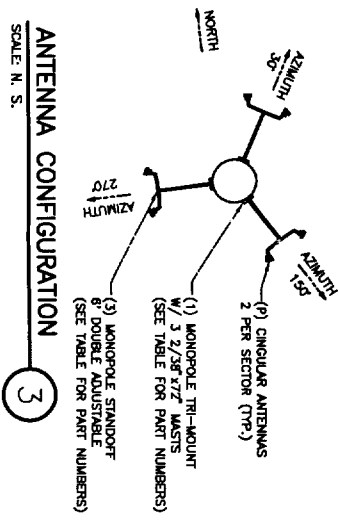
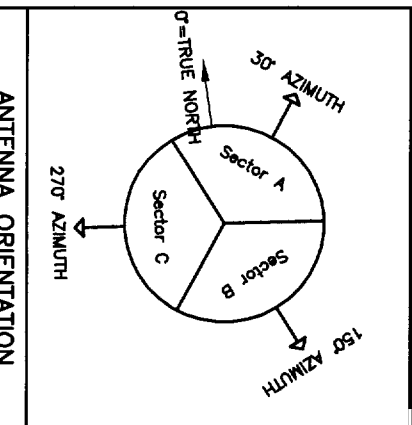


COMPOUND LAYOUT
SCALE 1/8" = 1'-0"
1



ANTENNA CONFIGURATION
SCALE N. S.
3

| PART | WALDMONT P.N. | ANDREW P.N. |
|-------|---------------|-------------|
| 1\"/> | | |



ANTENNA ORIENTATION

FOR CONSTRUCTION

xingular™
WIRELESS

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DRAWN BY: PT
CHECKED BY: KB
CAD FILE: 5306-A1.DWG

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| 1 | 10/17/08 | ISSUED FOR REVIEW |

