



ADDENDUM NO. 1 - OUTLINE AND SUMMARY INFORMATION

Project Name: MAES – Bart Farm Aurora Test Range Electrical PPA No.: 22-0544
Location: Montana State University - Bozeman Date: 04/07/2023
Owner: State of Montana, MSU - Bozeman
Plew Building 6th and Grant, PO Box 172760
Bozeman, Montana 59717-2760

To: *All Plan Holders of Record*

*The Plans and Specification prepared by **Morrison Maierle** dated **03-15-2023** shall be clarified and added as follow. The bidder proposes to perform all the following clarifications or changes. It is understood that the Base Bid shall include any modification of Work or Additional Work that may be required by reason of the following change or clarifications.*

The Bidders are to acknowledge the receipt of this Addendum by inserting its number and date into their Bid Forms. Failure to acknowledge may subject the Bidder to disqualification and rejection of the bid. This Addendum forms part of the Contract Documents as if bound therein and modifies them as follows:

1. AMENDMENTS TO THE PROJECT MANUAL
 - a. Specifications: N/A
2. AMENDMENTS TO THE DRAWINGS
 - a. Sheet:
 - i. E-2 SITE PLAN: Service drop from pole to trailer was updated from an overhead drop to an underground drop to the service equipment. The service equipment was updated to be mounted directly onto the end of the trailer.
 - ii. E-5 DETAILS: Detail 1 was updated to show the underground service drop.
 - iii. E-6 DETAILS: Detail 1 was updated to remove the overhead service drop equipment.
3. AMENDMENTS TO EQUIPMENT INFORMATION
 - a. N/A
4. PRE-BID MEETING INFORMATION
 - a. Project has been submitted to the City of Bozeman and approved. Permit shall be picked up by the Contractor that is awarded the project.

- b. Pre-Bid meeting notes by Loras O'Toole. See attached "AES Bart Farm Aurora Electrical 22-0544 Rebid – Pre-Bid Mtg Notes 4-4-23.pdf"

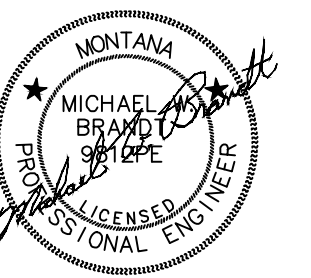
5. PRIOR APPROVALS

- a. N/A

6. ATTACHMENTS

- a. Pre-bid meeting attendance list
 - i. Loras O'Toole – MSU University Engineer
 - ii. Todd Cook – MSU Facilities Engineer
 - iii. Joe Hughes – Morrison-Maierle Project Manager
 - iv. Eric Henvich – Aurora
 - v. Ryan Crawford – South Hills Electrical

REV.	DESCRIPTION	DATE
1	ADDENDUM	3/30/23



22-0544

MMI# 0747.078

SHEET TITLE
SITE PLAN

SHEET
E-2

DATE
03-15-2023

GENERAL NOTES

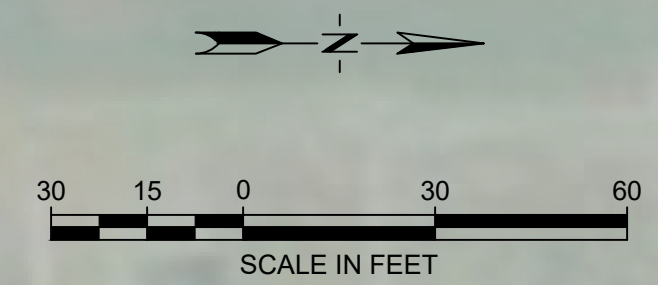
1. SEE STAKING SHEET FOR DETAILED COMMENTS, SHEET E-1.
2. SEE SAG AND TENSION STRINGING CHART, SHEET E-3.
3. SEE POLE ASSEMBLY DETAILS, SHEETS E-4 AND E-5.

