Florida Tower Partners

FL1656 - DEBARY
180' FLUSH MOUNTED MONOPOLE
CONSTRUCTION DRAWINGS - COMMUNICATION FACILITY

SITE INFORMATION

SITE NAME:	**DEBARY**
SITE NUMBER:	**FL1656**
SITE ADDRESS:	**WEST HIGHBANKS ROAD DEBARY, FL 32713**
PROPERTY OWNER:	**COMMUNITY UNITED METHODIST CHURCH OF DEBARY, INC.**
APPLICANT:	**FLORIDA TOWER PARTNERS, LLC**
PARCEL NUMBER:	**31-18-30-00-00-0012**
ALT. KEY:	**6211621**
ACREAGE OF PARENT PARCEL:	**18.05 ACRES**
ACREAGE OF PROPOSED LEASE AREA:	**0.13 ACRES (5,850 SQ. FT)**
EXISTING IMPERVIOUS:	**1.38% (0.25 AC. / 10,792 SQ. FT.)**
ADDED IMPERVIOUS:	**1.0% (0.18 AC. / 7,680 SQ. FT.)**
PARCEL'S ZONING DISTRICT:	**A-2 (RURAL AGRICULTURE DISTRICT)**
PARCEL'S FUTURE LAND USE:	**A/R (AGRICULTURE / RURAL)**
SITE TYPE:	**RAWLAND**
COUNTY:	**VOLUSIA**
JURISDICTION:	**CITY OF DEBARY**
SITE COORDINATES:	**N28° 53' 20.99" (LAT) W81° 20' 59.57" (LONG)**
STRUCTURE TYPE:	**FLUSH MOUNTED MONOPOLE**
STRUCTURE HEIGHT:	**180' AGL**

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION; THEREFORE, THERE IS NO HANDICAP ACCESS REQUIRED.

THE PROPOSED FACILITY IS NOT INTENDED FOR PERMANENT EMPLOYEE OCCUPANCY; THEREFORE, ADDITIONAL SITE PARKING IS NOT REQUIRED.

OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION BY TECHNICIANS APPROXIMATELY ONCE A MONTH.

DOES NOT REQUIRE POTABLE WATER, SEPTIC TANKS OR SANITARY SERVICE.

NO EXISTING FIRE HYDRANTS OR WATER LINES ARE IN THE VICINITY OF THE PROPOSED TOWER.

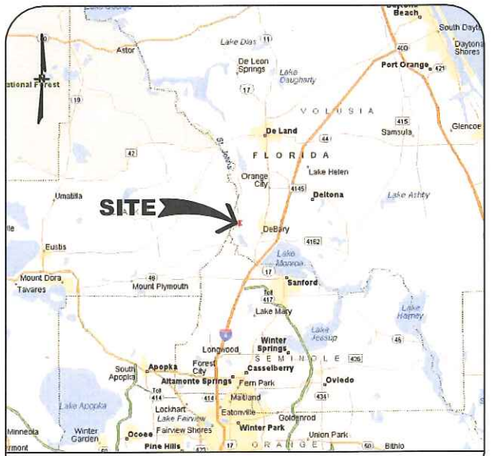
PROJECT SCOPE OF WORK:

THIS PROJECT CONSISTS OF A 180' FLUSH MOUNTED MONOPOLE WITH FOUNDATION, FENCING, LANDSCAPING, AND FUTURE GROUND WORK.

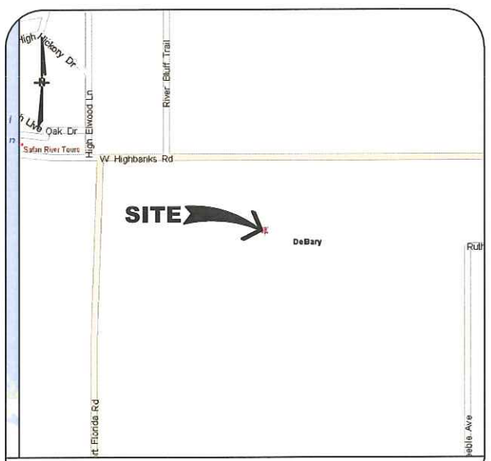
DIRECTIONS:

DEPART FROM CITY OF DEBARY PLANNING AND ZONING DEPARTMENT OFFICE IN DEBARY, FL AND HEAD TOWARD LAKE DRIVE. PROCEED ±132 FT. AND TURN RIGHT ONTO US-17 / US-92 / S CHARLES RICHARD BEALL BLVD. PROCEED ±0.5 MI AND TIRN LEFT ONTO W. HIGHBANKS RD. PROCEED ±2.6 MI AND ARRIVE AT DESTINATION ON THE LEFT.

THE CONTRACTOR MUST VERIFY ALL FIELD MEASUREMENTS AND CONDITIONS PRIOR TO BID AND TO COMMENCEMENT OF CONSTRUCTION.



KEY MAP



AREA MAP

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BUILDING CODES AND STANDARDS

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

FLORIDA BUILDING CODE:	FBC 2014, 5th EDITION
BUILDING/DWELLING CODE:	FBC 2014, 5th EDITION
STRUCTURAL CODE:	FBC 2014, 5th EDITION
PLUMBING CODE:	FBC 2014, 5th EDITION
MECHANICAL CODE:	FBC 2014, 5th EDITION
ELECTRIC CODE:	NFPA 70
FIRE/LIFE SAFETY CODE:	FLORIDA FIRE PREVENTION CODE
DESIGN WIND SPEED:	134 MPH
RISK CATEGORY:	II
EXPOSURE CATEGORY:	C

RISK CATEGORY DESIGN WIND SPEEDS ARE BASED ON ASCE 7-10 CRITERIA FOR A 3-SECOND GUST. REFER TO STRUCTURAL ANALYSIS IN THE EVENT A CONFLICT ARISES BETWEEN STANDARD REQUIREMENTS AND LISTED CODES, THE MORE RESTRICTIVE REQUIREMENT WILL TAKE PRECEDENCE.

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REV:	DATE:	DESCRIPTION:	BY:
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DRAWN BY: MAM | CHECKED BY: CAR

KHA PROJECT NUMBER: 148991017

ENGINEER SEAL:

NATHANIEL ROBERT LINDEN, PE
FL PROFESSIONAL ENGINEER LIC. # 72985
FL CERTIFICATE OF AUTHORIZATION # 00000696

PROJECT INFORMATION:

DEBARY
FL1656

WEST HIGHBANKS ROAD
DEBARY, FL 32713

SHEET TITLE: TITLE SHEET

SHEET NUMBER: T-1

GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.

2. THE ARCHITECT/ENGINEER HAS MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE CONSTRUCTION MANAGER OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.

4. THE CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, AND LABOR REQUIRED TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.

5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THE PROJECT REQUIREMENTS.

6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWING/CONTRACT DOCUMENTS.

7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATION UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE. CONTRACTOR SHALL PROVIDE SERVICES FOR OFF LOADING AND PLACEMENT OF SHELTER IN ACCORDANCE WITH MANUFACTURER'S LIFTING PROCEDURES.

8. THE CONTRACTOR SHALL MAINTAIN A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDA OR CLARIFICATIONS AVAILABLE FOR USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT. REDLINED AS-BUILTS ARE TO BE DELIVERED TO THE CLIENT AT CLOSEOUT.

9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.

11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.

12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.

13. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.

14. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.

15. FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (HANDICAPPED ACCESS NOT REQUIRED).

16. FACILITY HAS NO PLUMBING.

17. PRIOR TO OR UPON ENTERING INTO THE SITE COMPOUND, THE PERSONNEL ENTERING THE SITE AND THE SHELTER ARE TO CONTACT THE SWITCH AND THE CLIENT NOC INFORMING THEM OF THE FOLLOWING INFORMATION: WHO IS ENTERING THE SHELTER AND WHAT COMPANY THEY ARE WITH, WHY THEY ARE ENTERING THE SHELTER AND HOW LONG THEY PLAN TO BE AT THE SHELTER.

18. ALL INSTALLATION DEBRIS AND TRASH SHALL BE REMOVED FROM THE SITE ON A DAILY BASIS. ANY EXPENSE THAT IS INCURRED BY CLIENT FOR TRASH REMOVAL WILL BE BACK-CHARGED TO THE SUBCONTRACTOR.

19. THE CONTRACTOR SHALL NOTIFY KIMLEY-HORN AND ASSOCIATES, WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE CONSTRUCTION MANAGER.

A/C	AIR CONDITIONING
ADJ.	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
APPROX.	APPROXIMATELY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWG	AMERICAN WIRE GAUGE
A	AMPERE
BTS	BASE TRANSMISSION STATION
BLDG.	BUILDING
BLK.	BLOCK
B/S	BUILDING STANDARD
CIGBE	GROUND BAR
CLG	CEILING
CLR.	CLEAR
CONC.	CONCRETE
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
C.F.C.I.	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
DBL.	DOUBLE
DIA., ø	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
DN	DOWN
DTL.	DETAIL
DWG.	DRAWING
E	EAST
EA.	EACH
EL., ELEV.	ELEVATION
ELECT.	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
EQ.	EQUAL
EQUIP.	EQUIPMENT
E.W.	EACH WAY
EXIST.	EXISTING
EXT.	EXTERIOR
FIN.	FINISH
FLR	FLOOR
FT.	FOOT
GRC.	GALVANIZED RIGID CONDUIT
G. OR GRD.	GROUND
GA.	GAUGE
GALV.	GALVANIZED
GC	GENERAL CONTRACTOR
GEN	GENERATOR
HORIZ.	HORIZONTAL
HR	HOUR
HT.	HEIGHT
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
I.D.	INSIDE DIA.
IN.	INCH
INFO	INFORMATION
INSUL.	INSULATION
INT.	INTERIOR
KVA	KILOVOLTS-AMPERE
KW	KILOWATT
LB(S)	POUND(S)
MGB	MASTER GROUND BAR
MAX.	MAXIMUM
MECH.	MECHANICAL
MFR.	MANUFACTURER
MGR.	MANAGER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MTD.	MOUNTED
NEC	NATIONAL ELECTRICAL CODE
NEUT.	NEUTRAL
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NOC	NETWORK OPERATIONS CENTER
NPS	NOMINAL PIPE SIZE
N.T.S.	NOT TO SCALE
O.F.C.I.	OWNER FURNISHED CONTRACTOR INSTALLED
OC, o/c	ON CENTER
OPP	OPPOSITE
OD	OUTSIDE DIAMETER
OHP	OVERHEAD POWER
OHT	OVERHEAD TELEPHONE
OHU	OVERHEAD UTILITY LINES
PLYWD.	PLYWOOD
PR	PAIR
PH	PHASE
PVC	POLYVINYL CHLORIDE
PROJ	PROJECT
PROP	PROPERTY
PT	PRESSURE TREATED
RECPT.	RECEPTACLE
REQ'D	REQUIRED
RGS	RIGID GALVANIZED STEEL
R.O.	ROUGH OPENING
R.O.W.	RIGHT-OF-WAY
S	SOUTH
S.O.	SERVICE GRADE OIL RESISTANT
SHT	SHEET
SIM.	SIMILAR
SPEC.	SPECIFICATION
XXX.XX'	SPOT ELEVATION
SQ.	SQUARE
SF	SQUARE FOOT
SS	STAINLESS STEEL
STL.	STEEL
STRUCT.	STRUCTURAL
THRU	THROUGH
T.O.C.	TOP OF CONCRETE
T.O.M.	TOP OF MASONRY
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
VERT.	VERTICAL
VIF	VERIFY IN FIELD
V	VOLT
W	WEST
W/	WITH
W/O	WITHOUT
W.P.	WEATHERPROOF
XFMR	TRANSFORMER

NORTH ARROW

ELEVATION

SECTIONS & DETAILS

BRICK

CONCRETE

EARTH

GRAVEL

STEEL

METER

GROUND

REVISION

KEYNOTE

MATCH LINE

WORK POINT

MECHANICAL BONDING CONNECTION

EXOTHERMICALLY WELDED BONDING CONNECTION

POWER POLE

DISCONNECT SWITCH

DOUBLE-THROW MANUAL TRANSFER SWITCH

CIRCUIT BREAKER

EMERGENCY GENERATOR RECEPTACLE

TELCO PEDESTAL

GROUND ROD

GROUND ROD INSPECTION WELL

REPRESENTS DETAIL NUMBER

REF. DRAWING NUMBER

LEGEND

EXISTING CONTOUR LINE

EXISTING CHAIN LINK FENCE

EXISTING PROPERTY LINE

EXISTING OVERHEAD UTILITIES

EXISTING SANITARY SEWER LINE

EXISTING STORM DRAIN LINE

PROPOSED CONTOUR LINE

PROPOSED CHAIN LINK FENCE

PROPOSED LEASE AREA

PROPOSED OVERHEAD UTILITIES

PROPOSED UNDERGROUND TELCO

PROPOSED UNDERGROUND ELECTRIC

PROPOSED UNDERGROUND FIBER

PROPOSED EASEMENT

PROPOSED SILT FENCE

PROPOSED GROUNDING

FUTURE FEATURES

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DRAWN BY:	CHECKED BY:
MAM	CAR

KHA PROJECT NUMBER: 148991017

ENGINEER SEAL:

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FL PROFESSIONAL ENGINEER LIC. # 72985
FL CERTIFICATE OF AUTHORIZATION # 00000696

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DEBARY
FL1656

WEST HIGHBANKS ROAD
DEBARY, FL 32713

SHEET TITLE:

GENERAL NOTES & ABBREVIATIONS

SHEET NUMBER:

GN-1

CIVIL SPECIFICATION NOTES

GENERAL NOTES:

1. ZONING REGULATIONS AND CONDITIONAL USE PERMITS:

   A. CLIENT WILL SUBMIT FOR AND OBTAIN ALL ZONING AND CONDITIONAL USE PERMITS. SOME USE PERMITS MAY HAVE SPECIFIC REQUIREMENTS FOR THE SITE RELATED TO CONSTRUCTION, SUCH AS NOISE REGULATIONS, HOURS OF WORK, ACCESS LIMITATIONS, ETC. THE CONSTRUCTION MANAGER WILL INFORM THE CONTRACTOR OF THESE REQUIREMENTS AT THE PRE-BID MEETING OR AS SHOWN IN CONSTRUCTION DOCUMENTS.

2. FAA PERMIT AND TOWER LIGHTING:

   A. REFER TO CONSTRUCTION DOCUMENTS AND CONSTRUCTION MANAGER FOR FAA AND STATE LIGHTING REQUIREMENTS. CONTRACTOR SHALL PROVIDE TEMPORARY FAA APPROVED LIGHTING UNTIL PERMANENT LIGHTING IS OPERATIONAL.

3. TOWER SECURITY:

   A. TOWER SHALL BE FENCED BY CONTRACTOR, TEMPORARILY OR PERMANENTLY WITHIN 24 HOURS OF ERECTION. DO NOT ALLOW THE GATE ACCESSING THE TOWER AREA TO REMAIN OPEN AND UNATTENDED AT ANY TIME FOR ANY REASON. KEEP THE GATE CLOSED AND LOCKED WHEN NOT IN USE.

4. CONTRACTOR SHALL BE RESPONSIBLE FOR RECEIVING, UNLOADING, AND INSTALLATION FOR PLACEMENT OF NEW CONCRETE SHELTER BUILDING OR CABINETS AND ERECTION OF TOWER.

5. CONFLICTS:

   A. VERIFY ALL MEASUREMENTS AT THE SITE BEFORE ORDERING MATERIAL OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION WILL BE ALLOWED DUE TO DIFFERENCES BETWEEN ACTUAL DIMENSIONS OR DIMENSIONS SHOWN ON PLANS. SUBMIT NOTICE OF ANY DISCREPANCY IN DIMENSIONS OR OTHERWISE TO THE CONSTRUCTION MANAGER FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.

   B. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OF CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING THE WORK TO BE PERFORMED IN THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS CONTRACT DOCUMENTS GOVERNING THE WORK.

