



ENERGY SERVICES ENGINEERING

840 Northgate Drive
Telephone (509) 942-7403
Fax (509) 942-7405

P.O. Box 190 Richland, WA 99352
www.ci.richland.wa.us

SERVICE REQUIREMENTS COMMERCIAL & INDUSTRIAL CUSTOMERS

A. GENERAL

This document addresses the electrical service requirements for Commercial and Industrial business developments. These businesses will be classified with one of the following Energy service categories.

- Small General Service for developments whose monthly demand will not exceed 50 kW.
- Medium General Service for developments whose monthly demand will be greater than 50 kW but less than or equal to 300 kW.
- Large General Service for developments whose monthly demand will be greater than 301 kW but less than or equal to 1000 kW.
- Small industrial is for developments whose monthly demand will be greater than 1001 kW but less than or equal to 5000 kW.
- Large Industrial for developments whose monthly demand will be over 5000 kW.

The service termination method will depend on load information supplied by the customer to Energy Services. The City Electrical Engineer will determine Service classification and the termination method.

B. TERMINATION METHODS

1. For an underground power service the, the customer will be allowed to run the service entrance cables to the Utility's padmount transformer, provided the following criteria is met. The number of customer owned cables cannot greater than 6 conductors per phase nor can any of the individual conductors be sized larger than 500 kcm. The Utility will make the terminations of the customer cable to the connectors in the secondary compartment of the transformer.
2. For an overhead power service, the City will provide the service drop to the customer weatherhead, and make connections to the customer's service entrance cable. The Utility has limitations on the number of service cables and the length these cable can be run. Contact Energy Services for more information regarding an overhead delivery.

Either of the service delivery methods has limitations that are based on the anticipated customer load.

3. When the customer's load is 200 amps or less, self-contained metering is to be utilized. For underground service, the Customer supplies meter base, conduit and service cable runs to City padmount transformer or secondary enclosure. For Overhead service, the Customer is to supply the meter base, service entrance riser, weatherhead, and service entrance cables.
4. For loads between 201 and 801 amps, a CT cabinet is required for either single phase or three-phase delivery. In all cases where underground service is used, the Customer supplies the conduit runs and service cable(s) to the utility transformer.
5. For single-phase service a EUSERC 328B equipment mounting base in a sealable 24"x36"x11", NEMA 3R, CT cabinet is required. For three-phase service a EUSERC 329B equipment-mounting base in a hinged, sealable, 36"x48"x11", NEMA 3R CT cabinet, is

required. Note that all equipment bases (328B & 329B) must be rated for 800 amps continuous power when calculated demands over 400 amps are encountered. Contact the City Utility for usage of EUSERC 328A and 329A CT mounting bases. If the number of customer service entrance cables or service cables exceeds the capacity of the mounting base a EUSERC 317 or 318 cabinet with a pull section meeting EUSERC 343, 347 will be required. Contact Energy Service for more information.

6. The CT cabinet requirement may be waived if the City engineer determines that additional customers cannot be (or are not) served from the same utility transformer. When the CT enclosure is waived, the CTs will be installed in the padmount transformer secondary compartment when the service is underground and installed on the utility service cable when the service is overhead.
7. Single-phase loads greater than 600 amps will be by special permission of the City of Richland's Chief Electrical Engineer.
8. For three phase loads greater than 800 amps, only an underground service delivery method is permitted, except for larger industrial loads, which may be allowed other delivery means. Underground service will be with customer owned cables meeting the City's limitations. When the limitations can't be met, a padmounted "secondary bus enclosure" or an outdoor EUSERC (Electric Utility Service Equipment Requirement Committee) termination cabinet must be used. See section 3 for the secondary bus enclosure requirements. Consult with the City for approval after selecting a EUSERC outdoor termination cabinet design.

C. SECONDARY BUS ENCLOSURE

For loads greater than 801 amps, the delivery will be with an underground service run, and overhead only by special permission. The customer must bring the service conductors to the utility's point of service. The point of service will be either the transformer secondary terminals or bus bar in either a secondary bus enclosure or an approved outdoor switchboard service section. Consult with the City Electrical Engineer for usage. The secondary bus enclosure or outdoor switchboard service section must be installed on a customer provided secondary vault and pad. The City requires (6)-5" Sch 40 PVC conduits, to provided by the customer, between the Utility transformer vault and the secondary vault.

Approved manufacturers for the secondary bus enclosure are Shallbetter, and Scott Engineering. Manufacturer catalog sheets are attached showing drawings of approved materials. Any other manufacturer's enclosure or switchgear will need to be approved before being installed.

Vendors can be contacted at:

Shallbetter products:
Northwest Utility Sales
Attn: Keith Scott
8204 NE 91st Street
Vancouver, WA 98662
(360) 882-9979 voice and fax

Scott Engineering product:
Attn: Robert Bertolli
Scott Engineering
20540 Walnut Drive
Walnut, CA 91789
(909) 594-9637 business, (509) 595-0379 fax

D. VAULT AND PAD FOR UTILITY PADMOUNT TRANSFORMER

The customer is to provide and install the pad and vault for the City utility padmounted transformer. The City Engineer will provide information as to the specific vault and pad to be installed. Approved manufactures for the transformer vault and pad are 'Utility Vault', 'Hanson Pipe and Products' and H2Precast. The City must approve vaults and pads from any other manufacturer, prior to their use.

Vendors can be contacted at:

Utility Vault
Attn: Hugh Sisk
P.O. Box 588
Auburn WA, 98071
(253) 839-3500, (800) 892-1538, (253) 735-4201

Hanson Pipe
Attn: Larry Johnson
P.O. Box 9156
Tacoma, WA 98409
(253) 475-8888 business, (253) 471-4747 fax

H2Precast
Attn: Clay Prewitt
4919 Contractors Drive
East Wenatchee, WA 98802
(509) 884-6644 business, (509) 884-4567 (fax)

Cut sheets of the manufacturer's vaults and pads are included in this document.

E. GROUNDING

This section applies only when delivery is provided with underground power. The customer is to coordinate with the City to have the grounding system installed by the City's representative during placement of the padmount transformer vault. The representative will provide all material for grounding.

F. METERING

The Customer or his contractor shall supply all self-contained meter bases. For a meter base that will be used with CT installations, the contractor is to obtain a prewired 13 terminal meter base from City Electrical Meter shop, at cost, and install it either on the side of the building, or on a freestanding pedestal. The center line of all meter bases must be placed between 4½ ft and 5½ ft above final grade level. Self-contained meter bases are generally installed on the side of a building. For CT meter installations, a freestanding pedestal drawing is attached. The customer must supply either 1" IMC or Galvanized rigid steel conduit between the meter pedestal and the utility transformer. PVC conduit is not acceptable. The metering conduit between the meterbase and the location for the CT's can be no longer than 30 feet and cannot contain more than 270 degrees in bends. All meterbases are to be installed at a location that is readily accessible at any time by Utility personnel.

G. TELECOMMUNICATIONS

The utility may require that a telecommunication cable and conduit to be installed from the meterbase to the telecommunication switchboard. The communications circuit requirement will apply to loads 500 kVA and greater. The communication conduit should be a minimum of 1" galvanized rigid steel or Schedule 40 PVC, but that portion of the conduit above ground must be Galvanized Rigid Steel. The steel portions of the conduit must be grounded using an approved grounding bushings, such as Meyer's Hubs.

An analog communication circuit is required and should be connected to a telephone circuit that is on the customer side of any PBX or switch. This circuit may be shared with additional customer devices (i.e. faxes, HVAC, etc.) through a city provided line-sharing switch. When in use by the utility, the line sharing switch will provide priority phone service to the customer devices. The telecommunications cable to meter base demarcation point should be the same cable as for normal telephone extension within the facility (i.e. 4 conductor twisted pair Red, Green, Black, and Yellow). If customer wants KYZ pulses, use black and white, numbered, (two or four) twisted stranded CU pairs (18 or 20 AWG) with overall shield, sunlight/wet location, 300V

or 600V as appropriate. Acceptable cables are Belden (Cat#9552) and Alpha (Cat#5610B1802), available from suppliers such as Newark. The City utility will only use this circuit to obtain energy usage information from the electric meter.

H. CONTACTS

For specific information, regarding any of the requirements listed above contact the City of Richland Energy Services at (509) 942-7403.

I. MATERIAL ACCEPTABILITY, MANUFACTURER AND CATALOG INFORMATION

- SECONDARY TERMINATION ENCLOSURE (CT MOUNT, CABINET or ENCLOSURE)

Loading 225-800 Amps Single Phase:

- ▶ EUSERC 328B mount in a sealable 24"x36"x11" NEMA3R Cabinet

Loading 225-800 Amps Three Phase:

- ▶ EUSERC 329B mount in a sealable 36"x48"x11" hinged NEMA 3R Cabinet

Loading 801 Amps and greater:

- ▶ SCOTT ENGINEERING Model 130439-5 of appropriate ampere rating, 2000, 3200, or 3900 amps
- ▶ SCOTT ENGINEERING Model 9474-5B of appropriate ampere rating, 2000, 3200, or 3900 amps
- ▶ SHALLBETTER Model# STEI-xx60-34-AL-GA-WO-yyyy, where xx is the current rating codes and yyyy is for special design features. Contact Energy Services for specific model information.

