Electrical Services

Presented by: Terry Thayer

HQ Traffic Office

RCW = Revised Code of Washington
These are laws written by the state legislature. The constitution of the State is contained within the first portion of the RCW's.

WAC = Washington Administrative Code
The legislature creates job performance expectations or job duties (RCW's). The state agencies then further define and bring to life these performance expectations through writing these administrative rules.

EUSERC Specifications

WAC 296-46B-230 Wiring and protection -- Services.

001 General service requirements.

(1) The owner, the owner's agent, or the electrical contractor making the installation must consult the serving utility regarding the utility's service entrance requirements for equipment location and meter equipment requirements before installing the service and equipment. Provisions for a meter and related equipment, an attachment of a service drop, or an underground service lateral must be made at a location acceptable to the serving utility. The point of contact for a service drop must permit the clearances required by the NEC.

(3) The height of the center of the service meter must be as required by the serving utility. Secondary instrument transformer metering conductor(s) are not permitted in the service raceway.

042 Service conductor - size and rating.

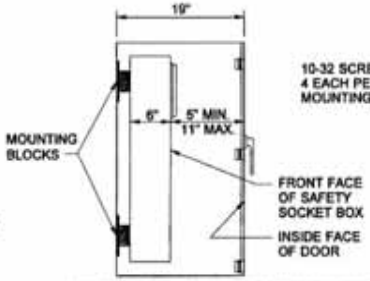
(7) If the service conductors have a lesser ampacity than the overcurrent protection or the equipment rating that they terminate in or on, an identification plate showing the ampacity of the conductors must be installed on the service equipment.

[Statutory Authority: RCW 19.28.006, 19.28.010, 19.28.031, 19.28.041, 19.28.061, 19.28.101, 19.28.131, 19.28.161, 19.28.171, 19.28.191, 19.28.201, 19.28.211, 19.28.241, 19.28.251, 19.28.271, 19.28.311, 19.28.321, 19.28.400, 19.28.420, 19.28.490, 19.28.551, 2002 c 249, chapters 34.05 and 19.28 RCW. 03-09-111, § 296-46B-230, filed 4/22/03, effective 5/23/03.]

GENERAL NOTES

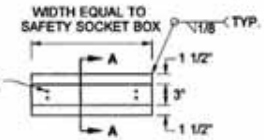
200 AMP TYPE 120/240 1ø SERVICE CABINET

1. SEE STANDARD SPECIFICATION 9-29.24, SERVICE CABINETS.
2. HINGES SHALL HAVE STAINLESS STEEL OR BRASS PINS.
3. CABINETS SHALL BE RATED NEMA 3R AND SHALL INCLUDE TWO RAIN TIGHT VENTS.
4. METERING EQUIPMENT DOOR SHALL BE PAD LOCKABLE. EACH DOOR SHALL BE GASKETED. INSTALL BEST CX CONSTRUCTION CORE ON RIGHT DOOR. SEE DOOR HINGE DETAIL, SHEET 1 OF 2.
5. THE FOLLOWING EQUIPMENT WITHIN THE SERVICE ENCLOSURE SHALL HAVE AN APPROPRIATELY ENGRAVED PHENOLIC NAME PLATE ATTACHED WITH SCREWS OR RIVETS: KEY NUMBERS 2, 3, 4, 6, 7, 8, 9 AND 16. KEY NUMBER 4 NAME PLATE SHALL READ: "PHOTOCELL BYPASS TEST ON" AND "PHOTOCELL TEST OFF- AUTOMATIC". SEE SERVICE CABINET DETAIL.
6. METERING ARRANGEMENTS VARY WITH DIFFERENT SERVING UTILITIES. THE UTILITY MAY REQUIRE METER BASE MOUNTING IN THE ENCLOSURE, ON THE SIDE OR ON THE BACK OF THE ENCLOSURE. THE UTILITY MAY REQUIRE THE DIMENSION BETWEEN THE DOOR AND THE FRONT OF THE SAFETY SOCKET BOX TO BE LESS THAN THE 11 INCHES SHOWN IN THE LEFT SIDE- SAFETY SOCKET BOX MOUNTING DETAIL. THE CONTRACTOR SHALL VERIFY THE SERVING UTILITY'S REQUIREMENTS PRIOR TO FABRICATION OF AND INSTALLING THE SERVICE EQUIPMENT.
7. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE ADJUSTED TO ACCOMMODATE THE VARIOUS SIZES OF EQUIPMENT INSTALLED.
8. ALL BUSSWORK SHALL BE HIGH GRADE COPPER AND SHALL EQUAL OR EXCEED THE MAIN BREAKER RATING. ALL BREAKERS SHALL BOLT ONTO THE BUSSWORK. JUMPERING OF BREAKERS SHALL NOT BE ALLOWED. BUSSWORK SHALL ACCOMMODATE ALL FUTURE EQUIPMENT AS SHOWN IN THE BREAKER SCHEDULE.
9. THE PHOTOCELL UNIT SHALL BE CENTERED IN THE PHOTOCELL ENCLOSURE TO PERMIT 360 DEGREE ROTATION OF THE PHOTOCELL WITHOUT REMOVAL OF THE PHOTOCELL UNIT OR THE PHOTOCELL ENCLOSURE.
10. ALL INTERNAL WIRE RUNS SHALL BE IDENTIFIED WITH "TO - FROM" CODED TAGS LABELED WITH THE CODE LETTERS AND/OR NUMBERS SHOWN ON THE SCHEDULES. APPROVED PVC OR POLYOLEFIN WIRE MARKING SLEEVES SHALL BE USED.
11. ALL NUTS, BOLTS AND WASHERS USED FOR MOUNTING THE PHOTOCELL ENCLOSURE SHALL BE STAINLESS STEEL.
12. A 1% TOLERANCE IS ALLOWED FOR ALL DIMENSIONS.
13. UNISTRUT TYPE CHANNEL AND MOUNTING HARDWARE COMPONENTS SHALL BE STAINLESS STEEL. CONDUIT CLAMPS SHALL BE HOT DIPPED, GALVANIZED STEEL OR STAINLESS STEEL.
14. INSTALL CONDUIT COUPLINGS ON ALL CONDUITS. PLACE COUPLINGS FLUSH WITH TOP OF CONCRETE FOUNDATION.
15. NOTE 15 HAS BEEN DELETED.
16. THE METER BASE PORTION OF THIS SERVICE WAS DESIGNED TO MEET METERING PORTION OF EUSERC DRAWING 309 REQUIREMENTS.
17. WHEN USING ALTERNATE DOOR HINGE: REMOVE HINGE PIN PRIOR TO WELDING HINGE TO CABINET AND PRIOR TO HOT DIP GALVANIZING CABINET. AFTER GALVANIZING, REPLACE PIN WITH BRASS PIN AND SOLDER IN PLACE.



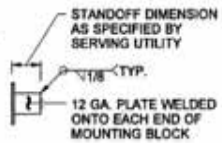
LEFT SIDE- SAFETY SOCKET BOX MOUNTING DETAIL

FABRICATE MOUNTING BLOCKS AFTER VERIFYING THE SERVICE UTILITY STAND OFF DIMENSION.



