

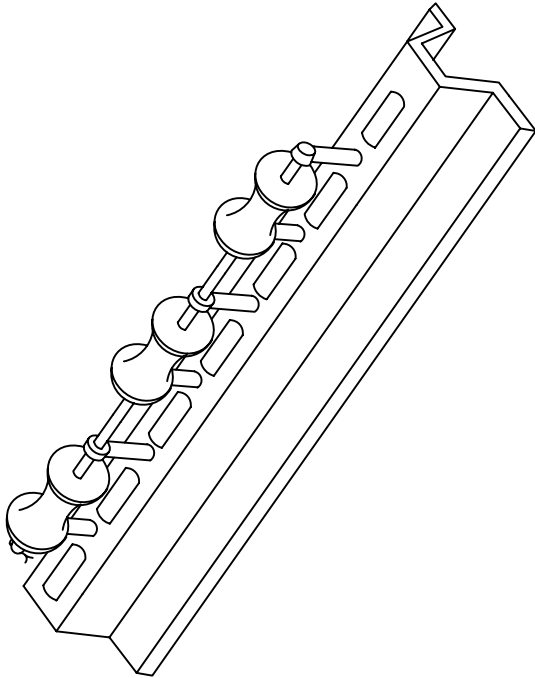


# **SECTION 12**

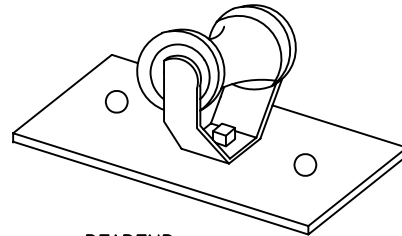
## **ELECTRIC SERVICE REQUIREMENTS DIAGRAMS**

UPDATED: June 14th, 2021

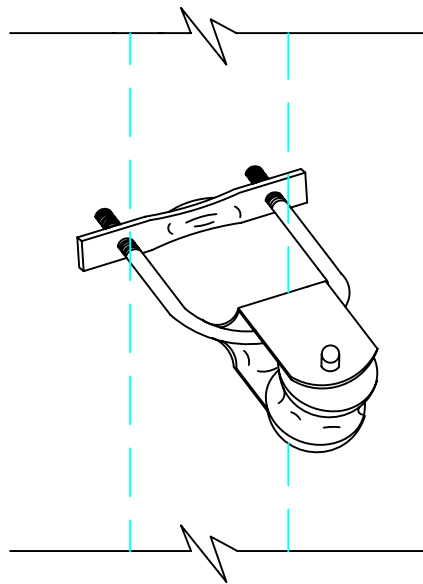
ALSO SEE N.E.C.  
REQUIREMENTS



HEAVY DUTY  
SERVICE BRACKET



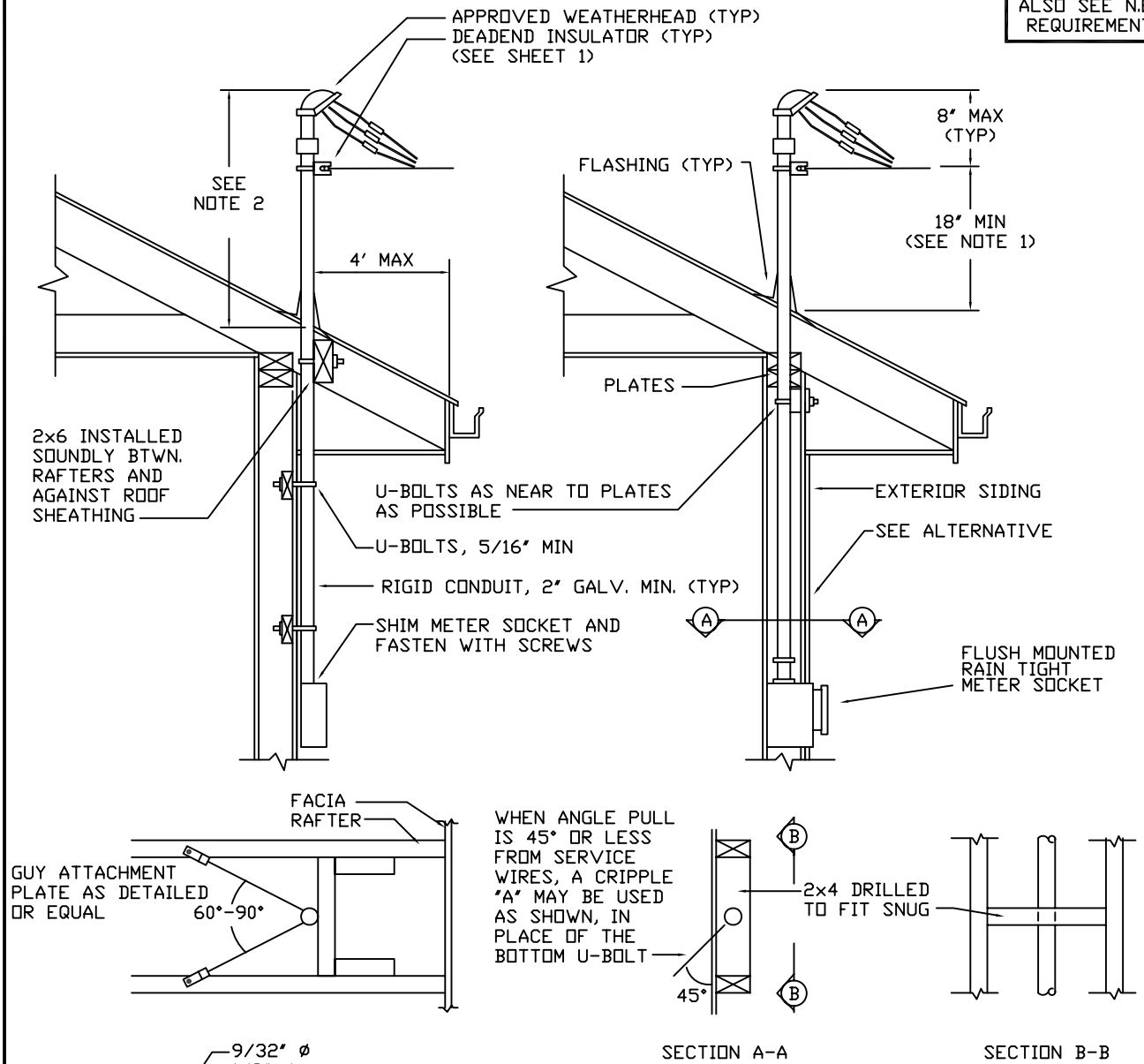
DEADEND  
HOUSE BRACKET



SERVICE MAST  
BRACKET TRUNNEL

DATE 9/27/93	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS SERVICE BRACKETS		
DRAWN KMD	REVISED 05/05/93 10/29/98	CLALLAM COUNTY PUD #1	PAGE 1 OF 37	DRAWNG # 1
APPROVED				

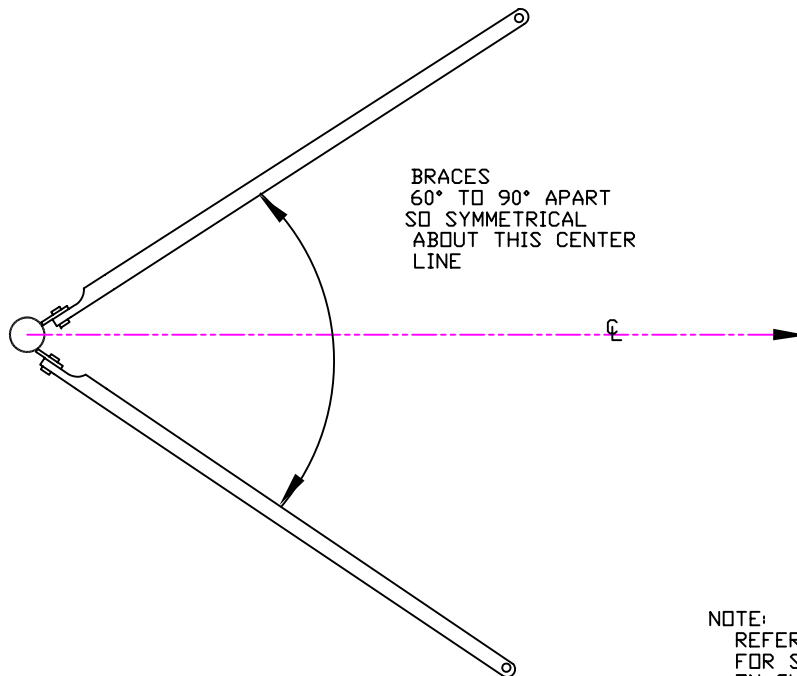
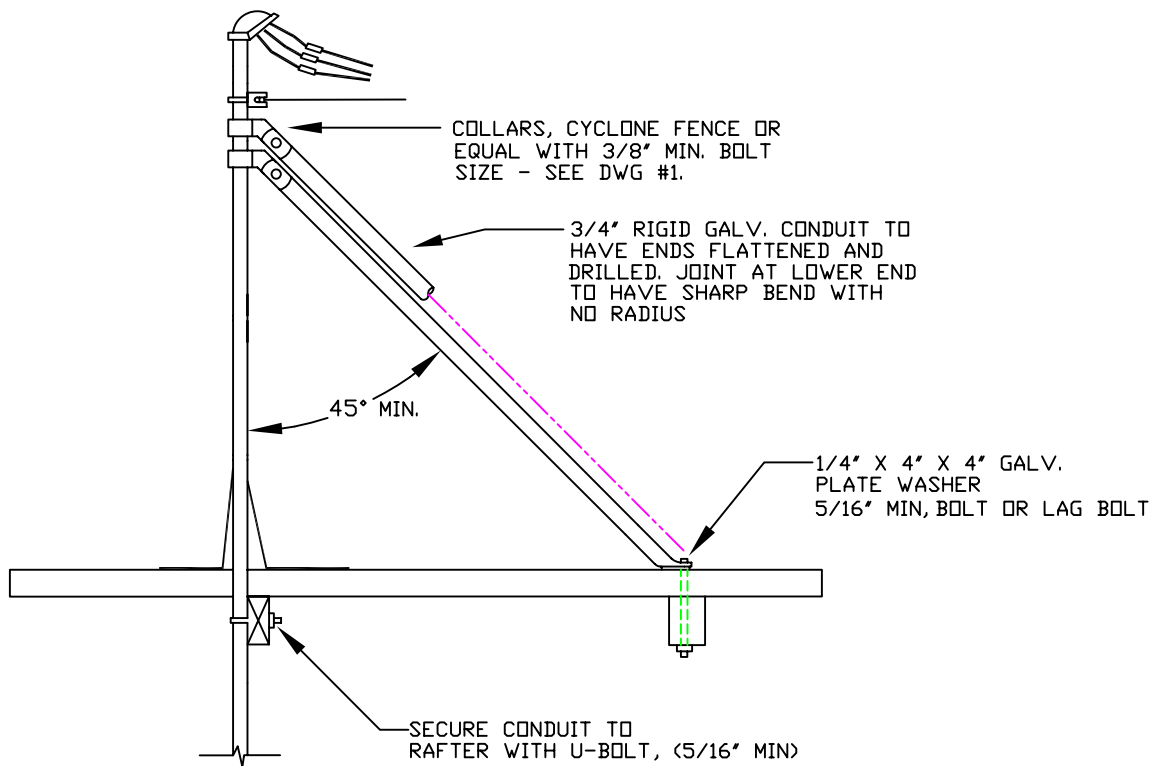
ALSO SEE N.E.C. REQUIREMENTS



- NOTE:
- 1) SERVICE MAST MAY BE INSTALLED INSIDE BUILDING LINES, PROVIDED MAST CONDUIT IS BRACED OR U-BOLTED. METER BASE SHALL BE GROUNDED WITH (2) 8' GROUND RODS (6' MIN SEPARATION) W/#6 COPPER CONNECTED TO ELECTRICAL EQUIPMENT.
  - 2) ROOF LINE TO POINT OF STRIKE ATTACHMENT SHALL NOT BE LESS THAN 18". WEATHERHEAD SHALL NOT BE MORE THAN 8' ABOVE POINT OF ATTACHMENT. WHERE MAST IS OVER 26' HIGH OR SERVICE DROP EXCEEDS 100', GUYS ARE REQUIRED. SEE NEC SECTION 230-24 FOR OTHER ROOF CLEARANCES & REQUIREMENTS.

DATE	12/86	SCALE	NONE	ELECTRICAL SERVICE REQUIREMENTS OVERHEAD STRIKE TO RESIDENCE		
DRAWN	SMH	REVISED	7/14/93 05/05/97 10/16/98 04/20/04	CLALLAM COUNTY PUD #1		
APPROVED				PAGE 2 OF 37	DRAWING # 2	

ALSO SEE N.E.C. REQUIREMENTS



NOTE:  
REFER TO DRAWING #2  
FOR SPECIFICATIONS  
ON GUYING AND OVER-  
HEAD STRIKES

GUYING-STIFF LEG TYPE

DATE	12/86	SCALE	NONE	ELECTRICAL SERVICE REQUIREMENTS GUYING-STIFF LEG TYPE		
DRAWN	KMD	REVISED	09/15/93 10/11/04 10/17/94 05/05/97 10/29/98	CLALLAM COUNTY PUD #1	PAGE 3 OF 37	DRAWING # 3
APPROVED						

ALSO SEE N.E.C. REQUIREMENTS

# — CLEARANCES: —

## SERVICES OVER GROUND & ROOFS

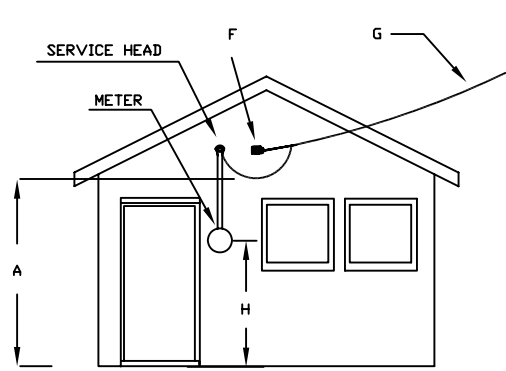


FIG. 1  
USUAL INSTALLATION

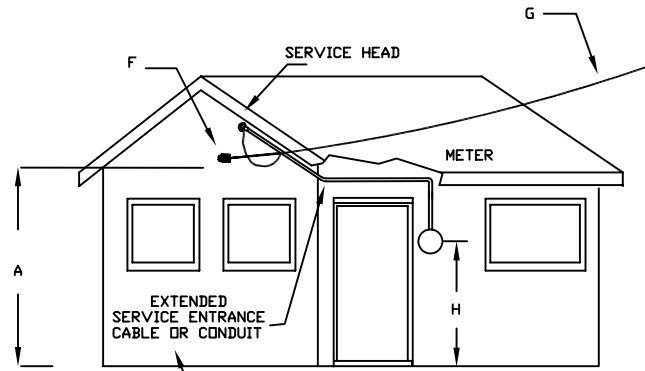
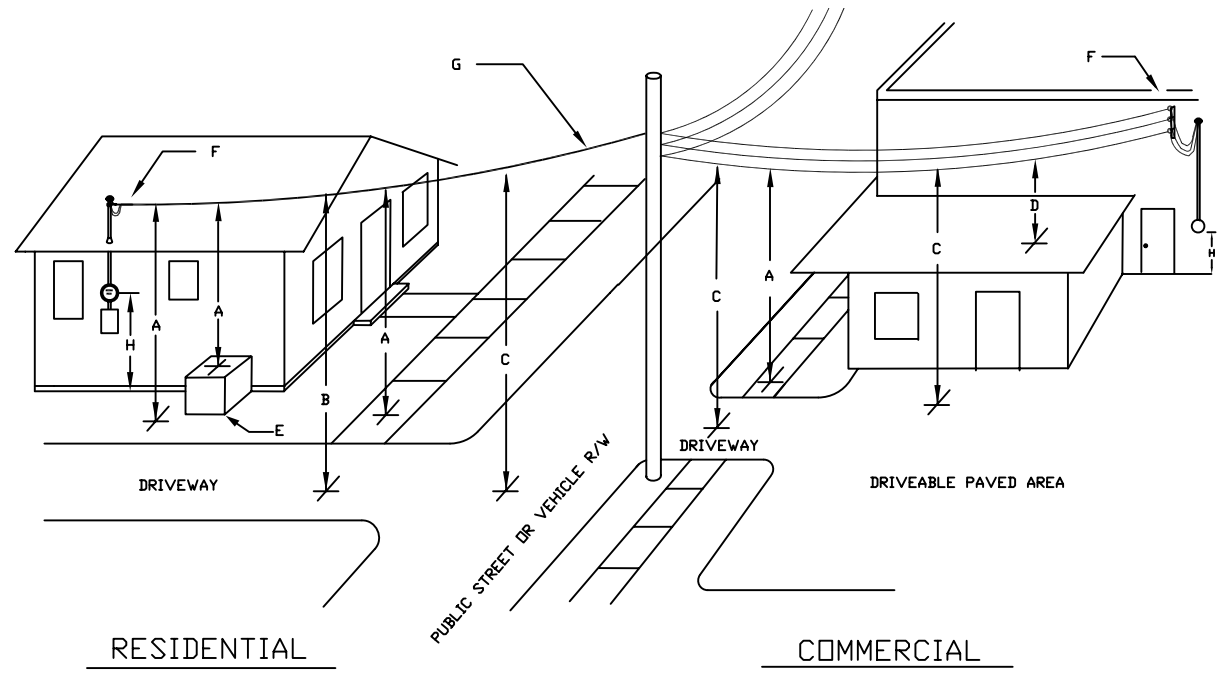


FIGURE 2  
WHERE SERVICE WALL IS OF INADEQUATE HEIGHT  
CUSTOMER EXTENDS SERVICE AS NECESSARY TO MEET  
UTILITY COMPANY'S POINT OF ATTACHMENT



DATE 3/3/97	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS CLEARANCES: SERVICES OVER GROUND & ROOFS - A		
DRAWN JAK	REVISED 05/05/97 05/05/97	CLALLAM COUNTY PUD #1	PAGE 4 OF 37	DRAWING # 4
APPROVED				

CLEARANCES : SERVICES OVER GROUND & ROOFS

OPEN WIRE OR TRIPLEX

MINIMUM REQUIRED CLEARANCES & NOTES

OVER GROUND

- A 12ft OVER SPACES AND WAYS SUBJECT TO PEDESTRIAN OR RESTRICTED TRAFFIC ONLY. (NO VEHICLES OVER 8 FT HIGH.)
- EXCEPTION Clearance may be reduced to 10ft at the drip loop or service drop cable limited to 150 volts to ground
- EXCEPTION Clearance must be increased to 15ft for service voltages between 300 and 750 volts to ground
- B 15ft RESIDENTIAL DRIVEWAYS, COMMERCIAL AREAS NOT SUBJECT TO TRUCK TRAFFIC.
- EXCEPTION Clearance may be reduced to 12ft for triplex service cable limited to 150 volts to ground
- C 18FT ROADS,STREETS,ALLEYS,NON-RESIDENTIAL DRIVEWAYS,PARKING LOTS AND OTHER AREAS SUBJECT TO TRUCK TRAFFIC.
- 24FT STATE HIGHWAYS

OVER ROOFS (INCLUDES PARKING GARAGES)

- D Clearances from highest point in roof shall not be less than:
1. 3ft--Roof not accessible to pedestrians ( See note )
  2. 8ft--Roof accessible to pedestrians
  3. 10ft--Roof accessible to vehicles, but not truck traffic
  4. 18ft--Roof accessible to truck traffic

NOTE:

A roof is considered accessible to pedestrians if there is a means of access through a doorway, ramp, stairway or permanently mounted ladder, or if slope of roof is less than 4 in per ft

- E Any equipment housing including air conditioning, platform or projection which a person might stand on
- F Service mast, bracket attachment or upright of adequate size and height
- G Normally triplex conductors, but may be separate as shown for commercial
- H See Section 3.3.2 regarding meter mounting heights

