

SITE DATA
<p>SITE INFORMATION</p> <p>COUNTY: CUMBERLAND JURISDICTION: CITY OF PORTLAND CODE: 2009 IBC OCCUPANCY: N/A ZONING: N/A USE: UNMANNED PUBLIC SAFETY TELECOMMUNICATIONS FACILITY</p> <p>SITE ACCESS</p> <p>TOM BURGOYNE</p> <p>(M) (508) 922-6233 (tom.burgoyne@americantower.com)</p> <p>PROJECT TYPE</p> <p>COLLOCATION ON AN EXISTING 275' GUYED TOWER AND NEW COMMUNICATION EQUIPMENT IN A NEW EQUIPMENT SHELTER WITHIN AN EXISTING FENCED COMPOUND NEW 25KW GENERATOR NEW 500 GAL. L.P. TANK</p> <p>APPLICANT</p> <p>U.S. CUSTOMS AND BORDER PROTECTION CONTACT: BARRY BRACKEN PROJECT MANAGER CBP/OIT/ENTS/WTP PHONE: 703.921.7393 MOBILE: 571.241.1604</p>



MOTOROLA SOLUTIONS

U.S. CUSTOMS & BORDER PROTECTION P25 TACCOMM MODERNIZATION PROJECT HOULTON FOCUS AREA

THIS DOCUMENT IS RELEASED FOR THE PURPOSES OF REVIEW UNDER THE AUTHORITY OF NICHOLAS G. KEHL, P.E. 12493 ON 02/15/11 . IT IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.

SITE NAME

SOUTH PORTLAND (ATC #10047)

SITE ADDRESS

225 RIVERSIDE INDUSTRIAL PARKWAY PORTLAND, MAINE 04103

PROJECT TEAM
<p>TOWER OWNER</p> <p>AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801</p> <p>PROJECT MANAGER</p> <p>MOTOROLA CONTACT: CURT HESS MOBILE: 410.627.57004 EMAIL: CURTHESS@MOTOROLA.COM</p> <p>ENGINEER</p> <p>CFE TELECOM CONTACT: NICHOLAS G. KEHL, P.E. 4544 S. LAMAR BLVD., BLDG. G-300 AUSTIN, TEXAS 78745 PHONE: 512.495.9470 FAX: 512.495.9473</p> <p>SITE LOCATION</p> <p>LAT: 43° 42' 21.69" LONG: -70° 18' 38.67" ELEV: 68.2' (AMSL)</p>

UTILITIES	
<p>ONE CALL</p> <p>CONTRACTOR TO CALL BEFORE DIGGING!!! PHONE: 1 (888) DIG-SAFE 1 (888) 344-7233</p> <p>CENTRAL MAINE POWER</p> <p>PHONE: 800.565.3181</p> <p>VERIZON</p> <p>PHONE: 866.323.1773</p>	
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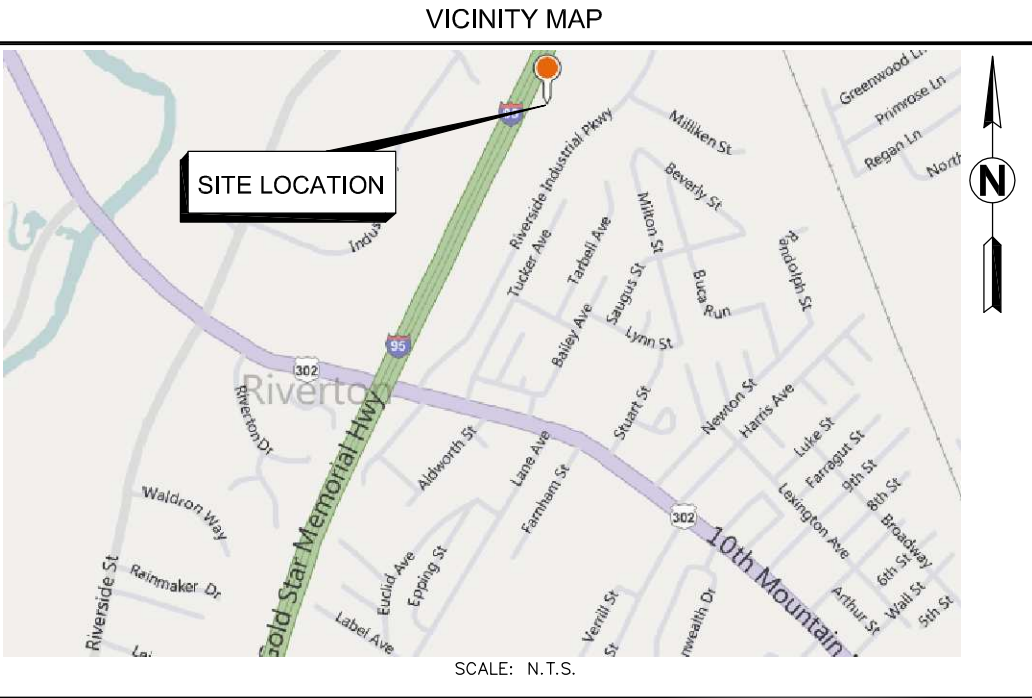
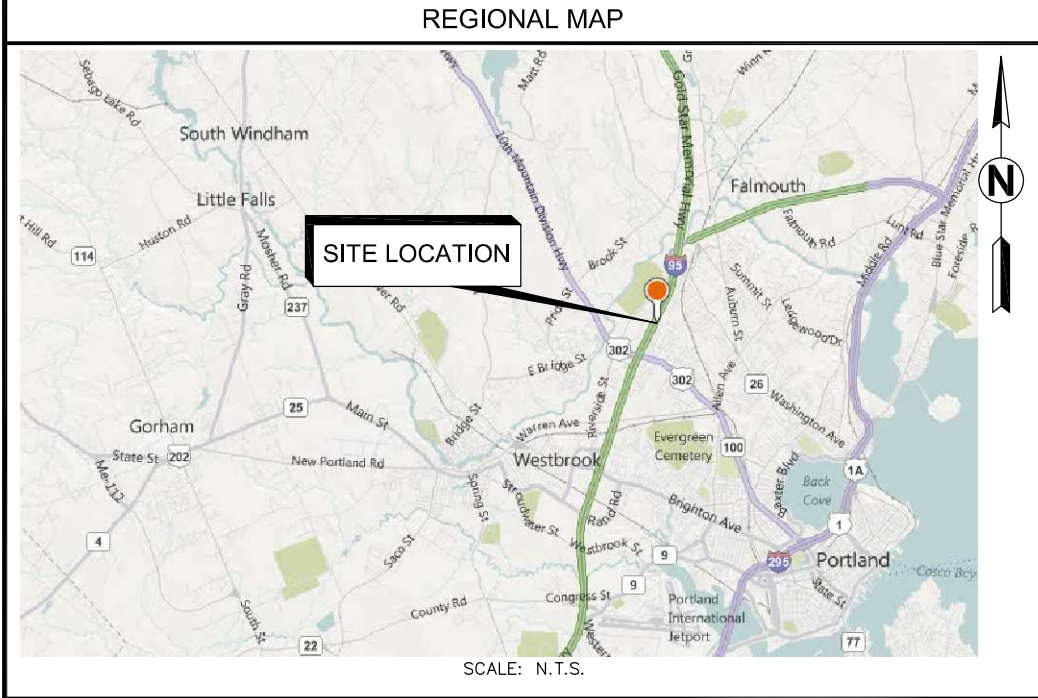
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TELECOM

MOTOROLA SOLUTIONS

SOUTH PORTLAND
(ATC #10047)



DRIVING DIRECTIONS

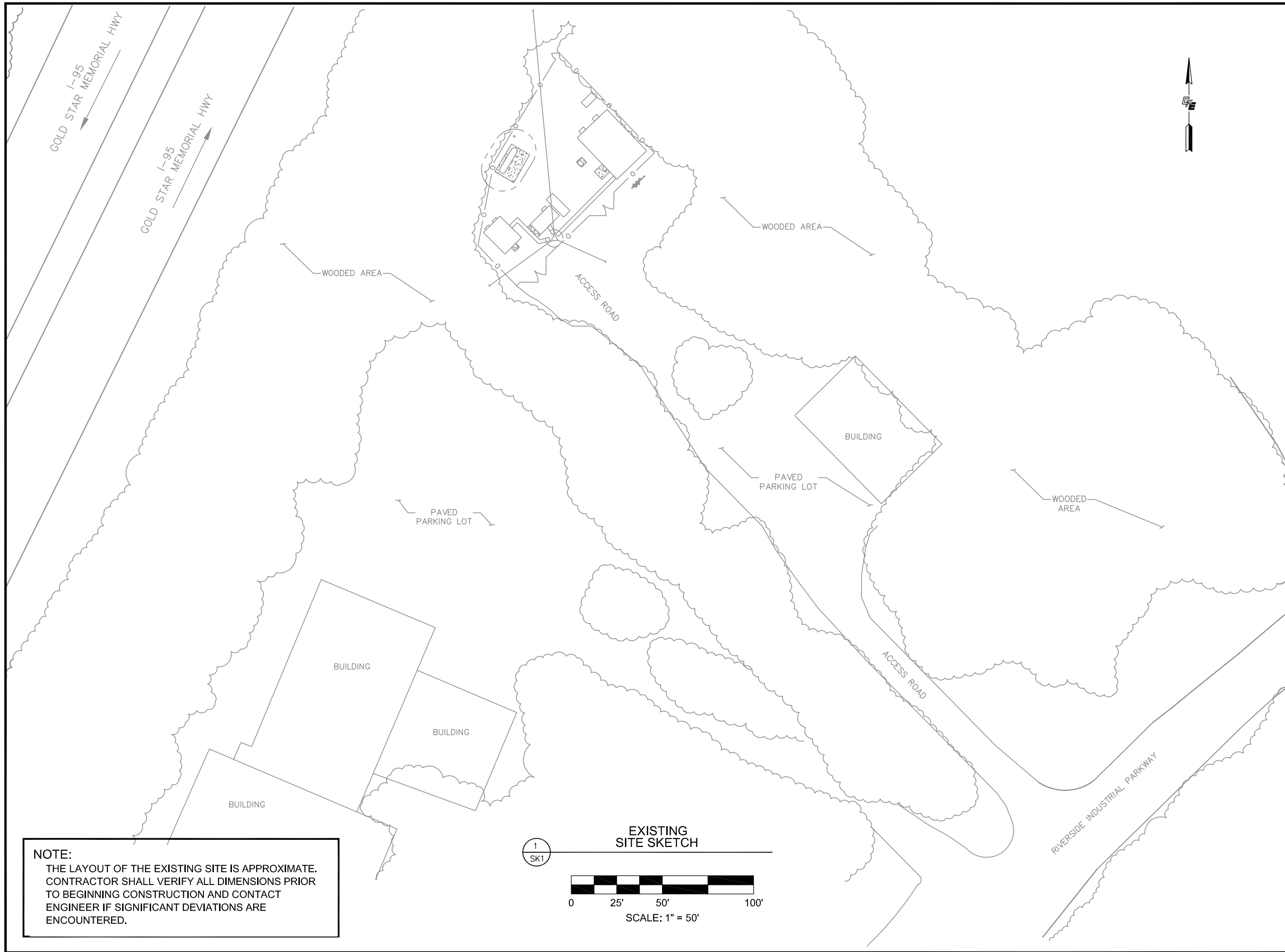
(FROM PORTLAND) DEPART CONGRESS ST. TOWARD EXCHANGE ST. TURN RIGHT ONTO FOREST AVE. KEEP STRAIGHT ONTO SR-100/ FOREST AVE. KEEP STRAIGHT ONTO US-302/SR-100/10TH MOUNTAIN DIVISION HWY/FOREST AVE. TAKE RAMP RIGHT I-295 SOUTH/US-1 SOUTH TOWARD SOUTH PORTLAND. AT EXIT 1, TAKE RAMP RIGHT FOR MAINE TURNPIKE AUTHORITY APPROACH RD TOWARD MAINE TURNPIKE NORTH/ MAINE MALL ROAD. TAKE RAMP RIGHT FOR I-95 NORTH/GOLD STAR MEMORIAL HWY/MAINE TURNPIKE TOWARD AUGUSTA/LEWISTON ARRIVE AT THE DESTINATION ON THE RIGHT.

LEGAL DESCRIPTION

THENCE IN A WESTERLY DIRECTION A DISTANCE OF 141 FEET TO A POINT ON THE SOUTHWESTERLY BOUNDARY OF THE LAND OF OWNER WHICH POINT IS LOCATED S45°44'28"E A DISTANCE OF 75 FEET FROM SAID EASTERLY SIDELINE OF THE MAINE TURNPIKE AUTHORITY LAND; THENCE N45°44'28"W ALONG SAID SOUTHWESTERLY BOUNDARY OF THE LAND OF OWNER A DISTANCE OF 75 FEET TO SAID EASTERLY SIDELINE OF THE MAINE TURNPIKE AUTHORITY; THENCE N25°44'02"E ALONG SAID MAINE TURNPIKE AUTHORITY LAND A DISTANCE OF 151.82 FEET TO THE POINT OF BEGINNING.

ATTACHMENTS
APPROVALS
<p>MOTOROLA PROJECT MANAGER _____ DATE _____</p> <p>MOTOROLA RF ENGINEER _____ DATE _____</p> <p>CBP TACCOMM PROJECT MANAGER _____ DATE _____</p>

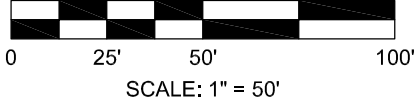
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TITLE SHEET		
T1		



NOTE:
 THE LAYOUT OF THE EXISTING SITE IS APPROXIMATE.
 CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR
 TO BEGINNING CONSTRUCTION AND CONTACT
 ENGINEER IF SIGNIFICANT DEVIATIONS ARE
 ENCOUNTERED.

1
SK1

EXISTING
SITE SKETCH



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EXISTING SITE
SKETCH

SK1

DIVISION 1 STANDARD PROVISIONS
PART 1 GENERAL

1.1 INTENT

- A. THESE SPECIFICATIONS AND THE CONSTRUCTION DRAWINGS ACCOMPANYING THEM DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR THE CONSTRUCTION OF THIS PROJECT.
- B. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH.
- C. THE INTENTION OF THESE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.
- D. THE PURPOSE OF THE SPECIFICATIONS IS TO INTERPRET THE INTENT OF THE DRAWINGS AND TO DESIGNATE THE METHOD OF THE PROCEDURE, TYPE AND QUALITY OF MATERIALS REQUIRED TO COMPLETE THE WORK.
- E. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED AS PART OF THE WORK. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE MADE OR PERMITTED BY MOTOROLA WITHOUT ISSUING A CHANGE ORDER.
- C. PRIOR TO COMMENCING CONSTRUCTION, MOTOROLA SHALL SCHEDULE AN "ON-SITE" MEETING WITH ALL MAJOR PARTIES. THIS SHALL INCLUDE (THOUGH NOT LIMITED TO) THE PROPERTY OWNER, POWER COMPANY, MOTOROLA AND THE CONTRACTOR.
- D. CONTRACTOR SHALL BE EQUIPPED WITH SOME MEANS OF CONSTANT COMMUNICATIONS, SUCH AS A MOBILE PHONE OR A BEEPER. THIS EQUIPMENT WILL NOT BE SUPPLIED BY MOTOROLA NOR WILL CELLULAR SERVICE BE ARRANGED.
- E. DURING CONSTRUCTION, CONTRACTOR MUST ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AND SAFETY GLASSES AT ALL TIMES. THE CONTRACTOR MUST COMPLY WITH ALL APPLICABLE OSHA REQUIREMENTS.
- F. PROVIDE DAILY UPDATES ON SITE PROGRESS, EITHER VERBAL OR WRITTEN.
- G. COMPLETE INVENTORY OF CONSTRUCTION MATERIALS AND EQUIPMENT IS REQUIRED PRIOR TO START OF CONSTRUCTION.
- H. MOTOROLA SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, TOWER ERECTIONS, AND SHELTER PLACEMENTS.

1.2 CONFLICTS

- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSIONS, WHICH MAY BE FOUND, SHALL BE SUBMITTED TO MOTOROLA FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.

1.3 STORAGE

- A. ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION AND IN A MANNER THAT DOES NOT NECESSARILY OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.

1.4 CLEAN UP

- A. THE CONTRACTOR SHALL AT ALL TIMES KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY HIS EMPLOYEES AT WORK AND AT THE COMPLETION OF THE WORK, HE SHALL REMOVE ALL RUBBISH FROM AND ABOUT THE BUILDING AREA, INCLUDING ALL HIS TOOLS, SCAFFOLDING, AND SURPLUS MATERIALS AND SHALL LEAVE HIS WORK CLEAN AND READY FOR USE.
- B. EXTERIOR: VISUALLY INSPECT EXTERIOR SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER.
- C. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
- D. IF NECESSARY TO ACHIEVE A UNIFORM DEGREE OF CLEANLINESS, HOSE DOWN THE EXTERIOR OF THE STRUCTURE.

1.5 QUALITY ASSURANCE


- A. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THESE SHALL INCLUDE BUT NOT BE LIMITED TO THE LATEST VERSION OF THE FOLLOWING:
- TIA/EIA - 222 - G - 2006
INTERNATIONAL BUILDING CODE (IBC) 2009
BUILDING OFFICIALS AND CODE ADMINISTRATORS (BOCA) 1990
NATIONAL ELECTRICAL CODE (NEC) WITH LOCAL AMENDMENTS 2006
UNDERWRITER LABORATORIES APPROVED ELECTRICAL PRODUCTS
AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATIONS (AISC)
ANSI/NFPA - 70 LIFE SAFETY CODE NFPA - 101 - 1990
- B. ALL WORK SHALL BE DONE IN ACCORDANCE WITH MOTOROLA'S R56 STANDARDS AND GUIDELINES FOR COMMUNICATIONS SITES.


1.6 ADMINISTRATION

- A. BEFORE THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR WILL ASSIGN A PROJECT MANAGER WHO WILL ACT AS A SINGLE POINT OF CONTACT FOR ALL PERSONNEL INVOLVED IN THE PROJECT. THIS PROJECT MANAGER WILL DEVELOP A MASTER SCHEDULE FOR THE PROJECT WHICH WILL BE SUBMITTED TO MOTOROLA PRIOR TO THE COMMENCEMENT OF ANY WORK.
- B. SUBMIT A BAR CHART TYPE PROGRESS SCHEDULE NOT MORE THAN 3 DAYS AFTER THE DATE ESTABLISHED FOR COMMENCEMENT OF THE WORK ON THE SCHEDULE. INDICATE A TIME BAR FOR EACH MAJOR CATEGORY OR UNIT OF WORK TO BE PERFORMED AT SITE,

PROPERLY SEQUENCED AND COORDINATED WITH OTHER ELEMENTS OF WORK. SHOW COMPLETION OF THE WORK SUFFICIENTLY IN ADVANCE OF THE DATE ESTABLISHED FOR SUBSTANTIAL COMPLETION OF THE WORK.

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MOTOROLA SOLUTIONS


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**GENERAL
NOTES**

GN1

DIVISION 2 – SITE WORK:
WORK AND DRAINAGE

ROAD RIGHT OF WAY (IF REQUIRED).

PART 1 GENERAL

2.1 WORK INCLUDED

- A. SITE WORK AND DRAINAGE DETAILS ARE WRITTEN TO COVER A VARIETY OF POSSIBLE SITE CONFIGURATIONS. SPECIFIC SERVICES WILL BE PERFORMED AS INDICATED IN THE SITE PLAN AND AGREED UPON BY CUSTOMER AND MOTOROLA PROJECT MANAGERS.
- B. REFER TO COMPLETE DRAWING SET AND REFERENCED SPECIFICATIONS / STANDARDS FOR WORK INCLUDED.

