ORANGE COUNTY-POUGHKEEPSIE LIMITED PARTNERSHIP,
d/b/a

verizon wireless

PROJECT NUMBER: 2004066514

LOCATION CODE: 157019

SITE NAME:

NEW HACKENSACK

DIRECTIONS TO SITE:

FROM ALBANY, TAKE I-87 SOUTH TO EXIT 18 (NEW PALTZ). FOLLOW ROUTE 299 EAST TO 9W. TAKE A RIGHT ONTO 9W/ROUTE 218 AND FOLLOW FOR APPROX. 2.5 MILES. TAKE ROUTE 55 EAST, ACROSS THE RIVER FOR APPROX. 4 MILES TO ROUTE 376 (RAYMOND AVENUE). PROCEED APPROX. 5 MILES AND TAKE A LEFT ONTO AIRPORT DRIVE. PROCEED APPROX. .3 MILES AND SITE WILL BE ON THE RIGHT SIDE.

VICINITY MAP

PROJECT NUMBER:	2004066514
SITE NAME:	NEW HACKENSACK
SITE ADDRESS:	AIRPORT DRIVE WAPPINGER, NEW YORK
TOWN:	TOWN OF WAPPINGER
COUNTY:	DUTCHESS COUNTY
TAX MAP NUMBER:	6259-4-647405
TOWER COORDINATES:	N 41° 37' 47.2"± W 073° 52' 05.7"±
GROUND ELEVATION:	227±
PROPERTY OWNER:	MJD AND SONS, INC. 8 ANDREAS COURT HOLMES, NEW YORK 12531
APPLICANT:	VERIZON WIRELESS 175 CALKINS ROAD ROCHESTER, NEW YORK 14623
CONTACT PERSON:	RANDY WILSON
CONTACT PHONE:	(585) 321-5461

PROJECT SUMMARY

MUNICIPALITY:	TOWN OF WAPPINGER
ZONING DISTRICT:	AI - AIRPORT INDUSTRY
GENERAL SETBACKS:	
FRONT: SIDE: REAR:	75 FEET 50 FEET 50 FEET
TOWER SET BACK:	1 1/2 TIMES TOWER HEIGHT
MINIMUM LOT SIZE:	N/A
OTHER:	N/A

ZONING TABLE

Before You Dig, Drill Or Blast!

Dig Safely.
New York

UNDERGROUND FACILITIES
PROTECTIVE ORGANIZATION

CALL US TOLL FREE 1-800-962-7962

NY industrial code rule 753 requires no less than two working days notice, but not more than ten days notice

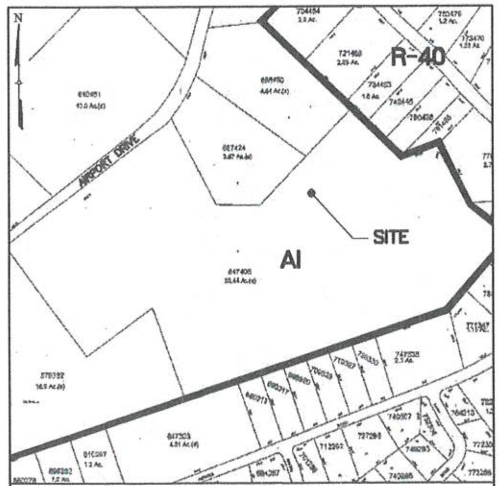
DIG SAFELY — NEW YORK

SHT. NO.	DESCRIPTION	REV NO	REVISION DATE
T-1	TITLE SHEET	7	12/4/07
SU-1	PARTIAL TOPOGRAPHIC SURVEY	11	11/14/07
P-1	PROPERTY PLAN	2	11/14/07
C-1	SITE PLAN & NOTES	6	1/15/08
C-1A	GRADING, SEDIMENT & EROSION CONTROL PLAN	6	1/15/08
C-1B	COMBINED SITE DEVELOPMENT PLAN	6	1/15/08
C-2	SITE DETAIL PLAN, ELEVATION, DETAILS, & NOTES	7	1/15/08
C-3	DETAILS	3	1/15/08
C-4	SHELTER ELEVATIONS	3	1/15/08
C-5	PROFILES	4	1/15/08
C-5A	ACCESS DRIVE ALIGNMENT PLAN	4	1/15/08
C-5B	ACESS DRIVE PROFILE	4	1/15/08
C-6	FOUNDATION PLAN, SECTIONS, & NOTES	3	1/15/08
E-1	ELECTRICAL DIAGRAMS & DETAILS	3	1/15/08
E-2	GROUNDING PLAN & NOTES	3	1/15/08
E-3	GROUNDING DETAILS	3	1/15/08
E-4	ELECTRICAL NOTES	3	1/15/08

SHEET INDEX

THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL ITEMS OF CONCERN HAVE BEEN ADDRESSED AND EACH OF THE DRAWINGS HAS BEEN REVISED AND ISSUED "FOR CONSTRUCTION"

AS BUILTS ARE BASED ON REDLINES PROVIDED BY CONTRACTOR AND NOTED IN ◯ AND SITE SURVEY OF NOVEMBER 12, 2007



ZONING/TAX MAP

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175 CALKINS ROAD
ROCHESTER, NEW YORK 14623

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Fax: (518) 783-1544
www.tectonicengineering.com

DESIGN APPROVAL

PRELIMARY/CONSTRUCTION

RF ENG.________ DATE:____
EQPT. ENG.________ DATE:____
OPERATIONS________ DATE:____
CONST. MGR.________ DATE:____
NETWORK ENG.________ DATE:____
REAL ESTATE________ DATE:____

WORK ORDER NUMBER	DRAWN BY
2248.66514	RDD

NO.	DATE	ISSUE
0	5/3/07	FOR CONSTRUCTION
1	8/8/07	REV PER ZONING
2	9/4/07	FOR BP APPLICATION
3	11/14/07	PER COMMENTS FOR CONSTRUCTION
4	11/15/07	PER TOWN COMMENTS FOR CONSTRUCTION
5	11/30/07	PER TOWN COMMENTS FOR CONSTRUCTION
6	12/4/07	PER COMMENTS FOR CONSTRUCTION
7	1/15/08	AS BUILTS

RELEASED BY	DATE

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0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

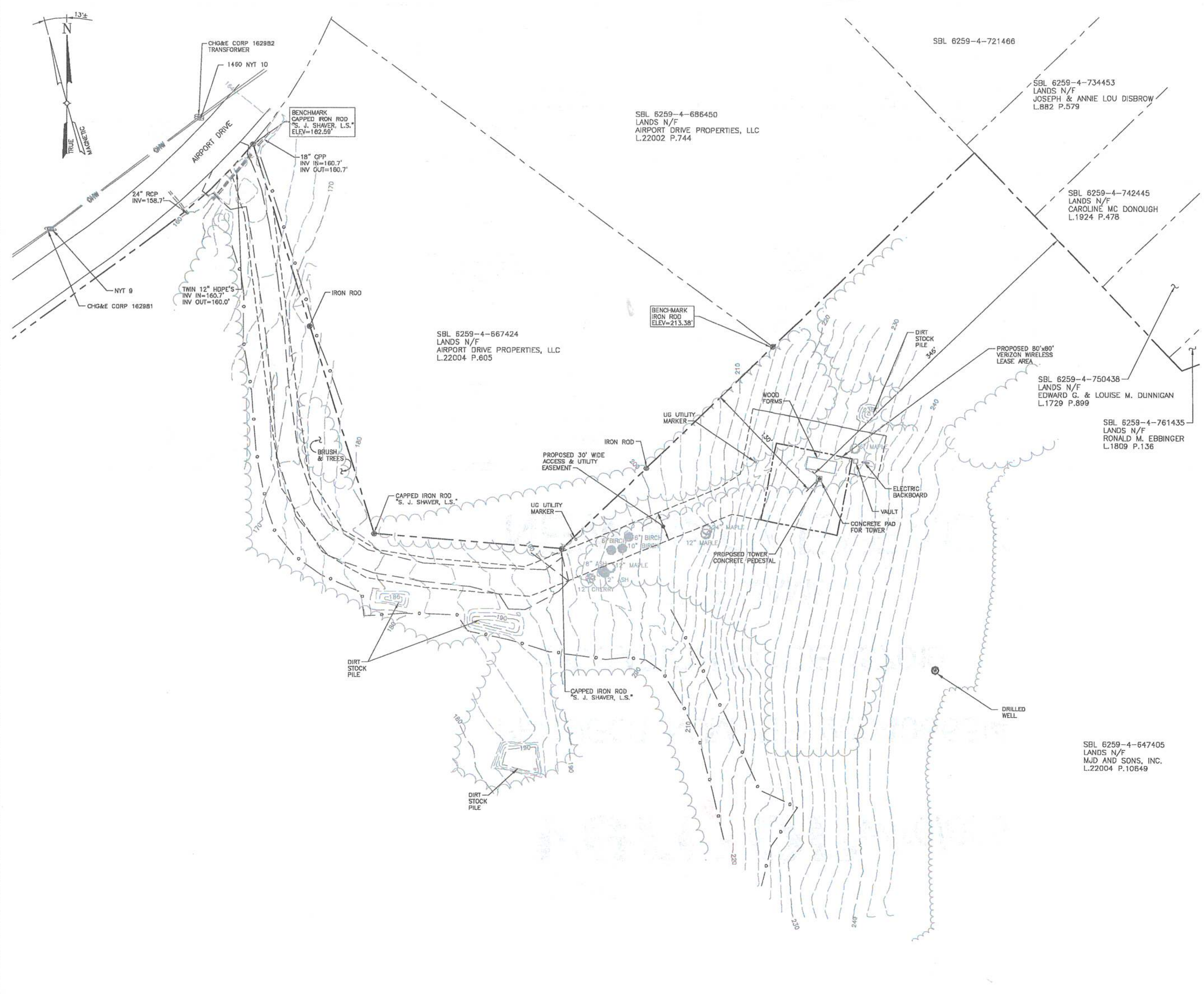
2004066514
NEW HACKENSACK
AIRPORT DRIVE
TOWN OF WAPPINGER
DUTCHESS COUNTY
NEW YORK

SHEET TITLE

TITLE SHEET

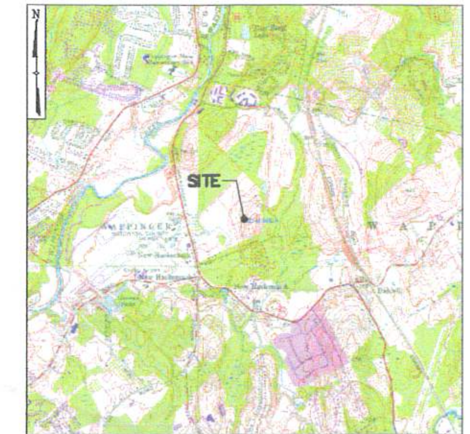
SHEET NUMBER

T-1



PARTIAL TOPOGRAPHIC SURVEY

SU-1 SCALE: 1" =50'



VICINITY MAP

GENERAL NOTES

1. THIS MAP HAS BEEN PREPARED FROM A FIELD SURVEY PERFORMED BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS, P.C. ON MARCH 3, 2005 AND OCTOBER 30, 2006 AND NOVEMBER 6, 2007..
2. REFERENCES:
   A: MJD AND SONS, INC (L.22004 P.10649) OBTAINED AT THE DUTCHESS COUNTY CLERKS OFFICE.
   B: MAP REFERENCE: "MAP OF SURVEY FOR MJD & SONS, INC.", PREPARED BY PETER R. HUSTIS, LLS, COMPLETED DECEMBER 30, 2003.
   C: MAP REFERENCE: "LOTLINE REALIGNMENT SUBDIVISION PLAT FOR EMSLEY SUBDIVISION-SECTION 2", PREPARED BY PETER R. HUSTIS, LLS, LAST REVISED 6/19/01, FILED IN THE DUTCHESS COUNTY CLERKS OFFICE AS MAP NO. 11243.
3. VERTICAL DATUM: NATIONAL GEODETIC VERTICAL DATUM OF 1929.
4. NORTH ORIENTATION IS TRUE NORTH BY SOLAR OBSERVATION.
5. LOCATIONS OF ALL UTILITIES AND SUBSTRUCTURES ARE APPROXIMATE ONLY BASED ON SURFACE EVIDENCE AND EXISTING PLANS. THE INFORMATION GIVEN ON THE SURVEY PERTAINING TO UTILITIES AND SUBSTRUCTURES IS NOT CERTIFIED TO ACCURACY OR COMPLETENESS. CONSULT WITH THE APPROPRIATE COMPANY OR AGENCY BEFORE DESIGNING OF CONSTRUCTING IMPROVEMENTS. TECTONIC ENGINEERING AND SURVEYING CONSULTANTS, P.C. WILL NOT BE RESPONSIBLE FOR ANY DAMAGE SUBSEQUENTLY CAUSED TO PERSONNEL, STRUCTURES OR UTILITIES.
6. THIS SURVEY IS SUBJECT TO A COMPLETE AND UP TO DATE ABSTRACT OF TITLE. COVENANTS, EASEMENTS, GRANTS AND RIGHTS-OF-WAY NOT VISIBLE AND NOT REFERENCED ARE NOT SHOWN. TECTONIC ENGINEERING AND SURVEYING CONSULTANTS, P.C. SHALL NOT BE LIABLE FOR THE DISTURBANCE OF ANY UTILITIES NOT SHOWN OR REFERENCED ON THIS SURVEY PLAT.
7. THIS SURVEY PLAN IS FOR SITE PLAN/ENGINEERING PURPOSES ONLY AND IS NOT INTENDED TO BE USED FOR THE TRANSFER OF TITLE.
8. NOT ALL IMPROVEMENTS ON THE PARCEL BEING SURVEYED HAVE BEEN SHOWN.
9. THIS SURVEY WAS PERFORMED WITH APPROXIMATELY 12" OF SNOW COVER. SOME PHYSICAL FEATURES MAY HAVE BEEN OBSCURED.