MOUNTING BLOCK DETAIL

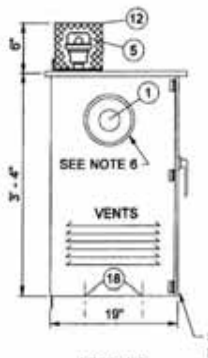
12 GA. - MATERIAL TO BE SAME AS CABINET MATERIAL



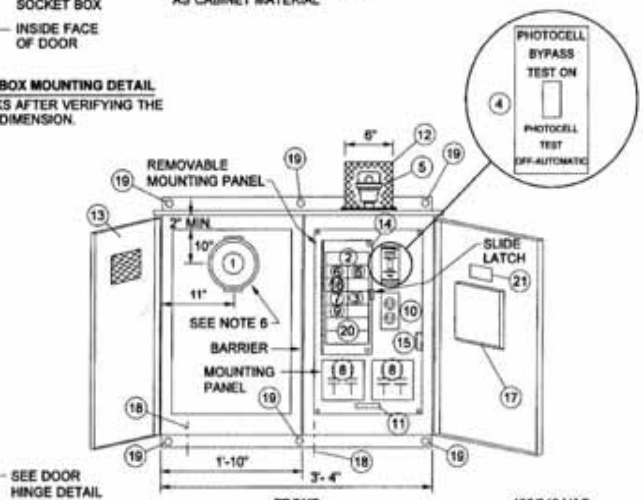
SECTION A-A

KEY

1. METER BASE PER SERVING UTILITY REQUIREMENTS. AS A MINIMUM, THE METER BASE SHALL BE SAFETY SOCKET BOX WITH FACTORY INSTALLED TEST BYPASS FACILITY THAT MEETS THE REQUIREMENTS OF EUSERC DRAWING 305.
2. MAIN BREAKER (SEE BREAKER SCHEDULE)
3. PHOTOCELL BREAKER (SPST 15 AMP - 120/240 VOLT)
4. TEST SWITCH (SPDT SNAP ACTION, POSITIVE CLOSE 15 AMP - 120/277 VOLT - "T" RATED)
5. PHOTOELECTRIC CONTROL, STD. SPEC. 9 - 29.11(2)
6. BRANCH BREAKER (SEE BREAKER SCHEDULE)
7. SIGNAL BREAKER (SEE BREAKER SCHEDULE)
8. CONTACTOR (SEE BREAKER SCHEDULE)
9. RECEPTACLE BREAKER (SPST 20 AMP - 120/240 VOLT)
10. RECEPTACLE, GROUNDED (GFCI 20 AMP - 125 VOLT)
11. NEUTRAL BUSS, 14 LUG COPPER
12. PHOTOCELL ENCLOSURE - ENCLOSURE TO BE FABRICATED FROM 5/8" EXPANDED STEEL MESH WITH WELDED SEAMS AND MOUNTING FLANGES. HOT DIP GALVANIZED AFTER FABRICATION. TYPE 5052 - H32 ALUMINUM WITH 5/8" x 5/8" OPENINGS EQUIVALENT TO 5/8" EXPANDED STEEL MESH MAY BE USED AS ALTERNATIVE MATERIAL. SEE PHOTOCELL ENCLOSURE MOUNTING DETAIL, SHEET 2 OF 2.
13. HINGED FRONT FACING DOOR WITH 4" x 4" MIN. POLISHED WIRE GLASS WINDOW.
14. HINGED DEAD FRONT WITH 1/4 TURN FASTENERS OR SLIDE LATCH.
15. CABINET MAIN BONDING JUMPER. BUSS SHALL BE 4 LUG TINNED COPPER. SEE CABINET MAIN BONDING JUMPER DETAIL ON SHEET 2 OF 2.
16. SPARE BRANCH BREAKER (DPST 20AMP- 120/240 VOLT)
17. METAL WIRING DIAGRAM HOLDER
18. 1/4" DIAMETER DRAIN HOLE. DRILL BEFORE GALVANIZING.
19. MOUNTING HOLE. SEE SERVICE CABINET MOUNTING DETAILS.
20. 18 CIRCUIT PANEL BOARD - MINIMUM SIZE WITH SEPARATE MAIN BREAKER.
21. LABEL CABINET WITH BUSSWORK RATING.