6. PHOTOS:

   A. PROVIDE PHOTOGRAPHIC EVIDENCE OF ALL FOUNDATION INSTALLATION, GROUNDING AND TRENCHING AFTER PLACEMENT OF UTILITIES PRIOR TO BACKFILL.

SITE PREPARATION:

1. CONTRACTOR'S SCOPE OF WORK:

   A. PROTECTION OF EXISTING TREES, VEGETATION AND LANDSCAPING MATERIALS WHICH MIGHT BE DAMAGED BY CONSTRUCTION ACTIVITIES.

   B. TRIMMING OF EXISTING TREES AND VEGETATION AS REQUIRED FOR PROTECTION DURING CONSTRUCTION ACTIVITIES.

   C. CLEARING AND GRUBBING OF STUMPS, VEGETATION, DEBRIS, RUBBISH, DESIGNATED TREES, AND SITE IMPROVEMENTS.

   D. TOPSOIL STRIPPING AND STOCKPILING.

   E. TEMPORARY EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL CONFORMING TO LOCAL AND STATE REQUIREMENTS AS APPLICABLE.

   F. TEMPORARY PROTECTION OF ADJACENT PROPERTY, STRUCTURES, BENCHMARKS, AND MONUMENTS.

   G. PROTECTION AND TEMPORARY RELOCATION, STORAGE AND REINSTALLATION OF EXISTING FENCING AND OTHER SITE IMPROVEMENTS SCHEDULED FOR REUSE.

   H. REMOVAL AND LEGAL DISPOSAL OF CLEARED MATERIALS.

2. CONTRACTOR'S QUALITY ASSURANCE:

   A. CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR CONTAINMENT OF SEDIMENT AND CONTROL OF EROSION ON SITE. ANY DAMAGE TO ADJACENT OR DOWNSTREAM PROPERTIES WILL BE CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

   B. CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE AT ALL TIMES. DO NOT ALLOW WATER TO STAND OR POND. ANY DAMAGE TO STRUCTURES OR WORK ON THE SITE CAUSED BY INADEQUATE MAINTENANCE OF DRAINAGE WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND ANY COST ASSOCIATED WITH REPAIRS FOR SUCH DAMAGE WILL BE AT THE CONTRACTOR'S EXPENSE.

   C. CONTRACTOR SHALL PROPERLY DISPOSE ALL WASTE MATERIAL OFF-SITE OR AS DIRECTED BY THE CONSTRUCTION MANAGER AND IN ACCORDANCE WITH JURISDICTIONAL AUTHORITIES.

3. PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS WITHIN THE CONSTRUCTION DOCUMENTS):

   A. MATERIALS USED FOR TREE PROTECTION, EROSION CONTROL, SILTATION.

   B. MATERIALS USED FOR DUST CONTROL AS SUITABLE FOR SPECIFIC SITE CONDITIONS.

EARTHWORK:

1. CONTRACTOR'S SCOPE OF WORK:

   A. EXCAVATION, TRENCHING, FILLING, COMPACTION AND GRADING FOR STRUCTURES, SITE IMPROVEMENTS AND UTILITIES.

   B. MATERIALS FOR SUB-BASE, DRAINAGE FILL, FILL, BACKFILL AND GRAVEL FOR SLABS, PAVEMENTS AND IMPROVEMENTS.

   C. ROCK EXCAVATION WITHOUT BLASTING.

   D. SUPPLY OF ADDITIONAL MATERIALS FROM OFF-SITE AS REQUIRED.

   E. REMOVAL AND LEGAL DISPOSAL OF EXCAVATED MATERIALS AS REQUIRED.

   F. SITE GRADING.

   G. PLACEMENT AND COMPACTION OF FILL, SUBGRADE AND GRAVEL SURFACING.

   H. WHEN REQUIRED, CONSTRUCTION OF COMPOUND, ACCESS ROADS, FENCING AND ALL FOUNDATIONS.

2. CONTRACTOR'S QUALITY ASSURANCE:

   A. COMPACTION: UNDER STRUCTURES, FOUNDATIONS, BUILDING SLABS, PAVEMENTS AND WALKWAYS 95 PERCENT MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 WITH PLUS OR MINUS 3 PERCENT OF OPTIMUM MOISTURE CONTENT.

   B. GRADING TOLERANCES OUTSIDE BUILDING LINES: LAWNS, UNPAVED AREAS AND WALKS, PLUS OR MINUS 1 INCH. UNDER PAVEMENTS, PLUS OR MINUS 1/2 INCH.

   C. GRADING TOLERANCE FOR FILL UNDER ALL CONCRETE APPLICATIONS: PLUS OR MINUS 1/2 INCH MEASURED WITH 10 FOOT STRAIGHTEDGE.

   D. CONTRACTOR MUST REFER TO THE GEOTECH REPORT FOR ALL COMPACTED FILL RECOMMENDATIONS. IF THE GEOTECH REPORT CONFLICTS WITH THE CONSTRUCTION DRAWINGS THEN STOP WORK AND CONTACT THE CLIENT AS SOON AS POSSIBLE.

3. PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS WITHIN CONSTRUCTION DOCUMENTS):

   A. SUB BASE MATERIAL: GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE OR SLAG AND NATURAL OR CRUSHED SAND.

   B. WASHED MATERIAL: UNIFORMLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL, WITH 100 PERCENT PASSING A 1-1/2 INCH SIEVE AND NOT MORE THAN 5 PERCENT PASSING A NO. 4 SIEVE.

   C. GRADING MATERIAL: SATISFACTORY NATIVE OR IMPORTED MATERIALS CONTAINING ROCK OR GRAVEL NOT LARGER THAN 2 INCHES IN ANY DIMENSION. GRADING MATERIAL SHALL NOT INCLUDE DEBRIS, WASTE, FROZEN MATERIALS, AND OTHER UNSUITABLE MATERIALS. IMPORTED MATERIAL SHALL HAVE A FINES CONTENT OF NO MORE THAN 5 PERCENT.

   D. BACKFILL MATERIALS: SATISFACTORY NON-COHESIVE NATIVE OR IMPORTED SOIL MATERIALS FREE OF CLAY, DEBRIS, WASTE, AND OTHER UNSUITABLE MATERIALS. ROCK OR GRAVEL SHALL NOT EXCEED 4 INCHES IN ANY DIMENSION. IMPORTED MATERIAL SHALL HAVE A FINES CONTENT OF NO MORE THAN 5 PERCENT.

   E. GRAVEL MATERIAL: EVENLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL, WITH 100 PERCENT PASSING A 1-1/2 INCH SIEVE AND NOT MORE THAN 5 PERCENT PASSING A NO. 4 SIEVE.

   F. GEOTEXTILE FABRIC: TYPAR 3401 OR EQUIVALENT

4. CLEARING AND GRUBBING:

   A. REMOVE ALL VEGETATION AND MATERIALS TO A MINIMUM DEPTH OF 6 INCHES. REMOVE STUMPS COMPLETELY UNDER FOUNDATIONS AND ROADWAY. DISPOSE OF CLEARING AND GRUBBING OFF-SITE, OR IN AN ON-SITE LOCATION APPROVED BY CONSTRUCTION MANAGER.

5. STRIPPING:

   A. STRIP NOT LESS THAN 3 INCHES OF VEGETATION AND TOPSOIL FROM AREAS THAT WILL UNDERLAY GRAVEL, PAVEMENT, NEW STRUCTURES, OR NEW EMBANKMENTS. STOCKPILE STRIPPED TOPSOIL ON-SITE FOR REUSE IN FINAL LANDSCAPING.

6. COMMON WEEDING:

   A. STERILIZE COMPOUND AREA WITH WEED KILLER/DEFOLIANT. THEN TREAT AREA WITH AN HERBICIDE SUCH AS PARQUET OR EQUIVALENT.

7. COMMON EXCAVATION:

   A. EXCAVATE TO DEPTH, LINES, AND GRADES SHOWN ON THE PLANS OR AS OTHERWISE SPECIFIED.

   B. TEMPORARILY STOCKPILE ON-SITE EXCAVATION AT AN APPROVED LOCATION WITHIN THE WORK AREA UNTIL SITE GRADING IS COMPLETE. STOCKPILE SHALL NOT EXCEED 15 FEET IN HEIGHT.

   C. DISPOSE OF EXCESS EXCAVATION OFF-SITE. MATERIALS REMOVED FROM SITE MUST BE DISPOSED OF IN A LEGAL MANNER.

8. EMBANKMENT:

   A. CONSTRUCT EMBANKMENT TO THE LINES AND GRADES SHOWN ON THE DRAWINGS.

   B. CONSTRUCT EMBANKMENT FROM ON-SITE EXCAVATION MATERIALS. USE IMPORTED BACKFILL ONLY AFTER AVAILABLE ON-SITE EXCAVATION MATERIALS HAVE BEEN USED.

   C. CONSTRUCT IN LIFTS OF NOT MORE THAN 9 INCHES IN LOOSE DEPTH. THE FULL WIDTH OF THE CROSS SECTION SHALL BE BROUGHT UP UNIFORMLY.

   D. MATERIAL SHALL BE PLACED IN LAYERS AND SHALL BE NEAR OPTIMUM MOISTURE CONTENT BEFORE ROLLING TO OBTAIN THE PRESCRIBED COMPACTION. WETTING OR DRYING OF THE MATERIAL AND MANIPULATION TO SECURE A UNIFORM MOISTURE CONTENT THROUGHOUT THE LAYER MAY BE REQUIRED. SUCH OPERATIONS SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM. SHOULD THE MATERIAL BE TOO WET TO PERMIT PROPER COMPACTION, REMOVE AND REPLACE FILL WITH MATERIAL IN CONFORMANCE WITH THESE SPECIFICATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIAL WITH AN ACCEPTABLE MOISTURE CONTENT.

   E. WHEN APPLICABLE, DO NOT PLACE FROZEN MATERIAL IN THE EMBANKMENT, AND DO NOT PLACE EMBANKMENT MATERIAL UPON FROZEN MATERIAL.

   F. BE RESPONSIBLE FOR THE STABILITY OF EMBANKMENTS AND REPLACE ANY PORTION WHICH HAS BECOME DISPLACED DUE TO THE CONTRACTOR'S OPERATIONS.

   G. START LAYERS IN THE DEEPEST PORTION OF THE FILL, AND AS PLACEMENT PROGRESSES, CONSTRUCT LAYERS APPROXIMATELY PARALLEL TO THE FINISHED GRADE LINE.

   H. ROUTE EQUIPMENT, BOTH LOADED AND EMPTY, OVER THE FULL WIDTH OF EMBANKMENT TO ENSURE UNIFORMITY OF MATERIAL PLACEMENT.

   I. COMPACT EMBANKMENT UNDERLYING NEW GRAVEL PAVING, FLOOR SLABS, AND STRUCTURES TO 95 PERCENT MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 WITH PLUS OR MINUS 3 PERCENT OF OPTIMUM MOISTURE CONTENT. COMPACT NON-STRUCTURAL AREA EMBANKMENTS TO A MINIMUM OF 90 PERCENT OF ASTM D-1557.

9. SITE GRADING:

   A. USING ON-SITE EXCAVATION MATERIALS, SHAPE, TRIM, FINISH, AND COMPACT SURFACE AREAS TO CONFORM TO THE LINES, GRADES, AND CROSS SECTIONS SHOWN ON THE DRAWINGS OR AS DESIGNATED BY THE CONSTRUCTION MANAGER.

   B. GRADE SURFACES TO DRAIN AND ELIMINATE ANY PONDING OR EROSION.

   C. ELIMINATE WHEEL RUTS BY REGRADING.

   D. CONSTRUCT FINISHED SURFACE OF SITE GRADING AREAS WITHIN ONE INCH FROM SPECIFIED GRADE.

10. SUBGRADE PREPARATION:

   A. SHAPE TOP OF SUBGRADE TO THE LINES AND GRADES SHOWN ON THE DRAWINGS.

   B. MAINTAIN TOP OF SUBGRADE IN A FREE-DRAINING CONDITION.

   C. DO NOT STOCKPILE MATERIALS ON TOP OF SUBGRADE UNLESS AUTHORIZED BY CONSTRUCTION MANAGER.

   D. COMPACT THE TOP 6 INCHES OF SUBGRADE TO A 95 PERCENT MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.

   E. REMOVE AND REPLACE SOFT SOILS ON AREAS THAT "PUMP" OR DEFORM UNDER WEIGHT OF COMPACTION EQUIPMENT.

   F. CONSTRUCT TOP OF SUBGRADE WITHIN ONE INCH OF ESTABLISHED GRADE AND CROSS-SECTION.

11. GEOTEXTILE FABRIC:

   A. LAY GEOTEXTILE FABRIC OVER COMPACTED SUBGRADE AS PER CONSTRUCTION DOCUMENTS IN COMPOUND AND UNDER LENGTH OF ROAD (WHEN REQUIRED). LAP ALL JOINTS A MINIMUM OF 12 INCHES.

12. GRAVEL SURFACING:

   A. CONSTRUCT GRAVEL SURFACING AREAS USING CRUSHED AGGREGATE BASE AND FINISH COURSES AS SPECIFIED BY CONSTRUCTION MANAGER OR CONSTRUCTION DOCUMENTS.

   B. SPREAD GRAVEL AND RAKE TO A UNIFORM SURFACE.

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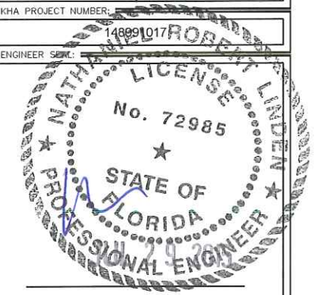
DRAWN BY:	CHECKED BY:
MAM	CAR

KHA PROJECT NUMBER: 148991017

ENGINEER SEAL:



NATHANIEL ROBERT LINDEN, PE
FL PROFESSIONAL ENGINEER LIC. # 72985
FL CERTIFICATE OF AUTHORIZATION # 00000696

PROJECT INFORMATION:

DEBARY
FL1656

WEST HIGHBANKS ROAD
DEBARY, FL 32713

SHEET TITLE:

SPECIFICATIONS

SHEET NUMBER:

SP-1

CIVIL SPECIFICATION NOTES

TRENCHING:

CONTRACTOR MUST NOTIFY "ONE-CALL" UTILITY LOCATING SERVICE THREE DAYS PRIOR TO CONSTRUCTION TO FLAG ALL UNDERGROUND UTILITIES.

1. MATERIALS:

   A. FILL MATERIAL SHALL BE OBTAINED, TO THE MAXIMUM EXTENT POSSIBLE, FROM EXCAVATIONS ON-SITE. THE STRUCTURAL FILL SHOULD BE SAND AND SHALL BE APPROVED BY THE CONSTRUCTION MANAGER AND SHALL CONFORM TO LOCAL GOVERNING JURISDICTION AND UTILITY COMPANY REQUIREMENTS. THE FILL MATERIAL SHALL BE FREE FROM PERCEPTIBLE AMOUNTS OF WOOD, DEBRIS OR TOPSOIL AND SHALL NOT CONTAIN MARBLE OR OTHER ELEMENTS, WHICH TEND TO KEEP IT IN A PLASTIC STATE. MATERIALS DESIGNATED AS HAZARDOUS OR INDUSTRIAL BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA) ARE TO BE AVOIDED. THE FILL MATERIAL SHALL CONTAIN FINES SUFFICIENT TO FILL ALL VOIDS IN THE MATERIAL.

2. PIPE DETECTION AND IDENTIFICATION:

   A. UTILIZING WARNING TAPE: ALL ELECTRIC SERVICE TRENCHES SHALL BE MARKED WITH WARNING TAPE.

3. TRENCH EXCAVATION:

   A. DIG TRENCH TO LINES AND GRADES SHOWN ON THE PLANS OR AS DIRECTED BY CONSTRUCTION MANAGER.

   B. TRENCH WIDTH SHALL BE SUFFICIENT TO ALLOW FOR SATISFACTORY CONSTRUCTION AND INSPECTION OF THE PROJECT, WITHOUT ENDANGERING OTHER CONSTRUCTION WORK OR ADJACENT FACILITIES.

