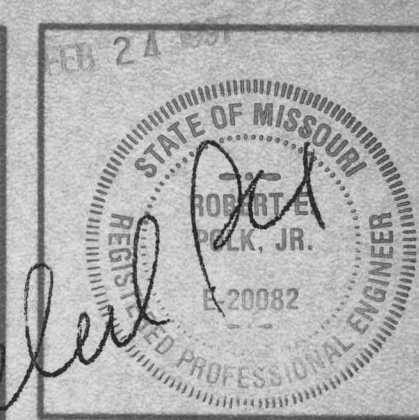


AT&T WIRELESS PCS, INC.



2.6 RAILS AND BRACES: 1-5/8" O.D., TYPE II FABRIC: GALVANIZED 9 GAUGE, WOVEN IN A 2" DIAMOND MESH WITH TOP SELVAGE TWISTED AND BARBED AND BOTTOM WOVEN KNUCKLED. FENCE HEIGHTS UP TO 12" TO BE ONE-PIECE WIDTHS.

GATES: FRAME ASSEMBLY OF 2" O.D. TYPE II PIPE WITH WELDED JOINTS. WELD AREAS REPAIRED WITH ZINC-RICH COATING APPLIED PER MANUFACTURER'S DIRECTIONS. FABRIC TO MATCH FENCE. GATE ACCESSORIES, HINGES, LATCHES, CENTER STOPS, KNEELERS AND NECESSARY HARDWARE OF QUALITY REQUIRED FOR INDUSTRIAL AND COMMERCIAL APPLICATION.

LATCHES

LATCHES SHALL PERMIT PADLOCKING OF GATE. BARBED WIRE INSTALLED AT TOP OF GATES.

2.7 FITTINGS:

POST CAPS - PRESSED STEEL, CAST IRON OR CAST ALUMINUM ALLOY DESIGNED TO FIT SNUGLY OVER POSTS TO EXCLUDE MOISTURE. SUPPLY CONE TYPE CAPS FOR TERMINAL POSTS AND LOOP TYPE FOR LINE POSTS.

RAILS AND BRACE ENDS - PRESSED STEEL, CAST IRON OR CAST ALUMINUM ALLOY, CUP-SHAPED TO RECEIVE RAIL AND BRACE ENDS.

TOP RAIL SLEEVES - TUBULAR STEEL, 0.051 THICKNESS X 7' LONG, EXPANSION TYPE.

TENSION BARS - STEEL STRIP, 5/8" WIDE X 3/16" THICK.

TENSION BANDS - PRESSED STEEL, 14 GAUGE THICKNESS X 3/4" WIDE.

BRACE BANDS - PRESSED STEEL, 12 GAUGE THICKNESS X 3/4" WIDE.

TENSION WIRE: 7 GAUGE COIL STEEL WIRE WITH MINIMUM COATING OF 0.80 OUNCES OF ZINC PER SQUARE FOOT OF WIRE SURFACE AND CONFORMING TO ASTM A 824.

BARBED WIRE: COMMERCIAL QUALITY STEEL, 12-1/2 GAUGE. THREE STRAND TWISTED LINE WIRE WITH 4 POINT BARS AT 5 INCH SPACING. COATING SHALL CONSIST OF A MINIMUM OF 0.80 OUNCES OF ZINC PER SQUARE FOOT OF WIRE SURFACE CONFORMING TO ASTM A 121.

THE WIRES: ALUMINUM, 9 GAUGE, ALLOY 1100-H4 OR EQUAL.

HOG RINGS: STEEL WIRE, 11 GAUGE, WITH A MINIMUM ZINC COATING OF 0.80 OUNCES PER SQUARE FOOT OF WIRE SURFACE.

2.8 BOLLARDS

BOLLARDS WILL EXTEND THREE (3) FEET ABOVE GROUND AND BE EMBEDDED FOUR (4) FEET IN CONCRETE MEETING ASTM 94 PORTLAND CEMENT CONCRETE WITH MAXIMUM 3/4" AGGREGATE HAVING A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28 DAYS. THE BALLAD WILL BE FOUR (4) INCHES IN DIAMETER AND FILLED WITH THE SAME MIX OF CONCRETE USED TO EMBED THEM. ALL BOLLARDS WILL BE GALVANIZED.