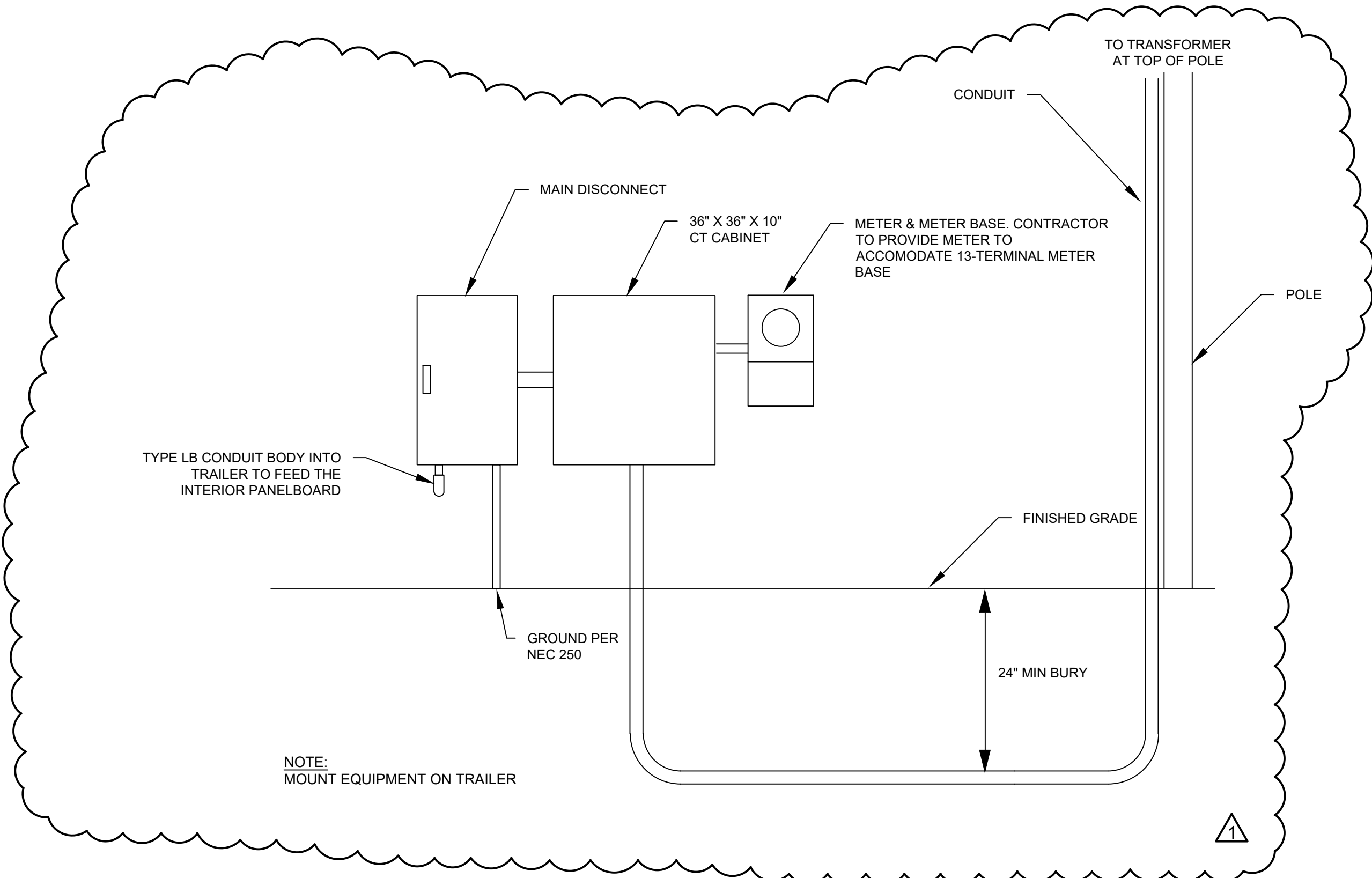
KEY NOTES

- 1 REMOVE EXISTING IN-LINE GUY.
- 2 INSTALL EXISTING DEAD-END ASSEMBLY AND ASSOCIATED DOWN GUY WITH NEW HARDWARE ON NEW 40' CLASS 4 POLE. RE-USE EXISTING TRANSFORMER AND FUSE CUTOFF. RE-INSTALL RISER AND SERVICE TO BUILDING.
- 3 INSTALL NEW GUY AND ANCHOR ASSEMBLY AT 30' FROM NEW POLE.
- 4 UNDERGROUND SERVICE CONDUCTOR, SEE DETAIL 1 SHEET E-5 AND ONE-LINE DIAGRAM & FEEDER SCHEDULE, DETAIL 1 SHEET E-6.
- 5 NOT USED.
- 6 INSTALL NEW 150kVA (3 x 50kVA) 12.47/7.2kV - 120/208V WYE, 3-PHASE TRANSFORMER BANK. INSTALL TYPE 10K OR 10T FUSE IN ACCORDANCE WITH MSU SYSTEM PROTECTION SCHEME.
- 7 SERVICE ENTRANCE EQUIPMENT, SEE DETAIL 1, SHEET E-5.
- 8 SEE SINGLE PHASE TAP GUIDE C.511G, SHEET E-6.

