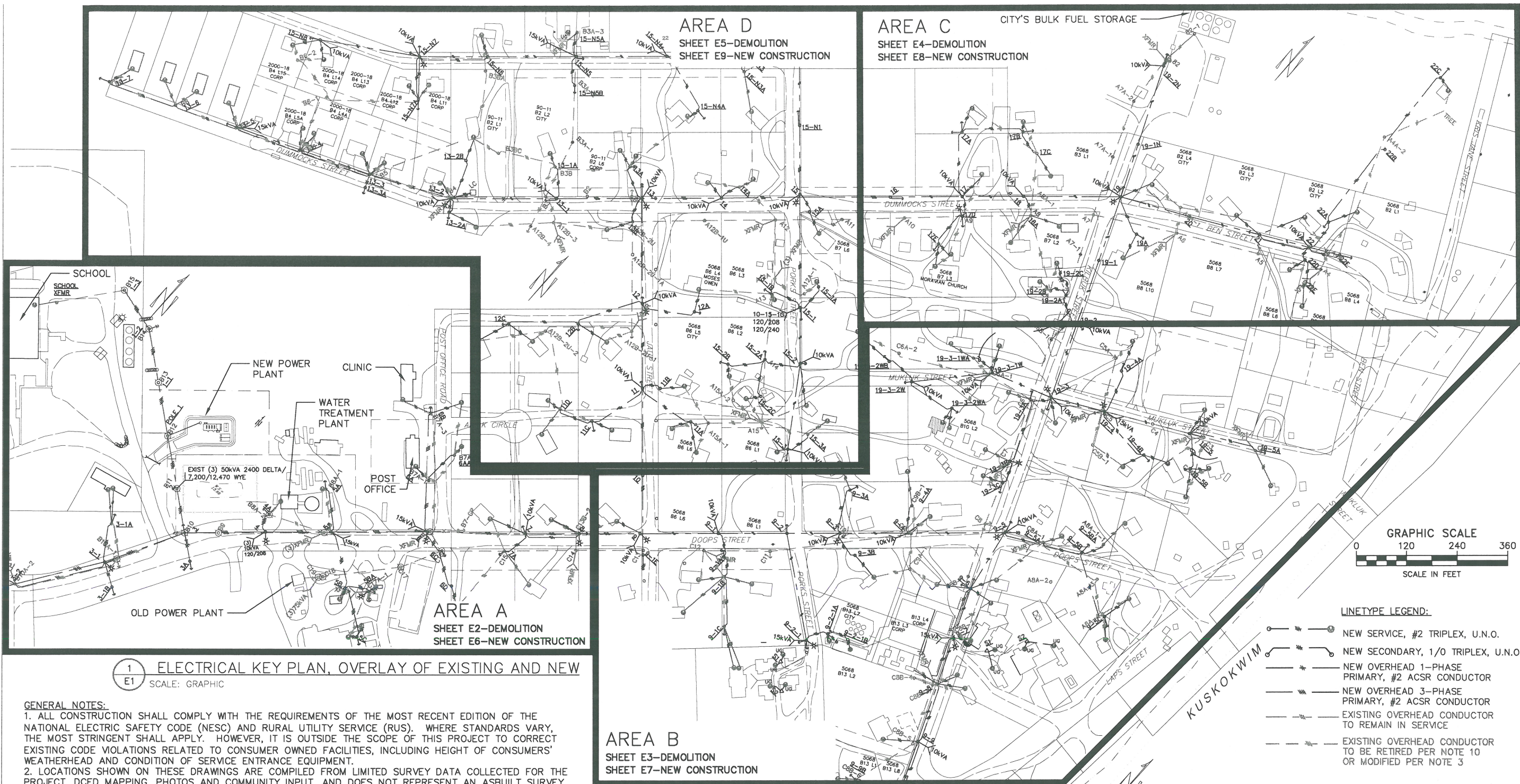


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1 ELECTRICAL KEY PLAN, OVERLAY OF EXISTING AND NEW
E1 SCALE: GRAPHIC

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE (NEC) AND RURAL UTILITY SERVICE (RUS). WHERE STANDARDS VARY, THE MOST STRINGENT SHALL APPLY. HOWEVER, IT IS OUTSIDE THE SCOPE OF THIS PROJECT TO CORRECT EXISTING CODE VIOLATIONS RELATED TO CONSUMER OWNED FACILITIES, INCLUDING HEIGHT OF CONSUMERS' WEATHERHEAD AND CONDITION OF SERVICE ENTRANCE EQUIPMENT.
2. LOCATIONS SHOWN ON THESE DRAWINGS ARE COMPILED FROM LIMITED SURVEY DATA COLLECTED FOR THE PROJECT, DCED MAPPING, PHOTOS AND COMMUNITY INPUT, AND DOES NOT REPRESENT AN ASBUILT SURVEY.
3. REQUEST LOCATES PRIOR TO DIGGING, ADJACENT UTILITIES SHOWN ON DRAWINGS SHOULD BE FIELD VERIFIED. UNDERGROUND FACILITIES WERE NOT SURVEYED AND LOCATIONS SHOWN MAY NOT REPRESENT ACTUAL FACILITIES. CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING ENERGIZED UNDERGROUND CIRCUIT WHERE NEW UNDERGROUND CIRCUIT RUNS PARALLEL.
4. EQUIPMENT LOCATIONS MAY BE SLIGHTLY FIELD ADJUSTED, WHEN STAKED. WITHIN R-O-W, COORDINATE LOCATIONS WITH ADJACENT UTILITIES, ESPECIALLY FUEL LINE ALONG DOOPS STREET AND KILBUK STREET.
5. EXISTING DISTRIBUTION SYSTEM IS: 2400V DELTA.
6. ALL MATERIAL PROVIDED SHALL BE ON THE RUS APPROVED MATERIALS LIST.
7. ASSEMBLY UNITS SHOWN ARE FOR EMPHASIS OF MAJOR ASSEMBLY UNITS ONLY. SEE STAKING SHEETS FOR REQUIRED ASSEMBLY UNITS. WHERE ASSEMBLY UNITS ARE NOT DETAILED IN THIS DRAWING SET, REFERENCE REA STANDARD DETAILS, REA BULLETIN 50-3, STD D 804, 1983 EDITION.
8. POLES SHALL BE SET AT DEPTH OF 10% OF POLE HEIGHT PLUS 3' MINIMUM (7'-6" MINIMUM FOR 45' POLE).
9. TYPICAL NEW POLE 45/4, UNLESS OTHERWISE NOTED.
10. CLEARING WILL BE REQUIRED IN AREAS THROUGH-OUT PROJECT. PROVIDE CLEARING WHERE REQUIRED FOR CONSTRUCTION OF THE PROJECT AND FOR THE NEW CIRCUIT'S CONTINUING PROPER OPERATION.
11. PROVIDE ARMOR ROD ON PRIMARY AND NEUTRAL ON EVERY ASSEMBLY ATTACHMENT EXCEPT AT DEADENDS.
12. NEW OVERHEAD PRIMARY CABLE IS: #2 ACSR SPARATE. LENGTHS SHOWN ARE APPROXIMATE--POLE LOCATIONS WERE NOT SURVEYED.
13. PRIMARY SHALL NOT CROSS NEUTRAL IN ANY SPAN; INSTALL NEUTRAL ON ROAD SIDE OF POLES.
14. PROVIDE 3" SQUARE CURVED WASHER ON BOTH SIDES OF ALL EYEBOLTS.
15. COORDINATE SCHEDULED DEMOLITION (SHOWN ON SHEETS E2 TO E5) WITH NEW DISTRIBUTION (SHOWN ON SHEETS E6 TO E9).
16. PROVIDE POLE NUMBERS FOR ALL POLES, UTILIZING NEW NUMBERING SHOWN.
17. PROVIDE REFURBISHMENT WORK INDICATED FOR DISTRIBUTION SYSTEM, INCLUDING ALL REQUIRED ACCESSORIES AND APPURTENANCES TO PROVIDE A COMPLETE AND SERVICABLE INSTALLATION.
18. ALL NEW PAD-MOUNTED EQUIPMENT SHALL BE PROPERLY SECURED AND LOCKED.
19. NEW UNDERGROUND SECONDARY AND SERVICE CONDUCTORS SHALL BE IN CONDUIT, WHICH CAN BE BACKFILLED USING NATIVE SOILS, PER TRENCH DETAIL.
20. BURIED TAP SPLICES SHALL NOT BE USED.

CONSTRUCTION COORDINATION NOTES:

1. THE AUTHORITY HAS PROVIDED AN OVERHEAD TRANSFORMER BANK OF THREE (3) 50 kVA TRANSFORMERS - 2,400V DELTA/ 7,200/12,470V WYE STEP-DOWN/STEP-UP TRANSFORMERS, MOUNTED ON POLE 2.
2. THE AUTHORITY WILL PROVIDE 5 DUAL VOLTAGE TRANSFORMERS: 120/240/2,400V DELTA AND 120/240/7,200/12,470V WYE SERVICE TRANSFORMERS.
3. UTILIZE AND RELOCATE AS NECESSARY: THE BANK OF THREE (3) 50 kVA TRANSFORMERS STEP-DOWN/STEP-UP TRANSFORMERS AND THE DUAL VOLTAGE TRANSFORMERS TO SECTIONALIZE PORTIONS OF THE CITY, MAINTAINING SERVICE TO THE CONSUMERS, AND MINIMIZING THE QUANTITY AND DURATION OF OUTAGES.
4. COORDINATE WORK ON DEMOLITION DRAWING WITH WORK ON NEW DISTRIBUTION DRAWINGS.
5. WHERE POLES ARE RETIRED AND NEW POLES ARE INSTALLED IN CLOSE VICINITY TO THE RETIRED POLE, MANY SERVICES AND SECONDARY CONDUCTORS ARE SHOWN ON THE DEMOLITION DRAWING IN THE "DEMOLITION" LINETYPE WITH NOTES TO MODIFY EXISTING SERVICE OR SECONDARY TO REUTILIZE EXISTING CONDUCTOR. THESE ARE ALSO THEN SHOWN ON THE NEW DISTRIBUTION DRAWINGS IN THE "NEW" LINETYPE WITH NOTES TO MODIFY EXISTING SERVICE OR SECONDARY TO REUTILIZE EXISTING CONDUCTOR.
6. RETIRED COMPONENTS SHALL BE DISPOSED OF BY CONTRACTOR IN A RESPONSIBLE MANNER.
7. THE AUTHORITY-PROVIDED DUAL VOLTAGE TRANSFORMERS AND STEP-DOWN/STEP-UP TRANSFORMER BANK SHALL BE RETURNED TO AEA ANCHORAGE WAREHOUSE AT COMPLETION OF PROJECT.
8. SEE SHEET E2 FOR GENERAL DEMOLITION NOTES.
9. SEE SHEET E6 FOR GENERAL CONSTRUCTION NOTES.

State of Alaska
Department of Community
and Economic Development
AIDEA/AEA
Rural Energy Group
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AKIAK, ALASKA
RURAL POWER SYSTEM UPGRADE
ELECTRICAL DISTRIBUTION PLAN

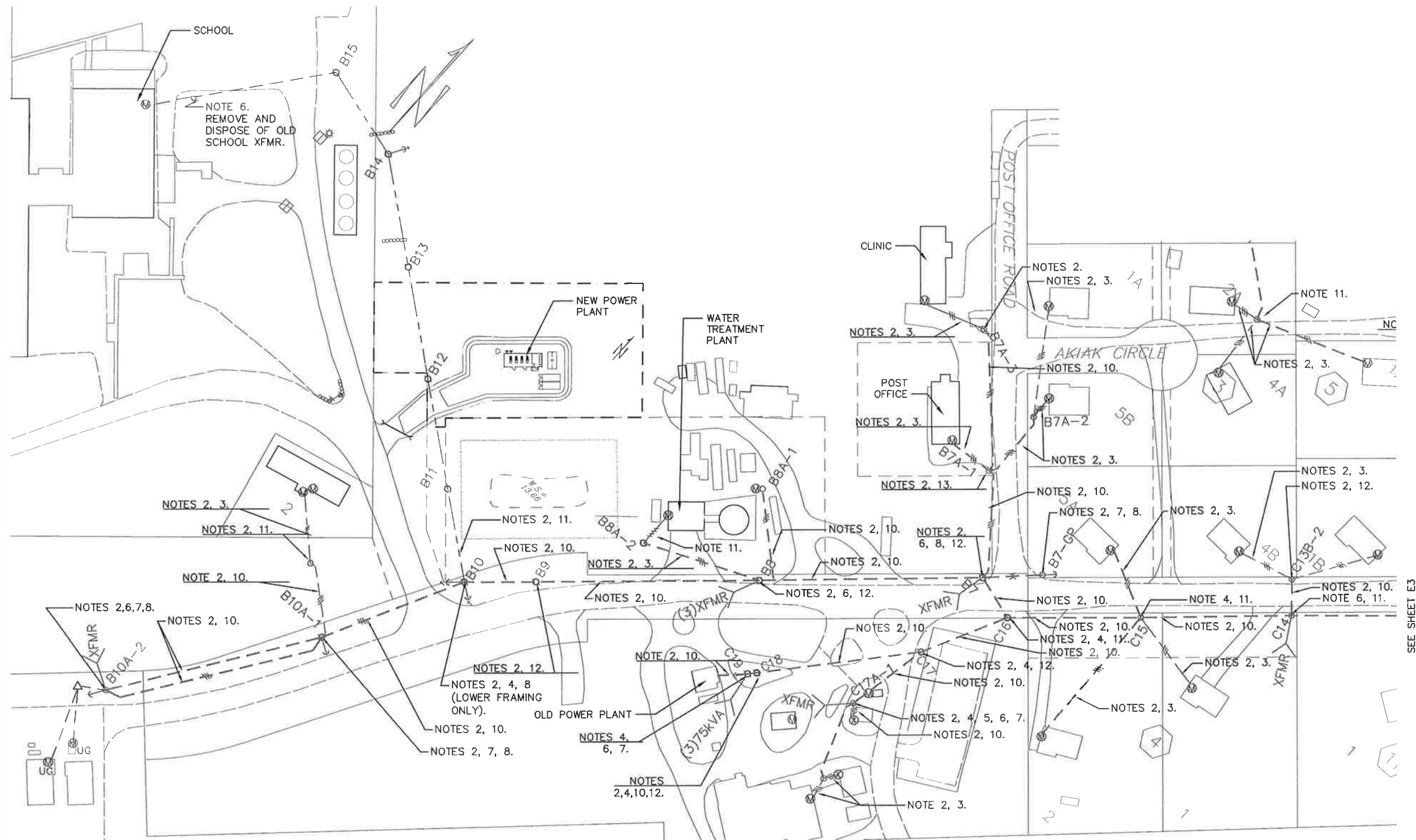
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1	ISSUED FOR CONSTRUCTION	2-18-15

Plot Date: 2/18/15	Designed: GME	Drawn: MME	Approved:
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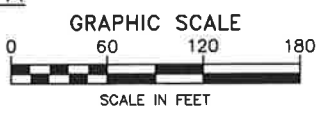
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1 ENLARGED ELECTRICAL DEMOLITION PLAN-AREA A
E2 SCALE: GRAPHIC



- EXIST. POLE NO. ○ EXISTING POLE TO REMAIN
- EXISTING POLE TO BE RETIRED PER NOTE 7 OR REMOVED FROM ELECTRICAL SERVICE PER NOTE 12
- EXISTING OVERHEAD CONDUCTOR TO REMAIN IN SERVICE
- - - EXISTING OVERHEAD CONDUCTOR TO BE RETIRED PER NOTE 10 OR MODIFIED PER NOTE 3

- DEMOLITION NOTES:**
1. SEE SHEET E1 FOR GENERAL NOTES AND CONSTRUCTION COORDINATION NOTES.
 2. COORDINATE SCHEDULED DEMOLITION SHOWN ON SHEETS E2-E5 WITH NEW DISTRIBUTION CONSTRUCTION.
 3. UNLESS NOTED OTHERWISE: EXISTING SERVICE DROPS TO REMAIN (BE RE-USED).
 4. WHERE EXISTING TRANSFORMERS, JUNCTION BOXES, OR PEDESTALS ARE TO BE RETIRED, NEW EQUIPMENT IS TO BE INSTALLED IN VICINITY OF EXISTING EQUIPMENT, AS REQUIRED, TO MINIMIZE OUTAGE TO CONSUMERS; AND RE-INSTALLATION OF EXISTING SECONDARIES AND SERVICES THAT ARE TO REMAIN.
 5. ALL RETIRED TRANSFORMERS ARE TO BE REMOVED FROM AKIAK AND SHALL BE DISPOSED OF PROPERLY.
 6. ALL RETIRED MATERIALS AND SHALL BE REMOVED FROM SITE AND PROPERLY DISPOSED OF; UNLESS PERMISSION TO USE VILLAGE LANDFILL IS ACQUIRED, IN WRITING, FROM THE VILLAGE.
 7. SOME DEMOLITION ITEMS ARE NOT SPECIFICALLY UNITIZED. DEMOLITION OF UN-UNITIZED ITEMS SHALL BE INCIDENTAL TO PROJECT AND ADDITIONAL PAYMENT FOR RETIREMENT AND REMOVAL SHALL NOT BE PROVIDED.
 8. PHASING OF CONSTRUCTION AND DEMOLITION SHALL BE SCHEDULED TO MINIMIZE OUTAGES TO CONSUMERS.

- SHEET NOTES:**
1. SEE SHEET E1 FOR GENERAL NOTES.
 2. SEE SHEET E6 FOR GENERAL CONSTRUCTION NOTES. COORDINATE SCHEDULED DEMOLITION WITH NEW DISTRIBUTION SHOWN ON SHEETS E6-E9.
 3. MODIFY EXISTING SERVICE OR SECONDARY TO REUTILIZE EXISTING CONDUCTOR.
 4. RETIRE FRAMING.
 5. RETIRE ABANDONED SERVICE
 6. RETIRE TRANSFORMER(S).
 7. RETIRE POLE.
 8. RETIRE GUY(S).
 9. MODIFY EXISTING GUY(S).
 10. RETIRE CONDUCTOR.
 11. ITEM TO REMAIN.
 12. POLE TO REMAIN. ALL ELECTRICAL APPURTENANCES ARE TO BE REMOVED/DEMOLISHED FROM POLE. WHERE REQUIRED TO PROVIDE CLEARANCE TO EXISTING AND NEW FACILITIES, POLE IS TO BE TOPPED TO PROVIDE REQUIRED CLEARANCE. IF POLE DOES NOT SUPPORT TELECOMMUNICATION FACILITIES AND IS NOT BEING MODIFIED FOR NEW CONSTRUCTION, UN-USED POLES IN GOOD CONDITION MAY BE RETIRED AND USED ELSEWHERE, WHERE USE OF RETIRED POLES IS ALLOWED ON SHEETS E6-E9.
 13. RELOCATE POLE.

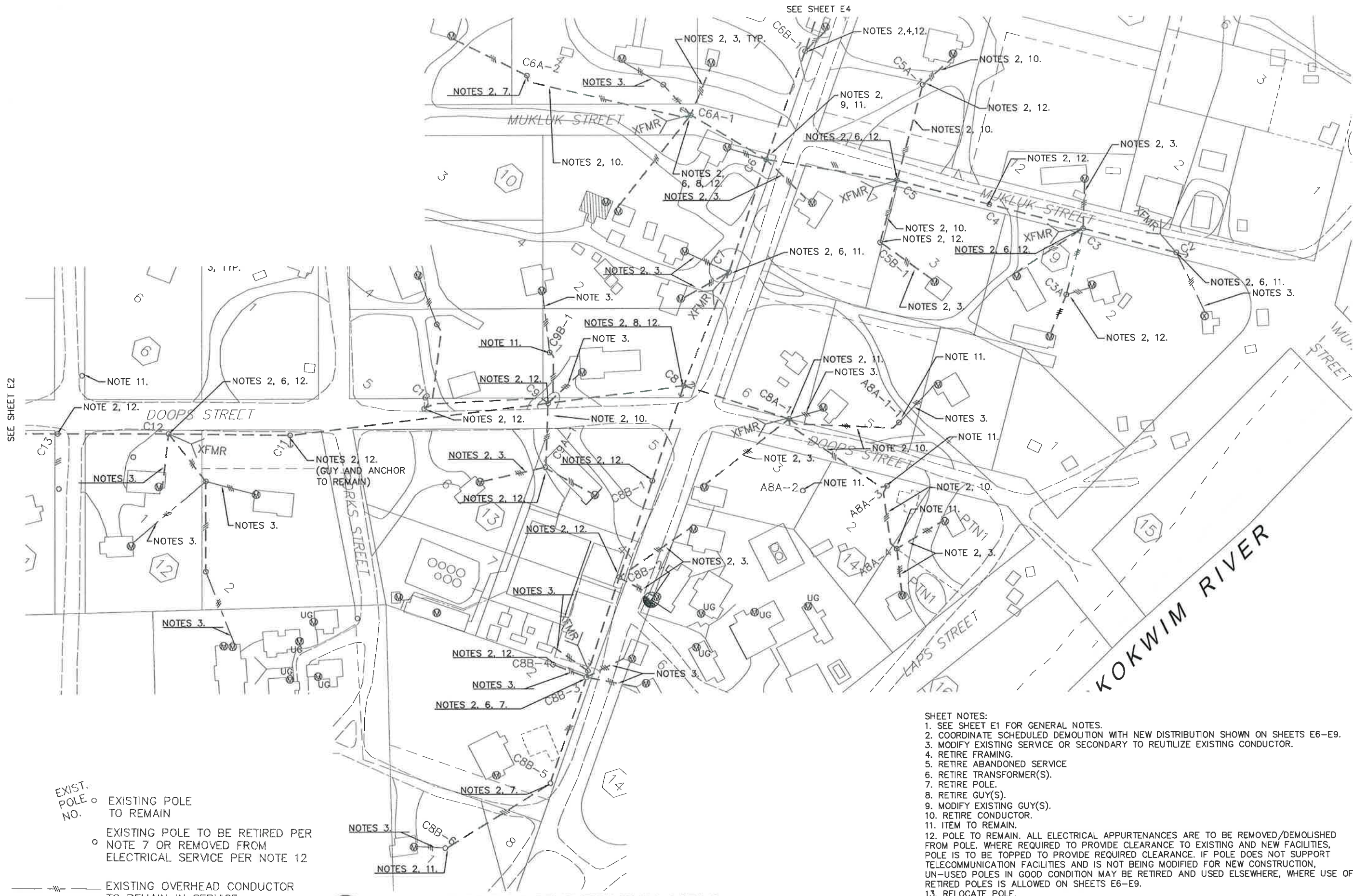
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Plot Date	2/18/15
Designed	GME
Drawn	MME
Approved	

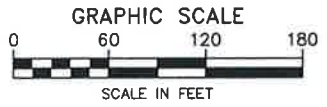
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- EXIST. POLE NO. ○ EXISTING POLE TO REMAIN
- EXISTING POLE TO BE RETIRED PER NOTE 7 OR REMOVED FROM ELECTRICAL SERVICE PER NOTE 12
- — — — — EXISTING OVERHEAD CONDUCTOR TO REMAIN IN SERVICE
- - - - - EXISTING OVERHEAD CONDUCTOR TO BE RETIRED PER NOTE 10 OR MODIFIED PER NOTE 3

1 ENLARGED ELECTRICAL DEMOLITION PLAN—AREA B
E3 SCALE: GRAPHIC



- SHEET NOTES:**
1. SEE SHEET E1 FOR GENERAL NOTES.
 2. COORDINATE SCHEDULED DEMOLITION WITH NEW DISTRIBUTION SHOWN ON SHEETS E6-E9.
 3. MODIFY EXISTING SERVICE OR SECONDARY TO REUTILIZE EXISTING CONDUCTOR.
 4. RETIRE FRAMING.
 5. RETIRE ABANDONED SERVICE
 6. RETIRE TRANSFORMER(S).
 7. RETIRE POLE.
 8. RETIRE GUY(S).
 9. MODIFY EXISTING GUY(S).
 10. RETIRE CONDUCTOR.
 11. ITEM TO REMAIN.
 12. POLE TO REMAIN. ALL ELECTRICAL APPURTENANCES ARE TO BE REMOVED/DEMOLISHED FROM POLE. WHERE REQUIRED TO PROVIDE CLEARANCE TO EXISTING AND NEW FACILITIES, POLE IS TO BE TOPPED TO PROVIDE REQUIRED CLEARANCE. IF POLE DOES NOT SUPPORT TELECOMMUNICATION FACILITIES AND IS NOT BEING MODIFIED FOR NEW CONSTRUCTION, UN-USED POLES IN GOOD CONDITION MAY BE RETIRED AND USED ELSEWHERE, WHERE USE OF RETIRED POLES IS ALLOWED ON SHEETS E6-E9.
 13. RELOCATE POLE.