- B. PRIOR TO OTHER EXCAVATION AND CONSTRUCTION EFFORTS CLEAR SITE OF ORGANIC MATERIAL TO MINIMUM OF SIX INCHES BELOW ORIGINAL GROUND LEVEL.
- C. DO NOT REMOVE TREES, BRUSH, OR DEBRIS FROM THE PROPERTY WITHOUT MOTOROLA APPROVAL.
- D. PRIOR TO PLACEMENT OF FILL OR BASE MATERIALS, PROOF ROLL THE SOIL.
- E. WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, COVER CLEARED AREAS WITH STABILIZER MAT PRIOR TO PLACEMENT OF FILL OR BASE MATERIAL.

2.2 RELATED WORK

- A. CONSTRUCTION FOR BUILDING FOUNDATION
- B. PLACEMENT OF SHELTER
- C. INSTALLATION OF GROUNDING & ELECTRICAL SYSTEM
- D. INSTALLATION OF ANTENNA SYSTEM

2.12 INSTALLATION

- A. THE COMPOUND AND TURNAROUND AREAS SHALL BE AT THE SUB-BASE COURSE ELEVATION PRIOR TO FORMING FOUNDATIONS. GRADE OR FILL THE SITE AND ACCESS ROAD AS REQUIRED IN ORDER THAT THERE IS EVEN DISTRIBUTION OF SPOILS RESULTING FROM FOUNDATION EXCAVATIONS. THE RESULTING GRADE WILL CORRESPOND WITH SAID SUB-BASE COURSE, ELEVATIONS ARE TO BE CALCULATED FROM FINISHED GRADES OR SLOPES, AS INDICATED.
- B. IF ANY, EXCESS SPOILS WILL BE CLEARED FROM JOB SITE AND NOT SPREAD BEYOND THE LIMITS OF OWNER/LEASED PROPERTY UNLESS AUTHORIZED BY PROJECT MANAGER.

2.3 DESCRIPTIONS

- A. ACCESS ROAD, TURNAROUND AREAS, AND COMPOUND AREAS ARE CONSTRUCTED TO PROVIDE A WELL-DRAINED, EASILY MAINTAINED, EVEN SURFACE FOR MATERIAL AND EQUIPMENT DELIVERIES AND MAINTENANCE PERSONNEL ACCESS.

2.4 QUALITY ASSURANCE

- A. APPLY SOIL STERILIZER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION (USE AS NEEDED).
- B. VEGETATION AND LANDSCAPING, IF REQUIRED WITHIN THE CONTRACT, WILL BE PLACED AND MAINTAINED AS RECOMMENDED BY NURSERY INDUSTRY STANDARDS.

- C. THE ACCESS ROAD SHALL BE BROUGHT TO BASE COURSE ELEVATION PRIOR TO FOUNDATION CONSTRUCTION TO PERMIT USE. COMPACTION SHALL BE DONE DURING CONSTRUCTION OF THE SITE.
- D. AVOID CREATING DEPRESSIONS WHERE WATER MAY POND.

2.5 SEQUENCING

- A. CONFIRM SURVEY STAKES AND SET ELEVATION STAKES PRIOR TO ANY CONSTRUCTION. PLACE SILT FENCE OR OTHER REQUIRED EROSION CONTROLS DOWN GRADIENT OF CONSTRUCTION AREA.
- B. THE COMPLETED ROAD AND SITE AREA WILL BE CLEARED OF HEAVY GROWTH OF GRASS, TREES, SHRUBS AND TOPSOIL PRIOR TO FOUNDATION CONSTRUCTION OR PLACEMENT OF BACKFILL OR SUB-BASE MATERIAL.
- C. CONSTRUCT TEMPORARY CONSTRUCTION ZONE ALONG ACCESS DRIVE WHEN REQUIRED FOR NEW TOWERS.
- D. THE SITE AREA WILL BE BROUGHT TO SUB-BASE COURSE ELEVATION AND THE ACCESS ROAD TO BASE COURSE ELEVATION PRIOR TO FORMING FOUNDATIONS.
- E. APPLY SOIL HERBICIDE PRIOR TO PLACING BASE MATERIALS.
- F. IF REQUIRED, GRADE, SEED, FERTILIZE AND MULCH DISTURBED AREA IMMEDIATELY AFTER BRINGING THE SITE AND ACCESS ROAD TO BASE COURSE ELEVATION. WATER TO ENSURE GROWTH.
- G. REMOVE GRAVEL FROM TEMPORARY CONSTRUCTION ZONE.
- H. AFTER APPLICATIONS OF FINAL SURFACES, APPLY SOIL HERBICIDE TO THE STONE SURFACE.

- E. WHEN IMPROVING AN EXISTING ACCESS ROAD, GRADE THE EXISTING ROAD TO REMOVE ANY ORGANIC MATTER AND SMOOTH THE SURFACE BEFORE PLACING FILL OR STONE.
- F. THE FINISH GRADE, INCLUDING TOP SURFACE COURSE, SHALL EXTEND A MINIMUM OF ONE FOOT BEYOND THE SITE FENCE AND SHALL COVER THE AREA AS INDICATED.
- G. RIPRAP SHALL BE APPLIED TO THE SIDES OF DITCHES OR DRAINAGE SWALES.
- H. RIPRAP SHALL BE APPLIED TO THE SIDE SLOPES OF ALL FENCED SITE AREAS, PARKING AREAS AND TO ALL OTHER SLOPES GREATER THAN 2:1.
- I. RIPRAP ENTIRE DITCH FOR SIX FEET IN ALL DIRECTIONS AT CULVERT OPENINGS OR AS INDICATED IN THE DRAWINGS.
- J. SEED, FERTILIZER AND STRAW COVER SHALL BE APPLIED TO ALL OTHER DISTURBED AREAS AND DITCHES, DRAINAGE, SWALES NOT OTHERWISE RIPRAPPED.
- K. UNDER NO CIRCUMSTANCES WILL DITCHES, SWALES NOR CULVERTS BE PLACED SO THEY DIRECT WATER TOWARDS, OR PERMIT STANDING WATER IMMEDIATELY ADJACENT TO SITE. IF DESIGN OR ELEVATIONS CONFLICT WITH THIS GUIDANCE, MOTOROLA SHOULD BE ADVISED IMMEDIATELY.
- L. IF DITCH LIES WITH SLOPES GREATER THAN TEN PERCENT, MOUND DIVERSIONARY HEADWALLS IN THE DITCH AT CULVERT ENTRANCES 45 DEGREES OFF THE DITCH LINE. RIPRAP THE UPSTREAM SIDE OF THE HEADWALL AS WELL AS THE DITCH FOR SIX FEET ABOVE THE CULVERT ENTRANCE.

PART 2 PRODUCTS

2.8 MATERIALS

- A. ROAD AND SITE MATERIALS: FILL MATERIAL – ACCEPTABLE SELECT FILL SHALL BE IN ACCORDANCE WITH LOCAL DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
- B. SOIL HERBICIDE SHALL BE EPA REGISTERED OF LIQUID COMPOSITION AND OF PRE-EMERGENCE DESIGN.
- C. SOIL STABILIZER FABRIC SHALL BE MIRAFI – 500X.

- M. SEED AND FERTILIZER SHALL BE APPLIED TO SURFACE CONDITIONS, WHICH WILL ENCOURAGE ROOTING. RAKE AREAS TO BE SEEDED TO EVEN THE SURFACE AND LOOSEN THE SOIL.
- N. PLACE SEED AS DIRECTED BY THE SEED PRODUCER.
- O. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE GROWTH OF SEEDED AND LANDSCAPED AREAS BY WATERING UP TO THE POINT OF RELEASE FROM THE CONTRACT. CONTINUE TO RE-WORK BARE AREAS UNTIL COMPLETE COVERAGE IS OBTAINED.

2.9 EQUIPMENT

- A. COMPACTION SHALL BE ACCOMPLISHED BY MECHANICAL MEANS.
- B. ALL LARGER AREAS SHALL BE COMPACTED BY SHEEPS FOOT, VIBRATORY OR RUBBER TIRED ROLLERS WEIGHING AT LEAST FIVE TONS.
- C. SMALLER AREAS SHALL BE COMPACTED BY POWER- DRIVER, HAND HELD TAMPERS.

2.13 FIELD QUALITY CONTROL

- A. COMPACTION SHALL BE AT LEAST 95% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D-1557.
- B. ALL TREES PLACED IN CONJUNCTION WITH A LANDSCAPE CONTRACT WILL BE WRAPPED, TIED WITH HOSE-PROTECTED WIRE AND SECURED.
- C. ALL EXPOSED AREAS SHALL BE PROTECTED AGAINST WASHOUTS AND SOIL EROSION. STRAW BALES WILL BE PLACED AT THE INLET APPROACH TO ALL NEW OR EXISTING CULVERTS.

PART 3 EXECUTION


2.10 INSPECTIONS

- A. LOCAL BUILDING INSPECTION SHALL RECEIVE ADEQUATE NOTIFICATION IN ADVANCE OF CONCRETE POURS WHEN REQUIRED.

2.11 PREPARATION

- A. CLEAR TREES, BRUSH AND DEBRIS FROM SITE AREA AND ACCESS

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CIVIL NOTES

C1

DIVISION 4 ANTENNA SYSTEM
PART 1 GENERAL

4.1 WORK INCLUDED

- A. INSTALL WAVEGUIDE BRIDGE AS INDICATED ON DRAWINGS. INSTALL NEW COAX, ANTENNAS, AND MOUNTS AS INDICATED ON DRAWINGS AND VERIFIED BY RF ENGINEER.
- B. SUPPLY AND INSTALL GROUND BARS AND GROUNDING SUPPLIES AS INDICATED IN THE DRAWINGS.
- C. LABEL CABLES.
- D. MICROWAVE INSTALLATION WILL BE PERFORMED BY OTHERS.

4.2 RELATED WORK

- A. FURNISH THE FOLLOWING WORK AS SPECIFIED UNDER CONSTRUCTION DOCUMENTS, BUT COORDINATE WITH OTHER TRADES PRIOR TO BID.

- 1. FLASHING OPENING INTO OUTSIDE WALLS.
- 2. SEALING AND CAULKING ALL OPENINGS.
- 3. PAINTING.
- 4. CUTTING AND PATCHING.
- 5. ENTRY PORT/PORT HOLE CUSHIONS.
- 6. ANTENNA/CABLE GROUNDING.

4.3 REQUIREMENTS OF REGULATORY AGENCIES

- A. FURNISH U.L. LISTED EQUIPMENT WHERE SUCH LABEL IS AVAILABLE AND INSTALL IN CONFORMANCE WITH U.L. STANDARDS WHERE APPLICABLE.
- B. INSTALL ANTENNA CABLES AND GROUNDING SYSTEM IN ACCORDANCE WITH DRAWINGS AND SPECIFICATION IN EFFECT AT PROJECT LOCATION AND RECOMMENDATIONS OF STATE AND LOCAL BUILDING CODES, SPECIAL CODES HAVING JURISDICTION OVER SPECIFIC PORTIONS OF WORK. THIS INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:
 - 1. EIA-ELECTRICAL INDUSTRIES ASSOCIATION RS-222, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.
 - 2. FAA-FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR AC 70/7460-IH, OBSTRUCTION MARKING AND LIGHTING.
 - 3. FCC-FEDERAL COMMUNICATIONS COMMISSION RULES AND REGULATIONS FORM 715, OBSTRUCTION MARKING AND LIGHTING SPECIFICATION FOR ANTENNA STRUCTURES AND FORM 715A, HIGH INTENSITY OBSTRUCTION LIGHTING SPECIFICATION FOR ANTENNA STRUCTURES.
 - 4. AISC-AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
 - 5. NEC-NATIONAL ELECTRICAL CODE-ON TOWER LIGHTING KITS.
 - 6. UL-UNDERWRITERS' LABORATORIES APPROVED.
 - 7. IN ALL CASES, PART 77 OF THE FAA RULES AND PARTS 17 AND 22 OF THE FCC RULES ARE APPLICABLE AND IN THE EVENT OF CONFLICT, SUPERSEDE ANY OTHER STANDARDS OF SPECIFICATIONS.
 - 8. 2000 LIFE SAFETY CODE NFPA-101.

4.4 MATERIALS

- A. ALL MATERIALS/HARDWARE SHALL BE HOT-DIPPED GALVANIZED OR STAINLESS STEEL UNLESS OTHERWISE INDICATED ON THE DRAWINGS.


4.5 LABELING

- A. ANTENNA AND LINE CONTRACTOR SHALL MARK CABLES WITH 1" WIDE UV-RESISTANT COLORED TAPE. THE CABLES SHALL BE MARKED AT THE END OF THE TRANSMISSION LINE NEAREST EACH ANTENNA, AT THE THE BASE OF THE TOWER/STRUCTURE CLOSEST TO THE ENTRY PORT AND IMMEDIATELY INSIDE THE ENTRY PORT.
- B. CABLES SHALL BE TAGGED IMMEDIATELY INSIDE THE SHELTER WITH ANTENNA MODEL, HEIGHT, OWNER, AND USE.
- C. MOTOROLA ANTENNA INSTALLATION AND IDENTIFICATION MATRIX (REF. MOTOROLA R56 APPENDIX B-7) SHALL BE FILLED OUT AND SUBMITTED TO MOTOROLA PROJECT MANAGER.

4.6 GROUNDING

- A. ANTENNA AND CABLE GROUNDING SHALL BE INSTALLED CONTEMPORANEOUSLY WITH INSTALLATION. NO UNGROUNDED COAX SHALL BE ROUTED INTO THE SHELTER OR CONNECTED TO EQUIPMENT.
- B. REFERENCE SEPARATE GROUNDING NOTES SHEET E1 FOR ADDITIONAL NOTES.

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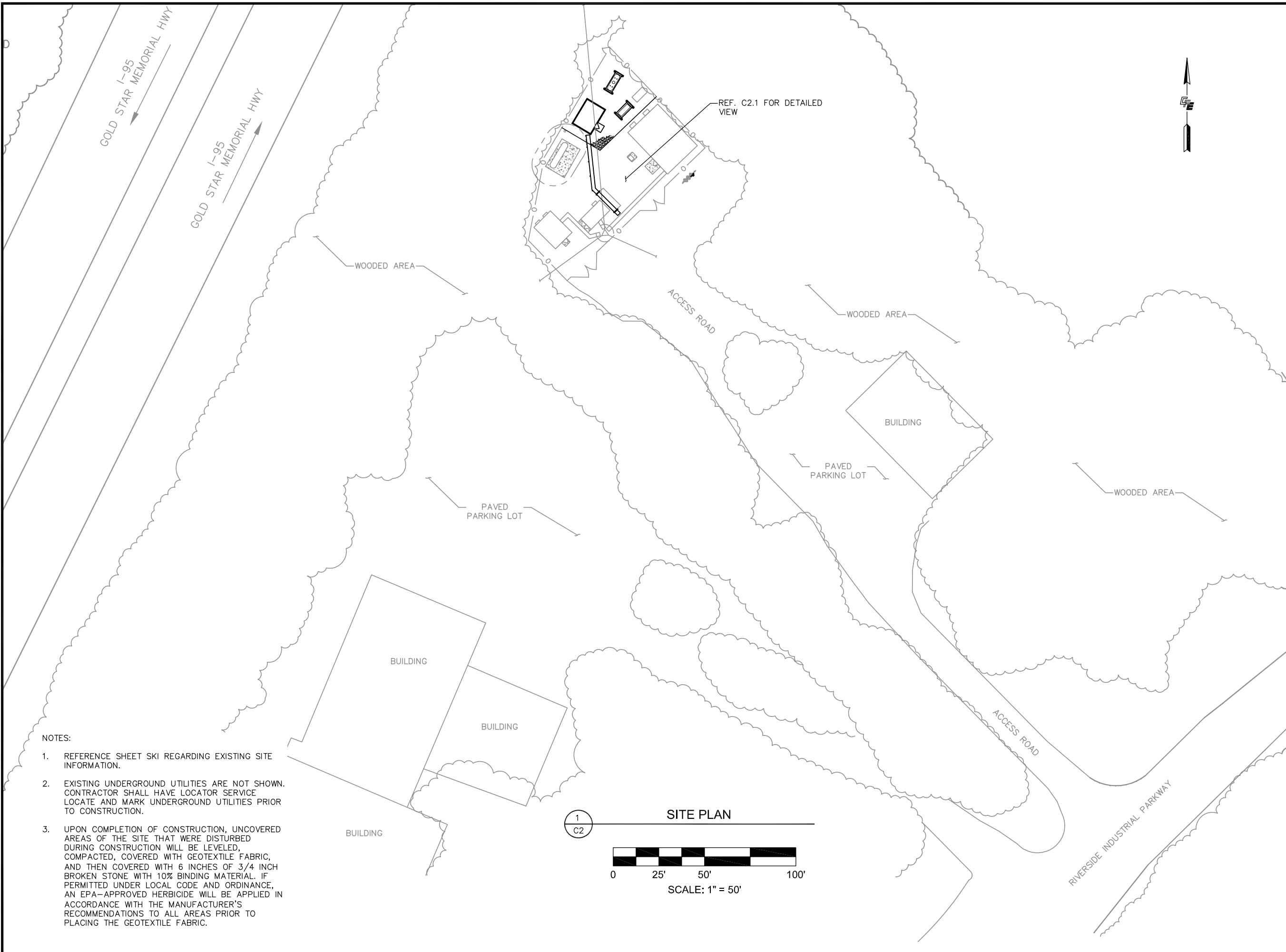
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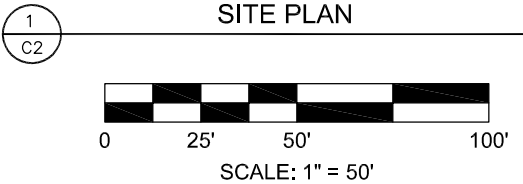
SITE PLAN

C2

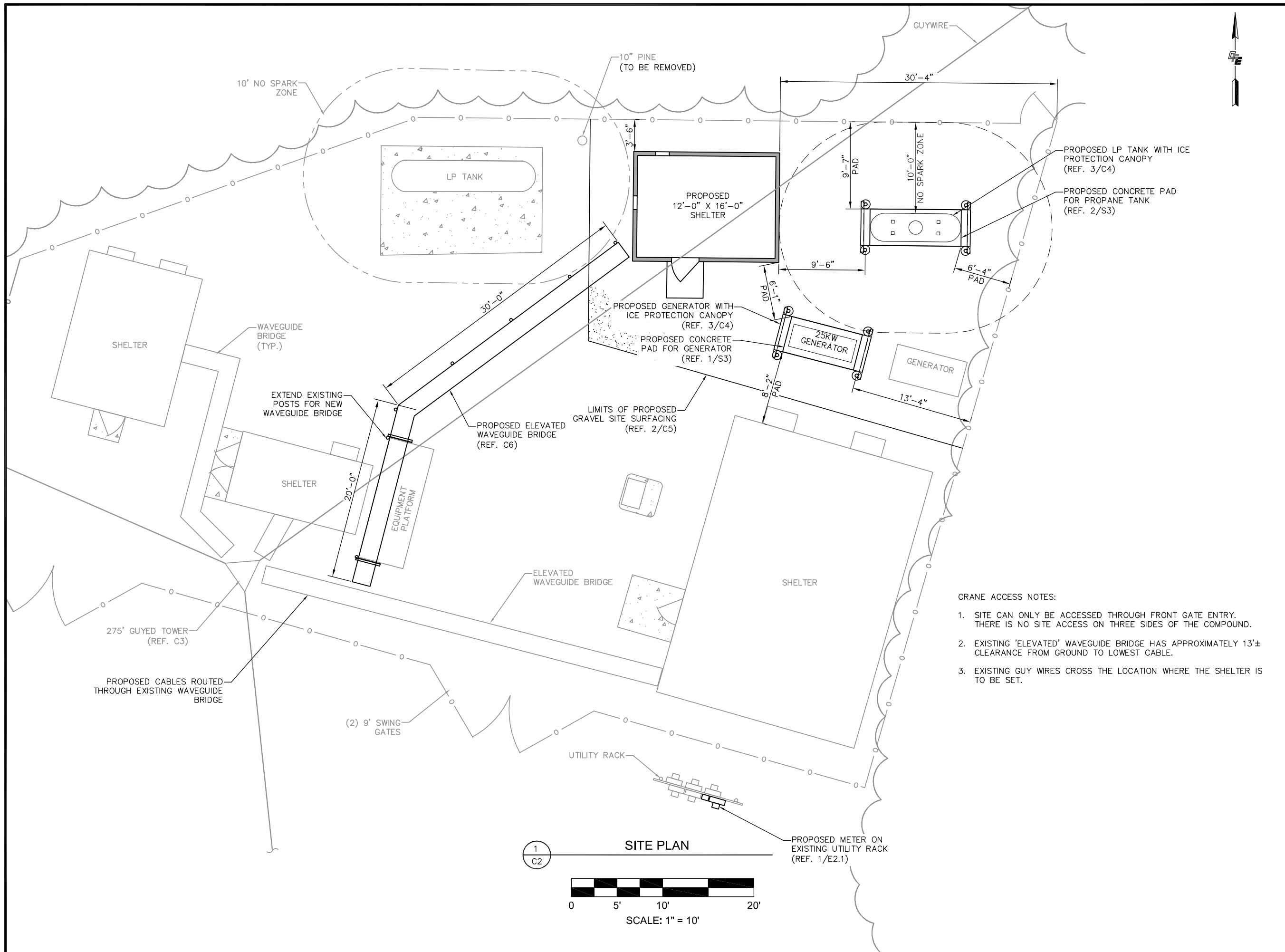


NOTES:


1. REFERENCE SHEET SKI REGARDING EXISTING SITE INFORMATION.
2. EXISTING UNDERGROUND UTILITIES ARE NOT SHOWN. CONTRACTOR SHALL HAVE LOCATOR SERVICE LOCATE AND MARK UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
3. UPON COMPLETION OF CONSTRUCTION, UNCOVERED AREAS OF THE SITE THAT WERE DISTURBED DURING CONSTRUCTION WILL BE LEVELED, COMPACTED, COVERED WITH GEOTEXTILE FABRIC, AND THEN COVERED WITH 6 INCHES OF 3/4 INCH BROKEN STONE WITH 10% BINDING MATERIAL. IF PERMITTED UNDER LOCAL CODE AND ORDINANCE, AN EPA-APPROVED HERBICIDE WILL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS TO ALL AREAS PRIOR TO PLACING THE GEOTEXTILE FABRIC.