- SECONDARY TERMINATION ENCLOSURE VAULT 801+ Amps

- ▶ HANSON PIPE & PRODUCTS Model 55400
- ▶ UTILITY VAULT Model 504-LA

- SECONDARY TERMINATION ENCLOSURE PAD, 801+ Amps

- ▶ HANSON PIPE & PRODUCTS Model 554-02S cover with 36"x36" access hole.
- ▶ UTILITY VAULT Model 55-332P, cover only

- GROUNDING MATERIAL REQUIREMENTS

- ▶ (2) - 5/8"x8' copper clad ground rods and connectors
- ▶ (40ft) - #2 SDBC ground wire encircling vault, connected to ground rods and terminating 10 ft inside vault
- ▶ All connections (except at ground rods) will be Exothermic weld

- TRANSFORMER VAULT

75 – 500 kVA

- ▶ HANSON PIPE & PRODUCTS Model 55400
- ▶ UTILITY VAULT Model 504-LA
- ▶ H2PRECAST Model 554

750 THRU 2500 kVA

- ▶ HANSON PIPE & PRODUCTS Model 77400
- ▶ UTILITY VAULT Model 774-LA
- ▶ H2PRECAST Model 774

- TRANSFORMER PAD

- 75 – 500 kVA

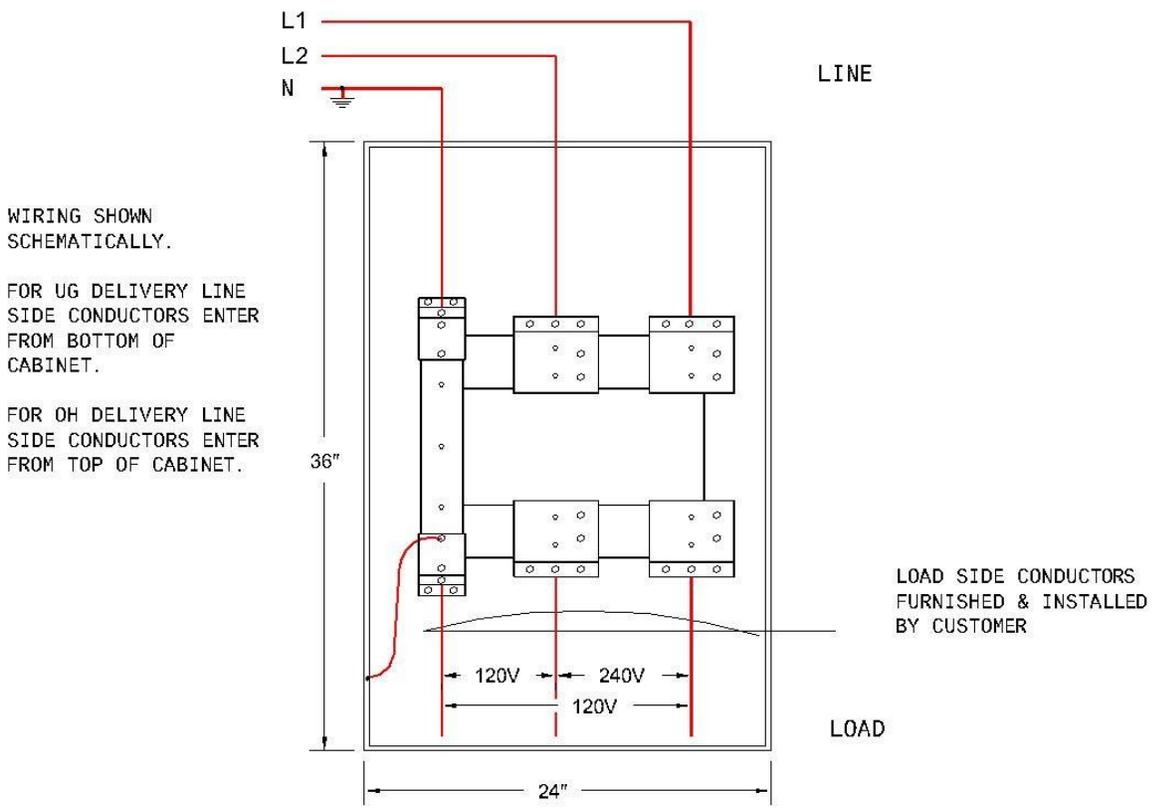
- ▶ 7'X7'X6" with 15"X48" access hole, 12" offset
 - ▶ HANSON PIPE & PRODUCTS Model 77-1548,
 - ▶ UTILITY VAULT Model 77-1548
 - ▶ H2PRECAST Model 77-1548

- 750, 1000, 1500 kVA

- ▶ 8'X8'x8" with 14"X56" access hole, 12" offset
 - ▶ HANSON PIPE & PRODUCTS Model 88-1456,
 - ▶ UTILITY VAULT Model 88-1456
 - ▶ H2PRECAST Model 88-1456

- 2000, 2500 kVA

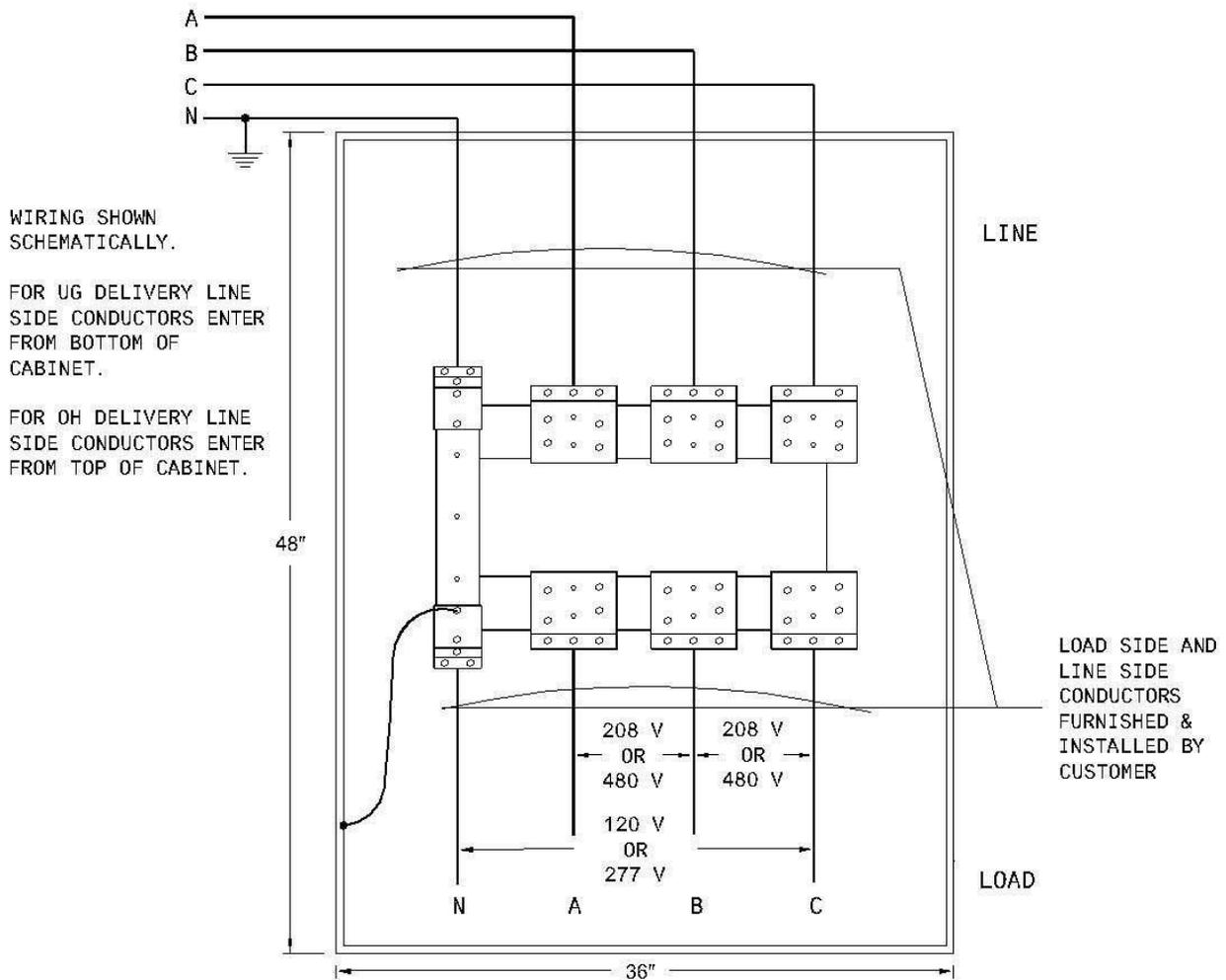
- ▶ 8'X9"x8" with 14"x60" access hole on 8' side, 12" offset
 - ▶ HANSON PIPE & PRODUCTS Model 89 –1460
 - ▶ UTILITY VAULT Model 89-1460
 - ▶ H2PRECAST Model 89-1460



NOTES

1. CURRENT TRANSFORMER (CT) CABINET, CT MOUNTING BASE (EUSERC 328B) AND METERING CIRCUIT CONDUIT SHALL BE SUPPLIED & INSTALLED BY THE CUSTOMER'S CONTRACTOR.
2. MINIMUM SIZE CT CABINET IS 24" x 36" x 11", NEMA 3R RATED.
3. CT MOUNTING RACK TO BE UL RATED FOR 50,000 AIC.
4. METERING CONDUIT SHALL BE 1" DIAMETER GALVANIZED RIGID STEEL OR IMC, AND SHALL BE LIMITED TO 30 FT OF LENGTH WITH NO MORE THAN 3 BENDS TOTALING 270 DEGREES. CITY APPROVAL WILL BE REQUIRED FOR LONGER LENGTHS OF CONDUIT OR FOR ADDITIONAL BENDS, IN WHICH CASE THE CONDUIT SIZE WILL BE SPECIFIED BY THE CITY. NO CONDULETS OR JUNCTION BOXES ARE ALLOWED IN THE METERING CONDUIT RUN.
5. NEUTRAL LUG SHALL BE BONDED TO CT COMPARTMENT.
6. GROUND CT SECONDARIES TO NEAREST SYSTEM NEUTRAL CONNECTION. GROUND AT ONE POINT ONLY.
7. CONTRACTOR IS RESPONSIBLE FOR TERMINATING LOAD CONDUCTORS ONTO CT MOUNTING BASE.
8. CT'S WILL BE PROVIDED AND INSTALLED BY CITY PERSONNEL.