ISSUED FOR CONSTRUCTION

State of Alaska
 Department of Community and Economic Development
 AIDEA/AEA
 Rural Energy Group
 813 West Northern Lights Blvd.
 Anchorage, Alaska 99503
 ENERGY AUTHORITY



CRW
 ENGINEERING GROUP LLC
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AKIAK, ALASKA
 RURAL POWER SYSTEM UPGRADE
 ENLARGED ELECTRICAL DISTRIBUTION PLAN
 AREA B

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0	ISSUED FOR CONSTRUCTION	4-20-12
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Plot Date	2/18/15
Designed	GME
Drawn	MME
Approved	

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 SHEET OF

NOTES 2, 7.

15-N2 (OLD)

TES 2, 11

IS 2, 10.

SEE SHEET E5

ES 2, 4, 6, 7.

NOTE 3.

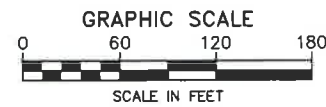
TES 2, 4, 8, 11

SEE SHEET E3

BARGE LANDING

1 ENLARGED ELECTRICAL DEMOLITION PLAN-AREA C

E4 SCALE: GRAPHIC



- EXIST. POLE NO. ○ EXISTING POLE TO REMAIN
- EXISTING POLE TO BE RETIRED PER NOTE 7 OR REMOVED FROM ELECTRICAL SERVICE PER NOTE 12
- — — — — EXISTING OVERHEAD CONDUCTOR TO REMAIN IN SERVICE
- - - - - EXISTING OVERHEAD CONDUCTOR TO BE RETIRED PER NOTE 10 OR MODIFIED PER NOTE 3

SHEET NOTES:

1. SEE SHEET E1 FOR GENERAL NOTES.
2. COORDINATE SCHEDULED DEMOLITION WITH NEW DISTRIBUTION SHOWN ON SHEETS E6-E9.
3. MODIFY EXISTING SERVICE OR SECONDARY TO REUTILIZE EXISTING CONDUCTOR.
4. RETIRE FRAMING.
5. RETIRE ABANDONED SERVICE
6. RETIRE TRANSFORMER(S).
7. RETIRE POLE.
8. RETIRE GUY(S).
9. MODIFY EXISTING GUY(S).
10. RETIRE CONDUCTOR.
11. ITEM TO REMAIN.
12. POLE TO REMAIN. ALL ELECTRICAL APPURTENANCES ARE TO BE REMOVED/DEMOLISHED FROM POLE. WHERE REQUIRED TO PROVIDE CLEARANCE TO EXISTING AND NEW FACILITIES, POLE IS TO BE TOPPED TO PROVIDE REQUIRED CLEARANCE. IF POLE DOES NOT SUPPORT TELECOMMUNICATION FACILITIES AND IS NOT BEING MODIFIED FOR NEW CONSTRUCTION, UN-USED POLES IN GOOD CONDITION MAY BE RETIRED AND USED ELSEWHERE, WHERE USE OF RETIRED POLES IS ALLOWED ON SHEETS E6-E9.
13. POLE TO REMAIN. RETIRE ALL PRIMARY FACILITIES, AND CONVERT POLE PER DISTRIBUTION PLANS.
14. RELOCATE POLE

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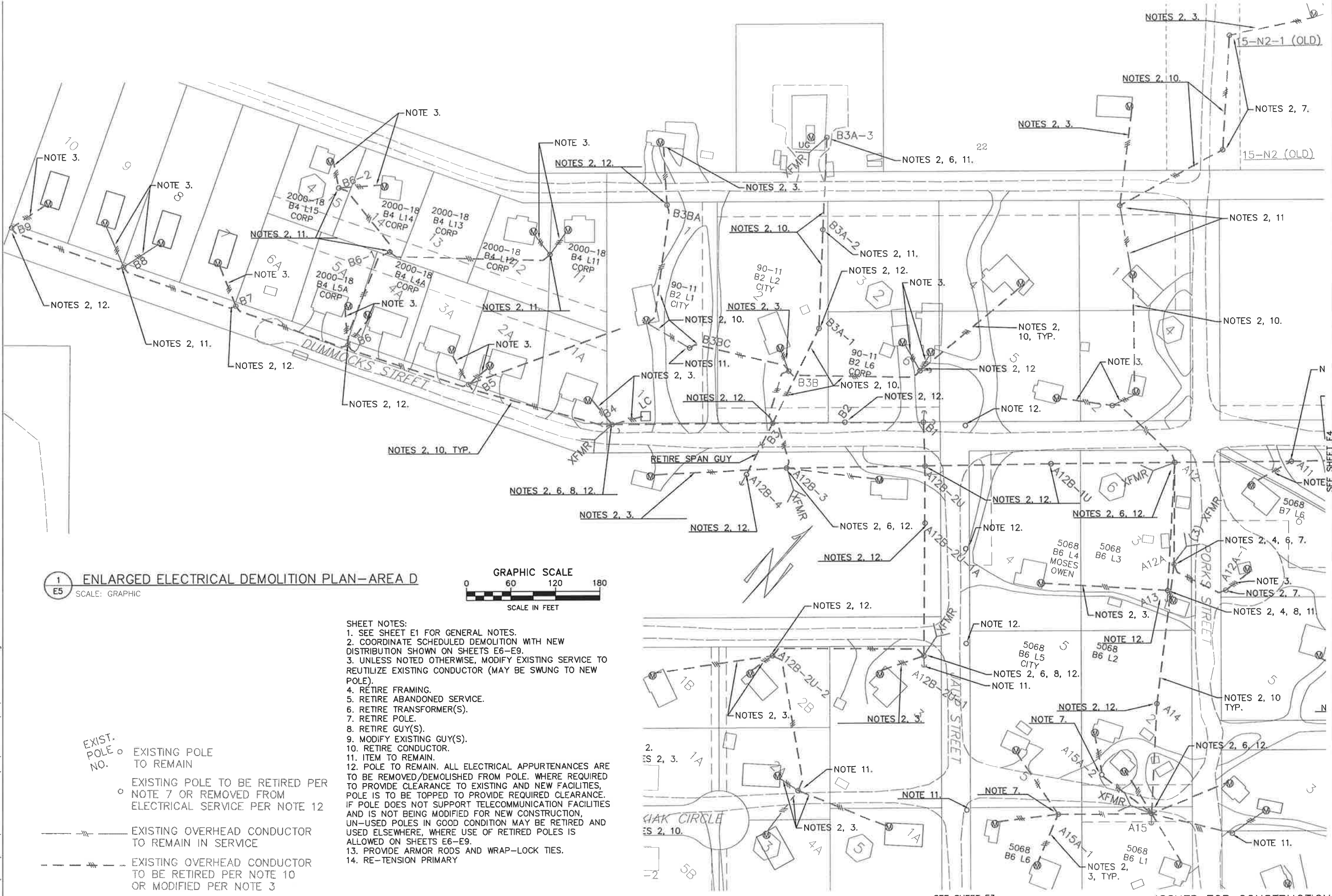
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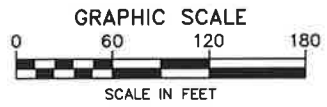
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1 ENLARGED ELECTRICAL DEMOLITION PLAN—AREA D
E5 SCALE: GRAPHIC



- SHEET NOTES:**
1. SEE SHEET E1 FOR GENERAL NOTES.
 2. COORDINATE SCHEDULED DEMOLITION WITH NEW DISTRIBUTION SHOWN ON SHEETS E6-E9.
 3. UNLESS NOTED OTHERWISE, MODIFY EXISTING SERVICE TO REUTILIZE EXISTING CONDUCTOR (MAY BE SWUNG TO NEW POLE).
 4. RETIRE FRAMING.
 5. RETIRE ABANDONED SERVICE.
 6. RETIRE TRANSFORMER(S).
 7. RETIRE POLE.
 8. RETIRE GUY(S).
 9. MODIFY EXISTING GUY(S).
 10. RETIRE CONDUCTOR.
 11. ITEM TO REMAIN.
 12. POLE TO REMAIN. ALL ELECTRICAL APPURTENANCES ARE TO BE REMOVED/DEMOLISHED FROM POLE. WHERE REQUIRED TO PROVIDE CLEARANCE TO EXISTING AND NEW FACILITIES, POLE IS TO BE TOPPED TO PROVIDE REQUIRED CLEARANCE. IF POLE DOES NOT SUPPORT TELECOMMUNICATION FACILITIES AND IS NOT BEING MODIFIED FOR NEW CONSTRUCTION, UN-USED POLES IN GOOD CONDITION MAY BE RETIRED AND USED ELSEWHERE, WHERE USE OF RETIRED POLES IS ALLOWED ON SHEETS E6-E9.
 13. PROVIDE ARMOR RODS AND WRAP-LOCK TIES.
 14. RE-TENSION PRIMARY

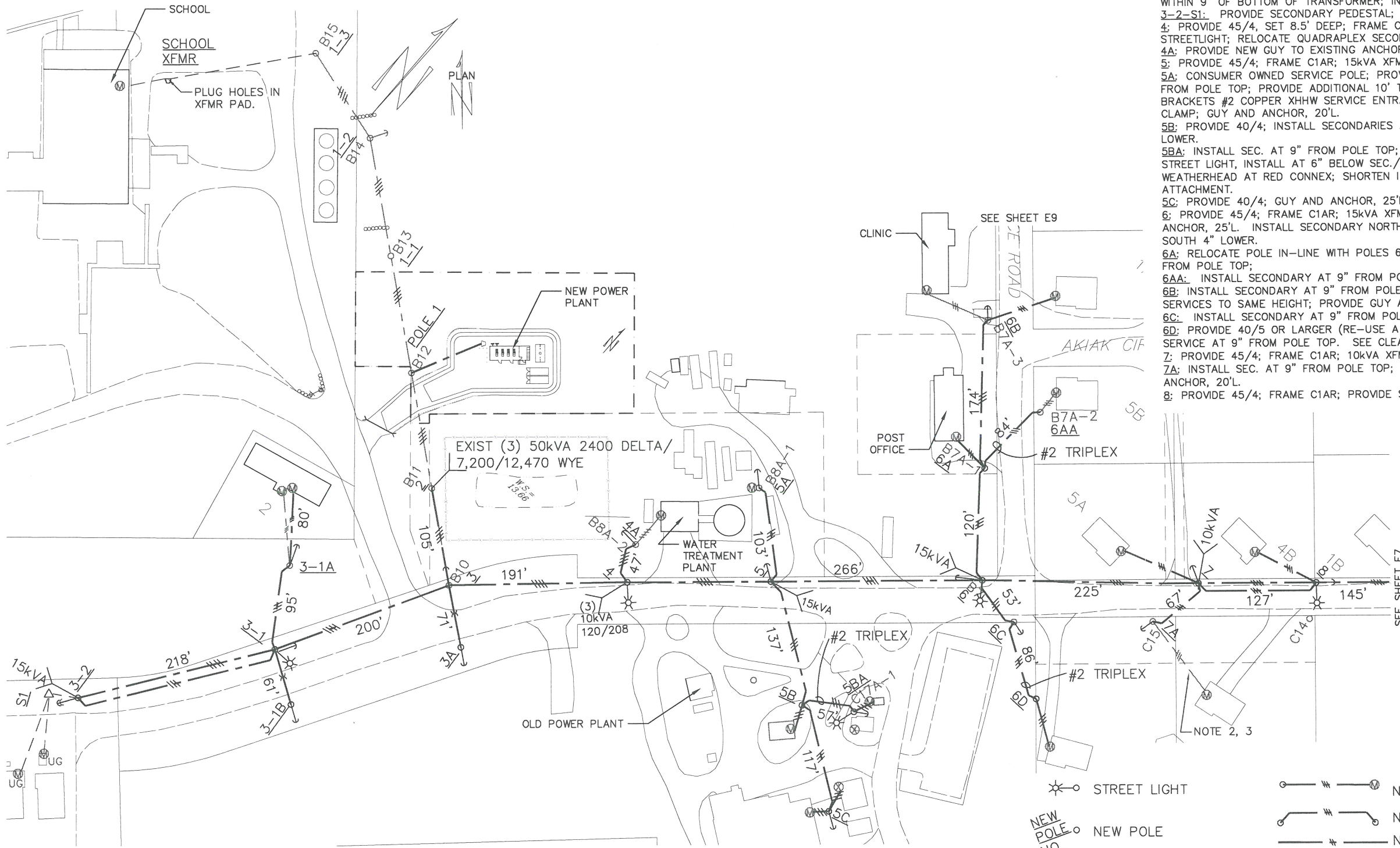
- EXIST. POLE NO.**
- EXISTING POLE TO REMAIN
 - EXISTING POLE TO BE RETIRED PER NOTE 7 OR REMOVED FROM ELECTRICAL SERVICE PER NOTE 12
 - EXISTING OVERHEAD CONDUCTOR TO REMAIN IN SERVICE
 - - - EXISTING OVERHEAD CONDUCTOR TO BE RETIRED PER NOTE 10 OR MODIFIED PER NOTE 3

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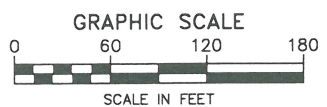
Plot Date	2/18/15
Designed	GME
Drawn	MME
Approved	

SHEET NOTES:
 1. SEE SHEET E1 FOR GENERAL NOTES.
 2. SEE SHEET E2 FOR GENERAL DEMOLITION NOTES. COORDINATE SCHEDULED DEMOLITION SHOWN ON SHEETS E2-E5 WITH NEW DISTRIBUTION CONSTRUCTION.
 3. UNLESS NOTED OTHERWISE: EXISTING SERVICE DROPS TO REMAIN (BE RE-USED)..

POLE NOTES:
 1, 1-1, 1-2, 1-3: NUMBER POLES.
 1-4U: PLUG HOLE IN TRANSFORMER PAD.
 2: PROVIDE NEUTRAL ATTACHMENT. EXTEND NEUTRAL TO POLE 3.
 3: CONVERT LOWER FRAMING TO 3Ø DOUBLE DEADEND; PROVIDE SPAN GUY TO POLE 3A WITH GUY STRAIN INSULATOR AT POLE.
 3A: PROVIDE 40/4; GUY AND ANCHOR, 30'L.
 3-1: PROVIDE 45/4; FRAME C2R; STREETLIGHT; SECONDARY GUY AND ANCHOR, 25'L.; INSTALL SECONDARY AT 9" BELOW NEUTRAL; INSTALL SECONDARY TO 3-1A, 4" LOWER; SPAN GUY TO POLE 3-1B, ATTACHED AT PRIMARY HEIGHT.
 3-1A: INSTALL SECONDARY AT 9" FROM POLE TOP; INSTALL AND RAISE SERVICES TO SAME HEIGHT; PROVIDE NEW SERVICE TO 2ND WEATHERHEAD; GUY AND ANCHOR, 20'.
 3-1B: PROVIDE 40/4 SPAN GUY, GUY AND ANCHOR, 25'L.
 3-2: PROVIDE NEW 40/4; FRAME C7-1R; PROVIDE 15kVA XFMR; PROVIDE NEW ANCHOR AND PRIMARY AND SECONDARY GUYS; PROVIDE SECONDARY RISER, EXTEND TO WITHIN 9" OF BOTTOM OF TRANSFORMER; INSTALL SECONDARY AT 9" BELOW NEUTRAL.
 3-2-S1: PROVIDE SECONDARY PEDESTAL; SOURCE EXISTING UG SERVICES FROM PED.
 4: PROVIDE 45/4, SET 8.5' DEEP; FRAME C1AR; PROVIDE (3)10kVA 120/208 VOLT; STREETLIGHT; RELOCATE QUADRAPLEX SECONDARY TO THIS POLE.
 4A: PROVIDE NEW GUY TO EXISTING ANCHOR.
 5: PROVIDE 45/4; FRAME C1AR; 15kVA XFMR; GUY AND ANCHOR, 25'L.
 5A: CONSUMER OWNED SERVICE POLE; PROVIDE M2-11; INSTALL SECONDARY AT 9" FROM POLE TOP; PROVIDE ADDITIONAL 10' TO WEATHERHEAD RISER; (2) STAND-OFF BRACKETS #2 COPPER XHHW SERVICE ENTRANCE CONDUCTORS; RISER PIPE GROUNDING CLAMP; GUY AND ANCHOR, 20'L.
 5B: PROVIDE 40/4; INSTALL SECONDARIES AT 9" FROM POLE TOP; INSTALL SERVICES 4" LOWER.
 5BA: INSTALL SEC. AT 9" FROM POLE TOP; RAISE SVC. TO SAME HEIGHT; PROVIDE STREET LIGHT, INSTALL AT 6" BELOW SEC./SVC.; RAISE SERVICE ATTACHMENT ON WEATHERHEAD AT RED CONNEX; SHORTEN ITS DRIP LOOPS TO WITHIN 4" OF RAISED ATTACHMENT.
 5C: PROVIDE 40/4; GUY AND ANCHOR, 25'L.. DO NOT ENERGIZED UN-METERED SERVICE.
 6: PROVIDE 45/4; FRAME C1AR; 15kVA XFMR; STREETLIGHT; SECONDARY GUY AND ANCHOR, 25'L. INSTALL SECONDARY NORTH 9" BELOW NEUTRAL; INSTALL SECONDARY SOUTH 4" LOWER.
 6A: RELOCATE POLE IN-LINE WITH POLES 6 AND 6B; INSTALL SECS. AND SVC. AT 9" FROM POLE TOP;
 6AA: INSTALL SECONDARY AT 9" FROM POLE TOP; RAISE SERVICE TO SAME HEIGHT.
 6B: INSTALL SECONDARY AT 9" FROM POLE TOP; RAISE EXISTING AND RELOCATED SERVICES TO SAME HEIGHT; PROVIDE GUY AND ANCHOR, 18'L.
 6C: INSTALL SECONDARY AT 9" FROM POLE TOP; PROVIDE GUY AND ANCHOR, 25' L.
 6D: PROVIDE 40/5 OR LARGER (RE-USE A RETIRED POLE). INSTALL SECONDARY AND SERVICE AT 9" FROM POLE TOP. SEE CLEARING NOTE ON E1.
 7: PROVIDE 45/4; FRAME C1AR; 10kVA XFMR; SEC. BISECTOR GUY AND ANCHOR, 20'L.
 7A: INSTALL SEC. AT 9" FROM POLE TOP; RAISE SVC. TO 4" LOWER; PROVIDE GUY AND ANCHOR, 20'L.
 8: PROVIDE 45/4; FRAME C1AR; PROVIDE STREETLIGHT; GUY AND ANCHOR, 20' L.



1 ENLARGED ELECTRICAL DISTRIBUTION PLAN-AREA A
 E6 SCALE: GRAPHIC



- ⊗ STREET LIGHT
- NEW POLE NO.
- EXIST. POLE NO. TO REMAIN
- # — NEW SERVICE, #2 TRIPLEX, U.N.O.
- # — NEW SECONDARY, 1/0 TRIPLEX, U.N.O.
- # — NEW OVERHEAD 1-PHASE PRIMARY, #2 ACSR CONDUCTOR
- # — NEW OVERHEAD 3-PHASE PRIMARY, #2 ACSR CONDUCTOR
- # — EXISTING OVERHEAD CONDUCTOR TO REMAIN IN SERVICE

*NOTE: SOME POLES DECOMMISSIONED FROM ELECTRICAL, FOR TELECOMMUNICATIONS USE ONLY, ARE NOT SHOWN ON PLAN FOR CLARITY. SEE SHEETS E2-E5 FOR LOCATIONS.



