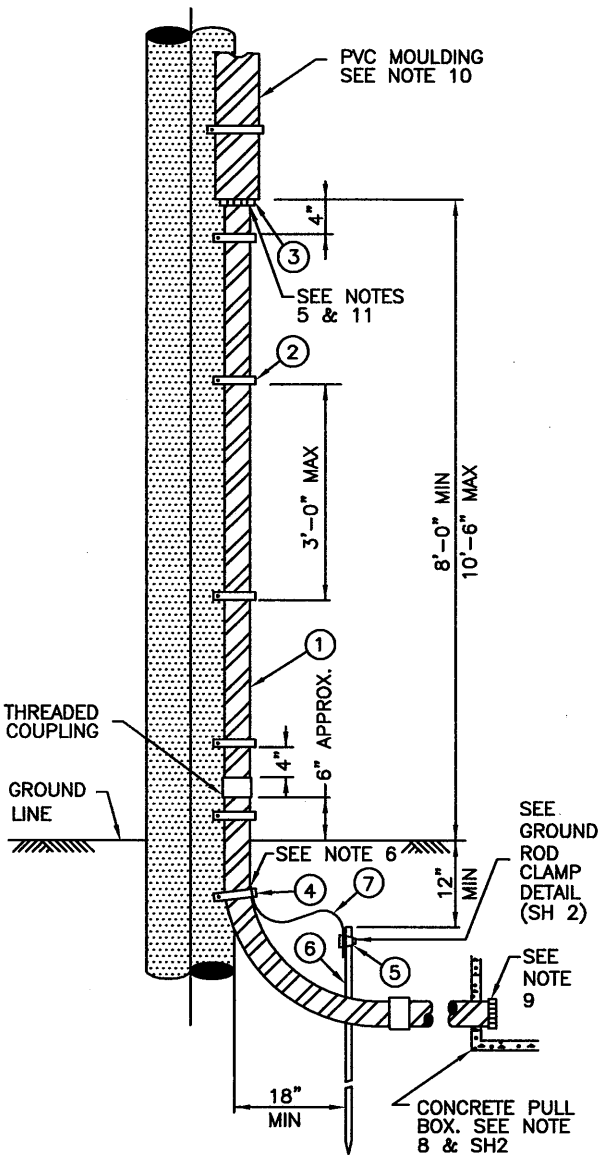
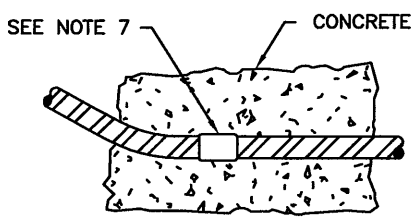




NON-METALLIC DUCT
CONCRETE ENCASED

NOTES:

1 THIS DWG. ILLUSTRATES THE INSTALLATION REQUIREMENTS FOR RIGID STEEL RISER CONDUIT ON WOOD POLES. THESE REQUIREMENTS APPLY TO RISER INSTALLATIONS OF ALL VOLTAGES.

2 THE RISER CONDUIT SHALL BE LOCATED IN A QUADRANT ON THE POLE AS MARKED BY THE ELECTRIC UTILITY REP.

3 THE MIN RADIUS ALLOWED IN THE BEND SHALL BE 36" FOR PRIMARY CONDUIT. UNLESS OTHERWISE SPECIFIED BY THE ELECTRIC UTILITY. A FACTORY BEND MAY BE USED FOR SECONDARY CONDUIT.

4 NO WELDING, BRAZING OR TORCH CUTTING SHALL BE MADE ON THE RISER CONDUIT. THE HEAT WILL DESTROY THE GALVANIZED COATING ON THE CONDUIT.

5 ALL SECONDARY STEEL RISER (600 VOLTS OR LESS) CONDUIT SHALL HAVE AN INSULATING BUSHING AT THE TOP (ITEM-3)

6 ALL PRIMARY VOLTAGE RISER (600 VOLTS OR GREATER) CONDUIT SHALL HAVE A GROUNDING BUSHING (ITEM-4)

7 IF A TRANSITION FROM METALLIC TO NON METALLIC CONDUIT IS MADE, A FACTORY ADAPTER MUST BE USED SEE NOTE 9

8 UNLESS OTHERWISE APPROVED BY ELECTRIC UTILITY, A PRECAST BOX SHALL BE INSTALLED IN THE DUCT NEAR THE BASE OF THE RISER POLE. REFER TO THE APPLICABLE LAYOUT DWG. FOR THE EXACT LOCATION OF THE BOX. SEE DWG. NO. DT-SS-U-1002 FOR THE SIZE AND TYPE OF BOX REQUIRED. SEE SHEET NO. 2 FOR ALTERNATE GRD LOCATION.

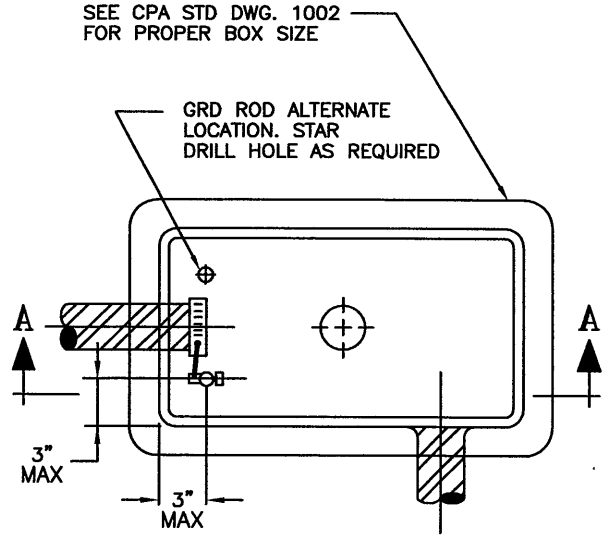
9 WHEN THE ALTERNATE GROUNDING LOCATION IS USED (SEE SHEET 2), THE RISER CONDUIT MUST BE A CONTINUOUS RUN OF GALVANIZED RIGID STEEL.

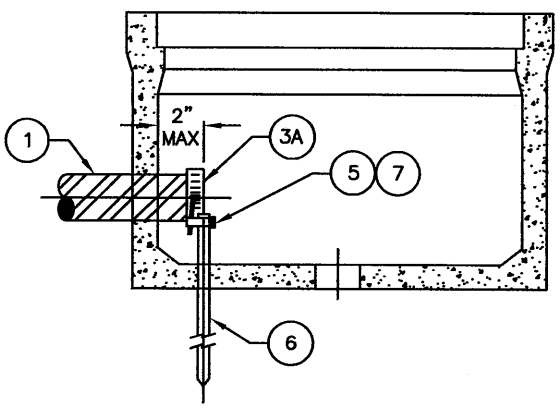
10 WHERE THE CUSTOMER FURNISHES & INSTALLS THE RISER CONDUIT, THE ELECTRIC UTILITY SHALL FURNISH AND INSTALL THE RISER MOLDING EXTENDING FROM THE RISER CONDUIT TO THE OVERHEAD CONDUCTOR LEVEL ON THE POLE.

11 ANY MATERIALS SUBSTITUTION MUST BE APPROVED IN ADVANCE BY THE ELECTRIC UTILITY.

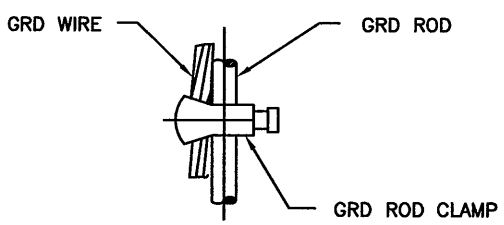
12 THE BEND OR SWEEP USED AT THE BOTTOM OF THE RISER CONDUIT SHALL BE RIGID GALVANIZED STEEL.

APPROVED 3/1994	ENGINEERING STANDARD	3	10-09	REVISED NOTES	TT
mDBland	INSTALLATION OF STEEL RISER CONDUIT ON WOOD POLES	2	4-86	REVISED NOTES	
ENGR. MANAGER		1	5-67	ADDED SHT 2 & REVISED MATL. LIST	
		REV	DATE	DESCRIPTION	APPR
ENGR PEV	CITY OF PALO ALTO CALIFORNIA	NTS	DT-SS-U-1001	1 OF 2
DRAWN UES/MJ MJ		SCALE	STANDARD NO.	SHEET NO.
CHECKED PEV				





SECTION A–A



GRD ROD CLAMP ASSY.

LIST OF MATERIALS

ITEM	DESCRIPTION	SIZE	MANUFACTURER	CAT. NO.
1	HOT DIPPED GALVANIZED RIGID STEEL CONDUIT	AS REQUIRED	–	–
2	GALVANIZED HANGER IRON USE 1/4" X 21/2" GALV. LAG SCREWS	NO.1 7/8" 16 GA	–	–
3	CONDUIT TOP GROUNDING BUSHING	2"	UNION INSULATING	96–2
			O–Z COMPANY	HBL–2021
		3"	UNION INSULATING	96–3
			O–Z COMPANY	HBL–3121
		4"	UNION INSULATING	96–4
			O–Z COMPANY	HBL–4121
		5"	UNION INSULATING	96–5
			O–Z COMPANY	HBL–5121
		6"	UNION INSULATING	96–6
			O–Z COMPANY	HBL–6121
		FOR SUBSTITUTE, SEE NOTE 11		
3A	CONDUIT BOTTOM GROUNDING BUSHING	2"	O–Z COMPANY	RBL–2021
		3"	O–Z COMPANY	RBL–3121
		4"	O–Z COMPANY	RBL–4121
		5"	O–Z COMPANY	RBL–5121
		6"	O–Z COMPANY	RBL–6121
4	CONDUIT GROUND CLAMP	FOR SUBSTITUTE, SEE NOTE 11		
		2"	O–Z COMPANY	CG 2022
			T & B COMPANY	3903
		3"	O–Z COMPANY	CG 3122
			T & B COMPANY	3904
		4"	O–Z COMPANY	CG 4122
			T & B COMPANY	3905
		5"	O–Z COMPANY	CG 5122
			T & B COMPANY	3905
		6"	O–Z COMPANY	CG 6122
			T & B COMPANY	3906
5	GROUND ROD CLAMP	DIA: 5/8" — WIRE SIZE: NO. 4 TO 2/0	ANDERSON ELEC. HUBBARD JOSLYN	GC 103 –01 6540 J8492AB
		DIA: 3/4" — WIRE SIZE: NO. 4 TO 2/0	LINE MATERIAL ELEC. WEAVER MATERIAL ELEC	WB 3/4 H WB 3/4 H
6	GROUND ROD	DIA: 5/8" — LENGTH: 8'–0"	BLACKBURN HUBBARD LINE MATERIAL JOSLYN	6258 9438 119952 J8338
		DIA: 3/4" — LENGTH: 12'–0"	HUBBARD LINE MATERIAL JOSLYN	9452 119961 J8352
7	STANDARD BARE COPPER WIRE	NO. 4 AWG MIN	–	–

APPROVED 3/1994

ENGR. MANAGER

ENGINEERING STANDARD

INSTALLATION OF STEEL RISER CONDUIT ON WOOD POLES

REV	DATE	DESCRIPTION	APPR
2	10–08	REVISED SECTION A–A	TT
1	5–67	REVISED MATL. LIST & ADDED SH 2	

ENGR	PEV	
DRAWN	UES/MJ	MJ
CHECKED	PEV	

CITY OF PALO ALTO
CALIFORNIA

NTS	DT–SS–U–1001	2 OF 2
SCALE	STANDARD NO.	SHEET NO.

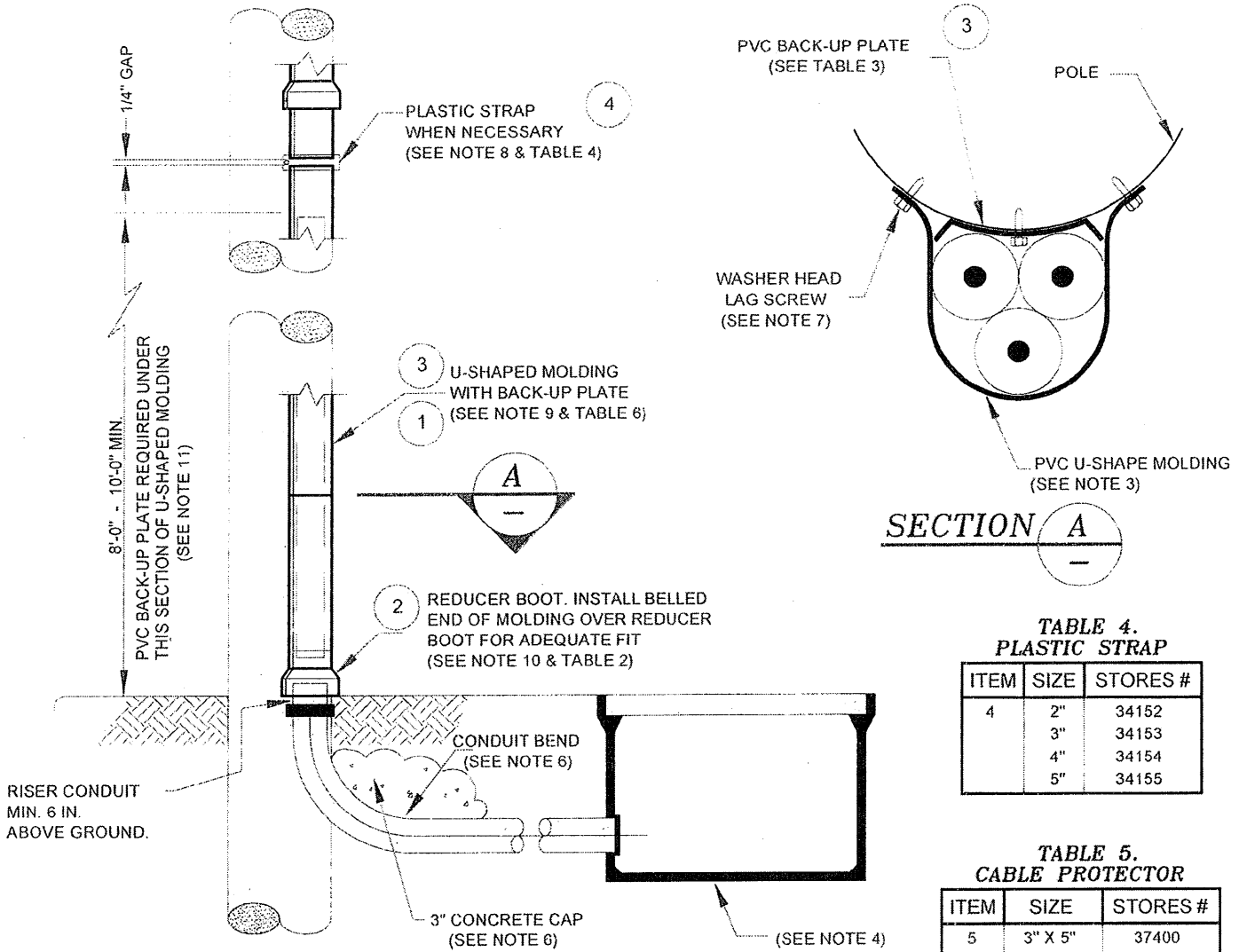


TABLE 4.
PLASTIC STRAP

ITEM	SIZE	STORES #
4	2"	34152
	3"	34153
	4"	34154
	5"	34155

TABLE 5.
CABLE PROTECTOR

ITEM	SIZE	STORES #
5	3" X 5"	37400
	2" X 2-1/2"	37401

TABLE 1.
U-SHAPED MOLDING

ITEM	SIZE	TYPE	STORES #
1	2"	SCH. 80	34122
	3"	SCH. 80	34123
	4"	SCH. 40	34124
	5"	SCH. 40	34125

TABLE 2.
REDUCER BOOT

ITEM	SIZE	STORES #
2	2" X 3"	34132
	4" X 2"	34133
	4" X 3"	34134
	5" X 4"	34135

TABLE 3.
BACKING PLATE

ITEM	SIZE	STORES #
3	2"	34142
	3"	34143
	4"	34144
	5"	34145

TABLE 6.
RECOMMENDED U-SHAPED MOLDING SIZES

VOLTAGE	CABLE SIZE AWG OR KCMIL	MOLDING SIZE
15 KV	#2 (2-3 COND.)	3"
	2/O (3 COND.)	4"
	350 (3 COND.)	4"
	500 (3 COND.)	5"
	750 (3 COND.)	5"
600 V	#2	2"
	1/O	2"
	4/O	2"
	350	2"
	500	3"
	750	3"

APPROVED 6/1994
Patrick E. Valath
SR. ENGINEER / MANAGER

ENGR.	J. Bujtor	JB
DRWN	M. Jamshid	MJ
CHKD.	P. Valath	PV

INSTALLATION OF PVC RISER CONDUIT ON WOOD POLES

City of Palo Alto
California
UTILITIES, ELECTRIC ENGINEERING

REV.	DATE	APPR.	DESCRIPTION
1	6/94	APPR.	DRAWING RENAMED
2	5/06	JSB	CONVERT'D TO A'CAD

MAP #	CKT #	SCALE	S.O.# / DRAWING #
XX	XX	NTS	DT-SS-U-1001A
			SHEET 1 OF 2

WOOD POLE RISER INSTALLATION NOTES

UNLESS OTHERWISE SPECIFIED, THIS CONSTRUCTION STANDARD SHALL BE USED FOR ALL WOOD POLE RISER INSTALLATION.
U-SHAPED PVC MOLDING SHALL BE MANUFACTURED FROM UNPLASTICIZED POLYVINYL CHLORIDE COMPOUND AND SHALL MEET THE REQUIREMENTS OF NEMA PUBLICATION PH 41-1986 AND NEMA PUBLICATION TC2-1983 AS APPROPRIATE.

FOR RISERS IN EXCESS OF 750 VOLTS G.O. 95 RULE 54.6E 1988 SPECIFIES THE USE OF A MOLDING THAT MEETS THE IMPACT TEST REQUIREMENTS OF EPC-80-PVC AND REQUIRING AN ADDITIONAL BACKUP PLATE OF PVC MATERIAL.
THE STANDARD SIZES USED SHALL BE 2", 3", 4", AND 5". TO COMPLY WITH THE IMPACT TEST REQUIREMENTS, 2" AND 3" SHALL BE SCHEDULE 80 AND THE 4" AND 5" SHALL BE SCHEDULE 40.

NOTES:

1. AS A MATTER OF CONVENIENCE THESE REQUIREMENTS SHALL APPLY TO PRIMARY AND SECONDARY RISER INSTALLATIONS ON WOOD POLES INCLUDING STREET LIGHT AND COMMUNICATIONS LINES.
2. THE RISER CONDUIT SHALL BE LOCATED IN A QUADRANT ON THE POLE AS DIRECTED BY THE ELECTRIC UTILITY.
3. THE TOP OF THE RISER SHALL HAVE A NYLON CABLE PROTECTOR.
4. UNLESS OTHERWISE APPROVED BY THE ELECTRIC UTILITY A NINETY DEGREE ELBOW AND A PRECAST BOX SIZE AS SPECIFIED SHALL BE INSTALLED AT THE BASE OF THE RISER POLE. REFER TO THE APPLICABLE LAYOUT DRAWING FOR THE EXACT LOCATION OF THE BOX.
5. ANY MATERIALS SUBSTITUTED MUST BE APPROVED BY THE ELECTRIC UTILITY PRIOR TO INSTALLATION.
6. UNLESS OTHERWISE SPECIFIED, THE BEND OR SWEEP USED AT THE BOTTOM OF THE RISER MOLDING FACTORY SHALL BE OF PVC SCHEDULE 40 MATERIAL AND SHALL BE CAPPED WITH CONCRETE (3" THICKNESS) ALONG THE INSIDE PORTION OF THE BEND.
   THE CONCRETE SHALL BE COLORED RED BY THE ADDITION OF MILLER'S RED OXIDE PIGMENT TO THE CONCRETE MIX.
   COLOR WILL BE THE SATISFACTION OF THE UTILITIES UNDERGROUND INSPECTOR.
7. THE U-SHAPED MOLDING SHALL BE ATTACHED TO THE POLE WITH 1/4" X 2" NEOPRENE WASHER HEAD LAG SCREWS AT 18" INTERVALS BELOW THE 8 FT. LEVEL AND AT 36" INTERVALS ABOVE THE 8 FT. LEVEL. THESE SCREWS SHOULD BE INSTALLED SNUG AGAINST THE MOLDING BUT NOT DRIVEN TIGHT IN ORDER TO PERMIT EXPANSION OF THE MOLDING DUE TO TEMPERATURE CHANGES.
8. IT IS ACCEPTABLE TO INSTALL A PLASTIC STRAP WHEN IT IS NECESSARY TO JOIN TWO SECTIONS OF MOLDING WITH PLAIN ENDS. A 1/4" SPACING MUST BE PROVIDED BETWEEN THE ENDS TO ALLOW FOR THERMAL EXPANSION.
9. ONE TEN FOOT SECTION OF PVC BACKUP PLATE SHALL BE FASTENED TO THE POLE AT THE LOWER SECTION OF THE RISER WITH 6d GALVANIZED NAILS.
10. USE REDUCER BOOTS TO JOIN DIFFERENT SIZED U-SHAPED MOLDINGS TOGETHER AND TO JOIN DIFFERENT SIZED U-SHAPED MOLDINGS TO CONDUIT BENDS. TWO REDUCER BOOTS MAY BE USED IN SERIES WHERE A DOUBLE REDUCTION IS REQUIRED.

APPROVED 6/1994
Patrick E. Valath
SR. ENGINEER / MANAGER

ENGR.	J. Bujtor	JB
DRWN	M. Jamshid	MJ
CHKD.	P. Valath	PV

INSTALLATION OF PVC RISER CONDUIT ON WOOD POLES

City of Palo Alto
California
UTILITIES, ELECTRIC ENGINEERING

REV.	DATE	APPR.	DESCRIPTION
1	6/94	APPR.	DRAWING RENAMED
2	5/06	JSB	CONVERT'D TO A'CAD

MAP #	CKT #	SCALE	S.O.# / DRAWING #
XX	XX	NTS	DT-SS-U-1001A
			SHEET 2 OF 2

THIS DRAWING PROVIDES INFORMATION ON THE INSTALLATION REQUIREMENTS, BOX TYPES, AND BOX SIZES ALLOWED BY THE CITY OF PALO ALTO UTILITIES (CPAU) FOR UNDERGROUND ELECTRIC UTILITY APPLICATION.

Box Manufacturer and Catalog Number			Inside Dimensions (Inches)									
Quazite Corporation	Christy Concrete Products, Inc.	Utility Vault Company	Length (A)	Width (B)	Depth (C)	Extension (D)	Voltage	Maximum Wire Size (AWG or kcmil)	Maximum # of Spliced or Looped Cables in Box	Maximum Conduit Size (Inches)	Maximum # of Conduits	Application
—	N-9 ■	—	17	10	12	10	Secondary	# 2	8 ♦	2	4	Traffic Signal, Street Light, or Communications ONLY
PG1324	N-30 ▲	—	24	13	18	8	Secondary	# 2	12 ♦	2	3	Pull box for secondary cables
PG1730	N-36 ▲	—	30	17	18	8	Secondary	4/0	12	2	3	Pull box for secondary cables
PG2436	N-40 ▲	—	36	24	18	8	Secondary	350	16 (2)	4	4	Pull box for secondary cables
PG3048	N-48 ▲	—	48	30	18	8	Secondary	500	24 (1)	4	6 ♦	Pull box for secondary cables
—	—	444-LA-CPA	42 (3' 6")	42 (3' 6")	42 (3' 6")		Secondary	750	24 (2)	4	6 ♦	REFERENCE ONLY — NOT APPROVED FOR NEW INSTALLATIONS – 200 A primary cables, single phase only – Under single phase transformer pads
							Primary	1/0	12	4	6	
—	—	CPA-3536	60 (5' 0")	36 (3' 0")	42 (3' 6")	6, 12	Secondary	750	24 (3)	4	6 ♦	– 200 A primary cables – 6 - 200 A Splices – Submersible Load Break – Pull box for 600 A primary cables
							Primary	350	12 (2)	4	4	
—	—	644-LA-CPA	66 (5' 6")	42 (3' 6")	39 (3' 3")	-----	Secondary	750	32 (2)	4	8 ●	– NOT Allowed in Full Traffic Applications – 2 sets - 200A or 600A splices – 4 way 200A Padmount Load Break Junction
							Primary	350	16 (3)	5	6	
—	—	577-LA-CPA	78 (6' 6")	48 (4' 0")	75 (6' 3")	-----	Secondary	750	32 (4)	4	12	– 1 Ph Submersible Transformer ≤ 100 kVA
							Primary	750	16 (2)	5	6	
—	—	CPA-4686	102 (8' 6")	54 (4' 6")	84 (7' 0")	6, 12	Secondary	750	32 (4)	4	14	– 6 - 600 A primary cables – 6 - 600 A splices or connectors – 3 way 200 A switch – Submersible Transformer ≤ 150 kVA
							Primary	750	16 (2)	5	6	
—	—	38Y-510-LA-CPA	120 (10' 0")	60 (5')	84 (7' 0")	-----	Secondary	750	32	4	16	– 6 - 600 A primary cables – 6 - 600 A primary splices or connectors – 600 A Switch – Submersible Transformer ≤ 300 kVA
							Primary	750	16 (3)	5	6	
—	—	38Y-612-LA-CPA	144 (12' 0")	72 (6' 0")	84 (7' 0")	-----	Secondary	750	32	4	16	– 6 - 600 A primary cables – 6 - 600 A primary splices or connectors – 600 A Switch – Submersible Transformer ≤ 750 kVA – Padmount Switch
							Primary	750	16 (3)	5	6	

LEGEND:

■ For Traffic Signal, Streetlight, or Communications ONLY

▲ For Use in Substations ONLY

♦ No more than 4 of maximum size

● No more than 6 of maximum size

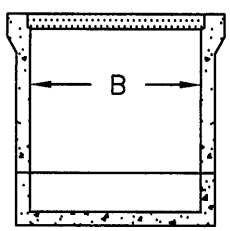
(1) No more than 1-set of maximum size (set = 4 conductors)

(2) No more than 2-sets of maximum size (set = 4 conductors)

(3) No more than 3-sets of maximum size (set = 4 conductors)

(4) No more than 4-sets of maximum size (set = 4 conductors)

BOX DIMENSIONS



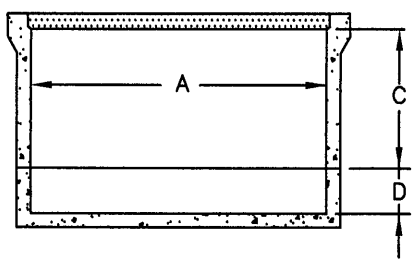


TABLE 1 – BOX TYPE, SIZE, & APPLICATION

REV	DATE	DESCRIPTION	APPR
6	1-09	REVISED	TT
5	3-95	REVISED	PV/MJ
4	7-89	REVISED	DH
3	5-89	REVISED	TL
2	2-86	REVISED	PV
1	4-87	REVISED & REDRAWN	EJM

APPROVED 3-1994

ENGR. MANAGER

ENGR	PEV	
DRAWN	UES/MJ	MJ
CHECKED	PEV	

ENGINEERING STANDARD

UNDERGROUND JUNCTION BOXES

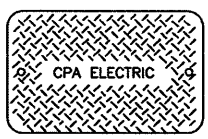
CITY OF PALO ALTO
CALIFORNIA

SCALE	STANDARD NO.	SHEET NO.
NTS	DT-SS-U-1002	1 OF 3

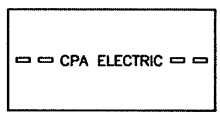
TABLE 2 – COVER TYPES BY APPLICATION

Manufacturer and Catalog Number		
Box	Application/Cover Type	Catalog Number
Utility Vault Company		
444-LA-CPA	Full Traffic	444 Roof Slab with inside-outside frame assembly and one (1) 30" manhole frame and cover
	Transformer (1-phase)	Pad size as required by transformer
644-LA-CPA	Non-Traffic, Submersible Load Break Junction	Aluminum Adjustable Frame with torsion assist slip resistant covers (3'6" x 5'6")
	Full Traffic - ONLY allowed with CPAU Approval	644 Roof Slab with inside-outside frame assembly and one (1) 30" manhole frame and cover
	Load Break Cabinet (60" wide)	Load Break Pad (48" x 72" x 8")
	Load Break Cabinet (44" wide)	Load Break Pad Type 2, with A-1252 Cover (48" x 72" x 8")
577-LA-CPA	Full Traffic	577 Roof Slab with inside-outside frame assembly and two (2) 30" manhole frames and covers
	Non-Traffic	Incidental Quick Release Slip Resistant Aluminum Plates & Adjustable Frame Assembly
	Submersible Transformer	Precast Roof Slab - Tapered Lift Out Cover with Two (2) 30" Grated Cast Iron Covers
CPA-3536	Full Traffic	Full Traffic Rectangular Splice Cover/Frame Assembly with Rectangular Covers
	Non-Traffic	CPA Adjustable Frame with Torsion Assist Cover Assembly
CPA-4686	Non-Traffic	Incidental Quick Release Slip Resistant Aluminum Plates & Adjustable Frame Assembly
	Full Traffic	Full Traffic Cover/Frame Assembly with Three (3) Rectangular Covers
	600A Switch, 600 A Splices or Separable Connectors - TRAFFIC	Full Traffic Cover/Frame Assembly with Three (3) Rectangular Covers
	600A Switch, 600 A Splices or Separable Connectors - NON-TRAFFIC	Incidental Quick Release Slip Resistant Aluminum Plates & Adjustable Frame Assembly
	Submersible Transformer	CPA Heavy FVT Frame (5") & CPA 24"x29" Grated Cast Iron Cover
38Y-510-LA-CPA	Submersible Switch	Precast Roof Slab - Tapered Lift Out Cover with Three (3) 30" SoCover Cast Iron Covers
	Submersible Transformer	Precast Roof Slab - Tapered Lift Out Cover with Three (3) 30" Grated Cast Iron Covers
	Switch (Type A)	711-CPA Switch Pad Roof Slab Type A
	Switch (Type B)	711-CPA Switch Pad Roof Slab Type B
	Switch (Type C)	711-CPA Switch Pad Roof Slab Type C
38Y-612-LA-CPA	Switch	Precast Roof Slab - Tapered Lift Out Cover with Three (3) 30" SoCover Cast Iron Covers
	Three Phase Transformer	Precast Roof Slab - Tapered Lift Out Cover with Three (3) 30" Grated Cast Iron Covers

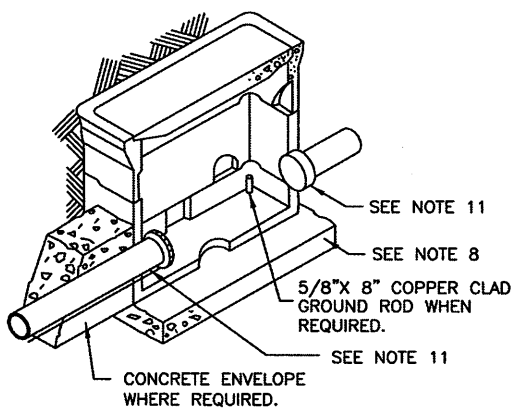
Manufacturer and Catalog Number		
Box	Cover Type	Catalog Number
Quazite Corporation		
PG1324	Heavy Duty w/ 2 Bolts	PG1324HA00
PG1730	Heavy Duty w/ 2 Bolts	PG1730HA00
PG2436	Heavy Duty w/ 2 Bolts	PG2436HA00
PG3048	Heavy Duty w/ 2 Bolts	PG3048HA00
Christy Concrete Products, Inc.		
N-9	Non-Traffic - Concrete	N9T
	Traffic - Steel	N9-61J
N-30	Non-Traffic - Concrete	N30T
	Traffic - Steel	N30-61J
N-36	Non-Traffic - Concrete	N36T
	Traffic - Steel	N36-61J
N-40	Non-Traffic - Concrete	N40T
	Traffic - Steel	N40-61J
N-48	Non-Traffic - Concrete	N48T
	Traffic - Steel	N48-61J



STEEL COVER



PLAIN COVER



TYPICAL BOX/CONDUIT INSTALLATION

REV	DATE	DESCRIPTION	APPR
5	1–09	REVISED	TT
4	3–95	REVISED	PV/MJ
3	7–89	REVISED	DH
2	4–86	REVISED	PV
1	4–78	REVISED & REDRAWN	EJM

APPROVED 3–1994

ENGR. MANAGER

ENGINEERING STANDARD

UNDERGROUND JUNCTION BOXES

ENGR	PEV	
DRAWN	UES/MJ	MJ
CHECKED	PEV	

CITY OF PALO ALTO
CALIFORNIA

NTS	DT-SS-U-1002	2 OF 3
SCALE	STANDARD NO.	SHEET NO.