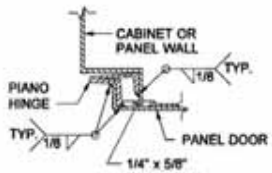


LEFT SIDE

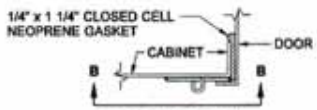


FRONT

SERVICE CABINET DETAIL

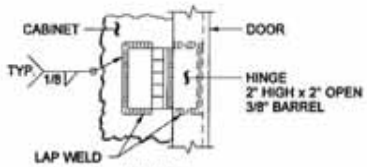


DOOR HINGE DETAIL

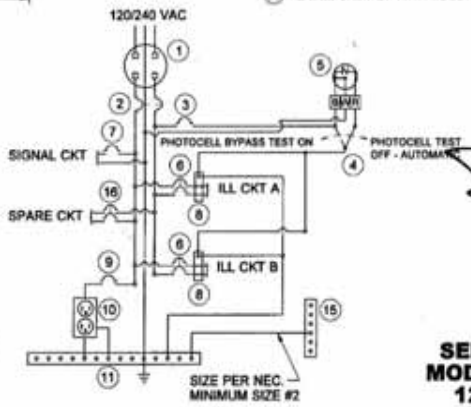


DOOR HINGE DETAIL

ALTERNATE FOR TYPE B MODIFIED CABINET SEE NOTE 17



VIEW B-B



WIRING SCHEMATIC

EXPIRES MAY 5, 2005

SERVICE CABINET TYPE B MODIFIED (0 - 200 AMP TYPE 120/240 SINGLE PHASE) STANDARD PLAN J-3b

SHEET 1 OF 2 SHEETS

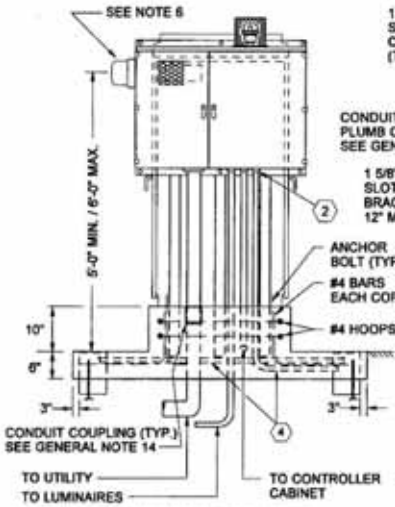
APPROVED FOR PUBLICATION

Harold Petersen 11-5-03

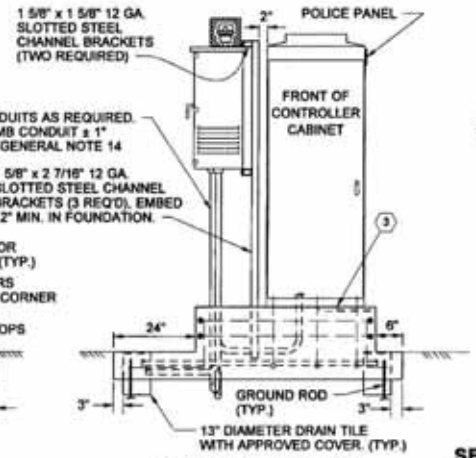
STATE DESIGN ENGINEER DATE

Washington State Department of Transportation

DATE	REVISION	BY
09/2003	REVISED NOTE 13	MHC

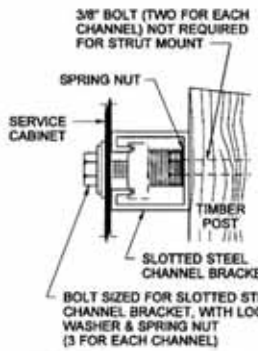


FRONT OF SERVICE CABINET



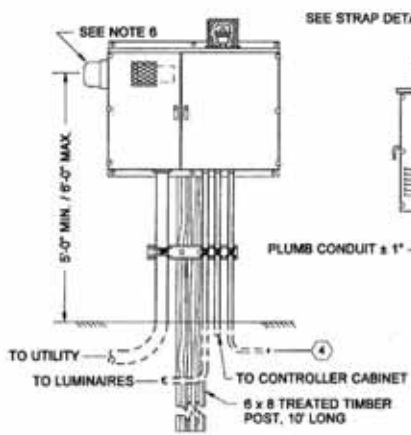
RIGHT SIDE OF SERVICE CABINET

STRUT MOUNT

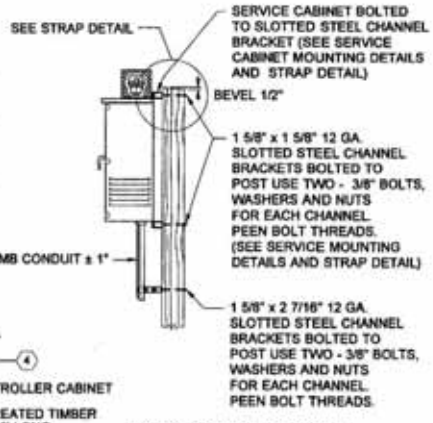


CABINET BRACKET MOUNTING DETAIL

SERVICE CABINET MOUNTING DETAILS

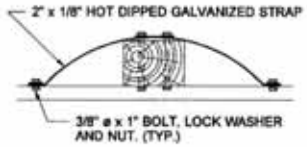


FRONT OF SERVICE CABINET

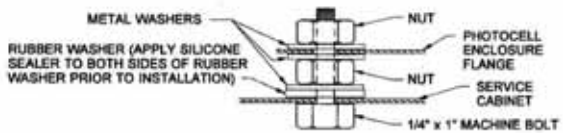


RIGHT SIDE OF SERVICE CABINET

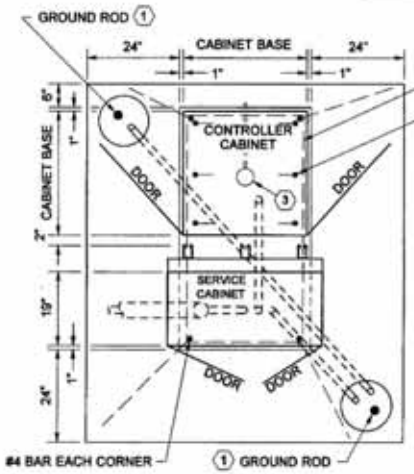
POST MOUNT



POST MOUNT STRAP DETAIL



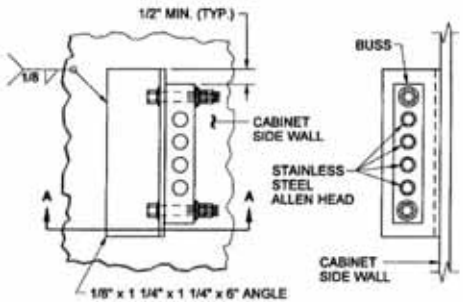
PHOTOCELL ENCLOSURE MOUNTING DETAIL



PLAN VIEW OF SERVICE CABINET

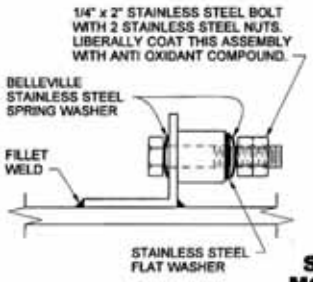
SEE STANDARD PLAN J-6c "CABINET FOUNDATION DETAILS", FOR DETAILS NOT SHOWN.

1. DRIVE GROUND RODS BEFORE PLACING CONCRETE. MOVE ROD(S) AND DRAIN TILE(S) WITH COVER(S) AS REQUIRED TO ACHIEVE FULL GROUND PENETRATION. MAINTAIN A 6' MINIMUM CLEARANCE BETWEEN GROUND RODS AS DETAILED ON STD. PLAN J-9a "TYPICAL GROUNDING DETAILS".
2. ALL CONDUITS PENETRATING CABINET SHALL BE TERMINATED WITH GROUNDING END BUSHING AND BONDED TO THE CABINET GROUNDING BUS.
3. 4" DIAM. x 1/2" DEEP SUMP. SLOPE FOUNDATION TOWARDS SUMP. 3/8" DIAM. POLYETHYLENE OR COPPER DRAIN PIPE. SLOPE TO DRAIN OUTSIDE FOUNDATION.
4. TO SERVICE GROUND - PER STD. PLAN J-9a "TYPICAL GROUNDING DETAILS"