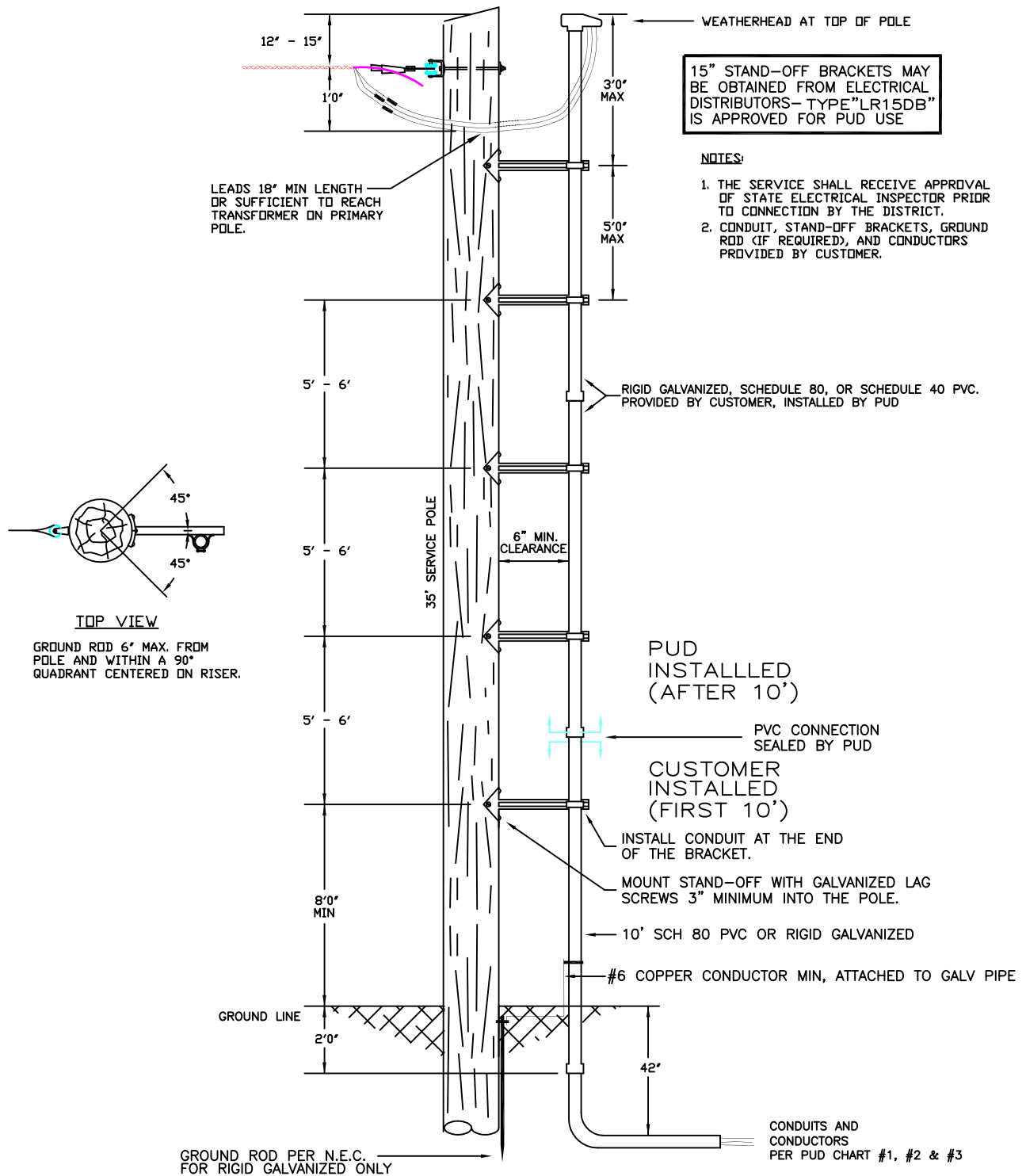
EXCEPTIONS:

1. For open wire service with voltages between 300 and 750 volts to ground the 3ft clearance described above must be increased to 8ft
2. Where voltage between conductors does not exceed 300 volts, a reduction in clearance over the roof to 18in minimum is permitted if:
  1. They do not pass over more than 4ft of the overhang of the roof
  2. They are terminated at a through-the-roof raceway or approved support

DATE 3/3/97	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS		
DRAWN JAK	REVISED 5/05/97 8/13/04	CLEARANCES: SERVICES OVER GROUND & ROOFS - B		
APPROVED	10/29/98 04/20/04	CLALLAM COUNTY PUD #1	PAGE 5 OF 37	DRAWING # 5

ALSO SEE N.E.C. REQUIREMENTS

PUD SERVICE POLE:  
 OVEREAD SERVICE FROM PADMOUNT TRANSFORMER  
 UNDERGROUND SERVICE FROM OVERHEAD TRANSFORMER

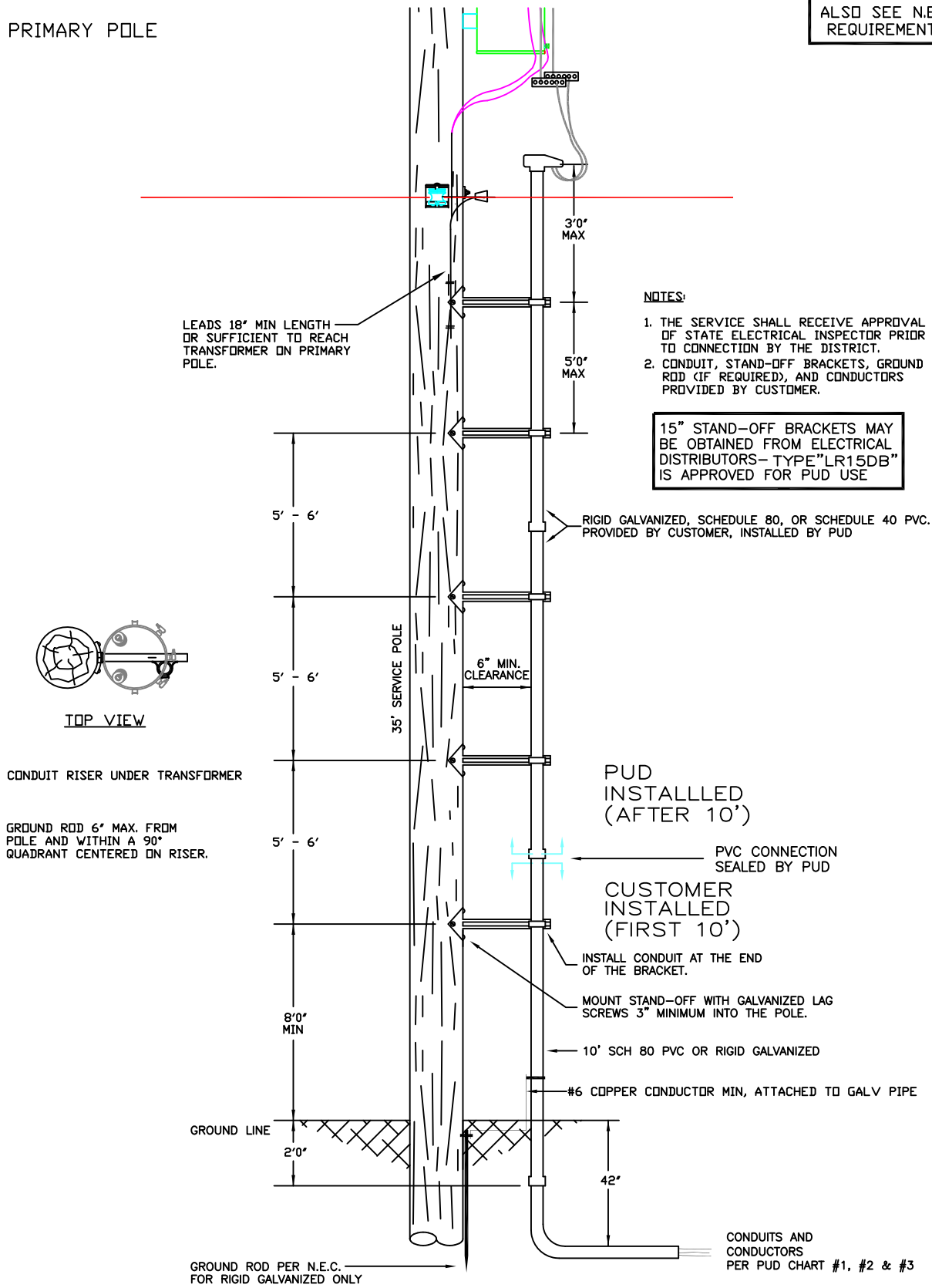


REV: STANDOFF SEPARATION

DATE	7/8/82	SCALE: NONE	ELECTRICAL SERVICE REQUIREMENTS SERVICE POLE - CONDUIT & STAND-OFF ASSEMBLY		
DRAWN	NB	REVISED 03/03/93 02/07/03 10/17/94 04/20/04 05/05/97 08/13/04 10/29/98 08/02/14 03/14/00			
APPROVED			CLALLAM COUNTY PUD #1	PAGE 6A OF 37	DRAWING # 6A

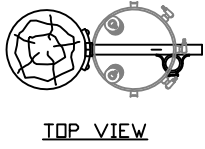
PUD PRIMARY POLE

ALSO SEE N.E.C. REQUIREMENTS



- NOTES:**
1. THE SERVICE SHALL RECEIVE APPROVAL OF STATE ELECTRICAL INSPECTOR PRIOR TO CONNECTION BY THE DISTRICT.
  2. CONDUIT, STAND-OFF BRACKETS, GROUND ROD (IF REQUIRED), AND CONDUCTORS PROVIDED BY CUSTOMER.

15" STAND-OFF BRACKETS MAY BE OBTAINED FROM ELECTRICAL DISTRIBUTORS - TYPE "LR15DB" IS APPROVED FOR PUD USE



CONDUIT RISER UNDER TRANSFORMER

GROUND ROD 6" MAX. FROM POLE AND WITHIN A 90° QUADRANT CENTERED ON RISER.

PUD INSTALLED (AFTER 10')

PVC CONNECTION SEALED BY PUD

CUSTOMER INSTALLED (FIRST 10')

INSTALL CONDUIT AT THE END OF THE BRACKET.

MOUNT STAND-OFF WITH GALVANIZED LAG SCREWS 3" MINIMUM INTO THE POLE.

10' SCH 80 PVC OR RIGID GALVANIZED

#6 COPPER CONDUCTOR MIN, ATTACHED TO GALV PIPE

GROUND ROD PER N.E.C. FOR RIGID GALVANIZED ONLY

CONDUITS AND CONDUCTORS PER PUD CHART #1, #2 & #3

REV: STANDOFF SEPARATION

DATE	7/8/82	SCALE: NONE	ELECTRICAL SERVICE REQUIREMENTS PRIMARY POLE - CONDUIT & STAND-OFF ASSEMBLY			
DRAWN	NB	REVISED				03/03/93
APPROVED		10/17/94	04/20/04	CLALLAM COUNTY PUD #1	PAGE 6B OF 37	
		05/05/97	08/13/04			DRAWING # 6B
		10/29/98	08/02/14			
		03/14/00				



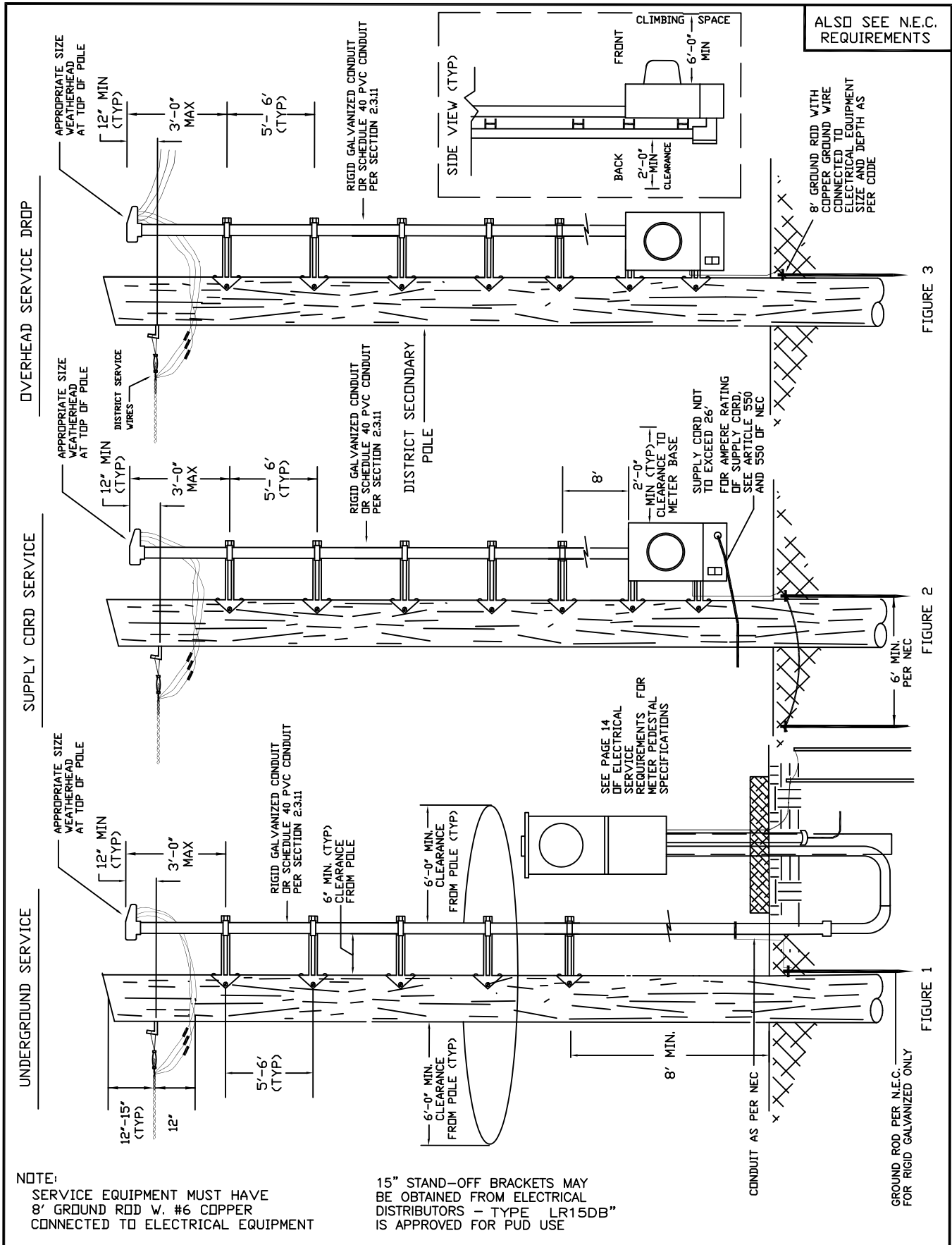
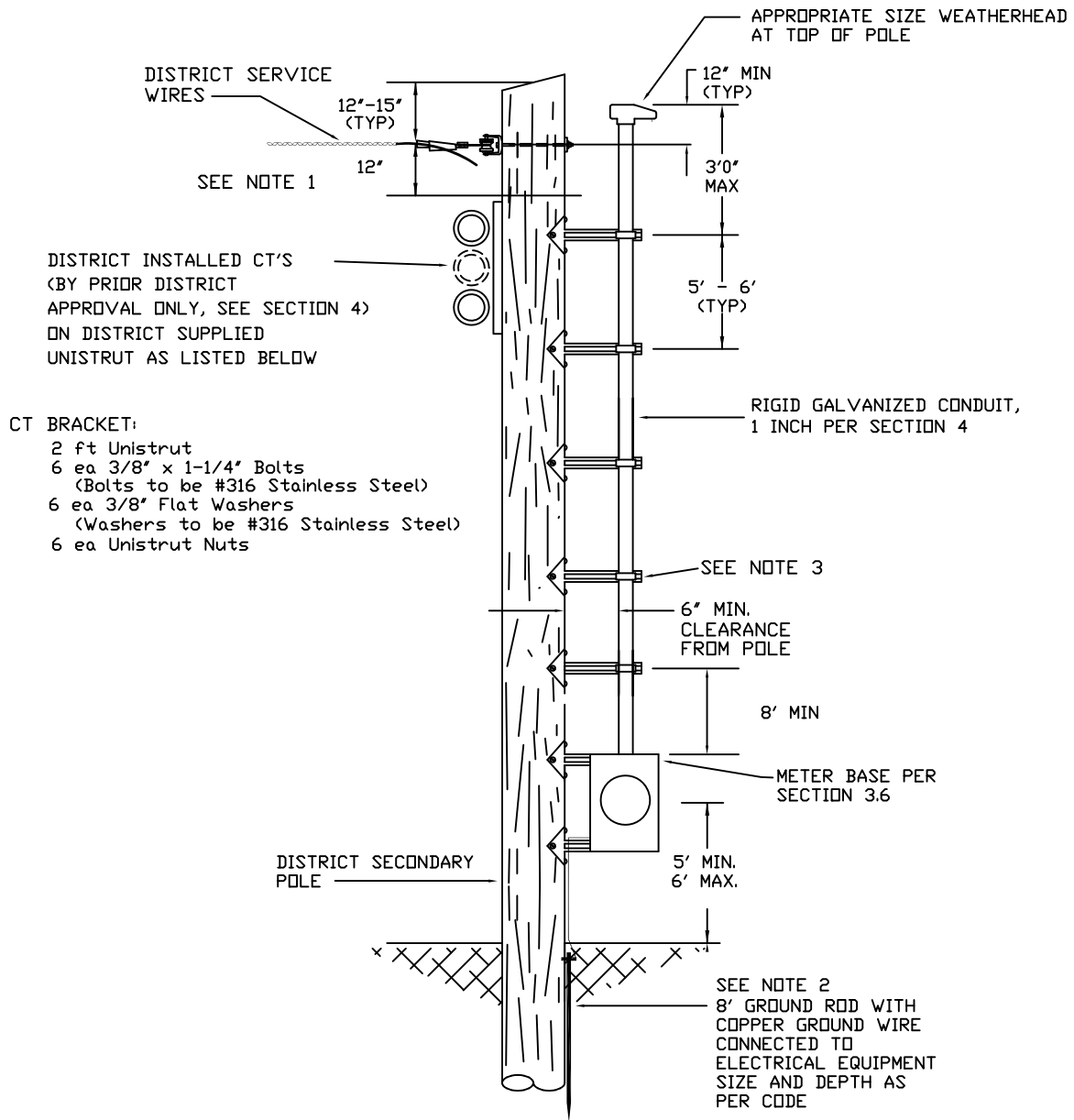


FIGURE 3

FIGURE 2

FIGURE 1

DATE	12/86	SCALE	NONE	ELECTRICAL SERVICE REQUIREMENTS		
DRAWN	SMH/DT	REVISED 12/01/08		SERVICE POLE; METERING SELF CONTAINED INSTALLATION		
APPROVED		ACCESS POLICY		CLALLAM COUNTY PUD #1	PAGE 7 OF 37	DRAWING # 7
		08/14 SVC UPDATES				
		10/17 SVC UPDATES				

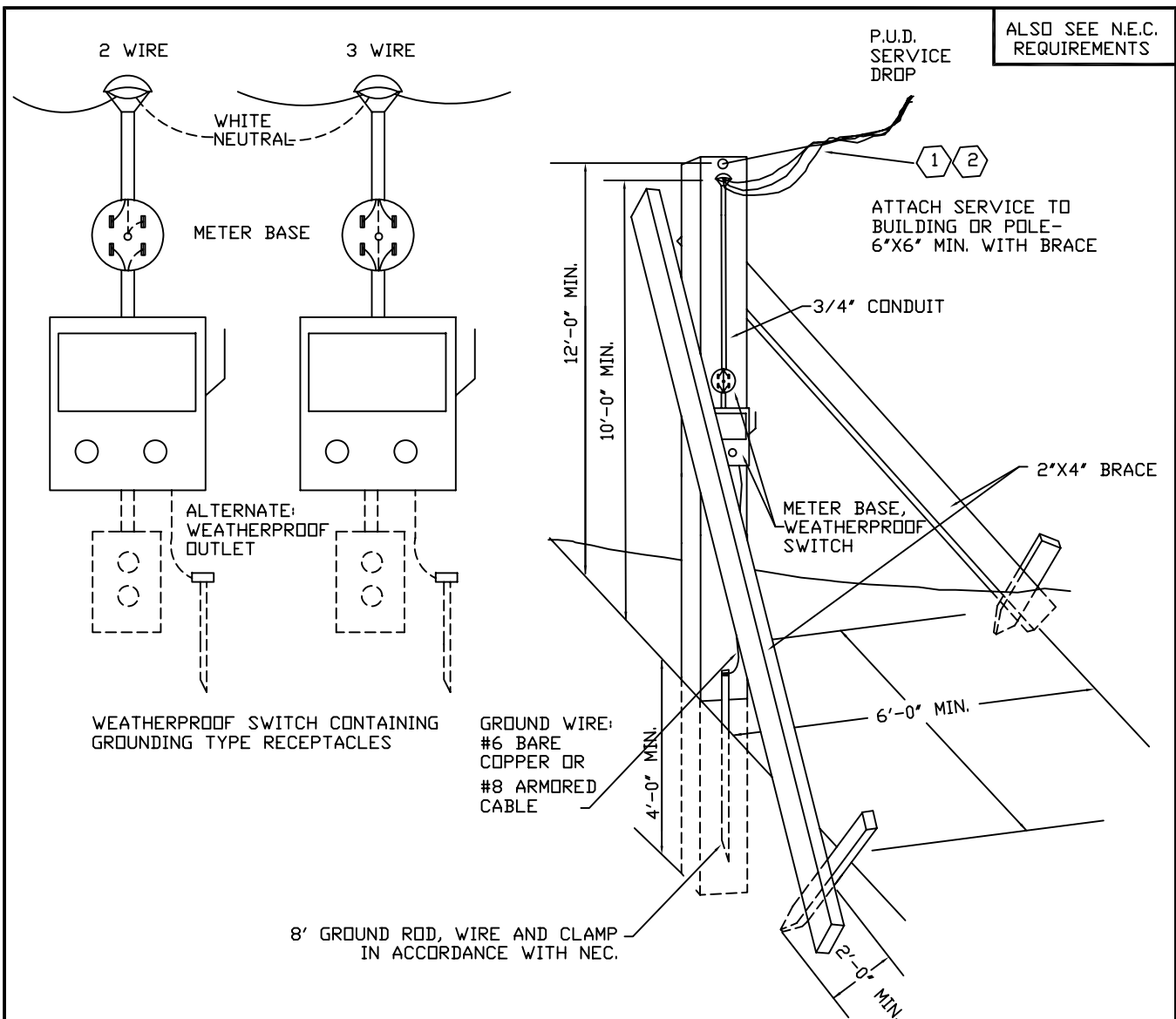


CT BRACKET:  
 2 ft Unistrut  
 6 ea 3/8" x 1-1/4" Bolts  
 (Bolts to be #316 Stainless Steel)  
 6 ea 3/8" Flat Washers  
 (Washers to be #316 Stainless Steel)  
 6 ea Unistrut Nuts

NOTES:

1. CUSTOMER SHALL PROVIDE SERVICE CONDUCTOR BETWEEN POLE AND CUSTOMER'S FACILITY. ALL CONDUCTORS SHALL HAVE A MINIMUM LENGTH OF 1 1/2 TIMES THE DISTANCE FROM THE SERVICE ATTACHMENT TO THE MOST DISTANT CURRENT TRANSFORMER.
2. ALL OUTDDOR ENCLOSURES MUST HAVE 8' GROUND ROD W/ #6 COPPER CONNECTED TO ELECTRICAL EQUIPMENT.
3. 15" STAND-OFF BRACKETS MAY BE OBTAINED FROM ELECTRICAL DISTRIBUTORS - TYPE LR15DB IS APPROVED FOR PUD USE.