ME SEA

Andrew P. Nadeau

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SHEET TITLE
COMPOUND LAYOUT & ELEVATION
SHEET NUMBER
A-1

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SHEET TITLE
**ANTENNA SCHEMATIC
BILL OF MATERIALS**

SHEET NUMBER
E-1

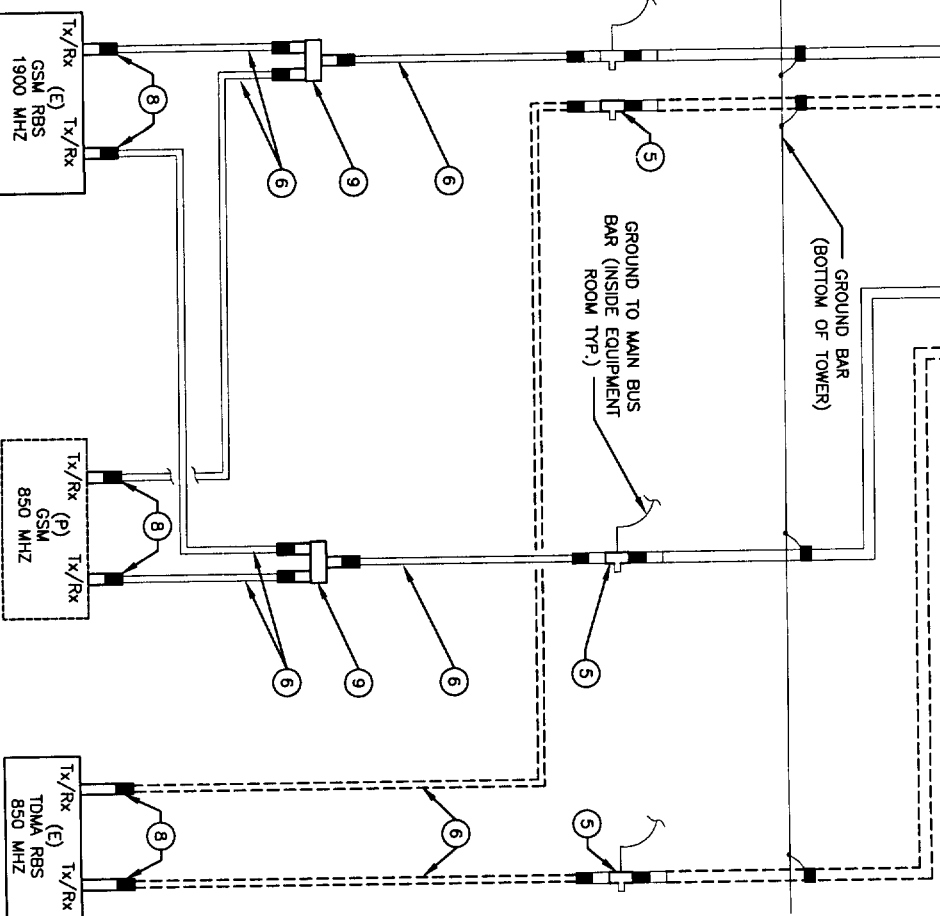
FOR CONSTRUCTION

| ITEM NO. | ITEM DESCRIPTION | ALPHA SECTOR - A AZIMUTH 30° | | ALPHA SECTOR - B AZIMUTH 150° | | ALPHA SECTOR - C AZIMUTH 270° | | TOTAL QUANTITY | SUPPLIED BY |
|----------|--|---------------------------------|---------------------|----------------------------------|---------------------|----------------------------------|---------------------|----------------|-------------|
| | | Tx/Rx | Tx/Rx | Tx/Rx | Tx/Rx | Tx/Rx | Tx/Rx | | |
| 1 | ANTENNA | 7740 | 7740 | 7740 | 7740 | 7740 | 7740 | 6 | BECHTEL |
| 2A | ANTENNA JUMPER LAA-PDMD-3 (ANDREW) | 1 USE EXISTING | 1 USE EXISTING | 1 USE EXISTING | 1 USE EXISTING | 1 USE EXISTING | 1 USE EXISTING | 6 | BECHTEL |
| 3 | TMA KRY-112-71/2 | --- | --- | --- | --- | --- | --- | --- | BECHTEL |
| 4 | MAIN COAX 1 5/8" | 190 FT USE EXISTING | 190 FT USE EXISTING | 190 FT USE EXISTING | 190 FT USE EXISTING | 190 FT USE EXISTING | 190 FT USE EXISTING | 1140 FT | BECHTEL |
| 5 | COAX SURGE ARRESTOR (ANDREW) (SEE NOTES 1 & 2) | 1 USE EXISTING | 1 USE EXISTING | 1 USE EXISTING | 1 USE EXISTING | 1 USE EXISTING | 1 USE EXISTING | 6 | BECHTEL |
| 6 | JUMPER FSJA-S08 (ANDREW) (SEE NOTES 3, 4, 5 & 6) | 3 USE EXISTING | 3 USE EXISTING | 3 USE EXISTING | 3 USE EXISTING | 3 USE EXISTING | 3 USE EXISTING | 18 | BECHTEL |
| 7 | ANTENNA SHARING KIT (ERICSSON) (SEE NOTE 7) | --- | --- | --- | --- | --- | --- | --- | BECHTEL |
| 8 | UNATTACHED DIN CONNECTOR F4PDW2-C (ANDREW) | 2 USE EXISTING | 2 USE EXISTING | 2 USE EXISTING | 2 USE EXISTING | 2 USE EXISTING | 2 USE EXISTING | 12 | BECHTEL |
| 9 | DIPLEXER AFDM1A8020-13 (SEE NOTES 4, 5 & 6) | 1 ALPHA (A1) | 1 ALPHA (A2) | 1 ALPHA (A1) | 1 ALPHA (A2) | 1 ALPHA (A1) | 1 ALPHA (A2) | 6 | BECHTEL |
| | COLOR CODE | SEE NOTES 4, 5 & 6 | | SEE NOTES 4, 5 & 6 | | SEE NOTES 4, 5 & 6 | | AS REQUIRED | G.C. |

NOTES:

- EXISTING SURGE ARRESTORS MUST PASS 25 VOLT DC TEST. IF IT FAILS THE TEST, THEN REMOVE AND DO NOT REPLACE SURGE ARRESTOR.
- CABLE SHIELDS, AND TOWER CONDUITS SHALL BE GROUNDED AT THE TOP OF THE TOWER, WITHIN 10 FEET OF THEIR CONNECTORS, AND AT THE BOTTOM OF THE TOWER ABOUT 6 INCHES BEFORE THEY TURN TOWARD THE FACILITY. THEY SHALL BE GROUNDED AT THE MIDDLE POINT OF TOWERS THAT ARE BETWEEN 150 FEET AND 300 FEET HIGH, AND AT INTERVALS OF 150 FEET OR LESS ON TOWERS THAT ARE HIGHER THAN 300 FEET.
- SUBCONTRACTOR SHALL VERIFY THE REQUIRED LENGTH IN FIELD BEFORE CUTTING THE JUMPER AND ATTACHING THE UNATTACHED CONNECTORS.
- FOLLOW THE EXISTING SCHEME FOR COLOR CODING AND CABLE TAGGING NEW
JUMPERS WHEN ALL OF THE FOLLOWING CONDITIONS ARE MET:
- EXISTING ANTENNAS AND/OR TOP JUMPERS ARE NOT MODIFIED OR REPLACED
- NO WORK OF ANY KIND IS PERFORMED AT OR NEAR THE ANTENNA END(S) OF EXISTING MAIN FEEDLINE(S)
- NO WORK IS PERFORMED ON EXISTING MAIN FEEDLINE COMPONENTS SUCH AS CONNECTORS, GROUND KITS, CABLE SUPPORTS, WEATHERPROOFING, ETC.
- GROUND KITS, CABLE SUPPORTS, WEATHERPROOFING, ETC
- FOLLOW STANDARD DETAIL 600 AND THE AWS DOCUMENT NO. WNS-00217, REVISION 1.2, TOWER/ANTENNA CABLE MARKING GUIDELINE FOR COLOR CODING AND TAGGING ALL (TDMA AND GSM) COAX CABLES WHEN ANY OF THE FOLLOWING CONDITIONS ARE MET:
- EXISTING ANTENNAS ARE MODIFIED OR REPLACED
- WORK OF ANY KIND IS PERFORMED AT OR NEAR THE ANTENNA END(S) OF EXISTING MAIN FEEDLINE(S),
- MAIN FEEDLINE COMPONENTS SUCH AS CONNECTORS, GROUND KITS, CABLE SUPPORTS, WEATHERPROOFING, ETC. ARE INSTALLED, MODIFIED OR REPLACED.
- COMPLETE A CABLE PORT DIAGRAM PER DETAIL 601 AND POST ONE COMPLETED COPY AND TWO BLANK COPIES OF THE DIAGRAM IN A PROTECTIVE PLASTIC SLEEVE IN THE SHELTER.
- USE THE REQUIRED LENGTH OF JUMPERS DEPENDING UPON FIELD CONDITIONS. THE END CONNECTIONS WILL BE MADE BY ERICSSON.
- WHEN MODIFYING EXISTING 2G TDMA COAXIAL CABLES AND ANTENNAS, REMOVE ALL EXISTING N TYPE CONNECTORS AND REPLACE WITH NEW 7/16 DIN STANDARD CONNECTORS.
- ANTENNA CIRCUIT SWEEP TESTING SHALL BE PERFORMED AND REPORTED IN ACCORDANCE WITH THE REQUIREMENTS OF AWS PROCEDURE DOCUMENT NO. WNS-00284, LATEST REVISION. CONTRACTOR WILL NOT ACCEPT A RADIO SIGNAL CABLE INSTALLATION WITH UNSATISFACTORY SWEEP TEST RESULTS.
- PROPOSED GSM 850 OVERLAY 1 5/8" CABLES TO BE ROUTED IN PLACE OF EXISTING 7/8" COAX CABLES FROM THE ANTENNAS DOWN THE ICE BRIDGE TO PROPOSED ERICSSON GSM CABINET.

DETAIL 505 BOS



- NOTES:**
- GSM DUPLEXER INTEGRATED INTO GSM BTS.
 - Tx2* - (GSM) ONLY WHEN APPLIES
 - ANTENNAS AS VIEWED FROM THE FRONT. SECTOR A IS SHOWN. SECTORS B&C SIMILAR.