ELEVATION VIEW

SIDE VIEW



DETAIL A-A

CABINET MAIN BONDING JUMPER DETAIL

SERVICE CABINET TYPE B MODIFIED (0 - 200 AMP TYPE 120/240 SINGLE PHASE) STANDARD PLAN J-3b

SHEET 2 OF 2 SHEETS

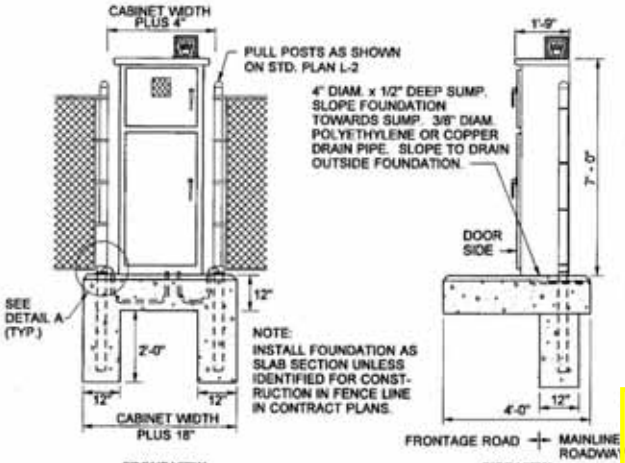
APPROVED FOR PUBLICATION

Harold Peterson 11-5-03

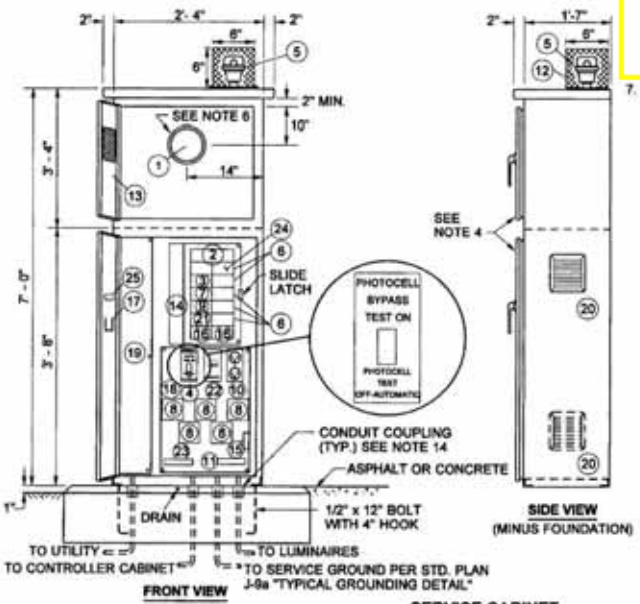
STATE DESIGN ENGINEER DATE

Washington State Department of Transportation

DATE	REVISION	BY
09/2003	REVISED SERVICE CABINET MOUNTING DETAIL	MHG



INSTALLATION DETAIL

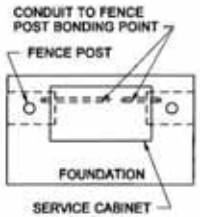


SERVICE CABINET

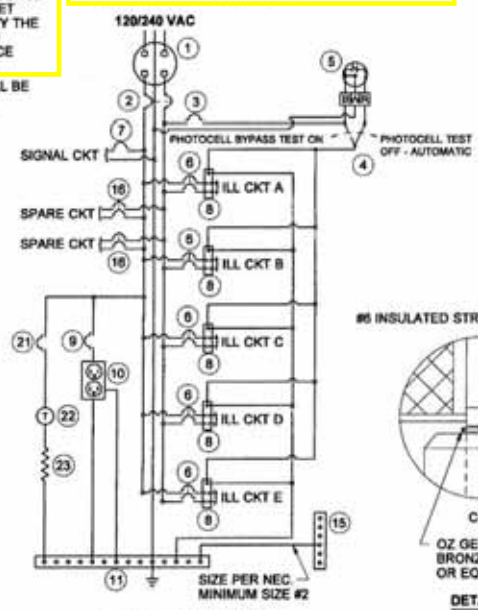
GENERAL NOTES

200 AMP TYPE 120/240 1ø SERVICE CABINET

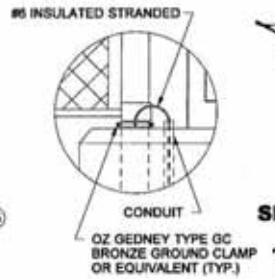
1. SEE STD. SPECIFICATION 9-29.24, SERVICE CABINETS.
2. HINGES SHALL HAVE STAINLESS STEEL OR BRASS PINS.
3. CABINETS SHALL BE RATED NEMA 3R AND SHALL INCLUDE TWO RAIN TIGHT VENTS.
4. METERING EQUIPMENT DOOR SHALL BE PAD LOCKABLE. EACH DOOR SHALL BE GASKETED. INSTALL BEST CX CONSTRUCTION CORE ON BOTTOM DOOR. SEE DOOR HINGE DETAIL, STANDARD PLAN J-3b. CONCEALED HEAVY DUTY STAINLESS STEEL LIFT OFF HINGES ARE ALLOWED AS AN ALTERNATIVE TO DOOR HINGE DETAIL SHOWN ON STANDARD PLAN J-3b. UPPER DOOR SHALL HAVE 2 HINGES AND LOWER DOOR SHALL HAVE 3 HINGES. THE LOWER DOOR SHALL HAVE A TWO POSITION DOOR STOP ASSEMBLY.
5. THE FOLLOWING EQUIPMENT WITHIN THE SERVICE ENCLOSURE SHALL HAVE AN APPROPRIATELY ENGRAVED PHENOLIC NAME PLATE ATTACHED WITH SCREWS OR RIVETS:
   KEY NUMBERS 2, 3, 4, 6, 7, 8, 9, 16 AND 21.
   KEY NUMBER 4 NAME PLATE SHALL READ: "PHOTOCELL BYPASS TEST ON" AND "PHOTOCELL TEST OFF- AUTOMATIC". SEE SERVICE CABINET DETAIL.
6. METERING ARRANGEMENTS VARY WITH DIFFERENT SERVING UTILITIES. THE UTILITY MAY REQUIRE METER BASE MOUNTING IN THE ENCLOSURE, ON THE SIDE OR ON THE BACK OF THE ENCLOSURE. THE UTILITY MAY REQUIRE THE DIMENSION BETWEEN THE DOOR AND THE FRONT OF THE SAFETY SOCKET BOX TO BE LESS THAN THE 11 INCHES SHOWN IN THE LEFT SIDE- SAFETY SOCKET BOX MOUNTING DETAIL. SEE STANDARD PLAN J-3b FOR SAFETY SOCKET BOX DETAIL. THE CONTRACTOR SHALL VERIFY THE SERVING UTILITY'S REQUIREMENTS PRIOR TO FABRICATION OF AND INSTALLING THE SERVICE EQUIPMENT.
7. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE ADJUSTED TO ACCOMMODATE THE VARIOUS SIZES OF EQUIPMENT INSTALLED.
8. ALL BUSSWORK SHALL BE HIGH GRADE COPPER AND SHALL EQUAL OR EXCEED THE MAIN BREAKER RATING. ALL BREAKERS SHALL BOLT ONTO THE BUSSWORK. JUMPERING OF BREAKERS SHALL NOT BE ALLOWED. BUSSWORK SHALL ACCOMMODATE ALL FUTURE EQUIPMENT AS SHOWN IN THE BREAKER SCHEDULE.
9. THE PHOTOCELL UNIT SHALL BE CENTERED IN THE PHOTOCELL ENCLOSURE TO PERMIT 360 DEGREE ROTATION OF THE PHOTOCELL WITHOUT REMOVAL OF THE PHOTOCELL UNIT OR PHOTOCELL ENCLOSURE.
10. ALL INTERNAL WIRE RUNS SHALL BE IDENTIFIED WITH "TO - FROM" CODED TAGS LABELED WITH THE CODE LETTERS AND/OR NUMBERS SHOWN ON THE SCHEDULES. APPROVED PVC OR POLYOLEFIN WIRE MARKING SLEEVES SHALL BE USED.
11. ALL NUTS, BOLTS AND WASHERS USED FOR MOUNTING THE PHOTOCELL ENCLOSURE SHALL BE STAINLESS STEEL.
12. A 1% TOLERANCE IS ALLOWED FOR ALL DIMENSIONS.
13. THE PHOTOCELL CIRCUIT SHALL BE INSTALLED IN FLEX CONDUIT WITHIN THE METER COMPARTMENT.
14. INSTALL CONDUIT COUPLINGS ON ALL CONDUITS. PLACE COUPLINGS FLUSH WITH TOP OF CONCRETE FOUNDATION.
15. SEE PLANS FOR BREAKER SCHEDULE.
16. SEAL CABINET TO FOUNDATION WITH A 1/2" BEAD OF SILICONE. APPLY SILICONE TO DRY SURFACE ONLY.
17. THE METER BASE PORTION OF THIS SERVICE WAS DESIGNED TO MEET METERING PORTION OF EUSERC DRAWING 309 REQUIREMENTS.



PLAN VIEW



WIRING SCHEMATIC



DETAIL A

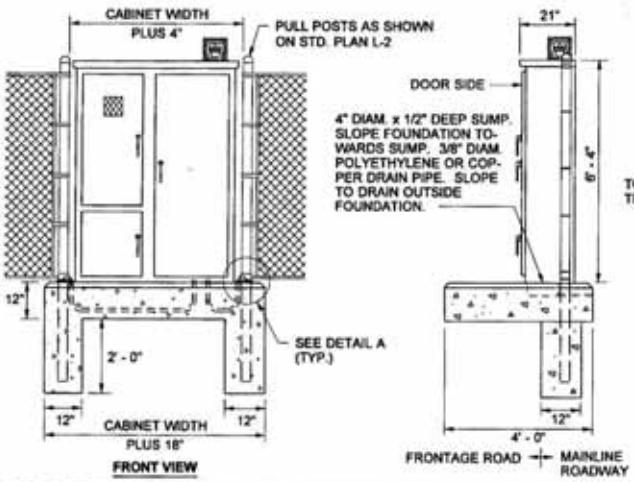
KEY

1. METER BASE PER SERVING UTILITY REQUIREMENTS. AS A MINIMUM, THE METER BASE SHALL BE SAFETY SOCKET BOX WITH FACTORY INSTALLED TEST BYPASS FACILITY THAT MEETS THE REQUIREMENTS OF EUSERC DRAWING 305.
2. MAIN BREAKER (SEE BREAKER SCHEDULE)
3. PHOTOCELL BREAKER (SPST 15 AMP - 120/240 VOLT)
4. TEST SWITCH (SPDT SNAP ACTION, POSITIVE CLOSE, 15 AMP - 120/277 VOLT "T" RATED)
5. PHOTOELECTRIC CONTROL, STD. SPEC. 9 - 29.11(2)
6. BRANCH BREAKER (SEE BREAKER SCHEDULE)
7. SIGNAL BREAKER (SEE BREAKER SCHEDULE)
8. CONTACTOR (SEE BREAKER SCHEDULE)
9. RECEPTACLE BREAKER (SPST 20 AMP - 120/240 VOLT)
10. RECEPTACLE, GROUNDED (GFCI 20 AMP - 125 VOLT)
11. NEUTRAL BUSS, 14 LUG COPPER
12. PHOTOCELL ENCLOSURE - ENCLOSURE TO BE FABRICATED FROM 5/8" EXPANDED STEEL MESH WITH WELDED SEAMS AND MOUNTING FLANGES. HOT DIP GALVANIZED AFTER FABRICATION. TYPE 5052 - H32 ALUMINUM WITH 5/8" x 5/8" OPENINGS EQUIVALENT TO 5/8" EXPANDED STEEL MESH MAY BE USED AS ALTERNATIVE MATERIAL. SEE PHOTOCELL ENCLOSURE MOUNTING DETAILS, STANDARD PLAN J-3b.
13. HINGED FRONT FACING DOOR WITH 4" x 4" MIN. POLISHED WIRE GLASS WINDOW.
14. HINGED DEAD FRONT WITH 1/4 TURN FASTENERS OR SLIDE LATCH.
15. CABINET MAIN BONDING JUMPER. BUSS SHALL BE 4 LUG TINNED COPPER. SEE CABINET MAIN BONDING JUMPER DETAIL, STANDARD PLAN J-3b.
16. SPARE BRANCH BREAKER (DPST 20AMP- 120/240 VOLT)
17. METAL WIRING DIAGRAM HOLDER
18. REMOVABLE EQUIPMENT MOUNTING PAN
19. 6" x 6" MIN. UNDERGROUND FEED - SERVICE WIREWAY (LEFT REAR CORNER)
20. SCREENED VENTS, 2 REQUIRED, 1 EACH SIDE, LOUVERED PLATES.
21. HEATER BREAKER (SPST 15 AMP - 120/240 VOLT)
22. THERMOSTAT, 40°F CLOSURE - 3 DIFFERENTIAL
23. STRIP HEATER (100 WATT NOMINAL), WITH TERMINAL STRIP COVER.
24. 24 CIRCUIT PANEL BOARD - MINIMUM SIZE WITH SEPARATE MAIN BREAKER.
25. LABEL CABINET WITH BUSSWORK RATING.

