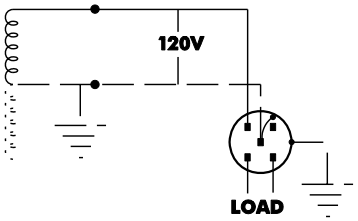
SINGLE PHASE SOCKETS

1.07.1

120V 2W 1Ø (OFF 120/240V 1Ø 3W)

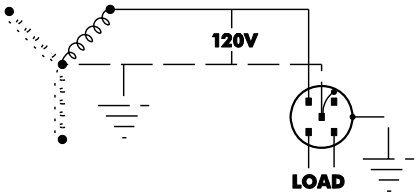
SECTION 1.07A



REFER TO DWG: 4.02.1

120V 2W 1Ø (OFF 120/208V 3Ø 4W)

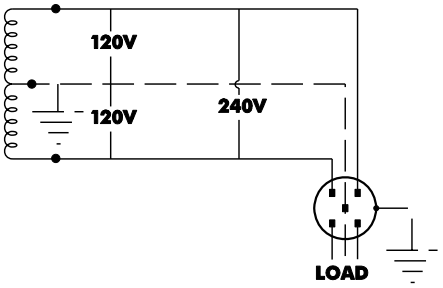
SECTION 1.07A



REFER TO DWG: 4.02.1

120/240V 1Ø 3W

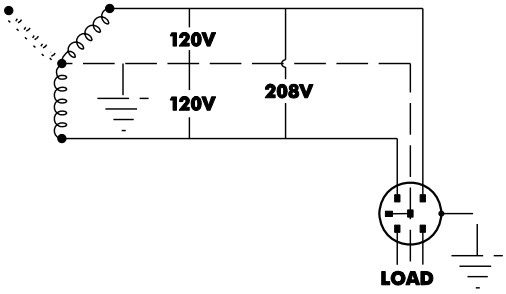
SECTION 1.07B



REFER TO DWG: 4.02.2 THRU 4.02.7

120/208V 1Ø 3W (OFF 120/208V 3Ø 4W)

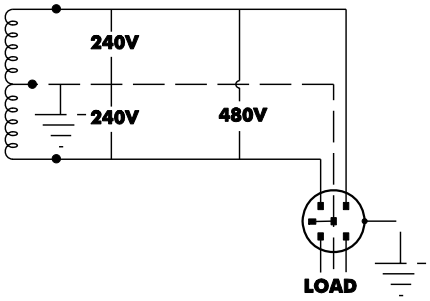
SECTION 1.07C



REFER TO DWG: 4.02.14

240/480V 1Ø 3W

SECTION 1.07D OVERHEAD ONLY



REFER TO DWG: 4.02.9

Revised 07-03-00 By BED

DESIGN ENTRY BY: ROBERT B ADAMS

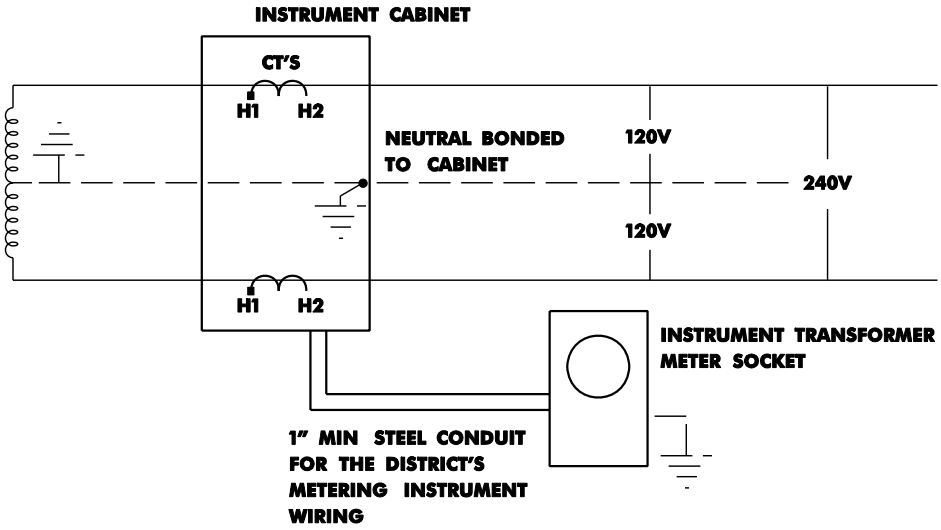
ISSUED DATE_____

SINGLE PHASE INSTRUMENT TRANSFORMERS (CT'S)

1.07.2

120/240V 1Ø 3W

SECTION 1.07B



INSTRUMENT TRANSFORMER CABINET SIZE IS TO BE DETERMINED BY THE CUSTOMER AFTER RECEIPT OF INSTRUMENT TRANSFORMER'S FROM THE DISTRICT, TAKING INTO CONSIDERATION THE NUMBER, PHYSICAL SIZE AND ORIENTATION OF THE INSTRUMENT TRANSFORMER'S, THE DIRECTION AND SIZE OF INCOMING AND OUTGOING CONDUCTORS, AND THE CONDUCTOR BENDING RADIUS NEEDED TO COMPLY WITH THE NEC.

REFER TO DWGS:

METER DIAGRAM: 4.06.3
RESIDENTAIL & GENERAL SERVICE OVERHEAD: 6.10
RESIDENTIAL UNDERGROUND: 7.07
GENERAL SERVICE UNDERGROUND: 8.06

Revised 07-03-00 By BED
DESIGN ENTRY BY: ROBERT B ADAMS

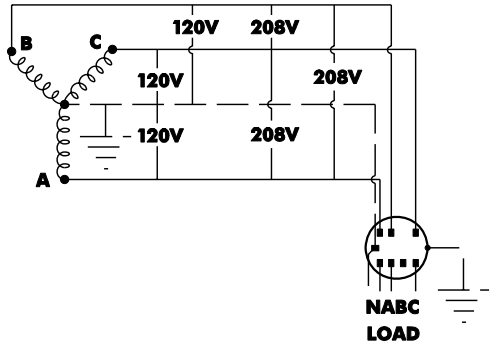
ISSUED DATE_____

THREE PHASE, 4 WIRE, WYE SOCKETS

1.07.3

SECTION 1.07E

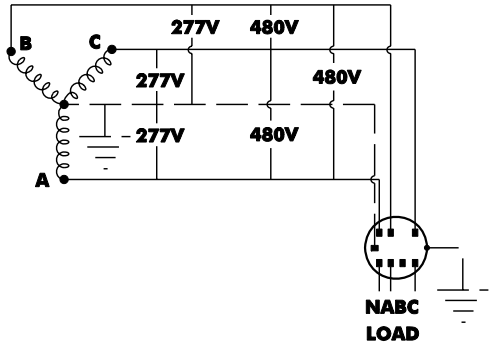
120/208V 3Ø 4W



REFER TO DWG: 4.02.13

SECTION 1.07F

277/480V 3Ø 4W



REFER TO DWG: 4.02.13

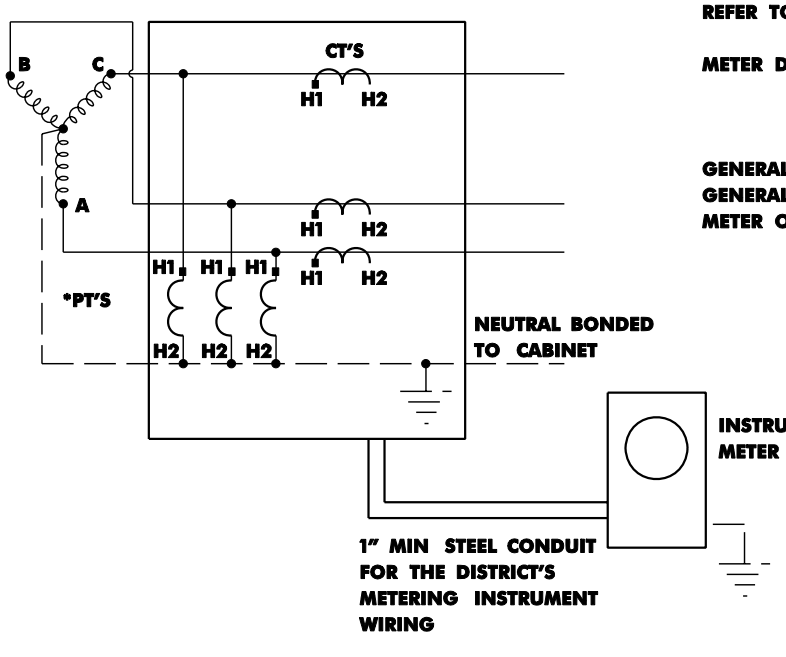
THREE PHASE, 4 WIRE, WYE INSTRUMENT TRANSFORMERS (CT'S & PT'S)

SECTION 1.07E

SECTION 1.07F

120/208V 3Ø 4W
277/480V 3Ø 4W

INSTRUMENT CABINET



REFER TO DWGS:

METER DIAGRAMS: 4.06.14
4.06.15
4.06.16
4.06.17
GENERAL SERVICE OVERHEAD: 6.10
GENERAL SERVICE UNDERGROUND: 8.06
METER ON PADMOUNT: 8.08.8

***PT'S WHEN REQUIRED**

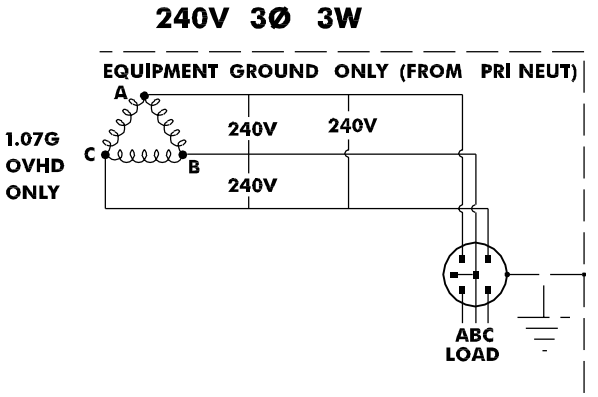
Revised 06-29-01 By BED
DESIGN ENTRY BY: ROBERT B ADAMS

ISSUED DATE_____

THREE PHASE, 3–WIRE, CLOSED DELTA SOCKETS

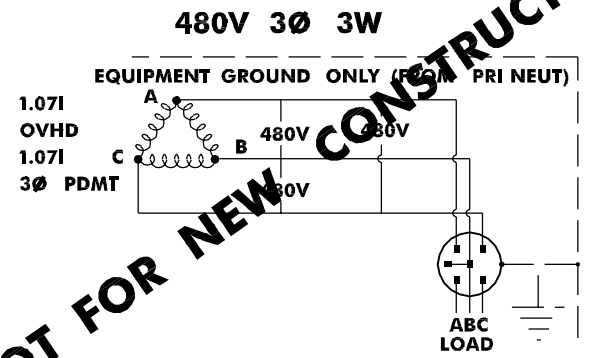
1.07.4

SECTION 1.07G



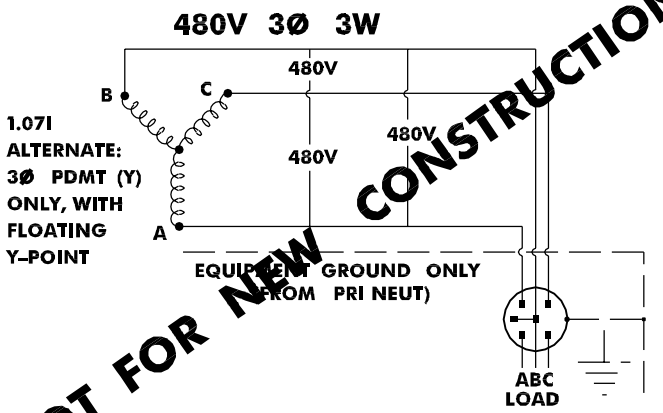
REFER TO DWG: 4.02.10

SECTION 1.07I



REFER TO DWG: 4.02.10

SECTON 1.07I



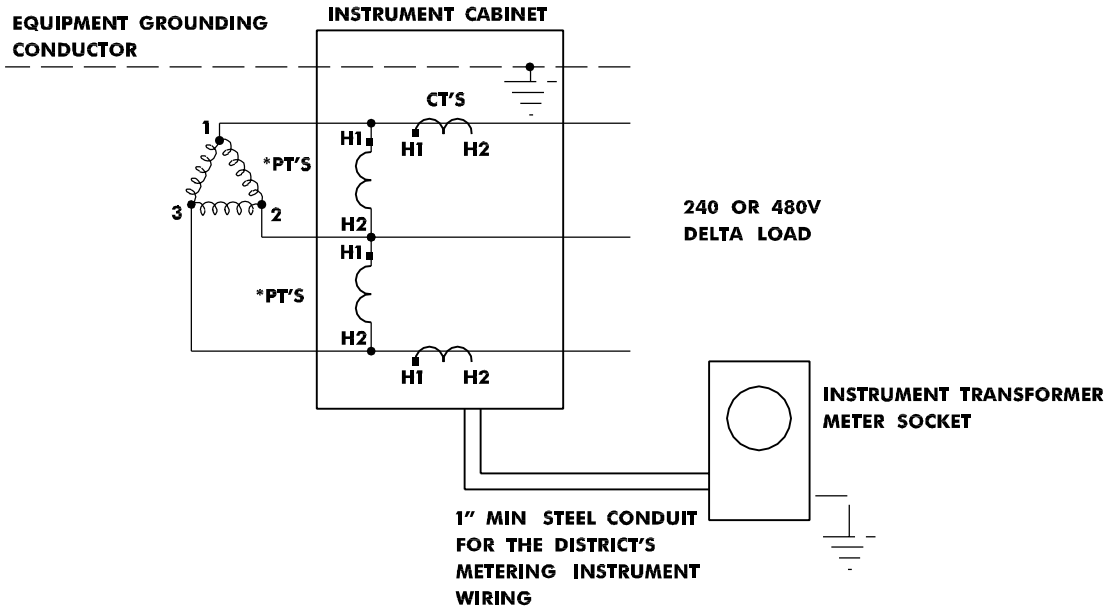
REFER TO DWG: 4.02.11

THREE PHASE, 3–WIRE, CLOSED DELTA INSTRUMENT TRANSFORMERS (CT'S & PT'S)

1.07.5

SECTION 1.07G OVERHEAD ONLY — **240V 3W DELTA**

SECTION 1.07I — **480V 3W DELTA – NOT FOR NEW CONSTRUCTION**



*PT'S WHEN REQUIRED

REFER TO DWGS:

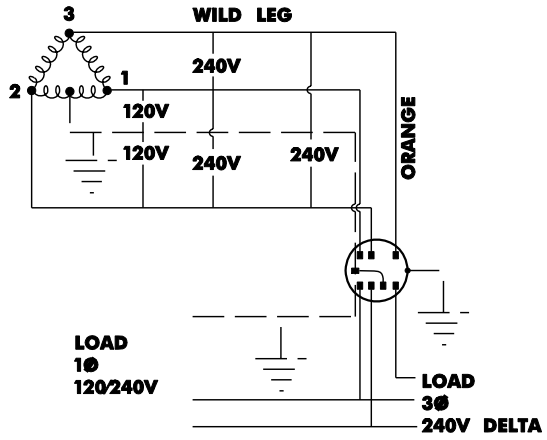
METER DIAGRAMS: 4.06.8
4.06.9
4.06.10
4.06.11
GENERAL SERVICE OVERHEAD: 8.06
GENERAL SERVICE UNDERGROUND: 7.07
METER ON PADMOUNT: 8.08.8

THREE PHASE, 4–WIRE, CLOSED DELTA SOCKETS

1.07.6

SECTION 1.07H OVERHEAD ONLY

120/240/240V 3Ø 4W



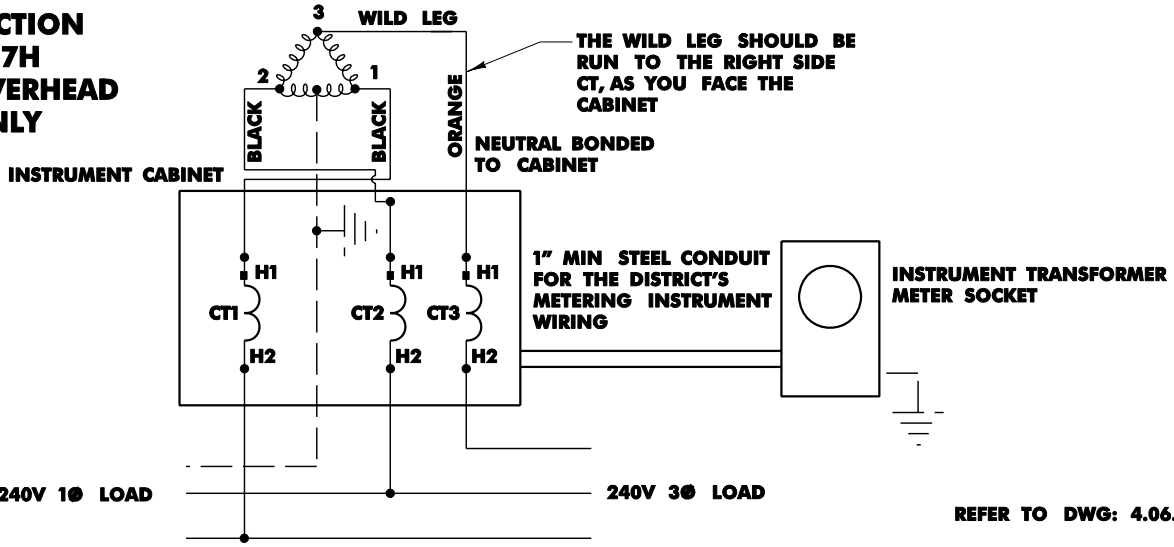
REFER TO DWGS: 4.06.13

NOTE: MAXIMUM SINGLE PHASE LOAD IS LIMITED TO FIVE PER CENT OF THE TOTAL LOAD ON BANK

THREE PHASE, 4–WIRE, CLOSED DELTA INSTRUMENT TRANSFOMERS (CT'S)

120/240/240V 3Ø 4W

SECTION 1.07H OVERHEAD ONLY



REFER TO DWG: 4.06.13

CT1 AND CT2 HAVE THE SAME RATIO
CT3 HAS A RATIO HALF OF CT1 AND CT2
IE: CT1 – 400/5
CT2 – 400/5
CT3 – 200/5

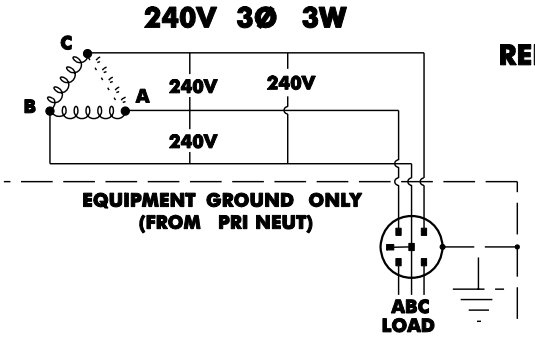
Revised 06-29-01 By BED
DESIGN ENTRY BY: ROBERT B ADAMS

ISSUED DATE_____

THREE PHASE, 3–WIRE, OPEN DELTA SOCKETS

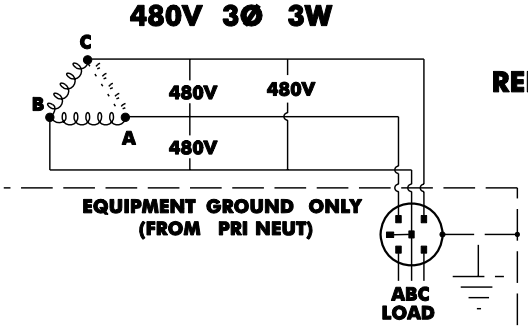
1.07.7

SECTION 1.07J OVERHEAD ONLY



REFER TO DWG: 4.02.12

SECTION 1.07L



REFER TO DWG: 4.02.10

Revised 07-03-00 By BED
DESIGN ENTRY BY: ROBERT B ADAMS

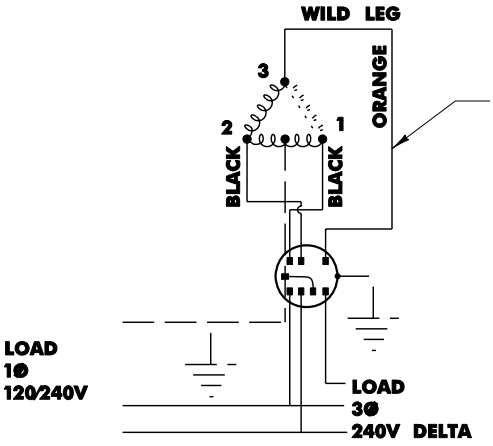
ISSUED DATE_____

THREE PHASE, 4–WIRE, OPEN DELTA SOCKETS

1.07.8

SECTION 1.07K OVERHEAD ONLY

120/240/240V 3Ø 4W

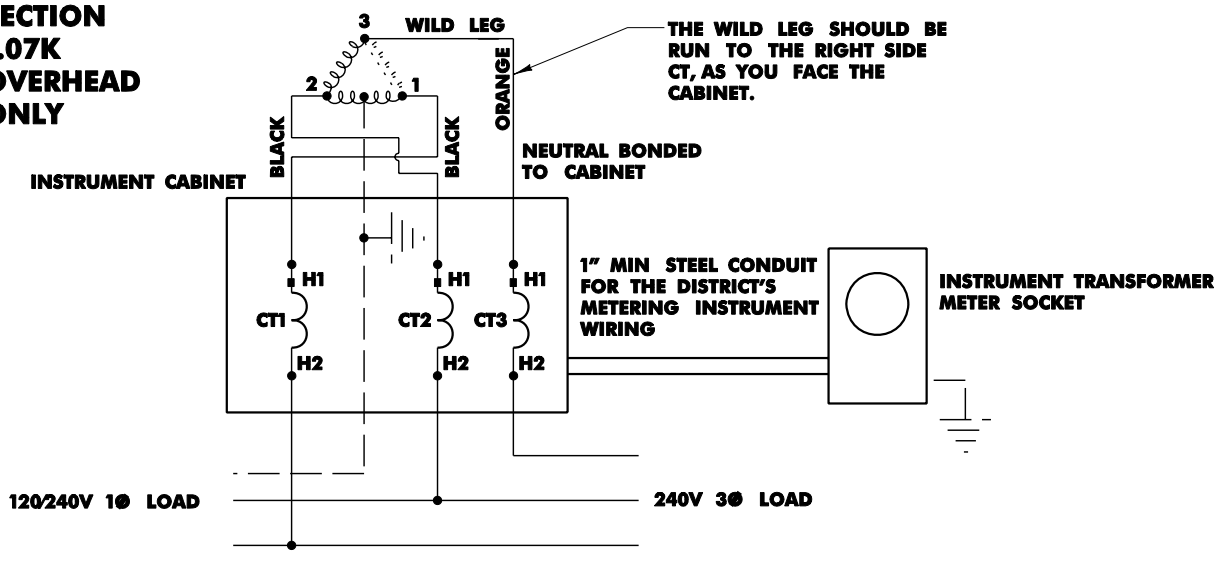


REFER TO DWGS: 4.02.12

THREE PHASE, 4–WIRE, OPEN DELTA INSTRUMENT TRANSFORMERS (CT'S)

SECTION 1.07K OVERHEAD ONLY

120/240/240V 3Ø 4W



CT1 AND CT2 HAVE THE SAME RATIO
CT3 HAS A RATIO HALF OF CT1 AND CT2
IE: CT1 – 400/5
CT2 – 400/5
CT3 – 200/5

REFER TO DWGS: 4.06.13
OVHD: 6.10
UGND SEC DIP: 8.06

Revised 06-29-01 By BED
DESIGN ENTRY BY: ROBERT B ADMAS

ISSUED DATE _____

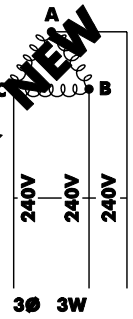
6–WIRE TOTALIZED SERVICE

LIMITED TO EXISTING 6–WIRE CUSTOMERS ONLY

1.07.9

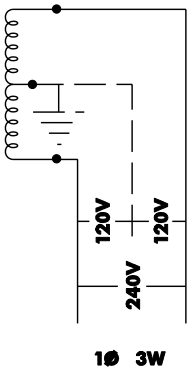
SECTION 1.07O

POWER TRANSFORMER(S)



A 6W CUSTOMER (1.07N) COULD BE FED FROM A 4W BANK (1.07K), BUT NOT VICE–VERSA

1.07B PDMT 1.07B OVHD

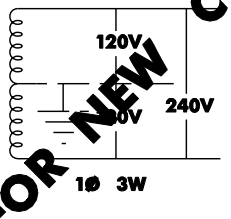


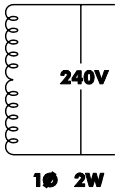
REFER TO DWGS: 4.06.4, 4.06.5, 4.06.6, 4.06.7

5–WIRE TOTALIZED SERVICE

LIMITED TO EXISTING 5–WIRE CUSTOMERS ONLY

SECTION 1.07P





ISOLATES 240V 2W FROM 1Ø 3W TO AVOID FLICKER FROM WELDERS, ETC.

REFER TO DWG: 4.02.8

Revised 07-03-00 By BED

DESIGN ENTRY BY: ROBERT B ADAMS

ISSUED DATE_____

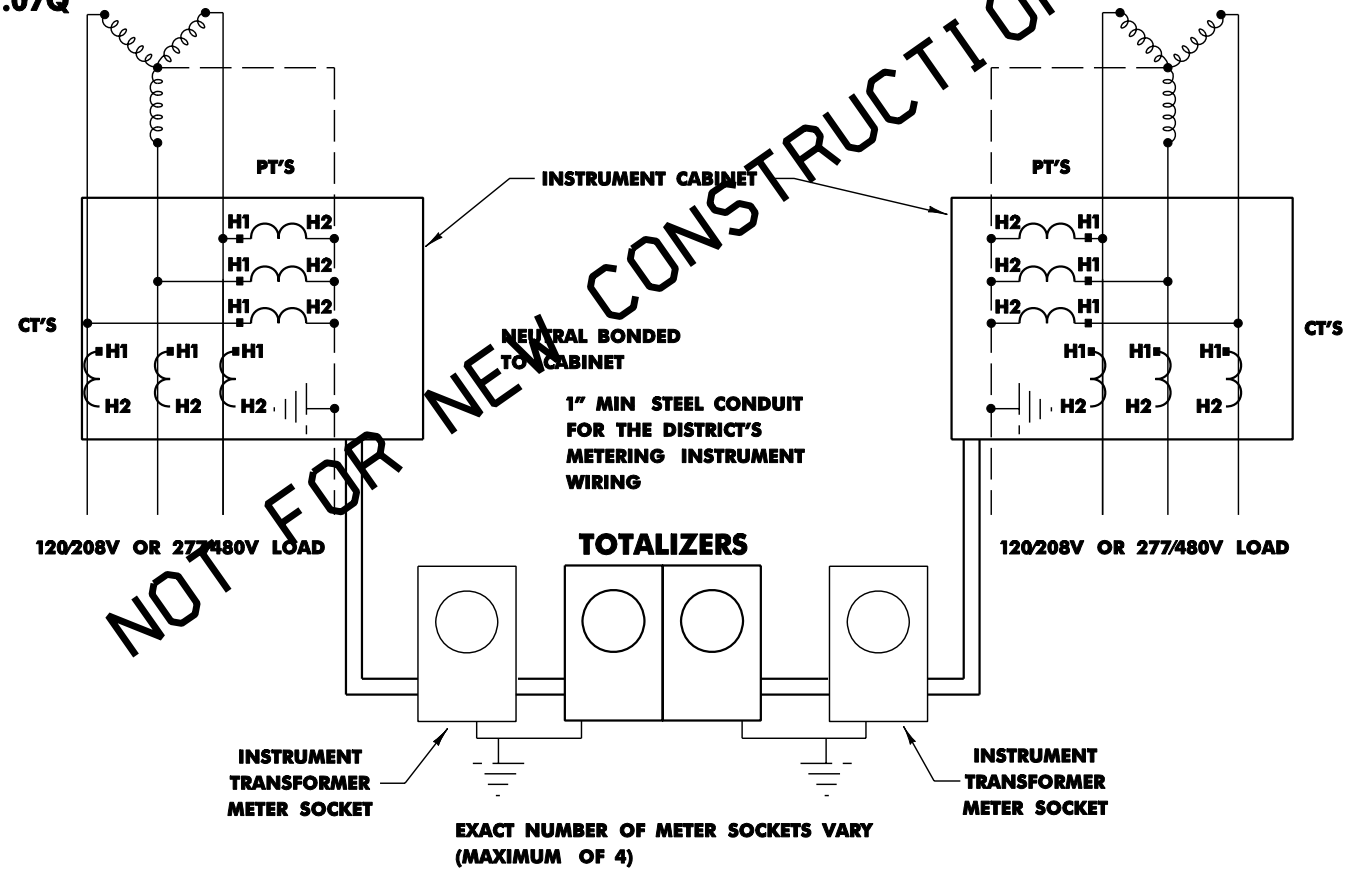
TWO CIRCUIT TOTALIZED

THREE PHASE, 4–WIRE, WYE

1.07.10

SECTION 1.07Q

4W TOTALIZED SERVICE
2 CIRCUIT TOTALIZE WYE



REFER TO DWGS: 4.06.18

Revised 09-15-08 By SAH
DESIGN ENTRY BY: ROBERT B. ADAMS

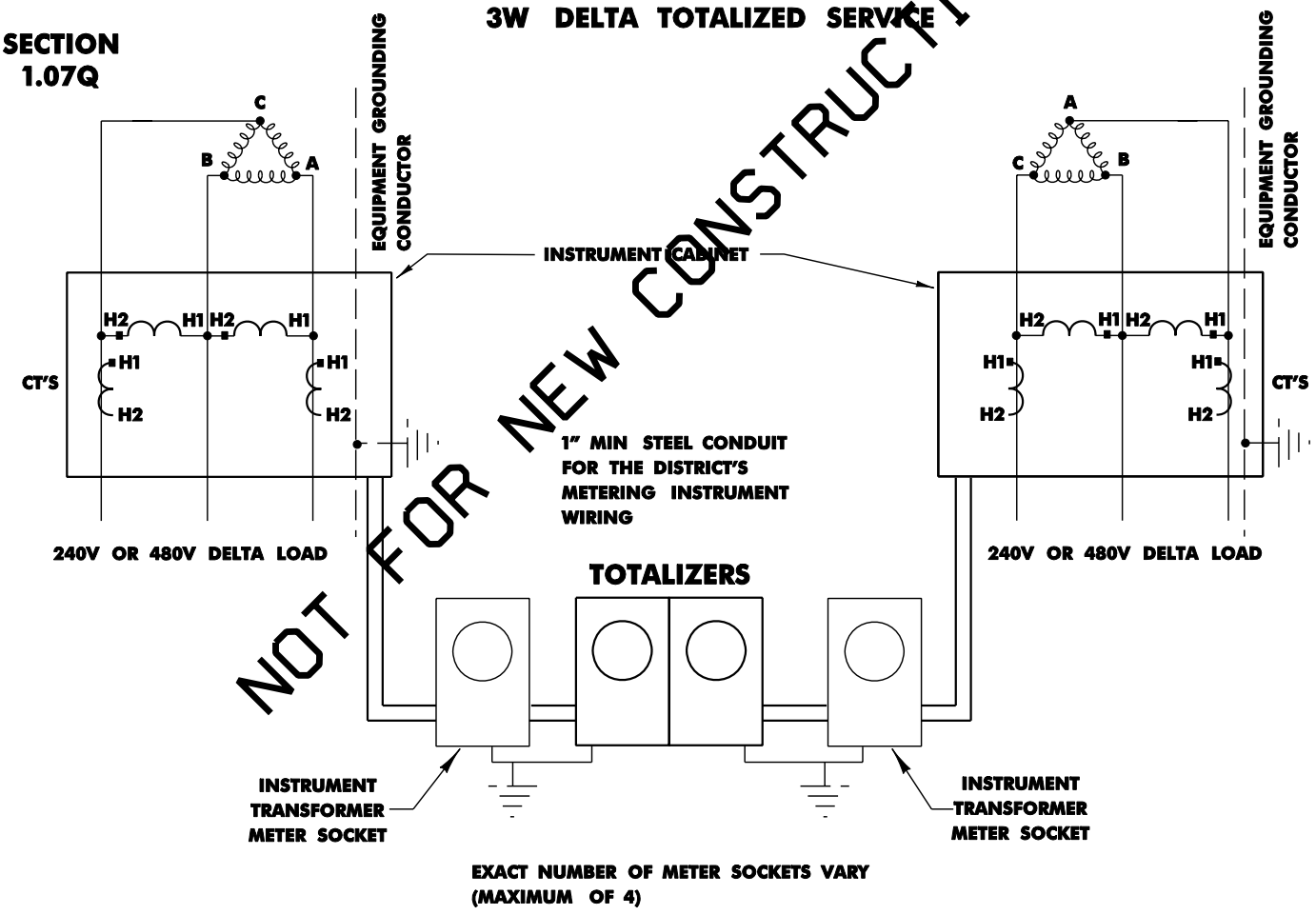
ISSUED DATE _____

TWO CIRCUIT TOTALIZED

THREE PHASE, 3–WIRE, CLOSED DELTA

1.07.11

SECTION 1.07Q



REFER TO DWG: 4.06.12

Revised 09-15-08 By SAH

DESIGN ENTRY BY: ROBERT B ADAMS

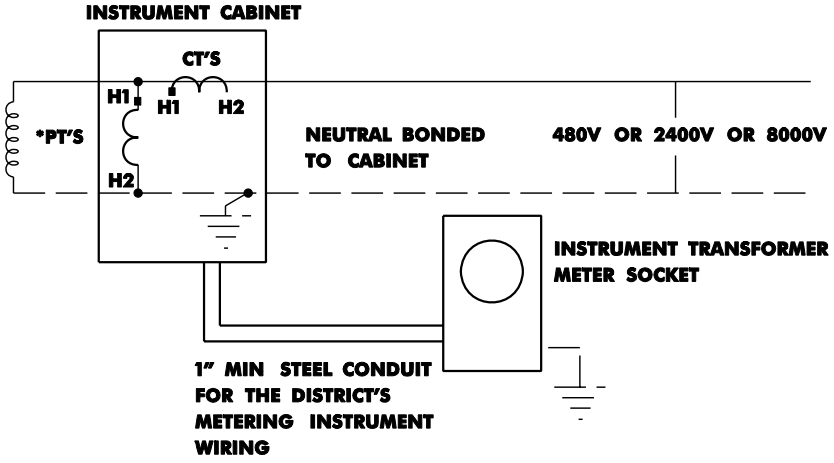
ISSUED DATE _____

PRIMARY METERING
SINGLE PHASE

1.07.12

480V, 2400V, OR 8000V 1Ø 2W

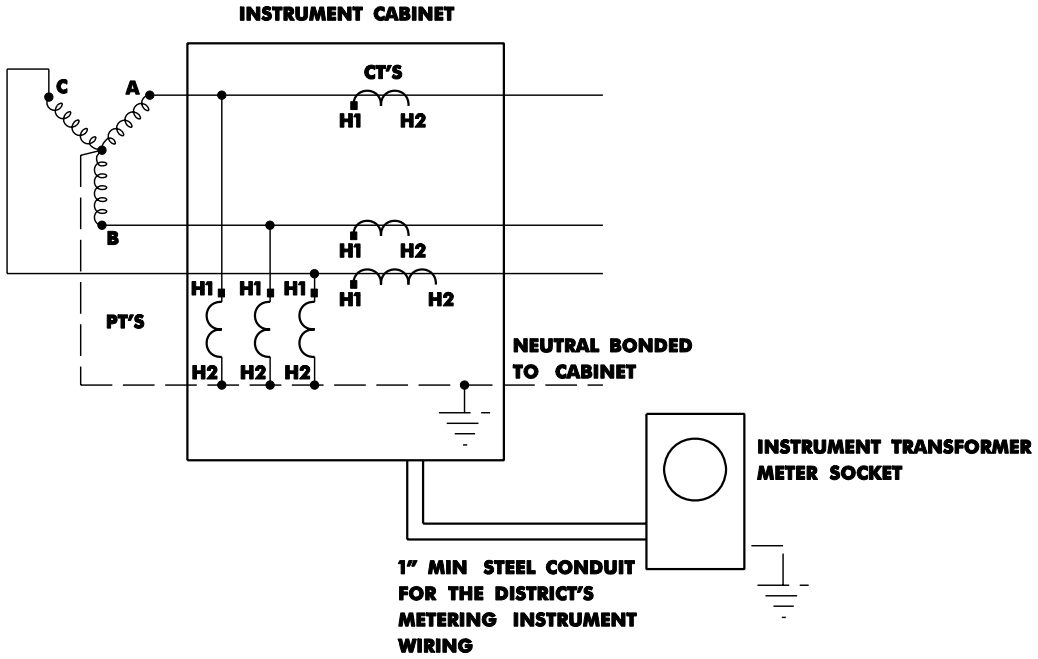
SECTION 1.07R



*PT'S WHEN REQUIRED

PRIMARY METERING
13,800V, THREE PHASE, 4–WIRE, WYE

SECTION 1.07R



Revised 07-03-00 By BED
DESIGN ENTRY BY: ROBERT B ADAMS

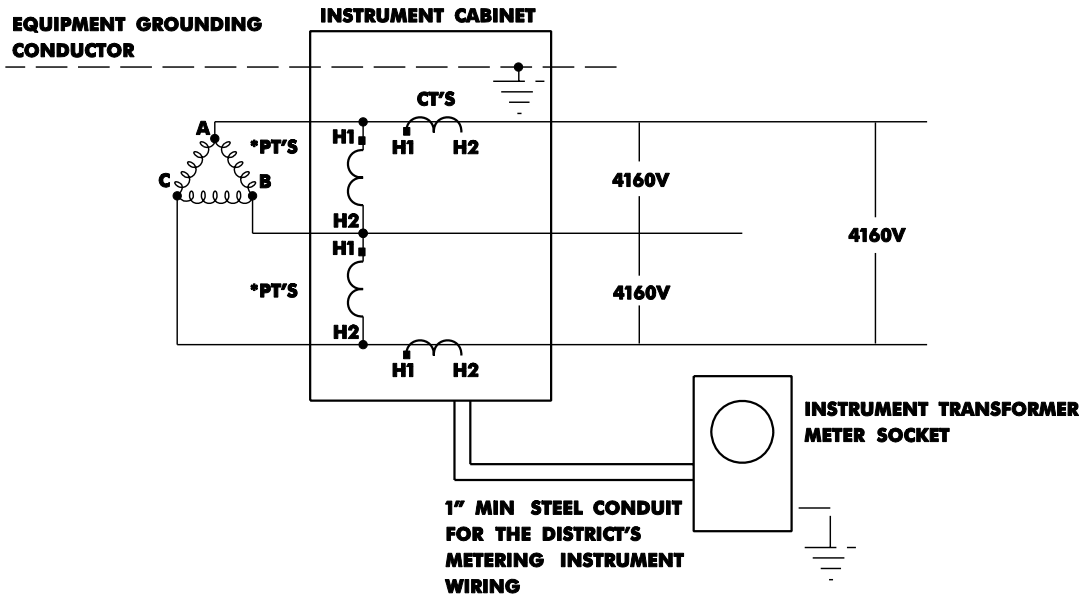
ISSUED DATE_____

PRIMARY METERING

2400V, 4160V, THREE PHASE, 3–WIRE, CLOSED DELTA

1.07.13

SECTION 1.07R



*PT'S WHEN REQUIRED

Revised 07-03-00 By BED

DESIGN ENTRY BY: ROBERT B ADAMS

ISSUED DATE_____

SINGLE PHASE TWO WIRE METERING

120 VOLT SERVICE – ONE KILOWATT MAXIMUM

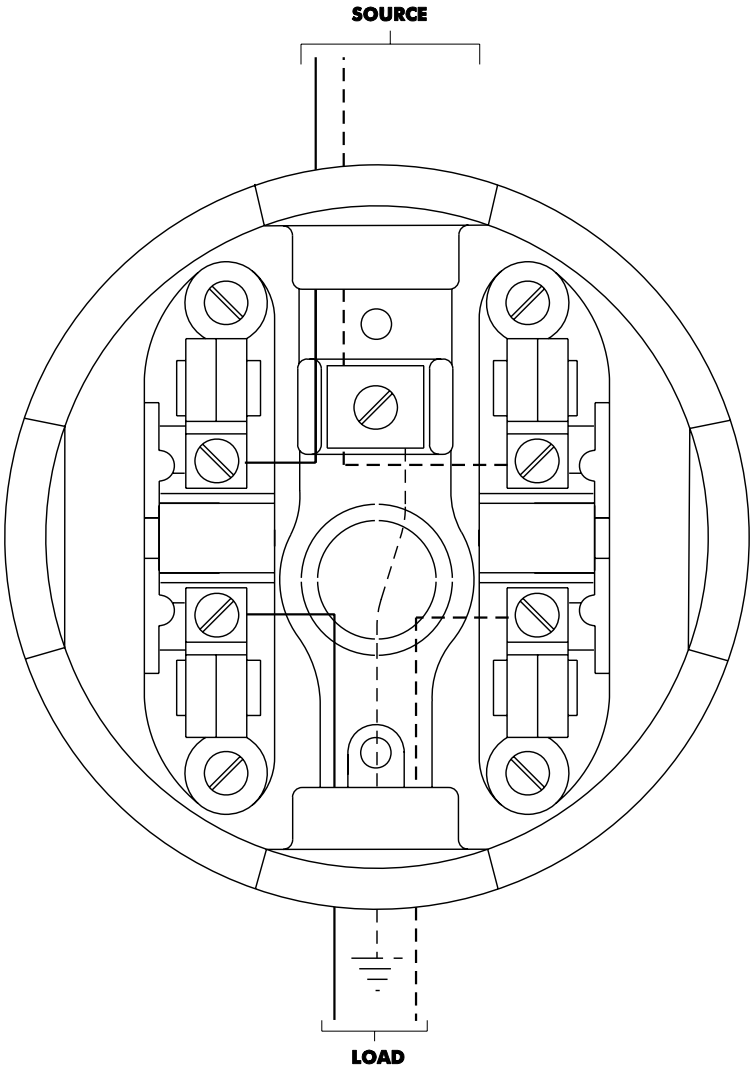
4.02.1

M104

NOTES:

TO BE WIRED AS SHOWN

HOT SIDE TO LEFT, FACING SOCKET



FRONT VIEW

COVER REMOVED

METER SOCKET: 0000006608
(BY CUSTOMER)

Revised 09-15-08 By SAH

DESIGN ENTRY BY: BRANT DANGEL

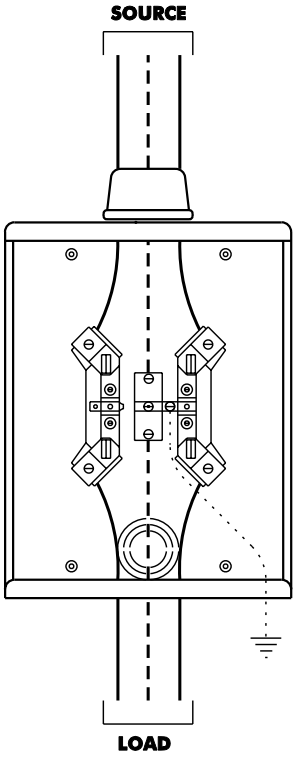
ISSUED DATE_____

SURFACE TYPE METER SOCKET

120/240 VOLT 3-WIRE
150 AMPERES OVERHEAD
SERVICE

4.02.2

M118
M118D
120/208V 1Ø 3W: M218
M218D



FRONT VIEW
COVER REMOVED

NOTES:

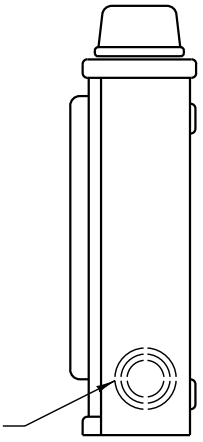
METER SOCKET 0000006616
(BY CUSTOMER)

TERMINALS FOR MAXIMUM
250 KCMIL CONDUCTORS

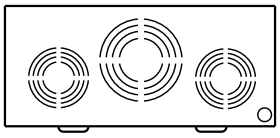
METER SOCKET AVAILABLE
WITH FIFTH TERMINAL FOR
THREE WIRE WYE SERVICE

METER CABINET AVAILABLE
WITH 1 1/4", 1 1/2", 2", OR
2 1/2" INTERCHANGEABLE
HUB OR BLANK COVER PLATE

3 KNOCKOUTS FOR 1" TO 1 1/2"
CONDUIT IN SIDES AND BACK



SIDE VIEW
COVER IN PLACE



BOTTOM VIEW

2 KNOCKOUTS FOR 1/2" TO 1 1/2" CONDUIT
1 KNOCKOUT FOR 1/2" TO 2" CONDUIT
1 KNOCKOUT 1/4" FOR EQUIPMENT GROUND

Revised 09-15-08 By SAH
DESIGN ENTRY BY: GRETE H SCHOLZ

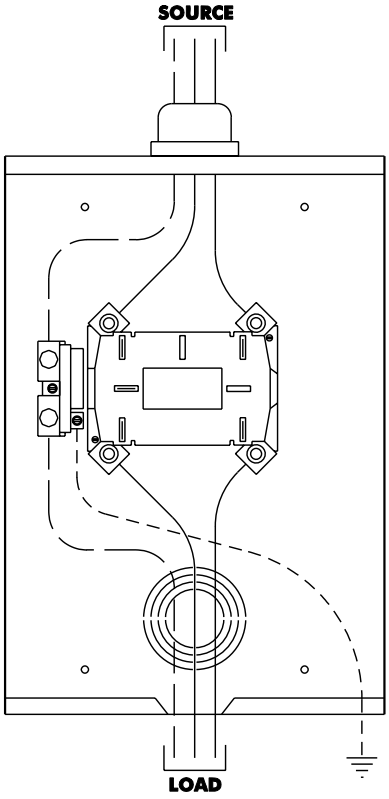
ISSUED DATE_____

SURFACE TYPE METER SOCKET

HIGH CAPACITY
120/240 VOLT 3–WIRE 200 AMPERES
OVERHEAD SERVICE

4.02.3

M120
M120D
120/208V 1Ø 3W: M220
M220D



FRONT VIEW
COVER REMOVED

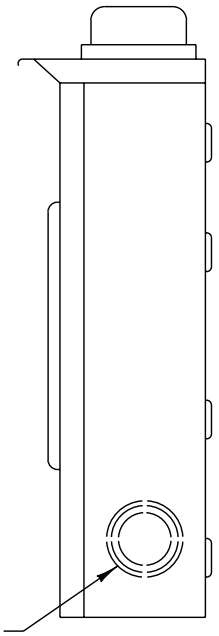
NOTES:

TERMINALS FOR MAXIMUM 350 KCMIL CONDUCTORS

METER SOCKET AVAILABLE WITH FIFTH TERMINAL FOR THREE WIRE WYE SERVICE

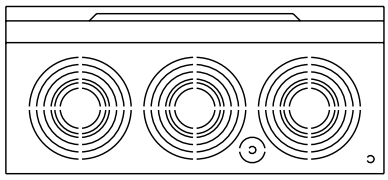
METER CABINET AVAILABLE WITH 1 1/2", 2", OR 2 1/2" INTERCHANGEABLE HUB OR BLANK COVER PLATE

METER SOCKET 0000006617 (BY CUSTOMER)



3 KNOCKOUTS FOR 1 1/2", 2", OR 2 1/2" CONDUIT IN SIDES AND BACK

SIDE VIEW
COVER IN PLACE



BOTTOM VIEW
3 KNOCKOUTS FOR 1 1/2", 2", OR 2 1/2" CONDUIT

Revised 09-15-08 By SAH
DESIGN ENTRY BY: GRETE H SCHOLZ

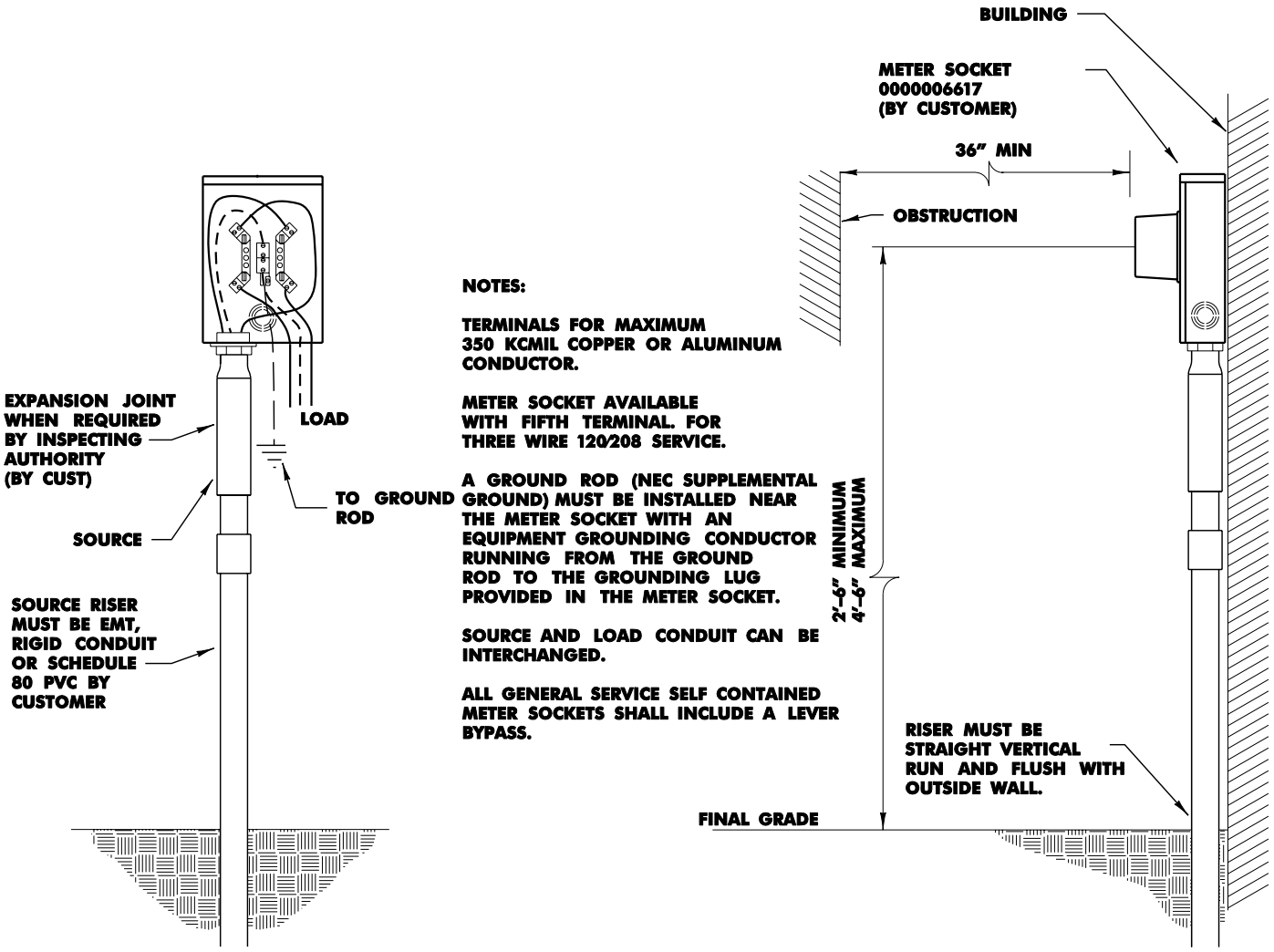
ISSUED DATE_____

SURFACE TYPE METER SOCKET

120/240 VOLT 3-WIRE 200 AMPERE UNDERGROUND SERVICE
"GENERAL SERVICE ONLY"

4.02.4

M121, M121D
M123, M123D
120/208V 1Ø 3W: M221, M221D
M223, M223D



NOTES:

TERMINALS FOR MAXIMUM 350 KCMIL COPPER OR ALUMINUM CONDUCTOR.