PART 3 - EXECUTION

3.1 INSPECTION

INSTALLER SHALL EXAMINE SITE AND REPORT IN WRITING TO ENGINEER/OWNER ANY CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY COMPLETION OF THE WORK.

CLEARING, GRADING AND FENCE LINE LAYOUT AND STAKING OF TERMINAL TO BE COMPLETED BY OTHERS BEFORE START OF FENCE INSTALLATION.

INSTALLER SHALL RECEIVE NOTICE TO PROCEED FROM THE GENERAL CONTRACTOR/AT&TWS BEFORE STARTING WORK.

INSTALLATION

3.2 GENERAL:

FENCE INSTALLATION TO CONFORM TO REQUIREMENTS OF ASTM F 567.

HEIGHT: PROVIDE FENCE HEIGHT AS INDICATED ON CONTRACT DRAWINGS.

POST SPACING: SPACE LINE POSTS AT INTERVALS NOT EXCEEDING TEN FEET.

POST SETTING: SET TERMINAL, GATE AND LINE POSTS PLUMB IN CONCRETE FOOTINGS AS INDICATED ON CONTRACT DRAWINGS. TOP OF FOOTING TO BE 2" ABOVE GRADE AND SLOPED TO DIRECT WATER AWAY FROM POSTS.

BRACING: BRACE GATE AND TERMINAL POSTS BACK TO ADJACENT LINE POSTS WITH HORIZONTAL BRACE RAILS AND DIAGONAL TRUSS RODS.

TOP RAIL: INSTALL THROUGH LINE POST LOOP CAPS CONNECTING SECTIONS WITH SLEEVES TO FORM A CONTINUOUS RAIL BETWEEN TERMINAL POSTS. FASTEN TO TERMINAL POSTS.

BOTTOM TENSION WIRE: STRETCH BETWEEN TERMINAL POSTS 3" ABOVE GRADE AND FASTEN TO OUTSIDE OF LINE POSTS WITH THE WIRES.

FABRIC: PULL FABRIC TAUT TO PROVIDE A SMOOTH UNIFORM APPEARANCE. FREE FROM SAG, WITH BOTTOM SELVAGE 2" ABOVE GRADE. FASTEN TO TERMINAL POSTS WITH TENSION BARS THREADED THROUGH MESH AND SECURED WITH TENSION BANDS WITH MAXIMUM 15" INTERVALS. Tie TO LINE POSTS AND TOP RAILS WITH THE WIRES SPACED AT MAXIMUM 12" ON POSTS AND 24" ON RAILS. ATTACH TO BOTTOM TENSION WIRE WITH HOG RINGS AT MAXIMUM 24" INTERVALS.

BARBED WIRE: ANCHOR TO TERMINAL EXTENSION ARMS, PULL TAUT TO REMOVE ALL SAG AND FIRMLY INSTALL IN SLOTS OF LINE POST EXTENSION ARMS.

GATES: INSTALL GATES PLUMB, LEVEL AND SECURE FOR FULL OPENING WITHOUT INTERFERENCE.

FASTENERS: INSTALL NUTS FOR FITTINGS, BANDS AND HARDWARE BOLTS ON INSIDE OF FENCE.

3.3 COMPLETION

THE AREA OF INSTALLATION SHALL BE LEFT NEAT AND FREE OF ANY DEBRIS CAUSED BY THE ERECTION OF THE FENCE.

STRUCTURAL STEEL & METAL FABRICATION

PART 1 - GENERAL

1.1 SCOPE

THIS SECTION COVERS THE TECHNICAL REQUIREMENTS FOR FURNISHING AND ERECTION OF STRUCTURAL STEEL AND METAL FABRICATIONS. THIS SECTION DOES NOT ADDRESS MONOPOLES AND MONOPOLE ANCHOR ASSEMBLIES SUPPLIED BY OTHERS.

1.2 REFERENCES

AISC CODE OF STANDARD PRACTICE

AWS D1.1: STRUCTURAL WELDING CODE

1.3 SUBMITTALS

1.3.1 SUBMIT FOR ENGINEER'S APPROVAL. SHOP FABRICATION DRAWINGS OR SKETCHES.

1.3.2 SUBMIT FOR INFORMATION. PRODUCT DATA AND CATALOG CUTS.

1.4 INSPECTION

1.4.1 SCHEDULE ALL LOCAL JURISDICTION INSPECTIONS REQUIRED FOR WORK

1.4.2 SCHEDULE ALL SPECIAL INSPECTION AS SPECIFICALLY REQUIRED ON THE DESIGN DRAWINGS.

PART 2 - PRODUCTS

2.1 MATERIALS

STEEL PLATES, SHAPES, THREADED RODS AND BARS: ASTM A36, GALVANIZED.