DATE 7/19/93	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS METERING ASSEMBLY, C.T., POLE INSTALLATION		
DRAWN SMH / DT	REVISED 01/10/09 08/10/14	CLALLAM COUNTY PUD #1	PAGE 8 OF 37	DRAWING # 8
APPROVED				



ALSO SEE N.E.C. REQUIREMENTS

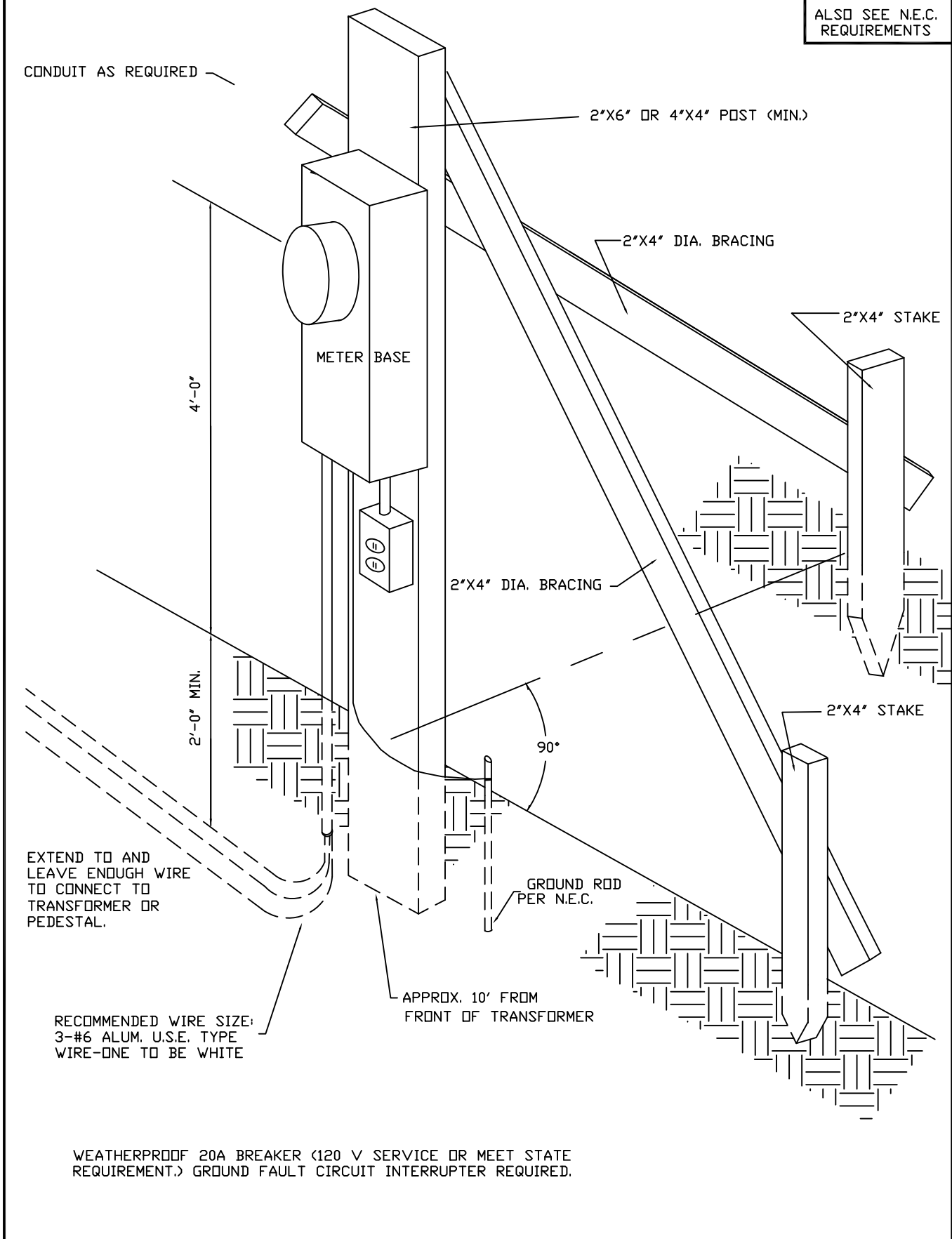
RECOMMENDED MIN. WIRE SIZE: 2-#8 BLACK, 1-#8 WHITE  
WITH 30 AMP. WEATHERPROOF SWITCH

**NOTES:**

1. ALL WIRING MUST COMPLY WITH STATE OR LOCAL CODES; A STATE WIRING LABEL OR LOCAL WIRING PERMIT MUST BE IN EVIDENCE BEFORE SERVICE IS CONNECTED BY P.U.D.
2. RECEPTACLES SHALL BE PROVIDED WITH A GROUNDING CONTACT CONNECTED TO THE EQUIPMENT GROUND TO PERMIT EFFECTIVE USE OF THE GROUNDING TYPE PLUGS AND CORDS REQUIRED FOR PORTABLE TOOLS.
3. BRACING ADEQUATE TO SUPPORT THE SERVICE DROP MUST BE PROVIDED.
4. IF VEHICULAR TRAFFIC WILL PASS UNDER THE SERVICE, SUFFICIENT ATTACHMENT HEIGHT WILL BE REQUIRED TO PROVIDE A MINIMUM SERVICE DROP CLEARANCE OF 15' OVER PRIVATE PROPERTY, AND 24' OVER STATE HIGHWAY.
5. TEMPORARY SERVICE WILL BE PROVIDED IF FACILITIES AS SHOWN ARE WITHIN 150' OF A P.U.D. POLE; IF OVER 150', CONSULT THE NEAREST LOCAL OFFICE OF P.U.D. NO. 1 OF CLALLAM COUNTY.
6. POLE SHOULD BE LOCATED AS NEAR AS POSSIBLE TO PERMANENT SERVICE LOCATION.

DATE 9/27/93	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS SERVICE ASSEMBLY, OVERHEAD TEMPORARY		
DRAWN KMD	REVISED 05/05/97	CLALLAM COUNTY PUD #1	PAGE 9 OF 37	DRAWING # 9
APPROVED	10/29/98 01/20/09			

ALSO SEE N.E.C. REQUIREMENTS



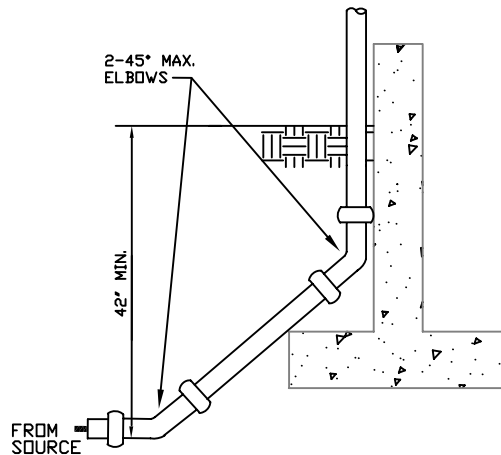
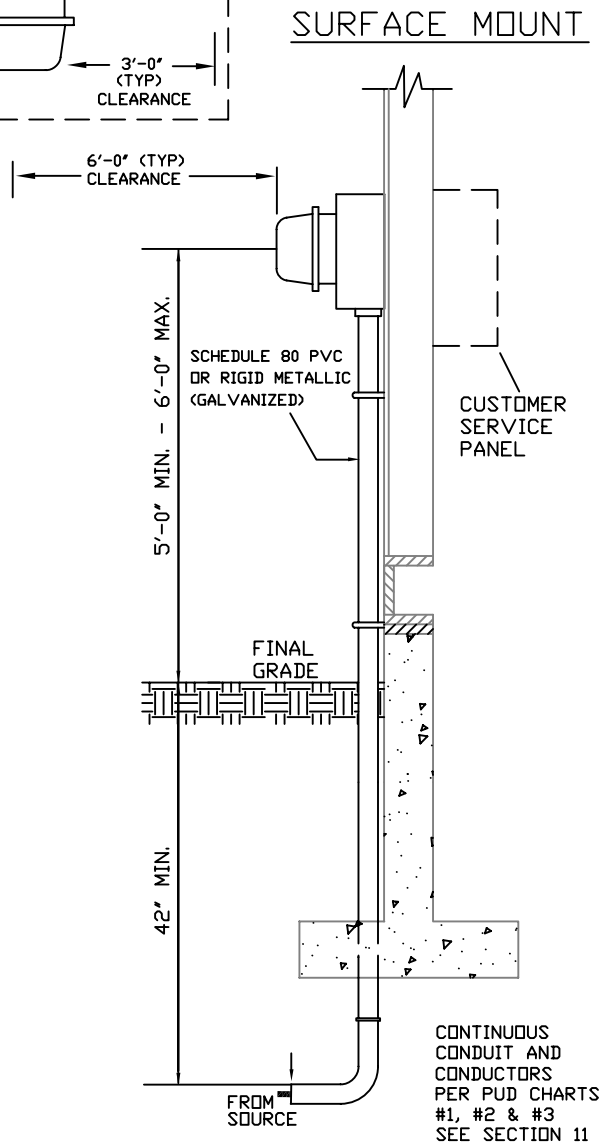
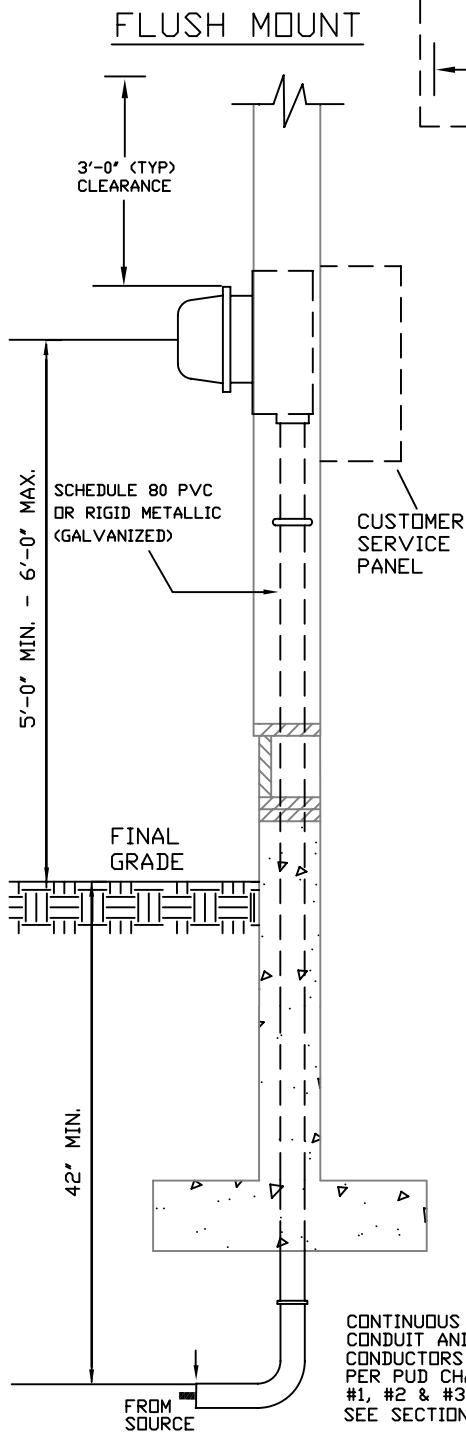
EXTEND TO AND LEAVE ENOUGH WIRE TO CONNECT TO TRANSFORMER OR PEDESTAL.

RECOMMENDED WIRE SIZE:  
3-#6 ALUM. U.S.E. TYPE  
WIRE-ONE TO BE WHITE

WEATHERPROOF 20A BREAKER (120 V SERVICE OR MEET STATE REQUIREMENT.) GROUND FAULT CIRCUIT INTERRUPTER REQUIRED.

DATE 9/27/93	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS SERVICE ASSEMBLY, UNDERGROUND TEMPORARY		
DRAWN KMD	REVISED 05/05/97	CLALLAM COUNTY PUD #1	PAGE 10 OF 37	DRAWING # 10
APPROVED	10/29/98 01/20/09 02/28/17			

ALSO SEE N.E.C.



- NOTES:  
 (1) SEE SECTION 11, CHART #1 & 2, FOR CONDUIT AND CONDUIT BEND REQUIREMENTS.  
 (2) GROUND RODS PER NEC REQUIREMENTS

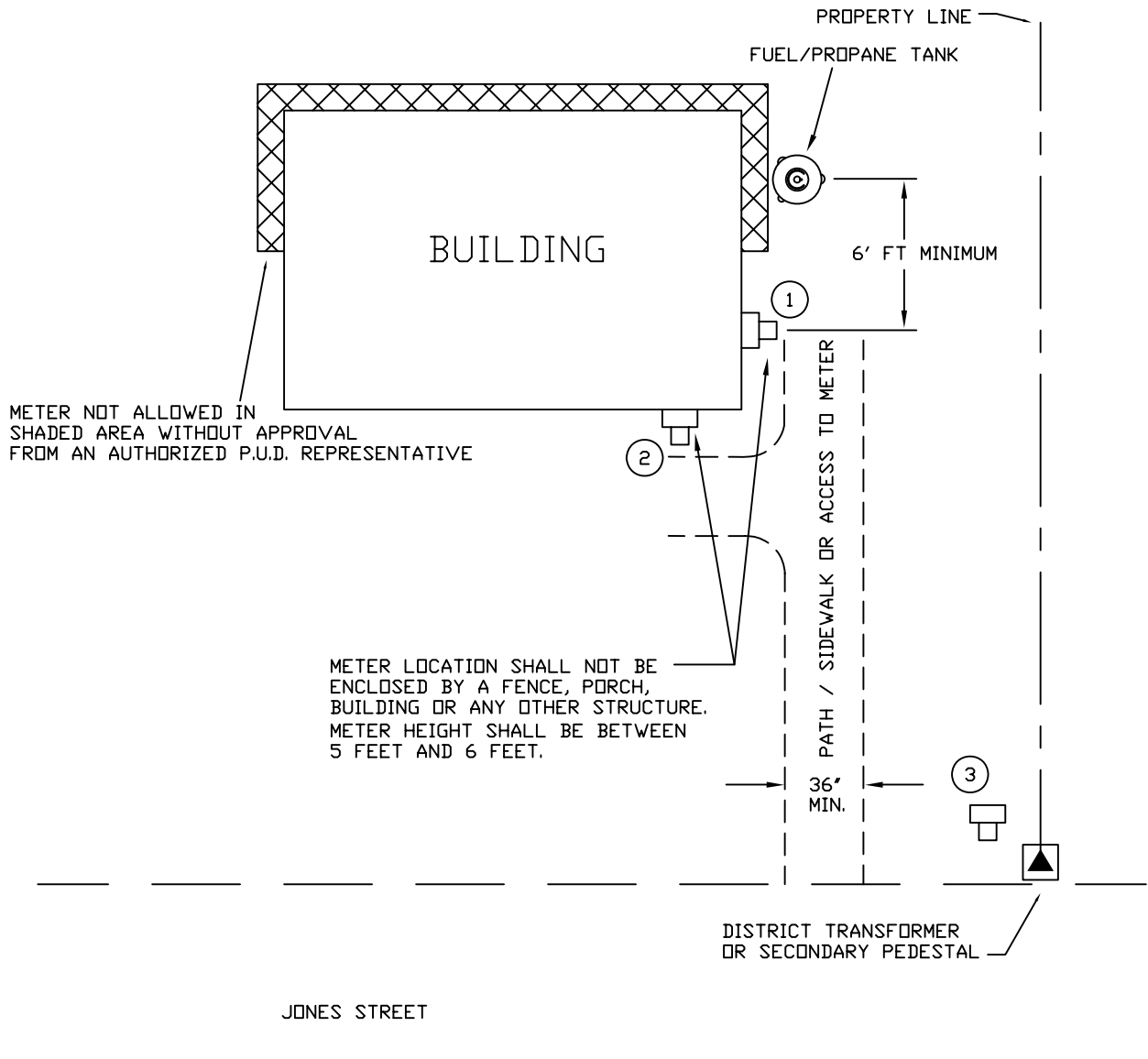
CONTINUOUS CONDUIT AND CONDUCTORS PER PUD CHARTS #1, #2 & #3 SEE SECTION 11

CONTINUOUS CONDUIT AND CONDUCTORS PER PUD CHARTS #1, #2 & #3 SEE SECTION 11

DATE 9/27/93	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS METERING ASSEMBLY, WALL MOUNTED, SELF CONTAINED		
DRAWN KMD	REVISED 8/13/04 05/01/08			
APPROVED	"ACCESS POLICY"	CLALLAM COUNTY PUD #1	PAGE 11 OF 37	DRAWING # 11

RECOMMENDED METER LOCATIONS

ALSO SEE N.E.C. REQUIREMENTS

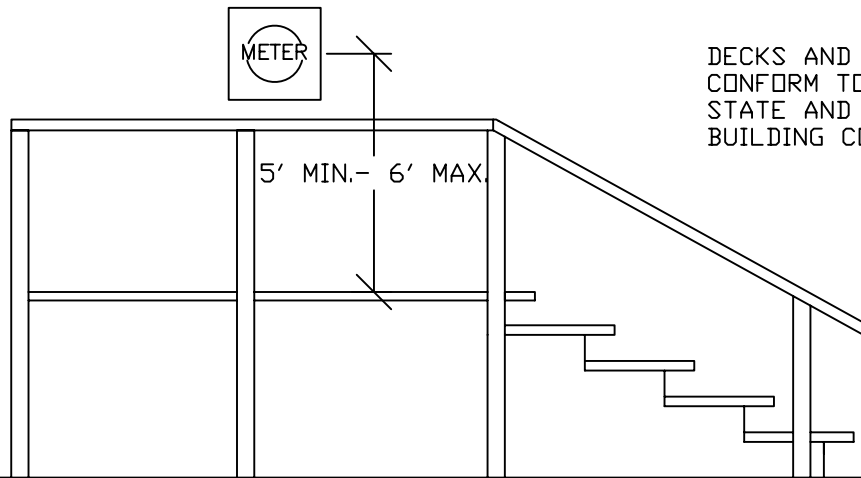


NOTES:

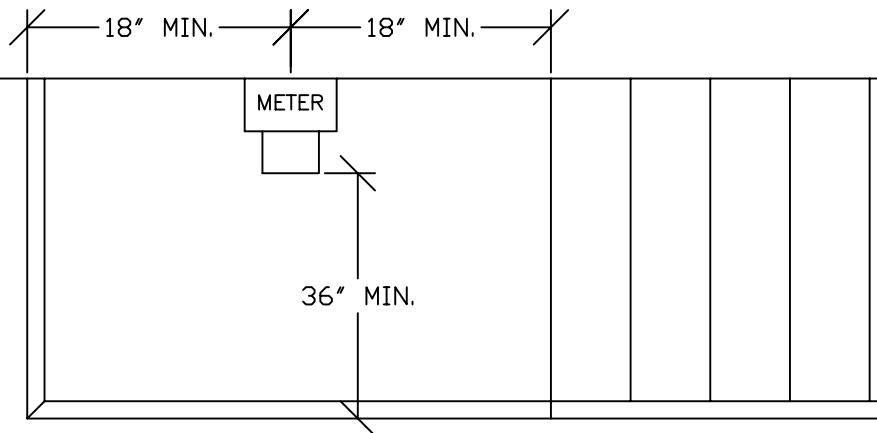
1. METER SITES #1, #2, AND #3 ARE RECOMMENDED METER LOCATIONS.
2. METER AT SITE #3 MUST BE A MINIMUM OF 5' FROM SIDE OF TRANSFORMER AND AT A HEIGHT OF BETWEEN 3 FEET AND 4 FEET.
3. THE CUSTOMER SHALL FURNISH A METER LOCATION ACCEPTABLE TO THE DISTRICT, READILY ACCESSIBLE WITHOUT RISK OF BODILY HARM TO DISTRICT EMPLOYEES.