DRAWN BY: bt	METERING CABINET CURRENT TRANSFORMERS (C.T.) 1Ø, 3-WIRE, 201-800 AMPS		M328B SHT. 1 OF 1
APPRD. BY:			
REV #: 0			



NOTES

1. CURRENT TRANSFORMER (CT) CABINET, CT MOUNTING BASE (EUSERC 329B) AND METERING CIRCUIT CONDUIT SHALL BE SUPPLIED & INSTALLED BY THE CUSTOMER'S CONTRACTOR.
2. MINIMUM SIZE CT CABINET IS 36" x 48" x 11", NEMA 3R RATED. A HINGED COVER IS REQUIRED.
3. CT MOUNTING RACK TO BE UL RATED FOR 50,000 AIC.
4. METERING CONDUIT SHALL BE 1" DIAMETER GALVANIZED RIGID STEEL OR IMC, AND SHALL BE LIMITED TO 30 FT OF LENGTH WITH NO MORE THAN 3 BENDS TOTALING 270 DEGREES. CITY APPROVAL WILL BE REQUIRED FOR LONGER LENGTHS OF CONDUIT OR FOR ADDITIONAL BENDS, IN WHICH CASE THE CONDUIT SIZE WILL BE SPECIFIED BY THE CITY. NO CONDULETS OR JUNCTION BOXES ARE ALLOWED IN THE METERING CONDUIT RUN.
5. NEUTRAL LUG SHALL BE BONDED TO CT COMPARTMENT.
6. GROUND CT SECONDARIES TO NEAREST SYSTEM NEUTRAL CONNECTION. GROUND AT ONE POINT ONLY.
7. CONTRACTOR IS RESPONSIBLE FOR TERMINATING CONDUCTORS ONTO CT MOUNTING BASE.
8. CT'S WILL BE PROVIDED AND INSTALLED BY CITY PERSONNEL.

DRAWN BY: BT

APPRD. BY:

REV #: 0

**METERING CABINET
CURRENT TRANSFORMERS (C.T.)
3Ø, 4-WIRE, 201-800 AMPS**

 **ENERGY
SERVICES**

020304

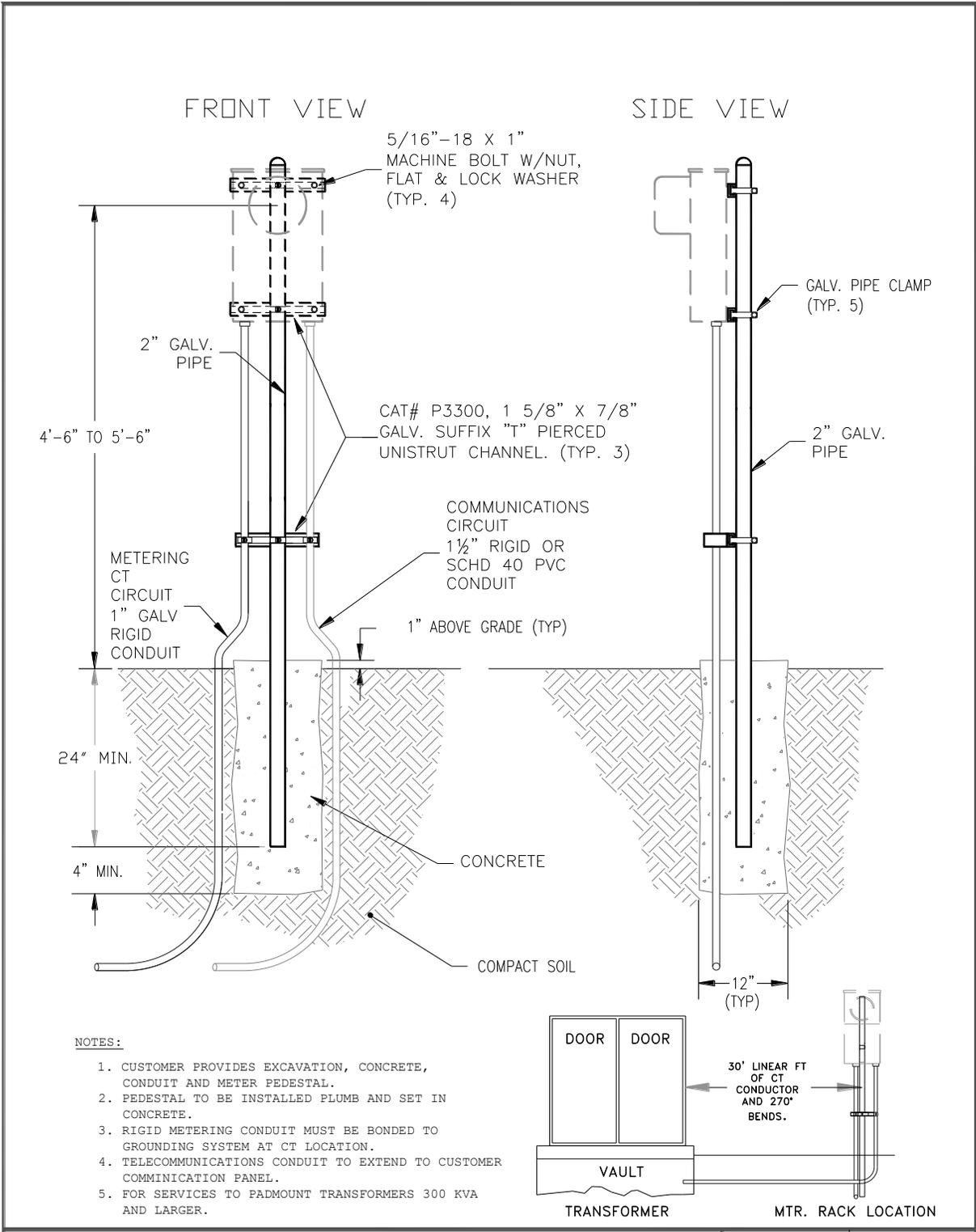
M329B
SHT: 1 OF 1

SUPERSEDES DRAWING NO.
DATE

NO.	REVISION DESCRIPTION	OPS/SYS	REVISION APPROVALS
		DATE	ENGINEERING DATE
△	△		

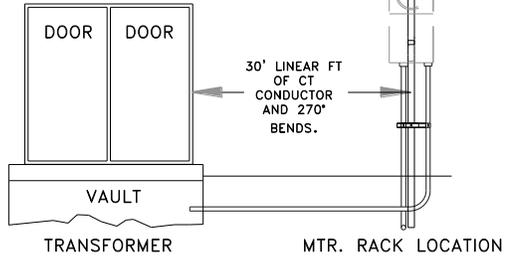
NO.	REVISION DESCRIPTION	OPS/SYS	REVISION APPROVALS
		DATE	ENGINEERING DATE
1	11/28/01 ADD COMM CRKT		

DRAWN BY
WT
DATE:



NOTES:

1. CUSTOMER PROVIDES EXCAVATION, CONCRETE, CONDUIT AND METER PEDESTAL.
2. PEDESTAL TO BE INSTALLED PLUMB AND SET IN CONCRETE.
3. RIGID METERING CONDUIT MUST BE BONDED TO GROUNDING SYSTEM AT CT LOCATION.
4. TELECOMMUNICATIONS CONDUIT TO EXTEND TO CUSTOMER COMMUNICATION PANEL.
5. FOR SERVICES TO PADMOUNT TRANSFORMERS 300 KVA AND LARGER.



CITY OF RICHLAND ENERGY SERVICES

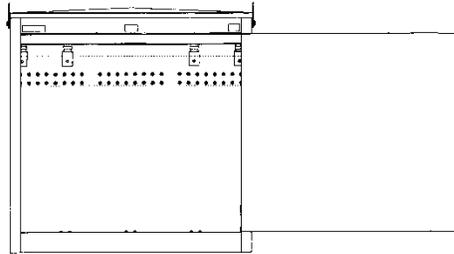
CONSTRUCTION GUIDELINE CT METER PEDESTAL WITH TELECOMMUNICATION CIRCUIT

PWR. OP. _____	CHECKED _____
ENG. _____	SCALE:

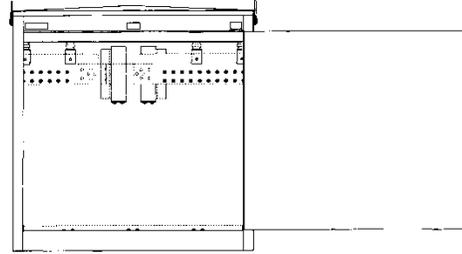
DRAWING FILE NAME:	
DS---	SHT.1 of 1

CABLE TERMINATING GEAR

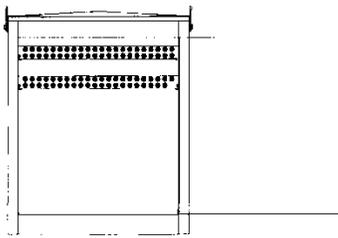
Models STEN, STEI, STEC1, STEC2, STMV.



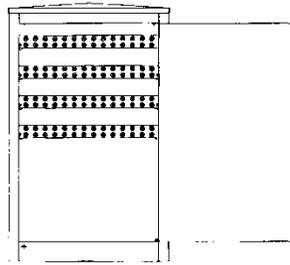
STEN
FRONT VIEW EXPOSED



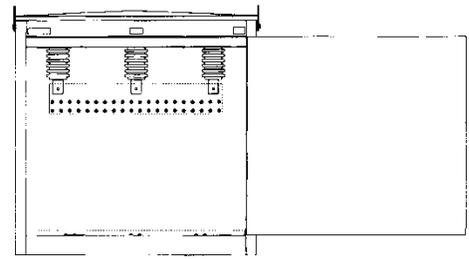
STEI
FRONT VIEW EXPOSED



STEC1
FRONT VIEW EXPOSED



STEC2
FRONT VIEW EXPOSED



STMV
FRONT VIEW EXPOSED

Application:

Shallbetter, Inc. Cable Terminating Gear is constructed in accordance with the latest applicable industry standards and the governing local and/or National Electrical Code requirements.