NOTES

1. UNUSUAL FIELD CONDITIONS MAY DICTATE BOX DIMENSIONS FOR DESIGNS DIFFERENT FROM THOSE SPECIFIED IN THIS DRAWING. THE DETAILS FOR INSTALLATIONS VARYING FROM THESE SPECIFICATIONS WILL BE FURNISHED BY ELECTRIC UTILITY.
2. ALL BOXES SHALL BE COMPLETE WITH BODY, COVER, SOLID BASE, AND NECESSARY EXTENSIONS.
3. ALL NON-CONCRETE ENCLOSURES (BODY, BASE, COVER, AND EXTENSIONS WHERE REQUIRED) SHALL MEET TIER 15 REQUIREMENTS AS SPECIFIED IN SCTE 77 2007 (OR LATEST VERSION) AND PER CPAU SPECIFICATION SS-01-09 - SPECIFICATION FOR NON-CONCRETE ENCLOSURES .
4. THE NUMBER OF EXTENSIONS REQUIRED IS DEPENDENT ON THE DEPTH OF THE CONDUIT. THE CONDUIT SHALL ENTER THE BOX PARALLEL WITH THE COVER.
5. ALL NON-ROUND COVERS ON ALL BOXES MUST BE SECURED BY RECESSED HOLD-DOWN BOLTS.
6. ALL BOXES 42"X42" AND LARGER SHALL HAVE COVERS APPROVED BY CPAU.
7. THE WORDS "CPA ELECTRIC", "CPA SL", "CPA TS", OR "CPA COMM" SHALL BE CAST OR INSCRIBED IN THE SURFACE OF ALL COVERS, 30"X48" AND SMALLER DEPENDING ON APPLICATION. LARGER BOXES SHALL HAVE "CPA-HIGH VOLTAGE" INSCRIBED ON THE FRAME.
8. THE BASE OF EACH BOX SHALL BE PLACED ON A 6" BEDDING OF 3/4" CLASS 2 AGGREGATE ON UNDISTURBED OR 95% COMPACTED EARTH. THE BOXES SHALL BE INSTALLED SO THE COVERS ARE LEVEL WITH THE ADJACENT CURB, DRIVEWAY, OR SIDEWALK GRADE.
9. FOR 30"X48" OR SMALLER BOXES, AN ALLOWANCE SHALL BE MADE FOR THE THICKNESS OF THE COVER TO ENSURE THE COVER IS FLUSH WITH THE FINISH GRADE. WHEN NO FINISH GRADE IS ESTABLISHED, BOX COVERS SHALL BE 2" ABOVE THE ADJACENT TERRAIN.
10. IT IS INTENDED THAT CONDUITS SHALL ENTER CONCRETE BOXES THROUGH THE KNOCKOUTS PROVIDED. BOX WALL MAY BE CUT OR CORE DRILLED AT OTHER LOCATIONS TO PROVIDE CONDUIT ENTRY.
11. STEEL CONDUITS SHALL EXTEND NO MORE THAN 2" INTO A BOX AND SHALL BE TERMINATED WITH GROUNDING BUSHINGS. PLASTIC CONDUITS SHALL BE TERMINATED WITH BELL ENDS, FLUSH WITH THE WALL OF THE BOX. BELL ENDS MAY NOT PROJECT INTO THE BOX. ALL CONDUIT ENTRANCES SHALL BE GROUTED.
12. USE STEEL TRAFFIC COVERS WHERE CONCRETE BOXES MUST BE LOCATED IN DRIVEWAYS OR OTHER AREAS SUBJECT TO LIGHT VEHICULAR TRAFFIC. BOXES USED IN HEAVY TRAFFIC AREAS SHALL BE DESIGNED FOR H-20-44 TRAFFIC LOADING.
13. ALL BOXES LISTED IN TABLE 1 SHALL BE SIZED FOR THE LARGEST CONDUCTOR THEY ARE EXPECTED TO CONTAIN.
14. FOR BOX INSTALLATION AT THE BASE OF A POLE RISER, SEE CPAU DWG. NUMBER DT-SS-U-1001.
15. UNLESS APPROVED BY THE UTILITY ELECTRIC ENGINEER, THE DEPTH OF A BOX MAY NOT EXCEED ITS LENGTH.

REV	DATE	DESCRIPTION	APPR
5	1-09	REVISED	TT
4	3-95	REVISED	PV/MJ
3	7-89	REVISED	DH
2	4-86	REVISED	PV
1	4-78	REVISED & REDRAWN	EJM

APPROVED 3-1994

ENGR. MANAGER

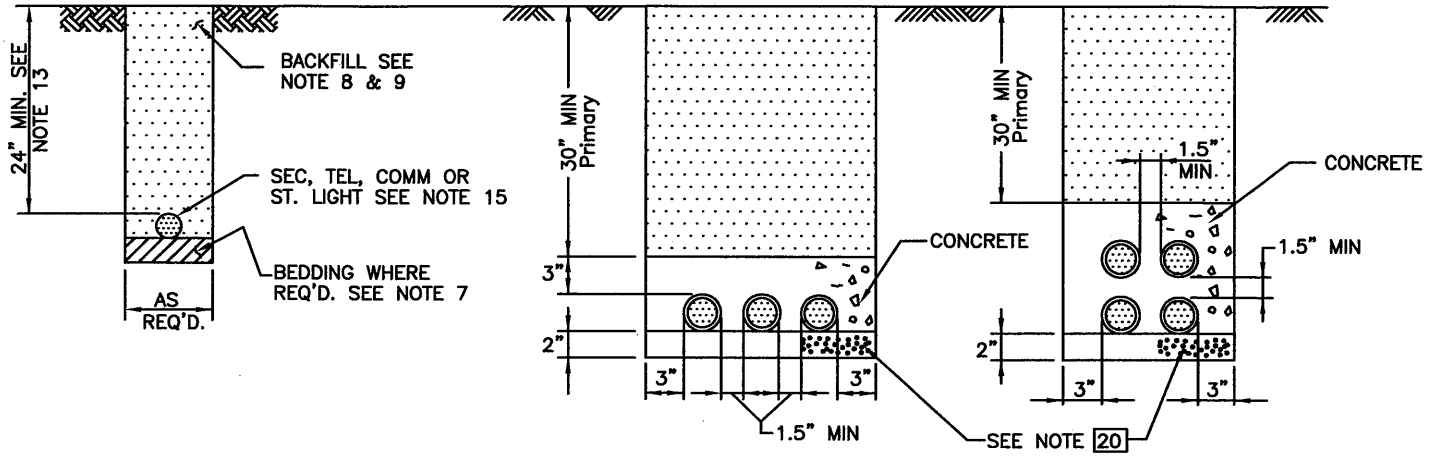
ENGINEERING STANDARD

UNDERGROUND JUNCTION BOXES

ENGR	PEV	
DRAWN	UES/MJ	MJ
CHECKED	PEV	

CITY OF PALO ALTO
CALIFORNIA

NTS	DT-SS-U-1002	3 OF 3
SCALE	STANDARD NO.	SHEET NO.



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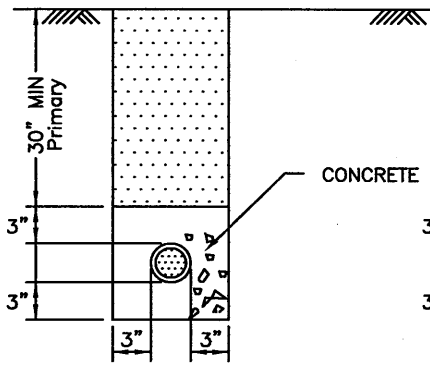
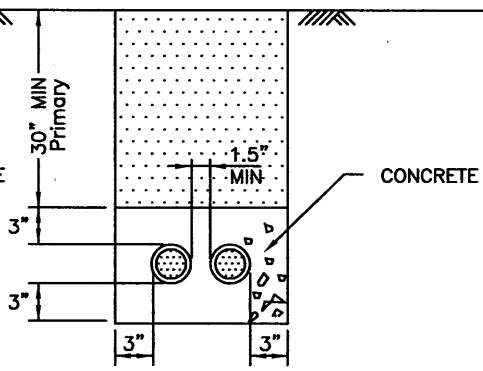


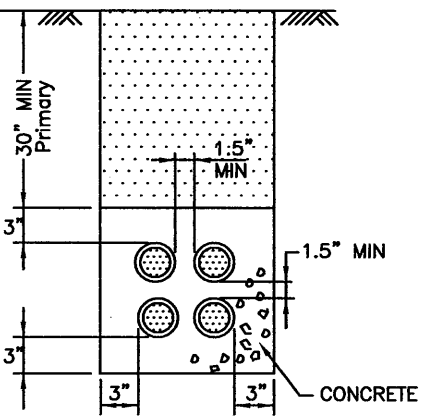
1-WAY DUCT BEAM

12" X 12" RACEWAY



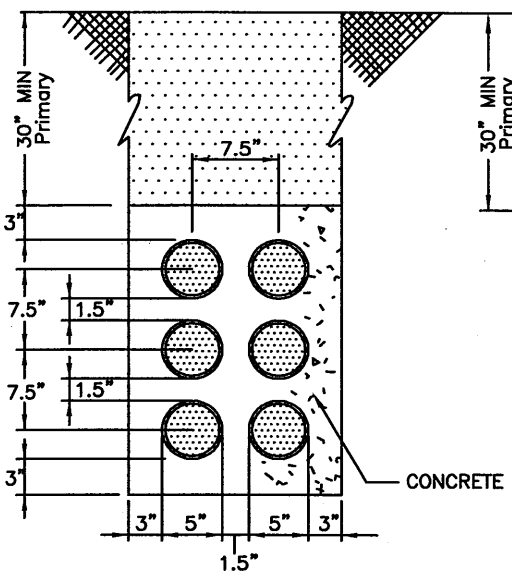
2-WAY DUCT BEAM

20" X 12" RACEWAY



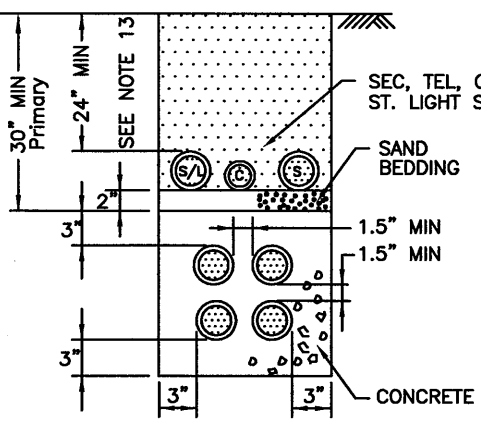
4-WAY DUCT BEAM

20" X 20" RACEWAY

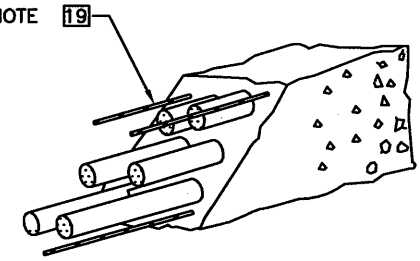


6-WAY DUCT BEAM

19 1/2" X 27" RACEWAY



TYPICAL DUCT BEAM

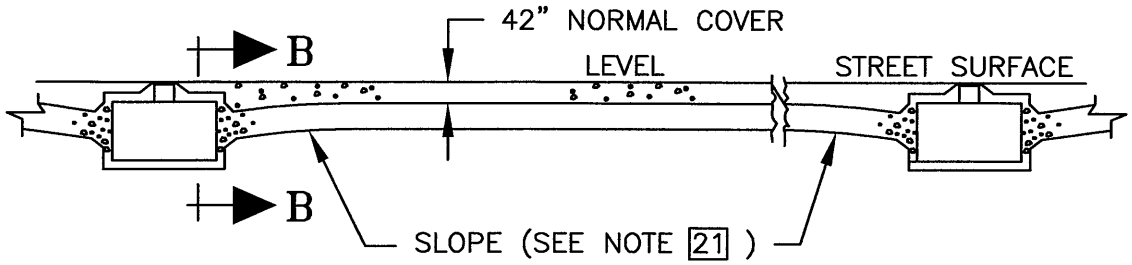


PERSPECTIVE VIEW

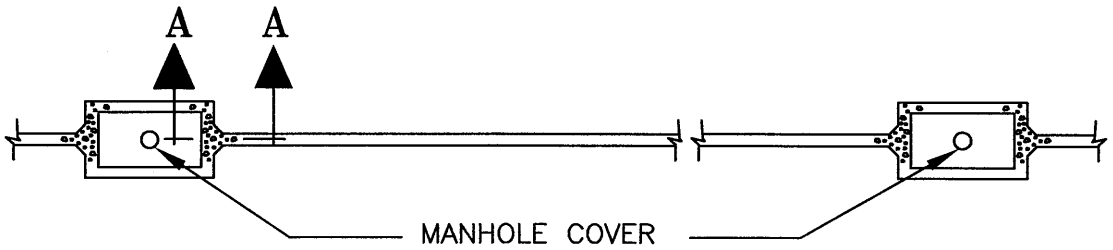
APPROVED 20	ENGINEERING STANDARD		
ENGR MANAGER	UNDERGROUND DUCT LINES		
ENGR TT	TYPICAL TRENCH SECTION DETAILS		
DRAWN MD	CITY OF PALO ALTO	NTS	DT-SS-U-1003 1 OF 4
CHECKED PV	CALIFORNIA	SCALE	STANDARD NO. SHEET NO.

Original Signed and Approved by Engineering Manager

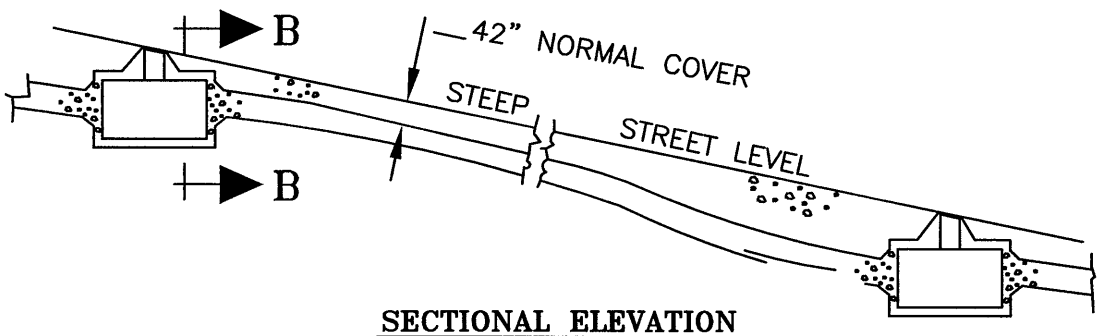
REV	DATE	DESCRIPTION	APPR
3	10/09	REVISED MIN PRIMARY COVER	TT
2	8/08	COMBINED DT-SS-U-1003 DT-PR-U-1004	TT
1	6/06	REVISED NOTES	JT



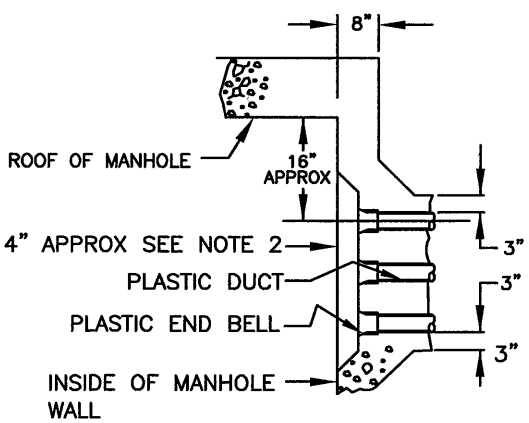
SECTIONAL ELEVATION



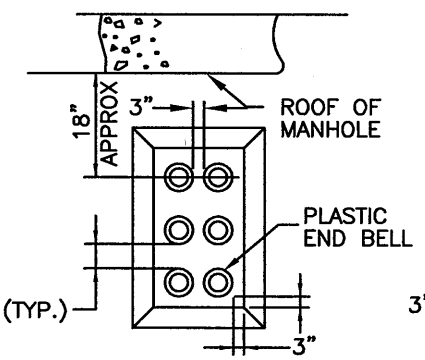
PLAN VIEW



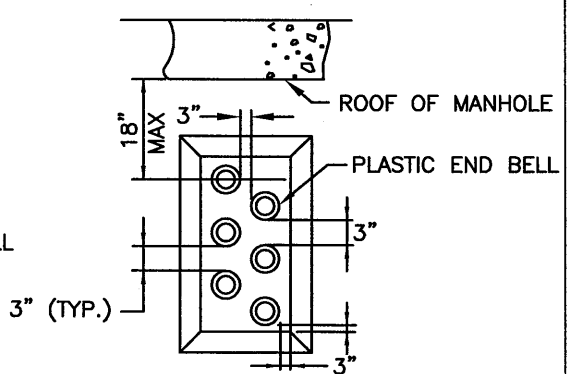
SECTIONAL ELEVATION



SECTION A–A



ALT. SECTION B–B
DUCT WINDOW



SECTION B–B
DUCT WINDOW

APPROVED 20	ENGINEERING STANDARD	4	8–08	COMBINED DT–SS–U–1003 DT–PR–U–1004	TT
ENGR. MANAGER	UNDERGROUND DUCT LINES	3	7–99	REVISED NOTES 1, 2, 5	FINCH
ENGR. TT	TYPICAL TRENCH SECTION DETAILS	2	6–90	CHANGED NOTE 2	
DRAWN MD		REV	DATE	DESCRIPTION	APPR
CHECKED PV	CITY OF PALO ALTO CALIFORNIA	NTS		DT–SS–U–1003	2 OF 4
		SCALE		STANDARD NO.	SHEET NO.

Original Signed and Approved by Engineering Manager

NOTES:

1. DIRECT BURIED PRIMARY CONDUIT IS NOT AN APPROVED CONSTRUCTION METHOD. PRIMARY CONDUITS SHALL BE CONCRETE ENCASED, UNLESS OTHERWISE APPROVED BY UTILITIES ENGINEER.

2. JOINT TRENCH WITH NATURAL GAS OR PRIVATE STREETLIGHT SYSTEMS IS NOT ALLOWED UNLESS APPROVED BY CITY OF PALO ALTO UTILITIES ELECTRIC AND WATER, GAS, WASTEWATER ENGINEERING DEPARTMENTS.

3. APPROVED CONDUIT MATERIALS:
   a. SCHEDULE 40 PVC
   b. TYPE "DB 60" (SECONDARY) OR "DB 120" (PRIMARY) PLASTIC CONDUIT
   c. HOT DIPPED GALVANIZED RIGID STEEL CONDUIT.

4. EVERY EFFORT MUST BE MADE TO OBTAIN A STRAIGHT WATER–TIGHT CONDUIT LINE TRUE TO THE CENTER LINE OF THE TRENCH.

5. SHARP TURNS MUST BE AVOIDED. THE MINIMUM ELBOW RADIUS ALLOWED SHALL BE 2' RADIUS ELBOWS FOR 2" CONDUITS, 3' RADIUS ELBOWS FOR 4" CONDUIT, 5' RADIUS ELBOWS FOR 5" CONDUIT, AND 3' RADIUS ELBOWS FOR ALL RISERS. UNLESS APPROVED BY THE PROJECT ENGINEER, FACTORY OFFSETS SHALL NOT BE USED.

6. ALL BENDS AND SWEEPS (90 DEGREES) MUST BE ENCASED IN CONCRETE (MINIMUM 3") ALONG THE INSIDE RADIUS.

7. IF THE ELECTRIC UNDERGROUND INSPECTOR DETERMINES THAT THE BOTTOM OF THE TRENCH IS ROCKY, A 2" SAND BEDDING MUST BE INSTALLED BEFORE THE CONDUIT.

8. EXCAVATED NATIVE SOIL MAY BE USED FOR GENERAL BACKFILL IN UNIMPROVED AREAS.

9. IN IMPROVED AREAS (STREETS, UNDER SIDEWALKS, ETC.) THE BACKFILL MATERIAL SHALL BE IN ACCORDANCE WITH THE CITY OF PALO ALTO STANDARD SPECIFICATIONS FOR BACKFILLING IN IMPROVED AREAS (SECTION 21).

10. ALL CONDUITS MUST BE MANDRELLED (STND. DWG DT–SS–U–1025). THIS TEST MUST BE WITNESSED BY THE ELECTRIC UNDERGROUND INSPECTOR.

11. A 3/8" POLYPROPYLENE PULL LINE (MIN. 150 LBS. TEST) MUST BE INSTALLED IN EACH CONDUIT.

12. CONDUIT SPACING SHALL BE MAINTAINED BY SPACERS, APPROVED BY THE CITY OF PALO ALTO, INSTALLED NO MORE THAN 7 FEET APART. CONDUITS MUST BE SECURELY BOUND TO THE SPACERS.

13. MINIMUM COVER FOR DIRECT BURIED CONDUIT:

a.	SECONDARY (NON TRAFFIC)	24"
b.	COMMUNICATION (NON TRAFFIC)	24"
c.	SECONDARY (TRAFFIC)	30"
d.	COMMUNICATION (TRAFFIC)	30"

14. MINIMUM CLEARANCE OF ELECTRIC LINES FROM OTHER UTILITY LINES:

a.	VERTICAL CLEARANCE FROM CROSSING UTILITY LINES	12"
b.	HORIZONTAL CLEARANCE FROM NATURAL GAS LINES	24"
c.	HORIZONTAL CLEARANCE FROM WATER/WASTEWATER LINES	48"

15. HORIZONTAL SPACING BETWEEN JOINTLY INSTALLED SECONDARY, COMMUNICATION, TELEPHONE, AND STREETLIGHTING CABLES OR CONDUIT MAY BE RANDOM UNLESS OTHERWISE SPECIFIED.

16. THE CONCRETE SHALL BE READY–MIXED, CLASS B PORTLAND CEMENT CONCRETE, CONTAINING 3 SACKS OF CEMENT PER CUBIC YARD. THE CONCRETE SHALL BE COLORED RED BY THE ADDITION OF RED OXIDE PIGMENT TO THE CONCRETE MIX. COLOR WILL BE TO THE SATISFACTION OF THE ELECTRIC UNDERGROUND INSPECTOR.

APPROVED ____ 20	ENGINEERING STANDARD	7	10/09	ADDED NOTE 14	TT
Original Signed and Approved by Engineering Manager	UNDERGROUND DUCT LINES	6	5–09	COMBINED DT–SS–U–1003 DT–PR–U–1004	TT
ENGR. MANAGER	TYPICAL OPEN CUT TRENCH SECTION DETAILS	5	6–99	MODIFIED NOTES	JT
		REV	DATE	DESCRIPTION	APPR
DSGN TT	CITY OF PALO ALTO	NTS		DT–SS–U–1003	3 OF 4
DRAWN MD	CALIFORNIA	SCALE		STANDARD NO.	SHEET NO.
CHECKED PV					

NOTES:

17. DURING CONCRETING, THE DUCTS SHALL BE HELD SECURELY IN PLACE WITH STAKES, PLASTIC SPACERS, ETC. WOODEN TIE–DOWN STAKES SHALL BE REMOVED IMMEDIATELY AFTER THE CONCRETE IS POURED.

18. BENDS IN DUCT LINES SHALL BE OF MAXIMUM PRACTICAL RADIUS.

19. WHEN A BREAK IS MADE IN THE POURING OF THE DUCT BEAM, A 3–FOOT LONG 5/8" DIA STL RE–BAR SHALL BE INSERTED HORIZONTALLY AT EACH CORNER OF THE DUCT BEAM, LEAVING 18" TO TIE INTO THE SUBSEQUENT POUR.

20. THE SEMI–ENCASED CONSTRUCTION IS A RESTRICTED INSTALLATION AND USED ONLY WITH THE ENGINEER'S APPROVAL. IF THE BOTTOM OF THE TRENCH IS ROCKY, USE SAND BACKFILL AND TAMP TO A SMOOTH BED WITH 95% COMPACTION.

21. SLOPE TO BE 3" IN 100 FT, IF POSSIBLE OR 1" IN 100 FT MIN. ON LEVEL GROUND, SLOPE DUCT LINE FROM CENTER TO EACH MANHOLE.

22. VERTICAL STAGGERING OF DUCT IN THE VAULT WINDOW, SHOWN IN SECTION B–B, ON SHEET 2, IS PREFERRED.

23. HORIZONTAL DIRECTIONAL BORING IS ALLOWED FOR INSTALLATION OF SECONDARY AND PRIMARY CONDUITS ONLY WHEN APPROVED BY UTILITY ELECTRIC ENGINEER.

24. DIRECTIONAL BORING WILL NOT BE ALLOWED IF IN THE OPINION OF UTILITY ENGINEERING OR THE ELECTRIC UNDERGROUND INSPECTOR, THE EXISTING FACILITIES OR OTHER CONFLICTS CREATE NAVIGATIONAL PROBLEMS.

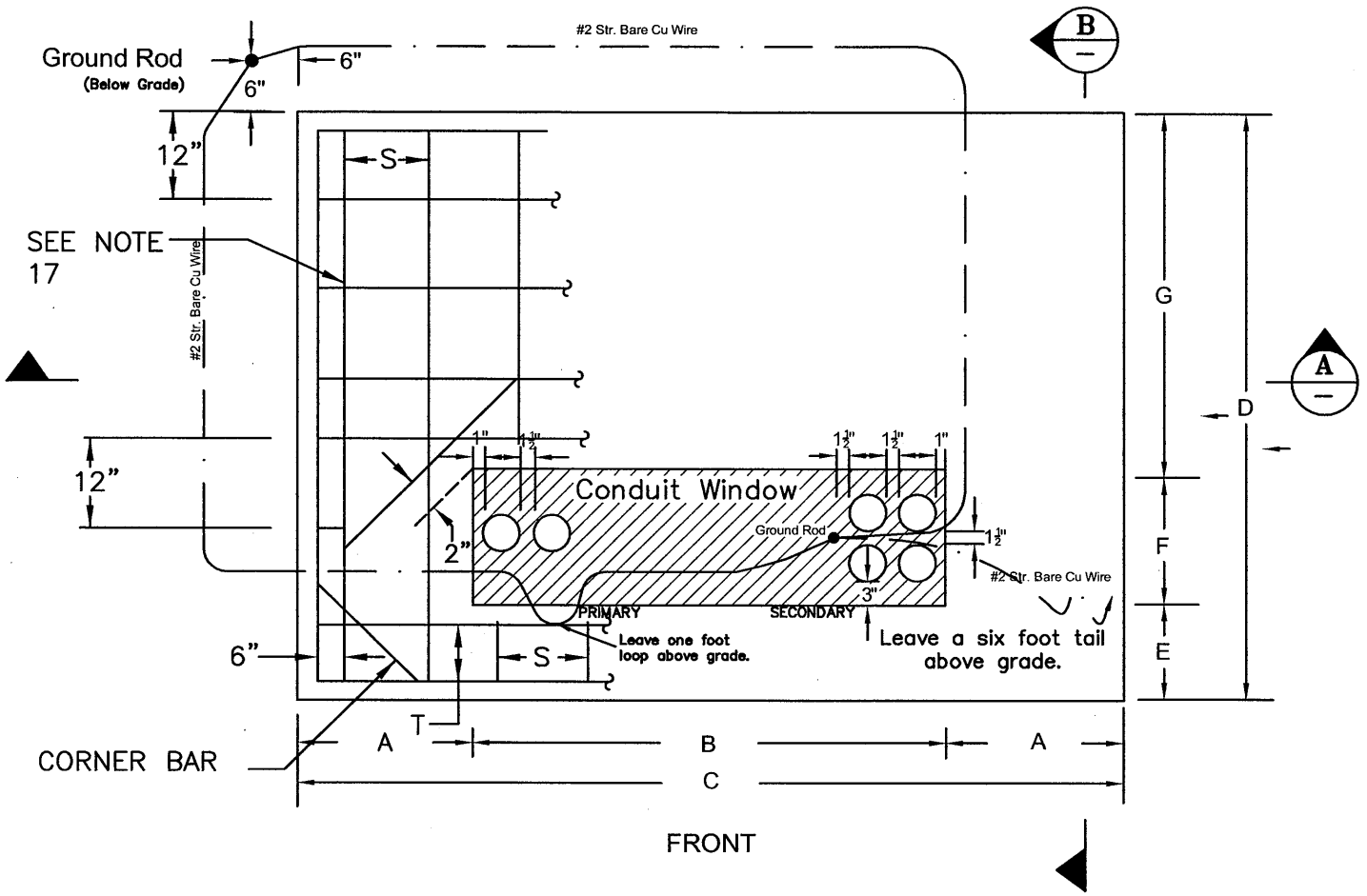
25. ALL UTILITY COVER AND SEPARATION REQUIREMENTS MUST BE MET FOR THE ENTIRE LENGTH OF THE BORE RUN. SEE ITEM #13, 45" MINIMUM COVER FOR PRIMARY CONDUIT. UTILITY EASEMENTS MUST BE HONORED.