   C. DISPOSAL OF EXCESS AND UNSUITABLE EXCAVATION MATERIAL PROPERLY, AS DIRECTED BY CONSTRUCTION MANAGER.

   D. USE HAND METHODS FOR EXCAVATION THAT CANNOT BE ACCOMPLISHED WITHOUT ENDANGERING EXISTING OR NEW STRUCTURES OR OTHER FACILITIES.

4. TRENCH PROTECTION:

   A. PROVIDE MATERIALS, LABOR, AND EQUIPMENT NECESSARY TO PROTECT TRENCHES AT ALL TIMES.

   B. SHEETING AND BRACING: MEET OR EXCEED OSHA REQUIREMENTS.

5. BACKFILLING:

   A. A PRELIMINARY EARTH RESISTIVITY TEST SHALL BE PERFORMED PRIOR TO BACKFILLING.

   B. BACKFILL AND/OR BEDDING SHALL NOT BE PLACED IN A TRENCH UNTIL THE TRENCH WORK AND BACKFILL HAS BEEN INSPECTED AND APPROVED BY THE CLIENT. CONTRACTOR TO NOTIFY CLIENT'S CONSTRUCTION MANAGER AT LEAST 24 HOURS IN ADVANCE OF EXPECTED BACKFILL.

   C. IF BACKFILL MATERIAL IS NOT SUITABLE (CONTAINS DEBRIS OR ROCK), REPLACE WITH A LOW RESISTANCE GROUND ENHANCEMENT MATERIAL.

   D. WHENEVER CLIENT REQUIRES THE REMOVAL OF WET OR OTHERWISE UNSTABLE SUBGRADE FROM THE FILL MATERIAL PREVIOUSLY PLACED BY THE CONTRACTOR, THE CONTRACTOR SHALL BEAR THE COST OF ALL REMOVAL OF UNSTABLE SOIL AND WITH BACKFILLING OF THE TRENCH.

   E. BACKFILL SHALL BE PLACED AND PACKED DOWN TIGHTLY TO ACHIEVE 95 PERCENT MAXIMUM DRY DENSITY AS OBTAINED THROUGH THE STANDARD PROCTOR METHOD (ASTM D-698).

   F. FOLLOWING AN APPROVED INSPECTION, BACKFILL MATERIAL SHALL BE DEPOSITED IN THE TRENCH WITH HAND SHOVELS (NOT BY MEANS OF WHEELBARROWS, CARTS, TRUCKS, BULLDOZERS, OR SIMILAR EQUIPMENT) IN 4" LAYERS AND COMPACTED BY MECHANICAL TAMPERS UNTIL THE CONDUCTOR OR PIPE HAS A COVER OF NOT LESS THAN 12" THE REMAINDER OF THE BACKFILL MATERIAL SHALL THEN BE DEPOSITED IN THE TRENCH IN 8" LAYERS AND MECHANICALLY COMPACTED.

   G. PROTECT CONDUIT FROM LATERAL MOVEMENT, DAMAGE FROM IMPACT OR UNBALANCED LOADING TO AVOID DISPLACEMENT OF CONDUIT AND/OR STRUCTURES. ANY SUBSEQUENT SETTLEMENT SHALL BE CONSIDERED THE RESULT OF IMPROPER COMPACTION AND SHALL BE PROMPTLY CORRECTED.

   H. IF REQUIRED COMPACTION DENSITY HAS NOT BEEN OBTAINED, REMOVE THE BACKFILL FROM THE TRENCH OR STRUCTURE, REPLACE WITH APPROVED BACKFILL, AND RECOMPACT AS SPECIFIED.

CHAIN LINK FENCES AND GATES

1. GENERAL:

   A. PROVIDE CHAIN LINK FENCES AND GATES AS COMPLETE UNITS BY A SINGLE SUPPLY SOURCE INCLUDING NECESSARY ERECTION ACCESSORIES, FITTINGS, AND FASTENINGS.

2. PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS WITHIN CONSTRUCTION DOCUMENTS):

   A. REFER TO DRAWINGS FOR FABRIC HEIGHT AND OVER WITH 2-INCH MESH SHALL BE KNUCKLED AT ONE SELVAGE AND TWISTED AT THE OTHER; ALL MESHES 60 INCHES HIGH AND UNDER SHALL BE KNUCKLED AT BOTH SELVAGES.

   B. STEEL FABRIC:

      COMPLY WITH CHAIN LINK FENCE MANUFACTURER'S INSTITUTE (CLFMI) PRODUCT MANUAL. FURNISH ONE PIECE OF FABRIC WIDTHS. WIRE SIZE INCLUDES ZINC OR ALUMINUM COATING.

      1. SIZE: 2-INCH MESH, 9 GAUGE (0.148-INCH DIAMETER) WIRE.

      2. GALVANIZED STEEL FINISH: ASTM A392, CLASS 2, WITH A MINIMUM 2.0 OZ. ZINC PER SQ. FT. OF UNCOATED WIRE SURFACE.

   C. FRAMEWORK AND ACCESSORIES:

      1. GENERAL REQUIREMENTS: EXCEPT AS INDICATED OTHERWISE, CONFORM TO THE CHAIN LINK FENCE MANUFACTURERS INSTITUTE (CLFMI) PRODUCT MANUAL, INDUSTRIAL STEEL GUIDE FOR FENCE RAILS, POSTS, GATES AND ACCESSORIES.

      2. STRENGTH REQUIREMENTS FOR POSTS AND RAILS CONFORMING TO ASTM F1043.

      3. TYPE 1 PIPE: HOT-DIPPED GALVANIZED STEEL PIPE CONFORMING TO ASTM F1083, PLAN ENDS, STANDARD WEIGHT (SCHEDULE 40) WITH NOT LESS THAN 1.8 OZ. ZINC PER SQ. FT. OF SURFACE AREA COATED.

      4. FITTINGS: COMPLY WITH ASTM F626. MILL FINISHED ALUMINUM OR GALVANIZED STEEL, TO SUIT MANUFACTURER'S STANDARDS.

      5. TOP RAIL: MANUFACTURER'S LONGEST LENGTHS, WITH EXPANSION TYPE COUPLINGS, APPROXIMATELY 6 INCHES LONG, FOR EACH JOINT. PROVIDE MEANS FOR ATTACHING TOP RAIL SECURELY TO EACH GATE CORNER, PULL AND END POST.

      A. GALVANIZED STEEL: 1-1/4 INCH NPS (1.66 INCH OD) TYPE I OR II STEEL PIPE OR 1.625 INCH X 1.25 INCH ROLL-FORMED C SECTIONS WEIGHTING 1.35 LBS. PER FT.

D. SWING GATES:

   COMPLY WITH ASTM F900. PROVIDE HARDWARE AND ACCESSORIES FOR EACH GATE, GALVANIZED PER ASTM A153, AND IN ACCORDANCE WITH THE FOLLOWING:

   1. HINGES: NON-LIFT-OFF TYPE, OFFSET TO PERMIT 180 DEG. GATE OPENING.

   2. LATCH: FORKED TYPE OR PLUNGER-BAR TYPE TO PERMIT OPERATION FROM EITHER SIDE OF GATE, WITH PADLOCK EYE AS INTEGRAL PART OF LATCH.

   3. KEEPER: PROVIDE KEEPER FOR VEHICLE GATES, WHICH AUTOMATICALLY ENGAGES GATE LEAF AND HOLDS IT IN OPEN POSITION UNTIL MANUALLY RELEASED.

   4. GATE STOPS: PROVIDE GATE STOPS FOR DOUBLE GATES, CONSISTING OF 2" O.D. x 12" LONG PIPE GATE KEEPER, EMBEDDED IN CONCRETE, AND DESIGNED TO ENGAGE CENTER DROP ROD OR PLUNGER BAR. INCLUDE LOCKING DEVICE AND PADLOCK EYES AS INTEGRAL PART OF LATCH, PERMITTING BOTH GATE LEAVES TO BE LOCKED WITH SINGLE PADLOCK.

E. CONCRETE:

   PROVIDE CONCRETE CONSISTING OF PORTLAND CEMENT, ASTM C150, AGGREGATES ASTM C33, AND CLEAN WATER.

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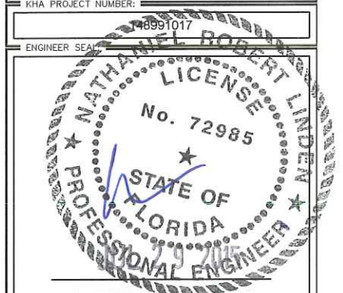


NATHANIEL ROBERT LINDEN, PE
FL PROFESSIONAL ENGINEER LIC. # 72985
FL CERTIFICATE OF AUTHORIZATION # 00000696

PROJECT INFORMATION:

DEBARY
FL1656

WEST HIGHBANKS ROAD
DEBARY, FL 32713

SHEET TITLE:

SPECIFICATIONS

SHEET NUMBER:

SP-2

NOTES:

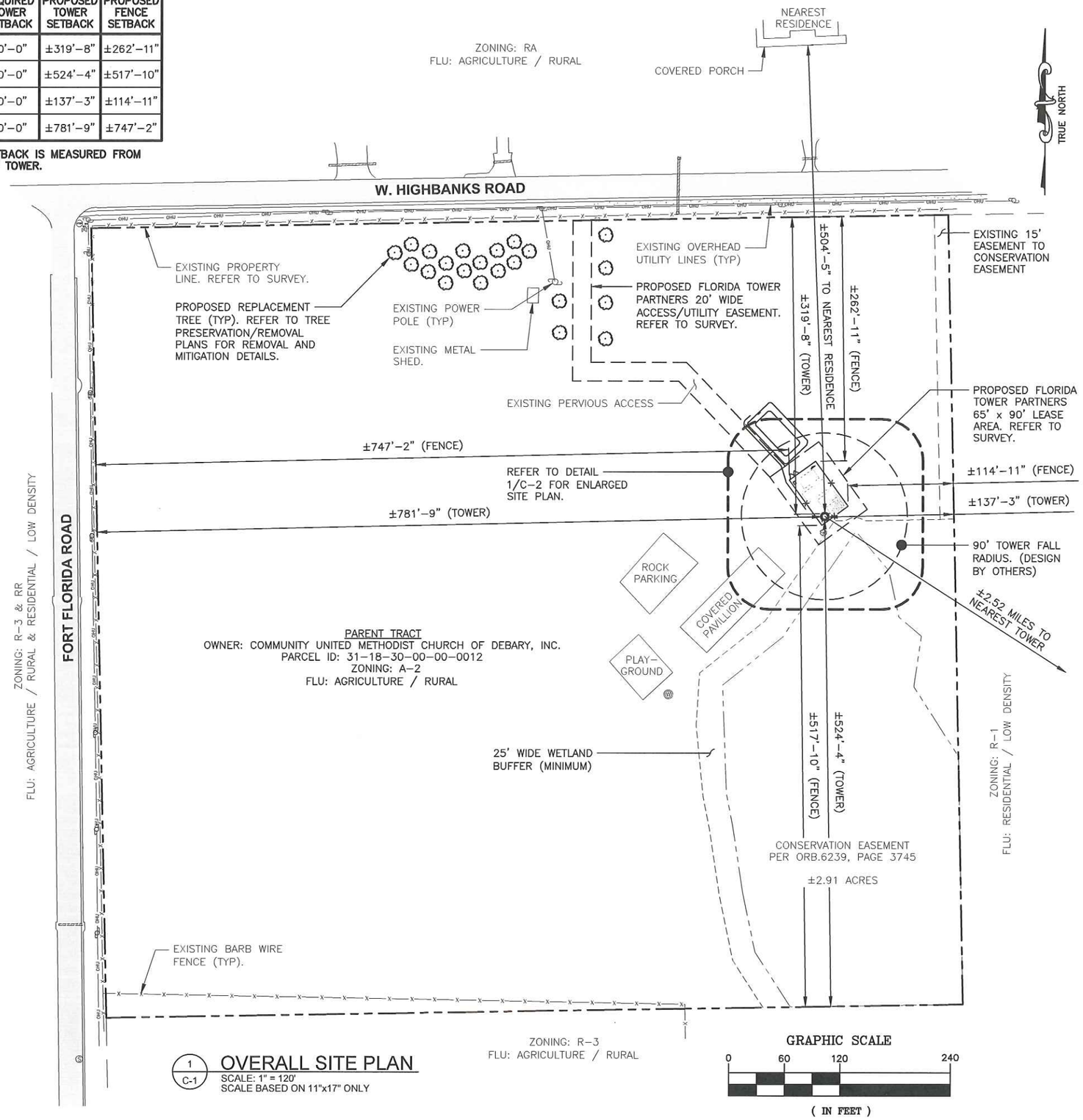
1. FENCED SITE AREA SHALL BE CLEARED AND GRUBBED. REMOVE UNSUITABLE SOFT OR LOOSE SOILS, ORGANIC MATERIAL AND OR RUBBLE TO FIRM SUBGRADE. FILL UNDERCUT UP TO 6 INCHES BELOW FINISH GRADE.
2. IF ANY ARCHAEOLOGICAL MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY THE CLIENT.
3. THE CONTRACTOR MUST CONTACT THE SURVEYOR TO STAKE OUT ALL EASEMENTS AND LEASE AREA PRIOR TO CONSTRUCTION. ALL FEES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR IS TO ENSURE THAT NO DAMAGE OR DEBRIS OCCURS ON THE ADJACENT PROPERTIES.
5. THE CONTRACTOR SHALL SEED ALL DISTURBED AREAS WITH LOW MAINTENANCE NATIVE GRASS AND COVER WITH APPROVED STRAW.
6. UNTIL THE COMPOUND IS SURROUNDED BY A PERMANENT FENCE, THE CONTRACTOR MUST ERECT A TEMPORARY FENCE AROUND THE TOWER AND POST A "NO TRESPASSING" SIGN. ALL CLIMBING PEGS MUST BE REMOVED UP TO 20' UNTIL A PERMANENT FENCE IS INSTALLED.
7. THE CONTRACTOR MUST ENSURE THAT ALL DELIVERY TRUCKS WILL BE ABLE TO DELIVER THE MATERIAL TO THE COMPOUND. IF THE DELIVERY TRUCKS CAN NOT ACCESS THE COMPOUND THEN THE CONTRACTOR MUST MAKE OTHER ARRANGEMENTS TO GET THE MATERIAL TO THE COMPOUND. IF THIS IS REQUIRED THE CONTRACTOR MUST CONTACT KIMLEY-HORN AND ASSOCIATES IMMEDIATELY. NO ADDITIONAL FEES WILL BE PASSED ON TO THE CLIENT.
8. PROPOSED TOWER AND FOUNDATION TO BE INSTALLED IN ACCORDANCE WITH THE TOWER MANUFACTURER PLANS PROVIDED BY CLIENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE UNLOADING OF TOWER MATERIALS DELIVERED TO SITE BY THE TOWER MANUFACTURER.
9. CONTRACTOR MUST REFER TO THE GEOTECH REPORT FOR ALL COMPACTED FILL RECOMMENDATIONS. IF THE GEOTECH REPORT CONFLICTS WITH THE CONSTRUCTION DRAWINGS THEN STOP WORK AND CONTACT THE CLIENT AS SOON AS POSSIBLE.
10. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL FLORIDA DOT AND/OR COUNTY SPECIFICATIONS PRIOR TO BID AND CONSTRUCTION. IF THE SPECIFICATIONS DIFFER FROM THE CONSTRUCTION DRAWINGS, THEN THE SPECIFICATIONS WILL GOVERN. NO ADDITIONAL COSTS FOR ADHERING TO THE SPECIFICATIONS WILL BE ALLOWED AFTER THE BID HAS BEEN ISSUED AND ACCEPTED NOR WILL PROJECT DELAYS BE TOLERATED.
11. AT THE TIME THE CONSTRUCTION DRAWINGS WERE COMPLETED, KIMLEY-HORN AND ASSOCIATES DID NOT HAVE A COPY OF THE PROPOSED TOWER MANUFACTURER DRAWINGS THUS WE DO NOT KNOW THE EXACT SIZE OF THE OVERALL TOWER FOOTPRINT. THE CONTRACTOR MUST COMPARE THE CONSTRUCTION DRAWINGS WITH THE TOWER DRAWINGS PRIOR TO BID AND/OR CONSTRUCTION AND IF THEY FIND ANY DISCREPANCIES OR POSSIBLE ISSUES THEY MUST NOTIFY THE CLIENT IMMEDIATELY.