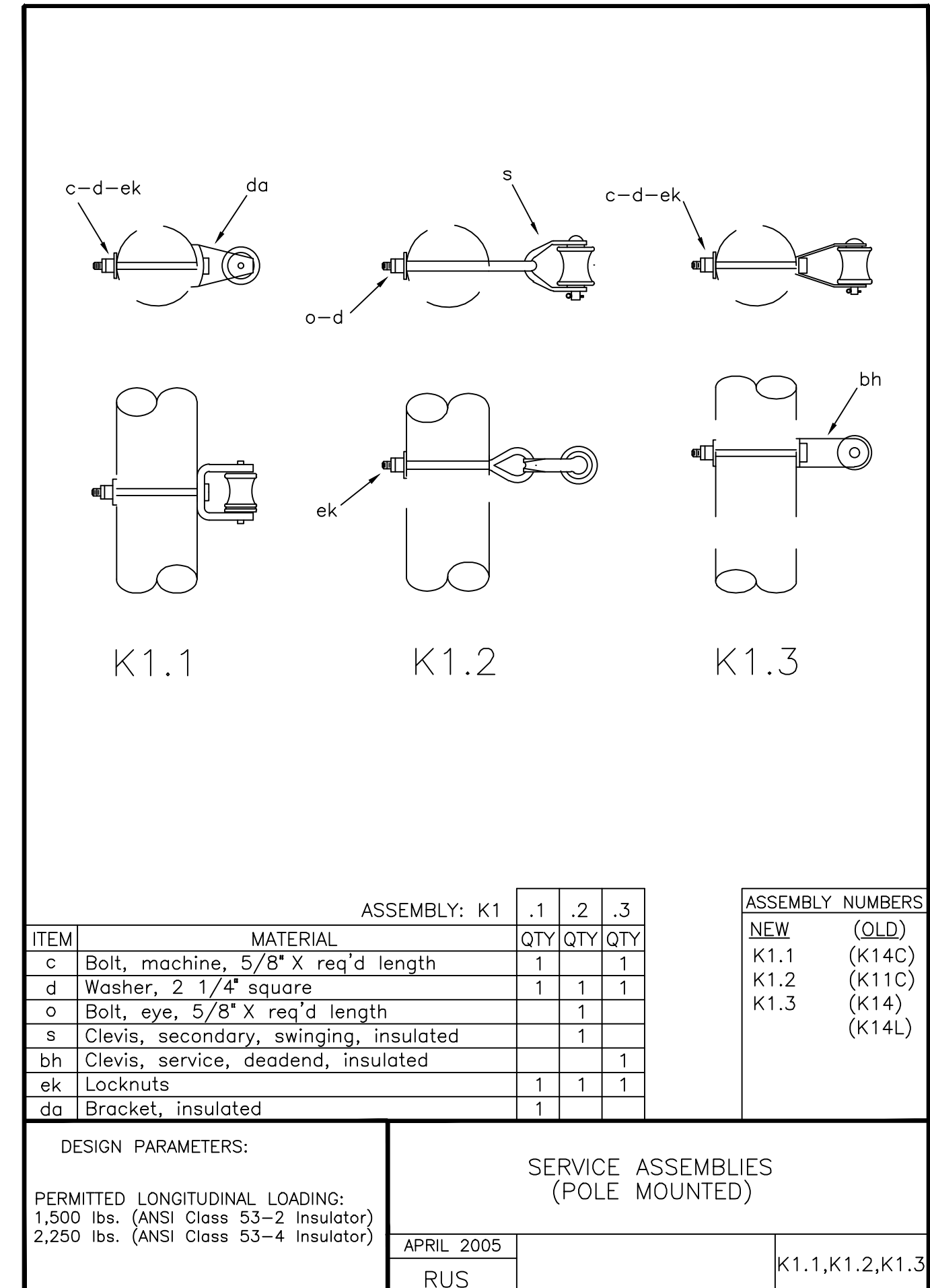
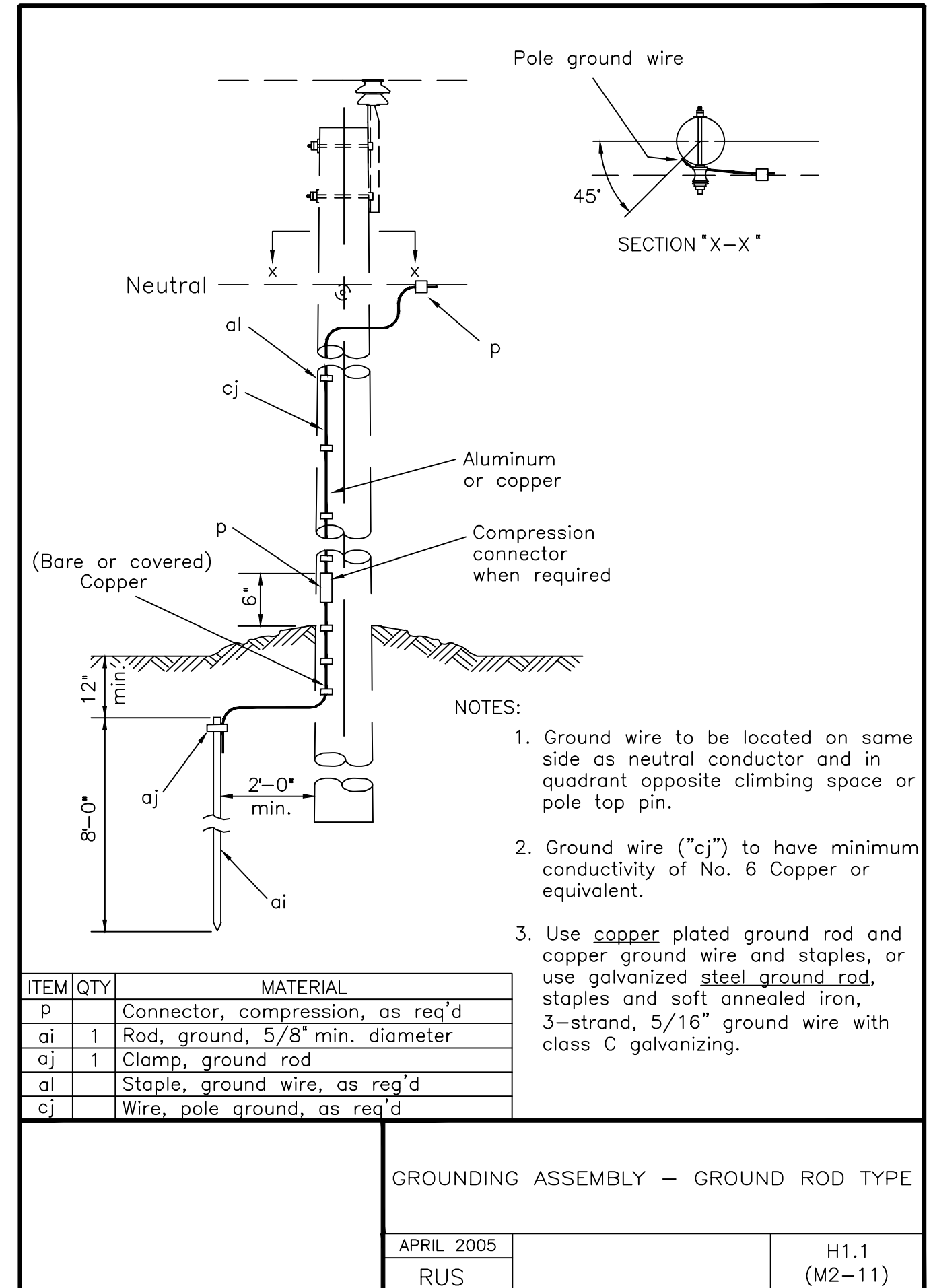