DATE 8/23/93	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS METER LOCATION ON BUILDINGS		
DRAWN SMH/DT	REVISED 05/05/97 10/29/08 "ACCESS POLICY"	CLALLAM COUNTY PUD #1	PAGE 12 OF 37	DRAWING # 12
APPROVED				

ALSO SEE N.E.C.  
REQUIREMENTS



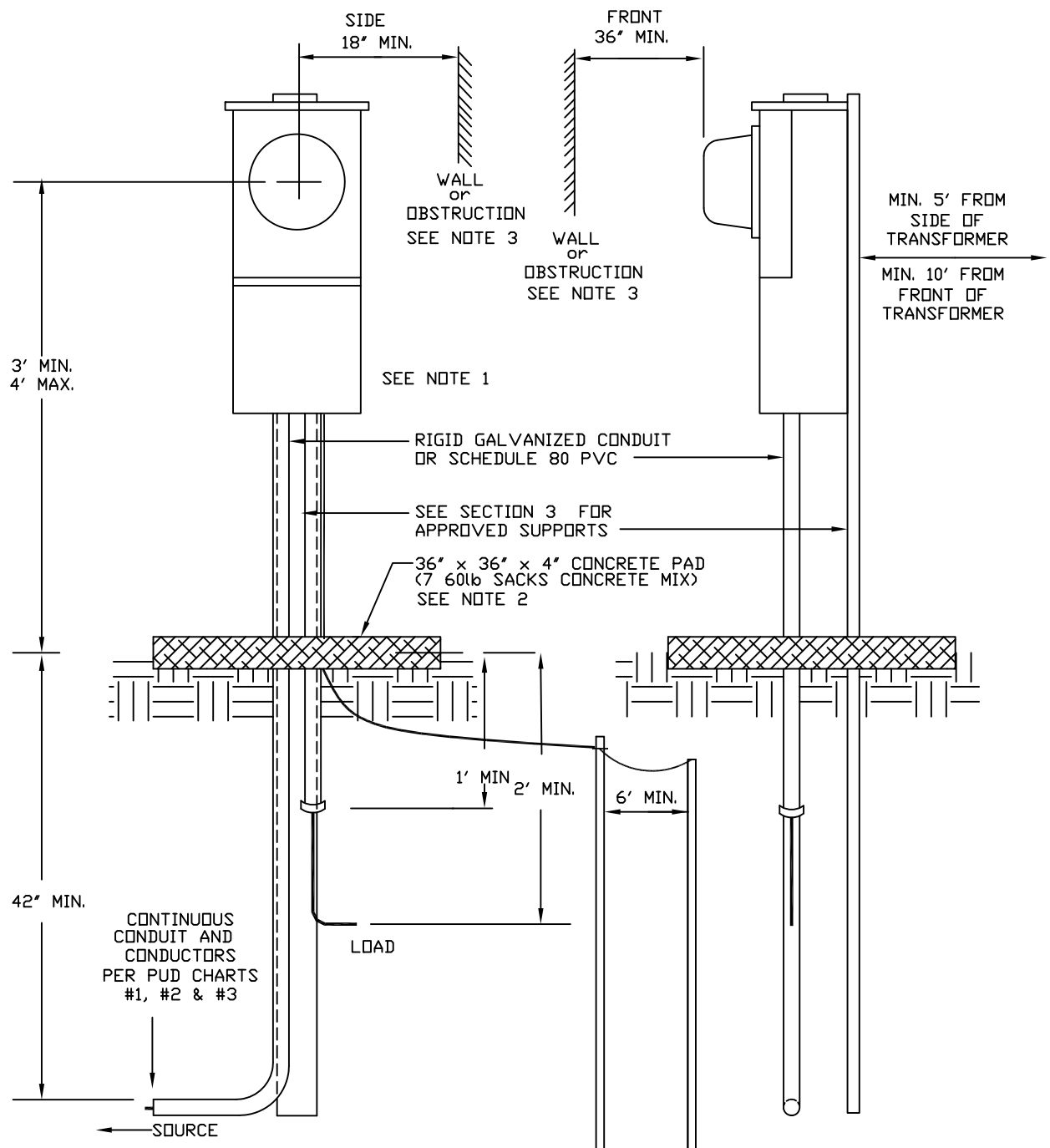
ELEVATION VIEW



PLAN VIEW

DATE 9/27/93	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS PLATFORMS FOR ELEVATED METERS		
DRAWN KMD	REV: 05/22/08 'ACCESS PLAN'	CLALLAM COUNTY PUD #1	PAGE 13 OF 37	DRAWING # 13
APPROVED				

ALSO SEE N.E.C. REQUIREMENTS



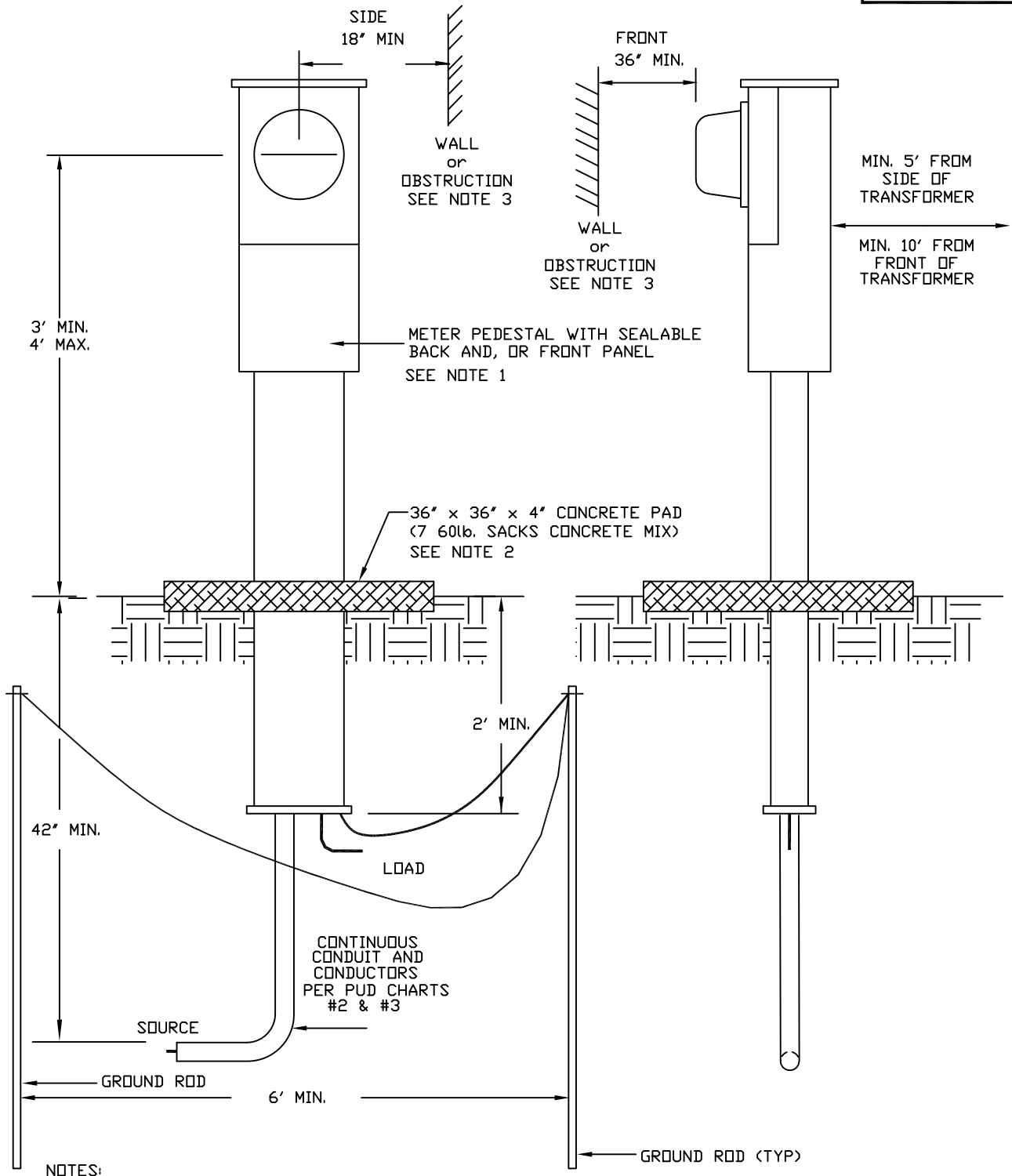
NOTES:

1. SERVICE EQUIPMENT MUST HAVE 8' GROUND ROD w/ #6 COPPER CONNECTED TO ELECTRICAL EQUIPMENT.
2. FILL UNDER SLAP MUST BE COMPACTED TO 95%.
3. METER BASE MUST BE 6' MINIMUM FROM DISTRICT POLE.

DATE 7/19/93	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS METER PEDESTAL, SELF CONTAINED		
DRAWN SMH/DT	REVISED 10/29/98 12/20/08	CLALLAM COUNTY PUD #1	PAGE 14 OF 37	DRAWING # 14
APPROVED	*ACCESS POLICY* 08/14			



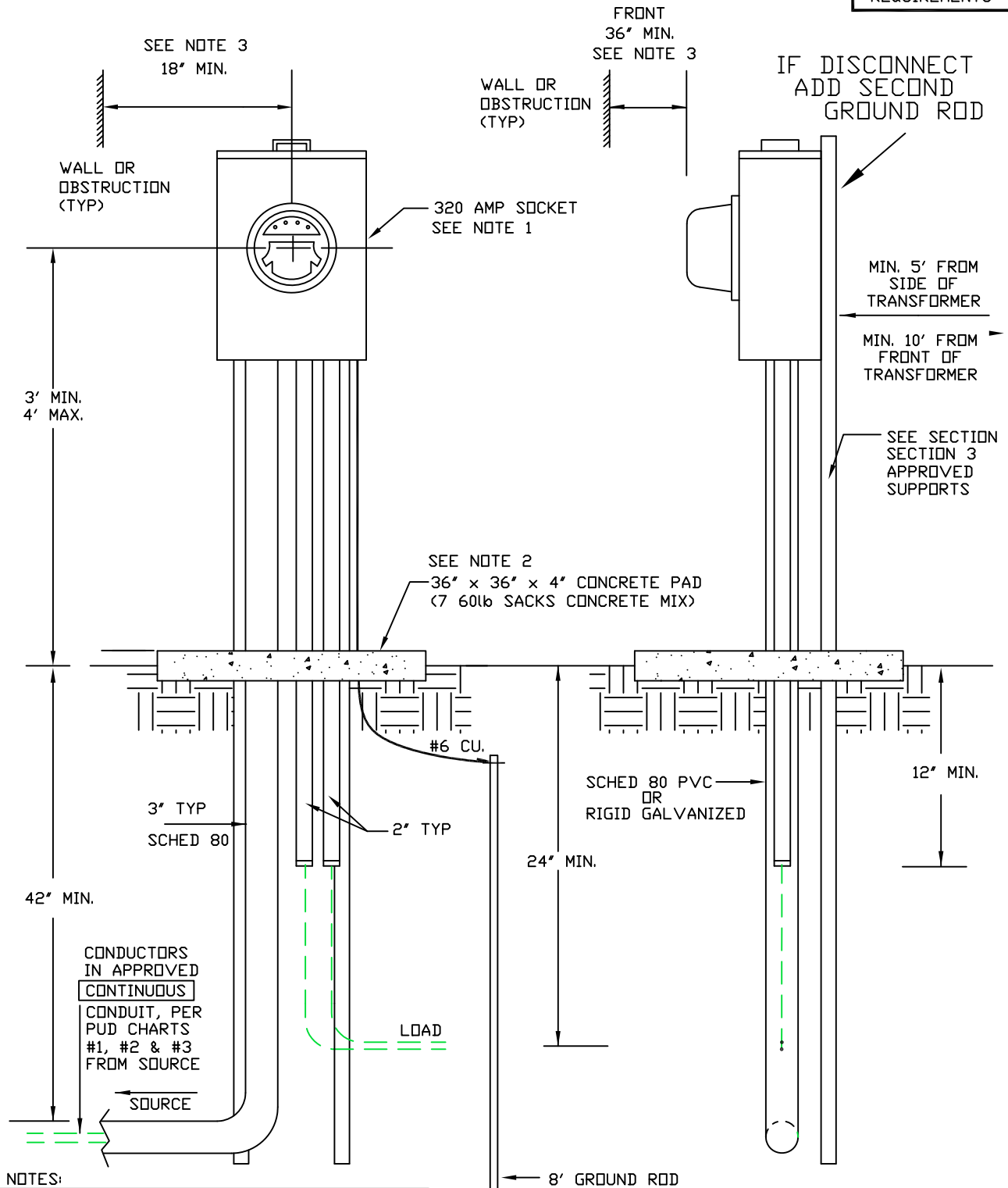
ALSO SEE N.E.C. REQUIREMENTS



- NOTES:
1. SERVICE EQUIPMENT MUST HAVE 8' GROUND ROD w/ #6 COPPER CONNECTED TO ELECTRICAL EQUIPMENT.
  2. FILL UNDER SLAP MUST BE COMPACTED TO 95%.
  3. METER BASE MUST BE 6' MINIMUM FROM DISTRICT POLE.

DATE	7/19/93	SCALE	NONE	ELECTRICAL SERVICE REQUIREMENTS METER PEDESTAL, MOBILE HOME	
DRAWN	SMH / DT	REVISED	10/29/98 12/20/08 08/04/14	CLALLAM COUNTY PUD #1	PAGE 15 OF 37
APPROVED					

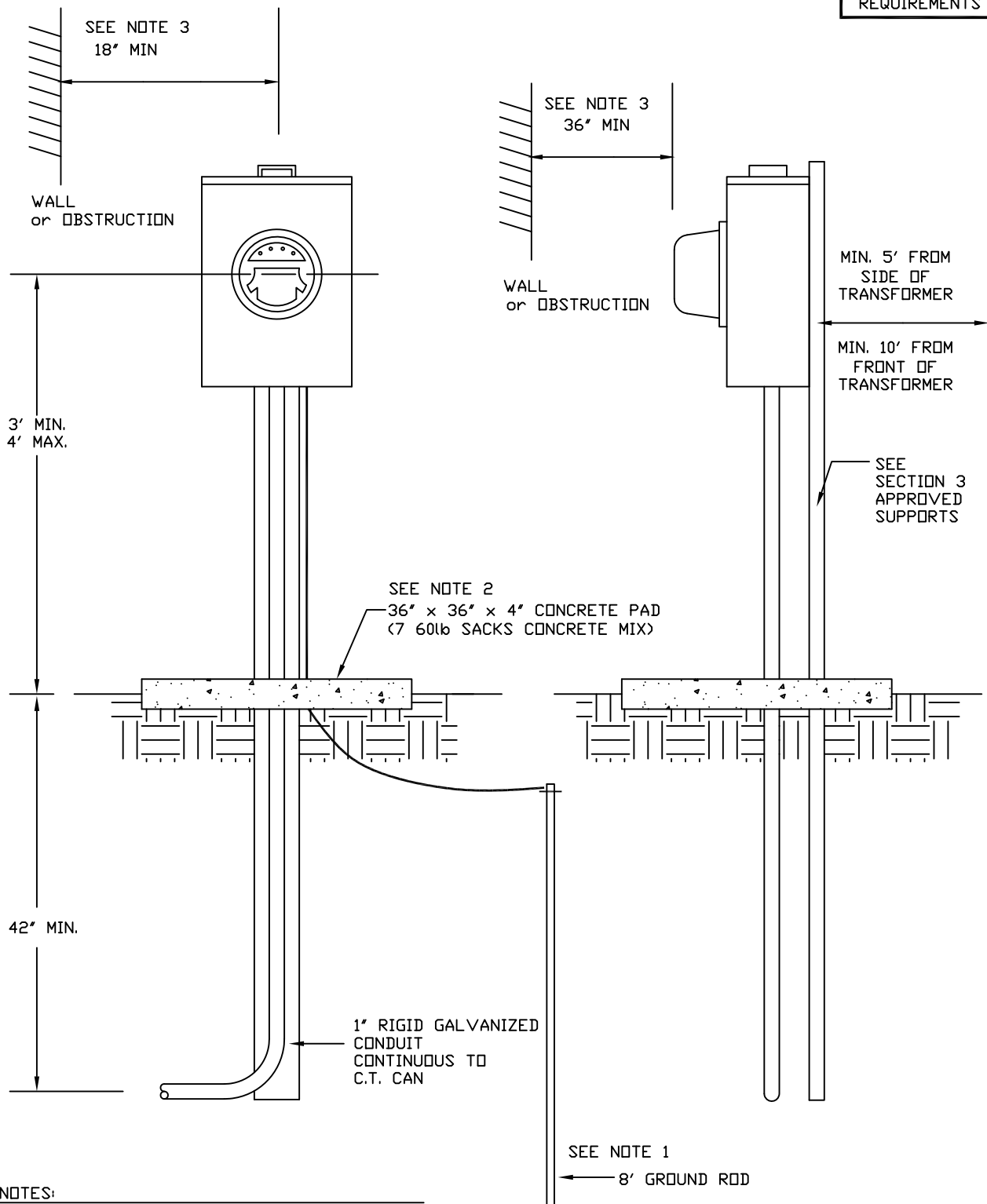
ALSO SEE N.E.C. REQUIREMENTS



- NOTES:
1. SERVICE EQUIPMENT MUST HAVE 8' GROUND ROD w/ #6 COPPER CONNECTED TO ELECTRICAL EQUIPMENT.
  2. FILL UNDER SLAB MUST BE COMPACTED TO 95%.
  3. METER BASE MUST BE 6' MINIMUM FROM DISTRICT POLE.

DATE	11/30/95	SCALE	NONE	ELECTRICAL SERVICE REQUIREMENTS METER PEDESTAL, 320 AMP SERVICE	PAGE 16 OF 37	DRAWING # 16
DRAWN	KMD	REVISED	10/29/98 8/25/04 03/14/00 12/20/08 08/04/14			
APPROVED				CLALLAM COUNTY PUD #1		

ALSO SEE N.E.C. REQUIREMENTS



NOTES:

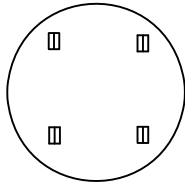
- 1. SERVICE EQUIPMENT MUST HAVE 8' GROUND ROD w/ #6 COPPER CONNECTED TO ELECTRICAL EQUIPMENT.
- 2. FILL UNDER SLAP MUST BE COMPACTED TO 95%.
- 3. METER BASE MUST BE 6' MINIMUM FROM DISTRICT POLE.

DATE	7/19/93	SCALE	NONE	ELECTRICAL SERVICE REQUIREMENTS METER PEDESTAL, C.T. METER	
DRAWN	SMH/DT	REVISED	05/05/97 8/13/04 10/20/08 08/04/14	CLALLAM COUNTY PUD #1	PAGE 17 OF 37
APPROVED					

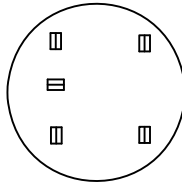
METER SOCKET CLIP ARRANGEMENT

ALSO SEE N.E.C. REQUIREMENTS

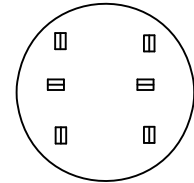
SINGLE PHASE		SELF CONTAINED			WITH CURRENT TRANSFORMERS		
VOLTAGE	WIRES	MAX. AMPS	# CLIPS	SOCKETS	# C.T.	# CLIPS	SOCKETS
120/208	3	200	5	B	2	6	C/TEST SW.
120/240	3	320	4	A			
480	3	200	4	A			
<u>THREE PHASE</u>							
208/120	4	200	7	D	3	13	E/TEST SW.
240	4	200	7	D	3	13	E/TEST SW.
480	4	200	7	D	3	13	E/TEST SW.
480/277	4	200	7	D	3	13	E/TEST SW.



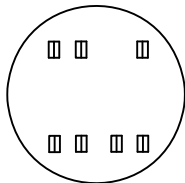
A



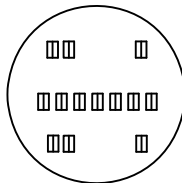
B



C



D



E

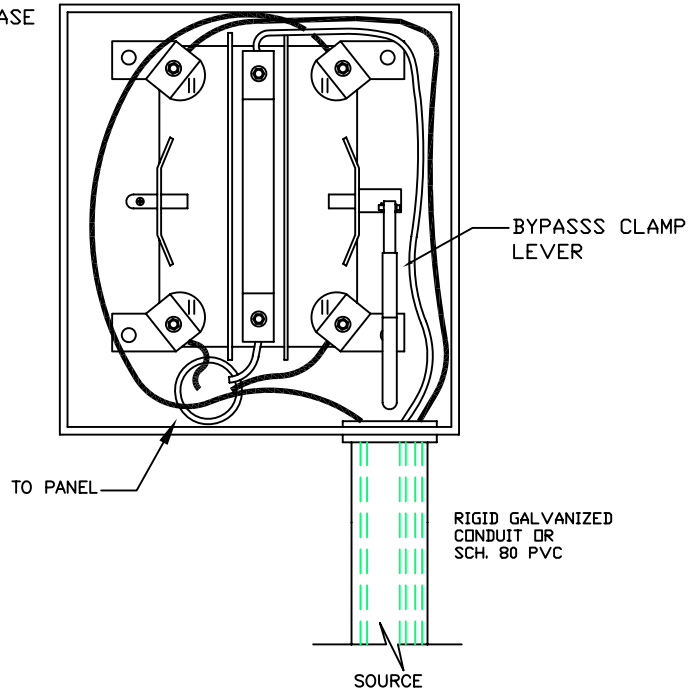
**NOTE:** ALL SOCKET-TYPE METERS SHALL BE FURNISHED WITH DISTRICT APPROVED SEALING RING.(SEE SECTION 3.6.9 OF THIS MANUAL FOR DETAIL)

DATE 4/20/21	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS METERS SOCKET CLIP ARRANGEMENT		
DRAWN XC	REVISED 10/29/98 11/29/14 4/20/21	CLALLAM COUNTY PUD #1	PAGE 18 OF 37	DRAWING # 18
APPROVED CY				

ALSO SEE N.E.C. REQUIREMENTS

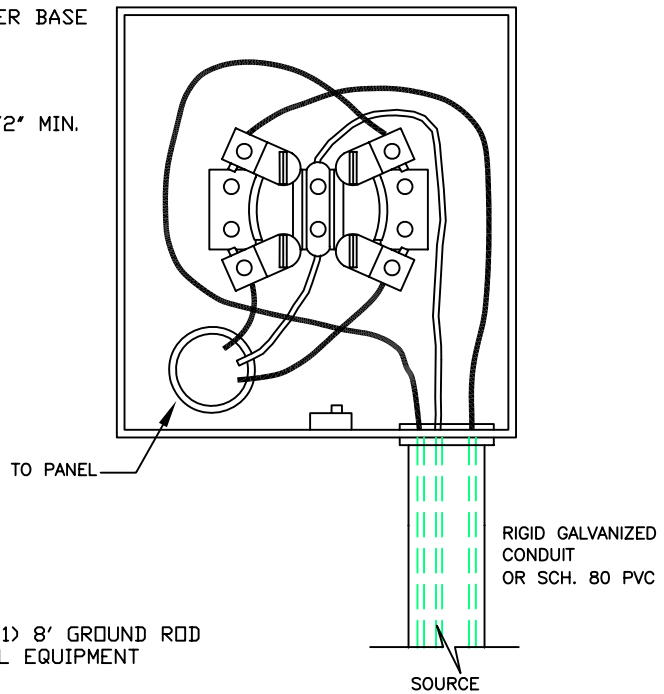
200A BY-PASS METER BASE

ENCLOSURE DEPTH = 4-1/2" MIN.