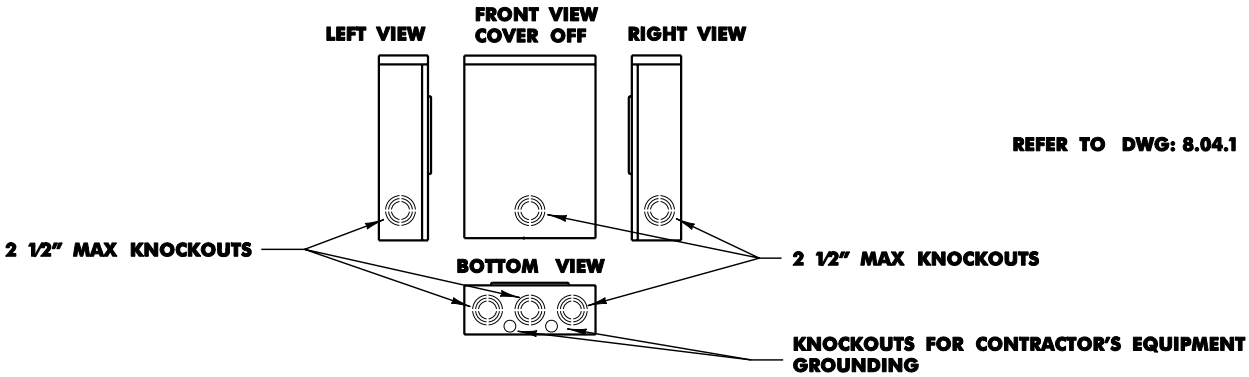
METER SOCKET AVAILABLE WITH FIFTH TERMINAL. FOR THREE WIRE 120/208 SERVICE.

A GROUND ROD (NEC SUPPLEMENTAL GROUND) MUST BE INSTALLED NEAR THE METER SOCKET WITH AN EQUIPMENT GROUNDING CONDUCTOR RUNNING FROM THE GROUND ROD TO THE GROUNDING LUG PROVIDED IN THE METER SOCKET.

SOURCE AND LOAD CONDUIT CAN BE INTERCHANGED.

ALL GENERAL SERVICE SELF CONTAINED METER SOCKETS SHALL INCLUDE A LEVER BYPASS.

KNOCKOUT LOCATION



REFER TO DWG: 8.04.1

Revised 10-15-08 By SAH
DESIGN ENTRY BY: JULIA VICTOR

ISSUED DATE _____

SURFACE TYPE METER SOCKET

HIGH CAPACITY
120/240 VOLT 3 WIRE 200 AMPERES
UNDERGROUND SERVICE

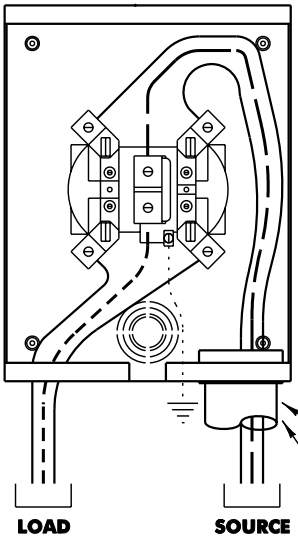
4.02.5

NOTES:

TERMINALS FOR MAXIMUM 250 MCM CONDUCTORS

METER SOCKET AVAILABLE WITH FIFTH TERMINAL FOR THREE WIRE WYE SERVICE

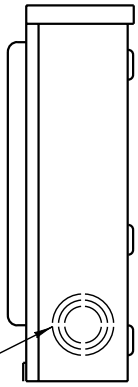
METER SOCKET 0000006617



FRONT VIEW
COVER REMOVED

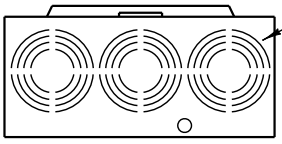
THIS KNOCKOUT FOR OPPD USE

2 1/2" RIGID GALVANIZED CONDUIT WITH NON-METALLIC BUSHING BY CUSTOMER IN ALL NON-RESIDENTIAL APPLICATIONS.
OPPD WILL FURNISH A NON-METALLIC RISER IN SINGLE FAMILY RESIDENTIAL APPLICATION.



3 KNOCKOUTS FOR 1 1/2", 2", OR 2 1/2" CONDUIT IN SIDES AND BACK

SIDE VIEW
COVER IN PLACE



THIS KNOCKOUT FOR OPPD USE

BOTTOM VIEW

3 KNOCKOUTS FOR 1 1/2", 2", OR 2 1/2" CONDUIT

Revised 07-03-00 By BED
DESIGN ENTRY BY: GRETE H SCHOLZ

ISSUED DATE_____

1Ø SURFACE TYPE METER SOCKET

120/240 VOLT 3–WIRE 320 AMPERES
OVERHEAD SERVICE

4.02.6

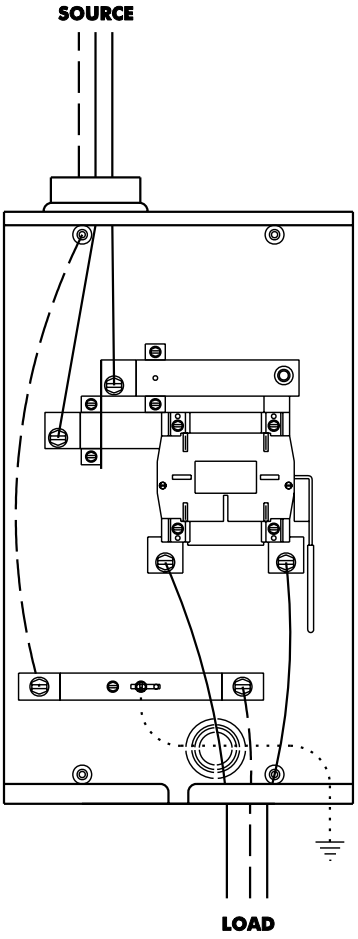
M130
M130D

NOTES:

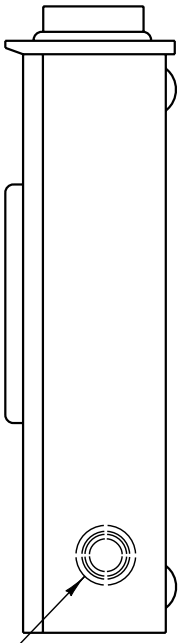
SOURCE:
SINGLE LUG – 350 KCMIL TO 500 KCMIL

LOAD:
SINGLE LUG – 500 KCMIL
DOUBLE LUG – 250 KCMIL

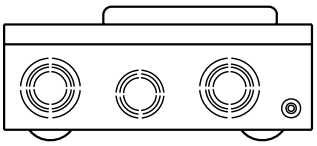
METER SOCKET 0000006618
(BY CUSTOMER)



FRONT VIEW
COVER REMOVED



SIDE VIEW
COVER IN PLACE



BOTTOM VIEW

2 KNOCKOUTS FOR 1 1/2" TO 3" CONDUIT
1 KNOCKOUT FOR 1 1/2" TO 2 1/2" CONDUIT
1 KNOCKOUT 1/4" & 1/2" EQUIPMENT GROUND

RESID. REFER TO DWG: 6.08.1
6.09

Revised 09-15-08 By SAH
DESIGN ENTRY BY: GRETE H SCHOLZ

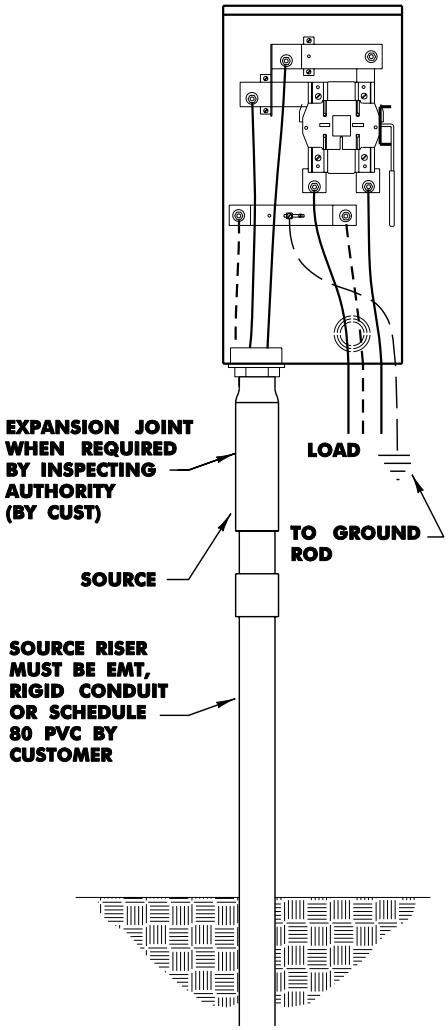
ISSUED DATE_____

SURFACE TYPE METER SOCKET

120/240 VOLT 3-WIRE 320 AMPERE UNDERGROUND SERVICE
"GENERAL SERVICE ONLY"

4.02.7

M131
M131D

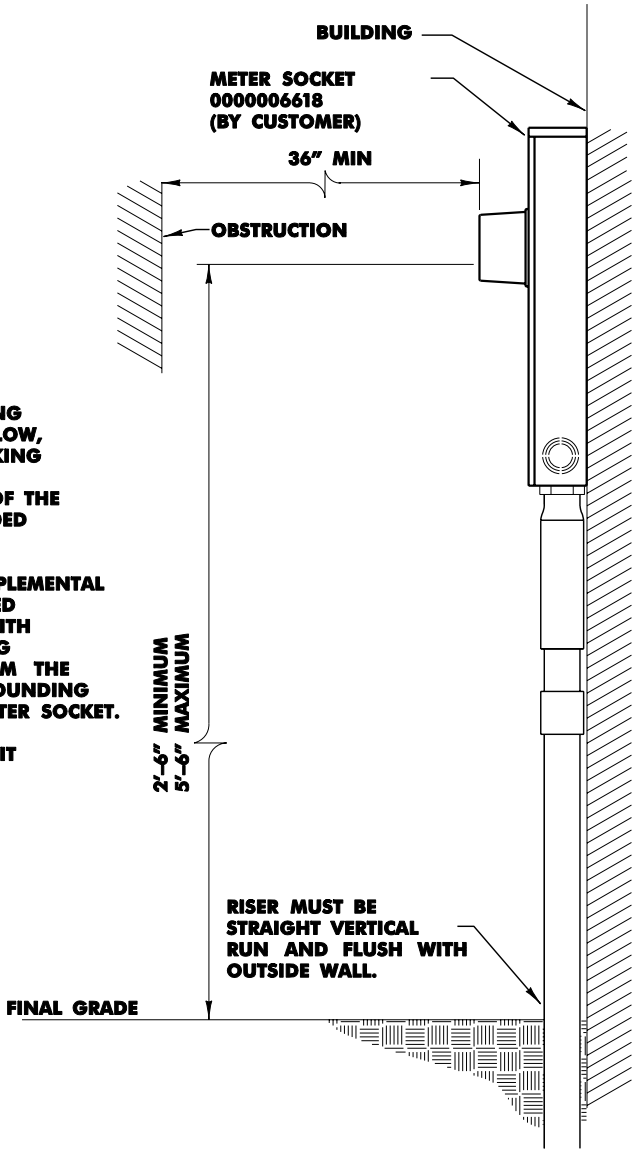


NOTE:

A MINIMUM CLEAR WORKING SPACE OF 2.5 FT ABOVE, BELOW, AND NECESSARY SIDE WORKING CLEARANCE, AS WELL AS 36" HORIZONTALLY IN FRONT OF THE METERING, SHALL BE PROVIDED AND MAINTAINED.

A GROUND ROD (NEC SUPPLEMENTAL GROUND) MUST BE INSTALLED NEAR THE METER SOCKET WITH AN EQUIPMENT GROUNDING CONDUCTOR RUNNING FROM THE GROUND ROD TO THE GROUNDING LUG PROVIDED IN THE METER SOCKET.

SOURCE AND LOAD CONDUIT CANNOT BE INTERCHANGED.



REFER TO DWG: 8.04.2

Revised 10-15-08 By SAH
DESIGN ENTRY BY: JULIA VICTOR

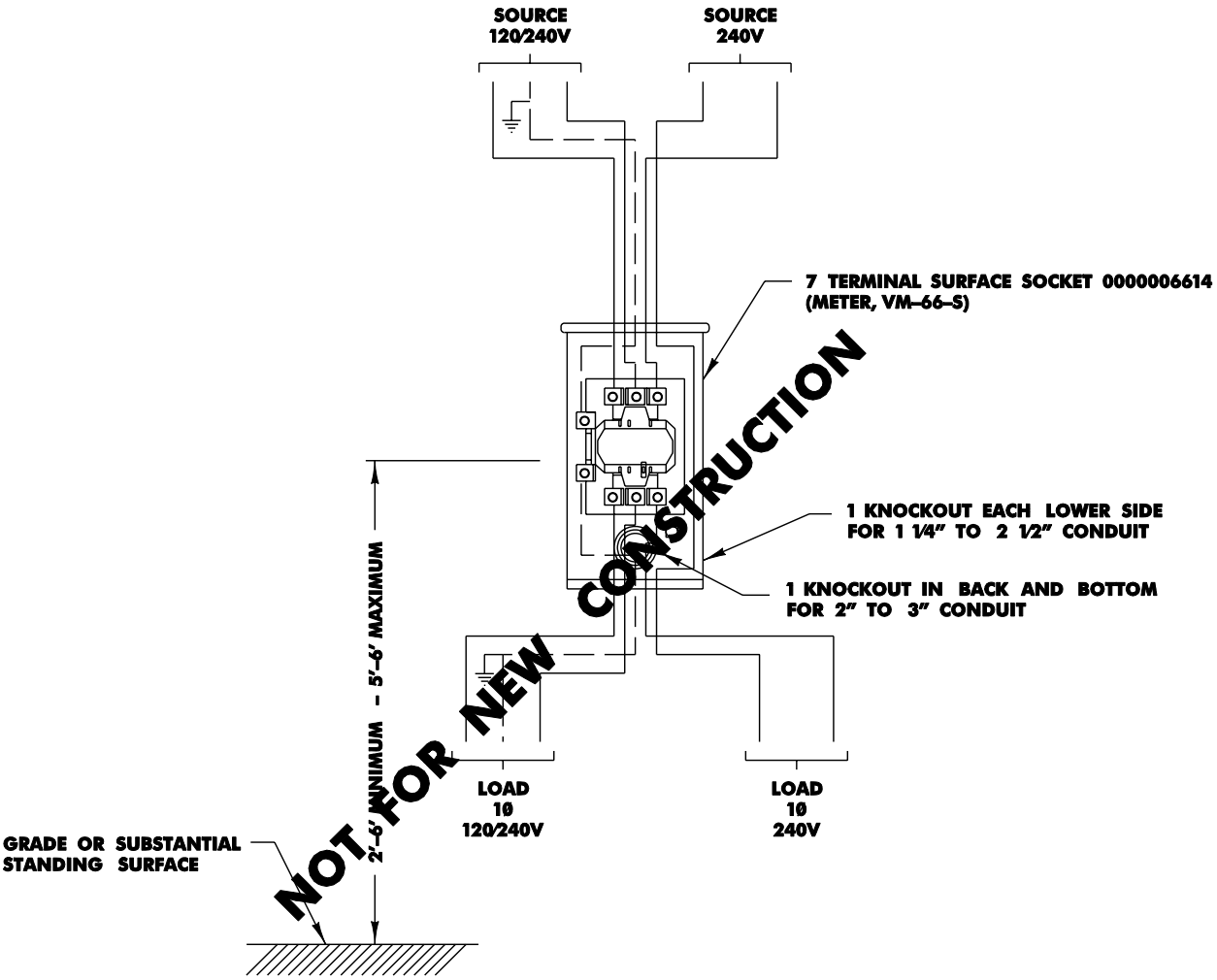
ISSUED DATE_____

SOCKET TYPE TOTALIZED METERING

CLASS 100 – RATING 24KVA OF 1Ø 120/240V AND 24KVA OF 1Ø 240V
CLASS 200 – RATING 48KVA OF 1Ø 120/240V AND 48KVA OF 1Ø 240V

4.02.8

M180
M180D



NOTES:

THIS METHOD OF METERING IS TO BE USED ONLY AT SPECIAL LOCATIONS, WHERE IT IS NECESSARY TO SERVE A 1Ø 240V LOAD FROM A SEPARATE SOURCE, IN ORDER TO AVOID VOLTAGE DIPS ON THE 1Ø 120/240V LOAD.

SERVICE ENTRANCE WIRES FOR THE 1Ø 240V LOAD MUST BE PERMANENTLY IDENTIFIED TO DISTINGUISH THEM FROM THE 1Ø 120/240V LOAD WIRES.

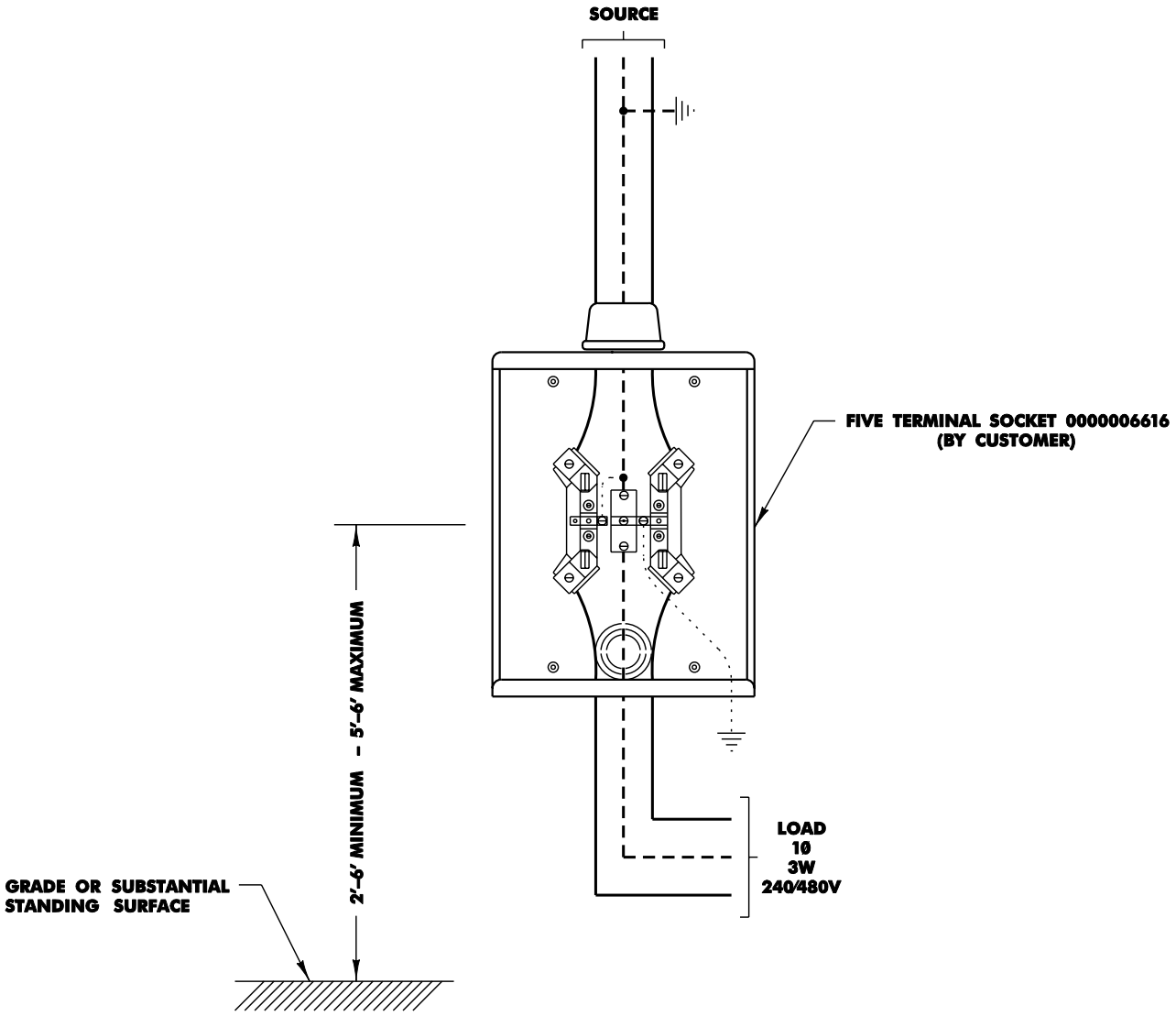
Revised 07-03-00 By BED
DESIGN ENTRY BY: GRETE H SCHOLZ

ISSUED DATE_____

THREE WIRE SINGLE PHASE 480 VOLT

4.02.9

M184
M184D



Revised 09-15-08 By SAH
DESIGN ENTRY BY: GRETE H SCHOLZ

ISSUED DATE_____

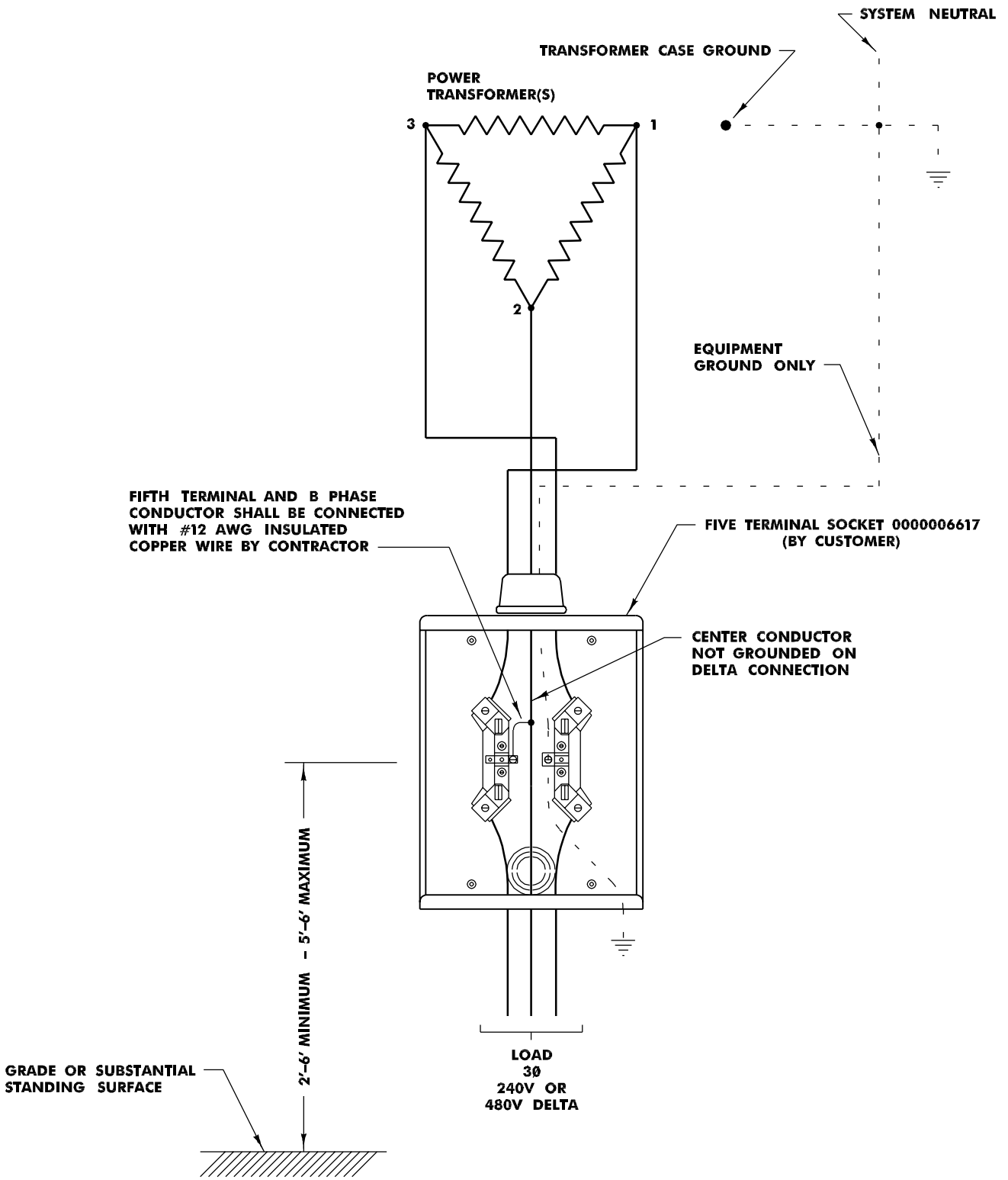
3Ø THREE WIRE SOCKET METERING

— 240 VOLT —
CLASS 200 – RATING 83KVA ON BALANCED LOAD

4.02.10

— 480 VOLT —
CLASS 200 – RATING 166KVA ON BALANCED LOAD
FOR MAINTENANCE ONLY

M320
M320D
M340
M340D



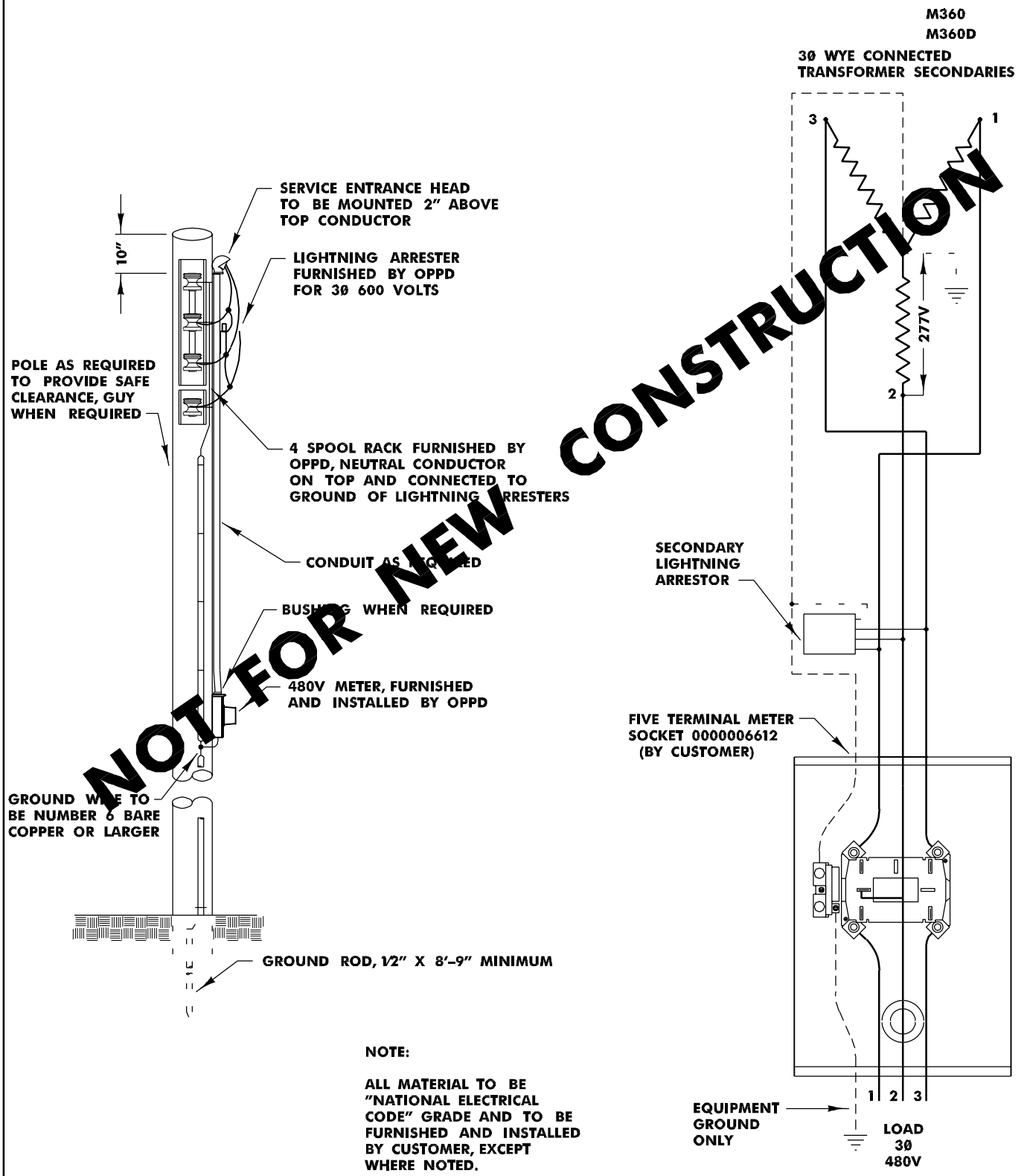
Revised 03-14-13 By AMJ
DESIGN ENTRY BY: GRETE H SCHOLZ

ISSUED DATE _____

THREE PHASE THREE WIRE METERING

480 VOLT FROM WYE–CONNECTED TRANSFORMER SECONDARIES
— SOCKET TYPE —
CLASS 100 – RATING 100 AMPERES TOTAL PER PHASE ON BALANCED LOAD
CLASS 200 – RATING 200 AMPERES TOTAL PER PHASE ON BALANCED LOAD
TYPICAL IRRIGATION–PUMP METER–POLE

4.02.11



NOTE:

ALL MATERIAL TO BE "NATIONAL ELECTRICAL CODE" GRADE AND TO BE FURNISHED AND INSTALLED BY CUSTOMER, EXCEPT WHERE NOTED.

Revised 03-14-13 By AMJ

DESIGN ENTRY BY: GRETE H SCHOLZ

ISSUED DATE _____

FOUR WIRE DELTA SOCKET METERING

CLASS 200 – RATING 200 AMPERES TOTAL PER PHASE ON BALANCED LOAD

4.02.12

M520
M520D

FOUR WIRE DELTA COMBINED BANK TRANSFORMERS
120/240V FROM 1 AND 2
240V 3Ø FROM 1, 2, AND 3

NOTES:

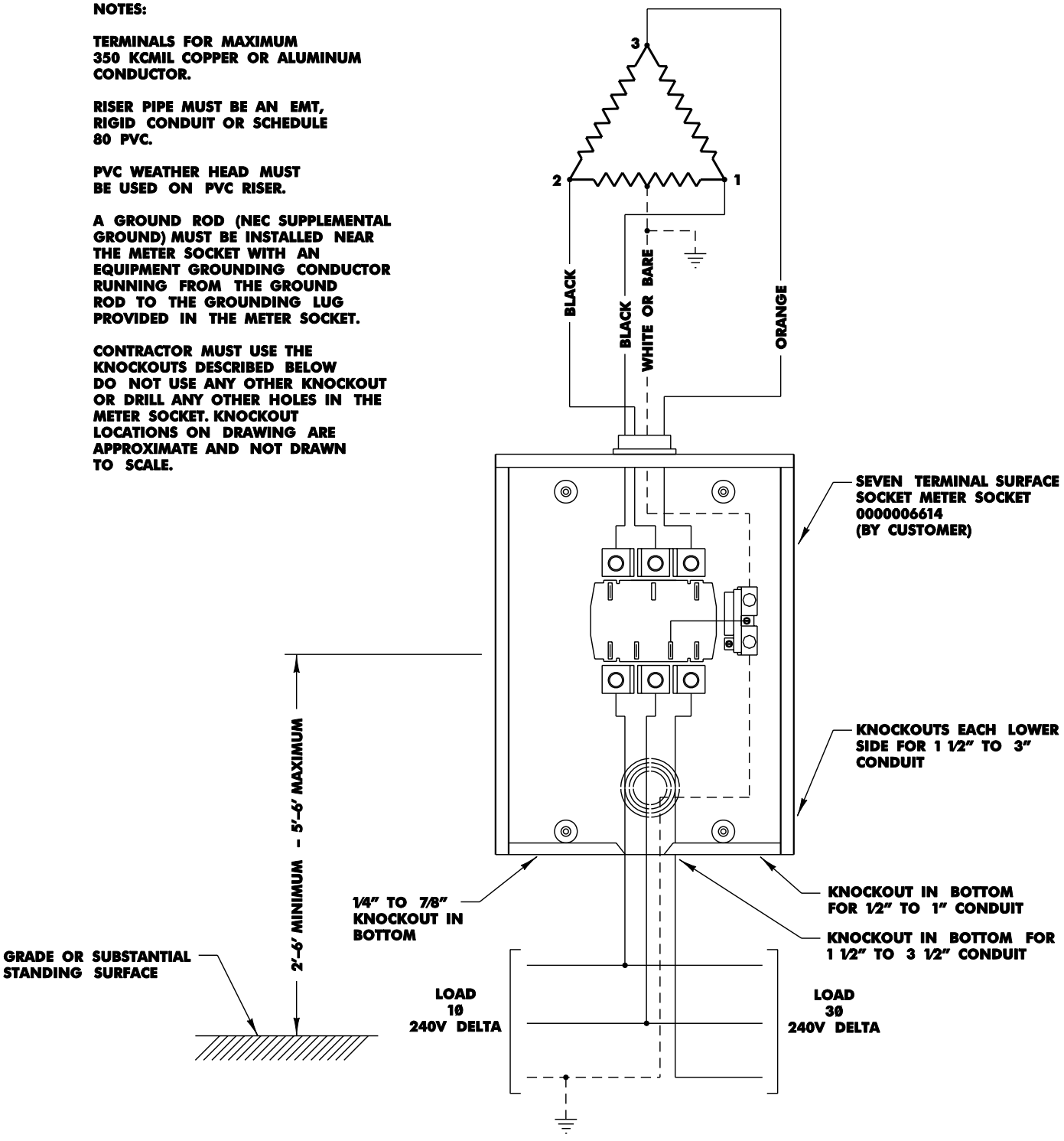
TERMINALS FOR MAXIMUM 350 KCMIL COPPER OR ALUMINUM CONDUCTOR.

RISER PIPE MUST BE AN EMT, RIGID CONDUIT OR SCHEDULE 80 PVC.

PVC WEATHER HEAD MUST BE USED ON PVC RISER.

A GROUND ROD (NEC SUPPLEMENTAL GROUND) MUST BE INSTALLED NEAR THE METER SOCKET WITH AN EQUIPMENT GROUNDING CONDUCTOR RUNNING FROM THE GROUND ROD TO THE GROUNDING LUG PROVIDED IN THE METER SOCKET.

CONTRACTOR MUST USE THE KNOCKOUTS DESCRIBED BELOW DO NOT USE ANY OTHER KNOCKOUT OR DRILL ANY OTHER HOLES IN THE METER SOCKET. KNOCKOUT LOCATIONS ON DRAWING ARE APPROXIMATE AND NOT DRAWN TO SCALE.



Revised 09-15-08 By SAH
DESIGN ENTRY BY: GRETE H SCHOLZ

ISSUED DATE_____

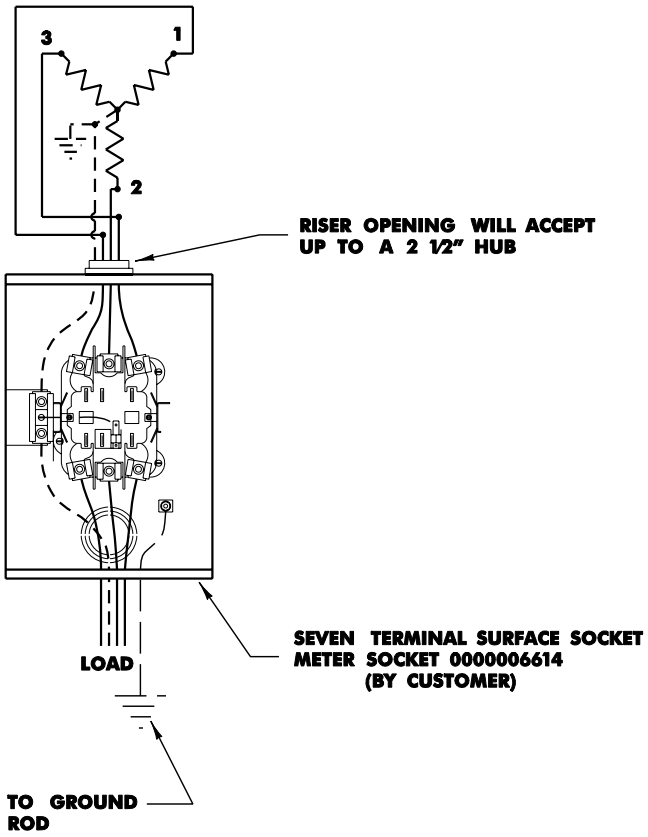
OVERHEAD 3Ø FOUR–WIRE WYE SOCKET METERING

120/208V–CLASS 200–RATING 72KVA ON BALANCED LOAD
277/480V–CLASS 200–RATING 166KVA ON BALANCED LOAD

4.02.13

M420
M421D
M441D

POWER TRANSFORMER (S)



NOTES:

TERMINALS FOR MAXIMUM 350 KCMIL COPPER OR ALUMINUM CONDUCTOR.

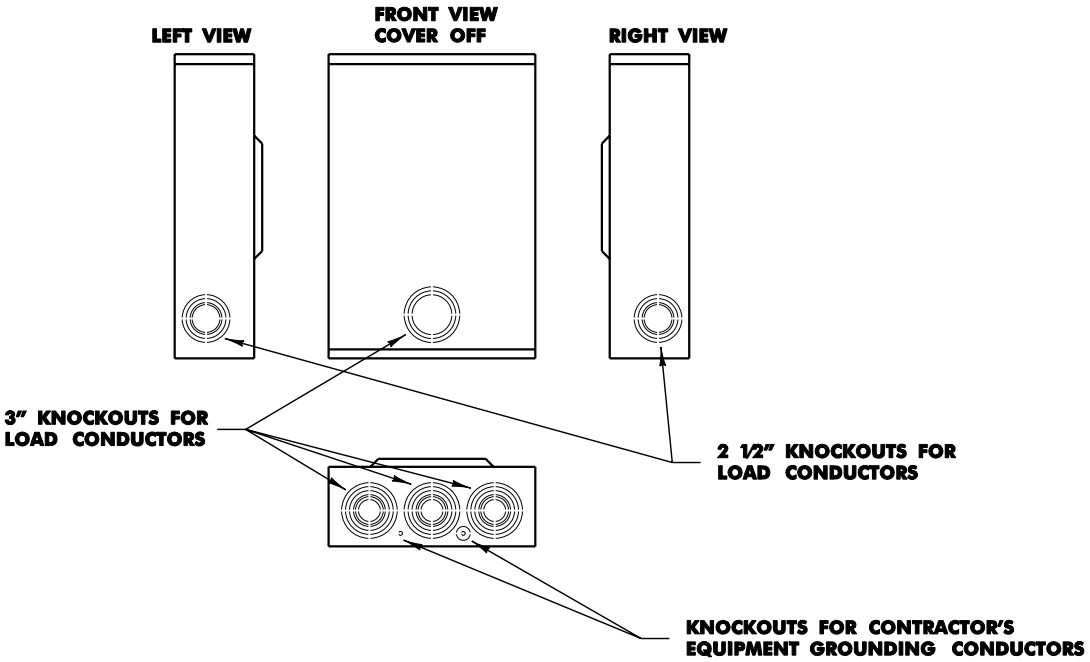
RISER PIPE MUST BE AN EMT, RIGID CONDUIT OR SCHEDULE 80 PVC.

PVC WEATHER HEAD MUST BE USED ON PVC RISER.

A GROUND ROD (NEC SUPPLEMENTAL GROUND) MUST BE INSTALLED NEAR THE METER SOCKET WITH AN EQUIPMENT GROUNDING CONDUCTOR RUNNING FROM THE GROUND ROD TO THE GROUNDING LUG PROVIDED IN THE METER SOCKET.

CONTRACTOR MUST USE THE KNOCKOUTS DESCRIBED BELOW DO NOT USE ANY OTHER KNOCKOUT OR DRILL ANY OTHER HOLES IN THE METER SOCKET. KNOCKOUT LOCATIONS ON DRAWING ARE APPROXIMATE AND NOT DRAWN TO SCALE.

KNOCKOUT LOCATION



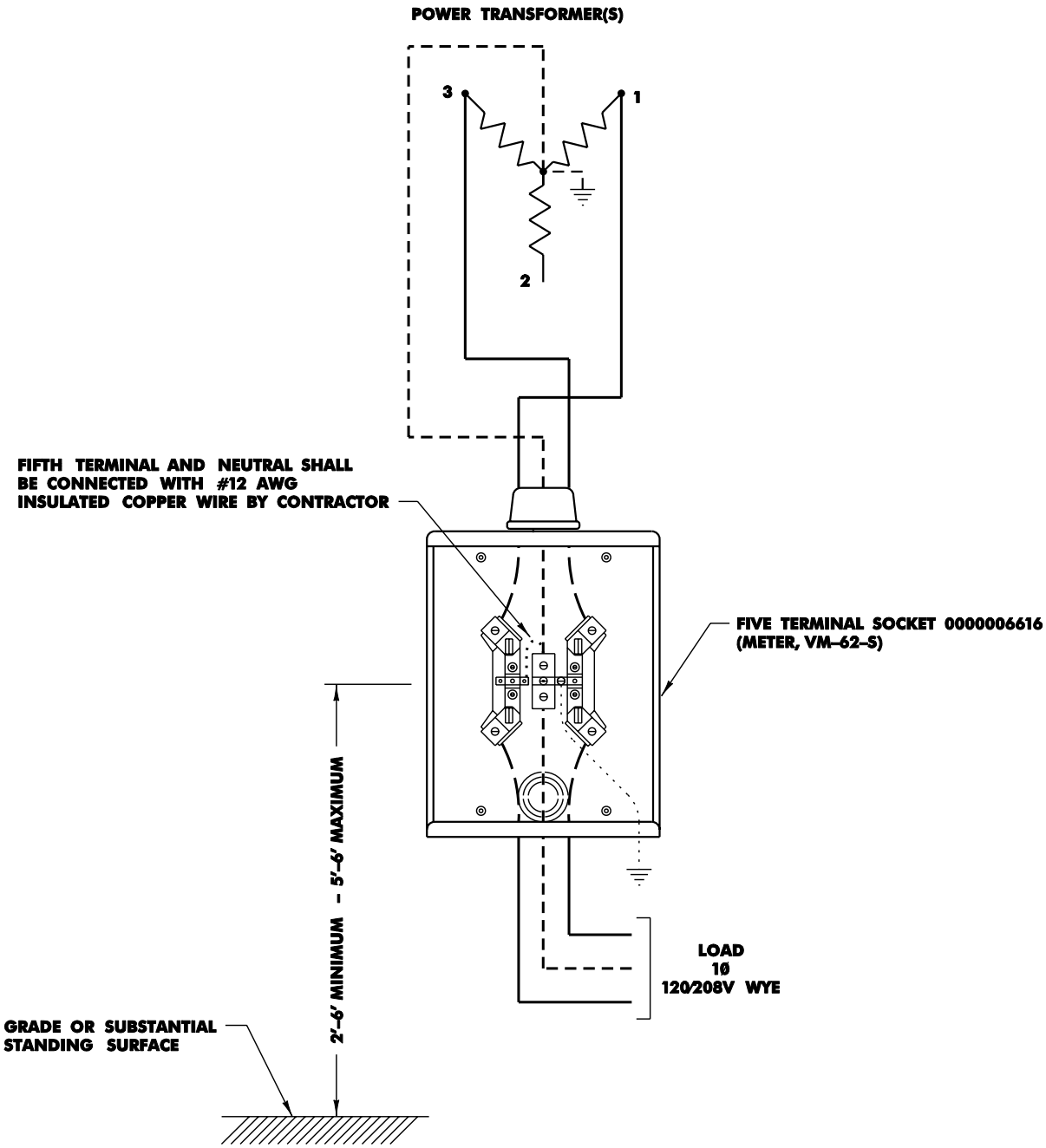
Revised 09-15-08 By SAH
DESIGN ENTRY BY: JULIA VICTOR

ISSUED DATE_____

THREE WIRE WYE SOCKET METERING
120/208V 1Ø 3W

CLASS 100 – RATING 24KVA ON BALANCED LOAD
CLASS 200 – RATING 48KVA ON BALANCED LOAD

4.02.14



Revised 07-03-00 By BED
DESIGN ENTRY BY: GRETE H SCHOLZ

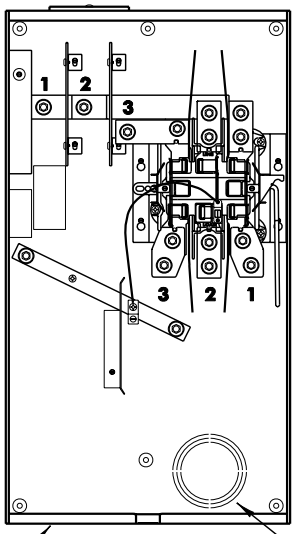
ISSUED DATE_____

GENERAL SERVICE

120/208V 3Ø 4-WIRE / 320 AMP OVERHEAD OR UGND SOCKET

4.02.15

M422D



THIS IS KNOCK OUT FOR LINE-SIDE CONDUCTORS ONLY WHEN SOCKET IS USED FOR UGND

3 1/2" KNOCKOUTS FOR LOAD CONDUCTORS

NOTES:

REFER TO SECTION 6.14

TERMINALS FOR MAXIMUM 600 KCMIL COPPER OR ALUMINUM CONDUCTOR.

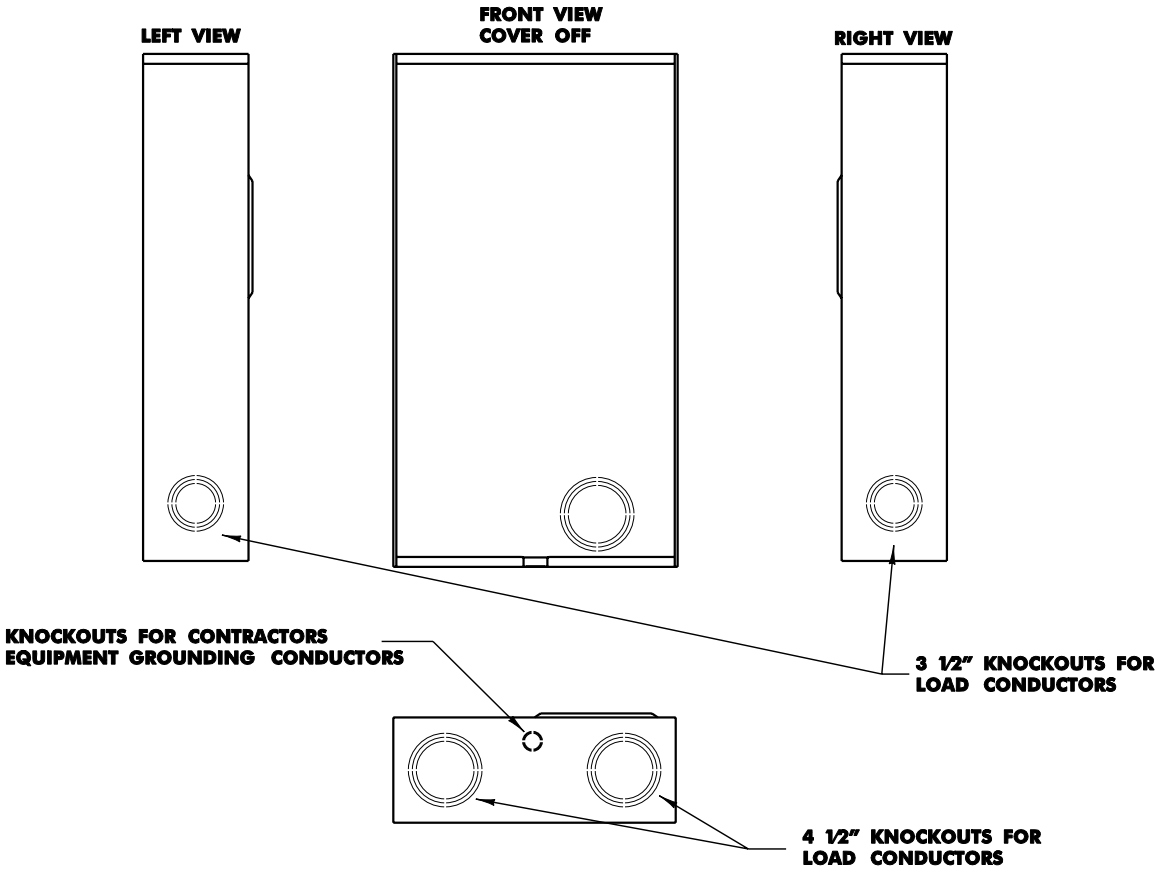
RISER PIPE MUST BE AN EMT, RIGID CONDUIT OR SCHEDULE 80 PVC.

PVC WEATHER HEAD MUST BE USED ON PVC RISER.

A GROUND ROD (NEC SUPPLEMENTAL GROUND) MUST BE INSTALLED NEAR THE METER SOCKET WITH AN EQUIPMENT GROUNDING CONDUCTOR RUNNING FROM THE GROUND ROD TO THE GROUNDING LUG PROVIDED IN THE METER SOCKET.

CONTRACTOR MUST USE THE KNOCKOUTS DESCRIBED BELOW DO NOT USE ANY OTHER KNOCKOUT OR DRILL ANY OTHER HOLES IN THE METER SOCKET. KNOCKOUT LOCATIONS ON DRAWING ARE APPROXIMATE AND NOT DRAWN TO SCALE.