SITE PLAN



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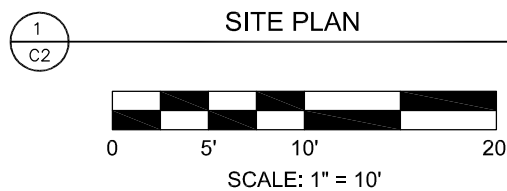
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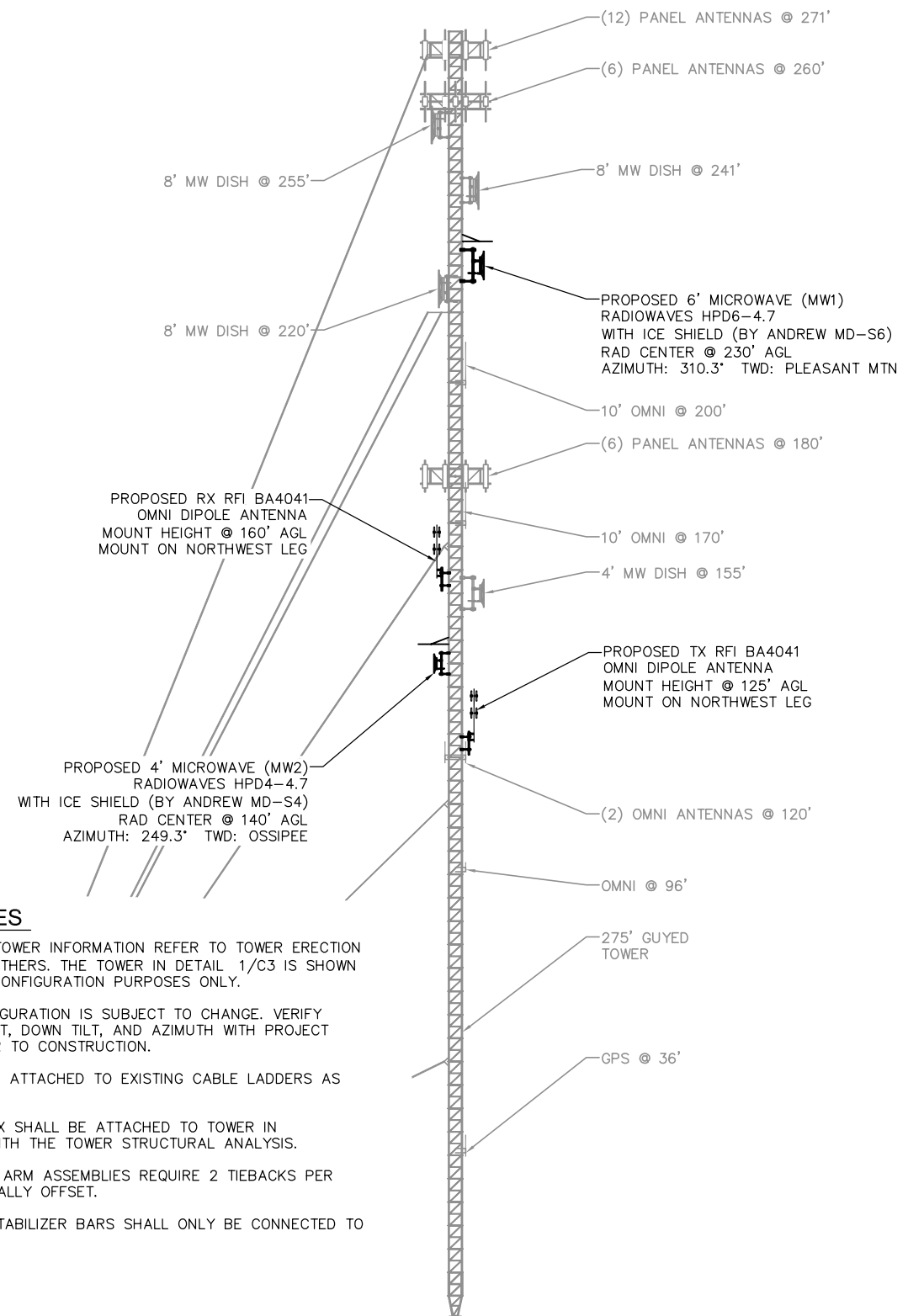
**DETAILED
SITE PLAN**

C2.1

- CRANE ACCESS NOTES:
- SITE CAN ONLY BE ACCESSED THROUGH FRONT GATE ENTRY. THERE IS NO SITE ACCESS ON THREE SIDES OF THE COMPOUND.
 - EXISTING 'ELEVATED' WAVEGUIDE BRIDGE HAS APPROXIMATELY 13'± CLEARANCE FROM GROUND TO LOWEST CABLE.
 - EXISTING GUY WIRES CROSS THE LOCATION WHERE THE SHELTER IS TO BE SET.



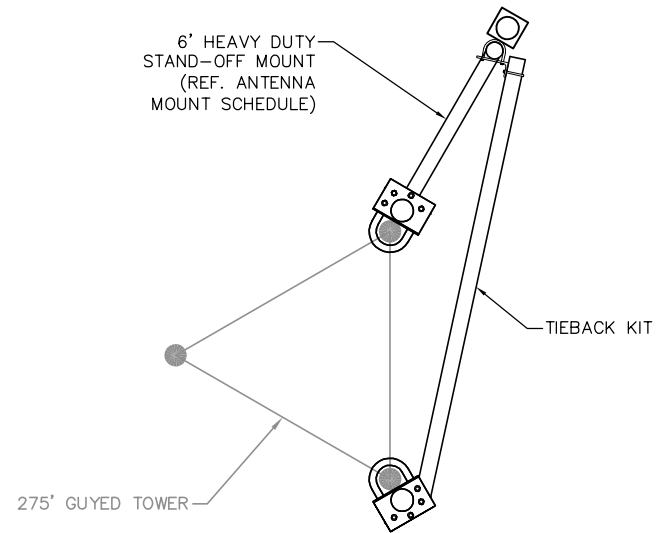
ANTENNA MOUNT SCHEDULE							
ELEVATION	ANTENNA	RAD CENTER	AZIMUTH	MOUNT KIT (1)	MOUNT KIT (2)	TIEBACK KIT	FEEDLINES
230'	HPD6-4.7	230'	310.3°	SABRE C10-153-202	SABRE C10-15 8-001	-	CAT5E
160'	RFI BA4041	-	-	SABRE C10-172-998	SABRE C10-151-906	SABRE C10-179-201	LDF4-50A
140'	HPD4-4.7	140'	249.3°	SABRE C10-153-202	SABRE C10-15 8-001	-	CAT5E
125'	RFI BA4041	-	-	SABRE C10-172-998	SABRE C10-151-906	SABRE C10-179-201	LDF4-50A



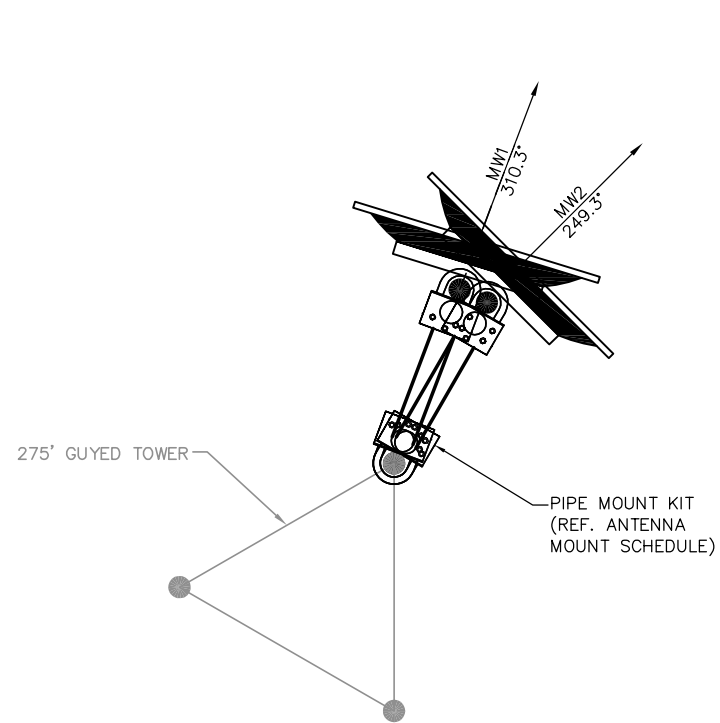
TOWER NOTES

1. FOR DETAILED TOWER INFORMATION REFER TO TOWER ERECTION DRAWINGS BY OTHERS. THE TOWER IN DETAIL 1/C3 IS SHOWN FOR GENERAL CONFIGURATION PURPOSES ONLY.
2. ANTENNA CONFIGURATION IS SUBJECT TO CHANGE. VERIFY ANTENNA HEIGHT, DOWN TILT, AND AZIMUTH WITH PROJECT MANAGER PRIOR TO CONSTRUCTION.
3. COAX SHALL BE ATTACHED TO EXISTING CABLE LADDERS AS SHOWN.
4. ANTENNAS COAX SHALL BE ATTACHED TO TOWER IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS.
5. ALL 6 FT. SIDE ARM ASSEMBLIES REQUIRE 2 TIEBACKS PER MOUNT, VERTICALLY OFFSET.
6. MOUNTS AND STABILIZER BARS SHALL ONLY BE CONNECTED TO TOWER LEGS.

1
C3 TOWER ELEVATION
SCALE: N.T.S.



2
C3 BIRD ANTENNA MOUNT DETAIL
SCALE: N.T.S.



3
C3 MICROWAVE DISH MOUNT DETAIL
SCALE: N.T.S.

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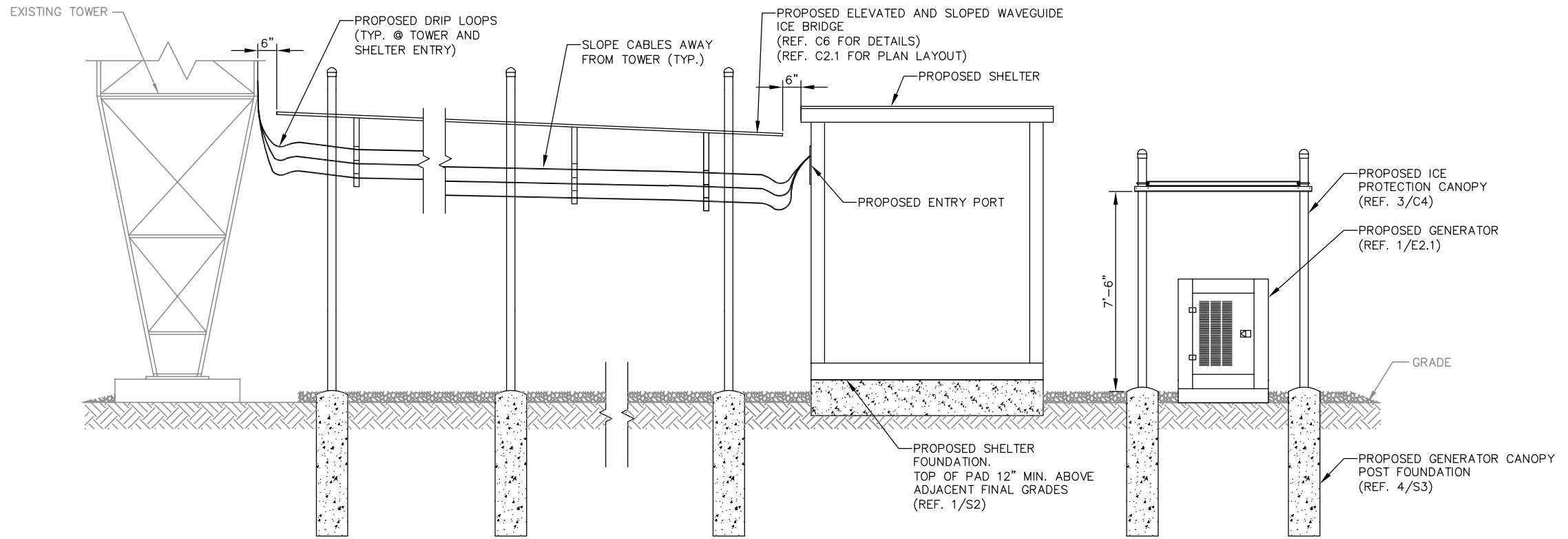
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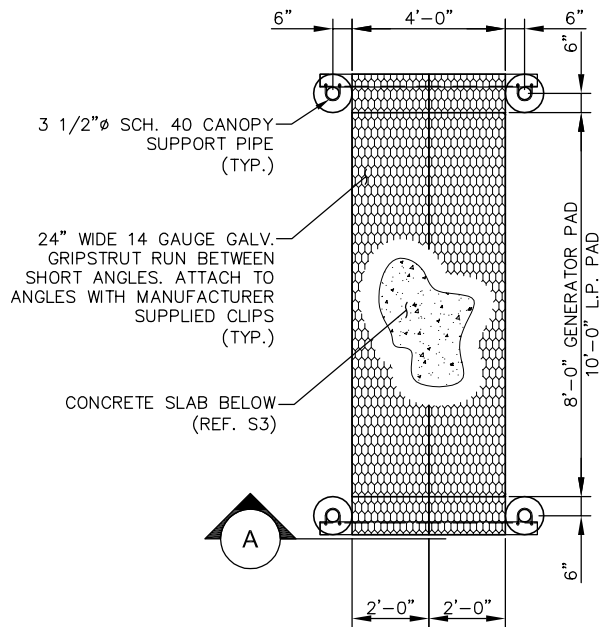
TOWER ELEVATION

C3

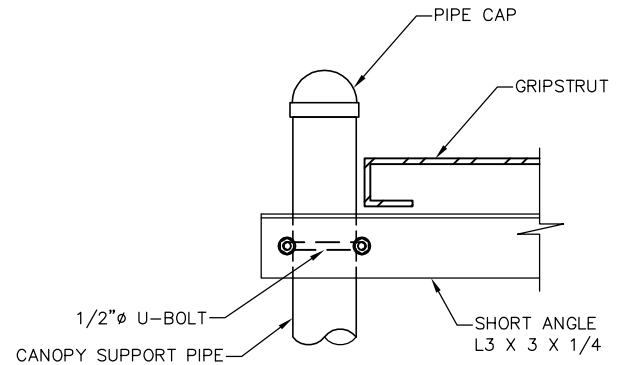


1
C4
**TYPICAL TOWER
COMPOUND PROFILE**
SCALE: N.T.S.

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INTENTIONALLY LEFT BLANK



3
C4
**ICE PROTECTION CANOPY
PLAN AND DETAILS**
SCALE: N.T.S.



SECTION - A
SCALE: N.T.S.

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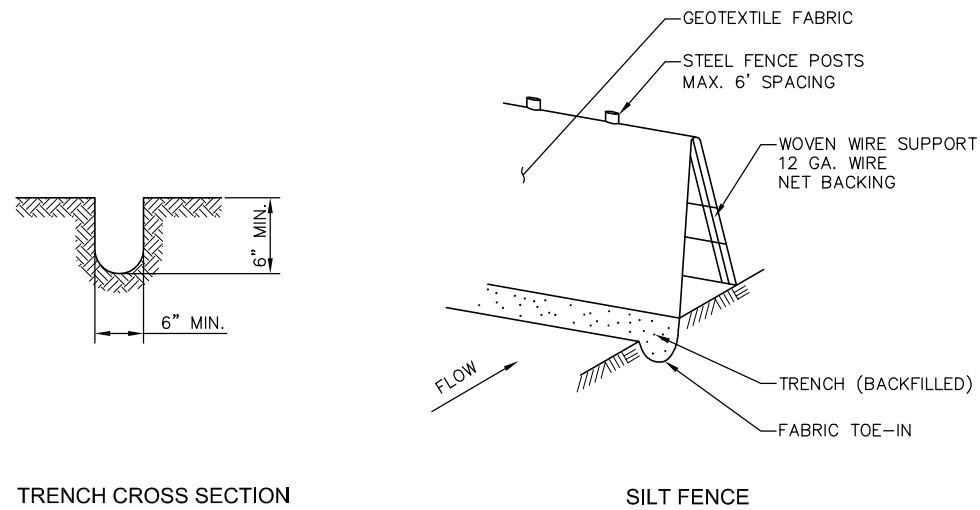
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NO.	DATE	DESCRIPTION