200A METER BASE

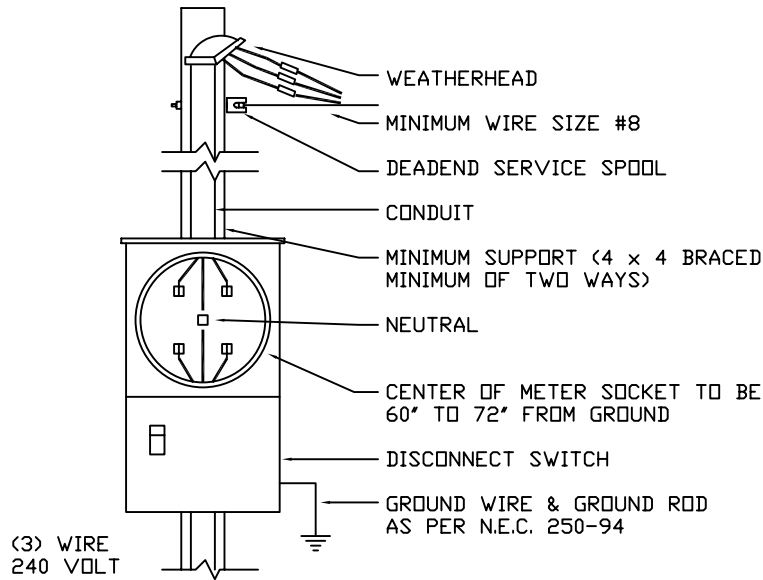
ENCLOSURE DEPTH = 4-1/2" MIN.



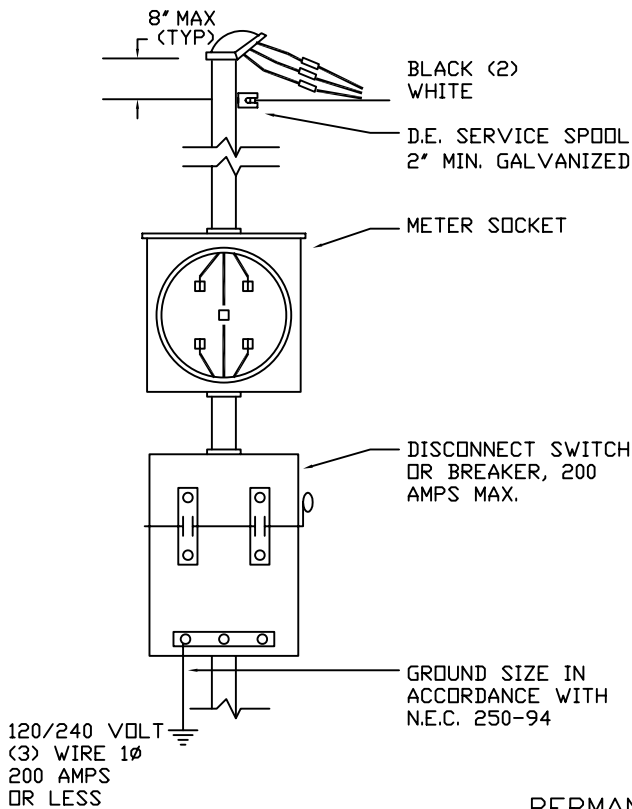
NOTE:  
ALL METERS MUST HAVE A MINIMUM OF (1) 8' GROUND ROD  
W/#6 COPPER CONNECTED TO ELECTRICAL EQUIPMENT

DATE	12/86	SCALE	NONE	ELECTRICAL SERVICE REQUIREMENTS METER SOCKET, 200 AMP, SINGLE PHASE		
DRAWN	KMD	REVISED	09/24/93 10/11/04 05/05/97 02/27/98 03/28/98 10/29/98 10/20/08			
APPROVED						

ALSO SEE N.E.C. REQUIREMENTS



TEMPORARY



PERMANENT

NOTE  
 SERVICE EQUIPMENT MUST HAVE (2)  
 8' GROUND RODS (6' MIN SEPARATION) W/  
 #4 COPPER CONNECTED TO ELECTRICAL  
 EQUIPMENT, AS PER N.E.C. 250-94

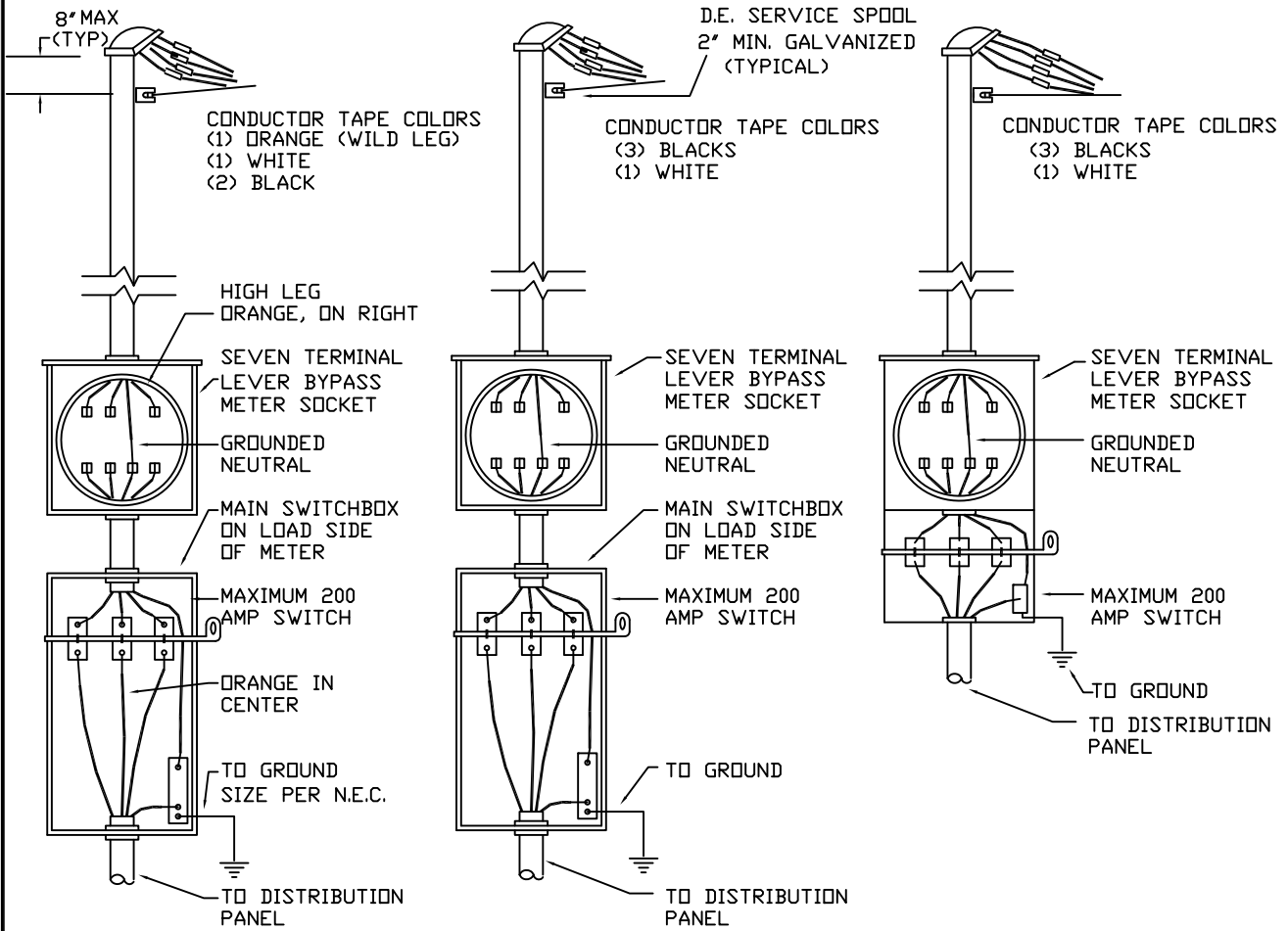
DATE 7/19/93	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS METERING - OVERHEAD SERVICE, 1-PHASE		
DRAWN SMH	REVISED 05/05/97	CLALLAM COUNTY PUD #1	PAGE 20 OF 37	DRAWING # 20
APPROVED	10/29/98 10/20/08			

ALSO SEE N.E.C.  
REQUIREMENTS

480/240 OR 240/120 VOLT  
4 WIRE 3 $\phi$   
DELTA  
SELF CONTAINED

480/277 VOLT  
4 WIRE 3 $\phi$   
WYE  
SELF CONTAINED

208/120  
4 WIRE 3 $\phi$   
WYE  
SELF CONTAINED



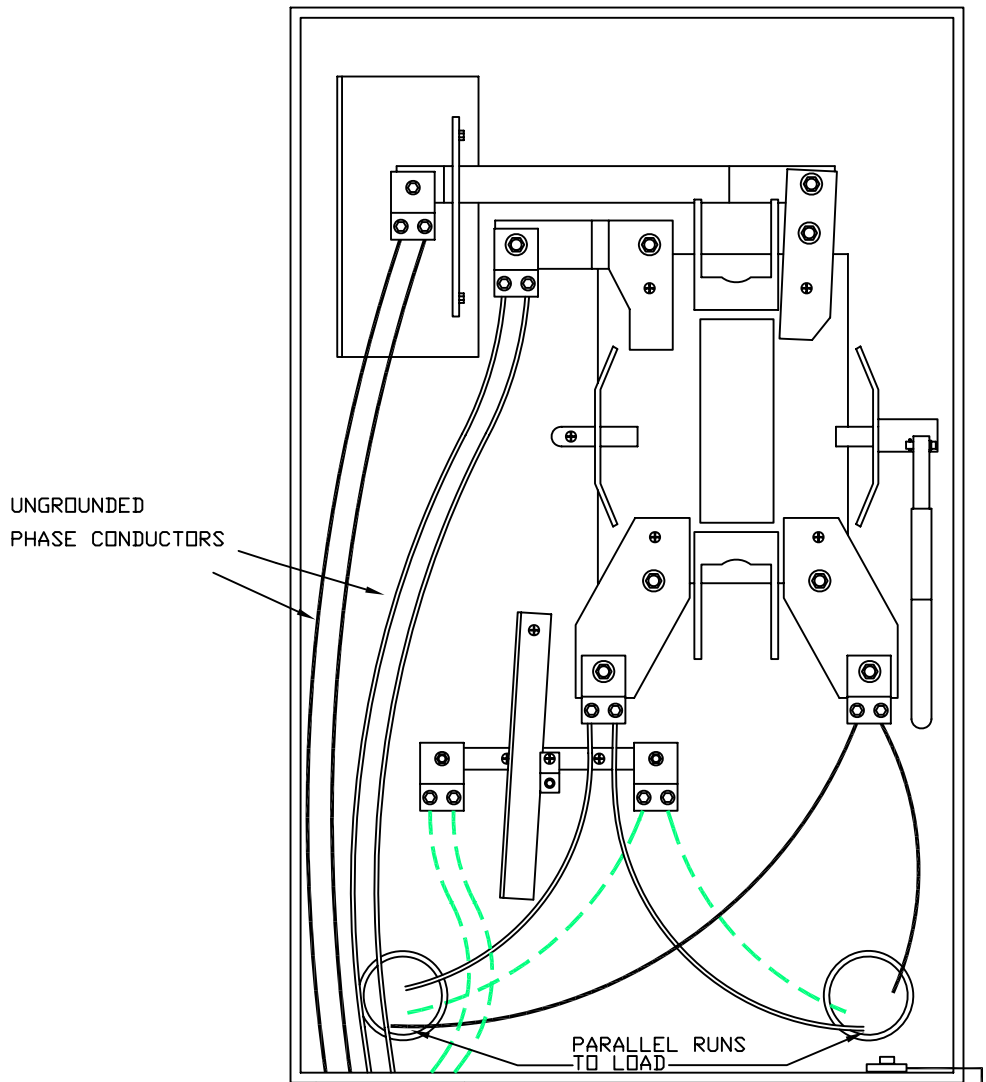
SEVEN TERMINAL LEVER BYPASS METER SOCKET

ALL METER BASES ARE 200 AMPS OR LESS

DATE 7/19/93	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS METERING - OVERHEAD SERVICE, 3-PHASE		
DRAWN SMH/DT	REVISED 10/29/98 8/13/04 11/29/08 08/04/14	CLALLAM COUNTY PUD #1	PAGE 21 OF 37	DRAWING # 21
APPROVED				

ALSO SEE N.E.C.  
REQUIREMENTS

NOTE: SEE PUD DRAWING 11 OR 16  
FOR INSTALLATION



UNGROUND  
PHASE CONDUCTORS

PARALLEL RUNS  
TO LOAD

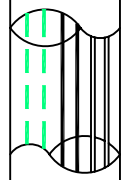
FROM SOURCE

ONE SET PARALLEL CONDUCTORS  
TO BE MARKED WITH RED TAPE  
NEUTRAL TO BE MARKED WITH WHITE

DATE 12/13/94	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS TYPICAL 320 AMP LEVER TYPE BYPASS METER BASE (UNDERGROUND)		
DRAWN KMD	REVISED 05/05/97 8/13/04	CLALLAM COUNTY PUD #1	PAGE 22 OF 37	DRAWING # 22
APPROVED	10/29/98 04/20/04			



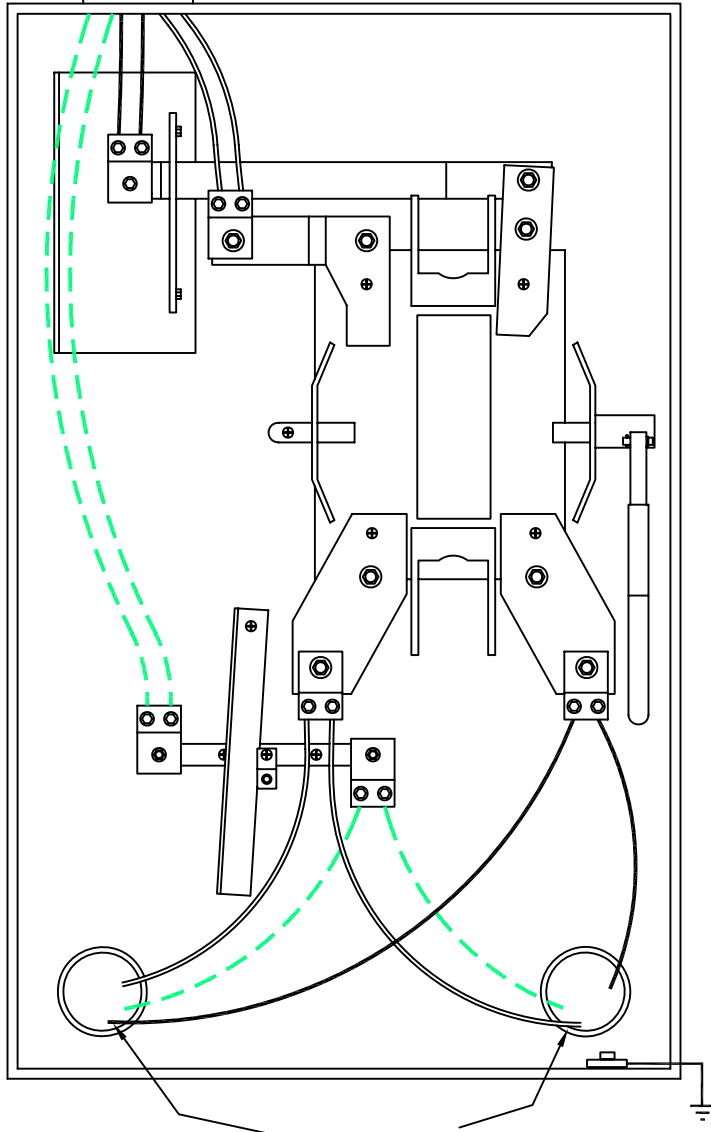
ALSO SEE N.E.C. REQUIREMENTS



ONE SET PARALLEL CONDUCTORS TO BE MARKED WITH RED TAPE NEUTRAL TO BE MARKED WHITE

FROM SOURCE

NOTE: SEE PUD DRAWING 2 OR 7 FOR INSTALLATION

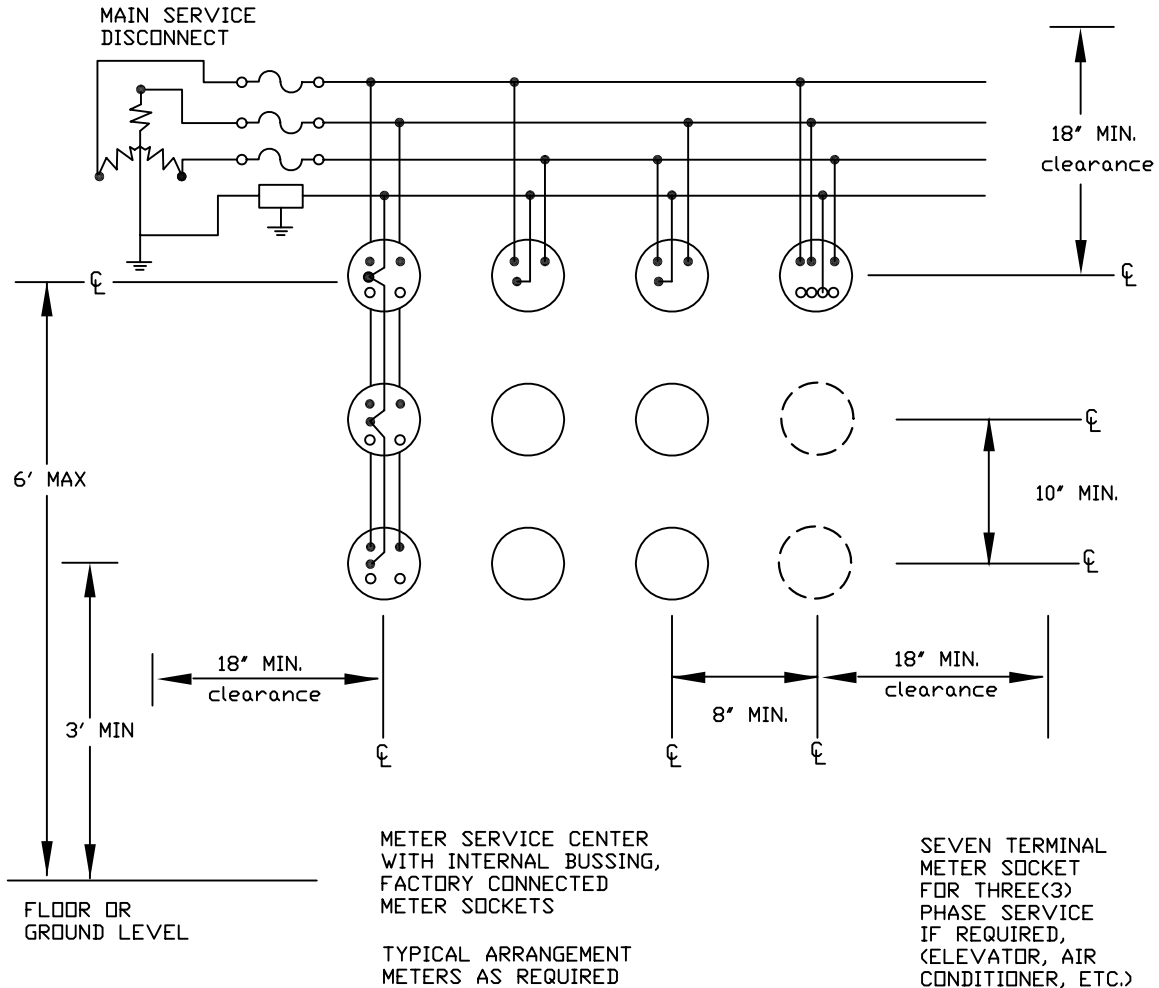


PARALLEL RUNS TO LOAD

DATE 12/13/94	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS TYPICAL 320 AMP LEVER TYPE BYPASS METER BASE (OVERHEAD)		
DRAWN KMD	REVISED 05/05/97 8/13/04	CLALLAM COUNTY PUD #1	PAGE 23 OF 37	DRAWING # 23
APPROVED	10/29/98 12/20/08			