The Shallbetter line of Cable Terminating Gear is intended for use as a junction point between transformer secondaries and switchgear or as a split point for feeding multi-services.

For complete specifications, please contact your authorized Shallbetter factory representative.



2050 South Oakwood Road
Oshkosh, WI 54904-6308

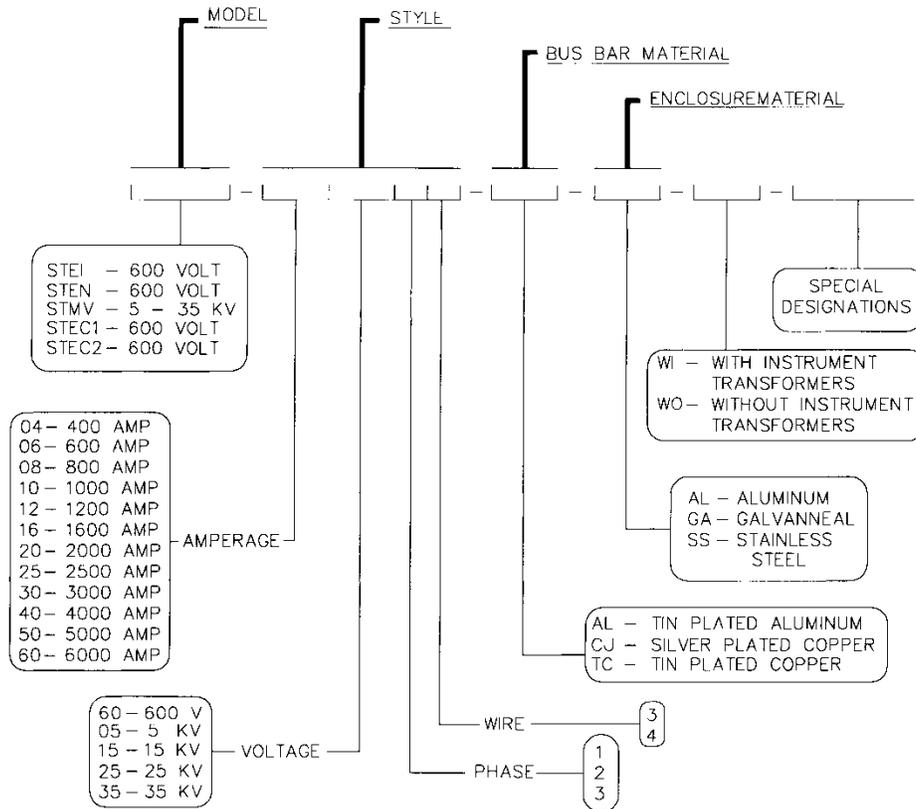
920.232.8888 (Phone)
920.232.8977 (Fax)

www.shallbetter.com
sbi@shallbetter.com

CABLE TERMINATING GEAR

Models STEN, STEI, STEC1, STEC2, STMV, 600 Volt./5-35 kV.

Catalog Number Selection Sheet. To be used in conjunction with Factory Check Sheet.



EXAMPLE: STEN-126034-CU-GA-WO XXXX
 PADMOUNT, TERMINATION ENCLOSURE, 1200 AMP, 600 VOLT, 3 PHASE, 4 WIRE,
 WITH SILVER PLATED COPPER BUS BAR, WITHOUT INSTRUMENT TRANSFORMERS,
 CONSTRUCTED OF GALVANNEAL STEEL.



2050 South Oakwood Road
 Oshkosh, WI 54904-6308

920.232.8888 (Phone)
 920.232.8977 (Fax)

www.shallbetter.com
 sbi@shallbetter.com

4.2.2

CABLE TERMINATING GEAR

Models STEN/STEI, STEC1/STEC2, 600 Volt./5-35 kV.

Factory Check Sheet. To be used in conjunction with Catalog Number Selection Sheet.

RATINGS:

Nominal System Voltage
Maximum Design Voltage
Basic Insulation Level (BIL)

____/____ kV
 600 Volt, 10 kV BIL
 15 kV, 95 kV BIL
 25 kV, 125 kV BIL
 35 kV, 150 kV BIL
 Other: ____ kV, ____ kV BIL

Continuous Current

200 amp
 400 amp
 600 amp
 1000 amp
 1200 amp
 1600 amp
 2000 amp
 2500 amp
 3000 amp
 4000 amp
 5000 amp
 6000 amp

ENCLOSURE:

Material:

- A60 Galvanneal Steel
- 304L Stainless Steel
- 5052-H32 Aluminum

Bus Material:

- Aluminum, Tin Plated, (0 - 3,000 amp only)
- Copper, Silver Plated

Paint Finish:

- Green Munsell No., 7GY 3.29/1.5
- Gray (ANSI 70). Munsell No., 5BG 7.0/0.4
- Gray (ANSI 61). Munsell No., 8.3G 6.10/0.54
- Other: _____

3-Point Latch Type:

- Penta-Head Bolt and shielded padlockable shackle, Shallbetter #70155. Manufactured to meet or exceed A.N.S.I. C57.12.28 for Padmount Equipment Enclosure Integrity.
- Hex-Head Bolt and shielded padlockable shackle, Shallbetter #70156
- Padlocking Handle, Shallbetter #70153

Instrumental transformers, (Model STEI only):

- Current Transformers: Manufacturer: _____, Model: _____, Type: _____, kV: _____, Ratio: _____.
- Potential Transformers: Manufacturer: _____, Model: _____, Type: _____, kV: _____, Ratio: _____.

Meter Socket, (Model STEI only): Manufacturer: _____, Model: _____, Type: _____.

Meter, (Model STEI only): Manufacturer: _____, Model: _____, Type: _____.

Connectors: Manufacturer: _____, Model: _____, Type: _____, Wire range: _____.

Threaded Inserts on Bus Bar.

Ground Bus.

Louvers for enclosure ventilation.

Insulating "No-Drip" Compound. Applied to the inside surface of the enclosure roof to prevent condensation.

Base Undercoating. Applied to the bottom 2" of the enclosure.

REA Deadfront Barriers. Barriers inside the enclosure door for each compartment, secured by recessed penta-head bolt.

Note: Replaces compartment barriers, (Model STMV).

Specials: _____



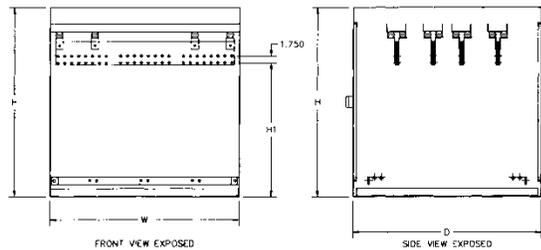
2050 South Oakwood Road
Oshkosh, WI 54904-6308

920.232.8888 (Phone)
920.232.8977 (Fax)

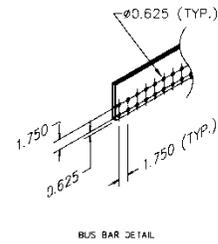
www.shallbetter.com
sbi@shallbetter.com

CABLE TERMINATING GEAR

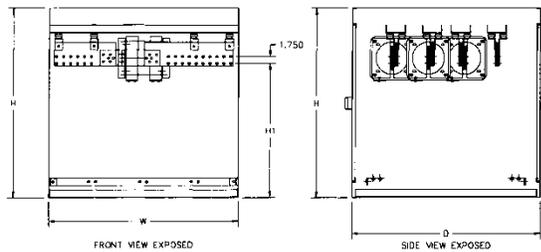
Models STEN/STEI, Padmounted, 600 Volt.
Single and Three Phase, 400-6000 Ampere.



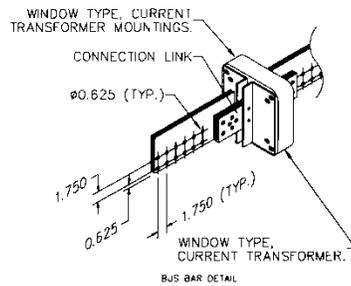
STYLE STEN



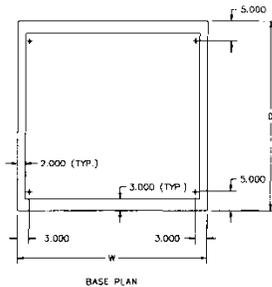
BUS BAR DETAIL



STYLE STEI



BUS BAR DETAIL



BASE PLAN



U.L. LISTED.

STYLE	AMPERAGE	H	W	D	H1	H2	WGT
STEN-0406	400-600	48	48	48	33	4.25	375 LB
STEN-0812	800-1200						425 LB
STEN-1620	1600-2000						475 LB
STEN-2530	2500-3000						525 LB
STFI-0406	400-600	48	48	48	33	4.25	390 LB
STFI-0812	800-1200						440 LB
STFI-1620	1600-2000						490 LB
STFI-2530	2500-3000						540 LB

- For options including meter sockets, meters and factory wiring, consult factory.
- For special configurations and sizes, consult factory.