KNOCKOUT LOCATION



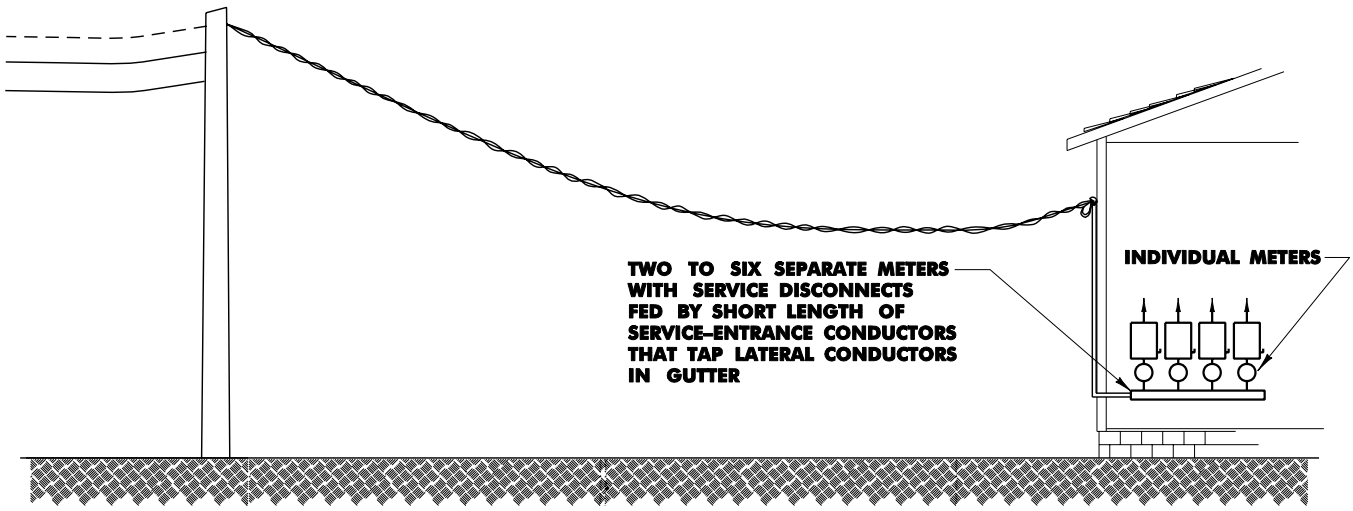
Revised 09-19-05 By JML

DESIGN ENTRY BY: BRANT DANGEL

ISSUED DATE_____

OVERHEAD SERVICE

4.05.1



NOTE:

FOR CLEARANCE, SEE SECTION 7.01

IDENTIFY METER WITH SPACE OR APARTMENT NUMBER

SCHEDULE 80 PVC EMT OR RIGID CONDUIT WILL BE ALLOWED OUTSIDE ON ANY COMMERCIAL OR MULTI–POSITION RESIDENTIAL METER PROJECTS

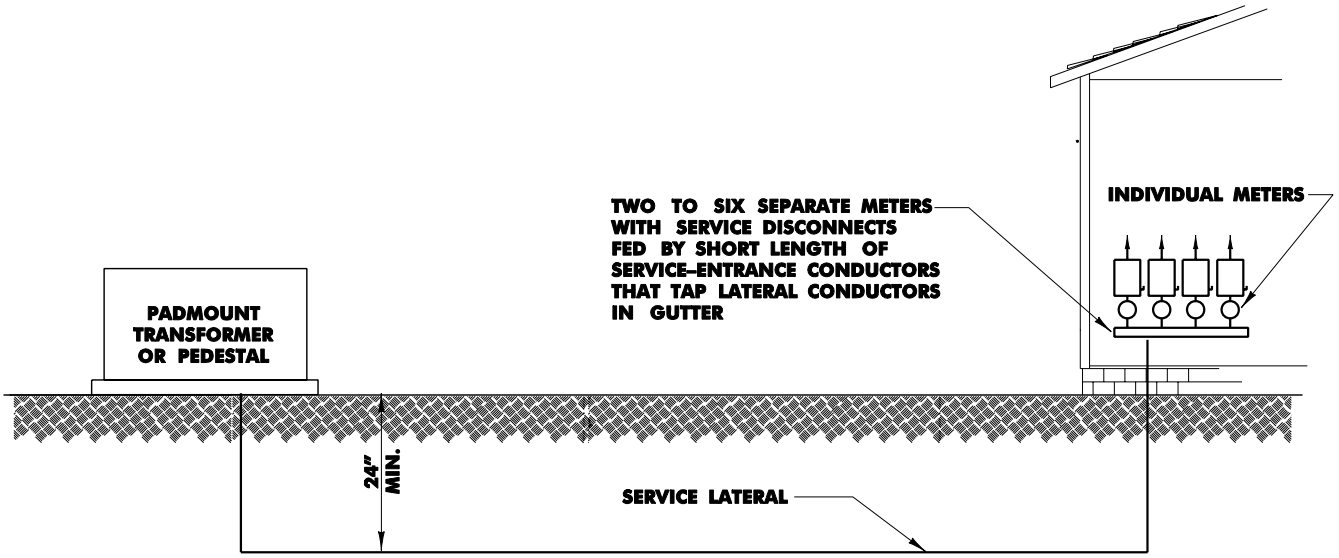
Revised 07-03-00 By BED

DESIGN ENTRY BY: ROBERT B ADAMS

ISSUED DATE_____

UNDERGROUND SERVICE

4.05.2



NOTE:

IDENTIFY METER WITH SPACE OR APARTMENT NUMBER

EMT, SCHEDULE 80 PVC, OR RIGID CONDUIT WILL BE ALLOWED OUTSIDE ON ANY COMMERCIAL OR MULTI-POSITION RESIDENTIAL METER PROJECTS

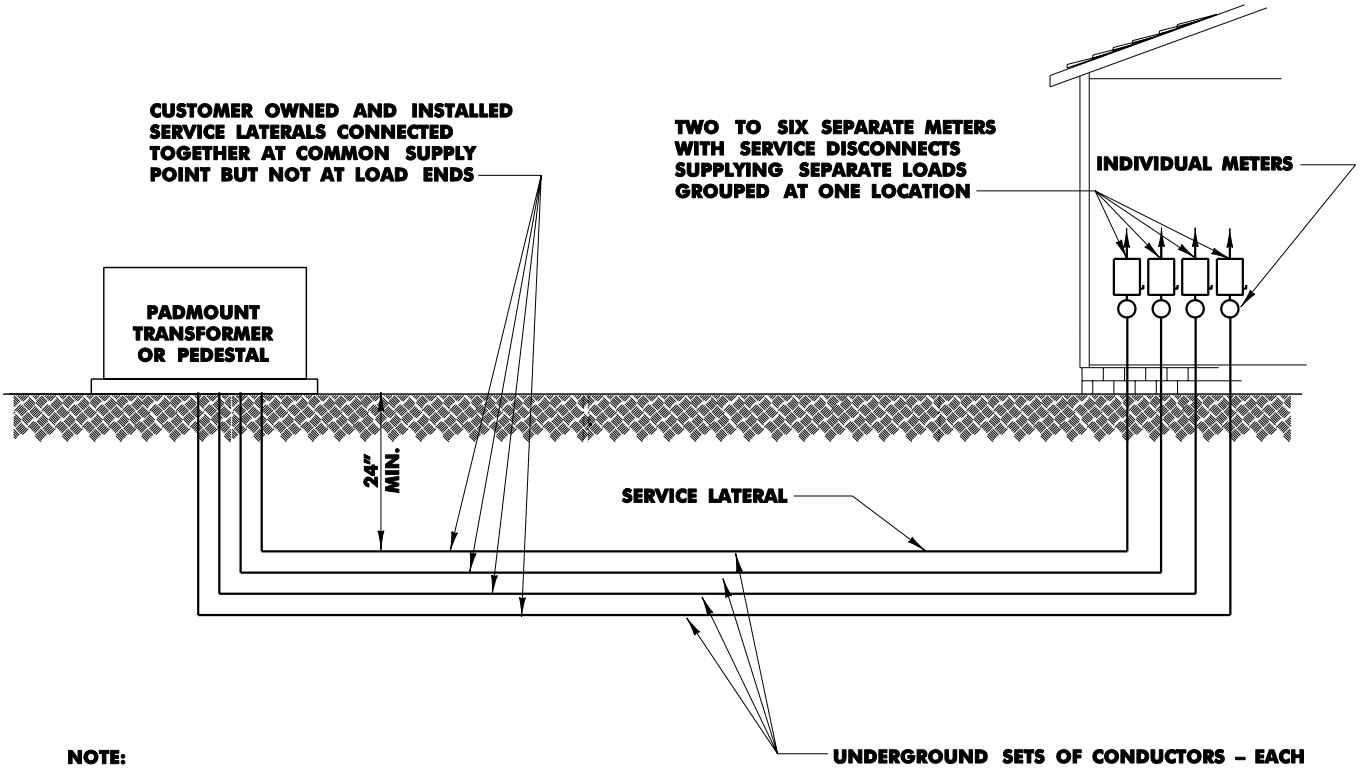
Revised 07-03-00 By BED
DESIGN ENTRY BY: ROBERT B ADAMS

ISSUED DATE _____

UNDERGROUND SERVICE

GENERAL SERVICE ACCOUNTS

4.05.3



NOTE:

IDENTIFY METER WITH SPACE OR APARTMENT NUMBER

EMT, SCHEDULE 80 PVC, OR RIGID CONDUIT WILL BE ALLOWED OUTSIDE ON ANY COMMERCIAL OR MULTI–POSITION RESIDENTIAL METER PROJECTS

Revised 07-03-00 By BED

DESIGN ENTRY BY: ROBERT B ADAMS

ISSUED DATE_____

DIAGRAM I

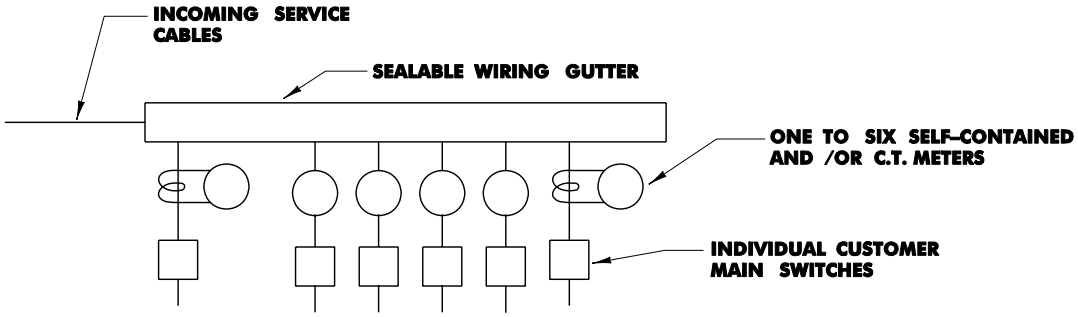


DIAGRAM II

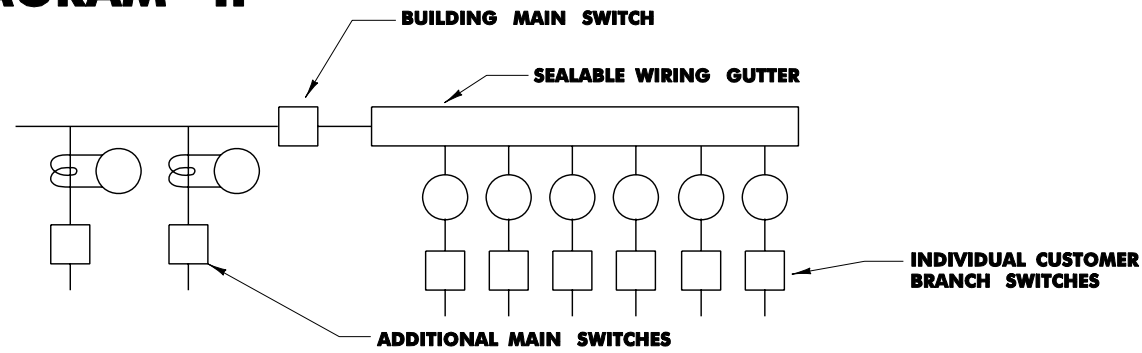
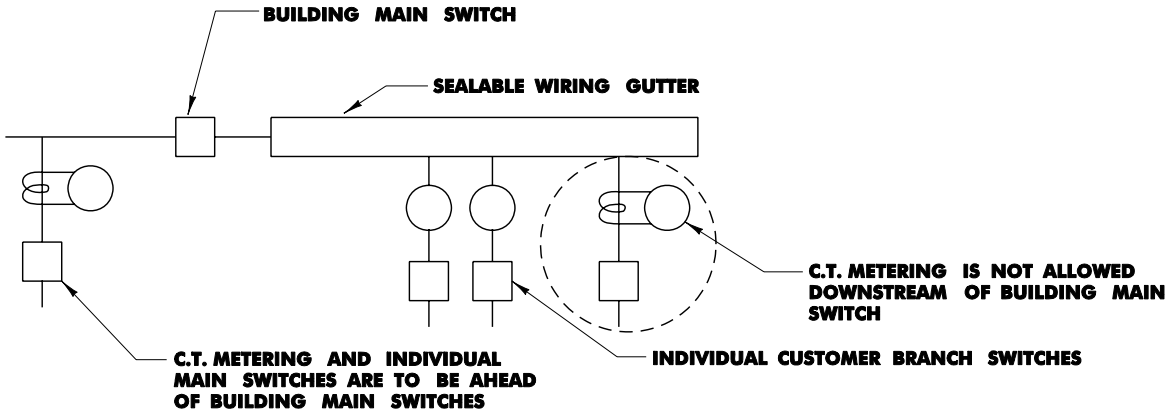


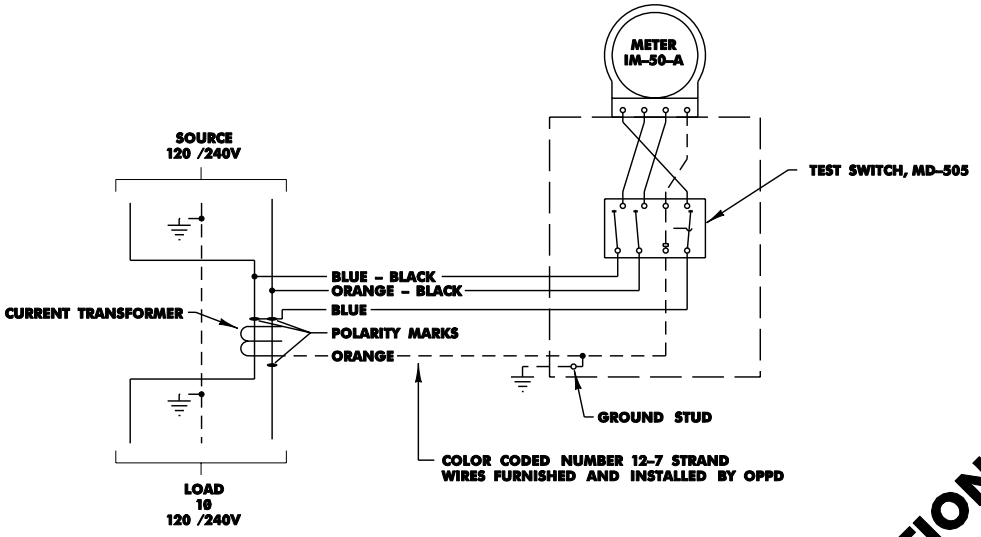
DIAGRAM III (NOT ALLOWED)

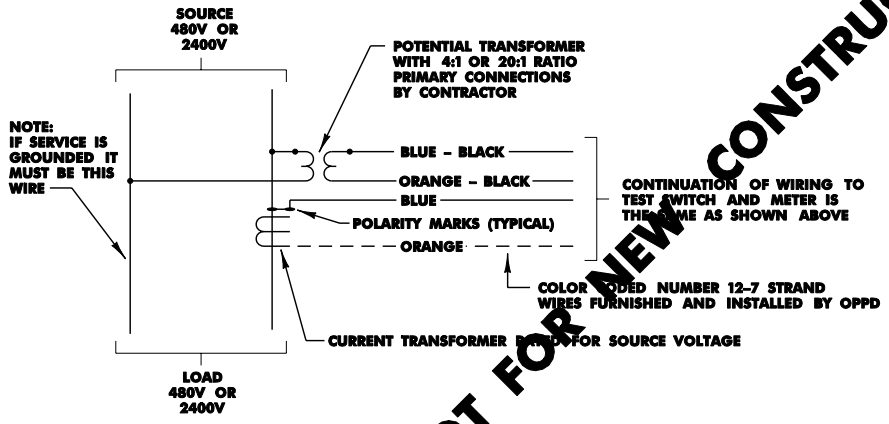


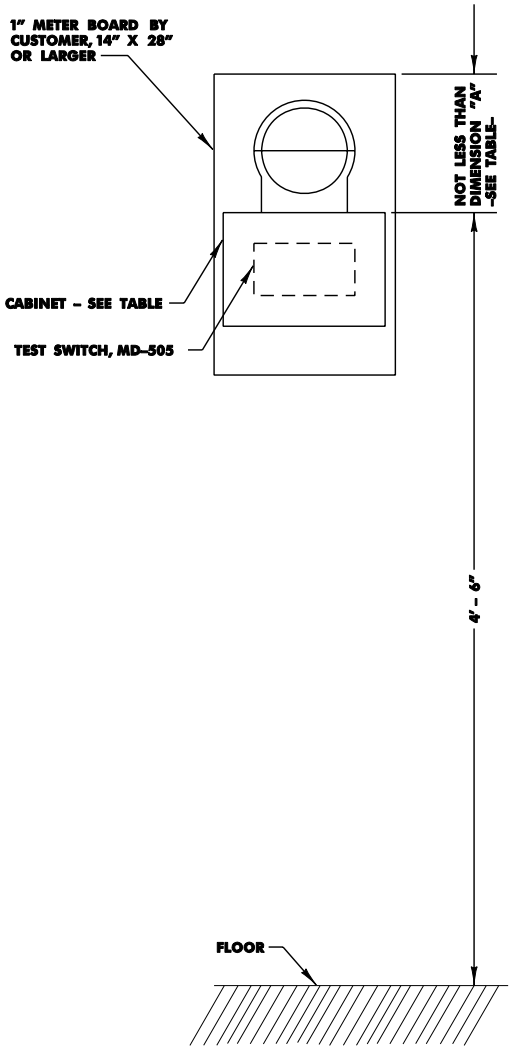
SINGLE PHASE "A" BASE METERING

FOR USE WITH INSTRUMENT TRANSFORMERS

4.06.2







- TABLE -

SERVICE	CABINET	DIMENSION "A"
120 /240 V	MD - 1190	12"
480 V	MD - 1190-B	17"
2400 V	MD - 1190-B	17"

NOTES:

CUSTOMER TO FURNISH AND INSTALL "NATIONAL ELECTRICAL CODE" GRADE STEEL CABINET OF ADEQUATE SIZE FOR THE INSTRUMENT TRANSFORMERS AND ALL WIRING CONNECTIONS

SERVICE ENTRANCE NEUTRAL MUST BE BONDED TO CURRENT TRANSFORMER CABINET

CUSTOMER TO FURNISH AND INSTALL 1" CONDUIT FROM INSTRUMENT TRANSFORMER CABINET TO METER CABINET

FOR LUG CONNECTIONS ON CURRENT TRANSFORMER UP TO 600 AMPERES MINIMUM BOLT SIZE 3/8" OVER 600 AMPERES MINIMUM BOLT SIZE 1/2"

Revised 07-03-00 By BED
DESIGN ENTRY BY: GRETE H SCHOLZ

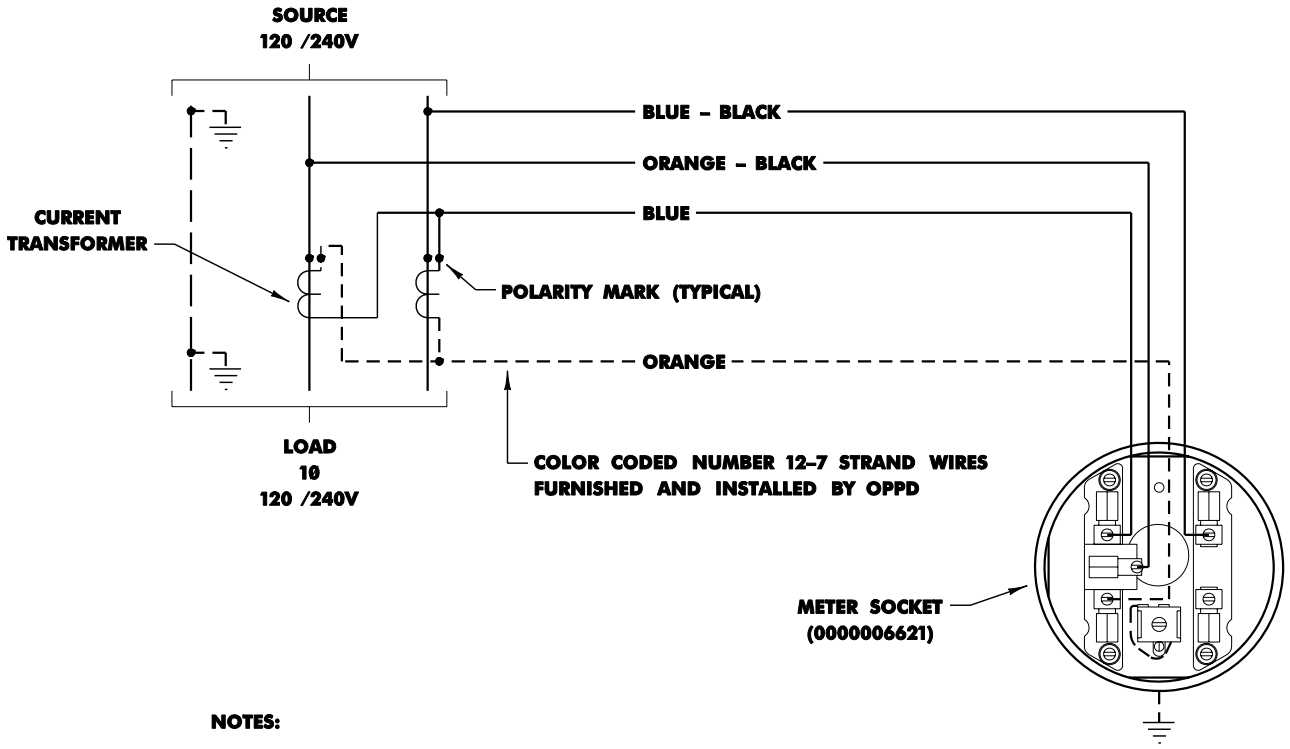
ISSUED DATE _____

SINGLE PHASE SOCKET METERING

120 /240V 1Ø 3W
OVER 400 AMPERES
FOR USE WITH INSTRUMENT TRANSFORMERS

4.06.3

M171
M171D



NOTES:

CUSTOMER TO FURNISH AND INSTALL "NATIONAL ELECTRICAL CODE" GRADE STEEL CABINET OF ADEQUATE SIZE FOR THE INSTRUMENT TRANSFORMERS AND ALL WIRING CONNECTIONS.

SERVICE ENTRANCE NEUTRAL MUST BE BONDED TO CURRENT TRANSFORMER CABINET.

CUSTOMER TO FURNISH AND INSTALL 1" CONDUIT FROM INSTRUMENT TRANSFORMER CABINET TO METER SOCKET.

FOR LUG CONNECTIONS ON CURRENT TRANSFORMERS UP TO 600 AMPERES MINIMUM BOLT SIZE 3/8" OVER 600 AMPERES MINIMUM BOLT SIZE 1/2".

REFER TO DWGS:

RESIDENTIAL & GENERAL SERVICE OVERHEAD: 6.10
RESIDENTIAL UNDERGROUND: 7.07
GENERAL SERVICE UNDERGROUND: 8.06

Revised 06-29-01 By BED
DESIGN ENTRY BY: GRETE H SCHOLZ

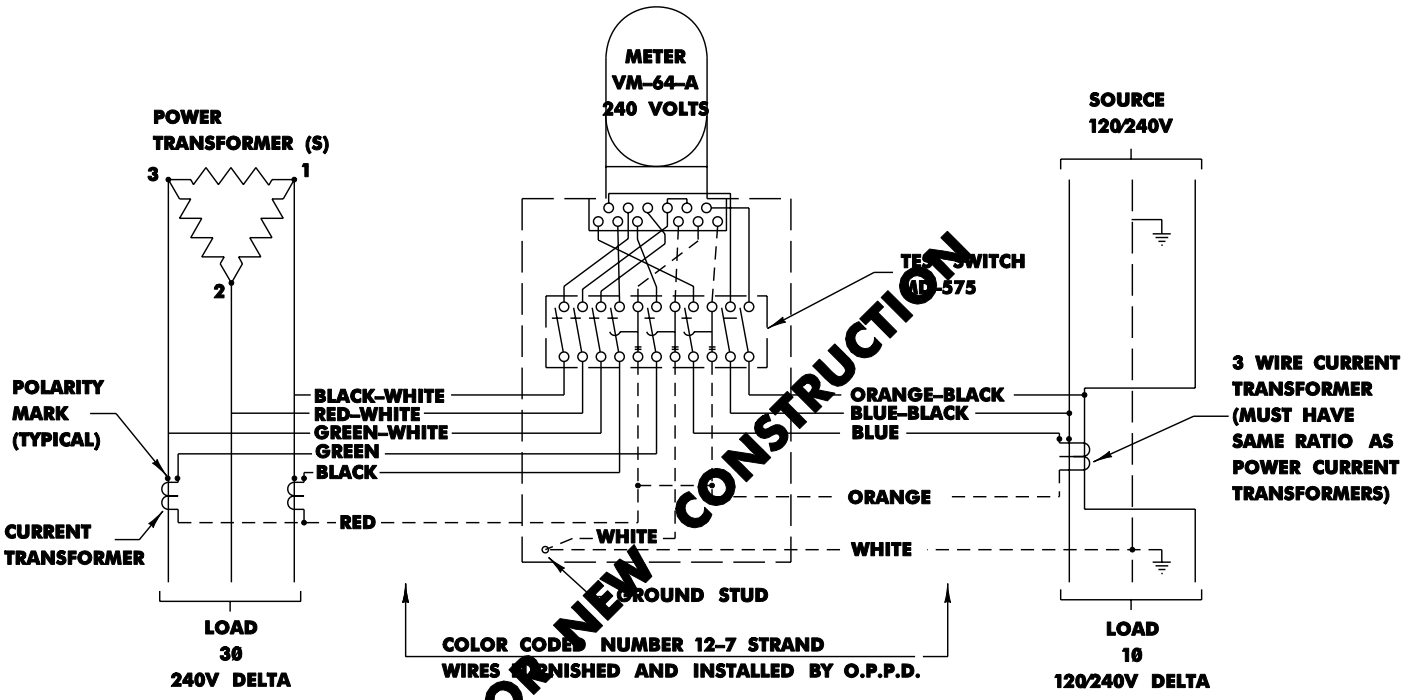
ISSUED DATE_____

SIX WIRE TOTALIZED METERING

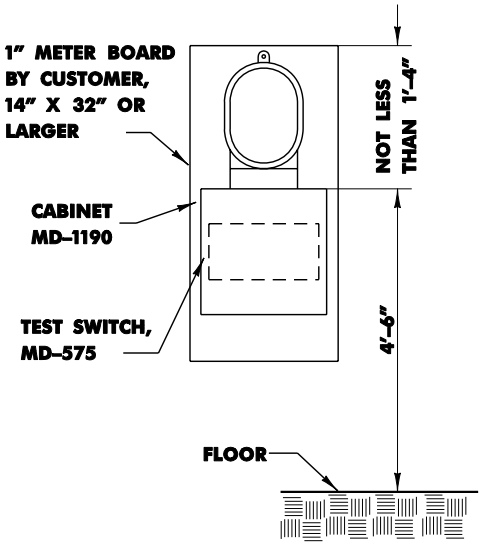
FOR USE WITH CURRENT TRANSFORMERS

4.06.4

M670DM



NOT FOR NEW CONSTRUCTION



NOTES:

CUSTOMER TO FURNISH AND INSTALL "NATIONAL ELECTRICAL CODE" GRADE STEEL CABINET OF ADEQUATE SIZE FOR THE CURRENT TRANSFORMERS AND ALL WIRING CONNECTIONS

SERVICE ENTRANCE NEUTRAL MUST BE BONDED TO CURRENT TRANSFORMER CABINET

CUSTOMER TO FURNISH AND INSTALL 1 1/4" CONDUIT FROM CURRENT TRANSFORMER CABINET TO METER CABINET

FOR LUG CONNECTIONS ON CURRENT TRANSFORMERS UP TO 600 AMPERES MINIMUM BOLT SIZE 3/8" OVER 600 AMPERES MINIMUM BOLT SIZE 1/2"

Revised 07-03-00 By BED

DESIGN ENTRY BY: BRANT DANGEL

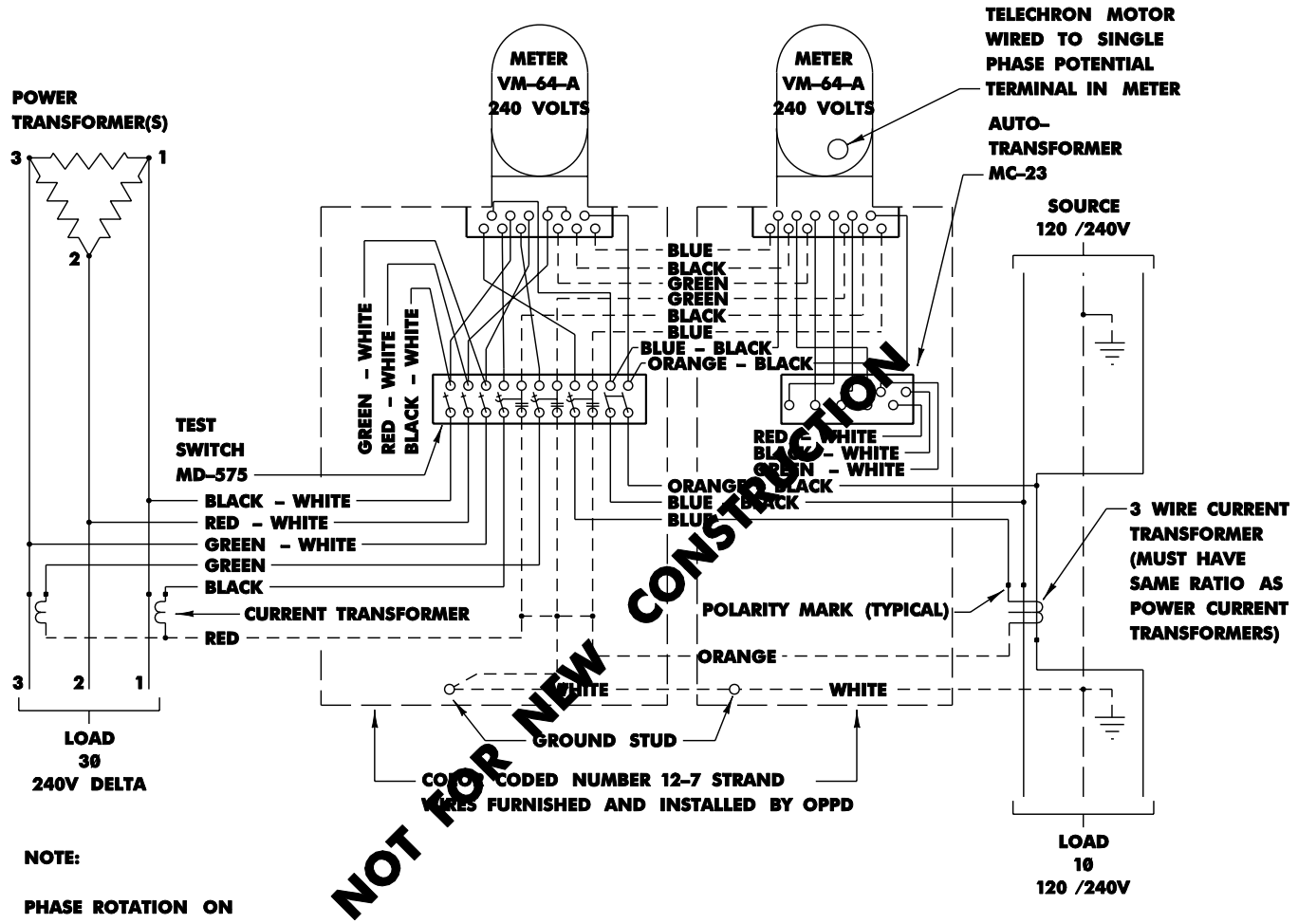
ISSUED DATE _____

SIX WIRE TOTALIZED METERING

KW AND KVA – FOR USE WITH CURRENT TRANSFORMERS

4.06.5

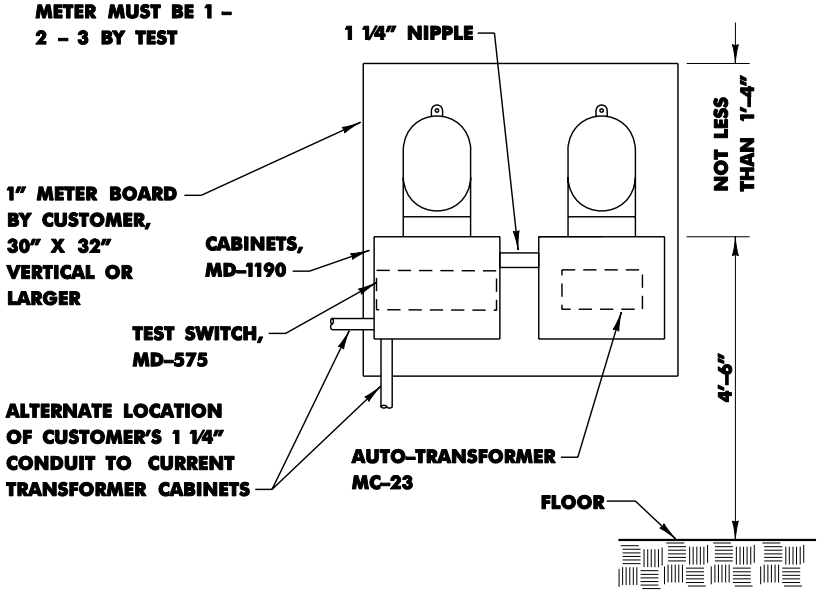
M680DM



NOT FOR NEW CONSTRUCTION

NOTE:

PHASE ROTATION ON POTENTIAL AT THE METER MUST BE 1 – 2 – 3 BY TEST



NOTES:

CUSTOMER TO FURNISH AND INSTALL "NATIONAL ELECTRICAL CODE" GRADE STEEL CABINET OF ADEQUATE SIZE FOR THE CURRENT TRANSFORMERS AND ALL WIRING CONNECTIONS.

SERVICE ENTRANCE NEUTRAL MUST BE BONDED TO CURRENT TRANSFORMER CABINET.

CUSTOMER TO FURNISH AND INSTALL 1 1/4" CONDUIT FROM CURRENT TRANSFORMER CABINET TO METER CABINET.

FOR LUG CONNECTIONS ON CURRENT TRANSFORMERS UP TO 600 AMPERES MINIMUM BOLT SIZE 3/8" OVER 600 AMPERES MINIMUM BOLT SIZE 1/2".

Revised 07-03-00 By BED

DESIGN ENTRY BY: GRETE H SCHOLZ

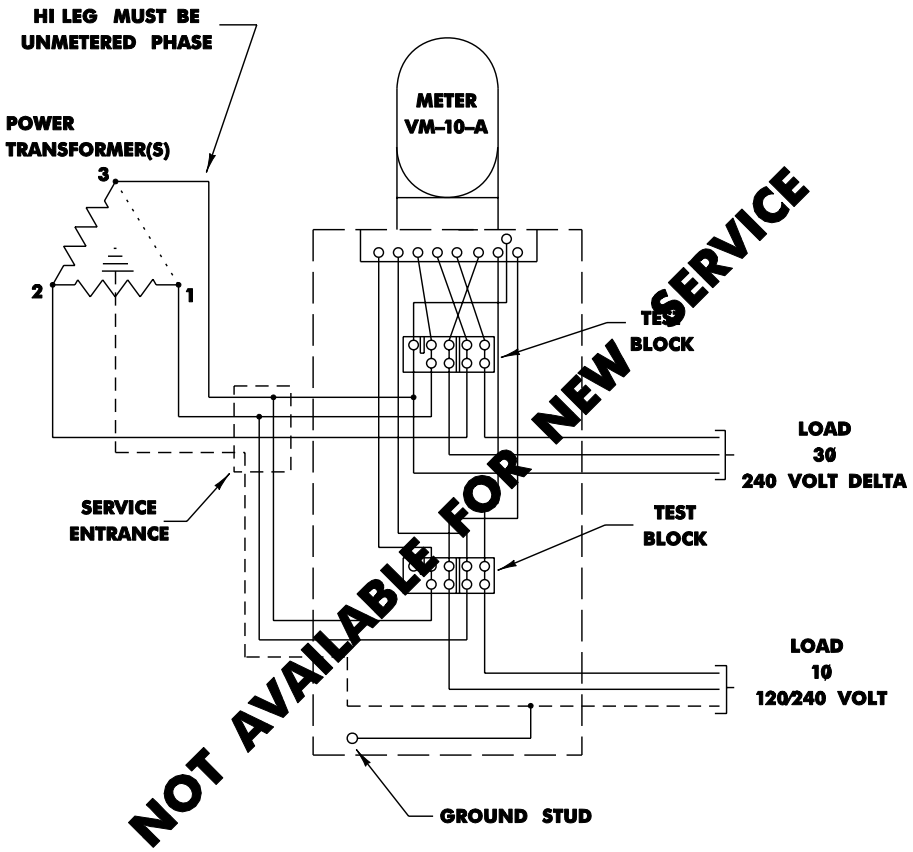
ISSUED DATE _____

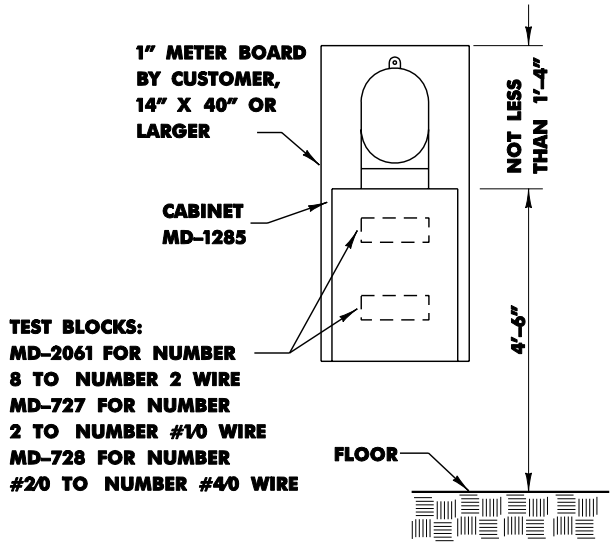
SIX WIRE TOTALIZED METERING

CLASS 45 – RATING 11KVA 1Ø AND 19KVA 3Ø – ON BALANCED LOAD
CLASS 125 – RATING 30KVA 1Ø AND 52KVA 3Ø – ON BALANCED LOAD

4.06.6

M690





Revised 06-29-01 By BED

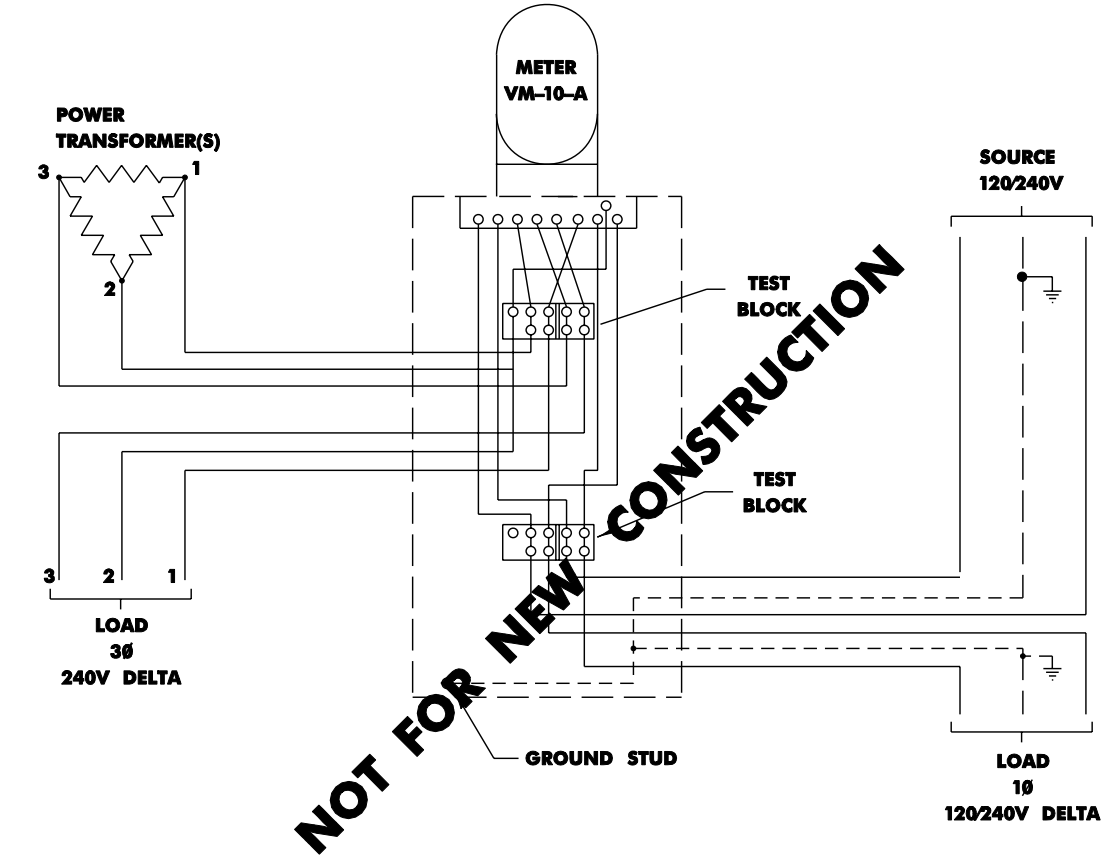
DESIGN ENTRY BY: BRANT DANGEL

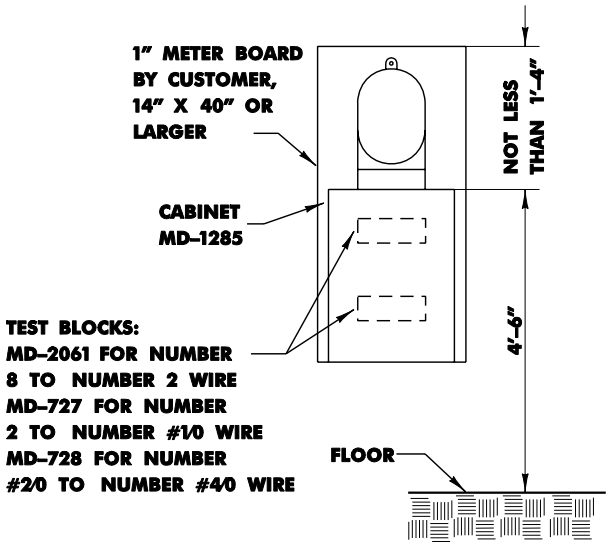
ISSUED DATE _____

SIX WIRE TOTALIZED METERING

CLASS 45 – RATING 11KVA 1Ø AND 19KVA 3Ø – ON BALANCED LOAD
CLASS 125 – RATING 30KVA 1Ø AND 52KVA 3Ø – ON BALANCED LOAD

4.06.7
M691





Revised 06-29-01 By BED
DESIGN ENTRY BY: BRANT DANGEL

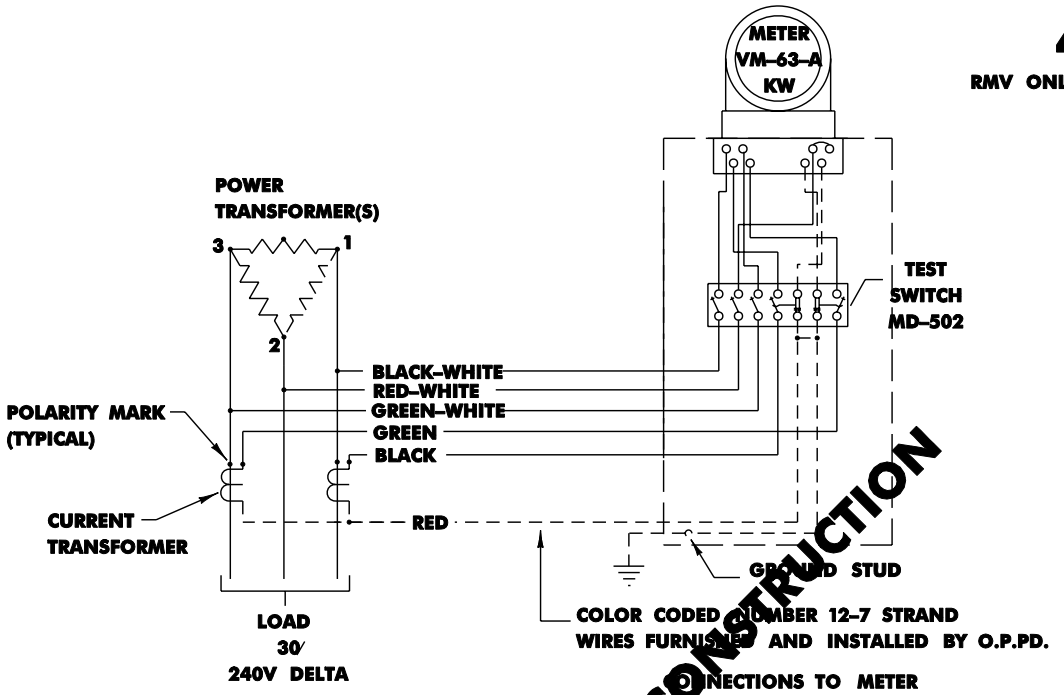
ISSUED DATE_____

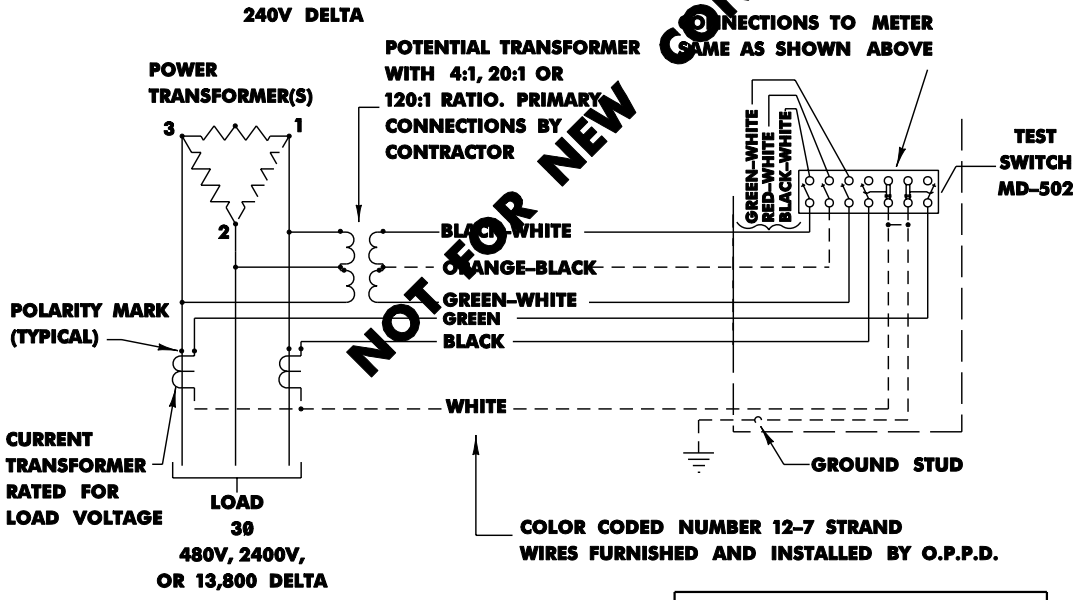
3Ø THREE WIRE DELTA METERING

FOR USE WITH INSTRUMENT TRANSFORMER

4.06.8

RMV ONLY: M380D





NOT FOR NEW CONSTRUCTION

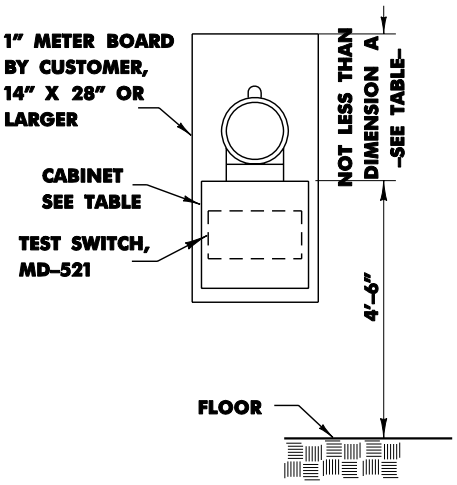


TABLE		
SERVICE	CABINET	DIMENSION A
240V	MD-1190	12"
480V	MD-1190-B	17"
2400V	MD-1190-B	17"
13,800V	MD-1190-B	17"

NOTES:

CUSTOMER TO FURNISH AND INSTALL "NATIONAL ELECTRICAL CODE" GRADE STEEL CABINET OF ADEQUATE SIZE FOR THE INSTRUMENT TRANSFORMERS AND ALL WIRING CONNECTIONS

CUSTOMER TO FURNISH AND INSTALL 1" CONDUIT FROM INSTRUMENT TRANSFORMER CABINET TO METER CABINET

FOR LUG CONNECTIONS ON INSTRUMENT TRANSFORMERS UP TO 600 AMPERES MINIMUM BOLT SIZE 3/8" OVER 600 AMPERES MINIMUM BOLT SIZE 1/2"