26. POTHOLING MUST BE DONE AT KEY LOCATIONS, AS PER THE INSTRUCTIONS OF THE ELECTRIC UNDERGROUND INSPECTOR, PRIOR TO COMMENCING HORIZONTAL DIRECTIONAL BORING.

27. A THOROUGH INVESTIGATION SHALL BE PERFORMED TO IDENTIFY KNOWN UTILITY SYSTEMS PARALLELING OR CROSSING THE PROPOSED BORE ROUTE.

APPROVED____ 20	ENGINEERING STANDARD	6	6–08	COMBINED DT–SS–U–1003 DT–PR–U–1004		TT
Original Signed and Approved by Engineering Manager	UNDERGROUND DUCT LINES	5	6–09	MODIFIED NOTES		JT
ENGR. MANAGER	TYPICAL TRENCH SECTION DETAILS	4	7–99	MODIFIED NOTES		FINCH
		REV	DATE	DESCRIPTION		APPR
ENGR. TT	CITY OF PALO ALTO	NTS		DT–SS–U–1003		4 OF 4
DRAWN MD	CALIFORNIA	SCALE		STANDARD NO.		SHEET NO.
CHECKED PV						

PAD & REINFORCING BAR DIMENSIONS



TRANSFORMER		*PAD DIMENSIONS, INCHES*										
KVA	LBS(APROX)	A	B	C	D	E	F	G	H**	J**	S**	T**
* 25–75 1Ø	2500	9	30	48	48	10	15	23	12	6	12	6
75–112.5	3000–4500	20	40	80	74	15	20	39	12	6	12	10
150–500	4000–6500	20	48	88	74	15	20	39	12	6	12	10
750–1000	9000–11000	26	48	100	100	15	24	61	15	9	6	10
1500	13000	26	56	108	114	15	24	75	15	9	4	10
2000–2500	20000	29	56	114	120	15	24	81	15	9	4	10

* THIS PAD SHOULD BE USED FOR SINGLE PHASE 75 KVA TRANSFORMERS, NOT THREE PHASE 75 KVA TRANSFORMERS.

** REQUIREMENT FOR PADS POURED IN PLACE

REV	DATE	DESCRIPTION	APPR
10	2–09	GENERAL REVISION	TT
9	7–97	REVISED NOTES	MJ/TF
8	1–97	REVISED PAD DIMENSIONS	PV/TL
7	5–96	REVISED PAD DIMENSIONS	PV/TL

APPROVED 3/1994

ENGR. MANAGER

ENGINEERING STANDARD

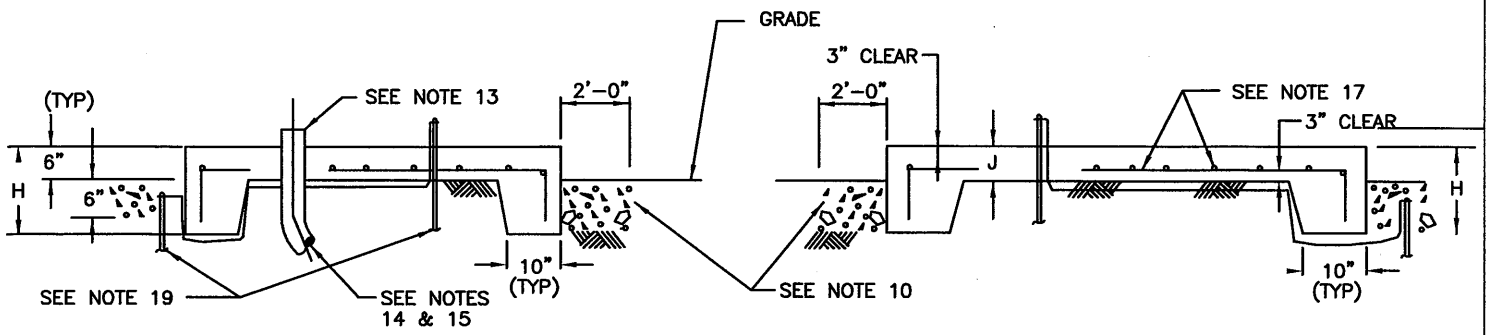
CONCRETE TRANSFORMER PAD

ENGR	PEV	
DRAWN	UES/MJ	MJ
CHECKED	PEV	

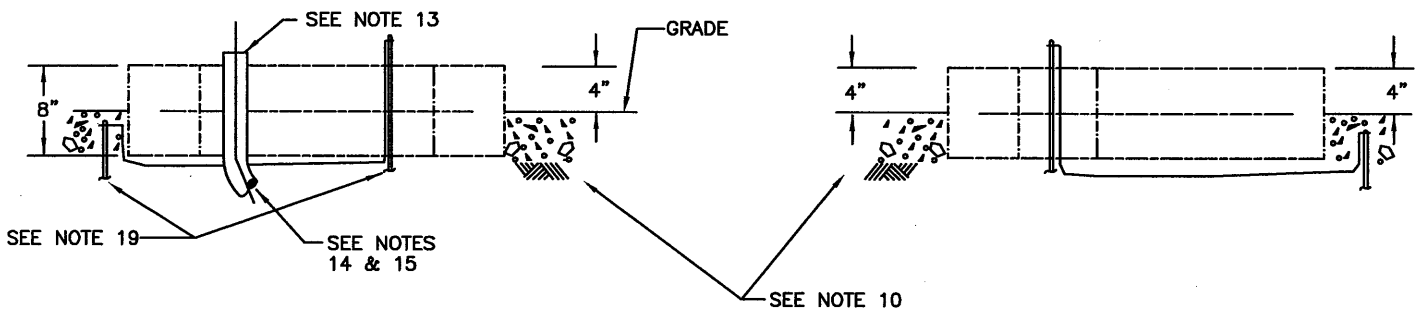
CITY OF PALO ALTO
CALIFORNIA

NTS	DT–SS–C–1005	1 OF 4
SCALE	STANDARD NO.	SHEET NO.

SECTION A — SECTION B

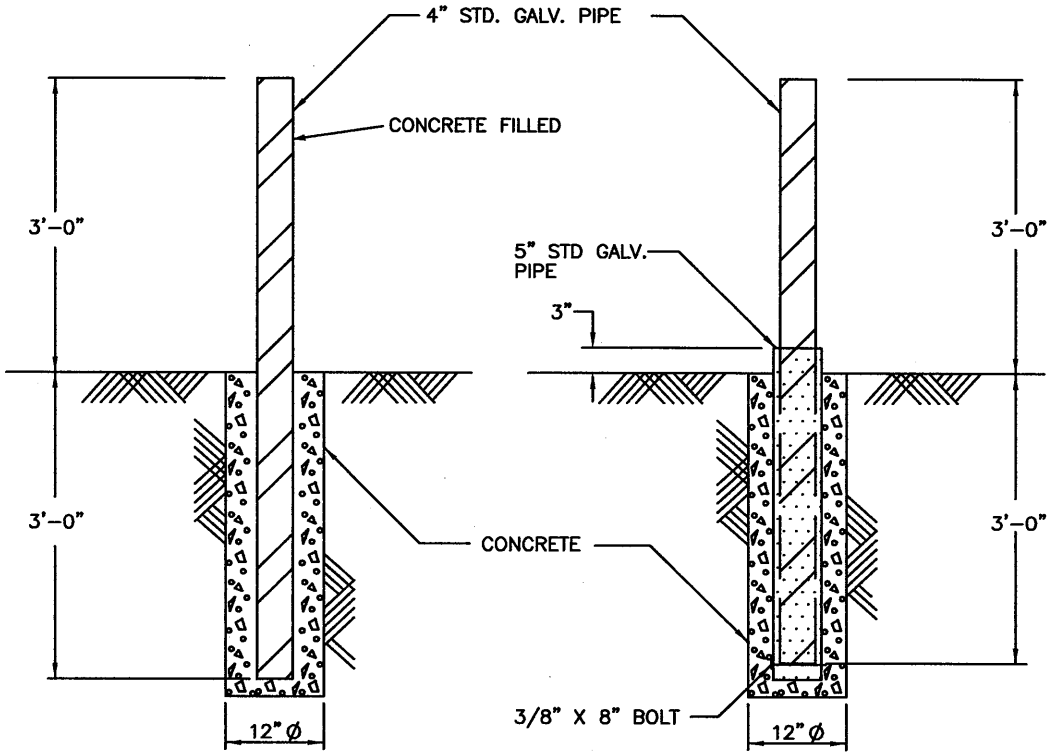


DETAILS FOR PADS POURED IN PLACE



DETAILS FOR PRECAST PADS

APPROVED 3/1994	ENGINEERING STANDARD	5	2-09	GENERAL REVISION	TT
mDBland	CONCRETE TRANSFORMER PAD	4	7-99	REVISED NOTES / ADDED NOTE 19	TF/SF
ENGR. MANAGER		3	2-88	GENERAL NOTES	
		REV	DATE	DESCRIPTION	APPR
ENGR PEV	CITY OF PALO ALTO	NTS	DT-SS-C-1005	2 OF 4
DRAWN UES/MJ MJ	CALIFORNIA	SCALE	STANDARD NO.	SHEET NO.
CHECKED PEV				



DETAIL 1
PERMANENT GUARD POST

DETAIL 2
REMOVABLE GUARD POST

USE REMOVABLE GUARD POSTS WHEN INSTALLED LESS THAN 8 FEET IN FRONT OF EQUIPMENT DOORS OR WHERE PERMANENT POSTS WOULD OBSTRUCT ACCESS FOR INSTALLATION OR MAINTENANCE.

GUARD POST INSTALLATION MUST BE COORDINATED WITH CONDUIT INSTALLATION TO AVOID CONFLICTS.

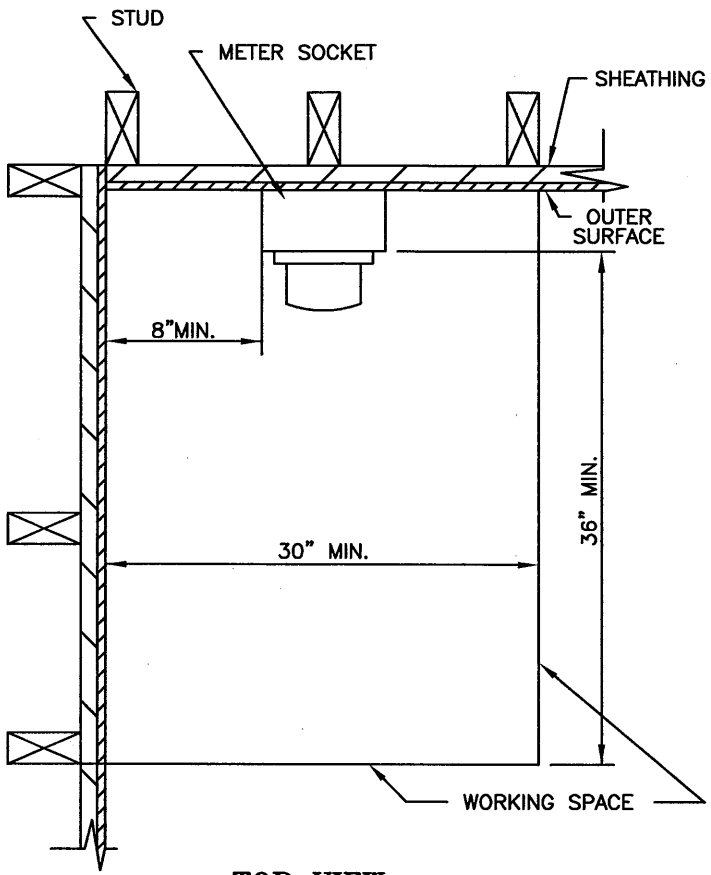
CONTACT CPAU ENGINEERING FOR GUARD POST PLACEMENT LOCATIONS DETAIL.

APPROVED 3/1994	ENGINEERING STANDARD					
mDBland	CONCRETE TRANSFORMER PAD	5	2-09	GENERAL REVISION	TP	
ENGR. MANAGER		3	2-88	GENERAL REVISION		
		REV	DATE	DESCRIPTION	APPR	
ENGR PEV	CITY OF PALO ALTO CALIFORNIA	NTS		DT-SS-C-1005	3 OF 4	
DRAWN UES/MJ MJ		SCALE		STANDARD NO.	SHEET NO.	
CHECKED PEV						

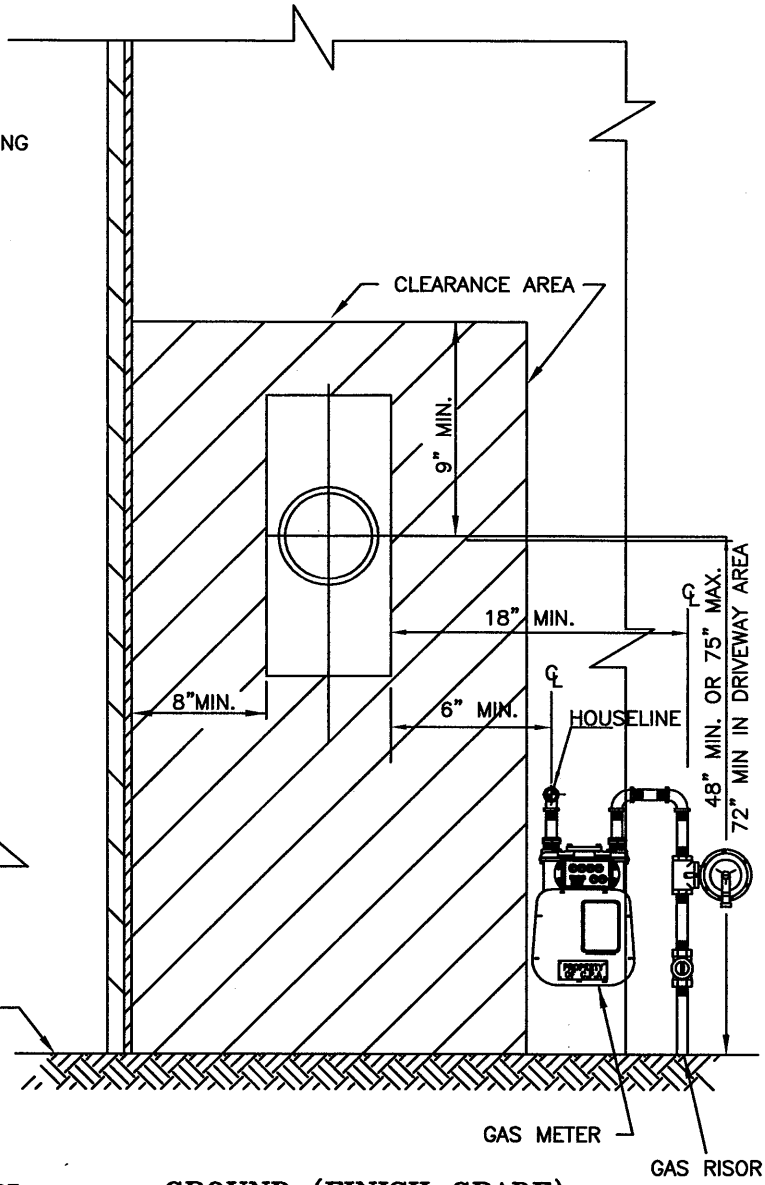
NOTES

1. DISTURBED EARTH UNDER THE PAD SHALL BE REPLACED BY SAND OR OTHER SUITABLE MATERIAL COMPACTED TO 95% OF MAXIMUM DRY DENSITY (ASTM D-1557).
2. CONCRETE IS REQUIRED BETWEEN ALL CONDUITS, LEVEL TO TOP OF THE PAD.
3. CONCRETE SHALL BE DESIGNED TO ATTAIN A STRENGTH OF 3000 PSI IN 28 DAYS.
4. AFTER PLACING, MOIST CURE CONCRETE FOR 7 DAYS BEFORE PLACING EQUIPMENT.
5. WOOD FLOAT FINISH TOP OF SLAB. ALL EDGES AND CORNERS ARE TO BE FINISHED SMOOTH.
6. EXPOSED HORIZONTAL SURFACES ARE TO BE SLOPED SLIGHTLY FOR DRAINAGE.
7. A MINIMUM OF 6 FEET SHALL BE MAINTAINED BETWEEN GROUND RODS.
8. CAP ALL CONDUITS.
9. CONTACT CPAU FOR APPROVED PRE-CAST TRANSFORMER PADS.
10. PADS NOT SECURED IN PLACE BY CONCRETE OR ASPHALT SHALL HAVE A 2' WIDE BY 6" DEEP STRIP OF 90% COMPACTED GRAVEL ALONG ALL EDGES.
11. A MINIMUM OF 3 FEET OF RADIAL CLEARANCE BETWEEN THE TRANSFORMER PAD AND ANY OTHER STRUCTURE SHALL BE PROVIDED (SEE NOTE 21).
12. IF THE TRANSFORMER IS TO BE LOCATED IN AN AREA SUBJECTED TO VEHICULAR TRAFFIC, BARRIERS SHALL BE PROVIDED IN ACCORDANCE WITH DETAIL 1 OR 2 ON SHEET 2. CONTACT CPAU ENGINEERING OR UG INSPECTOR FOR THE TYPE, NUMBER REQUIRED, AND LOCATION OF BARRIERS.
13. PLASTIC CONDUITS SHALL BE TERMINATED WITH END BELLS. GALVANIZED STEEL CONDUITS SHALL BE TERMINATED WITH GROUND BUSHINGS. ALL CONDUITS AND ENDS WILL BE TO THE FINAL GRADE OF THE PAD.
14. CONDUIT RISER BENDS SHALL HAVE A MINIMUM RADIUS OF 36".
15. PRIMARY CONDUITS SHALL BE LOCATED IN THE LEFT HALF OF THE CONDUIT OPENING. SECONDARY CONDUITS SHALL OCCUPY THE RIGHT HALF. (SEE SHEET 1)
16. CLEARANCE AROUND THE TRANSFORMER PAD SHALL BE PER CPAU STANDARD DWG. DT-CL-U-1031.
17. ALL REBAR SHALL BE A-615 GRADE 40. REBAR JOINTS SHALL BE FIRMLY AND SECURELY HELD IN POSITION BY WIRING AT INTERSECTIONS WITH NO. 16 GAUGE WIRE.
18. THE MAXIMUM NUMBER OF CONDUITS ENTERING THE SECONDARY SLOT SHALL BE FOUR. CONTACT THE ELECTRIC UTILITY PROJECT ENGINEER FOR DESIGNS REQUIRING MORE THAN FOUR SECONDARY CONDUITS.
19. GROUND ROD AND CLAMP, 5/8" X 8'. SEE CPAU STANDARD DWG. # DT-SS-U-1001 FOR MATERIALS INFORMATION.
20. TRANSFORMER ANCHORS SHALL BE INSTALLED BY CPAU ACCORDING TO MANUFACTURER'S INSTRUCTIONS. EXPANSION BOLT SHALL BE "PARABOLT" BY MOLY OR APPROVED EQUIVALENT. MINIMUM EMBEDMENT LENGTH AND EDGE DISTANCE SHALL MEET THE MANUFACTURER'S REQUIREMENTS.
21. A MINIMUM OF 8 FEET CLEARANCE SHALL BE MAINTAINED FROM THE FRONT OF THE PAD FOR OPERATIONAL NEEDS. A MINIMUM OF 3 FEET SHALL BE MAINTAINED ON UNOPERABLE SIDES AND BACK. ALL MEASUREMENTS ARE TAKEN FROM THE EDGE OF THE PAD. SEE CPAU ENGINEERING STANDARD DT-CL-U-1031.
22. UNLESS OTHERWISE APPROVED BY CPAU, A BOX SHALL BE INSTALLED NEXT TO THE TRANSFORMER PAD. PRIMARY CONDUITS ENTERING THE PAD WILL FIRST GO TO THIS BOX. REFER TO APPLICABLE LAYOUT DRAWING FOR LOCATION AND SIZE. SEE CPAU STANDARD DWG. # DT-SS-U-1002 FOR BOX INSTALLATION DETAILS.

APPROVED 3/1994 mDBland ENGR. MANAGER	ENGINEERING STANDARD CONCRETE TRANSFORMER PAD	5	2-09	GENERAL REVISION		JT
		4	7-99	REVISED NOTES / ADDED NOTE 19		TF/SF
		3	2-88	GENERAL NOTES		
		REV	DATE	DESCRIPTION		APPR
ENGR PEV / DRAWN UES/MJ MJ / CHECKED PEV	CITY OF PALO ALTO CALIFORNIA	NTS		DT-SS-C-1005		4 OF 4
		SCALE		STANDARD NO.		SHEET NO.



TOP VIEW



GROUND (FINISH GRADE)

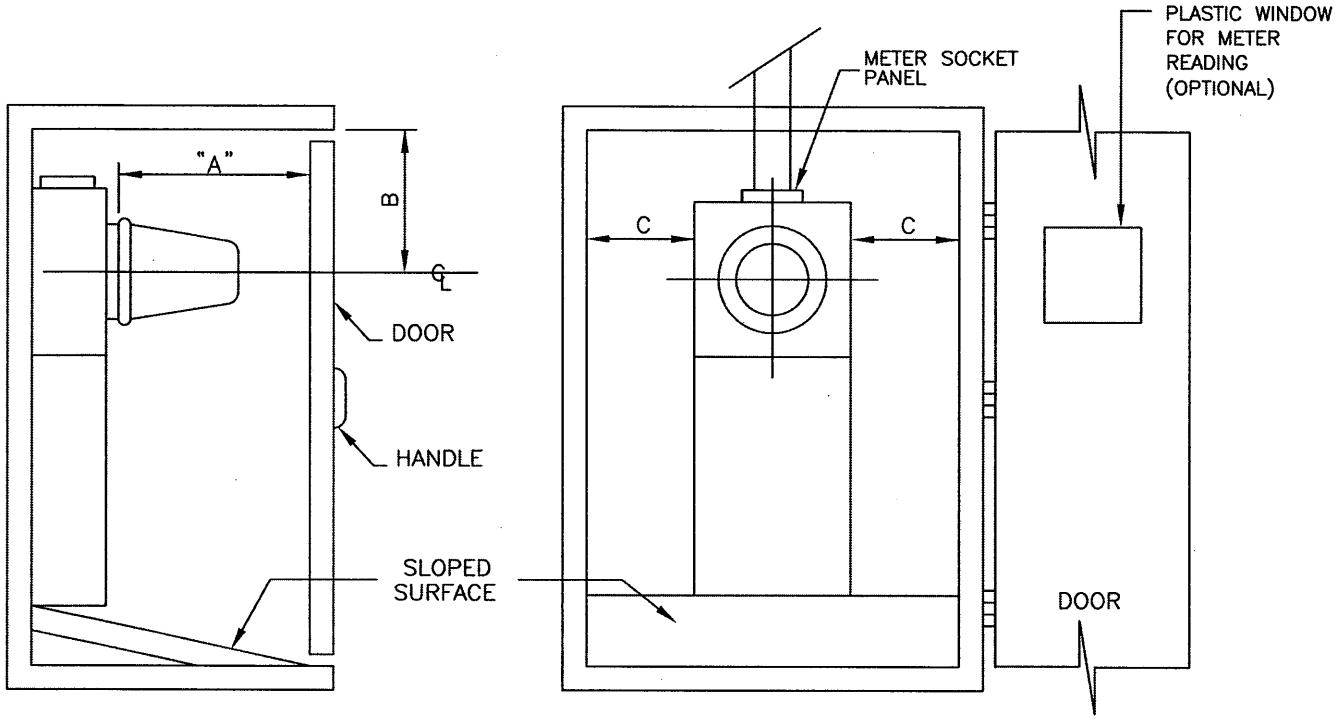
NO WORKING OBSTRUCTIONS ALLOWED IN SHADED AREA.

——— INDICATES BOUNDARY OF AREA WHICH MUST BE KEPT CLEAR OF OBSTRUCTIONS.

NOTES:

1. THERE MUST BE AN 8 INCH MINIMUM CLEARANCE BETWEEN THE NEAREST EDGE OF THE METER PANEL AND ANY OBSTRUCTION.
2. SUITABLE WORKING SPACE, AT LEAST 30 INCHES WIDE X 36 INCHES DEEP, SHALL BE PROVIDED IN FRONT OF THE METER SOCKET TO ALLOW FOR INSTALLATION, TESTING AND READING.
3. METERS SHALL BE LOCATED SO THAT THEY WILL NOT BE DAMAGED BY A SWINGING WINDOW OR DOOR.
4. THE WALL SURFACES ON EITHER SIDE OF A DOOR, FOR A DISTANCE EQUAL TO THE WIDTH OF THE DOOR, IS UNACCEPTABLE AS A METER LOCATION.

APPROVED 3/1994 mDBland ENGR. MANAGER	ENGINEERING STANDARD	3	8-08	REVISED CLEARANCES AND NOTES	TT
	REQUIRED MINIMUM CLEARANCES OF METER SOCKET FROM OBSTRUCTIONS	2	6-06	REVISED CLEARANCES	JT
		1	9-99	REVISED CLEARANCES AND NOTES	TF
		REV	DATE	DESCRIPTION	APPR
ENGR PEV	**CITY OF PALO ALTO** CALIFORNIA	NTS		SR-MT-E-1012	
DRAWN UES/MJ		SCALE		STANDARD NO.	SHEET NO.
CHECKED PEV					



SIDE VIEW

FRONT VIEW

DIMENSION "A" : 7" MINIMUM FOR RESIDENTIAL METERS. 15" MAXIMUM
9" MINIMUM FOR COMMERCIAL AND APARTMENT METERS. 15" MAXIMUM

DIMENSION "B" : 7" MINIMUM FOR RESIDENTIAL METERS.
9" MINIMUM FOR COMMERCIAL AND APARTMENT METERS.

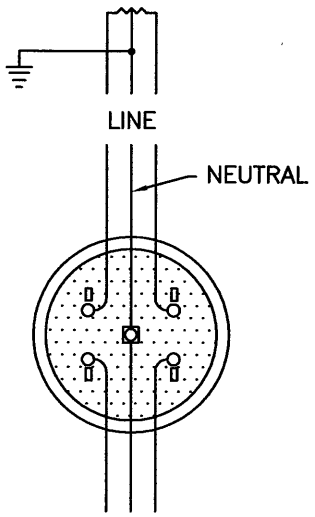
DIMENSION "C" : 2–1/2" MINIMUM FOR RESIDENTIAL METERS.
5" MINIMUM FOR COMMERCIAL AND APARTMENT METERS.

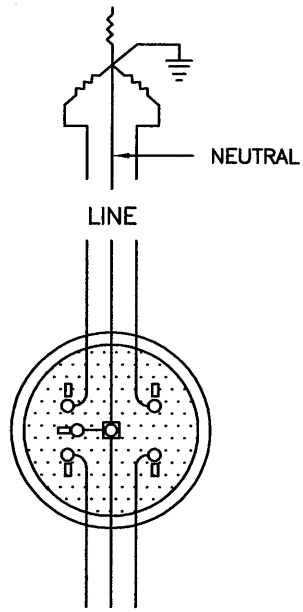
NOTE: DIMENSION "A" APPLIES ONLY TO THAT PORTION OF THE CABINET ENCLOSING DOOR IN FRONT OF THE METER.

NOTE:

1. THE CABINET SHOULD BE DESIGNED SO THAT NEITHER THE ROOF NOR THE DOOR SUPPORTS INTERFERE WITH THE INSTALLATION OF THE METER.
2. AT LEAST 16" VERTICAL AND HORIZONTAL CLEAR SPACE SHALL BE PROVIDED DIRECTLY IN FRONT OF THE SOCKET (8" ABOVE AND BELOW, AND 8" ON EITHER SIDE OF THE CENTER OF THE METER SOCKET).
3. THE CABINET DOORS SHALL HAVE SIDE HINGES, WILL OPEN GREATER THAN 90 DEGREES, AND WILL HAVE A LATCH TO KEEP IT IN THE OPEN POSITION.