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AKIAK, ALASKA
 RURAL POWER SYSTEM UPGRADE
 ENLARGED ELECTRICAL DISTRIBUTION PLAN
 AREA A

NO.	REVISION	DATE
0	ISSUED FOR CONSTRUCTION	4-20-12
1	ISSUED FOR CONSTRUCTION-REV 1	2-18-15

Plot Date	2/18/15
Designed	GME
Drawn	MME
Approved	

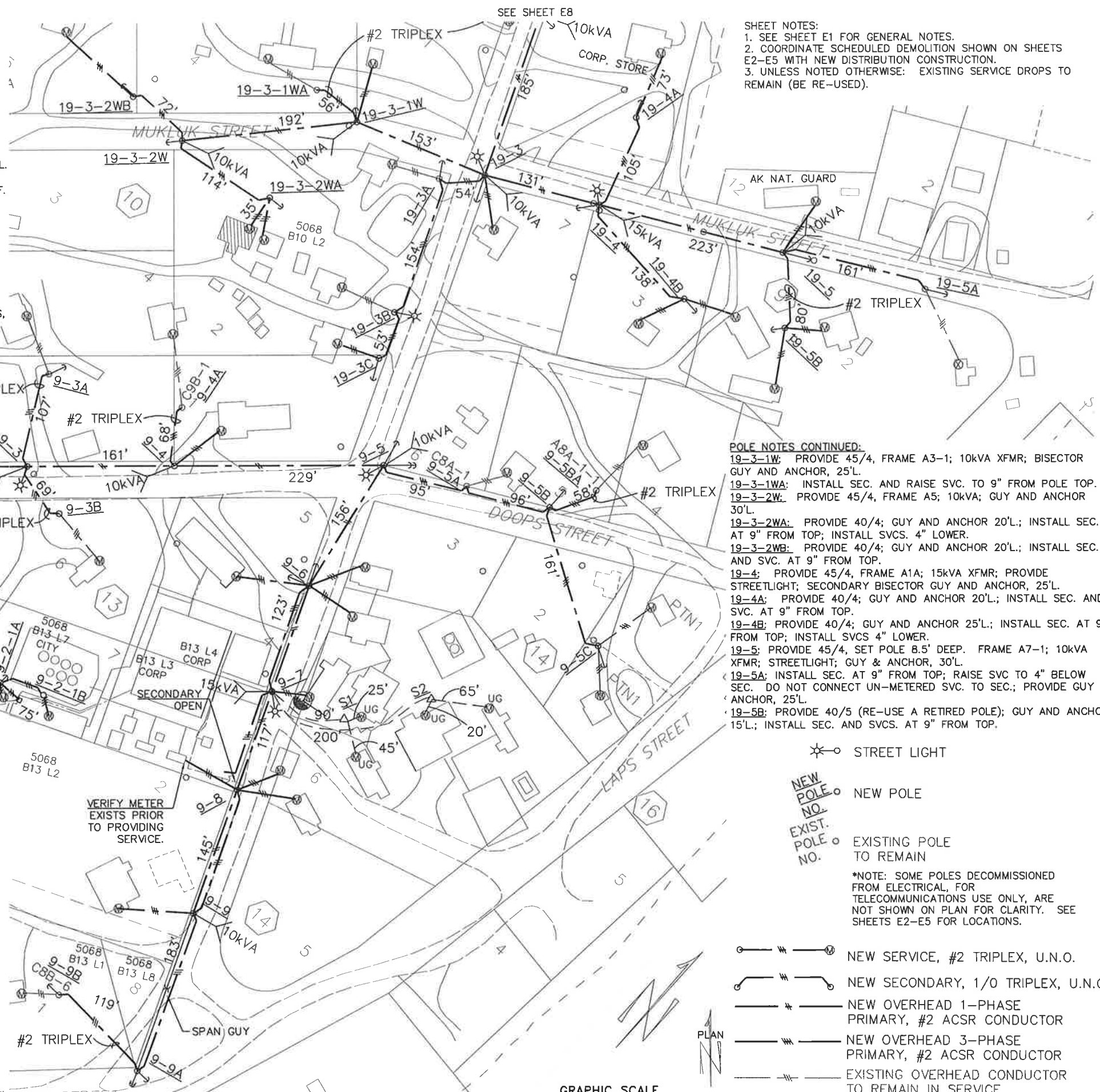
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POLE NOTES:

- 9: PROVIDE 45/4, FRAME C1AR, C10 (ALLEY ARM); 10kVA XFMR; STREETLIGHT.
- 9-1E: PROVIDE 45/4, C7-2A; PROVIDE (2) GUYS AND (2) ANCHORS, 30' & 35' LEADS.
- 9-1: PROVIDE 45/4, SET 8.5' DEEP. FRAME C1AR; 10kVA XFMR; INSTALL SEC. TO SOUTH AT REDUCED TENSION.
- 9-1A: PROVIDE 40/4, 20' SOUTH OF ROW; GUY AND ANCHOR, 15'L. PROVIDE GUARD POST 5' TALL (OLD POLE), AT ANCHOR ON WEST SIDE, 5' SOUTH OF ROW.
- 9-1B: INSTALL SECONDARY AT 9" FROM POLE TOP; RAISE SERVICES TO 4" LOWER.
- 9-1C: INSTALL SEC. AT 9" FROM POLE TOP; RAISE EXISTING SVC, AND INSTALL NEW, AT SAME HEIGHT; PROVIDE NEW SERVICE TO 2ND WEATHERHEAD; PROVIDE GUY AND ANCHOR, 20'L.
- 9-2: PROVIDE 45/4, FRAME C1AR, A7-1; GUY ANCHOR 30'L.
- 9-2-1: PROVIDE 45/4, FRAME A7-1. 15kVA XFMR, (2) 2" SEC. RISERS; STREETLIGHT; PRIMARY GUY WITH ANCHOR PLATE 3' FROM EXISTING POLE AND 25'L.; SECONDARY GUY AND ANCHOR 20'L.
- 9-2-1A: PROVIDE 40/5 OR LARGER (RE-USE A RETIRED POLE); INSTALL SEC. AND SVCS. AT 9" FROM POLE TOP; GUY AND ANCHOR 13'L.; PROVIDE INTERMEDIATE MAST FOR SERVICE OVER ROOF.
- S1: PROVIDE PEDESTAL AND NEW SERVICES TO ADJACENT BUILDINGS.
- S2: PROVIDE PEDESTAL AND NEW SERVICES TO ADJACENT BUILDINGS.
- 9-3: PROVIDE 45/4, FRAME C1AR; 10kVA XFMR; STREETLIGHT.
- 9-3A: INSTALL SECONDARY AT 9" FROM POLE TOP; RAISE SERVICE TO SAME HEIGHT; PROVIDE GUY AND ANCHOR 15'L. (INSTALL ANCHOR NEAR BIASECTOR BUT OPPOSING SECONDARY MORE).
- 9-3B: PROVIDE 40/5 OR LARGER (RE-USE A RETIRED POLE); INSTALL SEC. AND SVC AT 9" FROM POLE TOP.
- 9-4: PROVIDE 45/4, SET 8.5' DEEP. FRAME C1AR, 10kVA XFMR, STREETLIGHT.
- 9-4A: INSTALL SECONDARY AT 9" FROM POLE TOP; RAISE SERVICE TO SAME HEIGHT.
- 9-5: PROVIDE 45/4, FRAME C7-1R, A5-2, 10kVA XFMR, STREETLIGHT; (3) GUYS AND ANCHORS, 35', 30', 30'L.

SHEET NOTES:

- 1. SEE SHEET E1 FOR GENERAL NOTES.
- 2. COORDINATE SCHEDULED DEMOLITION SHOWN ON SHEETS E2-E5 WITH NEW DISTRIBUTION CONSTRUCTION.
- 3. UNLESS NOTED OTHERWISE: EXISTING SERVICE DROPS TO REMAIN (BE RE-USED).



POLE NOTES CONTINUED:

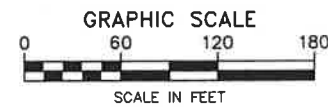
- 19-3-1W: PROVIDE 45/4, FRAME A3-1; 10kVA XFMR; BIASECTOR GUY AND ANCHOR, 25'L.
- 19-3-1WA: INSTALL SEC. AND RAISE SVC. TO 9" FROM POLE TOP.
- 19-3-2W: PROVIDE 45/4, FRAME A5; 10kVA; GUY AND ANCHOR 30'L.
- 19-3-2WA: PROVIDE 40/4; GUY AND ANCHOR 20'L.; INSTALL SEC. AND SVC. AT 9" FROM TOP.
- 19-4: PROVIDE 45/4, FRAME A1A; 15kVA XFMR; PROVIDE STREETLIGHT; SECONDARY BIASECTOR GUY AND ANCHOR, 25'L.
- 19-4A: PROVIDE 40/4; GUY AND ANCHOR 20'L.; INSTALL SEC. AND SVC. AT 9" FROM TOP.
- 19-4B: PROVIDE 40/4; GUY AND ANCHOR 25'L.; INSTALL SEC. AT 9" FROM TOP; INSTALL SVCS 4" LOWER.
- 19-5: PROVIDE 45/4, SET POLE 8.5' DEEP. FRAME A7-1; 10kVA XFMR; STREETLIGHT; GUY & ANCHOR, 30'L.
- 19-5A: INSTALL SEC. AT 9" FROM TOP; RAISE SVC TO 4" BELOW SEC. DO NOT CONNECT UN-METERED SVC. TO SEC.; PROVIDE GUY & ANCHOR, 25'L.
- 19-5B: PROVIDE 40/5 (RE-USE A RETIRED POLE); GUY AND ANCHOR 15'L.; INSTALL SEC. AND SVCS. AT 9" FROM TOP.

POLE NOTES, CONTINUED:

- 9-5A: INSTALL SECS AT 9" POLE TOP; RAISE SVC. TO SAME HEIGHT.
- 9-5B: PROVIDE 40/4; INSTALL SECONDARIES AT 9", 11", & 15" FROM POLE TOP PROVIDE BIASECTOR GUY AND ANCHOR, 25'L. FOR 1/0 TRIPLEXES.
- 9-5BA: INSTALL SECONDARY AT 9" FROM POLE TOP; RAISE SERVICE TO SAME HEIGHT.
- 9-5C: PROVIDE 40/4; INSTALL SEC. AT 9" FROM POLE TOP; INSTALL SERVICES 4" LOWER. PROVIDE GUY AND ANCHOR, 25'L.
- 9-6: PROVIDE 45/4, FRAME A2, (2) GUYS AND ANCHORS, 25'L.
- 9-7: PROVIDE 45/4, FRAME A1A, 15kVA XFMR.; (2) 2" SECONDARY RISERS; PROVIDE PEDESTAL AND NEW SERVICES TO ADJACENT BUILDINGS.
- S2: PROVIDE PEDESTAL AND NEW SERVICES TO ADJACENT BUILDINGS.
- 9-8: PROVIDE 45/4, FRAME A1A. OPEN SECONDARY TO NORTH.
- 9-9: PROVIDE 45/4, FRAME A5, 10kVA XFMR.
- 9-9A: PROVIDE 40/4, E2-3 (PRIMARY); INSTALL SPAN GUY AND ITS DOWN GUY AT 9" FROM POLE TOP; INSTALL BACKSPAN SECONDARY AND ITS GUY 7" LOWER; INSTALL TAP SEC. AND ITS GUY 6" LOWER; (3) GUYS AND (2) ANCHORS, (2) 18'L. IN-LINE, (1) 16'L.
- 9-9B: INSTALL SEC. AT 9" BELOW POLE TOP; INSTALL SVC. 4" LOWER. PROVIDE GUY AND ANCHOR, 15'L.
- 10: PROVIDE 45/4; FRAME C1AR.
- 19-3: PROVIDE 45/4, FRAME A5, A2; 10kVA XFMR; STREETLIGHT; GUY AND ANCHOR, 30'L. INSTALL SECONDARY TO SOUTHWEST AT REDUCED TENSION.
- 19-3A: INSTALL SEC. TO POLE 9-3 AT REDUCED TENSION AND AT 9" FROM POLE TOP; RAISE SVC. TO SAME HEIGHT; INSTALL SEC. TO POLE 9-3B 4" LOWER; PROVIDE GUY AND ANCHOR 20'L. INSTALL ANCHOR 3.5' WEST AND 3.5' NORTH OF EXISTING TELE. ANCHOR.
- 19-3B: INSTALL SEC. AND RAISE SVC. AT 9" FROM POLE TOP; INSTALL STREETLIGHT 6" LOWER.
- 19-3C: PROVIDE 40/4; INSTALL SEC. AND SVC. AT 9" FROM POLE TOP. PROVIDE GUY AND ANCHOR 25'L.

- STREET LIGHT
- NEW POLE
- EXIST. POLE

- NEW SERVICE, #2 TRIPLEX, U.N.O.
- NEW SECONDARY, 1/0 TRIPLEX, U.N.O.
- NEW OVERHEAD 1-PHASE PRIMARY, #2 ACSR CONDUCTOR
- NEW OVERHEAD 3-PHASE PRIMARY, #2 ACSR CONDUCTOR
- EXISTING OVERHEAD CONDUCTOR TO REMAIN IN SERVICE



1 ENLARGED ELECTRICAL DISTRIBUTION PLAN-AREA B
SCALE: GRAPHIC

ISSUED FOR CONSTRUCTION



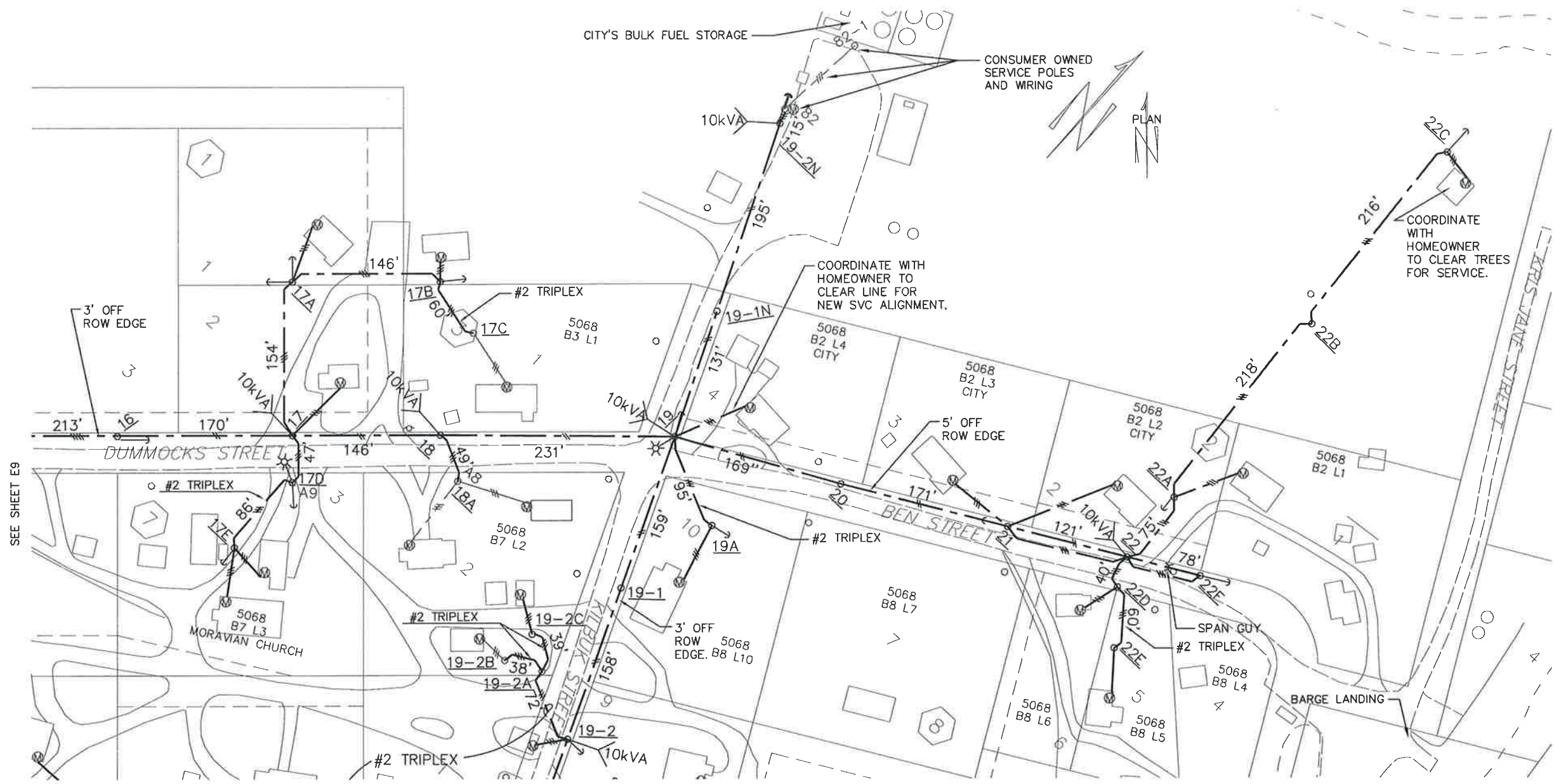
AKIAK, ALASKA
RURAL POWER SYSTEM UPGRADE
ENLARGED ELECTRICAL DISTRIBUTION PLAN
AREA B

NO.	REVISION	DATE
0	ISSUED FOR CONSTRUCTION	4-20-12
1	ISSUED FOR CONSTRUCTION-REV1	2-18-15

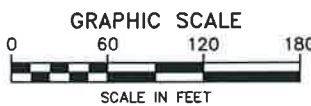
Plot Date	Designed	Drawn	Approved
2/18/15	GME	MME	

Sheet No.	E7
SHEET	OF

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1 ENLARGED ELECTRICAL DISTRIBUTION PLAN—AREA C
 E8 SCALE: GRAPHIC



- POLE NOTES:**
- 16: PROVIDE 45/4; FRAME C7-1R, A7X ON BACKSIDE; JUMPER NEUTRAL WITH #4 STR. CU. ON POLE AND UNDERSIDE OF XARM; GUY AND ANCHOR, 30'L.
 - 17: PROVIDE 45/4, FRAME A1A; 10kVA XFMR.
 - 17A: PROVIDE 40/4; INSTALL SECONDARIES AT 9" AND 13" FROM POLE TOP; (2) GUYS AND ANCHORS, 25'L.; INSTALL SVC AT SEC. HEIGHT.
 - 17B: PROVIDE 40/4; INSTALL SECONDARIES AT 9" AND 13" FROM POLE TOP; GUY AND ANCHOR, 25'L. (OUT-OF-LINE 3' NORTH); INSTALL SVC AT SEC. HEIGHT.
 - 17C: INSTALL SEC. AT 9" FROM TOP; RAISE SVC. TO SAME HEIGHT.
 - 17D: INSTALL SEC. AT 9" FROM POLE TOP; PROVIDE STREET LIGHT; GUY AND ANCHOR, 25'L. (OUT-OF-LINE 3' EAST).
 - 17E: PROVIDE 40/4; INSTALL SEC. AT 9" FROM TOP; INSTALL SVCS 4" LOWER; GUY AND ANCHOR, 20'L.
 - 18: PROVIDE 45/4, SET POLE 8.5' DEEP; FRAME A1A; 10kVA XFMR; INSTALL SECONDARY TO SOUTH AT REDUCED TENSION.
 - 18A: INSTALL SEC. AT 9" FROM POLE TOP, AT REDUCED TENSION; RAISE SVCS. TO SAME HEIGHT.
 - 19: PROVIDE 45/4; FRAME A2, A9-1; 10kVA; STREETLIGHT; GUY AND ANCHOR, 25'L.. INSTALL BISECTOR GUY 3' EAST OF BISECTOR ANGLE.
 - 19A: PROVIDE 40/4; INSTALL SEC. AND SVCS. AT 9" FROM POLE TOP; GUY AND ANCHOR, 20'L.
 - 19-1: PROVIDE 45/4; FRAME A1A.
 - 19-2: PROVIDE 45/4, FRAME A1A; 10kVA XFMR; GUY AND ANCHOR, 20'L.
 - 19-2A: INSTALL SECS. AT 9" FROM TOP.
 - 19-2B: INSTALL SEC. AND SVC. AT 9" FROM TOP.
 - 19-2C: PROVIDE 40/5 (RE-USE A RETIRED POLE); INSTALL SEC. AND SVC. AT 9" FROM TOP.
 - 19-1N: PROVIDE 45/4, FRAME A1A.
 - 19-2N: PROVIDE 45/4, FRAME A5; 10kVA XFMR.; GUY AND ANCHOR 30'L.
 - 20: PROVIDE 45/4, FRAME A1A.
 - 21: PROVIDE 45/4, FRAME A1A; PROVIDE GUY AND ANCHOR 25'L.
 - 22: PROVIDE 45/4, FRAME A5; 10kVA XFMR; STREETLIGHT; SPAN GUY TO POLE 23.
 - 22A: PROVIDE 40/4, INSTALL SECONDARY AT 52" FROM POLE TOP, GUY AND ANCHOR 25'L.
 - 22B: PROVIDE 40/4 INSTALL SECONDARY AT 52" FROM POLE TOP.
 - 22C: PROVIDE 40/4 INSTALL SECONDARY AND SERVICE AT 66" FROM POLE TOP, GUY AND ANCHOR; 30'L.
 - 22D: PROVIDE 40/5 (RE-USE A RETIRED POLE); SET POLE 8.5' DEEP; INSTALL SEC. AND SVC. AT 9" FROM TOP.
 - 22E: PROVIDE 40/5 (RE-USE A RETIRED POLE); INSTALL SEC. AND SVCS. AT 9" FROM TOP.
 - 22F: PROVIDE 40/4, INSTALL SPAN GUY AT 9" FROM POLE TOP; INSTALL SECONDARY AT 66" FROM POLE TOP, (2) GUYS AND AN ANCHOR 30'L.

- SHEET NOTES:**
1. SEE SHEET E1 FOR GENERAL NOTES.
 2. COORDINATE SCHEDULED DEMOLITION SHOWN ON SHEETS E2-E5 WITH NEW DISTRIBUTION CONSTRUCTION.
 3. UNLESS NOTED OTHERWISE: EXISTING SERVICE DROPS TO REMAIN (BE RE-USED).

- STREET LIGHT
- NEW POLE
- EXISTING POLE TO REMAIN
- *NOTE: POLES DECOMMISSIONED FROM ELECTRICAL, FOR TELECOMMUNICATIONS USE ONLY, ARE NOT SHOWN ON PLAN FOR CLARITY. SEE SHEETS E2-E5 FOR LOCATIONS.
- NEW SERVICE, #2 TRIPLEX, U.N.O.
- NEW SECONDARY, 1/0 TRIPLEX, U.N.O.
- NEW OVERHEAD 1-PHASE PRIMARY, #2 ACSR CONDUCTOR
- NEW OVERHEAD 3-PHASE PRIMARY, #2 ACSR CONDUCTOR
- EXISTING OVERHEAD CONDUCTOR TO REMAIN IN SERVICE

State of Alaska
 Department of Community and Economic Development
 AIDEA/AEA
 Rural Energy Group
 813 West Northern Lights Blvd
 Anchorage, Alaska 99503



CRW ENGINEERING GROUP LLC
 3140 ARCTIC BLVD., SUITE 100
 ANCHORAGE, ALASKA 99503
 PHONE: (907) 232-2232
 FAX: (907) 232-2273

AKIAK, ALASKA
RURAL POWER SYSTEM UPGRADE
 ENLARGED ELECTRICAL DISTRIBUTION PLAN
 AREA C

NO.	REVISION	DATE
0	ISSUED FOR CONSTRUCTION	4-20-12
1	ISSUED FOR CONSTRUCTION-REVI	2-18-15

Plot Date: 2/18/15
 Designed: GME
 Drawn: MME
 Approved:

Sheet No. **E8**
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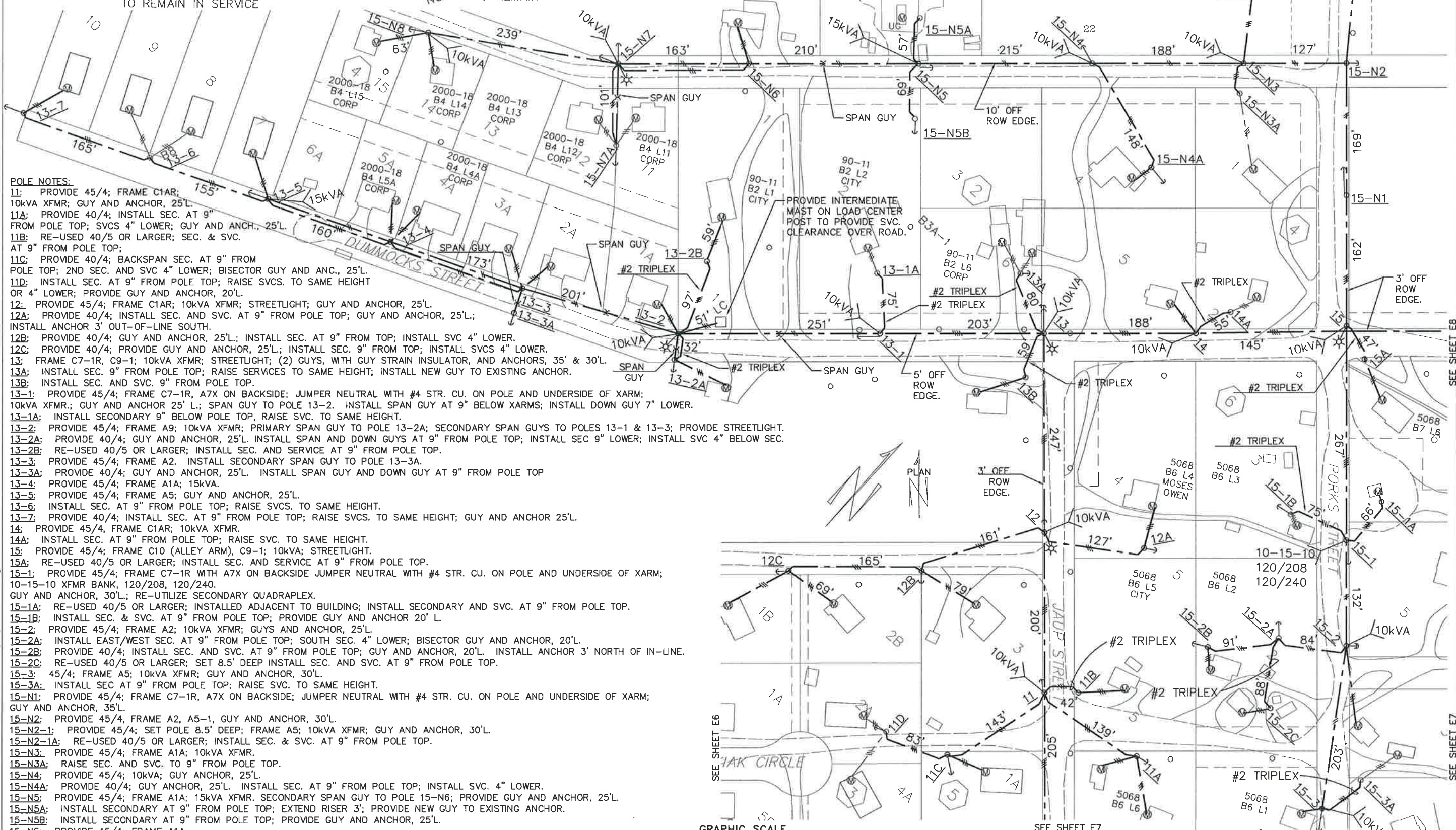
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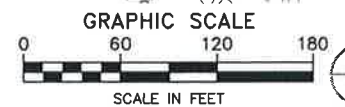
- NEW SERVICE, #2 TRIPLEX, U.N.O.
- NEW SECONDARY, 1/0 TRIPLEX, U.N.O.
- NEW OVERHEAD 1-PHASE PRIMARY, #2 ACSR CONDUCTOR
- NEW OVERHEAD 3-PHASE PRIMARY, #2 ACSR CONDUCTOR
- EXISTING OVERHEAD CONDUCTOR TO REMAIN IN SERVICE
- STREET LIGHT
- NEW POLE
- EXISTING POLE TO REMAIN

*NOTE: POLES DECOMMISSIONED FROM ELECTRICAL, FOR TELECOMMUNICATIONS USE ONLY, ARE NOT SHOWN ON PLAN FOR CLARITY. SEE SHEETS E2-E5 FOR LOCATIONS.

