1400
UNDERGROUND TRANSFORMERS

3/13/2023

~	F1A	Fuse Schedule – Padmount Transformers
~	HB16,HB32	Hillside Barrier
~	UID1	Padmounted Equipment Identification Tags & Safety Signs
~	UT2	1Ø Padmount Transformer Radial Feed
C	UT4	Open Y - Open Δ Padmount Transformer Installation
~	UT21,UT22	1Ø Padmount Transformer Assemblies, Loop Feed
~	UT24-UT28	1Ø Pad Xfmr Assembly, Radial or Loop w/ Feed-Thru Bushing
~	UT30-UT32	3Ø Padmount Transformer Assemblies
~	UTB	1Ø Padmount Transformer Boxpad (Basement)
~	UTP1	1Ø Transformer Pad – 25 to 75kVA
~	UTP2	1Ø Transformer Pad – 100kVA
~	UTP3	1Ø Transformer Pad Orientation & Conduit Installation
~	UTP4	3Ø Transformer Pad – 75 to 1500kVA
~	UTP5	Precast Pad & Vault for 3Ø Transformers
~	UTP6	3Ø Transformer Pad Orientation & Conduit Installation
~	UTP9	Typical Barrier Installation to Protect Padmounted Equipment

N New Standard
R Redrawn Standard
C Changed Standard
~ No Change

1ø Padmounted Transformers

kVA	Transformer Stock Number		Transformer Primary Protection			Minimum Upstream OH Fuse Size*2	
	BM 240/120	BR 480/120	Bayonet Fuse No	S/N	Isolation Link	Size	S/N
25*1	1317		4000358C05 (8 A)	653	3001861A02	25 A	683
50	1318	2016	4000358C08 (15 A)	654	3001861A03	30 A	684
75	1320		4000358C10 (25 A)	655	3001861A05	65 A	687
100	1322		4000358C10 (25 A)	655	3001861A05	65 A	687

3ø Padmounted Transformers

kVA	Transformer Stock Number		Transformer Primary Protection			Minimum Upstream OH Fuse *2	
	BL 208/120	BW 480/277	Bayonet Fuse No	S/N	Isolation Link	Size	S/N
75	1328	1337	4000358C05 (8 A)	653	3001861A02	25 A	683
150	1329	1338	4000358C08 (15 A)	654	3001861A03	30 A	684
300	1331	1340	4000358C10 (25 A)	655	3001861A05	50 A	686
500	1332	1341	4000358C12 (50 A)	656	3001861A06	100 A	689
750	1333	1342	4000358C12 (50 A)	656	3001861A06	100 A	689
1000	1334	1343	4000358C14 (65 A)*3	657	3001861A07	100 A*4	689
1500		1344	4000353C17 (140 A)	658	3001861A05	100 A*4*5	689
					ELSP Fuse*6		
2000✡		2164	4038361C05C (125 A)	2976	CBUC08250D100✡	See Systems Engineering	
2500✡		1345	4038361C05C (125 A)	2976	CBUC08250D100✡		

Spare fuses are kept in each transformer. It is the responsibility of the person using the spare fuse to replace it. Fuses are in free issue.

Notes:

*1 Fuses for 25 kVA livefront transformers are stocked for maintenance only (RTE 476B1, S/N 1664).
*2 Use largest fuse size for applications while considering up/downstream fuses, conductor, and loading. Check with Systems Engineering as needed.
*3 Recommended fuse will result in some loss of overload capability.
*4 Transformer and upstream protection may miscoordinate, therefore each transformer should ideally be on separate feeders/protection.
*5 Fuse will limit overload capability of transformer.
*6 The use of these fuses will provide 175% of rated load for 2 hours and 150% of rated load for 7 hours.

Rev. 3 - Added 2000 & 2500 kVA, stock numbers, upstream fuses and notes.

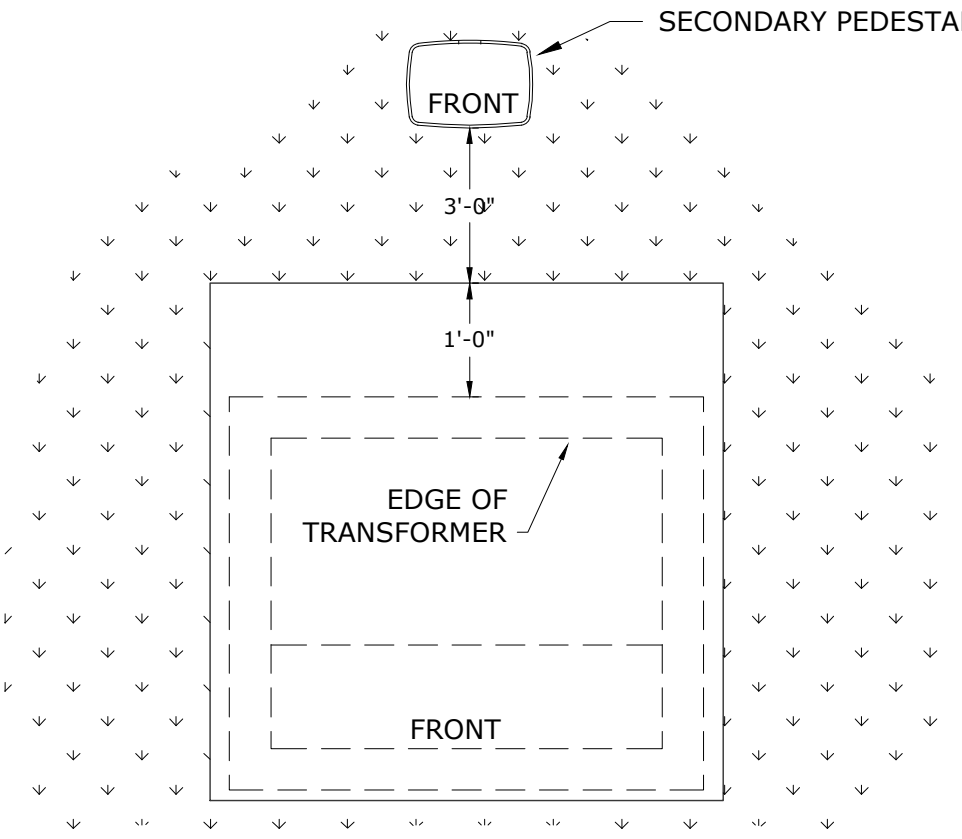
Clark Public Utilities

CONSTRUCTION STANDARDS

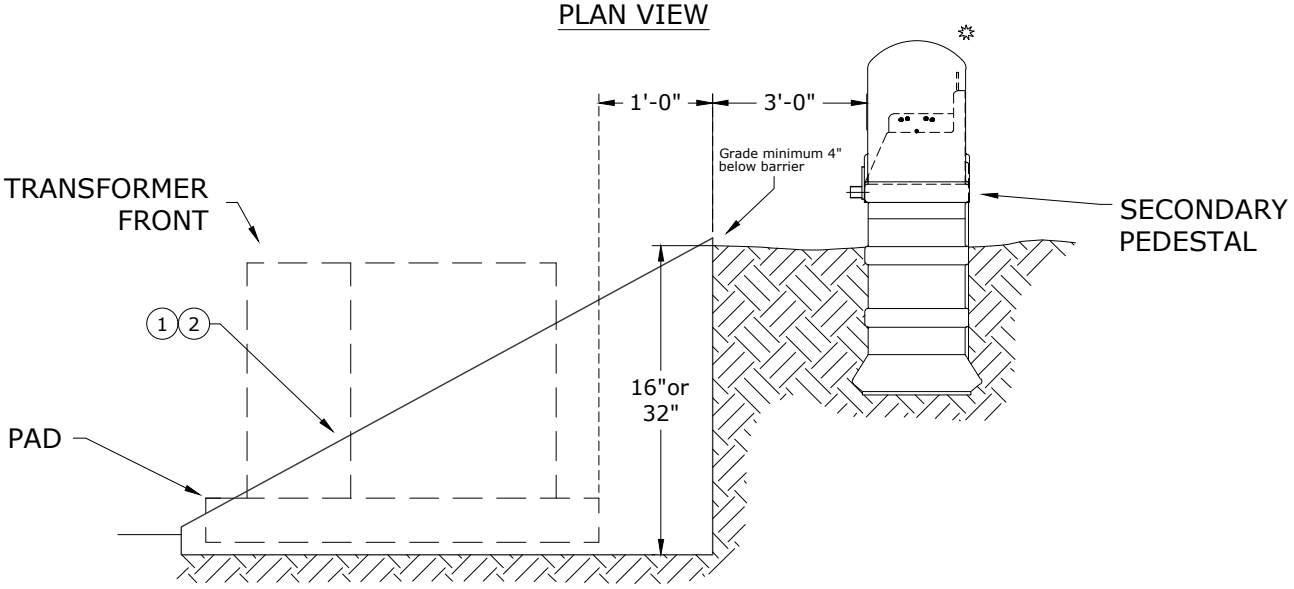
FUSE SCHEDULE
PADMOUNT TRANSFORMERS

REVISIONS			
R	DATE	ENGR	OPS
1	3/02	DRAWN	IN CAD
2	2/11/10	KJP	
3	7/10/20	KJP	

PAGE:	CAD FILE:	APP: ELM	SECTION
1 of 1	F1A	DATE: 1/31/80	1400



PLAN VIEW



SIDE VIEW

REV 2: Corrected Measurement Behind Pad, and changed title from HB1 to HB16,HB32.

ITEM NO.	DESCRIPTION	HB16		HB32	
		QTY.	S/N	QTY.	S/N
1	BARRIER, 16" Height	1	2460		
2	BARRIER, 32" Height			1	2461

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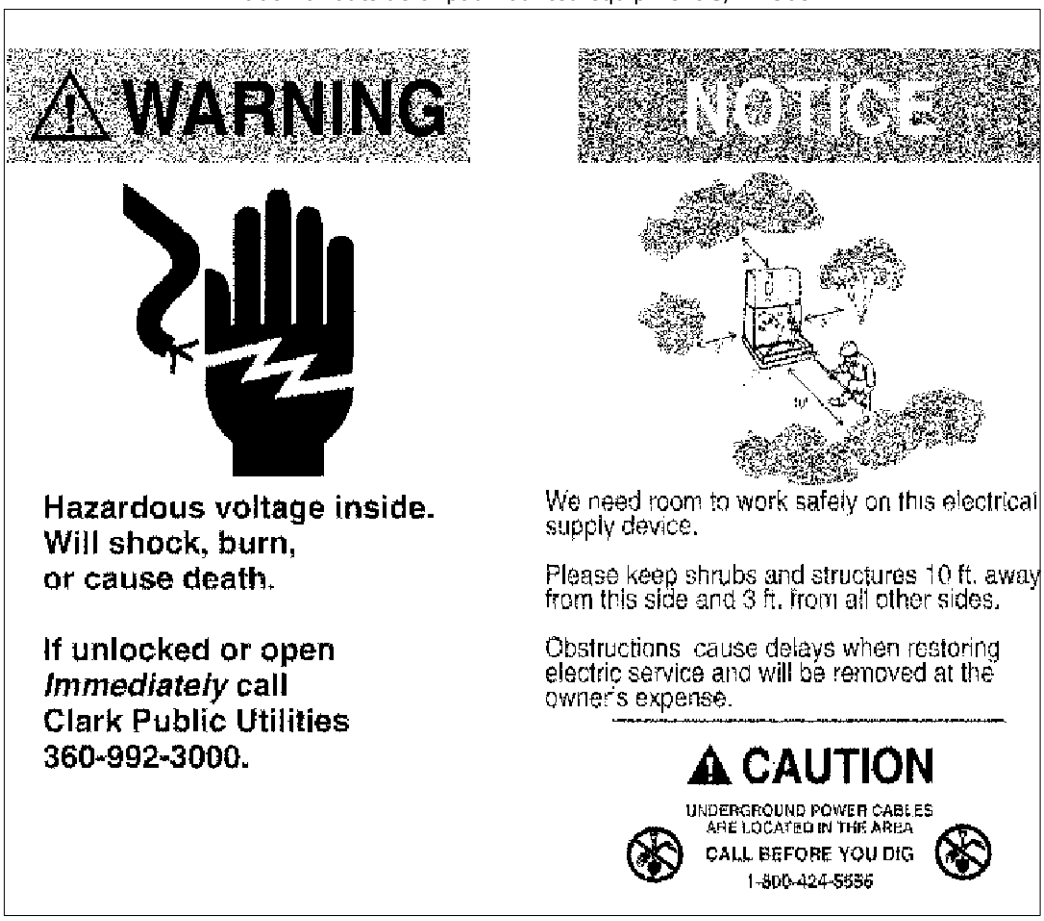
CONSTRUCTION STANDARDS

HILLSIDE BARRIER

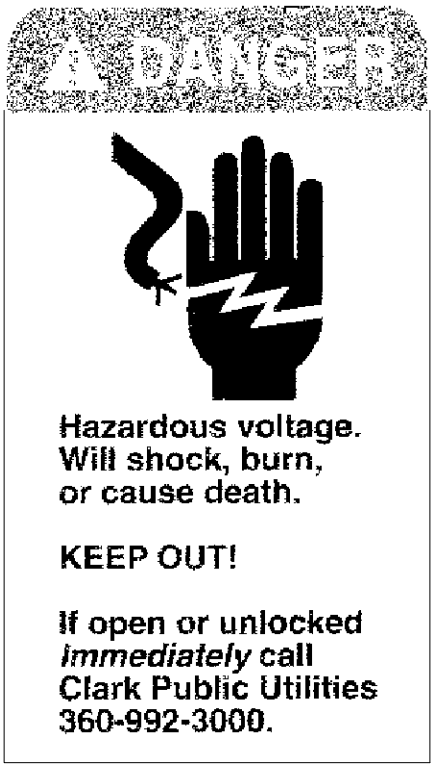
REVISIONS			
R	DATE	ENGR	OPS
1	4/26/04	LB	AH
2	5/30/07	LB	AH