APPROVED 199	ENGINEERING STANDARD		
Original Signed and Approved by Engineering Manager	CLEARANCE FOR METER CABINET ENCLOSURES	1 / 11/08 / REVISED NOTES AND DIMENSIONS / TT	
ENGR MANAGER		REV / DATE / DESCRIPTION	APPR
ENGR PEV	CITY OF PALO ALTO CALIFORNIA	NTS / SR-MT-E-1013	1 OF 1
DRAWN ES		SCALE / STANDARD NO.	SHEET NO.
CHECKED PEV			



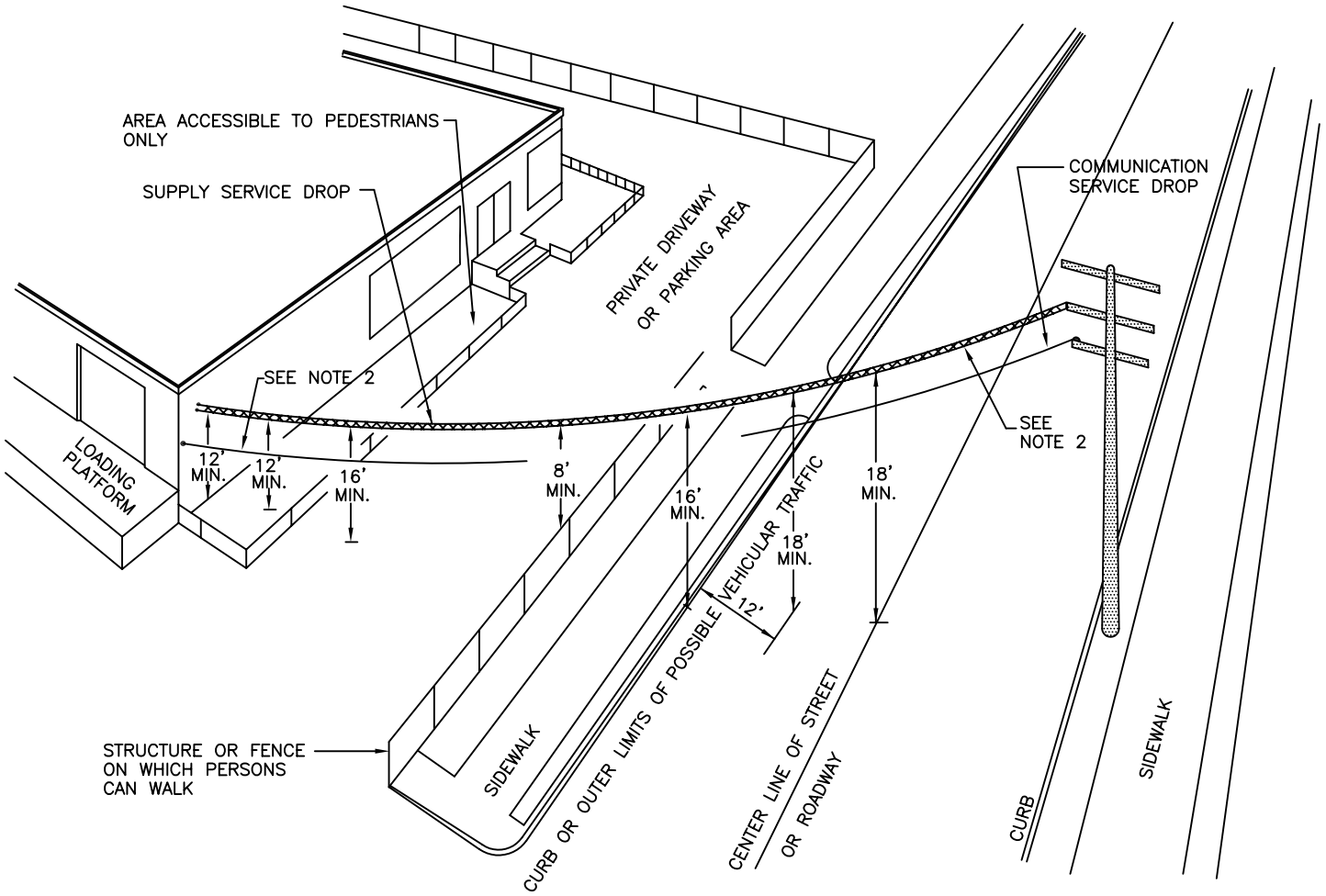


CLASS OF SERVICE	TYPE OF SERVICE	NO. OF JAWS
RESIDENTIAL	120/240 1ø 3W 120/208 1ø 3W/WYE	4 5
COMMERCIAL	120/240 1ø 3W 120/208 1ø 3W/WYE	4 5

NOTES :

1. SOCKETS FOR RESIDENTIAL INSTALLATIONS 200 A OR LESS SHALL NOT BE EQUIPPED WITH TEST BYPASS DEVICES. TEST BYPASS FACILITIES ARE REQUIRED FOR RESIDENTIAL SERVICES GREATER THAN 200 A.
2. LINE CONDUCTORS SHALL ALWAYS BE CONNECTED TO THE TOP TERMINALS OF THE SOCKET, AND LOAD CONDUCTORS CONNECTED TO THE BOTTOM TERMINALS OF THE SOCKET.
3. NEUTRAL TAPS SHALL BE CONNECTED TO THE SERVICE NEUTRAL CONDUCTOR AND LOCATED BEHIND SEALED PANELS. WIRE NUTS ARE NOT PERMITTED.
4. RESIDENTIAL, SELF–CONTAINED METER SOCKETS SHALL BE UL APPROVED AND SHALL HAVE A MAXIMUM CURRENT RATING EQUAL TO OR GREATER THAN THE CURRENT RATING OF THE ASSOCIATED SERVICE EQUIPMENT.
5. METER SOCKETS WITH EXTRUDED OR CAST ALUMINUM JAWS ARE NOT ACCEPTABLE AND WILL NOT BE CONNECTED.
6. THE NEUTRAL WIRE (WHITE) SHALL BE CONTINUOUS WITHOUT A SPLICE FROM THE WEATHERHEAD THROUGH THE SOCKET BONDING LUG TO THE NEUTRAL BAR IN THE MAIN SWITCH. WITH SPECIAL PERMISSION, THE NEUTRAL WIRE MAY BE BROKEN IF THE SOCKET IS EQUIPPED WITH AN APPROVED CONNECTION DEVICE.

APPROVED 3/1994	ENGINEERING STANDARD				
mDBland	DIAGRAM OF CONNECTIONS, METER SOCKETS FOR SELF–CONTAINED SINGLE PHASE METERS UP TO 400 AMPS	2	8/08	REVISED – Test bypass reqs	TT
ENGR. MANAGER		1	6/99	REVISED	FINCH
		REV	DATE	DESCRIPTION	APPR
ENGR PEV	CITY OF PALO ALTO CALIFORNIA	NTS		SR–MT–E–1014	1 OF 1
DRAWN MJ		SCALE		STANDARD NO.	SHEET NO.
CHECKED PEV					

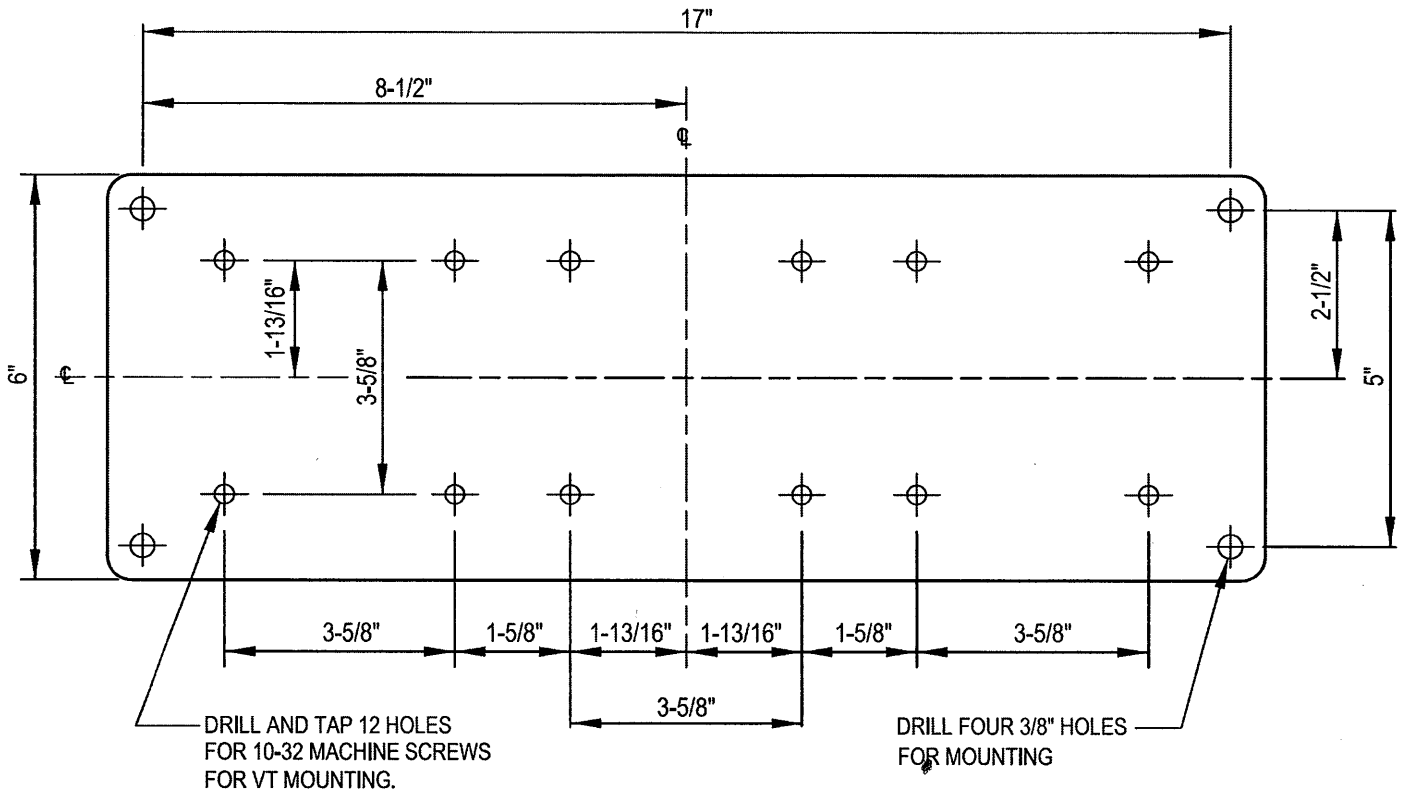


NOTES:

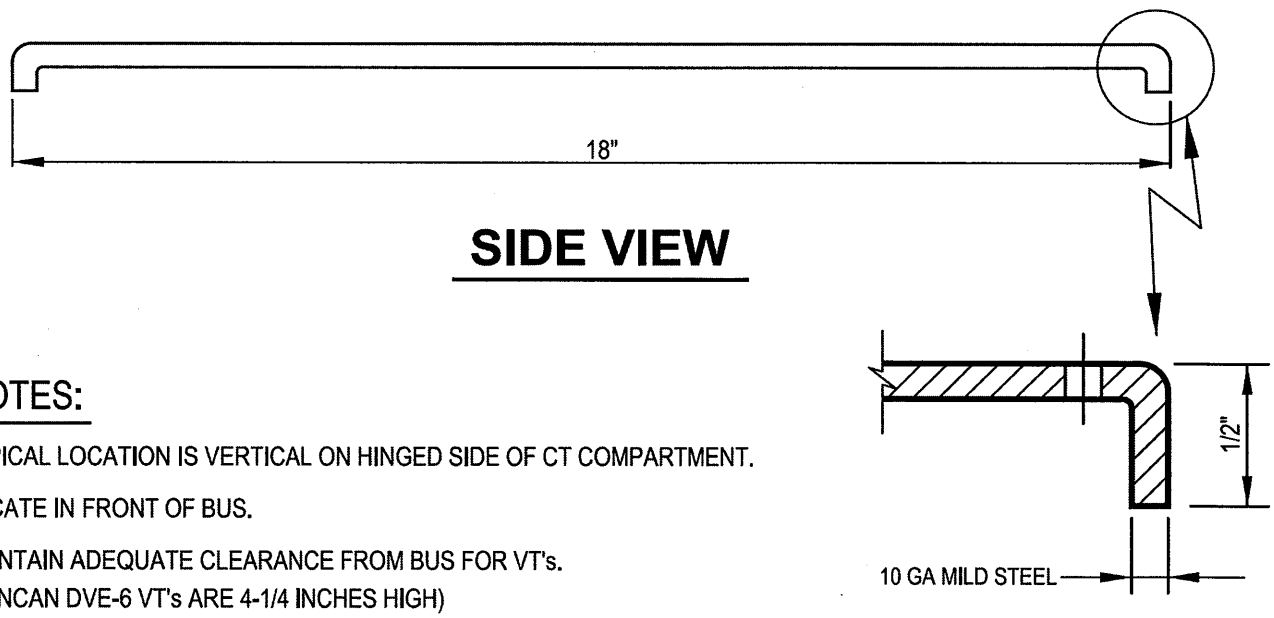
1. VERTICAL GROUND CLEARANCE WHEN CROSSING ABOVE RR TRACKS WITHOUT OVERHEAD TROLLEY WIRE 25 FEET MINIMUM.
2. 24" MIN. RADIAL CLEARANCE FROM SUPPLY SERVICE DROP TO COMMUNICATION SERVICE DROP IF MORE THAN 15" FROM POINT OF BUILDING ATTACHMENT OF EITHER SERVICE. IF LESS THAN 15 FT., 12" MIN. RADIAL CLEARANCE.
3. CPA UTILITIES ENGINEERING MUST BE CONSULTED ON ALL COMMERCIAL JOBS. THIS SHALL BE DONE IN THE PLANNING STAGE OF THE JOB.
4. ELECTRIC METER MUST BE LOCATED OUTSIDE THE BUILDING OR IN A TANDEM–LOCKED METER ROOM READILY ACCESSIBLE TO THE METER READER DURING NORMAL WORKING HOURS.
5. REFER TO GENERAL ORDER 95 RULE 54.8B–(4) FOR SERVICE DROP CLEARANCES OVER BUILDINGS.
6. SERVICE DROP LENGTH SHALL NOT EXCEED 100 FT.

REFERENCE: GENERAL ORDER 95, RULE 54.8–B.

APPROVED 3/1994	ENGINEERING STANDARD				
ENGR. MANAGER	GROUND CLEARANCES FOR SUPPLY SERVICE DROPS, 0–750 VOLTS INDUSTRIAL & COMMERCIAL PREMISES				
		1	6/99	REVISED	FINCH
		REV	DATE	DESCRIPTION	APPR
ENGR PEV	CITY OF PALO ALTO CALIFORNIA	NTS		SR–CL–0–1016	1 OF 1
DRAWN MJ		SCALE		STANDARD NO.	SHEET NO.
CHECKED PEV					



TOP VIEW

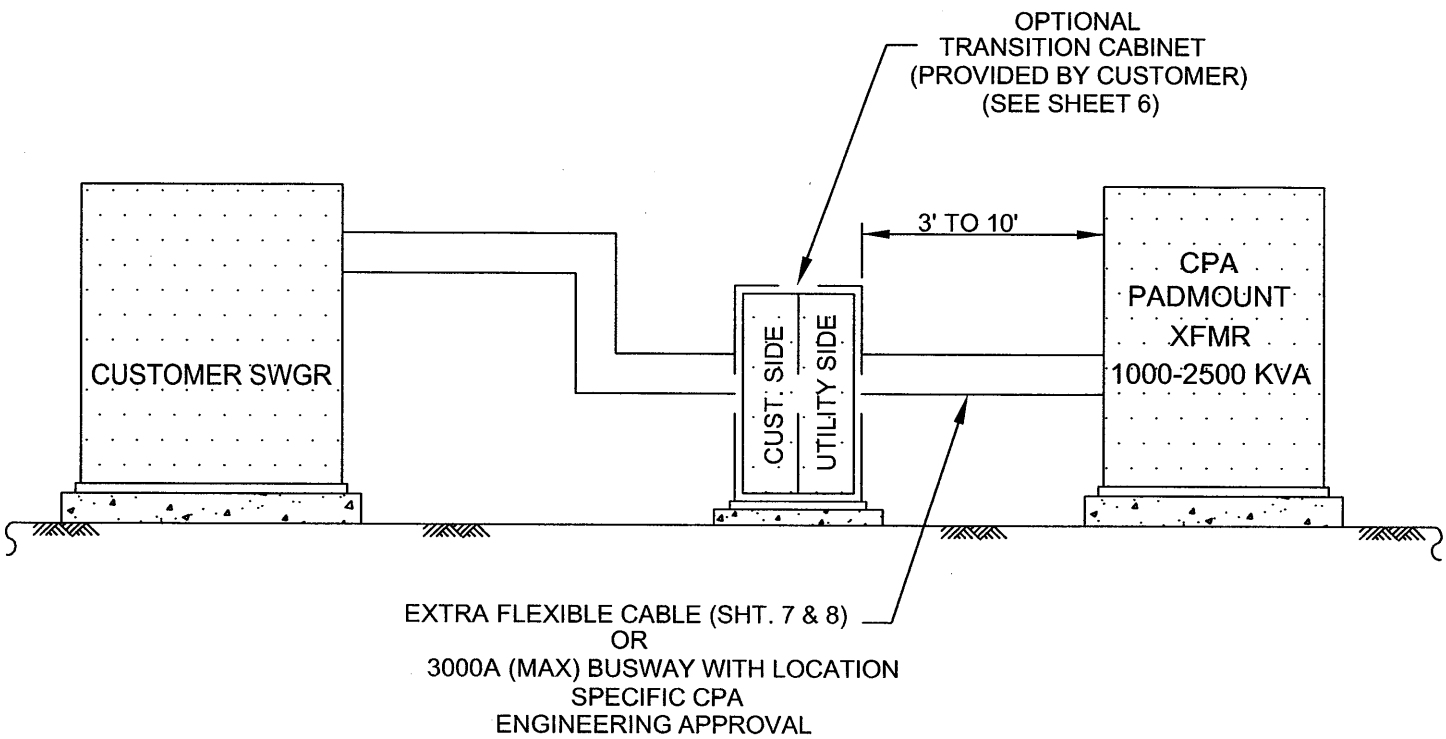


SIDE VIEW

NOTES:

1. TYPICAL LOCATION IS VERTICAL ON HINGED SIDE OF CT COMPARTMENT.
2. LOCATE IN FRONT OF BUS.
3. MAINTAIN ADEQUATE CLEARANCE FROM BUS FOR VT's.
   (DUNCAN DVE-6 VT's ARE 4-1/4 INCHES HIGH)
   (ABB PPW VT's ARE 4-1/2 INCHES HIGH)

APPROVED 03/1997	ENGINEERING STANDARD				
MSB	VOLTAGE TRANSFORMER				
ENGR. MANAGER	MOUNTING PLATE	1	07/05	AS SHOWN	PEV
Original Signed and Approved by Engineering Manager		REV	DATE	DESCRIPTION	APPR
ENGR. PEV	CITY OF PALO ALTO	NTS		SR-MT-M-1019	
DRAWN SES	CALIFORNIA	SCALE		STANDARD NO.	SHEET NO.
CHECKED PEV					



NOTES:

1. STANDARD SECONDARY CONNECTION SHALL BE MADE WITH EXTRA FLEXIBLE CABLE AS SHOWN ON SHT. 7 & 8. ALTERNATIVELY, A BUSWAY ASSEMBLY AS SHOWN ON SHT. 5 MAY BE USED, WITH UTILITIES' APPROVAL, TO CONNECT THE TRANSFORMER SECONDARY TERMINALS TO THE BUSWAY INSIDE THE TRANSFORMER SECONDARY COMPARTMENT.
2. FOR SERVICES LARGER THAN 1600 AMPS, THE CUSTOMER MAY INSTALL BUSWAY FROM THE CUSTOMER'S SWITCHGEAR DIRECTLY TO UTILITY'S PADMOUNT TRANSFORMER, WITH UTILITIES' APPROVAL.
3. ANY ATTACHMENT TO THE TRANSFORMER SECONDARY TERMINALS SHALL BE PERFORMED BY UTILITIES USING HARDWARE PROVIDED BY THE CUSTOMER, INCLUDING LUGS AND BRAIDED CABLE. ALL LABOR AND MATERIALS UP TO THAT POINT OF ATTACHMENT SHALL BE PROVIDED BY THE CUSTOMER.
4. ALL BUSWAY DESIGN AND CONFIGURATION SHALL BE SUBMITTED TO UTILITIES FOR REVIEW & APPROVAL PRIOR TO PROCUREMENT AND FABRICATION.
5. BUSWAY SHALL CONFORM TO ARTICLE 364 OF THE NATIONAL ELECTRICAL CODE.
6. BUSWAY SHALL BE RATED ACCORDING TO THE SERVICE ENTRANCE OVERCURRENT PROTECTION DEVICE AND FABRICATED PER ANSI 37.23.
7. THE DESIGNATED SERVICE POINT SHALL BE THE SECONDARY TERMINALS OF THE TRANSFORMER.
8. THE TRANSITION CABINET SHALL BE FABRICATED PER DRAWING # SR-XF-E-1020 SHT. 6 OR APPROVED EQUIVALENT.

REV.	DATE	APPR.	DESCRIPTION
4	12/08	TING	REVISED NOTES
3	02/06	BUJTOR	CONVERTED TO A'CAD, REVI'SD. NOTES & ADDED DWG. NO.
2	06/99	FINCH	REVISED NOTES
1	3/94	APPR.	DRAWING RENAMED

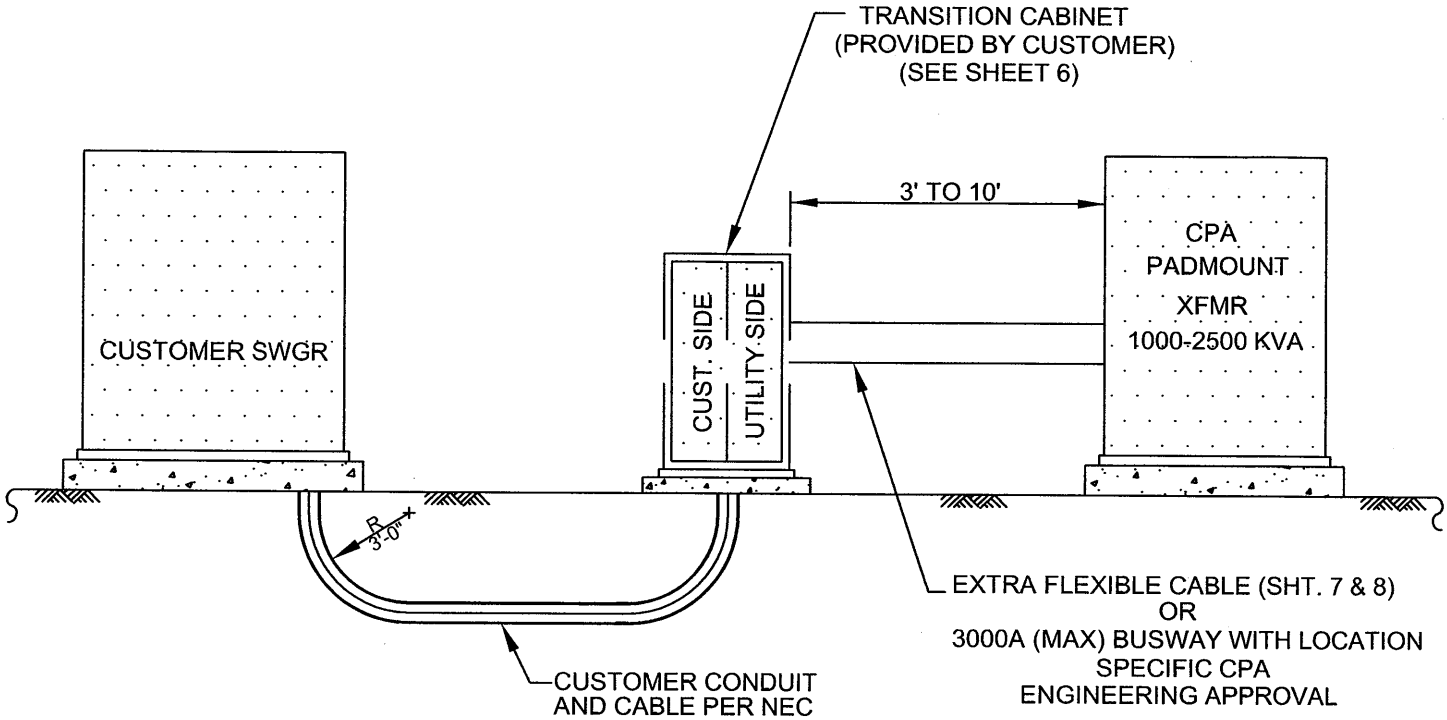
APPROVED _____
SR. ENGINEER / MANAGER

ENGR.	G. Jagannath	
DRWN	M. Jamshid	
CHKD.	P. Valath	

TRANSITION CABINET
FOR 1000-2500 KVA TRANSFORMER

City of Palo Alto
California
UTILITIES, ELECTRIC ENGINEERING

MAP #	CKT #	SCALE	S.O.# / DRAWING #
XX	XX	NTS	SR-XF-E-1020
			SHEET 1 OF 8



NOTES:

1. STANDARD SECONDARY CONNECTION SHALL BE MADE WITH EXTRA FLEXIBLE CABLE AS SHOWN ON SHT. 7 & 8. ALTERNATIVELY, A BUSWAY ASSEMBLY AS SHOWN ON SHT. 5 MAY BE USED, WITH UTILITIES' APPROVAL, TO CONNECT THE TRANSFORMER SECONDARY TERMINALS TO THE BUSWAY INSIDE THE TRANSFORMER SECONDARY COMPARTMENT.
2. THE CUSTOMER MAY, WITH UTILITIES' APPROVAL, INSTALL BUSWAY FROM TRANSFORMER TO TRANSITION CABINET AND CABLES FROM TRANSITION CABINET TO CUSTOMER SWITCHGEAR FOR TRANSFORMERS RATED 1000 KVA TO 2500 KVA.
3. ANY ATTACHMENT TO THE TRANSFORMER SECONDARY TERMINALS SHALL BE PERFORMED BY UTILITIES USING HARDWARE PROVIDED BY THE CUSTOMER, INCLUDING LUGS AND BRAIDED CABLE. ALL LABOR AND MATERIALS UP TO THAT POINT OF ATTACHMENT SHALL BE PROVIDED BY THE CUSTOMER.
4. ALL BUSWAY DESIGN AND CONFIGURATION SHALL BE SUBMITTED TO UTILITIES FOR REVIEW & APPROVAL PRIOR TO PROCUREMENT AND FABRICATION.
5. BUSWAY SHALL CONFORM TO ARTICLE 364 OF THE NATIONAL ELECTRICAL CODE.
6. BUSWAY SHALL BE RATED ACCORDING TO THE SERVICE ENTRANCE OVERCURRENT PROTECTION DEVICE AND FABRICATED PER ANSI 37.23.
7. THE DESIGNATED SERVICE POINT SHALL BE THE SECONDARY TERMINALS OF THE TRANSFORMER.
8. THE TRANSITION CABINET SHALL BE FABRICATED PER DRAWING # SR-XF-E-1020 SHT. 6 OR APPROVED EQUIVALENT.

REV.	DATE	APPR.	DESCRIPTION
4	12/08	TING	REVISED NOTES
3	02/06	BUJTOR	CONVERTED TO A'CAD, REVI'SD. NOTES & ADDED DWG. NO.
2	06/99	FINCH	REVISED NOTES
1	3/94	APPR.	DRAWING RENAMED

APPROVED

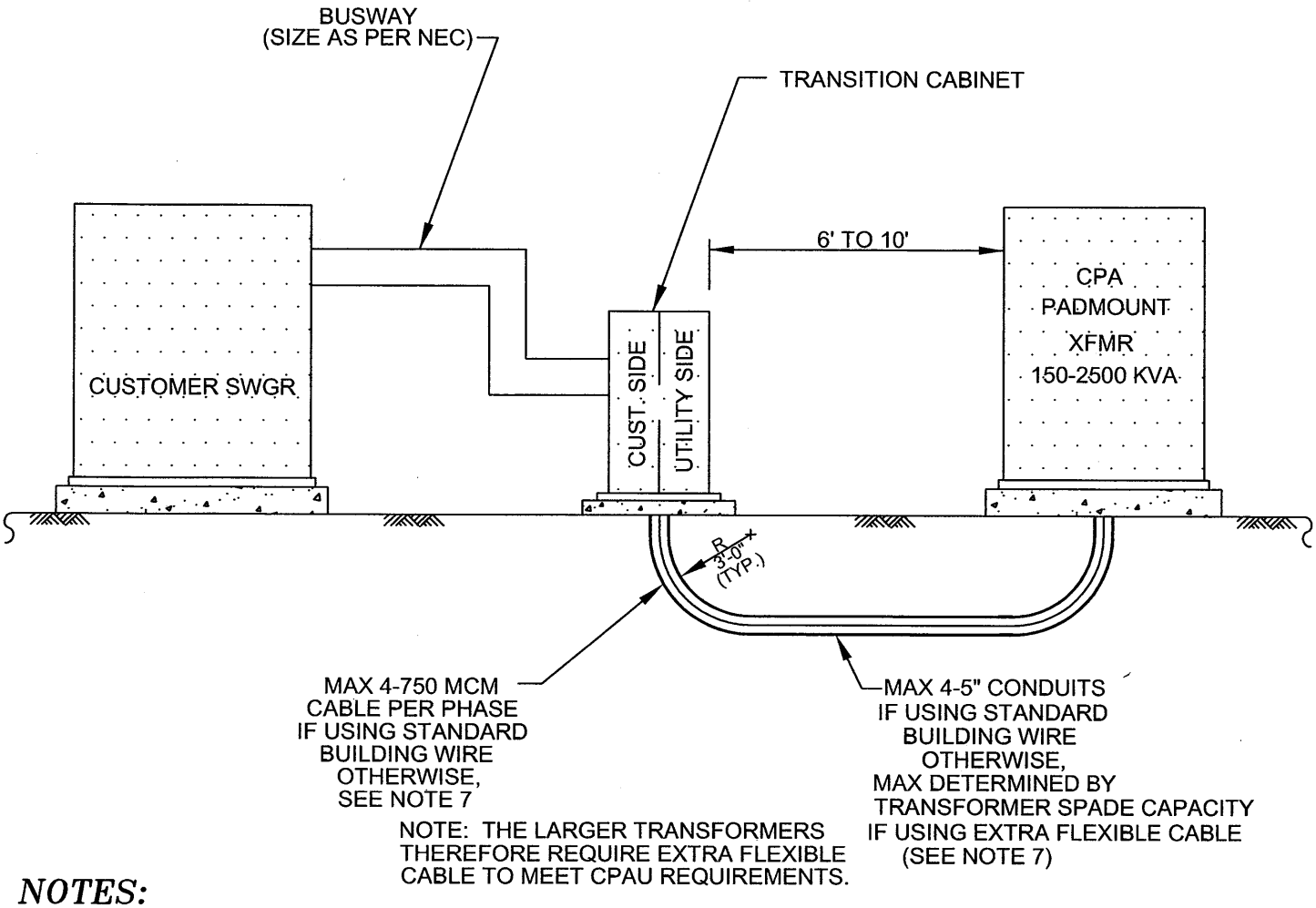
SR. ENGINEER / MANAGER

ENGR.	G. Jagannath	
DRWN	M. Jamshid	
CHKD.	P. Valath	

TRANSITION CABINET
FOR 1000-2500 KVA TRANSFORMER

City of Palo Alto
California
UTILITIES, ELECTRIC ENGINEERING

MAP #	CKT #	SCALE	S.O.# / DRAWING #
XX	XX	NTS	SR-XF-E-1020



NOTE: THE LARGER TRANSFORMERS THEREFORE REQUIRE EXTRA FLEXIBLE CABLE TO MEET CPAU REQUIREMENTS.

