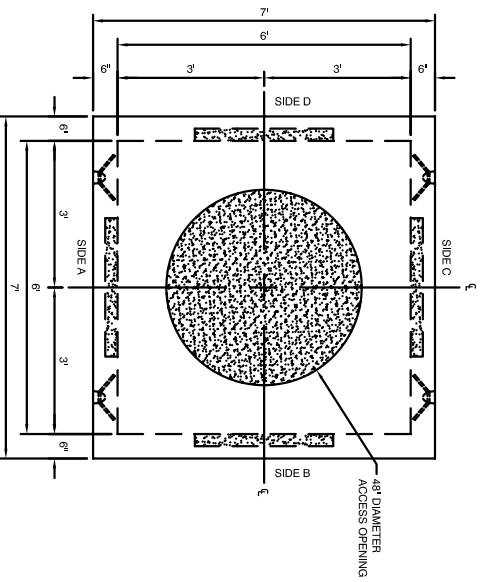


SIDE B & D

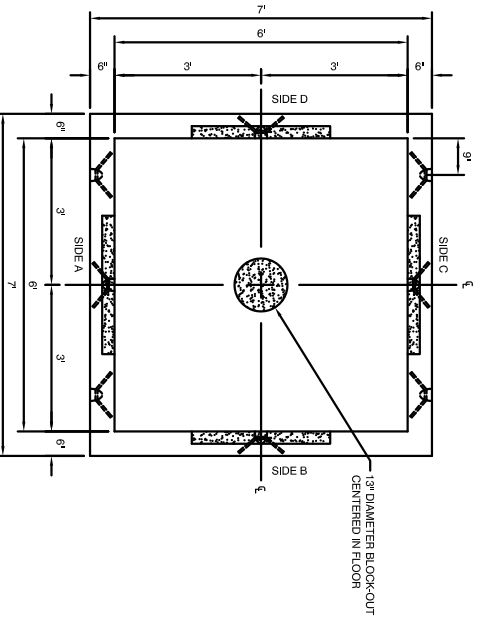
- NOTES:
1. SHALL BE DESIGNED FOR BURIAL DEPTH OF 5 FEET BELOW GRADE TO TOP OF VAULT.
 2. SHALL BE RATED FOR AASHTO HS 20 LOADING.



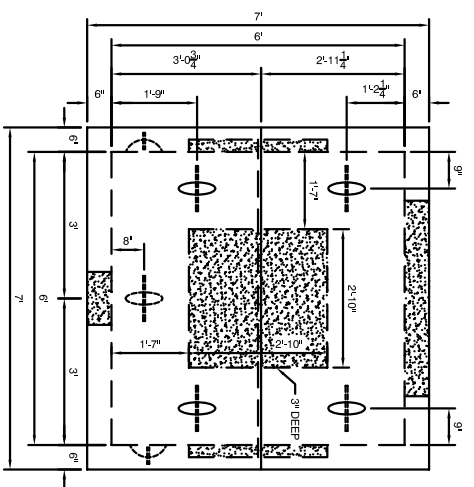
SCALE: 3/8"=1'-0"
 5'-0" X 5'-0" X 6'-0"
 MANHOLE



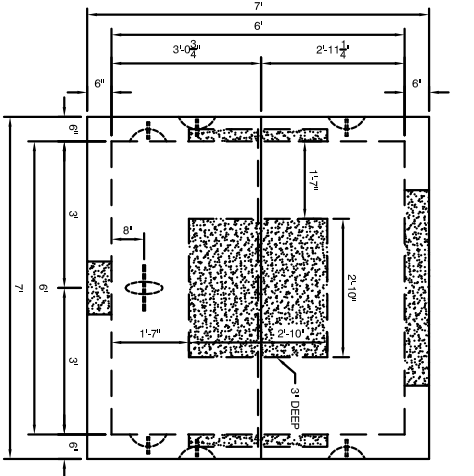
TOP VIEW



BOTTOM VIEW



SIDE A & C

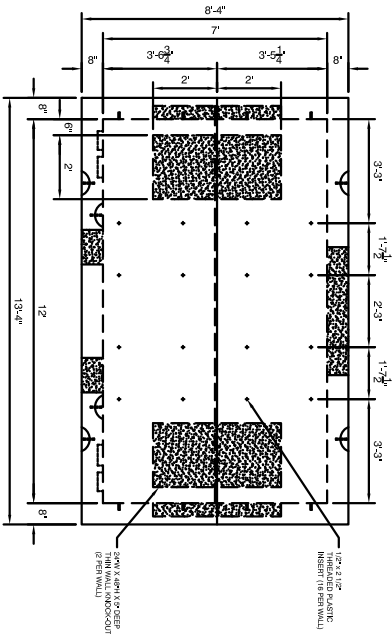
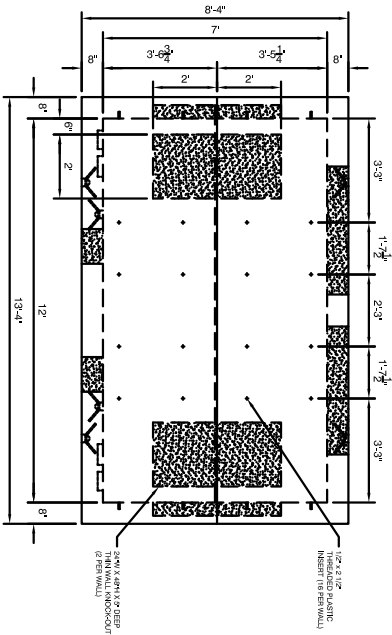
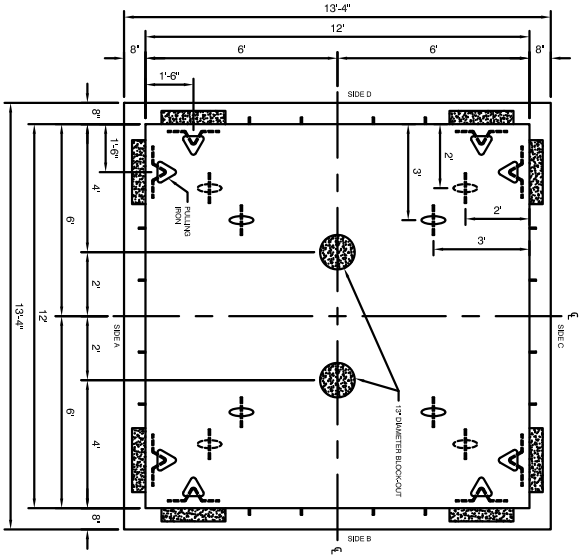
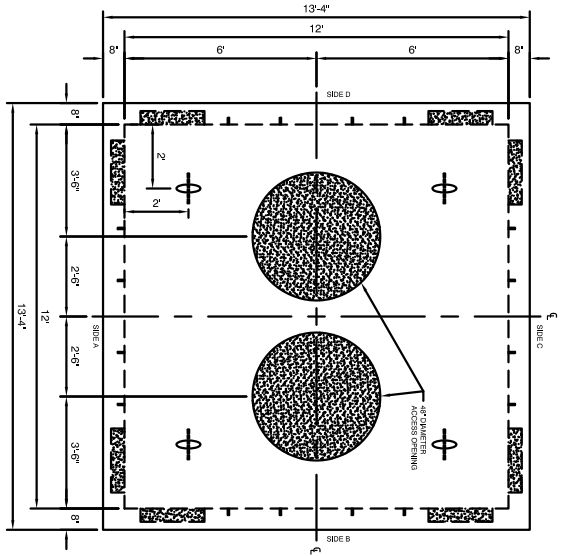


SIDE B & D

- NOTES:**
1. SHALL BE DESIGNED FOR BURIAL DEPTH OF 5 FEET BELOW GRADE TO TOP OF VAULT.
 2. SHALL BE RATED FOR AASHTO HS 20 LOADING.



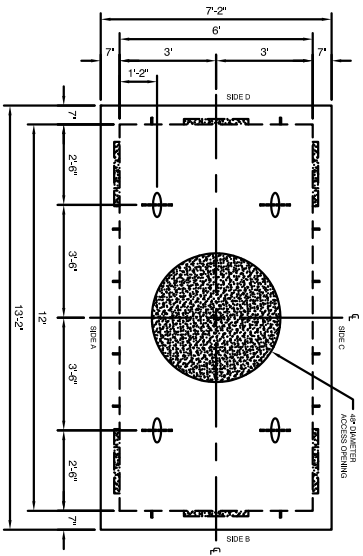
SCALE: 3/8" = 1'-0"
 6'-0" X 6'-0" X 6'-0"
 MANHOLE



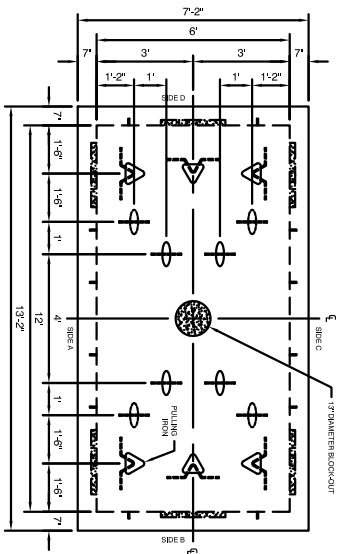
- NOTES:
1. SHALL BE DESIGNED FOR BURIAL DEPTH OF 5 FEET BELOW GRADE TO TOP OF VAULT.
 2. SHALL BE RATED FOR AASHTO HS 20 LOADING.



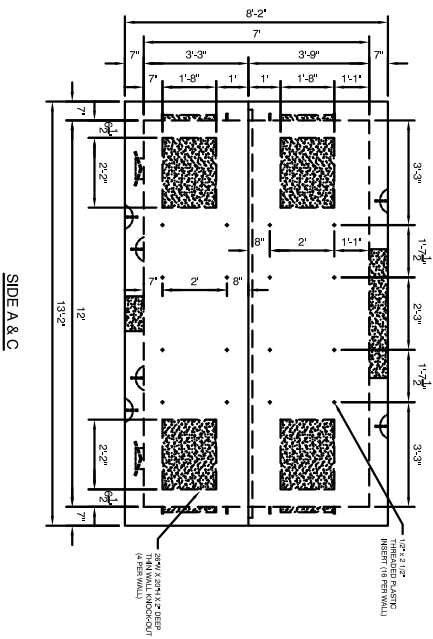
SCALE: 1/4"=1'-0"
 12'-0" X 12'-0" X 7'-0"
 MANHOLE



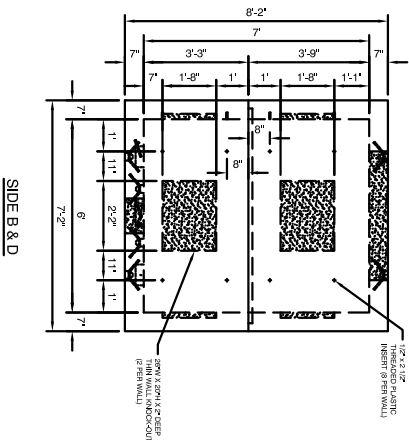
TOP VIEW



BOTTOM VIEW



SIDE A & C

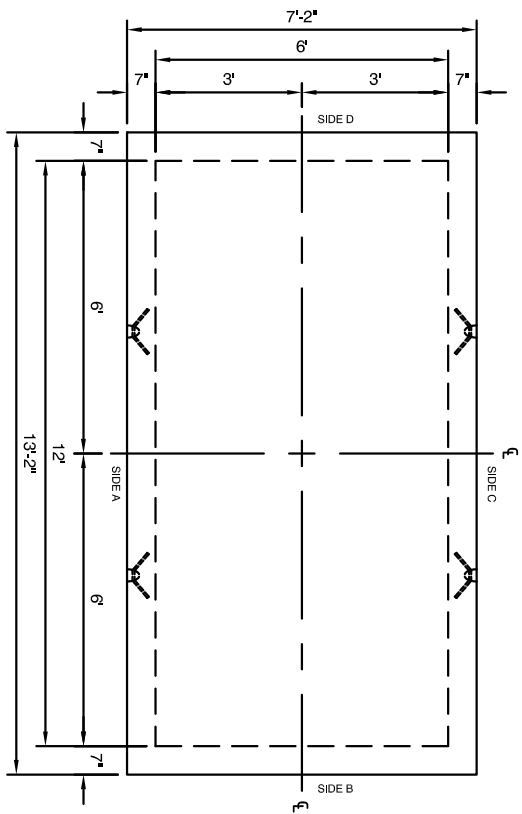


SIDE B & D

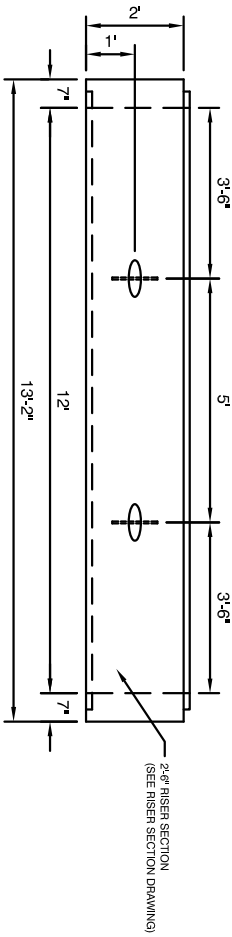
- NOTES:
1. SHALL BE DESIGNED FOR BURIAL DEPTH OF 5 FEET BELOW GRADE TO TOP OF VAULT.
 2. SHALL BE RATED FOR AASHTO HS 20 LOADING.