THE PROPERTY SHOWN HEREON FALLS WITHIN FLOOD ZONE 'X' AND FLOOD ZONE 'A' AS SHOWN ON THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 12127C0615H, DATED SEPTEMBER 29, 2011. NO FIELD MEASUREMENTS WERE USED IN THIS DETERMINATION.

THE CONTRACTOR MUST FIELD VERIFY ALL MEASUREMENTS AND FIELD CONDITIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

DIRECTION	REQUIRED TOWER SETBACK	PROPOSED TOWER SETBACK	PROPOSED FENCE SETBACK
NORTH	90'-0"	±319'-8"	±262'-11"
SOUTH	90'-0"	±524'-4"	±517'-10"
EAST	90'-0"	±137'-3"	±114'-11"
WEST	90'-0"	±781'-9"	±747'-2"

NOTE: TOWER SETBACK IS MEASURED FROM OUTSIDE EDGE OF TOWER.



1 / C-1 OVERALL SITE PLAN
SCALE: 1" = 120'
SCALE BASED ON 11"x17" ONLY

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KHA PROJECT NUMBER: 148991017

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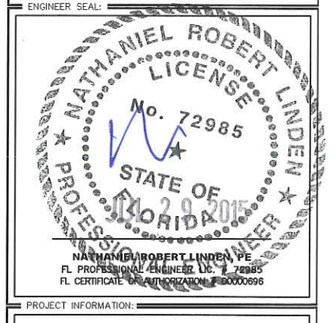


PROJECT INFORMATION:

DEBARY
FL1656

WEST HIGHBANKS ROAD
DEBARY, FL 32713

SHEET TITLE:

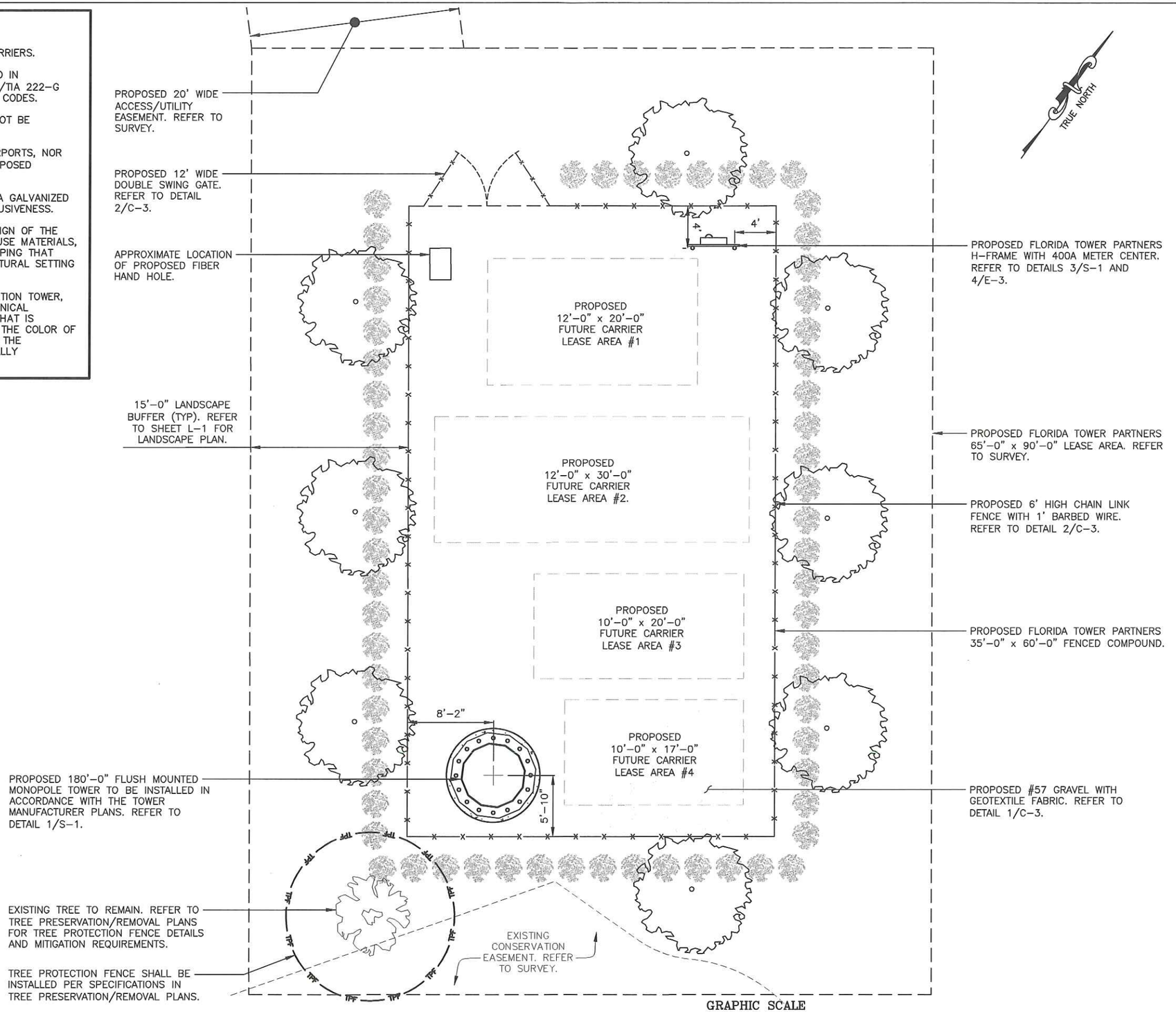
OVERALL SITE PLAN

SHEET NUMBER:

C-1

ZONING NOTES:

1. TOWER SHALL BE DESIGNED FOR FOUR (4) CARRIERS.
2. TOWER SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF EIA/TIA 222-G STANDARDS AS WELL AS ALL LOCAL BUILDING CODES.
3. PER FAA REQUIREMENTS, THE TOWER SHALL NOT BE ARTIFICIALLY LIGHTED.
4. THERE ARE NO PUBLIC AIRPORTS, PRIVATE AIRPORTS, NOR HELIPADS WITHIN FOUR (4) MILES OF THE PROPOSED COMMUNICATION TOWER LOCATION.
5. THE COMMUNICATION TOWER SHALL MAINTAIN A GALVANIZED STEEL FINISH SO AS TO REDUCE VISUAL OBTRUSIVENESS.
6. AT THE COMMUNICATION TOWER SITE, THE DESIGN OF THE BUILDINGS AND RELATED STRUCTURES SHALL USE MATERIALS, COLORS, TEXTURES, SCREENING, AND LANDSCAPING THAT WILL BLEND THE TOWER FACILITIES TO THE NATURAL SETTING AND BUILT ENVIRONMENT.
7. ALL ANTENNAS INSTALLED ON THE COMMUNICATION TOWER, AND THE SUPPORTING ELECTRICAL AND MECHANICAL EQUIPMENT SHALL BE OF A NEUTRAL COLOR THAT IS IDENTICAL TO, OR CLOSELY COMPATIBLE WITH, THE COLOR OF THE SUPPORTING STRUCTURE SO AS TO MAKE THE ANTENNAS AND RELATED EQUIPMENT AS VISUALLY UNOBTRUSIVE AS POSSIBLE.



1 / C-2 ENLARGED SITE PLAN
SCALE: 1" = 10'
SCALE BASED ON 11"x17" ONLY

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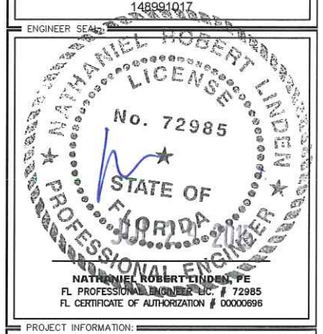


NATHANIEL ROBERT LINDEN, PE
FL PROFESSIONAL ENGINEER LIC. # 72985
FL CERTIFICATE OF AUTHORIZATION # DOXXXX696

PROJECT INFORMATION:

DEBARY
FL1656

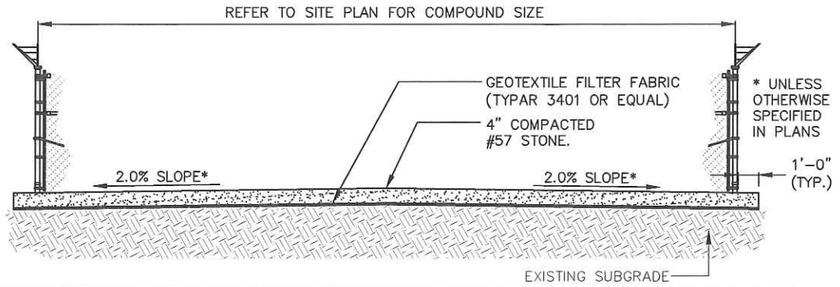
WEST HIGHBANKS ROAD
DEBARY, FL 32713

SHEET TITLE:

ENLARGED SITE PLAN

SHEET NUMBER:

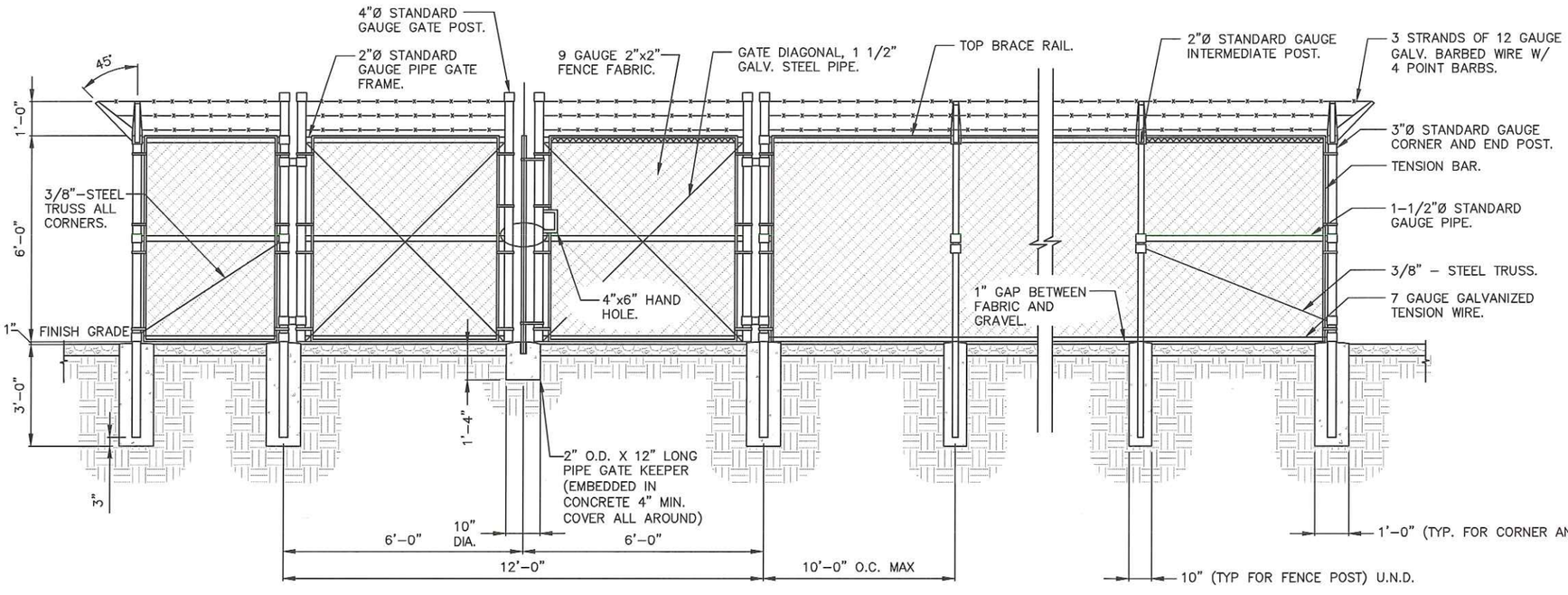
C-2



NOTES:

1. SITE WILL BE GRADED TO ALLOW DRAINAGE AWAY FROM TOWER AND SHELTER.
2. PRIOR TO LAYING THE STONE, THE COMPOUND SHOULD BE CLEARED OF ALL ORGANIC MATTER, STERILIZED WITH WEED KILLER, AND THEN TREATED WITH HERBICIDE.
3. AFTER PROJECT COMPLETION ALL DISTURBED AREAS MUST BE SEEDED WITH LOW MAINTENANCE GRASS.
4. STONE SHALL BE COMPACTED 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 TO PREVENT IMMEDIATE EROSION AND EASE IN DRIVING ACCESSIBILITY.

1 / C-3 **TYPICAL COMPOUND SECTION DETAIL**
SCALE: N.T.S.



NOTES:

1. ALL FENCING MATERIAL MUST BE GALVANIZED.
2. ALL POSTS MUST HAVE STEEL CAPS.
3. ALL POSTS AND BRACING MUST BE SCH. 40
4. INSTALL FENCING PER ASTM F-567
5. INSTALL GATES PER ASTM F-900
6. ALL CONCRETE FOUNDATIONS TO HAVE A MINIMUM OF 4000 PSI.
7. REFER TO FENCE SPECIFICATIONS FOR FURTHER INFORMATION.
8. LOCATE FENCE AS SHOWN ON SITE PLAN.
9. CONTRACTOR TO PROVIDE AND INSTALL "STYMIELOCK" ON COMPOUND GATE, WORK WITH CLIENT ON GATE COMBO.

2 / C-3 **FENCE DETAIL**
SCALE: N.T.S.