PAGE:		CAD FILE:	APP:	SECTION
1 of 1	HB16,HB32	HB16	DATE:	1400

Label for outside of padmounted equipment S/N 2568



Label for inside of padmounted equipment S/N 2569



REV 1: ADDED ANSI SAFETY SIGNS

Clark Public Utilities

CONSTRUCTION STANDARDS

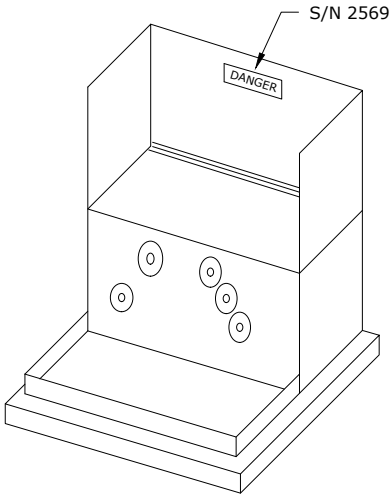
PADMOUNTED EQUIPMENT
IDENTIFICATION TAGS AND
SAFETY SIGNS

REVISIONS			
R	DATE	ENGR	OPS
0	6/13/02		
1	6/23/04	LB	AH

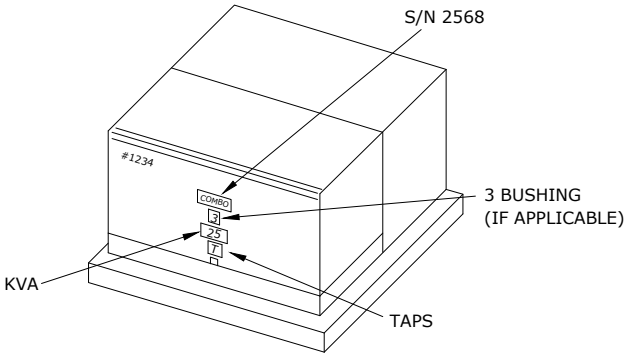
0 REDRAWN IN CAD

PAGE:	CAD FILE:	APP: ELM	SECTION
1 of 3	UID1	DATE: 1/31/80	1400

1. SINGLE-PHASE PADMOUNTED TRANSFORMERS

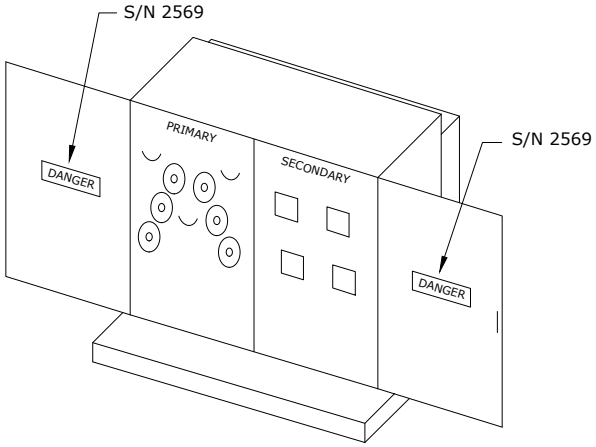


VIEW WITH LID OPEN

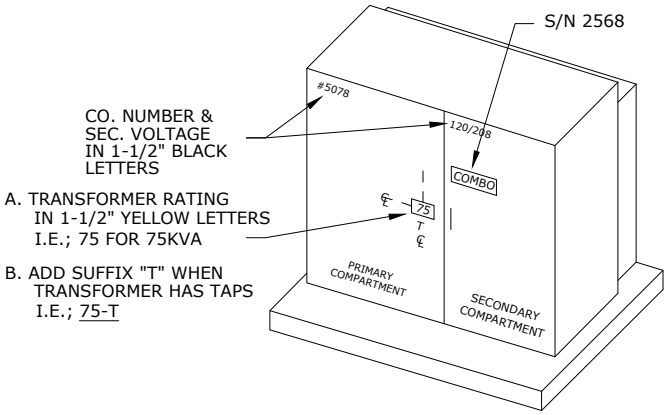


VIEW WITH LID CLOSED

2. THREE-PHASE PADMOUNTED TRANSFORMERS

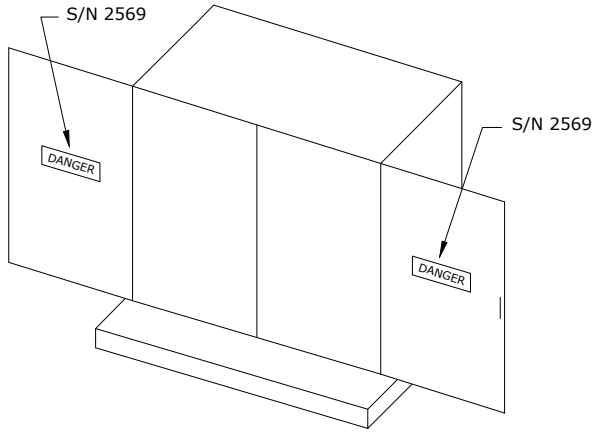


VIEW WITH DOOR OPEN

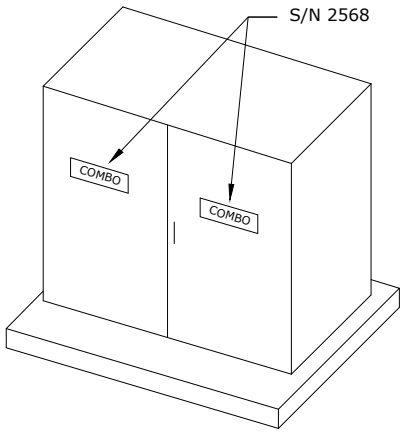


VIEW WITH DOOR CLOSED

3. OTHER PADMOUNT EQUIPMENT



VIEW WITH DOOR OPEN



VIEW WITH DOOR CLOSED

REV 1: ADDED ANSI SAFETY SIGNS

Clark Public Utilities

CONSTRUCTION STANDARDS

PADMOUNTED EQUIPMENT
IDENTIFICATION TAGS AND
SAFETY SIGNS

REVISIONS			
R	DATE	ENGR	OPS
0	6/13/02		
1	6/23/04	LB	AH

0 REDRAWN IN CAD

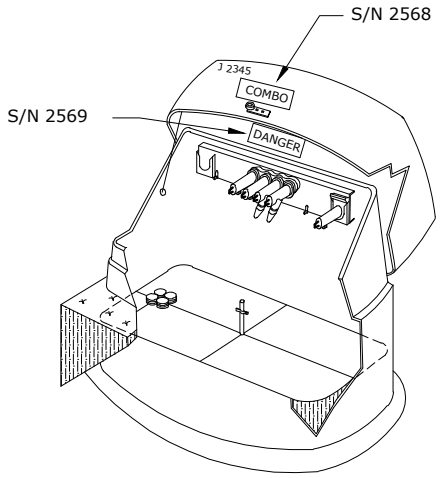
UID1

CAD FILE: UID1

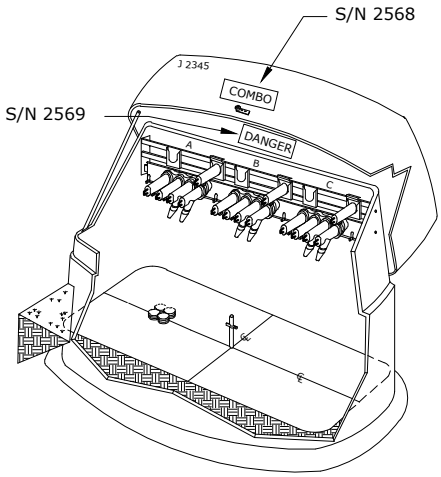
APP: ELM
DATE: 1/31/80

SECTION 1400

4. SINGLE-PHASE J-BOX



4. THREE-PHASE J-BOX



REV 1: ADDED ANSI SAFETY SIGNS

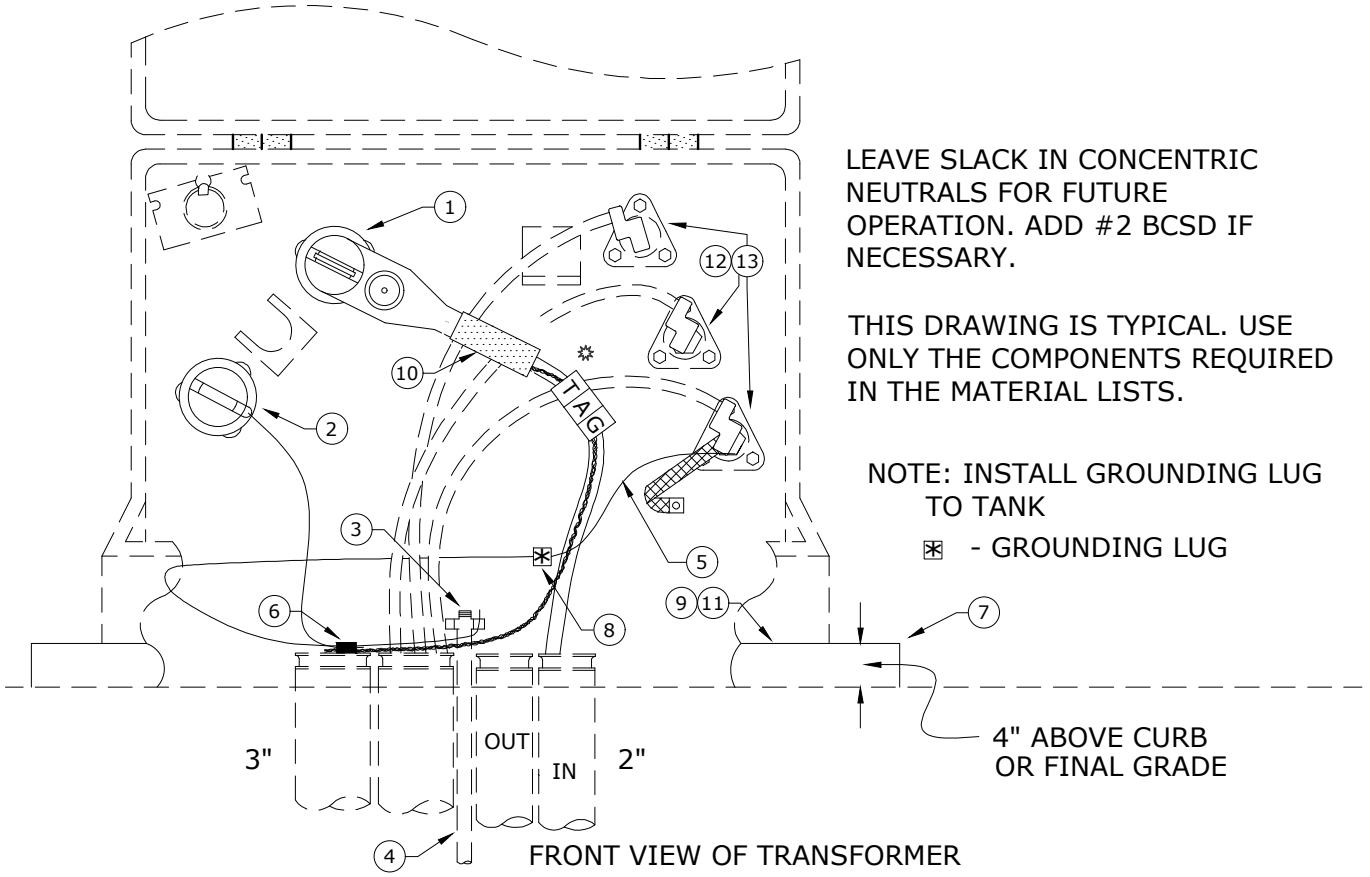
Clark Public Utilities

CONSTRUCTION STANDARDS

PADMOUNTED EQUIPMENT
IDENTIFICATION TAGS AND
SAFETY SIGNS

REVISIONS			
R	DATE	ENGR	OPS
0	6/13/02		
1	6/23/04	LB	AH
0 REDRAWN IN CAD			

PAGE:		CAD FILE:	APP: ELM	SECTION
3 of 3	UID1	UID1	DATE: 1/31/80	1400



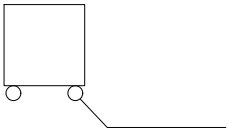
FRONT VIEW OF TRANSFORMER

LEAVE SLACK IN CONCENTRIC NEUTRALS FOR FUTURE OPERATION. ADD #2 BCSD IF NECESSARY.

THIS DRAWING IS TYPICAL. USE ONLY THE COMPONENTS REQUIRED IN THE MATERIAL LISTS.

NOTE: INSTALL GROUNDING LUG TO TANK

⊠ - GROUNDING LUG



RADIAL FEED

UT2

SEE US6 FOR SECONDARY CONNECTIONS DETAILS

MATERIAL LIST

ITEM NO.	DESCRIPTION	QTY.	S/N
1	Elbow, Loadbreak, 1/0, 200A, 175 mil	1	1312
2	Cap, Protective Insulated, 200A	1	265
3	Clamp, Ground Rod 5/8", Small	1	281
4	Rod, Ground 5/8" x 8'	1	1124
5	Conductor, Wire BSDC #4 SLD	6	376
6	Connector, Crimpet, #4 to #2	1	454
7	Pad, Transformer 42" x 42"	1	929
8	Ground Lug	1	842
9	Bolt, Machine, 1/2" x 1-1/2" SS	2	131✲
10	Elbow, Sealing Kit, 1/0, 175 & 220 mil	1	2391✲
11	Washer, 2" x 3" x 3/16" w/ 9/16" Slotted Hole	2	1415
12	Connector, z-bar #2-500 MCM + Streetlight	3	2265
13	Cover, Connector U.G.	3	2266

Rev. 4 - Corrected material issue.

Clark Public Utilities

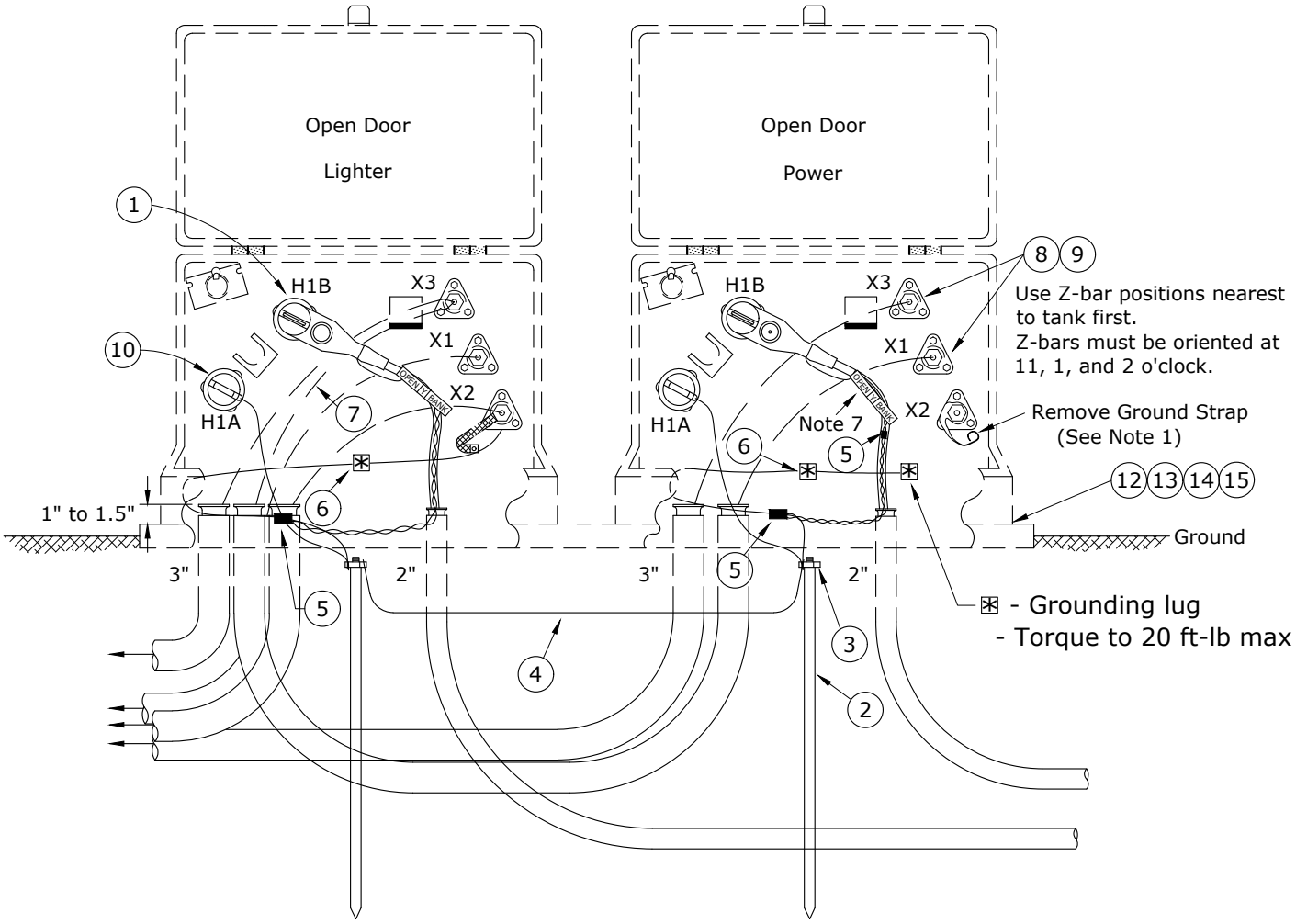
CONSTRUCTION STANDARDS

SINGLE PHASE
PADMOUNT TRANSFORMER
RADIAL FEED

REVISIONS

R	DATE	ENGR	OPS
1	2/23/00	HWH	MA
2	9/23/04	LB	AH
3	12/29/04	LB	AH
4	11/11/16	KJP	

PAGE:		CAD FILE:	APP: JEH	SECTION
1 of 1	UT2	UT2	DATE: 2/22/00	1400



Notes:

1. Remove ground strap from one secondary neutral bushing. Caution: Measure resistance from bushing to tank. There may be an internal ground.
2. Ground rods may be driven in trench.
3. Primary and secondary cables may be arranged as required to fit job site.
4. For 2-25kVA only.
5. See Std UTP1 for pad specifications.
6. Both phases must come from the same source and direction.
7. Put tags on cables that say "Open Y Bank".
8. Maximum motor size shall be 15 horsepower.