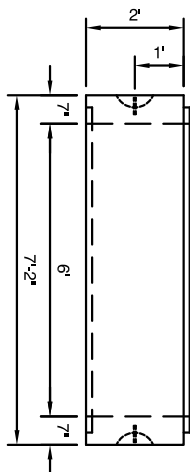
SCALE: 1/4" = 1'-0"
 6'-0" X 12'-0" X 7'-0"
 MANHOLE



TOP VIEW



SIDE A & C

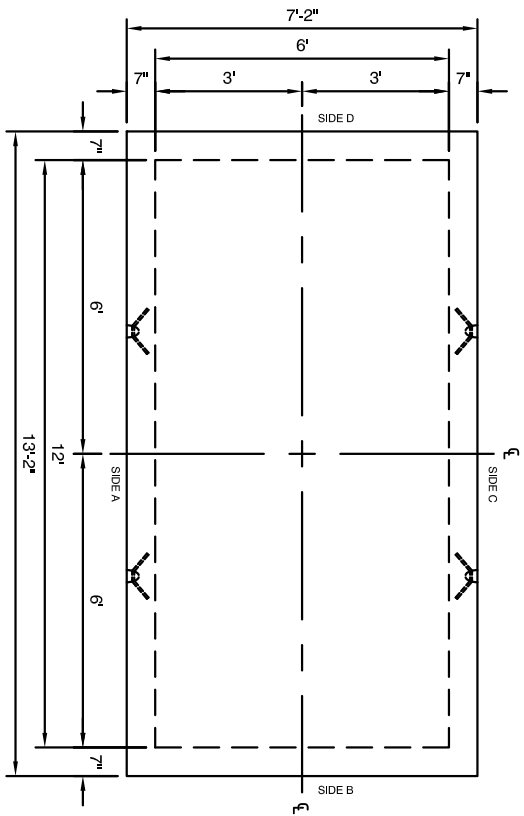


SIDE B & D

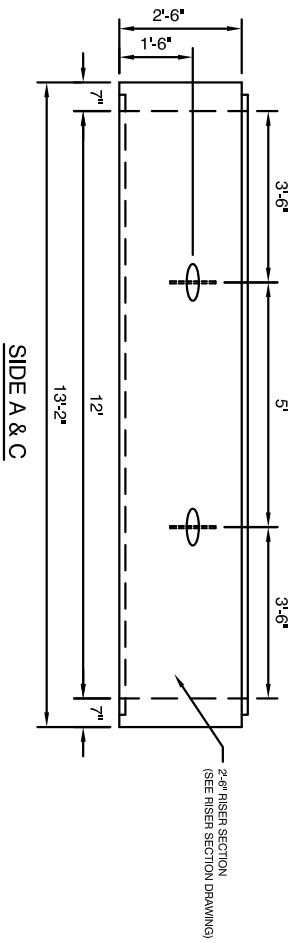
- NOTES:
1. FOR USE ON VAULTS THAT ARE DESIGNED FOR A BURIAL DEPTH OF 5 FEET BELOW GRADE TO TOP OF VAULT.
 2. SHALL BE RATED FOR AASHTO HS 20 LOADING.



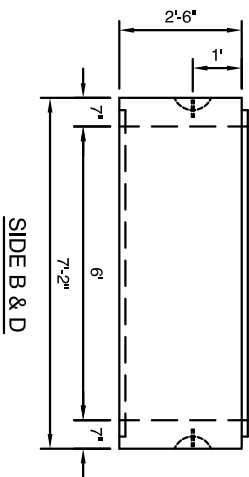
SCALE: 3/8"=1'-0"
 6'-0" X 12'-0" X 2'-0"
 RISER SECTION



TOP VIEW



SIDE A & C

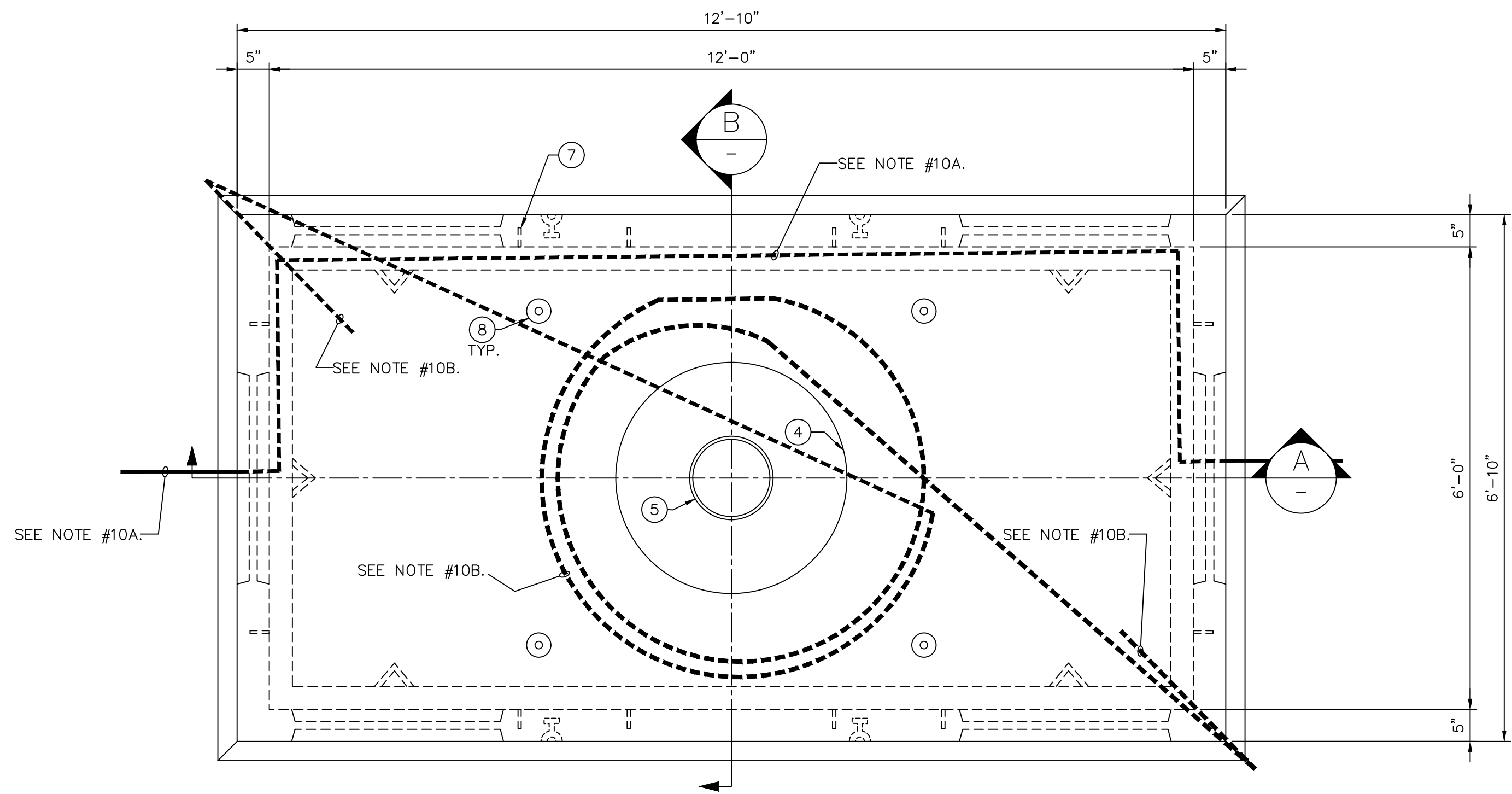


SIDE B & D

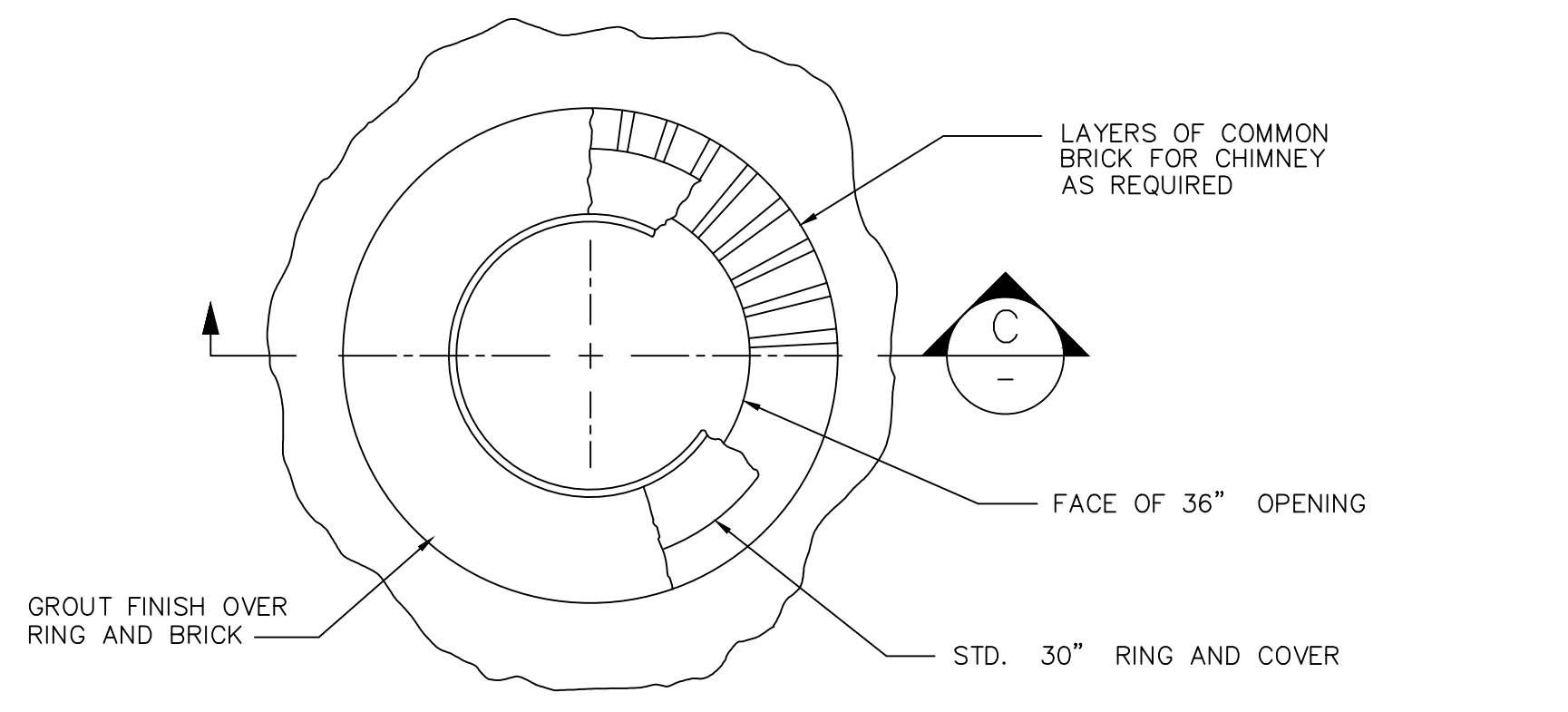
- NOTES:
1. FOR USE ON VAULTS THAT ARE DESIGNED FOR A BURIAL DEPTH OF 5 FEET BELOW GRADE TO TOP OF VAULT.
 2. SHALL BE RATED FOR AASHTO HS 20 LOADING.