LEGEND

PROPERTY LINE
ADJOINING PROPERTY LINE
LEASE LINE
EASEMENT LINE
EDGE OF PAVEMENT
EDGE OF GRAVEL
CONTOUR
INDEX CONTOUR
IRON ROD
STAKE-CENTERLINE PROPOSED RD
UTILITY POLE
OHW OVERHEAD WIRES
SILT FENCE
TREE LINE
BRUSH LINE

FAA 1-A CERTIFICATION

CENTER OF PROPOSED TOWER

LATITUDE: N 41°37'47.2" NAD 1983
LONGITUDE: W 073°52'05.7" NAD 1983

GROUND ELEVATION: 227 (IN FEET)
(NGVD 1929 DATUM)

THIS IS TO CERTIFY THAT THE ABOVE INFORMATION IS PROVIDED TO THE FOLLOWING ACCURACY:

± TWENTY (20) FEET IN THE HORIZONTAL
± THREE (3) FEET IN THE VERTICAL

GARY M. REED, P.L.S. #50557

STATE OF NEW YORK DATE: ____________

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DESIGN APPROVAL

PRELIMARY/CONSTRUCTION

RF ENG.__________ DATE:______
EQPT. ENG.__________ DATE:______
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CONST. MGR__________ DATE:______
NETWORK ENG.__________ DATE:______
REAL ESTATE__________ DATE:______

WORK ORDER NUMBER	DRAWN BY
2248.66514	GMR

NO.	DATE	ISSUE
0	3/8/05	FOR COMMENT
1	3/25/05	REVISED SITE LAYOUT
2	4/4/05	REVISED EASEMENT
3	4/25/05	REVISED EASEMENT
4	11/3/05	REVISED LEASE/EASEMENT
5	10/31/06	ADDITIONAL TOPOGRAPHY
6	11/2/06	PER VZW COMMENTS
7	4/10/07	PER VZW COMMENTS
8	6/19/07	LEGAL DESCRIPTION ADDED
9	7/18/07	AS PER COMMENTS
10	11/12/07	ADDITIONAL SURVEY
11	11/14/07	REVISED EASEMENT

RELEASED BY	DATE

GARY M. REED, P.L.S. #50557

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0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

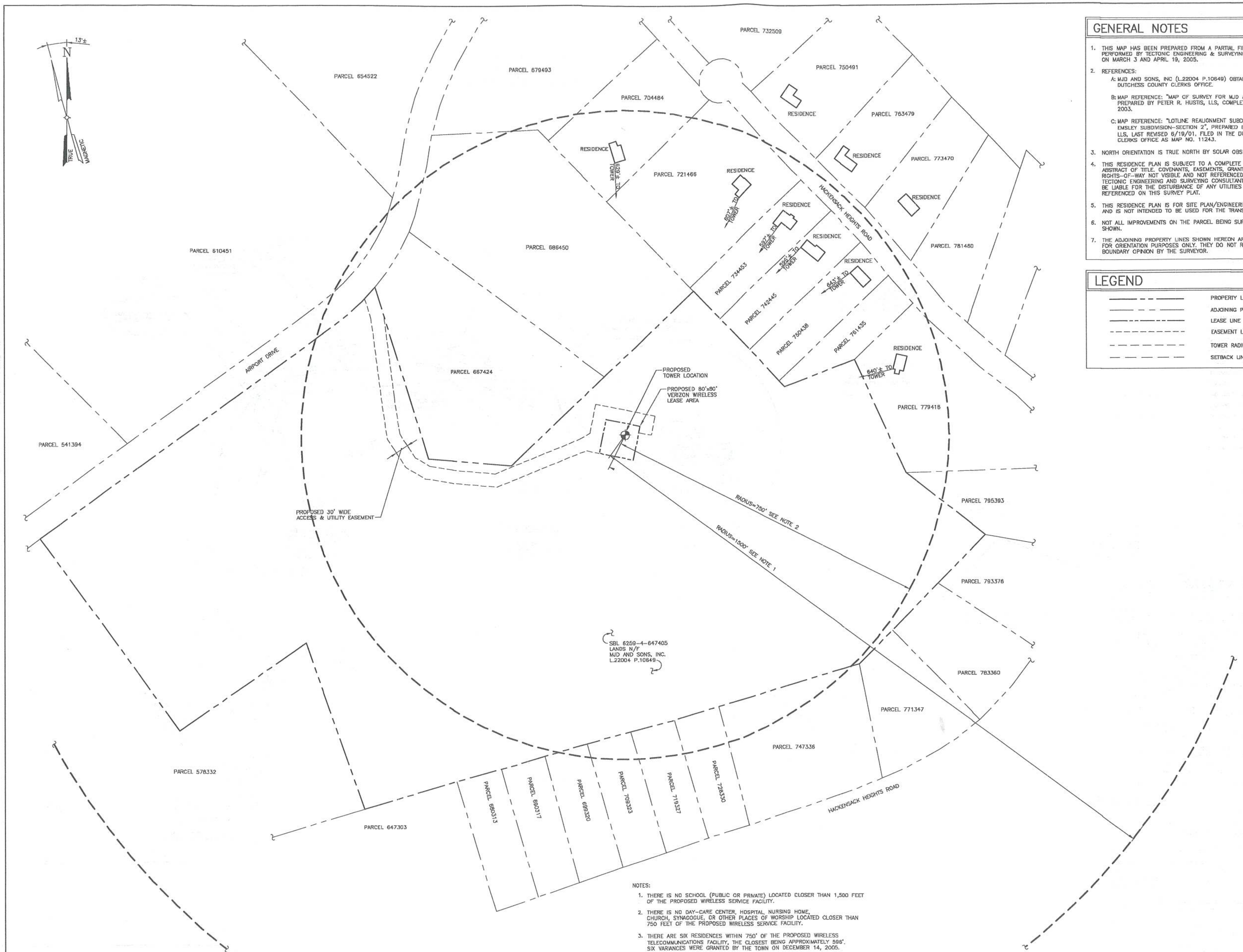
2004066514
NEW HACKENSACK
AIRPORT DRIVE
TOWN OF WAPPINGER
DUTCHESS COUNTY
NEW YORK

SHEET TITLE

PARTIAL TOPOGRAPHIC SURVEY

SHEET NUMBER

SU-1



NOTES:

1. THERE IS NO SCHOOL (PUBLIC OR PRIVATE) LOCATED CLOSER THAN 1,500 FEET OF THE PROPOSED WIRELESS SERVICE FACILITY.
2. THERE IS NO DAY-CARE CENTER, HOSPITAL, NURSING HOME, CHURCH, SYNAGOGUE, OR OTHER PLACES OF WORSHIP LOCATED CLOSER THAN 750 FEET OF THE PROPOSED WIRELESS SERVICE FACILITY.
3. THERE ARE SIX RESIDENCES WITHIN 750' OF THE PROPOSED WIRELESS TELECOMMUNICATIONS FACILITY, THE CLOSEST BEING APPROXIMATELY 596'. SIX VARIANCES WERE GRANTED BY THE TOWN ON DECEMBER 14, 2005.

1 / P-1 PROPERTY PLAN

SCALE: 1"=100'

GENERAL NOTES

1. THIS MAP HAS BEEN PREPARED FROM A PARTIAL FIELD SURVEY PERFORMED BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS, P.C. ON MARCH 3 AND APRIL 19, 2005.
2. REFERENCES:
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3. NORTH ORIENTATION IS TRUE NORTH BY SOLAR OBSERVATION.
4. THIS RESIDENCE PLAN IS SUBJECT TO A COMPLETE AND UP TO DATE ABSTRACT OF TITLE. COVENANTS, EASEMENTS, GRANTS AND RIGHTS-OF-WAY NOT VISIBLE AND NOT REFERENCED ARE NOT SHOWN. TECTONIC ENGINEERING AND SURVEYING CONSULTANTS, P.C. SHALL NOT BE LIABLE FOR THE DISTURBANCE OF ANY UTILITIES NOT SHOWN OR REFERENCED ON THIS SURVEY PLAT.
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6. NOT ALL IMPROVEMENTS ON THE PARCEL BEING SURVEYED HAVE BEEN SHOWN.
7. THE ADJOINING PROPERTY LINES SHOWN HEREON ARE APPROXIMATE AND FOR ORIENTATION PURPOSES ONLY. THEY DO NOT REPRESENT A BOUNDARY OPINION BY THE SURVEYOR.

LEGEND

PROPERTY LINE
ADJOINING PROPERTY LINE
LEASE LINE
EASEMENT LINE
TOWER RADIUS LINE
SETBACK LINE

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2248.66514	GMR

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2	11/14/07	REVISED EASEMENT

RELEASED BY	DATE

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0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

2004066514
NEW HACKENSACK
AIRPORT DRIVE
TOWN OF WAPPINGER
DUTCHESS COUNTY
NEW YORK

SHEET TITLE

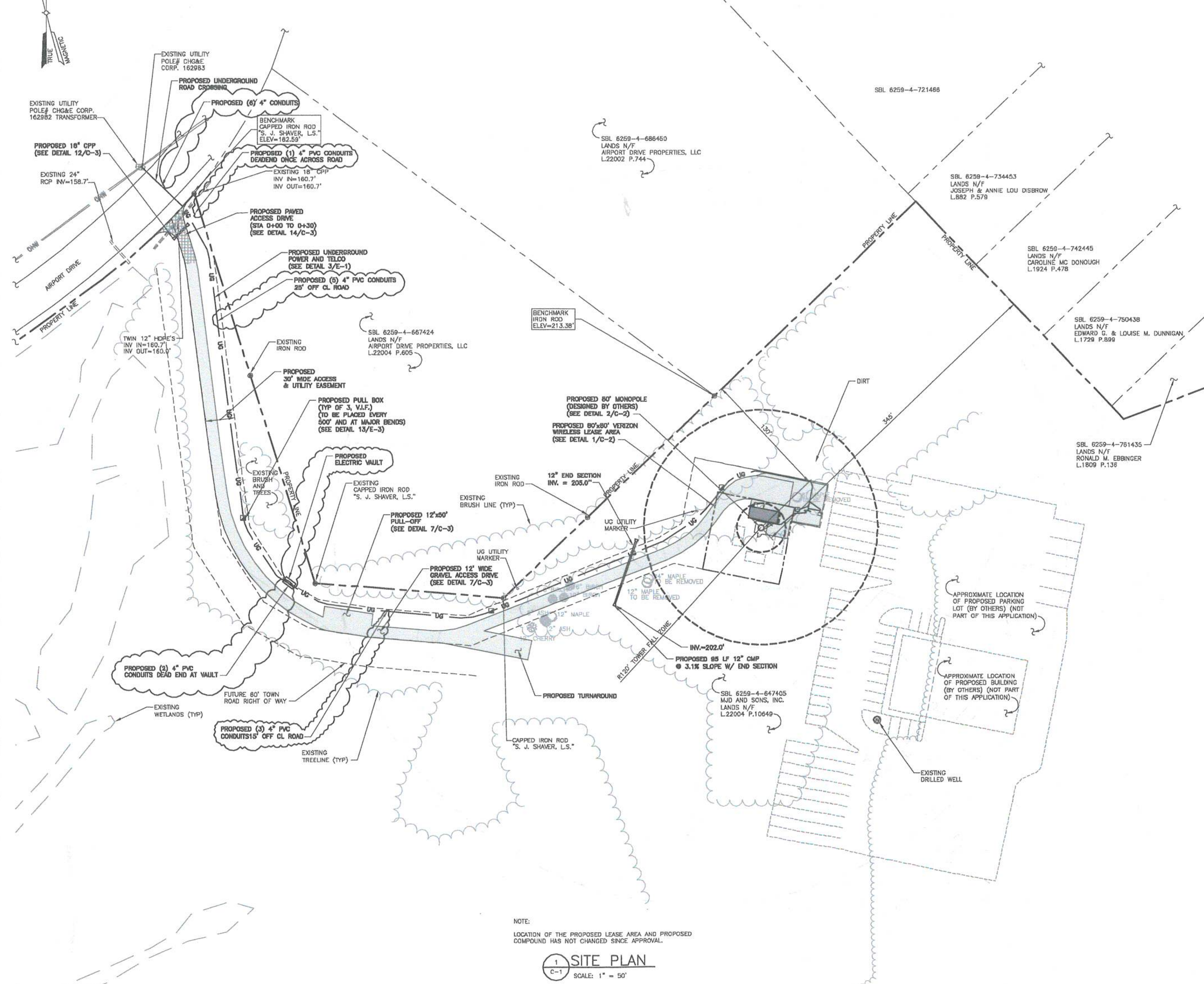
PROPERTY PLAN

SHEET NUMBER

P-1

NORTH ORIENTATION

1. TRUE NORTH ORIENTATION ESTABLISHED BY A SITE SURVEY PERFORMED BY TECTONIC ENGINEERING CONSULTANTS, P.C., ENTITLED, "PARTIAL TOPOGRAPHIC SURVEY", DATED 3/8/05.
2. DECLINATION OBTAINED FROM THE NATIONAL GEOPHYSICAL DATA CENTER DURING THE MONTH OF APRIL, 2005



NOTE:
LOCATION OF THE PROPOSED LEASE AREA AND PROPOSED COMPOUND HAS NOT CHANGED SINCE APPROVAL.

1 / C-1 SITE PLAN
SCALE: 1" = 50'

GENERAL NOTES

1. THE PROJECT IS THE COMMERCIAL INSTALLATION OF AN UNMANNED WIRELESS COMMUNICATION FACILITY.
2. THE PROPOSED DEVELOPMENT IS UNMANNED AND DOES NOT REQUIRE A MEANS OF WATER SUPPLY, SEWAGE DISPOSAL, OR HANDICAPPED ACCESS.
3. THE PROPOSED DEVELOPMENT IS MINIMAL, WILL CREATE NEGLIGIBLE ADDITIONAL STORMWATER RUNOFF, AND WILL, THEREFORE, NOT IMPACT THE EXISTING STORMWATER DRAINAGE SYSTEM.
4. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE, SOLID WASTE RECEPTACLES, OR PLUMBING.
5. ADEQUATE PARKING EXISTS FOR ONE VEHICLE FOR MAINTENANCE OR EMERGENCY SERVICE ONCE A MONTH.
6. THERE ARE NO NEW STREETS, CURBS, SIDEWALKS, OR WALKWAYS PROPOSED.
7. THERE ARE NO COMMERCIAL SIGNS PROPOSED FOR THIS INSTALLATION.