Rev 6 - Changed to 200A elbow with integral jacket seal, and added pad to material list.

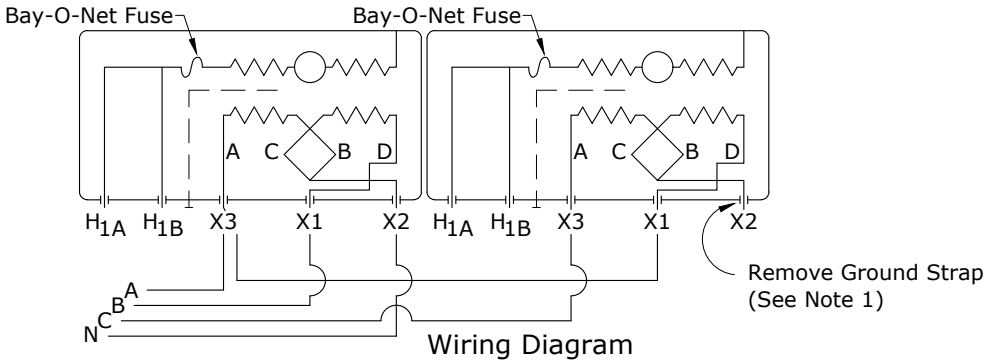
Clark Public Utilities

CONSTRUCTION STANDARDS

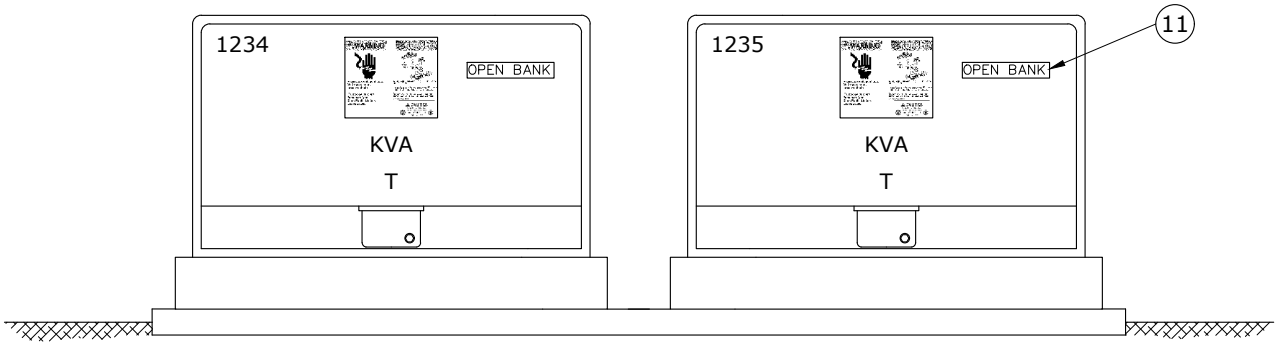
OPEN WYE - OPEN DELTA
PADMOUNT TRANSFORMER
INSTALLATION

REVISIONS			
R	DATE	ENGR	OPS
3	12/2/22	LB	AH
4	12/14/09	KJP	
5	2/4/14	CM	AH
6	3/7/23	CM	GM

PAGE:		CAD FILE:	APP: TR/GM	SECTION
1 of 2	UT4	UT4	DATE: 1/2/80	1400



Wiring Diagram



Rev 6 - Changed to 200A elbow with integral jacket seal, and added pad to material list.

ITEM NO.	DESCRIPTION	UT4 QTY.	UT4 S/N
1	Elbow, 200A, Loadbreak, 1/0, 200A, 175 & 200 mil, Test Point, 15 kV, w/ Jacket Seal	2	1312 ✲
2	Rod, Ground, 5/8" x 8'	2	1124
3	Clamp, Ground Rod 5/8", Bronze, Small	2	281
4	Conductor, Cu, #4 Solid, Bare, Soft-Drawn, 1C	30	376
5	Connector, Crimpet, Cu, Run #2 Sol/Str, Tap #8 Sol - #4 Str (2C4)	2	454
6	Lug, Grounding, #8 Sol-2/0 Str, 4-way	3	842
7	Cable, UG, 600v, Al, 4/0, USE, 1C	13	353
8	Connector, Z-Bar, 5/8" Stud, Al/Cu, 6-position, #2 - 500 MCM + Streetlight	5	2265
9	Cover, Connector, Z-Bar, 6-position	5	2266
10	Cap, Protective Insulated, 200A, 15 kV	2	265
11	Label, "Open Bank"	2	2781
12	Pad, Transformer 42" x 42", 1Ø, 25-75 kVA	2	929 ✲
13	Bolt, Machine, 1/2" x 1-1/2" SS	4	131 ✲
14	Washer, 2" x 3" x 3/16" w/ 9/16" Slotted Hole	4	1415 ✲
15	Nut, Spring Loaded, Galv, 1/2" (Unistrut)	4	920 ✲

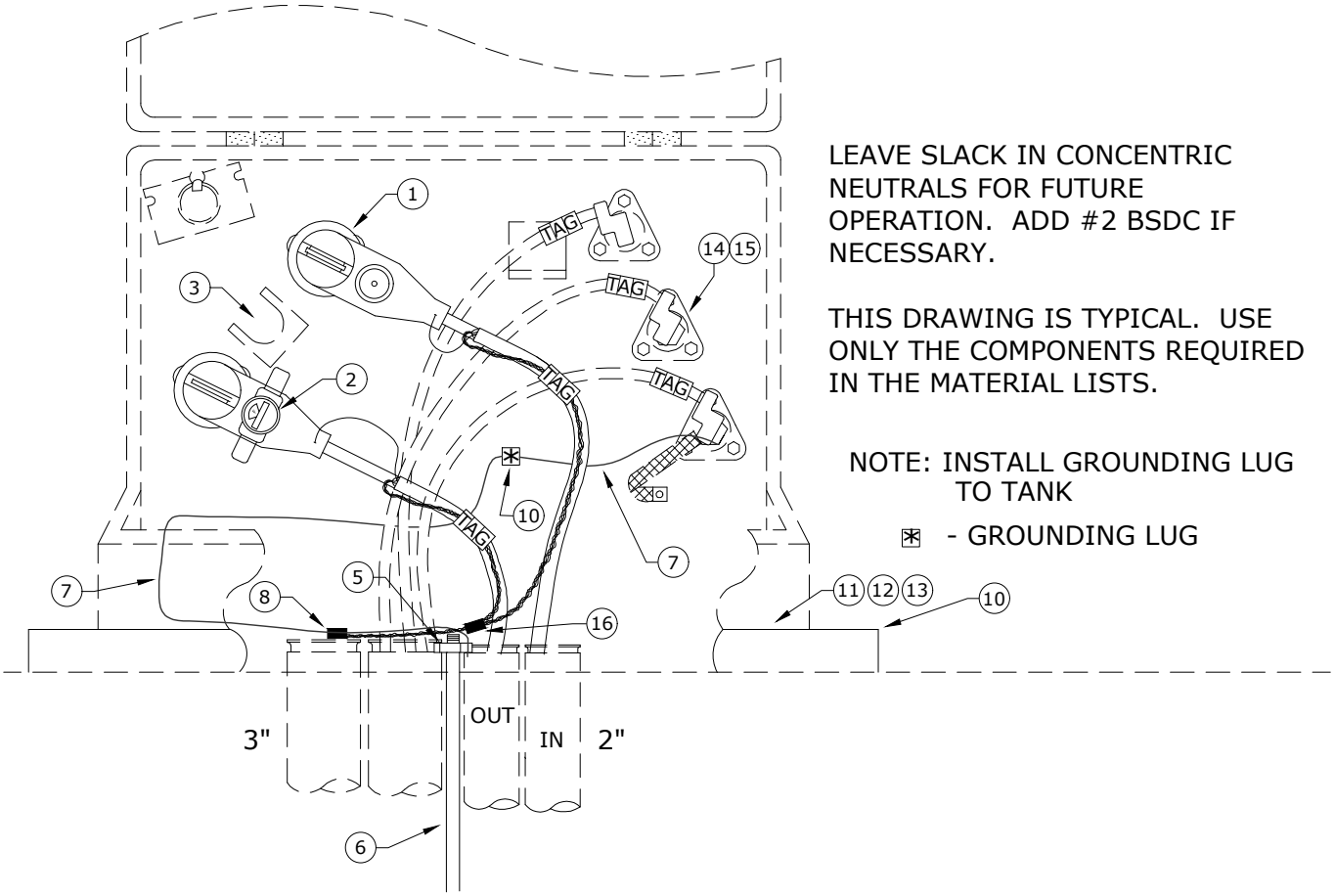
Clark Public Utilities

CONSTRUCTION STANDARDS

OPEN WYE - OPEN DELTA
PADMOUNT TRANSFORMER
INSTALLATION

REVISIONS			
R	DATE	ENGR	OPS
3	12/29/04	LB	AH
4	12/14/09	KJP	
5	2/4/14	CM	AH
6	3/7/23	CM	GM

PAGE:		CAD FILE:	APP: TR/GM	SECTION
2 of 2	UT4	UT4	DATE: 9/94	1400



LEAVE SLACK IN CONCENTRIC NEUTRALS FOR FUTURE OPERATION. ADD #2 BSDC IF NECESSARY.

THIS DRAWING IS TYPICAL. USE ONLY THE COMPONENTS REQUIRED IN THE MATERIAL LISTS.

NOTE: INSTALL GROUNDING LUG TO TANK

⊠ - GROUNDING LUG

FRONT VIEW OF TRANSFORMER (UT22 SHOWN)

SEE US6 FOR SECONDARY CONNECTIONS DETAILS

Rev 3: Changed to Voltage-reset fault indicator.

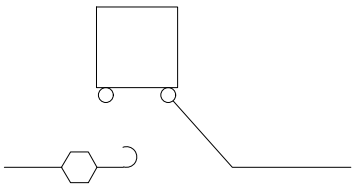
Clark Public Utilities

CONSTRUCTION STANDARDS

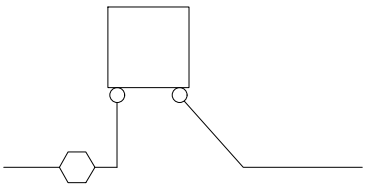
SINGLE PHASE
PADMOUNT TRANSFORMER ASSEMBLIES
LOOP FEED

REVISIONS			
R	DATE	ENGR	OPS
0	2/22/00	HWH	MA
1	9/23/04	LB	AH
2	12/29/04	LB	AH
3	4/29/09	CM	AH

PAGE:		CAD FILE:	APP:	SECTION
1 of 2	UT21-UT22	UT21-UT22	DATE: 10/98	1400



FUTURE
N.O. LOOP FEED UT21



LOOP FEED UT22

FAULT INDICATOR

NORMALLY OPEN

Rev 3: Changed to Voltage-reset fault indicator.

ITEM NO.	DESCRIPTION	UT21 QTY.	UT21 S/N
1	Elbow, Loadbreak, 1/0, 175 mil (Includes Sealing Kit #2391)	2	1312
2	Voltage-Reset Fault Indicator, 400A Trip, 1Ø UG	1	2694 ✲
3	Bushing, Standoff Insulated 200A	1	252
4	Cap, Protective Insulated 200A	1	265
5	Clamp, Ground Rod 5/8", Small	1	281
6	Rod, Ground 5/8" x 8'	1	1124
7	Conductor, Wire BSDC #4 SLD	12	376
8	Connector, Crimpet, #4 to #2 (2C4)	1	454
9	Pad, Transformer 42" x 42"	1	929
10	Ground Lug	1	842
11	Bolt, Unistrut, Padmount Tie Down	2	193
12	Nut, Spring-Loaded, Galv, 1/2", Unistrut	2	920
13	Washer, 2" x 3" x 3/16" w/ 9/16" Slotted Hole	2	1415
14	Connector, Z-Bar #6-500 MCM + St. Lt	3	2265
15	Cover, Connector Z-Bar	3	2266

ITEM NO.	DESCRIPTION	UT22 QTY.	UT22 S/N
1	Elbow, Loadbreak, 1/0, 175 mil (Includes Sealing Kit #2391)	2	1312
2	Voltage-Reset Fault Indicator, 400A Trip, 1Ø UG	1	2694 ✲
5	Clamp, Ground Rod 5/8", Small	1	281
6	Rod, Ground 5/8" x 8'	1	1124
7	Conductor, Wire BSDC #4 SLD	12	376
8	Connector, Crimpet, #4 to #2 (2C4)	1	454
9	Pad, Transformer 42" x 42"	1	929
10	Ground Lug	1	842
11	Bolt, Unistrut, Padmount Tie Down	2	193
12	Nut, Spring-Loaded, Galv, 1/2", Unistrut	2	920
13	Washer, 2" x 3" x 3/16" w/ 9/16" Slotted Hole	2	1415
14	Connector, Z-Bar #6-500 MCM + St. Lt	3	2265
15	Cover, Connector Z-Bar	3	2266
16	Connector, Crimpet, #2 to #2 (2C2)	1	455