- SHEET NOTES:
- SEE SHEET E1 FOR GENERAL NOTES.
 - COORDINATE SCHEDULED DEMOLITION SHOWN ON SHEETS E2-E5 WITH NEW DISTRIBUTION CONSTRUCTION.
 - UNLESS NOTED OTHERWISE: EXISTING SERVICE DROPS TO REMAIN (BE RE-USED).



- POLE NOTES:**
- 11: PROVIDE 45/4; FRAME C1AR; 10kVA XFMR; GUY AND ANCHOR, 25'L.
 - 11A: PROVIDE 40/4; INSTALL SEC. AT 9" FROM POLE TOP; SVCS 4" LOWER; GUY AND ANCH., 25'L.
 - 11B: RE-USED 40/5 OR LARGER; SEC. & SVC. AT 9" FROM POLE TOP;
 - 11C: PROVIDE 40/4; BACKSPAN SEC. AT 9" FROM POLE TOP; 2ND SEC. AND SVC 4" LOWER; BISECTOR GUY AND ANCH., 25'L.
 - 11D: INSTALL SEC. AT 9" FROM POLE TOP; RAISE SVCS. TO SAME HEIGHT OR 4" LOWER; PROVIDE GUY AND ANCHOR, 20'L.
 - 12: PROVIDE 45/4; FRAME C1AR; 10kVA XFMR; STREETLIGHT; GUY AND ANCHOR, 25'L.
 - 12A: PROVIDE 40/4; INSTALL SEC. AND SVC. AT 9" FROM POLE TOP; GUY AND ANCHOR, 25'L.; INSTALL ANCHOR 3' OUT-OF-LINE SOUTH.
 - 12B: PROVIDE 40/4; GUY AND ANCHOR, 25'L.; INSTALL SEC. AT 9" FROM TOP; INSTALL SVC 4" LOWER.
 - 12C: PROVIDE 40/4; PROVIDE GUY AND ANCHOR, 25'L.; INSTALL SEC. 9" FROM TOP; INSTALL SVCS 4" LOWER.
 - 13: FRAME C7-1R, C9-1; 10kVA XFMR; STREETLIGHT; (2) GUYS, WITH GUY STRAIN INSULATOR, AND ANCHORS, 35' & 30'L.
 - 13A: INSTALL SEC. 9" FROM POLE TOP; RAISE SERVICES TO SAME HEIGHT; INSTALL NEW GUY TO EXISTING ANCHOR.
 - 13B: INSTALL SEC. AND SVC. 9" FROM POLE TOP.
 - 13-1: PROVIDE 45/4; FRAME C7-1R, A7X ON BACKSIDE; JUMPER NEUTRAL WITH #4 STR. CU. ON POLE AND UNDERSIDE OF XARM; 10kVA XFMR.; GUY AND ANCHOR 25' L.; SPAN GUY TO POLE 13-2. INSTALL SPAN GUY AT 9" BELOW XARMS; INSTALL DOWN GUY 7" LOWER.
 - 13-1A: INSTALL SECONDARY 9" BELOW POLE TOP, RAISE SVC. TO SAME HEIGHT.
 - 13-2: PROVIDE 45/4; FRAME A9; 10kVA XFMR; PRIMARY SPAN GUY TO POLE 13-2A; SECONDARY SPAN GUYS TO POLES 13-1 & 13-3; PROVIDE STREETLIGHT.
 - 13-2A: PROVIDE 40/4; GUY AND ANCHOR, 25'L. INSTALL SPAN AND DOWN GUYS AT 9" FROM POLE TOP; INSTALL SEC 9" LOWER; INSTALL SVC 4" BELOW SEC.
 - 13-2B: RE-USED 40/5 OR LARGER; INSTALL SEC. AND SERVICE AT 9" FROM POLE TOP.
 - 13-3: PROVIDE 45/4; FRAME A2. INSTALL SECONDARY SPAN GUY TO POLE 13-3A.
 - 13-3A: PROVIDE 40/4; GUY AND ANCHOR, 25'L. INSTALL SPAN GUY AND DOWN GUY AT 9" FROM POLE TOP
 - 13-4: PROVIDE 45/4; FRAME A1A; 15kVA.
 - 13-5: PROVIDE 45/4; FRAME A5; GUY AND ANCHOR, 25'L.
 - 13-6: INSTALL SEC. AT 9" FROM POLE TOP; RAISE SVCS. TO SAME HEIGHT.
 - 13-7: PROVIDE 40/4; INSTALL SEC. AT 9" FROM POLE TOP; RAISE SVCS. TO SAME HEIGHT; GUY AND ANCHOR 25'L.
 - 14: PROVIDE 45/4, FRAME C1AR; 10kVA XFMR.
 - 14A: INSTALL SEC. AT 9" FROM POLE TOP; RAISE SVC. TO SAME HEIGHT.
 - 15: PROVIDE 45/4; FRAME C10 (ALLEY ARM), C9-1; 10kVA; STREETLIGHT.
 - 15A: RE-USED 40/5 OR LARGER; INSTALL SEC. AND SERVICE AT 9" FROM POLE TOP.
 - 15-1: PROVIDE 45/4; FRAME C7-1R WITH A7X ON BACKSIDE JUMPER NEUTRAL WITH #4 STR. CU. ON POLE AND UNDERSIDE OF XARM; 10-15-10 XFMR BANK, 120/208, 120/240. GUY AND ANCHOR, 30'L.; RE-UTILIZE SECONDARY QUADRAPLEX.
 - 15-1A: RE-USED 40/5 OR LARGER; INSTALLED ADJACENT TO BUILDING; INSTALL SECONDARY AND SVC. AT 9" FROM POLE TOP.
 - 15-1B: INSTALL SEC. & SVC. AT 9" FROM POLE TOP; PROVIDE GUY AND ANCHOR 20' L.
 - 15-2: PROVIDE 45/4; FRAME A2; 10kVA XFMR; GUYS AND ANCHOR, 25'L.
 - 15-2A: INSTALL EAST/WEST SEC. AT 9" FROM POLE TOP; SOUTH SEC. 4" LOWER; BISECTOR GUY AND ANCHOR, 20'L.
 - 15-2B: PROVIDE 40/4; INSTALL SEC. AND SVC. AT 9" FROM POLE TOP; GUY AND ANCHOR, 20'L. INSTALL ANCHOR 3' NORTH OF IN-LINE.
 - 15-2C: RE-USED 40/5 OR LARGER; SET 8.5' DEEP INSTALL SEC. AND SVC. AT 9" FROM POLE TOP.
 - 15-3: 45/4; FRAME A5; 10kVA XFMR; GUY AND ANCHOR, 30'L.
 - 15-3A: INSTALL SEC AT 9" FROM POLE TOP; RAISE SVC. TO SAME HEIGHT.
 - 15-N1: PROVIDE 45/4; FRAME C7-1R, A7X ON BACKSIDE; JUMPER NEUTRAL WITH #4 STR. CU. ON POLE AND UNDERSIDE OF XARM; GUY AND ANCHOR, 35'L.
 - 15-N2: PROVIDE 45/4, FRAME A2, A5-1, GUY AND ANCHOR, 30'L.
 - 15-N2-1: PROVIDE 45/4; SET POLE 8.5' DEEP; FRAME A5; 10kVA XFMR; GUY AND ANCHOR, 30'L.
 - 15-N2-1A: RE-USED 40/5 OR LARGER; INSTALL SEC. & SVC. AT 9" FROM POLE TOP.
 - 15-N3: PROVIDE 45/4; FRAME A1A; 10kVA XFMR.
 - 15-N3A: RAISE SEC. AND SVC. TO 9" FROM POLE TOP.
 - 15-N4: PROVIDE 45/4; 10kVA; GUY ANCHOR, 25'L.
 - 15-N4A: PROVIDE 40/4; GUY ANCHOR, 25'L. INSTALL SEC. AT 9" FROM POLE TOP; INSTALL SVC. 4" LOWER.
 - 15-N5: PROVIDE 45/4; FRAME A1A; 15kVA XFMR. SECONDARY SPAN GUY TO POLE 15-N6; PROVIDE GUY AND ANCHOR, 25'L.
 - 15-N5A: INSTALL SECONDARY AT 9" FROM POLE TOP; EXTEND RISER 3'; PROVIDE NEW GUY TO EXISTING ANCHOR.
 - 15-N5B: INSTALL SECONDARY AT 9" FROM POLE TOP; PROVIDE GUY AND ANCHOR, 25'L.
 - 15-N6: PROVIDE 45/4; FRAME A1A.
 - 15-N7: PROVIDE 45/4; FRAME A2; 10kVA XFMR; STREETLIGHT; PRIMARY SPAN GUY, (2) SECONDARY GUYS AND ANCHORS, 25'L.
 - 15-N7A: INSTALL SEC. 5' ABOVE SVCS.; RAISE SVCS TO NEW SEC. HEIGHT; INSTALL SPAN GUY 12" HIGHER; GUY AND ANCHOR, 25'L.
 - 15-N8: PROVIDE 45/4; 10kVA; GUY AND ANCHOR, 30'L.



1 ENLARGED ELECTRICAL DISTRIBUTION PLAN-AREA D ISSUED FOR CONSTRUCTION

State of Alaska
Department of Community and Economic Development
AIDEA/AEA
Rural Energy Group
813 West Northern Lights Blvd
Anchorage, Alaska 99503
ALASKA ENERGY AUTHORITY



CRW
ENGINEERING GROUP LLC
3940 ARCTIC BLVD, SUITE 200
ANCHORAGE, ALASKA 99503
PHONE: (907) 561-2222
FAX: (907) 561-2273

AKIAK, ALASKA
RURAL POWER SYSTEM UPGRADE
ENLARGED ELECTRICAL DISTRIBUTION PLAN
AREA D

NO.	REVISION	DATE
0	ISSUED FOR CONSTRUCTION	4-20-12
1	ISSUED FOR CONSTRUCTION-REV 1	2-18-15

Plot Date: 2/18/15	Designed: GME	Drawn: MME	Approved:
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Sheet No. **E9**
SHEET OF

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CONDUCTOR AND DUCT SCHEDULE	Reference to Designation on Plan Drawings and Staking Sheets	Description	Manufacturer
OH Primary Cable	Single-phase - 1 conductor Three-phase - 3 conductors	#2 ACSR, Sparate	RUS approved
OH Secondary	1/0 TRIPLEX	1/0 AL triplexed secondary	RUS approved
OH Service Cable	#2 TRIPLEX	#2 AL triplexed secondary	RUS approved
Jumpering pin tie wire	#4 SOLID ALUMINUM	#4 AL solid	Southwire, or approved equal
Ground	#4 STRANDED COPPER	#4 Bare Stranded Copper	Southwire, or approved equal
Ground	#6 SOLID COPPER	#6 Bare Solid Copper	Southwire, or approved equal
Covered Primary Equipment Jumper	#6 SOLID COPPER, COVERED	#6 Cu 110 mil XLP	Southwire, or approved equal
Streetlight conductors	#10 COPPER, STRANDED	#10 Cu, 7-strand, XHHW	Southwire, or approved equal
UG Secondary Cable	4/0 URD	4/0-2/0-4/0 AL triplexed secondary, Sweet Briar	RUS approved
UG Service Cable	#2 URD	#2-#2-#2 triplexed URD secondary cable, Ramapo	RUS approved
UG Service Riser	#2 COPPER XHHW	#2 copper XHHW, 600V, single conductor	Southwire, or approved equal
Underground conduit	HDPE2	2" schedule 40 HDPE, red or black with red stripes	Duraline, Carlon, or approved equal

SEE SHEET E1 FOR GENERAL NOTES AND CONSTRUCTION COORDINATION NOTES.
SEE SHEET E5 FOR DEMOLITION NOTES.

EQUIPMENT SCHEDULE

TYPE	DESCRIPTION	COMMENTS
10kV XFMR 15kV XFMR	120/240/7,200/12,470V 1φ-PHASE POLE-MOUNTED TRANSFORMER	SINGLE-PHASE, POLE-MOUNTED, STAINLESS STEEL, AMORPHOUS CORE, DISTRIBUTION TRANSFORMER (INTERNALLY RE-CONFIGURABLE FOR USE IN 3φ BANKS). AUTHORITY FURNISHED, CONTRACTOR INSTALLED.
15kV XFMR	120/240/7,200V AND 120/240/2,400V 1φ-PHASE DUAL-VOLTAGE POLE-MOUNTED TRANSFORMER	SINGLE-PHASE, POLE-MOUNTED, DUAL VOLTAGE, DISTRIBUTION TRANSFORMER. AUTHORITY FURNISHED. FOR TEMPORARY USE BY CONTRACTOR FOR PHASING WORK TO FACILITATE VILLAGE VOLTAGE CONVERSION. AUTHORITY FURNISHED. TO BE RETURNED TO AUTHORITY AT END OF PROJECT.
150kV XFMR BANK	7,200/12,470V WYE TO 2,400V DELTA	TRANSFORMER BANK, POLE MOUNTED, STEP-DOWN/STEP-UP 7,200/12,470V WYE TO 2,400V DELTA. EXISTING ON POLE 2. TO BE RELOCATED IN VILLAGE, AS REQUIRED, TO FACILITATE VOLTAGE CONVERSION. TO BE RETURNED TO AUTHORITY AT END OF PROJECT..
PEDESTAL	FIBERGLASS PEDESTAL	2-PIECE SECONDARY FIBERGLASS PEDESTAL, NORDIC FIBERGLASS, INC. PSP913306MG, FACTORY FINISHED MUNSSELL GREEN, OR APPROVED EQUAL.
S.L.	STREETLIGHT LUMINAIRE AND WOOD POLE MOUNTED BRACKET ARM	BEACON VIPER LED LUMINAIRE #VP-S-30NB-70-5K-T2-UNV-PCR-TL-SF2-GYS, OR EQUAL. MACLEAN POWER SYSTEMS, MAST ARM, WOOD POLE MOUNTING ARM #S-2-2.5G.

1 SCHEDULES
EO SCALE: NTS



AKIAK, ALASKA
RURAL POWER SYSTEM UPGRADE
ELECTRICAL DISTRIBUTION
DETAILS

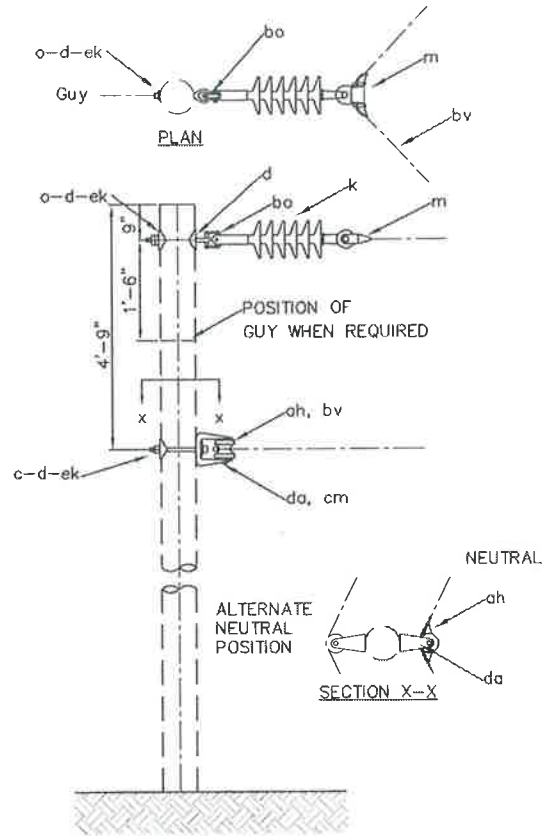
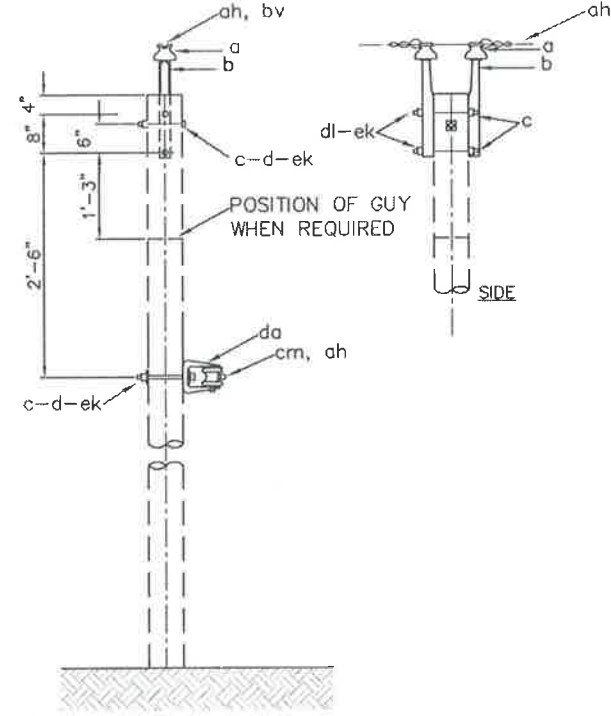
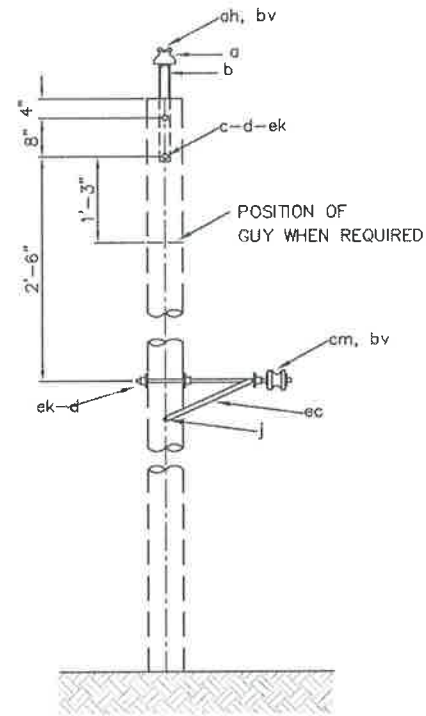
NO.	REVISION	BY	DATE
0	ISSUED FOR CONSTRUCTION		2-18-15

Plot Date: 2/18/15	Designed: GME	Drawn: MME	Approved:
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ISSUED FOR CONSTRUCTION

Sheet No. E10
SHEET OF

\\A-PC\Users\Public\G.ERRICO\SHARED\crw\Akiak-CRW\IFC\Akiak IFC-Details-3.dwg



NOTE:
1. THIS ASSEMBLY: USES A 3" SQUARE CURVED WASHERS (1 REQUIRED ON BACKSIDE OF NEUTRAL BRACKET).

NOTE:
1. THIS ASSEMBLY: USES 3" SQUARE CURVED WASHERS (3 REQUIRED).
2. EYE-BOLT TO BE TIGHTENED AGAINST WASHERS ON BOTH SIDES OF BOLT.

MATERIAL LIST		
NO.	Qty.	DESCRIPTION
a	1	INSULATOR, PIN TYPE, PORCELAIN, F-NECK
b	1	PIN, pole top, 20", straight
ah	1	TIE, PREFORMED, WRAPLOCK, SINGLE SUPPORT
ah	1	TIE, SPOOL, PREFORMED, SINGLE SUPPORT
bv	2	ARMOR ROD, SINGLE SUPPORT, SET
c	2	BOLT, MACHINE, 5/8" X REQ'D LENGTH
cm	1	INSULATOR, SPOOL, 3", ANSI 53-2
d	3	WASHER, 2-1/4" SQUARE WITH 11/16" HOLE
ec	1	BRACKET, OFFSET NEUTRAL
ek	-	LOCKNUT, 5/8", AS REQUIRED
i	2	SCREW, LAG, 1/2" X 4-1/2"

MATERIAL LIST		
NO.	Qty.	DESCRIPTION
a	2	INSULATOR, PIN TYPE, ANSI 55-4
b	2	PIN, pole top, 20"
ah	1	TIE, PREFORMED, WRAPLOCK, DOUBLE SUPPORT, SIDE TIE
ah	1	TIE, SPOOL, PREFORMED, SINGLE SUPPORT
bv	1	ARMOR ROD, DOUBLE SUPPORT, SET
bv	1	ARMOR ROD, SINGLE SUPPORT, SET
c	4	BOLT, MACHINE, 5/8" X REQ'D LENGTH
cm	1	INSULATOR, SPOOL, 3", ANSI 53-2
d	1	WASHER, CURVED, 3"
d	2	WASHER, 2-1/4" SQUARE WITH 11/16" HOLE
da	1	CLEVIS, NEUTRAL, RIGID
di	2	PIPE SPACER, 3/4" DIA. x 1-1/2"
ek	-	LOCKNUT, 5/8", AS REQUIRED

MATERIAL LIST		
NO.	Qty.	DESCRIPTION
ah	1	TIE, WRAPLOCK, SPOOL
bo	1	SHACKLE, ANCHOR
bv	2	ARMOR ROD, SINGLE SUPPORT, SET
c	1	BOLT, MACHINE, 5/8" X REQ'D LENGTH
cm	1	INSULATOR, SPOOL, 3", ANSI 53-2
d	3	WASHER, SQUARE, CURVED, 3", 11/16" HOLE
da	1	CLEVIS, NEUTRAL, RIGID
ek	-	LOCKNUT, 5/8", AS REQUIRED
k	1	INSULATOR, SUSP. 15KV EPOXILATOR, 10,000 LBS.
m	1	CLAMP, SUSP. ANGLE
o	1	BOLT, EYE, 5/8" X REQ'D LENGTH

1 A1 FRAMING
E11 SCALE: NTS

2 A2 FRAMING
E11 SCALE: NTS

3 A3 FRAMING
E11 SCALE: NTS

SHEET NOTES:
1. SEE SHEET E1 FOR GENERAL NOTES.