FASTENERS: ASTM A307, GALVANIZED.

ANCHOR BOLTS: ASTM A307 HEADED BOLTS, OR ASTM A36 THREADED RODS, WITH 2 HEAVY HEX NUTS AT BASE PLATE, GALVANIZED.

2.2 GALVANIZING

STANDARD: ASTM A525

PRIMER: PPG INHIBITIVE METAL PRIMER, OR APPROVED EQUAL REPAIR PAINT; ZINC RICH PRIMER, ZRC CHEMICAL PRODUCTS, OR APPROVED EQUAL.

PART 3 - EXECUTION

3.1 GENERAL

PERFORM ALL WORK IN ACCORDANCE WITH DESIGN DRAWINGS, LATEST EDITION OF REFERENCES LISTED, AND ACCEPTED INDUSTRY PRACTICE.

3.2 FIELD TOUCH-UP

TOUCH UP FIELD WELDS AND ABRADED AREAS WITH GALVANIZING REPAIR PAINT.

ELECTRICAL

1.0 GENERAL

1.1 SUMMARY

A. SCOPE - THIS SPECIFICATION PRESCRIBES THE REQUIREMENTS FOR INSTALLATION OF UNDERGROUND ELECTRICAL SYSTEMS.

1.2 REFERENCES

THE PUBLICATIONS LISTED BELOW FORM PART OF THIS SPECIFICATION. EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE THIS SPECIFICATION IS ISSUED FOR CONSTRUCTION UNLESS NOTED OTHERWISE. EXCEPT AS MODIFIED BY THE REQUIREMENTS SPECIFIED HEREIN OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THESE PUBLICATIONS.

A. ANSI (AMERICAN NATIONAL STANDARDS INSTITUTE)

1. C2 (NATIONAL ELECTRIC SAFETY CODE)

B. NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)

1. NFPA 70, NATIONAL ELECTRIC CODE

C. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)

1. INCLUDING ALL APPLICABLE AMENDMENTS.

D. UL (UNDERWRITERS LABORATORIES)

E. LOCAL CITY AND UTILITY COMPANY SPECS

F. BOCA 1996

1.3 SYSTEM DESCRIPTION

A. DESIGN REQUIREMENTS: CONTRACTOR SHALL INSTALL UNDERGROUND ELECTRICAL AND TELEPHONE CABLE AND CONDUITS AS SPECIFIED HEREIN AND AS SHOWN ON THE DRAWINGS.

B. PERFORMANCE REQUIREMENTS: WHEN FINISHED, WORK SHALL BE IN A COMPLETE AND UN Damaged STATE.

1.4 SUBMITTALS (REFER TO SECTION 2.1 GENERAL)

2.0 PRODUCTS

2.1 GENERAL

A. ITEMS SHALL BE NEW, STORED OFF THE GROUND, AND BE MAINTAINED IN A WEATHERPROOF CONDITION AND BE INSTALLED ONLY IF IN FIRST CLASS CONDITION.

B. SUBSTITUTIONS FOR MATERIAL AND EQUIPMENT WILL BE PERMITTED ONLY BY WRITTEN APPROVAL OF ELECTRICAL ENGINEER.

2.2 MATERIALS

A. ELECTRICAL AND TELEPHONE CABLES, CONDUIT, AND OTHER MATERIALS SHALL BE UL LISTED AND APPROVED BY LOCAL UTILITY. ALL 450 AND 900 BENDS SHALL BE (PVC COATED) RIGID GALVANIZED STEEL.

B. REFER TO DRAWINGS FOR CONDUIT AND CABLE TO BE USED.

3.0 EXECUTION

3.1 PREPARATION

A. BEFORE LAYING OUT WORK, EXERCISE PROPER PRECAUTION TO VERIFY EACH MEASUREMENT.

B. CONTACT LOCAL UTILITIES (GAS, POWER, WATER, TELEPHONE) TO ENSURE NO UNDERGROUND PIPES OR CONDUIT ARE IN EXCAVATION.

3.2 INSPECTION

VISUAL CHECK OF ELECTRICAL AND TELEPHONE CABLES, CONDUIT, AND OTHER ITEMS SHALL BE MADE BY AT&TWS BEFORE THOSE ITEMS ARE PERMANENTLY INSTALLED.