ALSO SEE N.E.C. REQUIREMENTS

TYPICAL 208/120V 3 $\phi$  4 WIRE  
TO SERVE MULTIPLE OCCUPANCY  
(ALL SERVICES UNDER 200A)

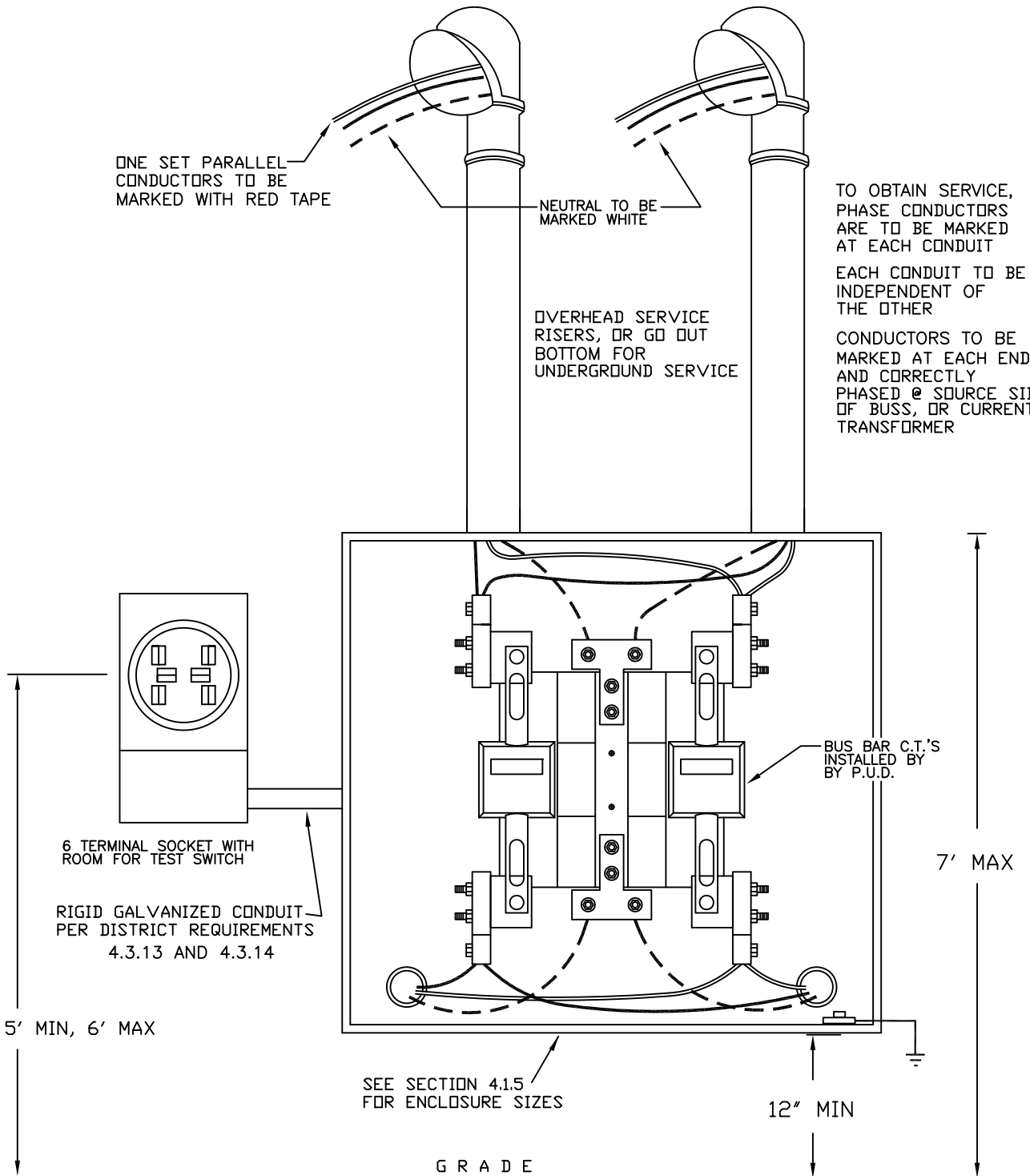


NOTES:

- \* 208/120 VOLT THREE(3) WIRE SINGLE PHASE METER SOCKET TO BE FIVE(5) TERMINAL LOCATED ON LEFT SIDE FACING METER.
- \* ALL LOAD TO BE BALANCED BETWEEN PHASES. (+ OR -10% OF NOMINAL AVERAGE LOAD)
- \* LOAD CENTER MAY BE TOP OR BOTTOM CONNECTED.
- \* LOAD CENTER TO BE APPROVED BY THE DISTRICT BEFORE BEING INSTALLED
- \* NON-SHUNTING TYPE METER SOCKETS.
- \* ALL METERS SHALL BE IDENTIFIED WITH A PERMANENT TYPE LABEL AS TO LOCATION OF SERVICE. SEE REQUIREMENTS SECTION 1.5.1, 1.5.2
- \* MIN. SOCKET CENTER SEPARATION=8" HORIZ. AND 10" VERT.

DATE	9/16/93	SCALE	NONE	ELECTRICAL SERVICE REQUIREMENTS 208/120 3 $\phi$ 4-WIRE TO SERVE MULTIPLE OCCUPANCY		
DRAWN	KMD	REVISED	05/05/97 10/29/98 12/20/08	CLALLAM COUNTY PUD #1		PAGE 24 OF 37
APPROVED						DRAWING # 24

ALSO SEE N.E.C. REQUIREMENTS



NOTES:

- \* ALL OUTDOOR ENCLOSURE MUST HAVE THE GROUND ROD INSTALLED AT THE ENCLOSURE LOCATION & CONNECTED TO ELECTRICAL EQUIPMENT
- \* NO SPLICES IN C.T. ENCLOSURES

DATE 12/12/94	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS CT ENCLOSURE WIRING, SINGLE-PHASE, 400 - 800 AMP, OVERHEAD		
DRAWN KMD	REVISED 09/04/96 8/13/04 05/05/97	CLALLAM COUNTY PUD #1	PAGE 25 OF 37	DRAWING # 25
APPROVED	10/29/98 10/21/08 11/21/14			

ALSO SEE N.E.C. REQUIREMENTS

ONE SET PARALLEL CONDUCTORS TO BE MARKED WITH RED TAPE

NEUTRAL TO BE MARKED WHITE

SEE SECT. 4 FOR ENCLOSURE SIZES

6 TERMINAL METER SOCKET WITH ROOM FOR TEST BLOCK

BUS BAR C.T.'S INSTALLED BY P.U.D.

CONDUIT PER PER DISTRICT REQUIREMENT SEE SEC. 4

12" MINIMUM  
36" MAXIMUM

48" x 36" x 4" CONCRETE PAD  
(9 60LB SACKS CONCRETE MIX)

4' - 5'

42" MIN

SCHE D 80

24" MIN

SEE SECTION 3 FOR APPROVED SUPPORTS

(SOURCE)

CONTINUOUS CONDUIT & CONDUCTORS SEE CHARTS #1 & #2 & #3

(LOAD)

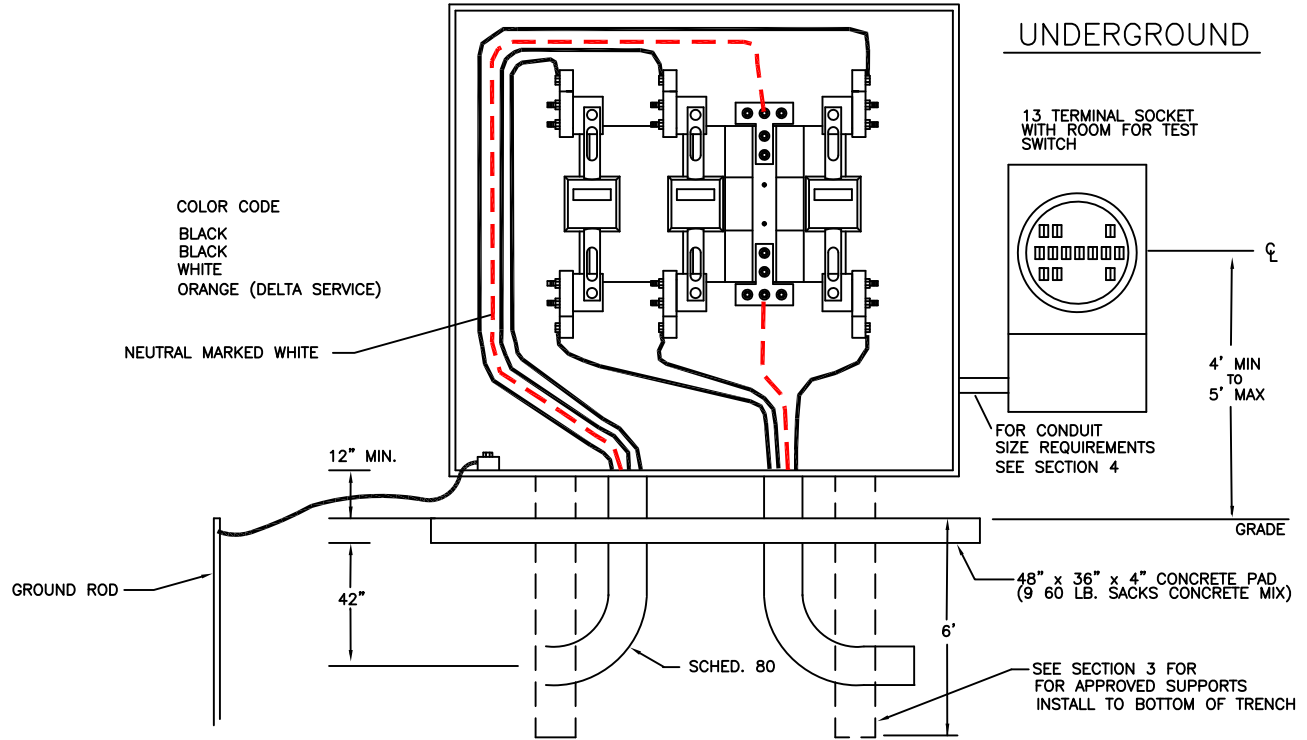
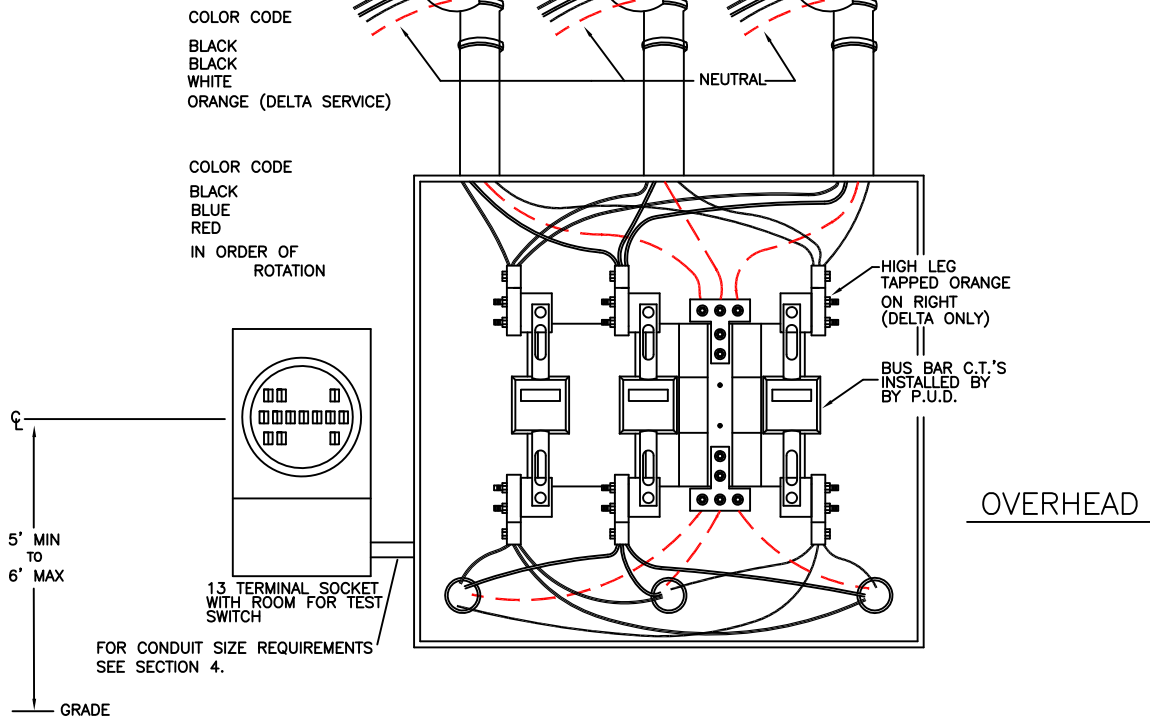
GROUND ROD (TYP)

NOTES:

- \* ALL OUTDOOR ENCLOSURES MUST HAVE (1) 8' GROUND ROD WITH #6 COPPER CONNECTED TO ELECTRICAL EQUIPMENT.
- \* TO OBTAIN SERVICE, PHASE CONDUCTORS ARE TO BE MARKED AT EACH CONDUIT. EACH CONDUIT TO BE INDEPENDENT OF THE OTHER.
- \* NO SPLICES IN C.T. ENCLOSURE
- \* FILL UNDER SLAB MUST BE COMPACTED TO 95%
- \* SOURCE AND LOAD CONDUCTORS MUST BE CLEARLY IDENTIFIED AND TAGGED AT EACH LANDING PAD CONNECTION.

DATE 09/03/96	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS	
DRAWN RMS KMD	REVISED 03/14/00 09/27/19	C.T. ENCLOSURE WIRING, SINGLE PHASE, 400 - 800 AMP, URD	
APPROVED	10/20/08	CLALLAM COUNTY PUD #1	PAGE 26 OF 37
	08/16/14		
	8/26/04		

ALSO SEE N.E.C. REQUIREMENTS

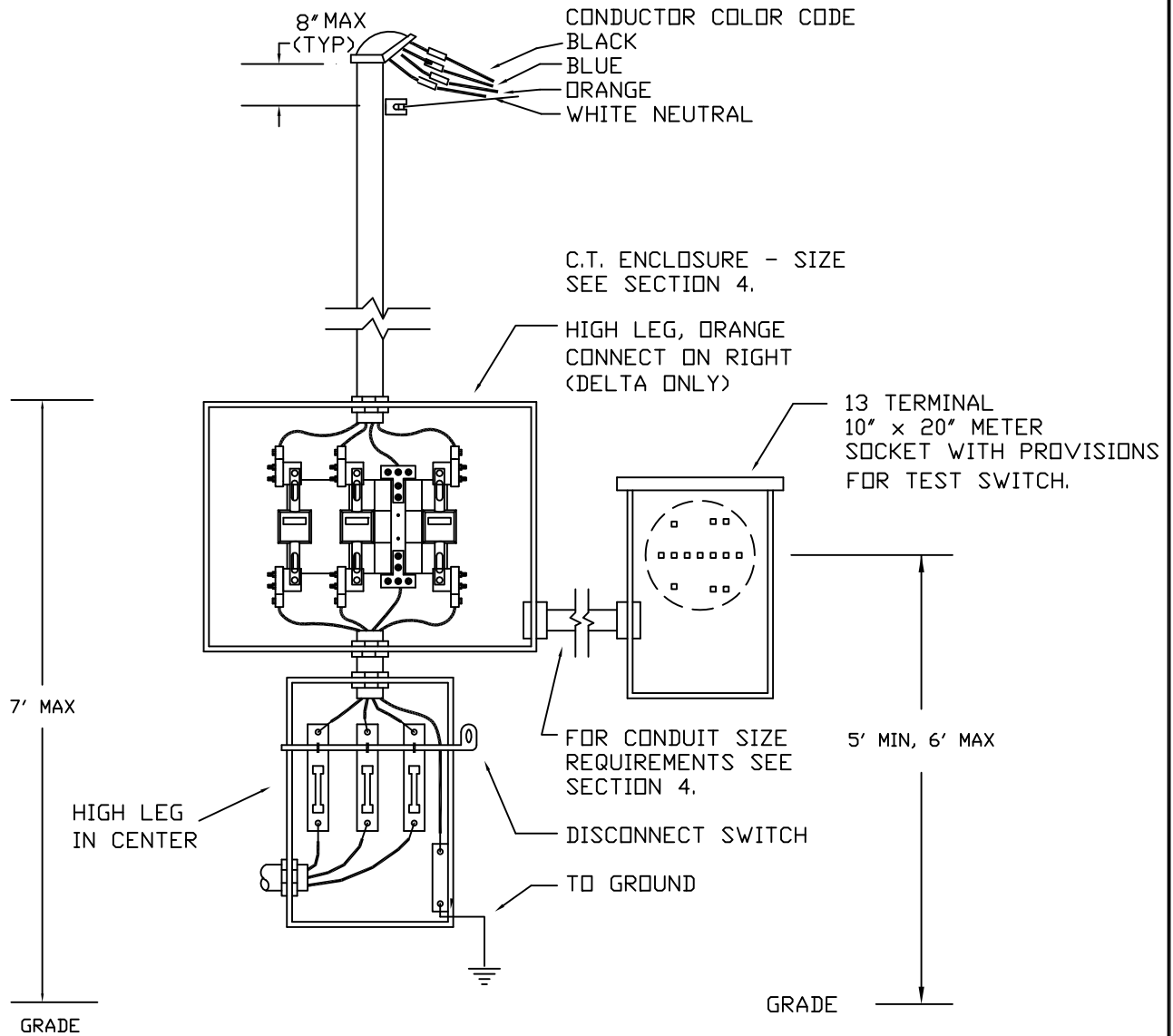


NOTES:

- \* ALL OUTDOOR ENCLOSURES MUST HAVE A GROUND ROD INSTALLED AT THE ENCLOSURE & CONNECTED TO ELECTRICAL EQUIPMENT.
- \* NO SPLICES IN C.T. ENCLOSURE
- \* SEE 4.1.5 FOR ENCLOSURE SIZE
- \* SOURCE AND LOAD CONDUCTORS MUST BE CLEARLY IDENTIFIED AND TAGGED AT EACH LANDING PAD CONNECTION.