ISSUED FOR CONSTRUCTION

State of Alaska
Department of Community
and Economic Development
AIDEA/AEA
Rural Energy Group
813 West Northern Lights Blvd
Anchorage, Alaska 99503
ALASKA ENERGY AUTHORITY

STATE OF ALASKA
REGISTERED PROFESSIONAL ENGINEER
GREGORY W. EHRICH
EE-10279

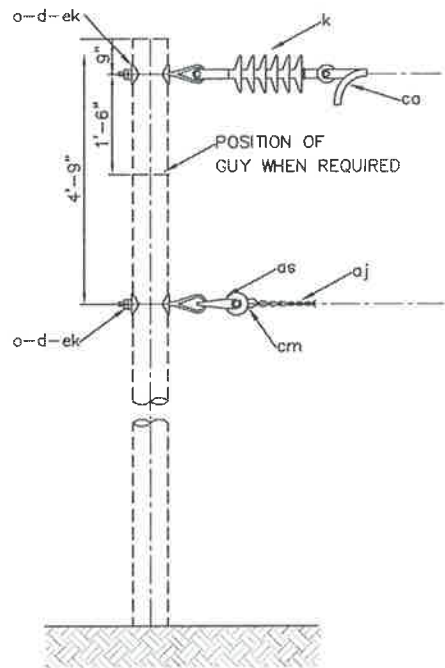
CRW
ENGINEERING GROUP LLC
3840 BOSTON BLVD., SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 541-3222
FAX: (907) 561-2273

AKIAK, ALASKA
RURAL POWER SYSTEM UPGRADE
ELECTRICAL DISTRIBUTION
DETAILS

NO.	REVISION	DATE
0	ISSUED FOR CONSTRUCTION	4-20-12
1	ISSUED FOR CONSTRUCTION-REV 1	2-18-15

Plot Date	2/18/15
Designed	GME
Drawn	MME
Approved	

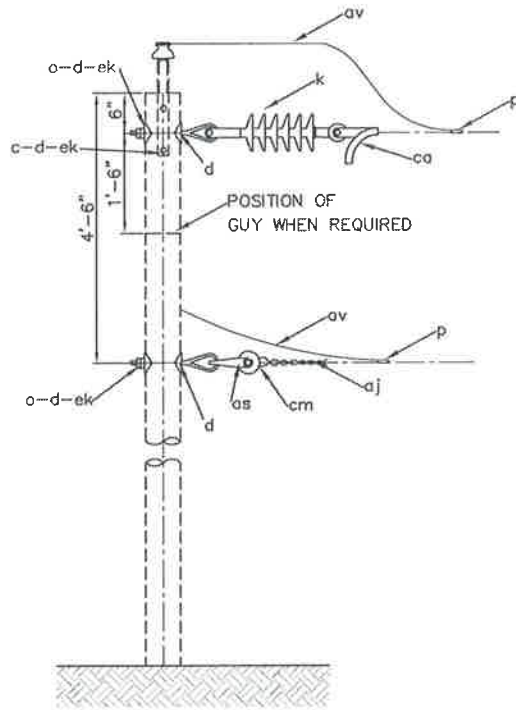
Sheet No.	E11
SHEET	OF



NOTE:
 1. THIS ASSEMBLY: USES 3" SQUARE CURVED WASHERS (4 REQUIRED).
 2. EYE-BOLT TO BE TIGHTENED AGAINST WASHERS ON BOTH SIDES OF BOLT.

MATERIAL LIST		
NO.	Qty.	DESCRIPTION
ca	1	DEADEND SHOE, CURVED, BOLTED, OR AUTOMATIC
as	1	CLEVIS, NEUTRAL, SWINGING
d	4	WASHER, SQUARE CURVED, 3", 11/16" HOLE
ek		LOCKNUTS, AS REQUIRED
k	1	INSULATOR, SUSPENSION, EPOXILATOR 15kv, 10,000 LBS.
o	2	BOLT, EYE, 5/8" x AS REQUIRED
cm	1	INSULATOR, SPOOL, 3", ANSI 53-2
aj	1	DEADEND, NEUTRAL, PREFORMED

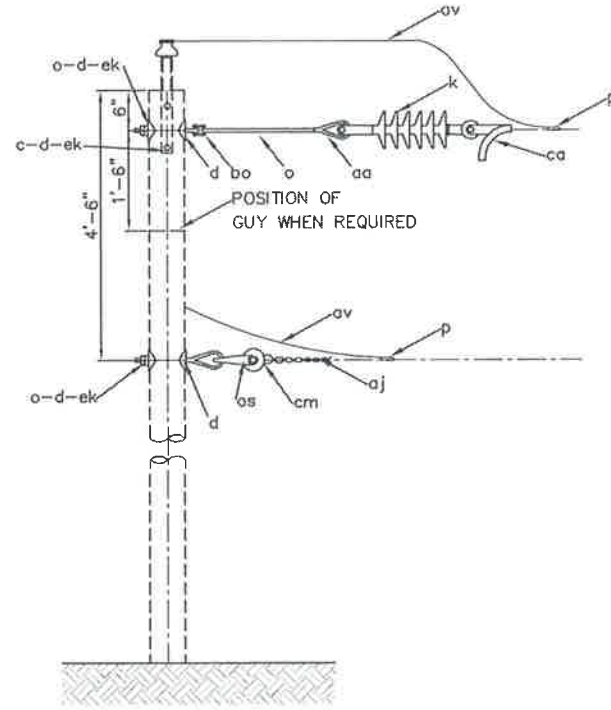
1 A5 FRAMING
 E12 SCALE: NTS



NOTE:
 1. THIS ASSEMBLY: USES 3" SQUARE CURVED WASHERS (4 REQUIRED).
 2. EYE-BOLT TO BE TIGHTENED AGAINST WASHERS ON BOTH SIDES OF BOLT.

MATERIAL LIST		
NO.	Qty.	DESCRIPTION
aj	1	DEADEND, NEUTRAL, PREFORMED
as	1	CLEVIS, NEUTRAL, SWINGING
av	-	JUMPERS, TAP PRIMARY CONDUCTOR, AS REQ'D
ca	1	DEADEND SHOE, CURVED, BOLTED; OR AUTOMATIC
cm	1	INSULATOR, SPOOL, 3", ANSI 53-2
d	4	WASHER, SQUARE, CURVED, 3", 11/16" HOLE
ek	-	LOCKNUTS, AS REQUIRED
k	1	INSULATOR, SUSP., EPOXILATOR 15kv, 10,000 LBS
o	2	BOLT, EYE, 5/8" x AS REQUIRED
p	4	CONNECTORS, COMPRESSION

2 A5-1 FRAMING
 E12 SCALE: NTS



NOTE:
 1. THIS ASSEMBLY: USES 3" SQUARE CURVED WASHERS (4 REQUIRED).
 2. EYE-BOLT TO BE TIGHTENED AGAINST WASHERS ON BOTH SIDES OF BOLT.

MATERIAL LIST		
NO.	Qty.	DESCRIPTION
aa	1	NUT, EYE, 5/8"
aj	1	DEADEND, NEUTRAL, PREFORMED
as	1	CLEVIS, NEUTRAL, SWINGING
av	-	JUMPERS, TAP PRIMARY CONDUCTOR, AS REQ'D
ba	1	SHACKLE, ANCHOR
ca	1	DEADEND SHOE, CURVED, BOLTED; OR AUTOMATIC
cm	1	INSULATOR, SPOOL, 3", ANSI 53-2
d	4	WASHER, SQUARE, CURVED, 3", 11/16" HOLE
ek	-	LOCKNUTS, AS REQUIRED
k	1	INSULATOR, SUSP., EPOXILATOR 15kv, 10,000 LBS
o	2	BOLT, EYE, 5/8" x AS REQUIRED
o	1	BOLT, EYE, 5/8" x 18"
p	4	CONNECTORS, COMPRESSION

3 A5-2 FRAMING
 E12 SCALE: NTS

SHEET NOTES:
 1. SEE SHEET E1 FOR GENERAL NOTES.

ISSUED FOR CONSTRUCTION

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State of Alaska
 Department of Community
 and Economic Development
 AIDEA/AEA
 Rural Energy Group
 813 West Northern Lights Blvd.
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CRW
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 3140 ARCTIC BLVD. SUITE 300
 ANCHORAGE, ALASKA 99503
 PHONE: (907) 562-2525
 FAX: (907) 561-2273

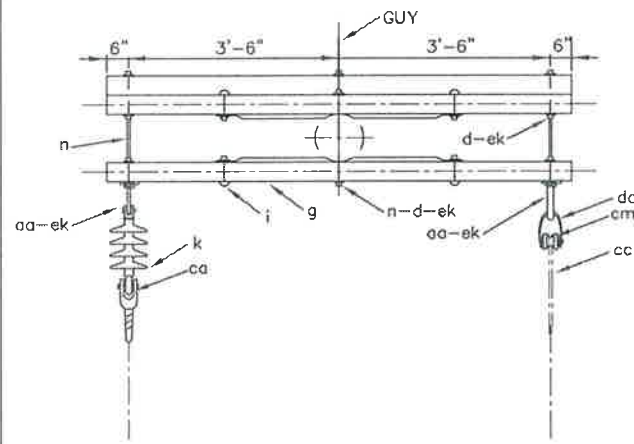
AKIAK, ALASKA
 RURAL POWER SYSTEM UPGRADE
 ELECTRICAL DISTRIBUTION
 DETAILS

NO.	REVISION	DATE
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1	ISSUED FOR CONSTRUCTION-REV 1	2-18-15

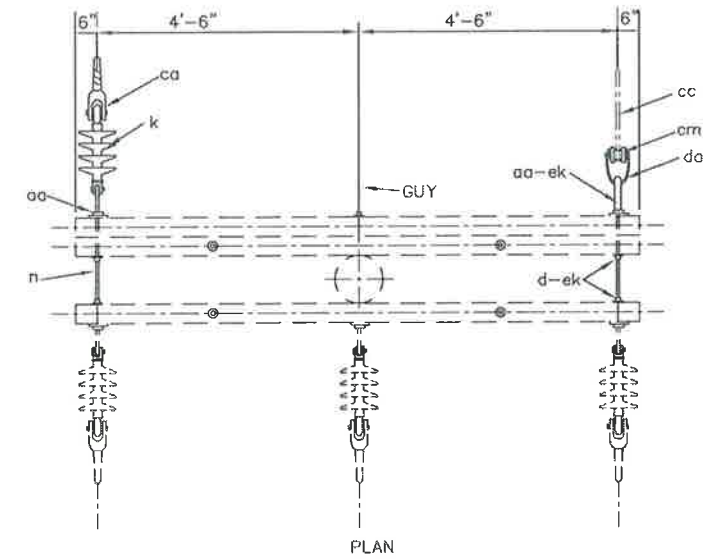
Plot Date: 2/18/15	Designed: GME	Drawn: MME	Approved:
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SHEET OF

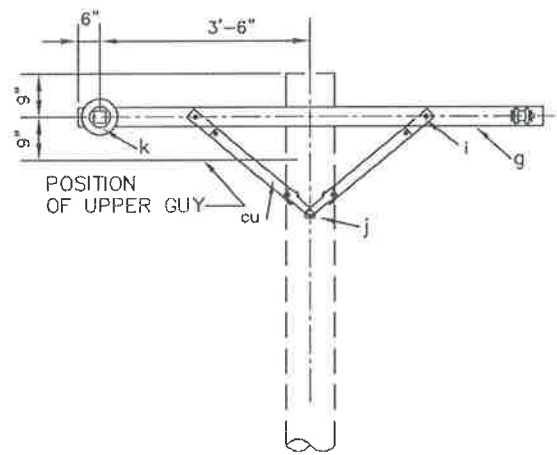
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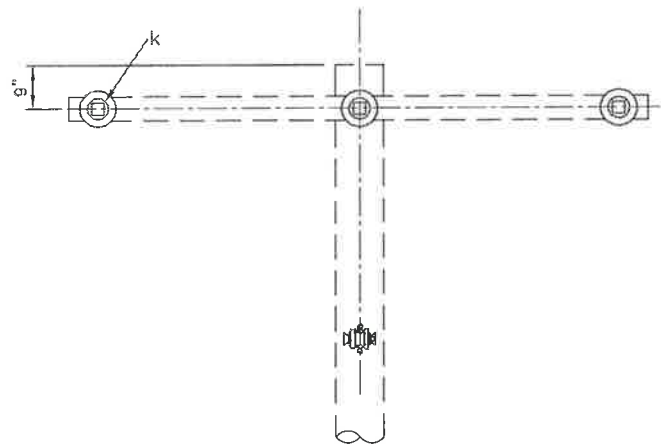
PLAN



PLAN



POSITION OF UPPER GUY



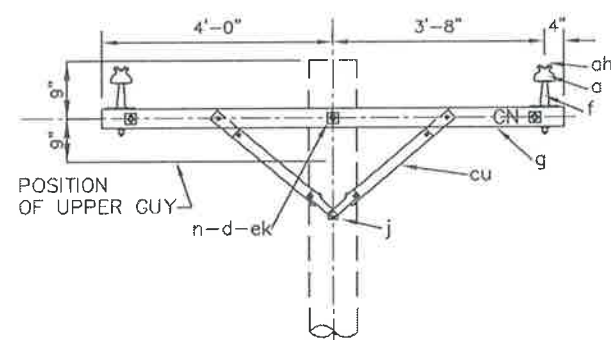
PLAN

Item	NO.	DESCRIPTION
aa	2	NUT, EYE, 5/8"
ca	1	DEADEND SHOE, CURVED, BOLTED, OR AUTOMATIC
cc	1	DEADEND, NEUTRAL PREFORMED
cu	4	BRACE, WOOD, 28"
d	10	WASHER, 2-1/4" SQUARE, 11/16" HOLE
ek	-	LOCKNUTS, AS REQUIRED
g	3	CROSSARM, 3-5/8" X 4-5/8" X 8'-0", TYPE 03
i	4	BOLT, CARRIAGE, 3/8" X 4-1/2"
j	2	SCREW, LAG, 1/2" X 4-1/2"
k	2	INSULATOR, SUSP., 15 KV EPOXILATOR, 10,000 lbs
n	3	BOLT, DOUBLE ARMING, 5/8" X REQ'D LENGTH

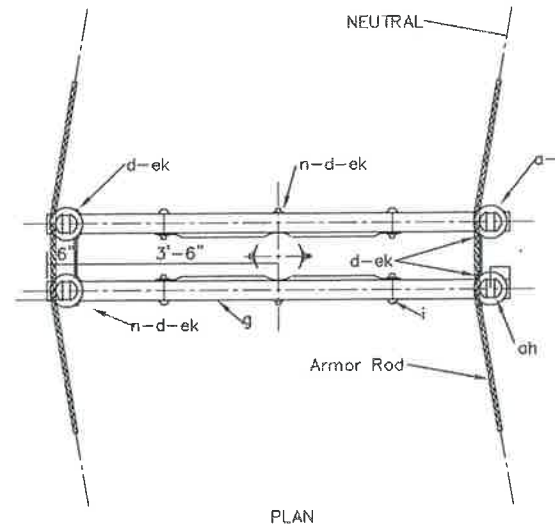
1 A7-1 FRAMING
E13 SCALE: NTS

Item	NO.	DESCRIPTION
aa	2	NUT, EYE, 5/8"
ca	1	DEADEND SHOE, CURVED, BOLTED, OR AUTOMATIC
cc	1	DEADEND, NEUTRAL, PREFORMED
cm	1	INSULATOR, SPOOL, 3", ANSI 53-2
da	1	CLEVIS, NEUTRAL, SWINGING
ek	-	LOCKNUTS, AS REQUIRED
k	1	INSULATOR, SUSP, 15 KV EPOXILATOR, 10,000 lb

2 A7X FRAMING
E13 SCALE: NTS



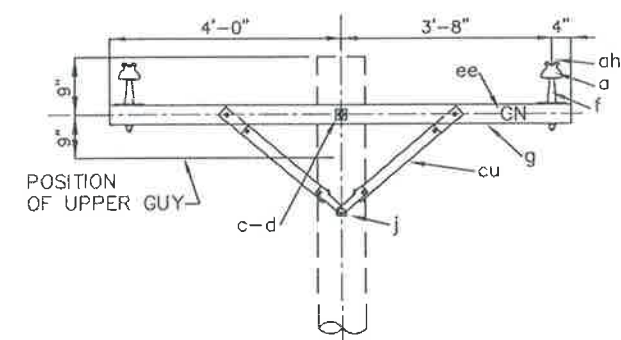
POSITION OF UPPER GUY



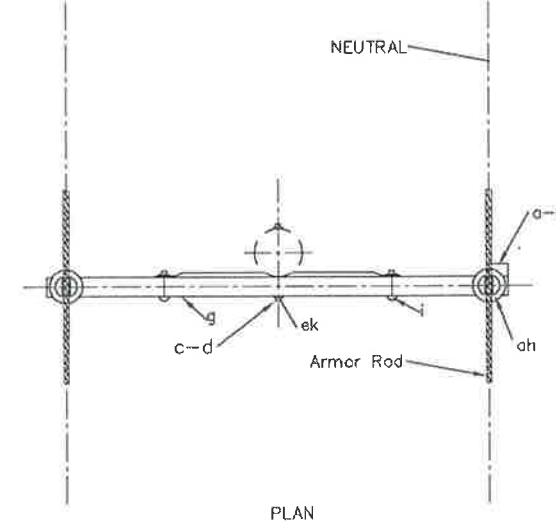
PLAN

Item	NO.	DESCRIPTION
a	4	INSULATOR, PIN TYPE, ANSI 55-4
ah	2	PREFORMED WRAPLOCK TIE, DOUBLE SIDE SUPPORT
c	2	ARMOR ROD, DOUBLE SUPPORT, SET
cu	4	BRACE, WOOD, 28"
d	10	WASHER, 2-1/4" SQUARE, 11/16" HOLE
ee	4	LETTERS, 2 "C", 2 "N" WITH 1" NAILS
ek	-	LOCKNUTS, AS REQUIRED
f	4	PIN, CROSSARM, STEEL, 5/8" x 10-3/4"
g	2	CROSSARM, 3-5/8" X 4-5/8" X 8'-0", TYPE 03
i	4	BOLT, CARRIAGE, 3/8" X 4-1/2"
j	2	SCREW, LAG, 1/2" X 4"
n	3	BOLT, DOUBLE ARMING, 5/8" X REQ'D LENGTH

3 A9 FRAMING
E13 SCALE: NTS



POSITION OF UPPER GUY



PLAN

Item	NO.	DESCRIPTION
a	2	INSULATOR, PIN TYPE, ANSI 55-4
ah	2	PREFORMED WRAPLOCK TIE
c	2	ARMOR ROD, SINGLE SUPPORT, SET
cu	2	BRACE, WOOD, 28"
d	2	WASHER, 2-1/4" SQUARE, 11/16" HOLE
ee	4	LETTERS, 2 "C", 2 "N" WITH 1" NAILS
ek	-	LOCKNUTS, AS REQUIRED
f	2	PIN, CROSSARM, STEEL, 5/8" X 10-3/4"
g	1	CROSSARM, 3-5/8" X 4-5/8" X 8'-0", TYPE 03
i	2	BOLT, CARRIAGE, 3/8" X 4-1/2"
j	1	SCREW, LAG, 1/2" X 4"
c	1	BOLT, MACHINE, 5/8" X REQ'D LENGTH

4 A9-1 FRAMING
E13 SCALE: NTS

SHEET NOTES:
1. SEE SHEET E1 FOR GENERAL NOTES.