3.3 INSTALLATION

A. TRENCHING, BACKFILLING, BEDDING, AND COMPACTING SHALL COMPLY WITH POWER & TELCO UTILITY SPECIFICATIONS.

B. DIG TRENCHES TO THE REQUIRED DEPTH AS SHOWN ON THE DRAWINGS WITHOUT POCKETS OR DIPS. REMOVE LARGE STONES FROM THE BOTTOM OF THE TRENCH AND FIRMLY TAMP LOOSE FILL IN THE TRENCH BOTTOM BEFORE CONDUIT IS LAID.

C. INSTALL UNDERGROUND CONDUIT WITH A MINIMUM 3-INCH TO 100-FOOT SLOPE OR TO A SLOPE SHOWN ON THE DRAWINGS.

D. PROVIDE BEDDING AND BACKFILL IN ACCORDANCE WITH SITE WORK SPECIFICATION.

E. UNLESS SHOWN OTHERWISE ON THE DRAWINGS, TERMINATE AND CAP ALL STUB-UPS 6 INCHES ABOVE FINISHED GRADE ELEVATION. ALL STUBS UPS SHALL BE (PVC COATED) RIGID GALVANIZED STEEL.

F. WHEREVER CONDUITS CROSS UNDER ROADWAYS USE (PVC COATED) RIGID GALVANIZED STEEL CONDUITS IN ALL CASES, EXTENDING 5 FEET BEYOND THE EDGE OF THE ROAD BED. MINIMUM DEPTH FOR CONDUIT SHALL BE 2'-6" BELOW ROADWAY GRADE.

G. MARK UNDERGROUND CONDUITS WITH A 6 INCH WIDE YELLOW POLYETHYLENE TAPE BURIED 6 INCHES UNDER THE SURFACE DIRECTLY OVER THE CONDUITS. MARK THE TAPE THIS: CAUTION -BURIED ELECTRICAL CABLE. PLASTIC MARKING TAPE SHALL BE ACID AND ALKALI RESISTANT POLYETHYLENE FILM SPECIFICALLY MANUFACTURED FOR MARKING AND LOCATING UNDERGROUND UTILITIES, 6 INCHES WIDE WITH A MINIMUM THICKNESS OF 0.004 INCH. TAPE SHALL HAVE MINIMUM STRENGTH OF 1500 PSI IN BOTH DIRECTIONS AND MANUFACTURED WITH INTEGRAL WIRES. FOIL BACKING OR OTHER MEANS TO ENABLE DETECTION BY A METAL DETECTOR WHEN BURIED UP TO 3 FT. DEEP. THE METALLIC CORE OF THE TAPE SHALL BE ENCASED IN A PROTECTIVE JACKET OR PROVIDED WITH OTHER MEANS TO PROTECT IT FROM CORROSION.

H. FOR SEALING CONDUITS, USE ONLY NON-THERMOPLASTIC COMPOUNDS SUCH AS J. M. DUXSEAL OR AN APPROVED SUBSTITUTE. THE COMPOUND SHALL HAVE NO EFFECT ON RUBBER OR RUBBER-LIKE INSULATIONS, LEAD, ALUMINUM, OR FERROUS ALLOYS. IT SHALL BE INSOLUBLE IN WATER AND WITHSTAND MAXIMUM TEMPERATURE RANGES OF THE LOCALITY.

I. AFTER INSTALLATION ALL CONDUIT MUST BE SWABBED TO ENSURE THAT NO FOREIGN MATERIAL EXISTS WITHIN CONDUIT. AFTER SWABBING THE OPEN ENDS MUST BE CAPPED.

J. ALL CONDUIT SHALL BE CUT WITH THE LONGITUDINAL AXIS AND REAMED OUT UNTIL FREE OF BURRS AND SHARP EDGES.

K. PROVIDE 2 1/2" PVC SCHEDULE 40 CONDUIT TO THE BUILDING IN A 12" X 24" DEEP TRENCH. ATTACH TO SERVICE ENTRANCE BOX ON EXTERIOR OF BUILDING. EXTEND FROM THE BUILDING TO A POINT DESIGNATED BY THE ELECTRIC COMPANY PERSONNEL AND DEADEND. INSTALL A PULL STRING WITH MINIMUM 75 POUND TENSILE STRENGTH WITHIN THE CONDUIT. AFTER THE ELECTRIC COMPANY HAS INSTALLED THE POWER LINE, SEAL THE INTERIOR AND EXTERIOR ENDS OF THE CONDUIT WITH PUTTY OR CHALK.