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KHA PROJECT NUMBER: 148991001

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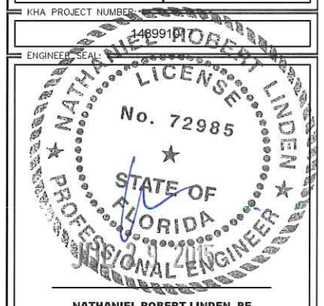

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WEST HIGHBANKS ROAD
DEBARY, FL 32713

SHEET TITLE:

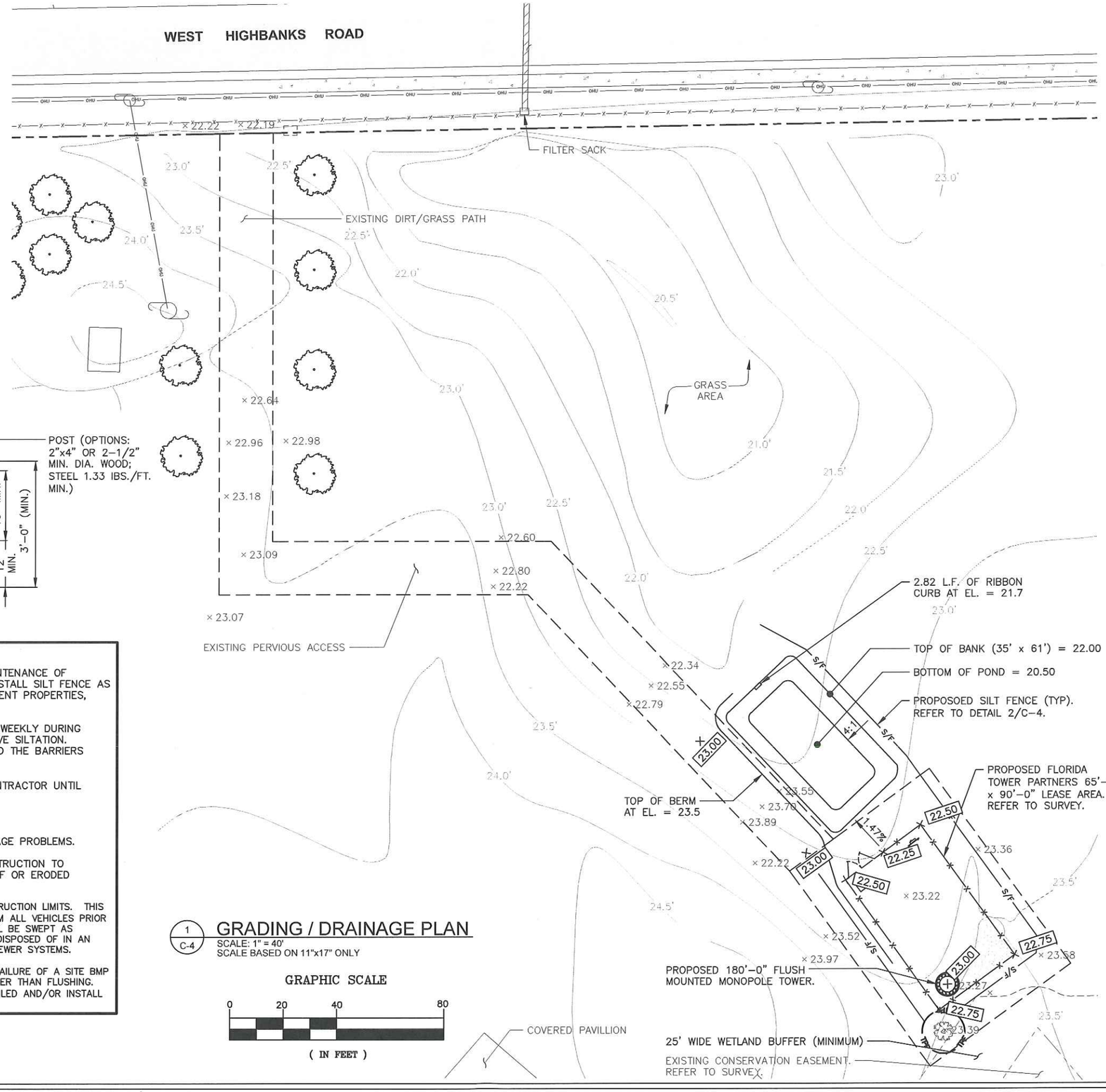
FENCE AND COMPOUND SECTIONS

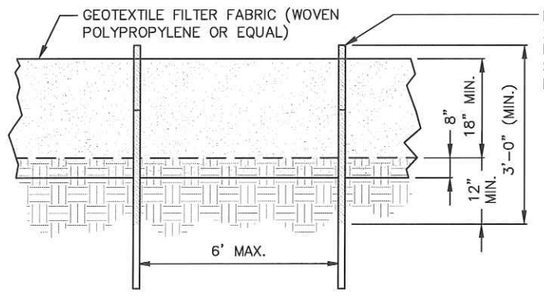
SHEET NUMBER:

C-3

TRUE NORTH

LEGEND	
XXX'	PROPOSED CONTOUR LINE
X/X'	EXISTING CONTOUR LINE
S/F	PROPOSED SILT FENCE
X – 29.5	EXISTING SPOT ELEVATION
	FLOW ARROW
× 29.50	PROPOSED SPOT GRADE
X – ME	MATCH EXISTING





NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS DURING CONSTRUCTION. INSTALL SILT FENCE AS SHOWN WHERE ADDITIONALLY REQUIRED FOR PROTECTION OF ADJACENT PROPERTIES, ROADWAYS, AND WATERWAYS.
2. CONTRACTOR SHALL INSPECT INSTALLED EROSION CONTROL DEVICE WEEKLY DURING CONSTRUCTION AND AFTER HEAVY RAINS FOR DAMAGE OR EXCESSIVE SILTATION. MAINTENANCE SHALL INCLUDE CLEANING BUILT–UP SEDIMENT BEHIND THE BARRIERS AND/OR REPLACING DAMAGED SECTIONS.
3. THE EROSION CONTROL DEVICES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL PERMANENT STABILIZATION IS ESTABLISHED.
4. HAY BALES SHALL NOT BGE USED AS EROSION CONTROL.
5. CONTRACTOR IS RESPONSIBLE FOR PROVIDING SITE FREE OF DRAINAGE PROBLEMS.
6. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICES FOR CONSTRUCTION TO PREVENT THE DIVERSION OF SEDIMENT LADEN STORM WATER RUNOFF OR ERODED MATERIALS FROM LEAVING THE CONSTRUCTION SITE.
7. CONTRACTOR SHALL PREVENT TRACKING OF SEDIMENT OUTSIDE OF CONSTRUCTION LIMITS. THIS MAY REQUIRE CLEANING AND/OR WASHING OF DEBRIS AND SEDIMENT FROM ALL VEHICLES PRIOR TO EXITING THE SITE. ANY SEDIMENT DEPOSITED ON THE ROADWAY SHALL BE SWEPT AS NECESSARY THROUGHOUT THE DAY OR AT THE END OF EVERY DAY AND DISPOSED OF IN AN APPROPRIATE MANNER. SEDIMENT SHALL NOT BE WASHED INTO STORM SEWER SYSTEMS.
8. ANY DEBRIS AND/OR SEDIMENT EXITING THE SITE DUE TO TRACKING OR FAILURE OF A SITE BMP SHALL BE CLEANED IMMEDIATELY BY THE CONTRACTOR BY A METHOD OTHER THAN FLUSHING. CONTRACTOR SHALL ALSO IMMEDIATELY REPAIR ANY BMPS THAT HAVE FAILED AND/OR INSTALL ADDITIONAL BMPS TO ENSURE SEDIMENT DOES NOT LEAVE THE SITE.

1 / C-4 **GRADING / DRAINAGE PLAN**
SCALE: 1" = 40'
SCALE BASED ON 11"x17" ONLY

GRAPHIC SCALE

0 20 40 80

(IN FEET)

2 / C-4 **SILT FENCE**
SCALE: N.T.S.

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SUITE 420
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PLANS PREPARED BY:

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REV:	DATE:	DESCRIPTION:	BY:
2	07/23/15	REVISED PER COMMENTS	MAM
1	07/20/15	REVISED PER COMMENTS	RCM
0	06/29/15	ISSUED FOR REVIEW	MAM

DRAWN BY:	CHECKED BY:
MAM	CAR

KHA PROJECT NUMBER:
148991014

ENGINEER SEAL:
NATHANIEL ROBERT LINDEN LICENSE No. 72985 STATE OF FLORIDA PROFESSIONAL ENGINEER
NATHANIEL ROBERT LINDEN, PE
FL PROFESSIONAL ENGINEER LIC. # 72985
FL CERTIFICATE OF AUTHORIZATION # 00000696

PROJECT INFORMATION:
DEBARY
FL1656
WEST HIGHBANKS ROAD
DEBARY, FL 32713

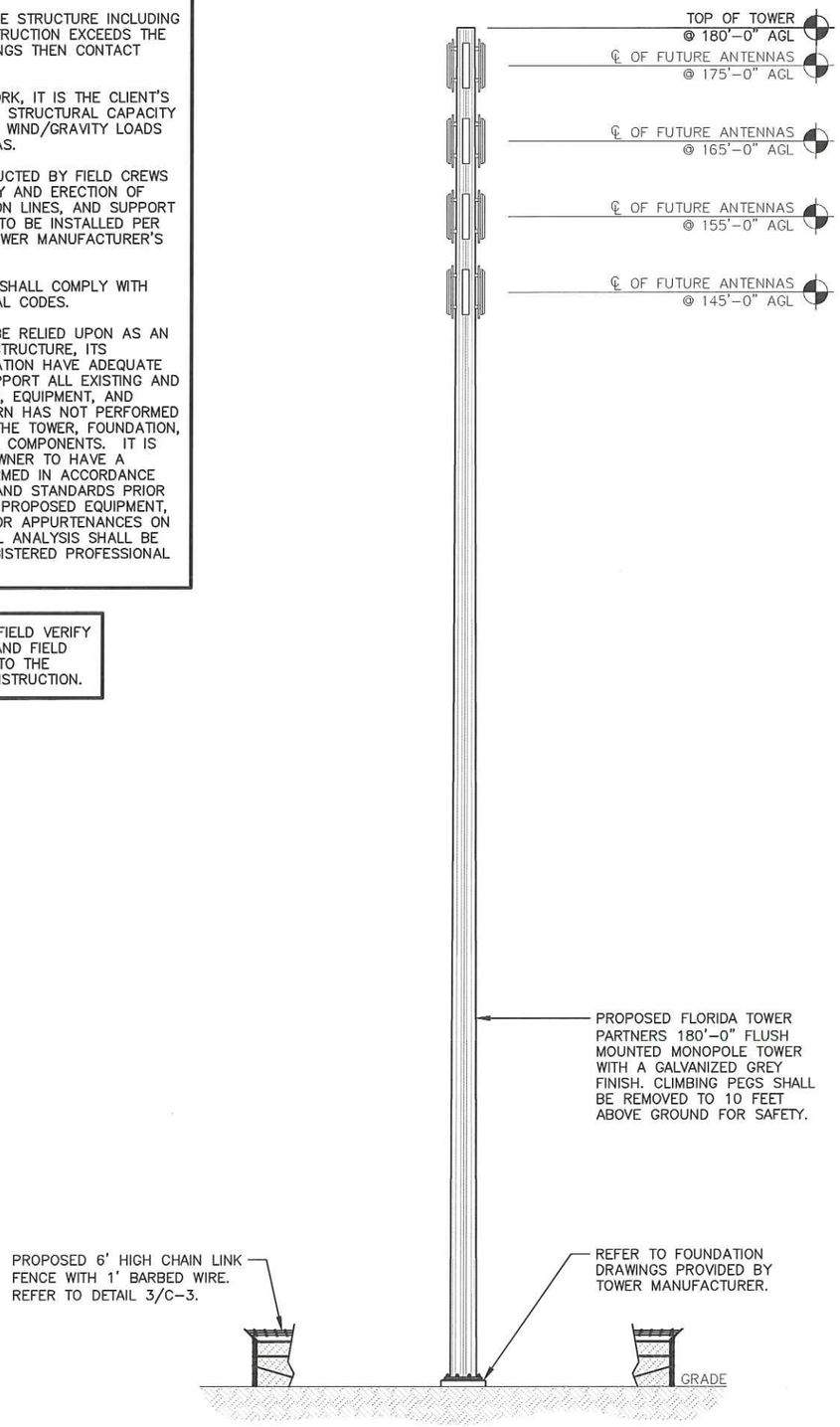
SHEET TITLE:
GRADING PLAN

SHEET NUMBER:
C-4

NOTES:

1. IF THE OVERALL HEIGHT OF THE STRUCTURE INCLUDING APPURTENANCES AFTER CONSTRUCTION EXCEEDS THE HEIGHT SHOWN ON THE DRAWINGS THEN CONTACT CLIENT IMMEDIATELY.
2. PRIOR TO PERFORMING THE WORK, IT IS THE CLIENT'S RESPONSIBILITY TO VERIFY THE STRUCTURAL CAPACITY OF THE TOWER TO RESIST THE WIND/GRAVITY LOADS FROM THE PROPOSED ANTENNAS.
3. INSTALLATION SHALL BE CONDUCTED BY FIELD CREWS EXPERIENCED IN THE ASSEMBLY AND ERECTION OF RADIO ANTENNAS, TRANSMISSION LINES, AND SUPPORT STRUCTURES. ANTENNA WORK TO BE INSTALLED PER THE REQUIREMENTS OF THE TOWER MANUFACTURER'S SPECIFICATION.
4. ANTENNA AND MOUNT DESIGN SHALL COMPLY WITH TIA-EIA-222-G AND ALL LOCAL CODES.
5. THESE DRAWINGS SHALL NOT BE RELIED UPON AS AN INDICATION THAT THE TOWER STRUCTURE, ITS COMPONENTS, AND ITS FOUNDATION HAVE ADEQUATE STRUCTURAL CAPACITY TO SUPPORT ALL EXISTING AND PROPOSED ANTENNAS, MOUNTS, EQUIPMENT, AND COAXIAL CABLES. KIMLEY-HORN HAS NOT PERFORMED A STRUCTURAL ANALYSIS ON THE TOWER, FOUNDATION, ANTENNA MOUNT, AND ALL ITS COMPONENTS. IT IS THE RESPONSIBILITY OF THE OWNER TO HAVE A STRUCTURAL ANALYSIS PERFORMED IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS PRIOR TO THE INSTALLATION OF ANY PROPOSED EQUIPMENT, COAXIAL CABLES, ANTENNAS, OR APPURTENANCES ON THE TOWER. THIS STRUCTURAL ANALYSIS SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER.

THE CONTRACTOR MUST FIELD VERIFY ALL MEASUREMENTS AND FIELD CONDITIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.



1 / S-1 TOWER ELEVATION
SCALE: N.T.S.

Florida Tower Partners

1001 3rd Avenue West
Suite 420
Bradenton, FL 34205
(941) 757-5010

Florida Tower Partners

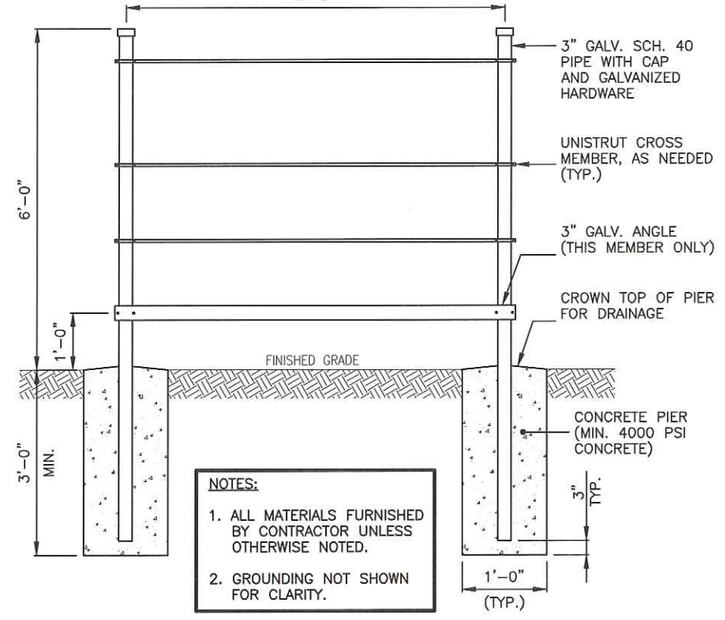
Site #: FL1656
Site Name: DEBARY
FCC#:
FAA:

NO TRESPASSING

TRESPASSERS WILL BE PROSECUTED

Florida Tower Partners

2 / S-1 SITE SIGNAGE
SCALE: N.T.S.



NOTES:

1. ALL MATERIALS FURNISHED BY CONTRACTOR UNLESS OTHERWISE NOTED.
2. GROUNDING NOT SHOWN FOR CLARITY.

3 / S-1 UTILITY RACK DETAIL
SCALE: N.T.S.