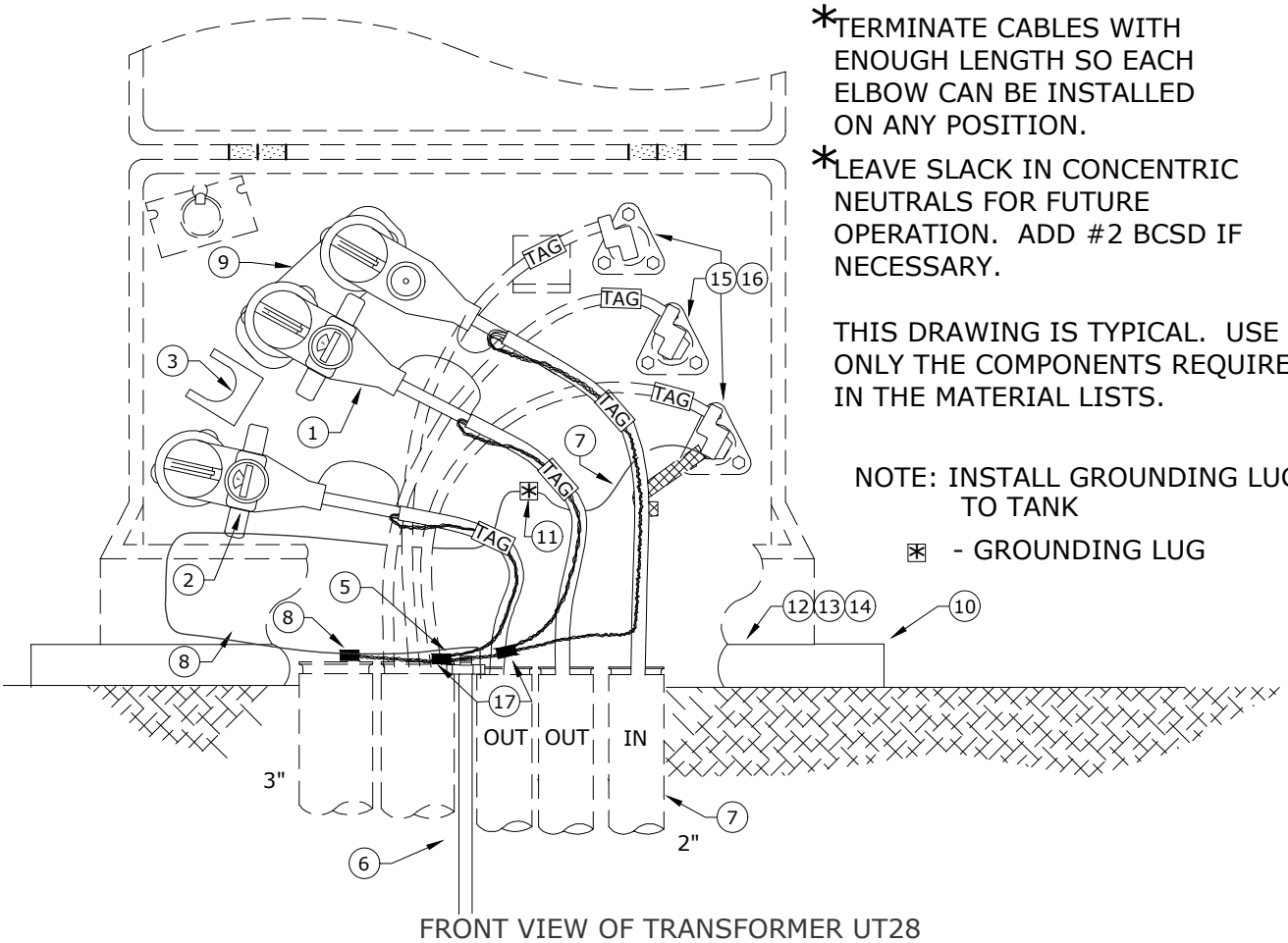
Clark Public Utilities

CONSTRUCTION STANDARDS

SINGLE PHASE
PADMOUNT TRANSFORMER ASSEMBLIES
LOOP FEED

REVISIONS			
R	DATE	ENGR	OPS
0	2/22/00	HWH	MA
1	9/23/04	LB	AH
2	12/29/04	LB	AH
3	4/29/09	CM	AH
△			

PAGE:		CAD FILE:	APP:	SECTION
2 of 2	UT21-UT22	UT21-UT22	DATE: 10/98	1400



FRONT VIEW OF TRANSFORMER UT28

*TERMINATE CABLES WITH ENOUGH LENGTH SO EACH ELBOW CAN BE INSTALLED ON ANY POSITION.

*LEAVE SLACK IN CONCENTRIC NEUTRALS FOR FUTURE OPERATION. ADD #2 BCSD IF NECESSARY.

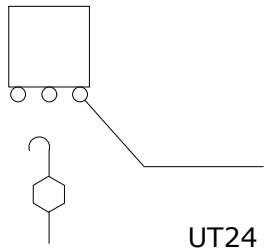
THIS DRAWING IS TYPICAL. USE ONLY THE COMPONENTS REQUIRED IN THE MATERIAL LISTS.

NOTE: INSTALL GROUNDING LUG TO TANK

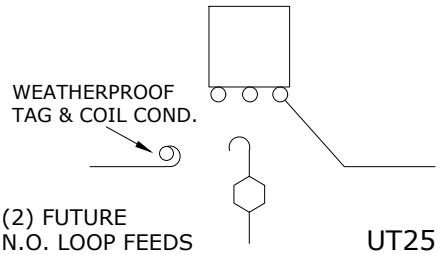
⊠ - GROUNDING LUG

SEE US6 FOR SECONDARY CONNECTORS DETAILS

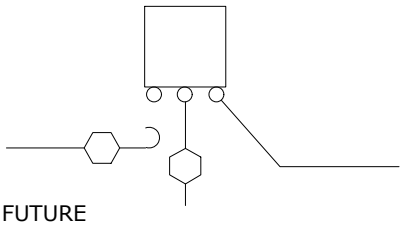
Rev 4: Changed to Voltage-reset fault indicators.



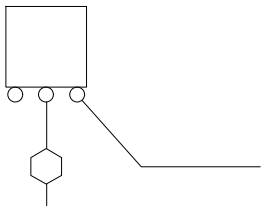
RADIAL FEED UT24



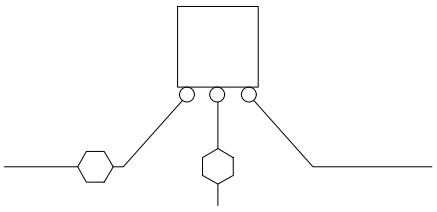
(2) FUTURE
N.O. LOOP FEEDS UT25



(1) FUTURE
(1) LOOP FEED UT26



LOOP FEED UT27



(2) LOOP UT28

FAULT INDICATOR

NORMALLY OPEN

Clark Public Utilities

CONSTRUCTION STANDARDS

SINGLE PHASE
PADMOUNT TRANSFORMER ASSEMBLIES RADIAL
OR LOOP FEED WITH FEED-THROUGH BUSHING

REVISIONS			
R	DATE	ENGR	OPS
1	7/15/02	JEH	TR
2	9/23/04	LB	AH
3	12/29//04	LB	AH
4	4/29/09	CM	AH

PAGE:	CAD FILE:	APP:	SECTION
1 of 4	UT24-UT28	DATE: 10/94	1400

UT24-UT28

Rev 4: Changed to Voltage-reset fault indicators.

ITEM NO.	DESCRIPTION	UT24 QTY.	UT24 S/N
1	Elbow, Loadbreak. 1/0, 200A, 175 mil	2	1312
2	Voltage-Reset Fault Indicator, 400A Trip, 1Ø UG	1	2694 ✲
3	Bushing, Standoff Insulated 200A	1	252
4	Cap, Protective Insulated 200A	2	265
5	Clamp, Ground Rod 5/8", Small	1	281
6	Rod, Ground 5/8" x 8'	1	1124
7	Conductor, Wire BSDC #4 SLD	6	376
8	Connector, Crimpet, #4 to #2 (2C4)	1	454
9	Insert, Feed-Through	1	237
10	Pad, Transformer 42" x 42"	1	929
11	Ground Lug	1	842
12	Bolt, Unistrut, Padmount Tie Down	2	193
13	Nut, Spring-loaded, Galv, 1/2", Unistrut	2	920
14	Washer, 2" X 3" X 3/16" w/ 9/16" slotted hole	2	1415
15	Connector, Z-Bar #6-500 MCM + St. Lt	3	2265
16	Cover, Connector U.G.	3	2266
17	Connector, Crimpet, #2 to #2 (2C2)	1	455

ITEM NO.	DESCRIPTION	UT25 QTY.	UT25 S/N
1	Elbow, Loadbreak. 1/0, 200A, 175 mil	2	1312
2	Voltage-Reset Fault Indicator, 400A Trip, 1Ø UG	1	2694 ✲
3	Bushing, Standoff Insulated 200A	1	252
4	Cap, Protective Insulated 200A	2	265
5	Clamp, Ground Rod 5/8", Small	1	281
6	Rod, Ground 5/8" x 8'	1	1124
7	Conductor, Wire BSDC #4 SLD	6	376
8	Connector, Crimpet, #4 to #2 (2C4)	1	454
9	Insert, Feed-Through	1	237
10	Pad, Transformer 42" x 42"	1	929
11	Ground Lug	1	842
12	Bolt, Unistrut, Padmount Tie Down	2	193
13	Nut, Spring-loaded, Galv, 1/2", Unistrut	2	920
14	Washer, 2" X 3" X 3/16" w/ 9/16" slotted hole	2	1415
15	Connector, Z-Bar #6-500 MCM + St. Lt	3	2265
16	Cover, Connector U.G.	3	2266
17	Connector, Crimpet, #2 to #2 (2C2)	1	455

Clark Public Utilities

CONSTRUCTION STANDARDS

SINGLE PHASE
PADMOUNT TRANSFORMER ASSEMBLIES RADIAL
OR LOOP FEED WITH FEED-THROUGH BUSHING

REVISIONS

R	DATE	ENGR	OPS
1	7/15/02	JEH	TR
2	9/23/04	LB	AH
3	12/29/04	LB	AH
4	4/29/09	CM	AH

UT24-UT28

CAD FILE: UT24-UT28

APP:

DATE: 10/94

SECTION 1400

Rev 4: Changed to Voltage-reset fault indicators.

ITEM NO.	DESCRIPTION	UT26 QTY.	UT26 S/N
1	Elbow, Loadbreak, 1/0, 200A, 175 mil	3	1312
2	Voltage-Reset Fault Indicator, 400A Trip, 1Ø UG	2	2694 ✲
3	Bushing, Standoff Insulated 200A	1	252
4	Cap, Protective Insulated 200A	1	265
5	Clamp, Ground Rod 5/8", Small	1	281
6	Rod, Ground 5/8" x 8'	1	1124
7	Conductor, Wire BSDC #4 SLD	6	376
8	Connector, Crimpet, #4 to #2 (2C4)	1	454
9	Insert, Feed-Through	1	237
10	Pad, Transformer 42" x 42"	1	929
11	Ground Lug	1	842
12	Bolt, Unistrut, Padmount Tie Down	2	193
13	Nut, Spring-loaded, Galv, 1/2", Unistrut	2	920
14	Washer, 2" X 3" X 3/16" w/ 9/16" slotted hole	2	1415
15	Connector, Z-Bar #6-500 MCM + St. Lt	3	2265
16	Cover, Connector U.G.	3	2266
17	Connector, Crimpet, #2 to #2 (2C2)	2	455

ITEM NO.	DESCRIPTION	UT27 QTY.	UT27 S/N
1	Elbow, Loadbreak, 1/0, 200A, 175 mil	2	1312
2	Voltage-Reset Fault Indicator, 400A Trip, 1Ø UG	1	2694 ✲
3	Bushing, Standoff Insulated 200A	1	252
4	Cap, Protective Insulated 200A	1	265
5	Clamp, Ground Rod 5/8", Small	1	281
6	Rod, Ground 5/8" x 8'	1	1124
7	Conductor, Wire BSDC #4 SLD	6	376
8	Connector, Crimpet, #4 to #2 (2C4)	1	454
9	Insert, Feed-Through	1	237
10	Pad, Transformer 42" x 42"	1	929
11	Ground Lug	1	842
12	Bolt, Unistrut, Padmount Tie Down	2	193
13	Nut, Spring-loaded, Galv, 1/2", Unistrut	2	920
14	Washer, 2" X 3" X 3/16" w/ 9/16" slotted hole	2	1415
15	Connector, Z-Bar #6-500 MCM + St. Lt	3	2265
16	Cover, Connector U.G.	3	2266
17	Connector, Crimpet, #2 to #2 (2C2)	1	455

Clark Public Utilities

CONSTRUCTION STANDARDS

SINGLE PHASE
PADMOUNT TRANSFORMER ASSEMBLIES RADIAL
OR LOOP FEED WITH FEED-THROUGH BUSHING

REVISIONS

R	DATE	ENGR	OPS
1	7/15/02	JEH	TR
2	9/23/04	LB	AH
3	12/29/04	LB	AH
4	4/29/09	CM	AH

UT24-UT28

CAD FILE: UT24-UT28

APP:

DATE: 10/94

SECTION 1400

Rev 4: Changed to Voltage-reset fault indicators.

ITEM NO.	DESCRIPTION	UT28	
		QTY.	S/N
1	Elbow, Loadbreak, 1/0, 200A, 175 mil	3	1312
2	Voltage-Reset Fault Indicator, 400A Trip, 1Ø UG	2	2694 ✲
3	Bushing, Standoff Insulated 200A	1	252
4	Cap, Protective Insulated 200A	-	265
5	Clamp, Ground Rod 5/8", Small	1	281
6	Rod, Ground 5/8" x 8'	1	1124
7	Conductor, Wire BSDC #4 SLD	6	376
8	Connector, Crimpet, #4 to #2 (2C4)	1	454
9	Insert, Feed-Through	1	237
10	Pad, Transformer 42" x 42"	1	929
11	Ground Lug	1	842
12	Bolt, Unistrut, Padmount Tie Down	2	193
13	Nut, Spring-loaded, Galv, 1/2", Unistrut	2	920
14	Washer, 2" X 3" X 3/16" w/ 9/16" slotted hole	2	1415
15	Connector, Z-Bar #6-500 MCM + St. Lt	3	2265
16	Cover, Connector U.G.	3	2266
17	Connector, Crimpet, #2 to #2 (2C2)	2	455