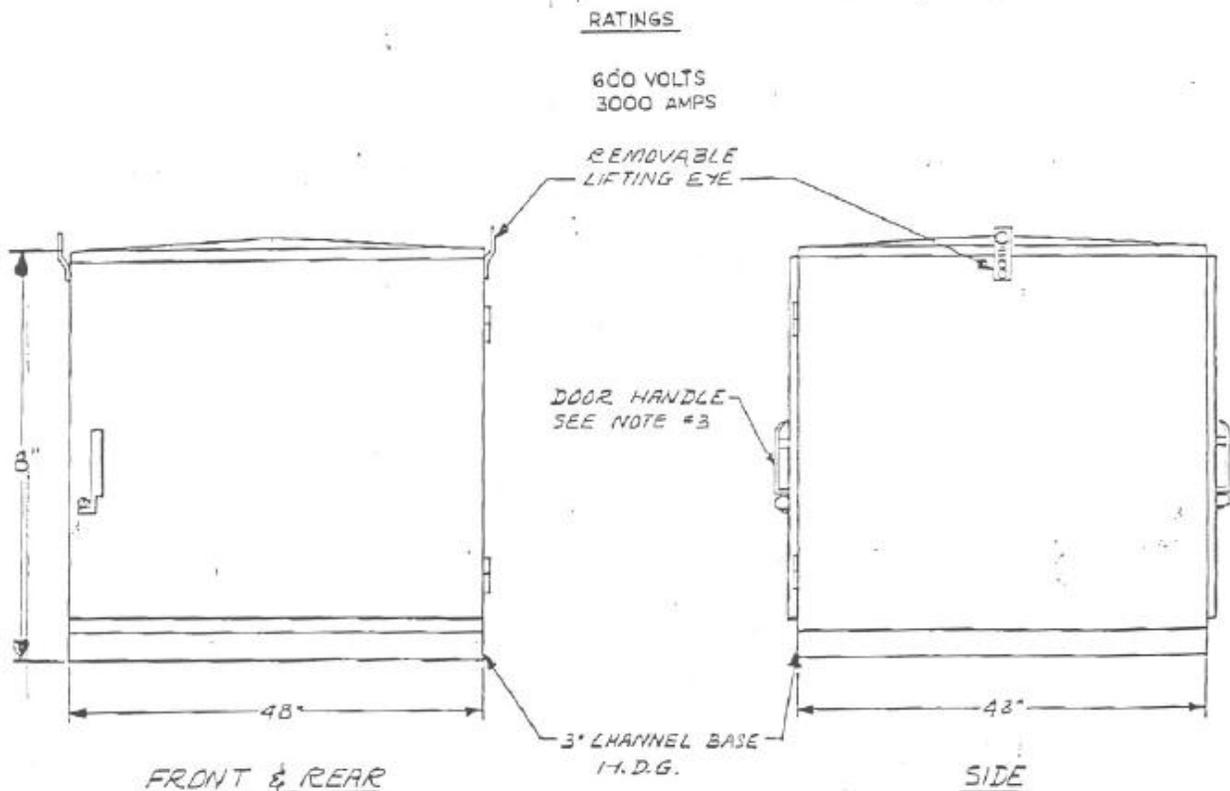
2050 South Oakwood Road
Oshkosh, WI 54904-6308

920.232.8888 (Phone)
920.232.8977 (Fax)

www.shallbetter.com
sbi@shallbetter.com

NOTES:

1. TYPICAL CONSTRUCTION: CABINET CONSTRUCTED OF 12 GA. COLD ROLLED SHEET METAL. CABINET TO BE FREE STANDING ON A 3-INCH CHANNEL BASE. ALL JOINTS TO BE TAMPER RESISTANT. M1G WELDING THROUGHOUT. ALL EXTERIOR WELDS TO BE GROUND-SMOOTH. 3-INCH CHANNEL BASE TO BE HOT DIP GALVANIZED AFTER FABRICATION.
2. FINISH: CABINET TO BE STEAM CLEANED AND PHOSPHATE COATED. POLYAMIDE-CURED EPOXY PRIMER TO BE SPRAYED ON TO A 2 MIL THICKNESS. FINISH COAT TO BE ALIPHATIC POLYURETHANE PADMOUNT GREEN MUNSELL 75y 3.29/1.5 SPRAYED ON TO A 2 MILL THICKNESS. TOTAL AVERAGE PAINT THICKNESS 4 MILS. MEETS ANSI C57.12.28 LATEST REVISION.
3. DOORS TO BE PROVIDED WITH A PADLOCK ABLE HANDLE WITH THREE POINT LATCHING, CONSTRUCTED SO THAT CAPTIVE PENTA HEAD BOLT MUST BE THREADED INTO POSITION BEFORE PADLOCK CAN BE INSERTED. MEETING W.U.C. GUIDE 2.13.1 AND ANSI C57.12.28. DOORS LIFT OFF IN OPEN POSITION. ALL HINGES TO BE STAINLESS STEEL.



130439-5

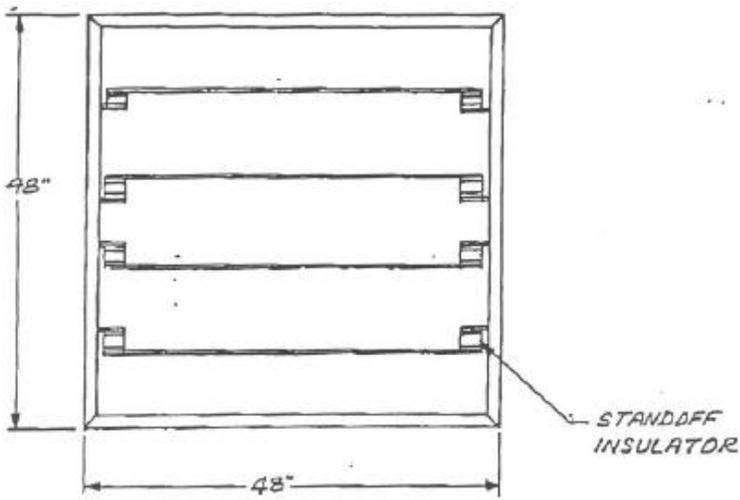
SCOTT ENGINEERING
WALNUT, CALIF.

TITLE: PADMOUNTED SECONDARY BUS ENCLOSURE
600 VOLT CLASS.

FOR: SMUD

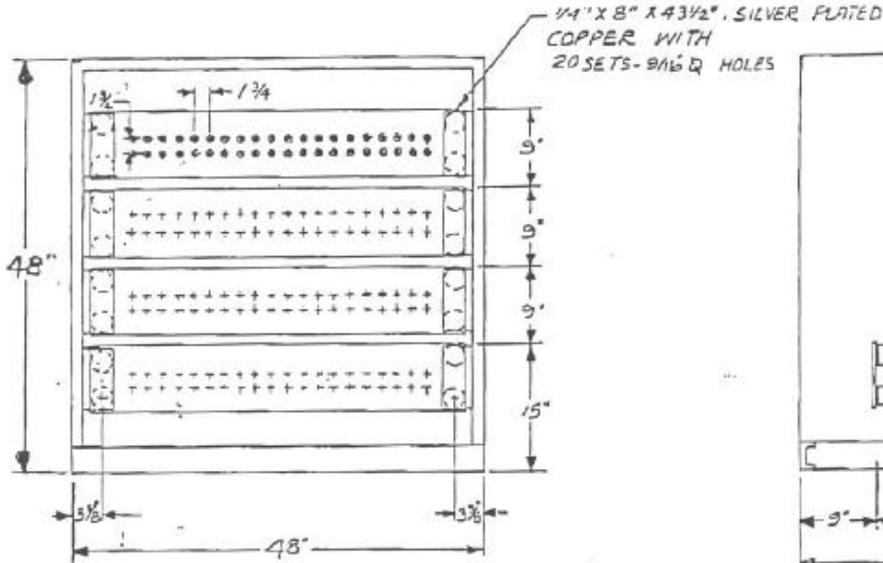
DATE: 1-10	DATE: 4-9-91	DRWG NO	REV. NO.
		130439	5

THIS DRAWING IS THE PROPERTY OF SCOTT ENGINEERING INC. AND CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DUPLICATED, USED, OR DISCLOSED OTHER THAN AS EXPRESSLY AUTHORIZED BY

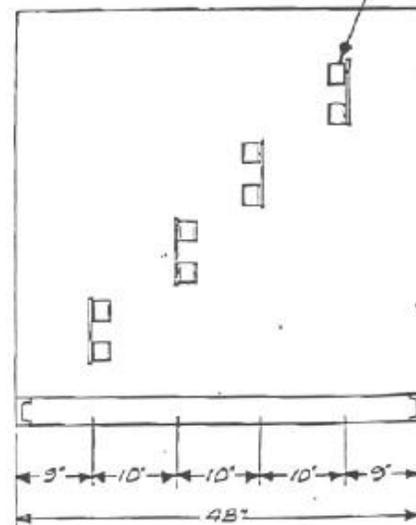


TOP

STANDOFF INSULATOR (6 TOTAL)
 2 1/8" H X 2 1/2" W - WITH 1/2" X 1/3" X 5/8"
 DEEP THREAD-GLASTIC #1961-18



FRONT & REAR



SIDE

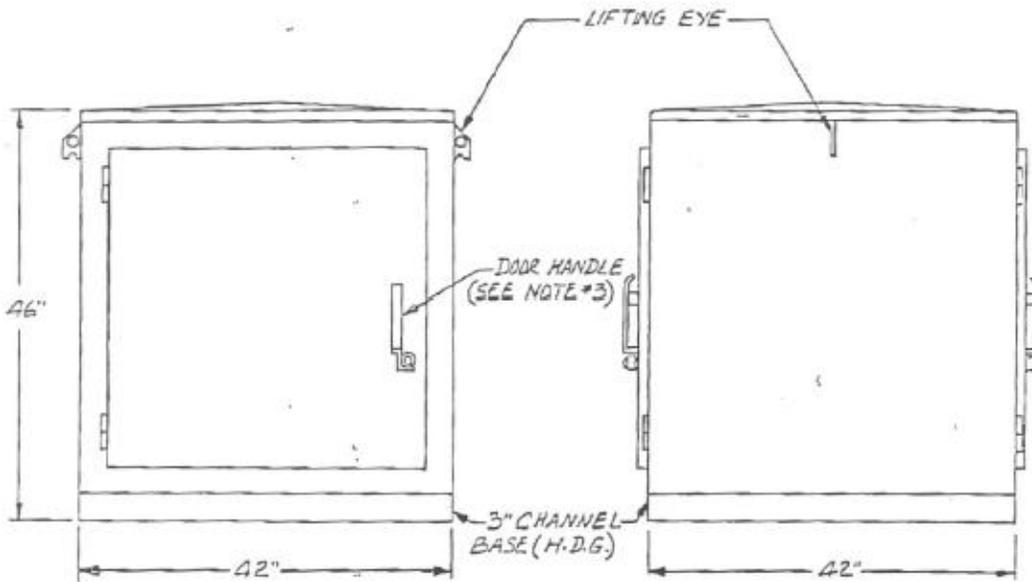
130439-5

SCOTT ENGINEERING WALNUT, CALIF.	
PADAUNTED SECONDARY BUS ENCLOSURE	
600VOLT CLASS	
SMUD	
SCALE: 1/4" = 1"	DATE: 4-9-91
DRAWN BY	CHEK. NO.