SITE NOTES

1. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWING.
2. RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
3. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE EQUIPMENT AND TOWER AREAS.
4. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW, OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
5. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
6. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES.
7. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED, OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF THE ENGINEER.
8. THE AREAS DISTURBED DUE TO CONSTRUCTION ACTIVITY SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH.
9. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE GUIDELINES FOR EROSION AND SEDIMENT CONTROL, AND COORDINATED WITH THE TOWN.

LEGEND

	PROPERTY LINE
	ADJOINING PROPERTY LINE
	PROPOSED LEASE LINE
	PROPOSED EASEMENT LINE
	SETBACK LINE
	EDGE OF EXISTING PAVED DRIVE
	EXISTING WETLANDS
	EXISTING UTILITY POLE
	PROPOSED UTILITY POLE
OHW	EXISTING OVERHEAD WIRES
OHW	PROPOSED OVERHEAD WIRES
UG	EXISTING UNDERGROUND UTILITIES
UG	PROPOSED UNDERGROUND UTILITIES
	EXISTING CONTOUR
	EXISTING INDEX CONTOUR
O	EXISTING IRON ROD/PIPE
o	PROPOSED SILT FENCE
x	EXISTING CHAINLINK FENCE
x	PROPOSED CHAINLINK FENCE
	CENTERLINE OF DITCH
	EXISTING BRUSH LINE
	EXISTING TREE LINE
	EXISTING STONE WALL & FENCE
	EXISTING STORM SEWER
	EXISTING CATCH BASIN
	PROPOSED PULL BOX

- CONTRACTOR SHALL NOTIFY UNDERGROUND FACILITIES PROTECTIVE ORGANIZATION AT TELEPHONE NUMBER 1-800-962-7962 PRIOR TO EXCAVATION AT SITE
- CONTRACTOR TO LOCATE AND VERIFY ALL EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION
- ALL EXCAVATION WORK WITHIN 36" OF EITHER SIDE OF UNDERGROUND UTILITIES MUST BE DONE BY HAND EXCAVATION METHODS

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0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

2004066514
NEW HACKENSACK
AIRPORT DRIVE
TOWN OF WAPPINGER
DUTCHESS COUNTY
NEW YORK

SHEET TITLE

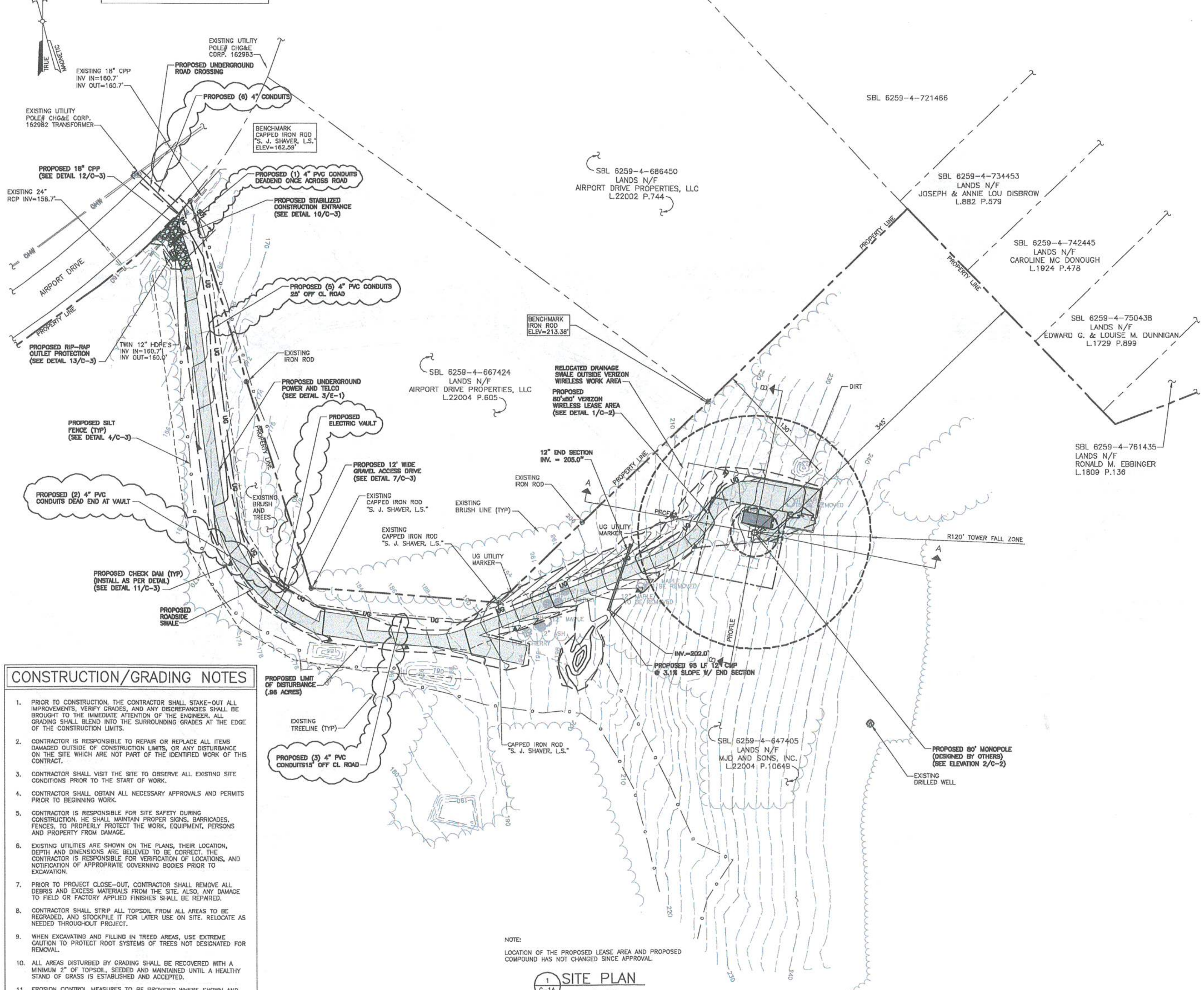
SITE PLAN & NOTES

SHEET NUMBER

C-1

NORTH ORIENTATION

1. TRUE NORTH ORIENTATION ESTABLISHED BY A SITE SURVEY PERFORMED BY TECTONIC ENGINEERING CONSULTANTS, P.C., ENTITLED, "PARTIAL TOPOGRAPHIC SURVEY", DATED 3/8/05.
2. DECLINATION OBTAINED FROM THE NATIONAL GEOPHYSICAL DATA CENTER DURING THE MONTH OF APRIL, 2005



1 / C-1A SITE PLAN
SCALE: 1" = 50'

CONSTRUCTION/GRADING NOTES

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL STAKE-OUT ALL IMPROVEMENTS, VERIFY GRADES, AND ANY DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. ALL GRADING SHALL BLEND INTO THE SURROUNDING GRADES AT THE EDGE OF THE CONSTRUCTION LIMITS.
2. CONTRACTOR IS RESPONSIBLE TO REPAIR OR REPLACE ALL ITEMS DAMAGED OUTSIDE OF CONSTRUCTION LIMITS, OR ANY DISTURBANCE ON THE SITE WHICH ARE NOT PART OF THE IDENTIFIED WORK OF THIS CONTRACT.
3. CONTRACTOR SHALL VISIT THE SITE TO OBSERVE ALL EXISTING SITE CONDITIONS PRIOR TO THE START OF WORK.
4. CONTRACTOR SHALL OBTAIN ALL NECESSARY APPROVALS AND PERMITS PRIOR TO BEGINNING WORK.
5. CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY DURING CONSTRUCTION. HE SHALL MAINTAIN PROPER SIGNS, BARRICADES, FENCES, TO PROPERLY PROTECT THE WORK, EQUIPMENT, PERSONS AND PROPERTY FROM DAMAGE.
6. EXISTING UTILITIES ARE SHOWN ON THE PLANS, THEIR LOCATION, DEPTH AND DIMENSIONS ARE BELIEVED TO BE CORRECT. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF LOCATIONS, AND NOTIFICATION OF APPROPRIATE GOVERNING BODIES PRIOR TO EXCAVATION.
7. PRIOR TO PROJECT CLOSE-OUT, CONTRACTOR SHALL REMOVE ALL DEBRIS AND EXCESS MATERIALS FROM THE SITE. ALSO, ANY DAMAGE TO FIELD OR FACTORY APPLIED FINISHES SHALL BE REPAIRED.
8. CONTRACTOR SHALL STRIP ALL TOPSOIL FROM ALL AREAS TO BE REGRADED, AND STOCKPILE IT FOR LATER USE ON SITE. RELOCATE AS NEEDED THROUGHOUT PROJECT.
9. WHEN EXCAVATING AND FILLING IN TREED AREAS, USE EXTREME CAUTION TO PROTECT ROOT SYSTEMS OF TREES NOT DESIGNATED FOR REMOVAL.
10. ALL AREAS DISTURBED BY GRADING SHALL BE RECOVERED WITH A MINIMUM 2" OF TOPSOIL, SEEDED AND MAINTAINED UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED AND ACCEPTED.
11. EROSION CONTROL MEASURES TO BE PROVIDED WHERE SHOWN AND AS DIRECTED BY THE PROJECT ENGINEER, STORMWATER INSPECTOR AND/OR MUNICIPALITY.

GENERAL NOTES

1. THE PROJECT IS THE COMMERCIAL INSTALLATION OF AN UNMANNED WIRELESS COMMUNICATION FACILITY.
2. THE PROPOSED DEVELOPMENT IS UNMANNED AND DOES NOT REQUIRE A MEANS OF WATER SUPPLY, SEWAGE DISPOSAL, OR HANDICAPPED ACCESS.
3. THE PROPOSED DEVELOPMENT IS MINIMAL, WILL CREATE NEGLIGIBLE ADDITIONAL STORMWATER RUNOFF, AND WILL, THEREFORE, NOT IMPACT THE EXISTING STORMWATER DRAINAGE SYSTEM.
4. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE, SOLID WASTE RECEPTACLES, OR PLUMBING.
5. ADEQUATE PARKING EXISTS FOR ONE VEHICLE FOR MAINTENANCE OR EMERGENCY SERVICE ONCE A MONTH.
6. THERE ARE NO NEW STREETS, CURBS, SIDEWALKS, OR WALKWAYS PROPOSED.
7. THERE ARE NO COMMERCIAL SIGNS PROPOSED FOR THIS INSTALLATION.

SITE NOTES

1. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWING.
2. RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
3. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE EQUIPMENT AND TOWER AREAS.
4. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW, OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
5. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
6. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES.
7. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED, OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF THE ENGINEER.
8. THE AREAS DISTURBED DUE TO CONSTRUCTION ACTIVITY SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH.
9. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE GUIDELINES FOR EROSION AND SEDIMENT CONTROL, AND COORDINATED WITH THE TOWN.

LEGEND

PROPERTY LINE
ADJOINING PROPERTY LINE
PROPOSED LEASE LINE
PROPOSED EASEMENT LINE
SETBACK LINE
EDGE OF EXISTING PAVED DRIVE
EXISTING UTILITY POLE
PROPOSED UTILITY POLE
OHW — EXISTING OVERHEAD WIRES
OHW — PROPOSED OVERHEAD WIRES
UG — EXISTING UNDERGROUND UTILITIES
UG — PROPOSED UNDERGROUND UTILITIES
EXISTING CONTOUR
EXISTING INDEX CONTOUR
EXISTING IRON ROD/PIPE
PROPOSED SILT FENCE
EXISTING CHAINLINK FENCE
PROPOSED CHAINLINK FENCE
CENTERLINE OF DITCH
EXISTING BRUSH LINE
EXISTING TREE LINE
EXISTING STONE WALL & FENCE
EXISTING STORM SEWER
PROPOSED ROADSIDE SWALE
PROPOSED CHECK DAM
PROPOSED LIMIT OF DISTURBANCE

ACCESS DRIVE NOTES

1. PRIOR TO COMMENCEMENT OF CONSTRUCTION, CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AS REQUIRED BY THE TOWN AND STATE.
2. PRIOR TO INSTALLATION OF ACCESS DRIVE, THE CONTRACTOR SHALL NOTIFY THE TOWN HIGHWAY SUPERINTENDENT SO HE/SHE MAY HAVE THE OPPORTUNITY TO INSPECT THE LOCATION OF THE ACCESS DRIVE ENTRANCE WITH RESPECT TO THE TOWN RIGHT OF WAY.
3. CONTRACTOR SHALL VERIFY THAT NO PONDING OCCURS AT THE POINT OF CONNECTION TO THE PAVED ROADWAY.
4. ACCESS DRIVE SHALL BE ALIGNED IN SUCH A WAY AS TO CREATE THE MINIMUM POSSIBLE TRAFFIC HAZARD. CLEAR VISIBILITY SHALL BE PROVIDED IN BOTH DIRECTIONS AT THE INTERSECTION OF THE PROPOSED ACCESS DRIVE AND THE PAVED ROADWAY.
5. CONTRACTOR TO ENSURE ACCESS DRIVE BE CONSTRUCTED TO PROVIDE FIRE DEPARTMENT APPARATUS ACCESS TO WITHIN 75 FEET OF THE PROPOSED FENCED COMPOUND & LEASE AREA.
6. CONTRACTOR TO CONSTRUCT ACCESS DRIVE IN ACCORDANCE WITH APPROVED PLANS TO ACCOMMODATE A 30 TON EMERGENCY VEHICLE.
7. CONTRACTOR TO PROVIDE A MINIMUM OVERHEAD CLEARANCE OF 15 FEET ALONG ENTIRE LENGTH OF THE ACCESS DRIVE.