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DRAWN BY:	CHECKED BY:
MAM	CAR

KHA PROJECT NUMBER: 148991017

ENGINEER SEAL:

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NATHANIEL ROBERT LINDEN, PE
FL PROFESSIONAL ENGINEER LIC. # 72985
FL CERTIFICATE OF AUTHORIZATION # 00000696

PROJECT INFORMATION:

DEBARY
FL1656

WEST HIGHBANKS ROAD
DEBARY, FL 32713

SHEET TITLE:

TOWER ELEVATION AND DETAILS

SHEET NUMBER:

S-1

ELECTRICAL SPECIFICATION NOTES

GENERAL NOTES:

1. OBTAIN PERMITS AND PAY FEES RELATED TO ELECTRICAL WORK PERFORMED ON THIS PROJECT. DELIVER COPIES OF ALL PERMITS TO CLIENT REPRESENTATIVE.
2. SCHEDULE AND ATTEND INSPECTIONS RELATED TO ELECTRICAL WORK REQUIRED BY JURISDICTION HAVING AUTHORITY. CORRECT AND PAY FOR ANY WORK REQUIRED TO PASS ANY FAILED INSPECTION.
3. ENGAGE AN INDEPENDENT ELECTRICAL TESTING FIRM APPROVED BY CLIENT TO TEST AND VERIFY THAT IMPEDANCE DOES NOT EXCEED 5 OHMS TO GROUND. THE COMPLETED SITE SHALL BE TESTED AND A REPORT SENT TO CLIENT REPRESENTATIVE.
4. REDLINED AS-BUILTS ARE TO BE DELIVERED TO CLIENT REPRESENTATIVE.
5. PROVIDE TWO COPIES OF OPERATION AND MAINTENANCE MANUALS IN THREE-RING BINDER.
6. FURNISH AND INSTALL THE COMPLETE ELECTRICAL SERVICE, CABLE TRAY, TELCO CONDUIT AND GROUNDING SYSTEMS.
7. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE BUILDING CODES AND LOCAL ORDINANCES, INSTALLED IN A NEAT MANNER, AND SHALL BE SUBJECT TO APPROVAL BY CLIENT REPRESENTATIVE.
8. CONDUCT A PRE-CONSTRUCTION SITE VISIT AND VERIFY EXISTING SITE CONDITIONS AFFECTING THIS WORK. REPORT ANY OMISSIONS OR DISCREPANCIES FOR CLARIFICATION PRIOR TO THE START OF CONSTRUCTION.
9. PROTECT ADJACENT STRUCTURES AND FINISHES FROM DAMAGE. REPAIR TO ORIGINAL CONDITION ANY DAMAGED AREA.
10. REMOVE DEBRIS ON A DAILY BASIS. DEBRIS NOT REMOVED IN A TIMELY FASHION WILL BE REMOVED BY OTHERS AND THE RESPONSIBLE SUBCONTRACTOR SHALL BE CHARGED ACCORDINGLY. REMOVAL OF DEBRIS SHALL BE COORDINATED WITH THE CLIENT'S REPRESENTATIVE. DEBRIS SHALL BE REMOVED FROM THE PROPERTY AND DISPOSED OF LEGALLY. USE OF THE PROPERTY'S DUMPSTER IS PROHIBITED.
11. ALL CONSTRUCTION SHALL BE INSPECTED AND APPROVED BY LOCAL AUTHORITIES.
12. SIGNAL WIRING SHALL BE INSULATED #18 AWG. NO BX OR ROMEX CABLE IS PERMITTED.
13. WIRING DEVICES AND EQUIPMENT SHALL BE UL LISTED AND SPECIFICATION GRADE.
14. FUSES ARE NOT ALLOWED; CIRCUIT BREAKERS ONLY.
15. MATERIALS SHALL BE NEW AND CONFORM TO THE APPLICABLE STANDARDS ESTABLISHED FOR EACH ITEM BY THE ORGANIZATIONS LISTED BELOW:
    - AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
    - UNDERWRITER'S LABORATORY (UL)
    - NATIONAL ELECTRICAL MANUFACTURING ASSOCIATION (NEMA)
    - AMERICAN STANDARDS ASSOCIATION (ASA)
    - NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
16. DESIGN AND INSTALLATION OF MATERIALS SHALL COMPLY WITH REGULATIONS OF:
    - THE NATIONAL ELECTRICAL CODE (NFPA 70)
    - THE NATIONAL ELECTRICAL SAFETY CODE (ANSI C-2)
    - THE LIFE SAFETY CODE (NFPA 101)
    - LIQUEFIED PETROLEUM GAS (NFPA 54 AND 58)
    - LOCAL CODES
    - 2010 FLORIDA BUILDING CODE.
17. ALL CONDUIT CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NFPA 70), LATEST EDITION.

GROUNDING NOTES:

1. PROVIDE GROUNDING AND BONDING IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, OR AUTHORITIES HAVING JURISDICTION. WHERE CONFLICTS BETWEEN THESE SPECIFICATIONS, CODES, AND AUTHORITIES HAVING JURISDICTION ARISE, THE MOST STRINGENT SHALL GOVERN. BUSS CONNECTORS SHALL BE 2-HOLE LONG BARREL TYPE COMPRESSION LUGS.
2. LUGS SHALL BE ATTACHED TO BUSSES USING BOLTS, NUTS AND STAR AND LOCK WASHERS. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED.
3. SURFACE CONNECTIONS SHALL BE MADE TO BARE METAL. PAINTED SURFACES SHALL BE FILED TO ENSURE PROPER CONTACT. APPLY NON-OXIDIZING AGENT TO CONNECTIONS.
4. COPPER BUSSES SHALL BE CLEANED, POLISHED, AND A NON-OXIDIZING AGENT APPLIED. NO FINGERPRINTS OR DISCOLORED COPPER WILL BE PERMITTED.
5. GROUND CONDUCTOR RUNS SHALL BE STRAIGHT AS POSSIBLE, WITH AN 8-INCH MINIMUM RADIUS FOR #6 CONDUCTORS AND 12" FOR #2 AND LARGER CONDUCTORS.
6. HARDWARE (I.E., NUTS BOLTS, WASHERS, ETC.) IS TO BE STAINLESS STEEL.
7. GROUND COAXIAL CABLES AT POINTS SHOWN ON GROUNDING RISER DIAGRAM WITH MANUFACTURER'S GROUNDING KITS.
8. GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE (CADWELD) TO GROUND RING AND GROUND RODS. REMAINING GROUNDING CONNECTIONS SHALL BE MECHANICAL CONNECTIONS. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO-HOLE LUGS.
9. GROUND RING COMPRISED OF #2 BARE TINNED SOLID COPPER CONDUCTOR SHALL HAVE A MINIMUM DISTANCE OF 24" FROM THE STRUCTURE AND BE BURIED A MINIMUM OF 30" BELOW GRADE.
10. CADWELD GROUND RODS TO GROUND RING. RODS TO BE 5/8" x 8'-0" COPPER CLAD STEEL WITH COPPER JACKET OF NOT LESS THAN 0.01 INCHES THICK. THE TOP OF GROUND ROD SHALL EXTEND NO MORE THAN 6 INCHES ABOVE THE BOTTOM OF THE TRENCH.
11. INTERCONNECT OUTDOOR EQUIPMENT GROUND RING AND TOWER GROUND RING WITH EXOTHERMIC WELD.
12. INSTALL GROUNDING KIT. BOND COAXIAL CABLE OUTER CONDUCTOR TO GROUNDING CONDUCTOR.
13. INSTALL GROUND RODS ON GROUND RING AT 8' INTERVALS. INSTALL GROUND RODS TO FENCE POSTS AT 16' INTERVALS.
14. ALL ELECTRICAL GROUNDING SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE LATEST EDITION OF NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 780, APPROVED BY LOCAL AUTHORITY.
15. ALL GROUNDING CONNECTIONS SHALL BE COATED WITH AN ANTI-CORROSIVE AGENT SUCH AS "T&B KOPR SHIELD", "NO-OXY", "NOALOX" OR "PENETROX". VERIFY PRODUCT WITH PROJECT MANAGER.
16. GROUND WIRES SHALL BE #2 BARE TINNED SOLID COPPER FROM CONDUCTOR FOR BONDING CONNECTIONS UNLESS OTHERWISE NOTED ON PLANS.
17. DOCUMENT GROUND RING INSTALLATION AND CONNECTIONS WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PRESENT PHOTO ARCHIVE AT SITE "PUNCH LIST" WALK TO CLIENT REPRESENTATIVE.
18. THE ENTIRE SYSTEM SHALL BE SOLIDLY GROUNDED USING LOCKNUTS AND BONDING NUTS ON CONDUITS AND PROPERLY BONDED GROUND CONDUCTORS. RECEPTACLES AND EQUIPMENT BRANCH CIRCUITS SHALL BE GROUNDED WITH A FULL-SIZED EQUIPMENT GROUNDING CONDUCTOR RUN IN THE CIRCUIT'S CONDUIT.
19. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
20. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 10 OHMS OR LESS.
21. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
22. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
23. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
24. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
25. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
26. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
27. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
28. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC, LATEST EDITION.
29. BOND ALL METALLIC OBJECTS WITHIN 6FT OF MAIN GROUND WIRES WITH 1 #2 TIN-PLATED COPPER GROUND CONDUCTOR.
30. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NONMETALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
31. ALL UNDERGROUND WIRE TO BE BURIED 30" DEEP OR 6" BELOW THE FROST LINE, WHICHEVER IS DEEPER.
32. ALL BURIED GROUND CONNECTIONS WILL BE MADE USING THE EXOTHERMIC WELD PROCESS.
33. ALL GROUND WIRES SHALL BE CONNECTED TO THE CIGBE USING THE EXOTHERMIC WELD PROCESS.
34. AN APPROVED ANTIOXIDATION COMPOUND SHALL BE USED ON ALL EXTERNAL CONNECTIONS, EXCLUDING EXOTHERMIC WELDS, AND ON ALL EXTERNAL GROUND BARS. COAT ALL CONDUCTORS AND SURFACES PRIOR TO CONNECTION.
35. ALL GROUND WIRES THAT ARE ROUTED ABOVE GROUND SHOULD BE INSTALLED IN 24" OF PVC WITH 6" ABOVE GROUND.
36. A RESISTANCE TO GROUND OF TEN (10) OHMS OR LESS IS THE OBJECTIVE FOR THE EARTH GROUND SYSTEMS AT CELL SITES. CHEMICAL ENHANCERS, A WELL CASING OR A CUSTOM DESIGNED GROUND SYSTEM MAY BE USED TO MEET THIS OBJECTIVE. WHEN USING CHEMICAL ENHANCERS MANUFACTURER SPECIFICATIONS SHALL BE FOLLOWED.
37. IF GROUNDED METALLIC OBJECTS ARE LESS THAN 6' FROM A FENCE POST, THEN THE POST SHOULD BE GROUNDED TO THE GROUND RING.

ELECTRICAL NOTES:

1. FOR EQUIPMENT SHELTER INTERNAL WIRING, REFER TO CONCRETE SHELTER SHOP DRAWINGS.
2. IF CONDUIT RUNS HAVE MORE THEN (3)-90° TURNS, THEN THE CONTRACTOR MUST INSTALL PULL BOXES AS NEEDED.
3. CONTRACTOR SHALL CORE DRILL THROUGH SHELTER WALL AND PROVIDE WEATHERPROOFING FOR ALL CONDUITS THAT DON'T HAVE A PENETRATION.
4. ALL TELCO CONDUIT BEND RADII MUST BE 10 TIMES THE CONDUIT DIAMETER.
5. ALL EQUIPMENT INSTALLED ON THE H-FRAMES SHALL MAINTAIN A MINIMUM OF 3' CLEARANCE TO ALL FENCES.
6. ALL CONDUIT INSTALLED IN FRONT OF THE GATE SHALL BE ENCLOSED IN CONCRETE.
7. MAINTAIN MINIMUM 12" SEPARATION BETWEEN POWER, TELEPHONE AND PIPING. ALL CONDUIT/PIPING SHALL BE BURIED MINIMUM 36" BELOW FINISHED GRADE.
8. ALL INCOMING ELECTRICAL SERVICE SHALL BE INSPECTED BY THE CORRECT JURISDICTION AND THE CERTIFICATION OF INSPECTION MUST BE PROVIDED TO CLIENT AND THE PROPER UTILITY COMPANY.
9. CONTRACTOR MUST INSTALL ALL CONDUIT INCLUDING PULLWIRES BETWEEN UTILITY POLE OR PEDESTAL AND (PPC) POWER PROTECTION CABINET FOR ALL INCOMING SERVICE.
10. CONTRACTOR TO INSTALL TELEPHONE CONDUIT UP THE PROPOSED UTILITY POLE A MINIMUM OF 1'-0" A.G.L AND SEAL.

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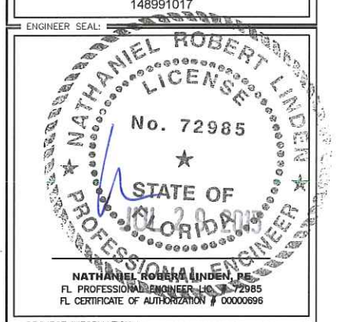
MAM	CAR

KHA PROJECT NUMBER: 148991017

ENGINEER SEAL:



NATHANIEL ROBERT LINDEN, PE
FL PROFESSIONAL ENGINEER LIC. # 72985
FL CERTIFICATE OF AUTHORIZATION # 00000696

PROJECT INFORMATION:

DEBARY
FL1656

WEST HIGHBANKS ROAD
DEBARY, FL 32713

SHEET TITLE:

ELECTRICAL SPECIFICATIONS

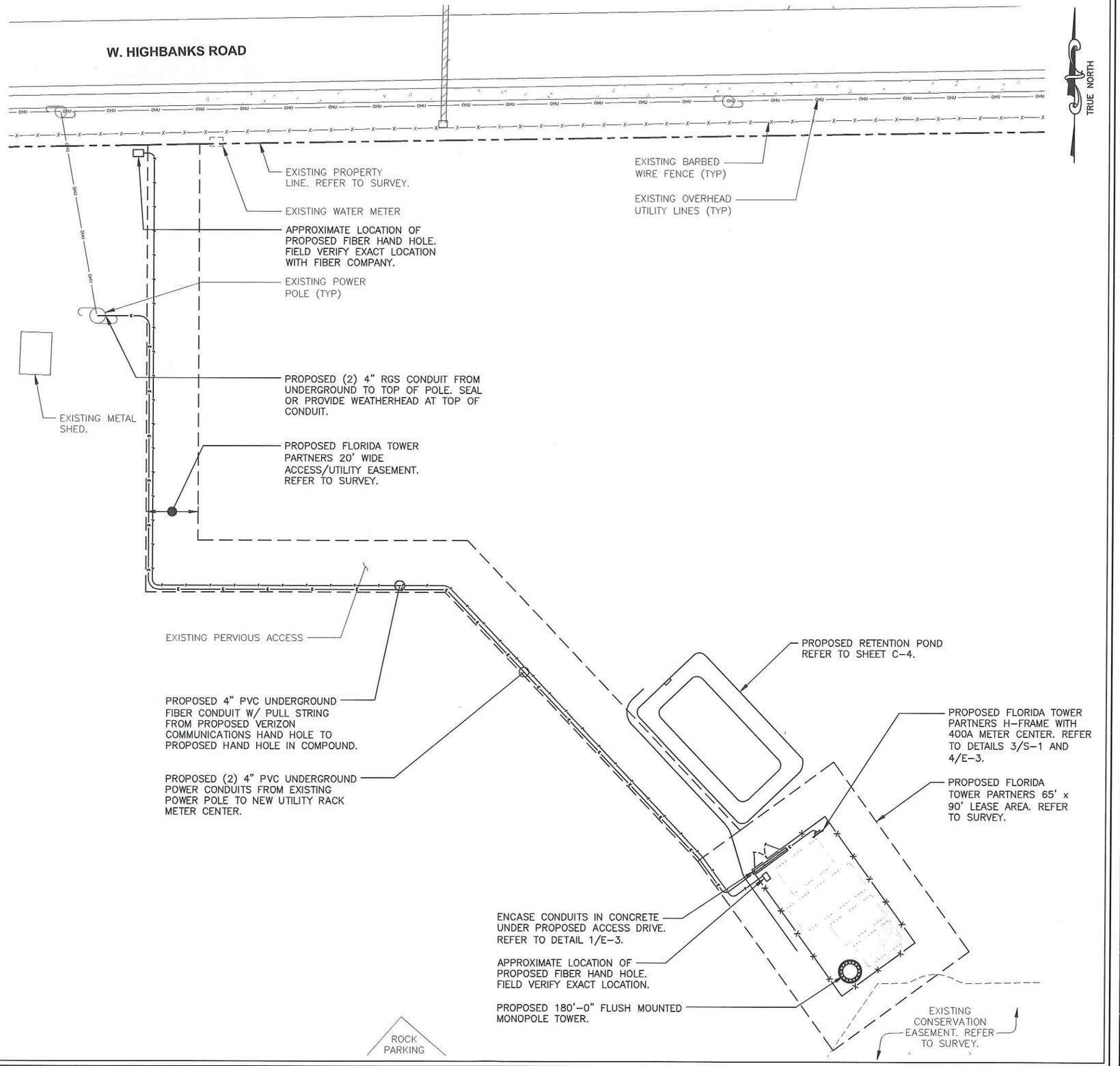
SHEET NUMBER:

E-1

NOTES:

1. CONTRACTOR MUST NOTIFY LOCAL UNDERGROUND UTILITY LOCATING SERVICE AT LEAST THREE DAYS PRIOR TO CONSTRUCTION TO FLAG ALL UNDERGROUND UTILITIES. CONTRACTOR MUST HAND DIG ALL TRENCHES & EXCAVATIONS AROUND EXISTING UNDERGROUND UTILITIES IN WORK AREA.
2. CONTRACTOR MUST VERIFY AND COORDINATE ALL POWER AND TELCO DESIGN INFORMATION PRIOR TO CONSTRUCTION WITH LOCAL UTILITY COMPANIES.
3. CONTRACTOR TO COORDINATE THE EXACT LOCATION OF THE NEW TELCO PEDESTAL AND/OR POLE WITH LOCAL UTILITY COMPANIES.
4. IF CONDUIT RUNS HAVE MORE THEN (3) 90° TURNS, THEN THE CONTRACTOR MUST INSTALL PULL BOXES AS NEEDED.
5. ALL TELCO CONDUIT BEND RADIUS MUST BE 10 TIMES THE CONDUIT DIAMETER.
6. ALL EQUIPMENT INSTALLED ON THE H-FRAMES SHALL MAINTAIN A MINIMUM OF 3' CLEARANCE TO ALL FENCES.
7. ALL CONDUIT INSTALLED IN FRONT OF THE GATE SHALL BE ENCLOSED IN CONCRETE.
8. ALL PROPANE GAS WORK SHALL CONFORM TO THE REQUIREMENTS OF NFPA 54 AND 58.
9. MAINTAIN A MINIMUM OF 12" SEPARATION BETWEEN POWER, TELEPHONE AND PIPING. ALL CONDUIT/PIPING SHALL BE BURIED 36" BELOW FINISHED GRADE.