Revised 06-29-01 By BED

DESIGN ENTRY BY: BRANT DANGEL

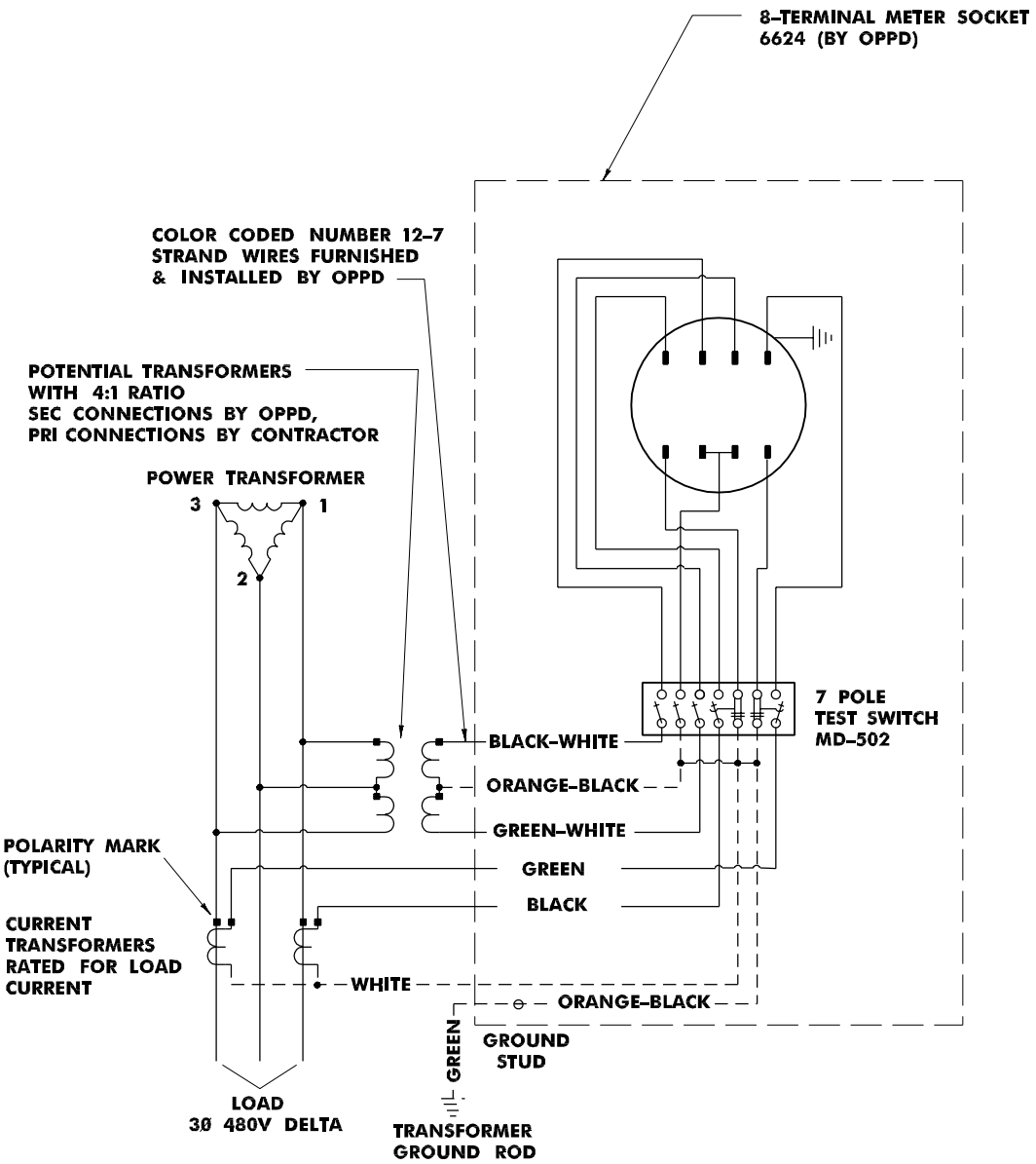
ISSUED DATE _____

3Ø THREE WIRE DELTA METERING

240V 3W DELTA
480V 3W DELTA – FOR MAINTENANCE ONLY

4.06.9

M371D
M381D
M383D



REFER TO DWG: 8.06

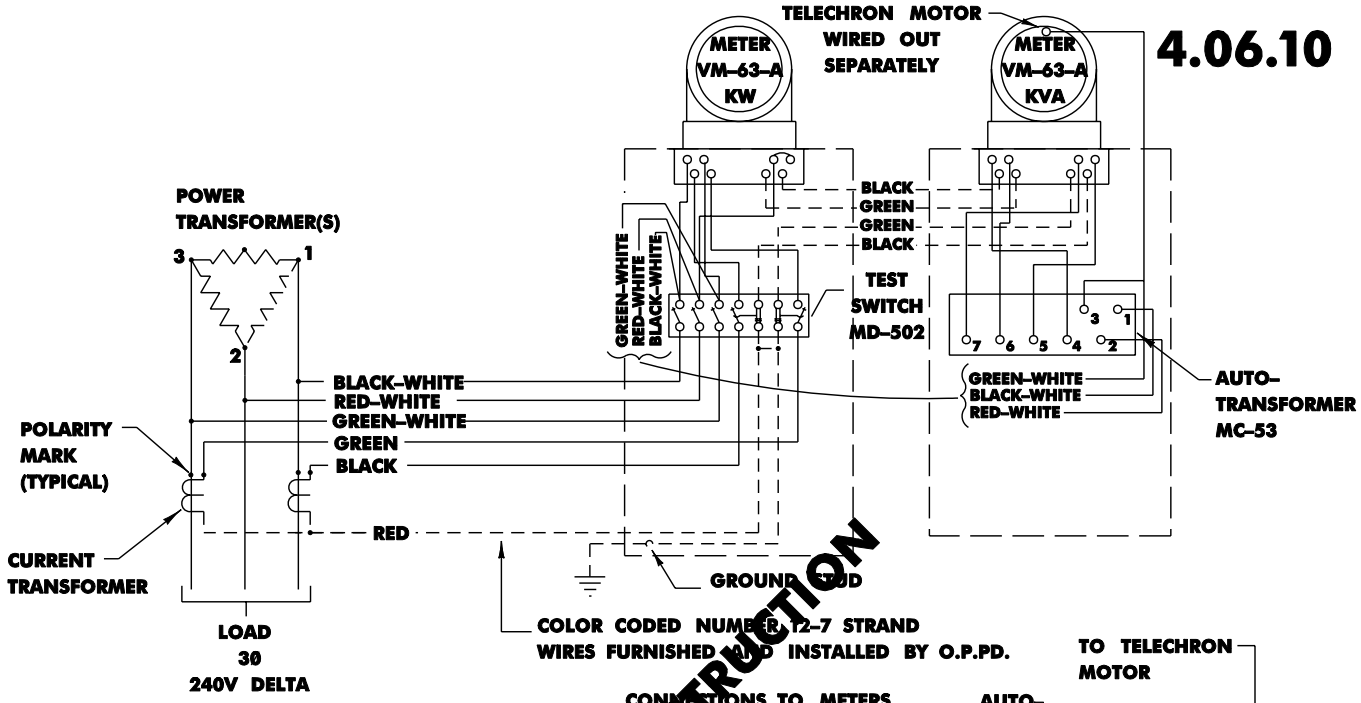
Revised 03-22-13 By AMJ
DESIGN ENTRY BY: BRANT DANGEL

ISSUED DATE _____

3Ø THREE WIRE DELTA METERING

FOR USE WITH INSTRUMENT TRANSFORMER

4.06.10



NOT FOR NEW CONSTRUCTION

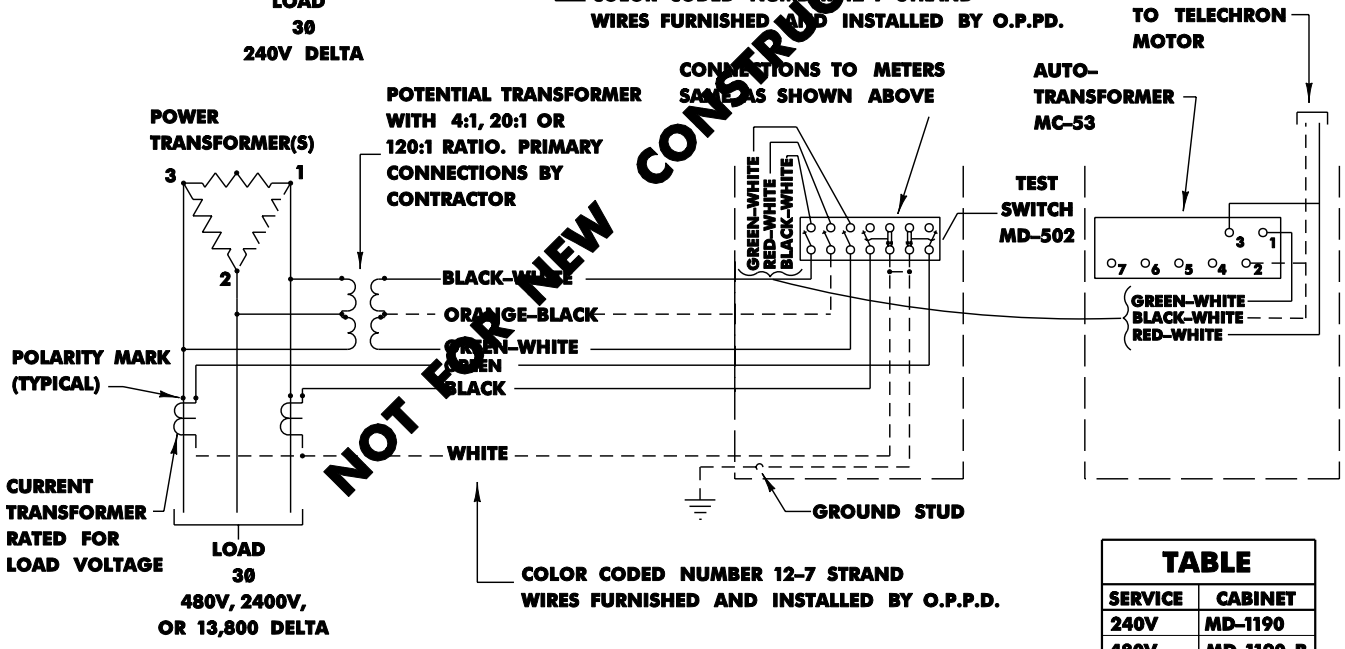
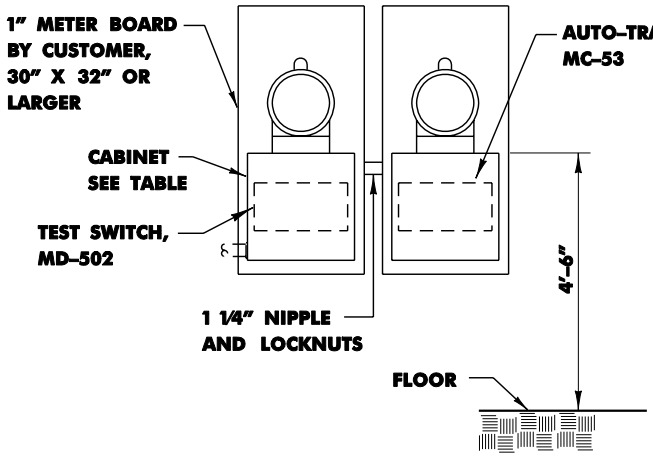


TABLE	
SERVICE	CABINET
240V	MD–1190
480V	MD–1190–B
2400V	MD–1190–B
13,800V	MD–1190–B



NOTES:

CUSTOMER TO FURNISH AND INSTALL "NATIONAL ELECTRICAL CODE" GRADE STEEL CABINET OF ADEQUATE SIZE FOR THE INSTRUMENT TRANSFORMERS AND ALL WIRING CONNECTIONS

CUSTOMER TO FURNISH AND INSTALL 1" CONDUIT FROM INSTRUMENT TRANSFORMER CABINET TO METER CABINET

FOR LUG CONNECTIONS ON INSTRUMENT TRANSFORMERS UP TO 600 AMPERES MINIMUM BOLT SIZE 3/8" OVER 600 AMPERES MINIMUM BOLT SIZE 1/2"

Revised 07-03-00 By BED

DESIGN ENTRY BY: GRETE H SCHOLZ

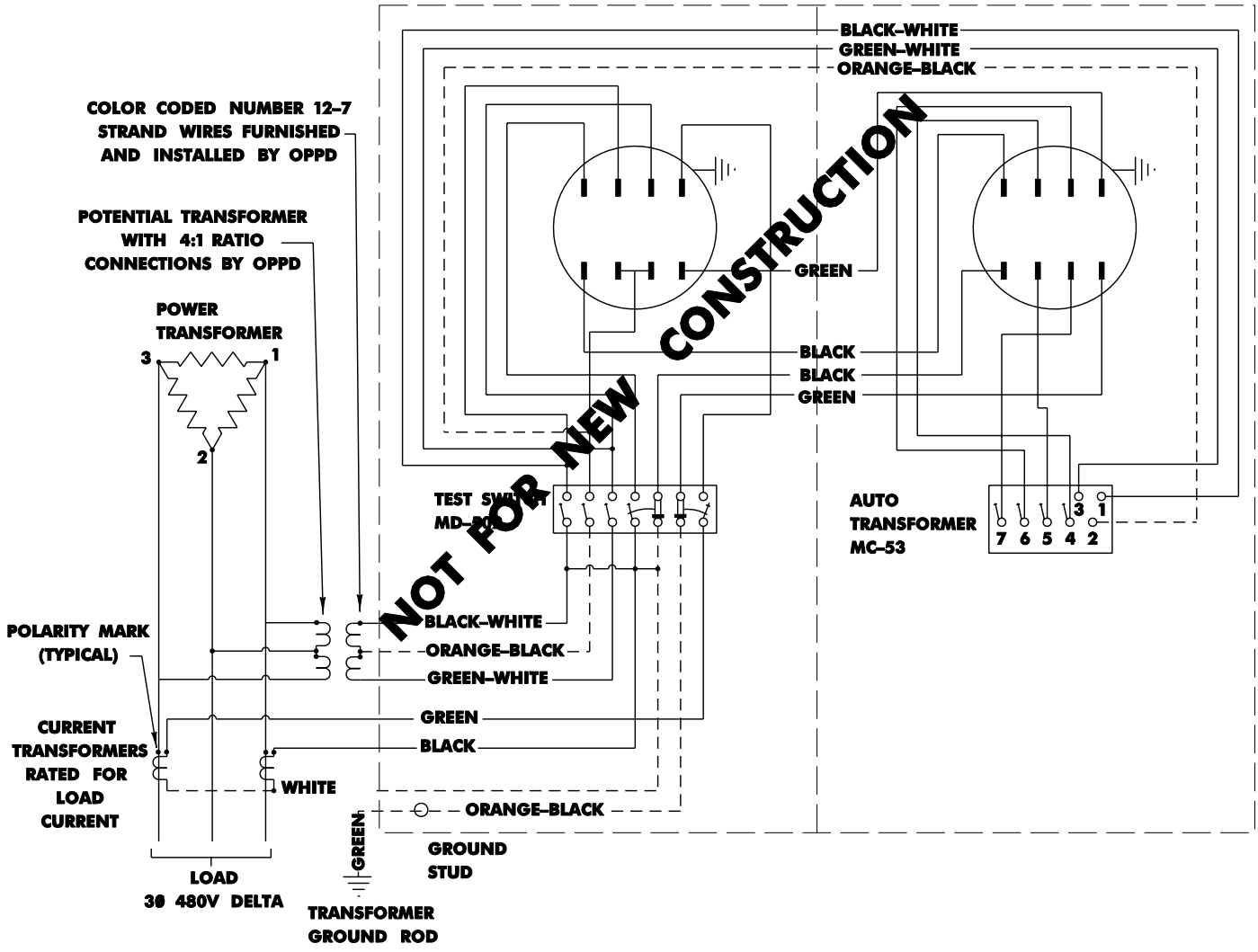
ISSUED DATE _____

3Ø THREE WIRE DELTA METERING

KW AND KVA

4.06.11

M383D



REFER TO DWG: 8.06

Revised 06-29-01 By BED

DESIGN ENTRY BY: BRANT DANGEL

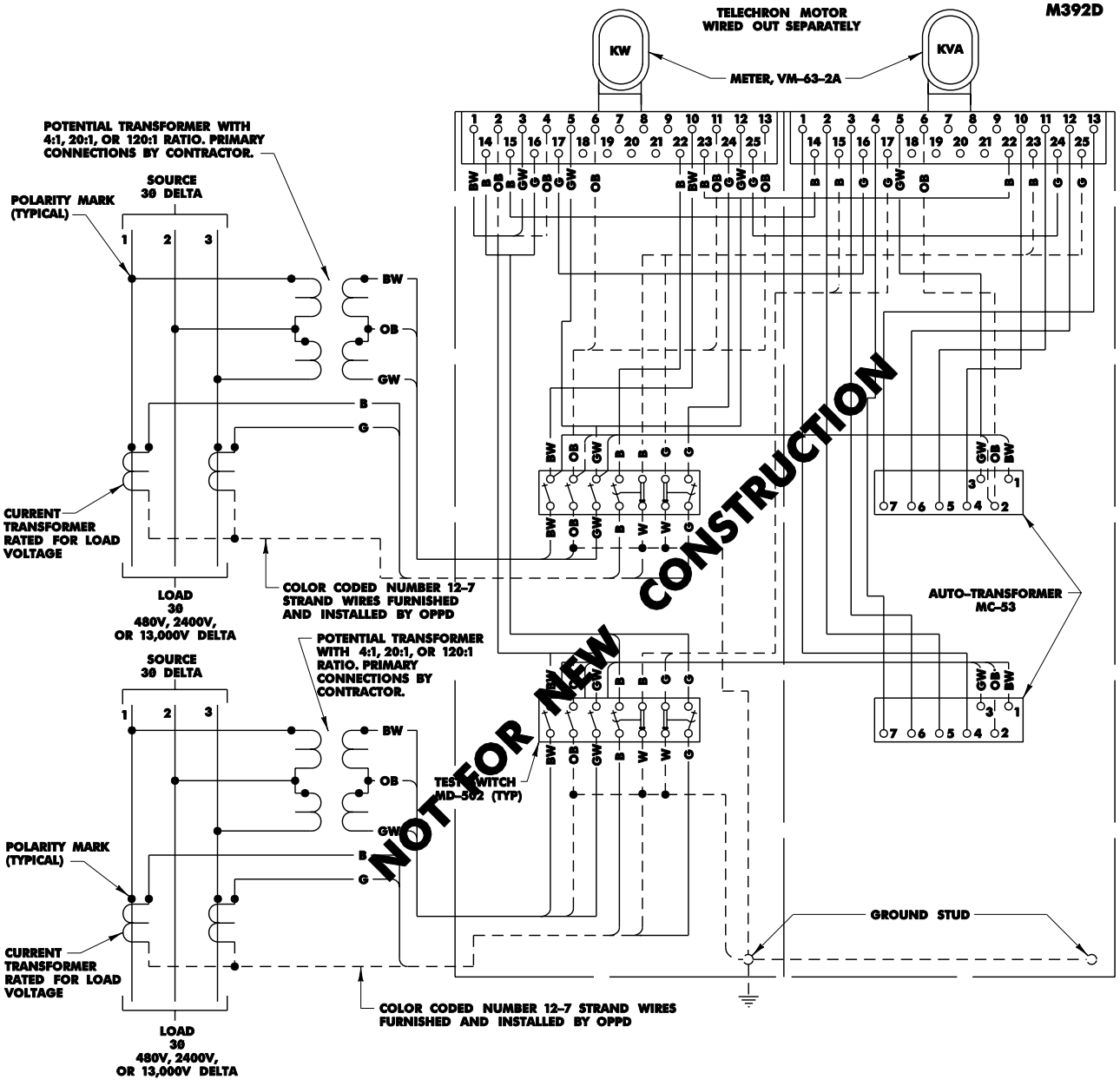
ISSUED DATE _____

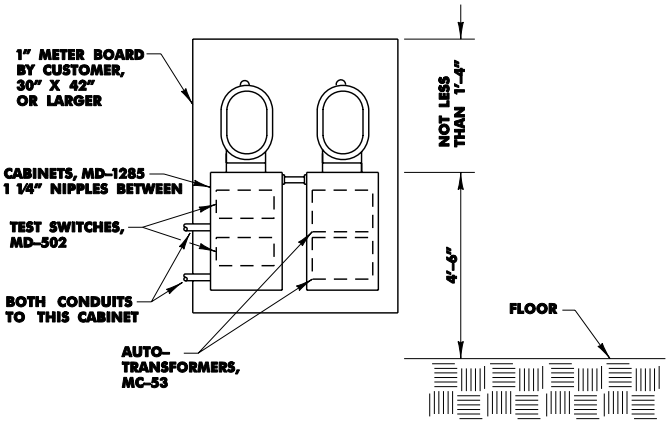
TWO CIRCUIT TOTALIZED METERING

FOR USE WITH INSTRUMENT TRANSFORMERS
KW AND KVA – THREE PHASE THREE WIRE DELTA

4.06.12

M392D





NOTES:

CUSTOMER TO FURNISH AND INSTALL "NATIONAL ELECTRICAL CODE" GRADE STEEL CABINETS OF ADEQUATE SIZE FOR THE INSTRUMENT TRANSFORMERS AND ALL WIRING CONNECTIONS.

CUSTOMER TO FURNISH AND INSTALL SEPARATE 1" CONDUITS FROM EACH INSTRUMENT TRANSFORMER CABINET TO METER TEST CABINET.

PHASE ROTATION AT THE METER MUST BE 1-2-3 BY TEST.

FOR LUG CONNECTIONS ON CURRENT TRANSFORMERS UP TO 600 AMPERES MINIMUM BOLT SIZE 3/8" OVER 600 AMPERES MINIMUM BOLT SIZE 1/2".

Revised 06-29-01 By BED

DESIGN ENTRY BY: GRETE H. SCHOLZ

ISSUED DATE _____

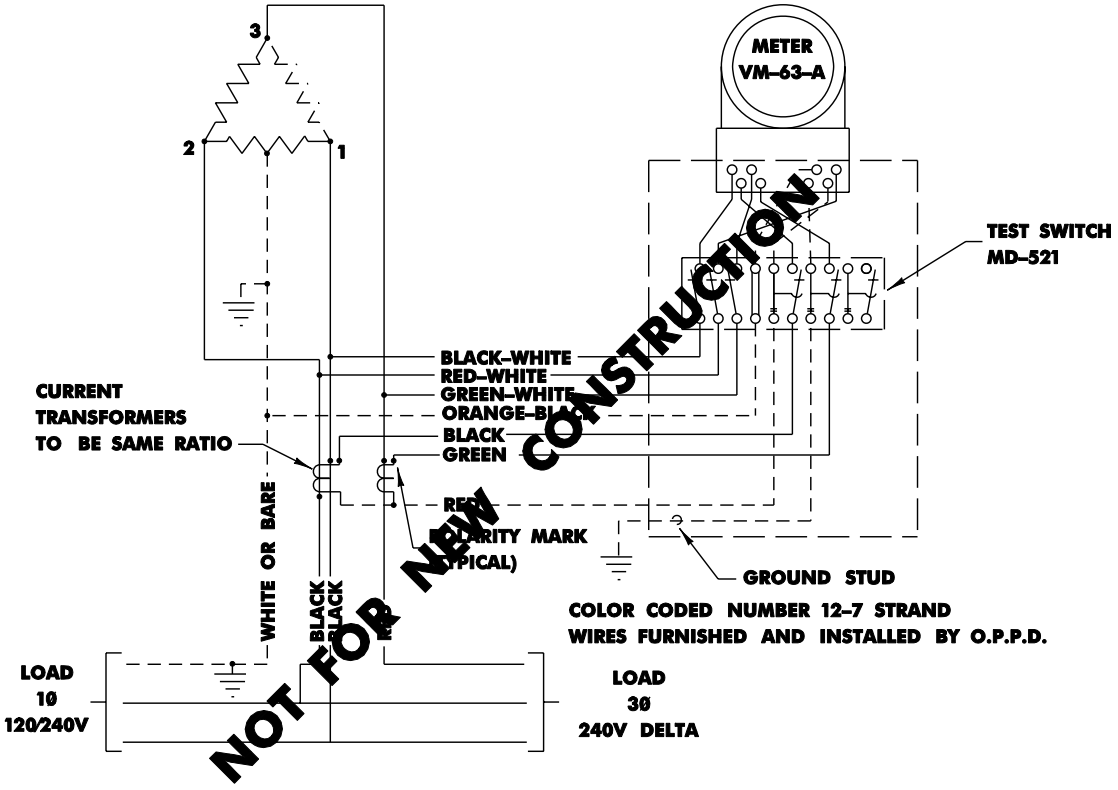
FOUR WIRE DELTA METERING

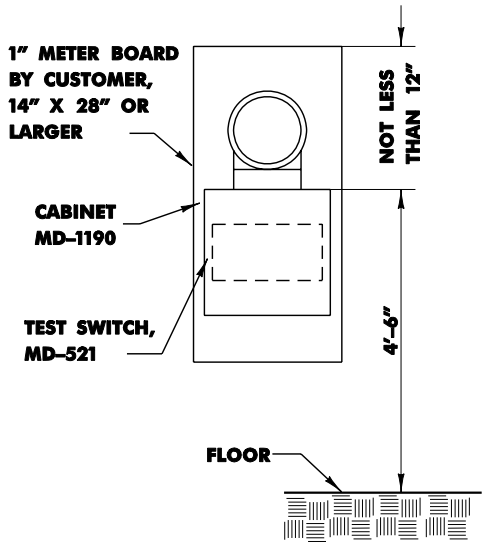
FOR USE WITH CURRENT TRANSFORMERS

4.06.13

RMV ONLY: M520D

FOUR WIRE DELTA COMBINED
BANK TRANSFORMERS
120/240V FROM 1 AND 2
240V 3Ø FROM 1, 2 AND 3





NOTES:

CUSTOMER TO FURNISH AND INSTALL "NATIONAL ELECTRICAL CODE" GRADE STEEL CABINET OF ADEQUATE SIZE FOR THE CURRENT TRANSFORMERS AND ALL WIRING CONNECTIONS

SERVICE ENTRANCE NEUTRAL MUST BE BONDED TO CURRENT TRANSFORMER CABINET

CUSTOMER TO FURNISH AND INSTALL 1" CONDUIT FROM CURRENT TRANSFORMER CABINET TO METER TEST CABINET

FOR LUG CONNECTIONS AN CURRENT TRANSFORMERS UP TO 600 AMPERES MINIMUM BOLT SIZE 3/8" OVER 600 AMPERES MINIMUM BOLT SIZE 1/2"

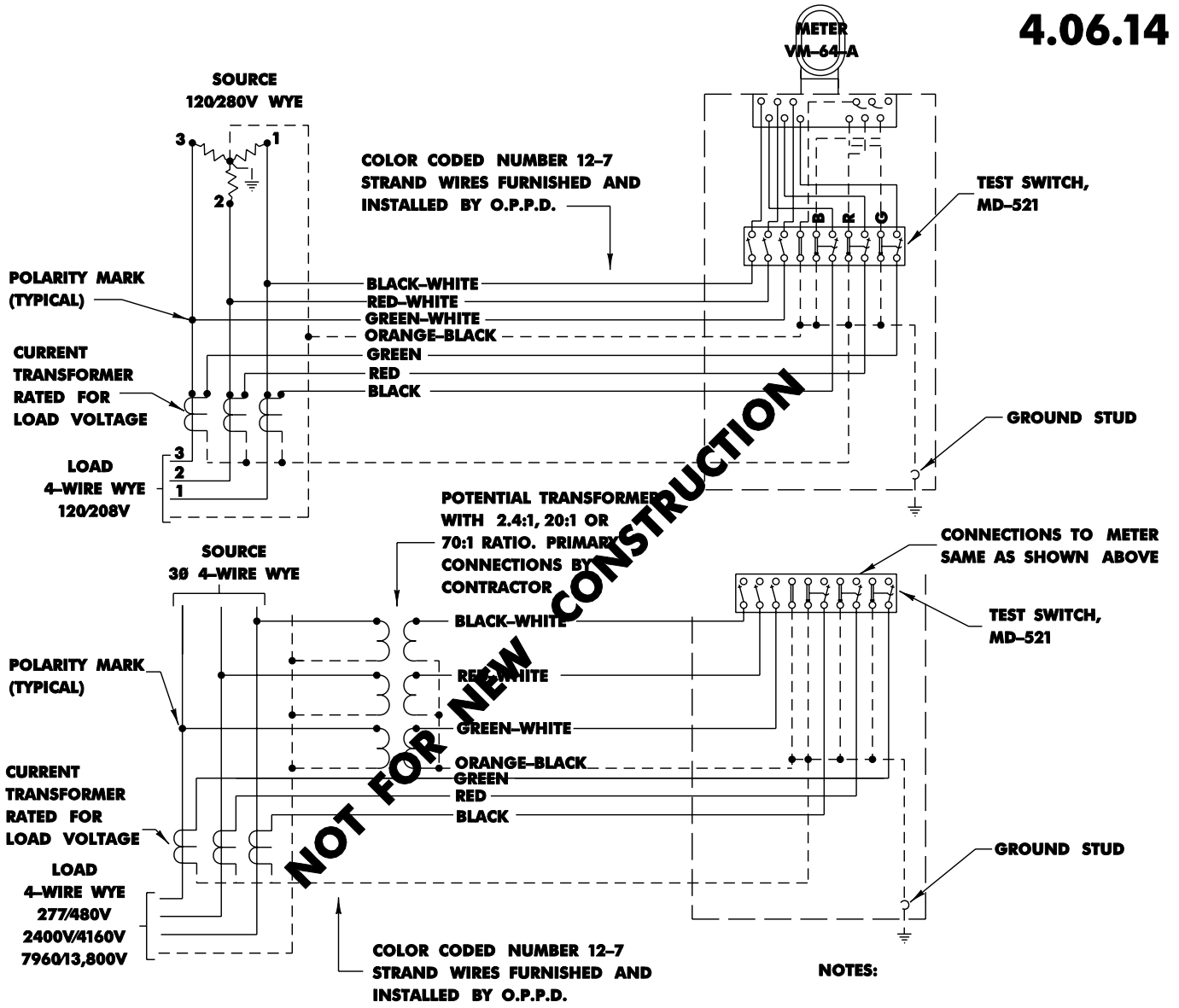
Revised 06-26-08 By JML
DESIGN ENTRY BY: BRANT DANGEL

ISSUED DATE_____

3Ø FOUR WIRE WYE METERING

KW – FOR USE WITH INSTRUMENT TRANSFORMERS

4.06.14



NOT FOR NEW CONSTRUCTION

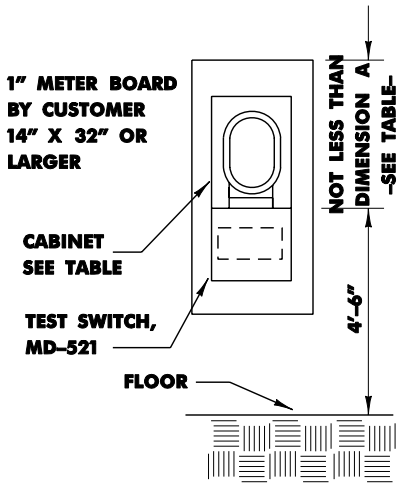


TABLE		
SERVICE	CABINET	DIMENSION A
120/208V	MD-1190	16"
277/480V	MD-1190-B	17"
2400/4160V	MD-1190-B	17"
7960/13,800V	MD-1190-B	17"

NOTES:

CUSTOMER TO FURNISH AND INSTALL "NATIONAL ELECTRICAL CODE" GRADE STEEL CABINET OF ADEQUATE SIZE FOR THE INSTRUMENT TRANSFORMERS AND ALL WIRING CONNECTIONS

SERVICE ENTRANCE NEUTRAL MUST BE BONDED TO INSTRUMENT TRANSFORMER CABINET

CUSTOMER TO FURNISH AND INSTALL 1 1/4" CONDUIT FROM INSTRUMENT TRANSFORMER CABINET TO METER TEST CABINET

PHASE ROTATION ON POTENTIAL AT THE METER MUST BE 1-2-3 BY TEST

FOR LUG CONNECTIONS AN CURRENT TRANSFORMERS UP TO 600 AMPERES MINIMUM BOLT SIZE 3/8" OVER 600 AMPERES MINIMUM BOLT SIZE 1/2"

Revised 07-03-00 By BED

DESIGN ENTRY BY: BRANT DANGEL

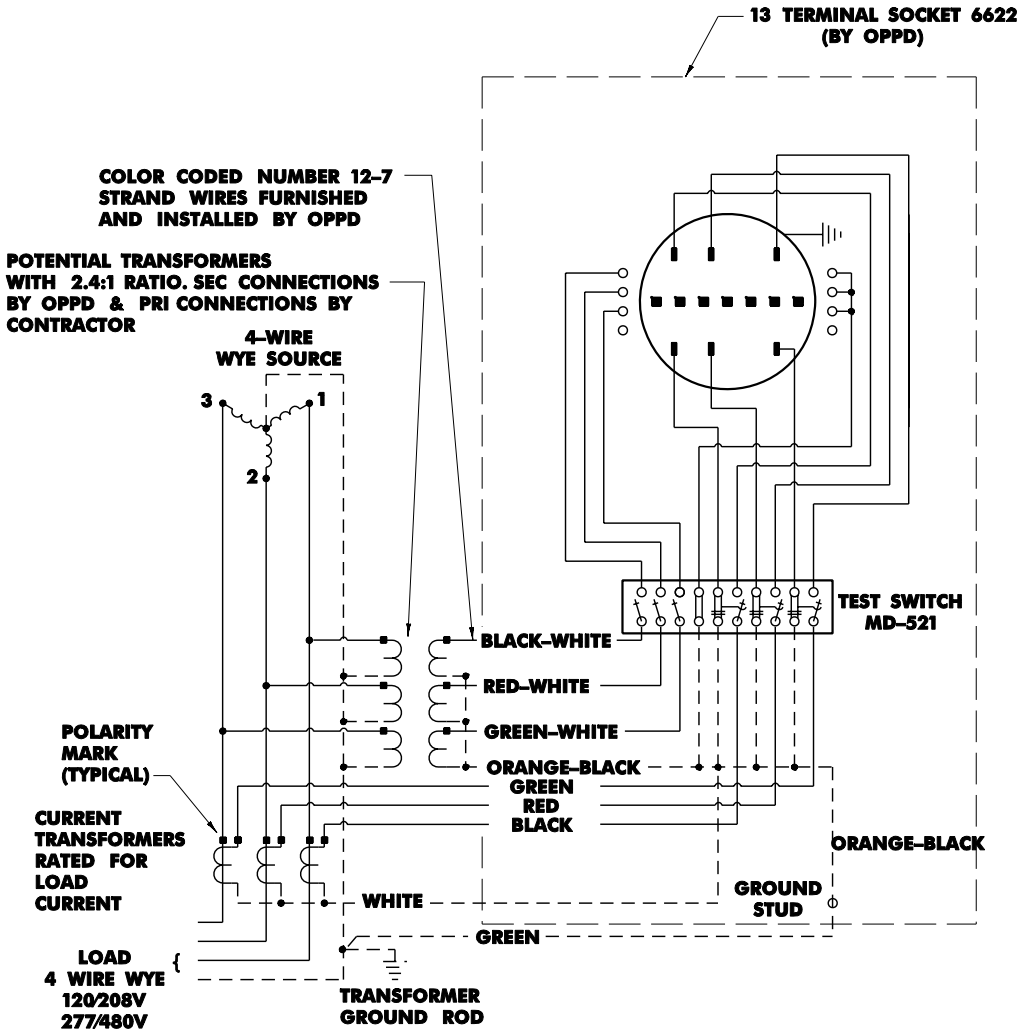
ISSUED DATE _____

3Ø FOUR WIRE WYE METERING

KW

4.06.15

M471D
M472D
M483D



REFER TO DWG: 8.06

Revised 09-15-08 By SAH
DESIGN ENTRY BY: BRANT DANGEL

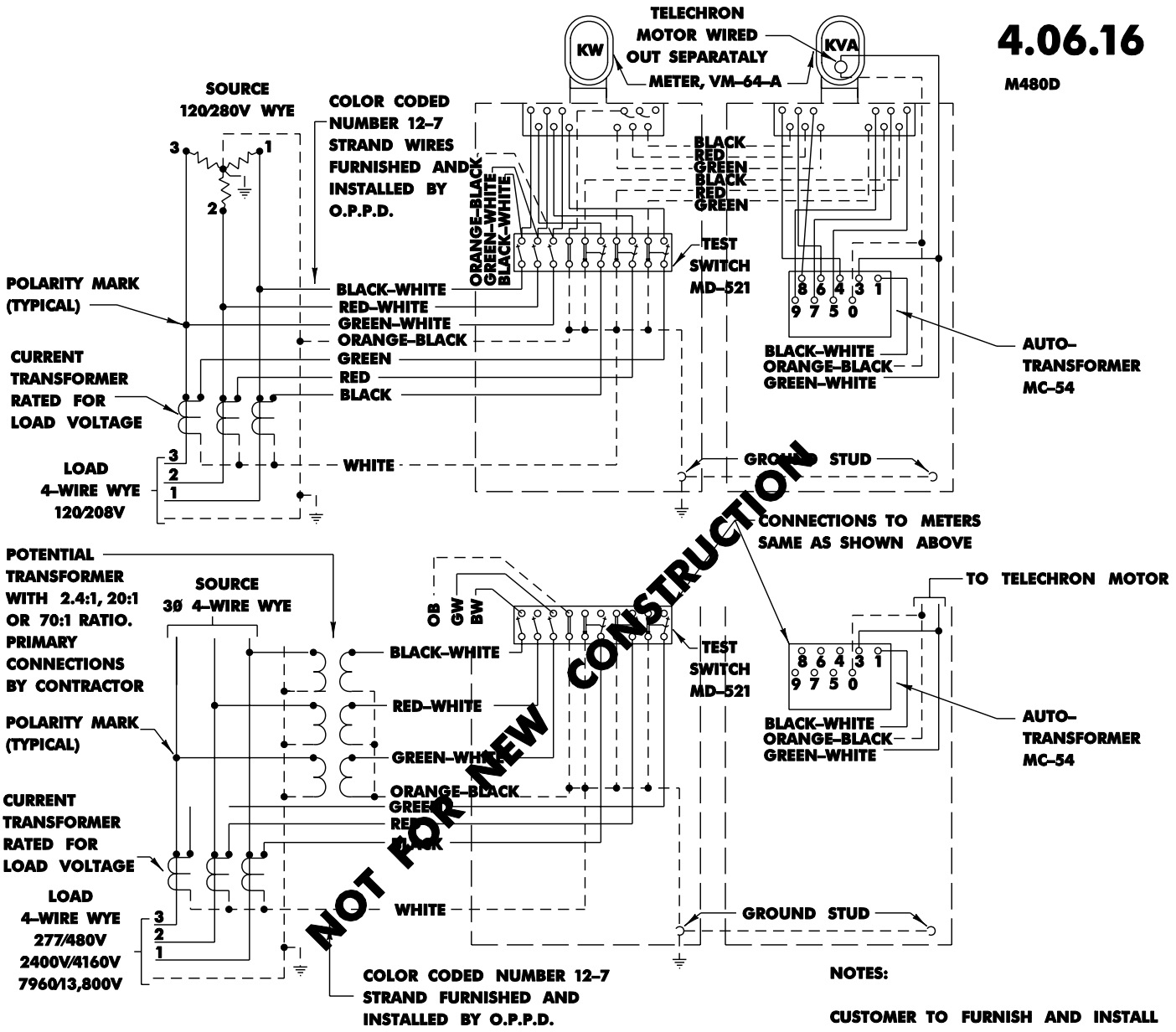
ISSUED DATE_____

3Ø FOUR WIRE WYE METERING

KW AND KVA – FOR USE WITH INSTRUMENT TRANSFORMERS

4.06.16

M480D



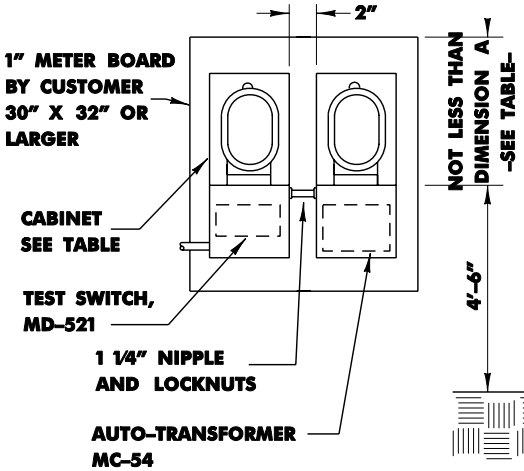


TABLE		
SERVICE	CABINET	DIMENSION A
120/208V	MD–1190	16"
277/480V	MD–1190–B	17"
2400/4160V	MD–1190–B	17"
7960/13,800V	MD–1190–B	17"

NOTES:

CUSTOMER TO FURNISH AND INSTALL "NATIONAL ELECTRICAL CODE" GRADE STEEL CABINET OF ADEQUATE SIZE FOR THE INSTRUMENT TRANSFORMERS AND ALL WIRING CONNECTIONS

SERVICE ENTRANCE NEUTRAL MUST BE BONDED TO INSTRUMENT TRANSFORMER CABINET

CUSTOMER TO FURNISH AND INSTALL 1" CONDUIT FROM INSTRUMENT TRANSFORMER CABINET TO METER TEST CABINET

PHASE ROTATION ON POTENTIAL AT THE METER TOMUST BE 1–2–3 BY TEST

FOR LUG CONNECTIONS ON CURRENT TRANSFORMERS UP TO 600 AMPERES MINIMUM BOLT SIZE 3/8" OVER 600 AMPERES MINIMUM BOLT SIZE 1/2"

Revised 06-29-01 By BED

DESIGN ENTRY BY: BRANT DANGEL

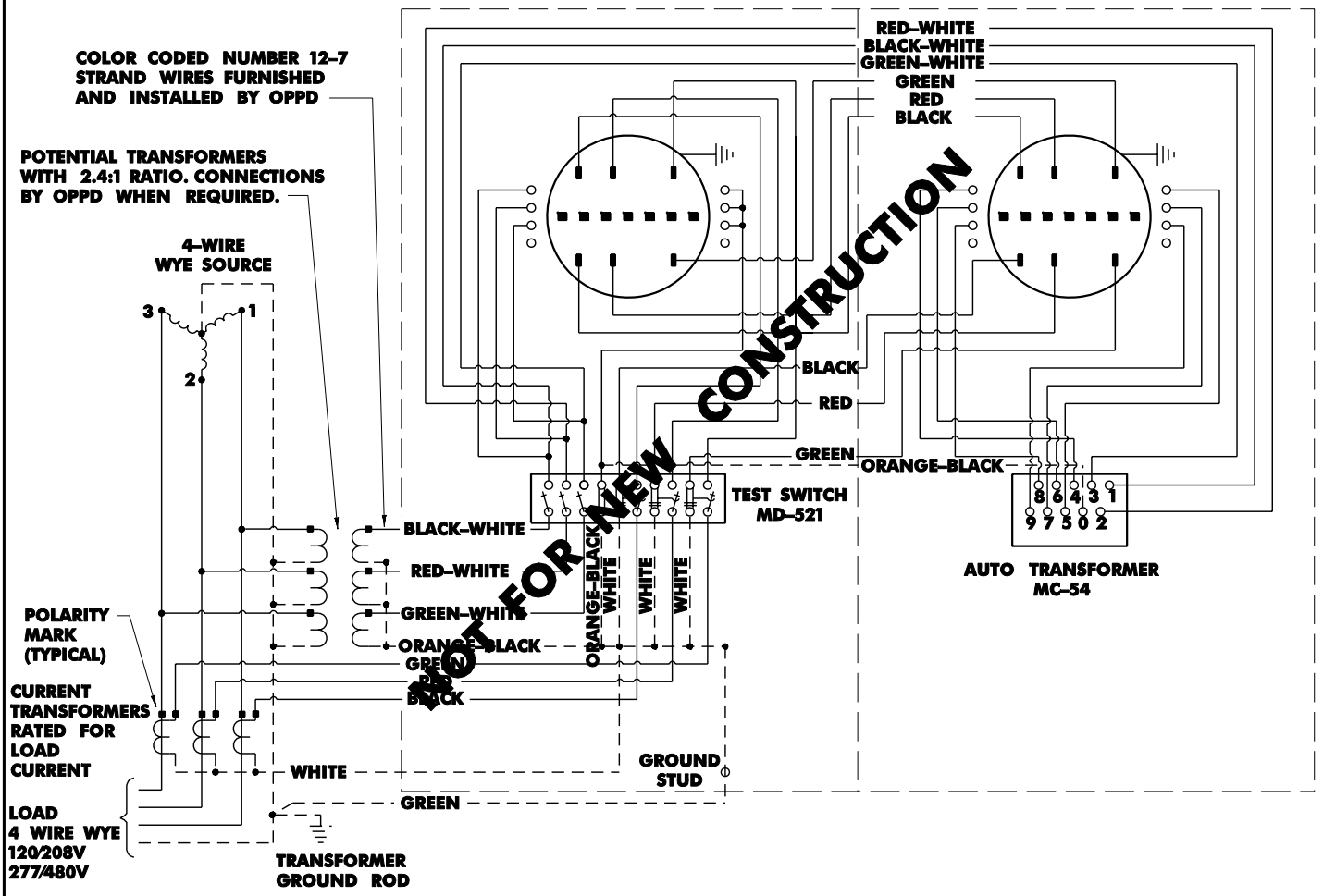
ISSUED DATE _____

3Ø FOUR WIRE WYE METERING

KW AND KVA

4.06.17

M481D



REFER TO DWG: 8.06

Revised 06-29-01 By BED

DESIGN ENTRY BY: BRANT DANGEL

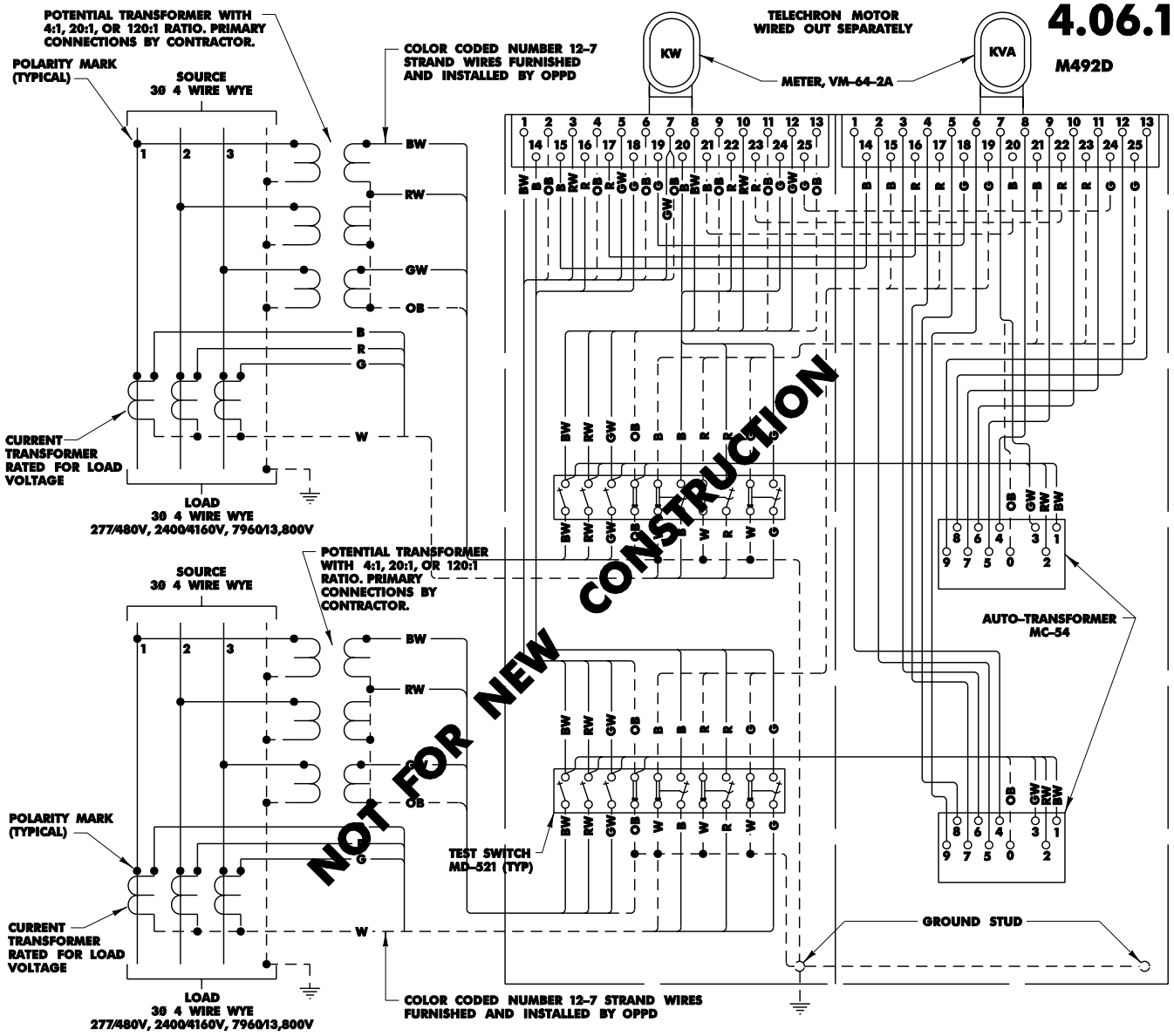
ISSUED DATE_____

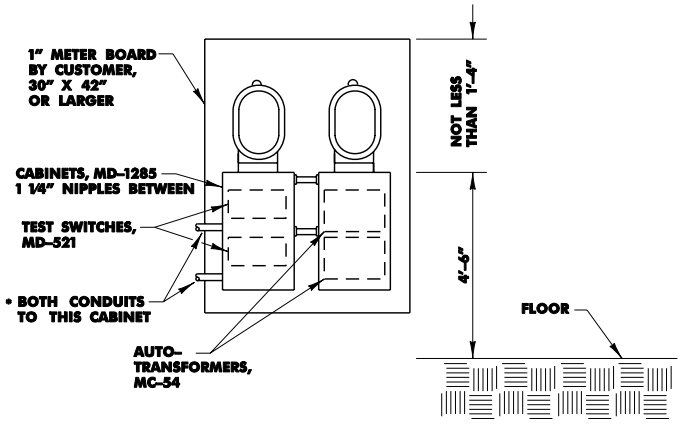
TWO CIRCUIT TOTALIZED METERING

FOR USE WITH INSTRUMENT TRANSFORMERS
KW AND KVA – THREE PHASE FOUR WIRE WYE

4.06.18

M492D





NOTES:

FOR LUG CONNECTIONS ON CURRENT TRANSFORMERS UP TO 600 AMPERES MINIMUM BOLT SIZE 3/8" OVER 600 AMPERES MINIMUM BOLT SIZE 1/2".

CUSTOMER TO FURNISH AND INSTALL "NATIONAL ELECTRICAL CODE" GRADE STEEL CABINETS OF ADEQUATE SIZE FOR THE INSTRUMENT TRANSFORMERS AND ALL WIRING CONNECTIONS.

• CUSTOMER TO FURNISH AND INSTALL SEPARATE 1 1/4" CONDUITS FROM EACH INSTRUMENT TRANSFORMER CABINET TO METER TEST CABINET.

PHASE ROTATION AT THE METER MUST BE 1-2-3 BY TEST.