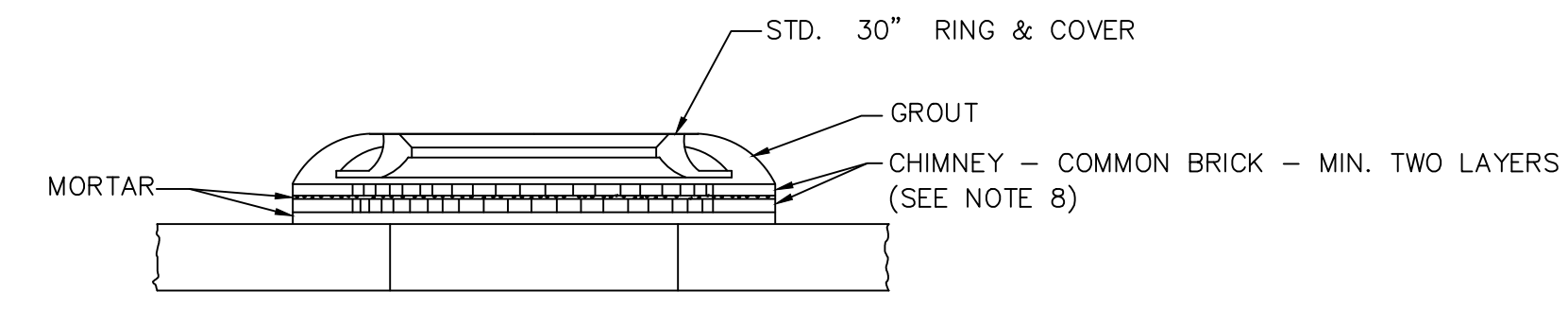
SCALE: 3/8"=1'-0"
 6'-0" X 12'-0" X 2'-6"
 RISER SECTION



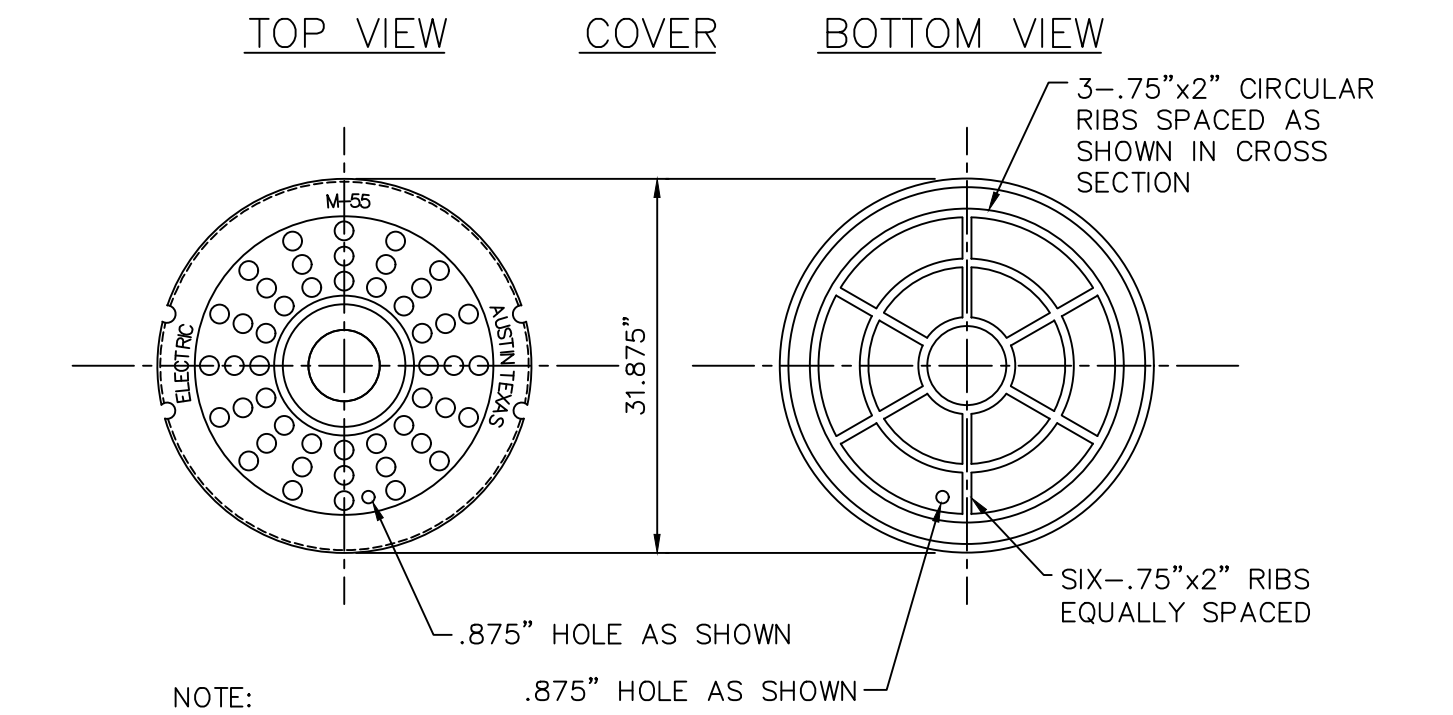
PLAN VIEW
SCALE: 3/4"=1'-0"



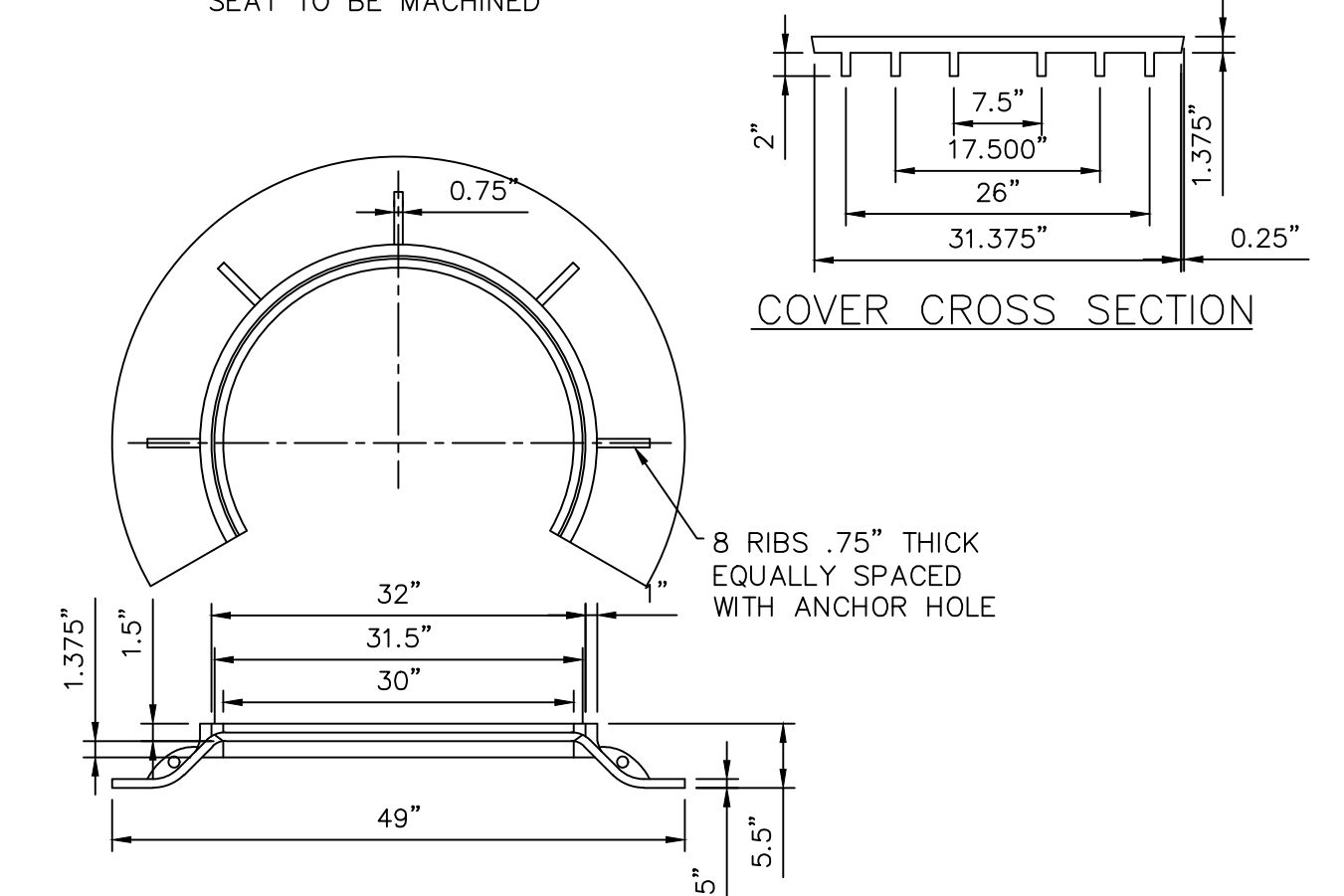
CHIMNEY PLAN VIEW
SCALE: N.T.S.



SECTION C
SCALE: N.T.S.