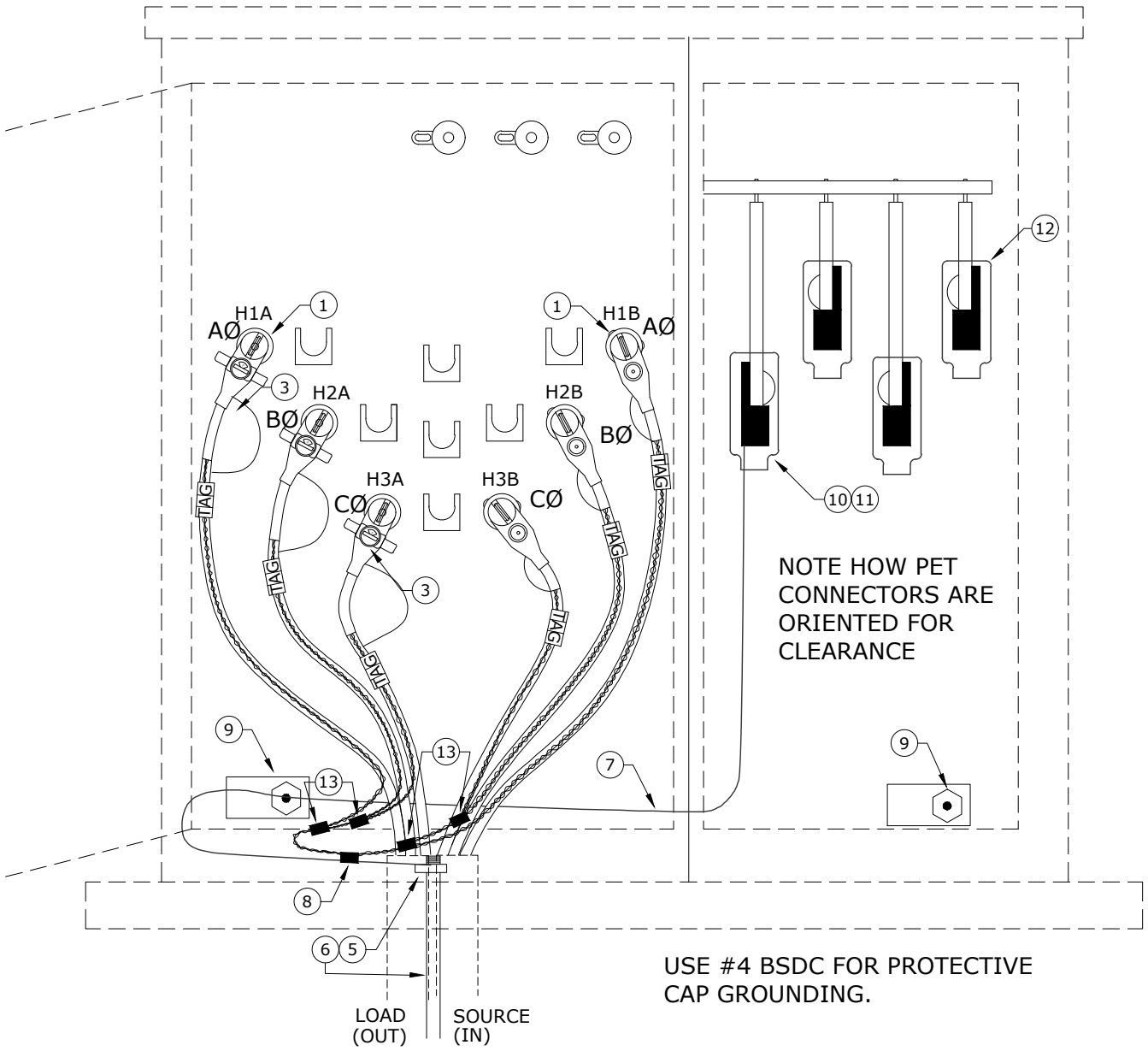
Clark Public Utilities

CONSTRUCTION STANDARDS

SINGLE PHASE
PADMOUNT TRANSFORMER ASSEMBLIES RADIAL
OR LOOP FEED WITH FEED-THROUGH BUSHING

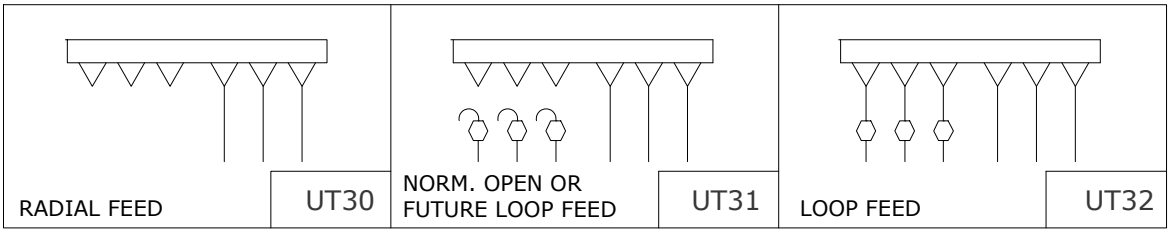
REVISIONS			
△R	DATE	ENGR	OPS
1	7/15/02	JEH	TR
2	9/23/04	LB	AH
3	12/29/04	LB	AH
4	4/29/09	CM	AH
△			

PAGE:		CAD FILE:	APP:	SECTION
4 of 4	UT24-UT28	UT24-UT28	DATE: 10/94	1400



FRONT VIEW OF TRANSFORMER

(UT32 SHOWN)



NOTE: SPECIFY I.D. TAGS AS REQUIRED.

Rev 3: Changed to Voltage-reset fault indicators.

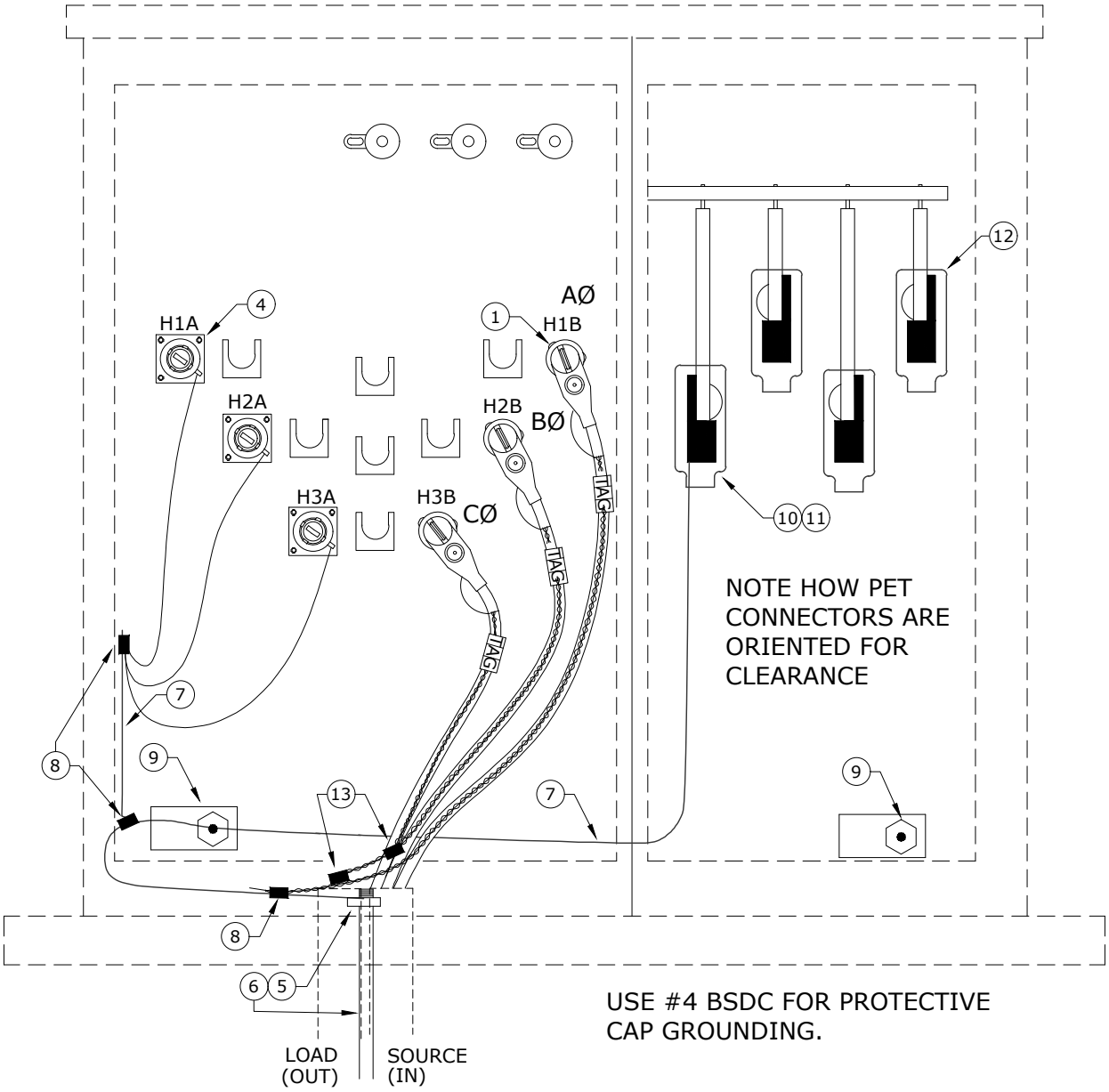
Clark Public Utilities

CONSTRUCTION STANDARDS

THREE PHASE
PADMOUNT TRANSFORMER ASSEMBLIES

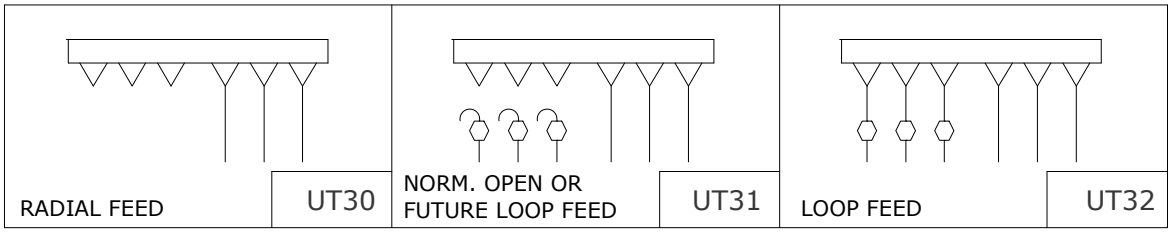
REVISIONS			
R	DATE	ENGR	OPS
1	2/23/00	HWH	MA
2	9/23/04	LB	AH
3	4/29/09	CM	AH

PAGE:		CAD FILE:	APP:	SECTION
1 of 3	UT30-UT32	UT30	DATE: 10/99	1400



FRONT VIEW OF TRANSFORMER

(UT30 SHOWN)



NOTE: SPECIFY I.D. TAGS AS REQUIRED.

Rev 3: Changed to Voltage-reset fault indicators.

Clark Public Utilities

CONSTRUCTION STANDARDS

THREE PHASE
PADMOUNT TRANSFORMER ASSEMBLIES

REVISIONS			
R	DATE	ENGR	OPS
1	2/23/00	HWH	MA
2	9/23/04	LB	AH
3	4/29/09	CM	AH

PAGE:		CAD FILE:	APP:	SECTION
2 of 3	UT30-UT32	UT30	DATE: 10/99	1400

Rev 3: Changed to Voltage-reset fault indicators.

ITEM NO.	DESCRIPTION	UT30 QTY.	UT30 S/N
1	Elbow, Loadbreak, 1/0, 200A, 175 mil	3	1312
4	Cap, Protective Insulated 200A	3	265
5	Clamp, Ground Rod 5/8", Small	1	281
6	Rod, Ground 5/8" x 8'	1	1124
7	Conductor, Wire BSDC #4 SLD	10	376
8	Connector, Crimpet, #4 to #2 (2C4)	1	454
9	Ground Lug	2	842
10	Connector, PET, #2-750 Al/Cu, 6 Position	4	2129
11	Bolt, Machine, 1/2 x 2" SS w/ Bronze Nut & Belleville Washer	16	1389
12	Cover, PET, 8 Position	4	2182
13	Connector, Crimpet, #2 to #2 (2C2)	2	455

ITEM NO.	DESCRIPTION	UT31 QTY.	UT31 S/N
1	Elbow, Loadbreak, 1/0, 200A, 175 mil	6	1312
2	Bushing, Standoff Insulated 200A	3	252
3	Voltage-Reset Fault Indicator, 400A Trip, 1Ø UG	3	2694 ☼
4	Cap, Protective Insulated, 200A	3	265
5	Clamp, Ground Rod 5/8", Small	1	281
6	Rod, Ground 5/8" x 8'	1	1124
7	Conductor, Wire BSDC #4 SLD	10	376
8	Connector, Crimpet, #4 to #2 (2C4)	1	454
9	Ground Lug	2	842
10	Connector, PET, #2-750 Al/Cu, 6 Position	4	2129
11	Bolt, Machine, 1/2 x 2" SS w/ Bronze Nut & Belleville Washer	16	1389
12	Cover, PET, 8 Position	4	2182
13	Connector, Crimpet, #2 to #2 (2C2)	4	455

ITEM NO.	DESCRIPTION	UT32 QTY.	UT32 S/N
1	Elbow, Loadbreak, 1/0, 200A, 175 mil	6	1312
3	Voltage-Reset Fault Indicator, 400A Trip, 1Ø UG	3	2694 ☼
5	Clamp, Ground Rod 5/8", Small	1	281
6	Rod, Ground 5/8" x 8'	1	1124
7	Conductor, Wire BSDC #4 SLD	10	376
8	Connector, Crimpet, #4 to #2 (2C4)	1	454
9	Ground Lug	2	842
10	Connector, PET, #2-750 Al/Cu, 6 Position	4	2129
11	Bolt, Machine, 1/2 x 2" SS w/ Bronze Nut & Belleville Washer	16	1389
12	Cover, PET, 8 Position	4	2182
13	Connector, Crimpet, #2 to #2 (2C2)	4	455