THE CONTRACTOR MUST FIELD VERIFY ALL MEASUREMENTS AND FIELD CONDITIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.



1 / E-2 ELECTRICAL PLAN
SCALE: 1" = 40'
SCALE BASED ON 11"x17" ONLY

GRAPHIC SCALE

0 20 40 80

(IN FEET)

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DRAWN BY:	CHECKED BY:
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KHA PROJECT NUMBER: 148991001

ENGINEER SEAL:

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FL PROFESSIONAL ENGINEER LIC. # 72985
FL CERTIFICATE OF AUTHORIZATION # 00000696

PROJECT INFORMATION:

DEBARY
FL1656

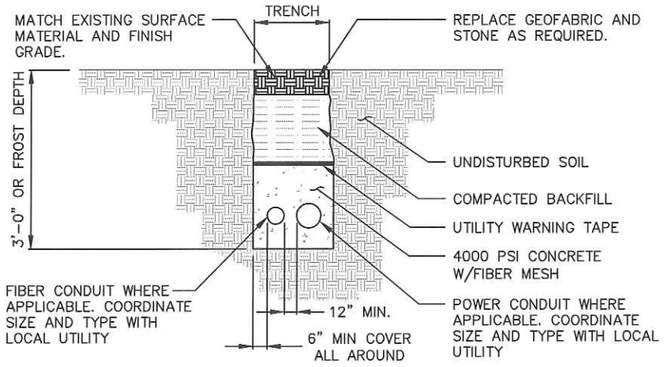
WEST HIGHBANKS ROAD
DEBARY, FL 32713

SHEET TITLE:

ELECTRICAL PLAN

SHEET NUMBER:

E-2



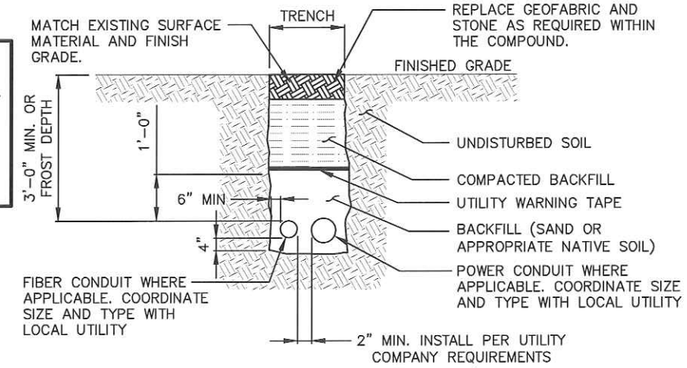
NOTES:

1. ENCASE ALL PVC CONDUITS/PIPES IN CONCRETE WHEN INSTALLED UNDER ACCESS ROADS OR HIGH TRAFFIC AREAS.

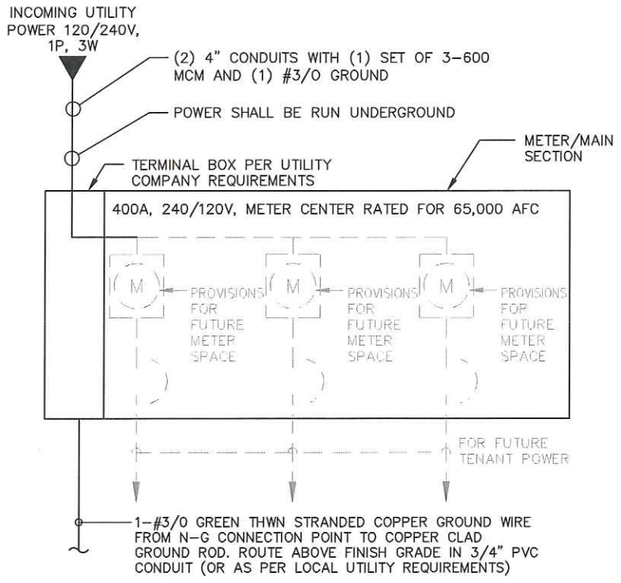
1 / E-3 UTILITY TRENCH DETAIL
SCALE: N.T.S.

NOTES:

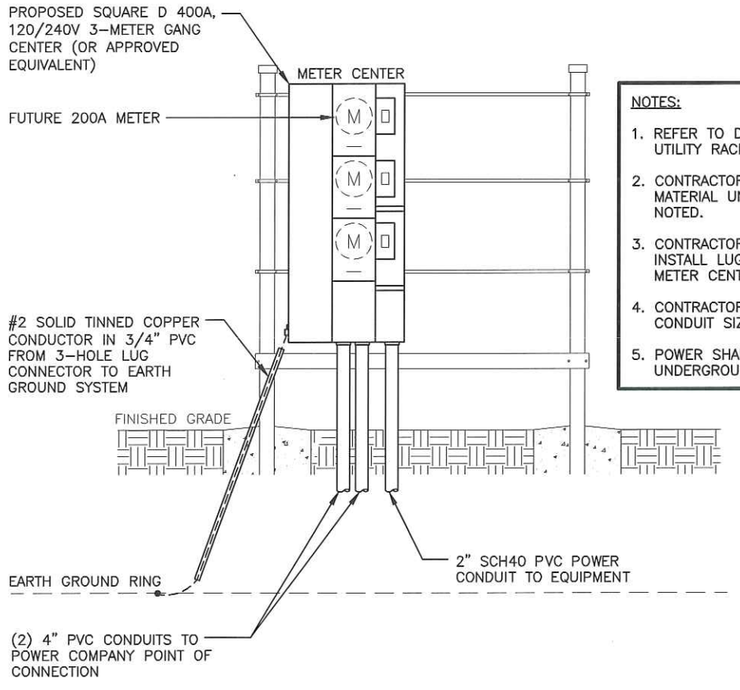
1. CONTRACTOR TO HAND DIG ALL NEW TRENCHES INSIDE COMPOUND.
2. SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS.



2 / E-3 UTILITY TRENCH DETAIL
SCALE: N.T.S.



3 / E-3 ELECTRICAL ONE-LINE DIAGRAM
SCALE: N.T.S.



NOTES:

1. REFER TO DETAIL 3/S-1 FOR UTILITY RACK DETAIL.
2. CONTRACTOR TO SUPPLY ALL MATERIAL UNLESS OTHERWISE NOTED.
3. CONTRACTOR TO PROVIDE AND INSTALL LUG CONNECTION AT METER CENTER.
4. CONTRACTOR TO VERIFY ALL CONDUIT SIZES.
5. POWER SHALL BE RUN UNDERGROUND.

4 / E-3 H-FRAME DETAIL ELEVATION
SCALE: N.T.S.

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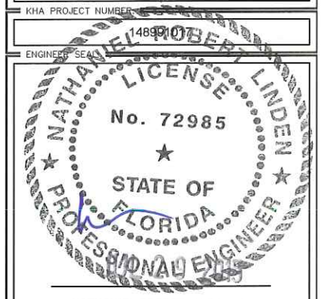
KHA PROJECT NUMBER: 148910107

ENGINEER SEAL:



NATHANIEL ROBERT LINDEN, PE
FL PROFESSIONAL ENGINEER LIC. # 72985
FL CERTIFICATE OF AUTHORIZATION # 00000696

PROJECT INFORMATION:

DEBARY
FL1656

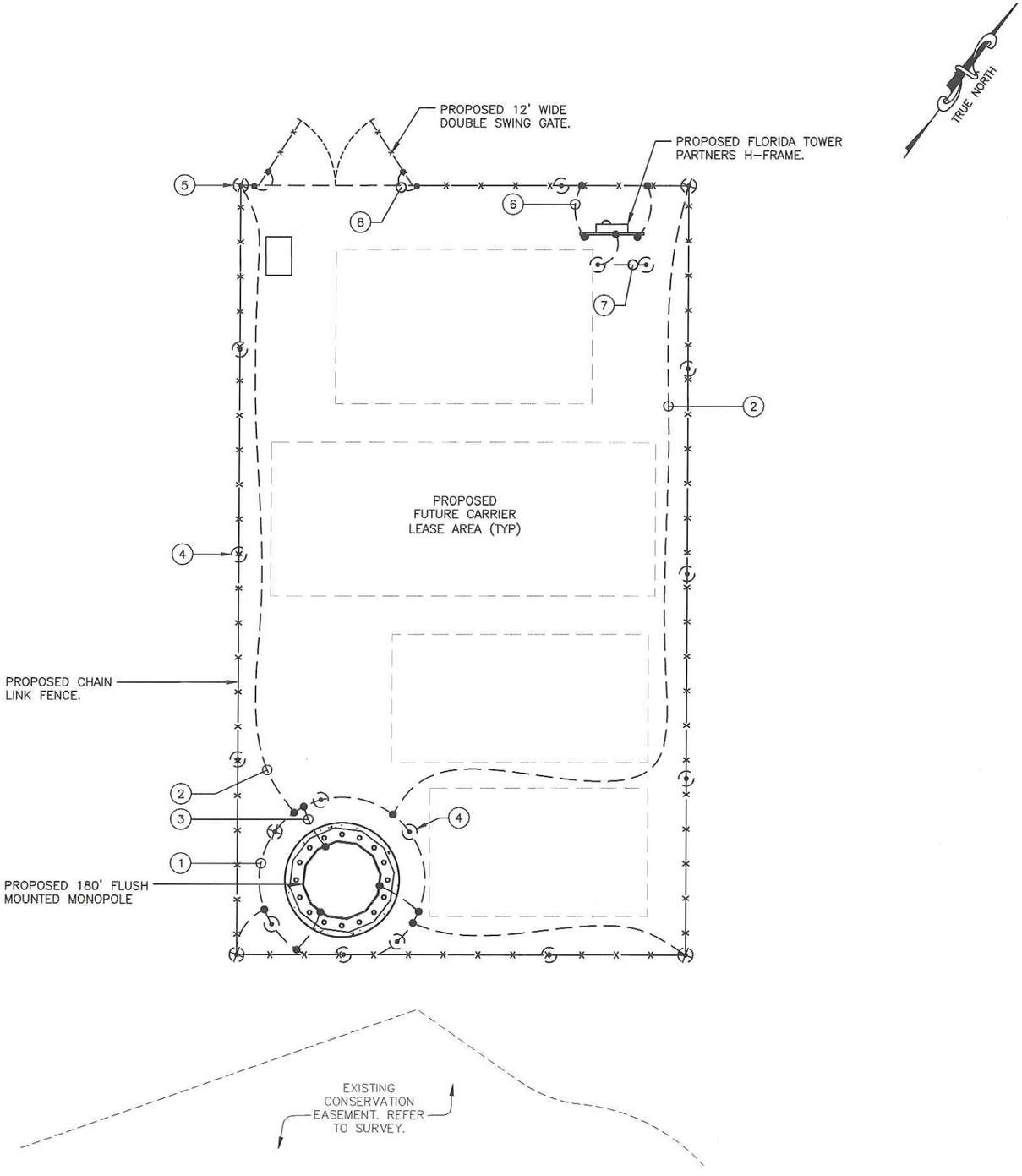
WEST HIGHBANKS ROAD
DEBARY, FL 32713

SHEET TITLE:

ONE-LINE AND PPC DIAGRAM

SHEET NUMBER:

E-3



GROUNDING PLAN

1 / GR-1

SCALE: 1" = 10'
SCALE BASED ON 11"x17" ONLY

GRAPHIC SCALE

0 5 10 20

(IN FEET)

KEY NOTES:

1. #2 BARE TINNED, SOLID, COPPER TOWER GROUND RING. THE GROUND RING SHALL BE AT LEAST 24 INCHES AWAY FROM THE STRUCTURE.
2. #2 BARE TINNED, SOLID, COPPER GROUND WIRE FROM COMPOUND GROUND RING TO TOWER GROUND RING. (TYP OF 4).
3. #2 BARE, TINNED, SOLID, COPPER GROUND WIRE FROM THE TOWER TO THE TOWER GROUND RING IN PVC A MINIMUM OF 18" BELOW GRADE (TYP OF 3). REFER TO MANUFACTURERS SPECS. FOR FURTHER TOWER GROUNDING.
4. 5/8" X 10' COPPER CLAD GROUND RODS. DISTANCE BETWEEN RODS MUST BE 16'-0" INTERVALS. REFER TO DETAIL 1/GR-2.
5. PROVIDE INSPECTION SLEEVE AS SHOWN ON PLANS. REFER TO DETAIL 3/GR-2.
6. #2 BARE TINNED SOLID COPPER GROUND WIRE FROM THE H-FRAME POSTS TO COMPOUND GROUND RING. (TYP FOR ALL POSTS).
7. #2 BARE COPPER CONDUCTOR INSTALL IN 3/4" PVC TO 5/8" X 10' COPPER CLAD GROUND ROD (OR AS PER LOCAL UTILITY REQUIREMENTS).
8. #2 INSULATED WEDLING CONDUCTOR WITH APPROVED SLEEVE FOR AN EXOTHERMIC WELD FROM GATE POST TO GROUND RING (TYP OF 2). MIN 12".