- EXISTING TO REMAIN
- EXISTING (TO BE REMOVED)
- NEW (TO BE ADDED)
- MALE CONNECTOR
- FEMALE CONNECTOR

ANTENNA CONFIGURATION, SECTORS: A, B & C

RF BILL OF MATERIALS

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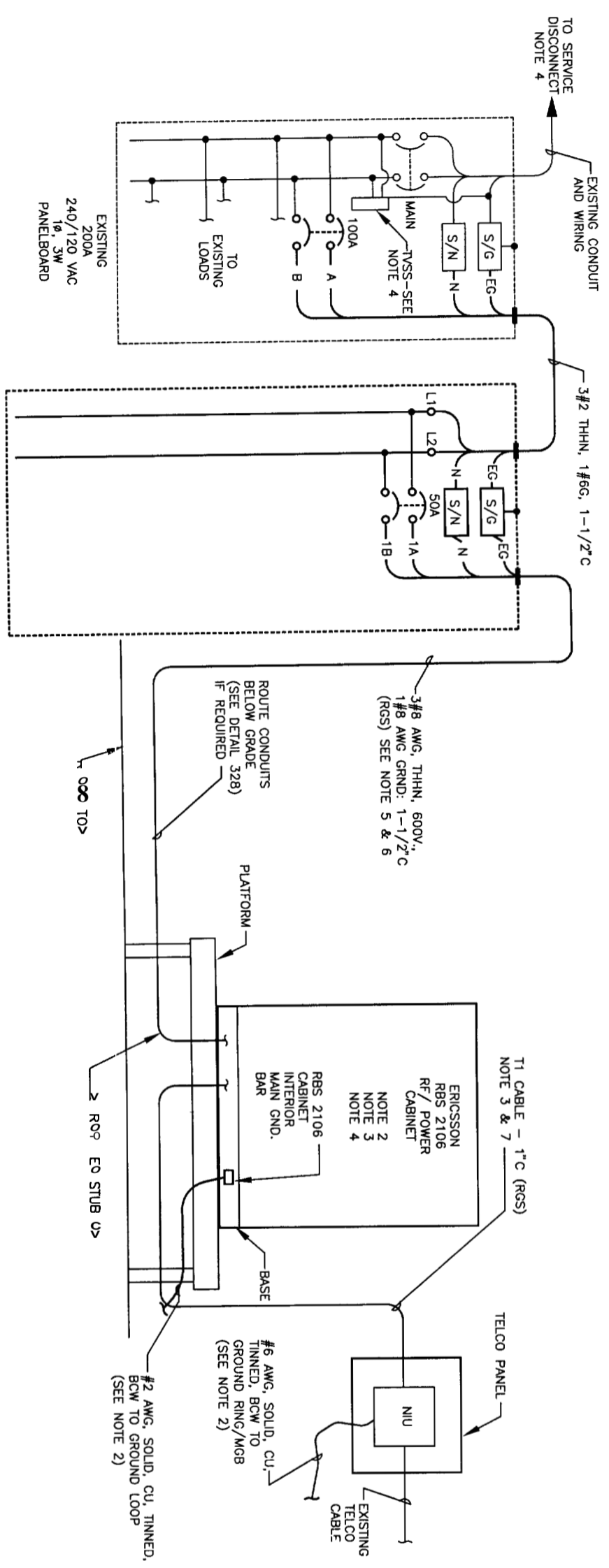
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SHEET TITLE
POWER & GROUNDING SCHEMATIC

SHEET NUMBER
E-2

FOR CONSTRUCTION

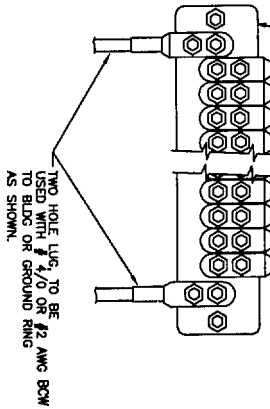
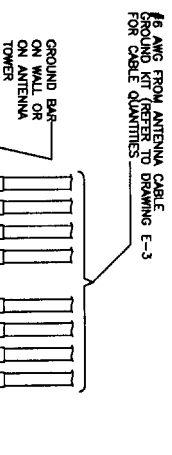