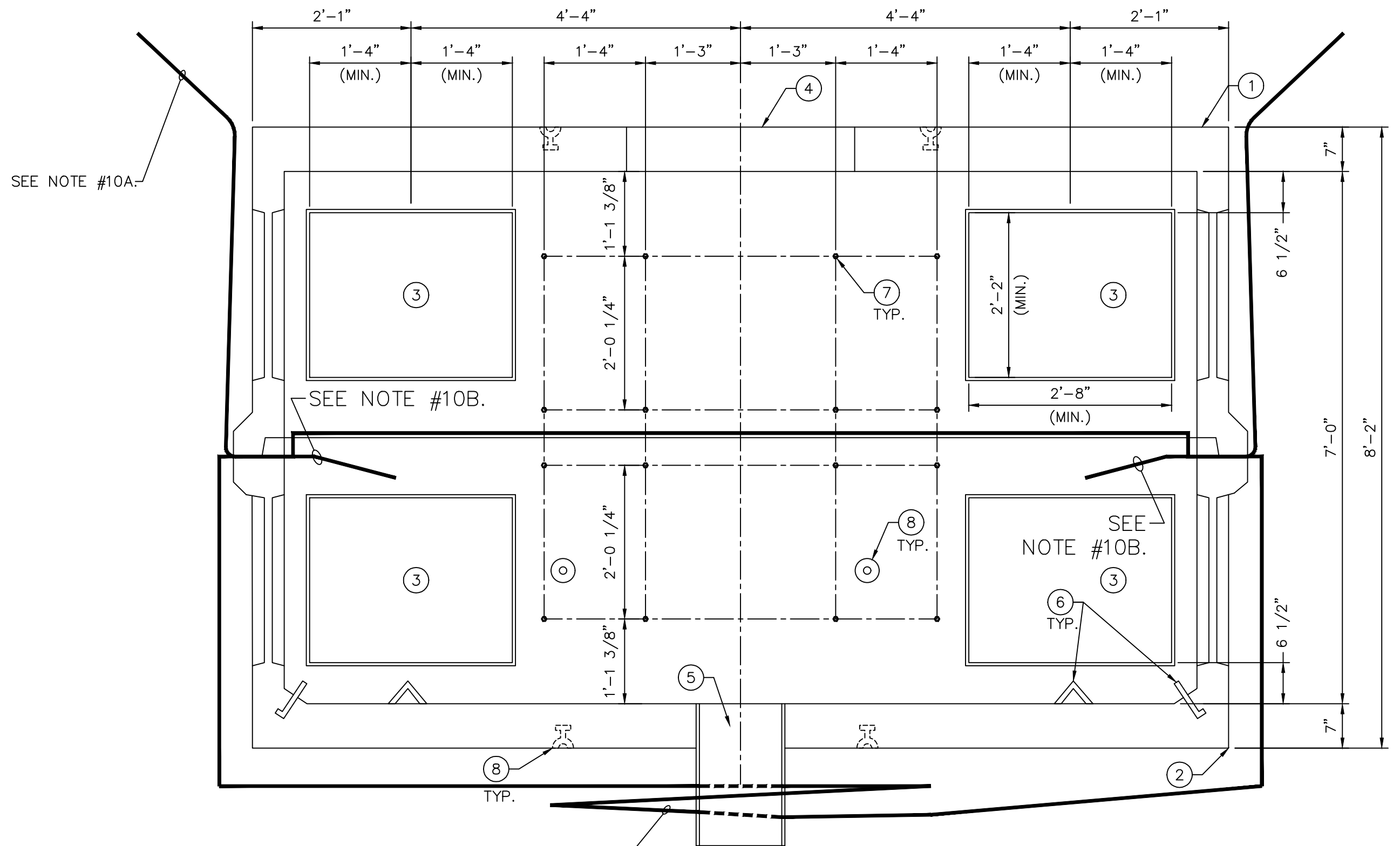


NOTE: RING AND COVER SEAT TO BE MACHINED

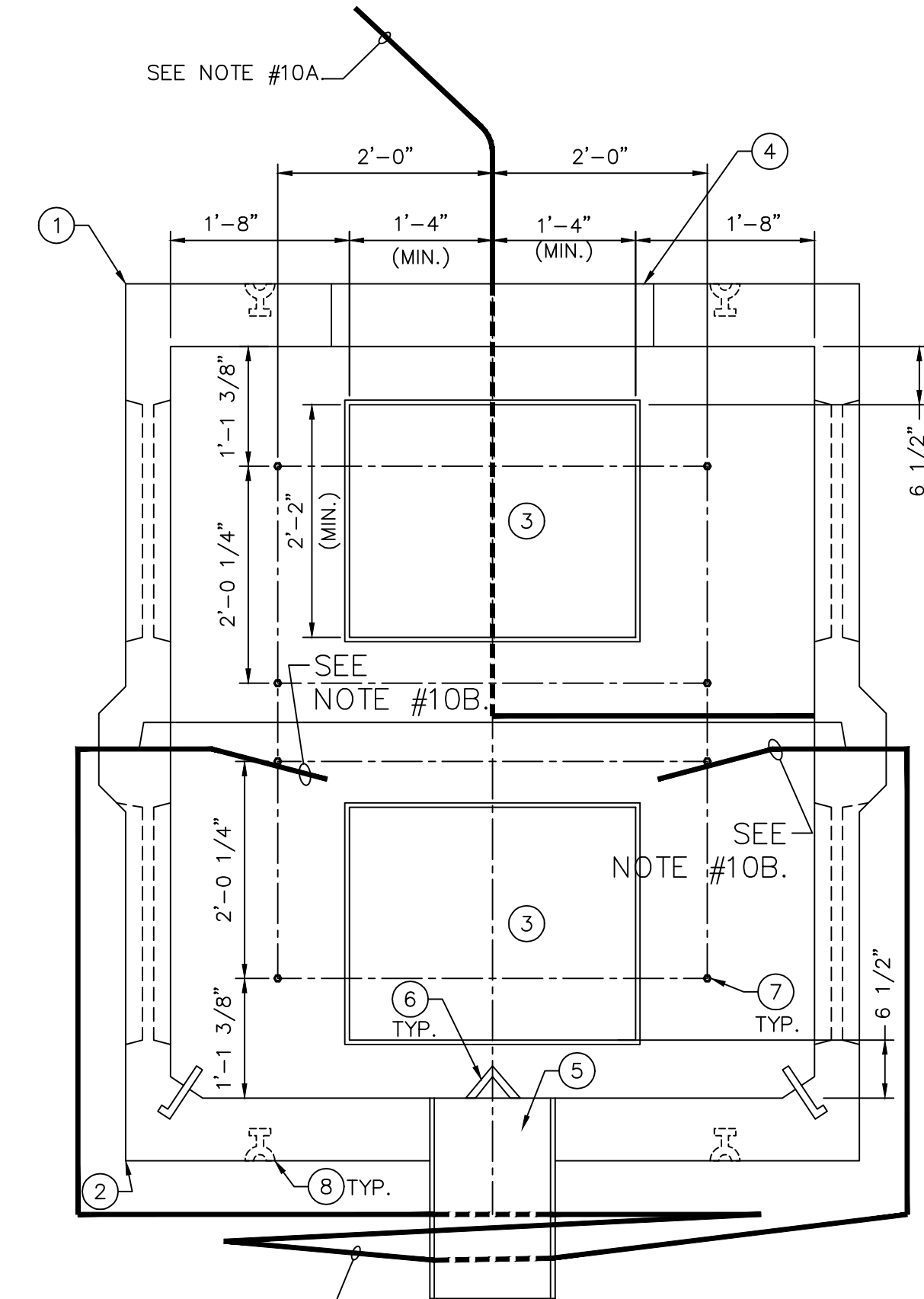


CROSS SECTION-MANHOLE RING

MANHOLE RING & COVER DETAIL
SCALE: 1"-1'-0"



SECTION A
SCALE: 3/4"=1'-0"



SECTION B
SCALE: 3/4"=1'-0"

NOTES:

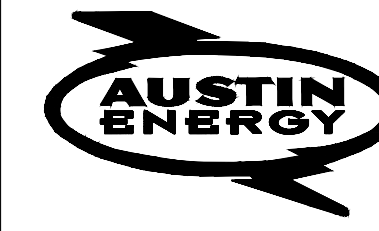
1. NOT USED.
2. WEIGHTS & STYLE ARE SUBJECT TO CHANGE DEPENDING ON MANHOLE SUPPLIER SELECTED.
3. DESIGNED FOR H-20 BRIDGE LOADING
4. THE FINISHED SUMP SHALL BE 13" DIA. X 18" DEEP.
5. FILL THE BOTTOM 6" OF SUMP WITH PEA GRAVEL.
6. MINIMUM EXCAVATION SIZE: 8'-10" X 14'-10" X DEPTH REQUIRED.
7. WINDOWS SHALL BE SIZED FOR 12-5" CONDUITS EACH.
8. CHIMNEY SHALL NOT EXCEED 2' TO RING AND COVER.
9. RING ELEVATION SHALL BE 6" ABOVE FINAL GRADE.
10. THE GROUNDING REQUIREMENTS FOR MANHOLES DEPEND ON WHERE THE MANHOLE IS INSTALLED. ONE OF THE FOLLOWING SHALL BE USED BUT NOT BOTH:
 - 10A. FOR MANHOLES INSIDE OF A SUBSTATION: INSTALL 19#9 COPPER-CLAD STEEL CABLE FOR CONNECTION TO THE STATION GROUND GRID. FORM THIS CONDUCTOR ALONG THE CENTER OF THE INSIDE SURFACE OF THE MANHOLE WALL. BRING THE CONDUCTOR THROUGH THE SEAM AT OPPOSITE ENDS OF MANHOLE, EXTEND BOTH ENDS ABOVE GRADE AS SHOWN AND COIL 5' FOR CONNECTION TO THE STATION GROUND GRID.
 - 10B. FOR MANHOLES OUTSIDE OF A SUBSTATION: INSTALL 19#9 COPPER-CLAD STEEL CABLE. LAY TWO 5 FOOT DIAMETER COILS IN THE BOTTOM OF THE EXCAVATION PRIOR TO PLACING THE MANHOLE. RUN THE CONDUCTOR TO DIAGONAL CORNERS AS SHOWN IN SECTIONS "A" AND "B". FORM IT ALONG THE OUTSIDE SURFACE OF THE BOTTOM AND SIDE OF THE MANHOLE WALL. BRING THE CONDUCTOR THROUGH THE SEAM AT OPPOSITE ENDS OF MANHOLE. LEAVE A 5' PITTAIL INSIDE THE MANHOLE AT EACH CORNER.

LEGEND

- ① TOP SECTION (SEE NOTE 2)
- ② BOTTOM SECTION (SEE NOTE 2)
- ③ WINDOW (12) REQUIRED.
- ④ 36" MANHOLE OPENING.
- ⑤ 13" DIAMETER OPENING FOR SUMP. (SEE NOTE 4 & 5).
- ⑥ PULL IRONS (6) REQUIRED.
- ⑦ INSERTS 1/2" DIA. (48) REQUIRED.
- ⑧ 2 TON RISS HANDLING ANCHOR (12) REQUIRED.