NOTES:

1. UTILITIES SHALL FURNISH, INSTALL AND CONNECT THE SERVICE LATERAL CONDUCTORS BETWEEN THE TRANSITION CABINET AND TRANSFORMER SECONDARY TERMINALS IF STANDARD BUILDING WIRE IS USED. OTHERWISE THE CUSTOMER FURNISHES AND INSTALLS EXTRA FLEXIBLE CABLE PER SHT. 7 & 8 IN ACCORDANCE WITH CPAU DRAWING # DT-SE-U-1032.
2. CUSTOMER HAS THE OPTION TO INSTALL BUSWAY FROM THE CABINET TO THE SWITCHGEAR.
3. ALL BUSWAY DESIGN AND CONFIGURATION SHALL BE SUBMITTED TO UTILITIES FOR REVIEW AND APPROVAL PRIOR TO PROCUREMENT AND FABRICATION.
4. BUSWAY SHALL CONFORM TO ARTICLE 364 OF THE NATIONAL ELECTRICAL CODE.
5. THE DESIGNATED SERVICE POINT SHALL BE THE CUSTOMER SUPPLIED TRANSITION CABINET IF USING STANDARD BUILDING CABLE, THE SECONDARY TERMINALS OF THE TRANSFORMER IF USING EXTRA FLEXIBLE CABLE.
6. THE TRANSITION CABINET SHALL BE FABRICATED PER DRAWING # SR-XF-E-1020 SHT. 6 OR APPROVED EQUIVALENT.
7. IF USING EXTRA FLEXIBLE CABLE WHERE CABLE AND CONDUITS PER PHASE CAN BE EXCEEDED, CONFIRM THAT TRANSFORMER SPADES HAVE ENOUGH QUANTITY CONNECTOR HOLES AND HAVE VERTICAL STRUCTURAL SUPPORTS (REF. SHT. 7 & 8).
8. UTILTIES (AT CUSTOMER'S EXPENSE) WILL PROVIDE LUGS ON THE TRANFORMER SECONDARY TERMINALS AND ON THE UTILITY SIDE OF THE TRANSITION CABINET FOR STANDARD BUILDING WIRE.

REV.	DATE	APPR.	DESCRIPTION
4	12/08	TING	REVISED NOTES
3	02/06	BUJTOR	CONVERTED TO A'CAD, REVI'SD. NOTES & ADDED DWG. NO.
2	06/99	FINCH	REVISED NOTES
1	3/94	APPR.	DRAWING RENAMED

APPROVED

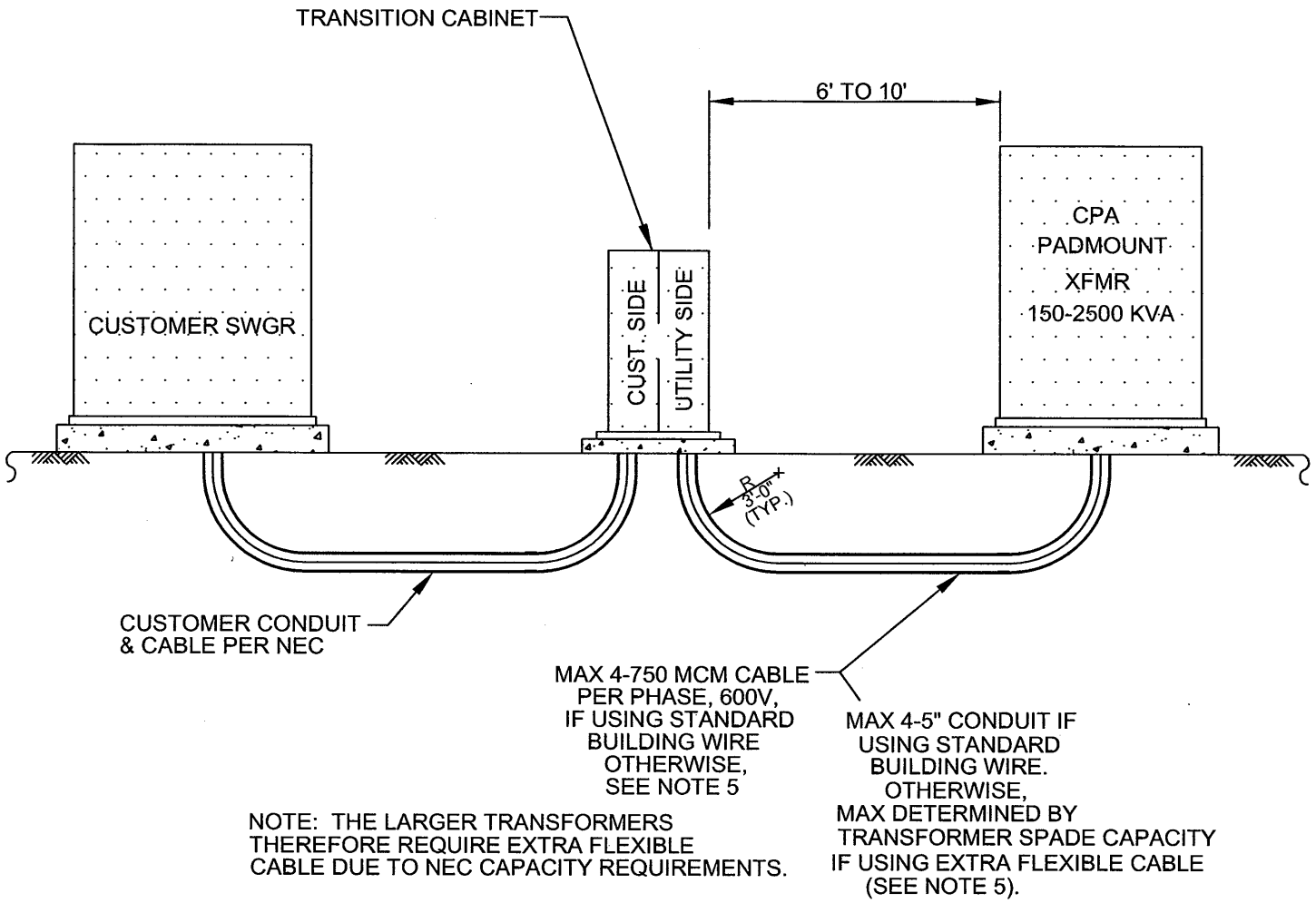
SR. ENGINEER / MANAGER

ENGR.	G. Jagannath	
DRWN	M. Jamshid	
CHKD.	P. Valath	

TRANSITION CABINET
FOR 150-2500 KVA TRANSFORMER

City of Palo Alto
California
UTILITIES, ELECTRIC ENGINEERING

MAP #	CKT #	SCALE	S.O.# / DRAWING #
XX	XX	NTS	SR-XF-E-1020
			SHEET 3 OF 8



NOTE: THE LARGER TRANSFORMERS THEREFORE REQUIRE EXTRA FLEXIBLE CABLE DUE TO NEC CAPACITY REQUIREMENTS.

NOTES:

1. THE CITY SHALL FURNISH, INSTALL AND CONNECT THE SERVICE LATERAL CONDUCTORS BETWEEN THE TRANSITION CABINET AND TRANSFORMER SECONDARY TERMINALS IF STANDARD BUILDING WIRE IS USED. OTHERWISE THE CUSTOMER FURNISHES AND INSTALLS EXTRA FLEXIBLE CABLE PER SHT. 7 & 8 IN ACCORDANCE WITH CPAU DRAWING # DT-SE-U-1032.
2. CUSTOMER SHALL INSTALL CABLES FROM THE TRANSITION CABINET TO THE SWITCHGEAR.
3. THE DESIGNATED SERVICE POINT SHALL BE THE CUSTOMER SUPPLIED TRANSITION CABINET.
4. THE TRANSITION CABINET SHALL BE FABRICATED PER DRAWING # SR-XF-E-1020 SHT. 6 OR APPROVED EQUIVALENT.
5. IF USING EXTRA FLEXIBLE CABLE WHERE CABLE AND CONDUITS PER PHASE CAN BE EXCEEDED, CONFIRM THAT TRANSFORMER SPADES HAVE ENOUGH QUANTITY CONNECTOR HOLES AND HAVE VERTICAL STRUCTURAL SUPPORTS (REF. SHT. 7 & 8).
6. UTILTIES (AT CUSTOMER'S EXPENSE) WILL PROVIDE LUGS ON THE TRANFORMER SECONDARY TERMINALS AND ON THE UTILITY SIDE OF THE TRANSITION CABINET.

REV.	DATE	APPR.	DESCRIPTION
4	12/08	TING	REVISED NOTES
3	02/06	BUJTOR	CONVERTED TO A'CAD, REVI'SD. NOTES & ADDED DWG. NO.
2	06/99	FINCH	REVISED NOTES
1	3/94	APPR.	DRAWING RENAMED

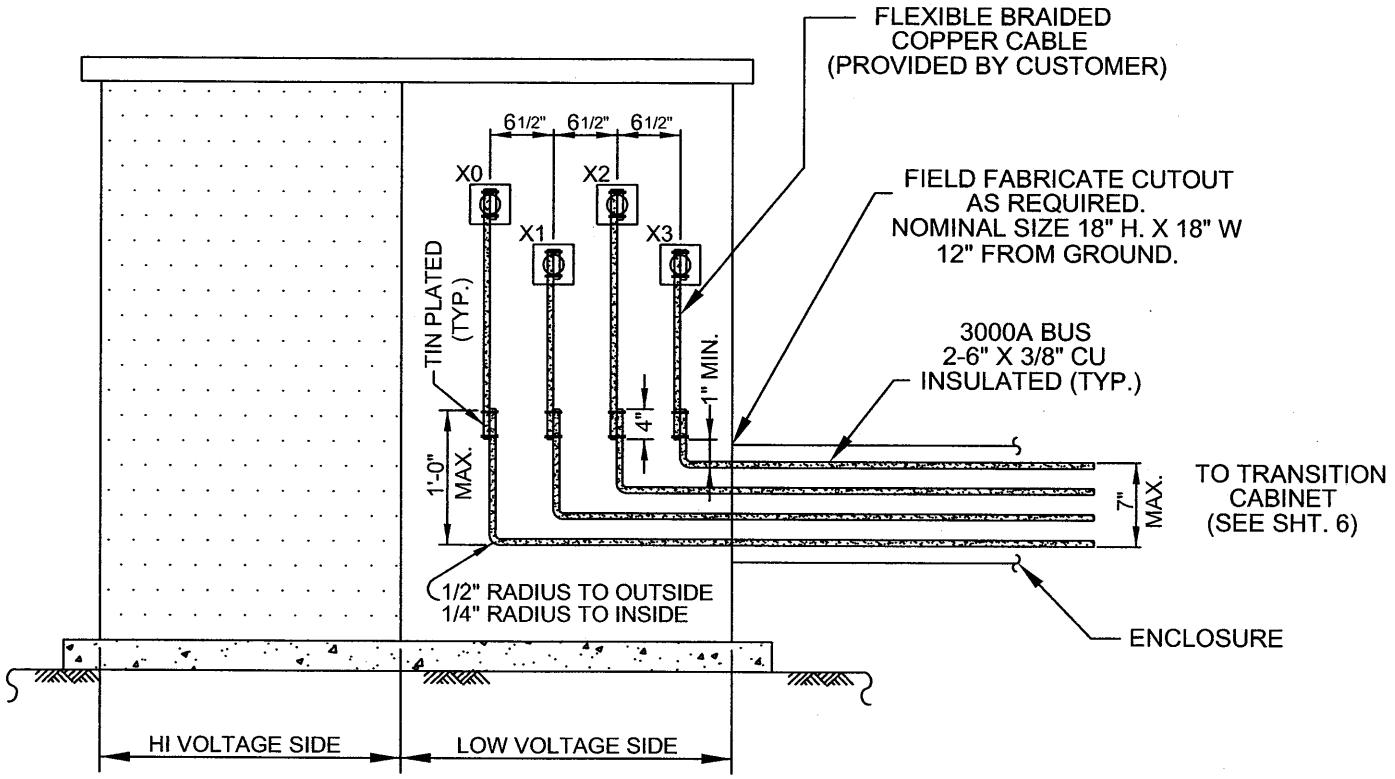
APPROVED _____
SR. ENGINEER / MANAGER

ENGR.	G. Jagannath	
DRWN	M. Jamshid	
CHKD.	P. Valath	

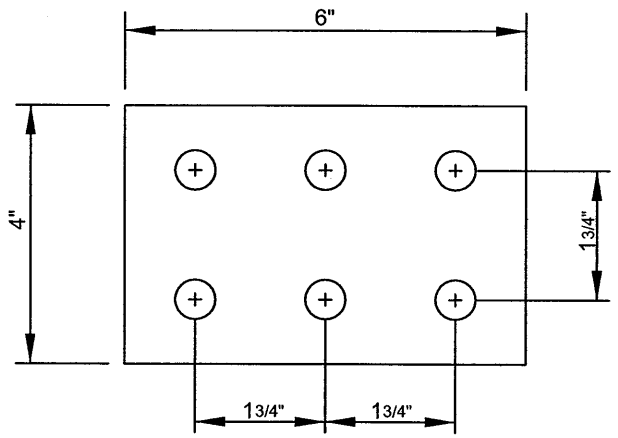
TRANSITION CABINET
FOR 150-2500 KVA TRANSFORMER

City of Palo Alto
California
UTILITIES, ELECTRIC ENGINEERING

MAP #	CKT #	SCALE	S.O.# / DRAWING #
XX	XX	NTS	SR-XF-E-1020
			SHEET 4 OF 8



PADMOUNT 3–PHASE DISTRIBUTION TRANSFORMER 1000–2500 KVA



PAD VIEW
(TYPICAL)

NOTES:

1. STANDARD SECONDARY CONNECTION WILL BE MADE WITH EXTRA FLEXIBLE CABLE AS SHOWN ON SHTS. 7 & 8. THIS BUSWAY ARRANGEMENT IS WITH LOCATION SPECIFIC CPA ENGINEERING APPROVAL ONLY. REFERENCE SHTS. 1 & 2.

APPROVED _____
SR. ENGINEER / MANAGER

ENGR.	G. Jagannath	
DRWN	M. Jamshid	
CHKD.	P. Valath	

3000 AMP BUSWAY
ARRANGEMENT AT TRANSFORMER

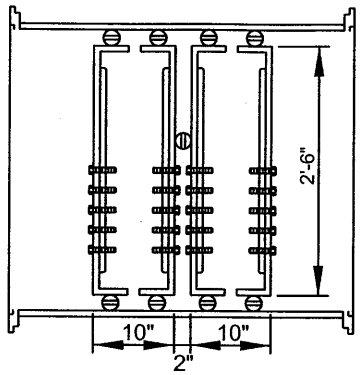
City of Palo Alto
California
UTILITIES, ELECTRIC ENGINEERING

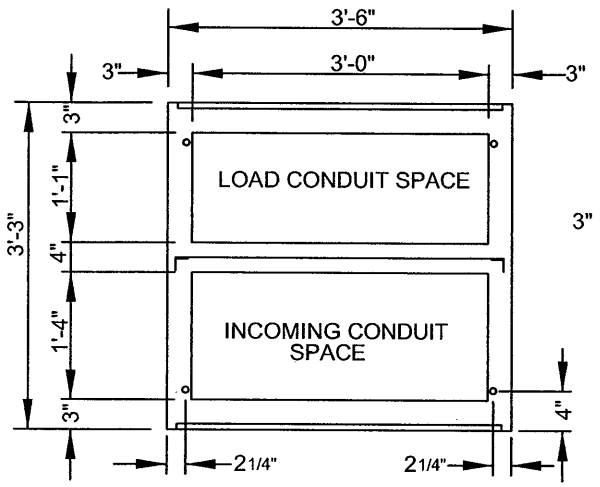
REV.	DATE	APPR.	DESCRIPTION
1	3/94	APPR.	DRAWING RENAMED
2	06/99	FINCH	REVISED NOTES
3	02/06	BUJTOR	CONVERTED TO A'CAD, REVI'SD. NOTES & ADDED DWG. NO.

MAP #	CKT #	SCALE	S.O.# / DRAWING #
XX	XX	NTS	SR-XF-E-1020
			SHEET 5 OF 8

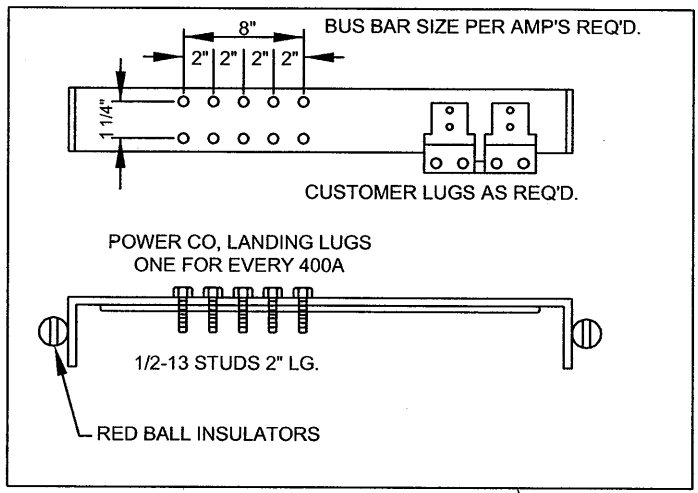
NOTES:

1. SCREWS SHALL BE PROVIDED FOR THE TRANSITION CABINET COVERS BY THE MANUFACTURER AS REQUIRED.
2. TWO SEALABLE STUDS WITH WING NUTS SHALL BE PROVIDED FOR EACH TRANSITION CABINET COVER.
3. TRANSITION CABINET WILL BE I.E.M. OR APPROVED EQUIVALENT.

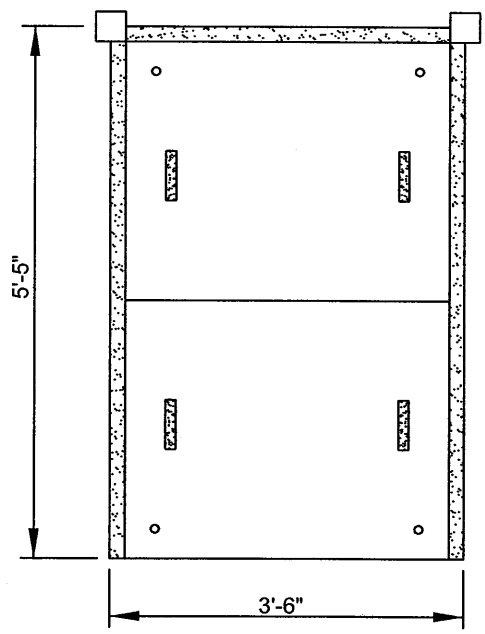




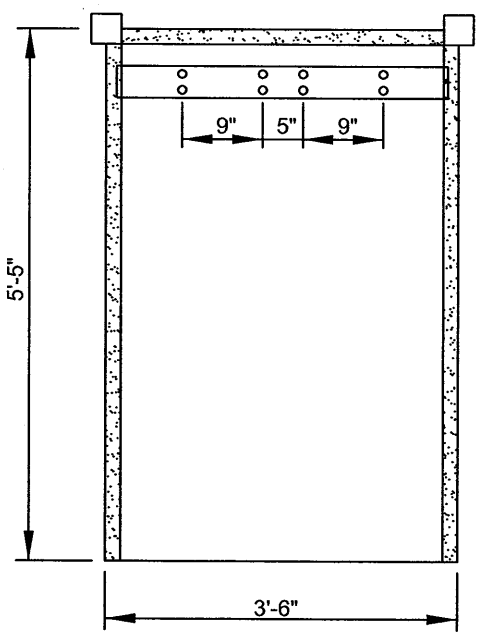
BASE DETAIL



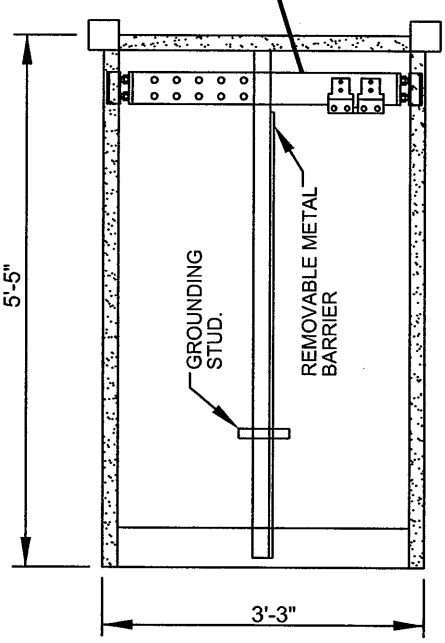
BLOW UP VIEW



FRONT VIEW



FRONT INTERIOR VIEW



SIDE VIEW

APPROVED

SR. ENGINEER / MANAGER

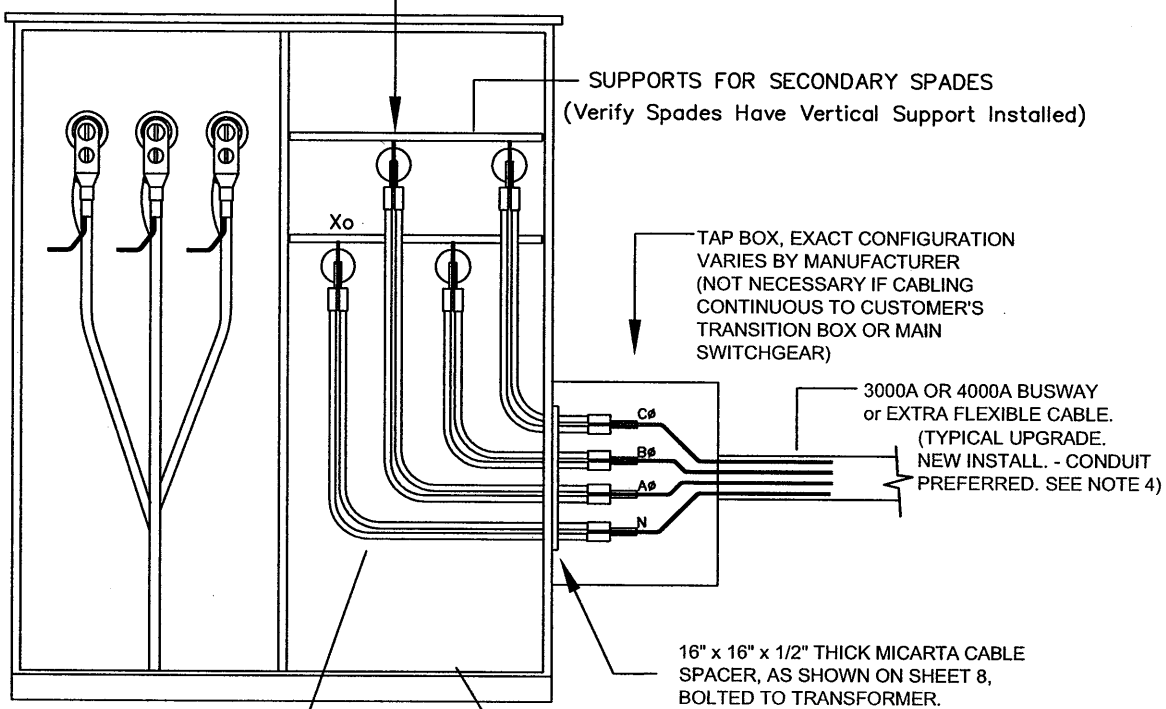
ENGR.	G. Jagannath	
DRWN	M. Jamshid	
CHKD.	P. Valath	

TYPICAL TRANSITION CABINET
FOR LARGE SERVICES

City of Palo Alto
California
UTILITIES, ELECTRIC ENGINEERING

REV.	DATE	APPR.	DESCRIPTION
1	3/94	APPR.	DRAWING RENAMED
2	06/99	FINCH	REVISED NOTES
3	02/06	BUJTOR	CONVERTED TO A'CAD, REVI'SD. NOTES & ADDED DWG. NO.

MAP #	CKT #	SCALE	S.O.# / DRAWING #
XX	XX	NTS	SR-XF-E-1020
			SHEET 6 OF 8



UTILITY GUIDE ONLY:

750 KVA:	3 CONDUCTORS PER PHASE AND NEUTRAL
1000 KVA:	4 CONDUCTORS PER PHASE AND NEUTRAL
1500 KVA:	4 CONDUCTORS PER PHASE AND NEUTRAL
2000 KVA:	6 CONDUCTORS PER PHASE AND NEUTRAL
2500 KVA:	7 CONDUCTORS PER PHASE AND NEUTRAL

NOTES:

1. CABLE TO BE SIZED PER CPAU DWG # DT-SE-U-1032. IF USING ALTERNATE CONDUIT LOCATION, STANDARD CABLE MAY BE USED, NOT TO EXCEED 4-750 MCM PER PHASE AND IN ACCORDANCE WITH CPAU DWG # DT-SE-U-1032.
2. THE DESIGNATED SERVICE POINT PER THE NATIONAL ELECTRIC CODE SHALL BE THE SECONDARY TERMINALS AT THE TRANSFORMER.
3. THE CUSTOMER SHALL FURNISH ALL HARDWARE AND MATERIALS NEEDED FOR A COMPLETE INSTALLATION.
4. IF GREATER THAN 3000A SERVICE, CALL CPA UTIL. ENGR. DEPT. AT 566-4500. USE OF 750KCMIL AND ELIMINATION OF TRANSITION CABINET MAY BE POSSIBLE.
5. CABLING BETWEEN TRANSFORMER AND CUSTOMER'S SWITCHGEAR SHALL BE SIZED PER CPAU DWG # DT-SE-U-1032 IF NOT USING A TRANSITION CABINET.

4	12/08	TING	REVISED NOTES
3	02/06	BUJTOR	CONVERTED TO A'CAD, REVI'SD. NOTES & ADDED DWG. NO.
2	06/99	FINCH	REVISED NOTES
1	3/94	APPR.	DRAWING RENAMED
REV.	DATE	APPR.	DESCRIPTION

APPROVED _____

Original Signed and Approved by Engineering Manager

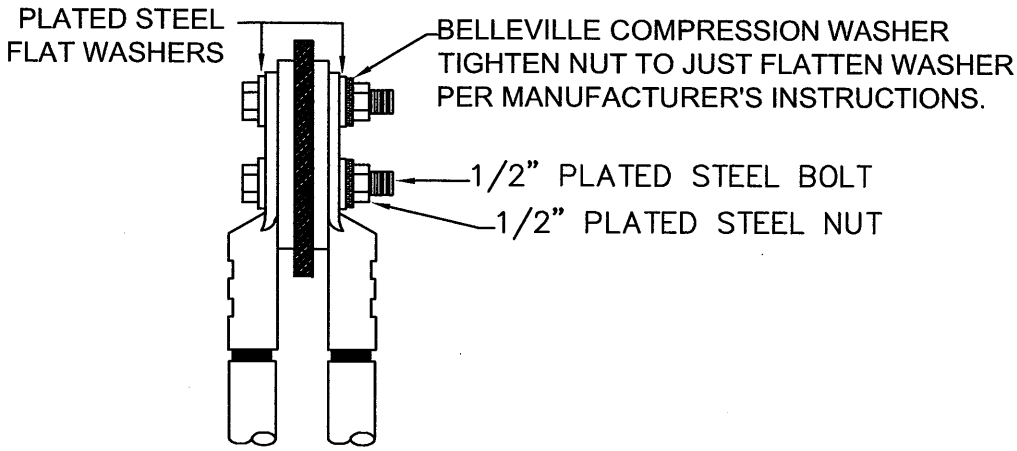
SR. ENGINEERING MANAGER

ENGR.	J.BUJTOR
DRWN.	T.CHIPPI
CHKD.	M.ZUCCARO

BUSWAY CONNECTION
For Transformer Secondary

City of Palo Alto
California
UTILITIES, ELECTRIC ENGINEERING

MAP #	CKT #	SCALE	S.O.# / DRAWING #
XX	XX	NTS	SR-XF-E-1020
			SHEET 7 OF 8



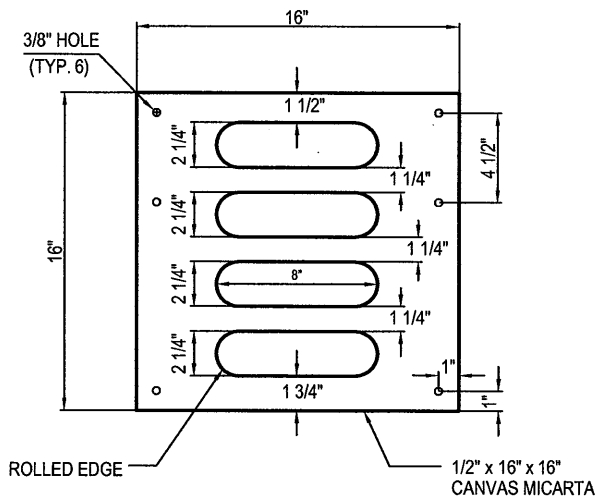
DETAIL 1: SECONDARY CABLE CONNECTION

MATERIALS

COMPRESSION CONNECTORS: USE 535.3 KCMIL CONNECTOR WITH DIE (BURNDY L99) RECOMMENDED BY TOOL MANUFACTURER.