THE CONTRACTOR MUST FIELD VERIFY ALL MEASUREMENTS AND FIELD CONDITIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

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DRAWN BY:	CHECKED BY:
MAM	CAR

KHA PROJECT NUMBER: 148991017

ENGINEER SEAL:

NATHANIEL ROBERT LINDEN LICENSE No. 72985 STATE OF FLORIDA PROFESSIONAL ENGINEER

NATHANIEL ROBERT LINDEN, PE
FL PROFESSIONAL ENGINEER LIC. # 72985
FL CERTIFICATE OF AUTHORIZATION # 00000696

PROJECT INFORMATION:

DEBARY
FL1656

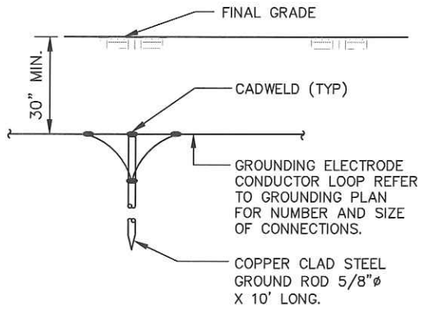
WEST HIGHBANKS ROAD
DEBARY, FL 32713

SHEET TITLE:

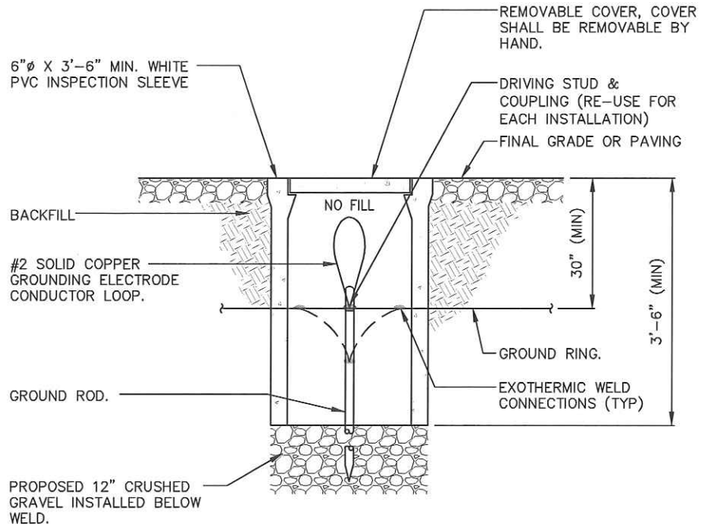
GROUNDING PLAN

SHEET NUMBER:

GR-1

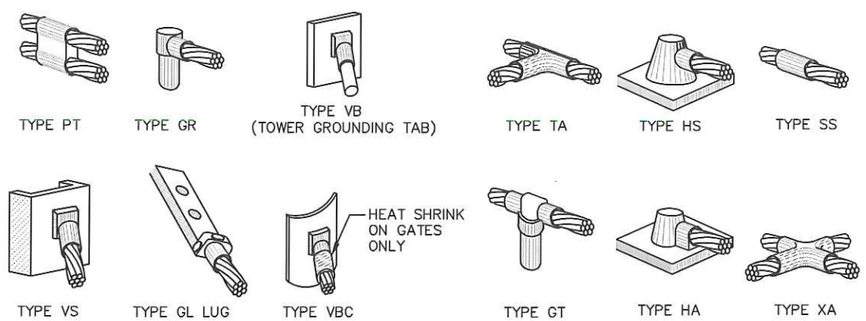


1 GR-2 **GROUND ROD DETAIL**
SCALE: N.T.S.



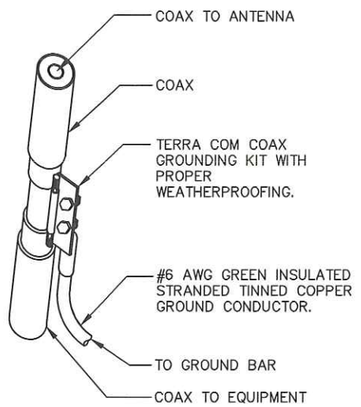
NOTE:
1. ANY INSPECTION WELL SHALL LINE UP WITH THE ELEVATED DECK COLUMNS SO THAT THEY ARE OUTSIDE OF A PARKING AISLE.

3 GR-2 **INSPECTION SLEEVE DETAIL**
SCALE: N.T.S.



NOTES:
1. CADWELD "TYPES" SHOWN ABOVE ARE EXAMPLES. PROVIDE APPROPRIATE TYPES AS REQUIRED.

2 GR-2 **GROUND BAR CONNECTION DETAIL**
SCALE: N.T.S.



4 GR-2 **COAX GROUNDING DETAIL**
SCALE: N.T.S.

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KHA PROJECT NUMBER: 146991017

ENGINEER'S SEAL:

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NATHANIEL ROBERT LINDEN, PE
FL PROFESSIONAL ENGINEER LIC. # 72985
FL CERTIFICATE OF AUTHORIZATION # 00000696

PROJECT INFORMATION:

DEBARY
FL1656

WEST HIGHBANKS ROAD
DEBARY, FL 32713

SHEET TITLE:

GROUNDING DETAILS

SHEET NUMBER:

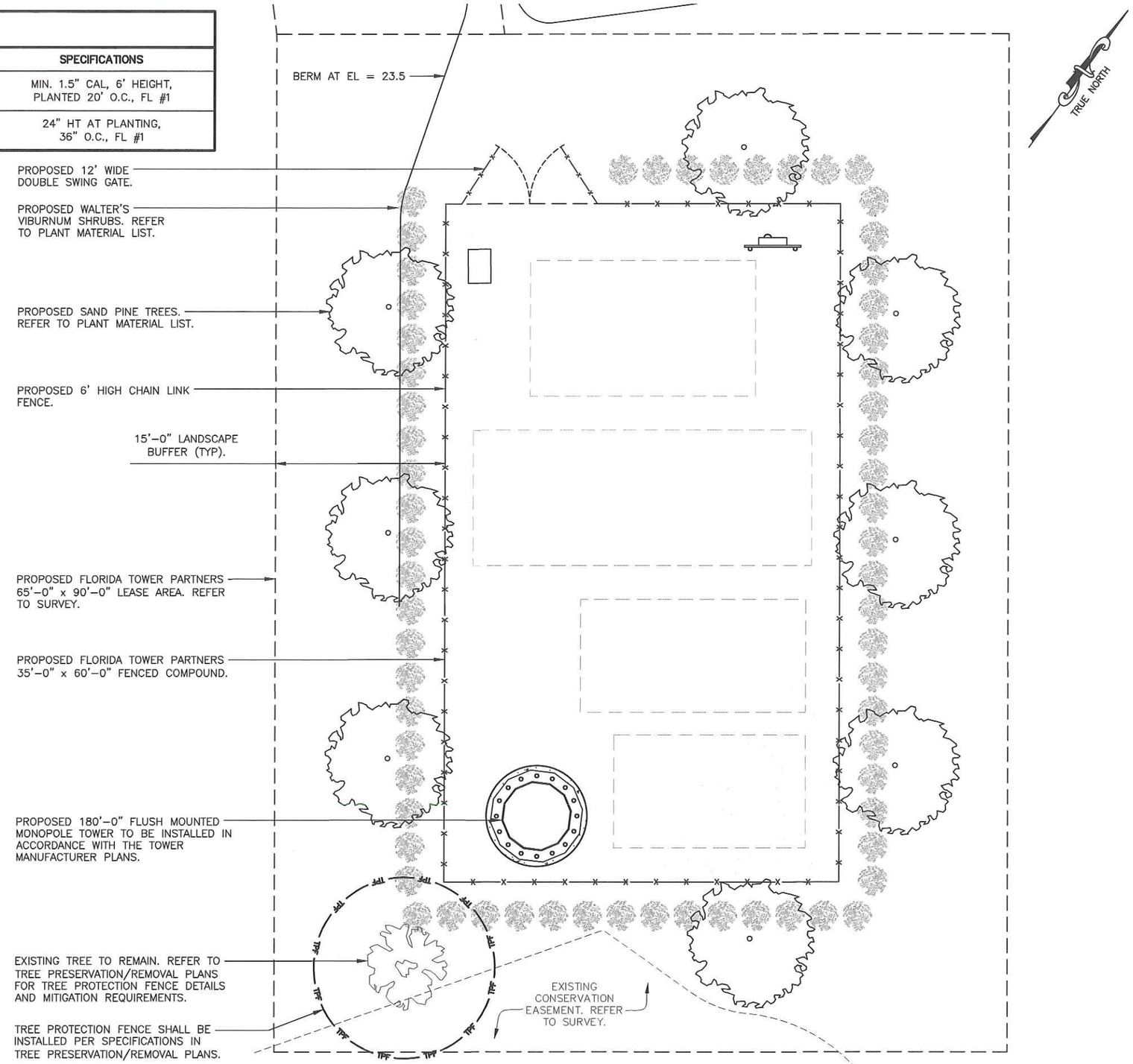
GR-2

PLANT MATERIAL LIST

SYMBOL	QTY	COMMON NAME	BOTANICAL NAME	SPECIFICATIONS
	8 EA	SAND PINE	PINUS CLAUSA	MIN. 1.5" CAL, 6' HEIGHT, PLANTED 20' O.C., FL #1
	64 EA	WALTER'S VIBURNUM	VIBURNUM OBOVATUM	24" HT AT PLANTING, 36" O.C., FL #1

LANDSCAPE INSTALLATION NOTES:

1. ALL PLANT MATERIALS SHALL BE FLORIDA #1 OR BETTER AS GIVEN IN, GRADES AND STANDARDS FOR NURSERY PLANTS, CURRENT EDITION, PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES.
2. SIZES SPECIFIED IN THE PLANT LIST ARE MINIMUM SIZES TO WHICH THE PLANTS ARE TO BE INSTALLED. TRUNK CALIPER IS MEASURED SIX INCHES ABOVE THE GROUND ON TREES.
3. ALL LANDSCAPING SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE CITY OF DEBARY STANDARDS AND IN ACCORDANCE WITH CURRENT INDUSTRY STANDARDS IN A NEAT, HEALTHY, AND WEED FREE CONDITION.
4. IT IS THE LANDSCAPE CONTRACTORS RESPONSIBILITY TO ENSURE THAT ALL PLANT BED AREAS HAVE PROPER DRAINAGE FOR OPTIMUM GROWTH OF LANDSCAPE MATERIAL BEFORE INSTALLATION BEGINS.
5. THE CONTRACTOR SHALL ENSURE THAT ALL PLANTING ISLANDS AND OTHER AREAS SHALL BE CLEAN OF TRASH, CONSTRUCTION DEBRIS OTHER WASTE MATERIALS TO A DEPTH OF 24" PRIOR TO LANDSCAPE INSTALLATION.
6. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL UNDERGROUND AND OVERHEAD UTILITIES. PLANT MATERIAL IS TO BE LOCATED SUCH THAT IT WILL NOT INTERFERE WITH ANY UNDERGROUND OR OVERHEAD UTILITIES.
7. ALL PLANT BEDS AND TREE RINGS SHALL BE TREATED WITH A PRE-EMERGENT HERBICIDE AND THEN TOP-DRESSED WITH 3" DEEP PINE BARK MULCH. ALL NEW TREES SHALL HAVE A TREE RING WITH A MINIMUM 24" RADIUS, ALL NEW TREES AND PALMS SHALL BE STAKED.
8. TREES, SHRUBS AND GROUND COVER SHALL BE INSTALLED USING THE FOLLOWING PROCEDURE: PLANT PITS SHALL BE EXCAVATED TO TWICE THE DIAMETER OF THE PLANT ROOT BALL. AERATE EXISTING SOIL BEFORE BACKFILLING PIT. ADD AGRIFORM FERTILIZER TABLETS TO EACH PLANT PIT, AS PER THE SPECIFICATIONS.
9. TREE INSTALLATION: ALL REQUIRED TREES SHALL BE INSTALLED 1" – 2" ABOVE FINISH GRADE. TREES INSTALLED OR BURIED TOO DEEP SHALL BE RESET TO THIS STANDARD. REMOVE THE TOP 1/3 OF THE WIRE BASKETS ON ALL B & B STOCK.
10. THE CONTRACTOR MUST MAINTAIN THE LANDSCAPING FOR 1 YEAR FROM THE DATE OF CONSTRUCTION COMPLETION. THIS INCLUDES BUT IS NOT LIMITED TO WATERING AND INSURING THAT THE LANDSCAPING DOES NOT DIE. IF ANY OF THE LANDSCAPING DIES WITHIN THE 1 YEAR TIME FRAME, THE CONTRACTOR MUST REPLACE IT WITH EQUIVALENT LANDSCAPING. LOCAL JURISDICTION WATERING GUIDELINES SHALL BE FOLLOWED THOROUGHLY.
11. CONTRACTOR MUST CONFIRM LANDSCAPE REQUIREMENTS AND SPECIFICATIONS WITH LOCAL JURISDICTION.
12. IF EXISTING TREES REMAIN, LOCATION/SPACING OF NEW TREES MAY BE MODIFIED TO AVOID CONFLICT.



1 / L-1 LANDSCAPE PLAN
SCALE: 1" = 10'
SCALE BASED ON 11"x17" ONLY

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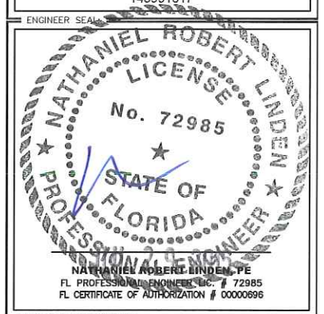

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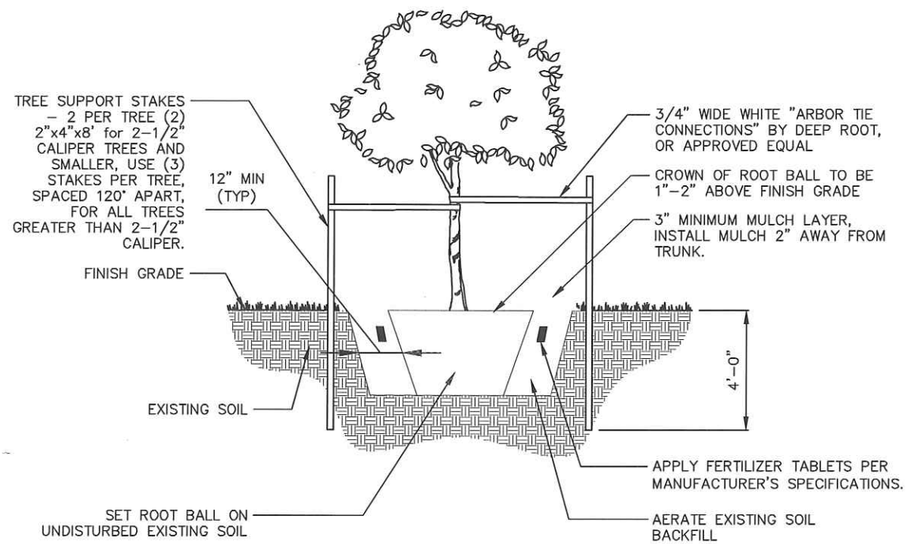
WEST HIGHBANKS ROAD
DEBARY, FL 32713

SHEET TITLE:

LANDSCAPE PLAN AND NOTES

SHEET NUMBER:

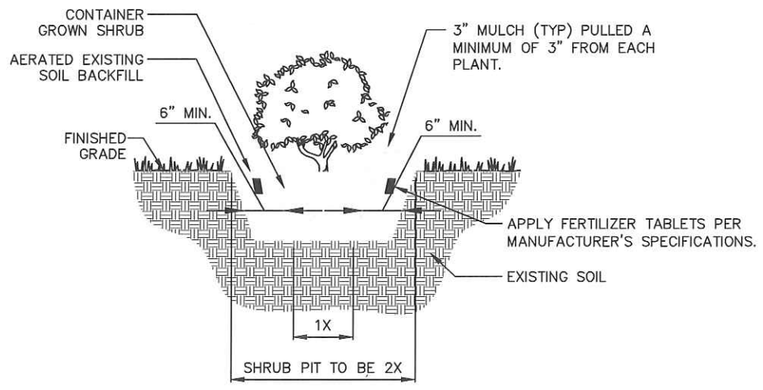
L-1



NOTES:

1. 4" SAUCER RIM WITH 3" MULCH ON TOP (WHEN NECESSARY). SAUCER SHALL BE UNIFORM AND NEATLY CONSTRUCTED.
2. CONTRACTOR SHALL REMOVE STAKING AND GUYING MATERIALS AFTER ONE GROWING SEASON.

1 / L-2 TREE PLANTING DETAIL
SCALE: N.T.S.



2 / L-2 SHRUB PLANTING DETAIL
SCALE: N.T.S.

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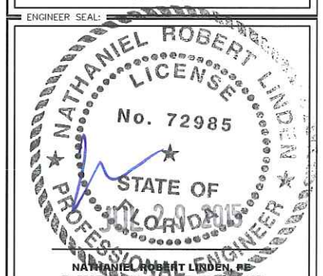

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L-2