THIS DRAWING IS THE PROPERTY OF SCOTT ENGINEERING INC. AND CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DUPLICATED, USED, OR DISCLOSED

NOTES:

1. TYPICAL CONSTRUCTION: CABINET CONSTRUCTED OF 12 GA. COLD ROLLED SHEET METAL. CABINET TO BE FREE STANDING ON A 3-INCH CHANNEL BASE. ALL JOINTS TO BE TAMPER RESISTANT. M1G WELDING THROUGHOUT. ALL EXTERIOR WELDS TO BE GROUND-SMOOTH. 3-INCH CHANNEL BASE TO BE HOT DIP GALVANIZED AFTER FABRICATION. ROOF IS TO CROSS KINKED FOR STRENGTH AND DRAINAGE.
2. FINISH: CABINET TO BE STEAM CLEANED AND PHOSPHATE COATED. POLYAMIDE-CURED EPOXY PRIMER TO BE SPRAYED ON TO A 2 MIL THICKNESS. FINISH COAT TO BE ALIPHATIC POLYURETHANE FORREST GREEN SPRAYED OIL TO A 2 MILL THICKNESS. TOTAL AVERAGE PAINT THICKNESS 4 MILS. MEETS ANSI C57.12.28 LATEST REVISION.
3. DOORS TO BE PROVIDED WITH A PADLOCK ABLE HANDLE WITH THREE POINT LATCHING, CONSTRUCTED SO THAT CAPTIVE PENTA HEAD BOLT MUST BE THREADED INTO POSITION BEFORE PADLOCK CAN BE INSERTED. MEETING W.U.C. GUIDE 2.13.1 AND ANSI C57.12.28. DOORS LIFT OFF IN OPEN POSITION. ALL HINGES TO BE STAINLESS STEEL.



FRONT & REAR

SIDE VIEW

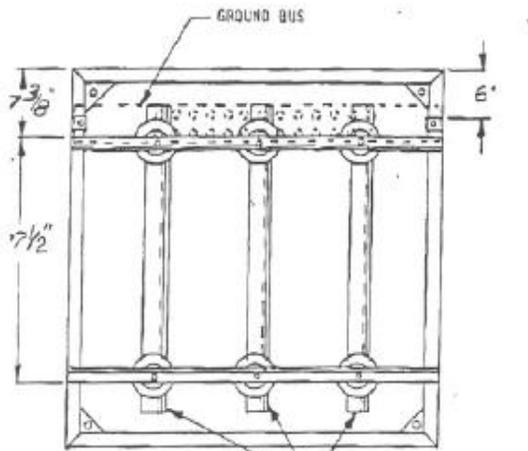
9474-5B

SCOTT
ENGINEERING
WALNUT, CALIF.

TITLE: SECONDARY METERING ENCLOSURE 2000 AMP /
3200 AMP / 3500 AMP
FOR: PACIFIC POWER & LIGHT COMPANY

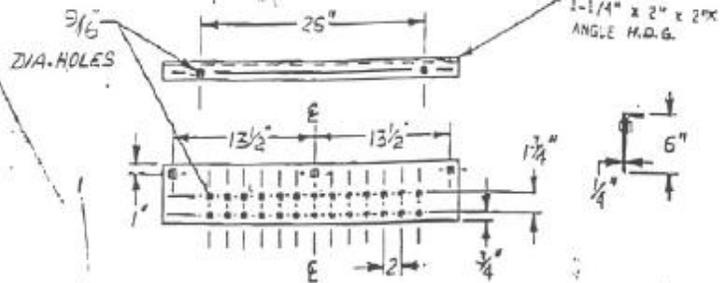
THIS DRAWING IS THE PROPERTY OF SCOTT ENGINEERING INC. AND CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DUPLICATED, USED, OR DISCLOSED WITHOUT WRITTEN PERMISSION FROM SCOTT ENGINEERING INC.

SCALE: 1" = 1'-0" DATE: 8-5-84

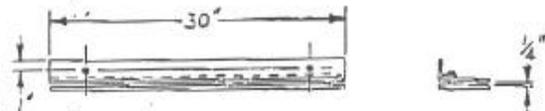


TOP
(EXPOSED)

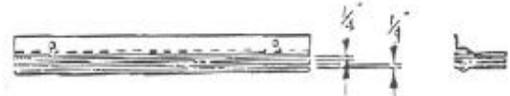
1/4" x 2" x 2" ANGLE
BOLTED TO 1/4" x 6"
COPPER



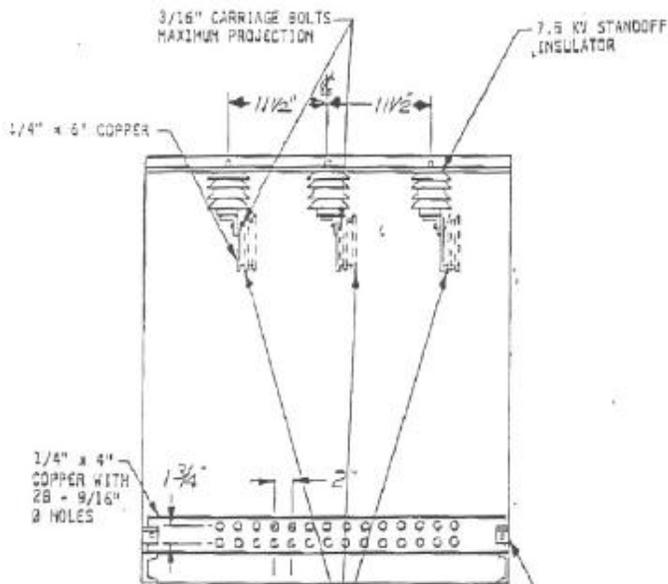
2000 AMP NOMINAL
1 PC. - 1/4" x 6 x 30 L COPPER BUS



3200 AMP NOMINAL
2 PCS. - 1/4" x 6 x 30 L COPPER BUS



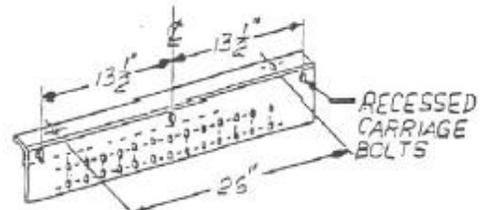
3900 AMP NOMINAL
3 PCS. - 1/4" x 6 x 30 L COPPER BUS



13 SPACERS (MOUNTED EVERY HOLE)
TO SEPARATE EACH LAMINATION.
LAMINATED BUS WORK ONLY.
(3200 AMP OR 3900 AMP)

GROUND BUS
(SHOWN IN ITS ALTERNATE
POSITION IN EXPOSED TOP VIEW)

FRONT
(EXPOSED)



1/2" x 2" x 2" 302 ANGLE BOLTED
TO 1/4" x 6 x 30 L COPPER 1/26 - 9/16 HOLES

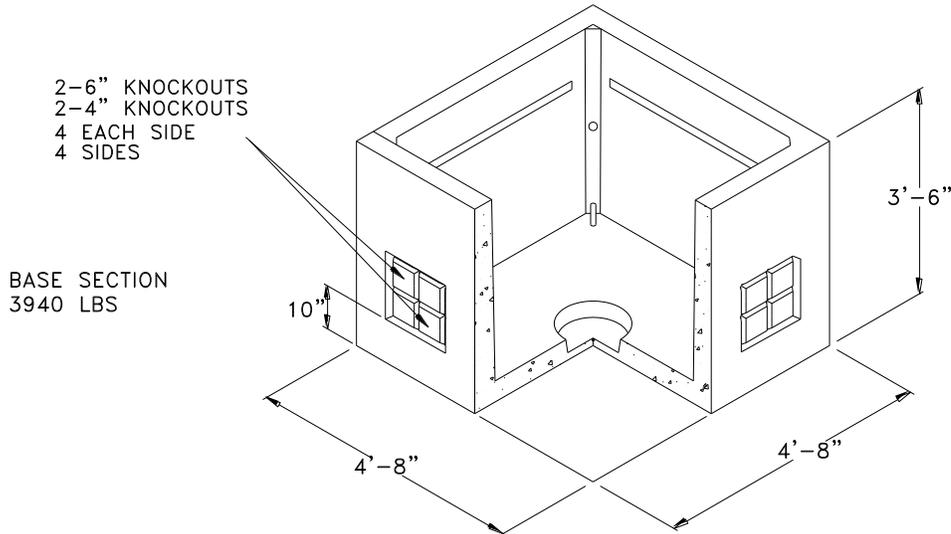
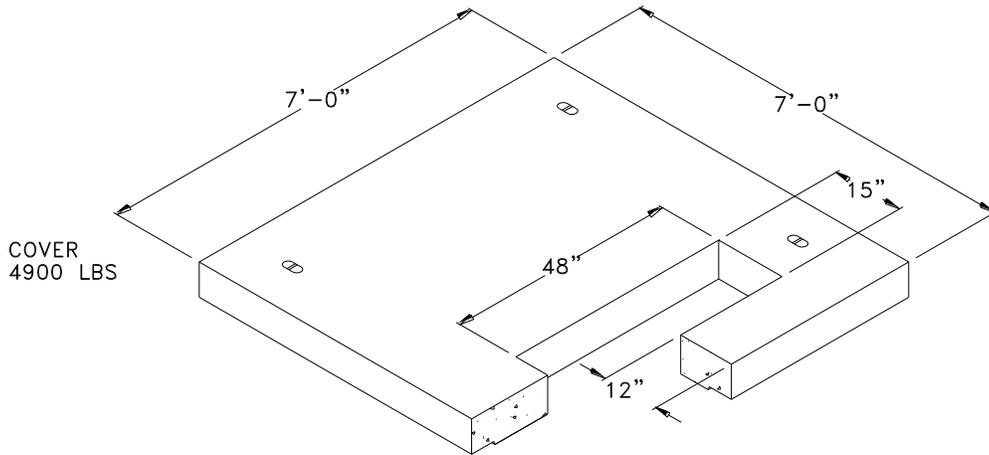
9474-5B

SCOTT
ENGINEERING
WALNUT, CALIF.