**COMPOUND
PROFILE, TRAPEZE
& COAX
CONFIGURATION**

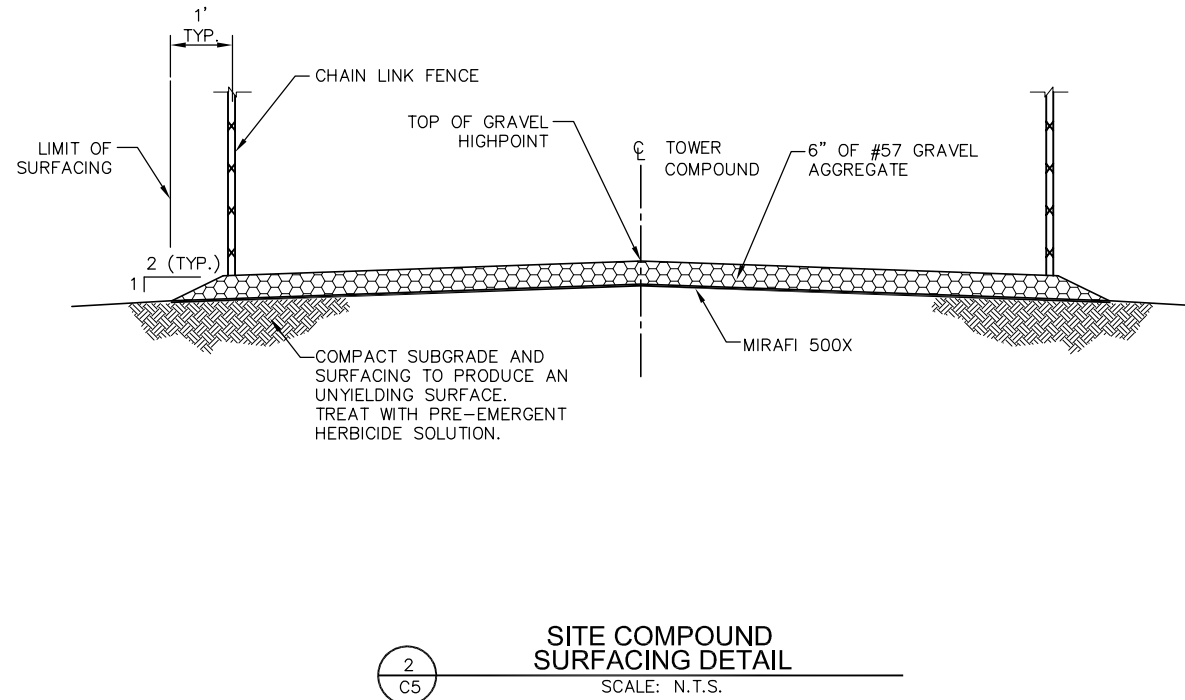
C4

SOIL AND EROSION CONTROL

1. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL, AND OTHER REQUIREMENTS OF GOVERNMENTAL AUTHORITIES HAVING JURISDICTION.
2. CONSTRUCTION AT THE SITE WILL BEGIN WITH THE INSTALLATION OF EROSION CONTROL MEASURES SUFFICIENT TO CONTROL SEDIMENT DEPOSITS AND EROSION.
3. EROSION CONTROL DEVICES SHALL BE INSTALLED BEFORE GROUND DISTURBANCE OCCURS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE CONSTRUCTION MANAGER IMMEDIATELY.
4. ALL SILT BARRIERS MUST BE PLACED AS ACCESS IS OBTAINED DURING CLEARING. NO GRADING SHALL BE DONE UNTIL SILT BARRIER IS INSTALLED.
5. CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED. CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES AT THE END OF EACH WORKING DAY TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.
6. THE CONTRACTOR SHALL REMOVE ACCUMULATED SILT WHEN THE SILT REACHES 12" IN HEIGHT WITHIN SILT FENCE BARRIERS.
7. FAILURE TO INSTALL, OPERATE OR MAINTAIN ALL EROSION CONTROL MEASURES MAY RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB SITE UNTIL SUCH MEASURES ARE CORRECTED.
8. A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT IF REQUIRED SHALL BE PRESENT ON THE JOB SITE WHENEVER LAND DISTURBANCE ACTIVITY IS IN PROGRESS.
9. ANY AREA OF DISTURBANCE LEFT EXPOSED OR THAT IS ANTICIPATED TO BE EXPOSED BEYOND THE EXPOSURE PERIOD REQUIRED BY LOCAL AUTHORITIES SHALL BE STABILIZED WITH TEMPORARY SEEDING.
10. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROVIDED IF REQUIRED UPON INSPECTION BY AND DIRECTION FROM LOCAL AUTHORITIES.
11. UPON COMPLETION OF WORK, OR AS DIRECTED BY EROSION CONTROL AUTHORITIES, ALL DISTURBED AREAS NOT IMPROVED WITH GRAVEL SHALL BE SEEDED WITH PERMANENT SEEDING MATERIAL SUITABLE FOR THE LOCAL GROWING AREA.



SILT FENCE DETAIL
SCALE: N.T.S.



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CONSTRUCTION DETAILS

C5

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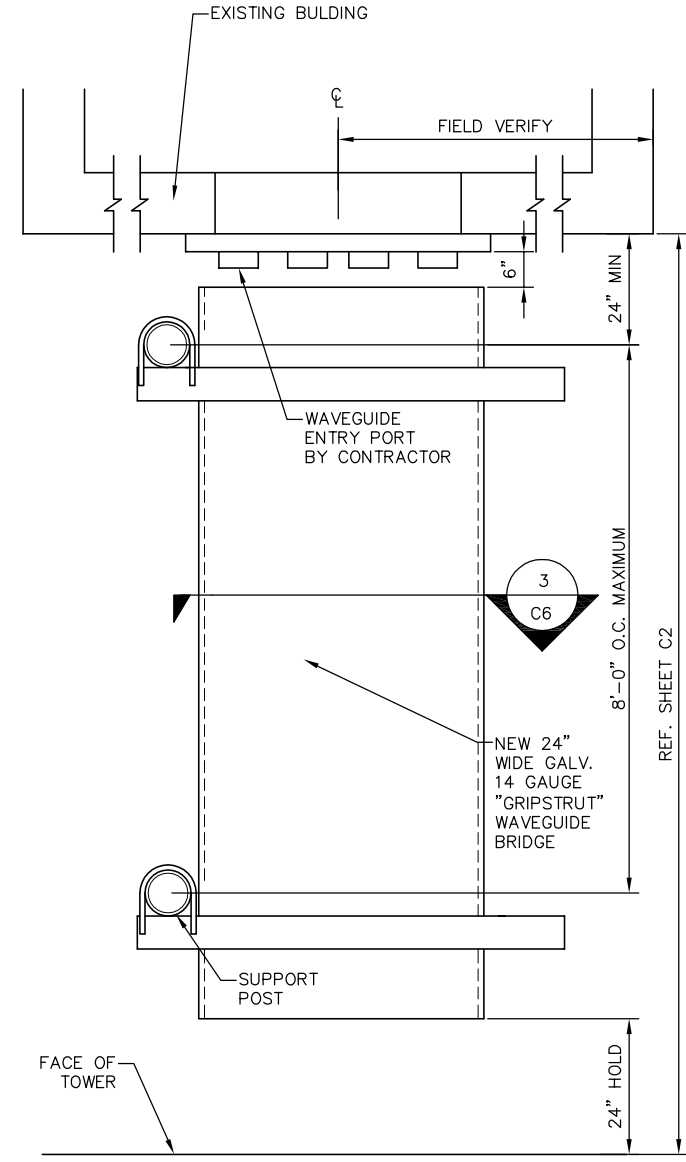
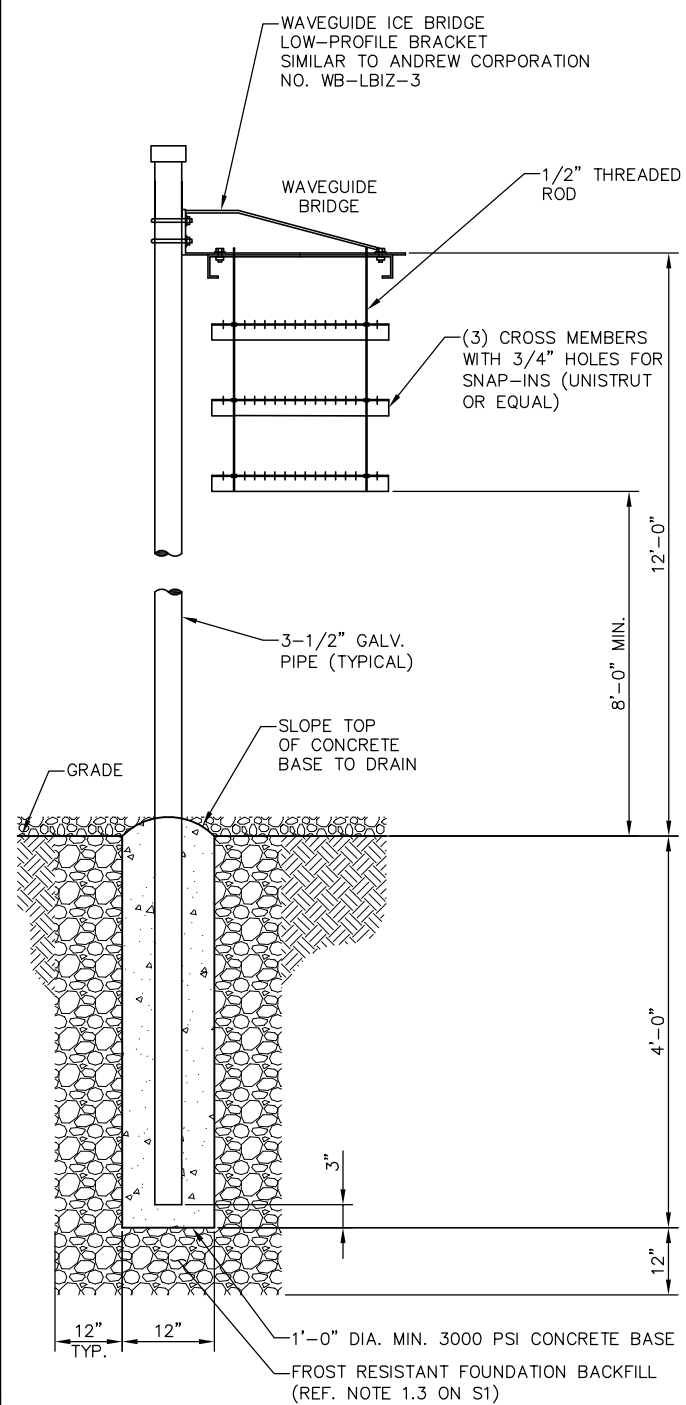
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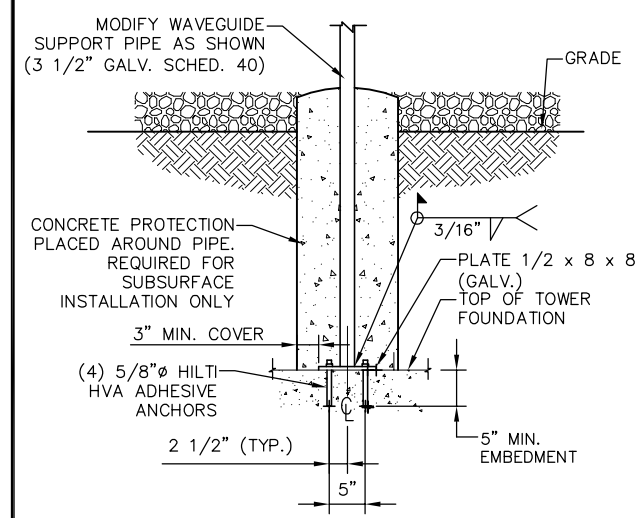
**WAVEGUIDE ICE
BRIDGE DETAILS**

C6



- NOTES:
1. ADJUST CENTERLINE OF WAVEGUIDE PORT ON BUILDING
 2. REF. DETAIL 1/E3.3 FOR WAVEGUIDE BRIDGE GROUNDING DETAIL.
 3. ALL MATERIALS USED FOR WAVEGUIDE SHALL BE HOT-DIPPED GALVANIZED. ALL FIELD CUTS OR DRILLED OPENINGS SHALL BE RESEALED WITH 3 COATS OF COLD-GALVANIZING COMPOUND TO CLEANED SURFACES.
 4. ADDITIONAL SECTIONS OF WAVEGUIDE BRIDGE MAY BE REQUIRED AS INDICATED IN SITE PLAN. SUPPORT EACH 10' SECTION WITH A MINIMUM OF TWO POSTS WITH A MAXIMUM SPACING OF 8'.

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INTENTIONALLY LEFT BLANK



ALL WELDS AND DAMAGED AREAS
OF GALVANIZING SHALL BE COATED
WITH THREE COATS OF GALVANOX
COLD GALVANIZING COMPOUND.

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INTENTIONALLY LEFT BLANK

STRUCTURAL NOTES

1.1 CODES

- A. 2009 INTERNATIONAL BUILDING CODE.

1.2 GENERAL

- A. THE DETAILS DESIGNATED AS "TYPICAL DETAILS" APPLY GENERALLY TO THE DRAWINGS IN ALL AREAS WHERE CONDITIONS ARE SIMILAR TO THOSE DESCRIBED IN THE DETAILS.
- B. ALL DIMENSIONS AND CONDITIONS OF EXISTING CONSTRUCTION SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOB SITE PRIOR TO BEGINNING WORK. DIFFERENCES BETWEEN EXISTING CONSTRUCTION AND THE DRAWINGS SHALL BE REFERRED TO THE OWNER AND THE ENGINEER.
- C. THE DESIGN AND PROVISION OF ALL TEMPORARY SUPPORTS – SUCH AS GUYS, BRACES, FALSE WORK, SUPPORTS, AND ANCHORS FOR SAFETY LINES, CRIBBING OR ANY OTHER TEMPORARY ELEMENTS REQUIRED FOR THE EXECUTION OF THE CONTRACT ARE NOT INCLUDED IN THE DRAWINGS AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. TEMPORARY SUPPORTS SHALL NOT RESULT IN THE OVERSTRESS OR DAMAGE OF THE ELEMENTS TO BE BRACED OR ANY ELEMENTS USED AS BRACE SUPPORTS.
- D. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, AND, EXCEPT WHERE SPECIFICALLY SHOWN, DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, SEQUENCE, AND SAFETY.
- E. THE ENGINEER SHALL NOT HAVE CONTROL OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSION OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSON PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- F. CONTRACTOR SHALL VERIFY EQUIPMENT SIZE AND LOCATION. NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES FROM PLANS.
- G. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE 48 HOURS IN ADVANCE OF THE TIME WHEN A SIGNIFICANT PORTION OF THE REINFORCING HAS BEEN TIED AND WHEN THE CONCRETE IS TO BE POURED FOR SCHEDULING SITE INSPECTIONS.
- H. POSITIVE DRAINAGE SHALL BE PROVIDED ADJACENT TO ALL FOUNDATIONS SO PONDING OF RAINFALL NEAR THE FOUNDATIONS DOES NOT OCCUR.
- I. DURING CONSTRUCTION, TEMPORARY GRADES SHALL BE ESTABLISHED TO PREVENT RUNOFF FROM ENTERING THE FOUNDATION AND ANCHORAGE EXCAVATIONS.
- J. DRAINAGE PATTERNS APPROVED AT THE TIME OF FINISH GRADING SHALL BE MAINTAINED THROUGHOUT THE LIFE OF THE TOWER.

1.3 FOUNDATION BACKFILL

FROST-RESISTANT STRUCTURAL FILL

- 1. PRIOR TO PLACING REQUIRED FILL MATERIAL, REMOVE FROM THE SITE ALL COBBLES, BOULDERS, AND VEGETATION, AS WELL AS OTHER DELETERIOUS MATERIALS, INCLUDING ANY LOOSE OR EXCESSIVELY ORGANIC MATERIAL FROM THE EXISTING SUBGRADE. THIS MATERIAL SHOULD BE STRIPPED TO A MINIMUM DEPTH OF 6 INCHES AND REMOVED FROM THE SITE. ALL EXPOSED SURFACES SHALL THEN BE INSPECTED BY PROBING, AND TESTING.
- 2. THE EXPOSED SUBGRADE SHOULD NOT BE ALLOWED TO DRY OUT PRIOR TO PLACING SELECT STRUCTURAL FILL.
- 3. ALL FILL UNDER THE SLAB SHALL BE COMPACTED FROST-RESISTANT STRUCTURAL FILL MATERIAL. 24" MINIMUM THICKNESS.
- 4. SELECT STRUCTURAL FILL MATERIAL SHALL MEET THE FOLLOWING GRADATION:
 NO PARTICLES GREATER THAN 6 INCHES
 PERCENT PASSING 3" SIEVE 100%
 PERCENT PASSING 1/4" SIEVE 25% - 70%
 PERCENT PASSING NO. 40 SIEVE 0% - 30%
 PERCENT PASSING NO. 200 SIEVE 0% - 5%
- 5. FROST-RESISTANT STRUCTURAL FILL SHALL BE PLACED IN LIFTS BETWEEN 9 INCHES AND 12 INCHES THICK, WATERED AS

- REQUIRED AND COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DEFINED IN ASTM TEST METHOD D1557 AT A MOISTURE CONTENT WITHIN 3 PERCENT OF THE OPTIMUM MOISTURE CONTENT.
- 6. COMPACTION AND MOISTURE CONTENT OF SUBGRADE AND EACH LIFT OF SELECT STRUCTURAL FILL SHALL BE INSPECTED AND APPROVED BY A QUALIFIED ENGINEERING TECHNICIAN, SUPERVISED BY A GEOTECHNICAL ENGINEER.

1.4 MOISTURE MANAGEMENT

- A. EVERY EFFORT SHALL BE MADE TO KEEP EXCAVATIONS DRY SHOULD GROUNDWATER BE ENCOUNTERED.
- B. SEEPAGE CAN BE EFFECTIVELY HANDLED BY SIMPLE DEWATERING METHODS, SUCH AS PERIPHERY DITCHES AND SUMPS. A SUITABLE SUMP COULD CONSIST OF A LARGE DIAMETER PIPE SET VERTICALLY WITH A COARSE SAND AND GRAVEL MIXTURE PLACED IN THE BOTTOM TO ACT AS A FILTER.
- C. CARE SHALL BE EXERCISED IN PUMPING DIRECTLY FROM THE EXCAVATION SINCE THIS MAY CAUSE DETERIORATION OF THE EXCAVATION BASE.
- D. THE TRAFFIC OF HEAVY EQUIPMENT (INCLUDING HEAVY COMPACTION EQUIPMENT) MAY CREATE PUMPING AND GENERAL DETERIORATION OF THE SHALLOWER SOILS.

1.5 SLAB-ON-GRADE

- A. SLAB-ON-GRADE FOUNDATIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ENGINEERING DESIGN FOR SITE PREPARATION, DRAINAGE, AND MAINTENANCE.
 - B. WITHIN THE AREA OF THE PROPOSED SLAB-ON-GROUND, REMOVE AND DISPOSE OF ALL SURFACE VEGETATION, ANY DELETERIOUS MATERIALS WHICH MAY BE PRESENT, AND ALL SOIL REQUIRED TO PROVIDE FOUNDATION BACKFILL BELOW AND ADJACENT TO THE SLAB AS INDICATED IN THE DRAWINGS. IF SOFT, WEAK, OR UNSTABLE SOIL CONDITIONS ARE REVEALED, OVER EXCAVATE THE AREA AND BRING BACK TO GRADE WITH FOUNDATION BACKFILL.
 - C. PLACE A 10 MIL POLYOLEFIN, ASTM E 1745 (CLASS A), VAPOR BARRIER OVER COMPACTED SOIL PRIOR TO PLACING FOUNDATION SLAB.
 - D. REFER TO PLANS FOR STIFFENED SLAB-ON-GRADE DIMENSIONS, THICKNESS, AND REINFORCING.
 - E. THE TROWELED FINISHED CONCRETE SLAB-ON-GRADE FLOOR PROFILE SHALL COMPLY WITH THE FOLLOWING FLATNESS AND LEVELNESS VALUES AS DEFINED IN THE ASTM E 1155:
- | | SPECIFIED OVERALL | MINIMUM LOCAL |
|----------------|-------------------|---------------|
| FLATNESS (FF) | 25 | 17 |
| LEVELNESS (FL) | 20 | 15 |
- F. HORIZONTAL WING AND VERTICAL INSULATION SHALL BE USED TO PROTECT SHALLOW FOUNDATIONS PER "DESIGN GUIDE FOR FROST PROTECTION OF SHALLOW FOUNDATIONS." U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, JUNE 1994. REF. SITE DETAILS.

1.6 CONCRETE


- A. CONCRETE DESIGN AND REINFORCEMENT SHALL BE IN ACCORDANCE WITH "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", ACI 318-20 AND WITH SP-66(04): ACI DETAILING MANUAL - 2004.
- B. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE, ACI 301-05."
- C. ALL CONCRETE SHALL HAVE SAND FINE AGGREGATE, NORMAL WEIGHT COARSE AGGREGATE, AND TYPE I OR III PORTLAND CEMENT. SLABS ON GRADE AND ALL OTHER CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH (F'C) OF 4000 PSI IN 28 DAYS. SEE CIVIL FOR SIDEWALKS, PAVING, AND SITE WORK CONCRETE STRENGTH REQUIREMENTS.
- D. NO PIPE SLEEVES SHALL PASS THROUGH STRUCTURAL CONCRETE WITHOUT PRIOR APPROVAL OF THE STRUCTURAL ENGINEER. CAST IN SLEEVES SHALL BE CAST IRON OR SCHEDULE 40 STEEL PIPE.
- E. CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY OF THE FORMS AND SHORING AND FOR SAFE PRACTICE IN THEIR USE AND REMOVAL.