ISSUED FOR CONSTRUCTION

State of Alaska
Department of
Community
and Economic
Development
AIDEA/AEA
Rural Energy Group
813 West Northern Lights Blvd.
Anchorage, Alaska 99583
ALASKA ENERGY AUTHORITY



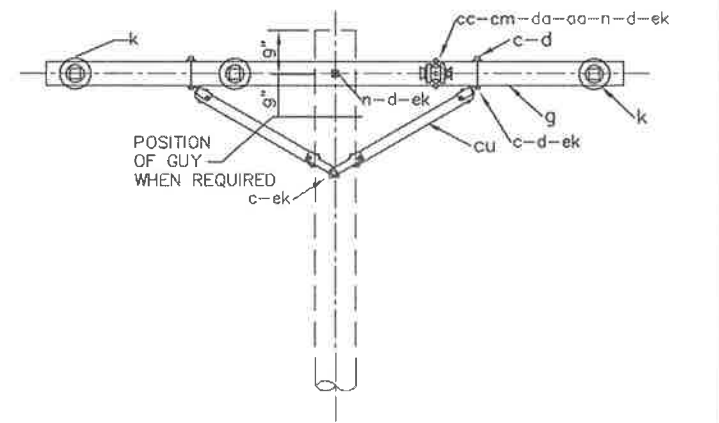
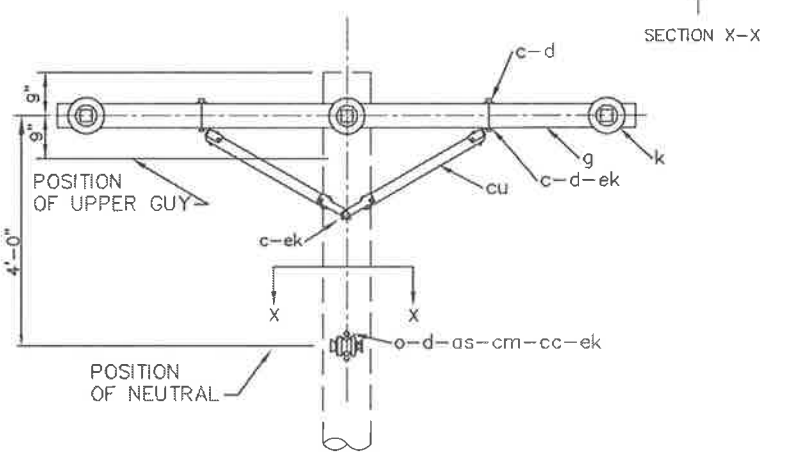
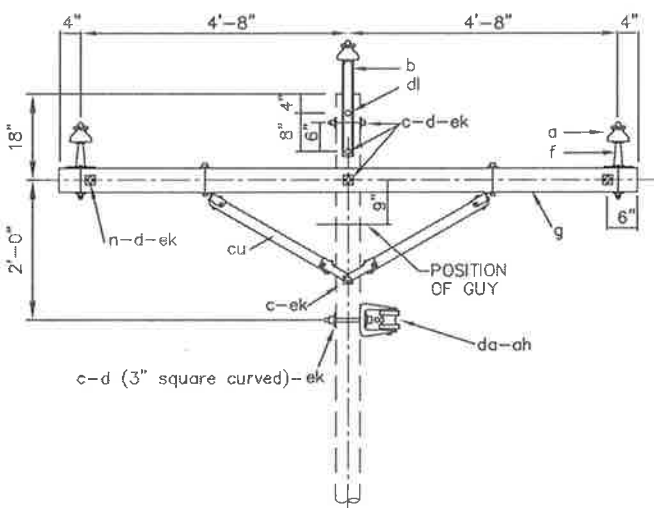
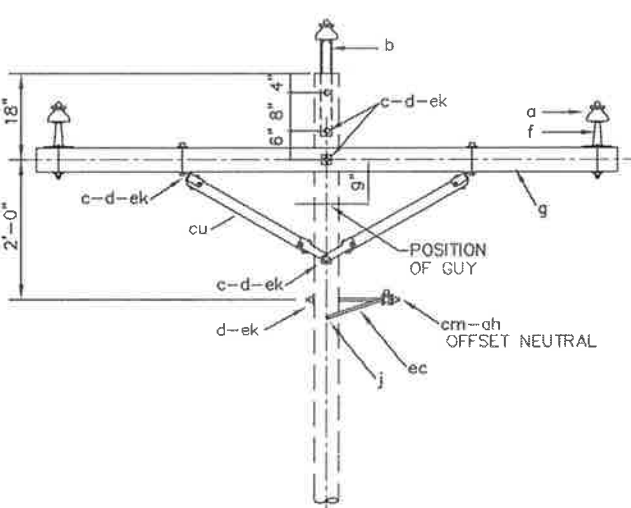
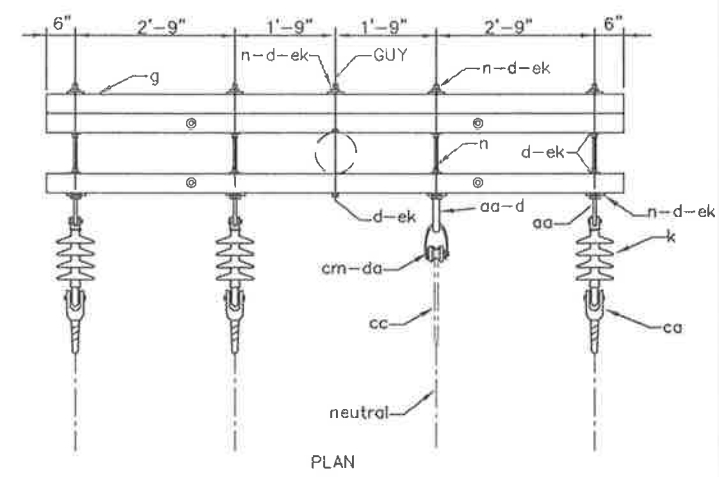
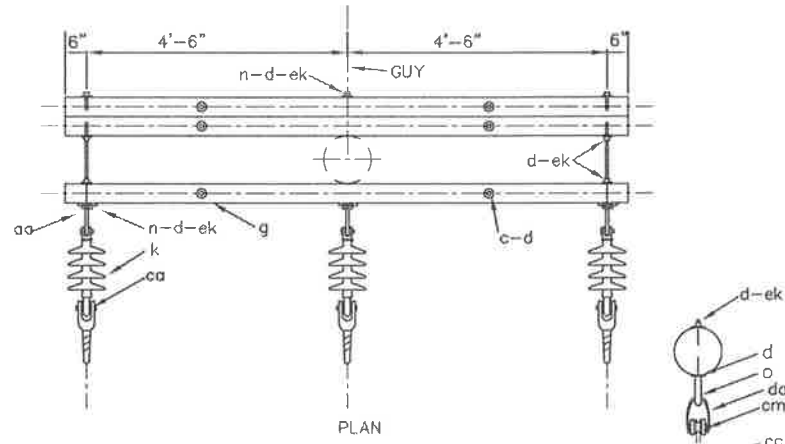
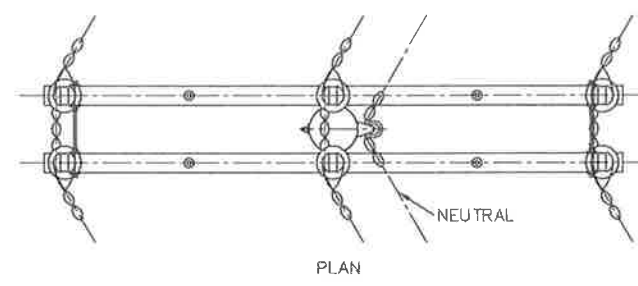
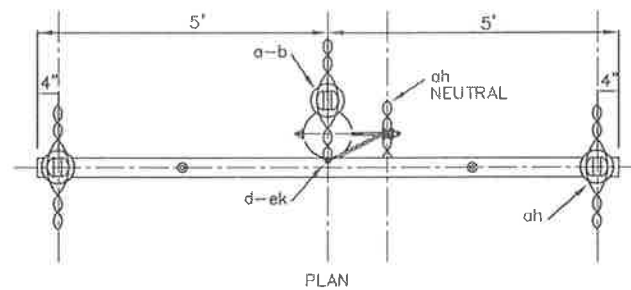
CRW
ENGINEERING GROUP LLC
3840 BECKER BLVD. SUITE 400
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-2222
FAX: (907) 562-2273

AKIAK, ALASKA
RURAL POWER SYSTEM UPGRADE
ELECTRICAL DISTRIBUTION
DETAILS

NO.	REVISION	DATE
0	ISSUED FOR CONSTRUCTION	4-20-12
1	ISSUED FOR CONSTRUCTION-REV 1	2-18-15

Plot Date	2/18/15
Designed	GME
Drawn	MME
Approved	

Sheet No.	E13
SHEET	OF



NOTE:
1. THIS ASSEMBLY: USES A 3" SQUARE CURVED WASHERS (1 REQUIRED ON BACKSIDE OF NEUTRAL BRACKET).

NOTE:
1. THIS ASSEMBLY: USES 3" SQUARE CURVED WASHERS (2 REQUIRED, ONE ON EACH SIDE OF NEUTRAL EYE-BOLT).
2. EYEBOLT TO BE TIGHTENED AGAINST WASHER ON BOTH SIDES OF BOLT.

MATERIAL LIST		
NO.	Qty.	DESCRIPTION
a	3	INSULATOR, PIN TYPE, ANSI 55-4
ah	3	TIE, WRAPLOCK, PREFORMED, SINGLE SUPPORT
ah	1	TIE, PREFORMED, SPOOL, SINGLE SUPPORT
b	1	PIN, POLE TOP, 20", STRAIGHT
c	4	BOLT, MACHINE, 5/8" X REQ'D LENGTH
c	2	BOLT, MACHINE, 1/2" X 6"
cm	1	INSULATOR, SPOOL, 3", ANSI 53-2
cu	1	BRACE, WOOD, 60" SPAN (PAIR)
d	2	WASHER, 1-3/8" ROUND, 9/16" HOLE
d	6	WASHER, 2-1/4" SQUARE, 11/16" HOLE
ec	1	BRACKET, OFFSET NEUTRAL
ek	2	LOCKNUT 1/2"
ek	-	LOCKNUT, 5/8", AS REQ'D
f	2	PIN, CROSSARM, STEEL, 5/8" X 10-3/4"
g	1	CROSSARM, 3-3/4" X 4-3/4" X 10'-0", TYPE 05
j	2	SCREW, LAG, 1/2" X 4-1/2"
-	4	ARMOR ROD, SINGLE SUPPORT, SET

MATERIAL LIST		
NO.	Qty.	DESCRIPTION
a	6	INSULATOR, PIN TYPE, ANSI 55-4
ah	3	TIE, WRAPLOCK, PREFORMED, DOUBLE SUPPORT, SIDE TIE
ah	1	TIE, PREFORMED, SPOOL, SINGLE SUPPORT
b	2	PIN, POLE TOP, 20", STRAIGHT
c	5	BOLT, MACHINE, 5/8" X REQ'D LENGTH
c	4	BOLT, MACHINE, 1/2" X 6"
cm	1	INSULATOR, SPOOL, 3", ANSI 53-2
cu	2	BRACE, WOOD, 60" SPAN (PAIR)
d	12	WASHER, 2-1/4" SQUARE, 11/16" HOLE
d	4	WASHER, 1-3/8" ROUND, 9/16" HOLE
d	1	WASHER, 3" SQUARE CURVED WITH 13/16" HOLE
da	1	CLEVIS, NEUTRAL, RIGID
dl	2	PIPE SPACER, 3/4" DIA. x 1-1/2"
ek	4	LOCKNUT 1/2"
ek	-	LOCKNUT, 5/8", AS REQ'D
f	4	PIN, CROSSARM, STEEL, 5/8" x 10-3/4"
g	2	CROSSARM, 3-3/4" X 4-3/4" X 10'-0", TYPE 05
n	3	BOLT, DOUBLE ARMING, 5/8" X REQUIRED LENGTH
-	3	ARMOR ROD, DOUBLE SUPPORT, SET
-	1	ARMOR ROD, SINGLE SUPPORT, SET

MATERIAL LIST		
Item NO.	NO.	DESCRIPTION
aa	3	NUT, EYE, 5/8"
c	4	BOLT, MACHINE, 1/2" X 6"
c	1	BOLT, MACHINE, 5/8" X REQ'D LENGTH
ca	3	DEADEND, CURVED, BOLTED OR AUTOMATIC
cc	1	DEADEND, NEUTRAL, PREFORMED
cm	1	INSULATOR, SPOOL, 3", ANSI 53-2
cu	2	BRACE, WOOD, 60" SPAN (PAIR)
d	10	WASHER, 2-1/4" SQUARE, 11/16" HOLE
d	4	WASHER, 1-3/8" ROUND, 9/16" HOLE
d	2	WASHER, 3" SQUARE, CURVED, 11/16" HOLE
da	1	CLEVIS, NEUTRAL, SWINGING
ek	-	LOCKNUTS, AS REQUIRED
g	3	CROSSARM, 3-3/4" X 4-3/4" X 10'-0", TYPE 05
k	3	INSULATOR, SUSP., 15 kV EPOXILATOR, 10,000 lb
n	3	BOLT, DOUBLE ARMING, 5/8" X REQ'D LENGTH
o	1	BOLT, EYE, 5/8" X REQ'D LENGTH

MATERIAL LIST		
Item NO.	NO.	DESCRIPTION
aa	4	NUT, EYE, 5/8"
c	1	BOLT, MACHINE, 5/8" X REQ'D LENGTH
c	4	BOLT, MACHINE, 1/2" X REQ'D LENGTH
ca	3	DEADEND, CURVED, BOLTED, OR AUTOMATIC
cc	1	DEADEND, NEUTRAL PREFORMED
cm	1	INSULATOR, SPOOL, 3", ANSI 53-2
cu	2	BRACE, WOOD, 60" SPAN (PAIR)
d	18	WASHER, 2-1/4" SQUARE, 11/16" HOLE
d	4	WASHER, ROUND, 1-3/8" DIA., 9/16" HOLE
da	1	CLEVIS, NEUTRAL, SWINGING
ek	-	LOCKNUT, 5/8" AS REQ'D
ek	-	LOCKNUT, 1/2" AS REQ'D
g	3	CROSSARM, 3-3/4" x 4-3/4" x 10'-0", TYPE 05X
k	3	INSULATOR, SUSP., 15 kV EPOXILATOR, 10,000 lb)
n	5	BOLT, DOUBLE ARMING, 5/8" x REQ'D LENGTH

1 C1AR
E14 SCALE: NTS

2 C2R
E14 SCALE: NTS

3 C7-1R
E14 SCALE: NTS

4 C7-2A
E14 SCALE: NTS

SHEET NOTES:
1. SEE SHEET E1 FOR GENERAL NOTES.

ISSUED FOR CONSTRUCTION

State of Alaska
Department of Economic Development and Economic Development
AIDEA/AEA
Rural Energy Group
613 West Northern Lights Blvd.
Anchorage, Alaska 99503
ALASKA ENERGY AUTHORITY



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PHONE: (907) 561-3252
FAX: (907) 561-2273

AKIAK, ALASKA
RURAL POWER SYSTEM UPGRADE
ELECTRICAL DISTRIBUTION
DETAILS

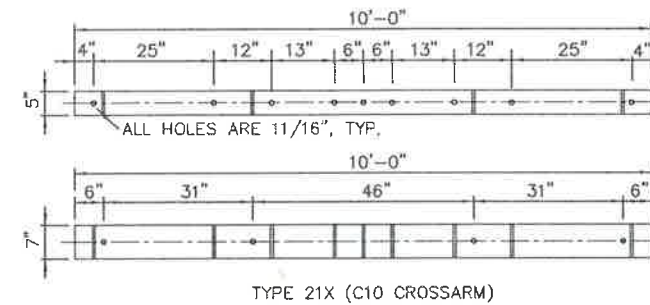
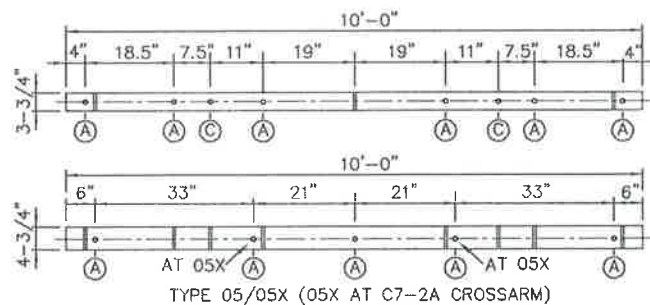
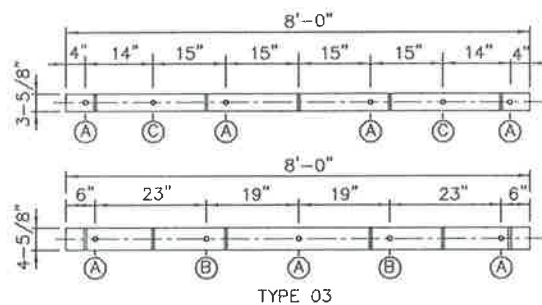
NO.	REVISION	DATE
0	ISSUED FOR CONSTRUCTION	4-20-12
1	ISSUED FOR CONSTRUCTION - REV 1	2-18-15

Plot Date: 2/18/15
Designed: GME
Drawn: MME
Approved:

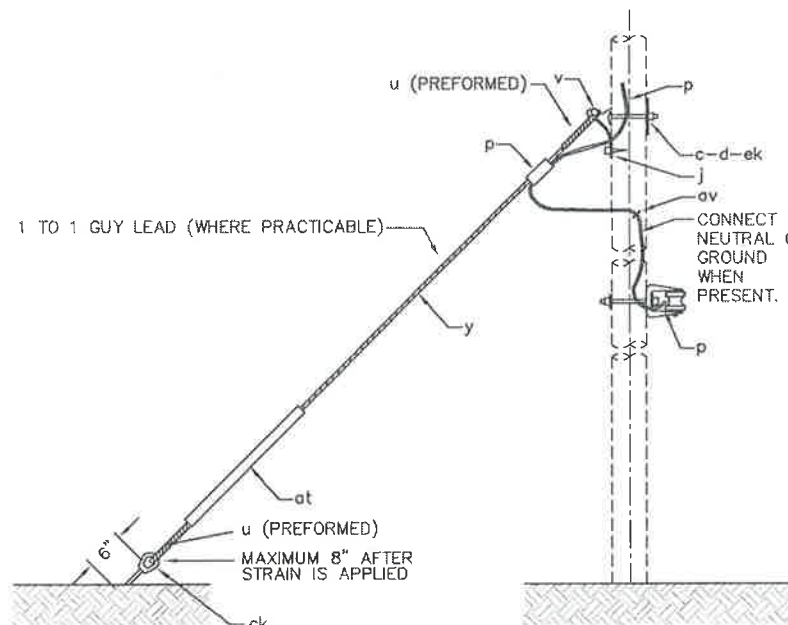
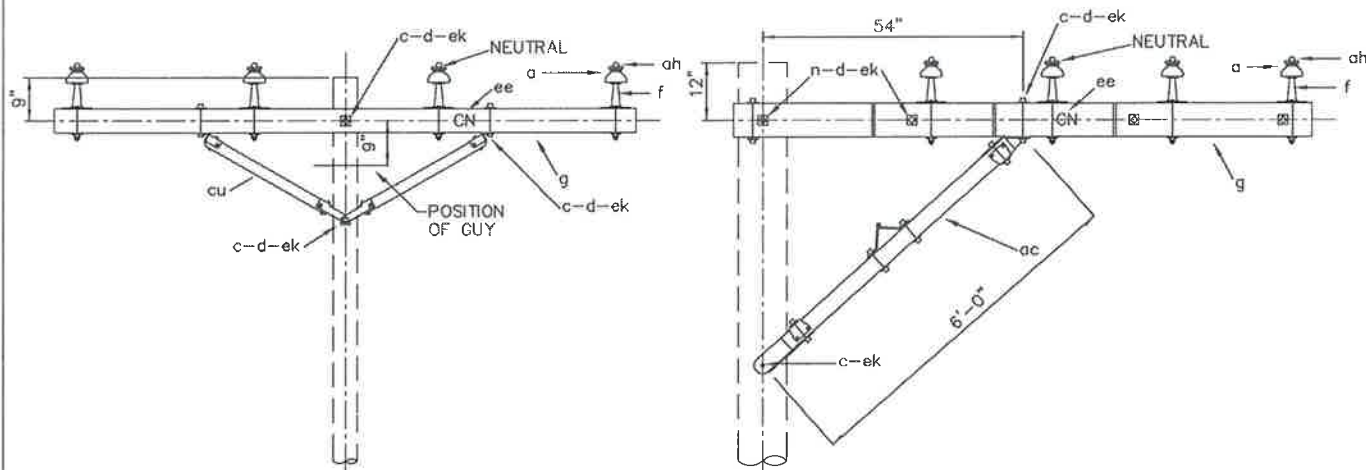
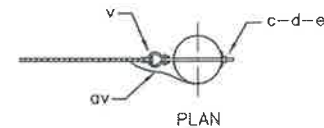
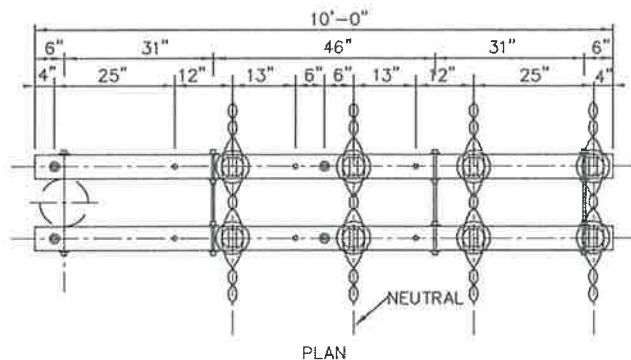
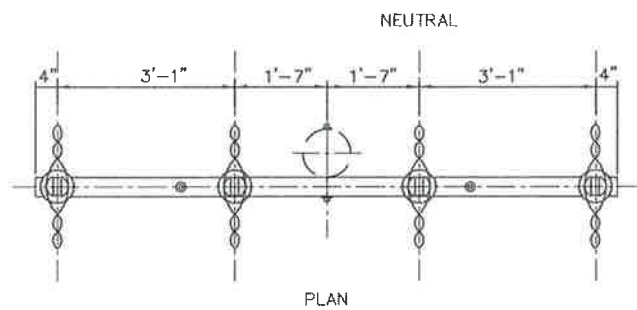
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SHEET OF

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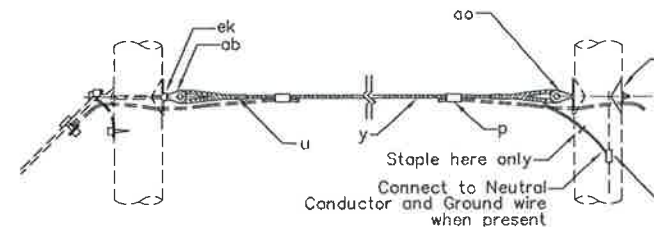
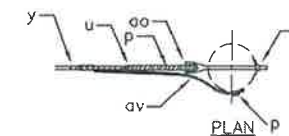
HOLE SIZING
 (A) 11/16" DIA.
 (B) 7/16" DIA.
 (C) 9/16" DIA.



5 M19: CROSSARM DRILLING GUIDE
 E15 SCALE: NTS



NOTES:
 1. FORMED TYPE GRIPS MAY BE USED ONLY WITH SUITABLE ATTACHMENTS, (ITEM V) RECOMMENDED BY GRIP MANUFACTURER.
 2. WHERE SEPARATE ANCHORS ARE INSTALLED THE MINIMUM SEPARATION SHALL BE FIVE FEET.
 3. SPACING BETWEEN ANCHORS SHALL BE SUFFICIENT TO PROVIDE MAXIMUM HOLDING POWER OF EACH ANCHOR.



NOTES:
 1. OTHER ACCEPTED AND EQUIVALENT ITEMS OF DEADEND MATERIAL MAY BE SUBSTITUTED FOR THE 3-BOLT CLAMP SHOWN.