- CONTRACTOR SHALL NOTIFY UNDERGROUND FACILITIES PROTECTIVE ORGANIZATION AT TELEPHONE NUMBER 1-800-962-7962 PRIOR TO EXCAVATION AT SITE
- CONTRACTOR TO LOCATE AND VERIFY ALL EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION
- ALL EXCAVATION WORK WITHIN 36" OF EITHER SIDE OF UNDERGROUND UTILITIES MUST BE DONE BY HAND EXCAVATION METHODS

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DESIGN APPROVAL

PRELIMARY/CONSTRUCTION

RF ENG.______ DATE:______
EQPT. ENG.______ DATE:______
OPERATIONS______ DATE:______
CONST. MGR.______ DATE:______
NETWORK ENG.______ DATE:______
REAL ESTATE______ DATE:______

WORK ORDER NUMBER	DRAWN BY
2248.66514	JRF

NO.	DATE	ISSUE
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RELEASED BY	DATE

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

2004066514
NEW HACKENSACK
AIRPORT DRIVE
TOWN OF WAPPINGER
DUTCHESS COUNTY
NEW YORK

SHEET TITLE

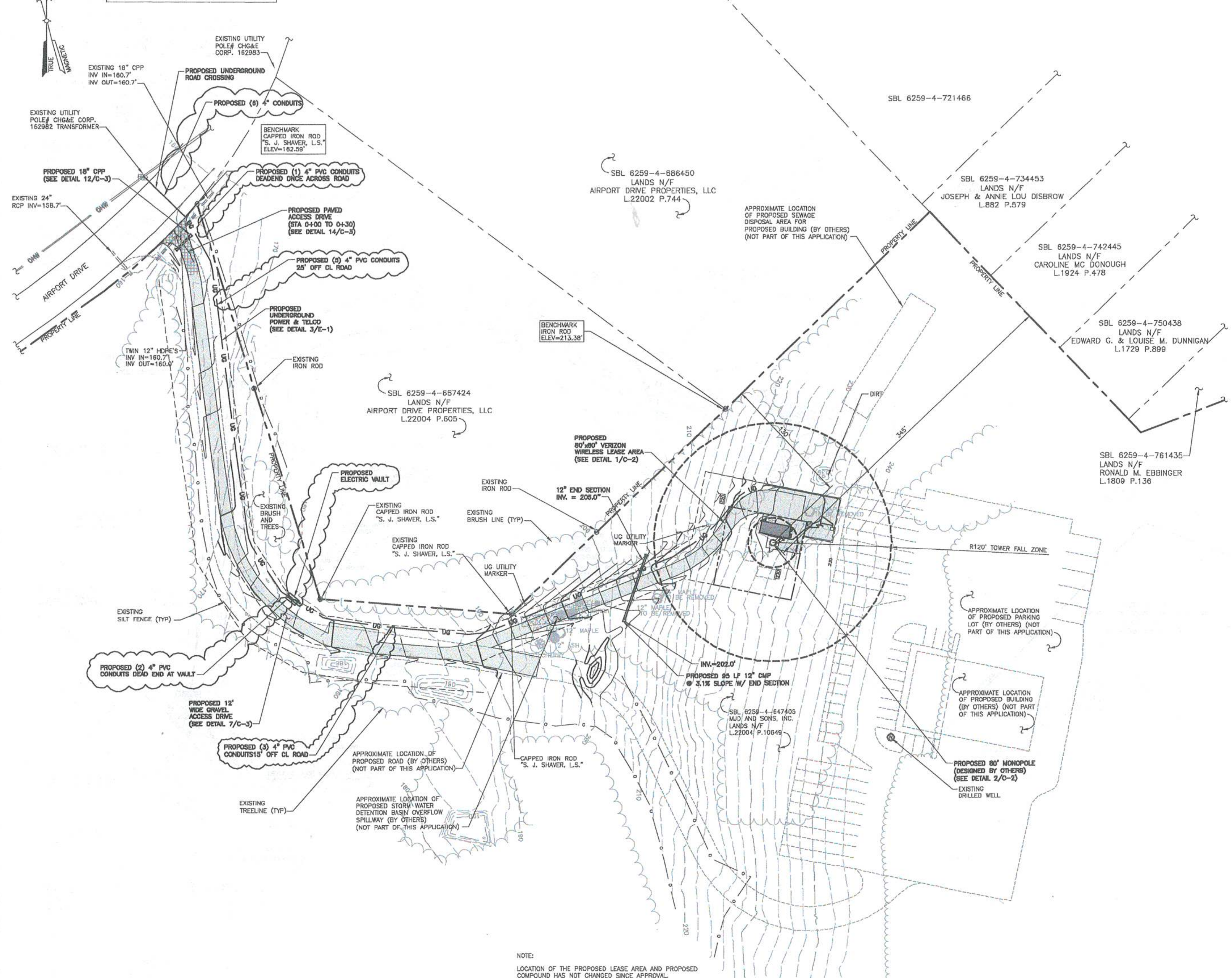
GRADING, SEDIMENT & EROSION CONTROL PLAN

SHEET NUMBER

C-1A

NORTH ORIENTATION

1. TRUE NORTH ORIENTATION ESTABLISHED BY A SITE SURVEY PERFORMED BY TECTONIC ENGINEERING CONSULTANTS, P.C., ENTITLED, "PARTIAL TOPOGRAPHIC SURVEY", DATED 3/8/05.
2. DECLINATION OBTAINED FROM THE NATIONAL GEOPHYSICAL DATA CENTER DURING THE MONTH OF APRIL, 2005



NOTE:
LOCATION OF THE PROPOSED LEASE AREA AND PROPOSED COMPOUND HAS NOT CHANGED SINCE APPROVAL.

1/C-1B SITE PLAN
SCALE: 1" = 50'

GENERAL NOTES

1. THE PROJECT IS THE COMMERCIAL INSTALLATION OF AN UNMANNED WIRELESS COMMUNICATION FACILITY.
2. THE PROPOSED DEVELOPMENT IS UNMANNED AND DOES NOT REQUIRE A MEANS OF WATER SUPPLY, SEWAGE DISPOSAL, OR HANDICAPPED ACCESS.
3. THE PROPOSED DEVELOPMENT IS MINIMAL, WILL CREATE NEGLIGIBLE ADDITIONAL STORMWATER RUNOFF, AND WILL, THEREFORE, NOT IMPACT THE EXISTING STORMWATER DRAINAGE SYSTEM.
4. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE, SOLID WASTE RECEPTACLES, OR PLUMBING.
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LEGEND

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- PROPOSED LEASE LINE
- PROPOSED EASEMENT LINE
- SETBACK LINE
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- EXISTING CHAINLINK FENCE
- PROPOSED CHAINLINK FENCE
- CENTERLINE OF DITCH
- EXISTING BRUSH LINE
- EXISTING TREE LINE
- EXISTING STONE WALL & FENCE
- EXISTING STORM SEWER
- EXISTING CATCH BASIN

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SITE INFORMATION

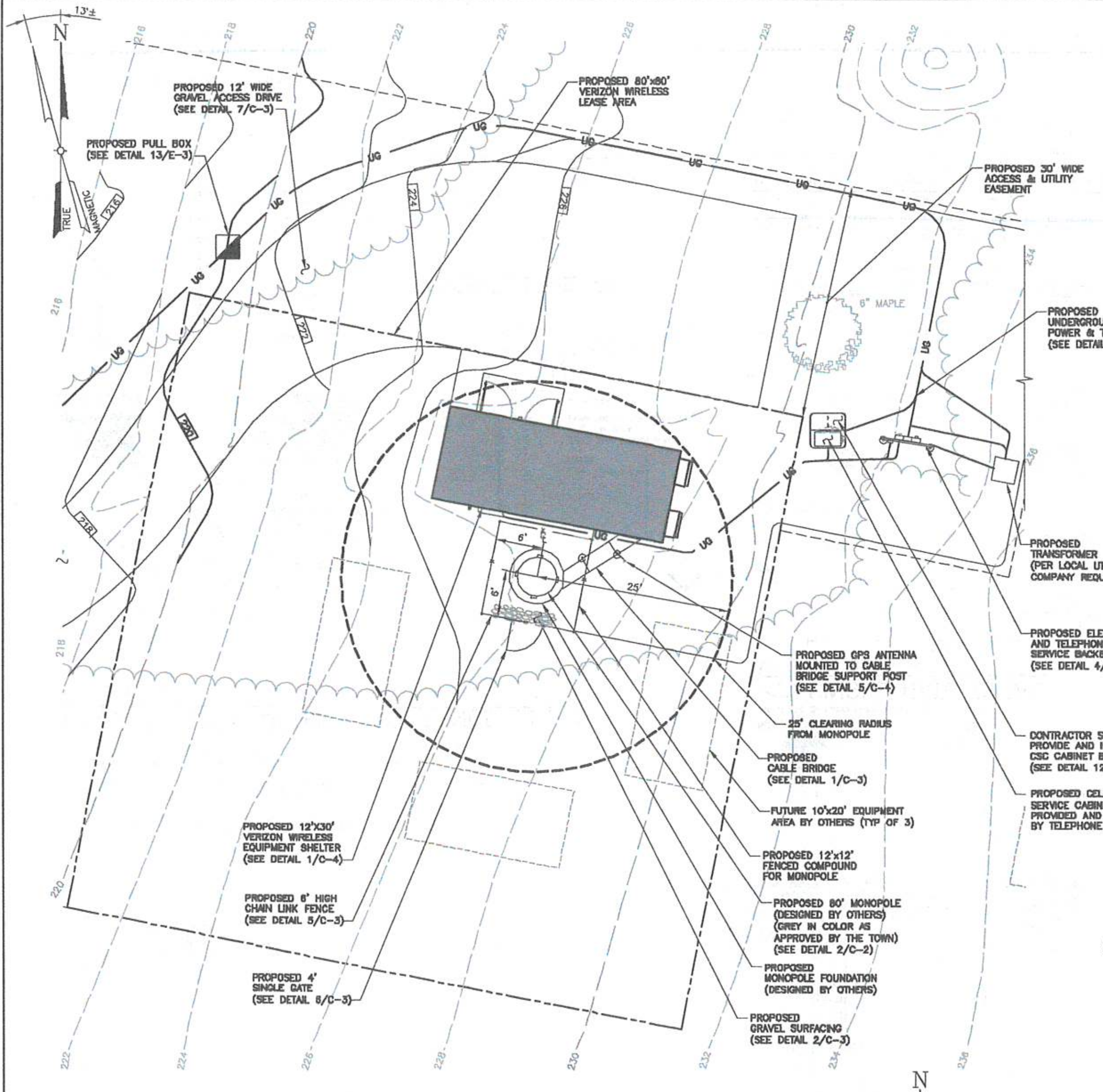
2004066514
NEW HACKENSACK
AIRPORT DRIVE
TOWN OF WAPPINGER
DUTCHESS COUNTY
NEW YORK

SHEET TITLE

COMBINED SITE DEVELOPEMENT PLAN

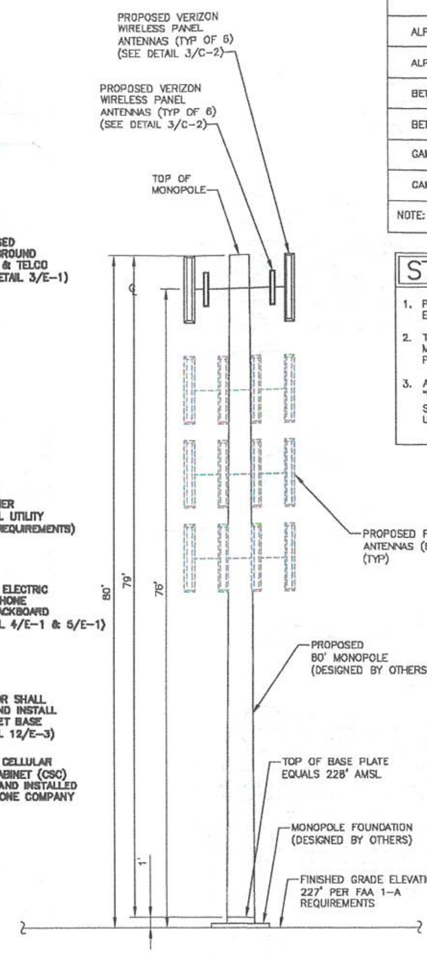
SHEET NUMBER

C-1B



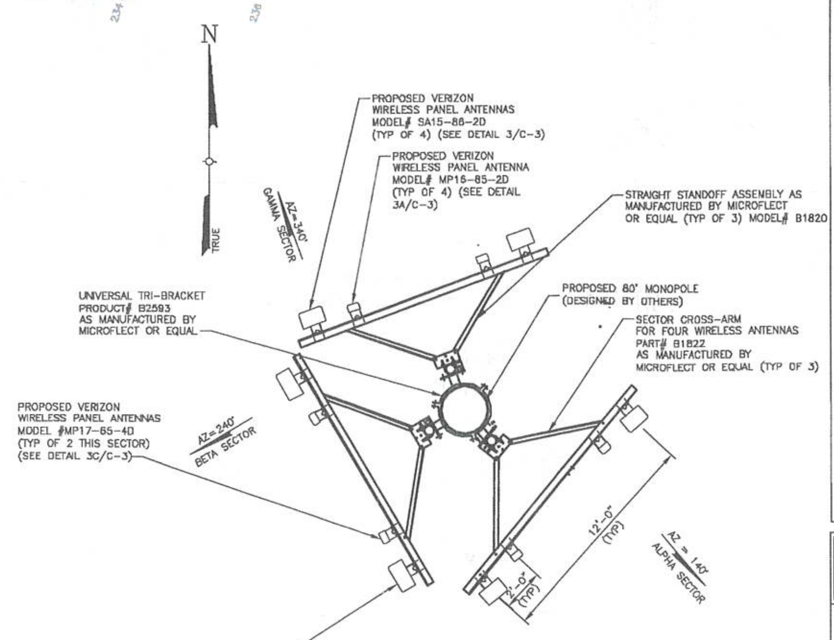
1/C-2 SITE DETAIL PLAN

SCALE: 1" = 10'