Revised 06-29-01 By BED

DESIGN ENTRY BY: GRETE H SCHOLZ

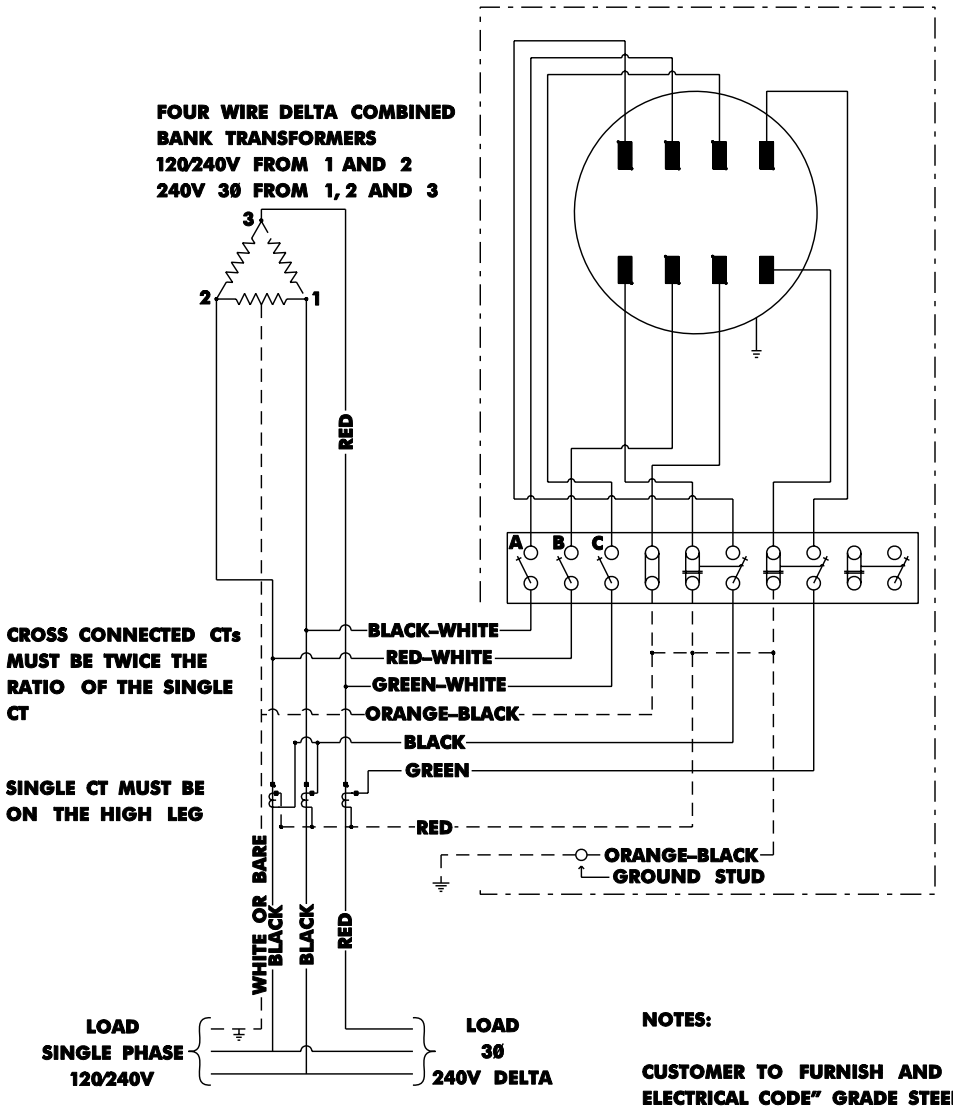
ISSUED DATE _____

FOUR WIRE DELTA METERING

FOR USE WITH CURRENT TRANSFORMERS

4.06.19

RMV ONLY: M520D



NOTES:

CUSTOMER TO FURNISH AND INSTALL "NATIONAL ELECTRICAL CODE" GRADE STEEL CABINET OF ADEQUATE SIZE FOR THE CURRENT TRANSFORMERS AND ALL WIRING CONNECTIONS

SERVICE ENTRANCE NEUTRAL MUST BE BONDED TO CURRENT TRANSFORMER CABINET
CUSTOMER TO FURNISH AND INSTALL 1" CONDUIT FROM CT CABINET TO METER TEST CABINET

FOR LUG CONNECTIONS ON CURRENT TRANSFORMERS
UP TO 600 AMPERES MINIMUM BOLT SIZE 3/8"
OVER 600 AMPERES MINIMUM BOLT SIZE 1/2"

Revised _____ By _____
DESIGN ENTRY BY: JOE LEE

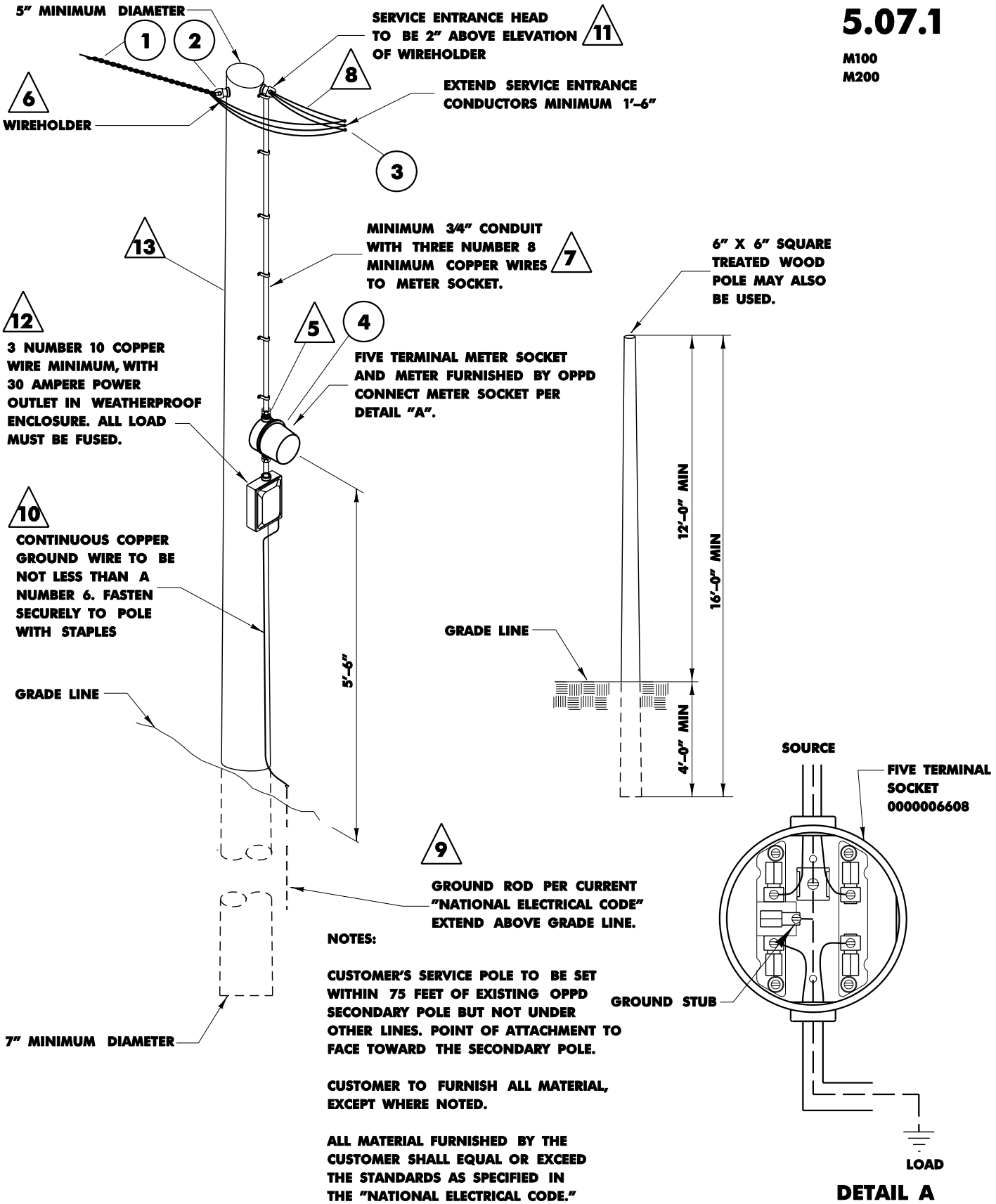
ISSUED DATE 06-26-08

OVERHEAD TEMPORARY SERVICE POLE

FOR USE DURING CONSTRUCTION

5.07.1

M100
M200



NOTES:

CUSTOMER'S SERVICE POLE TO BE SET WITHIN 75 FEET OF EXISTING OPPD SECONDARY POLE BUT NOT UNDER OTHER LINES. POINT OF ATTACHMENT TO FACE TOWARD THE SECONDARY POLE.

CUSTOMER TO FURNISH ALL MATERIAL, EXCEPT WHERE NOTED.

ALL MATERIAL FURNISHED BY THE CUSTOMER SHALL EQUAL OR EXCEED THE STANDARDS AS SPECIFIED IN THE "NATIONAL ELECTRICAL CODE."

DETAIL A

Revised 07-03-00 By BED
DESIGN ENTRY BY: BRANT DANGEL

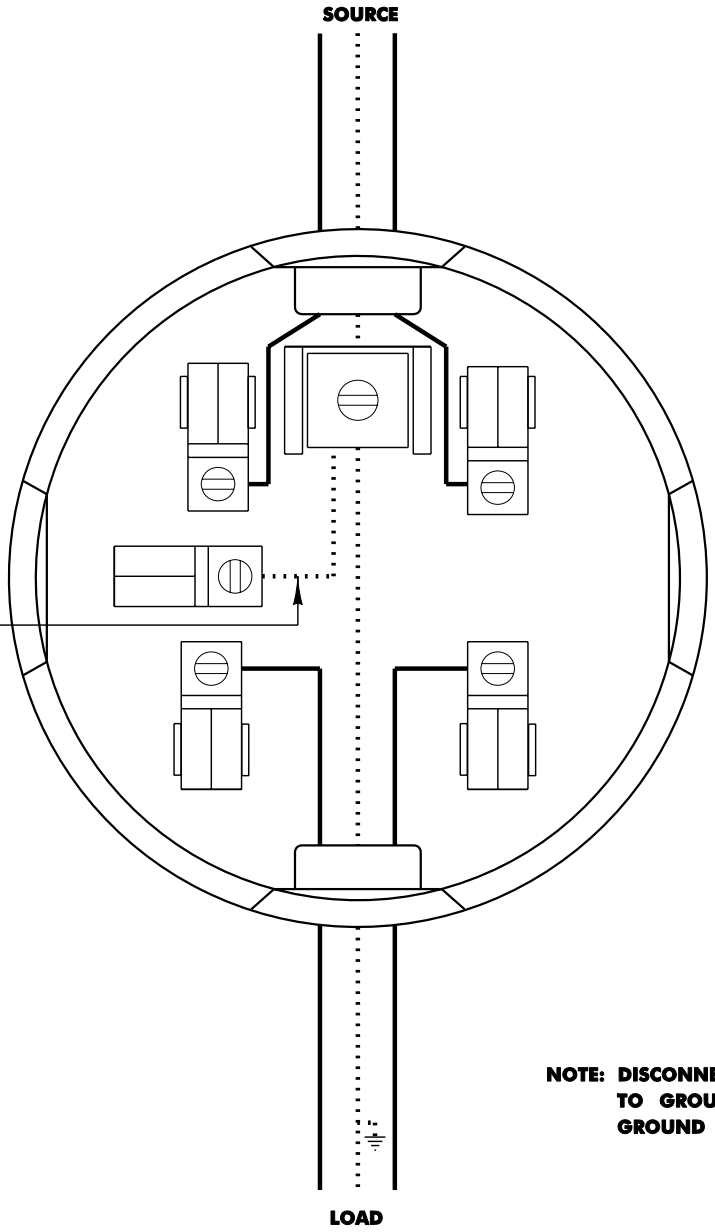
ISSUED DATE _____

OVERHEAD TEMP. POLE SOCKET

120/208V 1Ø 3W OR 120/240V 1Ø 3W

5.07.2

M104



NOTE: DISCONNECT MUST BE CONNECTED TO GROUNDING CONDUCTOR & GROUND ROD AT METER LOCATION

SOCKET LUGS CAN ACCEPT UP TO #2 WIRE

LEVER BY-PASS NOT REQUIRED FOR TEMP SOCKETS

Revised 07-03-00 By BED

DESIGN ENTRY BY: GRETE H. SCHOLZ

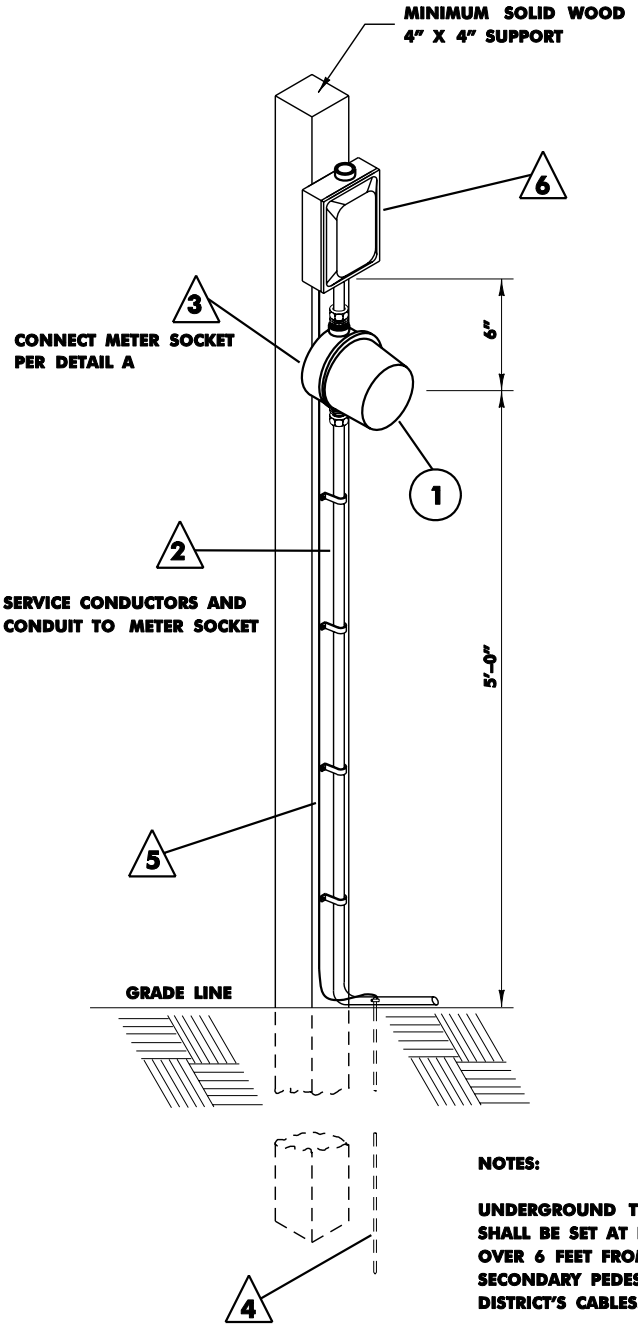
ISSUED DATE_____

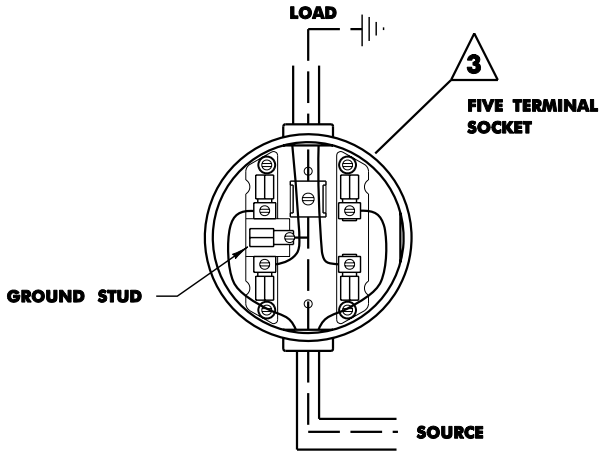
UNDERGROUND TEMPORARY SERVICE POST

FOR USE DURING CONSTRUCTION

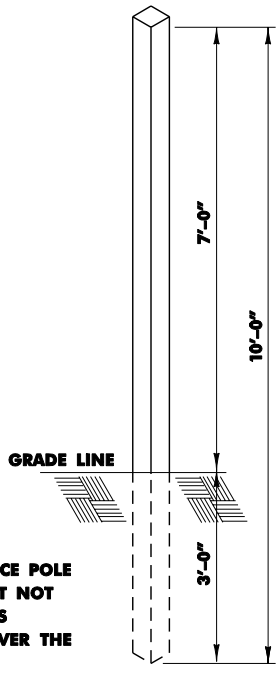
5.55

M101
M201





DETAIL A



DETAIL B

NOTES:

UNDERGROUND TEMPORARY SERVICE POLE SHALL BE SET AT LEAST 3 FEET BUT NOT OVER 6 FEET FROM THE DISTRICT'S SECONDARY PEDESTAL, BUT NOT OVER THE DISTRICT'S CABLES.

CUSTOMER TO FURNISH ALL MATERIAL, EXCEPT WHERE NOTED.

ALL MATERIAL FURNISHED BY THE CUSTOMER SHALL EQUAL OR EXCEED THE STANDARDS AS SPECIFIED IN THE "NATIONAL ELECTRICAL CODE."

LEVER BY-PASS NOT REQUIRED FOR TEMP SOCKETS.

Revised 07-03-00 By BED
DESIGN ENTRY BY: BRANT DANGEL

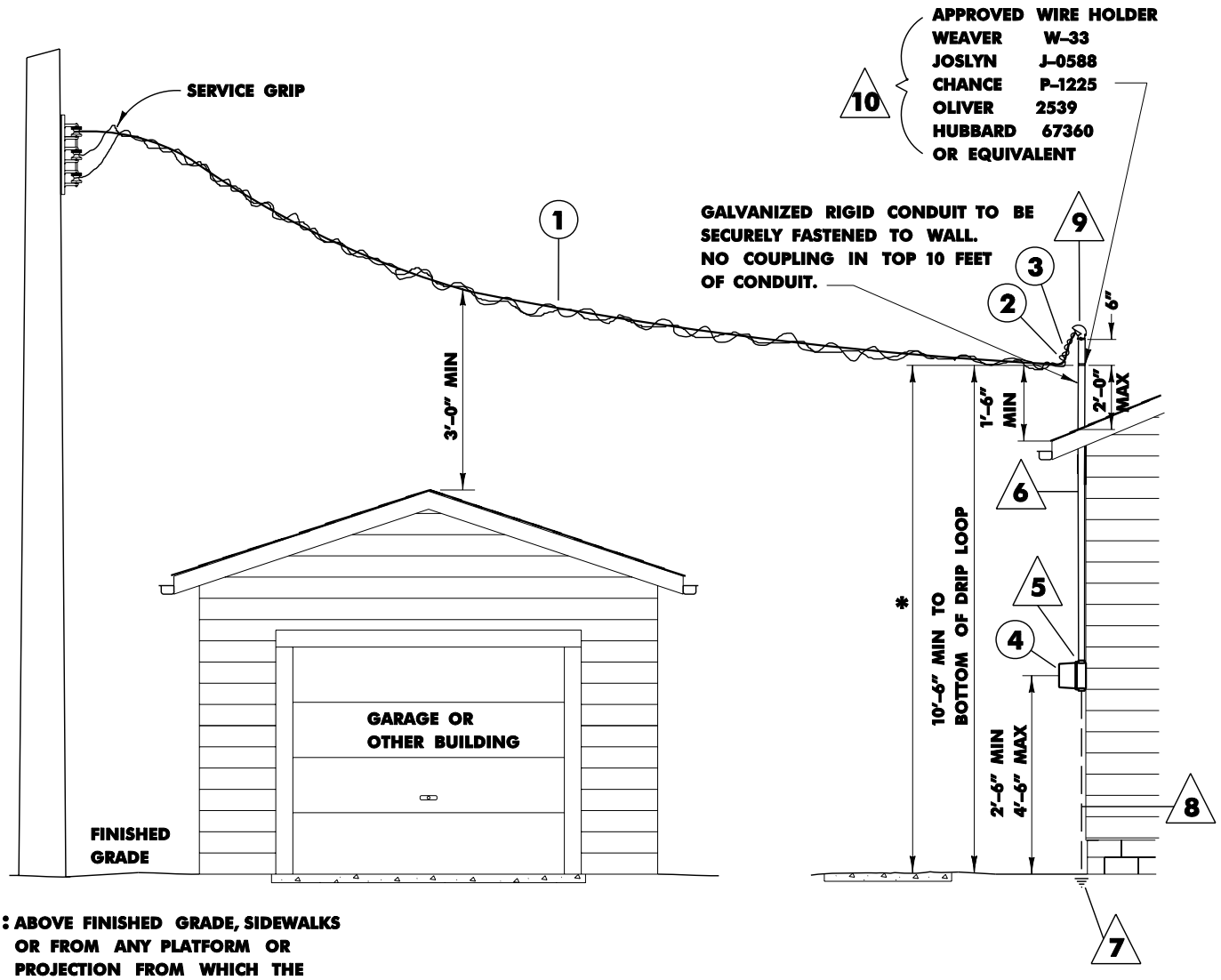
ISSUED DATE_____

RESIDENTIAL OVERHEAD SERVICE

EXTERIOR SERVICE MAST

6.08.1

M118



*: ABOVE FINISHED GRADE, SIDEWALKS OR FROM ANY PLATFORM OR PROJECTION FROM WHICH THE CONDUCTOR MAY BE REACHED....10.5FT

OVER RESIDENTIAL DRIVEWAY....15FT

OVER ROADS, STREETS, AND OTHER AREAS SUBJECT TO TRUCK TRAFFIC...15.5FT

Revised 05-31-07 By CCN

DESIGN ENTRY BY: BRANT DANGEL

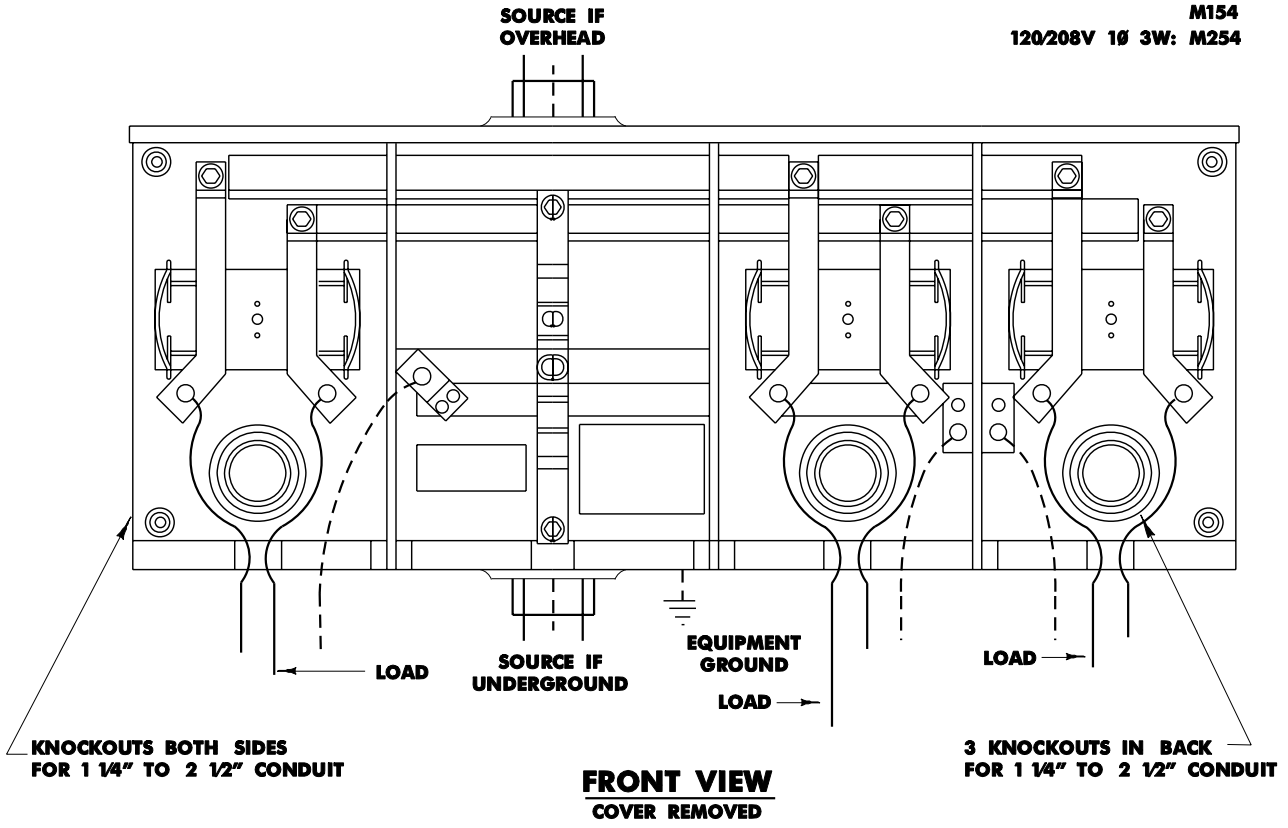
ISSUED DATE_____

SURFACE TYPE METER SOCKET

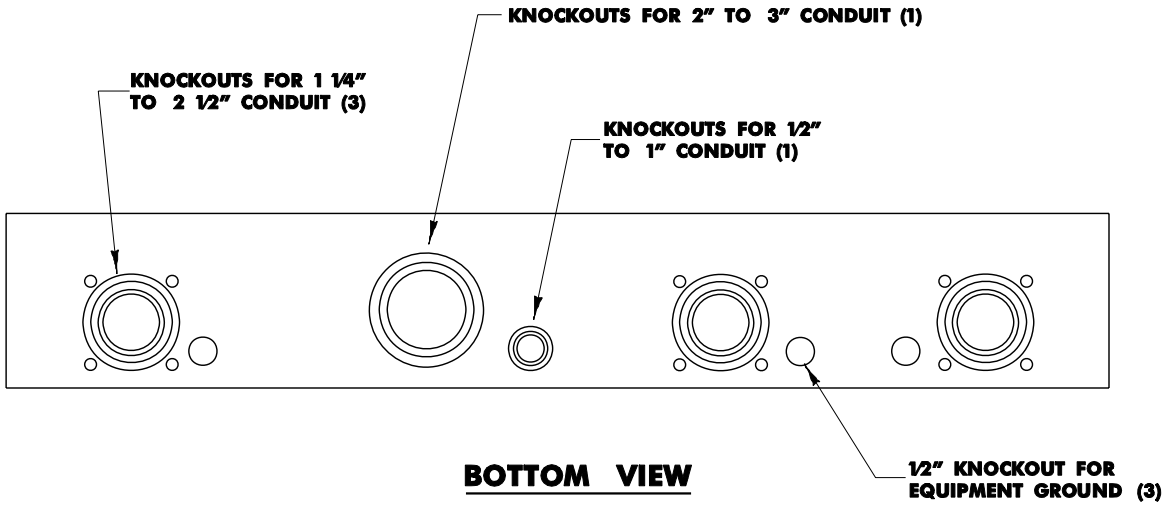
120/240 VOLT 3 WIRE OVERHEAD /UNDERGROUND SERVICE ONLY
200 AMPERES PER POSITION

6.08.3

M154
120/208V 1Ø 3W: M254



FRONT VIEW
COVER REMOVED



BOTTOM VIEW

NOTES:

SOURCE TERMINALS FOR MAXIMUM 600 KCMIL CONDUCTORS. LOAD TERMINALS FOR MAXIMUM 350 KCMIL CONDUCTORS.

METER SOCKET ALSO AVAILABLE WITH FIFTH TERMINAL FOR THREE WIRE WYE SERVICE.

Revised 10-15-08 By SAH
DESIGN ENTRY BY: ROBERT B ADAMS

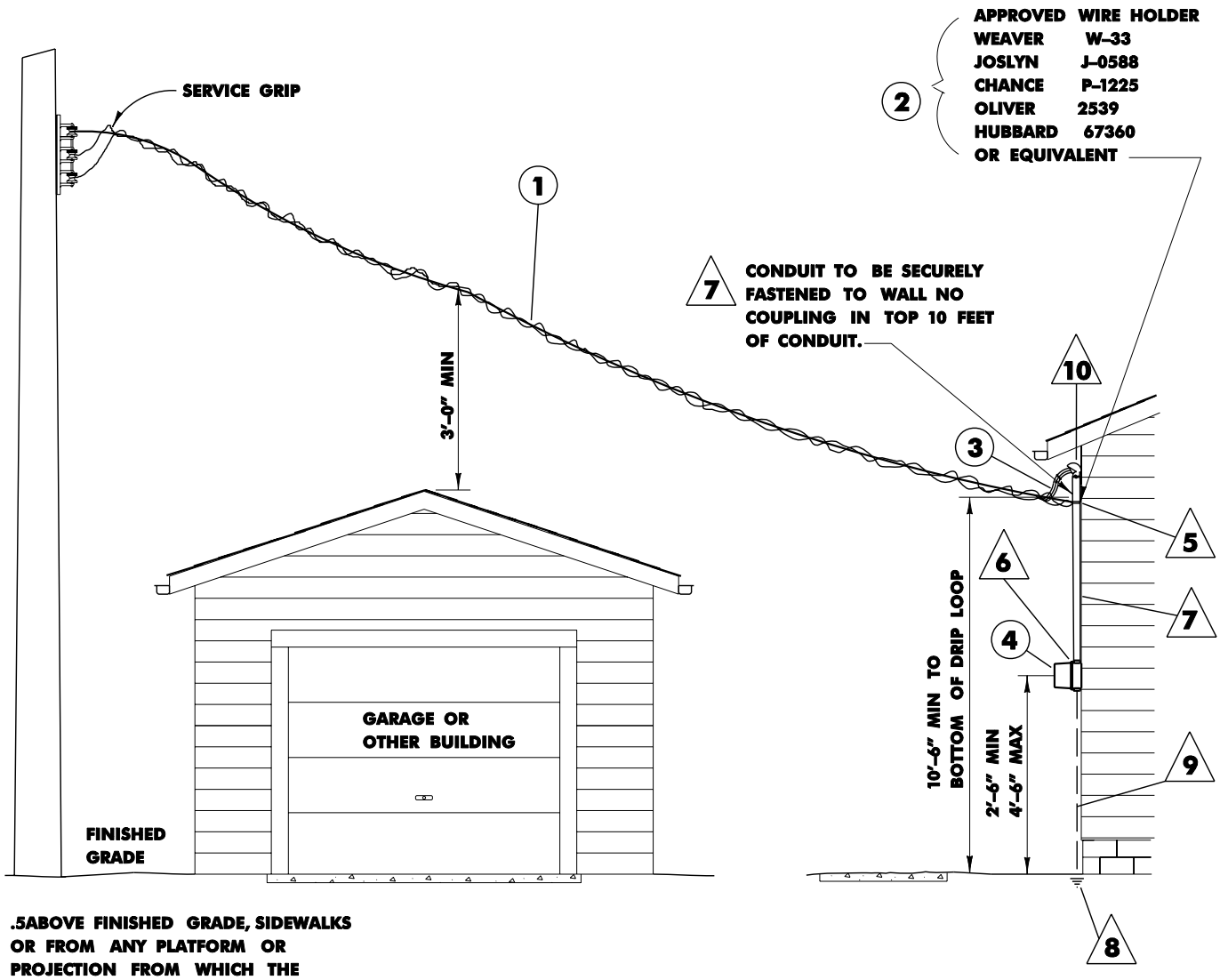
ISSUED DATE _____

RESIDENTIAL OVERHEAD SERVICE

SERVICE RISER CONDUIT ON EXTERIOR WALL

6.09

M118



.5ABOVE FINISHED GRADE, SIDEWALKS OR FROM ANY PLATFORM OR PROJECTION FROM WHICH THE CONDUCTOR MAY BE REACHED....10.5FT

OVER RESIDENTIAL DRIVEWAY....15FT

OVER ROADS, STREETS, AND OTHER AREAS SUBJECT TO TRUCK TRAFFIC....15.5FT.

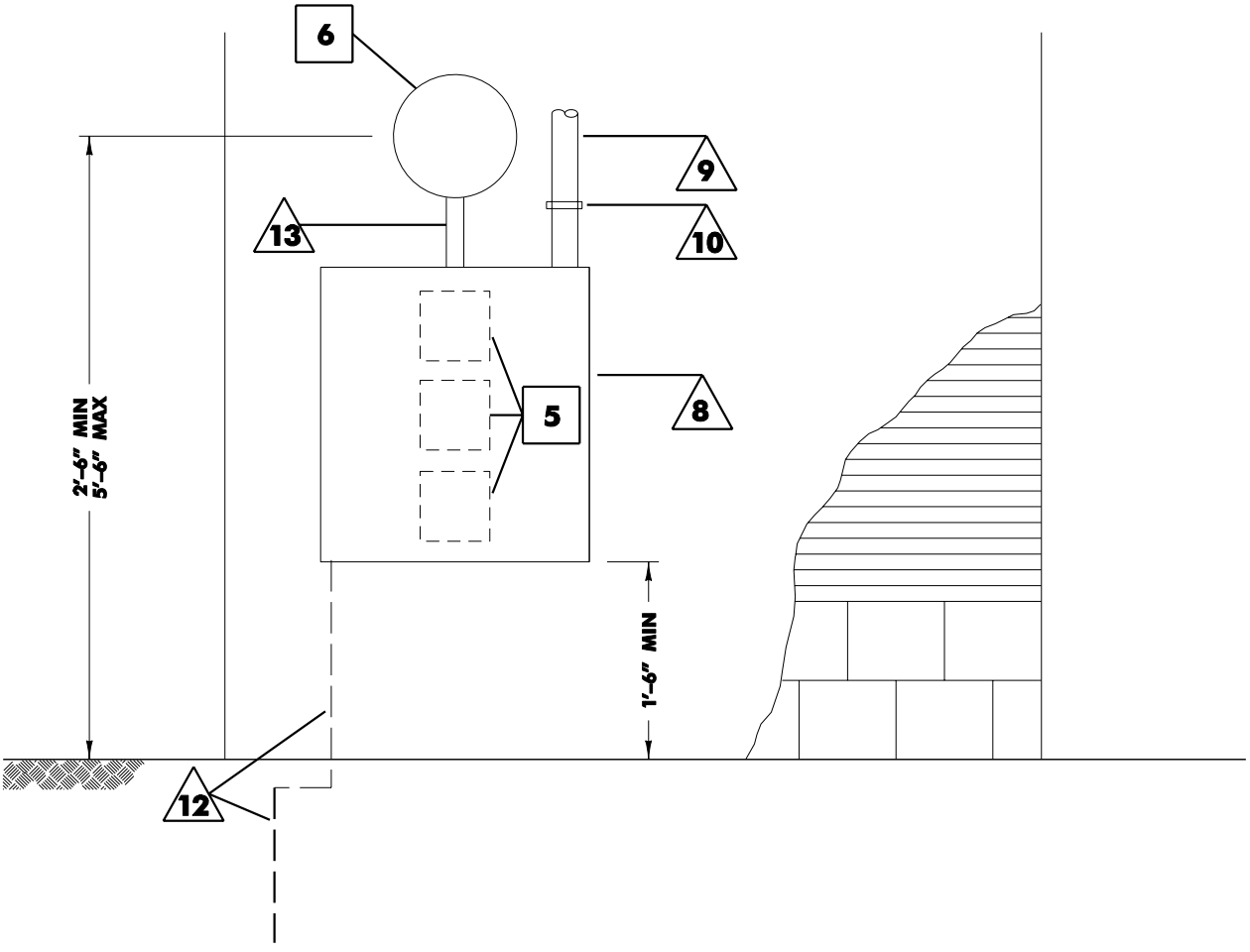
Revised 05-31-07 By MCH

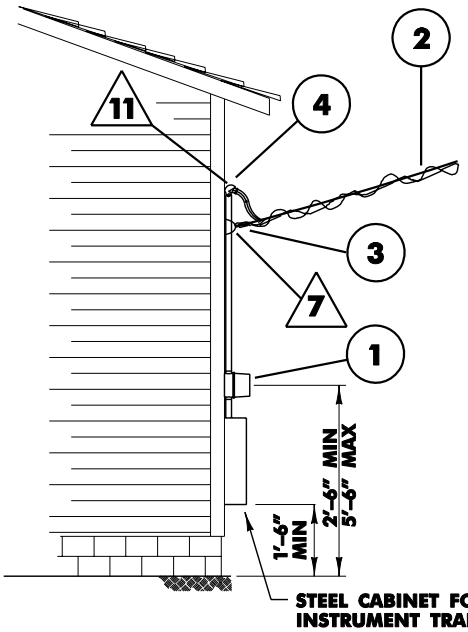
DESIGN ENTRY BY: BRANT DANGEL

ISSUED DATE_____

INSTRUMENT TRANSFORMER METERING
RESIDENTIAL & GENERAL SERVICE
OVERHEAD

6.10





REFER TO DWG: 4.06.3

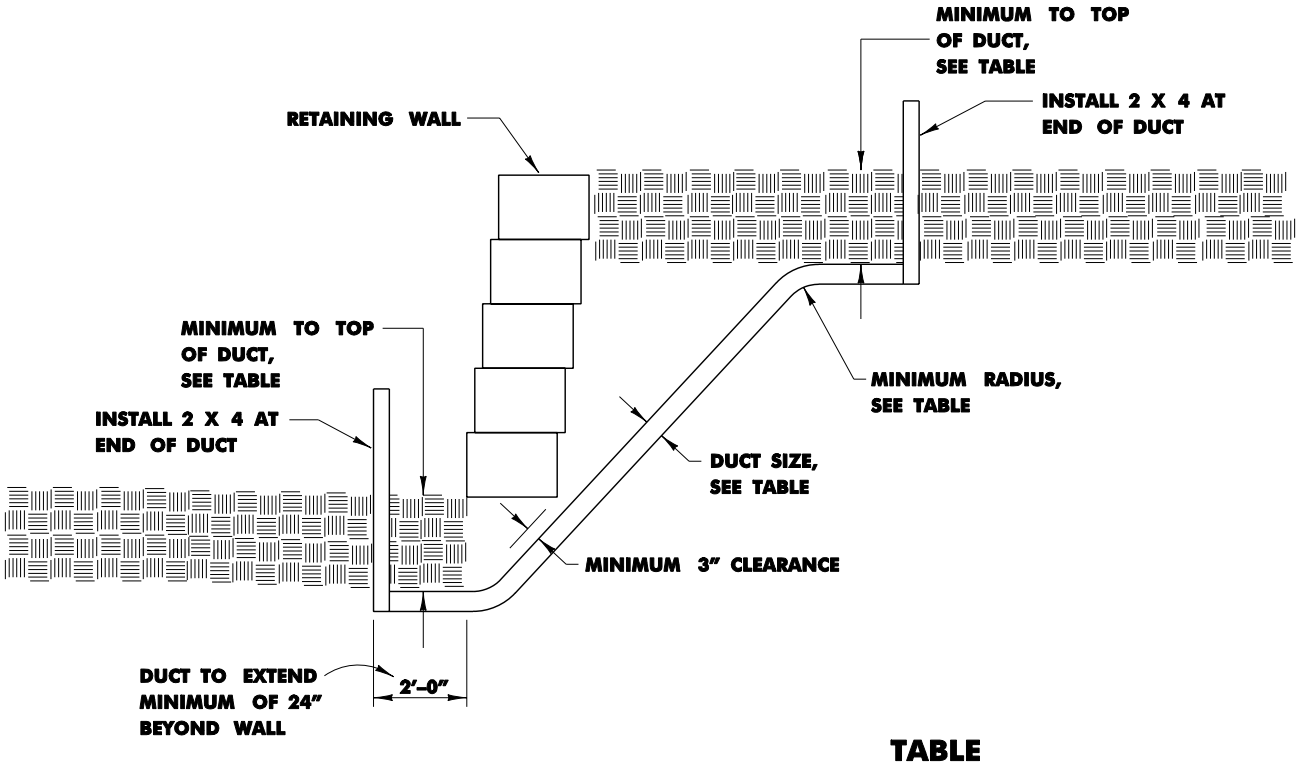
Revised 05-24-07 By MCH

DESIGN ENTRY BY: GRETE H SCHOLZ

ISSUED DATE_____

CUSTOMER–INSTALLED CONDUIT UNDER RETAINING WALL

7.02.1



TABLE

CABLE	MINIMUM COVER OVER DUCT	MINIMUM RADIUS OF ALL BENDS	DUCT SIZE
600V OR LESS			
200A HOUSE SERVICE	24 INCHES	24 INCHES	2 1/2 INCHES
320A HOUSE SERVICE	24 INCHES	24 INCHES	3 INCHES
OVER 600V	42 INCHES	36 INCHES	4 INCHES

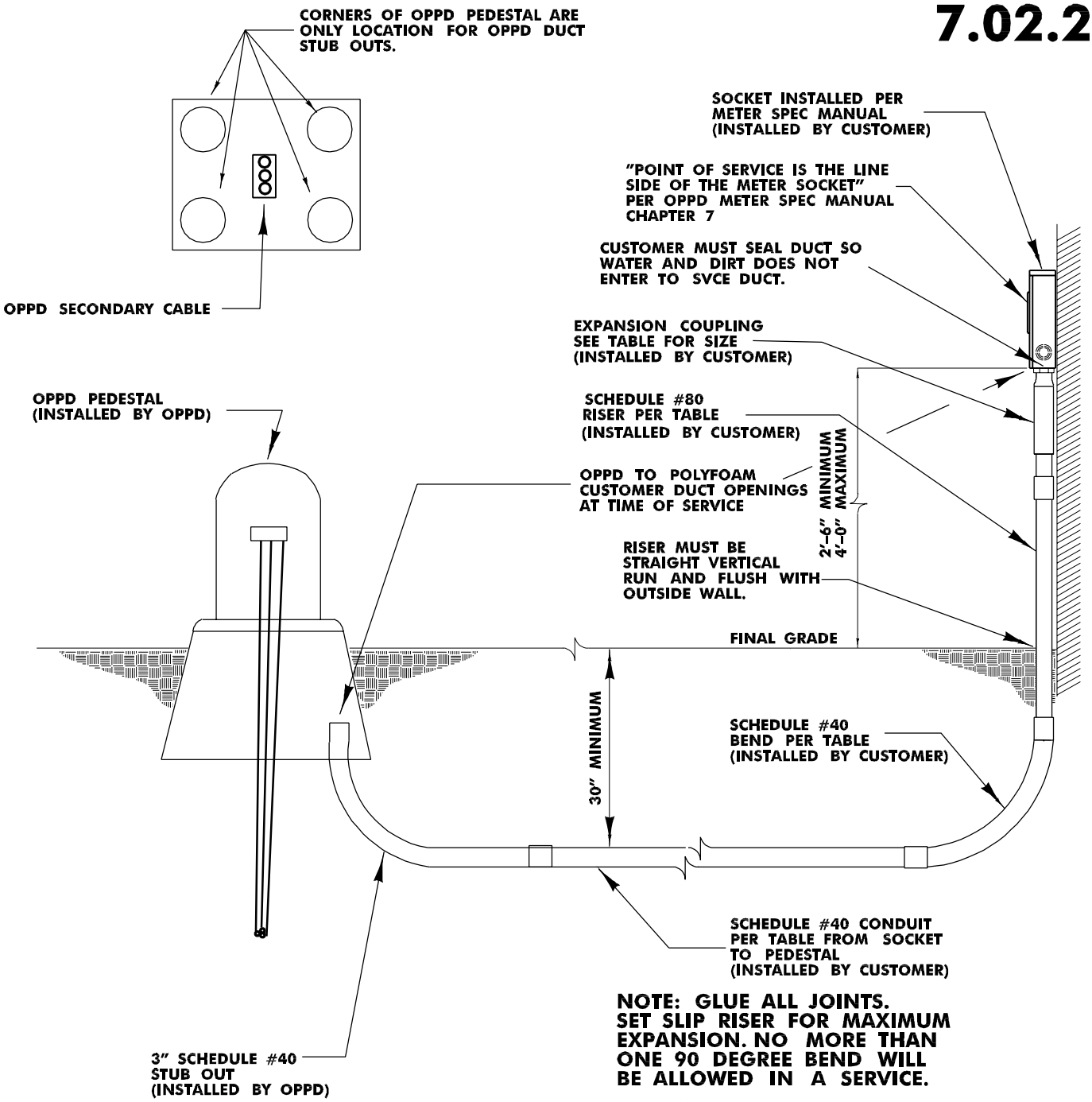
Revised 07-03-00 By BED

DESIGN ENTRY BY: BRANT DANGEL

ISSUED DATE_____

DUCTED SERVICE REQUIREMENTS

7.02.2



NOTE: GLUE ALL JOINTS. SET SLIP RISER FOR MAXIMUM EXPANSION. NO MORE THAN ONE 90 DEGREE BEND WILL BE ALLOWED IN A SERVICE.

SERVICE DUCT MUST BE INSTALLED OUTSIDE OPPD EASEMENTS

IF CUSTOMER WANTS TO REDUCE DUCT SIZE TO 2 1/2" THEY WILL NEED TO PURCHASE A 3" TO 2 1/2" REDUCING COUPLING.

TABLE

SERVICE SIZE	MINIMUM COVER OVER DUCT	MINIMUM RADIUS OF ALL BENDS	MINIMUM DUCT SIZE
200A HOUSE SERVICE	30 INCHES	24 INCHES	2 1/2 INCHES
320A HOUSE SERVICE	30 INCHES	24 INCHES	3 INCHES

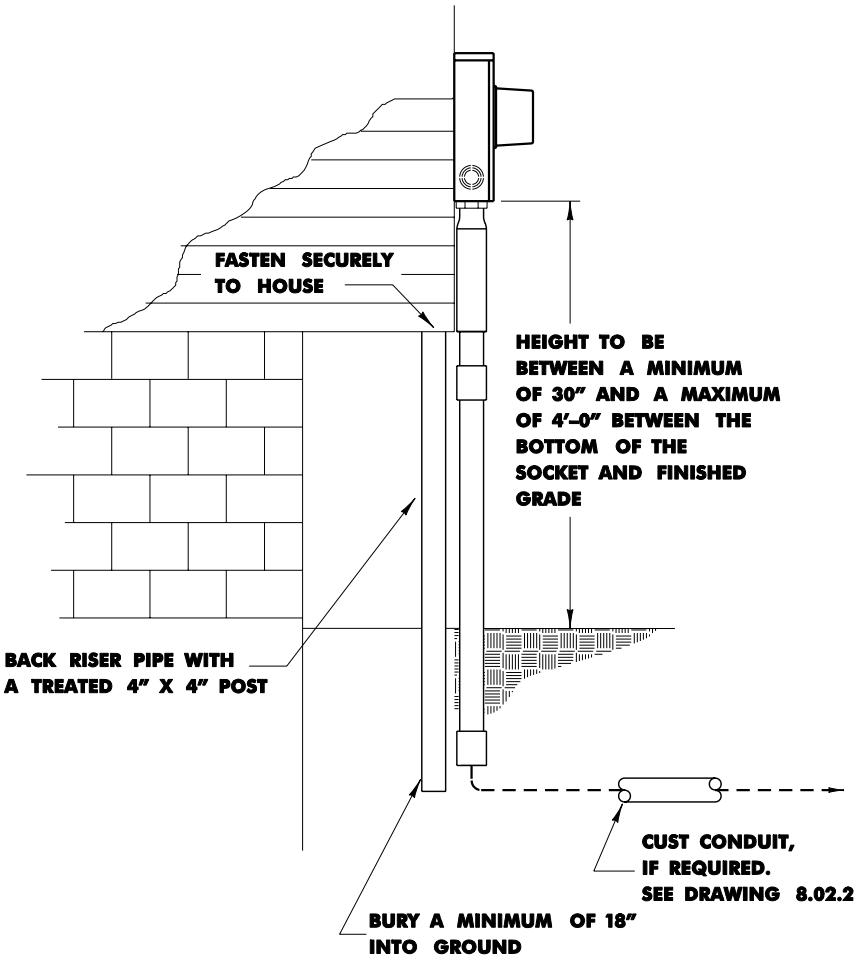
Revised 01-21-14 By AMJ

DESIGN ENTRY BY: ADOLFO MARTINEZ JR

ISSUED DATE_____

UNDERGROUND RESIDENTIAL SOCKET ON A CANTILEVER

7.04.1



NOTES:

TERMINALS FOR MAXIMUM 350 KCMIL COPPER OR ALUMINUM CONDUCTOR.

METER SOCKET AVAILABLE WITH FIFTH TERMINAL, FOR THREE WIRE 120/208 SERVICE.

PATH FOR SERVICE CONDUCTORS MUST BE CLEAR OF OBSTRUCTION AND AT FINAL GRADE BEFORE INSTALLATION OF SERVICE.

AFTER ENTRANCE EQUIPMENT IS INSTALLED CALL ACCOUNT SERVICES AT 536-4155 OR OPPD'S AREA OFFICE FOR CABLE INSTALLATION.

150 FT MAXIMUM RUN.

A GROUND ROD (NEC SUPPLEMENTAL GROUND) MUST BE INSTALLED NEAR THE METER SOCKET WITH AN EQUIPMENT GROUNDING CONDUCTOR RUNNING FROM THE GROUND ROD TO THE GROUNDING LUG PROVIDED IN THE METER SOCKET.

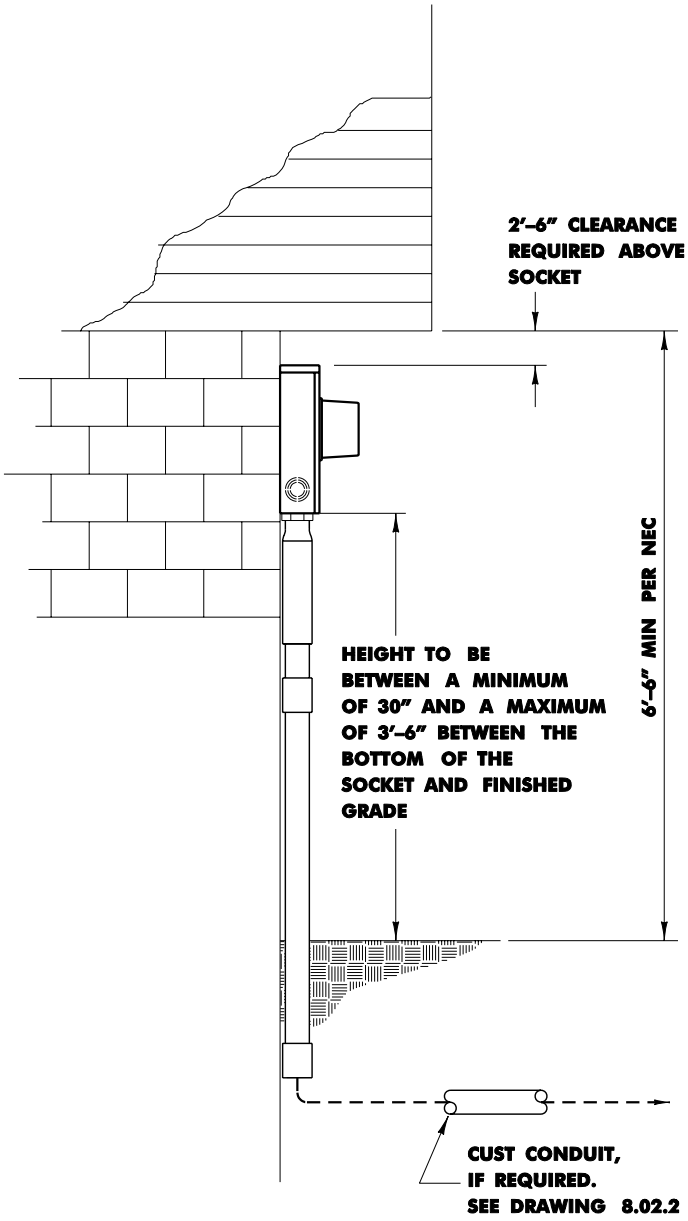
SOURCE AND LOAD CONDUIT CAN BE INTERCHANGED BY PRIOR APPROVAL ONLY. DETAILS ON CHANGES TO THIS DRAWING WILL BE GIVEN WHEN APPROVAL IS GRANTED.

Revised 09-15-08 By SAH
DESIGN ENTRY BY: BRANT DANGEL

ISSUED DATE _____

UNDERGROUND RESIDENTIAL SOCKET UNDER A CANTILEVER

7.04.2



NOTES:

TERMINALS FOR MAXIMUM 350 KCMIL COPPER OR ALUMINUM CONDUCTOR.