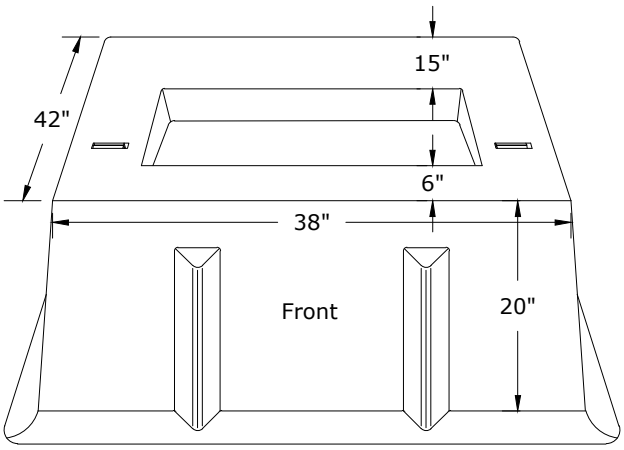
Clark Public Utilities

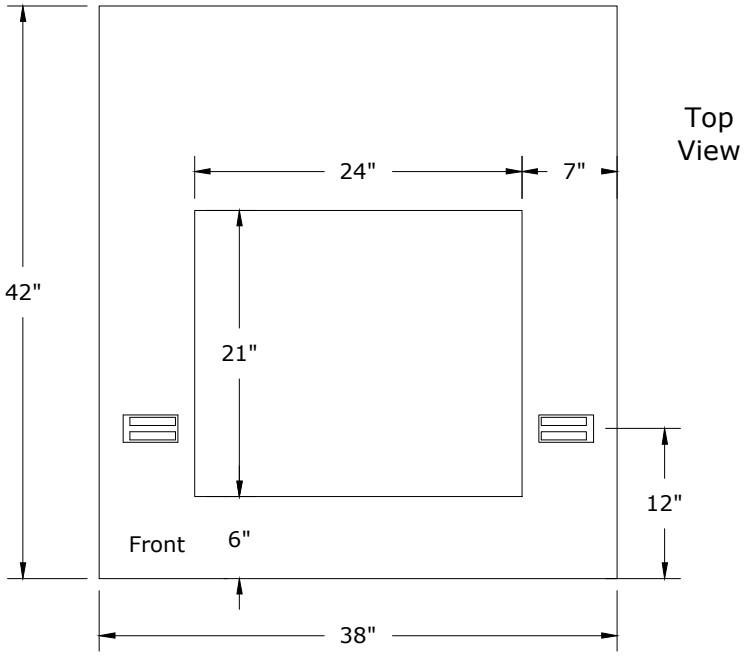
CONSTRUCTION STANDARDS

THREE PHASE
PADMOUNT TRANSFORMER ASSEMBLIES

REVISIONS			
R	DATE	ENGR	OPS
1	2/23/00	HWH	MA
2	9/23/04	LB	AH
3	4/29/09	CM	AH

PAGE:		CAD FILE:	APP:	SECTION
3 of 3	UT30-UT32	UT30	DATE: 10/99	1400





ITEM NO.	DESCRIPTION	QTY.	S/N
1	Box Pad, 1Ø Transformer, Fiberglass	1	2433

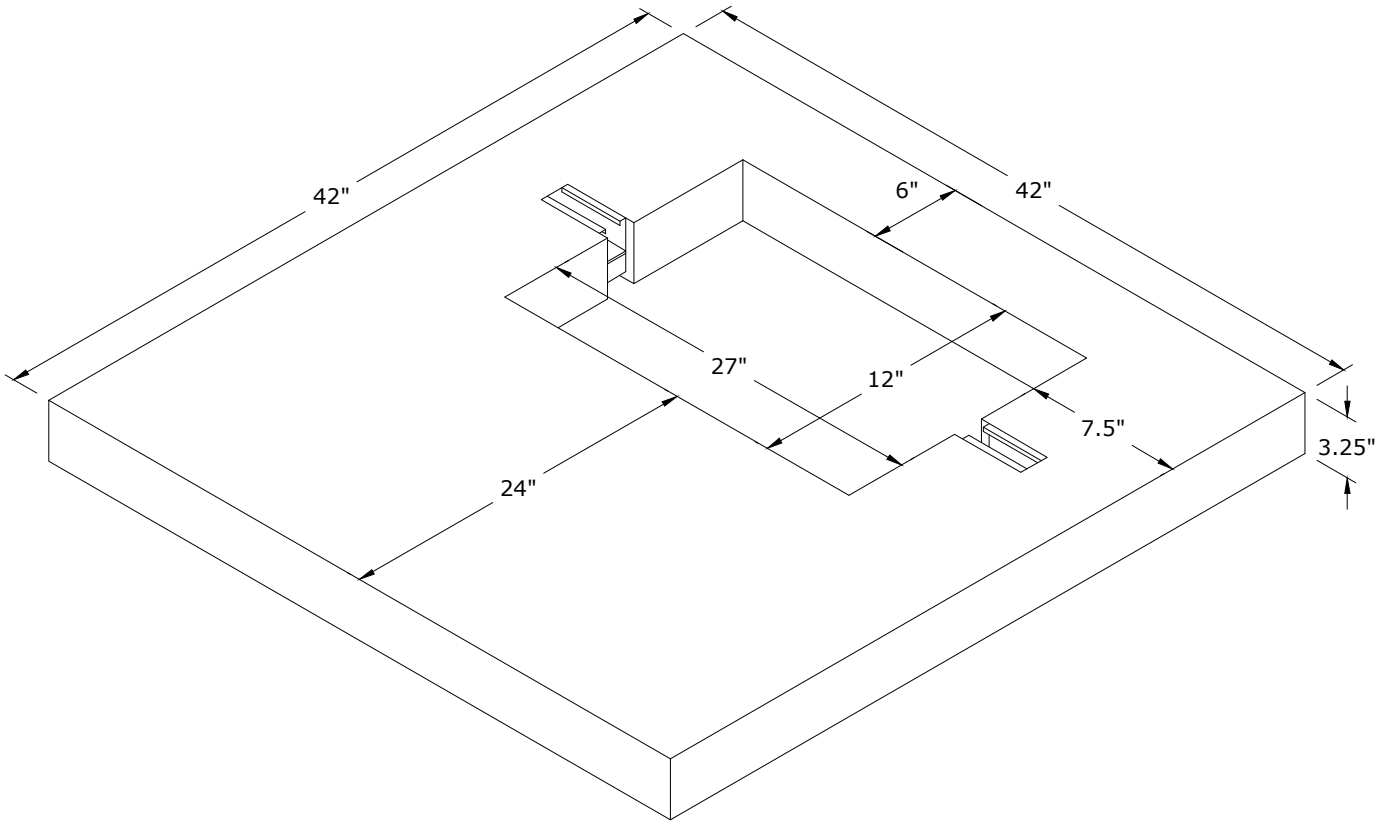
Clark Public Utilities

CONSTRUCTION STANDARDS

SINGLE PHASE
PADMOUNT TRANSFORMER
BOXPAD (BASEMENT)

REVISIONS			
R	DATE	ENGR	OPS
△			

PAGE:		CAD FILE:	APP: KJP	SECTION
1 of 1	UTB	UTB	DATE: 12/29/04	1400



Note: See Std UTP3 - 1Ø Transformer Pad Orientation and Conduit Installation 25-75kVA (page 1) - for installation instructions. ☼

Rev. 2 - Changed from plastic pad to polyconcrete, updated note, and added material issue.

ITEM NO.	DESCRIPTION	UTP1 QTY.	UTP1 S/N
1	Pad, Transformer, 42" x 42", 1Ø, 25-75kVA	1	929

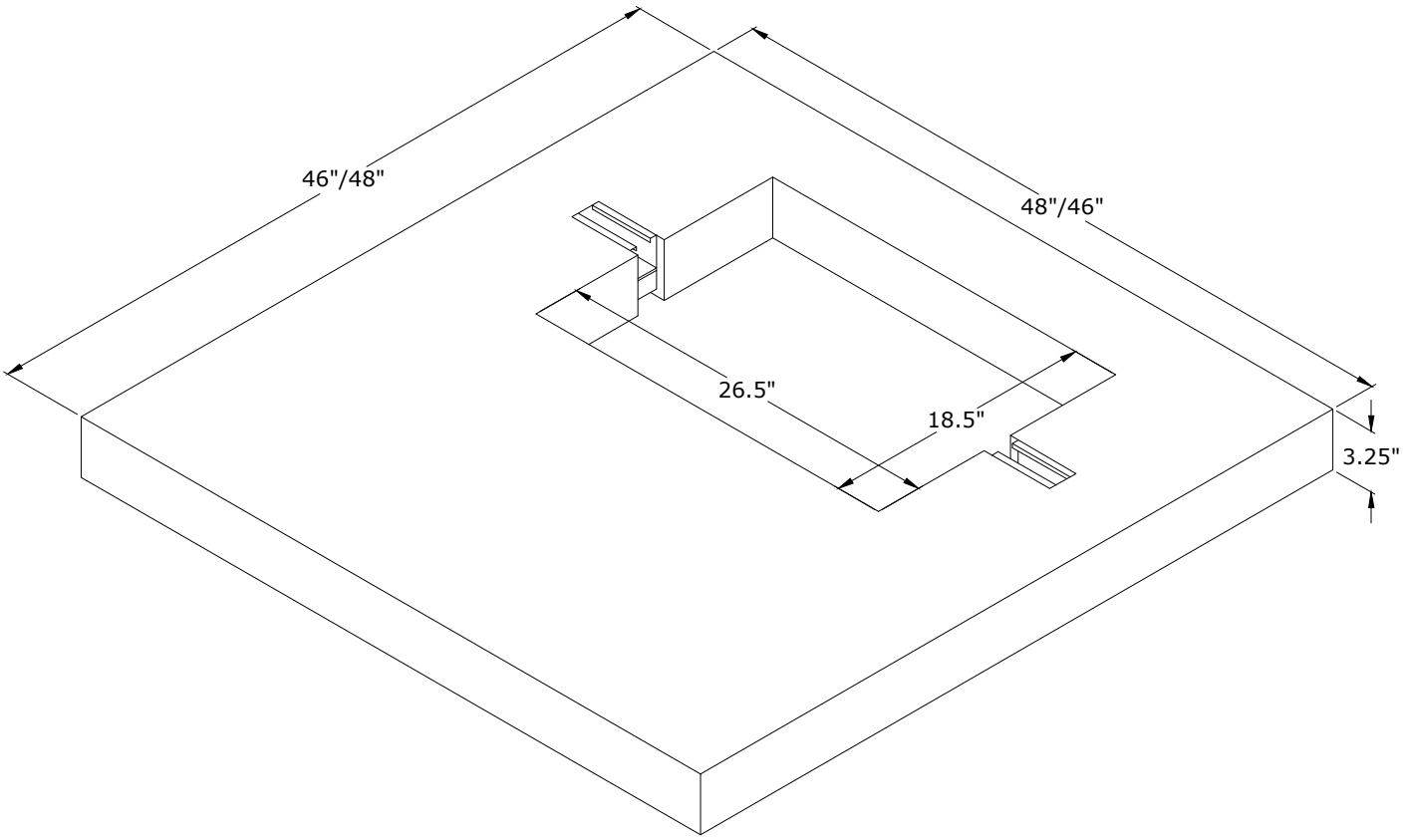
Clark Public Utilities

CONSTRUCTION STANDARDS

1Ø TRANSFORMER PAD
25 to 75 kVA

REVISIONS			
R	DATE	ENGR	OPS
1	2/23/00	HWH	MA
2	12/9/20	CM	GM

PAGE:		CAD FILE:	APP: HWH/GW	SECTION
1 of 1	UTP1	UTP1	DATE: 1/22/80	1400



Notes: ✲

1. See Std UTP3 - 1Ø Transformer Pad Orientation and Conduit Installation 100KVA (page 2) - for installation instructions.
2. Armorcast pad is 48" W x 46" L. Quazite pad is 46" W x 48" L.

Rev. 2 - Updated drawing, notes, and added material issue.

ITEM NO.	DESCRIPTION	UTP2 QTY.	UTP2 S/N
1	Pad, Transformer, 48" x 46", 1Ø, 100kVA only	1	930

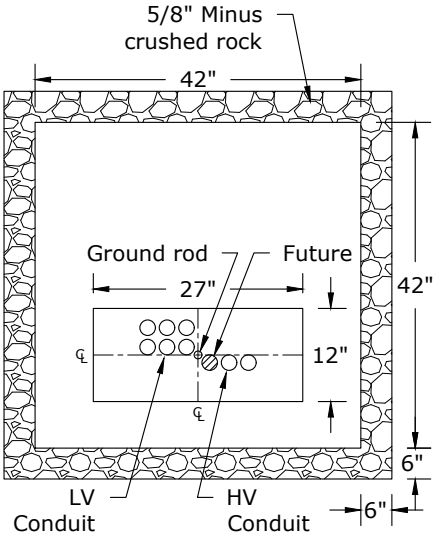
Clark Public Utilities

CONSTRUCTION STANDARDS

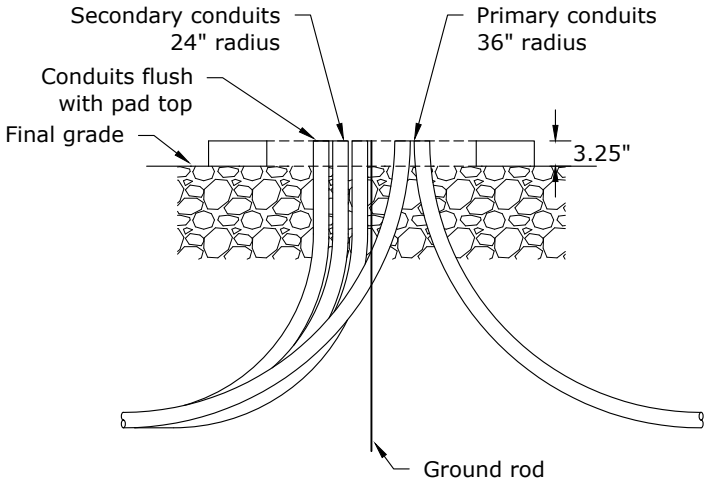
1Ø TRANSFORMER PAD
100 kVA

REVISIONS			
R	DATE	ENGR	OPS
1	2/23/00	HWH	MA
2	12/9/20	CM	GM

PAGE:		CAD FILE:	APP: HWH/GW	SECTION
1 of 1	UTP2	UTP2	DATE: 1/22/80	1400



25-75 KVA PAD
PLAN VIEW



FRONT VIEW

1Ø PADMOUNT TRANSFORMER CONDUIT ORIENTATION (25-75 KVA)

Notes:

1. AIC for 25 to 75 kVA transformers is 10,000 A.
2. High and low voltage conduits must be within their designated areas.
3. All conduits shall be in place and approved prior to transformer installation.
4. It shall be the responsibility of the owner or owner's representative to comply with all applicable code requirements.
5. The pad shall be furnished by the customer.
6. The front side must have 10 feet clear access for maintenance. See Std UTPC - Padmount Transformer Clearances.
7. All future conduit ends shall extend past the edge of the pad by 48 inches minimum.
8. Radius of secondary conduit elbow shall be 24 inches.
9. Depth of burial of conduits shall be as shown on Std UA1.
10. The pad shall be located so that no part of the transformer is closer than 10 feet to a combustible surface, windows or doors, or 3 feet to a non-combustible structure. See clearances in CPU Residential Handbook.
11. Minimum primary conduit size shall be 2 inches.
12. Backfill under the transformer pad must be 5/8" minus crushed rock compacted in multiple lifts. The rock layer must be a minimum of 12-inches thick below the pad. Soil stability may require more. The rock base shall extend 6 inches beyond the pad on all four sides.

Rev. 2 - Added 100kVA from UTP6, updated drawing and notes.

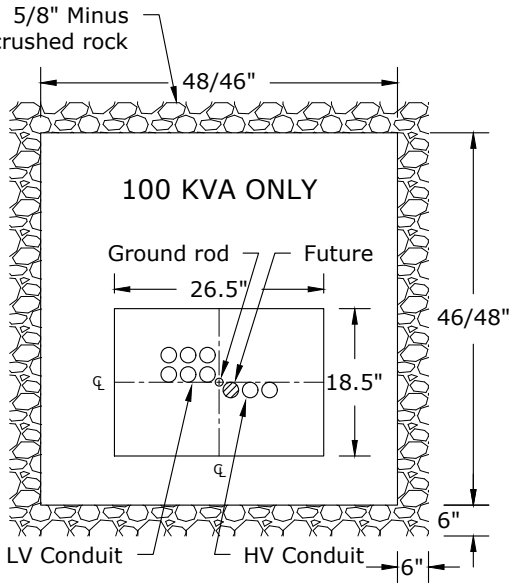
Clark Public Utilities

CONSTRUCTION STANDARDS

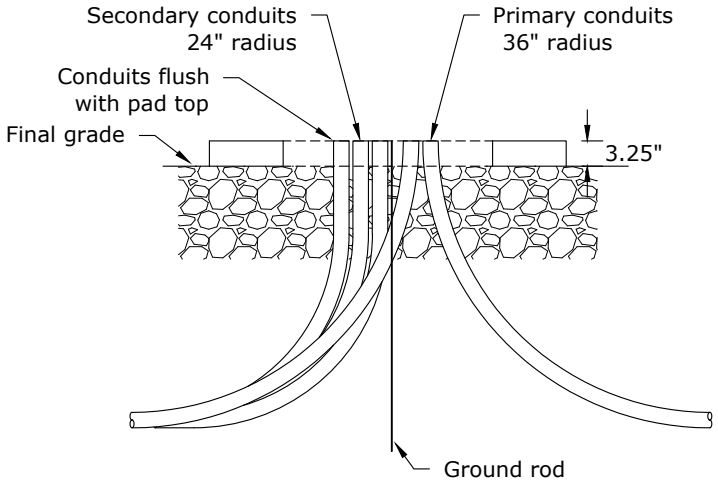
1Ø TRANSFORMER PAD ORIENTATION
AND CONDUIT INSTALLATION
25-75 KVA

REVISIONS			
R	DATE	ENGR	OPS
0	2/23/00	HWH	MA
1	1/26/04	LB	AH
2	12/9/20	CM	GM

PAGE:		CAD FILE:	APP: HWH/GW	SECTION
1 of 2	UTP3	UTP3	DATE: 1/22/80	1400



100 KVA PAD
PLAN VIEW



FRONT VIEW

1Ø PADMOUNT TRANSFORMER CONDUIT ORIENTATION (100 KVA)

Notes:

1. AIC for 100 kVA transformer is 14,000 A.
2. High and low voltage conduits must be within their designated areas.
3. All conduits shall be in place and approved prior to transformer installation.
4. It shall be the responsibility of the owner or owner's representative to comply with all applicable code requirements.
5. The pad shall be furnished by the customer.
6. The front side must have 10 feet clear access for maintenance. See Std UTPC - Padmount Transformer Clearances.
7. All future conduit ends shall extend past the edge of the pad by 48 inches minimum.
8. Radius of secondary conduit elbows shall be 24 inches.
9. Depth of burial of conduits shall be as shown on Std UA1.
10. The pad shall be located so that no part of the transformer is closer than 10 feet to a combustible surface, windows or doors or 3 feet to a non-combustible structure. See clearances in CPU Residential Handbook.
11. Minimum primary conduit size shall be 2 inches.
12. Backfill under the transformer pad must be 5/8" minus crushed rock compacted in multiple lifts. The rock layer must be a minimum of 12-inches thick below the pad. Soil stability may require more. The rock base shall extend 6 inches beyond the pad on all four sides.