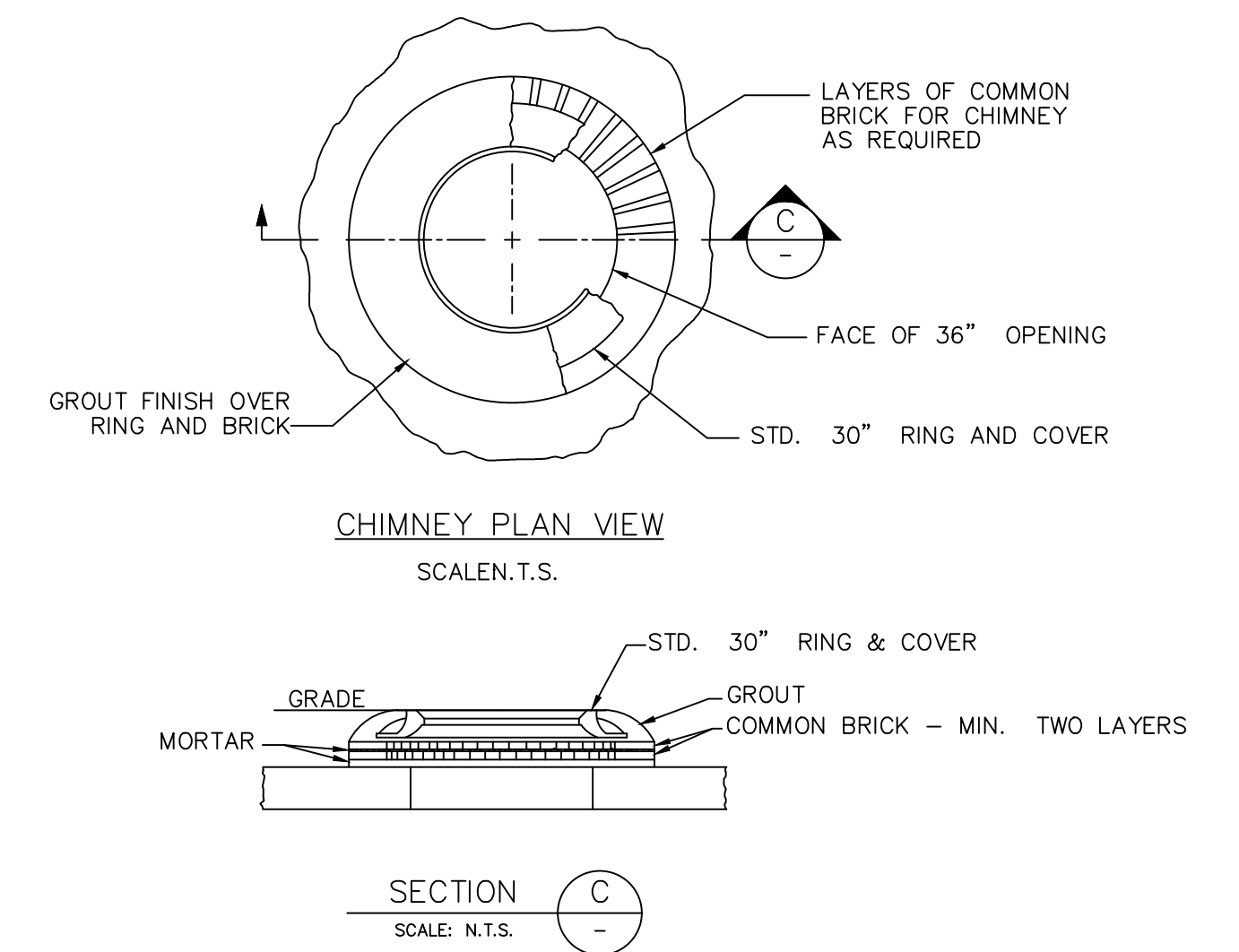
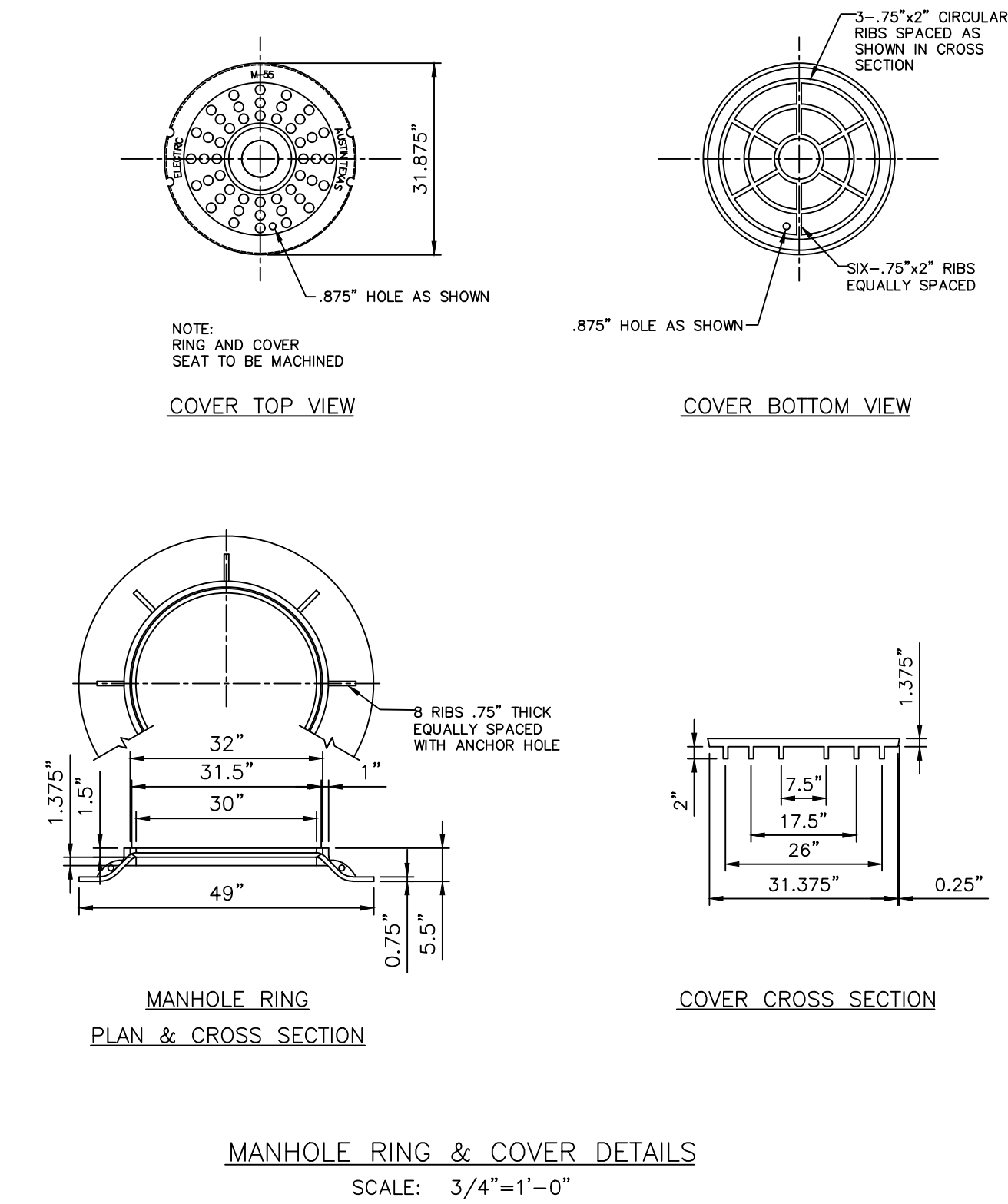
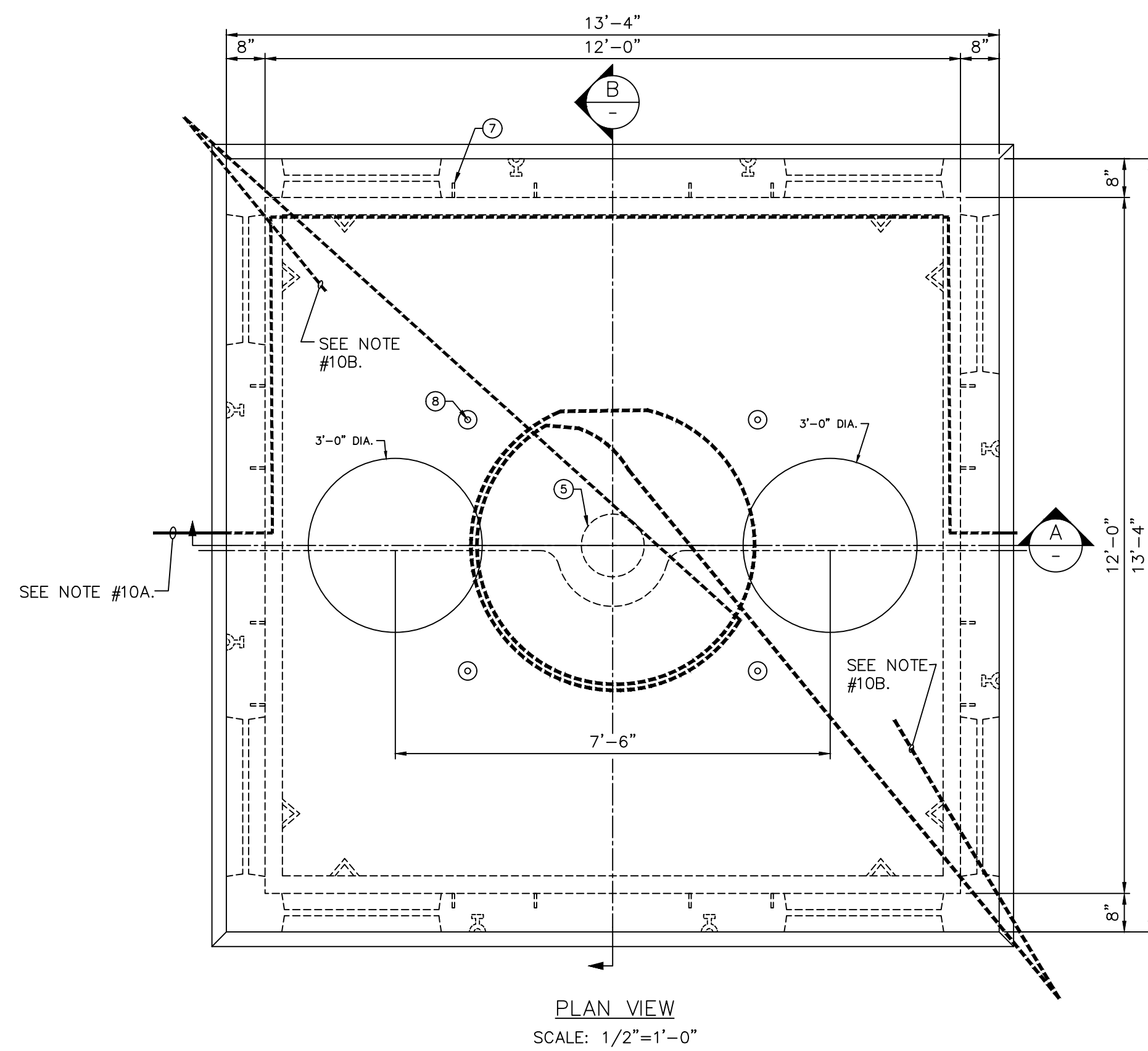
NO	DATE	REVISION	TASKNUM	DSGN	DWN	CHK	DSGN_APPD	CON_APPD	ENG_APPD
1	06-12-20	UPDATED OPENING WINDOW FROM 26"W X 26"H TO 32"W X 26"H	---	MP	MP	GLN	---	---	MP
0	---	ORIGINAL DRAWING - STATION REBUILD	---	GLN	GLN	---	---	---	---

NOTICE
The data in this document incorporates proprietary rights of AUSTIN ENERGY. Any party accepting this document does so in confidence and agrees that it shall not be duplicated in whole or part, nor disclosed to others without the consent of AUSTIN ENERGY.



ELECTRIC SERVICE DELIVERY
SUBSTATION ENGINEERING

TITLE :		MASTER NO.	SCALE
STANDARD SUBSTATION 6' X 12' I.D. PRECAST MANHOLE			3/4"=1'
		FILE NAME	
		7B_1098_14.DWG	
		DRAWING NUMBER	
		7B 1098 14	