METER SOCKET AVAILABLE WITH FIFTH TERMINAL, FOR THREE WIRE 120/208 SERVICE.

PATH FOR SERVICE CONDUCTORS MUST BE CLEAR OF OBSTRUCTION AND AT FINAL GRADE BEFORE INSTALLATION OF SERVICE.

AFTER ENTRANCE EQUIPMENT IS INSTALLED CALL ACCOUNT SERVICES AT 536–4155 OR OPPD'S AREA OFFICE FOR CABLE INSTALLATION.

150 FT MAXIMUM RUN.

A GROUND ROD (NEC SUPPLEMENTAL GROUND) MUST BE INSTALLED NEAR THE METER SOCKET WITH AN EQUIPMENT GROUNDING CONDUCTOR RUNNING FROM THE GROUND ROD TO THE GROUNDING LUG PROVIDED IN THE METER SOCKET.

SOURCE AND LOAD CONDUIT CAN BE INTERCHANGED BY PRIOR APPROVAL ONLY. DETAILS ON CHANGES TO THIS DRAWING WILL BE GIVEN WHEN APPROVAL IS GRANTED.

Revised 09-19-05 By JML
DESIGN ENTRY BY: BRANT DANGEL

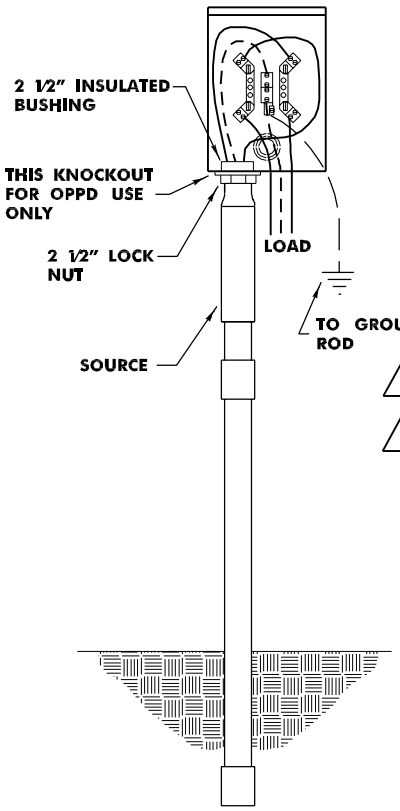
ISSUED DATE_____

SURFACE TYPE METER SOCKET

120/240 VOLT 3 WIRE 200 AMPERE UNDERGROUND SERVICE
"RESIDENTIAL SERVICE ONLY"

7.05.1

M118, M118D
120/208V 1Ø 3W: M218, M218D



OPPD SOURCE MAY USE RIGHT OR LEFT KNOCKOUT BASED ON SITE CONDITIONS.

NOTES:

TERMINALS FOR MAXIMUM 350 KCMIL COPPER OR ALUMINUM CONDUCTOR.

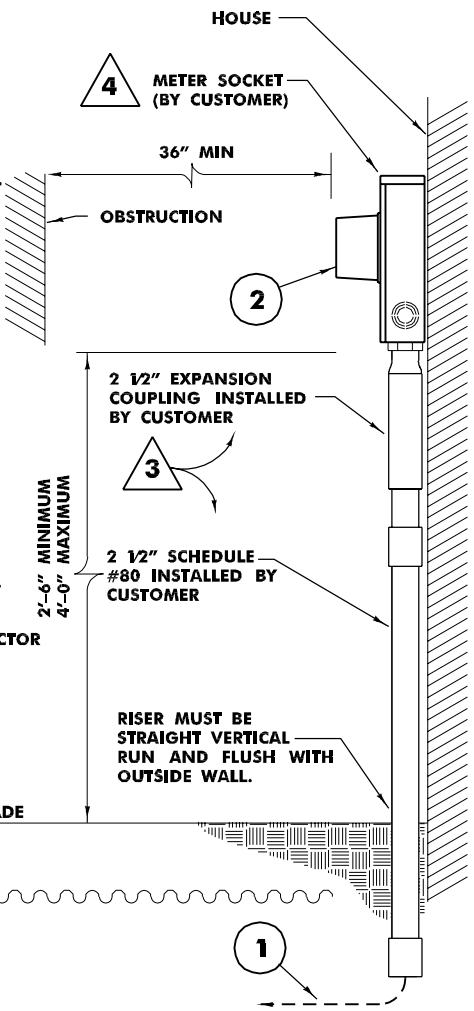
METER SOCKET AVAILABLE WITH FIFTH TERMINAL, FOR THREE WIRE 120/208 SERVICE AT 9 O'CLOCK POSITION ONLY.

PATH FOR SERVICE CONDUCTORS MUST BE CLEAR OF OBSTRUCTION AND AT FINAL GRADE BEFORE INSTALLATION OF SERVICE.

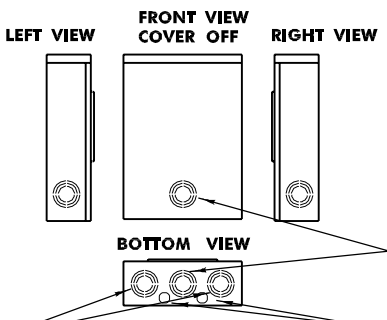
AFTER ENTRANCE EQUIPMENT IS INSTALLED CALL ACCOUNT SERVICES AT 536-4155 OR OPPD'S AREA OFFICE FOR CABLE INSTALLATION.

5 150 FT MAXIMUM RUN.

6 A GROUND ROD (NEC SUPPLEMENTAL GROUND) MUST BE INSTALLED 6" TO THE SIDE OF THE METER SOCKET WITH AN EQUIPMENT GROUNDING CONDUCTOR RUNNING FROM THE GROUND ROD TO THE GROUNDING LUG PROVIDED IN THE METER SOCKET.



KNOCKOUT LOCATION



CONTRACTOR MUST USE THE KNOCKOUTS DESCRIBED BELOW FOR THE LINE AND LOAD CONDUCTORS. DO NOT USE ANY OTHER KNOCKOUT OR DRILL ANY OTHER HOLES IN THE METER SOCKET. KNOCKOUT LOCATIONS ON DRAWING ARE APPROXIMATE AND NOT DRAWN TO SCALE. MIDDLE BOTTOM KNOCKOUT NOT TO BE USED FOR RISER FOR OPPD CABLE.

ANY PROPOSED REQUESTS TO USE OTHER KNOCKOUTS REQUIRES PRIOR APPROVAL BY OPPD.

Revised 12-17-10 By JML
DESIGN ENTRY BY: ROBERT B ADAMS

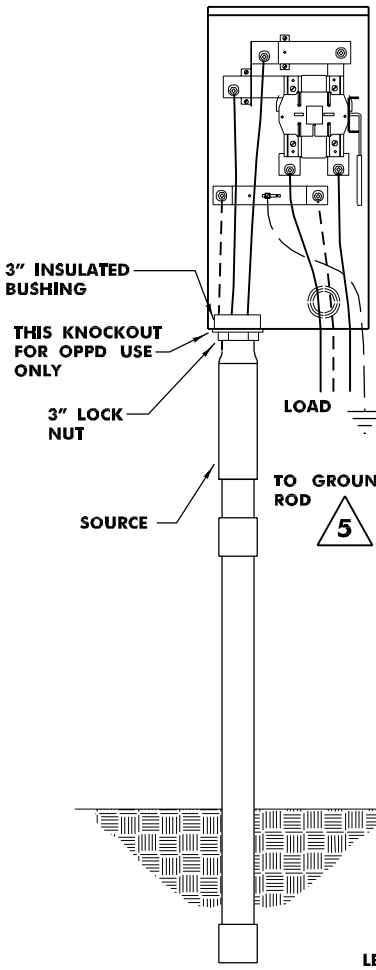
ISSUED DATE _____

SURFACE TYPE METER SOCKET

120/240 VOLT 3 WIRE 320 AMPERE UNDERGROUND SERVICE
"RESIDENTIAL SERVICE ONLY"

7.05.2

M135



NOTES:

TERMINALS FOR MAXIMUM 500 KCMIL OR PARALLEL 350 KCMIL COPPER OR ALUMINUM CONDUCTOR.

PATH FOR SERVICE CONDUCTORS MUST BE CLEAR OF OBSTRUCTIONS AND AT FINAL GRADE BEFORE INSTALLATION OF SERVICE.

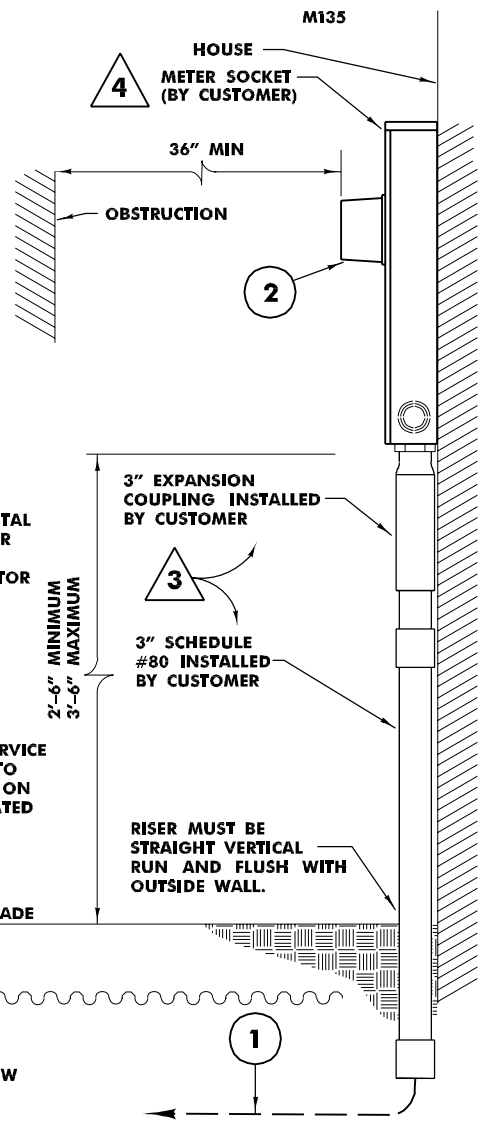
AFTER ENTRANCE EQUIPMENT IS INSTALLED CALL ACCOUNT SERVICES AT 536–4155 OR OPPD'S AREA OFFICE FOR CABLE INSTALLATION.

150 FT MAXIMUM RUN.

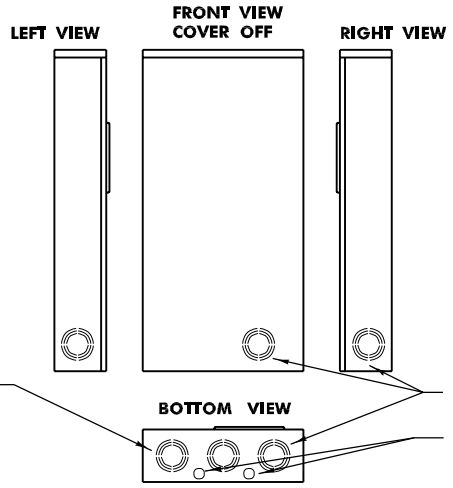
A GROUND ROD (NEC SUPPLEMENTAL GROUND) MUST BE INSTALLED NEAR THE METER SOCKET WITH AN EQUIPMENT GROUNDING CONDUCTOR RUNNING FROM THE GROUND ROD TO THE GROUNDING LUG PROVIDED IN THE METER SOCKET.

SOURCE AND LOAD CONDUIT CANNOT BE INTERCHANGED.

FOR HOMES CONVERTING FROM OVERHEAD TO UNDERGROUND SERVICE CALL ESD AT AREA OFFICE PRIOR TO INSTALLATION FOR INSTRUCTIONS ON DUCT INSTALLATION AND ASSOCIATED FEES.



KNOCKOUT LOCATION



CONTRACTOR MUST USE THE KNOCKOUTS DESCRIBED BELOW FOR THE LINE AND LOAD CONDUCTORS. DO NOT USE ANY OTHER KNOCKOUT OR DRILL ANY OTHER HOLES IN THE METER SOCKET. KNOCKOUT LOCATIONS ON DRAWING ARE APPROXIMATE AND NOT DRAWN TO SCALE.

Revised 09-09-09 By JML

DESIGN ENTRY BY: ROBERT B ADAMS

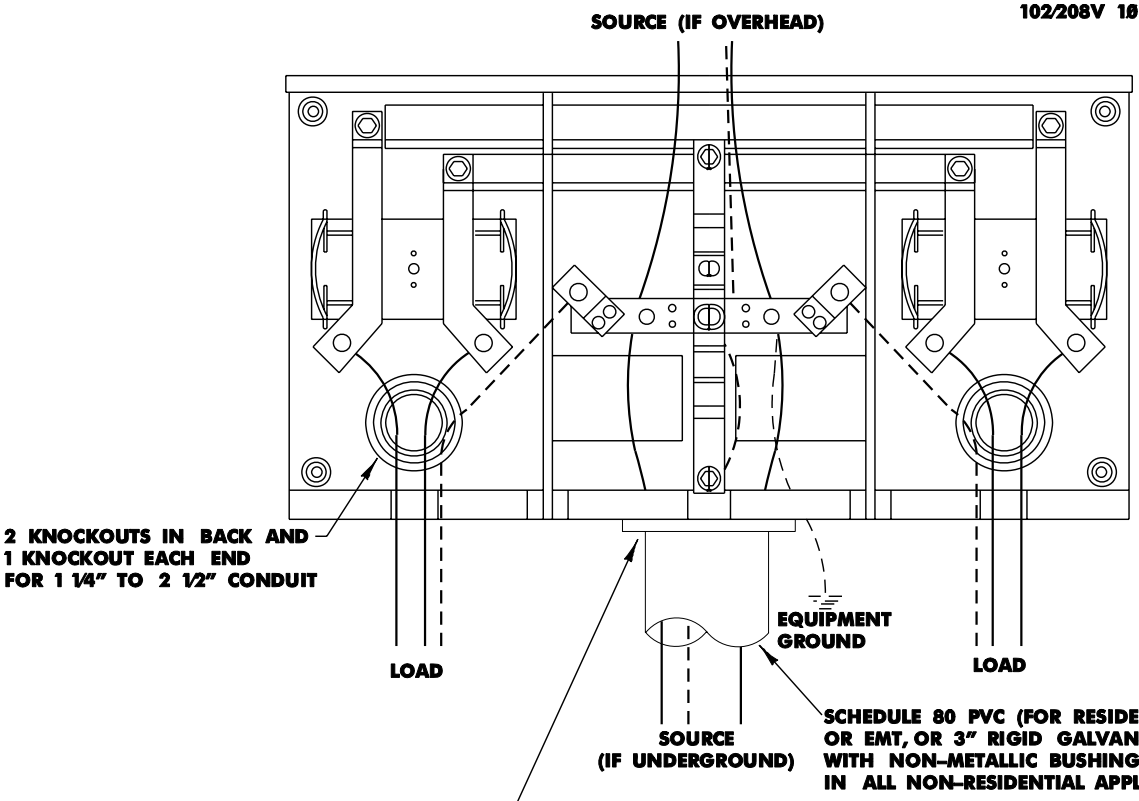
ISSUED DATE _____

1Ø SURFACE TYPE METER SOCKET

120/240 VOLT 3 WIRE UNDERGROUND /OVERHEAD SERVICE
200 AMPERES PER POSITION

7.05.3

M153
102/208V 1ø 3W: M253



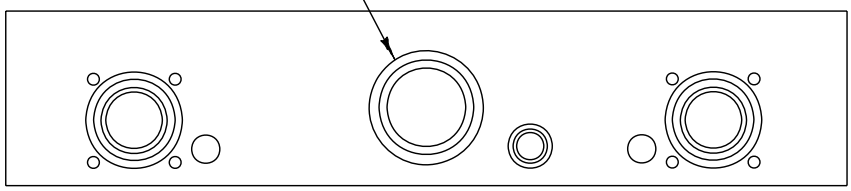
FRONT VIEW
COVER REMOVED

THIS KNOCKOUT FOR OPPD USE ONLY
FOR RESIDENTIAL APPLICATIONS

NOTES:

SOURCE TERMINALS FOR MAXIMUM 600 KCMIL CONDUCTORS, LOAD TERMINALS FOR MAXIMUM 350 KCMIL CONDUCTORS.

METER SOCKET AVAILABLE WITH FIFTH TERMINAL, FOR THREE WIRE WYE SERVICE.



BOTTOM VIEW

1 KNOCKOUTS FOR 2" TO 3" CONDUIT
2 KNOCKOUTS FOR 1 1/4" TO 2 1/2" CONDUIT
1 KNOCKOUTS FOR 1/2" TO 1" CONDUIT
2 KNOCKOUTS FOR 1/2" CONDUIT
1 KNOCKOUT FOR 1/4" EQUIPMENT GROUND

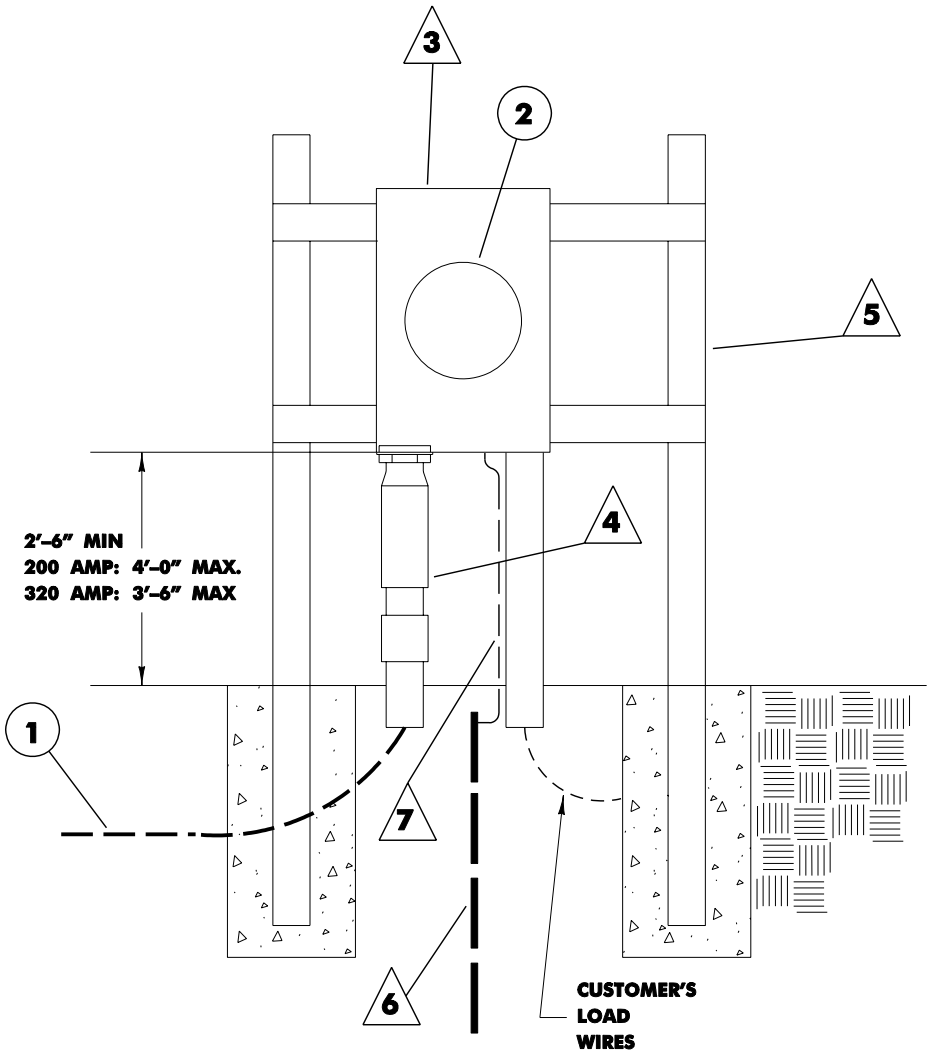
Revised 06-27-07 By JML
DESIGN ENTRY BY: ROBERT B ADAMS

ISSUED DATE _____

CUSTOMER'S METER SUPPORT
RESIDENTIAL, UNDERGROUND

7.06

M121
M121D
120/208V 1Ø 3W: M221
M221D



NOTES:

TERMINALS FOR MAXIMUM 250 KCMIL COPPER OR ALUMINUM CONDUCTOR.

METER SOCKET AVAILABLE WITH FIFTH TERMINAL, FOR THREE WIRE 120/208 SERVICE.

PATH FOR SERVICE CONDUCTORS MUST BE CLEAR OF OBSTRUCTION AND AT FINAL GRADE BEFORE INSTALLATION OF SERVICE.

AFTER ENTRANCE EQUIPMENT IS INSTALLED CALL ACCOUNT SERVICES AT 536–4155 OR OPPD'S AREA OFFICE FOR CABLE INSTALLATION.

150 FT MAXIMUM RUN.

A GROUND ROD (NEC SUPPLEMENTAL GROUND) MUST BE INSTALLED NEAR THE METER SOCKET WITH AN EQUIPMENT GROUNDING CONDUCTOR RUNNING FROM THE GROUND ROD TO THE GROUNDING LUG PROVIDED IN THE METER SOCKET.

SOURCE AND LOAD CONDUIT CAN BE INTERCHANGED BY PRIOR APPROVAL ONLY. DETAILS ON CHANGES TO THIS DRAWING WILL BE GIVEN WHEN APPROVAL IS GRANTED.

SEE DWG: 7.05.1 FOR ACCEPTABLE CONDUIT KNOCKOUT LOCATIONS IN SOCKET.

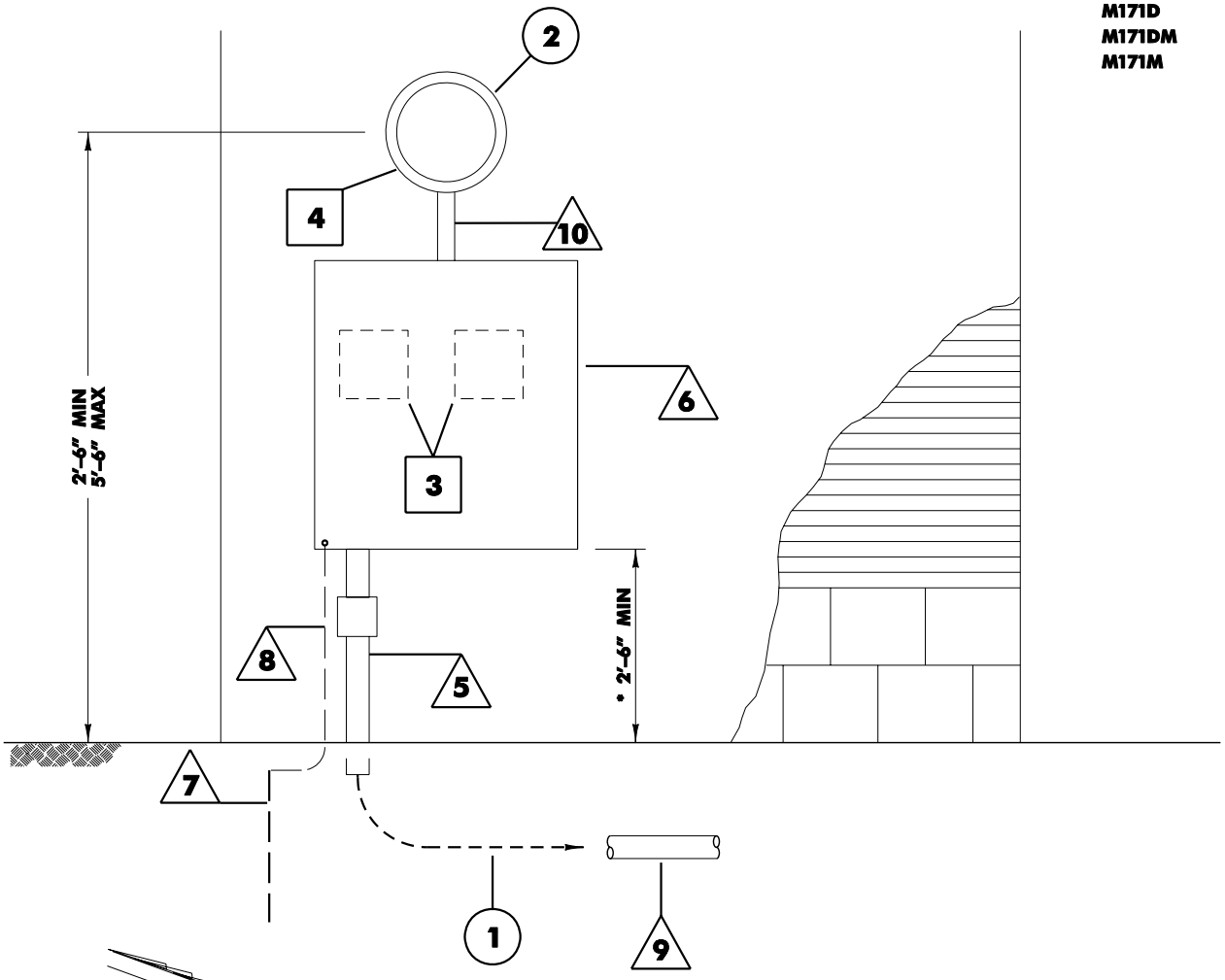
Revised 05-24-07 By MCH
DESIGN ENTRY BY: BRANT DANGEL

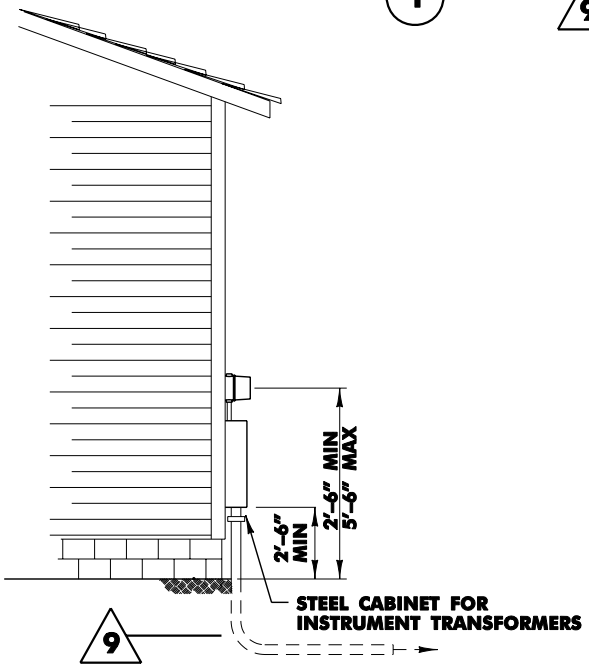
ISSUED DATE _____

INSTRUMENT TRANSFORMER METERING
RESIDENTIAL, UNDERGROUND

7.07

M171
M171D
M171DM
M171M





* TO PROVIDE SUFFICIENT SPACE FOR THE CUSTOMER TO INSTALL A SLIP-FIT RISER PIPE DOWN FROM THE CT CABINET TO GRADE LEVEL

REFER TO DWG: 4.06.3

Revised 07-03-00 By BED
DESIGN ENTRY BY: GRETE H SCHOLZ

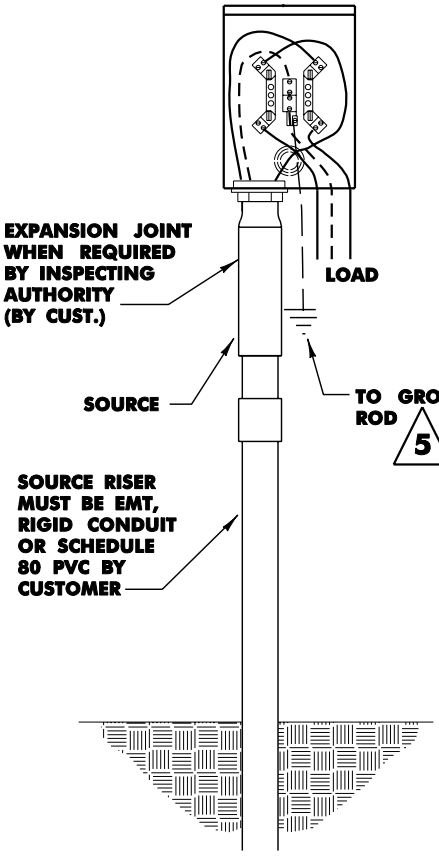
ISSUED DATE_____

SURFACE TYPE METER SOCKET

120/240 VOLT 3 WIRE 200 AMPERE UNDERGROUND SERVICE
"GENERAL SERVICE ONLY"

8.04.1

M123
M123D
120/208V 1Ø 3W: M223
M223D



NOTES:

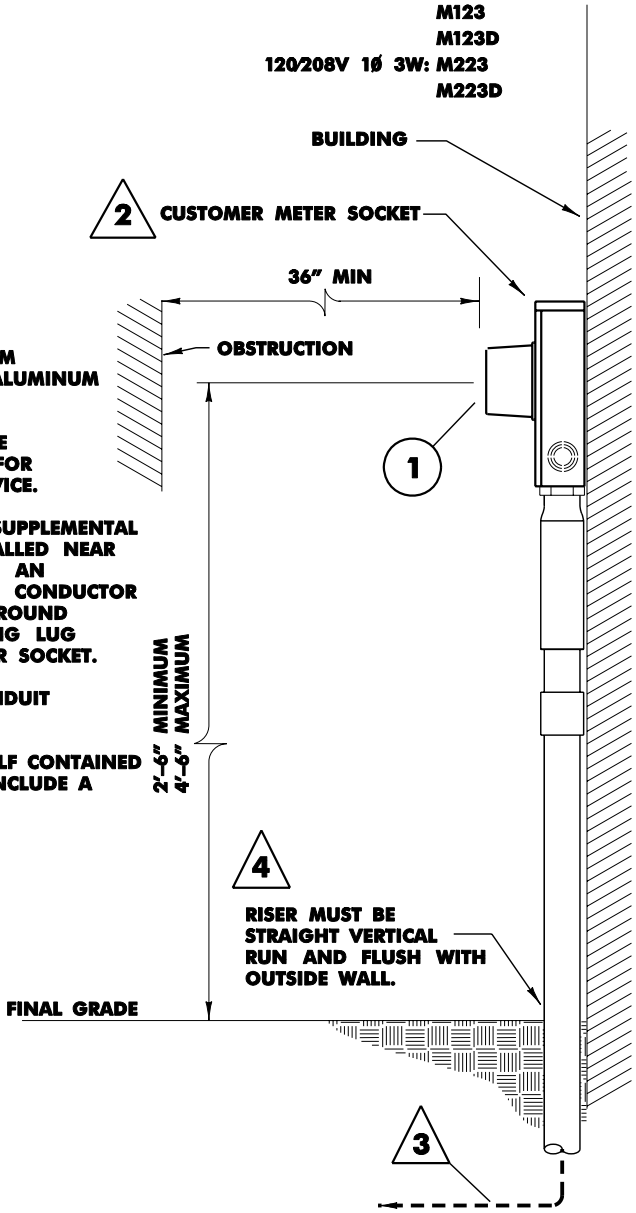
TERMINALS FOR MAXIMUM 350 KCMIL COPPER OR ALUMINUM CONDUCTOR.

METER SOCKET AVAILABLE WITH FIFTH TERMINAL. FOR THREE WIRE 120/208 SERVICE.

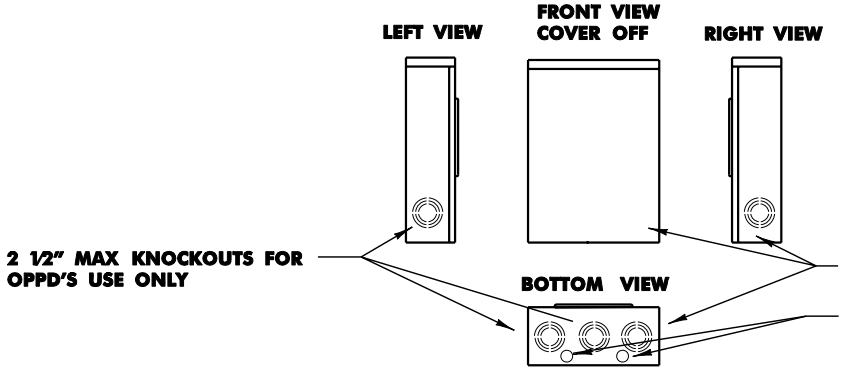
A GROUND ROD (NEC SUPPLEMENTAL GROUND) MUST BE INSTALLED NEAR THE METER SOCKET WITH AN EQUIPMENT GROUNDING CONDUCTOR RUNNING FROM THE GROUND ROD TO THE GROUNDING LUG PROVIDED IN THE METER SOCKET.

SOURCE AND LOAD CONDUIT CAN BE INTERCHANGED.

ALL GENERAL SERVICE SELF CONTAINED METER SOCKETS SHALL INCLUDE A LEVER BY-PASS.



KNOCKOUT LOCATION



CONTRACTOR MUST USE THE KNOCKOUTS DESCRIBED BELOW FOR THE LINE AND LOAD CONDUCTORS. DO NOT DRILL ANY OTHER HOLES IN THE METER SOCKET. KNOCKOUT LOCATIONS ON DRAWING ARE APPROXIMATE AND NOT DRAWN TO SCALE.

REFER TO DWG: 4.02.4

Revised 02-09-06 By JML
DESIGN ENTRY BY: ROBERT B ADAMS

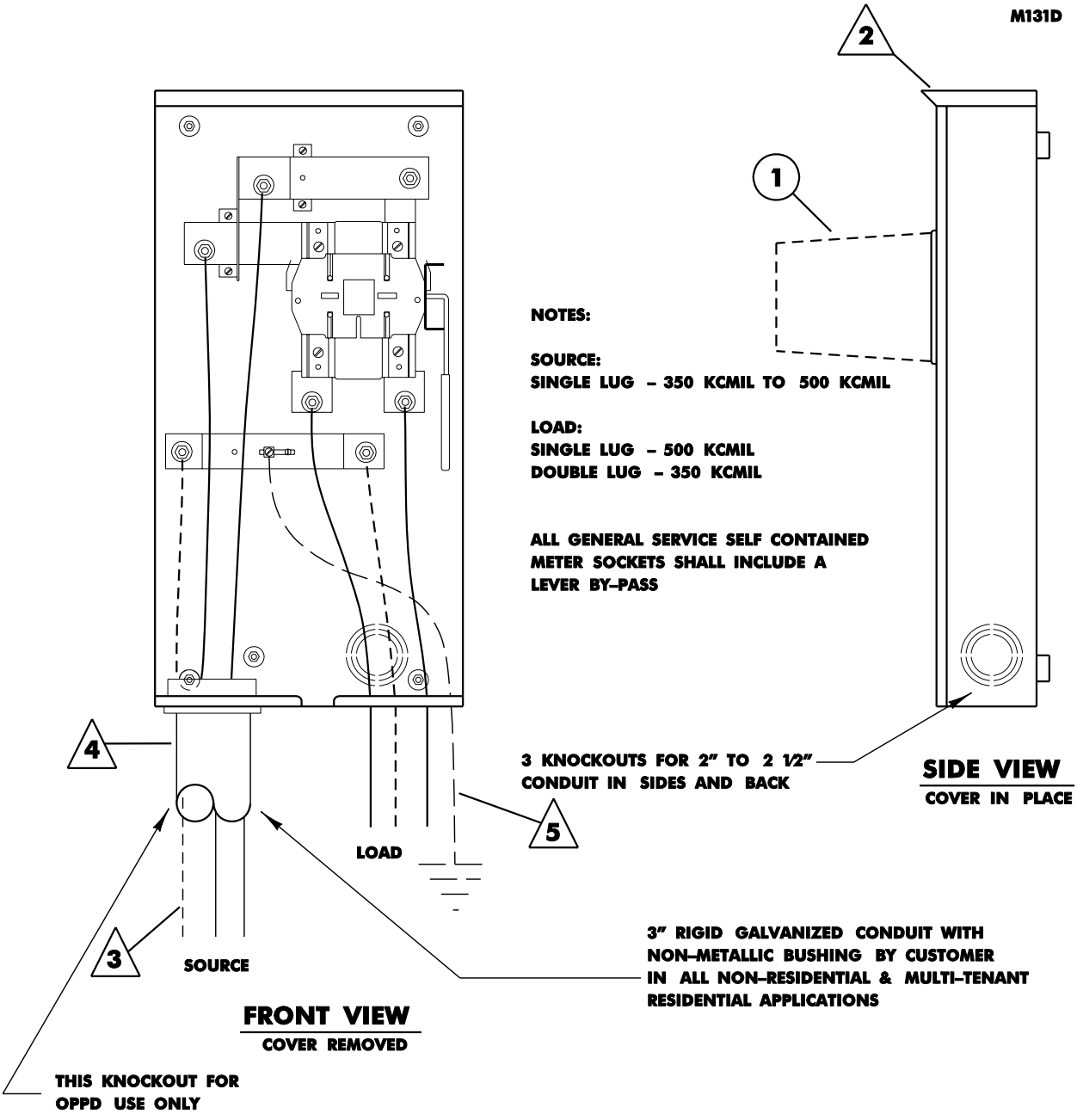
ISSUED DATE _____

1Ø SURFACE TYPE METER SOCKET

120/240 VOLT 3 WIRE 320 AMPERES
UNDERGROUND SERVICE
GENERAL SERVICE ONLY

8.04.2

M131
M131D



NOTES:

SOURCE:
SINGLE LUG – 350 KCMIL TO 500 KCMIL

LOAD:
SINGLE LUG – 500 KCMIL
DOUBLE LUG – 350 KCMIL

ALL GENERAL SERVICE SELF CONTAINED METER SOCKETS SHALL INCLUDE A LEVER BY–PASS

3 KNOCKOUTS FOR 2" TO 2 1/2" CONDUIT IN SIDES AND BACK

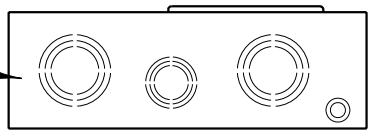
SIDE VIEW
COVER IN PLACE

3" RIGID GALVANIZED CONDUIT WITH NON–METALLIC BUSHING BY CUSTOMER IN ALL NON–RESIDENTIAL & MULTI–TENANT RESIDENTIAL APPLICATIONS

FRONT VIEW
COVER REMOVED

THIS KNOCKOUT FOR OPPD USE ONLY

THIS KNOCKOUT FOR OPPD USE ONLY



REFER TO DWG: 4.02.7

BOTTOM VIEW

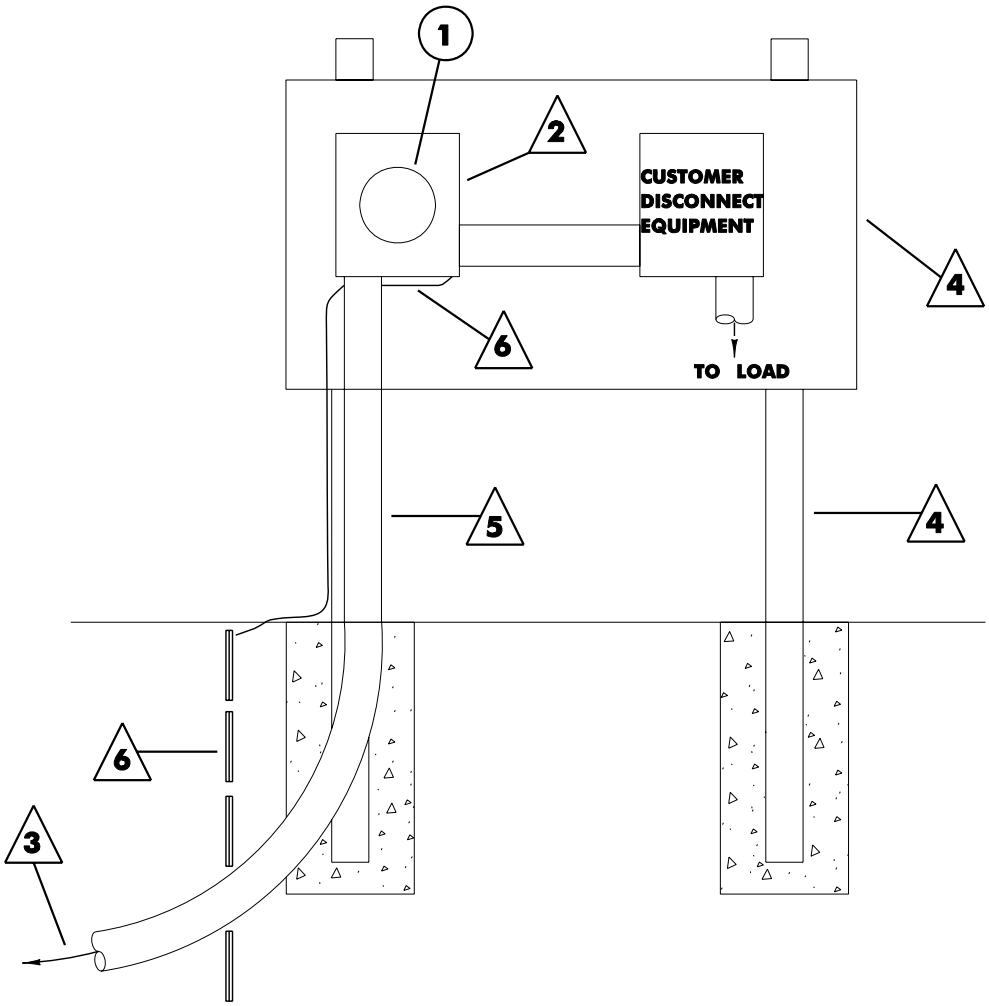
2 KNOCKOUTS FOR 1 1/2" TO 3" CONDUIT
1 KNOCKOUT FOR 1 1/2" TO 2 1/2" CONDUIT
1 KNOCKOUT FOR 1/4" AND 1/2" EQUIPMENT GROUND

Revised 05-31-07 By CCN
DESIGN ENTRY BY: BRANT DANGEL

ISSUED DATE _____

CUSTOMER'S METER SUPPORT
GENERAL SERVICE, UNDERGROUND

8.05



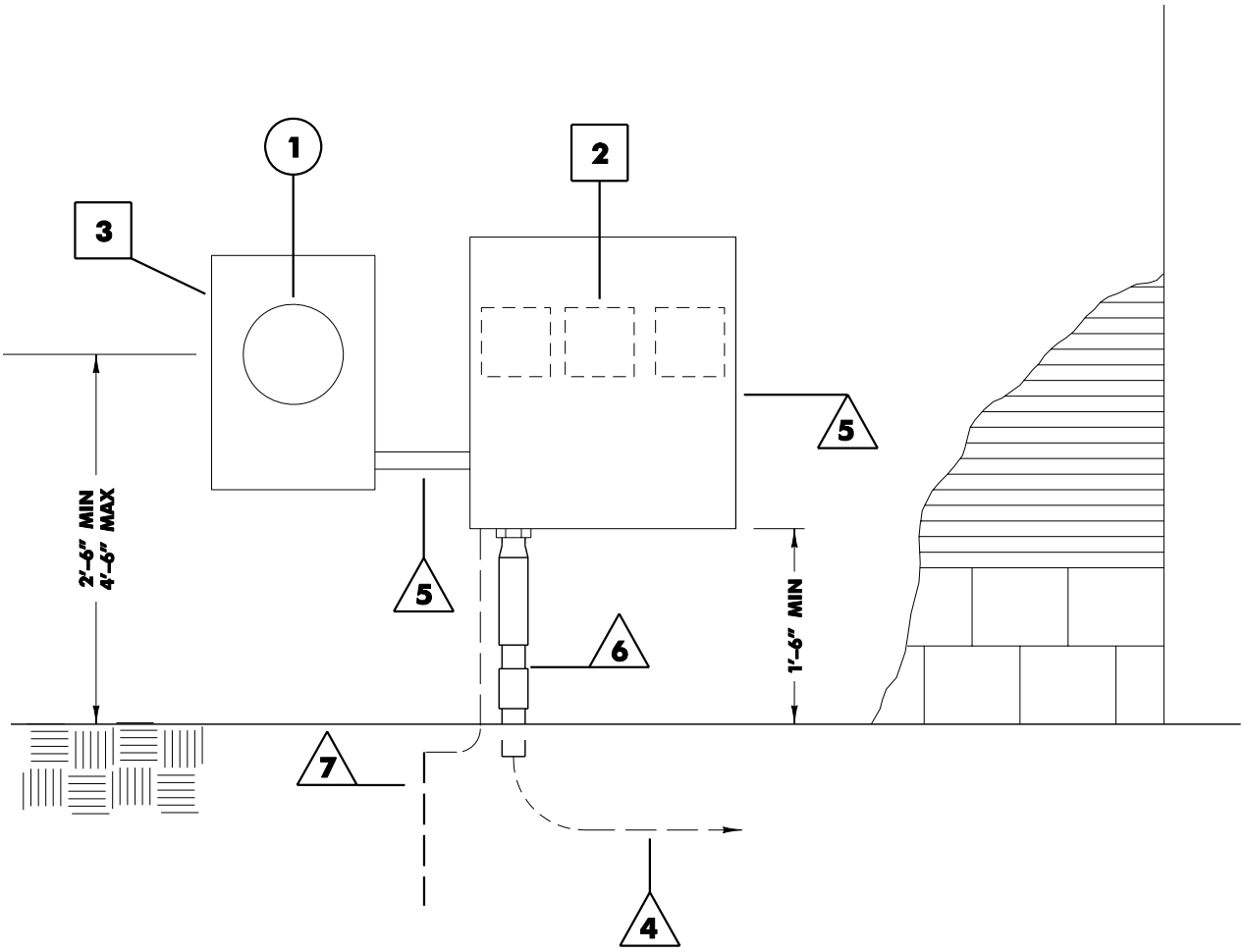
Revised 07-03-00 By BED

DESIGN ENTRY BY: GRETE H SCHOLZ

ISSUED DATE_____

INSTRUMENT TRANSFORMER METERING
GENERAL SERVICE, UNDERGROUND

8.06



REFER TO DWG:
120/240V 10 3W: 4.06.3
277/480V 30 4W & 120/208V 30 4W: 4.06.15
4.06.17
480V 30 3W: 4.06.9
4.06.11

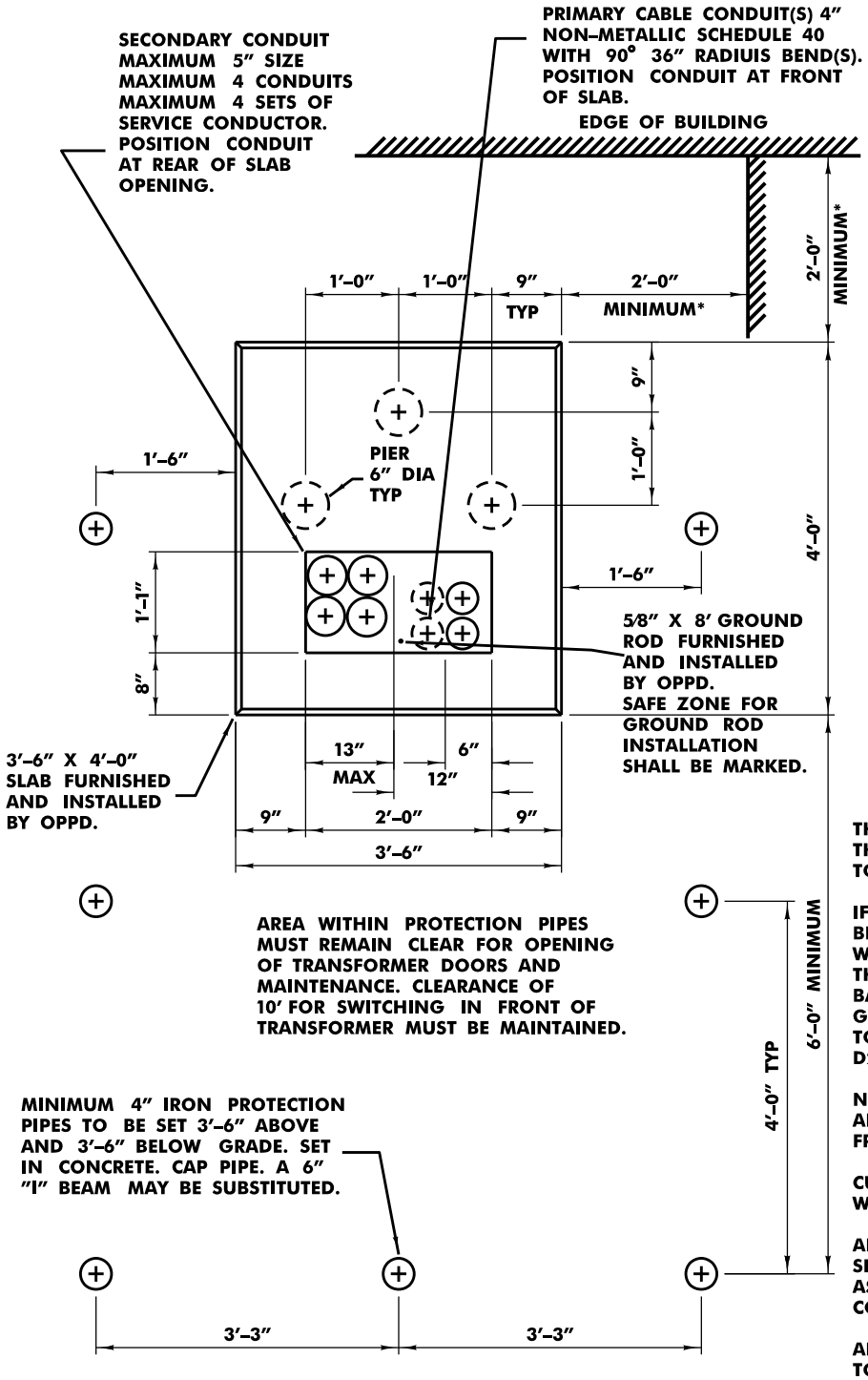
Revised 07-03-00 By BED
DESIGN ENTRY BY: GRETE H SCHOLZ

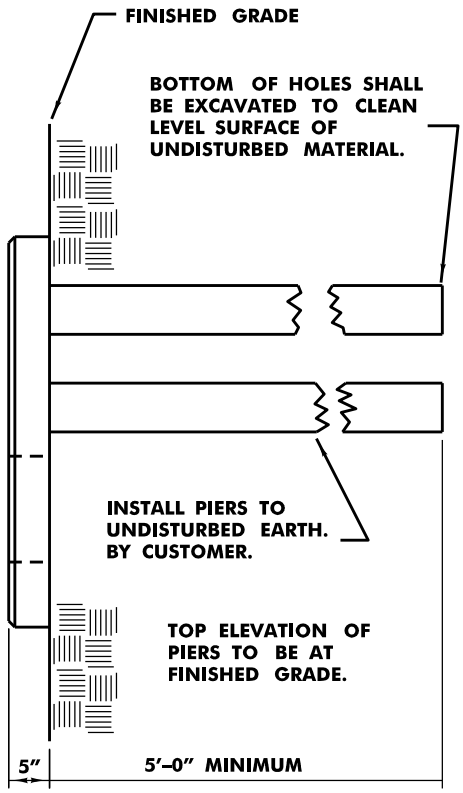
ISSUED DATE_____

1Ø PADMOUNT TRANSFORMER SLAB DETAIL

LOW PROFILE–TYPE, 25KVA TO 167KVA

8.08.1





THE TOP ONE (1) FOOT OF SUBGRADE BENEATH THE SLAB SHALL BE THOROUGHLY COMPACTED TO 90% OF MAXIMUM DENSITY PER ASTM D698.