1.7 REINFORCING STEEL

- A. REINFORCING STEEL SHALL BE DEFORMED BILLET-STEEL BARS CONFORMING TO THE REQUIREMENTS OF ASTM A615, GRADE 60.
 - B. DETAILING OF CONCRETE REINFORCEMENT AND ACCESSORIES SHALL BE IN ACCORDANCE WITH ACI PUBLICATION SP-66(04): ACI DETAILING MANUAL - 2004.
 - C. ALL HOOKS SHALL BE A.C.I. STANDARD 90-DEGREE HOOKS, UNLESS DETAILED OTHERWISE.
 - D. PROVIDE CORNER BARS FOR ALL HORIZONTAL BARS AT THE INSIDE AND OUTSIDE FACES AND TOP AND BOTTOM OF INTERSECTING BEAMS OR WALLS. CORNER BARS ARE NOT REQUIRED IF HORIZONTAL BARS ARE HOOKED. LAP CORNERS 2'-0".
 - E. THE WELDING OF REINFORCING STEEL WILL NOT BE PERMITTED.
 - F. HEAT SHALL NOT BE USED IN THE FABRICATION OR INSTALLATION OF REINFORCEMENT.
 - G. MINIMUM CONCRETE PROTECTION FOR REINFORCEMENT (SEE ACI 318, LATEST EDITION, FOR CONDITIONS NOT NOTED).

 GRADE BEAMS AS DETAILED
 SLAB ON GRADE 1 1/2" TOP
 - H. BARS IN SLABS ON GRADE SHALL BE SUPPORTED ON SMALL PIECES OF MASONRY OR ACCESSORIES WITH "SAND" PLATES WHICH PROVIDE 1 1/2" AT THE TOP.
- 1.8 MISCELLANEOUS**
- A. ALL GROUT FOR STEEL BEARING AND LEVELING SHALL BE NON-SHRINK AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI.

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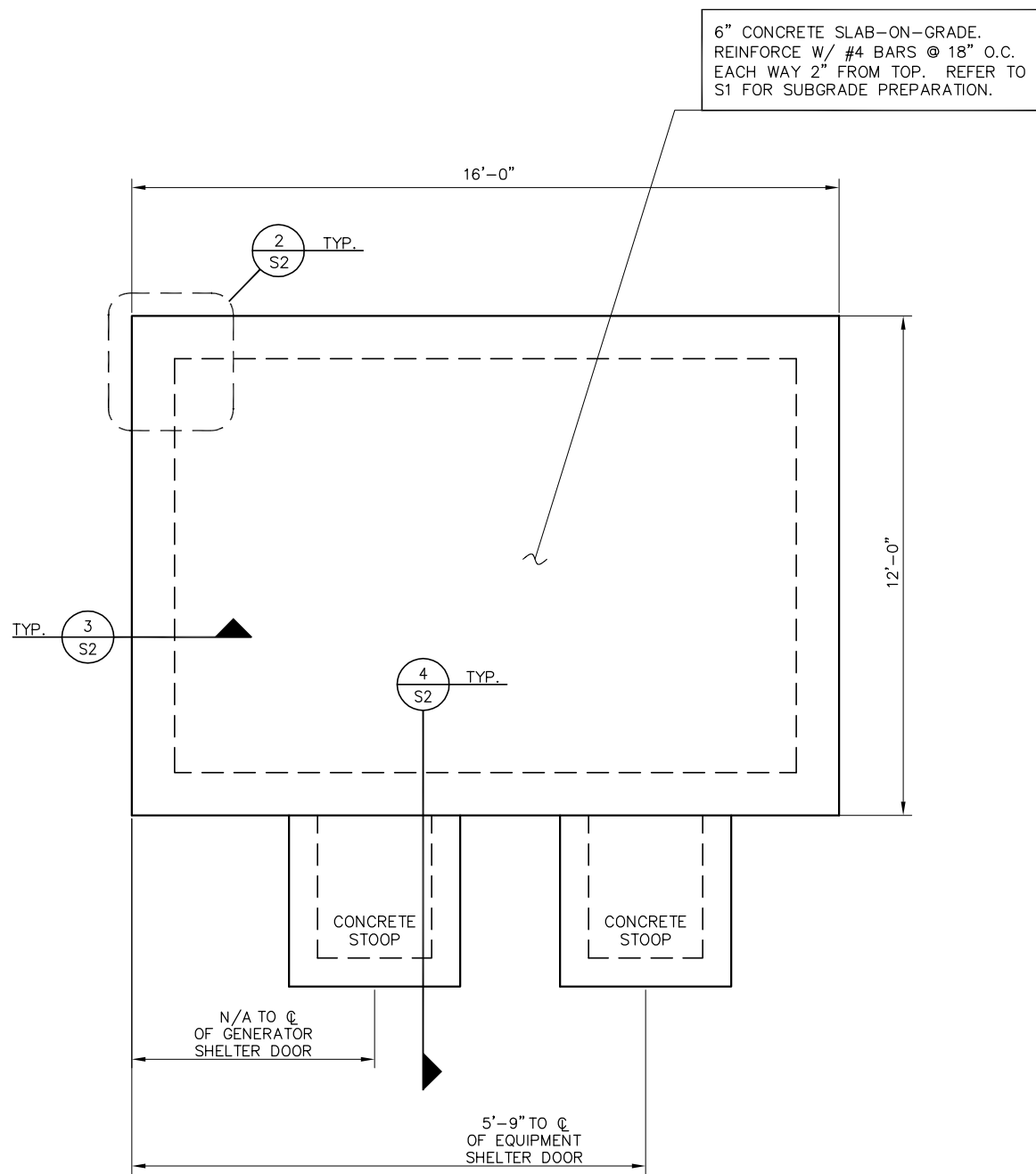
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STRUCTURAL NOTES

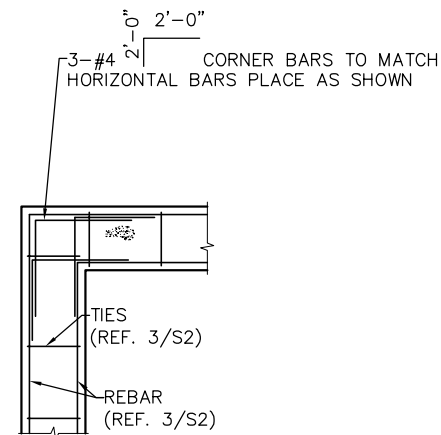
S1

PLAN NOTES:

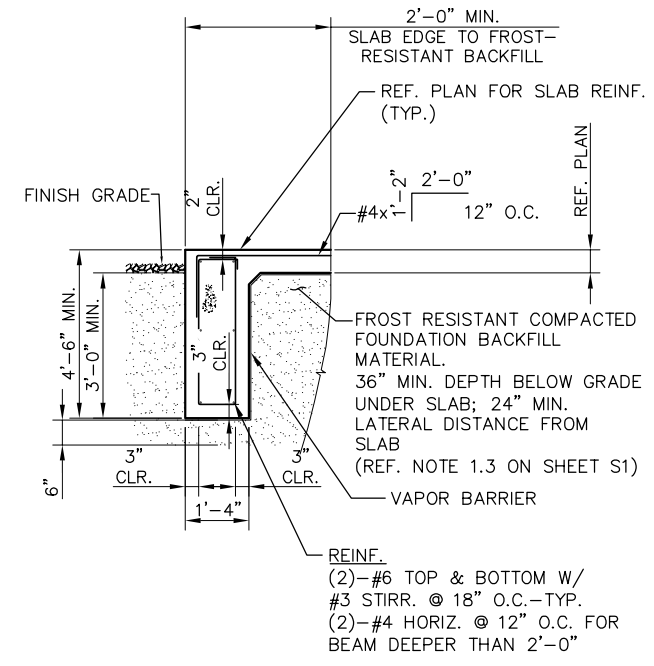
1. REFER TO CIVIL DRAWINGS FOR PLAN NORTH.
2. REFER TO EQUIP. BUILDING MANUFACTURER'S DRAWINGS FOR INFORMATION ON HOW TO ATTACH SHELTER TO FOUNDATION.



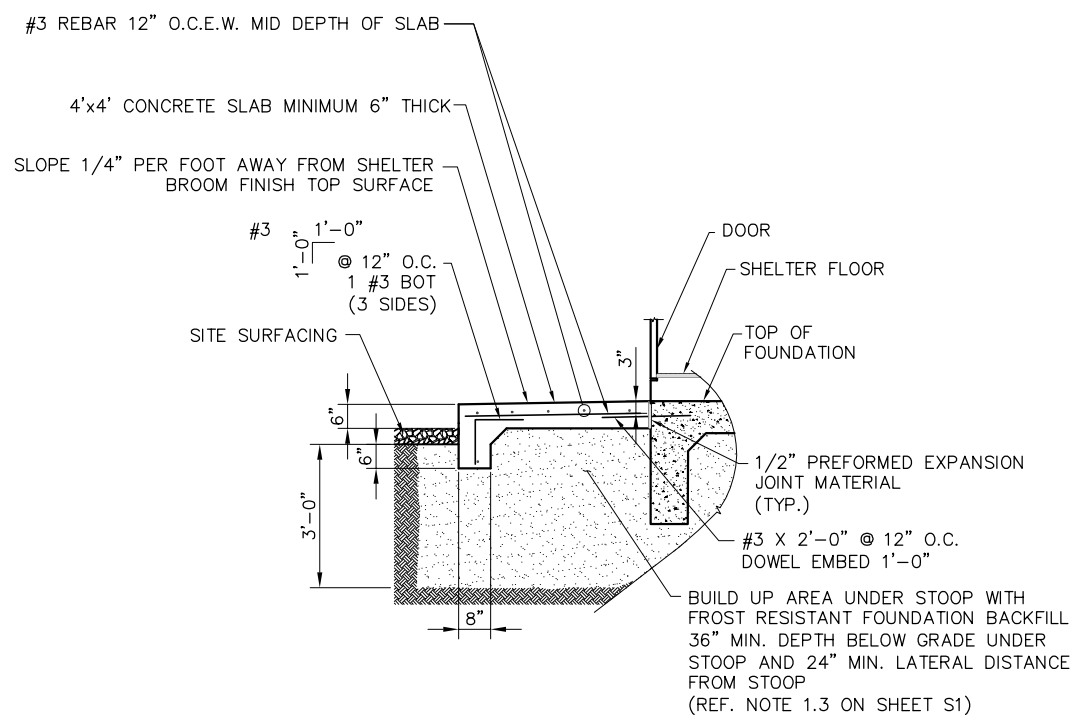
1 SHELTER CONCRETE BASE PLAN
SCALE: N.T.S.



2 TYPICAL CORNER BAR AT DOWN TURN
SCALE: N.T.S.



3 TYPICAL DOWN TURN SECTION
SCALE: N.T.S.



4 CONCRETE STOOP
SCALE: N.T.S.

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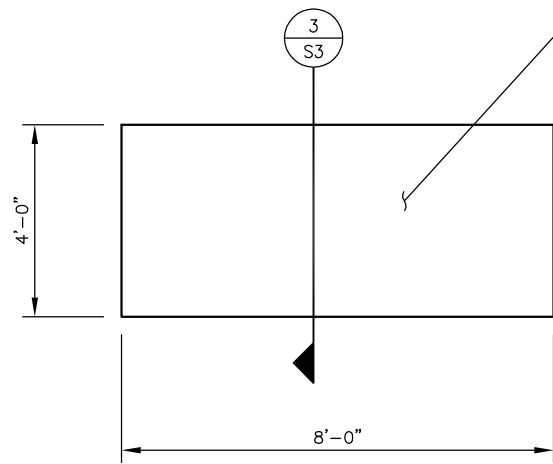
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SHELTER FOUNDATION DETAILS

S2

12" CONCRETE SLAB-ON-GRADE.
 REINFORCE W/ #4 BARS @ 12"
 O.C.B.W. TOP AND BOTTOM.



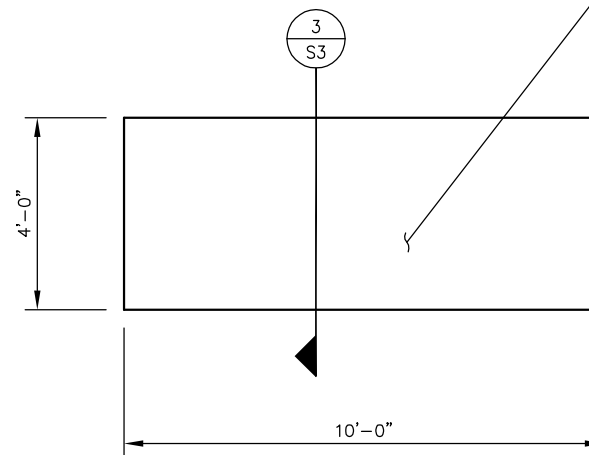
- NOTES:
1. REFERENCE CIVIL DRAWINGS FOR PLAN NORTH.
 2. FINISHED FLOOR ELEVATION OF SLAB SHALL BE LEVEL AND 6" ABOVE ADJACENT GRADE.

**GENERATOR
 FOUNDATION PLAN**

1
S3

SCALE: 1/4" = 1'-0"

12" CONCRETE SLAB-ON-GRADE.
 REINFORCE W/ #4 BARS @ 12"
 O.C.B.W. TOP AND BOTTOM.

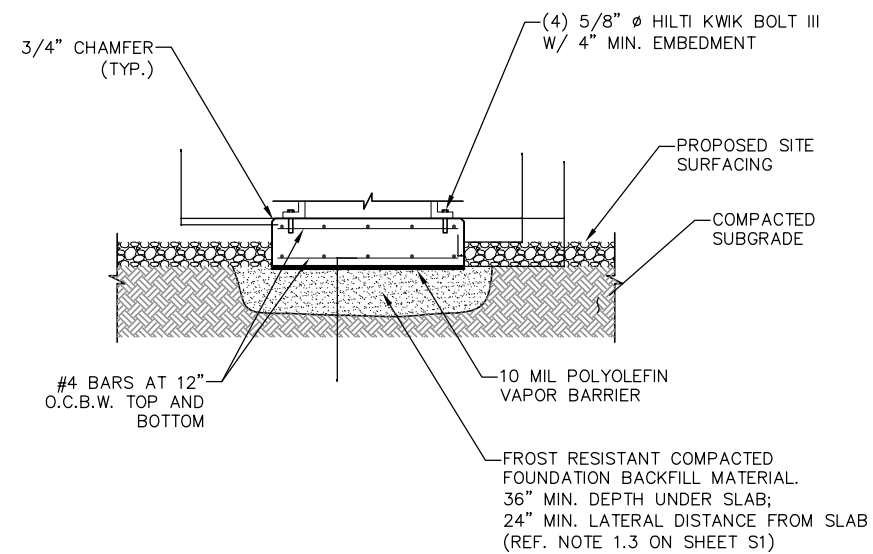


- NOTES:
1. REFERENCE CIVIL DRAWINGS FOR PLAN NORTH.
 2. FINISHED FLOOR ELEVATION OF SLAB SHALL BE LEVEL AND 6" ABOVE ADJACENT GRADE.

**FUEL TANK
 FOUNDATION PLAN**

2
S3

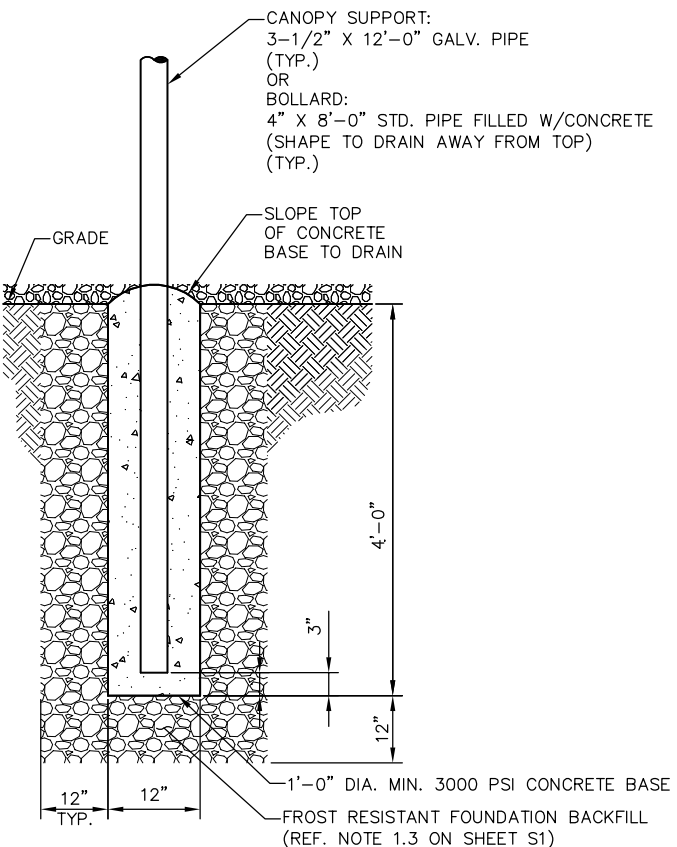
SCALE: 1/4" = 1'-0"



**GENERATOR/FUEL TANK
 CONCRETE PAD SECTION**

3
S3

SCALE: 1/4" = 1'-0"



**SECTION VIEW @
 CANOPY & BOLLARD BASE**

4
S3

SCALE: N.T.S.

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MOTOROLA SOLUTIONS



**SOUTH PORTLAND
 (ATC #10047)**

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REVISIONS

NO.	DATE	DESCRIPTION

**EQUIPMENT
 PAD DETAILS**

S3

ELECTRICAL SPECIFICATIONS:

GENERAL:

- A. CONTRACTOR SHALL PROVIDE ALL ITEMS OF LABOR AND MATERIALS TO MAKE A COMPLETE INSTALLATION OF ELECTRICAL WORK, AS SHOWN ON DRAWINGS, AS SPECIFIED, AND AS NECESSARY FOR COMPLETE SYSTEMS, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
 1. MAIN POWER BRANCH/FEEDERS AS REQUIRED.
 2. BRANCH FEEDER FOR POWER AND LIGHTING.
 3. ALL ELECTRICAL CONDUCTORS AND CONDUIT.
 4. ALL WIRING DEVICES, SAFETY SWITCHES.
 5. ALL LIGHTING FIXTURES AND LAMPS.
 6. ALL COMMUNICATION EMPTY CONDUIT SYSTEMS.
 7. LIGHTNING SURGE PROTECTION DEVICE.
 8. ANTENNA AND EQUIPMENT GROUNDING.

ELECTRICAL REQUIREMENTS

- A. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL LOCAL AND NATIONAL ELECTRICAL CODES.
- B. ALL WORK SHALL BE COMPLETED BY A CERTIFIED MASTER ELECTRICIAN.
- C. ALL WORK SHALL CONFORM TO THE LATEST VERSION OF MOTOROLA R56 STANDARDS.
- D. AFTER INSTALLATION TEST ALL CONDUCTORS FOR SHORTS AND GROUNDS BEFORE ENERGIZING.

GUARANTEE:

- A. THE CONTRACTOR SHALL FURNISH A WRITTEN CERTIFICATE, GUARANTEEING ALL MATERIALS, EQUIPMENT AND LABOR FURNISHED BY CONTRACTOR TO BE FREE OF ALL DEFECTS FOR A PERIOD OF ONE YEAR FROM AND AFTER THE DATE OF FINAL ACCEPTANCE OF ELECTRICAL WORK. THE CONTRACTOR SHALL FURTHER GUARANTEE THAT IF ANY DEFECTS APPEAR WITHIN THE STIPULATED GUARANTEED PERIOD, SUCH WORK SHALL BE REPLACED WITHOUT COST TO THE OWNER.