BELLEVILLE SPRING WASHERS: T&B STAINLESS STEEL, 1/2"; #50050BW

CANVAS MICARTA BOARD: RIDOUT PLASTICS, WWW.RIDOUTPLASTICS.COM, 858.560.1551, ANGUS-CAMPBELL, INC. 323.587.1236, OR PORT PLASTICS, 408.571.2231



4	12/08	TING	REVISED BOARD
3	02/06	BUJTOR	CONVERTED TO A'CAD, REVI'SD. NOTES & ADDED DWG. NO.
2	06/99	FINCH	REVISED NOTES
1	3/94	APPR.	DRAWING RENAMED
REV.	DATE	APPR.	DESCRIPTION

APPROVED _____
W. BUJTOR
SR. ENGINEERING MANAGER

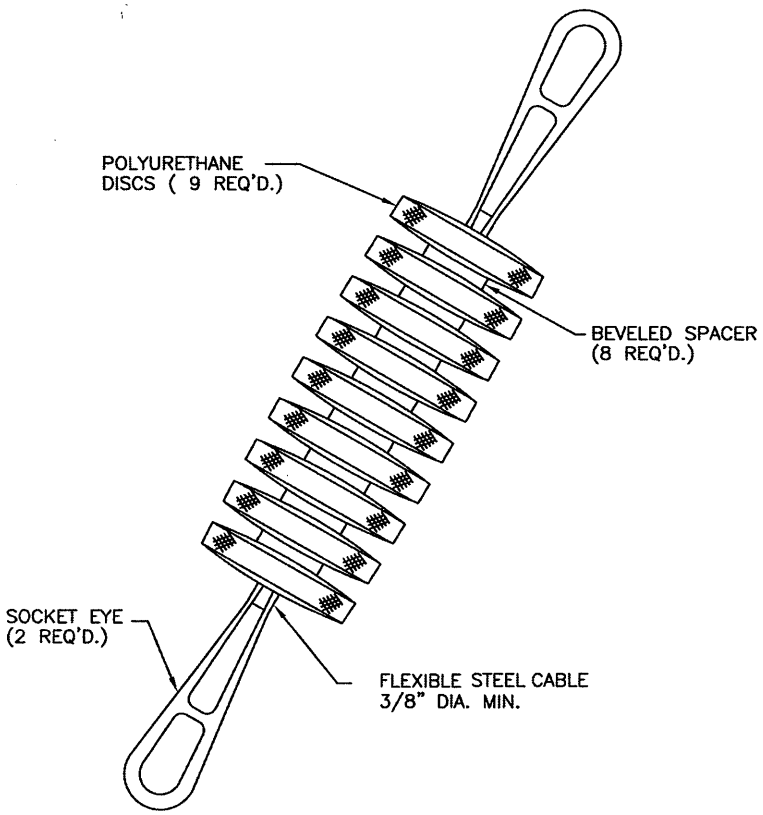
Original Signed and Approved by Engineering Manager

ENGR.	J.BUJTOR
DRWN.	T.GRIPPI
CHKD.	M.S.ZUCCARO

BUSWAY CONNECTION
For Transformer Secondary

City of Palo Alto
California
UTILITIES, ELECTRIC ENGINEERING

MAP #	CKT #	SCALE	S.O.# / DRAWING #
XX	XX	NTS	SR-XF-E-1020
			SHEET 8 OF 8



DUCT SIZE	MANDREL SIZE *	SAFE WORKING LOAD * *
1-1/2"	1-1/4	1400
2-0"	1-3/4"	2330
3-0"	2-3/4"	2330
4-0"	3-3/4"	4800
5-0"	4-3/4"	4800
6-0"	5-3/4"	4800

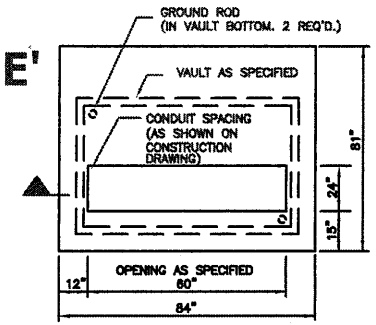
NOTES:

1. THE FLEXIBLE MANDREL IS CONSTRUCTED OF POLYURETHANE DISCS OF GRADUATED SIZES STRUNG ON A CABLE 3/8" MINIMUM DIAMETER SEPARATED BY BEVELED SPACERS AND EQUIPpED WITH DROP-FORGED STEEL SOCKET EYES ON EACH END.
2. REMOVE SHARP EDGES FROM EACH DISC TO AVOID DAMAGE TO THE DUCT.
3. ALL TESTING SHALL BE WITNESSED BY THE ELECTRIC UNDERGROUND INSPECTOR.
4. ALL CONDUITS, NEW OR EXISTING, SHALL BE TESTED AND APPROVED PRIOR TO INSTALLATION OF ANY CABLES.

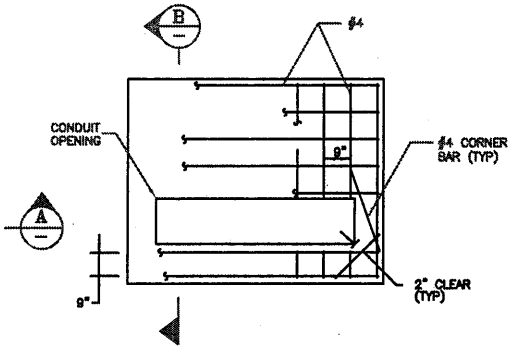
* OUTSIDE DIAMETER OF THE 3 CENTER DISCS.
* * SAFETY FACTOR (HORIZONTAL PULL ONLY.)

APPROVED ____ 99	ENGINEERING STANDARD				
Original Signed and Approved by Engineering Manager	MANDREL TESTING				
ENGR. [illegible] NAGER		1	11/08	ADDED NOTE 3 & 4	TT
ENGR. PEV		REV	DATE	DESCRIPTION	APPR
DRAWN HGS	CITY OF PALO ALTO	NTS		DT-SS-U-1025	
CHECKED PEV	CALIFORNIA	SCALE		STANDARD NO.	SHEET NO.

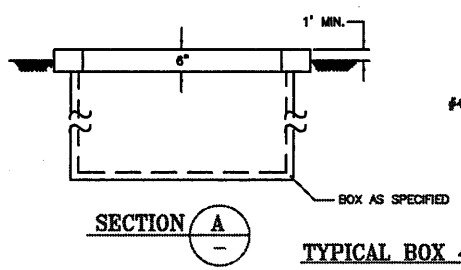
TYPE 'E'

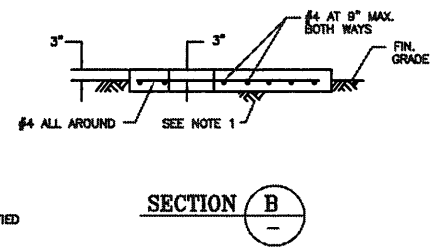


CONCRETE PAD DIMENSIONS



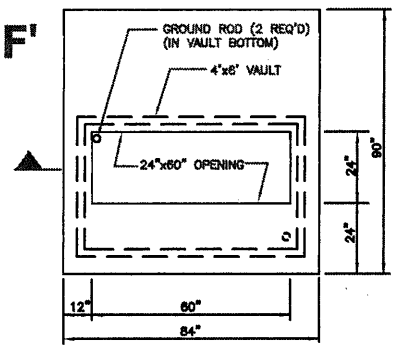
REINFORCING BAR LAYOUT



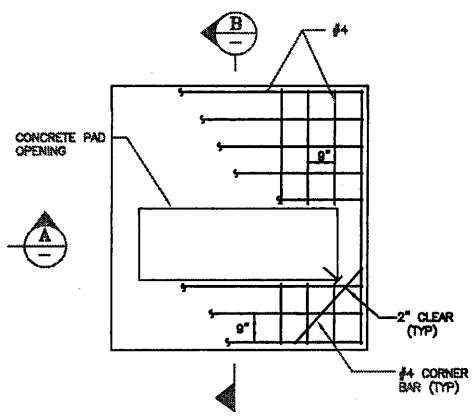


TYPICAL BOX 4' X 6' X 6'

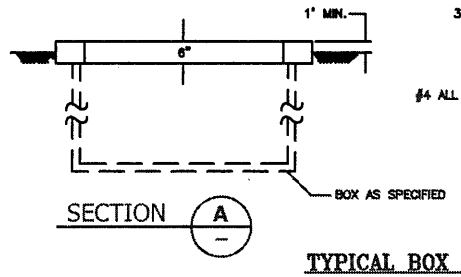
TYPE 'F'

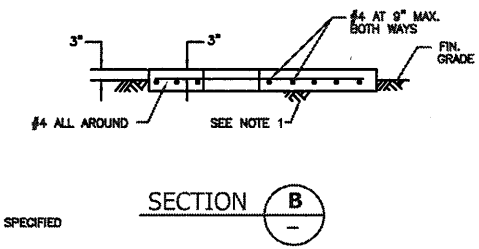


CONCRETE PAD DIMENSIONS



REINFORCING BAR LAYOUT





TYPICAL BOX 4' X 6' X 6'

NOTES:

1. TWO OF THE GROUND RODS MUST BE CONNECTED TOGETHER, BY BARE COPPER #2 STRANDED WIRE, AND RUN UP THROUGH THE CABLE WINDOW AND CONNECTED TO THE NEUTRAL.
2. ALL CONDUIT MUST BE CAPPED.
3. ALL SIDES MUST BE CLEAR FOR SWITCH DOOR SWING, SWITCH HANDLE OPERATION AND THE USE OF A HOT STICK OR BAYONET. MINIMUM CLEARANCES AROUND CONCRETE PAD ARE 3' FROM THE BACK AND SIDES AND 10' FROM THE FRONT. THESE CLEARANCES WILL BE CHECKED BY THE ELECTRICAL ENGINEERING.
4. GROUND ROD MUST BE 5/8" X 8' PER CITY OF PALO ALTO ENGINEERING DRAWING DT-SS-U-1001.
5. SWITCHGEAR MUST BE ANCHORED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
6. IF THE SWITCHGEAR IS LOCATED NEAR AN AREA SUBJECT TO VEHICULAR TRAFFIC, BARRIERS MUST BE PROVIDED IN ACCORDANCE WITH DETAIL 1 OR 2 ON SHEET 2 OF 3, CPA ENGINEERING STANDARD DT-TR-C-1005. CITY OF PALO ALTO WILL DETERMINE THE TYPE, NUMBER REQUIRED AND LOCATION.
7. PLACE 12" X 3/4" DRAIN ROCK UNDER VAULT BOX.
8. PLACE PAD WINDOW FLUSH WITH FRONT INSIDE BOX WALL FOR TYPE "A" PAD.
9. PLACE PAD WINDOW FLUSH WITH REAR INSIDE BOX WALL FOR TYPE "B" PAD.
10. THE BOX SPECIFIED SHALL BE ONE OF THE FOLLOWING: 644-LA-CPA, 660-LA-CPA OR 577-LA-CPA.

ENGINEERING STANDARDS

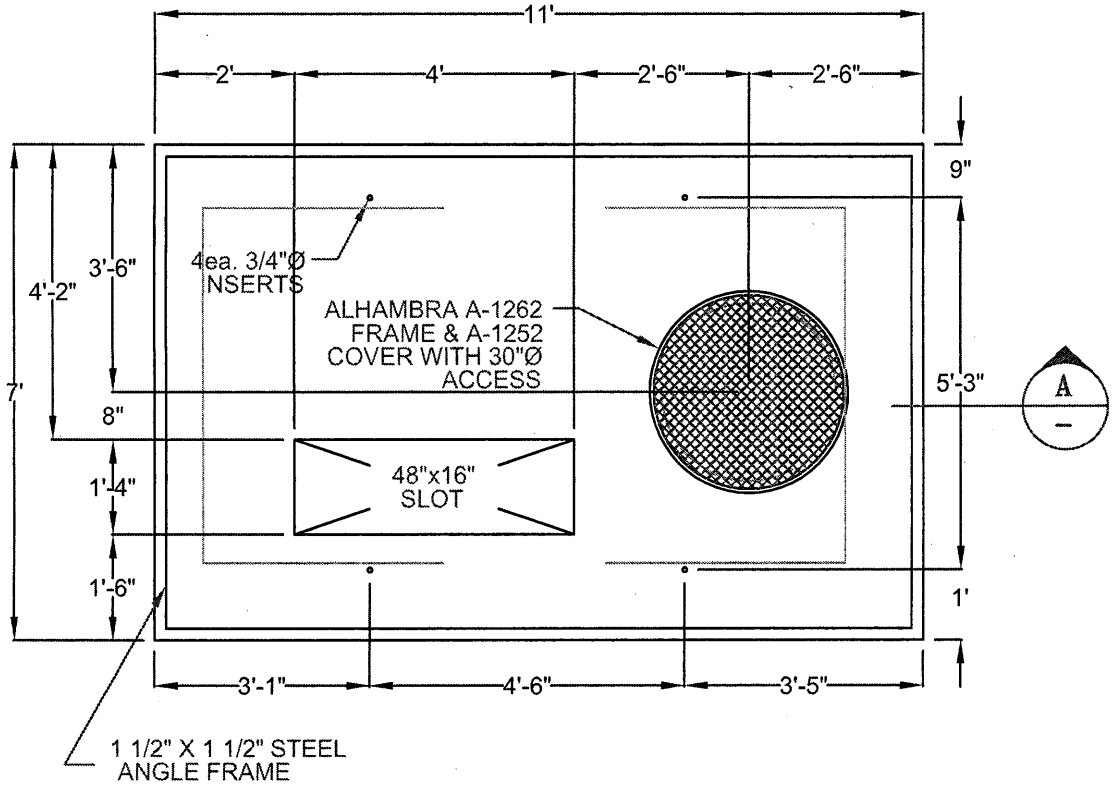
APPROVED 10/02	
PATRICK VALATH	
SR. ENGINEER / MANAGER	
ENGR.	PV
DRWN	DANIEL T.
CHKD.	TT

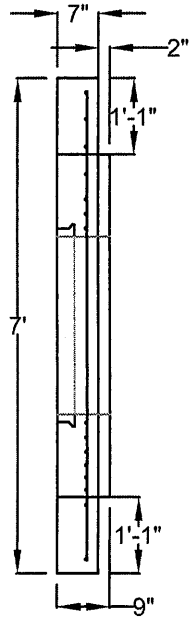
PADMOUNT SWITCHGEAR CONTRETE PAD DETAIL TYPE E & F

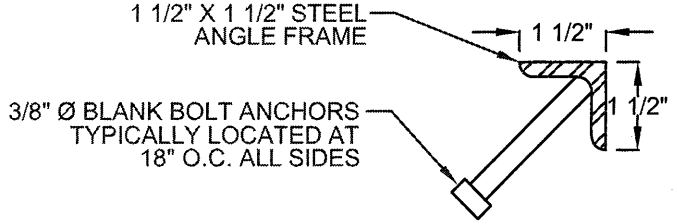
City of Palo Alto
California
UTILITIES, ELECTRIC ENGINEERING

REV.	DATE	APPR.	DESCRIPTION

MAP #	CKT #	SCALE	W.O.# / DRAWING #
-	-	NTS	DT-SS-U-1026
			SHEET 1 OF 5

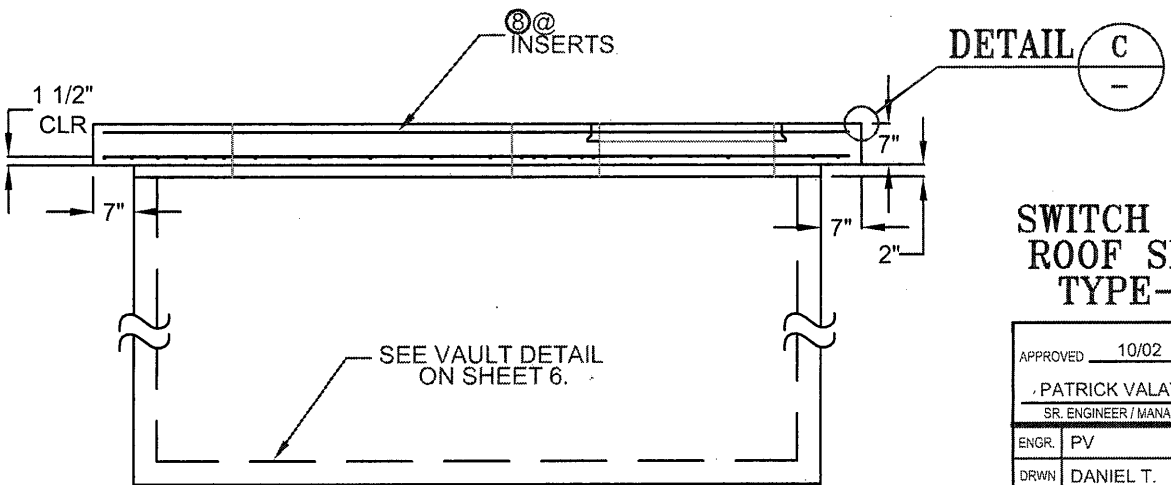






A **ANGLE FRAME DETAIL**

GENERAL NOTES:
1. CONCRETE: fc = 4,500 psi ULTIMATE COMPRESSIVE STRENGTH IN 28 DAYS.
2. REINFORCEMENT: A. REBAR: ASTM A706, GRADE 60
   B. STRENGTH Fy= 60,000 psi.
3. ALL CONCRETE JOINTS TO BE SEALED USING APPROVED JOINT SEALANT UNLESS OTHERWISE NOTED.
4. ALL MATERIAL SHALL BE DOMESTIC. (MADE IN U.S.A.)
5. STRUCTURE DESIGNED FOR EQUIP./PEDESTRIAN LAODING PER ASTM C-857. (300 lb. PER SQ. FT.)



SWITCH PAD ROOF SLAB TYPE-A

MARK	QTY	SIZE	LENGTH	TYPE	A	B	C	WEIGHT
⑨	5	5	1'-3"	STR				7#
⑧	2	4	10'-9"	STR				14#
⑦	1	5	1'-9"	STR				2#
⑥	3	5	4'-9"	STR				15#
⑤	4	5	7'-7"	STR				32#
④	10	5	10'-9"	STR				112#
③	12	5	2'-0"	STR				25#
②	13	5	3'-11"	STR				53#
①	14	5	6'-9"	STR				99#

APPROVED	10/02
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	SR. ENGINEER / MANAGER
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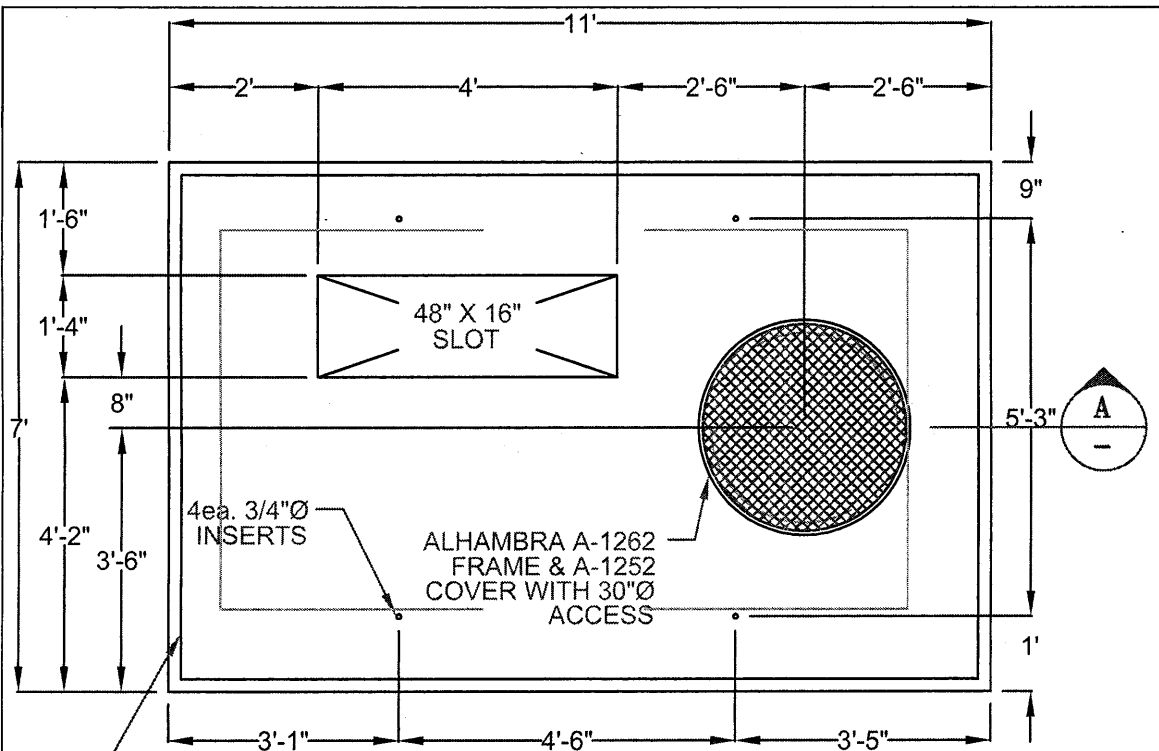
CHKD.	TT

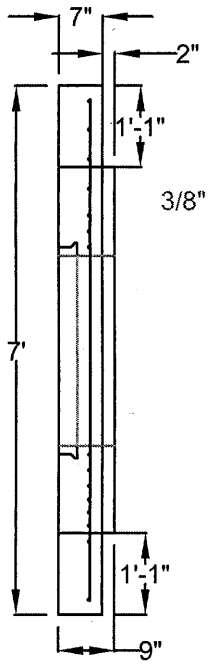
PADMOUNT SWITCHGEAR CONCRETE PAD DETAIL ROOF SLAB TYPE-A

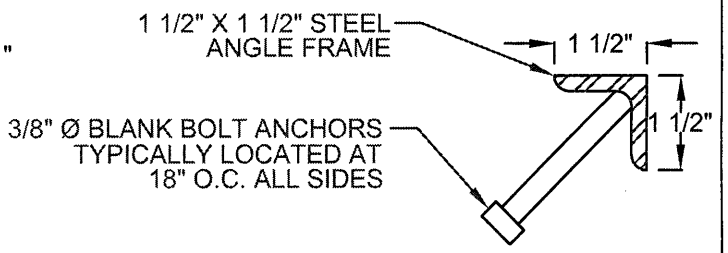
City of Palo Alto
California
UTILITIES, ELECTRIC ENGINEERING

REV.	DATE	APPR.	DESCRIPTION

MAP #	CKT #	SCALE	W.O.# / DRAWING #
-	-	NTS	DT-SS-U-1026
			SHEET 2 OF 5

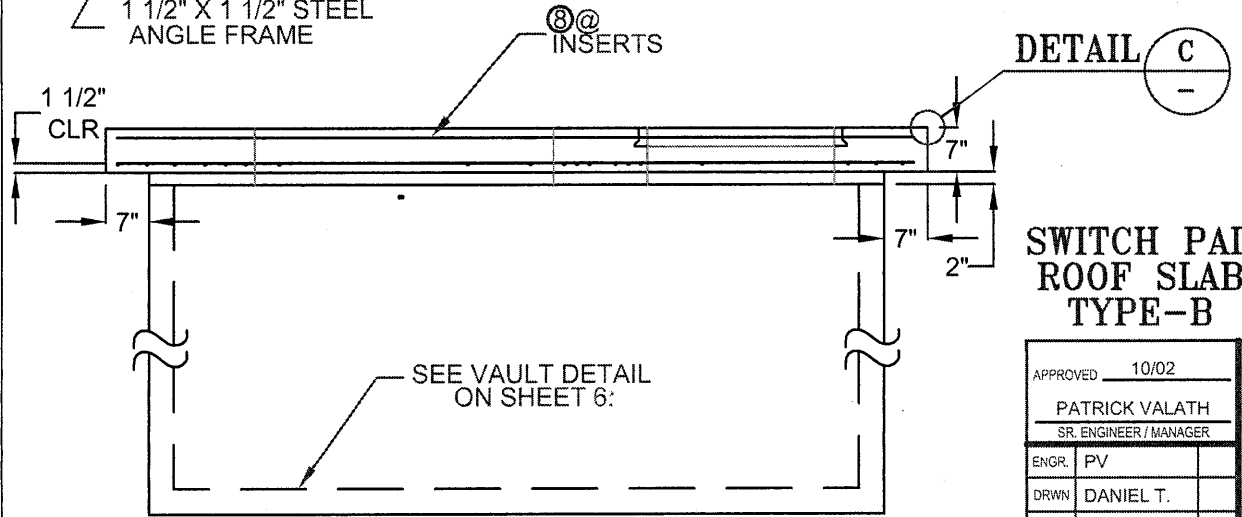






A **ANGLE FRAME DETAIL**

GENERAL NOTES:
1. CONCRETE: fc = 4,500 psi ULTIMATE COMPRESSIVE STRENGTH IN 28 DAYS.
2. REINFORCEMENT: A. REBAR: ASTM A706, GRADE 60
   B. STRENGTH Fy= 60,000 psi.
3. ALL CONCRETE JOINTS TO BE SEALED USING APPROVED JOINT SEALANT UNLESS OTHERWISE NOTED.
4. ALL MATERIAL SHALL BE DOMESTIC. (MADE IN U.S.A.)
5. STRUCTURE DESIGNED FOR EQUIP./PEDESTRIAN LAODING PER ASTM C-857. (300 lb. PER SQ. FT.)



SWITCH PAD ROOF SLAB TYPE-B

MARK	QTY	SIZE	LENGTH	TYPE	A	B	C	WEIGHT
⑨	5	5	1'-3"	STR				7#
⑧	2	4	10'-9"	STR				14#
⑦	1	5	1'-9"	STR				2#
⑥	3	5	4'-9"	STR				15#
⑤	4	5	7'-7"	STR				32#
④	10	5	10'-9"	STR				112#
③	12	5	2'-0"	STR				25#
②	13	5	3'-11"	STR				53#
①	14	5	6'-9"	STR				99#

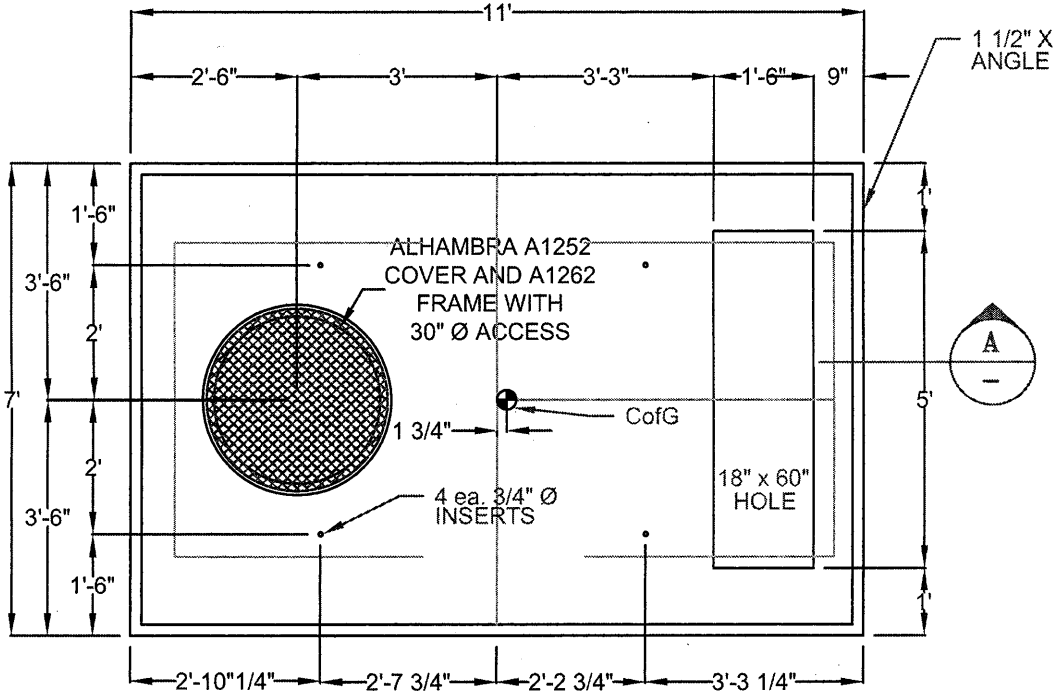
APPROVED 10/02	
PATRICK VALATH	
SR. ENGINEER / MANAGER	
ENGR.	PV
DRWN	DANIEL T.
CHKD.	TT

PADMOUNT SWITCHGEAR
CONCRETE PAD DETAIL
ROOF SLAB TYPE-B

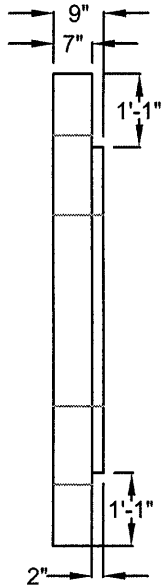
City of Palo Alto
California
UTILITIES, ELECTRIC ENGINEERING

REV.	DATE	APPR.	DESCRIPTION

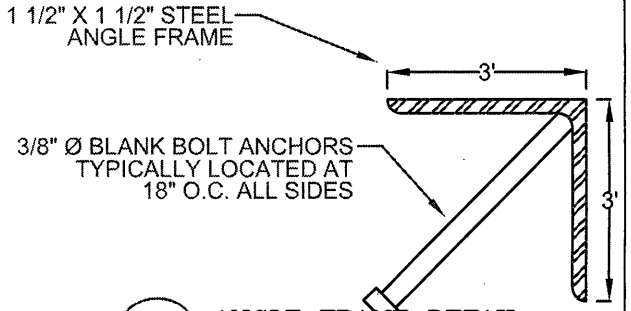
MAP #	CKT #	SCALE	W.O.# / DRAWING #
-	-	NTS	DT-SS-U-1026
			SHEET 3 OF 5

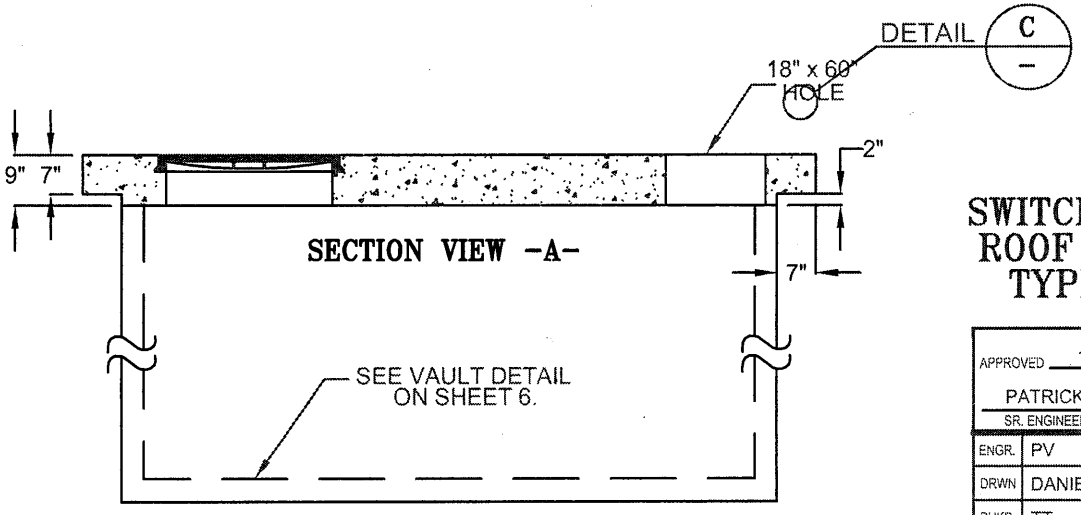


PLAN VIEW



END VIEW





SWITCH PAD ROOF SLAB TYPE-D

STEEL GENERAL NOTES:
1. STEEL: ASTM A36, GALVINIZE AFTER FABRICATION.
2. GALVINIZATION: ASTM A132.
3. WELDING: AWS D1.1.