TITLE: SECONDARY METERING ENCLOSURE 2000 AMP / 3200 AMP / 3900 AMP			
FOR: PACIFIC POWER & LIGHT COMPANY			
SCALE: 1" = 1'-0"	DATE: 8/5/55	DRAWN BY: S.A. 74	CHKD BY: ...

554 CITY OF RICHLAND

WITH 77-1548 PADMOUNT COVER



TRANSFORMER SIZES 75-500 kVA

Hanson
Hanson Pipe & Products

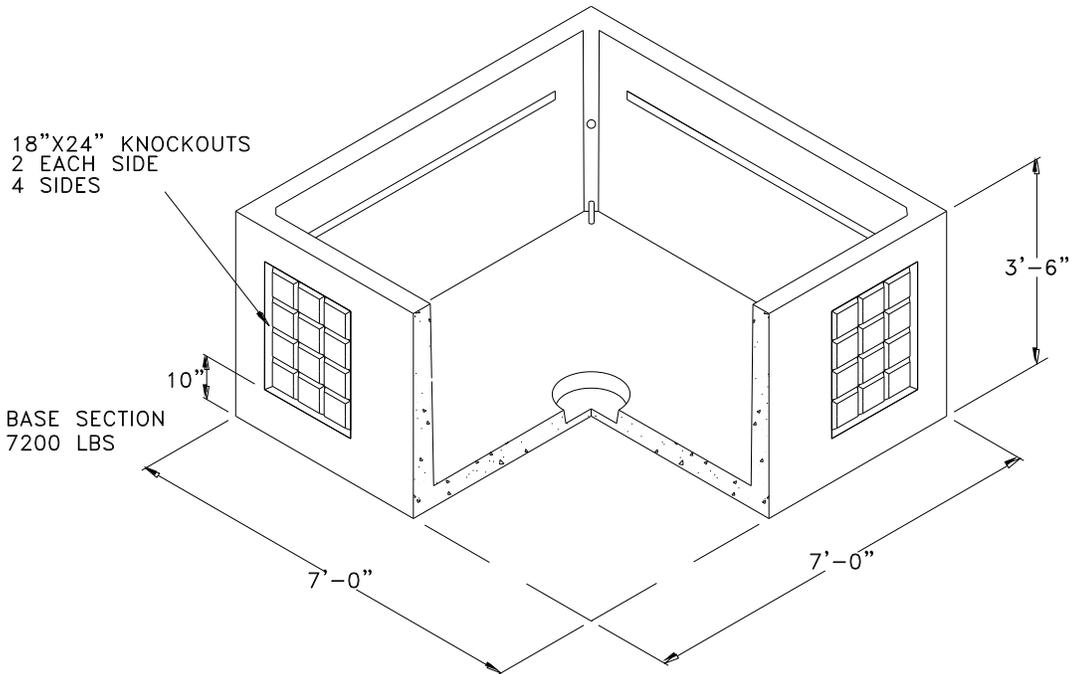
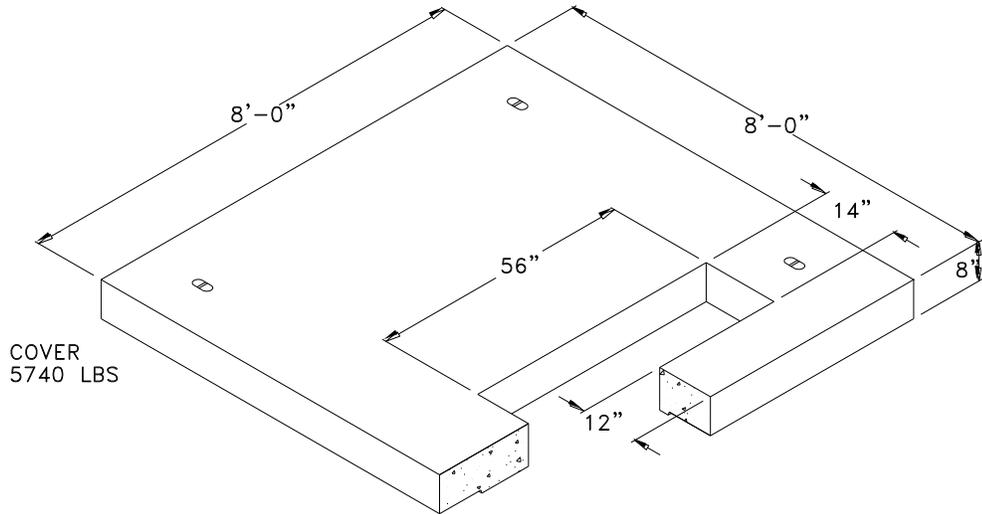
4601 SOUTH ORCHARD
TACOMA, WA. 98466
(253) 475-8888
FAX (253) 471-4747

755 NE COLUMBIA BLVD
PORTLAND, OR. 97211
(503) 285-8391
FAX (503) 286-0603

CONTRACTOR CITY OF RICHLAND		TITLE 554 VAULT W/ 77-1548 PADMOUNT COVER	
JOB		DRAWN TC	DATE 05-08-03
REVISIONS		CHECKED	DWG. NO. 554RICH
REV.	DATE	DESCRIPTION	BY CHK

774-CITY OF RICHLAND

WITH 88-1456 PADMOUNT COVER



TRANSFORMER SIZES 750 - 1500 kVA

Hanson
Hanson Pipe & Products

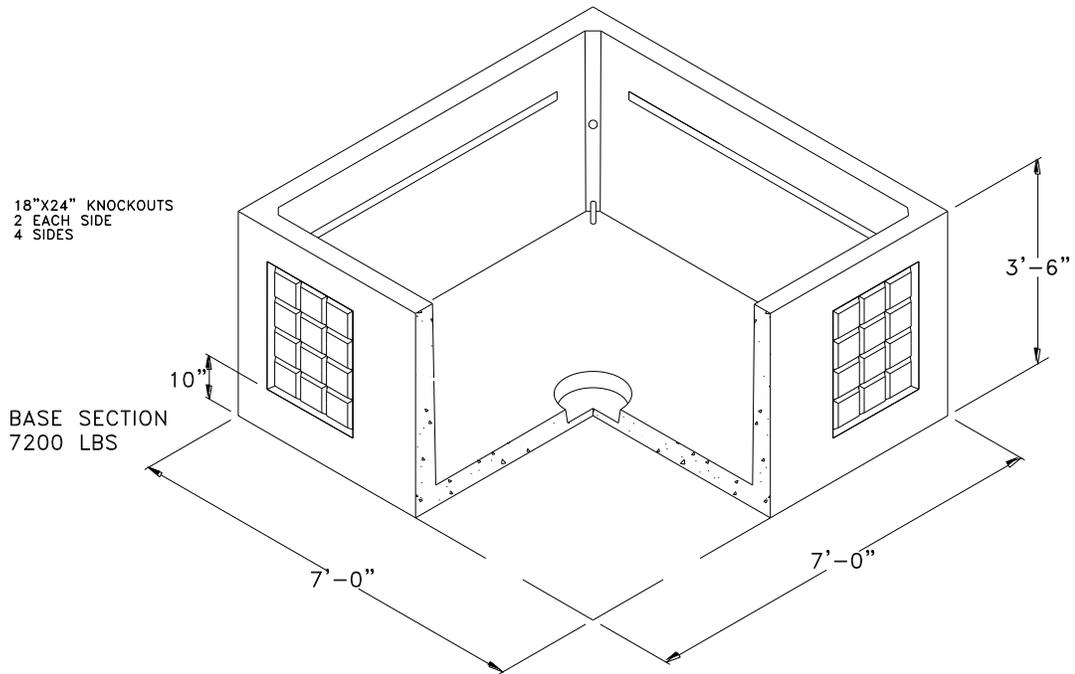
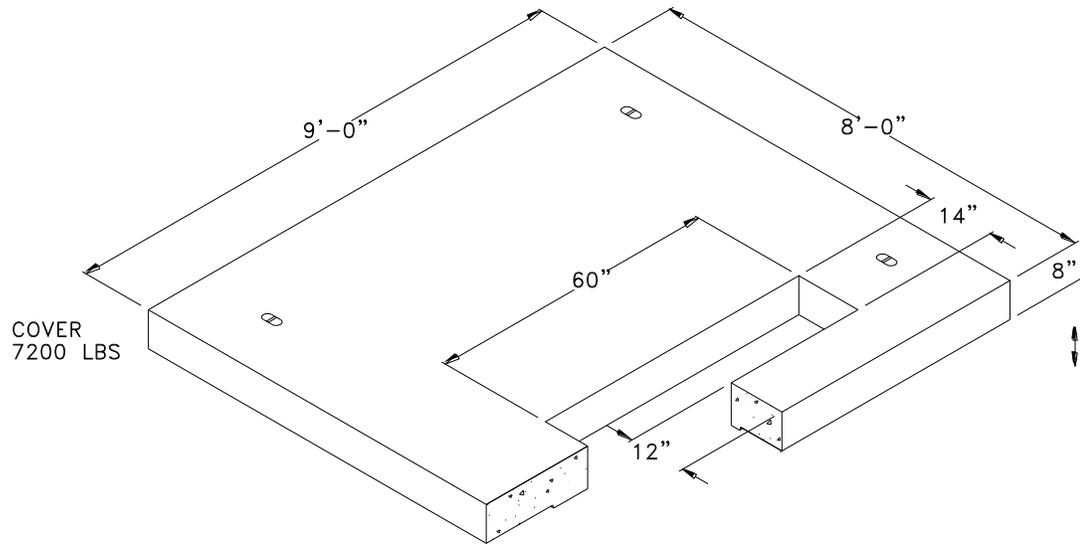
4601 SOUTH ORCHARD
TACOMA, WA. 98466
(253) 475-8888
FAX (253) 471-4747