DATE 12/14/94	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS CT ENCLOSURE WIRING, THREE-PHASE, 400-800 AMP		
DRAWN KMD/DT	REVISED 10/29/98 10/11/04 04/20/04	CLALLAM COUNTY PUD #1	PAGE 27 OF 37	DRAWING # 27
APPROVED	10/25/08 08/04/14			

ALSO SEE N.E.C. REQUIREMENTS

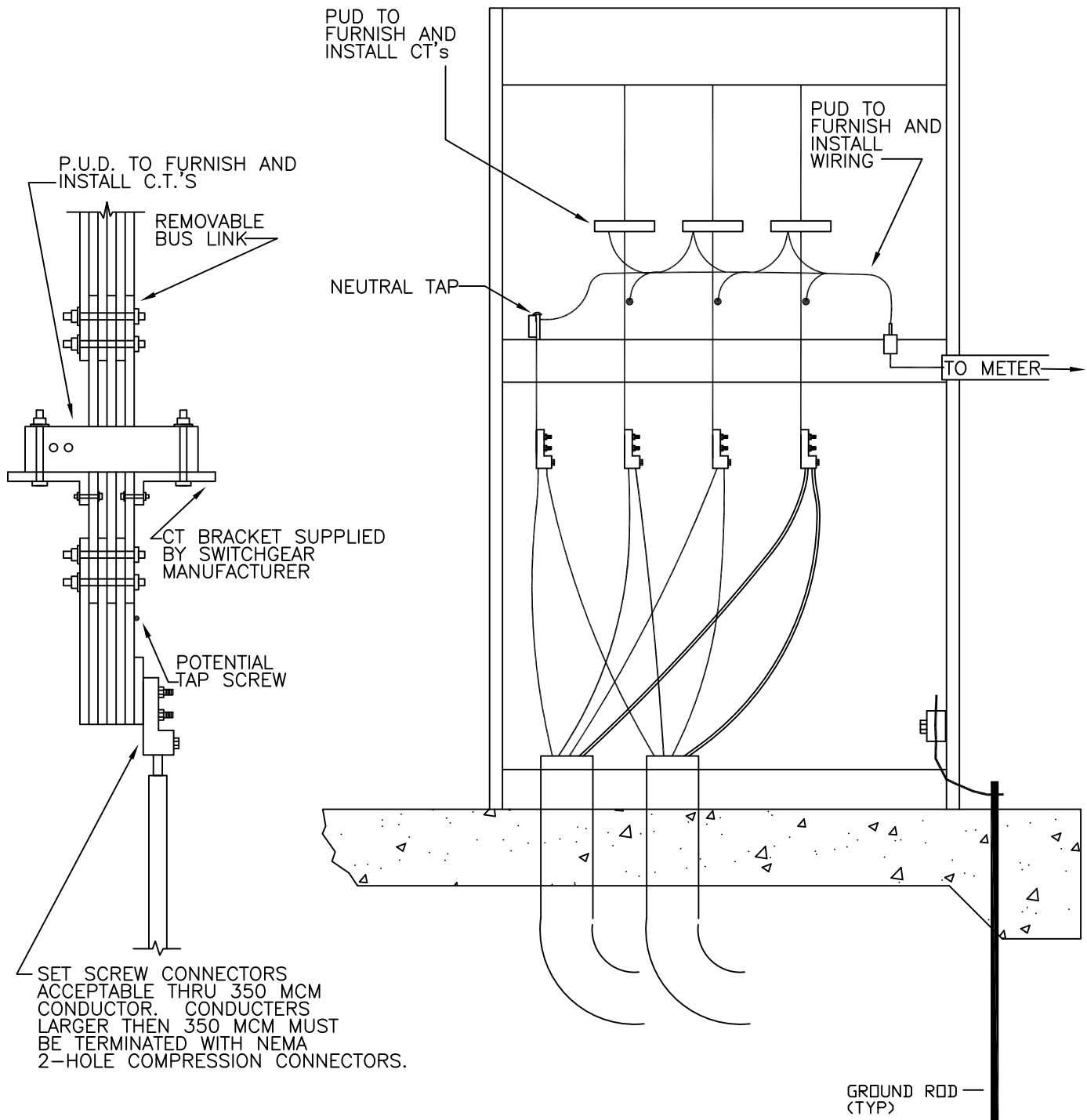


4 WIRE 3Ø  
3Ø CURRENT TRANSFORMER METERING, OUTSIDE ONLY

NOTES:

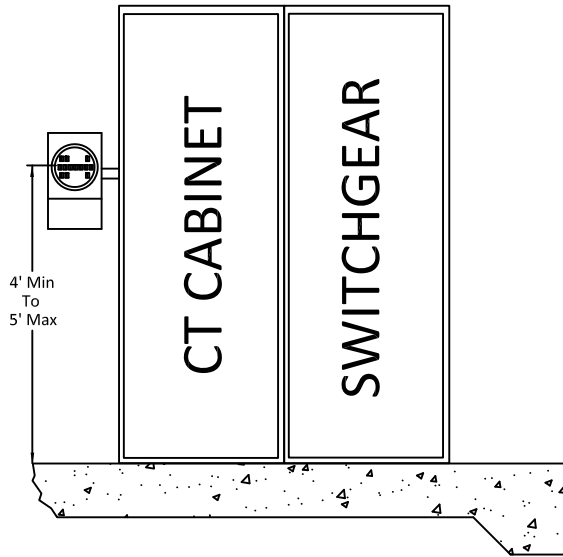
- \* SERVICE EQUIPMENT MUST HAVE (2) 8' GROUND RODS (6' MIN SEPARATION w/ COPPER GROUND LEADS CONNECTED TO ELECTRICAL EQUIPMENT AS PER NEC.
- \* BOND TO CT ENCLOSURE
- \* FOR UNDERGROUND SERVICE MOUNT SIMILAR TO DRAWING #26 CONNECT CONDUIT TO BOTTOM

DATE 7/19/93	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS METERING, OVERHEAD SERVICE, 3-PHASE, C.T. 400 to 800 Amp		
DRAWN SMH	REVISED 05/05/97 8/13/04 10/29/08 10/11/04 08/04/14	CLALLAM COUNTY PUD #1	PAGE 28	DRAWING # 28
APPROVED			OF 37	



DATE 12/29/94	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS: TYPICAL SWITCH GEAR METERING, UNDERGROUND SERVICE, 3-PHASE, C.T., LARGER THAN 800A		
DRAWN XC	REVISED 10/29/98 04/20/04 01/11/21	CLALLAM COUNTY PUD #1		PAGE 29 OF 38
APPROVED CY				DRAWING # 29A

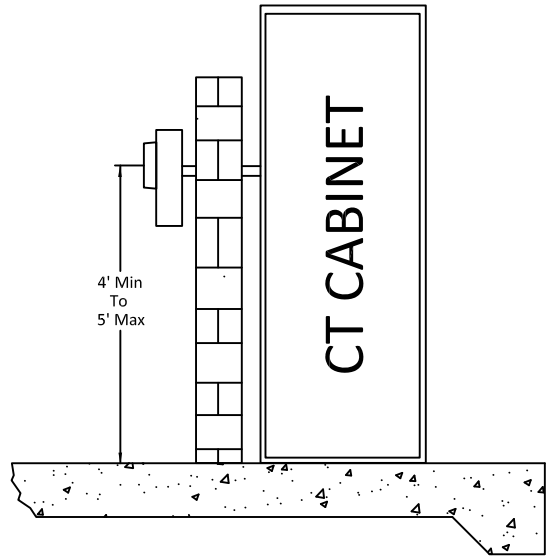
**EXTERIOR SWITCHGEAR  
WITH METER MOUNTED NEXT TO  
CABINET**



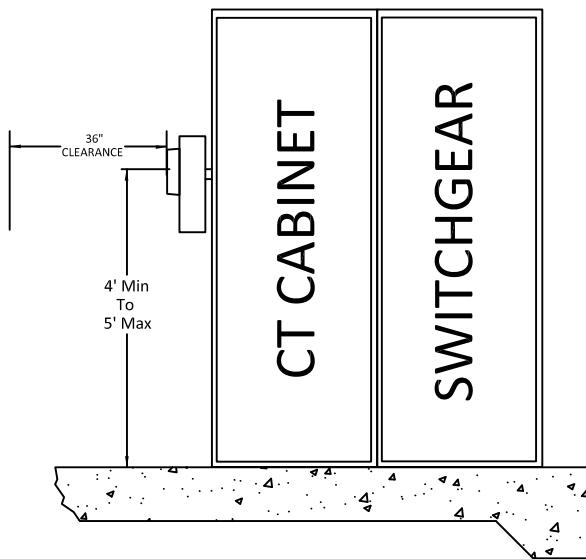
**INTERIOR SWITCHGEAR  
WITH METER MOUNTED OUTSIDE**

ALSO SEE N.E.C.  
REQUIREMENTS

- \*REQUIRES ACCESS TO CT CABINET AT ALL TIMES
- \*LOCK BOX REQUIRED FOR ENTRY.



**EXTERIOR SWITCHGEAR  
WITH METER MOUNTED TO CABINET**



**NOTES:**

- \* SEE DRAWING #18 FOR METER BASE REQUIREMENTS
- \* SOURCE AND LOAD CONDUCTORS MUST BE CLEARLY IDENTIFIED AND TAGGED AT EACH LANDING PAD CONNECTION
- \* METER BASE TO BE MOUNTED SEPARATE FROM SWITCH GEAR
- \* CONDUIT SIZES MUST BE IN ACCORDANCE WITH THE NEC
- \* TEST SWITCHES PROVIDED BY PUD
- \* METER BASE TO BE SUPPLIED BY CONTRACTOR
- \* CT'S ARE SUPPLIED BY THE PUD

DATE	01/11/21
DRAWN	XC
APPROVED	CY

SCALE	NONE
REVISED	

ELECTRICAL SERVICE REQUIREMENTS: TYPICAL SWITCH GEAR METERING, UNDERGROUND SERVICE, 3-PHASE, C.T., LARGER THAN 800A

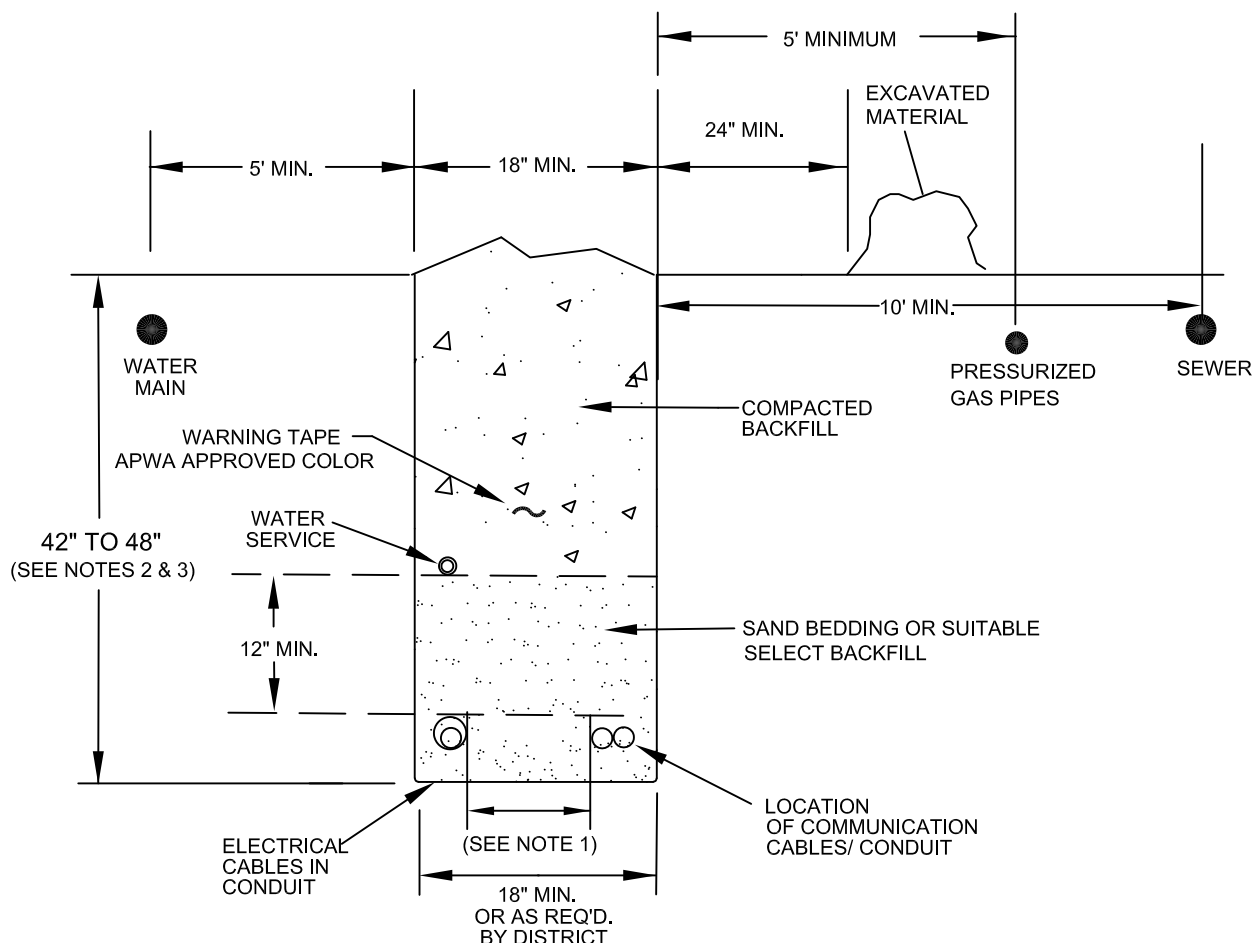
CLALLAM COUNTY PUD #1

PAGE 30  
OF 38

DRAWING # 29B



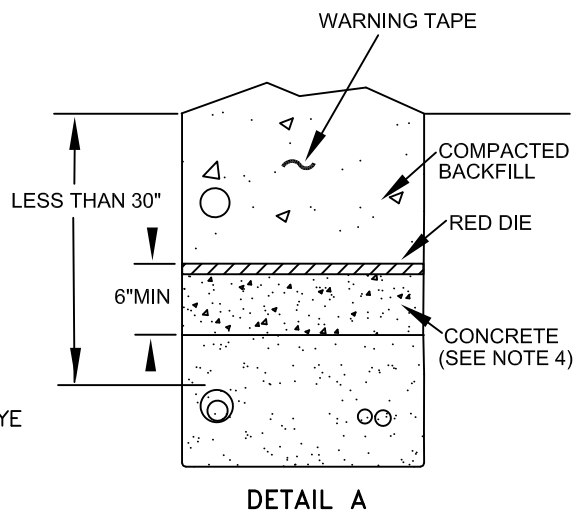
ALSO SEE N.E.C. REQUIREMENTS



### PRIMARY OR SERVICE TRENCH

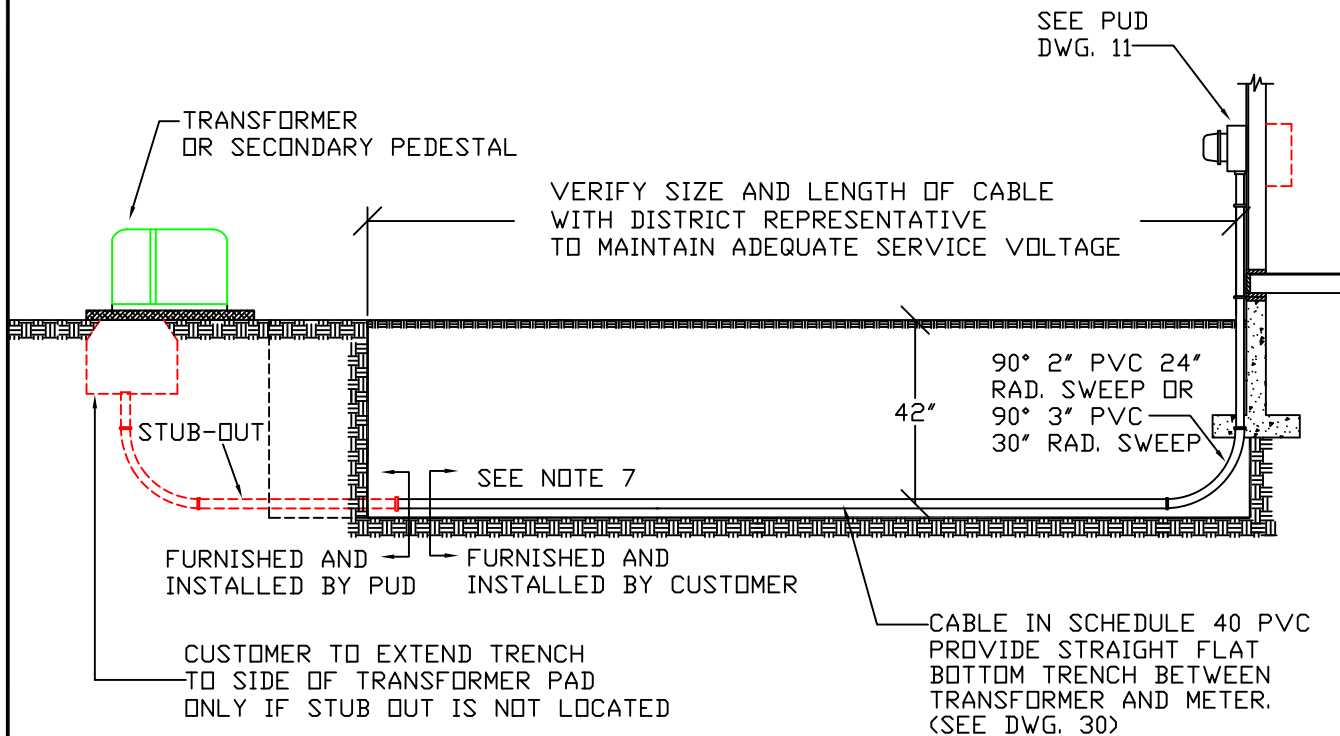
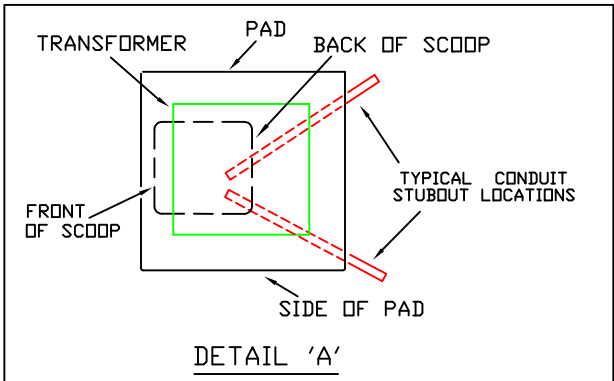
#### NOTES:

1. 12-INCH MINIMUM RADIAL SEPARATION IS REQUIRED EXCEPT WHERE RANDOM SEPARATION IS PERMITTED IN ACCORDANCE WITH NESC SECTION 354.
2. AN EXCEPTION TO MINIMUM TRENCH DEPTH MAY BE PERMITTED BY AUTHORIZED PERSONNEL DUE TO OBSTRUCTIONS OR ROCK SUBGRADE. IF DEPTH OF CONDUIT COVER IS LESS THAN 30-INCHES, THE CONDUIT SHALL BE PROTECTED BY A 6-INCH MINIMUM CONCRETE CAP AS SHOWN. (SEE DETAIL A & NOTE 4)
3. SEE WAC 296-155-657 FOR EXCAVATION, TRENCHING AND SHORING REQUIREMENTS.
4. MINIMUM 2,500 PSI STRENGTH CONCRETE WITH RED DYE IDENTIFIER TO A DEPTH OF 1-INCH AND/OR WARNING TAPE LOCATED ALONG TRENCH CENTERLINE, 12-INCHES ABOVE CONCRETE. (SEE DETAIL A)



DATE	10/14/21	SCALE	NONE	ELECTRICAL SERVICE REQUIREMENTS TRENCH REQUIREMENTS, DEPTH, WIDTH, CLEARANCES		
DRAWN	XC	REVISED	10/30/98 8/13/04 04/20/04 9/13/07 08/04/14 10/14/21	CLALLAM COUNTY PUD #1		
APPROVED	CY			PAGE 30 OF 37	DRAWING # 30	

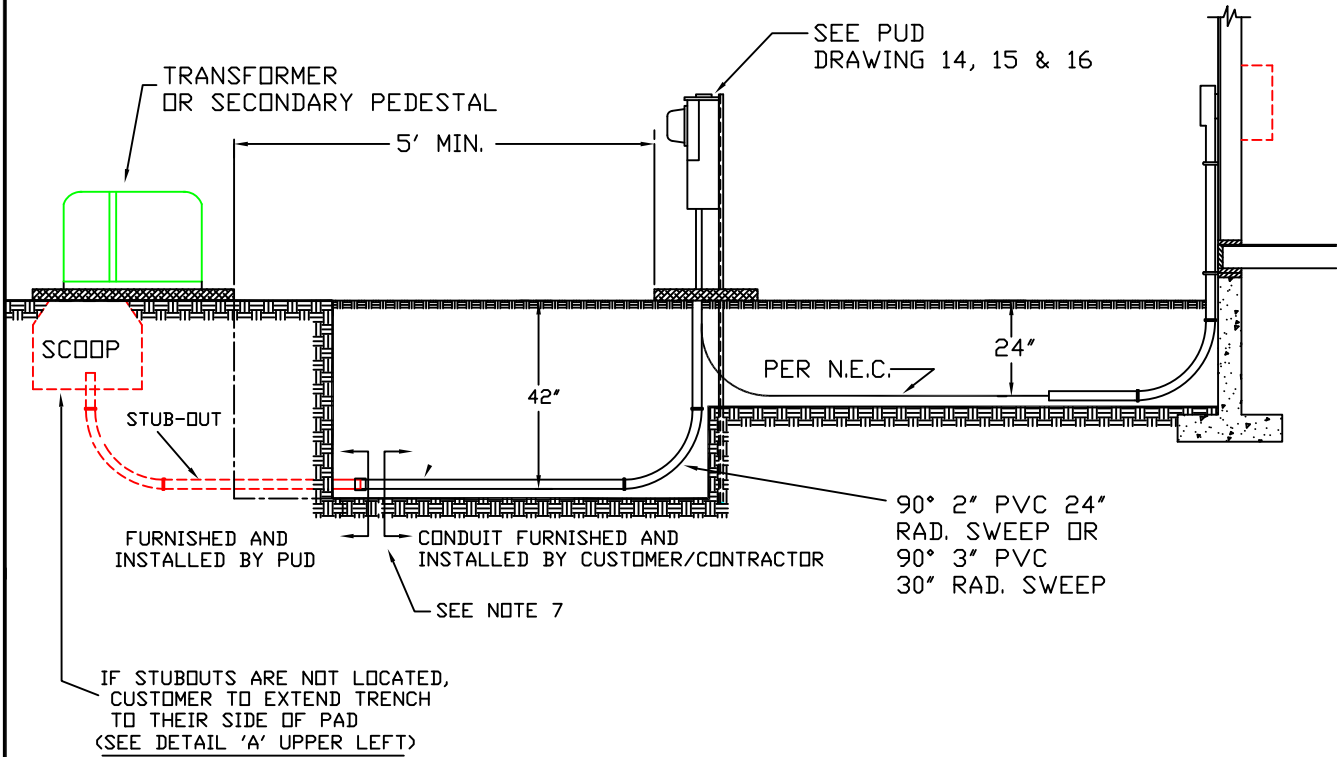
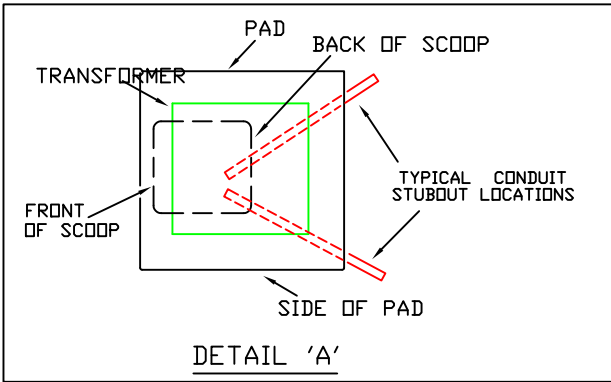
ALSO SEE N.E.C. REQUIREMENTS



- NOTES:
- 1) THE ABOVE EXAMPLE IS INTENDED FOR 200A AND 320A SINGLE PHASE SERVICE WITH ONE RUN OF 4/0-4/0-2/0 IN 2" CONDUIT OR TWO RUNS OF 4/0-4/0-2/0 IN 3" CONDUIT.
  - 2) CONTACT 1-800-424-5555 FOR LOCATIONS OF UNDERGROUND UTILITIES.
  - 3) NO STANDING WATER ALLOWED IN TRENCH.
  - 4) CONTACT THE PUD TO DETERMINE REQUIREMENTS FOR CONNECTION OF SERVICE OTHER THAN DESCRIBED ABOVE.
  - 5) TWO INCH CONCRETE COVER IF TRENCH DEPTH LESS THAN 18"
  - 6) PUD WILL PUSH CUSTOMER PROVIDED CONDUCTORS INTO CONDUIT FOR SERVICES UP TO 30 FEET.
  - 7) CUSTOMER/CONTRACTOR CONNECT TO PUD PVC STUBOUT.