GENERAL NOTES:
1. CONCRETE: fc = 4,500 psi ULTIMATE COMPRESSIVE STRENGTH IN 28 DAYS.
2. REINFORCEMENT: A. REBAR: ASTM A706, GRADE 60
   B. STRENGTH Fy= 60,000 psi.
3. ALL CONCRETE JOINTS TO BE SEALED USING APPROVED JOINT SEALANT UNLESS OTHERWISE NOTED.
4. ALL MATERIAL SHALL BE DOMESTIC. (MADE IN U.S.A.)
5. STRUCTURE DESIGNED FOR EQUIP./PEDESTRIAN LAODING PER ASTM C-857. (300 lb. PER SQ. FT.)

APPROVED	10/02
	PATRICK VALATH
	SR. ENGINEER / MANAGER
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DRWN	DANIEL T.
CHKD.	TT

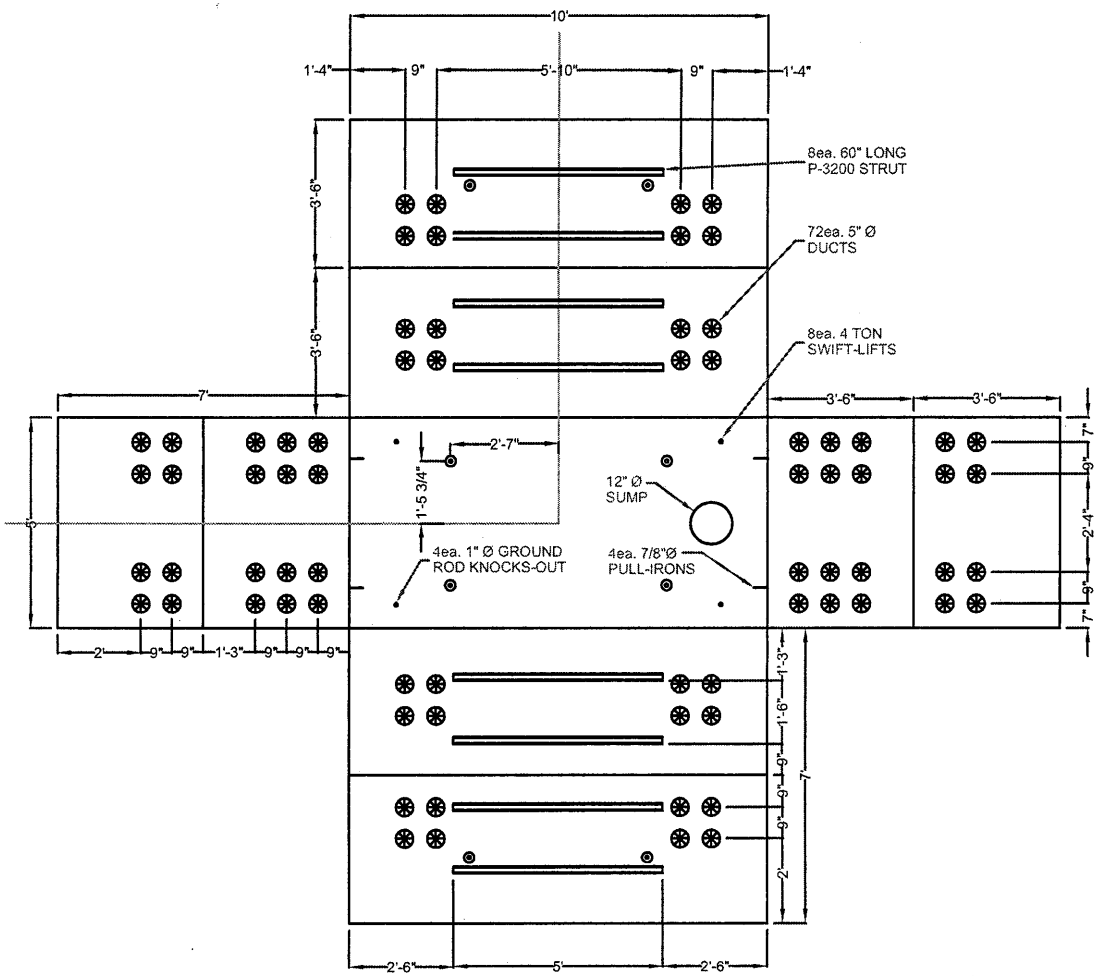
PADMOUNT SWITCHGEAR CONCRETE PAD DETAIL ROOF SLAB TYPE-D

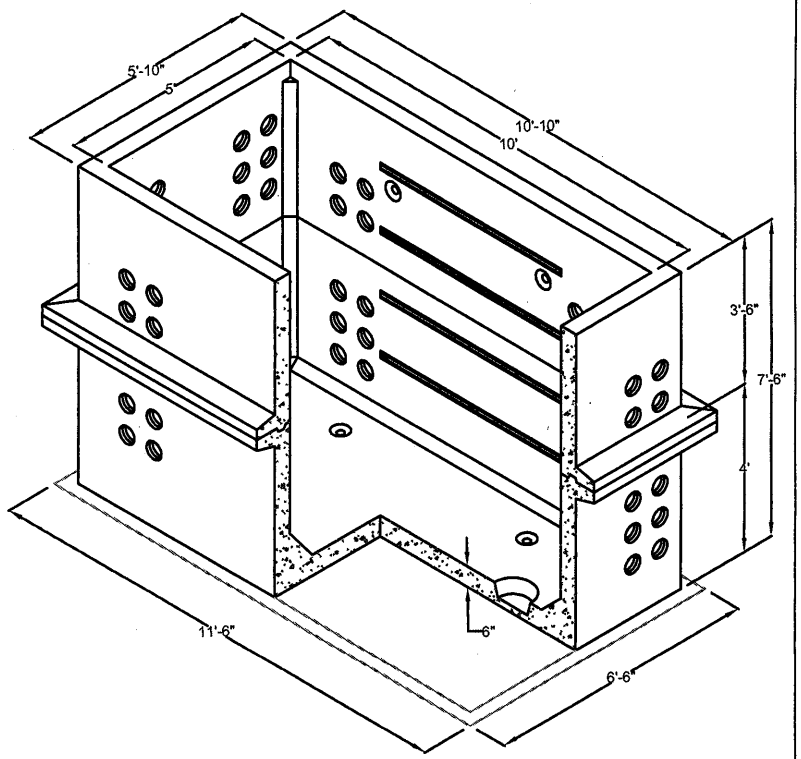
City of Palo Alto
California
UTILITIES. ELECTRIC ENGINEERING

REV.	DATE	APPR.	DESCRIPTION

MAP #	CKT #	SCALE	W.O.# / DRAWING #
-	-	NTS	DT-SS-U-1026

SHEET 4 OF 5





TOP WEIGHT: 9,800#
BASE WEIGHT: 11,400#

GENERAL NOTES:
1. CONCRETE: fc = 4,500 psi ULTIMATE COMPRESSIVE STRENGTH IN 28 DAYS.
2. REINFORCEMENT: A. REBAR: ASTM A706, GRADE 60
   B. STRENGTH Fy= 60,000 psi.
3. ALL CONCRETE JOINTS TO BE SEALED USING APPROVED JOINT SEALANT UNLESS OTHERWISE NOTED.
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5. STRUCTURE DESIGNED FOR EQUIP./PEDESTRIAN LAODING PER ASTM C-857. (300 lb. PER SQ. FT.)

ENGINEERING STANDARDS

APPROVED	10/02
	PATRICK VALATH
	SR. ENGINEER / MANAGER
ENGR.	PV
DRWN	DANIEL T.
CHKD.	TT

5' X 10' VAULT FOR SWITCHGEAR PADS TYPE A, B, C & D.

City of Palo Alto
California
UTILITIES. ELECTRIC ENGINEERING

REV.	DATE	APPR.	DESCRIPTION

MAP #	CKT #	SCALE	W.O.# / DRAWING #
-	-	NTS	DT-SS-U-1026
			SHEET 5 OF 5

2008 UTILITY ACCEPTABILITY TABLES

The following Acceptability Tables list EUSERC drawings and their acceptability to EUSERC member utilities and represents the most up-to-date polling information that EUSERC has regarding member acceptance of published requirements.

EUSERC does encourage member utilities to accept published EUSERC requirements to the greatest extent possible. However, due differences in operating policies, safety procedures, and other considerations, not all utility members are able to accept all EUSERC requirement drawings.

Manufacturers are encouraged to contact the EUSERC Chairman regarding any discrepancies between the published acceptability of member utilities in the following Tables and any Utility member's actual acceptance policies.

CODES:

A: The Member Utility accepts the EUSERC requirement as published.

C: The Member Utility accepts the basic EUSERC requirement but specifies some modification or limitation in usage. Manufacturer is to consult the utility regarding the deviation.

U: The Member Utility does not accept the EUSERC requirement.

N/A: The Member Utility does not use the type of equipment specified in the EUSERC requirement in the Utility's service area.

Note: Shaded codes in the following Acceptance Tables represent most recent utility changes to the Tables.

UTILITIES	301	301A	302	302A	302B	303	304	305	305A	306	307	308	309	310	311	312	313
ALAMEDA, CITY OF	A	U	A	A		U	A	A		C	A	C	U	--	A	A	A
ANAHEIM, CA, CITY OF	A		C	U		U	A	A		A	A	A	U	--	A	A	U
ANCHORAGE MUN LIGHT & POWER	A	U	NA	NA	NA	NA	A	A	A	A	NA	A	U	--	A	A	U
ARIZONA PUBLIC SERVICE	A	U	U	C	U	U	A	A		A	A	A	U	--	A	A	C
AZUSA, CA, CITY OF	A		C	A		U	A	A		A	NA	A	A	--	A		U
BANNING, CA, CITY OF	A		NA			NA	A	A		A	A	A	A	--	A	A	A
BENTON COUNTY, WA, PUD #1	C		C	A		U	C	C		C	A	C	A	--	A	A	U
BURBANK, CA, CITY OF	A	A	U	A	A	U	A	A		A	NA	A	U	--	A	A	C
CHELAN COUNTY, PUD #1	A	A	A	A	A	NA	A	A		A	A	A	A	--	A	A	A
COLTON, CA, CITY OF	U	U	A	C		U	A	A		A	A	A	A	--	A	A	C
DOUGLAS COUNTY PUD	C													--			
ELECTRICAL DISTRICT #3														--			
ELECTRICAL DISTRICT #4 & #5														--			
ELLENSBURG, WA, CITY OF	A	U	A	U	A	U	U	U		A	A	A	A	--	A	A	U
GLENDALE, CA, CITY OF	A	A	U	A	U	NA	A	A		A	A	A	U	--	A	A	A
GRANT COUNTY, PUD	A	A	A	A	A	A	C	A		NA	A	C	C	--	A	A	NA
HEALDSBURG, CA, CITY OF	A	A	A	A	A	A	A	A		A	A	A	A	--	A	A	A
IDAHO POWER COMPANY	A	A	A	U	C	NA	A	A		C	NA	C	C	--	A	A	NA
IMPERIAL IRRIGATION DISTRICT	A	A	U	U	A	U	A	A		A	A	C	A	--	C	C	A
INTERMOUNTAIN RURAL ELEC ASC.	C	C	U	U	A	NA	A	A		A	A	NA	NA	--	A	A	A
LODI, CA, CITY OF	A	A	U	U	U	A	A	A		A	A	A	A	--	A	A	A
LOMPOC, CA, CITY OF	NA	NA	NA	NA	NA	NA	A	A		A	A	A	U	--	A	A	A
LOS ANGELES, DWP	C	U	U	A	U	U	A	A		A	A	A	U	--	A	A	A
McMINNVILLE WATER & LIGHT	A	A	C	A		NA	A	A		C	A	U		--	A	A	C
MESA, AZ, CITY OF	A	A	C	C	C	NA	A	A		A	A	A	U	--	A	A	C
MODESTO IRRIGATION DISTRICT	A	A	A	U		NA	A	A		A	A	A	C	--	A	A	A
NAVOPACHE ELECTRIC COOP.	A	U	U	C	C	U	A	A		A	A	A	A	--	A	A	C
NEVADA POWER COMPANY	C	NA	U	U	A	A	A	A		A	A	C	C	--	A	A	A
NORTHWESTERN ENERGY,LLC														--			
PACIFIC GAS & ELECTRIC CO.	A	A	U	A	A	A	A	A		A	A	A	U	--	A	A	A
PACIFICORP	A	A	U	U	A	U	A	A		A	A	A	A	--	A	A	U
PALO ALTO, CA CITY OF	A	A	U	C	A	U	A	A		A	A	A	A	--	A	A	A
PASADENA, CA, CITY OF	A		NA			NA	A	A		A	NA	NA	A	--	A	A	NA
PENINSULA LIGHT CO.														--			
														--			
PORTLAND GENERAL ELECTRIC	A	A	U	A		U	A	A		C	A	A	C	--	A	A	U
PUGET SOUND ENERGY	U	U	U	U	U	NA	A	A		C	A	A	U	--	A	A	U
REDDING, CA, CITY OF	A	A	A	A	A	U	A	A		A	A	A	C	--	A	A	C
RICHLAND, WA, CITY OF	A	A	U	U	A	U	U	A		NA	A	A	A	--	A	C	A
RIVERSIDE, CA, CITY OF	A	U	U	A	C	NA	A	A		A	A	C	A	--	A	A	U
ROSEVILLE, CA, CITY OF	A	A	U	A	A	U	A	A	A	A	A	A	NA	--	A	A	U
SACRAMENTO MUNICIPAL UTILITY	A	A	U	A	A	A	A	A		A	A	C	C	--	A	A	A
SALT RIVER PROJECT	A	NA	C	U	U	U	A	A		A	A	A	U	--	A	A	U
SAN DIEGO GAS & ELECTRIC	A	NA	A	A	NA	A	A	A		A	A	C	A	--	A	A	A

UTILITIES	301	301A	302	302A	302B	303	304	305	305A	306	307	308	309	310	311	312	313
SEATTLE CITY LIGHT	C	U	C	A	A	NA	U	A		C	U	C	C	--	C	C	U
SIERRA PACIFIC POWER COMPANY	C	NA	A	A		A	A	A		A	A	A	U	--	A	A	A
SILICON VALLEY POWER	A	A	U	A	A	NA	A	A		A	A	A	A	--	A	A	A
SNOHOMISH COUNTY PUD#1	C	C	U	U	A	U	A	A		A	A	A	C	--	A	A	U
SOUTHERN CALIFORNIA EDISON	A	U	U	C	U	U	A	A	A	A	A	C	U	--	A	A	C
SPRINGFIELD UTILITY BOARD	A		C	A		U	A	A		A	C	C	C	--	C	A	A
SULPHUR SPRINGS VALLEY ELEC.	A		A	NA		U	C	C		C	A	C	C	--	C	C	A
TACOMA POWER	A	A	U	A	A	C	A	A		A	A	C	C	--	A	A	U
TRUCKEE-DONNER PUD	A	A	U	A	C	NA	A	A	A/	A	A	A	A	--	A	A	A
TUCSON ELECTRIC POWER	A		A	A		A	A	A		A	A	C	C	--	A	C	U
TURLOCK IRRIGATION DISTRICT	A	A	U	A	A	A	A	A		A	C	A	A	--	A	A	A
UKIAH, CITY OF	A	A	NA	A	A	A	A	A		A	A	A	A	--	A	A	A
UNI SOURCE ENERGY SERVICES	NA	NA	NA	NA		NA	A	A		A	C	C	A	--	A	A	A
VERNON, CA, CITY OF	A	C	A	U	C	NA	A	A		A	C	C	A	--	A	A	C
WESTERN AREA POWER ADMIN.	A		NA	NA		NA	NA	NA		NA	NA	A	A	--	NA	NA	NA

UTILITIES	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328A	328B	329A
ALAMEDA, CA, CITY OF	A	A	A	C	C	A	A	A	A	A	A	A	A	C	A	A	A
ANAHEIM, CA, CITY OF	U	A	U	U	U	A	A	C	A	A	A	A	A	A	U	U	U
ANCHORAGE MUN POWER & LIGHT	U	A	A	C	C	A	A	A	A	A	A	A	A	A	A	A	A
ARIZONA PUBLIC SERVICE	U	A	NA	NA	NA	C	C	NA	C	NA	C	A	A	A	C	U	A
AZUSA, CA, CITY OF	U	NA	NA	NA	A	A	A	A	A	A	A	A	A				
BANNING, CA, CITY OF	A		A	NA	NA	A	A	NA	NA	NA	NA	A	A				
BENTON COUNTY, WA, PUD #1	C	C	C	C	C	A	A	C	C	C	C	C	C	A			
BURBANK, CA, CITY OF	C	A	NA	A	A	A	A	NA	A	A	A	A	A	A	C	C	C
CHELAN COUNTY, PUD #1	A	A	A	A	A	A	A	C	A	U	A	A	A	A	A	A	A
COLTON, CA, CITY OF	C	A	C	A	A	A	A	C	A	A	A	A	A		C	C	C
DOUGLAS COUNTY PUD						A	A					A	A		A	A	A
ELECTRIC DISTRICT #3						A	A					A	A		A	A	A
ELECTRIC DISTRICT #4 & #5						A	A					A	A		A	A	A
ELLENSBURG, WA, CITY OF	U	U	U	A	A	A	A	NA	NA	NA	A	A	A	A	A	A	A
GLENDALE, CA, CITY OF	A	U	A	U	U	A	A	A	A	A	A	C	C	A	A	U	A
GRANT COUNTY, PUD	NA	NA	C	C	C	C	C	NA	NA	NA	NA	NA	NA			C	
HEALDSBURG, CA, CITY OF	A	U	A	A	A	A	A	A	A	A	A	A	A	U	A	A	A
IDAHO POWER CO.	NA	NA	A	C	NA	C	C	C	C	C	C	C	C	A	C	C	C
IMPERIAL IRRIGATION DISTRICT	C	C	U	U	U	A	A	U	A	U	A	A	A	C	A	A	A
INTERMOUNTAIN RURAL ELECTRIC ASSC.	A	A	U	NA	NA	A	A	A	A	A	A	A	A	A	A	A	A
LODI, CA, CITY OF	A	C	A	A	A	A	A	A	A	A	A	A	A	A	C	C	C
LOMPOC, CA, CITY OF	A	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
LOS ANGELES, DWP	A	A	U	U	U	A	A	A	A	A	A	C	C	A	A	C	A
McMINNVILLE WATER & LIGHT	C	C	U	U	U	A	A	C	A	C	C	A	A	A	A	C	A
MESA, AZ, CITY OF	A	C	NA	NA	NA	A	A	C	A	NA	C	A	A	C	A	A	A
MODESTO IRRIGATION DISTRICT	A		A	C	C	A	A	A	A	A	A	A	A	A	A	A	A
NAVOPACHE ELECTRIC COOP	U	C	U	C	C	A	A	A	A	C	A	A	A	C	C	C	A
NEVADA POWER COMPANY	A	A	C	A	A	C	C	A	A	A	A	A	A	A	C	U	C
NORTHWESTERN ENERGY,LLC																	
PACIFIC GAS & ELECTRIC CO.	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
PACIFICORP	U	A	C	C	C	C	C	A	A	A	A	A	A	A	A	A	A
PALO ALTO, CA, CITY OF	A	C	A	C	A	A	A	U	A	U	A	A	A	C	A	A	A
PASADENA, CA, CITY OF	NA		NA	NA	NA	A	A	A	A	A	A	A	A				
PENINSULA LIGHT CO.																	
PORTLAND GENERAL ELECTRIC	U	A	C	U	U	A	A	A	A	C	C	A	A	A	A	A	A
PUGET SOUND ENERGY	U	A	A	U	U	U	U	A	A	NA	C	A	A	A	A	A	A
REDDING, CA, CITY OF	C	U	C	C	C	C	A	A	A	A	A	A	A	C	C	U	C
RICHLAND, WA, CITY OF	A	C	U	C	C	C	C	C	C	NA	NA	C	C	A	C	A	C
RIVERSIDE, CA, CITY OF	U	A	C	C	C	C	C	NA	C	NA	C	C	C	A	C	U	C
ROSEVILLE, CA, CITY OF	U	A	U	U	U	A	A	A	A	U	A	A	A	A	U	U	U
SACRAMENTO MUNICIPAL UTILITY	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
SALT RIVER PROJECT	U	A	U	U	U	A	A	NA	A	A	A	A	A	A	C	C	C
SAN DIEGO GAS & ELECTRIC	A		NA	NA	NA	A	A	NA	A	NA	A	A	A	A	A	A	A

UTILITIES	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328A	328B	329A
SEATTLE, CITY LIGHT	U	U	C	C	C	C	C	U	C	U	C	C	C	C	C	C	A
SIERRA PACIFIC POWER COMPANY	A		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
SILICON VALLEY POWER	A	A	A	A	A	A	A	A	A	A	A	A	A		A	A	A
SNOHOMISH COUNTY PUD #1	U	A	A	U	U	A	A	A	A	A	A	C	C	C	A	A	A
SOUTHERN CALIFORNIA EDISON	C	A	U	U	U	C	A	U	A	U	A	A	A	A	C	U	C
SPRINGFIELD UTILITY BOARD	A	A	A	C	A	A	A	C	A	C	A	A	C		C	C	C
SULPHUR SPRINGS VALLEY ELEC.	A		A	U	U	A	A	A	A	A	A	A	A	A	A	A	A
TACOMA POWER	C	A	C	C	A	A	A	A	A	A	A	A	A	A	A	A	A
TRUCKEE-DONNER PUD	A	A	A	C	C	A	A	A	A	A	A	A	A	A	A	A	A
TUCSON ELECTRIC POWER	U		C	C	C	C	C	C	A	U	A	A	A		NA	NA	NA
TURLOCK IRRIGATION DISTRICT	A	C	A	A	A	A	A	A	A	A	A	A	C	A	NA	C	C
UKIAH, CITY OF	A		A	A	A	A	A	A	A	A	A	A	A		A	A	A
UNI SOURCE ENERGY SERVICES	A	A	A	A	A	A	A	C	C	NA	NA	A	A	A	A	A	A
VERNON, CA, CITY OF	C	NA	NA	NA	NA	A	A	C	A	C	C	A	A	A	A	C	A
WESTERN AREA POWER ADMIN.	NA	NA	NA	A	A	A	A	NA	NA	NA	NA	NA	A	A	A	A	A

UTILITIES	329B	330	331	332	333	334	335	336	337	338	339	340	341	342	343	343A	344
ALAMEDA, CA, CITY OF	A	A	A	A	A	--	--	C	--		A	--	--	A	A	C	U
ANAHEIM, CA, CITY OF	U	A	A	A	A	--	--	U	--	C	A	--	--	A	A	U	A
ANCHORAGE MUN LIGHT & POWER	A	A	A	C	NA	--	--	NA	--	NA	A	--	-	A	A	A	NA
ARIZONA PUBLIC SERVICE	U	A	A	A	NA	--	--	U	--	NA	NA	--	--	A	A	U	NA
AZUSA, CA, CITY OF		A	A	A	A	--	--	C	--		A	--	--	A	A		A
BANNING, CA, CITY OF		A	A	A	A	--	--	NA	--		A	--	--	A	A		A
BENTON COUNTY, WA, PUD #1		A	A	A	A	--	--	C	--		A	--	--	A	C		C
BURBANK, CA, CITY OF	C	A	A	A	A	--	--	NA	--	NA	A	--	--	A	A	A	A
CHELAN COUNTY, PUD #1	A	A	A	A	A	--	--	C	--	A	A	--	--	A	A	A	U
COLTON, CA, CITY OF	C	A	A	A	A	--	--	U	--	A	A	--	--	A	C		A
DOUGLAS COUNTY PUD	A					--	--		--			--	--				
ELECTRIC DISTRICT #3	A								--								
ELECTRIC DISTRICT #4 & #5	A								--								
ELLENSBURG, WA, CITY OF	U	A	A	A	NA	--	--	U	--	A	A	--	--	A	A	A	NA
GLENDALE, CA, CITY OF	U	A	A	A	A	--	--	U	--	NA	C	--	--	A	A	U	A
GRANT COUNTY, PUD	C	C	C	NA	NA	--	--	A	--	C	A	--	--	C	C	C	C
HEALDSBURG, CA, CITY OF	A	A	A	A	A	--	--	C	--		A	--	--	A	A		C
IDAHO POWER CO.	C	C	C	A	NA	--	--	NA	--	NA	NA	--	--	A	C	C	NA
IMPERIAL IRRIGATION DISTRICT	A	A	A	A	C	--	--	NA	--	C	C	--	--	A	A	A	C
INTERMOUNTAIN RURAL ELECTRIC ASSC.	A	A	A	A	A	--	--		--	C	NA	--	--	A	A	A	C
LODI, CA, CITY OF	C	A	A	A	A	--	--	C	--		A	--	--	A	A	A	A
LOMPOC, CA, CITY OF	A	A	A	C	C	--	--	U	--		A	--	--	A	A		C
LOS ANGELES, DWP	C	A	A	A	U	--	--	U	--	C	A	--	--	A	A	U	C
McMINNVILLE WATER & LIGHT	C	A	A	C	C	--	--	C	--	C	C	--	--	C	C	C	C
MESA, AZ, CITY OF	A	A	A	A	A	--	--	NA	--		NA	--	--	A	A		NA
MODESTO IRRIGATION DISTRICT	A	A	A	A	A	--	--	U	--		A	--	--	A	A	A	C
NAVOPACHE ELECTRIC COOP	A	A	A	A	U	--	--	C	--	NA	C	--	--	A	C	A	A
NEVADA POWER COMPANY	U	A	A	A	A	--	--	NA	--		A	--	--	A	A		C
NORTHWESTERN ENERGY,LLC																	
PACIFIC GAS & ELECTRIC CO.	A	A	A	A	A	--	--	U	--	A	A	--	--	A	A	C	U
PACIFICORP	A	A	A	A	U	--	--	U	--	U	A	--	--	A	A	A	A
PALO ALTO, CA, CITY OF	A	A	A	A	U	--	--	U	--	U	U	--	--	A	U	U	C
PASADENA, CA, CITY OF		A	A	C	A	--	--	NA	--		NA	--	--	NA	C		NA
PENINSULA LIGHT CO.						--	--		--			--	--				
PORTLAND GENERAL ELECTRIC	A	A	A	A	C	--	--	C	--	C	A	--	--	A	C	C	U
PUGET SOUND ENERGY	A	A	C	A	NA	--	--	U		U	A	--	--	A	C	C	C
REDDING, CA, CITY OF	U	A	A	A	A	--	--	C	--	C	A	--	--	A	C	U	U
RICHLAND, WA, CITY OF	A	A	A	A	A	-	-	U	--	C	A	-	-	A	U	C	C
RIVERSIDE, CA, CITY OF	U	A	A	A	A	--	--	NA	--	C	C	--	--	A	A	U	C
ROSEVILLE, CA, CITY OF	U	A	A	A	A	--	--	U	--	U	U	--	--	A	A	A	U
SACRAMENTO MUNICIPAL UTILITY	A	A	A	A	A	--	--	U	--	A	A	--	--	A	A	A	A
SALT RIVER PROJECT	C	A	A	A	C	--	--	NA	--	NA	NA	--	--	A	A	A	NA
SAN DIEGO GAS & ELECTRIC	A	A	A	A	U	--	--	NA	--		NA	--	--	A	C	C	C

UTILITIES	329B	330	331	332	333	334	335	336	337	338	339	340	341	342	343	343A	344
SEATTLE, CITY LIGHT	C	A	A	A	C	--	--	C	--	C	C	--	--	C	U	U	C
SIERRA PACIFIC POWER COMPANY	A	A	A	A	A	--	--	C	--		A	--	--	A	A	A	U
SILICON VALLEY POWER	A	A	A	A	A	--	--	NA	--		A	--	--	A	A	A	A
SNOHOMISH COUNTY PUD #1	A	A	A	A	U	--	--	U	--	U	A	--	--	A	C	A	C
SOUTHERN CALIFORNIA EDISON	U	A	A	A	A	--	--	U	--	U	U	--	--	A	C	U	C
SPRINGFIELD UTILITY BOARD		A	A	A	A	--	--	C	--	C	A	--	--	A	A		C
SULPHUR SPRINGS VALLEY ELEC.	A	A	A	A	A	--	--	A	--	A	A	--	--	A	A		A
TACOMA POWER	A	A	A	A	A	--	--	C	--		A	--	--	A	NA	NA	NA
TRUCKEE-DONNER PUD	A	A	A	A	A	--	--	A	--	A	A	--	--	A	A		A
TUCSON ELECTRIC POWER	NA	A	A	A	A	--	--	C	--		C	--	--	C	C		C
TURLOCK IRRIGATION DISTRICT	C	A	A	A	A	--	--	U	--	NA	A	--	--	A	A	C	C
UKIAH, CITY OF	A	A	A	A	A	--	--	A	--	A	A	--	--	C	A		A
UNI SOURCE ENERGY SERVICES	A	A	A	A	A	--	--	A	--	A	C	--	--	A	A		C
VERNON, CA, CITY OF	C	A	A	A	A	--	--	NA	--	C	A	--	--	A	A	C	A
WESTERN AREA POWER ADMIN.	A	NA	NA	NA	NA	--	--	NA	--	NA	NA	--	--	NA	NA	NA	NA