FEEDERS, SWITCHES, METERING EQUIPMENT:

- A. MAKE ARRANGEMENTS WITH OWNERS AS NEEDED TO BRING IN BRANCH FEEDERS FOR ELECTRICAL SERVICE AS SHOWN ON DRAWINGS. PAY ALL CHARGES INVOLVED THEREWITH. FURNISH, INSTALL FEEDER WIRE TO OWNER DISTRIBUTION PANEL. PROVIDE METER AS SHOWN ON DRAWINGS.

PANELBOARD CONSTRUCTION:

- A. PANELBOARDS SHALL CONSIST OF A CAN, FRONT, INTERIOR AND CIRCUIT PROTECTIVE DEVICES AND SHALL BE MANUFACTURED IN ACCORDANCE WITH UNDERWRITER'S LABORATORIES. THE GAUGE OF METAL USED AND THE GUTTER SPACE SHALL BE IN ACCORDANCE WITH APPLICABLE UL STANDARDS. EACH PANEL SHALL HAVE A DOOR MOUNTED ON A SEMI-CONCEALED HINGES WITH A CYLINDER LOCK, INDEX CARD HOLDER PROPERLY FILLED IN AS TO CIRCUIT; ALL PANELS WITH MASTER KEY. ALL PANELS SHALL BE FINISHED WITH BAKED-ON GRAY ENAMEL, OVER RUST INHIBITOR COAT. PANEL BOARDS SHALL BE AS MANUFACTURED BY G.E., ITE, SQUARE "D" OR CUTLER HAMMER.

WIRING:

- A. ALL CONDUCTORS SHALL BE MADE OF SOFT-DRAWN ANNEALED COPPER WITH A CONDUCTIVITY NOT LESS THAN THAT OF 90% PURE COPPER. ALL WIRE SIZE #10 AWG AND SMALLER SHALL BE SOLID CONDUCTOR TYPE; ALL #8 AWG AND LARGER SHALL BE STRANDED CONDUCTOR TYPE.
- B. CONDUCTORS SHALL BE TYPE "THHN/THWN" INSULATION.
- C. USE THE FOLLOWING COLOR CODES:

120/208V SYSTEMS	120/240V SYSTEMS	
PHASE A BLACK	PHASE A BLACK	
PHASE B RED	PHASE B RED	
PHASE C BLUE	PHASE C BLUE	
NEUTRAL WHITE	NEUTRAL WHITE	
GROUND GREEN	GROUND GREEN	
- D. INSTALL CONDUCTORS IN CLEAN, DRY CONDUITS. USE UL APPROVED PULLING LUBRICANT WHERE REQUIRED.
- E. USE #12 AS MINIMUM CONDUCTOR SIZE FOR POWER SYSTEMS. ALL CONTROL WIRES SHALL BE STRANDED AND TERMINATED WITH CRIMPED-ON LUGS.
- F. MAKE CONNECTION, SPLICES AND TAPS ONLY IN APPROVED BOXES AND FITTINGS. FOR SMALL BRANCH CIRCUIT CONDUCTORS, FIRST TWIST CONDUCTORS TOGETHER, THEN INSTALL A "SCOTCHLOK" OR EQUAL SPRING CONNECTOR OF PROPER SIZE. FOR LARGE CONDUCTORS USE SPLIT-BOLT OR HYDRAULICALLY COMPRESSED CONNECTIONS, THEN APPLY ENOUGH LAYERS OF VINYL ELECTRICAL TAPE TO EQUAL THE INSULATION VALUE OF THE CONDUCTOR INSULATION.
- G. WHERE FACTORY COLOR CODED CONDUCTORS ARE NOT AVAILABLE,

INSTALL BANDS OF COLORED VINYL PLASTIC TAPE AT EACH END OF EACH CONDUCTOR.

CONDUIT:

- A. PROVIDE A COMPLETE ASSEMBLY OF CONDUIT, TUBING OR DUCT WITH FITTINGS, INCLUDING, BUT NOT LIMITED TO, CONNECTORS, NIPPLES, COUPLINGS, LOCKNUTS, BUSHINGS, EXPANSION FITTINGS, OTHER COMPONENTS AND ACCESSORIES AS NEEDED. CONNECTIONS AND COUPLING MUST BE COMPRESSION TYPE TO MEET R56 FOR BONDING REQUIREMENTS.
- B. FITTINGS SHALL BE DESIGNED AND APPROVED FOR THE SPECIFIC USE INTENDED. PROVIDE INSULATED THROATS OR BUSHINGS FOR ALL CONDUITS. GROUNDING BUSHINGS SHALL ALSO HAVE INSULATED THROATS.
- C. MINIMUM CONDUIT SIZE IN ALL CASES SHALL BE 1/2" UNLESS MINIMUM SIZE IS SPECIFIED TO BE LARGER FOR SPECIFIC SYSTEMS SPECIFIED ELSEWHERE IN THE SPECIFICATIONS OR ON THE DRAWINGS.
- D. RIGID STEEL CONDUIT SHALL BE HEAVY-WALL STEEL TUBE WITH METALLIC CORROSION-RESISTANT COATING ON INTERIOR AND EXTERIOR, HOT-DIPPED GALVANIZED, FREE FROM DEFECTS, MANUFACTURED IN ACCORDANCE TO ANSI STANDARDS, AND UL-LISTED. USE THREADED COUPLINGS. USE RIGID GALVANIZED STEEL CONDUIT IN ALL LOCATIONS UNLESS NOTED OTHERWISE.
- E. UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC (UNLESS NOTED OTHERWISE).
- F. AS A MINIMUM, CONDUIT SIZES SHALL BE IN ACCORDANCE WITH NEC CONDUIT FILL REQUIREMENTS, REGARDLESS OF SIZE SCHEDULE OR INDICATED. IF LARGER SIZE IS SCHEDULED OR INDICATED, THE LARGER SIZE SHALL BE USED.
- G. INSTALLATION:
 1. ANCHOR CONDUIT WITH HANGERS, CONDUIT STRAPS OR OTHER DEVICES SPECIFICALLY DESIGNED FOR THE PURPOSE. WIRE TIES SHALL NOT BE PERMITTED. USE TRAPEZE HANGERS FOR MULTIPLE PARALLEL CONDUIT RUNS.
 2. ALL CONCRETE INSERTS SHALL BE GALVANIZED OR CADMIUM PLATED; INDIVIDUAL HANGERS, TRAPEZE HANGERS AND RODS SHALL BE PRIME COATED.
 3. INSTALL HORIZONTAL RUNS OF CONDUIT TO PROVIDE A NATURAL DRAIN TO PREVENT MOISTURE COLLECTING IN THE POCKETS OR TRAPS.
 4. CAP CONDUIT ENDS UNTIL CONDUCTOR IS INSTALLED TO PREVENT FOREIGN OBJECTS FROM ENTERING CONDUIT.
 5. FITTINGS AND CONDUITS SHALL BE APPROVED FOR GROUNDING PURPOSES OR SHALL BE JUMPERED WITH A COPPER GROUNDING CONDUCTOR OF PROPER AMPACITY. LEAVE TERMINATION OF SUCH JUMPERS EXPOSED.
 6. INSTALL (2) 200 POUND NYLON PULL CORDS IN ROUGH-IN RACEWAYS.
 7. INSTALL OFFSETS, PULL BOXES AND ELBOWS AS REQUIRED TO ACCOMPLISH A HARMONIOUS ROUTING OF THE SYSTEMS.
 8. OPENINGS AROUND ELECTRICAL PENETRATIONS THROUGH FIRE RESISTANT RATED CONSTRUCTION SHALL BE FIRE-STOPPED USING APPROVED METHODS TO MAINTAIN THE FIRE RESISTANT RATING.

JUNCTION AND PULL BOXES:

- A. USE GALVANIZED PULL AND JUNCTION BOXES THAT COMPLY WITH NEC AS TO SIZE AND CONSTRUCTION.
- B. FOR JUNCTION AND PULL BOXES, USE BOXES NOT LESS THAN 4" SQUARE AND 1 1/2" DEEP WITH REMOVABLE COVERS.
- C. IN WET AREAS OR OUTDOORS, USE CAST ALUMINUM OR CAST IRON BOXES WITH THREADED HUBS AND GASKETED COVERS.
- D. INSTALL JUNCTION AND PULL BOXES IN ACCESSIBLE LOCATIONS. POSITION BOXES SO COVERS CAN BE REMOVED.
- E. INSTALL BOXES ON CONCEALED CONDUITS WITH COVERS FLUSH WITH FINISH.

LP-GAS CONTAINERS

- A. ALL ELECTRICAL EQUIPMENT AND WIRING WITHIN (5) FIVE FEET SHALL BE CLASS 1 DIVISION 1
- B. ELECTRICAL WIRING AND EQUIPMENT (5) FIVE FEET TO (10) TEN FEET SHALL BE CLASS 1 DIVISION 2

GROUNDING

- 1.1 GENERAL
 - A. GROUNDING SHALL BE INSTALLED PER MOTOROLA R56 STANDARDS

AND GUIDELINES FOR COMMUNICATIONS SITES.

1.2 CONNECTIONS

- A. ALL EXTERNAL GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC PROCESS, BY IRREVERSIBLE HIGH COMPRESSION, AND/OR BY 2-HOLE LONG BARREL LUGS. NO SINGLE-HOLE, CRIMP-ON, OR SOLDER CONNECTIONS SHALL BE USED. CONNECTIONS SHALL INCLUDE ALL CABLE TO CABLE SPLICE. ALL MATERIALS USED (MOLDS, WELDING METAL, TOOLS, ETC.) SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES.
- B. ALL INTERIOR GROUNDING AND BONDING CONDUCTORS SHALL BE CONNECTED BY TWO HOLE-TYPE (COMPRESSION) CONNECTIONS. MECHANICAL CONNECTIONS, FITTINGS OR CONNECTIONS THAT DEPEND SOLELY ON SOLDER SHALL NOT BE USED.

1.3 GROUND RODS

- A. ALL GROUND RODS SHALL BE COPPER-CLAD STEEL 5/8" DIAMETER X 8'-0" LONG AND AT LOCATIONS INDICATED. GROUND RODS SHALL BE DRIVEN FULL LENGTH VERTICALLY IN UNDISTURBED EARTH.
- B. GROUND RODS SHALL BE LOCATED SO AS TO AVOID THE TOWER FOUNDATION.
- C. IF ROCK IS ENCOUNTERED, GROUND RODS MAY BE DRIVEN AT AN OBLIQUE ANGLE OF NOT GREATER THAN 45 DEGREES FROM VERTICAL OR MAY BE BURIED HORIZONTALLY AND PERPENDICULAR TO THE BUILDING, IN A TRENCH AT LEAST 36" DEEP.
- D. GROUND RODS SHALL BE BURIED TO A MINIMUM DEPTH OF 30 INCHES BELOW FINISHED GRADE, WHERE POSSIBLE, OR BURIED BELOW THE FREEZE LINE, WHICHEVER DEPTH IS GREATER.
- E. GROUND RODS SHALL NOT BE INSTALLED MORE THAN 16 FEET APART (OR TWICE THE LENGTH OF THE ROD) AND NOT LESS THAN 6 FEET (PER NFPA 70, ARTICLE 250-56).

1.4 GROUND BARS

- A. ALL GROUND BARS SHALL BE 1/4" THICK BARE COPPER PLATES AND OF SUFFICIENT SIZE TO GROUND ATTACHMENTS INDICATED IN THE DRAWINGS (MIN. 2" X 12"). HOLES SHALL BE 7/16" DIAMETER ON 3/4" CENTERS TO PERMIT THE CONVENIENT USE OF TWO-HOLE LUGS.
- B. THE METHOD OF ATTACHMENT OF THE GROUNDING ELECTRODE CONDUCTOR TO EXTERIOR AND TOWER GROUND BARS SHALL BE EXOTHERMIC OR IRREVERSIBLE HIGH COMPRESSION.

1.5 CABLES

- A. ALL EXTERIOR GROUNDING CABLES SHALL BE STANDARD #2 AWG TINNED SOLID BARE COPPER WIRE UNLESS INDICATED OTHERWISE ON DRAWINGS.
- B. WHEN THE DIRECTION OF THE CONDUCTOR MUST CHANGE, IT SHALL BE DONE GRADUALLY. ALL BENDS SHALL BE MADE WITH THE GREATEST PRACTICAL RADIUS AND SHALL NOT BE LESS THAN 8".
- C. ALL CONDUITS SHALL BE METALLICALLY SUPPORTED.
- D. ALL CONDUITS USED AS RACEWAYS FOR GROUNDING CONDUCTORS SHALL BE BONDED AT BOTH ENDS IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC).
- E. PROVIDE WIRE PROTECTION PIPES AT ALL GROUND WIRES AT GRADE LEVEL PER DETAIL 7/E4.

1.6 GROUNDING RING

- A. THE GROUND RING ENCIRCLING THE BUILDING SHALL BE A MINIMUM SIZE OF NO. 2 AWG BARE TINNED SOLID COPPER CONDUCTOR IN DIRECT CONTACT WITH THE EARTH AT A MINIMUM DEPTH OF 36 INCHES. CONDUCTOR BENDS SHALL HAVE A MINIMUM RADIUS OF 8 INCHES.
- B. ALL EXTERNAL GROUND RINGS ARE TO BE JOINED TOGETHER AND ALL CONNECTIONS SHALL BE EXOTHERMIC OR IRREVERSIBLE HIGH COMPRESSION. NO LUGS OR CLAMPS WILL BE ACCEPTED.

1.7 FENCE/GATE

- A. 1. GROUND ALL SECTIONS OF FENCE AND GATE AS INDICATED ON DRAWINGS. GROUND EACH GATE POST AND CORNER POST. ALL CONNECTIONS FOR THE FENCE GROUND SYSTEM SHALL BE EXOTHERMIC WELD AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES.

1.8 DISSIMILAR METALS


- A. BONDING OF TWO DISSIMILAR METALS MAY RESULT IN GALVANIC CORROSION, A REACTION THAT OCCURS AT THE JUNCTION OF DISSIMILAR METALS WHEN THEY ARE EXPOSED TO MOISTURE. THE DEGREE AND RATE OF CORROSION DEPENDS ON THE RELATIVE

POSITION OF THE METALS IN THE ELECTROCHEMICAL SERIES. TO DETERMINE THE LIKELIHOOD OF TWO METALS REACTING REFERENCE SECTION 6.5.2 IN THE R56 SPECIFICATIONS.

- 1. THE SAME METAL SHALL BE USED THROUGHOUT THE SYSTEM WHEN POSSIBLE.
- 2. EXOTHERMICALLY WELD CONNECTIONS OF DIFFERENT METALS WHEN WELD MATERIAL IS AVAILABLE FOR THE METALS BEING BONDED.
- 3. COPPER CONDUCTORS SHALL NOT BE INSTALLED ON ALUMINUM ROOFING OR SIDING.
- 4. ALUMINUM AND COPPER SHALL NOT BE DIRECTLY CONNECTED TO EACH OTHER UNLESS USING EXOTHERMIC WELDING MATERIALS SPECIFICALLY INTENDED FOR THESE TWO METALS TO MAKE THE CONNECTION. ALUMINUM AND COPPER MAY BE JOINED WITH THE USE OF A LISTED BIMETALLIC TRANSITION CONNECTOR OF STAINLESS STEEL. THESE CONNECTORS SHALL BE LISTED FOR THE SIZE AND NUMBER OF CONDUCTORS AND MARKED WITH AL/CU. THESE CONNECTIONS SHALL BE LIBERALLY COATED WITH A CONDUCTIVE ANTIOXIDANT AT THE POINT OF INSERTION INTO THE CONNECTOR.
- 5. COPPER SHALL NOT COME IN CONTACT WITH GALVANIZED STEEL.
- 6. TINNED COPPER SHALL BE USED WHEN CONNECTING TO A GALVANIZED STEEL STRUCTURE.
- 1.9 ANTI-OXIDANT
 - A. ANTI-OXIDANT COMPOUND SHALL BE USED BETWEEN ALL EXTERNAL MECHANICAL CONNECTIONS. CARE SHALL BE TAKEN TO USE THE APPROPRIATE ANTI-OXIDANT TYPE. ZINC ANTI-OXIDANT (GRAY COLOR) SHALL BE USED WHEN CONNECTING TO GALVANIZED AND ALUMINUM OBJECTS AND COPPER ANTI-OXIDANT (COPPER COLOR) SHALL BE USED WHEN CONNECTING TO COPPER OBJECTS.
- 1.10 TEST PROCEDURE
 - A. THE GROUND SYSTEM RESISTANCE SHALL NOT EXCEED 10 OHMS. A DESIGN GOAL OF 5 OHMS IS RECOMMENDED. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 6.6 IN MOTOROLA R56 SPECIFICATIONS (DATED 9-1-05).
 - B. GROUND TEST MUST BE PERFORMED PRIOR TO UTILITY CONNECTION AND GROUND CONNECTION TO EXISTING SITE COMMON GROUNDING ELECTRODE SYSTEM.

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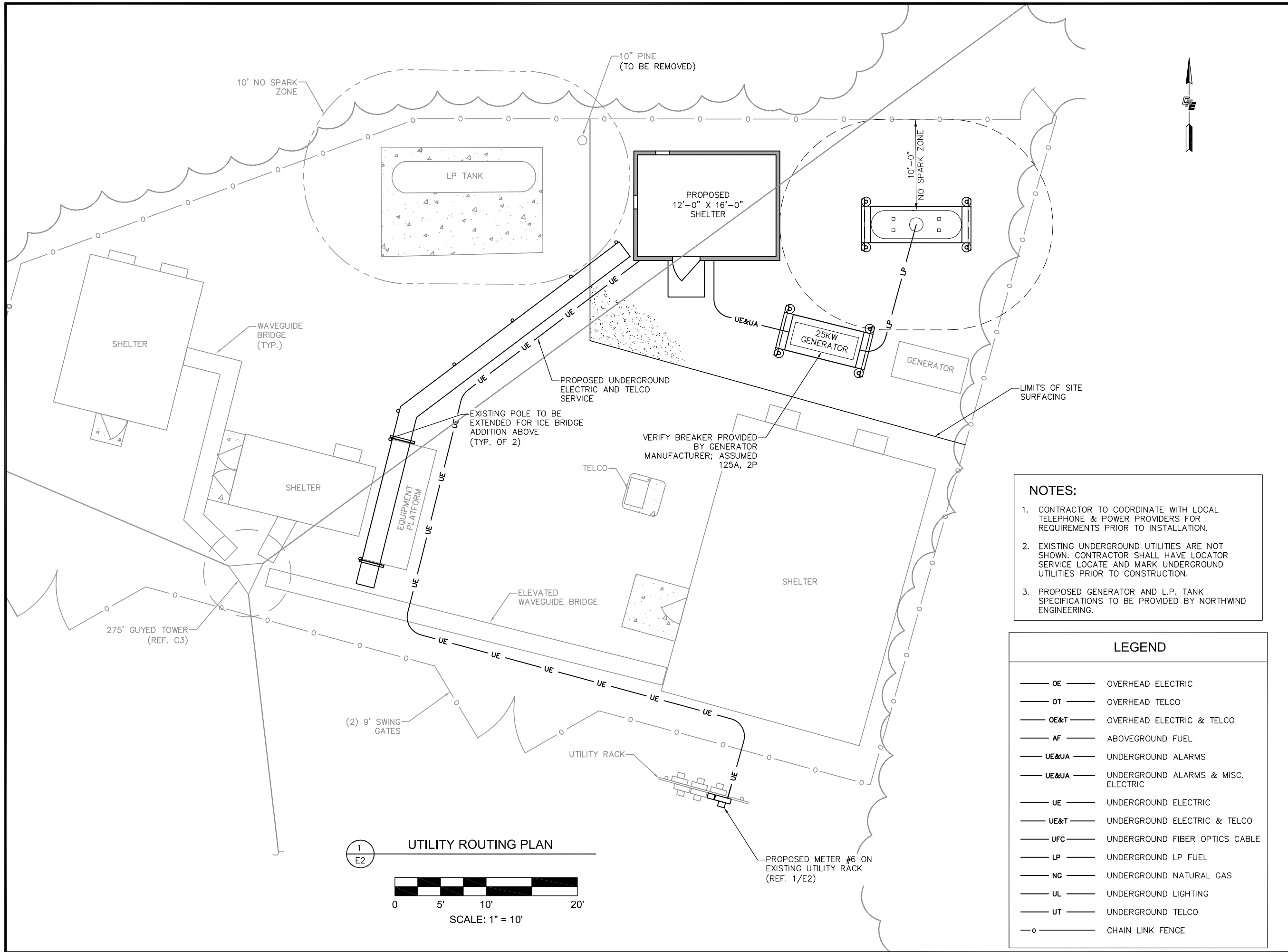
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ELEC/TELCO
GENERAL NOTES