- NOTES:**
- SUBCONTRACTOR SHALL CONFIRM THE AVAILABILITY OF POWER TO SUPPORT THE NEW LOAD. THE SUBCONTRACTOR SHALL SUBMIT TO CONTRACTOR A LOAD CALCULATION SHOWING THAT THE PANEL HAS ADEQUATE CAPACITY FOR THE ADDITIONAL LOADS. ALL EXISTING LOADS ON THE PANEL SHALL BE INCLUDED IN THE ANALYSIS. ALL ELECTRICAL WORK SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NEC AND ALL LOCAL CODES. SUBCONTRACTOR SHALL PROVIDE PADLOCK ACCESSORIES ON NEW CIRCUIT BREAKER HANDLES.
- CASE #1**
THE MAIN POWER PANEL HAS SUFFICIENT CAPACITY TO ACCOMMODATE THE ADDITIONAL LOAD, BUT HAS NO SPARE BREAKERS.
- THE SUBCONTRACTOR SHALL EVALUATE THE EXISTING LOADS ON THE MAIN PANEL AND REMOVE EITHER (2) 1-P BREAKER SLOTS, OR (1) 2-P BREAKER SLOT, AND INSTALL A 2-POLE, 100-AMP, 240V BREAKER IN THE NOW OPENED UP SLOTS. FURNISH AND INSTALL A 100A, 240/120VAC, 1PH, 3W, 20-POLE PANEL BOARD (SQUARE D CLASS 1630, NOOD, OR EQUAL, WITH GQB BREAKERS) ADJACENT TO THE SPACE RESERVED FOR ERICSSON 3G, BTS EQUIPMENT. REINSTALL THE BREAKERS FROM THE DISCONNECTED LOAD IN THE SUB-PANEL AND DETERMINE THE REASSIGNED LOAD. THE FEEDER SIZE FROM THE MAIN PANEL TO THE SUB-PANEL SHOULD BE 3#2 THHN, 1#6G, 1-1/2" CONDUIT. THE BTS EQUIPMENT SHALL BE FED FROM THE SUB-PANEL.

- ROUTE #2 AWG BCW EQUIPMENT GROUND CONDUCTORS IN DUCTWORK OF ERICSSON CABINETS, CUT, COIL, AND TAPE TEN FOOT PIGTAIL FOR FUTURE CONNECTION BY ERICSSON. THE GROUND CONDUCTORS SHALL BE CONNECTED TO THE MGB BY USING TWO HOLE LUGS PER DETAIL 508A.
- SU CONTRACTOR SHALL INSTALL THE T1 TRAY PORT E BRANISHED BY ERICSSON.
- FURNISH AND INSTALL NEW IVSS DEVICE AT SERVICE DISCONNECT IN ACCORDANCE WITH DETAIL 506. IF NEEDED.
- CONTRACTOR SHALL COIL AND TAPE AN ADDITIONAL 5'-0" OF WIRING FOR CONNECTIONS TO ERICSSON EQUIPMENT.
- TOP ENTRY ONLY IF PANEL IS LIMITED INDORS OTHERWISE: BOTTOM OR SIDE ENTRY ONLY
- ALL OUTSIDE CONDUITS SHALL BE RGS. ALL UNDERGROUND CONDUITS SHALL BE PVC.

| MATERIALS | MFG. | MODEL | QUANTITY | PROVIDED BY |
|------------------------------------|---------|---------------------------|-----------|---------------|
| 50A, 2P, 120/240V BREAKER | --- | MATCH EXISTING PANELBOARD | AS REQ'D. | SUBCONTRACTOR |
| CONDUIT, POWER & GROUND CONDUCTORS | TO SUIT | MATCH EXISTING CONDUIT | TO SUIT | SUBCONTRACTOR |
| CABLE TRAY | --- | MATCH EXISTING TRAY | AS REQ'D. | SUBCONTRACTOR |
| T1 CABLE AND CONNECTIONS | --- | ERICSSON | AS REQ'D. | ERICSSON |

BILL OF MATERIALS

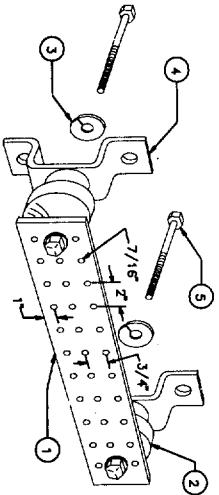


NOTE:
1. CONTRACTOR TO UTILIZE KORR-SHIELD (THOMAS & BETTS) ON ALL LUG CONNECTIONS.