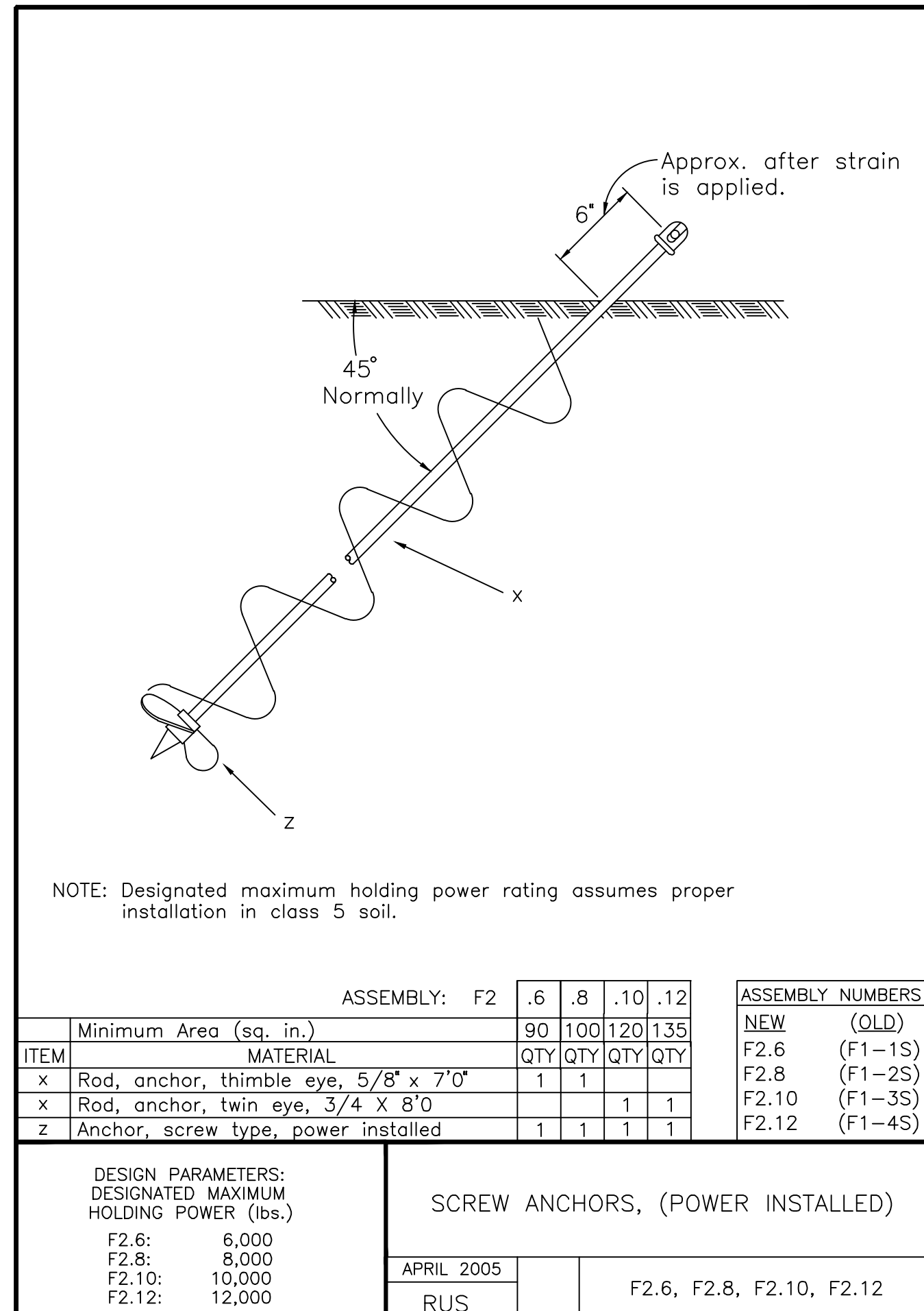
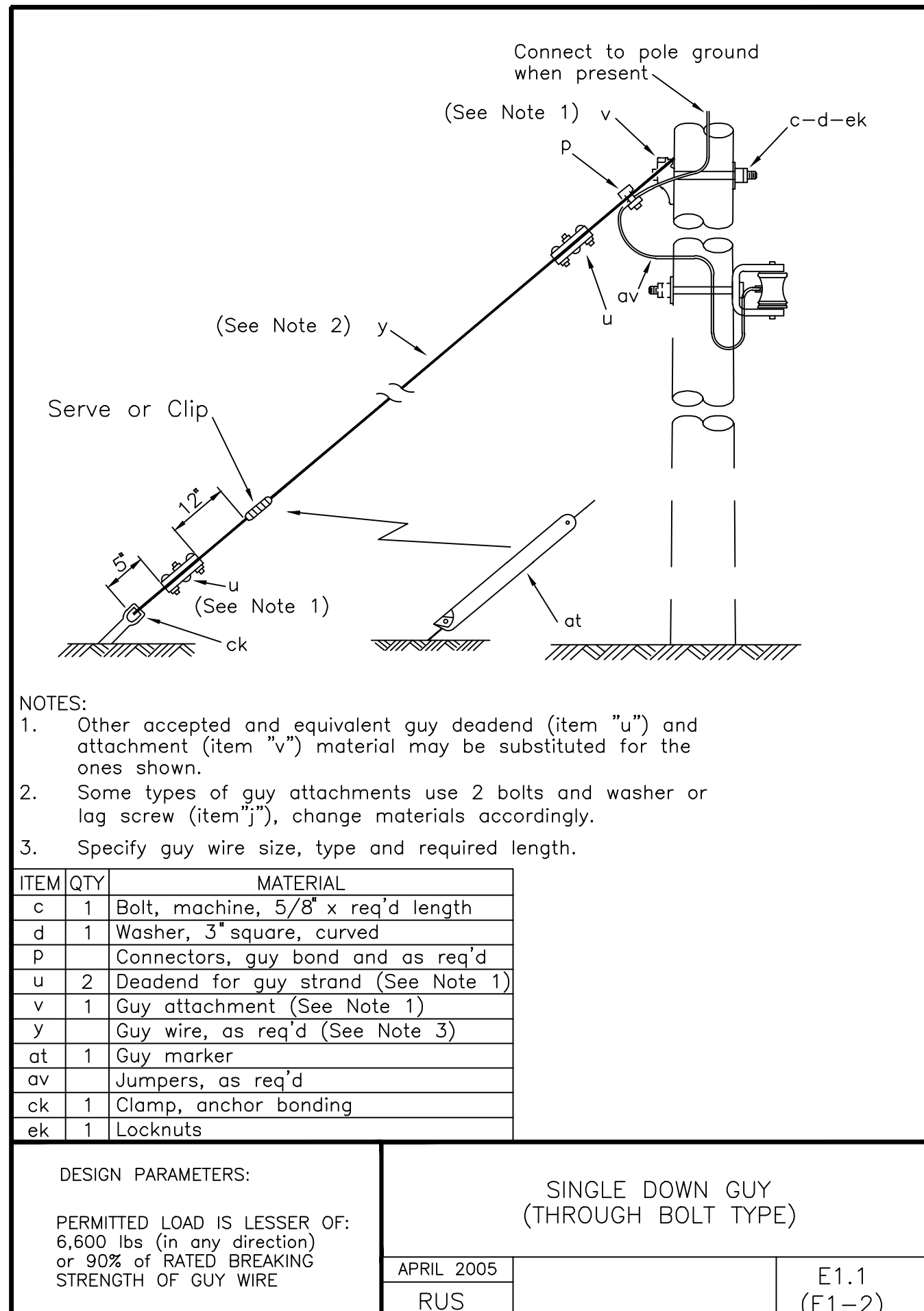