E1



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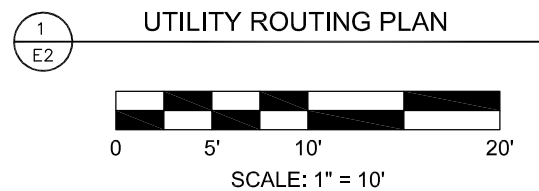
UTILITY ROUTING PLAN

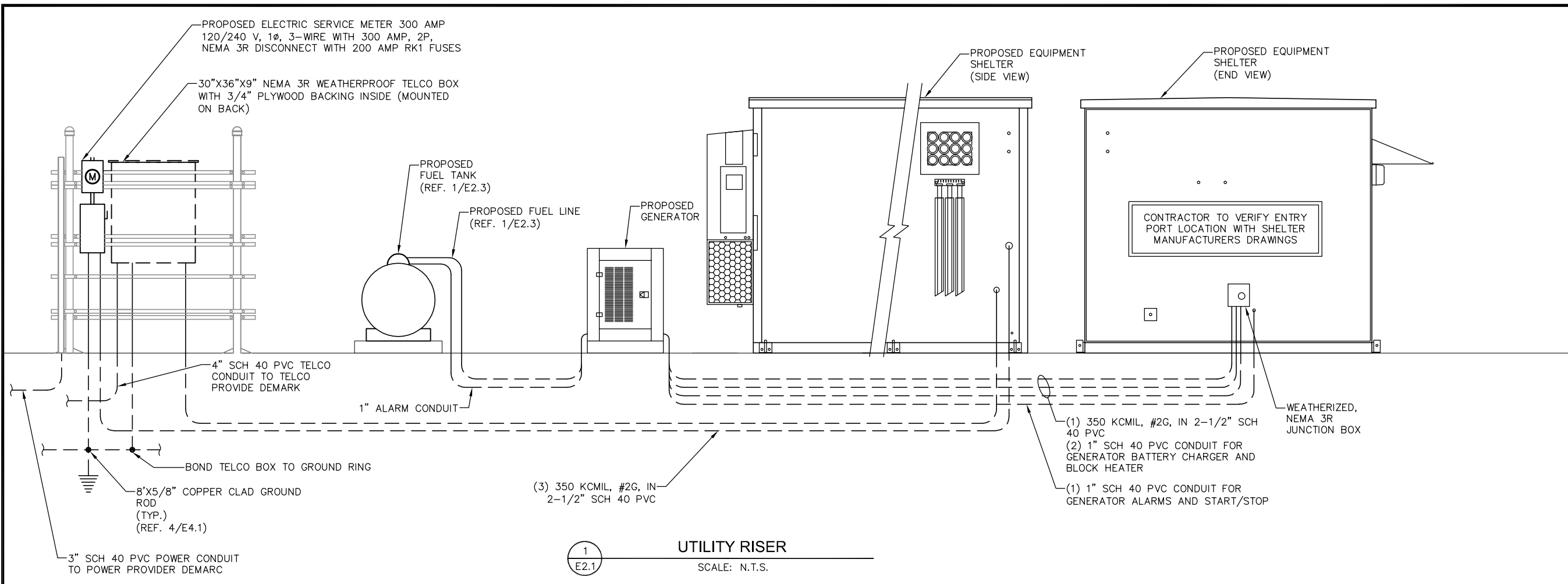
E2

- NOTES:**
- CONTRACTOR TO COORDINATE WITH LOCAL TELEPHONE & POWER PROVIDERS FOR REQUIREMENTS PRIOR TO INSTALLATION.
 - EXISTING UNDERGROUND UTILITIES ARE NOT SHOWN. CONTRACTOR SHALL HAVE LOCATOR SERVICE LOCATE AND MARK UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
 - PROPOSED GENERATOR AND L.P. TANK SPECIFICATIONS TO BE PROVIDED BY NORTHWIND ENGINEERING.

LEGEND

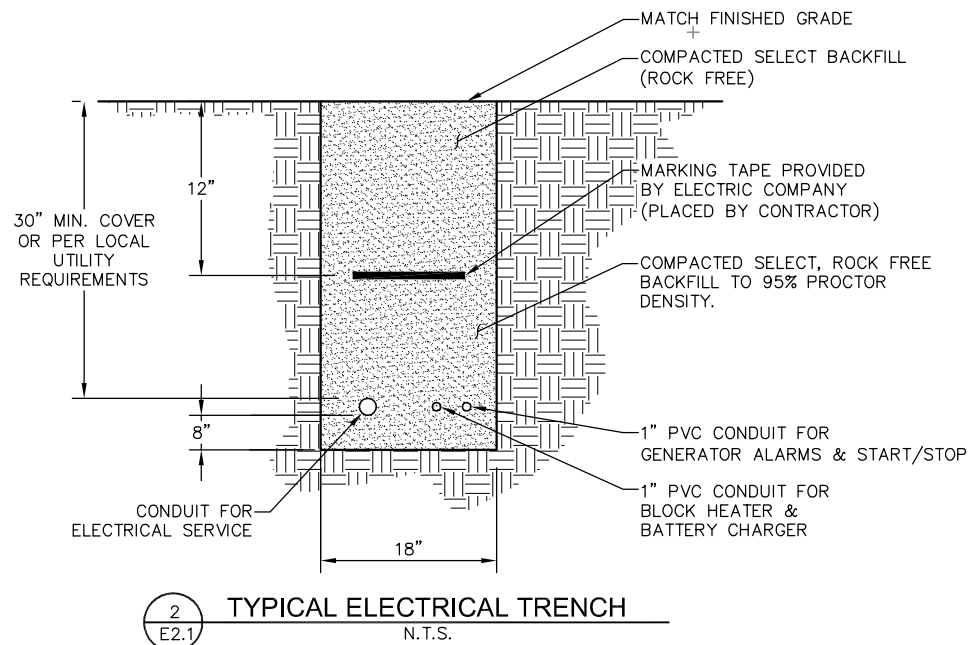
— OE —	OVERHEAD ELECTRIC
— OT —	OVERHEAD TELCO
— OE&T —	OVERHEAD ELECTRIC & TELCO
— AF —	ABOVEGROUND FUEL
— UE&UA —	UNDERGROUND ALARMS
— UE&UA —	UNDERGROUND ALARMS & MISC. ELECTRIC
— UE —	UNDERGROUND ELECTRIC
— UE&T —	UNDERGROUND ELECTRIC & TELCO
— UFC —	UNDERGROUND FIBER OPTICS CABLE
— LP —	UNDERGROUND LP FUEL
— NG —	UNDERGROUND NATURAL GAS
— UL —	UNDERGROUND LIGHTING
— UT —	UNDERGROUND TELCO
— o —	CHAIN LINK FENCE





NOTES:

1. ALL UNDERGROUND PRIMARY CABLE SHALL BE MARKED IN THE TRENCH USING MARKING TAPE PROVIDED BY UTILITY COMPANY.
2. THE MARKING TAPE SHALL BE PLACED APPROXIMATELY 12 INCHES BELOW FINISHED GRADE, AS SHOWN BELOW, WHILE BACKFILLING ELECTRICAL TRENCH.
3. SELECTED BACKFILL OF ROCK-FREE SOIL SHALL BE PLACED IN 6 INCH LAYERS AT A TIME AND EACH LAYER WELL TAMPED.
4. MINIMUM 30" COVER OVER CONDUIT.
5. ALL HORIZONTAL RUNS OF UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC UNLESS INSTALLING UNDER ROAD BED OR ANY TRAFFIC AREAS WHERE IT SHALL BE SCHEDULE 80 PVC. CONDUIT SUPPLIED AND INSTALLED BY CONTRACTOR.
6. ALL CONDUIT BENDS SHALL BE LONG SWEEP TYPE.



ONE LINE DIAGRAM TO BE PROVIDED BY SHELTER MANUFACTURER

3
E2.1

ELECTRICAL ONE LINE DIAGRAM
SCALE: N.T.S.

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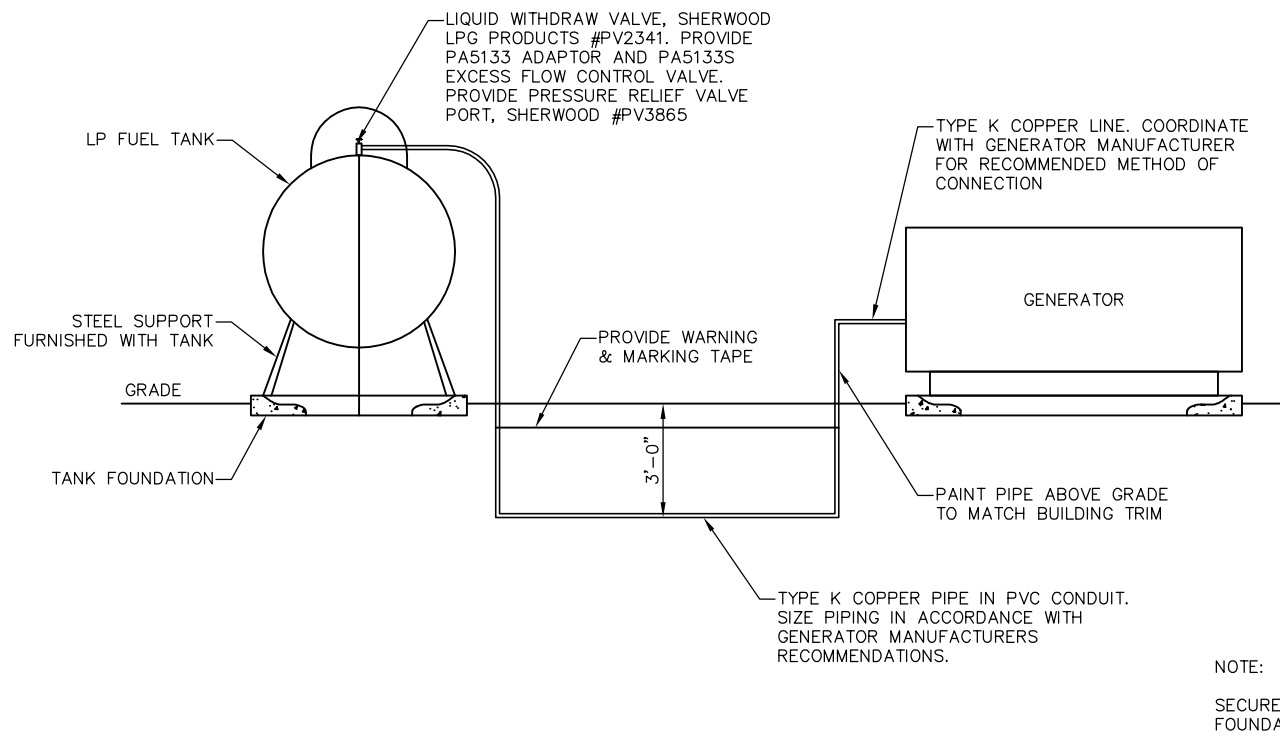
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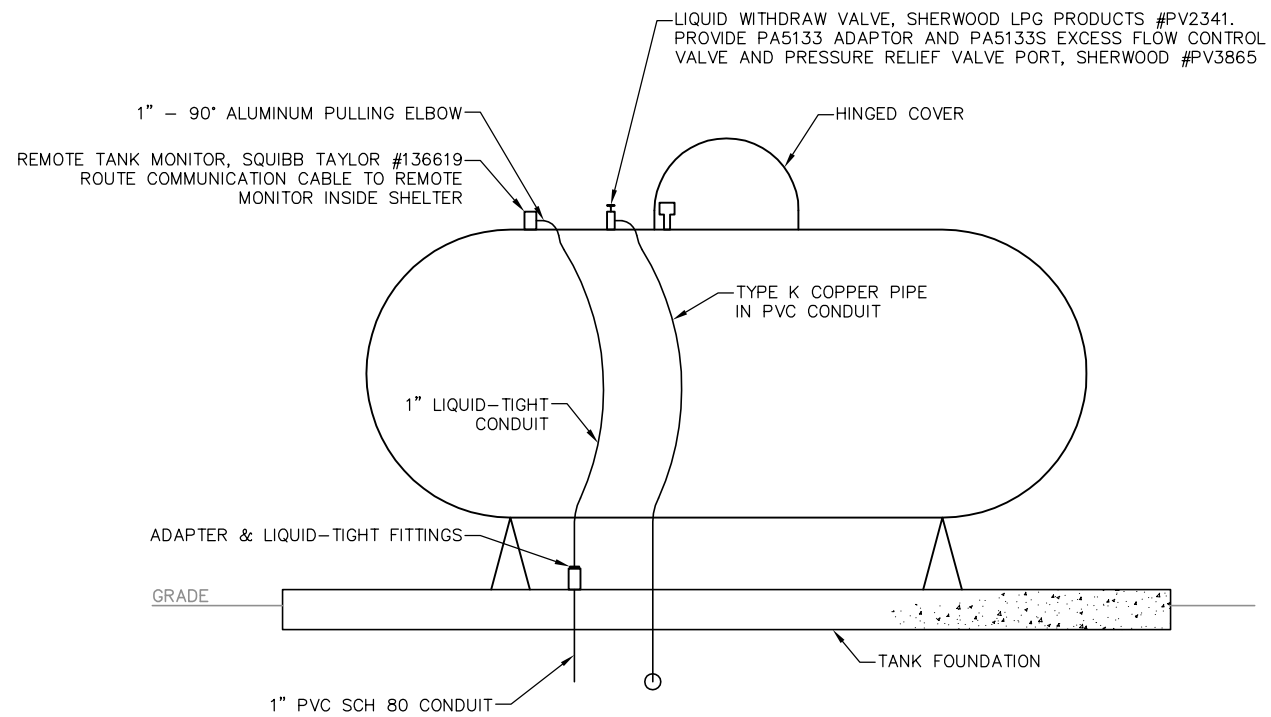
REVISIONS		
NO.	DATE	DESCRIPTION

UTILITY DETAILS

E2.1



1
E2.3
LIQUID PROPANE PIPING DETAIL
SCALE: N.T.S.



2
E2.2
LIQUID PROPANE HARDWARE CONNECTION DETAIL
SCALE: N.T.S.

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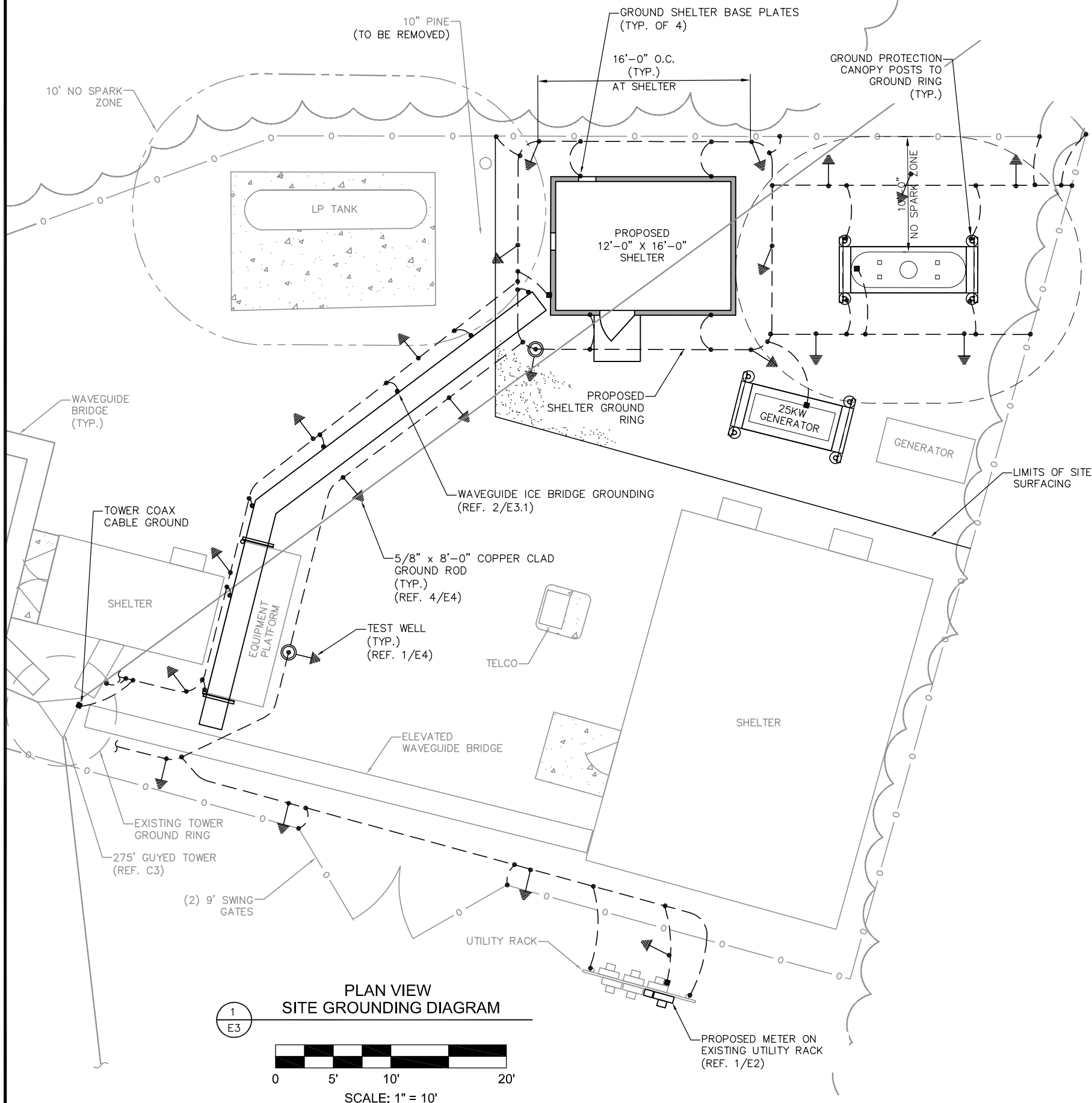
REVISIONS

NO.	DATE	DESCRIPTION

LP TANK DETAILS

E2.2

TESTING NOTE:
GROUNDING SYSTEM TO BE TESTED AFTER INSTALLATION
AND WILL CONSIST OF THE THREE POINT,
FALL-OF-POTENTIAL MEGGER TEST METHOD AND SHOULD
REGISTER 10 OHMS OR LESS. SUBMIT WRITTEN TEST
RESULTS TO OWNER.