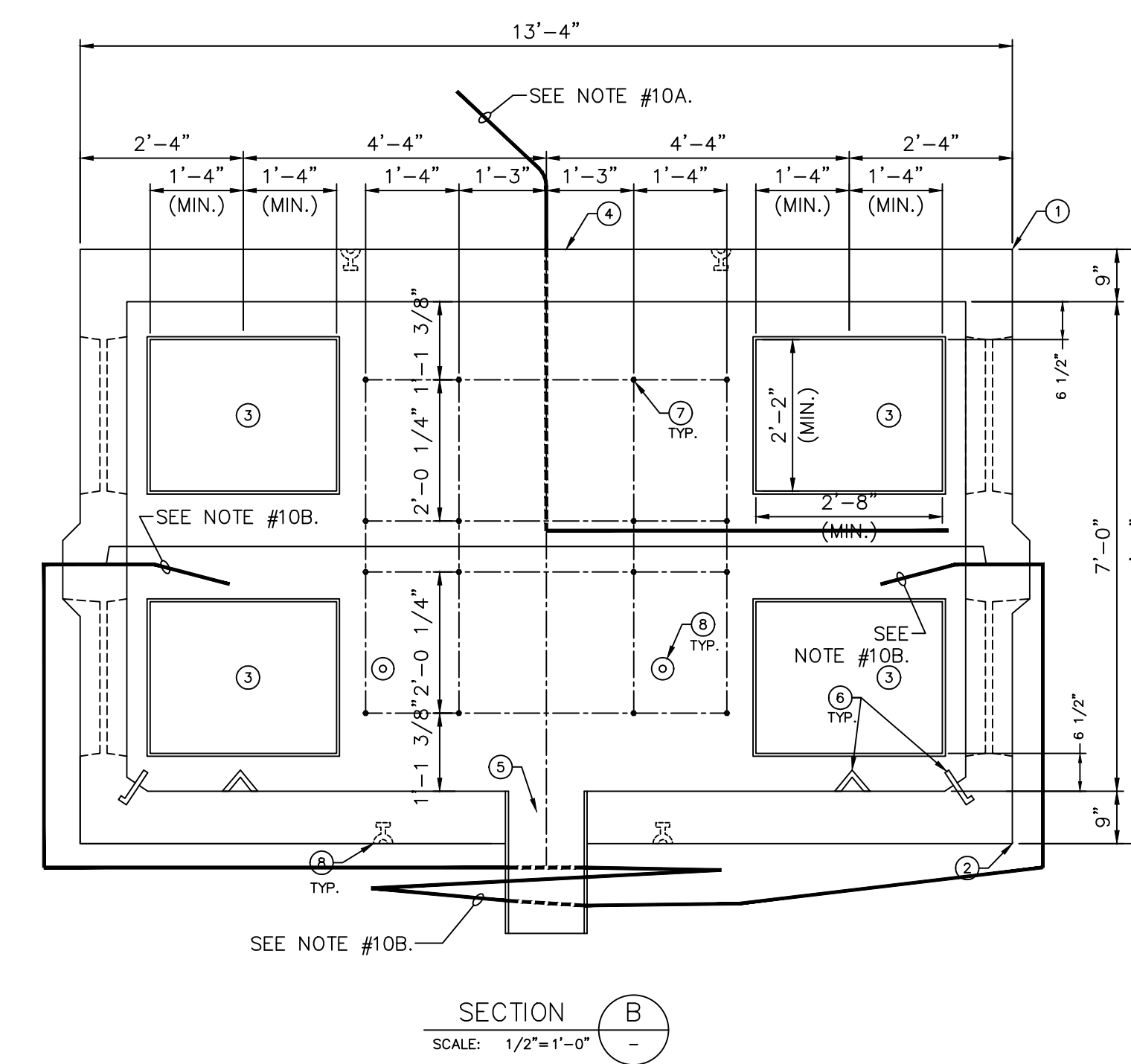
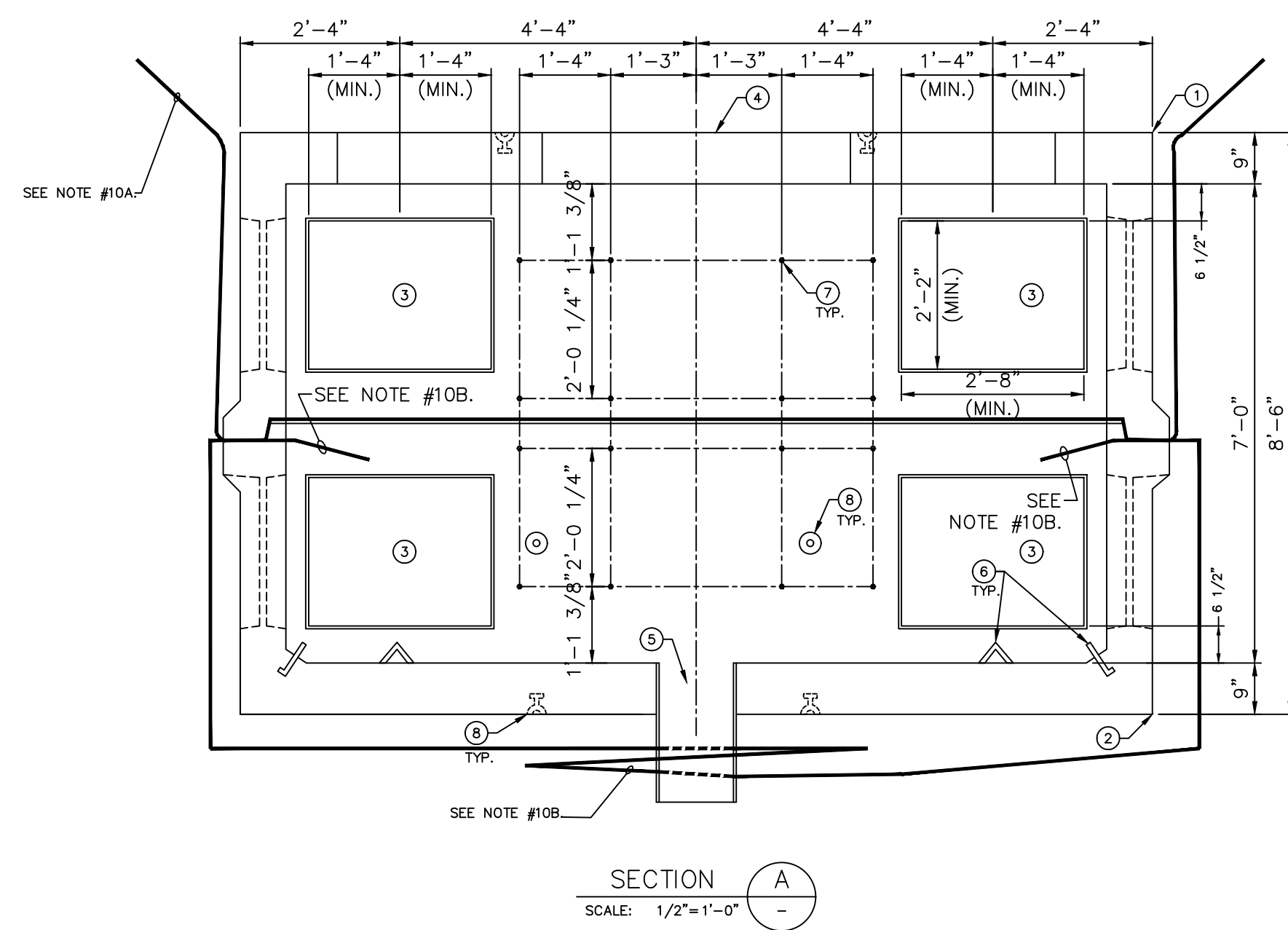


LEGEND

- ① TOP SECTION. (SEE NOTE 2)
- ② BOTTOM SECTION. (SEE NOTE 2)
- ③ KNOCKOUT (12) REQUIRED.
- ④ 36" MANHOLE OPENING.
- ⑤ 13" DIAMETER OPENING FOR SUMP. (SEE NOTE 4 & 5 BELOW).
- ⑥ PULL IRONS (6) REQUIRED.
- ⑦ INSERTS 1/2" DIA. (48) REQUIRED.
- ⑧ 2 TON RISS HANDLING ANCHOR (12) REQUIRED.

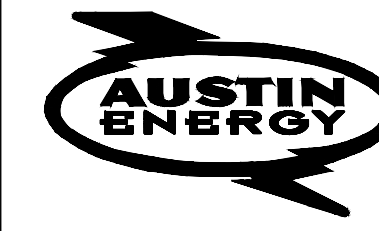
NOTES:

1. NOT USED
2. WEIGHTS & STYLE ARE SUBJECT TO CHANGE DEPENDING ON MANHOLE SUPPLIER SELECTED.
3. DESIGNED FOR H-20 BRIDGE LOADING
4. THE FINISHED SUMP SHALL BE 13" DIA. X 18" DEEP.
5. FILL THE BOTTOM 6" OF SUMP WITH PEA GRAVEL.
6. MINIMUM EXCAVATION SIZE: 14'-10" X 14'-10" X DEPTH REQUIRED.
7. WINDOWS SHALL BE SIZED FOR 12-5" CONDUITS EACH.
8. CHIMNEY SHALL NOT EXCEED 2' TO RING AND COVER.
9. RING ELEVATION SHALL BE 6" ABOVE FINAL GRADE.
10. THE GROUNDING REQUIREMENTS FOR MANHOLES DEPEND ON WHERE THE MANHOLE IS INSTALLED. ONE OF THE FOLLOWING SHALL BE USED BUT NOT BOTH:
 - 10A. FOR MANHOLES INSIDE OF A SUBSTATION:
INSTALL 19#9 COPPER-CLAD STEEL CABLE FOR CONNECTION TO THE STATION GROUND GRID. FORM THIS CONDUCTOR ALONG THE CENTER OF THE INSIDE SURFACE OF THE MANHOLE WALL. BRING THE CONDUCTOR THROUGH THE SEAM AT OPPOSITE ENDS OF MANHOLE. EXTEND BOTH ENDS ABOVE GRADE AS SHOWN AND COIL 5' FOR CONNECTION TO THE STATION GROUND GRID.
 - 10B. FOR MANHOLES OUTSIDE OF A SUBSTATION:
INSTALL 19#9 COPPER-CLAD STEEL CABLE. LAY TWO 5 FOOT DIAMETER COILS IN THE BOTTOM OF THE EXCAVATION PRIOR TO PLACING THE MANHOLE. RUN THE CONDUCTOR TO DIAGONAL CORNERS AS SHOWN IN SECTIONS "A" AND "B". FORM IT ALONG THE OUTSIDE SURFACE OF THE BOTTOM AND SIDE OF THE MANHOLE WALL. BRING THE CONDUCTOR THROUGH THE SEAM AT OPPOSITE ENDS OF MANHOLE. LEAVE A 5' PIGTAIL INSIDE THE MANHOLE AT EACH CORNER.



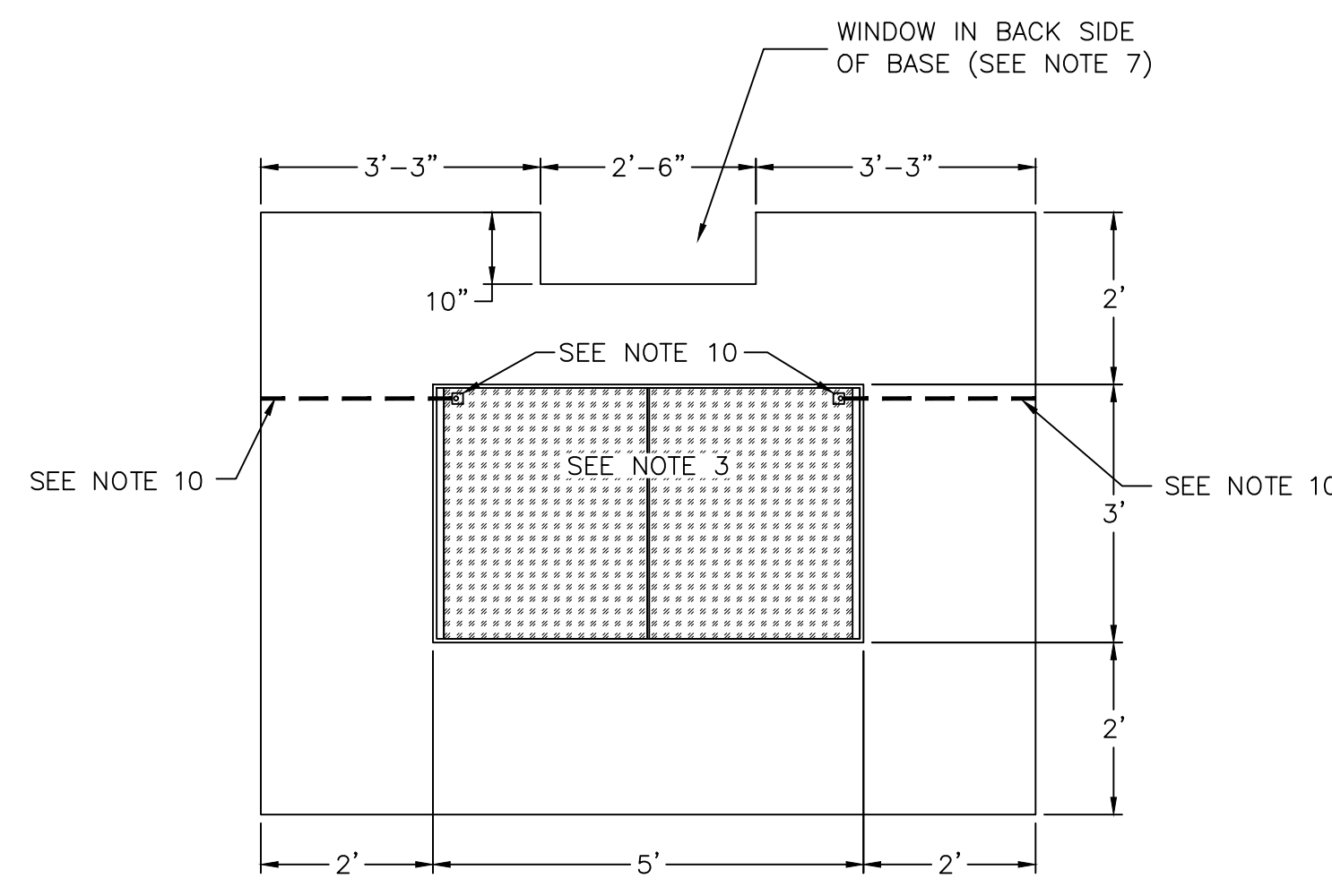
NO	DATE	REVISION	TASKNUM	DSGN	DWN	CHK	DSGN_APPD	CON_APPD	ENG_APPD
1	06-12-20	UPDATED OPENING WINDOW FROM 26"W X 26"H TO 32"W X 26"H	---	MP	MP	GLN	---	---	MP
0	---	ORIGINAL DRAWING	---	GLN	GLN	---	---	---	---

NOTICE
The data in this document incorporates proprietary rights of AUSTIN ENERGY. Any party accepting this document does so in confidence and agrees that it shall not be duplicated in whole or part, nor disclosed to others without the consent of AUSTIN ENERGY.