755 NE COLUMBIA BLVD
PORTLAND, OR. 97211
(503) 285-8391
FAX (503) 286-0603

CONTRACTOR CITY OF RICHLAND		TITLE 774 VAULT W/ 88-1456 PADMOUNT COVER	
JOB		DRAWN TC	DATE 05-08-03
REVISIONS		CHECKED	DWG. NO. 774RICH
REV.	DATE	DESCRIPTION	BY CHK

774-CITY OF RICHLAND

WITH 89-1460 PADMOUNT COVER



TRANSFORMER SIZES 2000 - 2500 kVA

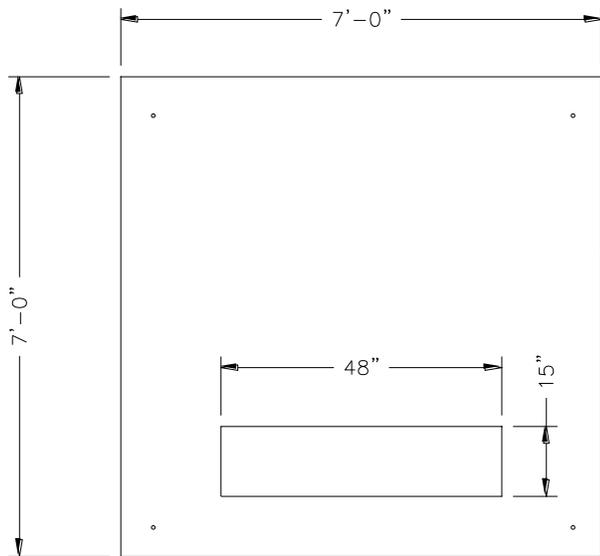
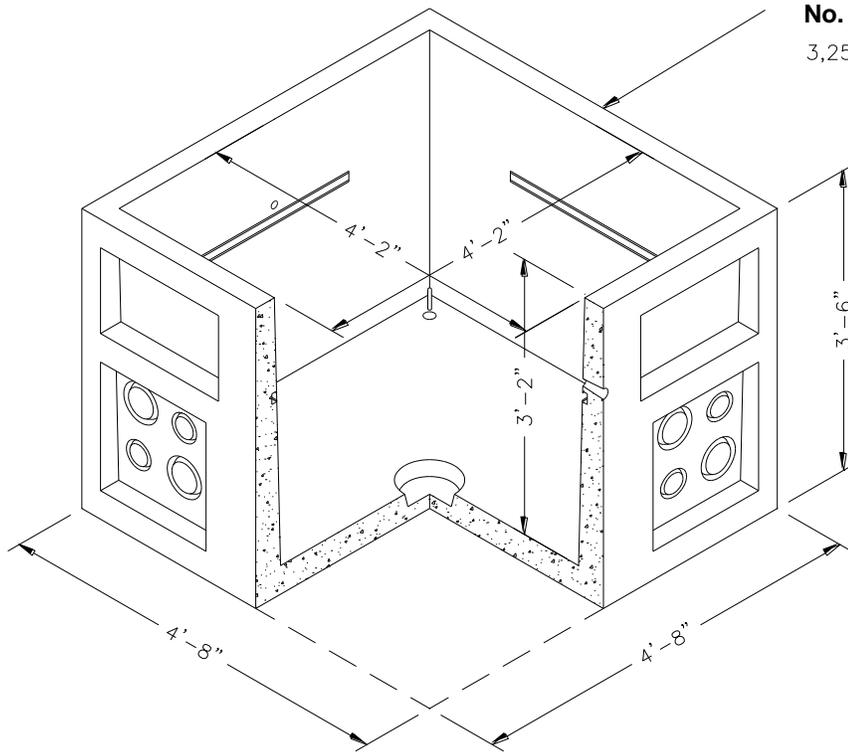


4601 SOUTH ORCHARD
TACOMA, WA. 98466
(253) 475-8888
FAX (253) 471-4747

755 NE COLUMBIA BLVD
PORTLAND, OR. 97211
(503) 285-8391
FAX (503) 286-0603

CONTRACTOR CITY OF RICHLAND				TITLE 774 VAULT W/ 89-1460 PADMOUNT COVER	
JOB				DRAWN TC	
REVISIONS				DATE 05-08-03	
				CHECKED	
				DWG. NO. 774RICH	
REV.	DATE	DESCRIPTION	BY	CHK	

VAULT
No. 504-BL
 3,250 lbs.



VAULT COVER
No. 77-1548

TRANSFORMER SIZES 75-500 kVA

MODIFIED UTILITY VAULT DWG 010UEE504LAB.DWG



P.O. BOX 588, Auburn, Washington 98071-0588
 Phone: 253-839-3500 Fax: 253-735-4201

504-LA

FILE NAME:

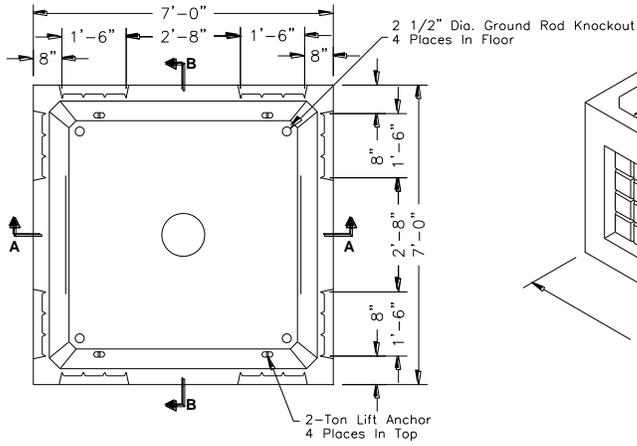
ISSUE DATE: APRIL, 2001

www.oldcastleprecast.com

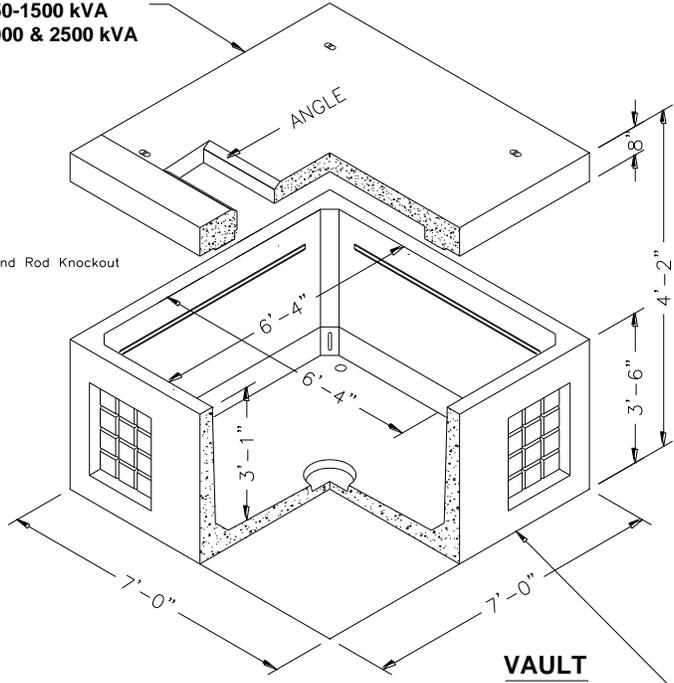
504 VAULT
77-1548

Copyright © 2001 Oldcastle Precast, Inc.

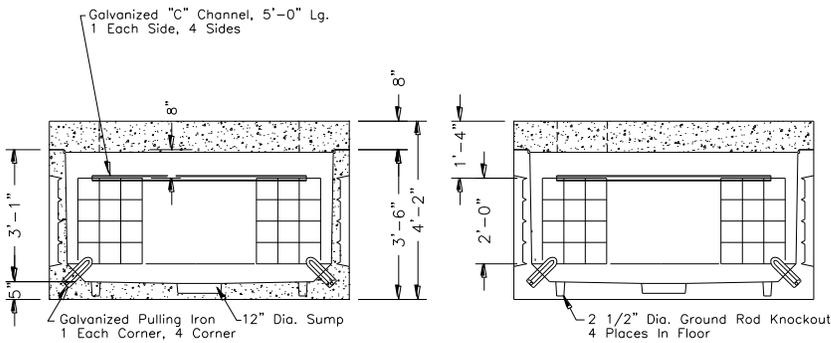
COVER
 No. 88-1456 for 750-1500 kVA
 No. 89-1460 for 2000 & 2500 kVA



PLAN VIEW



VAULT
 No. 774-LA
 6,900 lbs.



SECTION AA

SECTION BB

TRANSFORMER SIZES 750-2500 kVA

MODIFIED UV DWG: D010UEE774LAB.DWG



P.O. BOX 588, Auburn, Washington 98071-0588
 Phone: 253-839-3500 Fax: 253-735-4201

774-LA

FILE NAME: --

ISSUE DATE: MAY, 2001

www.oldcastleprecast.com

774 VAULT
3 PHASE PADS

Copyright © 2001 Oldcastle Precast, Inc.