MATERIAL LIST		
NO.	Qty.	DESCRIPTION
a	4	INSULATOR, PIN TYPE, ANSI 55-4
ah	4	TIE, PREFORMED, WRAPLOCK, SINGLE SUPPORT
c	2	BOLT, MACHINE, 5/8" X REQ'D LENGTH
c	2	BOLT, MACHINE, 1/2" X REQ'D LENGTH
cu	1	BRACE, WOOD, 60" SPAN (PAIR)
d	2	WASHER, 1-3/8" ROUND, 9/16" HOLE
d	6	WASHER, 2-1/4" SQUARE, 11/16" HOLE
ee	4	LETTERS, 2 EA. "C", "N", WITH 1" NAILS
ek	2	LOCKNUT 1/2"
ek	-	LOCKNUT, 5/8", AS REQ'D
f	4	PIN, CROSSARM, STEEL, 5/8" x 10-3/4"
g	1	CROSSARM, 3-3/4" X 4-3/4" X 10'-0", TYPE 05
-	4	ARMOR ROD, SINGLE SUPPORT, SET

1 C9-1 FRAMING
 E15 SCALE: NTS

MATERIAL LIST		
NO.	Qty.	DESCRIPTION
a	8	INSULATOR, PIN TYPE, ANSI 55-4
ac	2	BRACE, HUGHES BROS, #1096.6R
ah	4	TIE, PREFORMED, WRAPLOCK, DOUBLE SUPPORT, TOP TIE
c	5	BOLT, MACHINE, 5/8" X REQ'D LENGTH
d	18	WASHER, 2-1/4" SQUARE, 11/16" HOLE
ee	4	LETTERS, 2 EA. "C", "N", WITH 1" NAILS
ek	-	LOCKNUT, 5/8", AS REQ'D
f	8	PIN, CROSSARM, STEEL, 5/8" x 13", 8" SHANK
g	2	CROSSARM, 5" X 7" X 10'-0", TYPE 21X
-	8	ARMOR ROD, DOUBLE SUPPORT, SET
n	4	BOLT, DOUBLE ARMING, 5/8" x REQUIRED LENGTH

2 C10 FRAMING
 E15 SCALE: NTS

MATERIAL LIST		
Item	QTY	DESCRIPTION
c	1	BOLT, MACHINE, 3/4" X REQ'D LENGTH
d	1	WASHER, 4" SQUARE, STEEL, 3/8 THICK, CURVED, 13/16" HOLE
ek	1	LOCKNUTS, 3/4"
j	1	SCREW, LAG 1/2" x 4"
p	-	CONNECTORS, COMPRESSION, AS REQUIRED
u	2	DEADEND, PREFORMED, GUY
v	1	GUY ATTACHMENT, 20,000 LBS.
y	-	GUY STRAND, 3/8", GALVANIZED STEEL STRAND, EHS, AS REQ'D
al	-	COPPER CLAD STAPLES, AS REQUIRED
av	-	JUMPERS, GROUNDING, AS REQUIRED, #6 BARE SOLID COPPER
at	1	GUY MARKER, 96", 2" DIA. (YELLOW, ORANGE, OR YELLOW & ORANGE)
ck	1	CLAMP, ANCHOR ROD, BONDING

3 E1-3
 E15 SCALE: NTS

MATERIAL LIST		
No.	Qty.	DESCRIPTION
d	1	WASHER, 4" SQUARE, CURVED, 3/8" THICK, WITH 13/16" HOLE
u	2	DEADEND GRIP, PRE-FORMED
y	-	GUY WIRE, 7 STRAND, 3/8", GALVANIZED STEEL, EHS, AS REQ'D
ob	1	NUT, THIMBLE TYPE EYE, 3/4"
oo	1	BOLT, THIMBLEYE, 3/4" x REQUIRED LENGTH
av	1	JUMPERS, GROUNDING, AS REQUIRED, #6 BARE SOLID COPPER
p	-	CONNECTORS, COMPRESSION, AS REQUIRED
ek	-	LOCKNUTS, 3/4", AS REQUIRED

4 E2-3
 E15 SCALE: NTS

SHEET NOTES:
 1. SEE SHEET E1 FOR GENERAL NOTES.

ISSUED FOR CONSTRUCTION



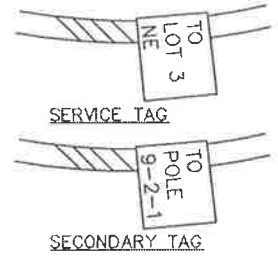
AKIAK, ALASKA
 RURAL POWER SYSTEM UPGRADE
 ELECTRICAL DISTRIBUTION
 DETAILS

NO.	REVISION	DATE
0	ISSUED FOR CONSTRUCTION	2-18-15

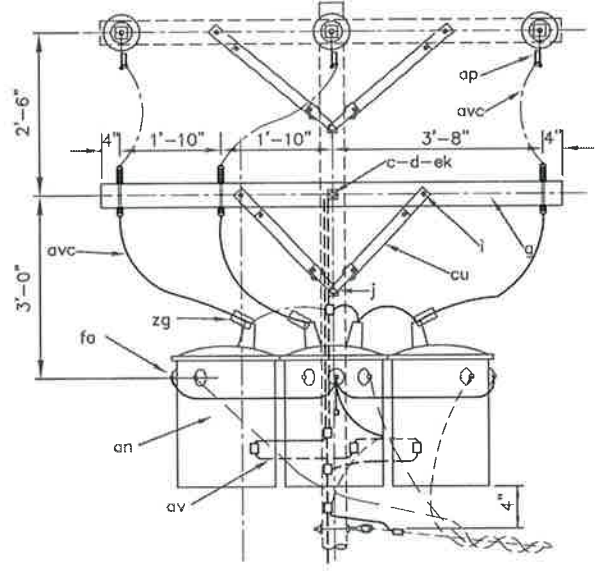
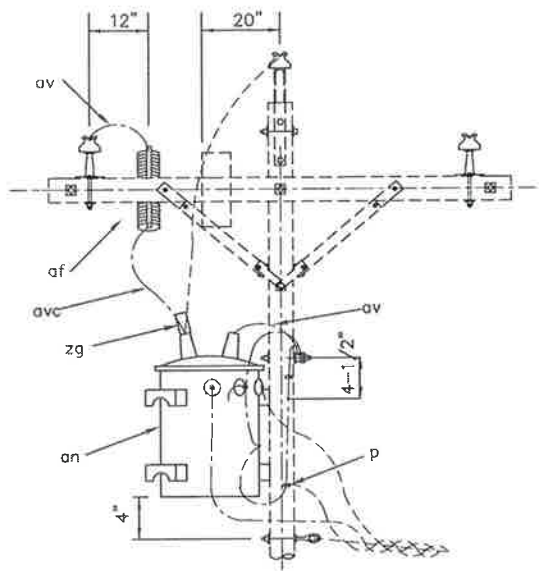
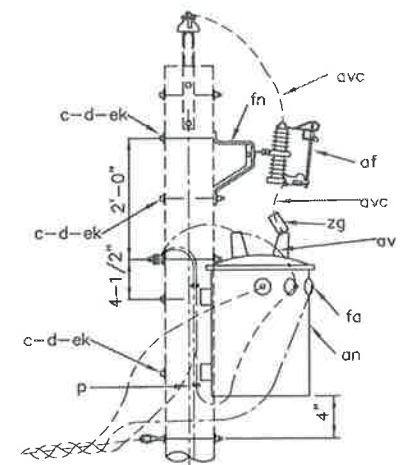
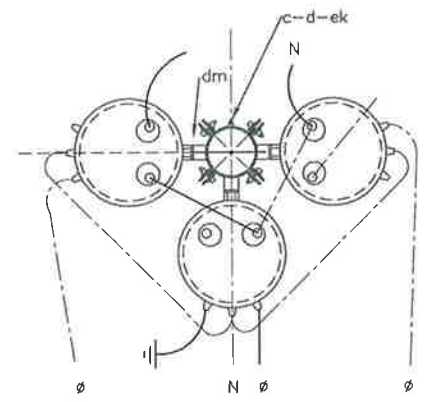
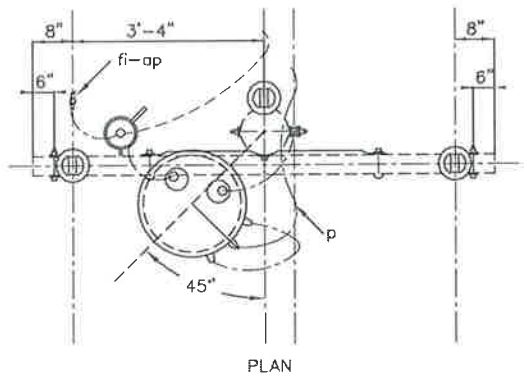
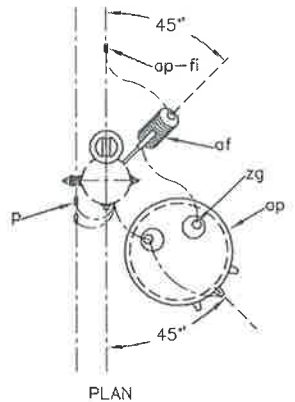
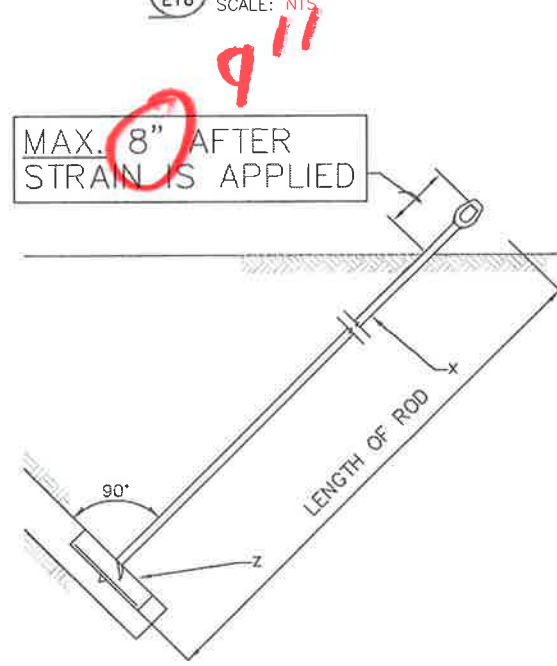
Plot Date	2/18/15	Designed	GME	Drawn	MME	Approved
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CABLE TAGGING NOTES:

- TAG ALL CABLES AT RISERS AND IN PEDESTALS.
- TAG EVERY CABLE (INCLUDING NEUTRALS) AT RISERS AND IN PEDESTALS WITH A YELLOW PLASTIC COATED CLOTH TAGS.
- ATTACH TAGS AT RISERS 6" ABOVE TOP OF RISER. ATTACH TAGS IN PEDESTALS 8" TO 12" BELOW TERMINAL BLOCK.
- ALL TAGS SHALL BE SECURELY TAPED TO THE CONDUCTOR WITH 3M #37 OR #88 VINYL ELECTRICAL TAPE.
- THE DESTINATION (LOCATION OF OTHER END) OF THE CIRCUIT SHALL BE PRINTED LEGIBLY ON EACH TAG WITH A PERMANENT BLACK MARKER.
- FOR PARALLEL CIRCUITS MARK THE TAGS AS BELOW:
 PHASE A: A1, A2...An
 PHASE B: B1, B2...Bn
 PHASE C: C1, C2...Cn
 NEUTRAL: N1, N2...Nn



5 TAGGING
E16 SCALE: NTS



MATERIAL LIST		
NO.	Qty.	DESCRIPTION
af	1	CUTOUT, NON-LOAD BREAK, W/ FUSE
an	1	TRANSFORMER, CONVENTIONAL
ap	1	CLAMP, HOT LINE
avc	-	JUMPER, COVERED, #6 CU XHHW, LENGTH AS REQ'D
av	-	GROUND WIRE, #6 AWG BaCuSol, LENGTH AS REQ'D
c	2	BOLT, MACHINE, 5/8" X REQ'D LENGTH
e	2	BOLT, MACHINE, 3/4" X REQ'D LENGTH
d	2	WASHER, 2-1/4" SQUARE, 11/16" HOLE
d	2	WASHER, 2-1/4" SQUARE, 13/16" HOLE
ek	-	LOCKNUT, AS REQ'D
fa	3	CONNECTOR BLOCK, TRANSFORMER, 8-POSITION
fi	1	STIRRUP, FORGED
fn	1	BRACKET, CUTOUT SUPPORT
p	-	CONNECTORS, COMPRESSION TYPE, AS REQ'D
zq	1	ANIMAL GUARD

MATERIAL LIST		
NO.	Qty.	DESCRIPTION
af	1	CUTOUT, NON-LOAD BREAK, W/ FUSE & NEMA BRACKET
an	1	TRANSFORMER
ap	1	CLAMP, HOTLINE
avc	-	JUMPER, COVERED, #6 CU XHHW, LENGTH AS REQ'D
av	-	GROUND WIRE, #6 AWG BaCuSol, LENGTH AS REQ'D
bb	2	LUG, GROUNDING, TANK
c	2	BOLT, MACHINE, 3/4" X REQ'D LENGTH
d	2	WASHER, 2-1/4" SQUARE WITH 13/16" HOLE
ek	2	LOCKNUT, 3/4"
fi	1	STIRRUP, FORGED
p	-	CONNECTOR, COMPRESSION, AS REQUIRED
	3	CONNECTOR BLOCK, TRANSFORMER, 8-POSITION
zq	1	ANIMAL GUARD

MATERIAL LIST		
NO.	Qty.	DESCRIPTION
af	3	CUTOUT, NON-LOAD BREAK
an	3	TRANSFORMER, CONVENTIONAL
ap	3	CLAMP, HOT LINE
av	-	JUMPERS, STRANDED, AS REQ'D
avc	-	JUMPER, COVERED, #6 CU XHHW, LENGTH AS REQ'D
av	-	GROUND WIRE, #6 AWG BaCuSol, LENGTH AS REQ'D
c	2	BOLT, MACHINE, 3/4" X REQ'D LENGTH
e	1	BOLT, MACHINE, 5/8" X REQ'D LENGTH
cu	2	BRACE, WOOD, 28"
d	2	WASHER, 2-1/4" SQUARE, 11/16" HOLE
d	2	WASHER, 2-1/4" SQUARE, 13/16" HOLE
dm	1	BRACKET, TRANSFORMER CLUSTER MOUNT
ek	-	LOCKNUTS, AS REQ'D
fa	6	CONNECTOR BLOCKS, TRANSFORMER, 8-POSITION
fi	3	STIRRUP, FORGED
g	1	CROSSARM, 3-5/8" x 4-5/8" x 8'
i	2	BOLT, CARRIAGE, 3/8" x 4-1/2"
j	1	SCREW, LAG, 1/2" X 4-1/2"
p	-	CONNECTOR, COMPRESSION, AS REQ'D
	3	LUG, GROUNDING, TANK
zq	3	ANIMAL GUARD

1 F1-4P
E16 SCALE: NTS

2 G105
E16 SCALE: NTS

3 G136
E16 SCALE: NTS

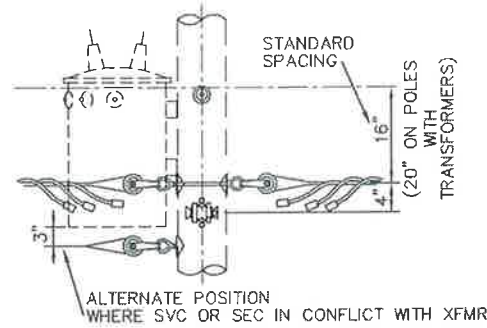
4 G312
E16 SCALE: NTS

SHEET NOTES:
1. SEE SHEET E1 FOR GENERAL NOTES. ISSUED FOR CONSTRUCTION

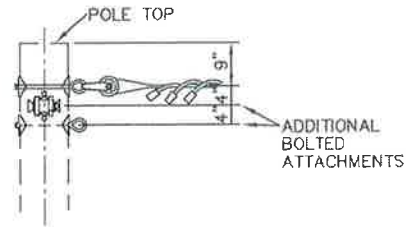
NO.	REVISION	DATE
0	ISSUED FOR CONSTRUCTION	2-18-15

Plot Date	2/18/15
Designed	CME
Drawn	MME
Approved	

Sheet No.	E16
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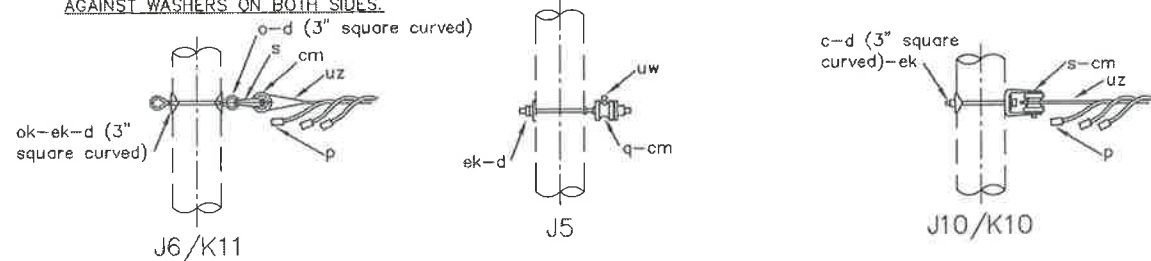


J6/K11, J5, J10/K10 AT PRIMARY POLE

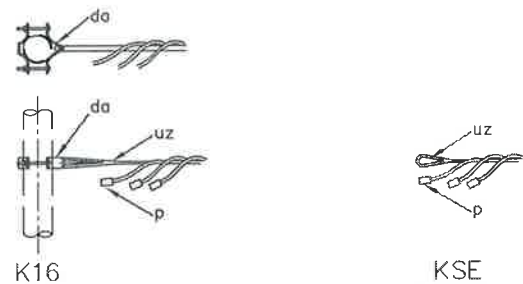


J6/K11, J5, J10/K10 AT SECONDARY POLE

EYEBOLTS TO BE TIGHTENED AGAINST WASHERS ON BOTH SIDES.

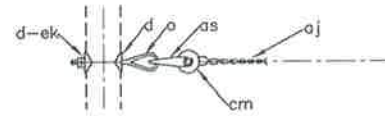


MINIMIZE DRIP LOOPS:
FOR HORIZONTAL TRANSITIONS, DRIP LOOP CONDUCTORS SHALL NOT EXTEND MORE THAN 4" BELOW LOWER ATTACHMENT BOLT.
FOR TRANSITIONS TO TRANSFORMER BUSHINGS, CONDUCTORS SHALL NOT EXTEND MORE THAN 4" BELOW ATTACHMENT BOLT.



MATERIAL LIST						
NO.	J6 or K11	J5	J10 or K10	K16	KSE	DESCRIPTION
c			1			BOLT, MACHINE, 5/8" X REQ'D LENGTH
o	1					BOLT, OVALEYE, 5/8" X REQ'D LENGTH
cm	1	1	1			INSULATOR, SPOOL, 3", VICTOR #V12612, OR EQUAL
d		1				WASHER, 2-1/4" SQUARE, 11/16" HOLE
da	2		1			WASHER, 3" SQUARE, CURVED, 11/16" HOLE
da				1		BRACKET, SERVICE MAST, MACLEAN #J0590 OR EQUAL
ek	1	1	1			LOCKNUTS, 5/8"
ok	1					NUT, OVALEYE, 5/8", AS REQ'D
p	3		3	3	3	CONNECTORS, COMPRESSION, (3) H-TAP WITH (2) COVERS OR (2) INSULATED SVC SPLICES AND (1) BARE SVC SPLICE
q		1				BOLT, 5/8" DOUBLE UPSET
s			1			CLEVIS, RIGID, MACLEAN #J1300, OR EQUAL
s	1					CLEVIS, SWINGING, MACLEAN #J0322, OR EQUAL
uz	1		1	1	1	GRIP, SERVICE, DEAD-END, SIZE AS REQ'D FOR #4 TRIPLEX: PREFORMED #SG-4502 FOR #2 TRIPLEX: PREFORMED #SG-4504 FOR 1/0 TRIPLEX: PREFORMED #SG-4506 FOR 4/0 TRIPLEX: PREFORMED #SG-4509
uw		1				TIE, SPOOL FOR #2 TRIPLEX: PREFORMED #SPL-1354-P FOR 1/0 TRIPLEX: PREFORMED #SPL-1355-P

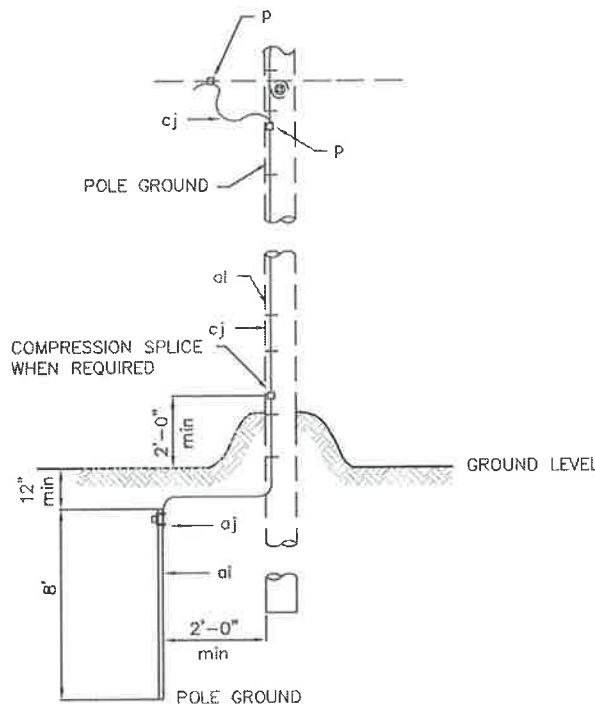
- 1 J6/K11 SCALE: NTS
- 2 J5 SCALE: NTS
- 3 J10/K10 SCALE: NTS
- 4 K16 SCALE: NTS
- 5 KSE SCALE: NTS



NOTE:
1. THIS ASSEMBLY USES 3" SQUARE CURVED WASHERS (2 REQUIRED).
2. EYE-BOLT TO BE TIGHTENED AGAINST WASHERS ON BOTH SIDES OF BOLT.

MATERIAL LIST		
NO.	Qty.	DESCRIPTION
as	1	CLEVIS, NEUTRAL, SWINGING
d	2	WASHER, SQUARE CURVED, 3", 11/16" HOLE
ek	1	LOCKNUT
o	1	BOLT, EYE, 5/8" X AS REQUIRED
cm	1	INSULATOR, SPOOL, 3", ANSI 53-2
aj	1	DEADEND, NEUTRAL, PREFORMED

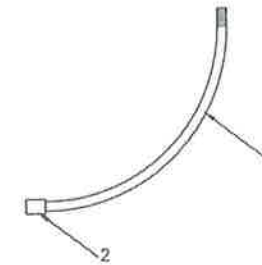
8 N6 SCALE: NTS



NOTES:
1. POLE GROUND WIRE TO BE LOCATED ON SAME SIDE AS NEUTRAL CONDUCTOR AND IN QUADRANT OPPOSITE CLIMBING SPACE AND ON SIDE OF RISER.
2. STAPLES ON GROUND WIRES SHALL BE 2'-0" APART, EXCEPT FOR A DISTANCE OF 8'-0" ABOVE GROUND AND 8'-0" FROM TOP OF POLE, WHERE THEY SHALL BE 6" APART.
3. GROUND WIRE TO CLEAR ALL HARDWARE BY 2" MINIMUM, AND SHALL BE STAPLED TO MAINTAIN THIS POSITION.

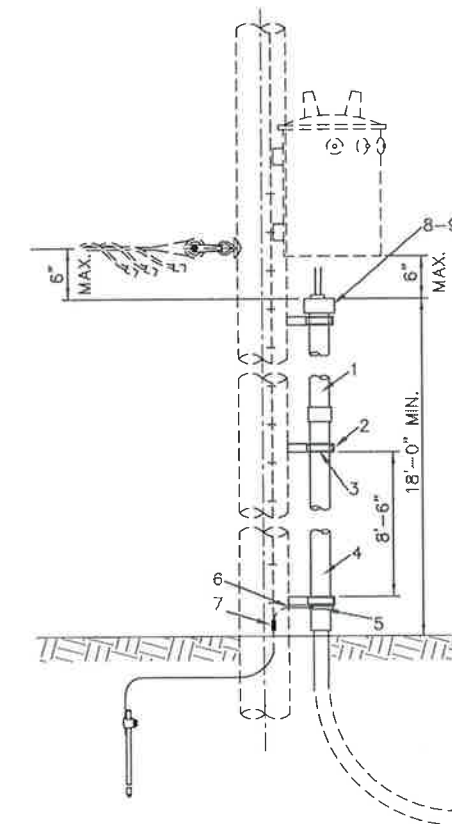
MATERIAL LIST		
Item	NO.	DESCRIPTION
p	as req'd	CONNECTOR, COMPRESSION
ai	1	ROD, GROUND, COPPER-CLAD STEEL, 5/8" MIN. X 8'
aj	1	GROUND ROD CLAMP
ai	AS REQ'D	STAPLES, COPPER CLAD
cj	AS REQ'D	GROUND WIRE, #6 BARE SOLID COPPER
av	AS REQ'D	JUMPER, COPPER

6 M2-11 SCALE: NTS



MATERIAL LIST		
No.	Qty.	DESCRIPTION
1	1	ELBOW, CONDUIT, RGS, 2", 36" RADIUS
2	1	SPLICE, 2" CONDUIT, RIGID TO HDPE, DURALINE, SHUR-LOCK II, COUPLER, 20000123

9 RSC2LS SCALE: NTS



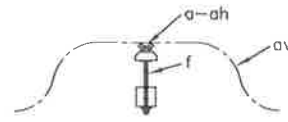
NOTES:
1. DRIP LOOPS SHALL NOT EXTEND BELOW TOP OF RISER.