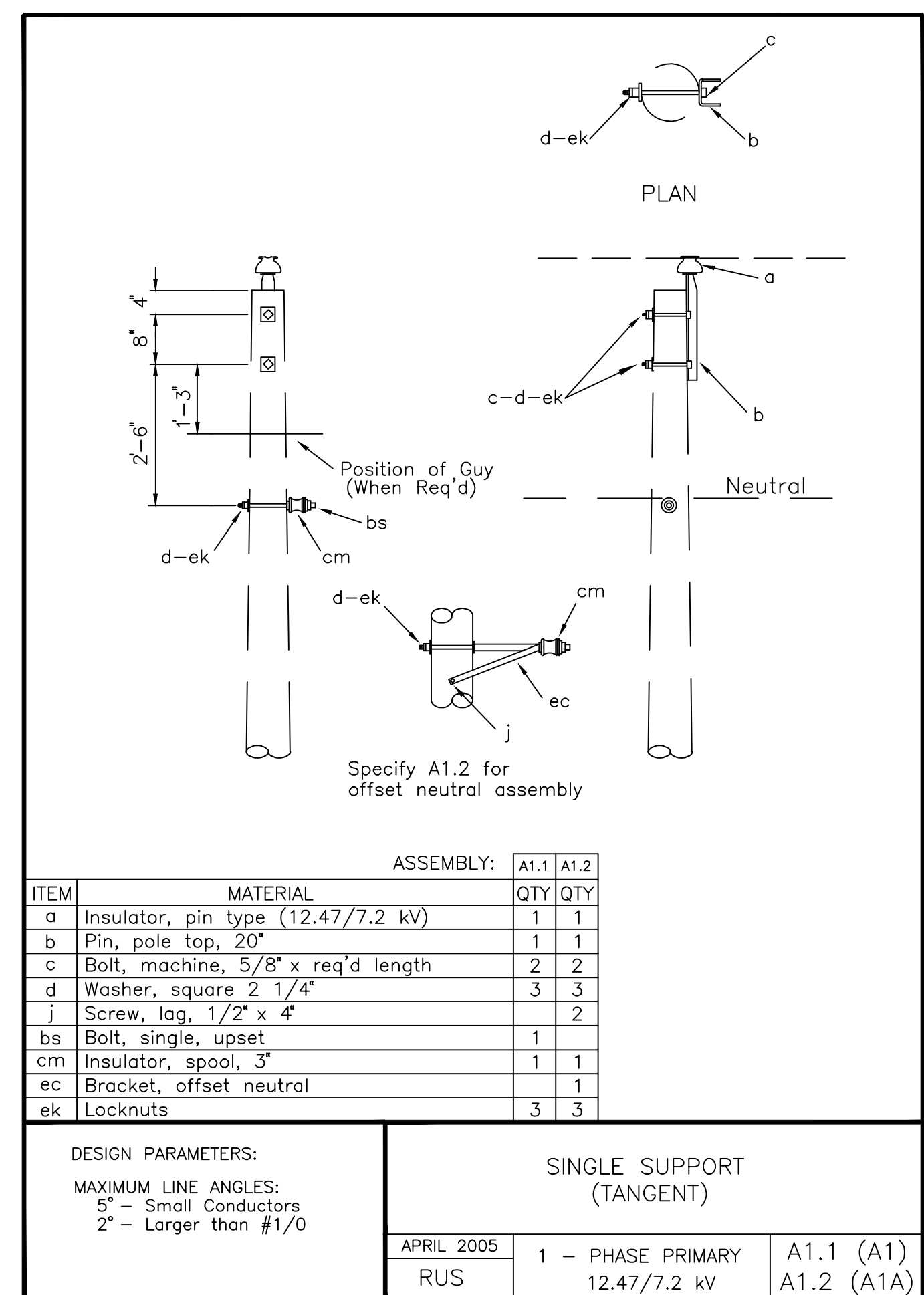
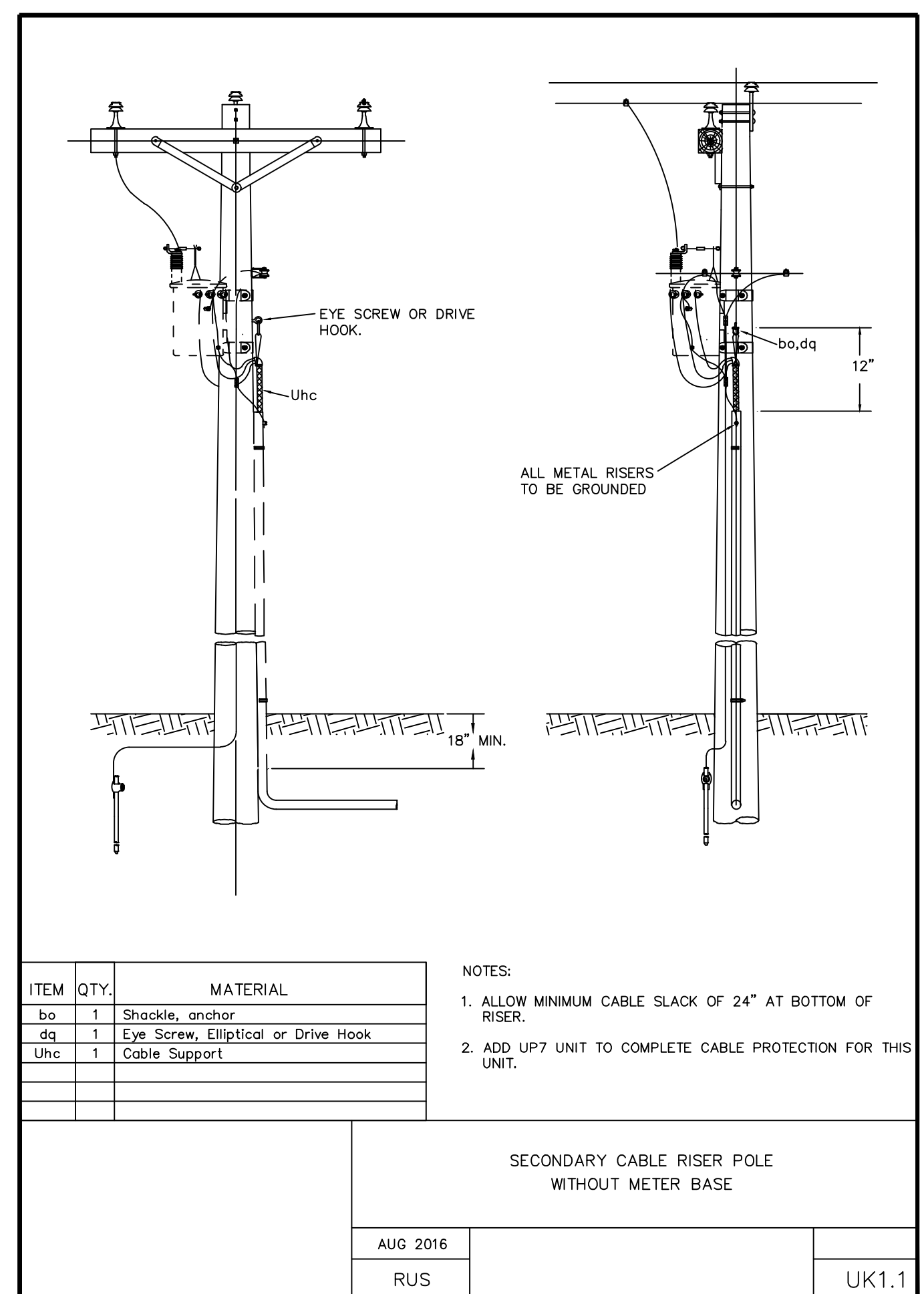