IF THE TOP THREE (3) FEET OF SUBGRADE BENEATH THE SLAB IS SUSCEPTIBLE TO A HIGH WATER TABLE OR PERIODIC SATURATION, THE EXISTING SOIL SHALL BE EXCAVATED AND BACKFILLED WITH A CLEAN SAND OR GRAVEL AND THOROUGHLY COMPACTED TO 90% OF MAXIMUM DENSITY PER ASTM D2049 AND D1556.

NO WALLS TO BE BUILT AROUND OR CANOPIES ABOVE TRANSFORMER. PLACE TRANSFORMER AWAY FROM DOORS, WINDOWS, & BUILDING OPENINGS.*

CUSTOMER TO FURNISH ALL MATERIAL, EXCEPT WHERE NOTED.

ALL MATERIAL FURNISHED BY THE CUSTOMER SHALL EQUAL OR EXCEED THE STANDARDS AS SPECIFIED IN THE "NATIONAL ELECTRICAL CODE."

ALL CUSTOMER INSTALLED PRIMARY CONDUITS TO BE RODDED AND PROVEN CLEAR AND A JET LINE TO BE LEFT IN EACH CONDUIT.

ALL CONDUITS ENTERING SLAB TO BE VERTICAL AND AT A 90° ANGLE WITH TOP OF SLAB.

COORDINATE WITH OPPD TO INSPECT SITE PRIOR TO POURING CONCRETE. INSPECTION WILL INCLUDE LOCATION AND DEPTH OF HOLES FOR SUPPORT PIERS (IF REQUIRED), AND CONDUIT PLACEMENT. OPPD INSPECTION DOES NOT INCLUDE INSPECTING FOR INSURANCE RECOMMENDED BUILDING CLEARANCES.

* THIS DRAWING SHOWS THE MINIMUM CLEARANCE NEEDED FOR PHYSICAL REASONS; FACTORY MUTUAL INSURANCE COMPANY RECOMMENDS THE FOLLOWING SEPARATION DISTANCES BETWEEN THE SPECIFIED TYPE OF BUILDING AND TRANSFORMER FOR MINERAL–OIL FILLED TRANSFORMERS WITH UNDER 500 GALLONS OF OIL. BUILDING OWNERS AND THEIR CONTRACTORS ARE RESPONSIBLE FOR LOCATING THE SLAB PER OPPD MINIMUM CLEARANCE GUIDELINES AND THEIR INSURANCE COMPANY RECOMMENDATIONS.

TWO HOURS FIRE RESISTANT CONSTRUCTION	NON–COMBUSTIBLE CONSTRUCTION	COMBUSTIBLE CONSTRUCTION
5'	15'	25'

Revised 01-15-20 By CLS

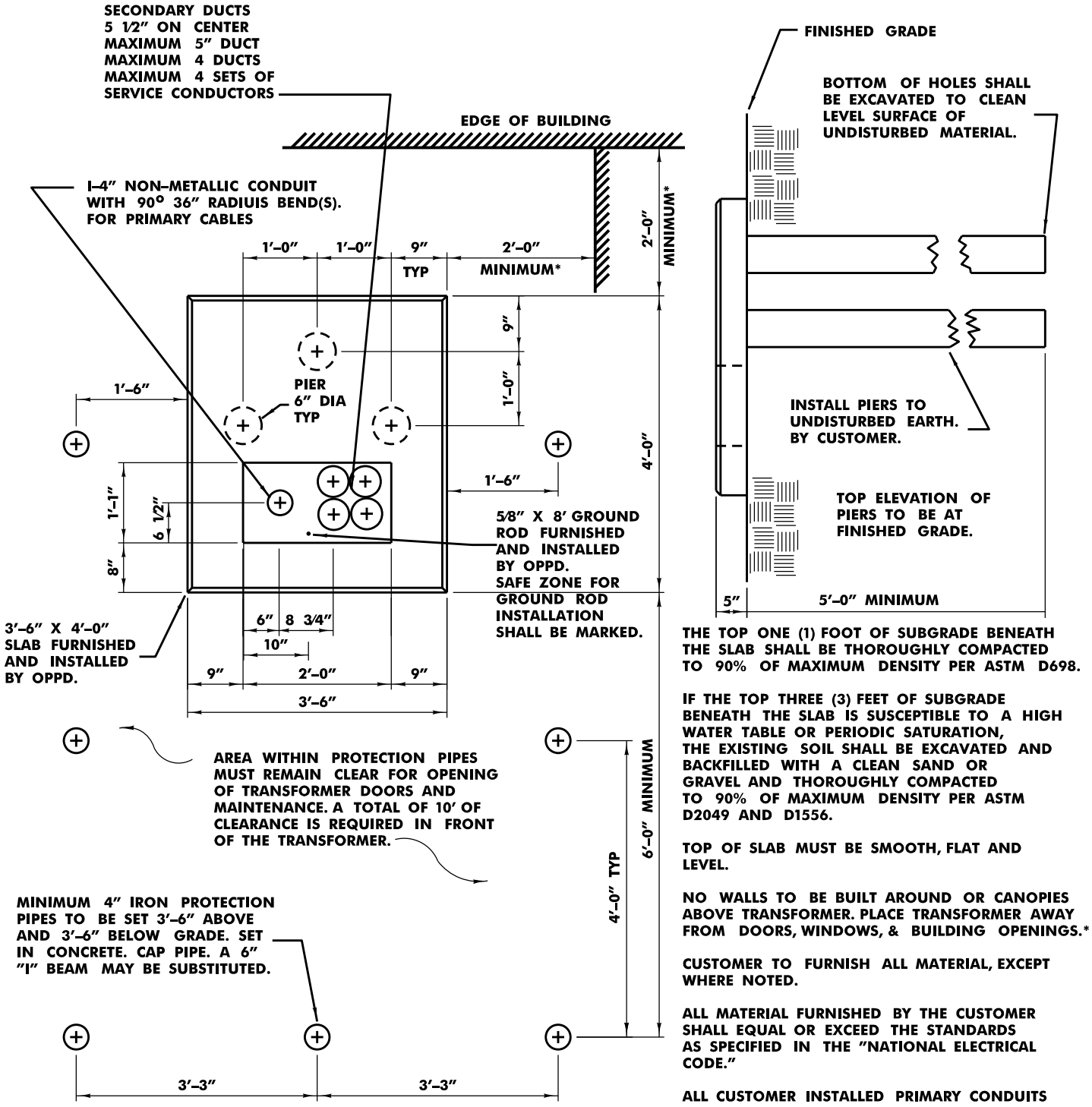
DESIGN ENTRY BY: ROBERT B ADAMS

ISSUED DATE _____

1Ø PADMOUNT TRANSFORMER SLAB DETAIL

CONVENTIONAL, 25KVA TO 167KVA

8.08.2



THE TOP ONE (1) FOOT OF SUBGRADE BENEATH THE SLAB SHALL BE THOROUGHLY COMPACTED TO 90% OF MAXIMUM DENSITY PER ASTM D698.

IF THE TOP THREE (3) FEET OF SUBGRADE BENEATH THE SLAB IS SUSCEPTIBLE TO A HIGH WATER TABLE OR PERIODIC SATURATION, THE EXISTING SOIL SHALL BE EXCAVATED AND BACKFILLED WITH A CLEAN SAND OR GRAVEL AND THOROUGHLY COMPACTED TO 90% OF MAXIMUM DENSITY PER ASTM D2049 AND D1556.

TOP OF SLAB MUST BE SMOOTH, FLAT AND LEVEL.

NO WALLS TO BE BUILT AROUND OR CANOPIES ABOVE TRANSFORMER. PLACE TRANSFORMER AWAY FROM DOORS, WINDOWS, & BUILDING OPENINGS.*

CUSTOMER TO FURNISH ALL MATERIAL, EXCEPT WHERE NOTED.

ALL MATERIAL FURNISHED BY THE CUSTOMER SHALL EQUAL OR EXCEED THE STANDARDS AS SPECIFIED IN THE "NATIONAL ELECTRICAL CODE."

ALL CUSTOMER INSTALLED PRIMARY CONDUITS TO BE RODDED AND PROVEN CLEAR AND A JET LINE TO BE LEFT IN EACH CONDUIT.

ALL CONDUITS ENTERING SLAB TO BE VERTICAL AND AT A 90° ANGLE WITH TOP OF SLAB.

COORDINATE WITH OPPD TO INSPECT SITE PRIOR TO POURING CONCRETE. INSPECTION WILL INCLUDE LOCATION AND DEPTH OF HOLES FOR SUPPORT PIERS (IF REQUIRED), AND CONDUIT PLACEMENT. OPPD INSPECTION DOES NOT INCLUDE INSPECTING FOR INSURANCE RECOMMENDED BUILDING CLEARANCES.

* THIS DRAWING SHOWS THE MINIMUM CLEARANCE NEEDED FOR PHYSICAL REASONS; FACTORY MUTUAL INSURANCE COMPANY RECOMMENDS THE FOLLOWING SEPARATION DISTANCES BETWEEN THE SPECIFIED TYPE OF BUILDING AND TRANSFORMER FOR MINERAL–OIL FILLED TRANSFORMERS WITH UNDER 500 GALLONS OF OIL. BUILDING OWNERS AND THEIR CONTRACTORS ARE RESPONSIBLE FOR LOCATING THE SLAB PER OPPD MINIMUM CLEARANCE GUIDELINES AND THEIR INSURANCE COMPANY RECOMMENDATIONS.

TWO HOURS FIRE RESISTANT CONSTRUCTION	NON–COMBUSTIBLE CONSTRUCTION	COMBUSTIBLE CONSTRUCTION
5'	15'	25'

Revised 01-15-20 By CLS

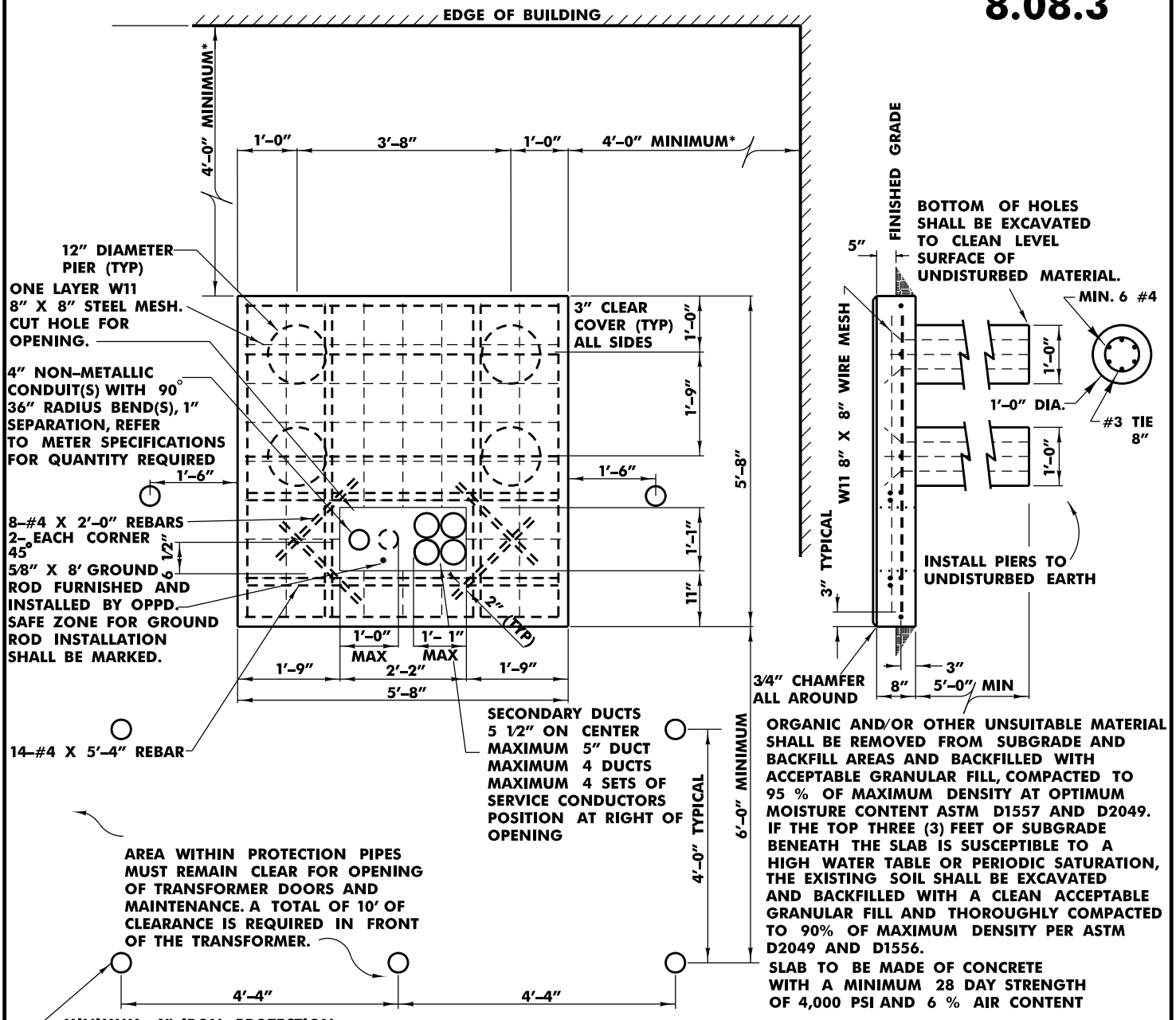
DESIGN ENTRY BY: ROBERT B ADAMS

ISSUED DATE _____

1Ø PADMOUNT TRANSFORMER SLAB DETAIL

CONVENTIONAL, 250KVA AND 333KVA
MAX. WEIGHT 3000 POUNDS

8.08.3



ORGANIC AND/OR OTHER UNSUITABLE MATERIAL SHALL BE REMOVED FROM SUBGRADE AND BACKFILL AREAS AND BACKFILLED WITH ACCEPTABLE GRANULAR FILL, COMPACTED TO 95 % OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT ASTM D1557 AND D2049. IF THE TOP THREE (3) FEET OF SUBGRADE BENEATH THE SLAB IS SUSCEPTIBLE TO A HIGH WATER TABLE OR PERIODIC SATURATION, THE EXISTING SOIL SHALL BE EXCAVATED AND BACKFILLED WITH A CLEAN ACCEPTABLE GRANULAR FILL AND THOROUGHLY COMPACTED TO 90% OF MAXIMUM DENSITY PER ASTM D2049 AND D1556.

SLAB TO BE MADE OF CONCRETE WITH A MINIMUM 28 DAY STRENGTH OF 4,000 PSI AND 6 % AIR CONTENT

TOP OF SLAB MUST BE SMOOTH, FLAT AND LEVEL.

NO WALLS TO BE BUILT AROUND OR CANOPIES ABOVE TRANSFORMER. PLACE TRANSFORMER AWAY FROM DOORS, WINDOWS, & BUILDING OPENINGS.*

CUSTOMER TO FURNISH ALL MATERIAL, EXCEPT WHERE NOTED

ALL MATERIAL FURNISHED BY THE CUSTOMER SHALL EQUAL OR EXCEED THE STANDARDS AS SPECIFIED IN THE "NATIONAL ELECTRICAL CODE"

ALL CUSTOMER INSTALLED PRIMARY CONDUITS TO BE RODDED AND PROVEN CLEAR, AND A JET LINE TO BE LEFT IN EACH CONDUIT

ALL CONDUITS ENTERING SLAB TO BE VERTICAL AND AT A 90° ANGLE WITH TOP OF SLAB

COORDINATE WITH OPPD TO INSPECT SITE PRIOR TO POURING CONCRETE. INSPECTION WILL INCLUDE LOCATION AND DEPTH OF HOLES FOR SUPPORT PIERS, AND CONDUIT PLACEMENT. OPPD INSPECTION DOES NOT INCLUDE INSPECTING FOR INSURANCE RECOMMENDED BUILDING CLEARANCES.

* THIS DRAWING SHOWS THE MINIMUM CLEARANCE NEEDED FOR PHYSICAL REASONS; FACTORY MUTUAL INSURANCE COMPANY RECOMMENDS THE FOLLOWING SEPARATION DISTANCES BETWEEN THE SPECIFIED TYPE OF BUILDING AND TRANSFORMER FOR MINERAL–OIL FILLED TRANSFORMERS WITH UNDER 500 GALLONS OF OIL. BUILDING OWNERS AND THEIR CONTRACTORS ARE RESPONSIBLE FOR LOCATING THE SLAB PER OPPD MINIMUM CLEARANCE GUIDELINES AND THEIR INSURANCE COMPANY RECOMMENDATIONS.

TWO HOURS FIRE RESISTANT CONSTRUCTION	NON–COMBUSTIBLE CONSTRUCTION	COMBUSTIBLE CONSTRUCTION
5'	15'	25'

Revised 01-15-20 By CLS

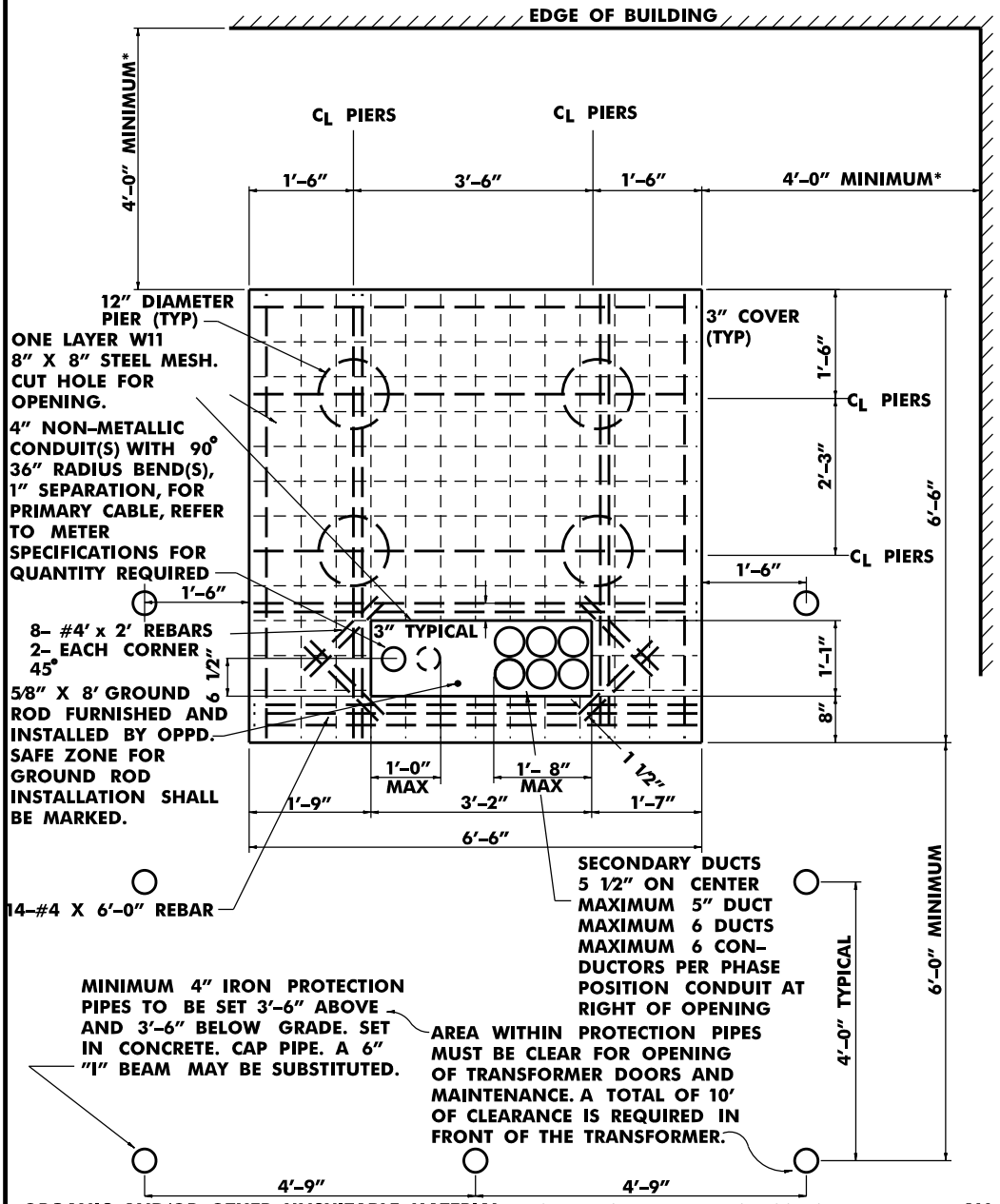
DESIGN ENTRY BY: ROBERT B ADAMS

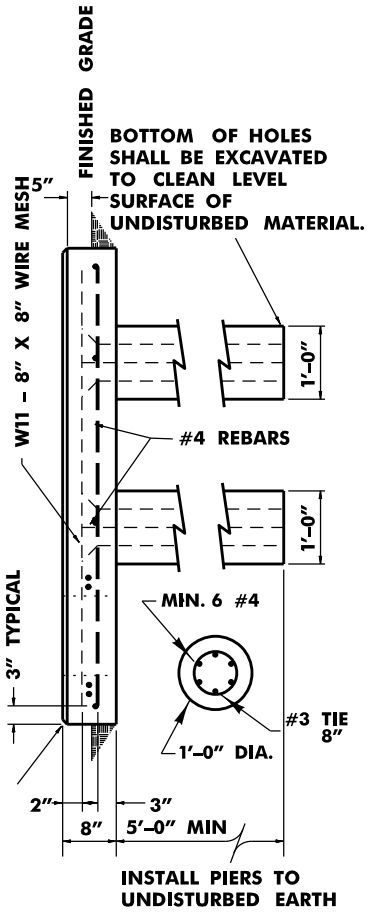
ISSUED DATE _____

3Ø PADMOUNT TRANSFORMER SLAB DETAIL

75 KVA TO 500 KVA
7000 POUNDS

8.08.4





ORGANIC AND/OR OTHER UNSUITABLE MATERIAL SHALL BE REMOVED FROM SUBGRADE AND BACKFILL AREAS AND BACKFILLED WITH ACCEPTABLE GRANULAR FILL, COMPACTED TO 95 % OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT ASTM D1557 AND D2049. IF THE TOP THREE (3) FEET OF SUBGRADE BENEATH THE SLAB IS SUSCEPTIBLE TO A HIGH WATER TABLE OR PERIODIC SATURATION, THE EXISTING SOIL SHALL BE EXCAVATED AND BACKFILLED WITH A CLEAN ACCEPTABLE GRANULAR FILL AND THOROUGHLY COMPACTED TO 90% OF MAXIMUM DENSITY PER ASTM D2049 AND D1556.

SLAB TO BE MADE OF CONCRETE WITH A MINIMUM 28 DAY STRENGTH OF 4,000 PSI AND 6 % AIR CONTENT

TOP OF SLAB MUST BE SMOOTH, FLAT AND LEVEL.
NO WALLS TO BE BUILT AROUND OR CANOPIES ABOVE TRANSFORMER. PLACE TRANSFORMER AWAY FROM DOORS, WINDOWS, & BUILDING OPENINGS.*

CUSTOMER TO FURNISH ALL MATERIAL, EXCEPT WHERE NOTED

ALL MATERIAL FURNISHED BY THE CUSTOMER SHALL EQUAL OR EXCEED THE STANDARDS AS SPECIFIED IN THE "NATIONAL ELECTRICAL CODE"

ALL CUSTOMER INSTALLED PRIMARY CONDUITS TO BE RODDED AND PROVEN CLEAR, AND A JET LINE TO BE LEFT IN EACH CONDUIT

ALL CONDUITS ENTERING SLAB TO BE VERTICAL AND AT A 90° ANGLE WITH TOP OF SLAB

* THIS DRAWING SHOWS THE MINIMUM CLEARANCE NEEDED FOR PHYSICAL REASONS; FACTORY MUTUAL INSURANCE COMPANY RECOMMENDS THE FOLLOWING SEPARATION DISTANCES BETWEEN THE SPECIFIED TYPE OF BUILDING AND TRANSFORMER FOR MINERAL–OIL FILLED TRANSFORMERS WITH UNDER 500 GALLONS OF OIL. BUILDING OWNERS AND THEIR CONTRACTORS ARE RESPONSIBLE FOR LOCATING THE SLAB PER OPPD MINIMUM CLEARANCE GUIDELINES AND THEIR INSURANCE COMPANY RECOMMENDATIONS.

TWO HOURS FIRE RESISTANT CONSTRUCTION	NON–COMBUSTIBLE CONSTRUCTION	COMBUSTIBLE CONSTRUCTION
5'	15'	25'

COORDINATE WITH OPPD TO INSPECT SITE PRIOR TO POURING CONCRETE. INSPECTION WILL INCLUDE LOCATION AND DEPTH OF HOLES FOR SUPPORT PIERS (IF REQUIRED), AND CONDUIT PLACEMENT. OPPD INSPECTION DOES NOT INCLUDE INSPECTING FOR INSURANCE RECOMMENDED BUILDING CLEARANCES.

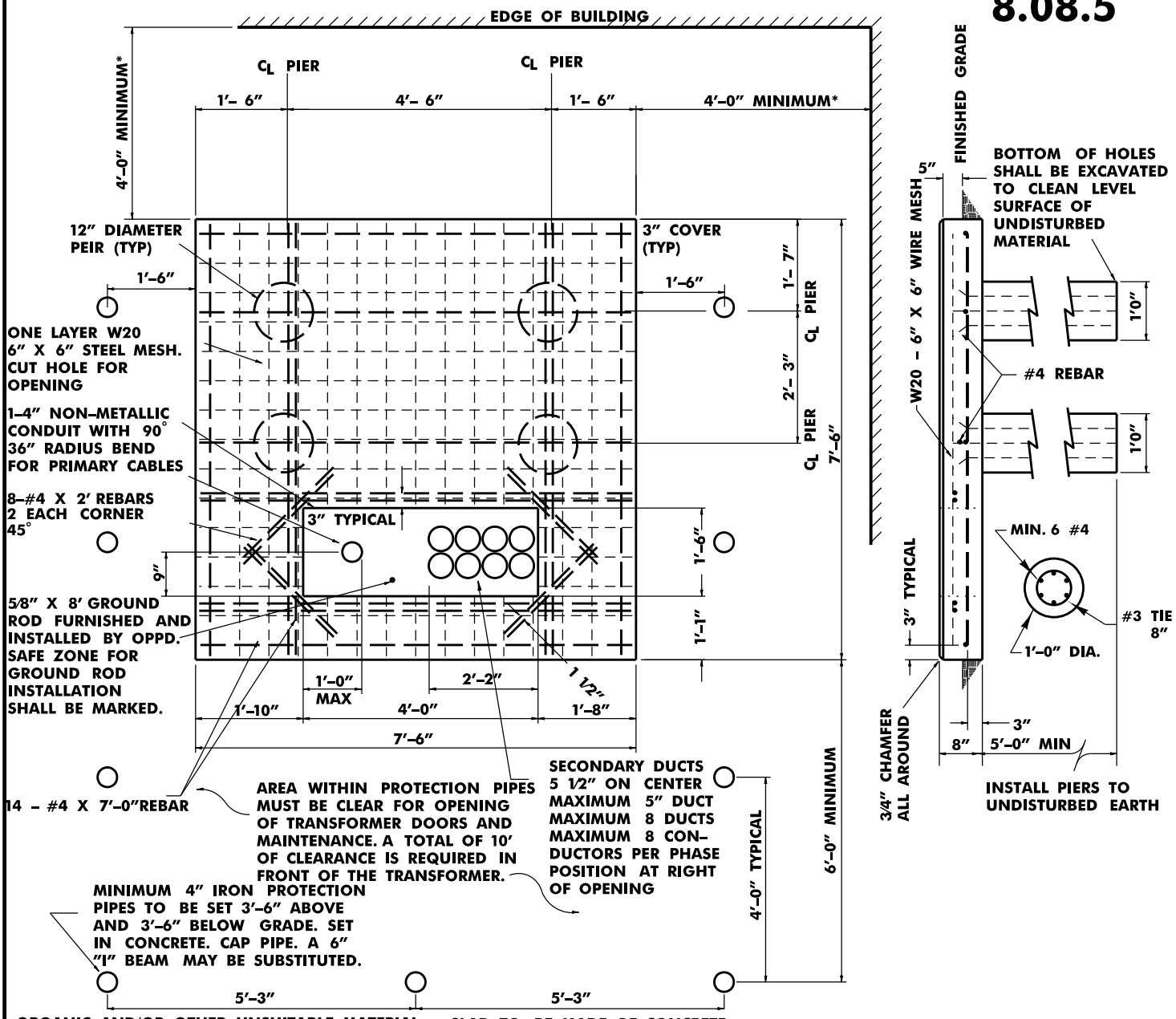
Revised 01-15-20 By CLS
DESIGN ENTRY BY: ROBERT B ADAMS

ISSUED DATE _____

3Ø PADMOUNT TRANSFORMER SLAB DETAIL

500 KVA TO 1000 KVA
9000 POUNDS

8.08.5



ORGANIC AND/OR OTHER UNSUITABLE MATERIAL SHALL BE REMOVED FROM SUBGRADE AND BACKFILL AREAS AND BACKFILLED WITH ACCEPTABLE GRANULAR FILL, COMPACTED TO 95 % OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT ASTM D1557 AND D2049. IF THE TOP THREE (3) FEET OF SUBGRADE BENEATH THE SLAB IS SUSCEPTIBLE TO A HIGH WATER TABLE OR PERIODIC SATURATION, THE EXISTING SOIL SHALL BE EXCAVATED AND BACKFILLED WITH A CLEAN ACCEPTABLE GRANULAR FILL AND THOROUGHLY COMPACTED TO 90% OF MAXIMUM DENSITY PER ASTM D2049 AND D1556.

SLAB TO BE MADE OF CONCRETE WITH A MINIMUM 28 DAY STRENGTH OF 4,000 PSI AND 6 % AIR CONTENT

ALL MATERIAL FURNISHED BY THE CUSTOMER SHALL EQUAL OR EXCEED THE STANDARDS AS SPECIFIED IN THE "NATIONAL ELECTRICAL CODE"

ALL CUSTOMER INSTALLED PRIMARY CONDUITS TO BE RODDED AND PROVEN CLEAR, AND A JET LINE TO BE LEFT IN EACH CONDUIT

ALL CONDUITS ENTERING SLAB TO BE VERTICAL AND AT A 90° ANGLE WITH TOP OF SLAB

TOP OF SLAB MUST BE SMOOTH, FLAT AND LEVEL.

NO WALLS TO BE BUILT AROUND OR CANOPIES ABOVE TRANSFORMER. PLACE TRANSFORMER AWAY FROM DOORS, WINDOWS, & BUILDING OPENINGS.*

CUSTOMER TO FURNISH ALL MATERIAL, EXCEPT WHERE NOTED

* THIS DRAWING SHOWS THE MINIMUM CLEARANCE NEEDED FOR PHYSICAL REASONS; FACTORY MUTUAL INSURANCE COMPANY RECOMMENDS THE FOLLOWING SEPARATION DISTANCES BETWEEN THE SPECIFIED TYPE OF BUILDING AND TRANSFORMER FOR MINERAL–OIL FILLED TRANSFORMERS WITH UNDER 500 GALLONS OF OIL. BUILDING OWNERS AND THEIR CONTRACTORS ARE RESPONSIBLE FOR LOCATING THE SLAB PER OPPD MINIMUM CLEARANCE GUIDELINES AND THEIR INSURANCE COMPANY RECOMMENDATIONS.

TWO HOURS FIRE RESISTANT CONSTRUCTION	NON–COMBUSTIBLE CONSTRUCTION	COMBUSTIBLE CONSTRUCTION
5'	15'	25'

Revised 01-15-20 By CLS

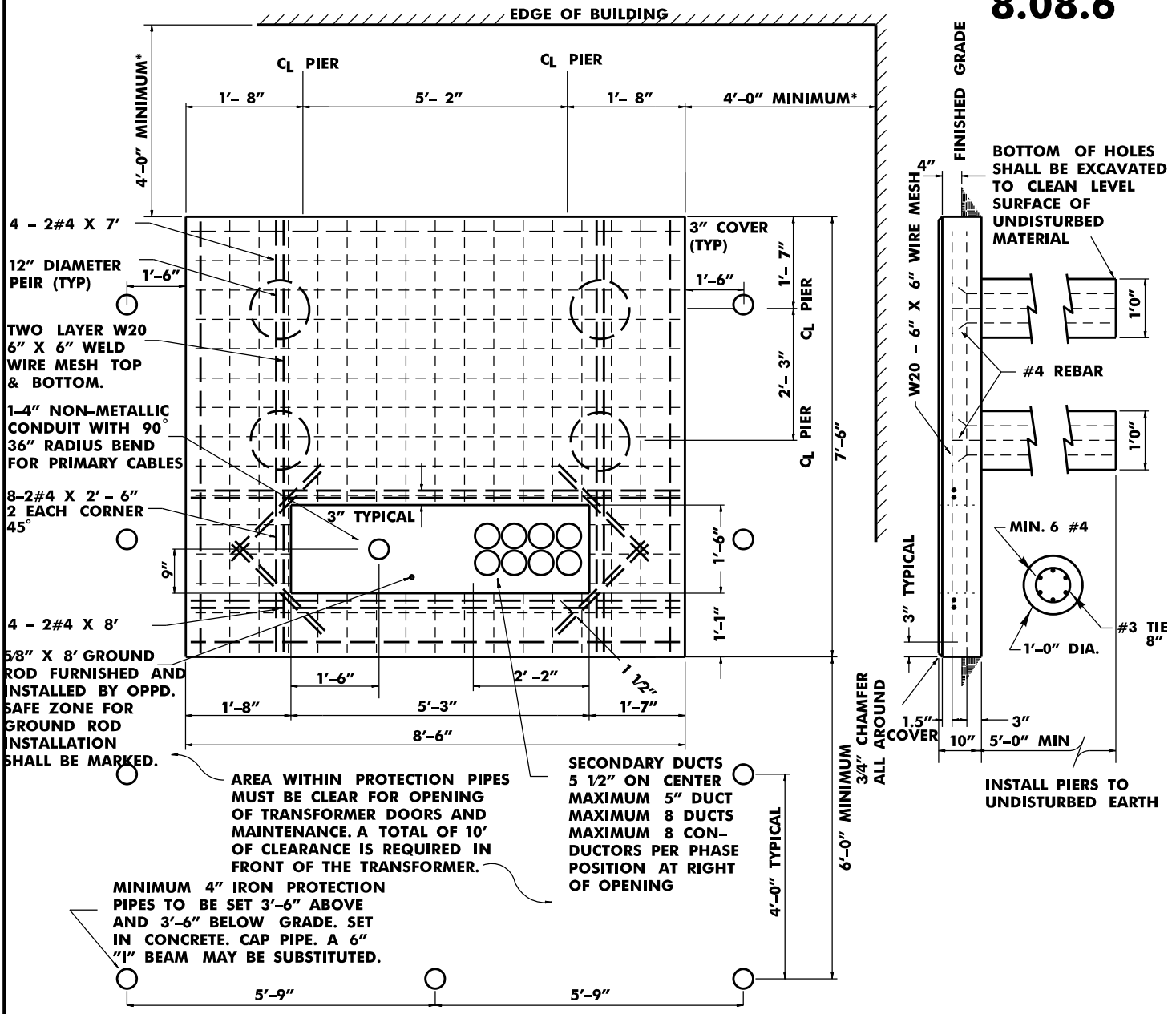
DESIGN ENTRY BY: ROBERT B ADAMS

ISSUED DATE _____

3Ø PADMOUNT TRANSFORMER SLAB DETAIL

1500, 2000 & 2500 KVA
20000 POUNDS

8.08.6



ORGANIC AND/OR OTHER UNSUITABLE MATERIAL SHALL BE REMOVED FROM SUBGRADE AND BACKFILL AREAS AND BACKFILLED WITH ACCEPTABLE GRANULAR FILL, COMPACTED TO 95 % OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT ASTM D1557 AND D2049. IF THE TOP THREE (3) FEET OF SUBGRADE BENEATH THE SLAB IS SUSCEPTIBLE TO A HIGH WATER TABLE OR PERIODIC SATURATION, THE EXISTING SOIL SHALL BE EXCAVATED AND BACKFILLED WITH A CLEAN ACCEPTABLE GRANULAR FILL AND THOROUGHLY COMPACTED TO 90% OF MAXIMUM DENSITY PER ASTM D2049 AND D1556.

SLAB TO BE MADE OF CONCRETE WITH A MINIMUM 28 DAY STRENGTH OF 4,000 PSI AND 6 % AIR CONTENT

ALL MATERIAL FURNISHED BY THE CUSTOMER SHALL EQUAL OR EXCEED THE STANDARDS AS SPECIFIED IN THE "NATIONAL ELECTRICAL CODE"

ALL CUSTOMER INSTALLED PRIMARY CONDUITS TO BE RODDED IN PROVEN CLEAR, AND A JET LINE TO BE LEFT IN EACH CONDUIT

ALL CONDUITS ENTERING SLAB TO BE VERTICAL AND 90° ANGLE WITH TOP OF SLAB

TOP OF SLAB MUST BE SMOOTH, FLAT AND LEVEL.

NO WALLS TO BE BUILT AROUND OR CANOPIES ABOVE TRANSFORMER. PLACE TRANSFORMER AWAY FROM DOORS, WINDOWS, & BUILDING OPENINGS.*

CUSTOMER TO FURNISH ALL MATERIAL, EXECPT WHERE NOTED

* THIS DRAWING SHOWS THE MINIMUM CLEARANCE NEEDED FOR PHYSICAL REASONS; FACTORY MUTUAL INSURANCE COMPANY RECOMMENDS THE FOLLOWING SEPARATION DISTANCES BETWEEN THE SPECIFIED TYPE OF BUILDING AND TRANSFORMER FOR MINERAL–OIL FILLED TRANSFORMERS WITH UNDER 500 GALLONS OF OIL. BUILDING OWNERS AND THEIR CONTRACTORS ARE RESPONSIBLE FOR LOCATING THE SLAB PER OPPD MINIMUM CLEARANCE GUIDELINES AND THEIR INSURANCE COMPANY RECOMMENDATIONS.

TWO HOURS FIRE RESISTANT CONSTRUCTION	NON–COMBUSTIBLE CONSTRUCTION	COMBUSTIBLE CONSTRUCTION
5'	15'	25'

Revised 01-15-20 By CLS

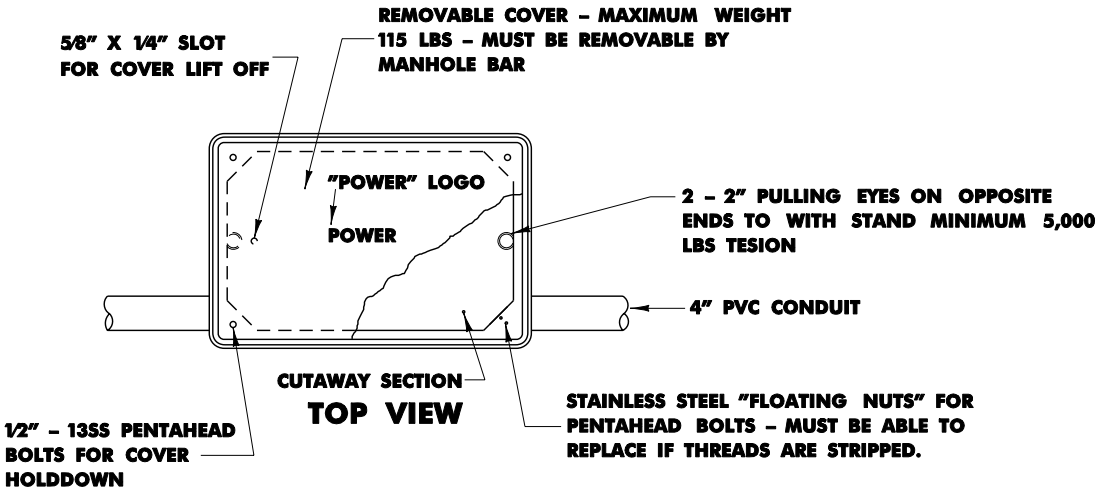
DESIGN ENTRY BY: ROBERT B ADAMS

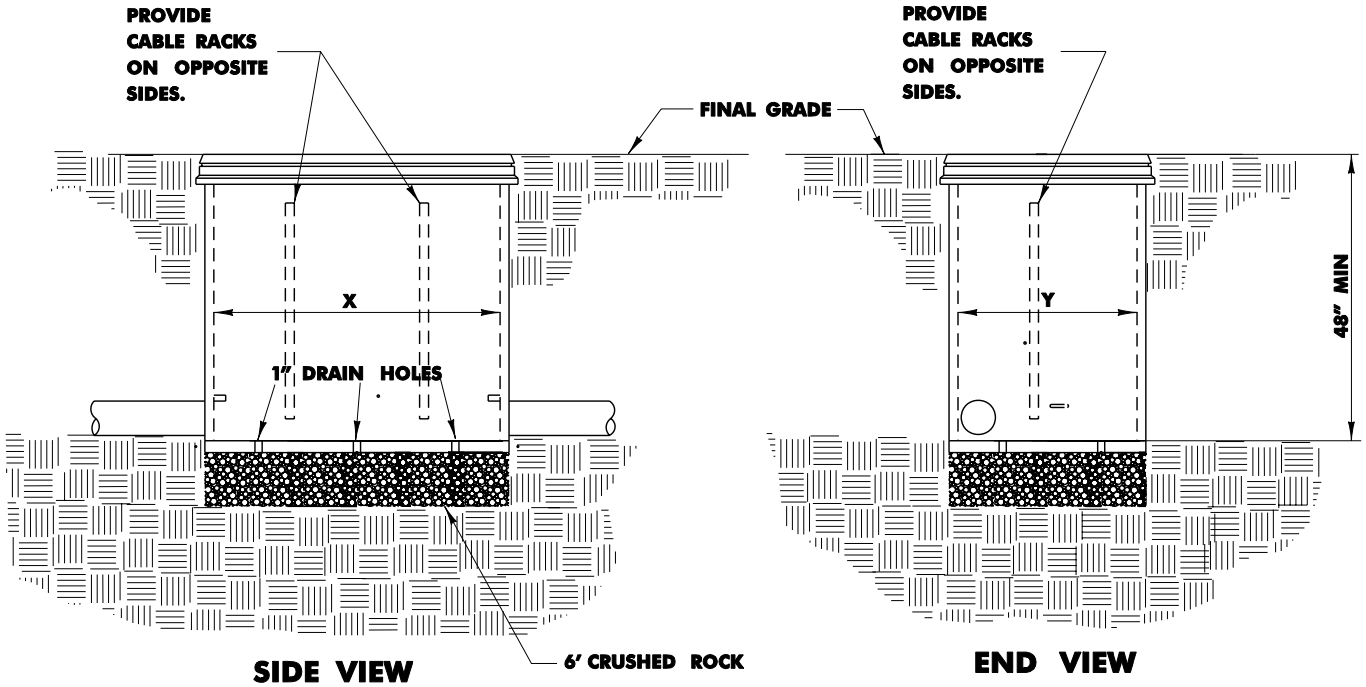
ISSUED DATE _____

CUSTOMER INSTALLED PULLBOX

MAXIMUM 1/0 CABLE
DO NOT INSTALL IN DRIVING SURFACE

SINGLE PHASE: 8.08.7A
THREE PHASE: 8.08.7B





DIMENSIONS			CONDUIT	EXCAVATION	MAX CABLE	MAX NO OF
STD		Y	KNOCKOUTS	REQ'D (LABOR)	SIZE	SPLICES
8.08.7A	60"	36"	4 3/4"	7 CU YDS	1/0	2
8.08.7B	78"	48"	4 3/4"	9.8 CU YDS	1/0	6

NOTE:

1. DESIGN LOAD – HS–20–44 (FULL TRAFFIC LOADING).
2. CDR (DIVISION OF HOMAC MFG CO).
3. PLACEMENT PER MANUFACTURER'S RECOMMENDATION.
4. PULLBOX IS FOR OPPD'S EXCLUSIVE USE. JOINT USE WITH CUSTOMER EQUIPMENT OF ANY NATURE SHALL NOT BE ALLOWED.

Revised 09-15-08 By SAH
DESIGN ENTRY BY: BRANT DANGEL

ISSUED DATE_____

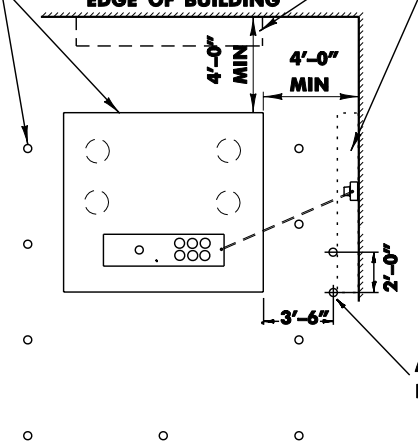
3Ø PADMOUNT TRANSFORMER

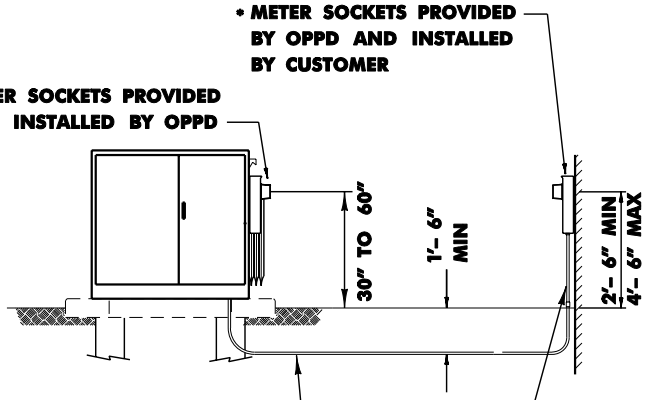
METERING EQUIPMENT ON TRANSFORMER

STD 8.08.8

TRANSFORMER SLAB AND PROTECTION PIPES BY CUSTOMER PER METER SPEC MANUAL PAGE 9.08.4, 9.08.5 OR 9.08.6 AS SPECIFIED BY OPPD.

IF CUSTOMER BUILDING IS WITHIN 10' OF TRANSFORMER SLAB, METER SOCKETS MAY BE INSTALLED ON BUILDING ANYWHERE WITHIN DOTTED AREAS SHOWN AS SPECIFIED BY OPPD.





ADDITIONAL PROTECTION PIPES REQUIRED FOR SUSCEPTIBLE LOCATIONS.

1" GALVANIZED RIGID CONDUIT BY CUSTOMER

1" PVC SCHED 40 CONDUIT TO TRANSFORMER (BY CUSTOMER)

AREA WITHIN PROTECTION PIPES MUST BE CLEAR FOR OPENING OF TRANSFORMER DOORS AND MAINTENANCE.

NOTES:

* A MINIMUM CLEAR WORKING SPACE OF 2.5 FT ABOVE, BELOW, AND NECESSARY SIDE WORKING CLEARENCE, AS WELL AS 36" HORIZONTALLY IN FRONT OF THE METERING, SHALL BE PROVIDED AND MAINTAINED.

METERING ON TRANSFORMER IS FOR ONLY WITH INSTRUMENT TRANSFORMERS MOUNTED INSIDE PADMOUNTED TRANSFORMER AND METER MOUNTED ON PADMOUNT TRANSFORMER OR ON BUILDING WALL. AEOT IS FOR NEW CONSTRUCTION ONLY, UNLESS EXISTING SERVICE ENTRANCE CABLES ARE REPLACED.

REFER TO DWGS:
120/208V 3Ø 4W OR 277/480V 3Ø 4W: 4.06.15
4.06.17
480V 3Ø 4W: 4.06.9
4.06.11

REFER TO DWGS: 8.08.1
THROUGH 8.08.6 FOR SLAB DETAILS

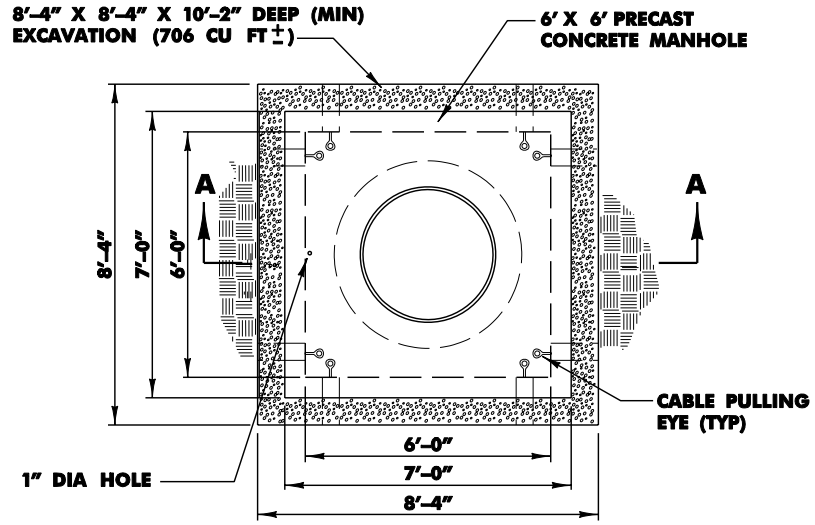
Revised 07-03-00 By BED
DESIGN ENTRY BY: BRANT DANGEL

ISSUED DATE _____

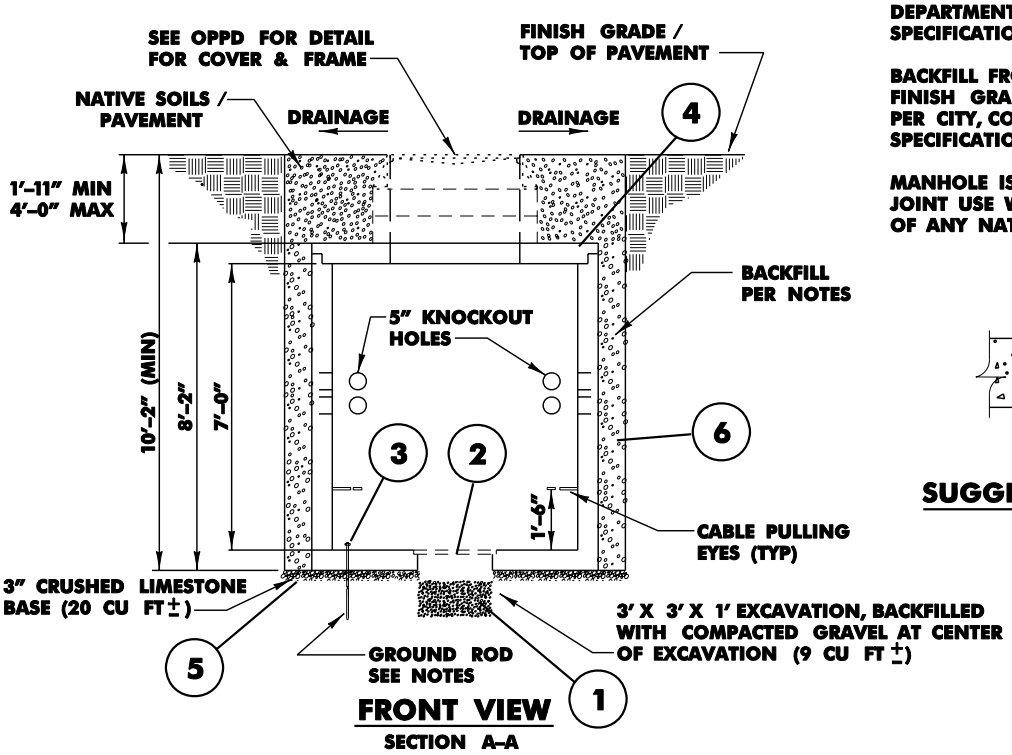
6′ X 6′ PRECAST MANHOLE CUSTOMER INSTALLATION

HS 20 – 44 LOADING
MAXIMUM CABLE SIZE #1/0

STD 8.08.9



TOP VIEW



FRONT VIEW

SECTION A–A

NOTES:

CONTACT ENGINEER IF SOIL MOISTURE / GROUND WATER IS ENCOUNTERED AT DEPTH OF LESS THAN 3′–0″ BELOW GRADE.