SERVICE CABINET TYPE D (0 - 200 AMP TYPE 120/240 SINGLE PHASE) STANDARD PLAN J-3c

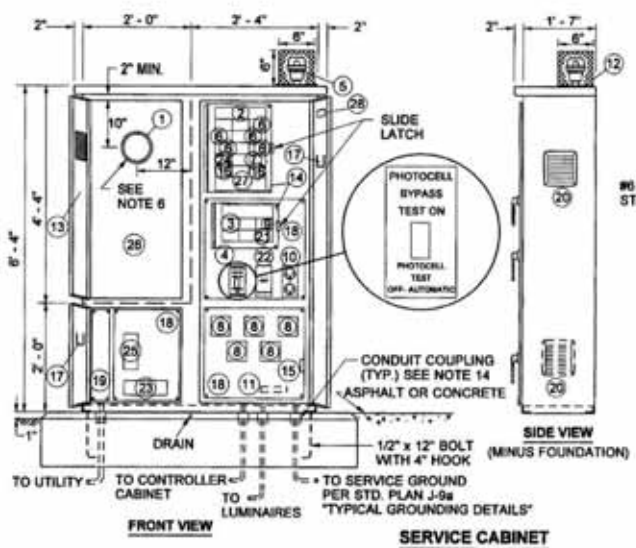
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
6-24-02
STATE DESIGN ENGINEER DATE
Washington State Department of Transportation

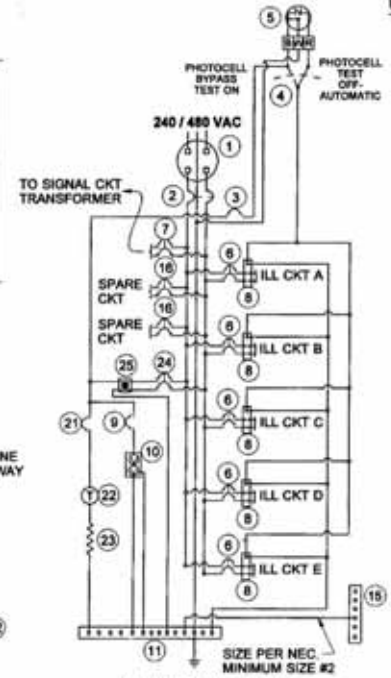


NOTE: INSTALL FOUNDATION AS SLAB SECTION UNLESS IDENTIFIED FOR CONSTRUCTION IN FENCE LINE IN CONTRACT PLANS.

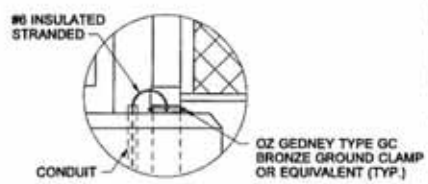
INSTALLATION DETAIL



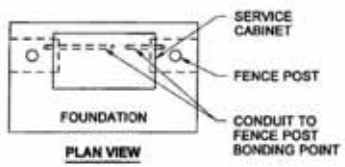
SERVICE CABINET



WIRING SCHEMATIC



DETAIL A



PLAN VIEW

KEY

1. METER BASE PER SERVING UTILITY REQUIREMENTS. AS A MINIMUM, THE METER BASE SHALL BE SAFETY SOCKET BOX WITH FACTORY INSTALLED TEST BYPASS FACILITY THAT MEETS THE REQUIREMENTS OF EUSERC DRAWING 305.
2. MAIN BREAKER (SEE BREAKER SCHEDULE)
3. PHOTOCELL BREAKER (SPST 15 AMP - 120/240 VOLT)
4. TEST SWITCH (SPDT SNAP ACTION, POSITIVE CLOSE 15 AMP - 120/277 VOLT "T" RATED)
5. PHOTOELECTRIC CONTROL, STD. SPEC. 9 - 29.11(2)
6. BRANCH BREAKER (SEE BREAKER SCHEDULE)
7. SIGNAL TRANSFORMER BREAKER (SEE BREAKER SCHEDULE)
8. CONTACTOR (SEE BREAKER SCHEDULE)
9. RECEPTACLE BREAKER (SPST 20 AMP - 120/240 VOLT)
10. RECEPTACLE, GROUNDED (GFCI 20 AMP - 125 VOLT)
11. NEUTRAL BUSS, 14 LUG COPPER
12. PHOTOCELL ENCLOSURE - ENCLOSURE TO BE FABRICATED FROM 5/8" EXPANDED STEEL MESH WITH WELDED SEAMS AND MOUNTING FLANGES. HOT DIP GALVANIZED AFTER FABRICATION. TYPE 5052 - H32 ALUMINUM WITH 5/8" x 5/8" OPENINGS EQUIVALENT TO 5/8" EXPANDED STEEL MESH MAY BE USED AS ALTERNATIVE MATERIAL. SEE PHOTOCELL ENCLOSURE MOUNTING DETAILS, STANDARD PLAN J-3b.
13. HINGED FRONT FACING DOOR WITH 4" x 4" MIN. POLISHED WIRE GLASS WINDOW.
14. HINGED DEAD FRONT WITH 1/4 TURN FASTENERS OR SLIDE LATCH
15. CABINET MAIN BONDING JUMPER. BUSS SHALL BE 4 LUG TINNED COPPER. SEE CABINET MAIN BONDING JUMPER DETAIL, STANDARD PLAN J-3b.
16. SPARE BRANCH BREAKER (DPST 20AMP- 240/480 VOLT)
17. METAL WIRING DIAGRAM HOLDER
18. REMOVABLE EQUIPMENT MOUNTING PAN
19. 6" x 6" MIN. UNDERGROUND FEED - SERVICE WIREWAY (LEFT REAR CORNER)
20. SCREENED VENTS, 2 REQUIRED, 1 EACH SIDE, LOUVERED PLATES
21. HEATER BREAKER (SPST 15 AMP - 120/240 VOLT)
22. THERMOSTAT, 40°F CLOSURE - 3 DIFFERENTIAL
23. STRIP HEATER (100 WATT NOMINAL), WITH TERMINAL STRIP COVER
24. TRANSFORMER BREAKER (DPST 15 AMP - 480 VOLT)
25. DRY TRANSFORMER (480/120 VOLT) 3 KVA COPPER BUSSED AND COPPER WOUND
26. RESERVED FOR METER, CURRENT TRANSFORMER AND/OR DISCONNECT SWITCH AS REQUIRED BY THE UTILITY
27. 24 CIRCUIT PANEL BOARD - MINIMUM SIZE WITH SEPARATE MAIN BREAKER.
28. LABEL CABINET WITH BUSSWORK RATING