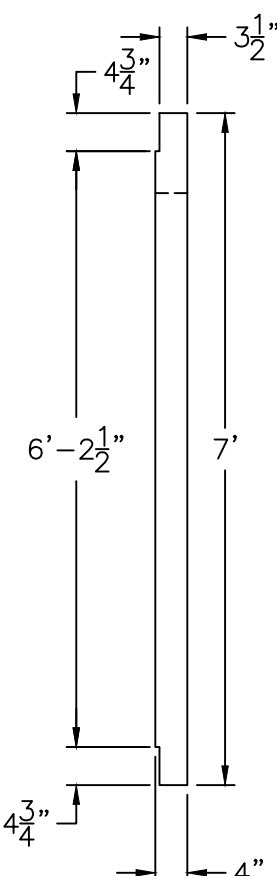


ELECTRIC SERVICE DELIVERY
SUBSTATION ENGINEERING

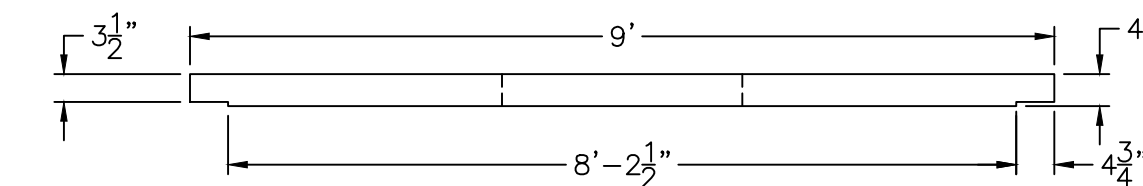
TITLE :	STANDARD SUBSTATION 12' X 12' I.D. PRECAST MANHOLE
MASTER NO.	7B_1098_15.DWG
SCALE	1/2"=1'
DRAWING NUMBER	7B 1098 15