UTILITIES	345	346	347	348	349	350	351	352	353	354	401	401A	402	403	404	405	406
ALAMEDA, CA, CITY OF	C	--	A	C	C	--	U	--	A	A	C	C	C	A	A	U	U
ANAHEIM, CA, CITY OF	C	--	A	A	A	--	A	--	A	A	A	A	A	C	A	U	U
ANCHORAGE MUN LIGHT & POWER	A	--	A	C	C	-	C	-	A	A	C	C	C	C	NA	NA	NA
ARIZONA PUBLIC SERVICE	A	--	A	A	C	--	NA	--	A	A	C	U	A	C	U	NA	NA
AZUSA, CA, CITY OF	A	--	A	A	A	--	A	--	A	A	A					NA	NA
BANNING, CA, CITY OF	A	--	A	A	A	--	NA	--	A	A	NA	A				A	A
BENTON COUNTY, WA, PUD #1	C	--	A	C	A	--	C	--	A	C	C			A	A	C	C
BURBANK, CA, CITY OF	A	--	A	A	A	--	NA	--	A	A	C	NA	C	A	A	NA	NA
CHELAN COUNTY, PUD #1	A	--	A	C	A	--	A	--	A	A	NA	NA	NA	A	A	C	C
COLTON, CA, CITY OF	C	--	C	A	A	--	C	--	A	A	C					A	A
DOUGLAS COUNTY PUD		--	A			--		--									
ELECTRIC DISTRICT #3		--	A														
ELECTRIC DISTRICT #4 & #5		--	A														
GLENDALE, CA, CITY OF	A	--	A	A	C	--	C	--	A	A	A	C	A	A	A	U	U
GRANT COUNTY, PUD	NA	--	C	C	C	--	C	--	C	NA	C		C	NA	NA	C	C
HEALDSBURG, CA, CITY OF	A	--	A	A	A	--	C	--	C	A	A	A		A	A	U	U
IDAHO POWER CO.	C	--	C	C	C	--	C	--	C	A	C	C	C	NA	NA	C	C
IMPERIAL IRRIGATION DISTRICT	A	--	A	A	A	--	NA	--	A	A	A	C	A	A	C	NA	NA
INTERMOUNTAIN RURAL ELECTRIC ASSC.	A	--	A	A	NA	--	NA	--	A	A	NA	NA	NA	NA	NA		
LODI, CA, CITY OF	A	--	A	A	A	--	U	--	A	A	A	A	A	NA	NA	NA	
LOMPOC, CA, CITY OF	A	--	A	A	A	--	C	--	C	A	C	C	C	C	NA	C	C
LOS ANGELES, DWP	A	--	C	C	A	--	U	--	A	A	C	NA	A	A	U	NA	NA
McMINNVILLE WATER & LIGHT	A	--	A	C	U	--	U	--	A	A	C	C	C	C		NA	NA
MESA, AZ, CITY OF	A	--	A			--		--		A	NA	NA	NA	NA	NA	NA	NA
MODESTO IRRIGATION DISTRICT	A	--	A	A	C	--	C	--	A	A	A	A	A	A	U	U	U
NAVOPACHE ELECTRIC COOP	A	--	A	A	A	--	A	--	A	A	C	C		U	U	C	C
NEVADA POWER COMPANY	A	--	A	C	NA	--	NA	--	A	A	NA	NA	NA	A	A	NA	NA
NORTHWESTERN ENERGY,LLC		--										A	A	A			
PACIFIC GAS & ELECTRIC CO.	A	--	A	A	C	--	C	--	A	A	A		A	A	A	U	U
PACIFICORP	A	--	A	A	A	--	NA	--	C	A	A		A	A	A	U	U
PALO ALTO, CA, CITY OF	A	--	A	A	C	--	A	--	C	A	C	C	A	A	U	U	U
PASADENA, CA, CITY OF	C	--	A	A	A	--	NA	--	A	A	A					NA	NA
PENINSULA LIGHT CO.		--				--		--									
PORTLAND GENERAL ELECTRIC	C	--	A	C	C	--	U	--	A	A	A	A	A	A	C	U	U
PUGET SOUND ENERGY	C	--	A	A	C	--	C	--	C	A	A	U	A	A	NA	NA	NA
REDDING, CA, CITY OF	A	--	A	C	C	--	C	--	A	A	C	C	A	A	U	U	U
RICHLAND, WA, CITY OF	C	--	A	C	C	-	C	-	A	C	NA	NA	NA	A	A	U	U
RIVERSIDE, CA, CITY OF	A	--	A	A	C	--	C	--	A	A	A	A	A	A	A	NA	NA
ROSEVILLE, CA, CITY OF	A	--	A	C	C	--	U	--	A	A	C	C	C	A	A	NA	NA
SACRAMENTO MUNICIPAL UTILITY	A	--	A	A	A	--	A	--	A	A	A	A	A	A	A	U	NA
SALT RIVER PROJECT	A	--	A	A	A	--	C	--	A	A	A	NA	A	A	A	NA	NA
SAN DIEGO GAS & ELECTRIC	C	--	C	A	A	--	C	--	C	A	A	NA	A	A	U	NA	NA

UTILITIES	345	346	347	348	349	350	351	352	353	354	401	401A	402	403	404	405	406
SILICON VALLEY POWER	A	--	A	A	NA	--	NA	--	A	A	A	NA		NA	A	NA	NA
SEATTLE, CITY LIGHT	A	--	A	C	C	--	C	--	C	C	C	C	C	C	U	NA	NA
SIERRA PACIFIC POWER COMPANY	A	--	A	C	C	--	C	--	A	A	C	A		NA	A	U	U
SNOHOMISH COUNTY PUD #1	C	--	C	C	C	--	C	--	A	C	C			C	C	NA	NA
SOUTHERN CALIFORNIA EDISON	A	--	A	A	A	--	NA	--	A	A	A	U	A	NA	A	U	U
SPRINGFIELD UTILITY BOARD	C	--	C	A	C	--	C	--	C	A	C	C	NA	C	C	C	C
SULPHUR SPRINGS VALLEY ELEC.	A	--	A	A	A	--	NA	--	C	C	C			NA	NA	NA	NA
TACOMA, WA, CITY OF	NA	--	NA	NA	A	--	A	--	C	A	NA	NA	NA	A	A	C	C
TRUCKEE-DONNER PUD	A	--	A	A	A	--	A	--	A	A	NA	NA	NA	A	A	C	C
TUCSON ELECTRIC POWER	C	--	NA	C	C	--	C	--	A	A	A					U	U
TURLOCK IRRIGATION DISTRICT	A	--	A	A	NA	--	C	--	C	A	U	U	NA	A	A	NA	NA
UKIAH, CITY OF	A	--	A	A	A	--	A	--	A	A	A	A		A	A	A	A
UNI SOURCE ENERGY SERVICES	A	--	A	A	A	--	C	--	A	A	A	A	A	C	C	NA	NA
VERNON, CA, CITY OF	A	--	A	A	C	--	NA	--	A		A	A	A	C	A	C	C
WESTERN AREA POWER ADMIN.	A	--	A	NA	NA	--	NA	--	NA	NA	A	A	A	NA	NA	C	C

UTILITIES	407	408	409	410	411	412											
ALAMEDA, CA, CITY OF	U	A	C	C	C	U											
ANAHEIM, CA, CITY OF	U	A	A	A	A	A											
ANCHORAGE MUN LIGHT & POWER	NA	A	A	A	NA	NA											
ARIZONA PUBLIC SERVICE	NA	C	U	U	C	U											
AZUSA, CA, CITY OF	NA	A	A	A	A	C											
BANNING, CA, CITY OF		A	A	NA	A	C											
BENTON COUNTY, WA, PUD #1		C	C	C	C	C											
BURBANK, CA, CITY OF	NA	A	NA	A	C	C											
CHELAN COUNTY, PUD #1		C	C	A	A	A											
COLTON, CA, CITY OF		C	C	C	A	A											
DOUGLAS COUNTY PUD																	
ELECTRIC DISTRICT #3																	
ELECTRIC DISTRICT #4 & #5																	
GLENDALE, CA, CITY OF	U	A	U	A	A	C											
GRANT COUNTY, PUD	NA	C	C	C	A	C											
HEALDSBURG, CA, CITY OF		C	A	C	A	A											
IDAHO POWER CO.	NA	C	C	C	C	C											
IMPERIAL IRRIGATION DISTRICT	NA	A	NA	NA	A	C											
INTERMOUNTAIN RURAL ELECTRIC ASSC.			NA		NA												
LODI, CA, CITY OF		A	C	C	C	C											
LOMPOC, CA, CITY OF		C	C	C	C	C											
LOS ANGELES, DWP	NA	C	NA	U	A	U											
McMINNVILLE WATER & LIGHT		NA	NA	NA	C	C											
MESA, AZ, CITY OF	NA	A	A	A	A	A											
MODESTO IRRIGATION DISTRICT		A	A	U	A	C											
NAVOPACHE ELECTRIC COOP		C	C	C	C	C											
NEVADA POWER COMPANY	A	A	A	A	A	A											
NORTHWESTERN ENERGY,LLC																	
PACIFIC GAS & ELECTRIC CO.	U	A	U	C	U	U											
PACIFICORP		C	C	C	C	A											
PALO ALTO, CA, CITY OF	U	A	U	U	C	A											
PASADENA, CA, CITY OF		A	A	C	C	C											
PENINSULA LIGHT CO.																	
PORTLAND GENERAL ELECTRIC	U	C	C	C	C	C											
PUGET SOUND ENERGY	NA	A	A	A	C	C											
REDDING, CA, CITY OF	U	A		A	A	C											
RICHLAND, WA, CITY OF	U	A		A	A	C											
RIVERSIDE, CA, CITY OF	NA	A	C	NA	A	NA											
ROSEVILLE, CA, CITY OF	NA	A	C	A	A	A											
SACRAMENTO MUNICIPAL UTILITY	NA	A	A	A	A	A											
SALT RIVER PROJECT	NA	A	A	NA	A	C											
SAN DIEGO GAS & ELECTRIC	A	A	C	C	A	A											

UTILITIES	407	408	409	410	411	412											
SILICON VALLEY POWER		A	NA	C	NA	NA											
SEATTLE, CITY LIGHT	NA	C	C	C	C	C											
SIERRA PACIFIC POWER COMPANY		A	A	A	A	A											
SNOHOMISH COUNTY PUD #1		NA	C	C	C	C											
SOUTHERN CALIFORNIA EDISON	U	A	NA	A	A	A											
SPRINGFIELD UTILITY BOARD		C	C	C	C	C											
SULPHUR SPRINGS VALLEY ELEC.		NA	NA	NA	NA	NA											
TACOMA, WA, CITY OF		C	C	C	A	C											
TRUCKEE-DONNER PUD	A	A	A	A	A	C											
TUCSON ELECTRIC POWER		C	C	C	C	C											
TURLOCK IRRIGATION DISTRICT	NA	C	C	C	C	C											
UKIAH, CITY OF		A	A	A	A	A											
UNI SOURCE ENERGY SERVICES		A	A	A	A	A											
VERNON, CA, CITY OF	C	A	A	C	A	A											
WESTERN AREA POWER ADMIN.	C	A	A	A	A	A											

METER SOCKET CONFIGURATION TABLES

On the following Tables of Meter Socket Configurations, the symbols mean:

CODES

4	4 clip socket
5	5 clip socket with the 5th clip at either 6 or 9 o'clock position
5A	5 clip socket with the 5th clip at the 9 o'clock position
5B	5 clip socket with the 5th clip at the 6 o'clock position
5C	5th clip at 9 o'clock position for 100 amp sockets and at 6 o'clock position for 200 amp sockets
6	6 clip socket with clips at 3 and 9 o'clock positions
7	7 clip socket
8	8 clip socket
13	13 clip socket
15	15 clip socket
P	Potential transformers used
E	8 clip socket for less than 400 amps; otherwise 13 clip socket
F	8 clip socket for less than 500 amps; otherwise 13 clip socket
G	8 clip socket for less than 800 amps; otherwise 13 clip socket
*	Consult the utility
NA	Not applicable

	SINGLE-PHASE									SELF-CONTAINED						
METER SOCKET CONFIGURATION FORM SHEET 1	120 2W	208 2W	240 2W	277 2W	480 2W	120 208 3W	120 240 3W	240 480 3W	277 480 3W	120 208 4W	120 240 4W	240 3W	277 480 4W	480 3W	240 480 4W	
ALAMEDA, CA, CITY OF	4	NA	NA	NA	NA	5	4	NA	5	7	7	5	7	5		
AMERICAN ELECTRIC POWER SERVICE																
ANAHEIM, CA, CITY OF	4	NA	4	NA	NA	5	4	NA	4	7	7	5	7	5		
ANCHORAGE MUM POWER & LIGHT	4	NA	NA	NA	NA	5A	4	4	NA	7	7	NA	7	NA		
ARIZONA PUBLIC SERVICE	4	NA	NA	NA	NA	5A	4	NA	NA	7	7	NA	7	NA	NA	
AZUSA, CA, CITY OF	4	NA	4	NA	NA	5A		NA	NA	7	7	5A	7	NA		
BANNING, CA, CITY OF	4	4	4	4	4	5	5	5	5	7	7	5	7	5		
BENTON COUNTY, WA, PUD #1	4	NA	4	NA	4	5	4	NA	NA	7	7	NA	7	NA		
BURBANK, CA, CITY OF	4	NA	4	NA	NA	5	4	NA	NA	7	NA	5	NA	NA	NA	
CHELAN COUNTY, PUD #1	4	NA	NA	NA	NA	5	4	5	5	7	7	NA	7	NA		
COLTON, CA, CITY OF	4	NA	NA	NA	NA	5	4	NA	NA	7	7	5	7	5		
DOUGLAS COUNTY PUD																
ELECTRICAL DISTRICT #3																
ELECTRICAL DISTRICT #4 & #5																
GLENDALE, CA, CITY OF	4	NA	NA	NA	NA	5A	4	NA	NA	7	NA	5A	NA	NA		
GRANT COUNTY, PUD	NA	NA	NA	NA	NA	NA	5A	NA	NA	7	13	NA	13	NA		
HEALDSBURG, CA, CITY OF	4	NA	4	NA	NA	5	4	NA	5	7	7	5	7	5		
IDAHO POWER CO.	NA	NA	NA	NA	NA	5A	4	4	NA	7	7	NA	7	NA		
IMPERIAL IRRIGATION DISTRICT	NA	NA	NA	NA	NA	NA	4A	NA	NA	7	7	NA	7	NA		
INTERMOUNTAIN RURAL ELEC. ASSC.	4	NA	NA	NA	NA	5	4	NA	NA	7	7	5	7	5		
LODI, CA, CITY OF	4	NA	NA	NA	NA	5A	4	NA	NA	7	7	*	*	*		
LOMPOC, CA, CITY OF																
LOS ANGELES, DWP	4	NA	NA	NA	4	5A	4	NA	NA	7	7	5A	7	5A		
McMINNVILLE WATER & LIGHT																
MESA, AZ, CITY OF																
MODESTO IRRIGATION DISTRICT	4	NA	NA	NA	NA	5A	4	NA	NA	7	7	*	7	5A		
NAVOPACHE ELECTRIC COOP																
NEVADA POWER COMPANY	NA	NA	NA	NA	NA	NA	4	NA	NA	7	7	NA	7	NA	A	
NORTHWESTERN ENERGY, LLC																
PACIFIC GAS & ELECTRIC CO.	4	NA	4	NA	4	5	4	NA	5	7	7	5	7	5		
PACIFICORP	4	NA	NA	NA	NA	5A	4	4	NA	7	7	5	7	5		
PALO ALTO, CA, CITY OF	NA	NA	NA	NA	NA	5A	4	NA	NA	7	7	NA	7	NA	NA	
PASADENA, CA, CITY OF	4	NA	NA	NA	NA	NA	4	NA	NA	7	NA	5A	*	*		
PENINSULA LIGHT CO.																
PORTLAND GENERAL ELECTRIC	4	NA	4	NA	NA	5A	4	4	NA	7	7	5A	7	5A		
PUGET SOUND ENERGY	NA	NA	NA	NA	NA	5A	4	NA	NA	7	7	NA	7	NA	NA	
REDDING, CA, CITY OF	4	NA	4	NA	NA	5	4	NA	NA	7	7	NA	7	NA		
RICHLAND, WA, CITY OF	NA	NA	NA	NA	NA	5A	4	NA	NA	7	7	NA	7	NA	7	
RIVERSIDE, CA, CITY OF	4	NA	4	NA	NA	5	4	*	5	7	7	5	7	5	NA	
ROSEVILLE, CA, CITY OF	NA	NA	NA	NA	NA	5A	4	NA	NA	7	7	NA	7	NA	NA	
SACRAMENTO MUNICIPAL UTILITY	4	NA	NA	NA	NA	5A	4	NA	NA	7	7	NA	7	NA	NA	
SALT RIVER PROJECT	4	NA	NA	NA	NA	5	4	NA	NA	7	7	NA	7	NA		
SAN DIEGO GAS & ELECTRIC	4	NA	NA	NA	4	5A	4	4	NA	7	7	5A	7	5A	NA	
SILICON VALLEY POWER	4	NA	NA	NA	NA	5	4	NA	NA		7	7	NA	7	5	
SEATTLE, WA, CITY OF	4	NA	4	NA	NA	5A	4	4	5A		7	7	5A	7	5A	
SIERRA PACIFIC POWER COMPANY	NA	NA	NA	NA	NA	5A	4	NA	NA		7	7	5A	7	5A	
SNOHOMISH COUNTY PUD #1	4	NA	NA	NA	NA	5	4	NA	NA		7	7	5	7	5	

	SINGLE-PHASE										SELF-CONTAINED				THREE PHASE			
METER SOCKET CONFIGURATION FORM SHEET 1	120 2W	208 2W	240 2W	277 2W	480 2W	120 208 3W	120 240 3W	240 480 3W	277 480 3W		120 208 4W	120 240 4W	240 3W	277 480 4W	480 3W	240 480 4W		
SOUTHERN CALIFORNIA EDISON	4	NA	NA	NA	4	5	4	4	5		7	7	5	7	5	NA		
SPRINGFIELD UTILITY BOARD	4	NA	NA	NA	NA	5	4	NA	NA		7	7	5	7	5			
SULPHUR SPRINGS VALLEY ELEC.	4	4	4	4	4	5	4	4	5		7	7	5B	7	5B			
TACOMA POWER	NA	NA	NA	NA	*	5A	4	NA	NA		7	7	NA	7	*			
TRUCKEE-DONNER PUD	4	NA	NA	NA	NA	5A	4	*	*		7	7	5C	7	5C	NA		
TUCSON ELECTRIC POWER	4	NA	NA	NA	NA	5A	4	4	NA		7	7	5A	7	NA			
TURLOCK IRRIGATION DISTRICT	4	NA	NA	NA	NA	5	4	NA	NA		7	7	NA	7	NA			
UKIAH, CITY OF	NA	NA	NA	NA	NA	5A	4	NA	NA		7	7	NA	7	NA			
UNISOURCE ENERGY SERVICES																		
VERNON, CA, CITY OF	4	NA	5	NA	NA	5	4	NA	NA		7	7	5	7	NA			
WESTERN AREA POWER ADMIN.	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA			

					SINGLE-PHASE			TRANSFORMER RATED			THREE PHASE					
METER SOCKET CONFIGURATION FORM SHEET 1	120 2W	208 2W	240 2W	277 2W	480 2W	120 208 3W	120 240 3W	240 480 3W	277 480 3W		120 3W	120 208 4W	120 240 4W	240 3W	277 480 4W	480 3W
ALAMEDA, CA, CITY OF	5	NA	NA	NA	NA	8	6	NA	NA		NA	13	13	8	13	8
ANAHEIM, CA, CITY OF	5A	NA	5A	NA	5A	NA	6	NA	13		G	13	E	13	13	13
ANCHORAGE MUN POWER & LIGHT	NA	NA	NA	NA	NA	NA	6	NA	NA		NA	13	13	NA	13	NA
ARIZONA PUBLIC SERVICE	NA	NA	NA	NA	NA	8	8	NA	NA		NA	13	13	NA	13	NA
AZUSA, CA, CITY OF	NA	NA	5A	NA	NA	NA	NA	NA	NA		NA	13	13	8	13	8
BANNING, CA, CITY OF	5A	NA	5A	8	8	8	8	8	8		8	13	7	13	13	8
BENTON COUNTY, WA, PUD #1	NA	NA	NA	NA	NA	8	6	NA	NA		NA	13	13	NA	13	NA
BURBANK, CA, CITY OF	NA	NA	4	NA	NA	NA	6	NA	NA		NA	13	13	8	13P	8P
CHELAN COUNTY, PUD #1	5	NA	5	NA	NA	8	8	8P	8P		NA	13	13	NA		8P
COLTON, CA, CITY OF	5	NA	5	NA	NA	NA	6	NA	NA		8	13	13	NA	13	NA
DOUGLAS COUNTY PUD																
ELECTRICAL DISTRICT #3																
ELECTRICAL DISTRICT #4 & #5																
ELLENSBURG, CITY OF - ENERGY SERVICES																
GLENDALE, CA, CITY OF	NA	NA	NA	NA	NA	NA	5	NA	NA		NA	15	NA	8	15P	8P
GRANT COUNTY, PUD	NA	NA	NA	NA	NA	NA	5A	7	NA		NA	7	13	NA	13	NA
HEALDSBURG, CA, CITY OF	NA	NA	8	NA	8	NA	6	NA	NA		NA	13	13	8	13	8
IDAHO POWER CO.	5A	NA	5A	NA	5A	NA	5A	NA	NA		NA	13	18	8	13	8
IMPERIAL IRRIGATION DISTRICT	NA	NA	NA	NA	NA	NA	5A	NA	NA		NA	15	15	NA	15	NA
INTERMOUNTAIN RURAL ELEC ASSC.	NA	NA	NA	NA	NA	NA	8	NA	NA		NA	13	13	NA	13P	NA
LODI, CA, CITY OF	NA	NA	NA	NA	NA	NA	6	NA	NA		NA	15	15	15	15	15
LOMPOC, CA, CITY OF	NA	NA	NA	NA	NA	NA	6	NA	NA		NA	13	13	8	13	8
LOS ANGELES, DWP	NA	NA	NA	NA	NA	NA	6	NA	NA		8	13	13	8	13	8
McMINNVILLE WATER & LIGHT																
MESA, AZ, CITY OF	NA	NA	NA	NA	NA	NA	6	NA	NA		NA	13	13	NA	13	8
MODESTO IRRIGATION DISTRICT	5A	NA	NA	NA	5A	*	*	*	*		NA	13	13	*	13P	8P
NAVOPACHE ELECTRIC COOP																
NEVADA POWER COMPANY	NA	NA	NA	NA	NA	NA	6	NA	NA		NA	13	13	NA	13	NA
NORTHWEST ENERGY, LLC																
PACIFIC GAS & ELECTRIC CO.	8	NA	8	NA	8	NA	6	NA	NA		8	15	15	8	15	8
PACIFICORP	NA	NA	NA	NA	NA	NA	6	*	NA		NA	13	13	NA	13	NA
PALO ALTO, CA, CITY OF	NA	NA	NA	NA	NA	NA	5A	NA	NA		NA	13	NA	NA	13P	NA
PASADENA, CA, CITY OF	NA	NA	NA	NA	NA	NA	5A	NA	NA		NA	13	NA	8	13P	8P
PENINSULA LIGHT CO.																
PORTLAND GENERAL ELECTRIC	NA	NA	NA	NA	NA	6	6	6	NA		8	13	13	8	13	8
PUGET SOUND ENERGY	NA	NA	NA	NA	NA	NA	6	NA	NA		NA	13	13	NA	13	NA
REDDING, CA, CITY OF	NA	NA	NA	NA	NA	NA	6	NA	NA		13	13	13	NA	13	8
RICHLAND, WA, CITY OF	NA	NA	NA	NA	NA	8	6	NA	NA		NA	13	13	NA	13	NA
RIVERSIDE, CA, CITY OF	NA	NA	NA	NA	NA	NA	6	NA	NA		NA	13	13	8	13	8
ROSEVILLE, CA, CITY OF	NA	NA	NA	NA	NA	NA	6	NA	NA		NA	13	13	NA	13	NA
SACRAMENTO MUNICIPAL UTILITY	NA	NA	NA	NA	NA	8	6	NA	NA		NA	13	13	NA	13	NA
SALT RIVER PROJECT	NA	NA	NA	NA	NA	NA	6	NA	NA		NA	13	13	NA	13	NA
SAN DIEGO GAS & ELECTRIC	NA	NA	NA	NA	NA	15	6	15	NA		NA	15	15	15	15	15
SILICON VALEY POWER	NA	NA	NA	NA	NA	NA	8	NA	NA		NA	13	13	NA	13P	8P
SEATTLE, WA, CITY OF	5A	NA	5A	NA	NA	8	6	6	8		8	13	13	8	13	NA
SIERRA PACIFIC POWER COMPANY	NA	NA	NA	NA	NA	NA	6	NA	NA		5A	15	15	15	15P	15P
SNOHOMISH COUNTY PUD #1	NA	NA	NA	NA	NA	8	6	6	NA		5	13	13	8	13	8

	SINGLE-PHASE					TRANSFORMER RATED					THREE PHASE					
METER SOCKET CONFIGURATION FORM SHEET 1	120 2W	208 2W	240 2W	277 2W	480 2W	120 208 3W	120 240 3W	240 480 3W	277 480 3W		120 3W	120 208 4W	120 240 4W	240 3W	277 480 4W	480 3W
SOUTHERN CALIFORNIA EDISON	NA	NA	NA	NA	5	NA	5	NA	NA		NA	15	15	15	15	15
SPRINGFIELD UTILITY BOARD	NA	NA	NA	NA	NA	NA	8	NA	NA		NA	13	13	8	13	8
SULPHUR SPRINGS VALLEY ELEC.	5A	5A	5A	5A	5A	8	6	8P	8P		NA	13	13	8	13P	8P
TACOMA POWER	NA	NA	NA	NA	NA	8	6	NA	NA		NA	13	13	NA	13	8
TRUCKEE-DONNER PUD	5A	NA	NA	NA	NA	8	6	NA	NA		NA	13	13	NA	13	NA
TUCSON ELECTRIC POWER	NA	NA	NA	NA	NA	NA	6	6	NA		NA	13	8	*	13	*
TURLOCK IRRIGATION DISTRICT																
UKIAH, CITY OF	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	13	13	NA	13	NA
UNISOURCE ENERGY SERVICES																
VERNON, CA, CITY OF	5	NA	5	NA	NA	8	6	NA	NA		8	13	13	8	13	8
WESTERN AREA POWER ADMIN.	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	C	C	NA	NA	NA

UTILITY REQUIREMENTS FOR MANUFACTURERS DRAWINGS

Manufacturers' drawings are required in some cases prior to fabrication or installation of the services and metering equipment. Specific instances are:

1. All single self-contained metering equipment, 0-600 volts.
2. All multiple self-contained metering equipment, 0-600 volts.
3. All instrument transformer rated metering equipment, 0-600 volts.
4. All standard switchboard service sections, 0-600 volts.
5. Standard switchboard service sections rated 400 amps and above.
6. Standard switchboard service sections rated 1000 amps and above.
7. Specially engineered switchboards.
8. High voltage switchboards.
9. None of the above.

See the following page for individual EUSERC member requirements.

CODES:

X: Required

UTILITIES	1	2	3	4	5	6	7	8	9							
ALAMEDA, CA, CITY OF		X	X	X	X	X	X	X								
ANAHEIM, CA, CITY OF			X	X	X	X	X	X								
ANCHORAGE MUN LIGHT & POWER		X				X	X	X								
ARIZONA PUBLIC SERVICE		X	X		X		X	X								
AZUSA, CA, CITY OF		X	X	X	X	X	X	X								
BANNING, CA, CITY OF																
BENTON COUNTY, WA, PUD #1		X	X	X	X	X	X	X								
BURBANK, CA, CITY OF			X	X	X	X	X	X								
CHELAN COUNTY, PUD #1		X		X	X	X	X	X								
COLTON, CA, CITY OF		X	X	X	X	X	X	X								
DOUGLAS COUNTY PUD																
ELECTRICAL DISTRICT #3																
ELECTRICAL DISTRICT #4 & #5																
GLENDALE, CA, CITY OF					X		X	X								
GRANT COUNTY, PUD			X	X			X	X								
HEALDSBURG, CA, CITY OF		X	X	X	X		X	X								
IDAHO POWER CO.	X	X	X	X	X	X	X	X								
IMPERIAL IRRIGATION DISTRICT		X	X	X	X	X	X	X								
INTERMOUNTAIN RURAL ELEC ASSC.		X	X	X			X	X								
LODI, CA, CITY OF		X	X		X		X	X								
LOMPOC, CA, CITY OF			X		X	X	X	X								
LOS ANGELES, DWP					X		X	X								
McMINNVILLE WATER & LIGHT																
MESA, AZ, CITY OF	X	X	X	X	X	X	X	X								
MODESTO IRRIGATION DISTRICT		X	X	X	X	X	X	X								
NAVOPACHE ELECTRIC COOP																
NEVADA POWER COMPANY			X	X		X	X	X								
NEMA																
NORTHWESTERN ENERGY, LLC																
PACIFIC GAS & ELECTRIC CO.						X	X	X								
PACIFICORP						X	X	X								
PALO ALTO, CA, CITY OF		X	X	X	X		X	X								
PASADENA, CA, CITY OF			X	X	X		X	X								
PENINSULA LIGHT CO.																
PORTLAND GENERAL ELECTRIC					X	X	X	X								
PUGET SOUND ENERGY						X	X	X								
REDDING, CA, CITY OF			X		X	X	X	X								
RICHLAND, WA, CITY OF																
RIVERSIDE, CA, CITY OF		X	X	X	X	X	X	X								
ROSEVILLE, CA, CITY OF		X	X	X	X	X	X	X								
SACRAMENTO MUNICIPAL UTILITY		X	X	X	X	X	X	X								
SALT RIVER PROJECT		X	X		X		X	X								
SAN DIEGO GAS & ELECTRIC		X				X	X	X								
SILICON VALLEY POWER		X	X	X			X	X								
SEATTLE, CITY LIGHT					X	X	X	X								
SIERRA PACIFIC POWER COMPANY		X	X	X	X	X	X	X								
SNOHOMISH COUNTY PUD #1		X	X	X	X	X	X	X								
SOUTHERN CALIFORNIA EDISON		X	X	X	X	X	X	X								
SPRINGFIELD UTILITY BOARD																
SULPHUR SPRINGS VALLEY ELEC.				X	X		X	X								
TACOMA POWER			X	X	X	X	X	X								
TRUCKEE-DONNER PUD		X	X	X	X	X	X	X								
TUCSON ELECTRIC POWER			X	X	X	X	X	X								
TURLOCK IRRIGATION DISTRICT		X	X	X			X	X								
UKIAH, CITY OF		X	X	X	X	X	X	X								
UNISOURCE ENERGY SERVICES																
VERNON, CA, CITY OF		X	X	X	X	X	X	X								
WESTERN AREA POWER ADMIN.							X									