**INSTALLATION - STANDARD DETAIL
GROUNDING OF GROUND WIRE TO GROUND BAR**

SCALE: NTS

4

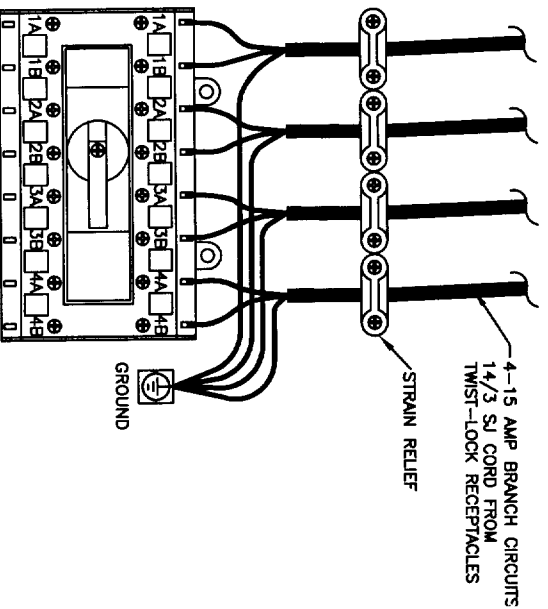


- LEGEND
- 1- COPPER TINNED GROUND BAR, 1/4" X 4" X 20" OR OTHER LENGTH AS REQUIRED. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION
 - 2- INSULATORS, NEWTON INSTRUMENT CO. CAT. NO. 3061-4
 - 3- 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3019-8
 - 4- WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-8068
 - 5- 5/8-11 X 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT. NO. 3012-1