2/C-2 ELEVATION

SCALE: 1" = 10'



NOTE:

1. CONTRACTOR SHALL TAG COAX CABLE AT BOTH ENDS WITH ANTENNA DESIGNATION AS DIRECTED BY VERIZON WIRELESS.

3/C-2 ANTENNA ORIENTATION

SCALE: NONE

ANTENNA AND COAXIAL SCHEDULE

SECTOR	ANTENNA	ANTENNA DATA	MECHANICAL DOWN TILT	AZIMUTH	# OF ANTENNAS PER SECTOR	ANTENNA ℄ HEIGHT (AGL)	COAXIAL CABLE
ALPHA	SA15-86-2D	96.4"x 14"x 9", 42.5 LBS	0°	140°	2	76'±	1 5/8" DIA
ALPHA	MP16-85-2D	47.1"x 6.7"x 4.1", 10 LBS	0°	140°	2	76'±	1 5/8" DIA
BETA	SA16-60-4D	96.4"x 16.7"x 9", 46.5 LBS	0°	240°	2	76'±	1 5/8" DIA
BETA	MP17-65-4D	48"x 6.7"x 1.7", 10 LBS	0°	240°	2	76'±	1 5/8" DIA
GAMMA	SA15-86-2D	96.4"x 14"x 9", 42.5 LBS	0°	340°	2	76'±	1 5/8" DIA
GAMMA	MP16-85-2D	47.1"x 6.7"x 4.1", 10 LBS	0°	340°	2	76'±	1 5/8" DIA

NOTE: CONTRACTOR TO TAG COAX CABLE AT BOTH ENDS WITH ANTENNA DESIGNATION AS DIRECTED BY VERIZON WIRELESS.

STRUCTURAL NOTE:

1. PROPOSED TOWER AND TOWER FOUNDATION TO BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK.
2. THE VERIFICATION OF STRUCTURAL ADEQUACY AND DESIGN OF THE ATTACHMENTS MUST BE PERFORMED, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK.
3. ALL WORK SHOULD CONFORM TO THE CURRENT STANDARD (ANSI/TIA-222-G "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES"), NEW YORK STATE BUILDING CODE, LATEST EDITION, NEW YORK STATE UNIFORM FIRE PREVENTION AND ITS REFERENCED STANDARDS.

ANTENNA MOUNTING NOTES

1. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO ANSI/TIA-222-G "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES".
   DESIGN WIND SPEED (3 SECOND GUST) = 90 MPH. (DUTCHESS COUNTY, NEW YORK)
   (40 MPH IN CONJUNCTION WITH 0.75 INCHES OF DESIGN ICE THICKNESS)
2. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
3. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
4. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
5. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH DOUBLE NUTS AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
6. DESIGN OF THE ANTENNA MOUNTING BRACKETS, SUPPORTS, AND ALL COMPONENTS THEREOF AND ATTACHMENT THERETO SHALL BE THE RESPONSIBILITY OF THE MANUFACTURER. MANUFACTURER SHALL PROVIDE THE OWNER DRAWINGS DETAILING ALL COMPONENTS OF THE ASSEMBLY, INCLUDING CONNECTIONS, DESIGN LOADS, AND ALL OTHER PERTINENT DATA. MANUFACTURER SHALL ALSO PROVIDE THE OWNER WITH A STATEMENT OF COMPLIANCE, INDICATING THAT THE ANTENNA SUPPORTS HAVE BEEN DESIGNED IN ACCORDANCE WITH ANSI/TIA-222-G STANDARDS. ALL SUBMISSIONS SHALL BEAR THE SIGNATURE AND SEAL OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK.

EROSION AND SEDIMENT CONTROL MEASURES

TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

GENERAL MEASURES:

1. AS MUCH AS IS PRACTICAL, EXISTING VEGETATION SHALL BE PRESERVED. FOLLOWING THE COMPLETION OF CONSTRUCTION ACTIVITIES IN ANY PORTION OF THE SITE, PERMANENT VEGETATION SHALL BE ESTABLISHED ON ALL EXPOSED SOILS.
2. SITE PREPARATION ACTIVITIES SHALL BE PLANNED TO MINIMIZE THE SCOPE AND DURATION OF SOIL DISRUPTION.

PARTICULAR MEASURES:

1. DRAINAGE DITCH SEDIMENT FILTERS: UNTIL SUCH TIME AS FINAL SITE STABILIZATION IS COMPLETED, DITCHES SHALL RECEIVE TREATMENT WITH STRAW BALE WEIRS SO AS TO EFFECTIVELY TRAP SEDIMENT AND MINIMIZE ITS RELEASE OFF-SITE. STRAW BALE FILTERS SHALL BE CONSTRUCTED WITHIN EACH DITCH BEGINNING AT ITS DOWNSTREAM TERMINUS AND SHOULD BE PLACED AT INTERVALS OF LESS THAN 50 FEET.
2. STRAW BALE BERMS OR SILT FENCES: STRAW BALE BERMS OR SILT FENCES SHALL BE CONSTRUCTED AROUND ALL STOCKPILES OF FILL, TOPSOIL, AND EXCAVATED OVERBURDEN THAT ARE TO REMAIN EXPOSED FOR PERIODS LESS THAN 30 DAYS. STRAW BALE BERMS AND SILT FENCES SHALL BE ANCHORED AND MAINTAINED IN GOOD CONDITION UNTIL SUCH TIME AS SAID STOCKPILES ARE REMOVED AND STOCKPILING AREAS ARE BROUGHT TO FINAL GRADE AND PERMANENTLY STABILIZED.
3. TOPSOIL AND FILL THAT IS TO REMAIN STOCKPILED ON-SITE FOR PERIODS GREATER THAN 30 DAYS SHALL BE STABILIZED BY SEEDING. PRIOR TO THE SEEDNG OPERATION, THE STOCKPILED MATERIAL SHALL BE GRADED AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
4. IN NO CASE SHALL ERODIBLE MATERIALS BE STOCKPILED WITHIN 25 FEET OF ANY DITCH, STREAM, OR OTHER SURFACE WATER BODY.

PERMANENT AND TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

1. PERMANENT AND TEMPORARY VEGETATIVE COVER: IMMEDIATELY FOLLOWING THE COMPLETION OF CONSTRUCTION ACTIVITY OR WHERE WORK IS DELAYED AND WILL NOT BE DISTURBED FOR 21 DAYS OR MORE IN ANY PORTION OF THE SITE, PERMANENT OR TEMPORARY VEGETATION SHALL BE ESTABLISHED WITHIN 14 DAYS ON ALL EXPOSED SOILS. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED AS SOON AS PRACTICAL FOLLOWING DISTURBANCE TO STABILIZE BARE SOIL AND PROMOTE THE PROMPT RE-ESTABLISHMENT OF VEGETATION:
   A. AN ADEQUATE SEEDBED SHALL BE PREPARED BY SCARIFYING, COMPACTED SOIL, AND REMOVING SURFACE DEBRIS AND OBSTACLES.
   B. LIME SHALL BE APPLIED SUFFICIENTLY TO ATTAIN A SOIL ACIDITY pH OF 6.0 TO 7.0.
   C. FERTILIZER (5-10-10 MIXTURE OR EQUIVALENT) SHALL BE APPLIED PER SOIL TEST RESULTS OR AT A RATE OF 600 LBS. PER ACRE.
   D. DISTURBED AREAS WHICH WILL REMAIN TEMPORARILY FALLOW FOR PERIODS GREATER THAN 14 DAYS SHALL BE SEEDED AT THE FOLLOWING RATE TO PRODUCE TEMPORARY GROUND COVER: 30 LBS. RYEGRASS (ANNUAL OR PERENNIAL) PER ACRE. DURING THE WINTER, USE 100 LBS. CERTIFIED "AROOSTOOK" WINTER RYE (CEREAL RYE) PER ACRE.
   E. PERMANENT SEEDING SHALL BE APPLIED ON 4" MIN TOPSOIL AT THE FOLLOWING RATE FOR ROUGH OR OCCASIONAL MOWING AREAS:
      8 LBS EMPIRE BIRDSFOOT TREFOIL OR COMMON WHITE CLOVER PER ACRE
      20 LBS TALL FESCUE PER ACRE PLUS
      2 LBS REDTOP OR 5 LBS RYEGRASS (PERENNIAL) PER ACRE
      FOR MOWED AREAS:
      65 LBS KENTUCKY BLUEGRASS PER ACRE
      65 LBS RYEGRASS (PERENNIAL) PER ACRE
   F. ALL SEEDING SHALL BE PERFORMED USING THE BROADCAST METHOD OR HYDROSEEDING, UNLESS OTHERWISE APPROVED.
   G. ALL DISTURBED AREAS SHALL BE STABILIZED SUBSEQUENT TO SEEDING BY APPLYING 2 TONS OF STRAW MULCH PER ACRE. STRAW MULCH SHALL BE ANCHORED BY APPLYING 750 LBS OF WOOD FIBER MULCH PER ACRE WITH A HYDROSEEDER, OR TUCKING THE MULCH WITH SMOOTH DISCS OR OTHER MULCH ANCHORING TOOLS TO A DEPTH OF 3". MULCH ANCHORING TOOLS SHALL BE PULLED ACROSS SLOPES ALONG TOPOGRAPHIC CONTOURS.
2. ALL UNNECESSARY REMOVAL OF HEALTHY TREES SHALL BE AVOIDED. MATERIALS SHALL NOT BE STORED NOR MACHINERY OPERATED WITHIN THE DRIP-LINE OF THE TREES TO REMAIN.

MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES:

1. THE CONTRACTOR SHALL ON A DAILY BASIS INSPECT AND MAINTAIN THE INTEGRITY AND FUNCTION OF ALL TEMPORARY EROSION CONTROL MEASURES THROUGHOUT THE DURATION OF THE CONSTRUCTION PROCESS.
2. TO ASSURE PROPER FUNCTION, SILTATION BARRIERS SHALL BE MAINTAINED IN GOOD CONDITION AND REINFORCED, EXTENDED, REPAIRED, OR REPLACED AS NECESSARY. WASHOUTS SHALL BE IMMEDIATELY REPAIRED, RE-SEEDED, AND PROTECTED FROM FURTHER EROSION.
3. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES ABOUT 0.5 FT DEEP AT THE FENCE. THE SEDIMENT FENCE SHALL BE REPAIRED AS NECESSARY TO MAINTAIN BARRIER.
4. ALL SEEDED AREAS SHALL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN IN ORDER TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.

LITTER AND CONSTRUCTION DEBRIS CONTROL MEASURES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH THE FOLLOWING LITTER AND CONSTRUCTION DEBRIS CONTROL MEASURES:

1. CONTRACTOR SHALL DISPOSE OF ALL CONSTRUCTION DEBRIS OFF-SITE AT A FACILITY APPROVED FOR THE TYPE OF MATERIAL GENERATED AT THE SITE.
2. NO BURNING OR BURIAL PITS WILL BE PERMITTED ON-SITE.
3. TEMPORARY STORAGE CONTAINERS SHALL BE PROVIDED AS NECESSARY TO CONTROL LITTER AND CONSTRUCTION DEBRIS FROM ENTERING ON-SITE STORM WATER DISCHARGES.
4. PRIOR TO LEAVING THE SITE EACH DAY, THE CONTRACTOR SHALL INSPECT THE PROJECT SITE AND PLACE ALL LITTER AND CONSTRUCTION DEBRIS IN APPROPRIATE STORAGE CONTAINERS.