GENERAL NOTES

200 AMP TYPE 240/480 1ø SERVICE CABINET

1. SEE STD. SPECIFICATION 9-29.24, SERVICE CABINETS.
2. HINGES SHALL HAVE STAINLESS STEEL OR BRASS PINS.
3. CABINETS SHALL BE RATED NEMA 3R AND SHALL INCLUDE TWO RAIN TIGHT VENTS.
4. METERING EQUIPMENT DOORS SHALL BE PAD LOCKABLE. EACH DOOR SHALL BE GASKETED. INSTALL BEST CX CONSTRUCTION CORE ON BOTTOM LEFT AND RIGHT DOORS. SEE DOOR HINGE DETAIL, STD. PLAN J-3b; CONCEALED HEAVY DUTY STAINLESS STEEL LIFT OFF HINGES ARE ALLOWED AS AN ALTERNATIVE. UPPER LEFT DOOR SHALL HAVE 3 HINGES, LOWER LEFT DOOR SHALL HAVE 2 HINGES, AND RIGHT DOOR SHALL HAVE 3 HINGES. LOWER DOOR SHALL HAVE A TWO POSITION DOOR STOP ASSEMBLY.
5. THE FOLLOWING EQUIPMENT WITHIN THE SERVICE ENCLOSURE SHALL HAVE AN APPROPRIATELY ENGRAVED PHENOLIC NAME PLATE ATTACHED WITH SCREWS OR RIVETS: KEY NUMBERS 2, 3, 4, 6, 7, 8, 9, 16, 21 AND 25. KEY NUMBER 4 NAME PLATE SHALL READ: "PHOTOCELL BYPASS TEST ON" AND "PHOTOCELL TEST OFF- AUTOMATIC". SEE SERVICE CABINET DETAIL.
6. METERING ARRANGEMENTS VARY WITH DIFFERENT SERVING UTILITIES. THE UTILITY MAY REQUIRE METER BASE MOUNTING IN THE ENCLOSURE, ON THE SIDE, OR ON THE BACK OF THE ENCLOSURE. THE UTILITY MAY REQUIRE THE DIMENSION BETWEEN THE DOOR AND THE FRONT OF THE SAFETY SOCKET BOX TO BE LESS THAN THE 11 INCHES SHOWN IN THE LEFT SIDE- SAFETY SOCKET BOX MOUNTING DETAIL, SEE STD. PLAN J-3b. THE CONTRACTOR SHALL VERIFY THE SERVING UTILITY'S REQUIREMENTS PRIOR TO FABRICATION OF AND INSTALLING THE SERVICE EQUIPMENT.
7. THE DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE ADJUSTED TO ACCOMMODATE THE VARIOUS SIZES OF EQUIPMENT INSTALLED.
8. ALL BUSSWORK SHALL BE HIGH GRADE COPPER AND SHALL EQUAL OR EXCEED THE MAIN BREAKER RATING. ALL BREAKERS SHALL BOLT ONTO THE BUSSWORK. JUMPERING OF BREAKERS SHALL NOT BE ALLOWED. BUSSWORK SHALL ACCOMMODATE ALL FUTURE EQUIPMENT AS SHOWN IN THE BREAKER SCHEDULE.
9. THE PHOTOCELL UNIT SHALL BE CENTERED IN THE PHOTOCELL ENCLOSURE TO PERMIT 360 DEGREE ROTATION OF THE PHOTOCELL WITHOUT REMOVAL OF THE PHOTOCELL UNIT OR THE PHOTOCELL ENCLOSURE.
10. ALL INTERNAL WIRE RUNS SHALL BE IDENTIFIED WITH "TO - FROM" CODED TAGS LABELED WITH THE CODE LETTERS AND/OR NUMBERS SHOWN ON THE SCHEDULES. APPROVED PVC OR POLYOLEFIN WIRE MARKING SLEEVES SHALL BE USED.
11. ALL NUTS, BOLTS, AND WASHERS USED FOR MOUNTING PHOTOCELL ENCLOSURE SHALL BE STAINLESS STEEL.
12. A 1% TOLERANCE IS ALLOWED FOR ALL DIMENSIONS.
13. SEE PLANS FOR BREAKER SCHEDULE.
14. INSTALL CONDUIT COUPLINGS ON ALL CONDUITS. PLACE COUPLINGS FLUSH WITH TOP OF CONCRETE FOUNDATION.
15. SEAL CABINET TO FOUNDATION WITH A 1/2" BEAD OF SILICONE. APPLY SILICONE TO DRY SURFACE ONLY.
16. THE METER BASE PORTION OF THIS SERVICE WAS DESIGNED TO MEET METERING PORTION OF EUSERC DRAWING 309 REQUIREMENTS.

SERVICE CABINET TYPE E (0 - 200 AMP TYPE 240/480 SINGLE PHASE) STANDARD PLAN J-3d

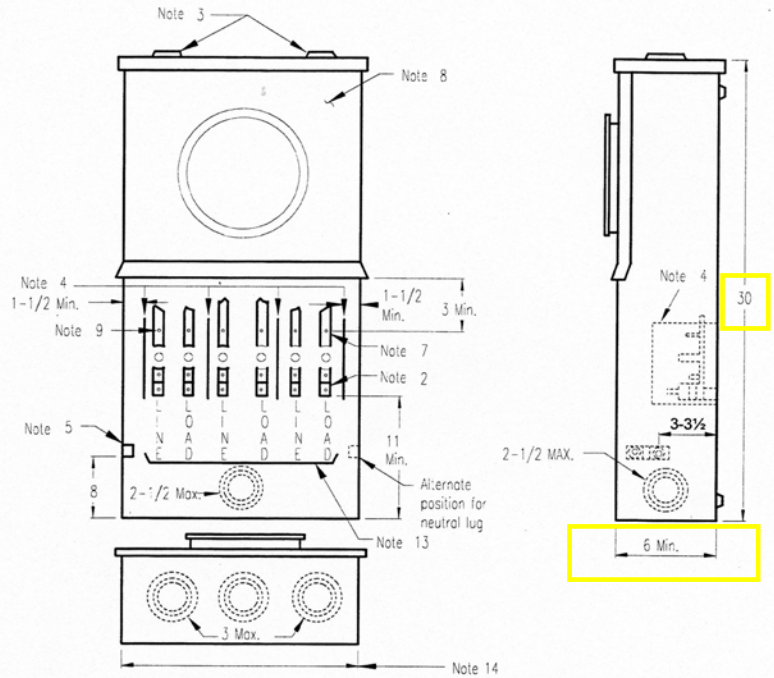
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER — DATE 11.5.03

Washington State Department of Transportation

DATE	REVISION	BY
09/2003	REVISED KEY NOTE 16	WHC



ALL DIMENSIONS SHOWN ARE IN INCHES

NOTES:

1. This device may be used for commercial, multifamily residential (not separately metered) and other types of occupancies.
2. Cable terminating facilities shall be aluminum bodied mechanical lugs with a range of No. 1/0 AWG through No. 250 Kcmil.
3. Hubs capped off if used for underground feed.
4. Rigid insulating barriers.
5. Insulated bondable vertical lay-in, double neutral lug with No. 250 Kcmil wire capacity, mounted on either sidewall.
6. Test-bypass blocks shall be bussed or wired to socket jaws or terminals.
7. Upper test connector studs.

REV.	DATE	DESCRIPTION
1	02/89	NOTES 10, 11, 12 & 14. ADDED COLOR SPECIFICATIONS.
2	06/90	ADDED NOTE 16.
3	08/97	REVISE LUG DESIGNATION IN NOTE 2 - PROJECT 961120

SCALE	SAFETY SOCKET BOX WITH FACTORY INSTALLED TEST-BYPASS FACILITIES, 200 AMPERE, 0-600 VOLTS	SH 1 OF 2 SH	
DATE 08/97	ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE	DWG NO 305	REV. 3

8. All panels shall be independently removable. Meter panel shall be provided with a sealing ring and the meter socket shall be rigidly mounted on support and attached to the meter panel. Test-bypass compartment cover panel shall be sealable and permanently labeled: "DO NOT BREAK SEALS. NO FUSES INSIDE".

9. Test-bypass block detail on Dwg. 312.

10. For 3-Phase, 4 wire, connect 7th jaw to body of neutral lug with No. 12 Min. copper wire, white in color.

11. For 3-Phase, 4 wire delta, identify right hand test-bypass block (2 poles) as power leg. Identification to be orange in color.

12. For 3-Phase, 3 wire, install bus to connect line and load poles together at top of center test-bypass block and connect 5th jaw to this bus, using No. 12 Min. copper wire. Color shall be other than white, gray, green or orange.

13. For 1-Phase, 3 wire, provide two test-bypass blocks mounted in the outer positions and a four jaw socket.

14. For 1-Phase, 3 wire, 120/208 volt, provide two test-bypass blocks mounted in the outer positions and a five jaw socket. Connect 5th jaw of meter socket to body of neutral lug with a No. 12 Min. copper wire, white in color.