VERIFY SCALE!
THESE PRINTS MAY BE REDUCED.
LINE BELOW MEASURES ONE INCH
ON ORIGINAL DRAWING.
MODIFY SCALE ACCORDINGLY!

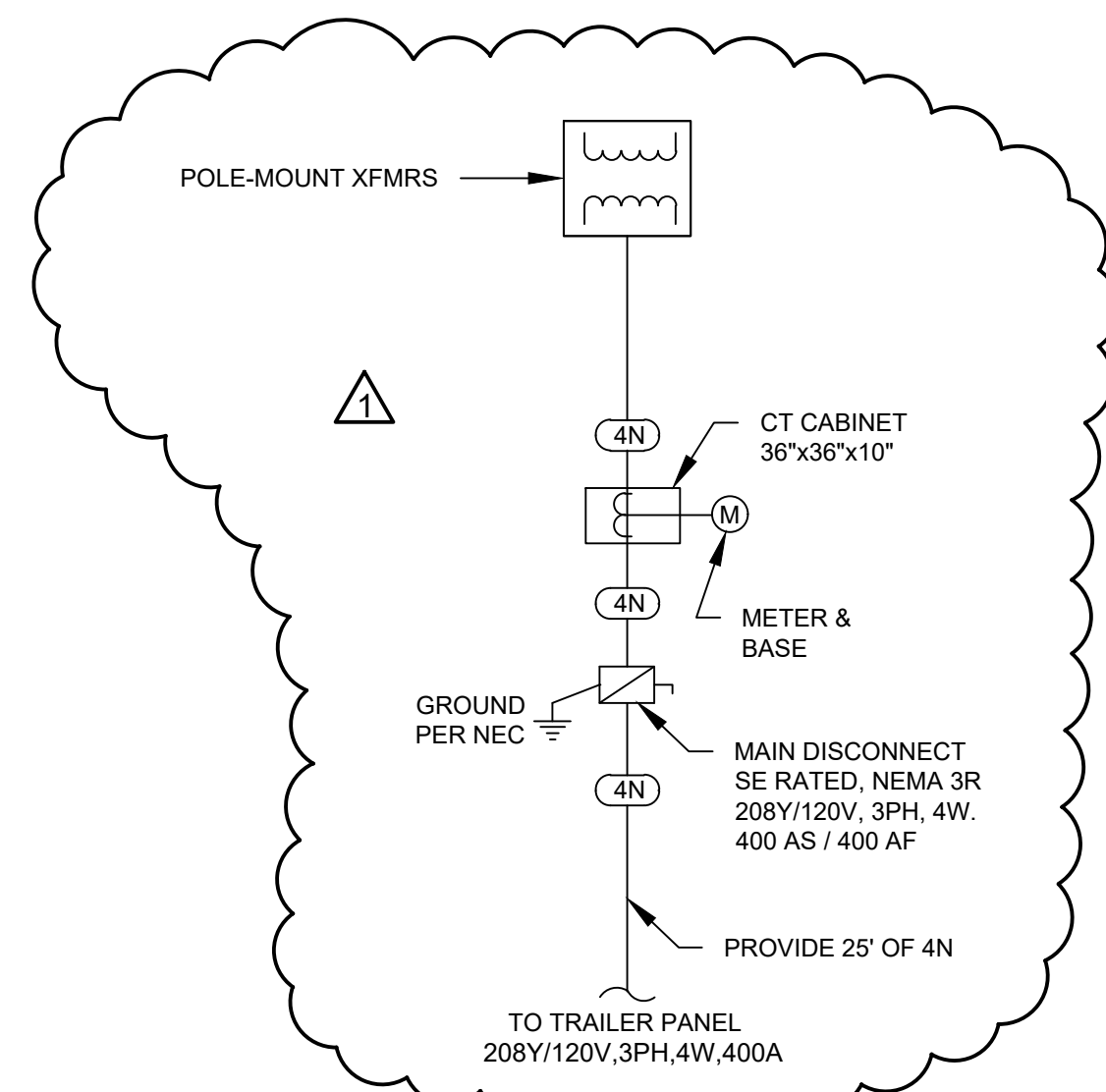




1 MAIN DISCONNECT/METER/ CT CABINET DETAIL
E-2 SCALE: NO SCALE

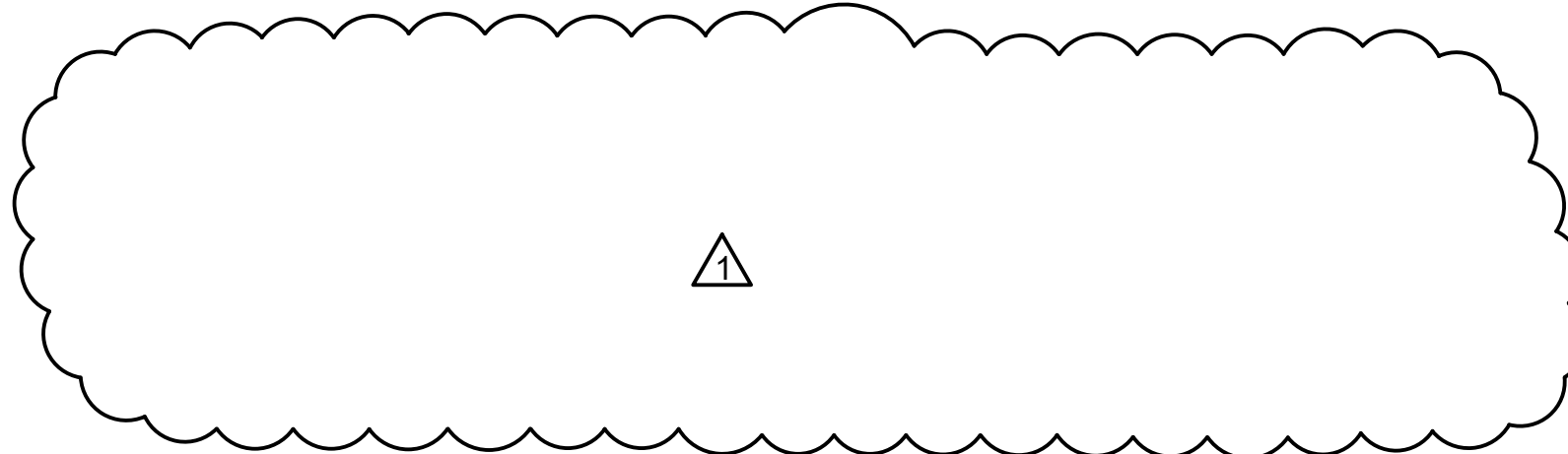


GENERAL NOTES
1. SEE STAKING SHEET E-1 FOR LOCATION OF EACH DETAIL USED.