LEGEND

- EXOTHERMIC WELD
- MECHANICAL CONNECTION
- GROUND ROD WITH EXOTHERMIC WELD
- GROUND ROD WITH INSPECTION WELL
- #2 TINNED SOLID BARE COPPER GROUND WIRE
- FENCE



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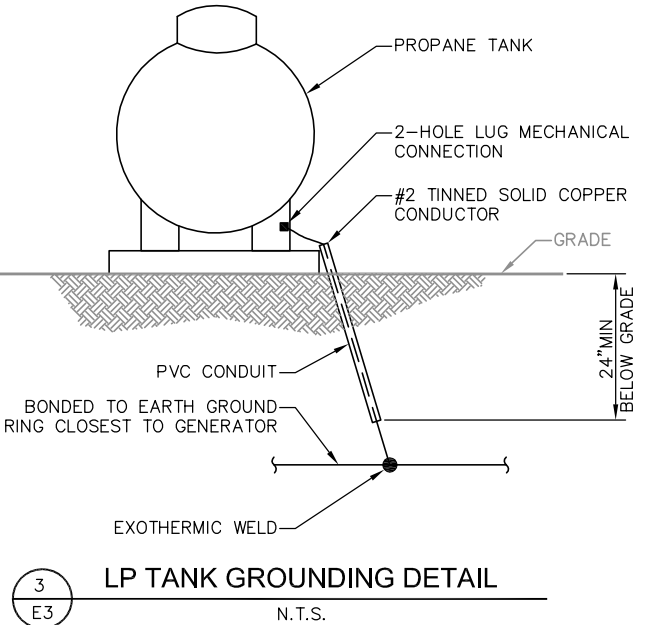
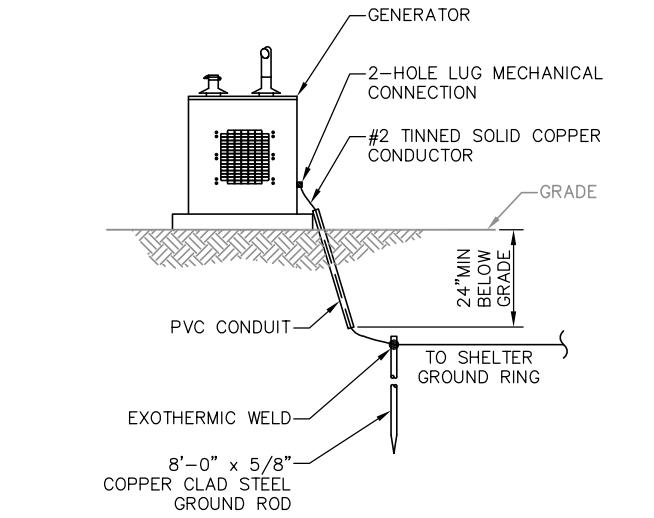
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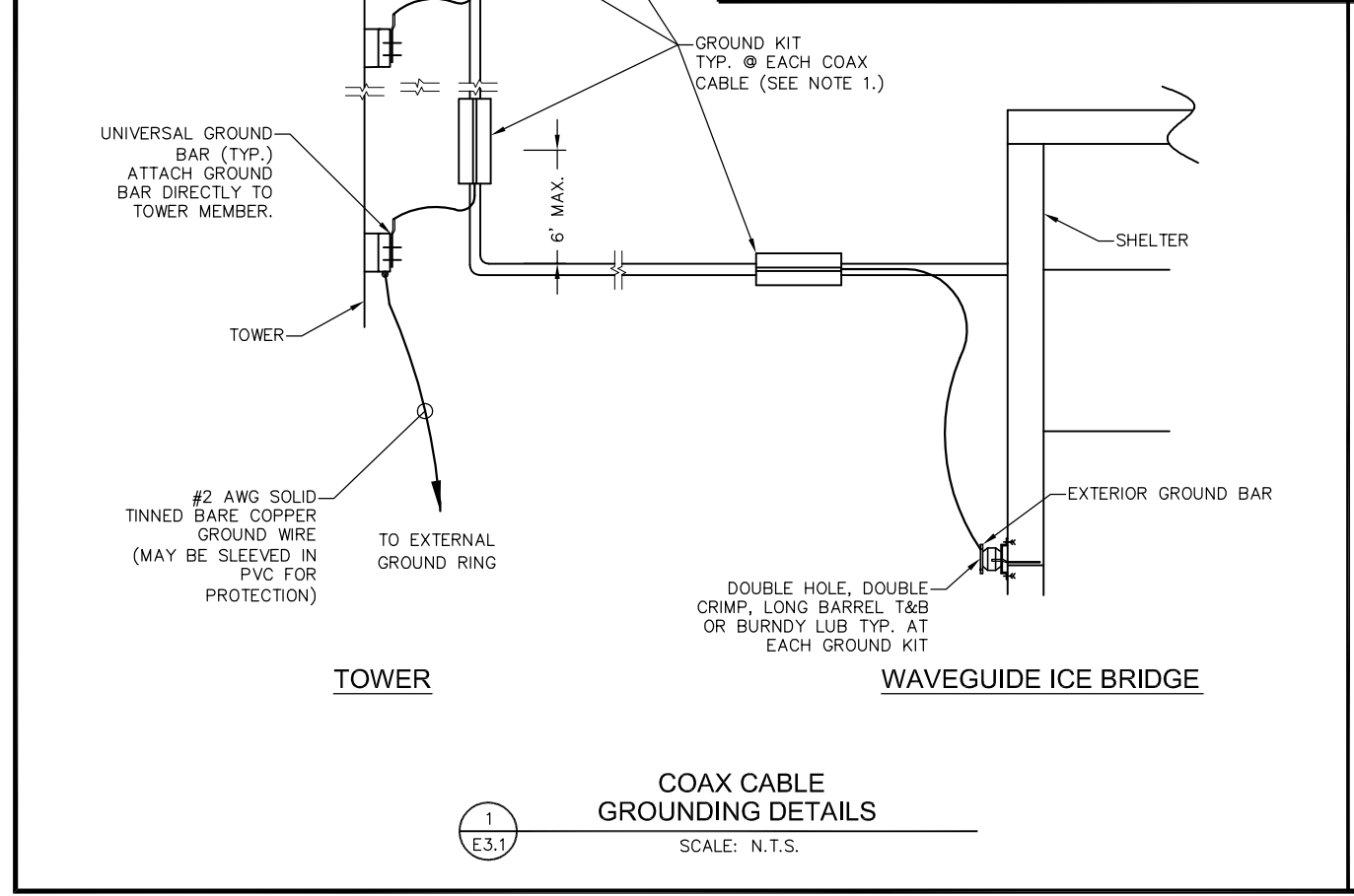
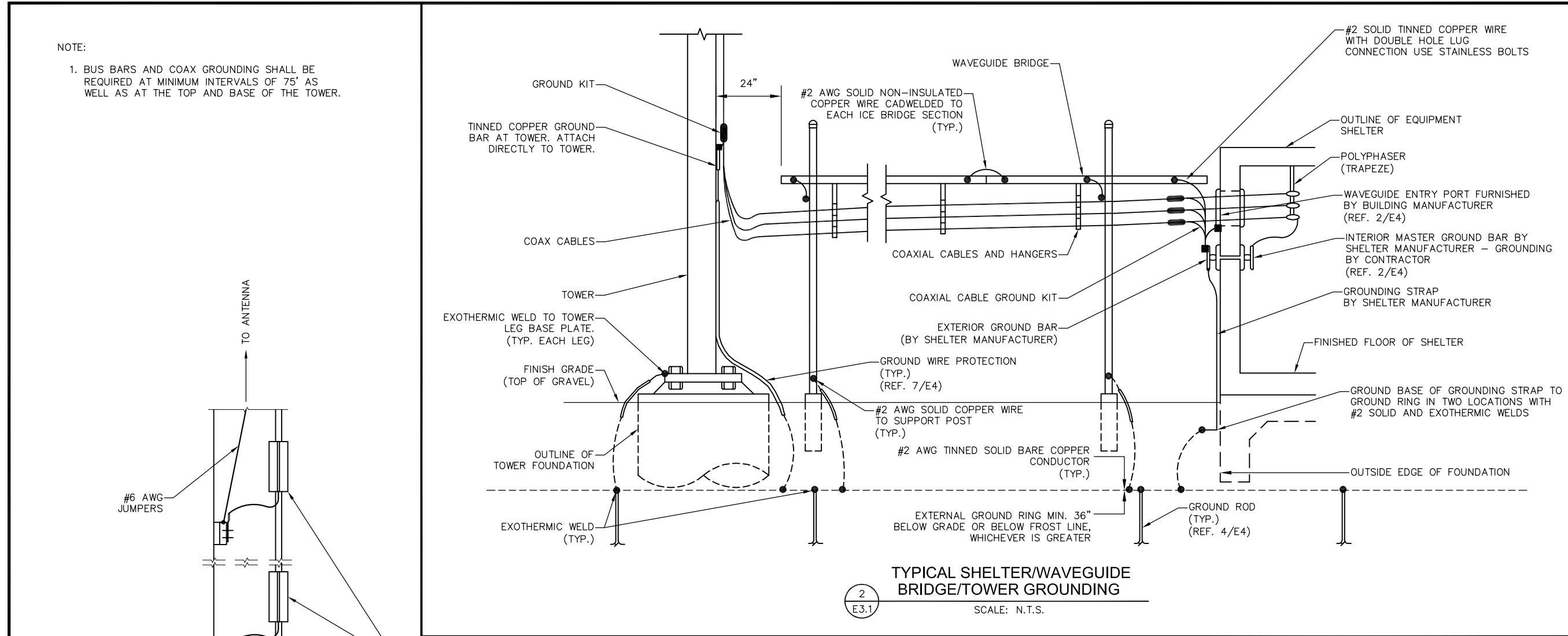
SITE GROUNDING PLAN

E3



NOTE:

1. BUS BARS AND COAX GROUNDING SHALL BE REQUIRED AT MINIMUM INTERVALS OF 75' AS WELL AS AT THE TOP AND BASE OF THE TOWER.



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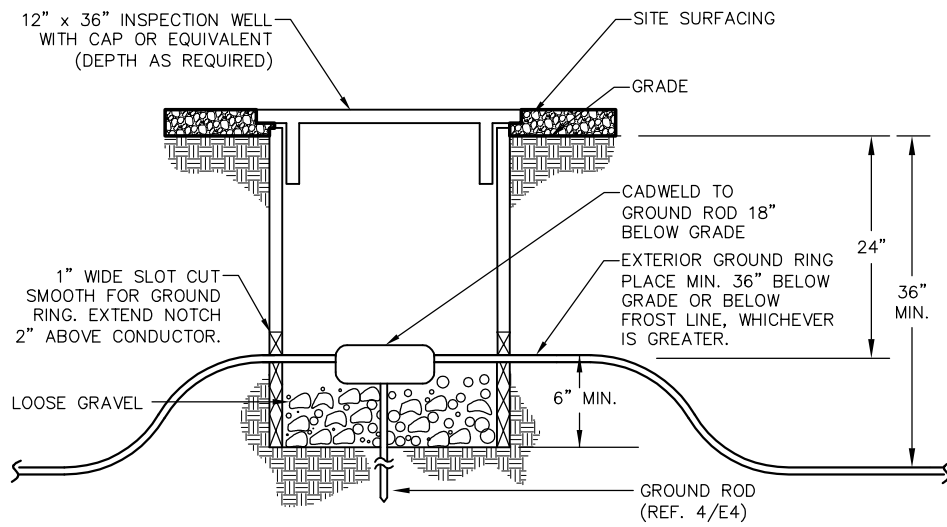
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NO.	DATE	DESCRIPTION

EQUIPMENT GROUNDING SYSTEM

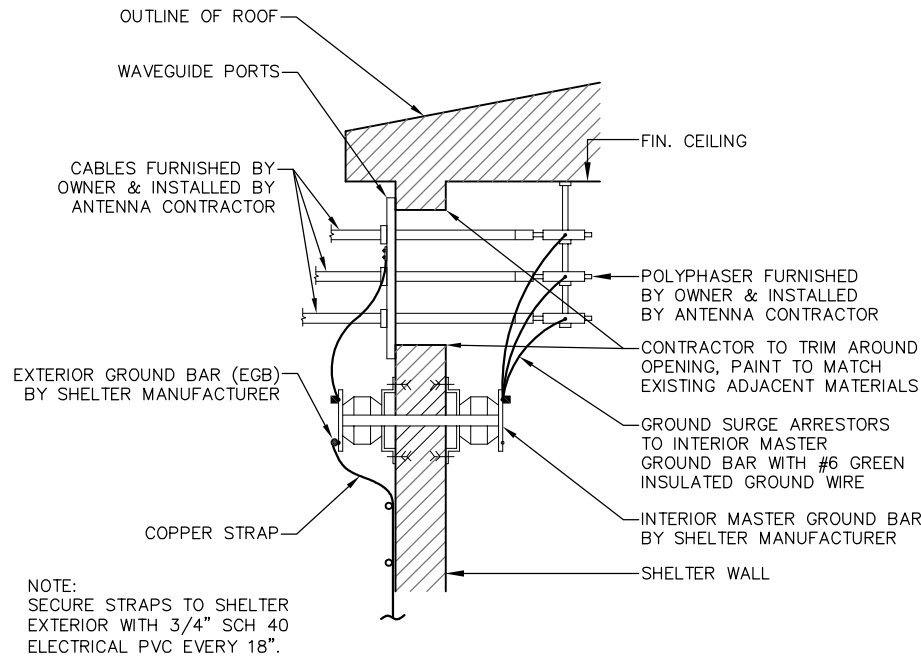
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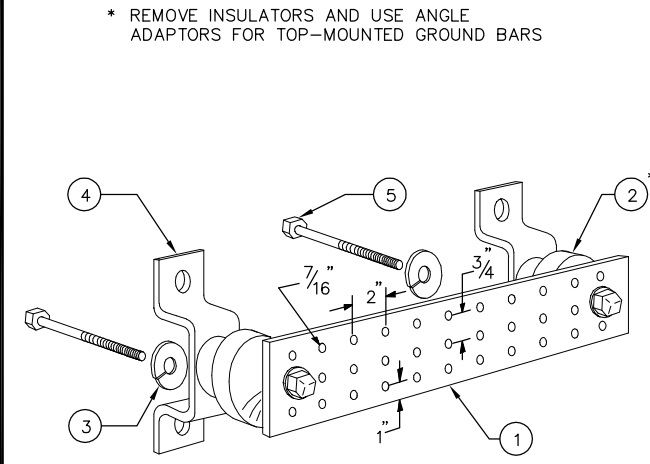


1
E4
INSPECTION WELL DETAIL
SCALE: N.T.S.



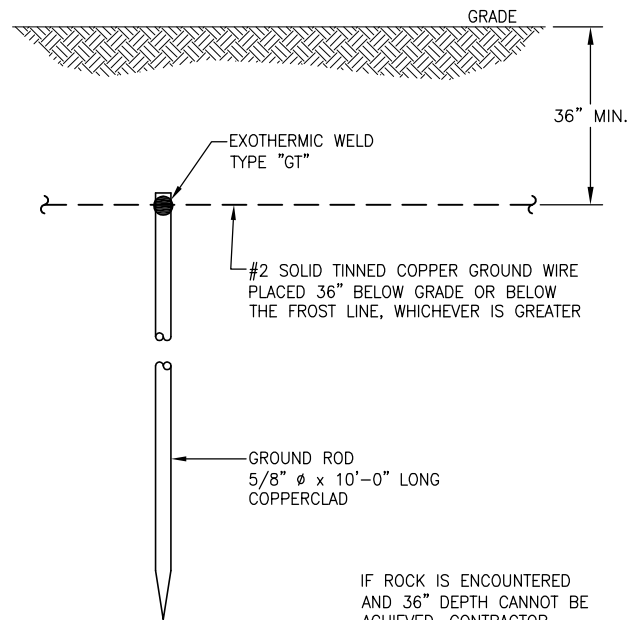
NOTE:
SECURE STRAPS TO SHELTER EXTERIOR WITH 3/4" SCH 40 ELECTRICAL PVC EVERY 18".

2
E4
GROUND AT PORT PLATE
SCALE: N.T.S.

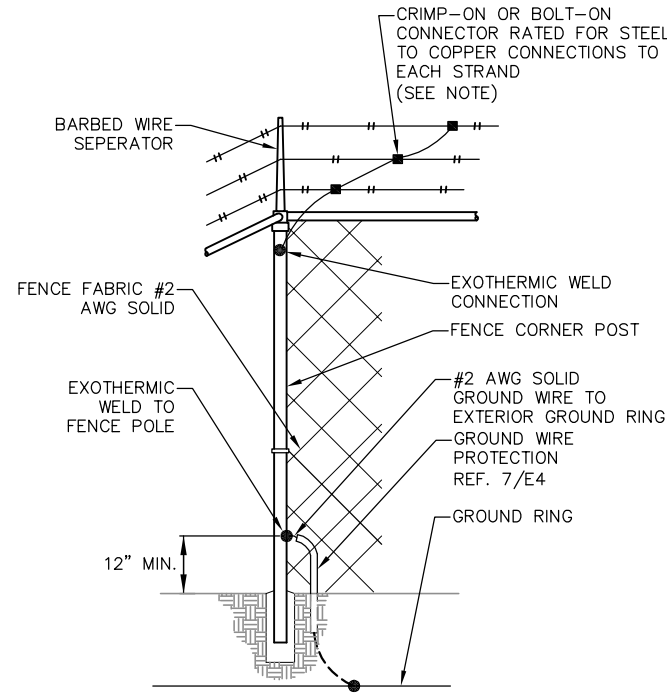


- LEGEND**
- 1 - COPPER GROUND BAR PLATE, 1/4"x 4"x 24", NEWTON INSTRUMENT CO. CAT. NO. B-6142. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION
 - 2 - INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4
 - 3 - 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8
 - 4 - MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056
 - 5 - 5/8-11 X 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1

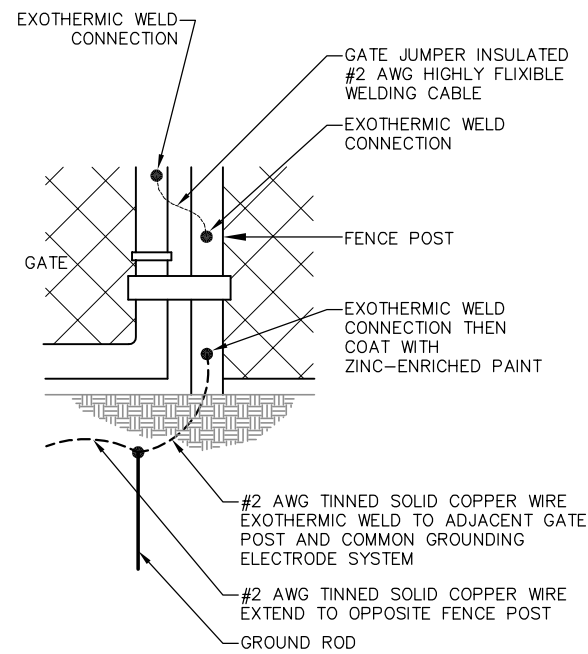
3
E4
TYPICAL GROUND BAR
N.T.S.



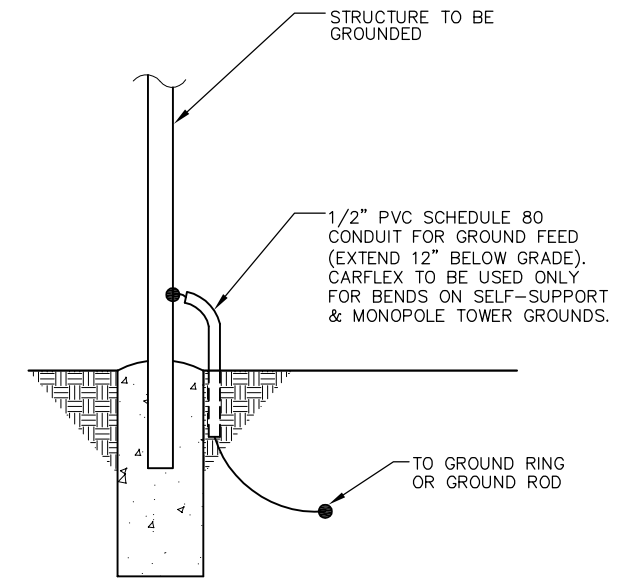
4
E4
GROUND ROD
SCALE: N.T.S.



5
E4
CORNER POST FENCE GROUNDING DETAIL
SCALE: N.T.S.



6
E4
GATE GROUND DETAIL
N.T.S.



NOTE: CONDUIT SHALL BE PROPERLY CAPPED AND SEALED AT ENDS.

7
E4
GROUND WIRE PROTECTION
SCALE: N.T.S.

NOT FOR CONSTRUCTION

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MOTOROLA SOLUTIONS

SOUTH PORTLAND (ATC #10047)

SET ISSUED FOR REVIEW DATE 02/15/11

REVISIONS

NO.	DATE	DESCRIPTION

GROUNDING DETAILS

E4