15. Decals on inside back of enclosure in 3/4 inch minimum block letter labeling.

16. Minimum width of access opening shall be 13-1/2 inches.

REV.	DATE	DESCRIPTION
1	02/89	NOTES 10, 11, 12 & 14. ADDED COLOR SPECIFICATIONS.
2	06/90	ADDED NOTE 16.
3	08/97	REVISE LUG DESIGNATION IN NOTE 2 - PROJECT 961120

SCALE	SAFETY SOCKET BOX WITH FACTORY INSTALLED TEST-BYPASS FACILITIES, 200 AMPERE, 0-600 VOLTS	SH 2 OF 2 SH	
DATE 08/97	ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE	DWG NO 305	REV. 3

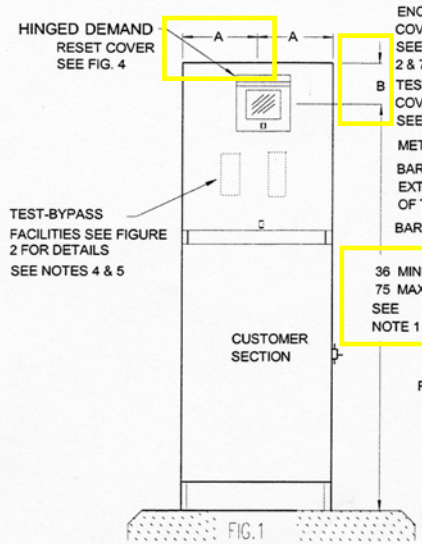


FIG.1

FRONT VIEW

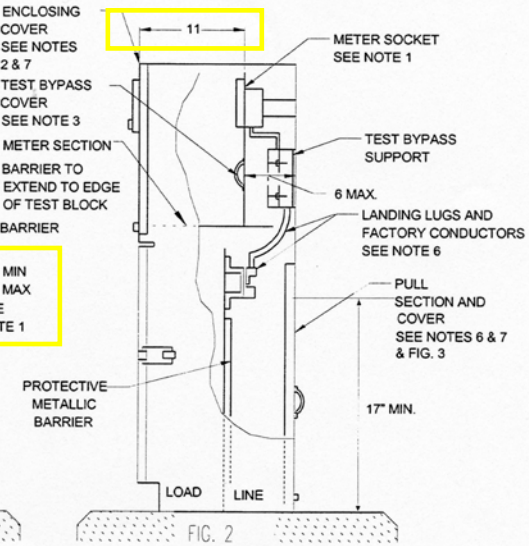


FIG. 2

SIDE VIEW

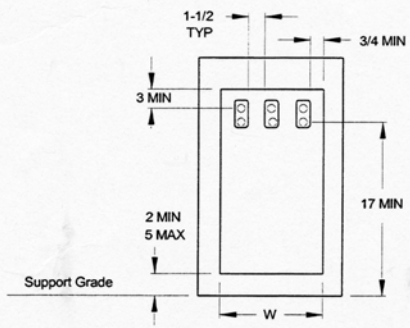


FIG. 3

WIREWAY PULL SECTION

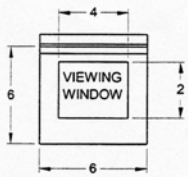


FIG. 4

HINGED DEMAND RESET

WITH POLYCARBONATE VIEWING

TABLE 1 - MINIMUM DIMENSIONS

SERVICE	W*	A**	B**
1 PHASE	10-1/2	10	9
3 PHASE	12-1/2		

* SEE NOTE 6 & 7 ** SEE NOTE 2 & 7

ALL DIMENSIONS SHOWN ARE IN INCHES

REV.	DATE	DESCRIPTION
	03/98	DRAWING ADDED - PROJECT 970509
	10/98	NEW PROJECT
	1/99	REVISION ADDED MIN DIMENSION TO TABLE 1

SCALE	COMMERICAL FIXED TOP SERVICE PEDESTALS 0-200 AMPERES 0-600 VOLTS	sheet 1 of 3	
DATE 10/98	ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE	DWG NO 309	REV.

NOTES:

1. The meter panel shall be provided with a sealing ring and the meter socket shall be rigidly mounted on a support, attached to the meter panel. Ringless sockets are not acceptable. Meter height is measured from the center of the meter-socket.

2. The meter shall be enclosed and the enclosing cover shall meet the following conditions:

   a. The cover shall have a fixed top and sides with access to the metering compartment provided through a hinged door. The hinged door shall be equipped with a device to hold the door in the open position at 90 degrees or more.

   Note: "A" and "B" dimensions are measured from the center of the meter socket to the access opening return flanges.

3. Test-bypass compartment covers shall be sealable and fitted with a lifting handle - covers exceeding 16 inches in width shall require two lifting handles.

4. Test-bypass blocks with rigid barriers shall be furnished, installed and wired or bussed to the meter socket by the manufacturer. Connection sequences shall be LINE-LOAD from left to right and clearly identified by 3/4 inch minimum block letter labeling. See Drawings 311 and 312 for test-bypass block details.

5. Test-bypass shall be installed with the following clearances:

   a. 3-inches of vertical clearance from the upper test connector stud to the upper compartment access opening and 3-inches from the center of the cable terminal screw to the lower compartment access opening.

   b. 1-1/2 inches of side clearance from the rigid insulating barriers to the compartment sides and 1 inch to the compartment access openings.

6. The terminating pull section shall:

   a. Comply with the minimum dimensions shown in Table 1 (The "W" dimension is measured between the access opening return flanges), accept a minimum 3 inch conduit, and the cover shall be equipped with a lifting handle.

   b. Be equipped with an aluminum-bodied, mechanical lugs, with a range of No. 6 AWG through 250 Kcmil, for termination of the service conductors. Insulated cable or bus shall be installed between the termination lugs and the test-bypass facilities.

   c. Have a protective metallic barrier (16 gauge minimum) provided between the pull section and the customer distribution section. There shall be a 1/4 inch minimum clearance between the customer section wall and the barrier to prevent screws and bolts from protruding into the pull section.

7. Utility compartments covers (i.e., meter cover, demand reset cover, and pull section) shall be sealable and lockable with a padlock having a 5/16 inch lockshaft.

REV.	DATE	DESCRIPTION
	03/98	DRAWING ADDED - PROJECT 970509
	10/98	NEW PROJECT
	1/99	REVISION ADDED MIN DIMENSION TO TABLE 1

SCALE	**COMMERICAL FIXED TOP SERVICE PEDESTALS 0-200 AMPERES 0-600 VOLTS**	sheet 1 of 3	
DATE 10/98	**ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE**	DWG NO **309**	REV.

8. Internal equipment attached to the outer walls of the enclosure shall be secured in place with devices that may not be loosened from the outside. Screws or bolts requiring special tools for installation or removal are not acceptable.