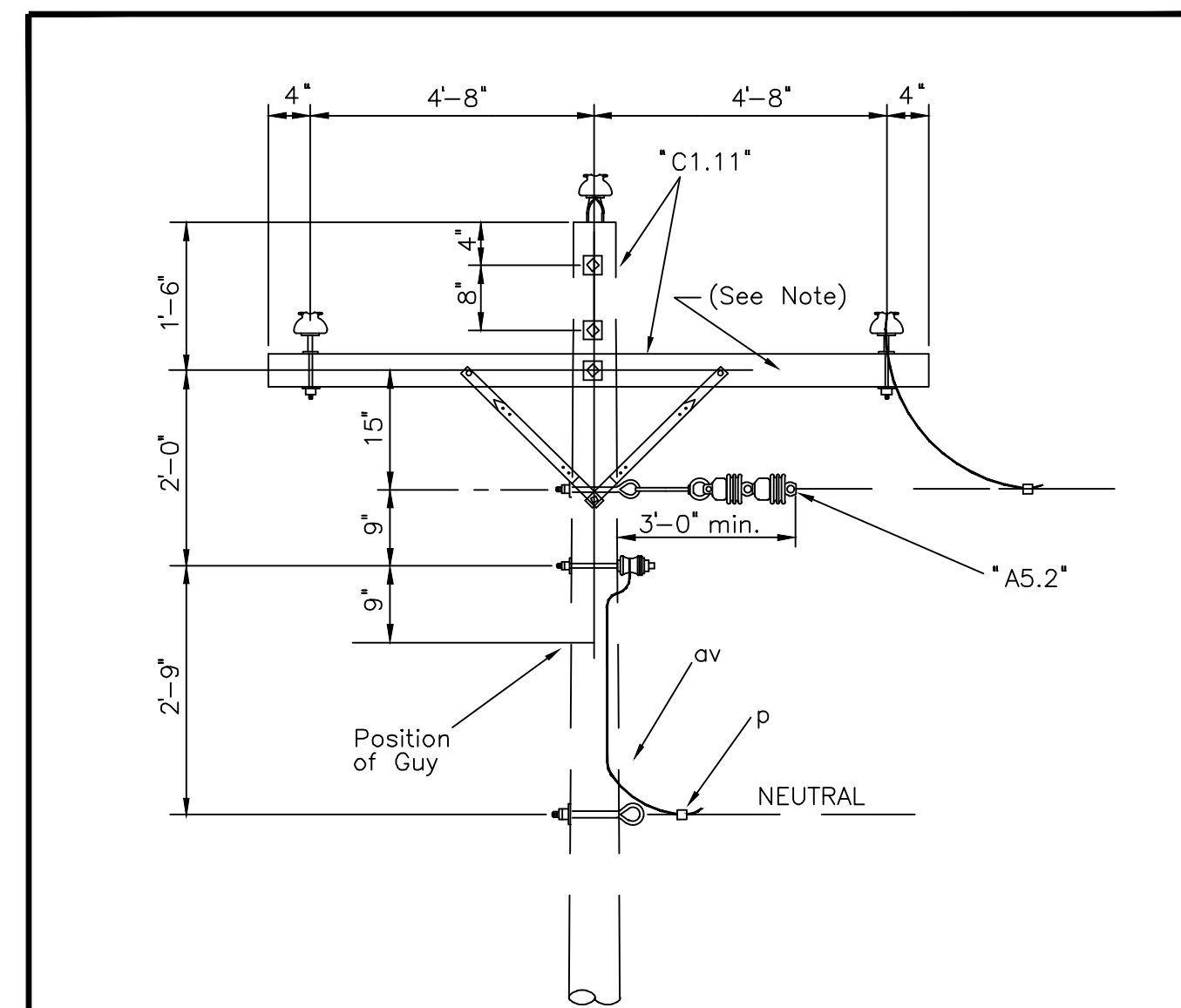


FEEDER SCHEDULE - IN CONDUIT

FEEDER NUMBER	AMPS	WIRE QTY PER CONDUIT	SETS IN PARALLEL	75 DEG COPPER		GROUND AWG
				CONDUIT	PHASE QTY AND AWG	
4N	400	4W	1	4"	3#500	1#500



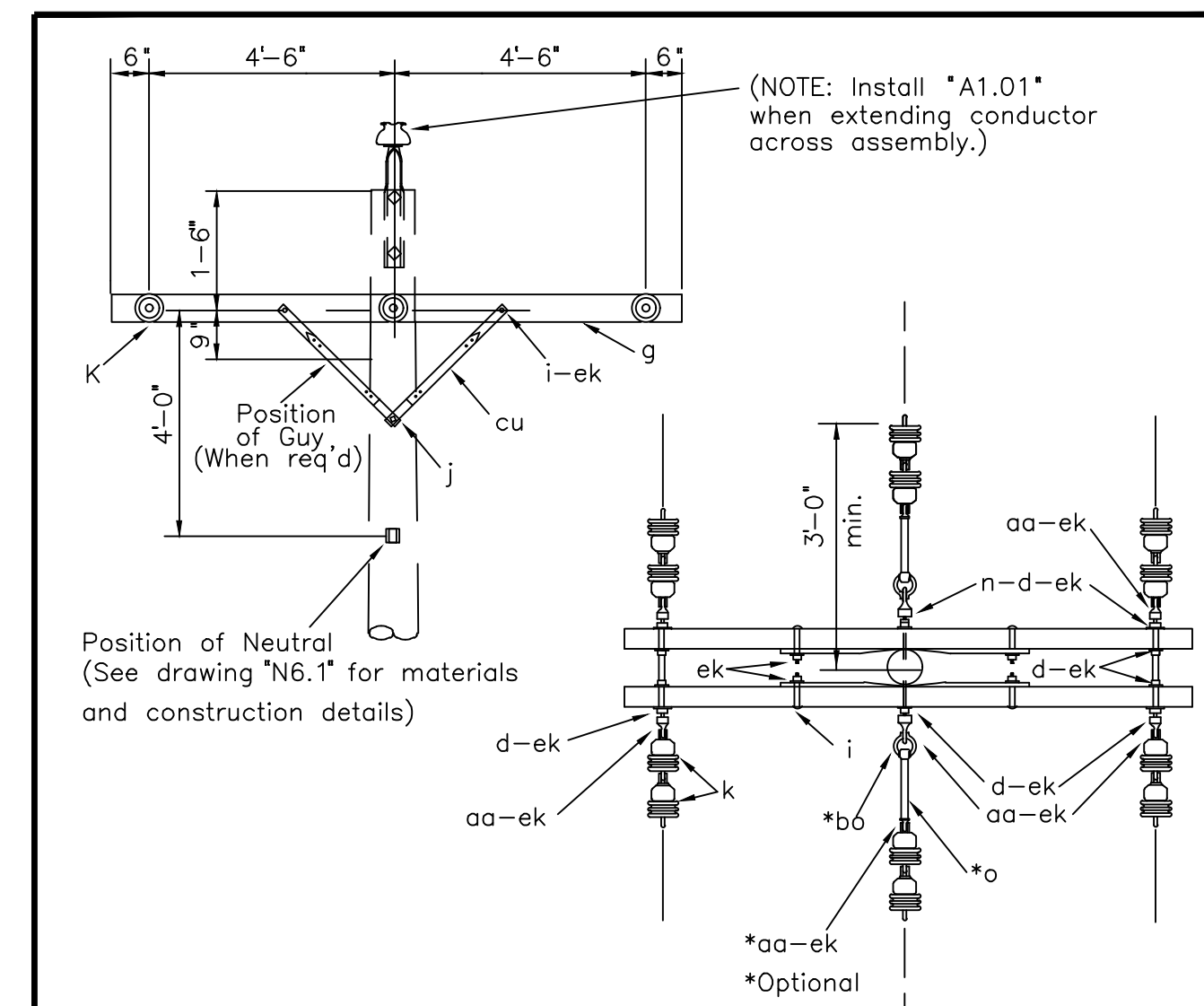
1 SECONDARY ONE LINE DIAGRAM
E-2 SCALE: NO SCALE