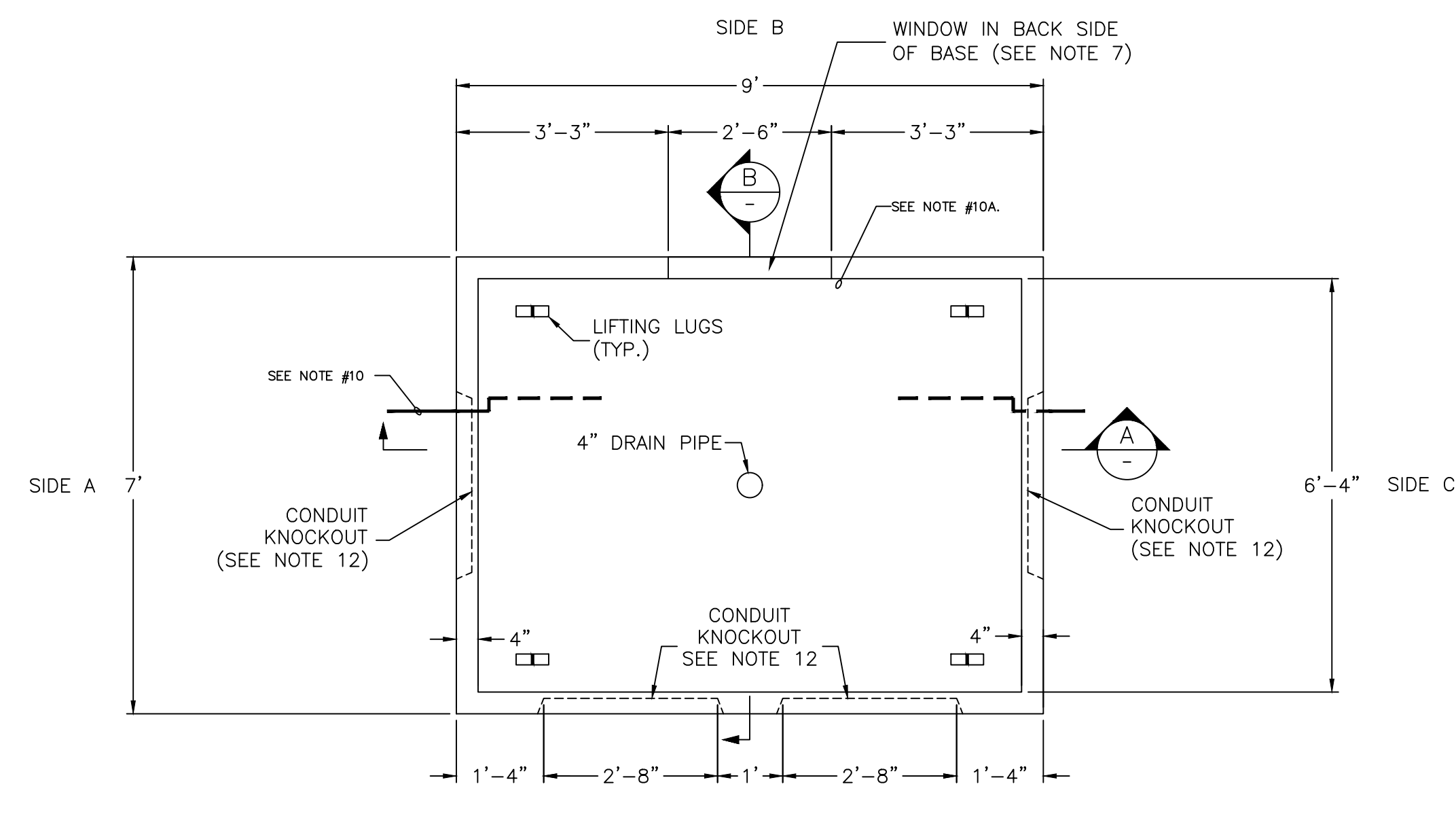
TOP VIEW



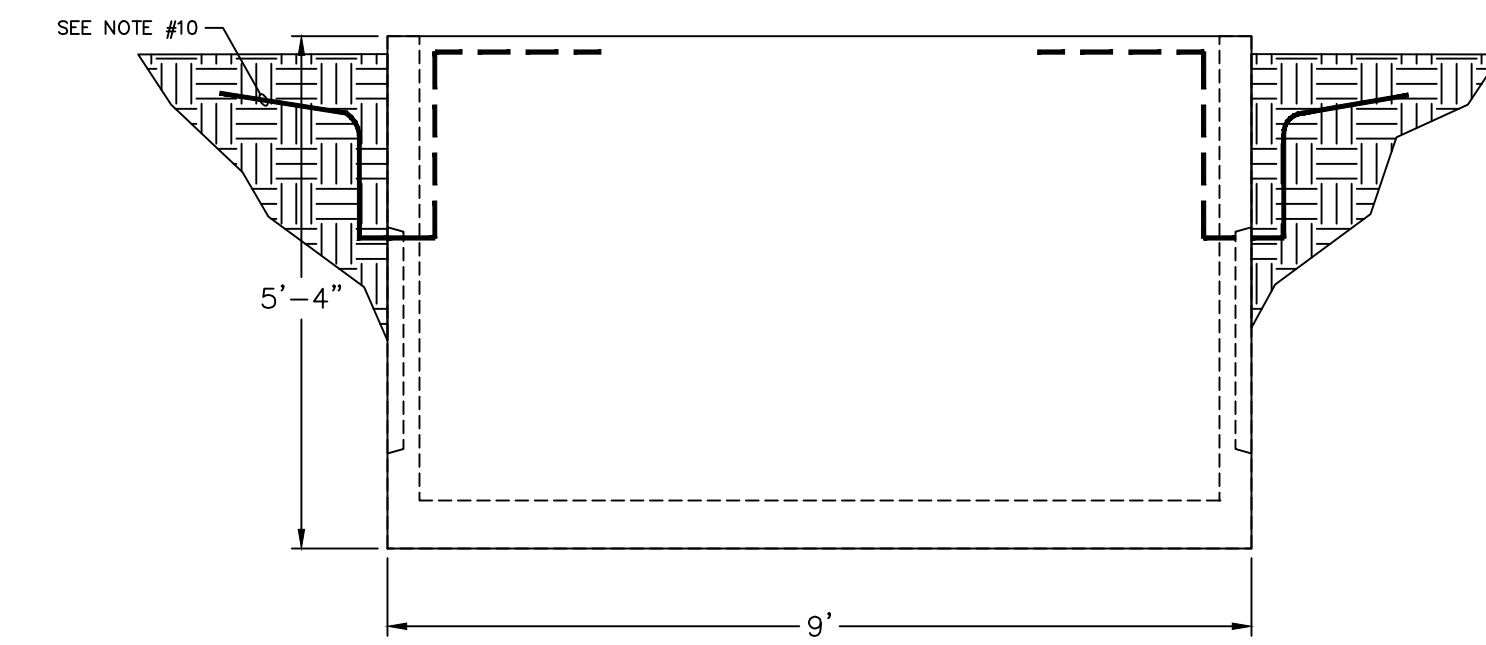
CABLE VAULT LID
SIDE VIEW



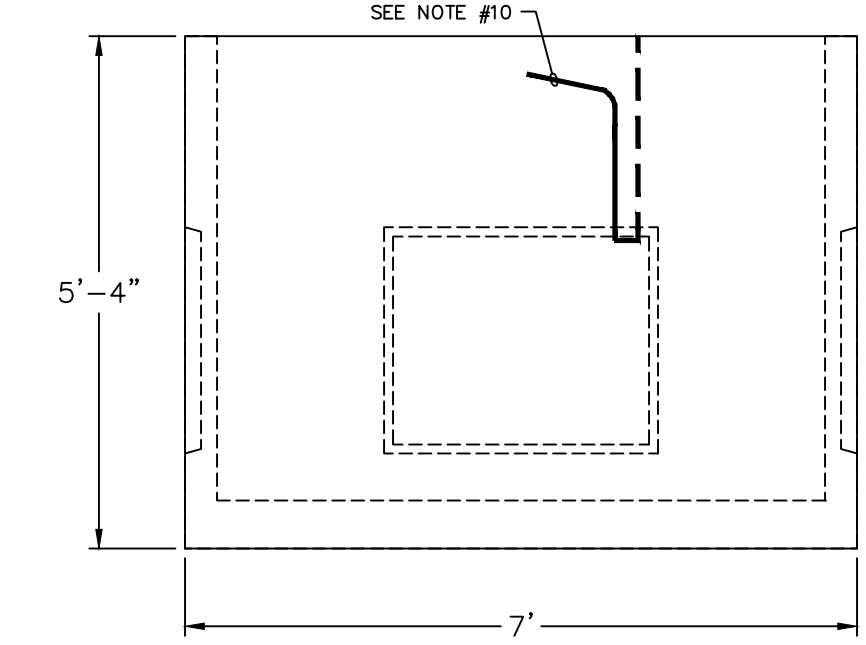
CABLE VAULT LID
SIDE VIEW



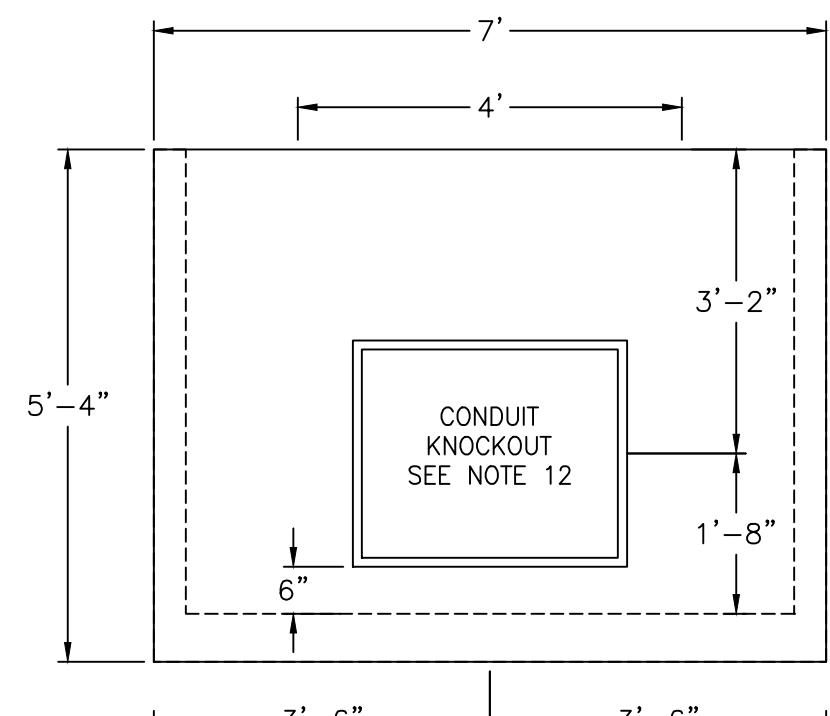
CABLE VAULT
PLAN VIEW



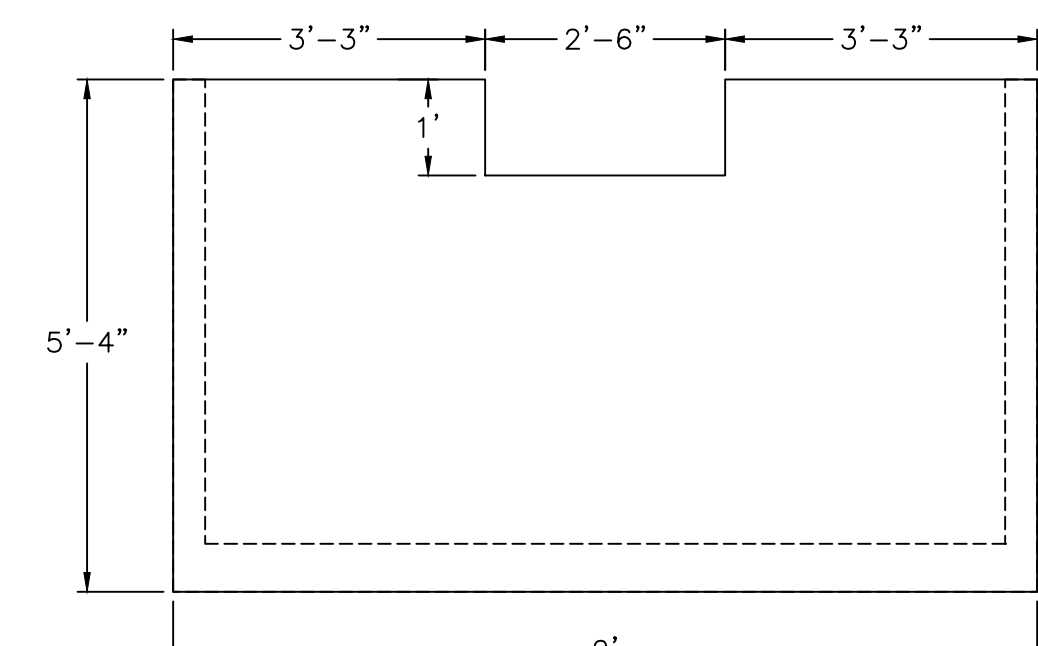
SECTION A-A



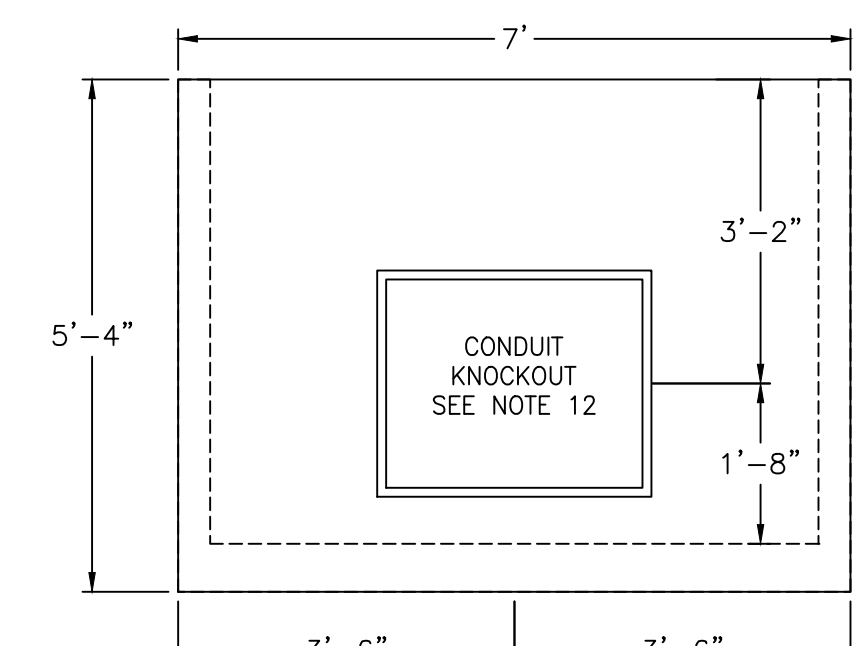
SECTION B-B



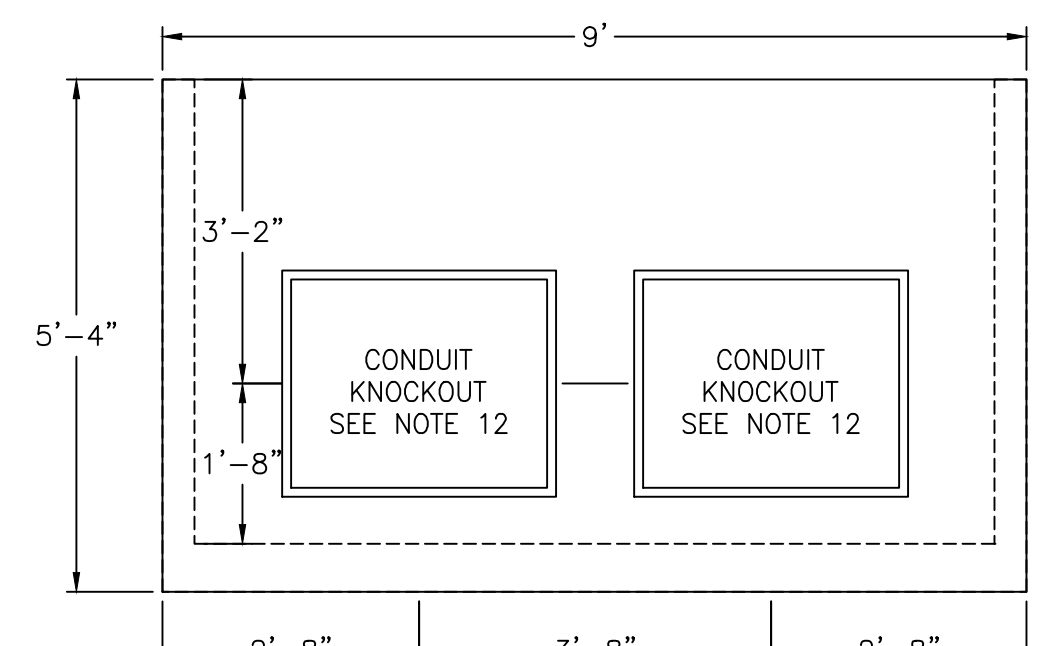
SIDE A



SIDE B



SIDE C



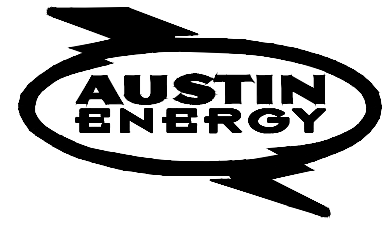
SIDE D

NOTES:

1. THE CABLE VAULT SHALL BE A "ONE-PIECE" DESIGN OR ENGINEER APPROVED EQUAL.
2. THE CABLE VAULT SHALL CONSIST OF A PRECAST CONCRETE BASE AND COVER WITH TORSION ASSISTED LIDS. IT SHALL BE INSTALLED WITH LID EXTENDING ABOVE THE SURROUNDING CRUSHED ROCK SURFACE. THE COVER & LID SHALL BE MANUFACTURED AS HEAVY DUTY VEHICULAR TRAFFIC RATINGS OR ENGINEER APPROVED EQUAL.
3. THE TORSION ASSIST LIDS SHALL OPEN A MINIMUM OF 90° AND REQUIRE NO MORE THAN 55 LBS. OF LIFT TO OPEN OR CLOSE A SINGLE LID FROM ANY POSITION. LIDS SHALL HAVE PROVISIONS FOR LOCKING IN THE OPEN POSITION.
4. THE CABLE VAULT AND LID SHALL BE DESIGNED TO SUPPORT AT LEAST 200 POUNDS PER SQUARE FOOT LIVE LOAD FOR PEDESTRIAN TRAFFIC.
5. THE CABLE VAULT SHALL HAVE AN MINIMUM INTERIOR CLEAR CROSS SECTIONAL AREA OF 76" WIDE X 100" LONG X 58" DEEP. THE OVERALL DIMENSIONS SHALL BE APPROXIMATELY 84" WIDE X 108" LONG X 64" DEEP, OVERALL INCLUDING COVER.
6. THE VAULT WALLS SHALL HAVE KNOCKOUTS IN THE WALLS. SEE THE CABLE VAULT PLAN & SECTION VIEWS FOR THE SIZE AND PLACEMENT OF THE OPENINGS.
7. PROVIDE WINDOW IN THE BACK OF THE BASE. THIS WINDOW SHALL BE 30" WIDE AND 12" HIGH. SEE SIDE B FOR DETAILS. PROVIDE WINDOW IN THE BACK OF THE LID. THIS WINDOW SHALL BE 30" WIDE AND 10" HIGH. SEE CABLE VAULT DRAWING FOR DETAILS.
8. THE CABLE VAULT SHALL BE DESIGNED AND CONSTRUCTED SO THAT NEITHER THE LIDS, NOR TEMPORARY SIDE-TO-SIDE BRACES NEED TO BE INSTALLED TO FACILITATE INSTALLATION OR SUBSEQUENT MACHINE BACKFILLING AND TAMPING.
9. THE CABLE VAULT SHALL HAVE TWO TORSION ASSISTED LIDS. THEY SHALL BE EASILY ACCESSIBLE FOR MAINTENANCE. LIDS SHALL HAVE A PROVISION FOR LOCKING WITH A HEX-HEAD BOLT. SPRING STEEL RODS SHALL BE USED TO MAKE OPENING THE LIDS EASIER. LIDS SHALL BE DIAMOND PLATED AND HAVE HANDLES THAT ARE FLUSH TO PREVENT TRIPPING HAZARDS. LIDS SHALL HAVE A GROUNDING PAD FOR ATTACHMENT TO THE SITE GROUND GRID. THE LIDS SHALL BE RATED FOR PEDESTRIAN TRAFFIC. THE LIDS SHALL BE HOT DIP GALVANIZED PER ASTM A-123. OTHER LID SYSTEMS MAY BE BID FOR EVALUATION BY THE AUSTIN ENERGY ENGINEER.
10. PROVIDE A NEMA GROUND PAD ON EACH LID FOR CONNECTING A 19#9 COPPER GROUND WIRE TO THE SUBSTATION GROUNDING GRID. GROUND WIRE SHALL BE RUN INSIDE VAULT AND OUT NEAREST WINDOW TO GROUND GRID.
11. FURNISH AND INSTALL FOUR LIFTING ANCHORS IN THE CABLE VAULT. THESE ANCHORS WILL BE USED TO LIFT THE CABLE VAULT DURING INSTALLATION. THESE ANCHORS SHALL PROVIDE A MEANS TO LIFT THE VAULT WITHOUT DAMAGE.
12. ALL CONDUIT KNOCKOUT WINDOWS SHALL BE 32"x26". THERE SHALL BE TWO (2) CONDUIT KNOCKOUT WINDOWS CENTERED IN SIDE D SIZED 32"x26".
13. CUT AND ADJUST REINFORCING STEEL AS REQUIRED TO CLEAR KNOCKOUTS.

NO	DATE	REVISION	TASKNUM	DSGN	DWN	CHK	DSGN_APPD	CON_APPD	ENG_APPD
8									
7									
6									
5									
4									
3									
2	08-14-20	UPDATE CABLE VAULT DIMENSION	---	MP	MP	GLN	---	---	MP
1	07-28-20	UPDATE CONDUIT KNOCKOUT TO 32"x26"	---	MP	MP	GLN	---	---	MP
0	06-03-20	ORIGINAL DRAWING	---	GLN	GLN	MP	---	---	MP

NOTICE
The data in this document incorporates proprietary rights of AUSTIN ENERGY. Any party accepting this document does so in confidence and agrees that it shall not be duplicated in whole or part, nor disclosed to others without the consent of AUSTIN ENERGY.



ELECTRIC SERVICE DELIVERY
SUBSTATION ENGINEERING

TITLE :	STANDARD SUBSTATION CONTROL HOUSE 6'X8'X5'H CABLE VAULT
MASTER NO.	EV_C10_8.DWG
SCALE	1/2"=1'
FILE NAME	7B_1098_16.DWG
DRAWING NUMBER	7B 1098 16