L. PROVIDE 3" PVC CONDUIT TO THE BUILDING IN A 12" X 24" DEEP TRENCH. ATTACH TO THE BUILDING WITH A 3" LB AND REDUCING BUSHINGS. EXTEND TO A POINT DESIGNATED BY THE TELEPHONE COMPANY PERSONNEL AND DEADEND. INSTALL A PULL STRING WITH MINIMUM 75 POUND TENSILE STRENGTH WITHIN CONDUIT. AFTER THE TELEPHONE COMPANY HAS THE INSTALLED LAND LINE, SEAL THE INTERIOR END OF THE CONDUIT WITH PUTTY OR CHALK.

GROUNDING

PART 1 - GROUNDING

1.1 SUMMARY

A. SCOPE OF SPECIFICATION
1. THIS SPECIFICATION PRESCRIBES THE REQUIREMENTS FOR FURNISHING, INSTALLATION, AND TESTING OF THE GROUNDING CABLE, CONNECTORS AND ASSOCIATED COMPONENTS AS INDICATED ON THE DRAWINGS.

2. APPLICATIONS OF ELECTRICAL GROUNDING AND BONDING WORK SPECIFIED IN THIS SPECIFICATION INCLUDES THE FOLLOWING:

a. FENCE AND GATE POSTS.

b. ELECTRICAL POWER SYSTEMS.

c. GROUNDING ELECTRODES.

d. GROUND BUS BAR.

e. SERVICE EQUIPMENT.

f. ENCLOSURES.

g. MONOPOLE / LATTICE TOWER.

h. ICE BRIDGE.

1. REFERENCES

THE PUBLICATIONS LISTED BELOW FORM PART OF THIS SPECIFICATION. EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE THIS SPECIFICATION IS ISSUED FOR CONSTRUCTION UNLESS NOTED OTHERWISE. EXCEPT AS MODIFIED BY THE REQUIREMENTS SPECIFIED HEREIN OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THESE PUBLICATIONS.

A. ANSI (AMERICAN NATIONAL STANDARDS INSTITUTE)

B. IEEE (INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS)

C. NEC (NATIONAL ELECTRICAL CODE)

D. NEMA (NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION)

E. NESC (NATIONAL ELECTRICAL SAFETY ASSOCIATION)

F. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)

G. UL (UNDERWRITERS LABORATORIES, INC.)

H. APPLICABLE LOCAL CODES AND ORDINANCES.

PART 2 - PRODUCTS

2.1 MATERIALS

A. EXCEPT AS OTHERWISE INDICATED, PROVIDE ELECTRICAL GROUNDING AND BONDING SYSTEMS INDICATED; WITH ASSEMBLY OF MATERIALS, INCLUDING, BUT NOT LIMITED TO, GROUNDING ELECTRODES, BONDING JUMPER Braid, AND ADDITIONAL ACCESSORIES NEEDED FOR A COMPLETE INSTALLATION. WHERE MORE THAN ONE TYPE COMPONENT PRODUCT MEETS INDICATED REQUIREMENTS, SELECTION IS INSTALLER'S OPTION. WHERE MATERIALS OR COMPONENTS ARE NOT INDICATED, PROVIDE PRODUCTS WHICH COMPLY WITH NEC, UL, AND IEEE REQUIREMENTS AND WITH ESTABLISHED INDUSTRY STANDARDS FOR THOSE APPLICATIONS INDICATED.

B. GROUND CONDUCTORS SHALL BE STANDARD THINNED SOLID BARE COPPER AND SIZE INDICATED ON DRAWINGS. MINIMUM BENDING RADIUS SHALL BE MAINTAINED ACCORDING TO NEC.

C. ALL UNDERGROUND GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS. CONNECTORS SHALL INCLUDE ALL CABLE TO CABLE SPLICES, TEES, AND ALL CABLE TO GROUND RODS. MOLDS, WELDING METAL, AND TOOLS SHALL BE BY CADWELD AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S PROCEDURES. ALL EXOTHERMIC WELDS MUST HAVE A MINIMUM OF 6" BETWEEN WELDS.