**GROUNDING - STANDARD
DETAIL GROUND BAR**

SCALE: NTS

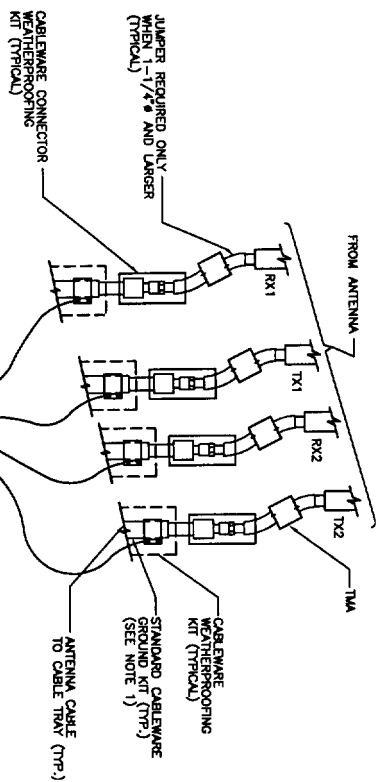
5



**CONNECTING SINGLE-PHASE AC POWER
TO ERICSSON BITS**

DETAIL 1018

1018

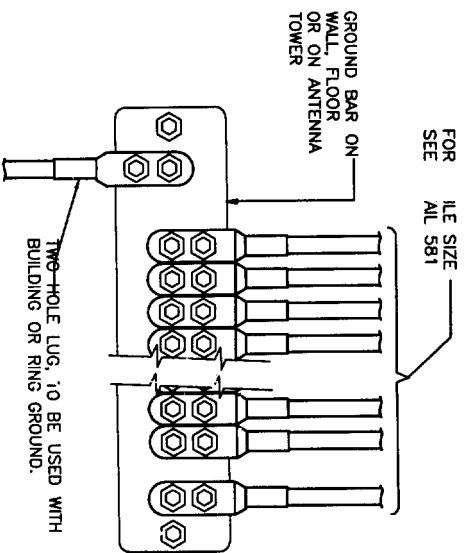


NOTE:
NOT INSTAL CABLE GROUND KIT AT 1" BRND EQ EXAMS
DIRECT GROUND WIRE DOWN TO CABLE

**GROUNDING - STANDARD DETAIL CONNECTION OF
GROUND WIRES TO GROUNDING BAR (CIGBE)**

SCALE: NTS

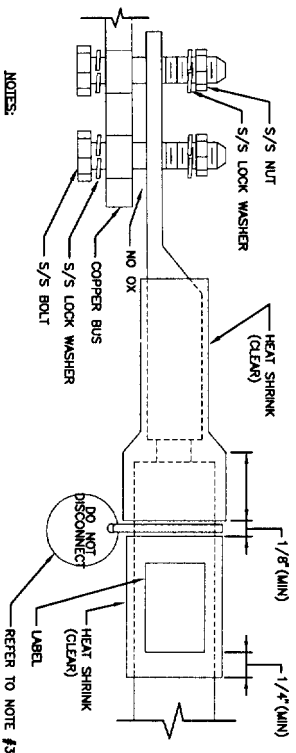
3



**INSTALLATION OF GROUND
WIRE TO GROUND BAR**

DETAIL 508A

508A

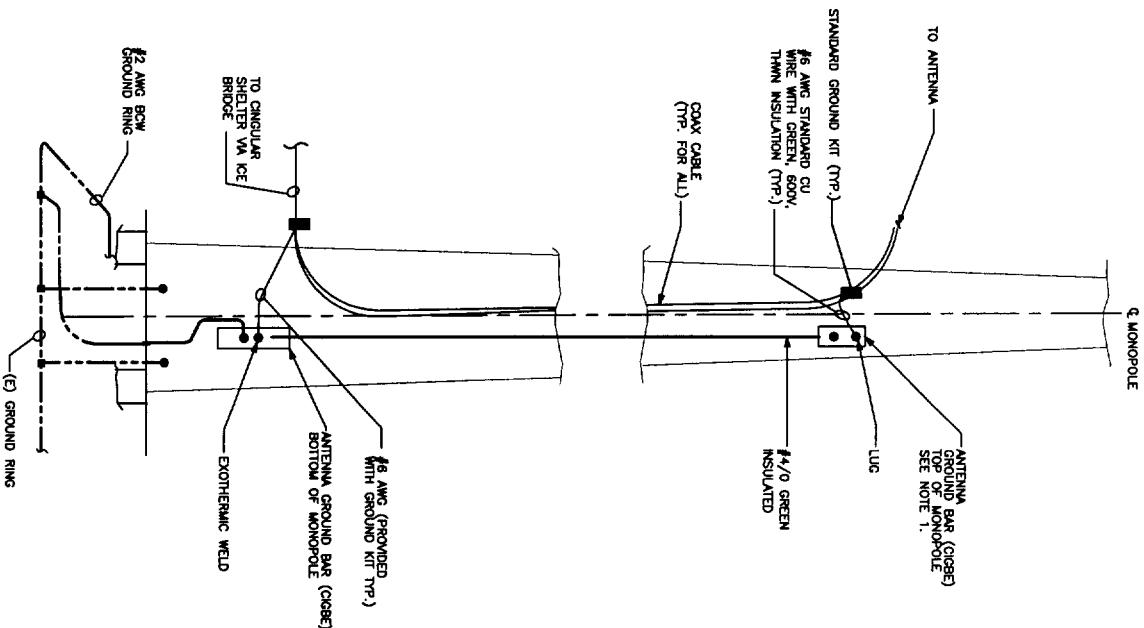


NOTES:
1. ALL HARDWARE 18-8 STAINLESS STEEL, INCLUDING LOCK WASHERS. COAT ALL SURFACES WITH KORR-SHIELD BEFORE MOUNTING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A DEAGON TOOTH WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH KORR-SHIELD.
3. PROVIDE "DO NOT DISCONNECT" TAG AS REQUIRED BY ITEM 2.7 OF CONULAR ENGINEERING LETTER 01.
REFER TO NOTE #3

GROUND LUG DETAIL

SCALE: NTS

1



NOTE:
1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF MONOPOLE, ANTENNA LOCATION AND CONNECTION ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

**ANTENNA CABLE
GROUNDING - MONOPOLE**

SCALE: NTS

2

FOR CONSTRUCTION

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ELECTRICAL DETAILS

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E-3