NOTE:
When tapping center phase, install post type insulator, "A1.011", horizontally on crossarm, 19 inches (minimum) from surface of pole and fasten jumper to insulator.

ITEM	QTY	MATERIAL
1	1	"C1.11" Primary Assembly
1	1	"A5.2" Primary Assembly
p		Connectors, as req'd
av		Jumpers, as req'd

DESIGN PARAMETERS:	SINGLE PHASE TAP GUIDE		
PERMITTED LONGITUDINAL LOAD = 5,000 lbs./Conductor	APRIL 2005	3 - PHASE PRIMARY	C5.11G
	RUS	12.47/7.2 kV	



(NOTE: Install "A1.01" when extending conductor across assembly.)

ITEM	QTY	MATERIAL
d	2	Washer, square, 3", curved
d	10	Washer, square, 2 1/4"
g	2	Crossarm, 3 5/8" x 4 5/8" x 10'-0"
i	4	Bolt, carriage, 3/8" x 4 1/2"
j	2	Screw, lag, 1/2" x 4"
k	12	Insulator, suspension, 4 1/4"
n	4	Bolt, double arming, 5/8" x req'd length
o	2	Bolt, eye, 5/8" x req'd length
p		Connectors, as req'd
aa	8	Nut, eye, 5/8"
av		Jumpers, as req'd
bo	2	Shackle, anchor
cu	4	Brace, 28"
ek	26	Locknuts

- NOTES:
- Double arming bolt, item "n," and eye nut, item "aa," may be replaced with double arming eye bolt, item "dy."
 - Maximum line angle may be increased to 15° by installing anchor shackles, item "bo," to (horizontal) eye nuts and installing side guys as req'd.
 - Designate as C6.31 for assembly with three crossarms.

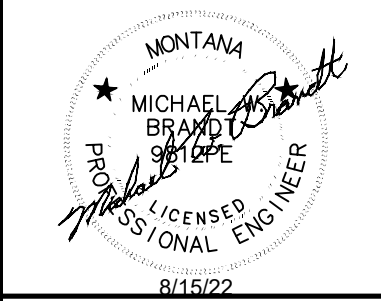
DESIGN PARAMETERS:	DOUBLE DEADEND ON CROSSARMS		
PERMITTED UNBALANCED CONDUCTOR TENSION: See Table A (Exhibit 2)	APRIL 2005	3 - PHASE PRIMARY	C6.21 (CB)
MAXIMUM LINE ANGLE = 5° (See Note 2)	RUS	12.47/7.2 kV	C6.31

CONSTRUCTION DOCUMENTS

MAES - BART FARM AURORA TEST RANGE ELECTRICAL



DRAWN BY: MWB		
REVIEWED BY: -		
REV.	DESCRIPTION	DATE
1	ADDENDUM	3/30/23



22-0544

MMI# 0747.078

SHEET TITLE
DETAILS

SHEET
E-6

DATE
03-15-2023



MSU-CPDC
MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

PRE-BID MEETING AGENDA

Project: AES ButForm Aurora Electrical, PPA# 22-0544
From: Loras O'Toole, Facilities Engineer, ph 7092
Date: 4-4-23

1. Recommended Attendees:
 - a. ~~OFS Design/Consulting Staff~~ Todd Cook 994-5480
 - b. OFS Construction Manager, Loras O'Toole 994-7092
 - c. ~~Safety and Risk Management~~ MSU Elec Foreman, Andy Smith
 - d. Outside consultants Joe Hughes, Ryan Maroney, MHI
 - e. Clients Aurora Eric Henrich, Adam Wong, Crystal Durso
 - f. MSU-ITC Trent Berg, Zeb Barber
2. Route sign-in sheet. Introductions
3. Availability of Contract Documents Website, plans exchanges,
4. Arrangement of Work:
 - a. Related work being performed by MSU or other contractors. None
 - b. Owner furnished equipment. None
 - c. Use of building areas for construction None
5. Bidding Considerations: Submitted to City. Counter Permit by Contractor.
 - a. Plan review fees paid by owner, permit fees paid by contractor. Status.
 - b. Bid opening date, time. Bids April 18 @ 2pm, Plew Bldg
 - c. Bid Security of 10% of bid for all projects.
 - d. Deadline for Substitution, and Addenda. To MSU 4/7 end of day.
 - e. Performance, labor, and material bonds for 100%, for projects over \$25,000.
 - f. State tax of 1% for projects over \$5000.
 - g. Prevailing wages for projects over \$25,000.
 - h. General liability, Owner protective liability, and property insurance, in MSU name.
 - i. Completion of project 180 days after Notice to Proceed. < Can be adjusted depending on material (lead time, (by addenda)
 - j. Liquidated damages of 160 per day.
 - k. Project meetings. As needed
6. Review drawings and technical specifications
7. Questions that have been raised since bid documents sent out. Scope
8. Open discussion of project and related questions. - Extend 3PH OHT
- Replace 2 poles
- Rearrange (E) 1 ph ckt w/(E) transformer
- One new pole
9. Project walk-through.

Encl: List of Attendees, Notes from Meeting

- New scales on dugs (corrected in) (re-bid docs)

Page 1 of 1

- New service to trailer with disconnect & meter
- Connect to (E) panel on trailer
- UG between last pole + service gear by addendum.

AES BART FARM
Aurora Electrical
Pre Bid Attendance

2/4/23

Name / Company / Phone / Email

Loras O'Toole	MSU	994-7092	loras@montana.edu
Todd Cook	MSU	994-5480	todd.cook1@montana.edu
Joe Hughes	MMI	406-587-0721	jhughes@m-m.net
Eric Henrich	Aurora	?	ehenrich@aurora.tech
Ryan Crawford	South Hills	406-422-0890	?