D. SUBSTITUTIONS FOR MATERIAL & EQUIPMENT WILL BE PERMITTED ONLY BY WRITTEN APPROVAL OF ELECTRICAL ENGINEER AND AT&TWS.

3.0 EXECUTION

3.1 EXAMINATION

EXAMINE AREAS AND CONDITIONS UNDER WHICH ELECTRICAL GROUNDING AND BONDING CONNECTIONS ARE TO BE MADE AND NOTIFY AT&TWS IN WRITING OF CONDITIONS DETRIMENTAL TO PROPER COMPLETION OF WORK. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2 INSTALLATION OF ELECTRICAL GROUNDING AND BONDING SYSTEMS

A. 5/8" DIA X 10'-0" LONG COPPER CLAD STEEL GROUND RODS @ 10'-0" (MIN.) & 15'-0" (MAX.) SPACING. ALL UNDERGROUND CONNECTION SHALL BE EXOTHERMIC WELD TYPE. ALL COMMUNICATION EQUIPMENT GROUNDING AND GROUND CONNECTIONS WILL BE THE SOLE RESPONSIBILITY OF THE EQUIPMENT GROUNDING CONTRACTOR TO INSTALL, TEST, AND APPROVE.

B. INSTALL ELECTRICAL GROUNDING AND BONDING SYSTEMS AS INDICATED, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, IEEE'S "STANDARD OF INSTALLATION," AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PRODUCTS COMPLY WITH REQUIREMENTS.

C. COORDINATE WITH OTHER ELECTRICAL WORK AS NECESSARY TO INTERFACE INSTALLATION OF ELECTRICAL GROUNDING AND BONDING SYSTEM.

D. INSTALL GROUND CABLES A MINIMUM OF 36 INCHES BELOW SURFACES OF SOIL OR 6" BELOW FROST LINE (WHICHEVER IS GREATER) WHICH ENIRCLE THE TOWER AND BUILDING AND ARE CONNECTED TO EACH DRIVEN GROUND ROD.

E. TIGHTEN GROUNDING AND BONDING CONNECTORS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES FOR CONNECTORS AND BOLTS. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT INDICATED, TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUE VALUES SPECIFIED IN UL 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.

F. ROUTE GROUNDING CONNECTIONS AND CONDUCTORS TO GROUND AND PROTECTIVE DEVICES IN SHORTEST AND STRAIGHTEST PATHS AS POSSIBLE TO MINIMIZE TRANSIENT VOLTAGE RISES.

G. APPLY CORROSION-RESISTANT FINISH TO FIELD-CONNECTIONS, BURIED METALLIC GROUNDING AND BONDING PRODUCTS, AND PLACES WHERE FACTORY APPLIED PROTECTIVE COATINGS HAVE BEEN DESTROYED, WHICH ARE SUBJECTED TO CORROSIVE ACTION.

H. THE EXTERNAL GROUND RING (EGR) MUST BE PLACED ABOUT TWO FEET AND NO MORE THAN THREE FEET FROM THE EXTERIOR WALL OF THE SURROUNDING BUILDING, COMPLETELY SURROUNDING IT. IT MUST ALSO BE PLACED AT LEAST 18 INCHES BELOW THE SURFACE OF THE SOIL AND SIX (6) INCHES BELOW THE FROST LINE, AS MEASURED FROM THE TOP OF THE BURIED RODS AND CONNECTING WIRES. THE GROUNDING TRENCH WILL BE BACKFILLED WITH CLEAN DIRT COMPACTED TO 95% OF STANDARD PROCTOR DENSITY.

I. THE TOWER EGR MUST COMPLETELY SURROUND THE TOWER ABOUT TWO FEET BEYOND THE RADIUS OF THE TOWER. IT MUST BE BONDED TO THE TOWER AT ALL STEEL TOWER SUPPORTS AT THE CLOSEST POINT BETWEEN THE EGR AND THE SUPPORT TO MINIMIZE ELECTRICAL IMPEDANCE BETWEEN THE EGR AND TOWER. IT MUST ALSO BE BONDED TO ADJACENT BUILDING EGR AT THE CLOSEST POINT BETWEEN THE EGRS AND BETWEEN AT LEAST TWO OTHER POINTS BETWEEN THE EGRS TO MINIMIZE ELECTRICAL IMPEDANCE BETWEEN THE EGRS AND TO ENHANCE RELIABILITY. THE GROUNDING TRENCH WILL BE BACKFILLED WITH CLEAN SOIL.