Rev. 2 - Added 100kVA from UTP6, updated drawing and notes.

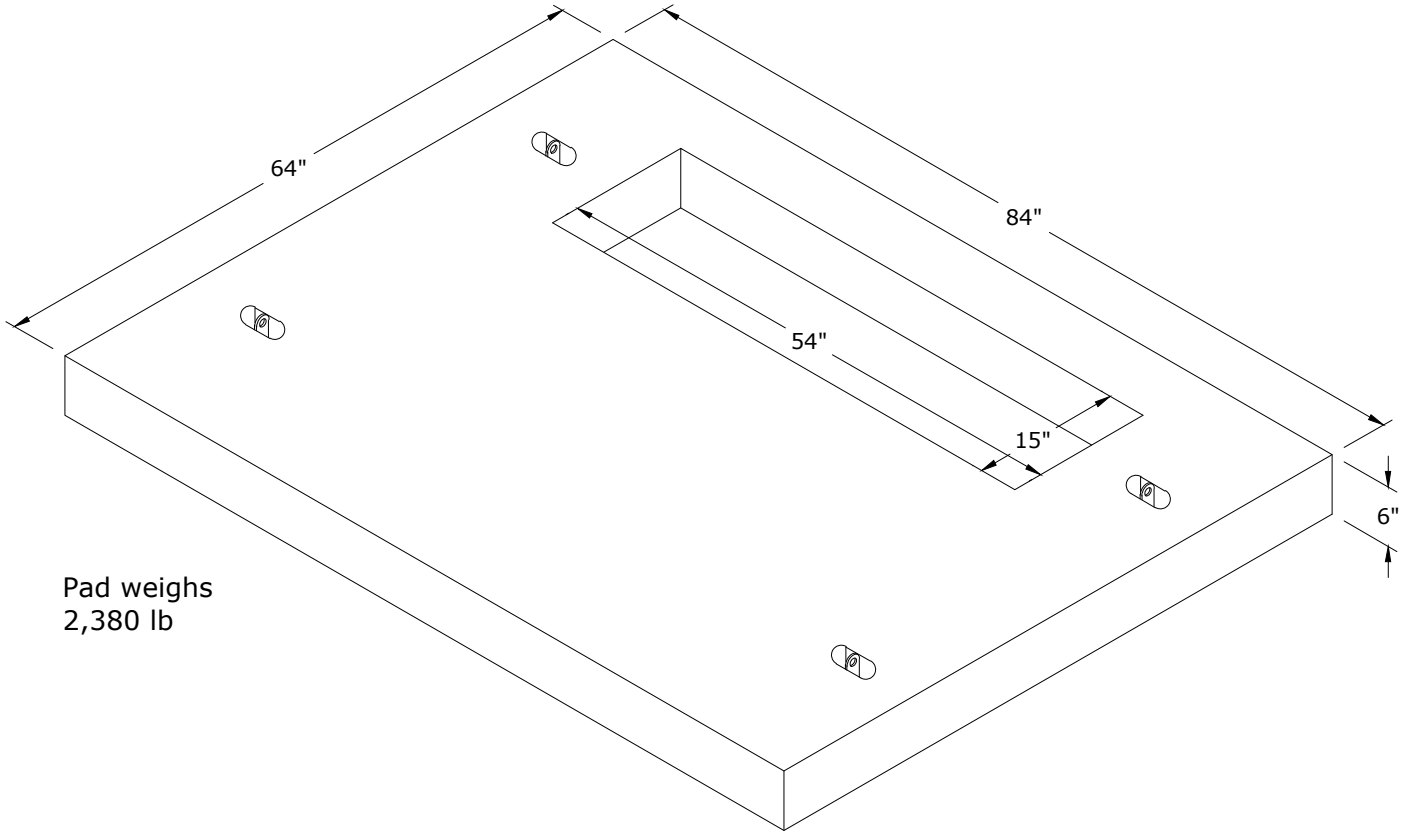
Clark Public Utilities

CONSTRUCTION STANDARDS

1Ø TRANSFORMER PAD ORIENTATION
AND CONDUIT INSTALLATION
100 KVA

REVISIONS			
R	DATE	ENGR	OPS
0	2/23/00	HWH	MA
1	1/26/04	LB	AH
2	12/9/20	CM	GM

PAGE:		CAD FILE:	APP: HWH/GW	SECTION
2 of 2	UTP3	UTP3	DATE: 1/22/80	1400



Pad weighs
2,380 lb

Notes:

1. This pad is available from Utility Vault/OldCastle catalog #UTP4 (CPU S/N 2170).
2. This pad is adequate up to 6 conductors per phase. See Std UTP5 - Precast Pad and Vault for 3Ø Transformers - if more conductors are required.
3. See Std UPT6 - 3Ø Transformer Pad Orientation and Conduit Installation - for installation instructions.

Rev. 2 - Updated dimensions, added weight, and removed reinforcement detail.

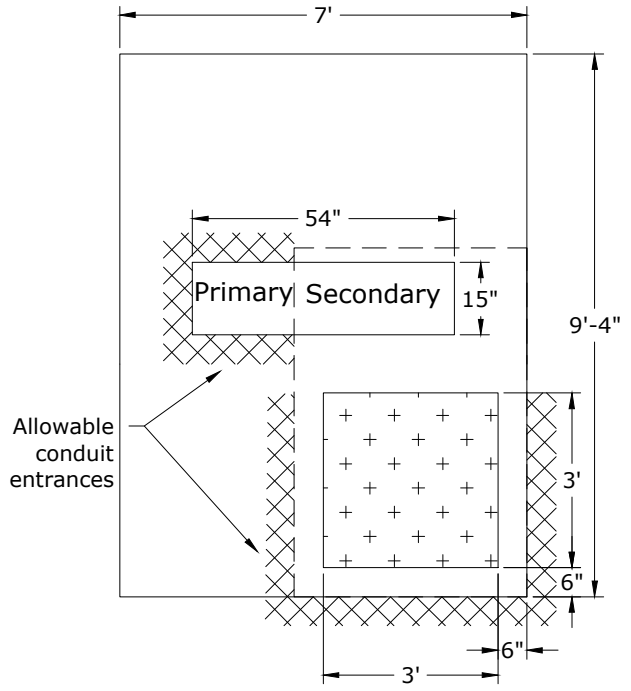
Clark Public Utilities

CONSTRUCTION STANDARDS

3Ø TRANSFORMER PAD
75 to 1500 kVA

REVISIONS			
R	DATE	ENGR	OPS
0	2/23/00	HWH	MA
1	8/17/03	LB	DK
2	12/9/20	CM	GM

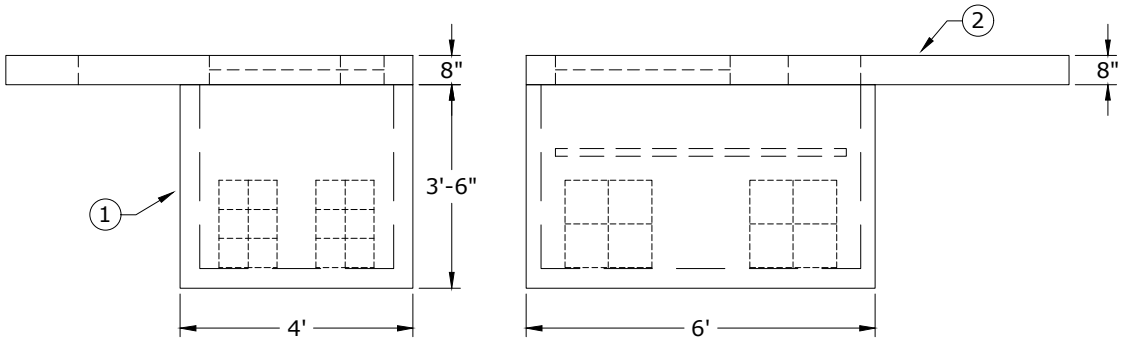
PAGE:		CAD FILE:	APP: HWH/GW	SECTION
1 of 1	UTP4	UTP4	DATE: 1/22/80	1400



Top View

Materials:

1. Vault 6' x 4' x 3'-6" - Oldcastle Part #644LA
2. Pad 7' x 9'-4" x 8" with 15" x 54" opening - Oldcastle Part #0370133.



Front View

Side View

Notes:

1. Locking bolts shall be 1/2" pentahead bolt.
2. Backfill under the vault and transformer pad must be 5/8" minus crushed rock compacted in lifts. The rock layer must be a minimum of 12-inches thick below the pad and vault. Soil stability may require more. The rock base shall extend 6 inches beyond the pad on all four sides.
3. Customer shall install both components shown. All secondary conduits go into 644 vault and enter only in the areas shown. All secondary cables shall have a minimum 10 feet of excess in vault for makeup.
4. All primary conduits shall enter the pad from outside of the vault and only in the locations shown.
5. This pad and vault are required if more than 6 cables per leg are being installed. The maximum number of secondary runs is 8.
6. Install bell ends in conduit in knockouts and grout inside and outside to be even with vault walls.

Rev. 1 - Renamed from UTP4-6, and updated drawing.

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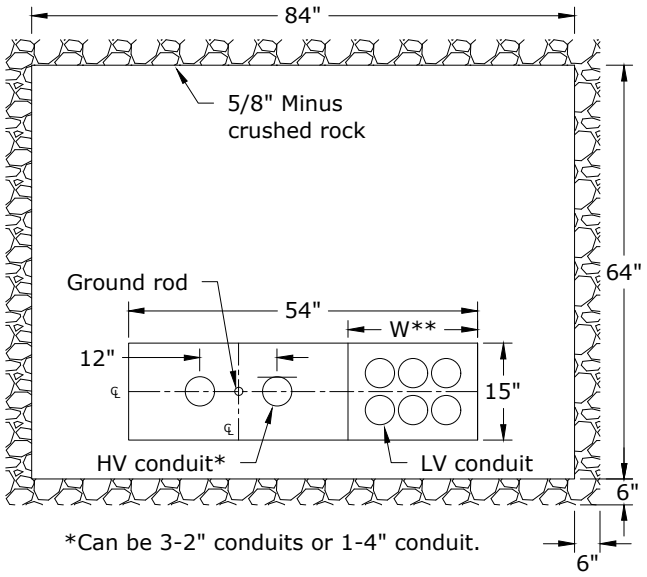
CONSTRUCTION STANDARDS

PRECAST PAD AND VAULT
FOR 3Ø TRANSFORMERS

REVISIONS			
R	DATE	ENGR	OPS
1	12/9/20	CM	GM

PAGE:		CAD FILE:	APP: GW	SECTION
1 of 1	UTP5	UTP5	DATE: 12/18/87	1400

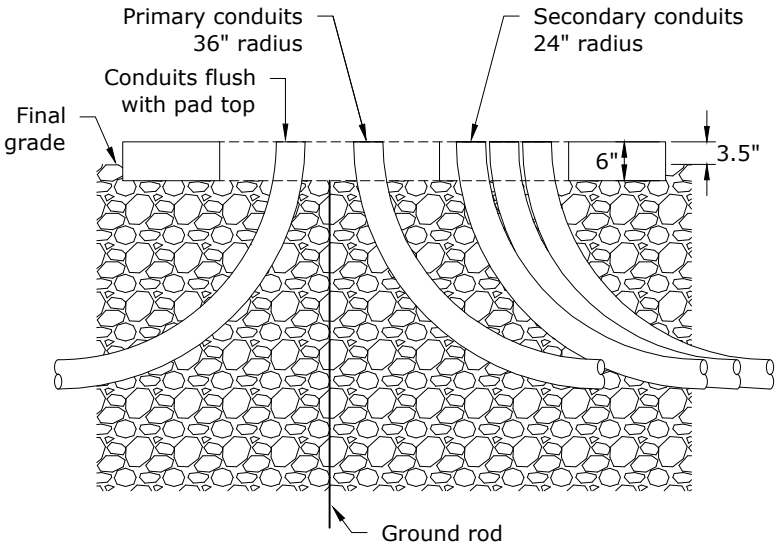


*Can be 3-2" conduits or 1-4" conduit.

KVA	TYPICAL** "W" INCHES
75 - 300	20
500	22
750 - 1500	28

**Varies by manufacturer

PLAN VIEW



FRONT VIEW

3Ø Padmount Transformer Conduit Orientation

Notes:

1. The concrete pad and all conduits shall be in place and approved by the CPU Inspector prior to transformer installation.
2. Refer to Std UPTC - Padmount Transformer Clearances - and the CPU Commercial Handbook for clearances.
3. See Std UTP4 - 3ø Transformer Pad 75 to 1500 kVA - for concrete pad details.
4. Backfill under the transformer pad must be 5/8" minus crushed rock compacted in multiple lifts. The rock layer must be a minimum of 12-inches thick below the pad. Soil stability may require more. The rock base shall extend 6 inches beyond the pad on all four sides.

Rev. 5 - Added 4" primary conduit drawing, moved 1ø to UTP3, and updated drawing and notes.