9. For structural mounting and support of the pedestal consult the serving agency.

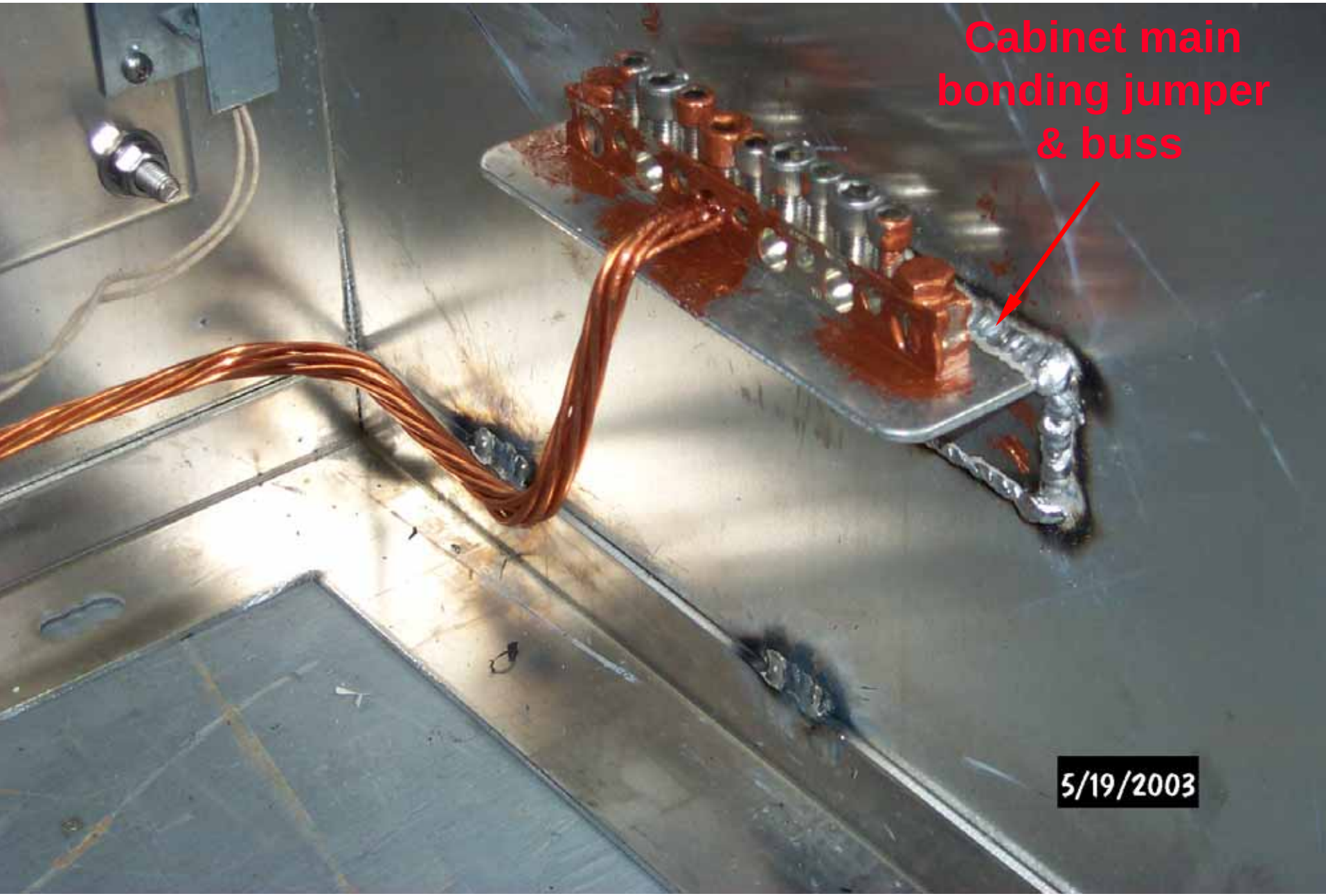
REV.	DATE	DESCRIPTION
	03/98	DRAWING ADDED - PROJECT 970509
	10/98	NEW PROJECT
	1/99	REVISION ADDED MIN DIMENSION TO TABLE 1

SCALE	**COMMERICAL FIXED TOP SERVICE PEDESTALS 0-200 AMPERES 0-600 VOLTS**	sheet 1 of 3	
DATE 10/98	**ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE**	DWG NO **309**	REV.

5/19/2003

MAIN DISCONNECT
MAIN DISCONNECT
ILLUM A
ILLUM C
ILLUM B
ILLUM D
LIGHT CNTRL.
SIGNAL
RECP.
HEATER
MANUFACTURED BY
BROWNFIELD
MANUFACTURING INC
(360) 568-0572
120/240 VOLTS
PHOTOCELL BYPASS TEST ON
PHOTOCELL TEST OFF / AUTOMATIC
5/19/2003

Lighting contactors


Cabinet main
bonding jumper
& buss
5/19/2003

CAUTION
BROWNFIELD
BROWNFIELD
6/16/2003

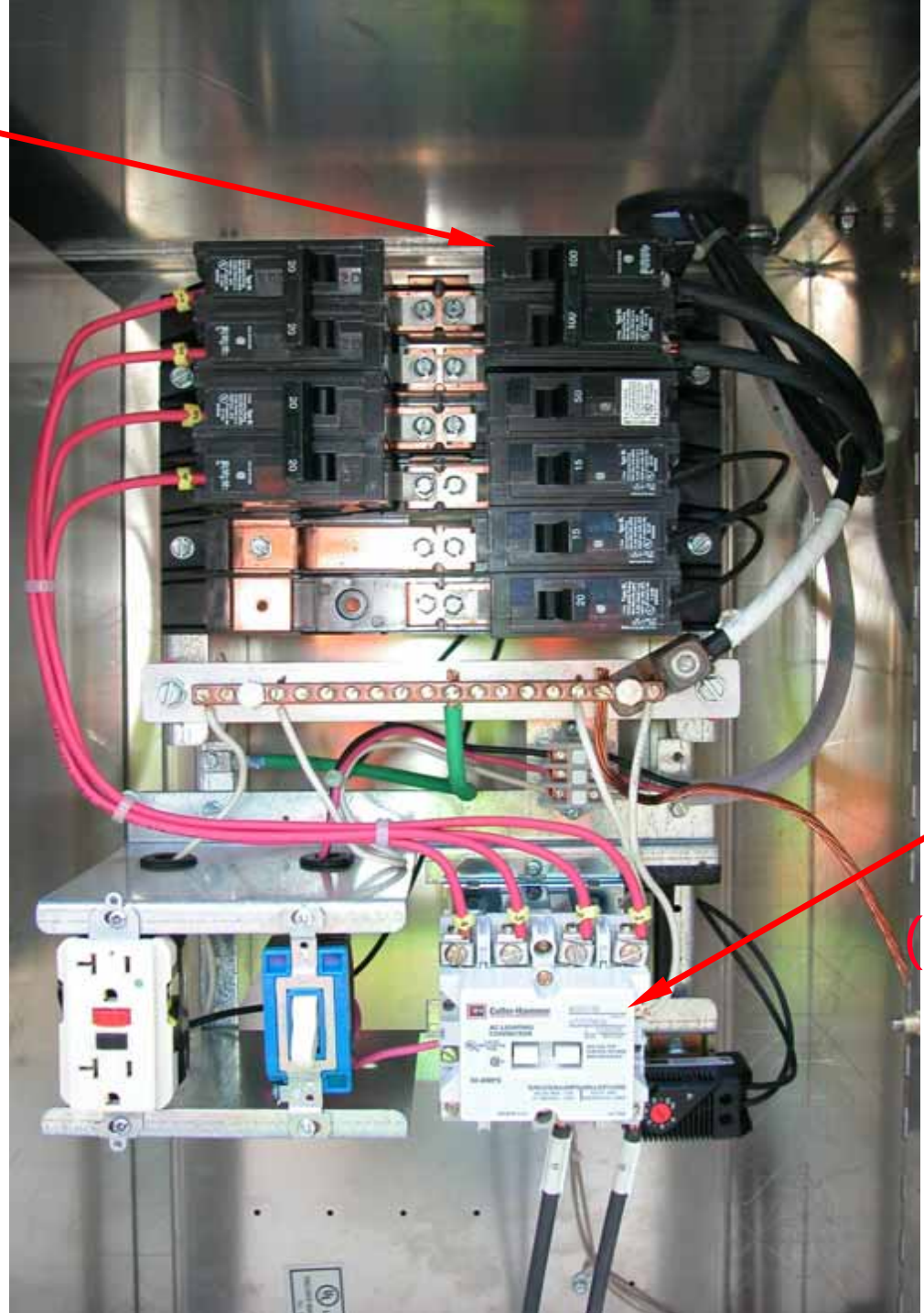
MAIN DISCONNECT
PHOTOCELL BYPASS TEST ON
CAUTION
MANUFACTURED BY
BROWNFIELD
(360) 568-0572
6/16/2003

CAUTION
MANUFACTURED BY
BROWNFIELD
MANUFACTURING INC
(360) 568-0572
6/16/2003

This slotted steel channel is specified as 1-5/8” x 2-7/16” not 1-5/8” x 1-5/8”

6/16/2003

Back-fed
main breaker
(not acceptable)



Dual circuit
contactor
(not acceptable)

Man – that's one tall garbage can!!

If you have any questions, please contact Terry Thayer at:
360-705-7290