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SITE INFORMATION

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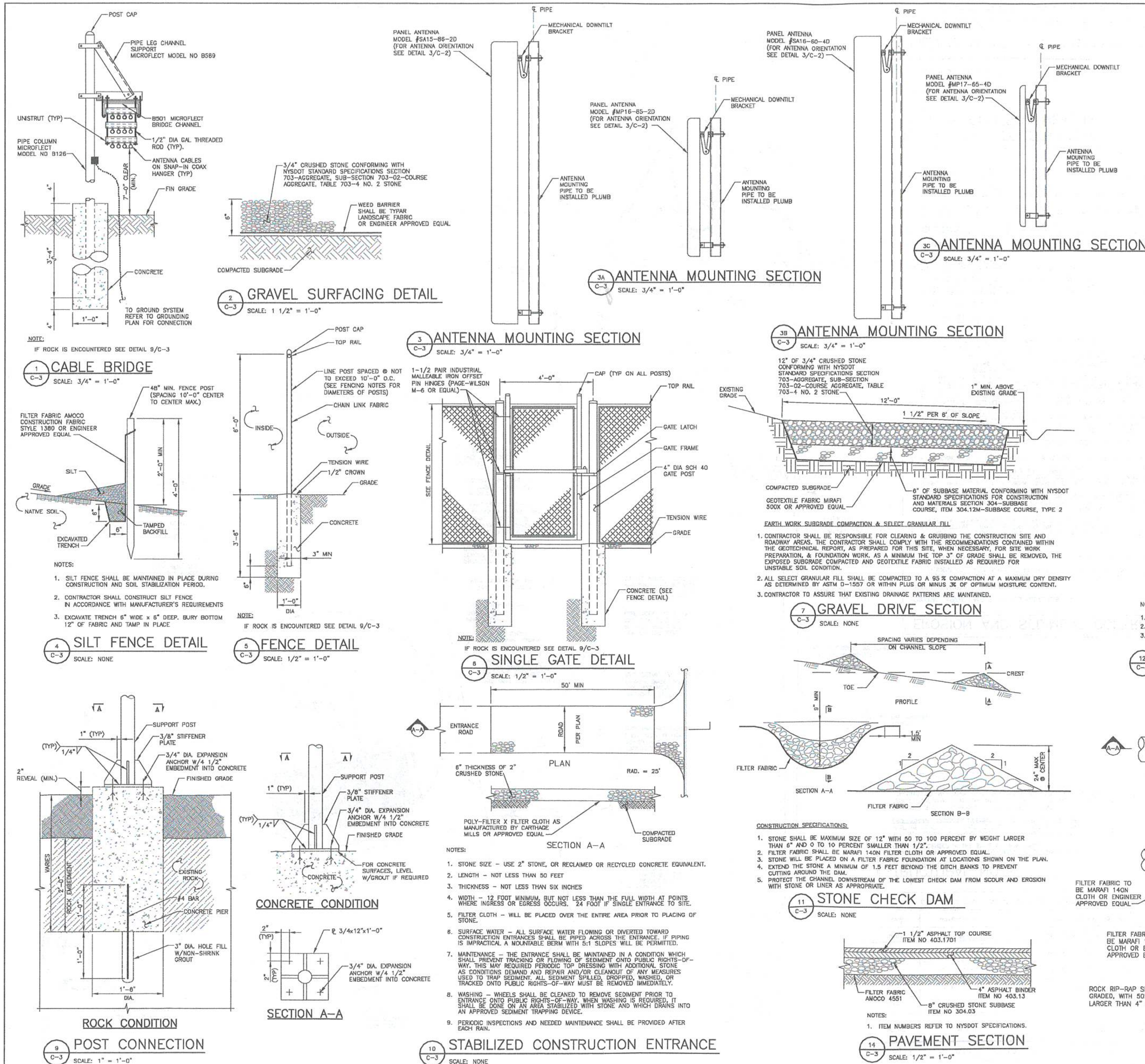
NEW HACKENSACK
AIRPORT DRIVE
TOWN OF WAPPINGER
DUTCHESS COUNTY
NEW YORK

SHEET TITLE

SITE DETAIL PLAN, ELEVATION, DETAILS & NOTES

SHEET NUMBER

C-2



FENCING NOTES

1. CORNER POSTS, PULL POSTS, AND END POSTS SHALL BE 3" NOMINAL D.D., SCHEDULE 40, STEEL PIPE CONFORMING WITH ASTM F-1083. GATE POSTS SHALL BE 4" NOMINAL O.D., SCHEDULE 40, STEEL PIPE CONFORMING WITH ASTM F-1083 AND MAY BE UTILIZED FOR SINGLE GATE OPENING WIDTHS OF 6 FEET OR LESS AND FOR DOUBLE GATE OPENING WIDTHS OF 12 FEET OR LESS.
2. LINE POSTS SHALL BE 2" NOMINAL O.D. SCHEDULE 40 STEEL PIPE CONFORMING WITH ASTM F-1083.
3. TOP RAIL AND BRACE RAIL SHALL BE 1 5/8" NOMINAL O.D. PIPE CONFORMING WITH ASTM F-1083.
4. GATE FRAMES SHALL BE FABRICATED FROM 1 1/2" NOMINAL O.D. PIPE CONFORMING WITH ASTM F-1083.
5. FENCE FABRIC SHALL BE 9 GAUGE WIRE SIZE, 2" MESH CHAIN LINK FENCE CONFORMING WITH ASTM A-392.
6. TIE WIRE SHALL BE AS FOLLOWS:
   a) AT POSTS, RAILS, AND WHERE NECESSARY ON GATE FRAMES: MINIMUM 11 GAUGE GALVANIZED STEEL SPACED AT NOT LESS THAN 14" ON CENTER.
   b) AT TENSION WIRES: BY HOG RINGS SPACED AT NOT LESS THAN 24" ON CENTER.
7. TENSION WIRE SHALL BE 7 GAUGE GALVANIZED STEEL.
8. THE GATE LATCH SHALL BE THE MALLEABLE IRON FORK TYPE AS MANUFACTURED BY PAGE WILSON AS THEIR TYPE 75 GATE LATCH ASSEMBLY, OR EQUAL. PAD LOCKS ARE TO BE PROVIDED BY THE OWNER.
9. FENCE HEIGHT SHALL BE 6'.
10. FENCE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM F-567 AND GATES SHALL BE INSTALLED IN ACCORDANCE WITH ASTM F-900.

SILT FENCE DETAIL — NOTES:

1. SILT FENCE SHALL BE MAINTAINED IN PLACE DURING CONSTRUCTION AND SOIL STABILIZATION PERIOD.
2. CONTRACTOR SHALL CONSTRUCT SILT FENCE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS
3. EXCAVATE TRENCH 6" WIDE x 6" DEEP. BURY BOTTOM 12" OF FABRIC AND TAMP IN PLACE

GRAVEL DRIVE SECTION

EARTH WORK SUBGRADE COMPACTION & SELECT GRANULAR FILL

1. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING & GRUBBING THE CONSTRUCTION SITE AND ROADWAY AREAS. THE CONTRACTOR SHALL COMPLY WITH THE RECOMMENDATIONS CONTAINED WITHIN THE GEOTECHNICAL REPORT, AS PREPARED FOR THIS SITE, WHEN NECESSARY, FOR SITE WORK PREPARATION, & FOUNDATION WORK. AS A MINIMUM THE TOP 3" OF GRADE SHALL BE REMOVED, THE EXPOSED SUBGRADE COMPACTED AND GEOTEXTILE FABRIC INSTALLED AS REQUIRED FOR UNSTABLE SOIL CONDITION.
2. ALL SELECT GRANULAR FILL SHALL BE COMPACTED TO A 95 % COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 OR WITHIN PLUS OR MINUS 3% OF OPTIMUM MOISTURE CONTENT.
3. CONTRACTOR TO ASSURE THAT EXISTING DRAINAGE PATTERNS ARE MAINTAINED.

CULVERT TRENCH DETAIL — NOTES:

1. OVEREXCAVATE FOR BELLS.
2. ADDITIONAL BEDDING MAY BE USED AS ORDERED BY ENGINEER.
3. ALL EXCAVATION AND TRENCHING SHALL MEET OSHA REQUIREMENTS.

STABILIZED CONSTRUCTION ENTRANCE — NOTES:

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET
3. THICKNESS - NOT LESS THAN SIX INCHES
4. WIDTH - 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24 FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRED PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTIONS AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STONE CHECK DAM — CONSTRUCTION SPECIFICATIONS:

1. STONE SHALL BE MAXIMUM SIZE OF 12" WITH 50 TO 100 PERCENT BY WEIGHT LARGER THAN 6" AND 0 TO 10 PERCENT SMALLER THAN 1/2".
2. FILTER FABRIC SHALL BE MARAFI 140N FILTER CLOTH OR APPROVED EQUAL.
3. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION AT LOCATIONS SHOWN ON THE PLAN.
4. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
5. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.

PAVEMENT SECTION — NOTES:

1. ITEM NUMBERS REFER TO NYSDOT SPECIFICATIONS.

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DESIGN APPROVAL

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0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

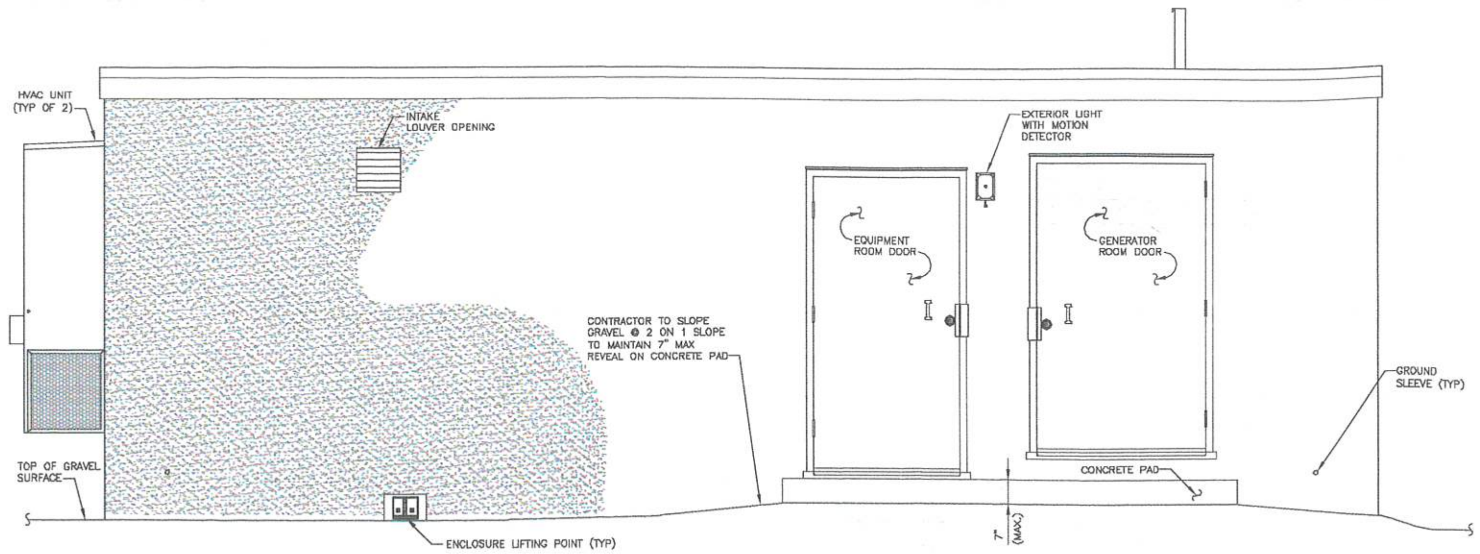
2004066514
NEW HACKENSACK
AIRPORT DRIVE
TOWN OF WAPPINGER
DUTCHESS COUNTY
NEW YORK

SHEET TITLE

DETAILS

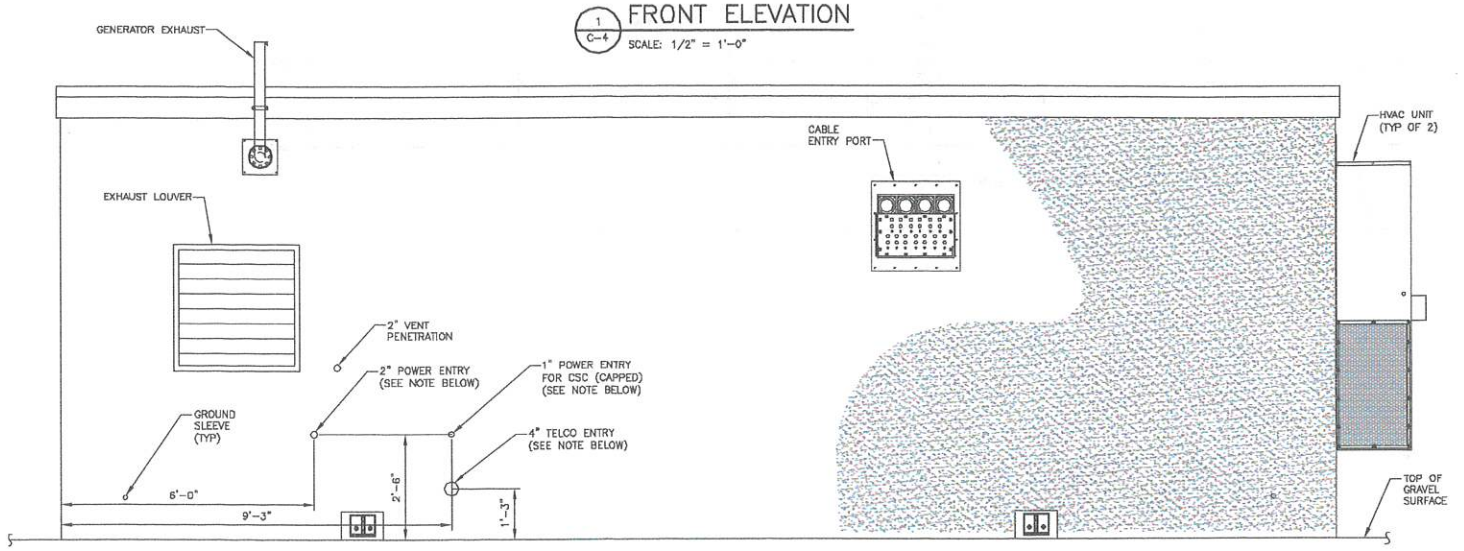
SHEET NUMBER

C-3



1 C-4 FRONT ELEVATION

SCALE: 1/2" = 1'-0"

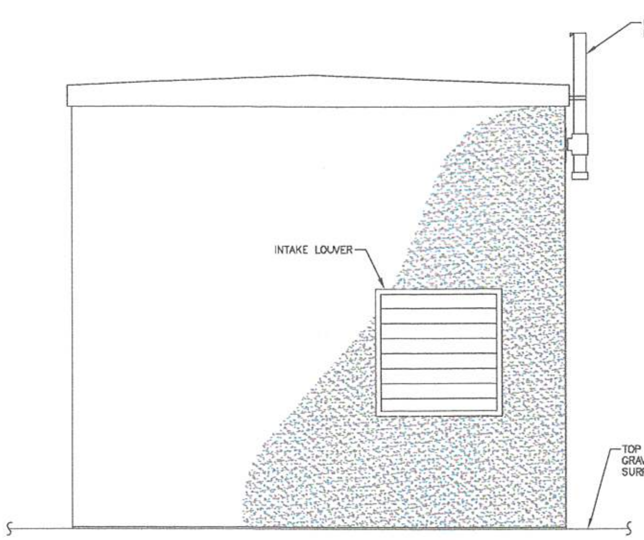


NOTE:

SEE SHELTER SPECIFICATION DRAWINGS FOR POWER & TELCO ENTRY POINTS

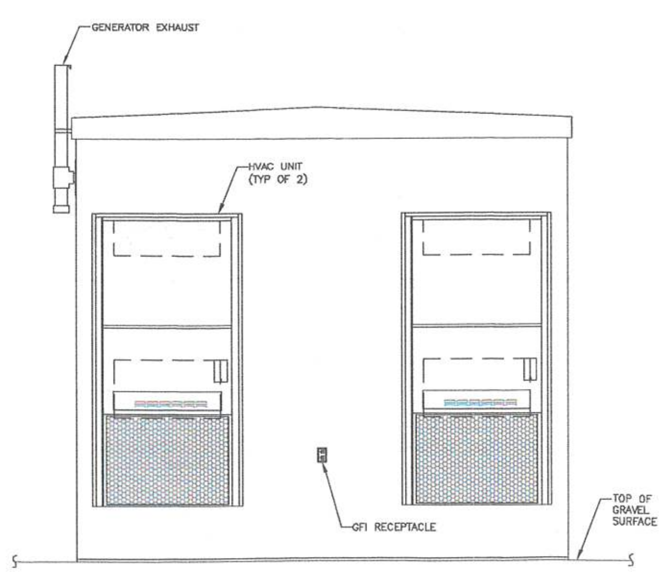
2 C-4 REAR ELEVATION

SCALE: 1/2" = 1'-0"



3 C-4 SIDE ELEVATION

SCALE: 1/2" = 1'-0"

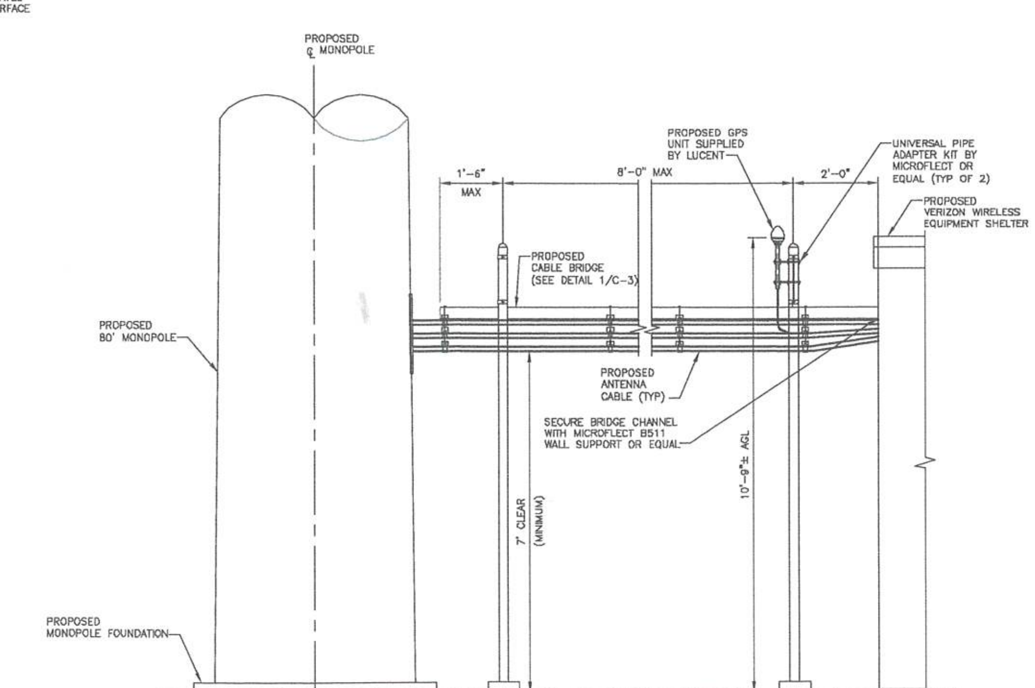


4 C-4 SIDE ELEVATION

SCALE: 1/2" = 1'-0"

CONSTRUCTION NOTES

1. ALL WORK SHALL COMPLY WITH THE NEW YORK STATE BUILDING CODE, LATEST EDITION, AND THE NEW YORK STATE UNIFORM FIRE PREVENTION AND ITS REFERENCED STANDARDS, AS WELL AS OTHER APPLICABLE CODES AND APPLICABLE LOCAL ORDINANCES. CONTRACTOR SHALL VISIT THE JOB SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
4. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
5. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. THE WORK SHALL INCLUDE FURNISHING ALL LABOR, EQUIPMENT, MATERIALS, AND APPURTENANCES NECESSARY TO EFFECT ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS REQUIRED CLEARANCE. IT IS, THEREFORE, CRITICAL TO FIELD VERIFY DIMENSIONS. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS, AND/OR DESIGN INTENT; THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE CLIENT'S AUTHORIZED REPRESENTATIVE OR THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
7. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
8. CONTRACTOR SHALL RECEIVE CLARIFICATION IN WRITING, AND SHALL RECEIVE IN WRITING AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
9. CONTRACTOR SHALL NOTIFY THE CLIENT OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND TO EXIST IN THE FIELD.
10. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE BEST CONSTRUCTION SKILLS AND ATTENTION.
11. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS AND INSPECTIONS AND PAY ALL REQUIRED FEES.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA, ADJACENT AREAS, AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS, AND ANY OTHER PORTIONS OF THE WORK.
14. CONTRACTOR SHALL COORDINATE HIS WORK AND SCHEDULE HIS ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER. CONTRACTOR SHALL PROVIDE ACCESS TO THE SITE AND ASSIST THE RADIO EQUIPMENT VENDOR AND THE ANTENNA INSTALLATION CONTRACTOR AS THEY MAY REQUIRE.
15. CONTRACTOR SHALL PROVIDE 48 HOURS WRITTEN NOTICE TO THE ENGINEER AND CLIENT PRIOR TO COMMENCEMENT OF WORK.
16. CONTRACTOR SHALL MAINTAIN LIABILITY INSURANCE TO PROTECT THE OWNER AND CLIENT.
17. CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
18. CONTRACTOR SHALL VERIFY FINAL EQUIPMENT LOCATIONS WITH CLIENT.
19. CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING SURFACES, EQUIPMENT, IMPROVEMENTS, PIPING, ETC.; AND IMMEDIATELY REPAIR ANY DAMAGE THAT OCCURS DURING CONSTRUCTION.
20. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTATION SHALL BE TURNED OVER TO CLIENT AT COMPLETION OF WORK.
21. COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF ACCEPTANCE BY OWNER. ANY WORK, MATERIALS, OR EQUIPMENT FOUND TO BE DEFECTIVE DURING THAT PERIOD SHALL BE CORRECTED IMMEDIATELY, UPON WRITTEN NOTIFICATION, AT NO ADDITIONAL COST TO CLIENT.
22. MINIMUM BEND RADIUS OF ANTENNA CABLES SHALL BE IN ACCORDANCE WITH CABLE MANUFACTURER'S RECOMMENDATIONS.
23. REPAIR ALL EXISTING SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND WITH ADJACENT SURFACES.
24. CONTRACTOR SHALL KEEP CONTRACT AREA CLEAN AND HAZARD FREE AND DISPOSE OF ALL DEBRIS AND RUBBISH. EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OF THE OWNER SHALL BE REMOVED. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
25. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ITEMS UNTIL COMPLETION OF CONSTRUCTION.
26. CABLE ROUTING SHOWN IS DIAGRAMMATIC. ACTUAL ROUTE OF ANTENNA CABLES SHALL BE DETERMINED IN THE FIELD. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.



5 C-4 EQUIPMENT ELEVATION

SCALE: 1/2" = 1'-0"

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WORK ORDER NUMBER	DRAWN BY
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2	9/4/07	FOR BP APPLICATION
3	1/15/08	AS BUILTS

RELEASED BY	DATE

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

2004066514
NEW HACKENSACK
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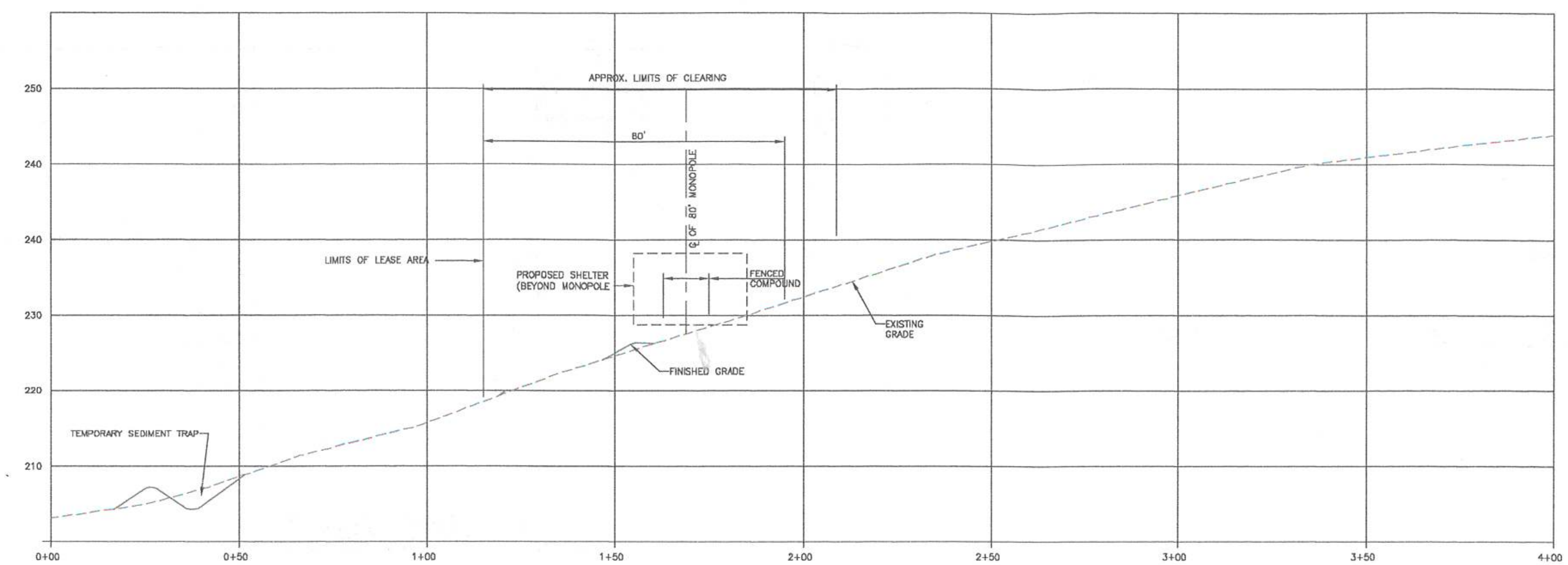
DUTCHESS COUNTY
NEW YORK

SHEET TITLE

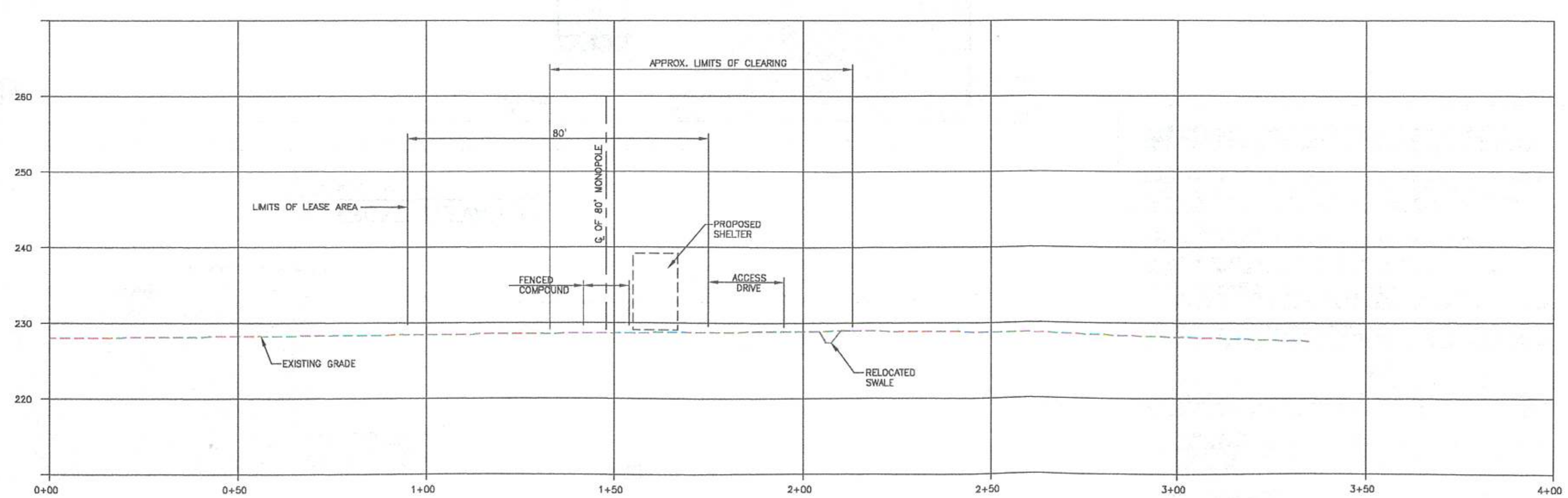
SHELTER ELEVATIONS

SHEET NUMBER

C-4



SECTION A-A (1/C-5)
SCALE: 1" = 20' HORIZ.
1" = 10' VERT.



SECTION B-B (2/C-5)
SCALE: 1" = 20' HORIZ.
1" = 10' VERT.