DATE	10/14/94	SCALE	NONE	ELECTRICAL SERVICE REQUIREMENTS UNDERGROUND SERVICE, WALL MOUNTED METER	
DRAWN	KMD	REVISED	10/29/98 3/4/05 8/4/14		
APPROVED				CLALLAM COUNTY PUD #1	PAGE 31 OF 37
				DRAWING # 31	

ALSO SEE N.E.C. REQUIREMENTS



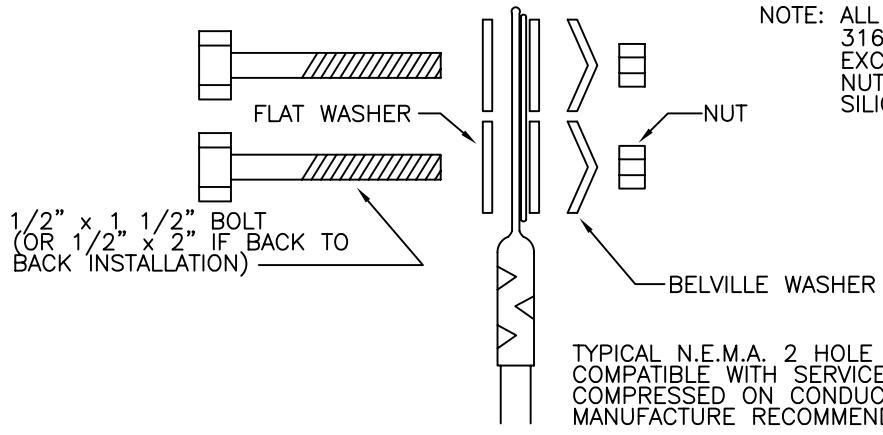
IF STUBOUTS ARE NOT LOCATED, CUSTOMER TO EXTEND TRENCH TO THEIR SIDE OF PAD <SEE DETAIL 'A' UPPER LEFT>

- NOTES:
- 1) THE ABOVE EXAMPLES ARE INTENDED FOR 200A AND 320A SINGLE PHASE SERVICE WITH ONE RUN OF 4/0-4/0-2/0 IN 2" CONDUIT OR TWO RUNS OF 4/0-4/0-2/0 IN 3" CONDUIT.
  - 2) CONTACT 1-800-424-5555 FOR LOCATIONS OF UNDERGROUND UTILITIES.
  - 3) EXCAVATE BY HAND WITHIN TWO FEET OF OTHER UTILITY LOCATE MARKS.
  - 4) NO STANDING WATER ALLOWED IN TRENCH.
  - 5) CONTACT THE PUD TO DETERMINE REQUIREMENTS FOR CONNECTION OF SERVICE OTHER THAN DESCRIBED ABOVE.
  - 6) PUD WILL PUSH CUSTOMER PROVIDED CONDUCTORS INTO CONDUIT FOR SERVICES UP TO 30 FEET.
  - 7) CUSTOMER/CONTRACTOR CONNECT TO PUD PVC STUBOUT.

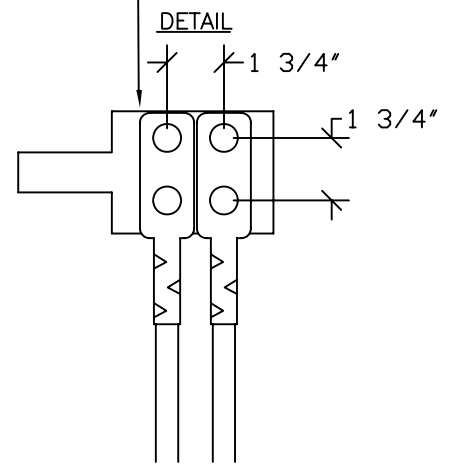
DATE	10/13/94	SCALE	NONE	ELECTRICAL SERVICE REQUIREMENTS UNDERGROUND SERVICE, METER PEDESTAL	
DRAWN	KMD	REVISED	08/22/00	CLALLAM COUNTY PUD #1	PAGE 32 OF 37
APPROVED		08/13/04	08/04/14		

ALSO SEE N.E.C. REQUIREMENTS

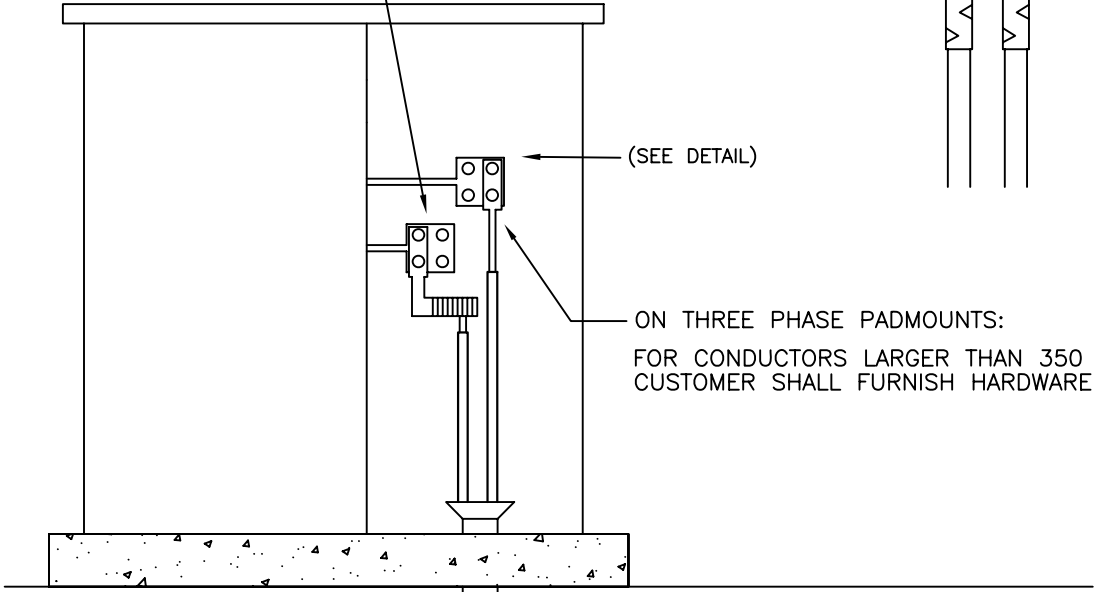
NOTE: ALL PARTS TO BE 316 STAINLESS EXCEPT NUTS. NUTS TO BE SILICON BRONZE.



TYPICAL N.E.M.A. 2 HOLE SPADE CONNECTORS COMPATIBLE WITH SERVICE ENTRANCE CONDUCTOR COMPRESSED ON CONDUCTOR IN ACCORDANCE MANUFACTURE RECOMMENDATIONS



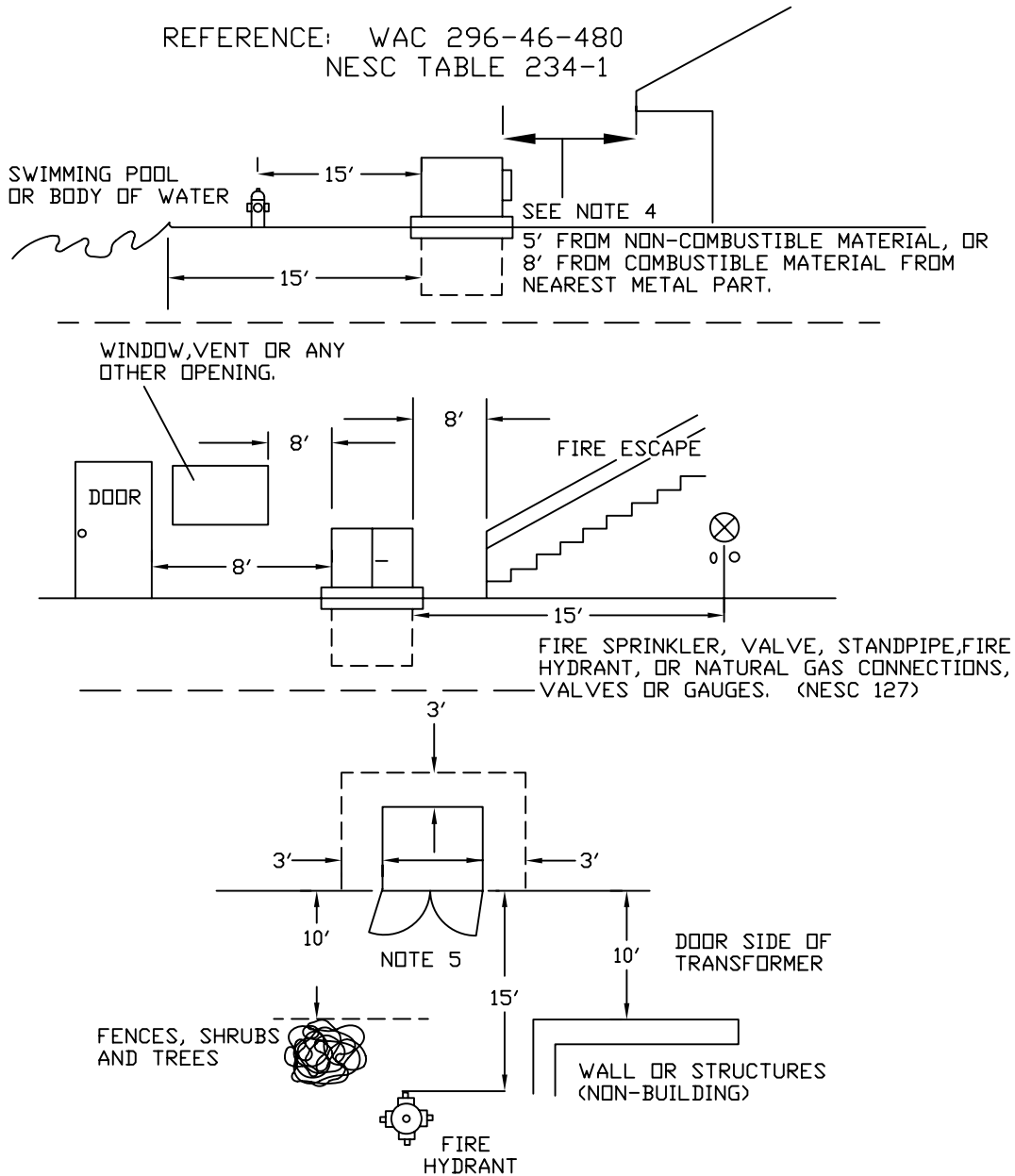
ON THREE PHASE PADMOUNTS: WITH 350 MCM OR SMALLER DISTRICT PROVIDES MULTI-LUG CONNECTORS



ELEVATION VIEW PAD MOUNT TRANSFORMER

DATE 06/15/95	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS TERMINATION OF CONDUCTORS IN 3-PHASE PAD MOUNT XFR		
DRAWN KMD	REVISED 05/05/97 10/29/98 08/13/04	CLALLAM COUNTY PUD #1	PAGE 33 OF 37	DRAWING # 33
APPROVED				

REFERENCE: WAC 296-46-480  
 NESC TABLE 234-1



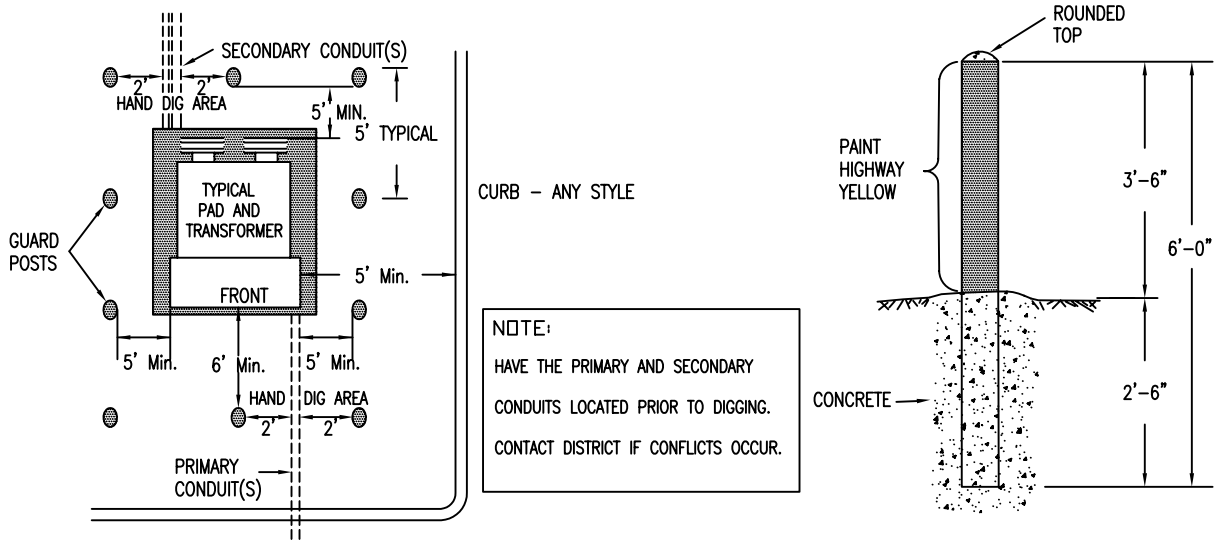
**Notes:**

1. ALL MEASUREMENTS FROM NEAREST METAL PART OF THE TRANSFORMER.
2. MINIMUM 20' CLEARANCE FROM COMBUSTIBLE FUEL STORAGE TANKS.
3. PADMOUNT EQUIPMENT SHALL BE NOT MORE THAN 15' FROM ACCESS ROAD OR DRIVEWAY.
4. NON-COMBUSTIBLE: BRICK, CONCRETE, STEEL AND STONE.
5. LANDSCAPING WHICH DOES NOT INTERFERE WITH OPERATION AND MAINTENANCE OF THE TRANSFORMER IS ALLOWED.
6. GROUND MUST SLOPE AWAY FROM BUILDING FOR TRANSFORMER INSTALLATION SHOWN.

DATE 4/14/97	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS PADMOUNT CLEARANCES		
DRAWN LB	REVISED 05/05/97 10/29/98	CLALLAM COUNTY PUD #1	PAGE 34 OF 37	DRAWING # 34
APPROVED				

GUARD POSTS SHALL BE FURNISHED AND INSTALLED BY THE CUSTOMER WHEN PADMOUNT EQUIPMENT IS LOCATED WITHIN AN AREA OF VEHICULAR TRAFFIC. THE DISTRICT SHALL DETERMINE THE NUMBER AND LOCATION OF ALL GUARD POSTS.

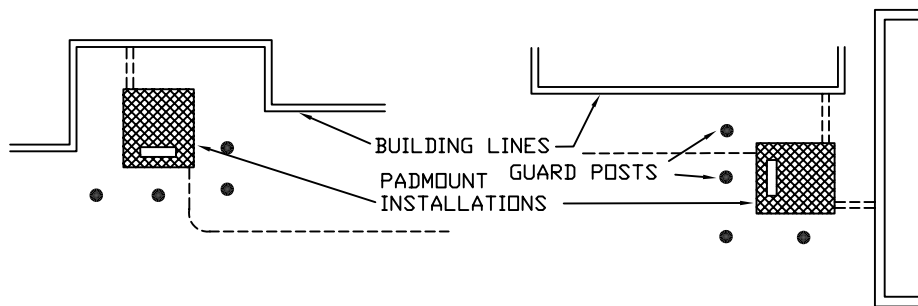
### GUARD POST LOCATIONS



- GUARD POSTS ARE REQUIRED BY THE STATE OF WASHINGTON ELECTRICAL INSPECTION DIVISION PARAGRAPH FOUR (4) OF WAC 296-46-480 "LOCATION OF PADMOUNT TRANSFORMERS", WHEN LOCATED WHERE EXPOSED TO VEHICULAR TRAFFIC OR OTHER MOBILE TYPE MACHINERY.
- GUARD POSTS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AT NO EXPENSE TO THE DISTRICT.
- THE DISTRICT SHALL DETERMINE THE NUMBER AND ESTABLISH THE LOCATIONS OF ALL GUARD POSTS.
- TWO TYPES OF GUARD POSTS ARE ACCEPTED BY THE DISTRICT. TYPE ONE IS A 6" X 60" STEEL PIPE SET IN AND FILLED WITH CONCRETE. TYPE TWO IS A 9" X 72" PRECAST STEEL REINFORCED CONCRETE POST SET IN CONCRETE. THE EXPOSED PORTION OF THE POST SHALL BE PAINTED HIGHWAY YELLOW.

REFER TO PAGE 34 FOR BUILDING CLEARANCES.

### TYPICAL EXAMPLES



DATE 4/21/97	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS GUARD POST LOCATIONS		
DRAWN LB / dt	REVISED 05/05/97	CLALLAM COUNTY PUD #1	PAGE 35 OF 37	DRAWING # 35
APPROVED	11/29/08			

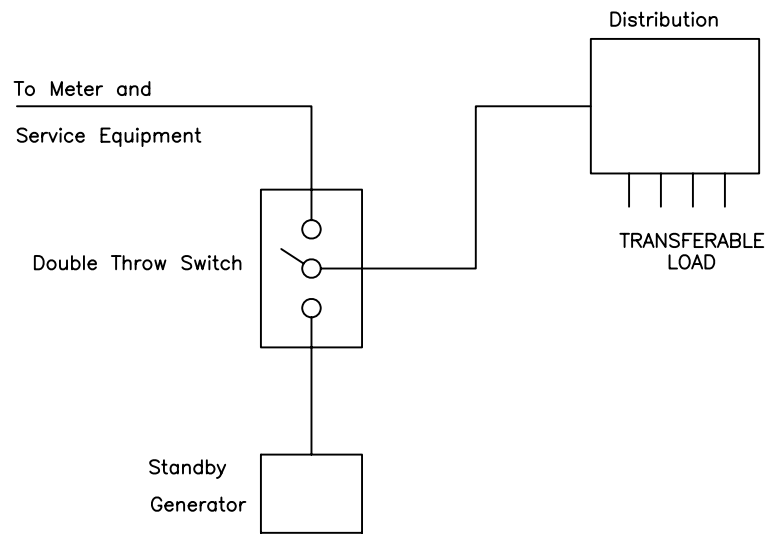
ALSO SEE N.E.C.  
REQUIREMENTS

This page intentionally left blank

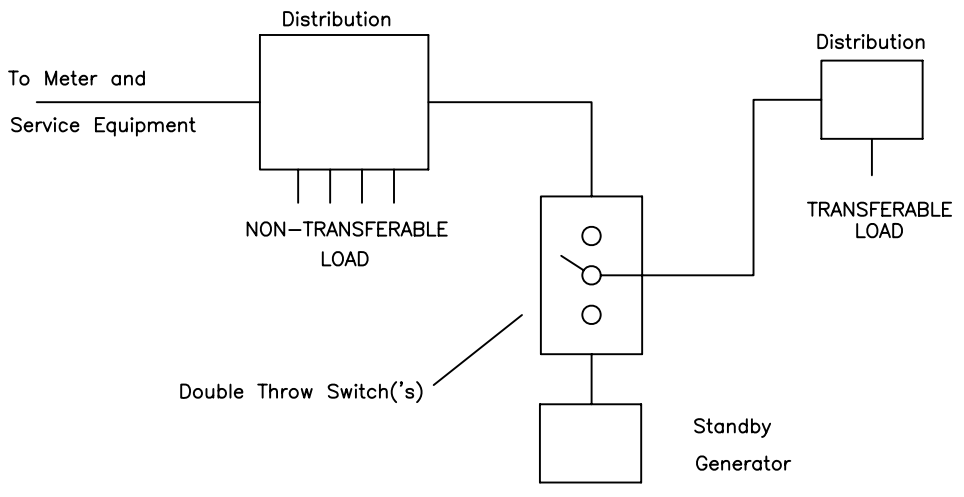
DATE 4/28/97	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS		
DRAWN LB	REVISED 05/05/97	CLALLAM COUNTY PUD #1	PAGE 36 OF 37	DRAWING # 36
APPROVED	10/29/98 03/14/00			

ALSO SEE N.E.C. REQUIREMENTS

ENTIRE LOAD TRANSFERABLE



PARTIAL LOAD TRANSFERABLE



CUSTOMER GENERATION AND TRANSFER SWITCHES

DATE 1/29/99	SCALE NONE	ELECTRICAL SERVICE REQUIREMENTS STANDBY GENERATOR SCHEMATIC CONNECTION DIAGRAMS		
DRAWN DWP	REVISED	CLALLAM COUNTY PUD #1	PAGE 37 OF 37	DRAWNG # 37
APPROVED	1/29/99			