J. THE CONTRACTOR SHALL TEST THE ENTIRE INSTALLATION TO DETERMINE THAT IT IS FREE FROM GROUND OR SHORTS EXCEPT WHERE GROUNDS ARE REQUIRED AS PART OF THE SYSTEM.

K. COAXIAL CABLES SHALL HAVE, AS A MINIMUM 3 GROUND KITS INSTALLED, TWO AT THE TOWER GROUND BARS (TOP AND BOTTOM) AND ONE AT THE WAVEGUIDE ENTRY PORT (EXTERNAL).

L. ALL WAVEGUIDE AND COAXIAL CABLE SHIELDS THAT EXTEND FROM THE TOWER INTO THE BUILDING MUST BE GROUNDED BOTH AT THE TOWER AND AT THE ENTRANCE TO THE BUILDING.

M. APPROVED GROUND KITS, WHICH INCLUDE GROUNDING STRAPS, ARE USED FOR THE COAX CABLE. THE KITS AT THE TOP OF THE TOWER AND IN THE MIDDLE SECTIONS OF THE TOWER (IF THE TOWER IS OVER 200 FT.) ARE MECHANICAL ATTACHED TO THE TOWER OR GROUND BAR IF OVER 200 FT. BY TWO HOLE LUGS. THE COAXIAL CABLE MUST BE GROUNDED AT THE BOTTOM OF THE TOWER ABOUT 6 IN. BEFORE THEY TURN TOWARD THE BUILDING. THE GROUNDING STRAPS NEAR THE TURN TOWARD THE FACILITY ARE MECHANICAL ATTACHED TO A GROUND BAR WHICH IS CONNECTED TO THE EGR WITH NO. 2 AWG SOLID, TINNED, BARE COPPER WIRE BY TWO HOLE LUGS. DRIP LOOPS MUST BE USED ON THE COAX CABLE TO PREVENT WATER ON THE CABLE FROM ENTERING THE BUILDING. THE GROUND BAR IS CONNECTED WITH NO. 2 AWG SOLID, TINNED, BARE COPPER WIRE DIRECTLY TO THE EGR. THE COAX CABLE ARE CONNECTED TO THE GROUND BARS AT BOTH THE TOWER AND NEAR THE WAVEGUIDE ENTRANCE PORT OF THE BUILDING WITH APPROVED GROUND KITS. THE GROUND BARS ARE THE CONNECTED TO THE EGR WITH NO. 2 AWG SOLID, TINNED, BARE COPPER WIRE. THE COAX CABLES MUST SLOPE FROM THE DRIP LOOP TOWARD THE BUILDING TO PREVENT WATER ON THE CABLE FROM ENTERING THE BUILDING THROUGH THE WAVEGUIDE PORT.

N. THE ICE BRIDGE SUPPORTS MUST BE GROUNDED BOTH AT THE TOWER AND AT THE BUILDING. THE ICE BRIDGE WIRE MUST BE NO. 2 AWG SOLID, TINNED, BARE COPPER WIRE AND BONDED EXOTHERMIC TO THE EGR.

O. THE FENCE THAT SURROUNDS THE FACILITY MUST BE GROUNDED TO THE FACILITY EGR OR THE TOWER EGR AT ALL CORNER POSTS. NO. 2 AWG SOLID, TINNED, BARE WIRE IS EXOTHERMICALLY BONDED FROM EACH CORNER POST TO THE NEAREST EGR GROUND ROD. THE FENCE POST GROUND BOND MUST BE ABOUT 6 IN. AND NO HIGHER THAN 12 IN. ABOVE THE SOIL SURFACE AND ON THE INSIDE OF THE POST. EACH GATE MUST BE GROUND TO THE ADJACENT FENCE POST WITH AN APPROVED GROUNDING STRAP.

REVISIONS		NO	DATE	DESCRIPTIONS
NO	DATE			

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TITLE: SPECIFICATIONS
DATE: 2-18-1996
DRAFTED: M. Roth
PROJECT NO.: 297000

SHEET: SPEC-3