MATERIAL LIST		
No.	Qty.	DESCRIPTION
1	-	PIPE, PVC, 2" SCHEDULE 40, AS REQUIRED
2	-	BRACKET, STAND-OFF, 12", AS REQUIRED
3	-	CLAMP, PIPE, 2" HDG, AS REQUIRED
4	1	PIPE, RGS, 2", 10' LENGTH
5	1	CLAMP, 2" GROUNDING
6	-	WIRE, #6 BARE STRANDED COPPER, AS REQUIRED
7	-	CONNECTOR, C-CRIMP, AS REQUIRED
8	1	CONDUIT, BELL END, 2", PVC
9	-	DUCT SEAL

7 UM5/2: SECONDARY RISER SCALE: NTS

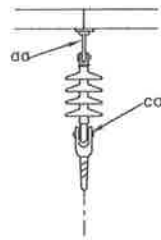
SHEET NOTES:
1. SEE SHEET E1 FOR GENERAL NOTES.

ISSUED FOR CONSTRUCTION



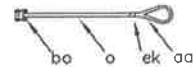
MATERIAL LIST		
NO.	Qty.	DESCRIPTION
a	1	INSULATOR, PIN TYPE, ANSI 55-4
f	1	PIN, CROSSARM, STEEL, 5/8" x 10-3/4"
ah	-	TIE WIRE, ALUMINUM, #4, SOLID
av	-	JUMPER, PRIMARY CONDUCTOR, AS REQ'D

8 M5-5: CROSSARM PIN
E18 SCALE: NTS



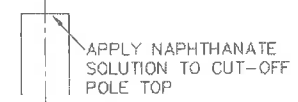
MATERIAL LIST		
NO.	Qty.	DESCRIPTION
aa	1	NUT, EYE, 5/8"
k	1	INSULATOR, SUSP., 15kV EPOXILATOR, 10,000 LBS
ca	1	DEADEND, CURVED, BOLTED OR AUTOMATIC

9 M5-20: EPOXILATOR, ASSEMBLY
E18 SCALE: NTS



MATERIAL LIST		
NO.	Qty.	DESCRIPTION
aa	1	NUT, EYE, 5/8"
bo	1	SHACKLE, ANCHOR
ek	1	LOCKNUT, 5/8"
o	1	BOLT, EYE, 5/8" x 18"

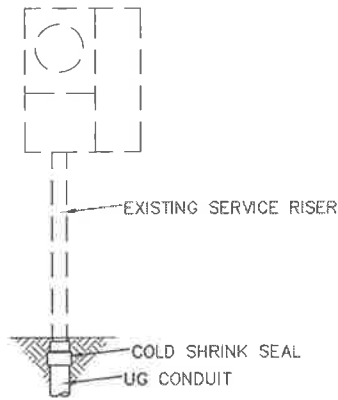
10 M5-21: LINK-OUT
E18 SCALE: NTS



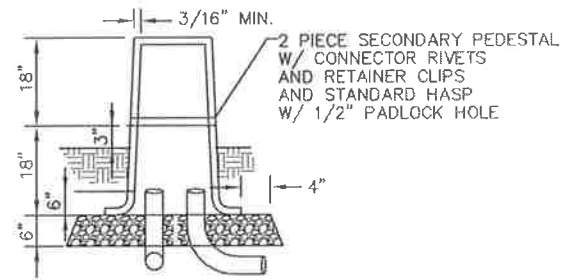
MATERIAL LIST		
Item	NO.	DESCRIPTION
z	-	NAPHTHANATE SOLUTION, AS REQUIRED

11 TOP POLE
E18 SCALE: NTS

SHEET NOTES:
1. SEE SHEET E1 FOR GENERAL NOTES.

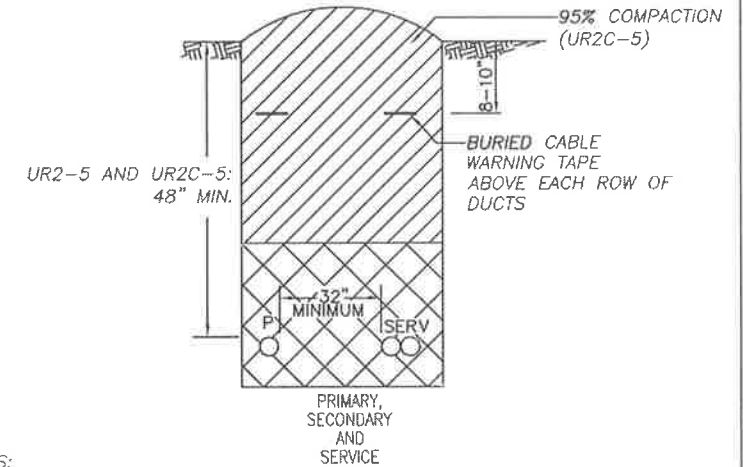


5 UG-SERVICE RISER TRANSITION
E18 SCALE: NTS



MATERIAL LIST		
Item	Qty.	DESCRIPTION
Ugu-1	1	PEDESTAL, NORDIC FIBERGLASS PSP-91336-MG OR APPROVED EQUAL
Ugp	3	8 POSITION, INSULATED CONNECTOR BLOCK
Uhw	1	ONE-TIME LOCK
Uaz	1	WARNING LABEL STICKER
Uaz	1	"LETTERS", "NUMBERS", 3" HIGH, REFLECTIVE YELLOW ON BLACK BACKGROUND

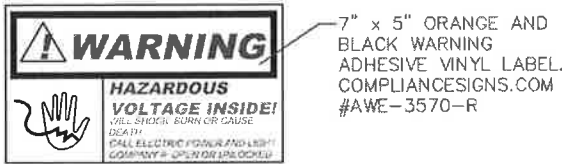
6 UK5: SECONDARY PEDESTAL
E18 SCALE: NTS



NOTES:
1. DEPTHS SPECIFIED ARE TO FINISHED GRADE.
2. BACKFILLING IS PART OF ALL TRENCHING UNITS. ALL BACKFILL WITHIN 12" OF CABLE OR CONDUIT SHALL BE FREE OF LARGE ROCKS AND FROZEN MATERIAL WHICH MAY CAUSE DAMAGE TO THE INSTALLED CONDUIT.
UR2C-5: COMPACT BACKFILL IN 6"-8" LIFTS, TO 95% COMPACTION.

LEGEND
 STONE FREE BACKFILL, SAND BED NOT REQUIRED
 BACKFILL, COMPACTED AT UR2-48C
 UNDISTURBED EARTH

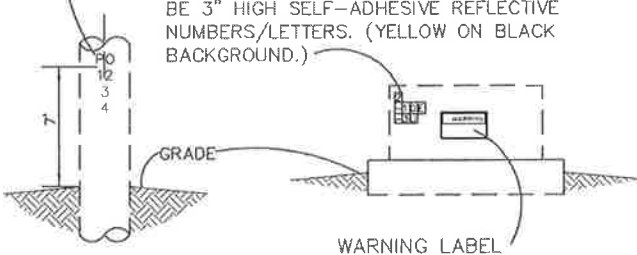
7 UR2-5/UR2C-5: TRENCH DETAIL
E18 SCALE: NTS



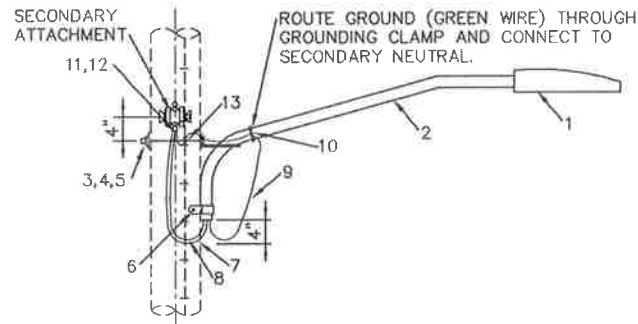
MOUNT OUTSIDE EQUIPMENT ENCLOSURE

POLE NUMBERS AND LETTERS, AS REQUIRED. NUMBERS AND LETTERS SHALL BE 3" HIGH AND MADE OF CUTOUT ALUMINUM AND FASTENED TO POLE WITH 1" ALUMINUM OR GALVANIZED STEEL NAILS. POLE NUMBERS TO FACE ROAD OR ACCESS TRAIL.

ON PAD MOUNTED EQUIPMENT AND PEDESTALS, NUMBERS AND LETTERS SHALL BE 3" HIGH SELF-ADHESIVE REFLECTIVE NUMBERS/LETTERS. (YELLOW ON BLACK BACKGROUND.)

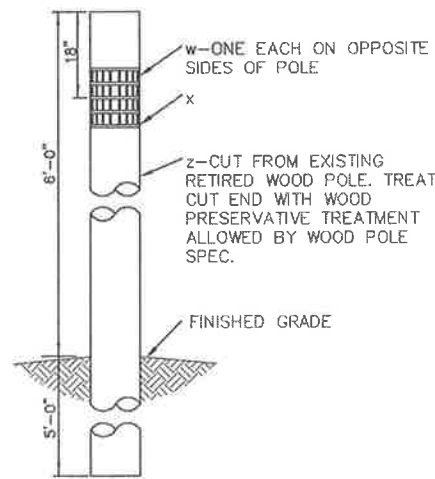


1 M52-3: NUMBERS AND LABELS
E18 SCALE: NTS



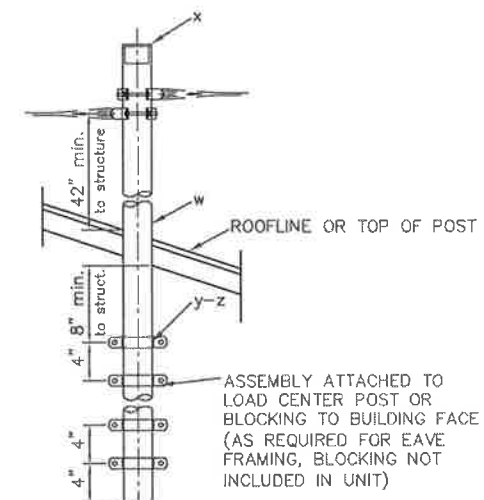
MATERIAL LIST		
Item	NO.	DESCRIPTION
1	1	LUMINAIRE, LED, AS SCHEDULED, OR EQUAL
2	1	BRACKET, WOOD POLE MOUNTING, AS SCHEDULED, OR EQUAL
3	1	BOLT, MACHINE, 5/8" x REQUIRED LENGTH
4	1	WASHER, 2-1/4" SQUARE, 11/16" HOLE
5	1	NUT, LOCK, 5/8"
6	2	SCREW, LAG 1/2" x 4"
7	-	WIRE, #10 CU, 7-STRAND, XHHW, BLACK
8	-	WIRE, #10 CU, 7-STRAND, XHHW, WHITE
9	-	WIRE, #10 CU, 7-STRAND, XHHW, GREEN
10	1	CLAMP, PIPE, GROUNDING, 2"
11	3	CONNECTOR, H-TAP, COMPRESSION, BLACKBURN #WR139, OR EQ.
12	1	COVER, SECONDARY
13	0-1	CONNECTOR, "C" CRIMP, COPPER

2 M26-5: STREET LIGHT ATTACHMENT
E18 SCALE: NTS



MATERIAL LIST		
Item	NO.	DESCRIPTION
w	2	REFLECTOR GRID, ALMETEK, #6001123, GRID-WHITE, 8"x12"
x	16	NAILS, 1" ALUMINUM
y	1	BOLLARD, WOOD, TREATED (REUSED POLE)
z	-	NAPHTHANATE SOLUTION, AS REQUIRED

3 GUARD POST: WOOD POLE BOLLARD
E18 SCALE: NTS

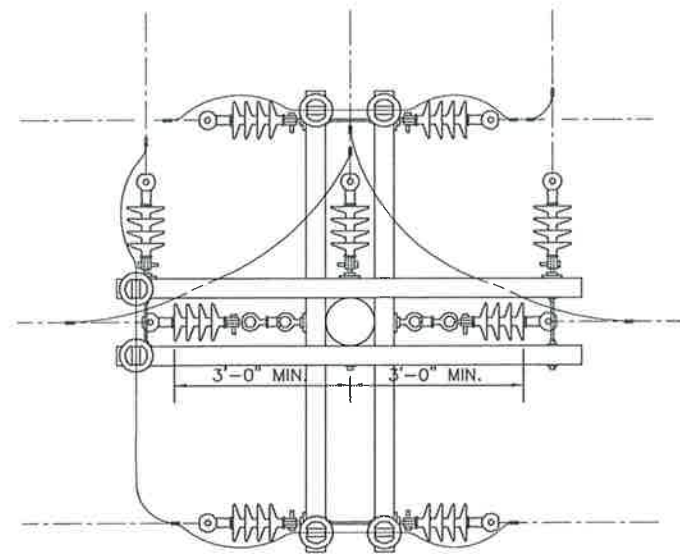


MATERIAL LIST		
Item	NO.	DESCRIPTION
w	1	PIPE, 2", RIGID GALVANIZED STEEL, SCH. 40 x 10'-0" LONG
x	1	POST CAP, ALUMINUM, 2-3/8" DIA.
y	4	CLAMP, PIPE, 2-HOLE, HOT DIPPED GALVANIZED, 7/16" HOLE
z	8	SCREW, LAG, GIMLET, 3/8", 2-1/2", HEX HEAD

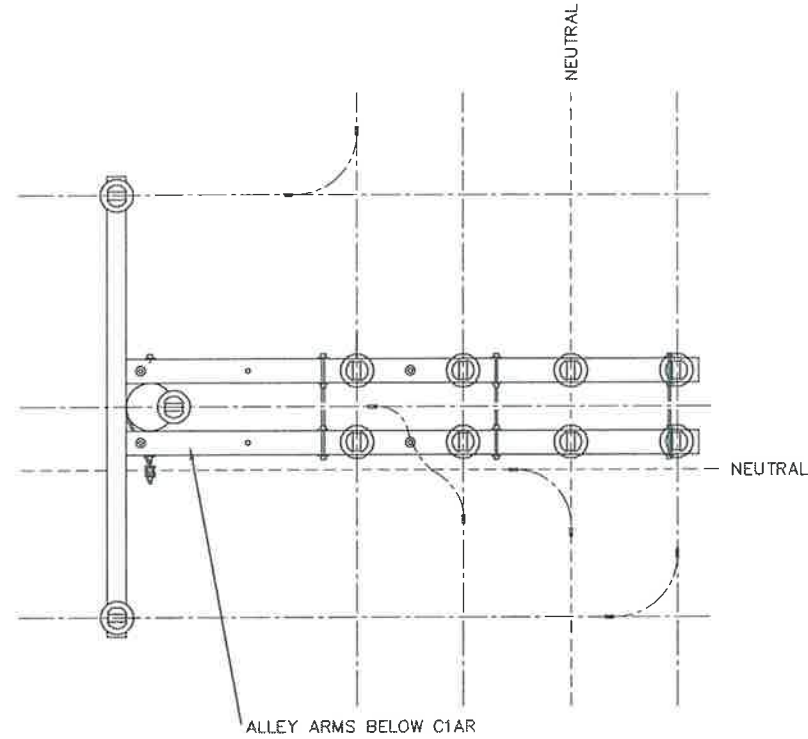
4 INTERMEDIATE MAST
E18 SCALE: NTS

NO.	REVISION	DATE
0	ISSUED FOR CONSTRUCTION	2-18-15

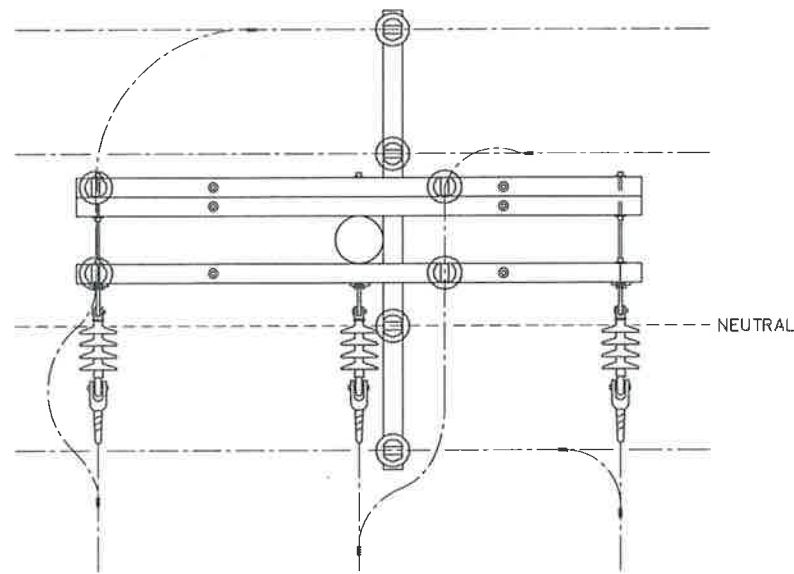
Plot Date	2/18/15	Designed	GME	Drawn	MME	Approved	
Sheet No.	E18						
SHEET	OF						



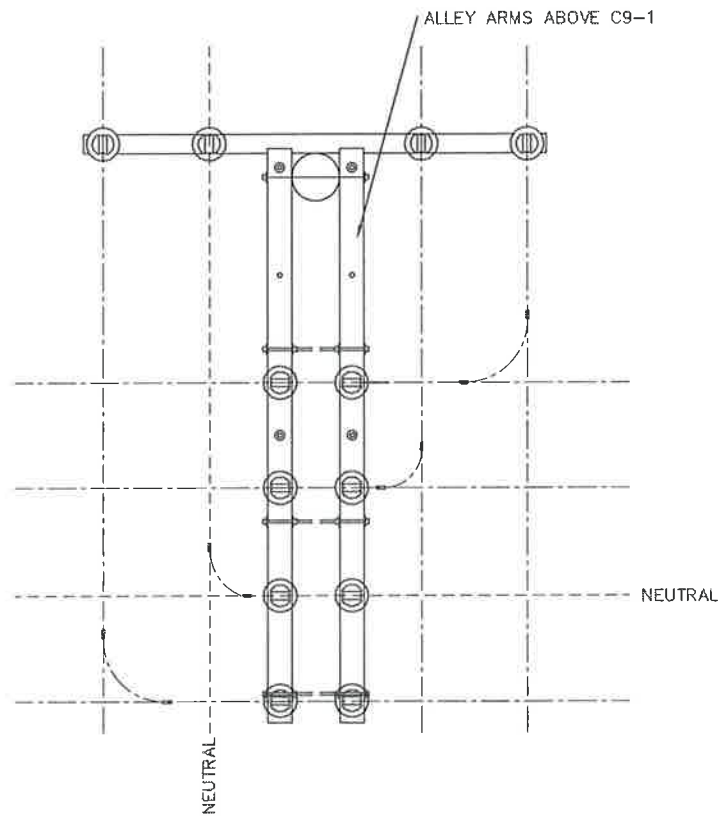
1 POLE 3 JUMPERING DETAIL
E19 SCALE: NTS



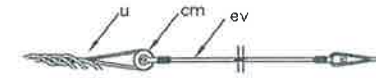
2 POLE 9 JUMPERING DETAIL
E19 SCALE: NTS



3 POLE 13 JUMPERING DETAIL
E19 SCALE: NTS

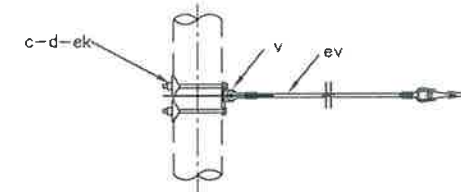


4 POLE 15 JUMPERING DETAIL
E19 SCALE: NTS



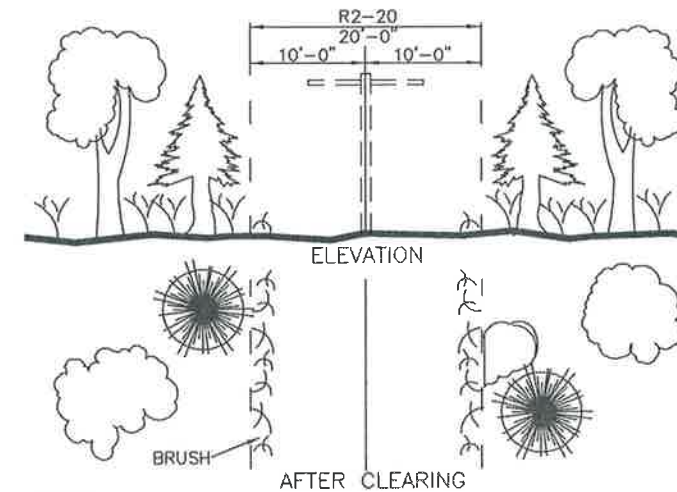
MATERIAL LIST		
NO.	Qty.	DESCRIPTION
ev	1	INSULATOR, GUY STRAIN, CLEVIS/THIMBLE-EYE, 96", 21,000 LBS.
cm	1	ROLLER, GUY STRAIN, 2"
u	2	DEADEND, PREFORMED, GUY

7 M5-23: GUY STRAIN INSULATOR
E19 SCALE: NTS



MATERIAL LIST		
NO.	Qty.	DESCRIPTION
ev	1	INSULATOR, GUY STRAIN, CLEVIS/THIMBLE-EYE, 96", 21,000 LBS.
v	1	POLE EYE PLATE, 20,000 LBS.
c	2	BOLT, MACHINE, 3/4" x REQUIRED LENGTH
d	2	WASHER, STEEL, 4" SQUARE, CURVED, 13/16" HOLE
ek	2	LOCKNUT, 3/4"

6 M5-23P: GUY STRAIN INSULATOR WITH POLE PLATE
E19 SCALE: NTS



NOTES:
 1. REMOVE ALL OF THE TREES, BRUSH, STUMPS, ROOTS AND ALL OTHER UNDERGROWTH, EITHER DEAD OR ALIVE, FROM THE DESIGNATED WIDTH OF THE RIGHT-OF-WAY.
 2. ALL TREES AND BRUSH WILL BE NEATLY STACKED ALONG EDGE OF THE CLEARING
 3. THIS IS A 20' WIDE CLEARING UNIT (10' ON EACH SIDE OF CL).

5 R2-20: CLEARING
E19 SCALE: NTS

SHEET NOTES:
 1. SEE SHEET E1 FOR GENERAL NOTES.

ISSUED FOR CONSTRUCTION

NO.	REVISION	DATE
0	ISSUED FOR CONSTRUCTION	2-18-15

Plot Date	2/18/15
Designed	GME
Drawn	MME
Approved	

Sheet No.	E19
SHEET	OF