TOP PORTION OF MANHOLE = 2.42 TONS
BOTTOM PORTION OF MANHOLE = 8.75 TONS

DRIVE 5/8″ X 10′ GROUND ROD (0000002821) THRU 1″ HOLE IN BOTTOM OF PRECAST MANHOLE PRIOR TO THE SETTING OF THE TOP OF MANHOLE. EXTEND GROUND ROD 6″ ABOVE MANHOLE FLOOR.

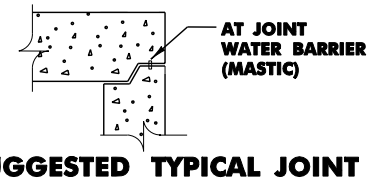
WATER BARRIER (MASTIC) PROVIDED BY MANHOLE MANUFACTURER MUST BE INSTALLED BETWEEN TOP AND BOTTOM PORTIONS.

COLLARS SHALL BE SHIMMED & GROUTED ON MANHOLE ROOF TO ATTAIN REQUIRED SLOPE PER DIRECTION OF ENGINEER.

BACKFILL TO TOP OF MANHOLE WITH "FLOWABLE FILL" PER NEBRASKA DEPARTMENT OF ROADS (NDOR) SPECIFICATIONS.

BACKFILL FROM TOP OF MANHOLE TO FINISH GRADE WITH COMPACTED SOIL PER CITY, COUNTY OR STATE SPECIFICATIONS, WHICHEVER GOVERNS.

MANHOLE IS FOR OPPD'S EXCLUSIVE USE. JOINT USE WITH CUSTOMER EQUIPMENT OF ANY NATURE SHALL NOT BE ALLOWED.



SUGGESTED TYPICAL JOINT

BILL OF MATERIAL		
ITEM	DESCRIPTION	REQ'D
1	GRAVEL	1/3 CU YD
2	STEEL GRATING, 2′ X 2′	1
3	GROUND ROD, 5/8″ X 10′	1
4	MANHOLE, 6′ X 6′	1
5	CRUSHED LIMESTONE	3/4 CU YD
6	FLOWABLE BACKFILL	7 CU YDS

FLOWABLE FILL (NDOR)	
MATERIAL	WEIGHT
CEMENT	50 LBS
FLY ASH	200 LBS
WATER	420 LBS
SAND	2700 LBS
AEA	10 OZ/CY

COMPRESSIVE STRENGTH (28 DAYS) 85–175 PSI
AIR CONTENT FOR ALL MIXES WILL BE IN THE RANGE OF 10.0% TO 16.0%

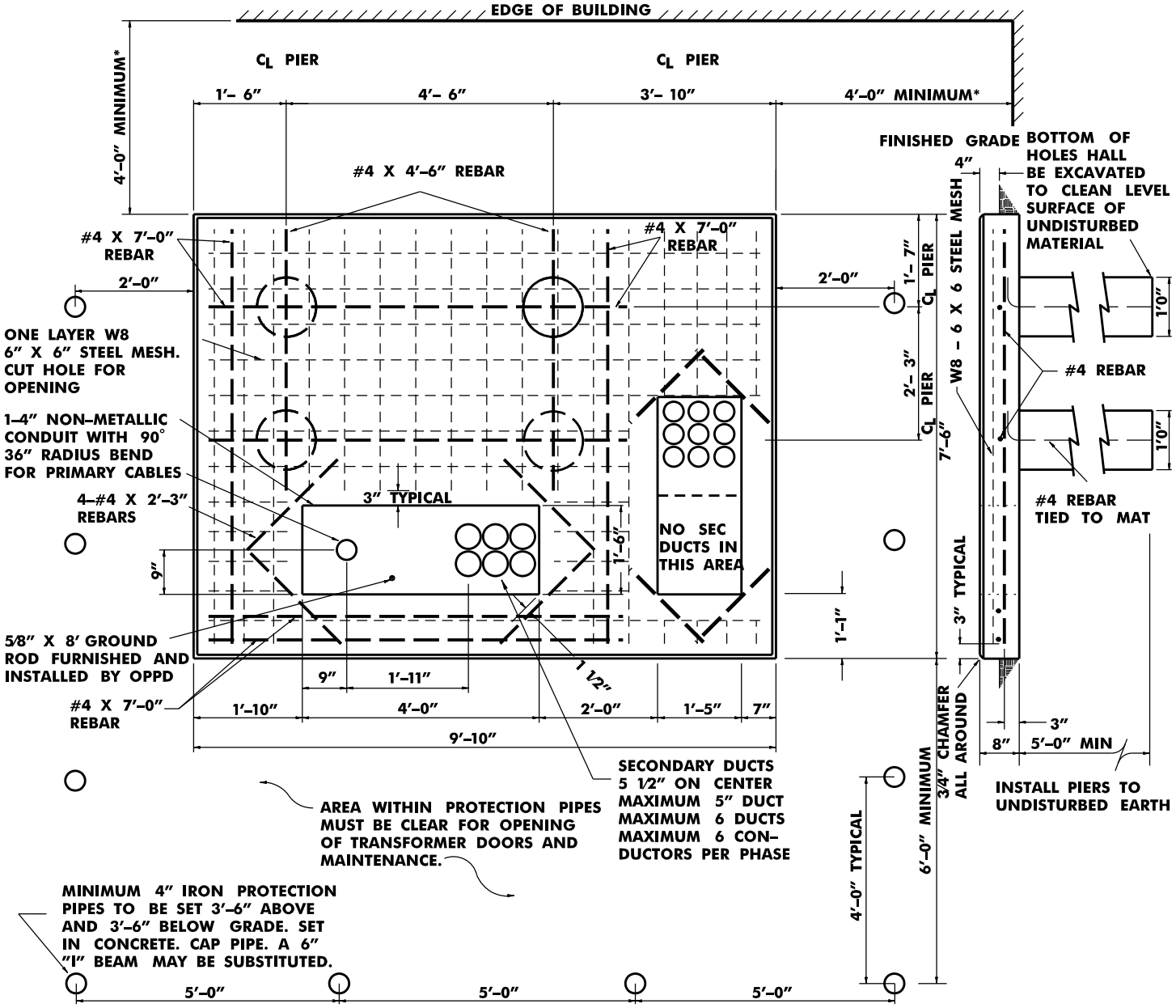
Revised 11-21-02 By BED
DESIGN ENTRY BY: BRANT DANGEL

ISSUED DATE _____

TRANSFORMER AND SECONDARY CABINET SLAB DETAIL

750 KVA & 1000 KVA TRANSFORMERS

8.09.1



THE TOP ONE (1) FOOT OF SUBGRADE BENEATH THE SLAB SHALL BE THOROUGHLY COMPACTED TO 90% OF MAXIMUM DENSITY PER ASTM D698. IF THE TOP THREE (3) FEET OF SUBGRADE BENEATH THE SLAB IS SUSCEPTIBLE TO A HIGH WATER TABLE OR PERIODIC SATURATION, THE EXISTING SOIL SHALL BE EXCAVATED AND BACKFILLED WITH A CLEAN SAND OR GRAVEL AND THOROUGHLY COMPACTED TO 90% OF MAXIMUM DENSITY PER ASTM D2049 AND D1556.

ALL MATERIAL FURNISHED BY THE CUSTOMER SHALL EQUAL OR EXCEED THE STANDARDS AS SPECIFIED IN THE "NATIONAL ELECTRICAL CODE" ALL CUSTOMER INSTALLED PRIMARY CONDUITS TO BE RODDED AND PROVEN CLEAR, AND A JET LINE TO BE LEFT IN EACH CONDUIT ALL CONDUITS ENTERING SLAB TO BE VERTICAL AND AT A 90° ANGLE WITH TOP OF SLAB.

SLAB TO BE MADE OF SG–6 CONCRETE WITH A MINIMUM 28 DAY STRENGTH OF 3000 PSI TOP OF SLAB MUST BE SMOOTH, FLAT AND LEVEL. NO WALLS TO BE BUILT AROUND OR CANOPIES ABOVE TRANSFORMER. PLACE TRANSFORMER AWAY FROM DOORS, WINDOWS, AND BUILDING OPENINGS.* CUSTOMER TO FURNISH ALL MATERIAL, EXCEPT WHERE NOTED.

COORDINATE WITH OPPD TO INSPECT SITE PRIOR TO POURING CONCRETE. INSPECTION WILL INCLUDE LOCATION AND DEPTH OF HOLES FOR SUPPORT PIERS (IF REQUIRED), AND CONDUIT PLACEMENT. OPPD INSPECTION DOES NOT INCLUDE INSPECTING FOR INSURANCE RECOMMENDED BUILDING CLEARANCES.

* THIS DRAWING SHOWS THE MINIMUM CLEARANCE NEEDED FOR PHYSICAL REASONS; FACTORY MUTUAL INSURANCE COMPANY RECOMMENDS THE FOLLOWING SEPARATION DISTANCES BETWEEN THE SPECIFIED TYPE OF BUILDING AND TRANSFORMER FOR MINERAL–OIL FILLED TRANSFORMERS WITH UNDER 500 GALLONS OF OIL. BUILDING OWNERS AND THEIR CONTRACTORS ARE RESPONSIBLE FOR LOCATING THE SLAB PER OPPD MINIMUM CLEARANCE GUIDELINES AND THEIR INSURANCE COMPANY RECOMMENDATIONS.

TWO HOURS FIRE RESISTANT CONSTRUCTION	NON–COMBUSTIBLE CONSTRUCTION	COMBUSTIBLE CONSTRUCTION
5'	15'	25'

Revised 01-15-20 By CLS

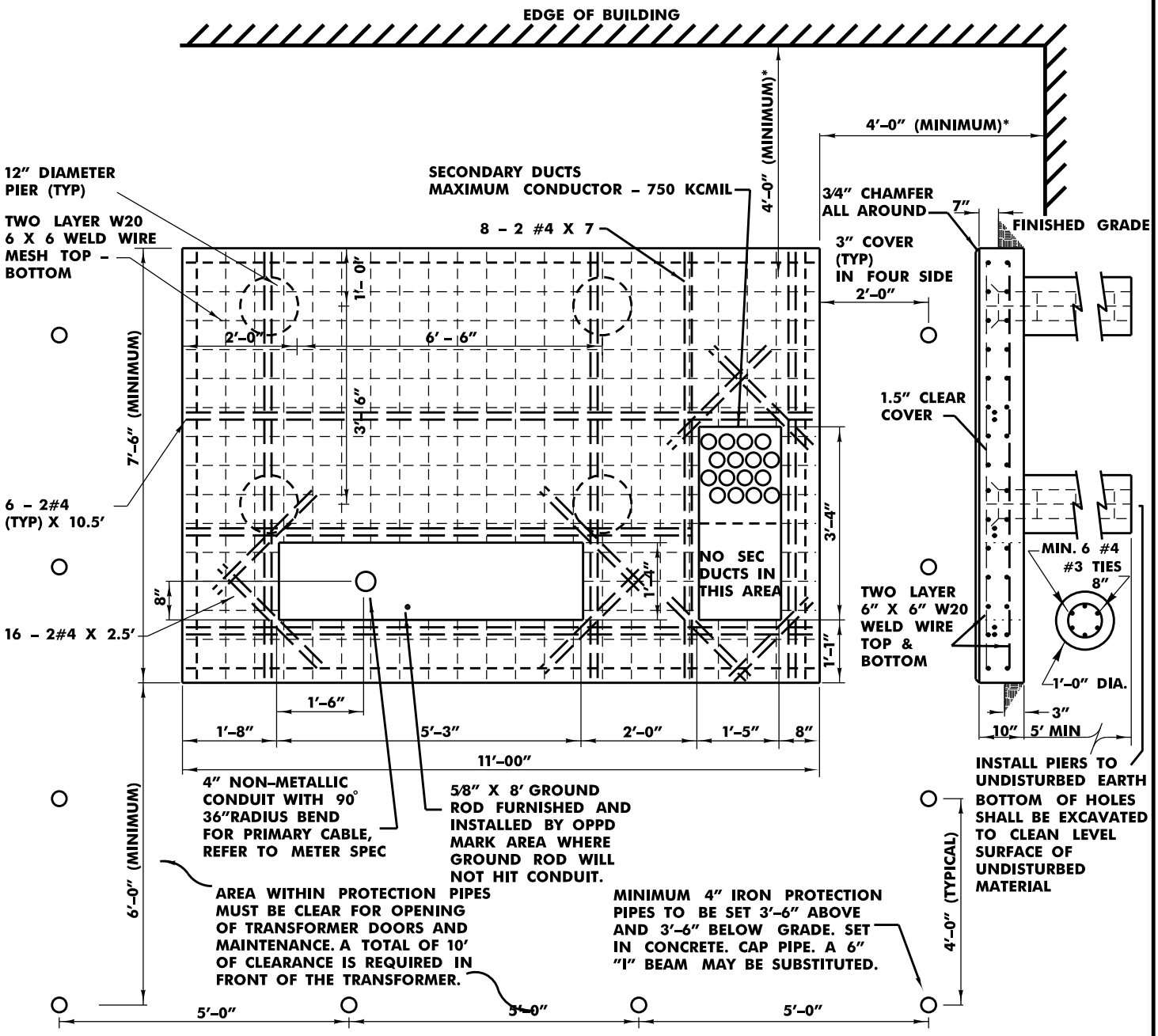
DESIGN ENTRY BY: BRANT DANGEL

ISSUED DATE _____

TRANSFORMER AND SECONDARY CABINET SLAB DETAIL

1500 KVA, 2000 KVA & 2500 KVA TRANSFORMERS

8.09.2



ORGANIC AND/OR OTHER UNSUITABLE MATERIAL SHALL BE REMOVED FROM SUBGRADE AND BACKFILL AREAS AND BACKFILLED WITH ACCEPTABLE GRANULAR FILL, COMPACTED TO 95 % OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT ASTM D1557 AND D2049. IF THE TOP THREE (3) FEET OF SUBGRADE BENEATH THE SLAB IS SUSCEPTIBLE TO A HIGH WATER TABLE OR PERIODIC SATURATION, THE EXISTING SOIL SHALL BE EXCAVATED AND BACKFILLED WITH A CLEAN ACCEPTABLE GRANULAR FILL AND THOROUGHLY COMPACTED TO 90% OF MAXIMUM DENSITY PER ASTM D2049 AND D1556.

SLAB TO BE MADE OF CONCRETE WITH A MINIMUM 28 DAY STRENGTH OF 4,000 PSI AND 6 % AIR CONTENT

ALL MATERIAL FURNISHED BY THE CUSTOMER SHALL EQUAL OR EXCEED THE STANDARDS AS SPECIFIED IN THE "NATIONAL ELECTRICAL CODE"

ALL CUSTOMER INSTALLED PRIMARY CONDUITS TO BE RODDED IN PROVEN CLEAR, AND A JET LINE TO BE LEFT IN EACH CONDUIT

ALL CONDUITS ENTERING SLAB TO BE VERTICAL AND 90° ANGLE WITH TOP OF SLAB

TOP OF SLAB MUST BE SMOOTH, FLAT AND LEVEL.

NO WALLS TO BE BUILT AROUND OR CANOPIES ABOVE TRANSFORMER. PLACE TRANSFORMER AWAY FROM DOORS, WINDOWS, & BUILDING OPENINGS.*

CUSTOMER TO FURNISH ALL MATERIAL, EXECPT WHERE NOTED

* THIS DRAWING SHOWS THE MINIMUM CLEARANCE NEEDED FOR PHYSICAL REASONS; FACTORY MUTUAL INSURANCE COMPANY RECOMMENDS THE FOLLOWING SEPARATION DISTANCES BETWEEN THE SPECIFIED TYPE OF BUILDING AND TRANSFORMER FOR MINERAL–OIL FILLED TRANSFORMERS WITH UNDER 500 GALLONS OF OIL. BUILDING OWNERS AND THEIR CONTRACTORS ARE RESPONSIBLE FOR LOCATING THE SLAB PER OPPD MINIMUM CLEARANCE GUIDELINES AND THEIR INSURANCE COMPANY RECOMMENDATIONS.

TWO HOURS FIRE RESISTANT CONSTRUCTION	NON–COMBUSTIBLE CONSTRUCTION	COMBUSTIBLE CONSTRUCTION
5'	15'	25'

Revised 01-15-20 By CLS

DESIGN ENTRY BY: BRANT DANGEL

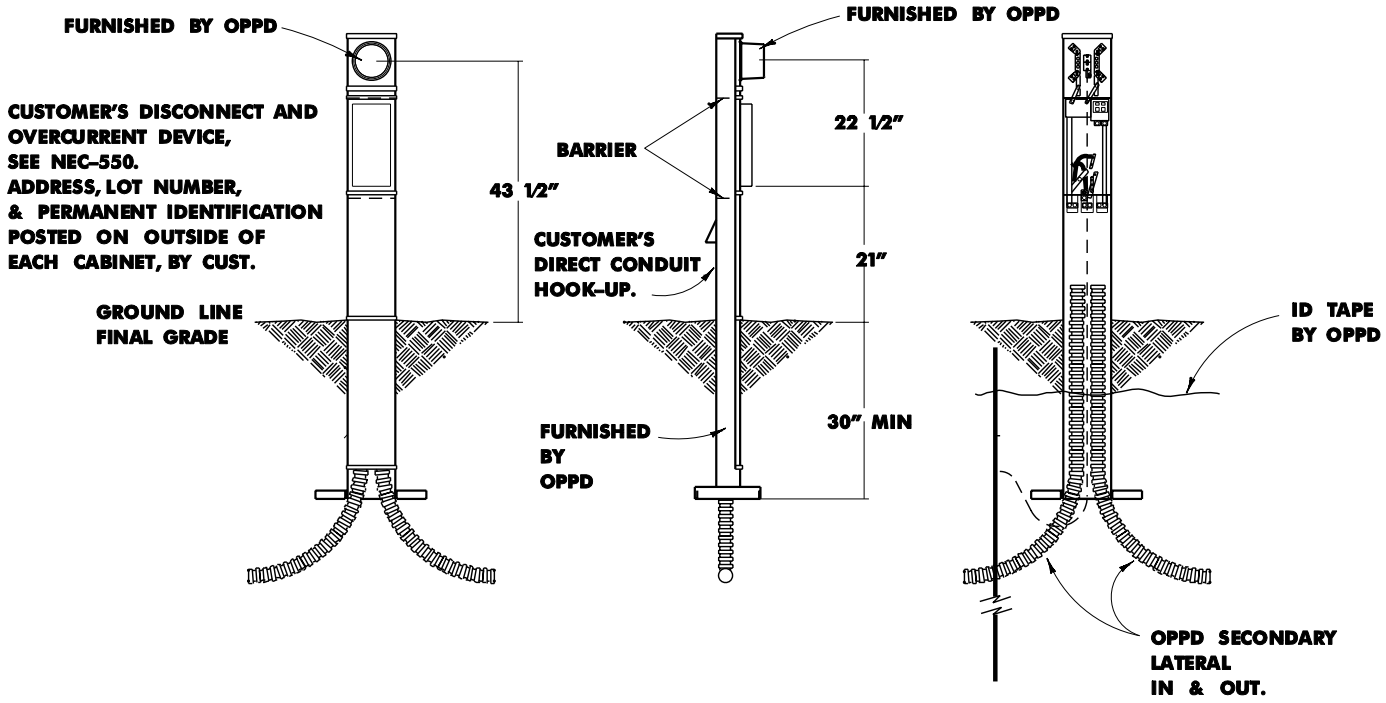
ISSUED DATE _____

MOBILE HOME PARK UNDERGROUND SERVICE

120/240V SINGLE PHASE
(SINGLE)
200 AMPERE MAX SERVICE

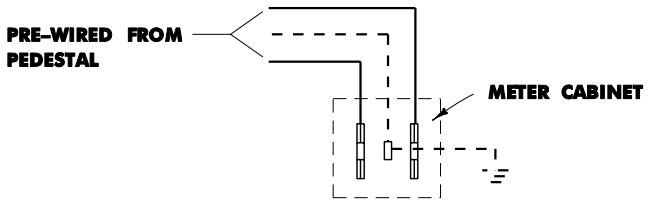
9.06.1

120/240V 1Ø 3W: M191
120/208V 1Ø 3W: M291



FRONT VIEW | **SIDE VIEW** | **FRONT VIEW** (COVER REMOVED)

UNDERGROUND METER DISTRIBUTION CENTER FURNISHED AND INSTALLED BY OPPD.



CUSTOMER'S DISCONNECT AND OVERCURRENT DEVICE MUST BE COMPATIBLE WITH MANUFACTURER'S PANEL. (ONE CUSTOMER PER PANEL).

ONE LINE DIAGRAM

Revised 07-03-00 By BED
DESIGN ENTRY BY: ROBERT B ADAMS

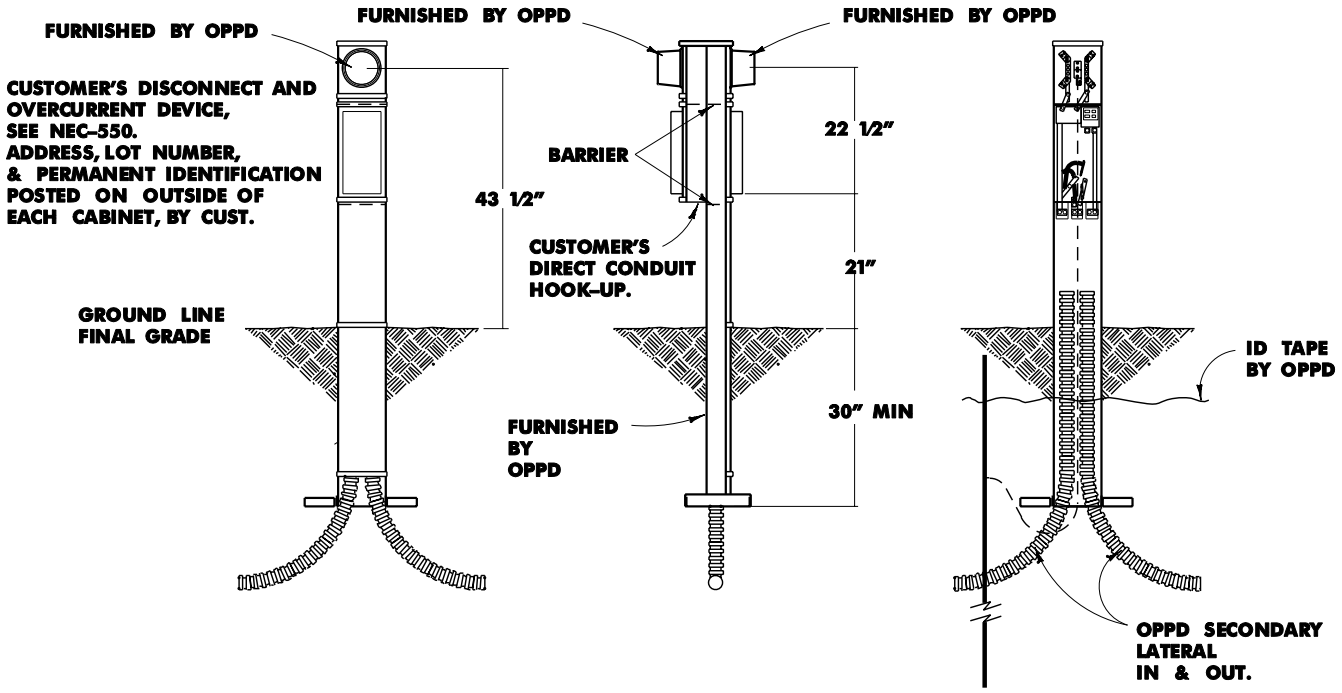
ISSUED DATE _____

MOBILE HOME PARK UNDERGROUND SERVICE

120/240V SINGLE PHASE (DOUBLE) 200 AMPERE MAX SERVICE EACH

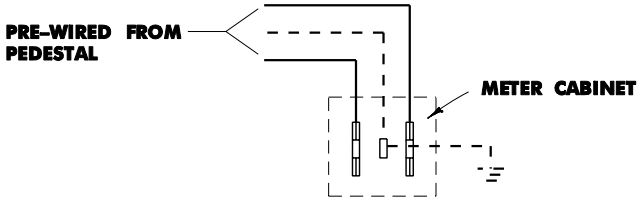
9.06.2

120/240V 1Ø 3W: M193
120/208V 1Ø 3W: M293



FRONT VIEW | **SIDE VIEW** | **FRONT VIEW** (COVER REMOVED)

UNDERGROUND METER DISTRIBUTION CENTER FURNISHED AND INSTALLED BY OPPD.



CUSTOMER'S DISCONNECT AND OVERCURRENT DEVICE MUST BE COMPATIBLE WITH MANUFACTURER'S PANEL. (ONE CUSTOMER PER PANEL).

ONE LINE DIAGRAM

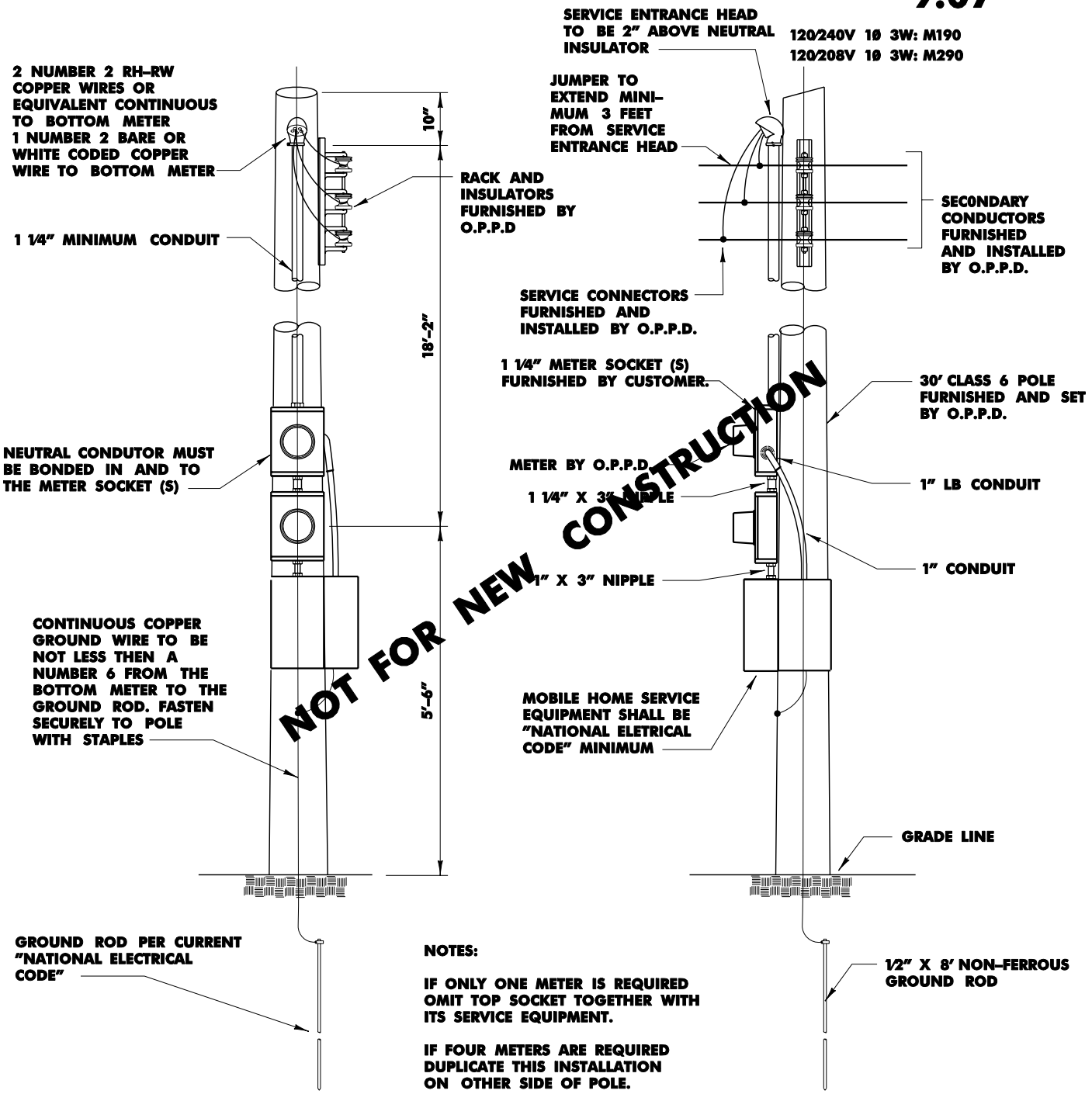
Revised 07-03-00 By BED
DESIGN ENTRY BY: ROBERT B ADAMS

ISSUED DATE _____

MOBILE HOME PARK SECONDARY SERVICE

FROM OVERHEAD

9.07



NOTES:

IF ONLY ONE METER IS REQUIRED OMIT TOP SOCKET TOGETHER WITH ITS SERVICE EQUIPMENT.

IF FOUR METERS ARE REQUIRED DUPLICATE THIS INSTALLATION ON OTHER SIDE OF POLE.

SIZE OF METERED CONDUCTORS TO BE NATIONAL ELECTRICAL CODE OR LARGER.

CUSTOMER TO FURNISH ALL MATERIAL, EXCEPT WHERE NOTED.

ALL MATERIAL FURNISHED BY THE CUSTOMER SHALL EQUAL OR EXCEED THE STANDARDS AS SPECIFIED IN THE "NATIONAL ELECTRICAL CODE."

REFER TO SECTION 9.07 FOR INSTALLATION AND SERVICE REQUIREMENTS

Revised 05-24-07 By MCH

DESIGN ENTRY BY: ROBERT B ADAMS

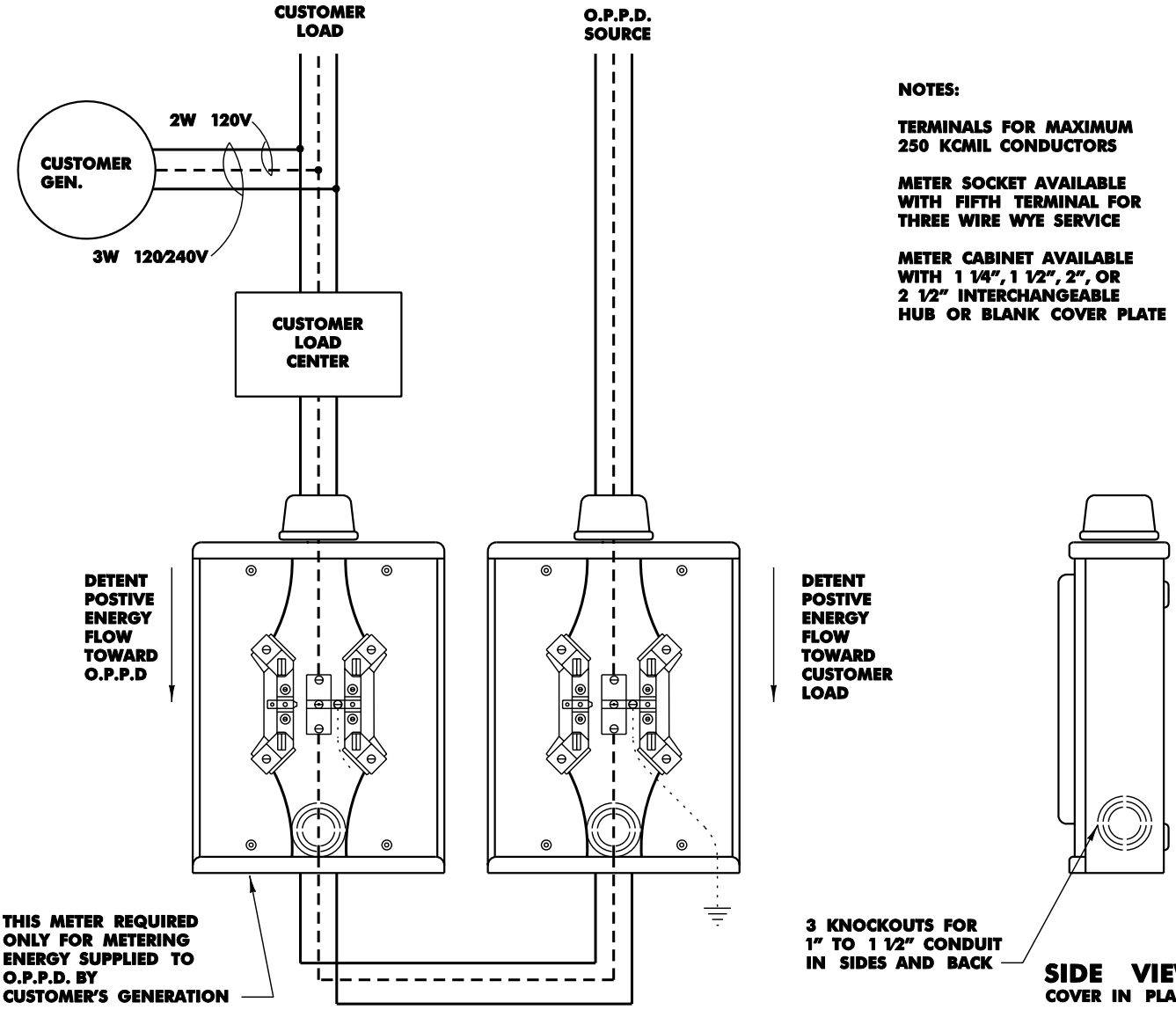
ISSUED DATE _____

SURFACE TYPE METER SOCKET

120/240 VOLT 3 WIRE 200 AMPERES
FOR CUSTOMERS WITH INTERCONNECTED GENERATION

11.08

M128
M228



FRONT VIEW
COVER REMOVED

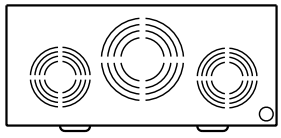
SIDE VIEW
COVER IN PLACE

NOTES:

TERMINALS FOR MAXIMUM 250 KCMIL CONDUCTORS

METER SOCKET AVAILABLE WITH FIFTH TERMINAL FOR THREE WIRE WYE SERVICE

METER CABINET AVAILABLE WITH 1 1/4", 1 1/2", 2", OR 2 1/2" INTERCHANGEABLE HUB OR BLANK COVER PLATE



BOTTOM VIEW

2 KNOCKOUTS FOR 1/2" TO 1 1/2" CONDUIT
1 KNOCKOUT FOR 1/2" TO 2" CONDUIT
1 KNOCKOUT 1/4" FOR EQUIPMENT GROUND

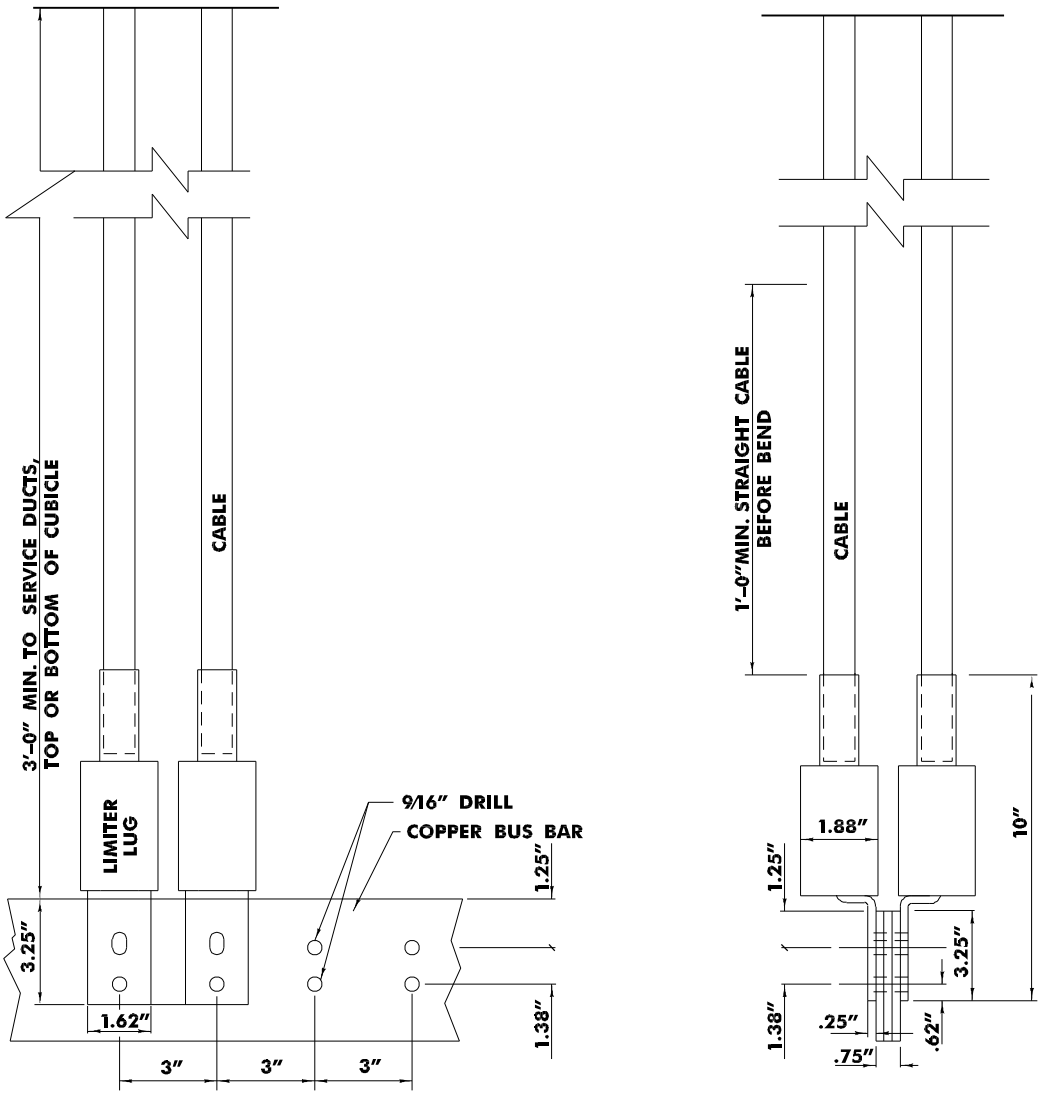
Revised 07-03-00 By BED
DESIGN ENTRY BY: ROBERT B ADAMS

ISSUED DATE_____

LIMITER INSTALLATION

500 KCMIL CABLES
120/208V 3Ø 4W
277/480V 3Ø 4W
480V 3Ø 3W

12.02.1



LIMITER CATALOG ID - 0000162577

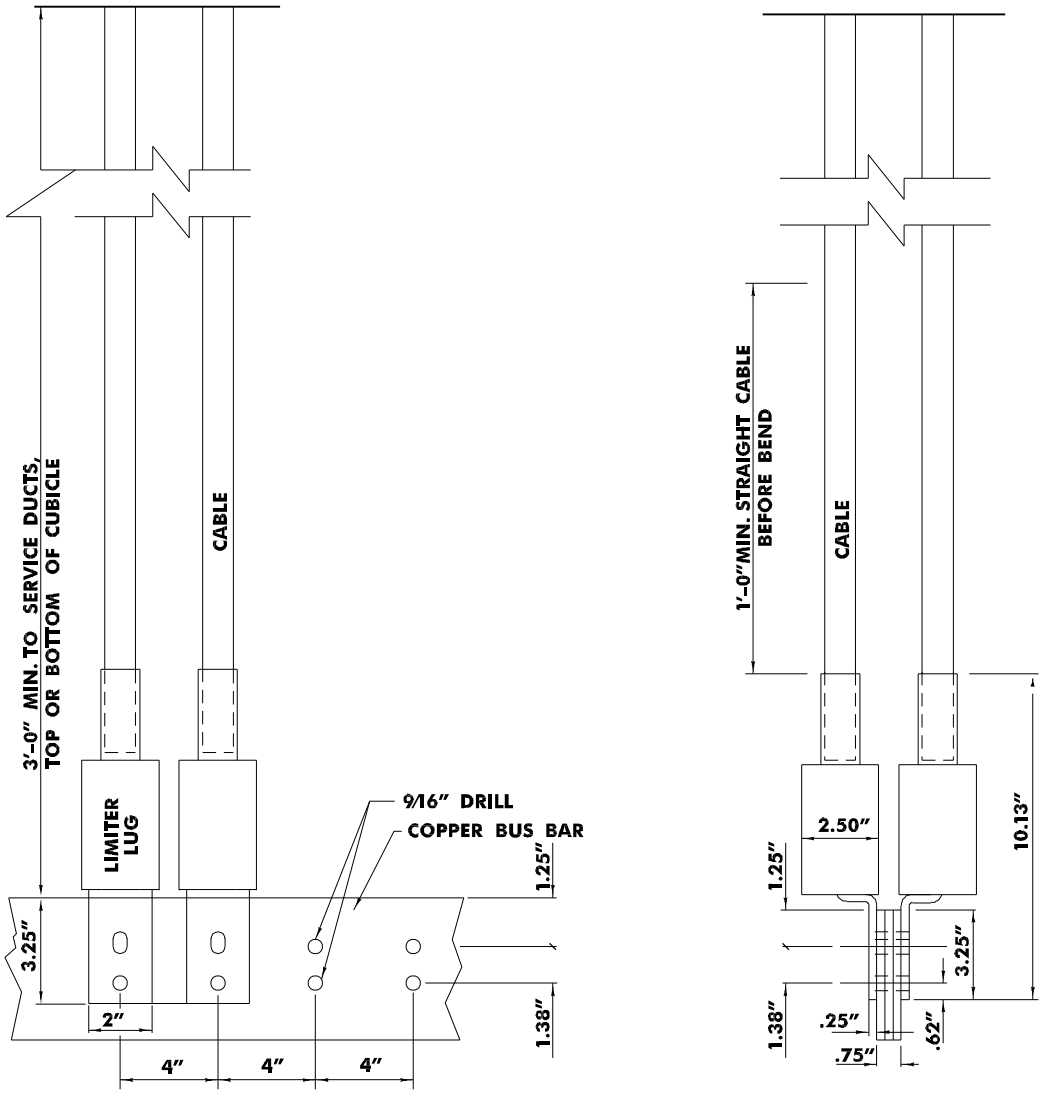
Revised 06-08-17 By AMJ
DESIGN ENTRY BY: ROBERT B ADAMS

ISSUED DATE _____

LIMITER INSTALLATION

750 KCMIL CABLES
120/208V 3Ø 4W
277/480V 3Ø 4W
480V 3Ø 3W – FOR MAINTENANCE ONLY

12.02.2



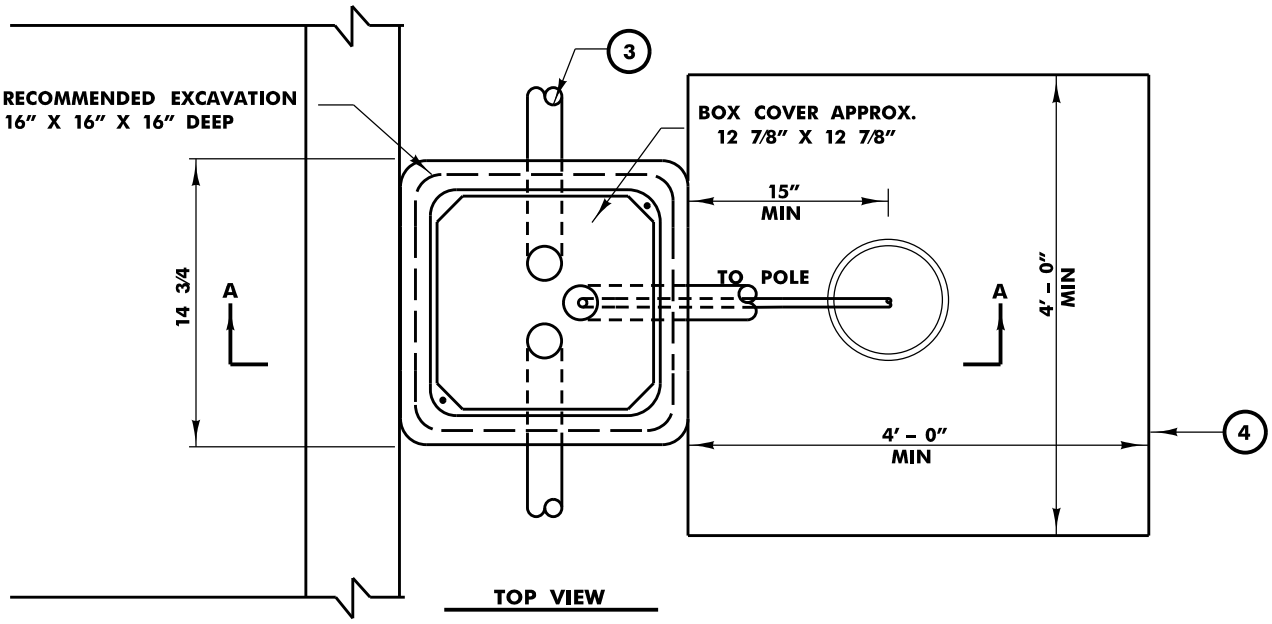
LIMITER CATALOG ID – 0000162578

Revised 06-08-17 By AMJ
DESIGN ENTRY BY: ROBERT B ADAMS

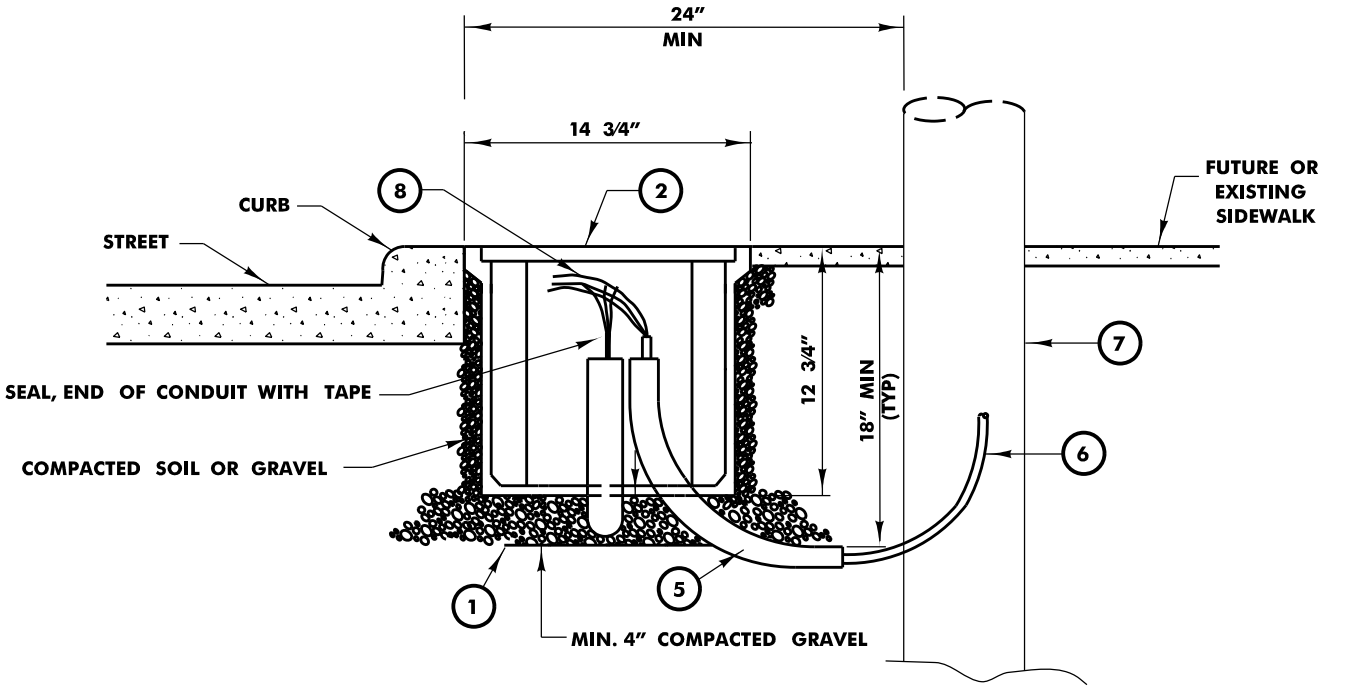
ISSUED DATE _____

CUSTOMER INSTALLED STREET LIGHT CONDUIT & PULLBOX IN AREAS OF REDEVELOPMENT

0.01.1



TOP VIEW



SIDE ELEVATION SECTION A–A

NOTES:

1. CUSTOMER TO COMPACT A MINIMUM OF 4" OF GRAVEL.
2. CUSTOMER TO INSTALL PULL BOX WITH LID (TO BE PROVIDED BY OPPD).
3. CUSTOMER TO INSTALL 2" PVC SCHEDULE 40 CONDUIT AT MIN. DEPTH OF 18" TO TOP OF CONDUIT, AND USE 18" RAD. BENDS INTO PULL BOX (ALL PROVIDED BY OPPD). CUSTOMER IS RESPONSIBLE FOR INSTALLING A PULL LINE IN THE CONDUIT.
4. CUSTOMER TO LEAVE A 4' X 4' OPENING IN SIDEWALK, CENTERED BEHIND PULL BOX.
5. CUSTOMER TO INSTALL 2" PVC SCHEDULE 40 18" RAD. BEND. TAPE END & MARK WITH CAUTION TAPE AND STAKE AT END OF BEND.
6. OPPD TO INSTALL 1 1/2" BLACK HDPE SCHEDULE 40 CONDUIT BETWEEN PULL BOX AND BASE OF STREET LIGHT POLE.
7. OPPD TO INSTALL STREET LIGHT POLE AT A MINIMUM DISTANCE OF 15" FROM EDGE OF PULL BOX TO CENTER OF POLE.
8. OPPD TO PULL STREET LIGHT CONDUCTOR (AND HOLIDAY LIGHT CIRCUIT) THROUGH CONDUITS AND MAKE TERMINATIONS IN PULL BOX AND STREET LIGHT POLE.

Revised 01-24-18 By AMJ
DESIGN ENTRY BY: ADOLFO MARTINEZ JR

ISSUED DATE 00-00-00