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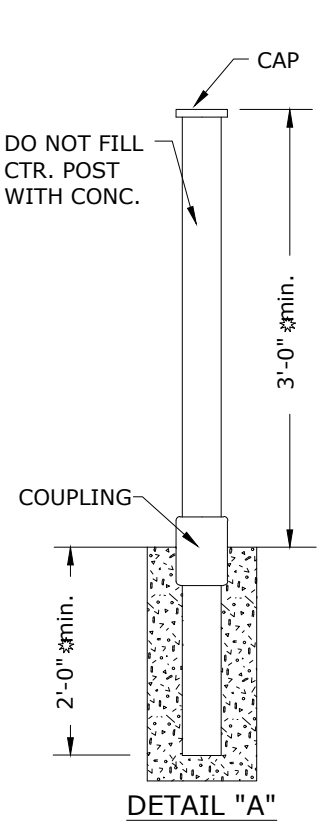
CONSTRUCTION STANDARDS

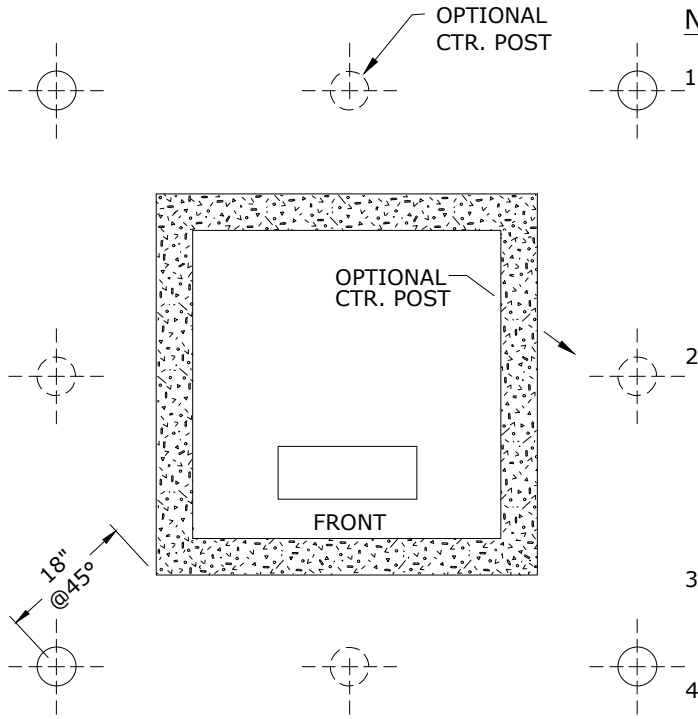
3Ø TRANSFORMER PAD ORIENTATION
AND CONDUIT INSTALLATION

REVISIONS			
R	DATE	ENGR	OPS
2	7/15/02	JEH	TR
3	1/26/04	LB	AH
4	12/29/04	LB	AH
5	12/9/20	CM	GM

PAGE:		CAD FILE:	APP:	SECTION
1 of 1	UTP6	UTP6	DATE: 10/98	1400



DETAIL "A"

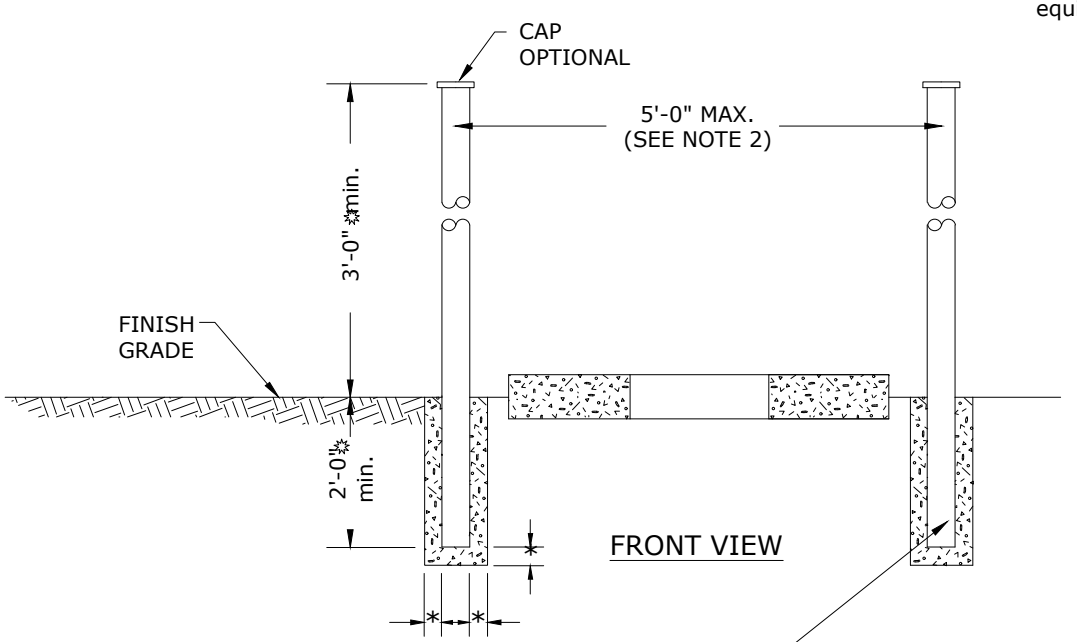


DETAIL "A"

PLAN VIEW
TYPICAL PAD

Notes:

1. Typical locations of barriers positioning will vary depending on the following conditions.
   a. Physical location of equipment with respect to hazards.
   b. Type of equipment to be protected and accessibility required.
2. If distance between corner barriers exceeds 5 ft., A ctr. post may be required similar to corner post except center post on front side of padmount device may be constructed as det. "A".
3. Project Engineer will determine and indicate number, size, and position of barrier posts.
4. Posts of 4" steel pipe, concrete-filled or substitute of equal strength to be set in concrete. Use same mixture as pad.
5. See WAC 296-46-480 Para. 4, rules and regulations for installing electric wires and equipment.



FRONT VIEW

* DIMENSIONS AND CONDUIT SIZE TO BE PROVIDED BY PROJECT ENGINEER.

Rev 2: Corrected dimensions on barrier to match Commercial Electric Service Handbook.

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CONSTRUCTION STANDARDS

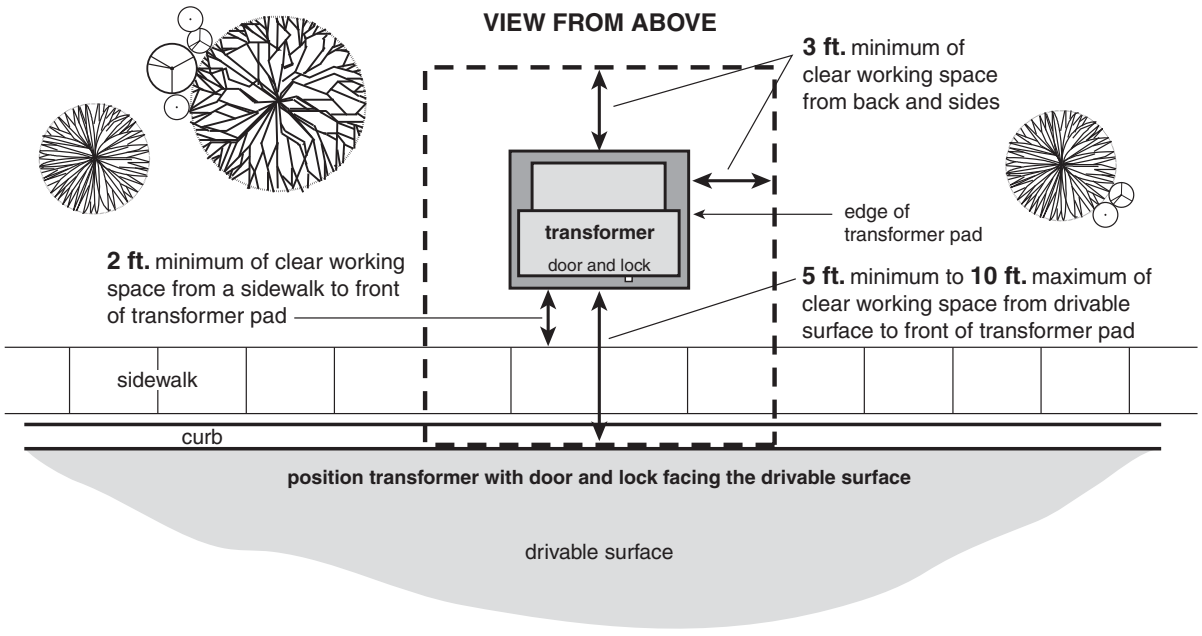
TYPICAL BARRIER INSTALLATION TO PROTECT PADMOUNTED EQUIPMENT

REVISIONS			
R	DATE	ENGR	OPS
0	2/23/00	HWH	MA
1	5/30/07	LB	AH
2	12/14/09	KJP	

PAGE:		CAD FILE:	APP:	SECTION
1 of 1	UTP9	UTP9	DATE: 9/94	1400

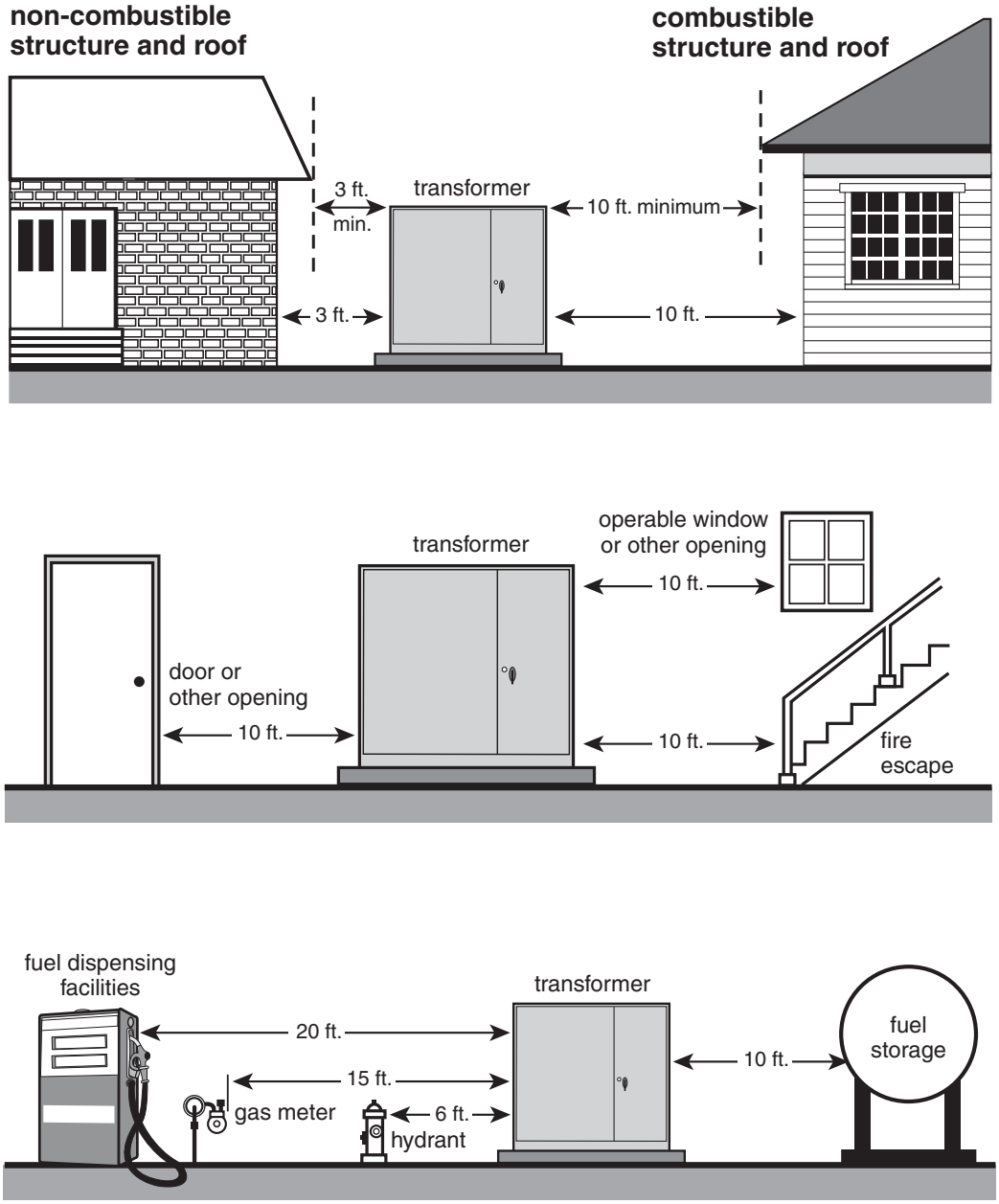
Please see page 17 of our Commercial Electric Service Handbook, for more details and information.

Figure 3 Commercial padmounted transformer location and access



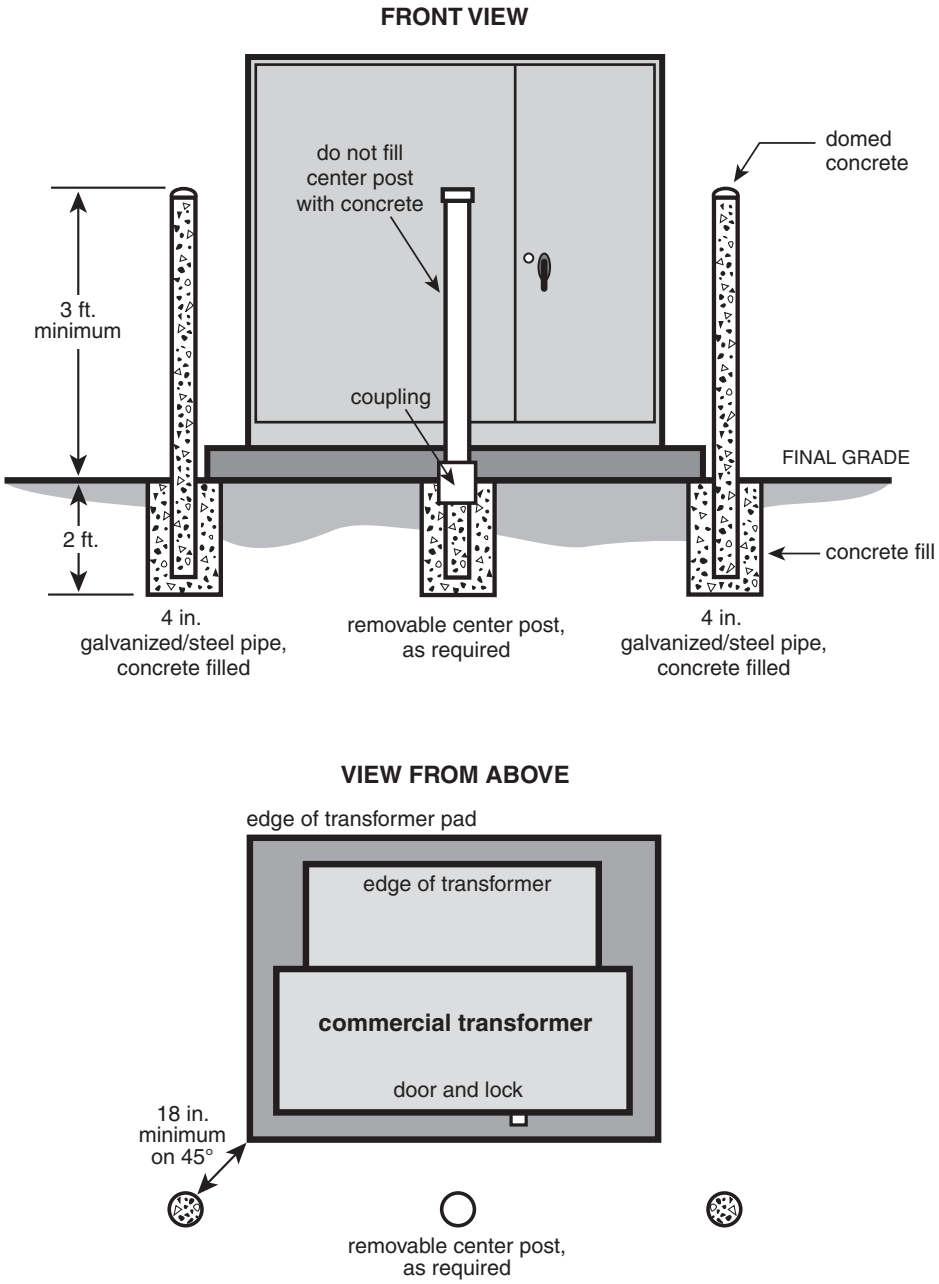
Please see page 18 of our Commercial Electric Service Handbook, for more details and information.

Figure 4 Commercial padmounted transformer minimum safety clearances



Please see page 20 of our Commercial Electric Service Handbook, for more details and informaion.

Figure 5 Guard post (bollard) installation for commercial transformers



NOTE: Additional guard posts may be required at back and sides of transformer.