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SHEET TITLE

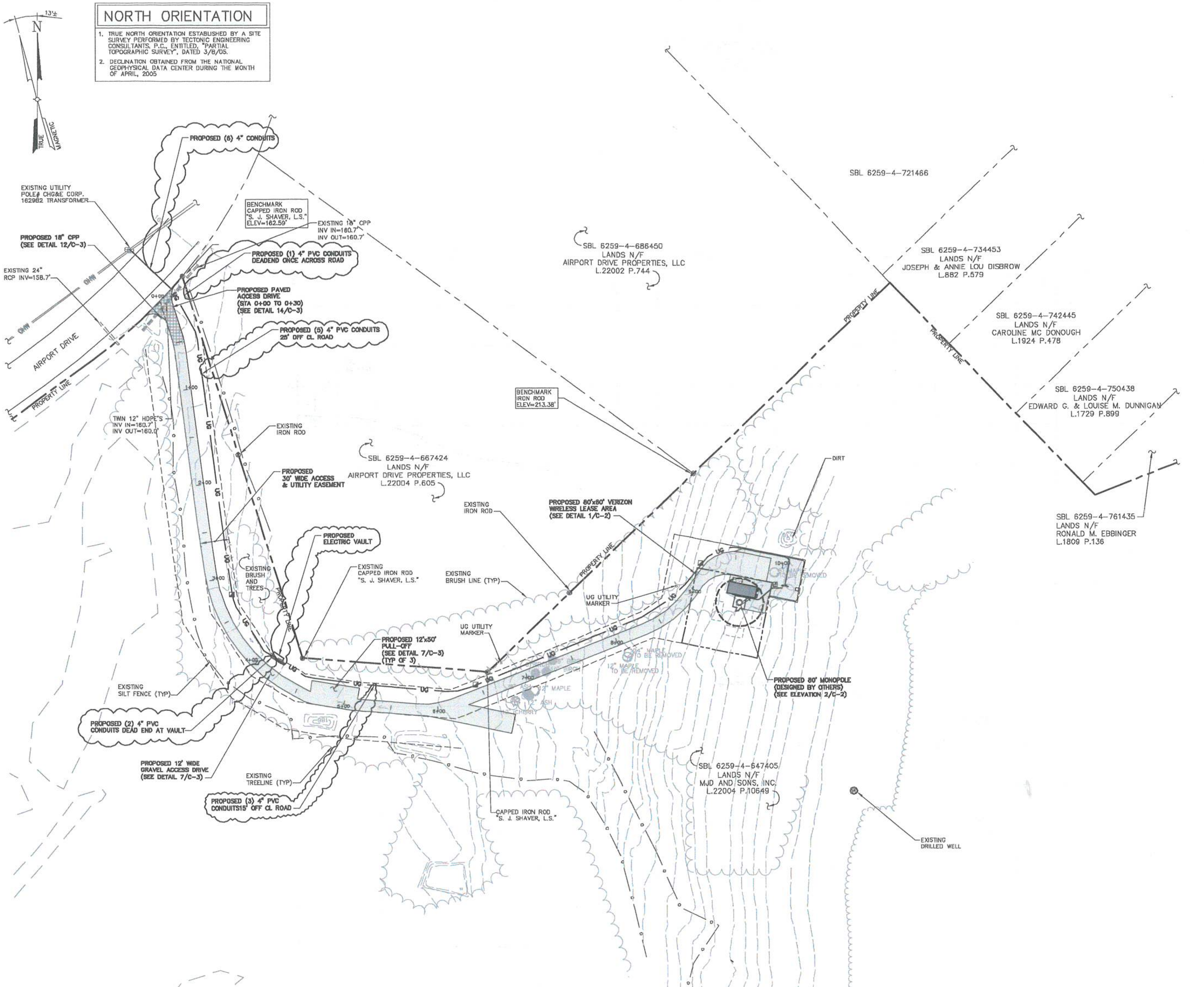
PROFILES

SHEET NUMBER

C-5

NORTH ORIENTATION

1. TRUE NORTH ORIENTATION ESTABLISHED BY A SITE SURVEY PERFORMED BY TECTONIC ENGINEERING CONSULTANTS, P.C., ENTITLED, "PARTIAL TOPOGRAPHIC SURVEY", DATED 3/8/05.
2. DECLINATION OBTAINED FROM THE NATIONAL GEOPHYSICAL DATA CENTER DURING THE MONTH OF APRIL, 2005



NOTE:

1. SITE PLAN, ACCESS EASEMENT, AND LEASE AREA ESTABLISHED BY A SITE SURVEY PERFORMED BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS, P.C., ENTITLED "PARTIAL TOPOGRAPHIC SURVEY", LAST REVISED 4/10/07.

1/C-5A ACCESS DRIVE ALIGNMENT PLAN

SCALE: 1" = 50'

- CONTRACTOR SHALL NOTIFY UNDERGROUND FACILITIES PROTECTIVE ORGANIZATION AT TELEPHONE NUMBER 1-800-962-7962 PRIOR TO EXCAVATION AT SITE
- CONTRACTOR TO LOCATE AND VERIFY ALL EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION
- ALL EXCAVATION WORK WITHIN 36" OF EITHER SIDE OF UNDERGROUND UTILITIES MUST BE DONE BY HAND EXCAVATION METHODS

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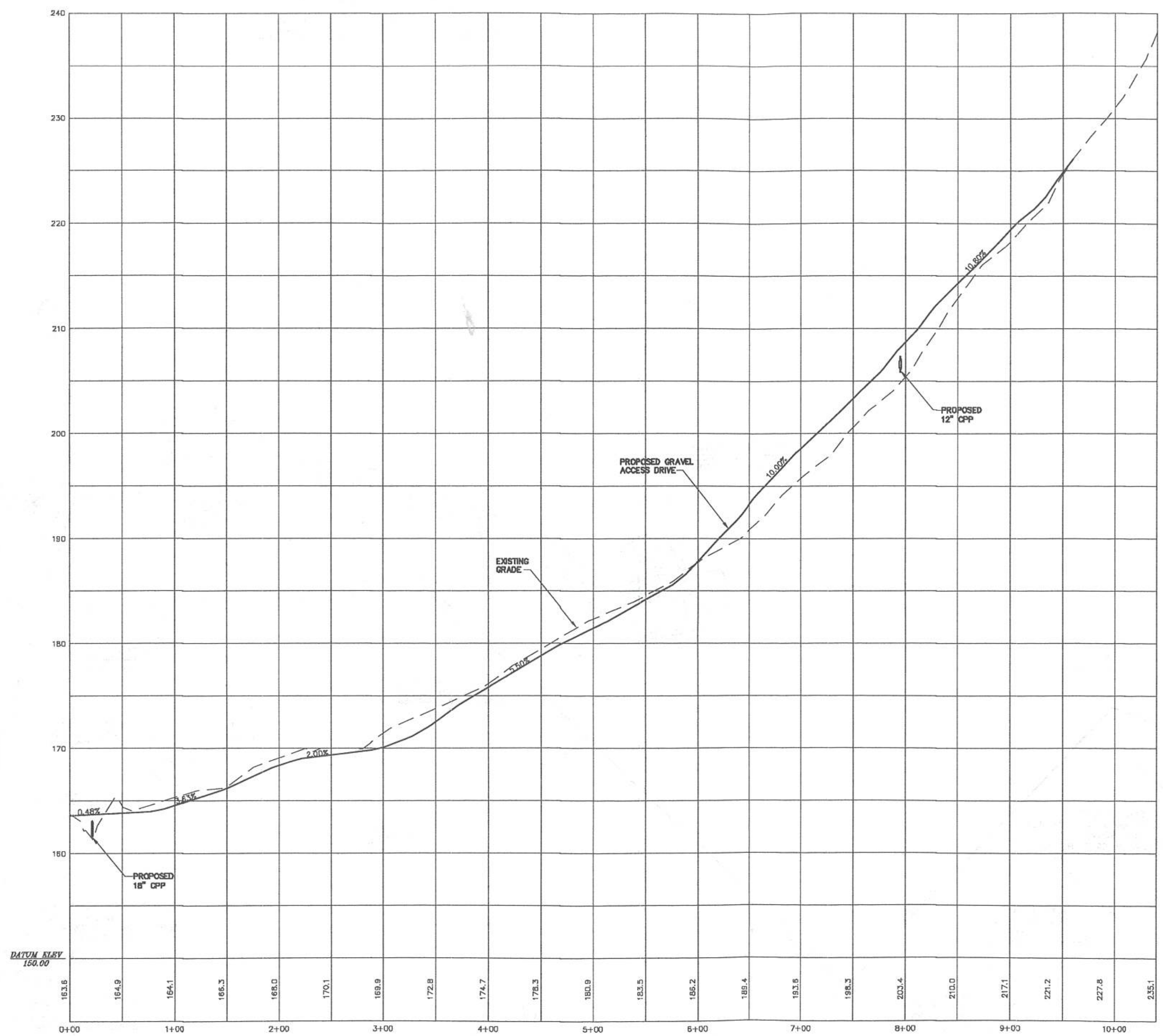
SHEET TITLE

ACCESS DRIVE
ALIGNMENT PLAN

SHEET NUMBER

C-5A



ACCESS DRIVE PROFILE (1 / C-5B)

SCALE: 1" = 80' HORIZ.
1" = 8' VERT.

- CONTRACTOR SHALL NOTIFY UNDERGROUND FACILITIES PROTECTIVE ORGANIZATION AT TELEPHONE NUMBER 1-800-962-7962 PRIOR TO EXCAVATION AT SITE
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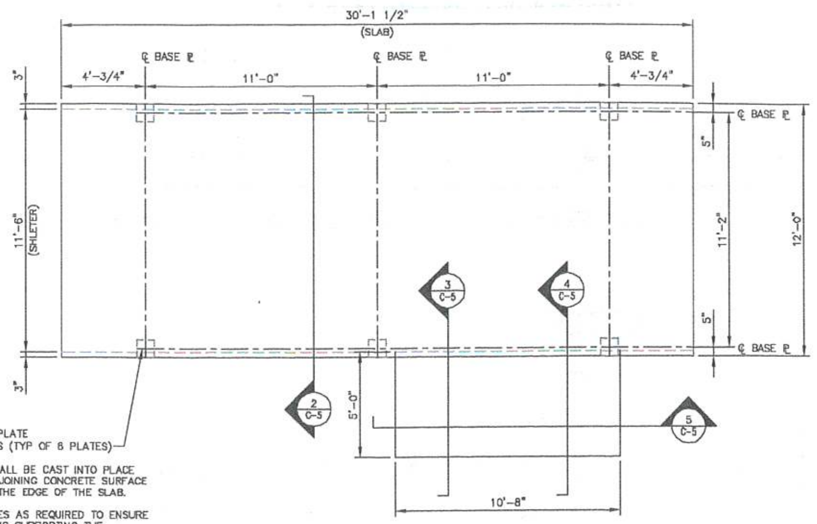
ACCESS
DRIVE
PROFILE

SHEET NUMBER

C-5B



10"X10"X1" STEEL BEARING PLATE WITH (2) 3/4"øx6" ANCHORS (TYP OF 6 PLATES)

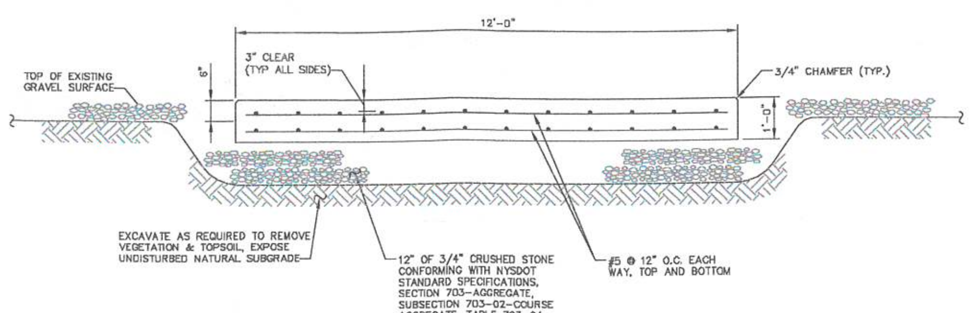
1. BEARING PLATES SHALL BE CAST INTO PLACE FLUSH WITH THE ADJOINING CONCRETE SURFACE AND ALIGNED WITH THE EDGE OF THE SLAB.
2. SHIM BEARING PLATES AS REQUIRED TO ENSURE CONTACT WITH BEAMS SUPPORTING THE EQUIPMENT SHELTER. SAID SHIMMING SHALL NOT PREVENT BEAMS FROM BEARING UNIFORMLY ON THE CONCRETE ALONG THEIR ENTIRE LENGTH.
3. WELD BEAMS TO THE (6) BEARING PLATES TO PROVIDE FOR CONNECTION OF EQUIPMENT SHELTER TO FOUNDATION.

NOTES:

1. REFER TO EQUIPMENT SHELTER DRAWINGS (BY OTHERS) FOR ADDITIONAL INFORMATION.
2. VERIFY ALL DIMENSIONS WITH SHELTER MANUFACTURER'S DRAWINGS BEFORE CONSTRUCTION.
3. REFER TO 5/C-5 FOR PAD LOCATION.

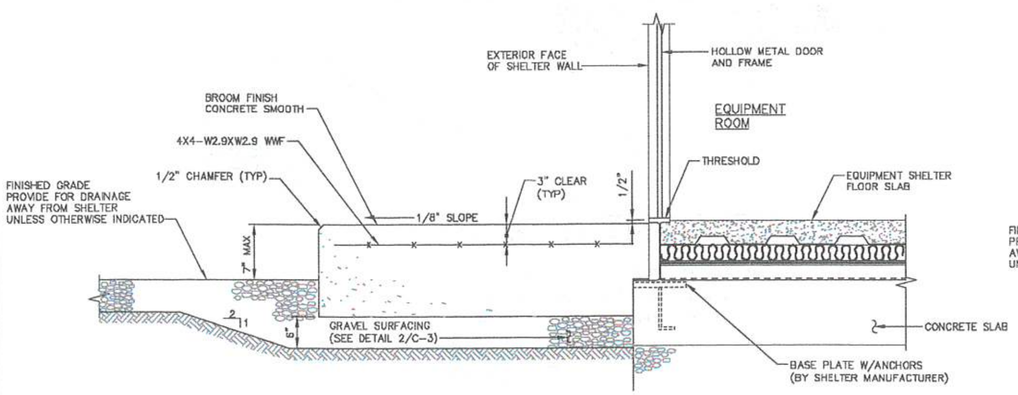
1 / C-5 FOUNDATION PLAN

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



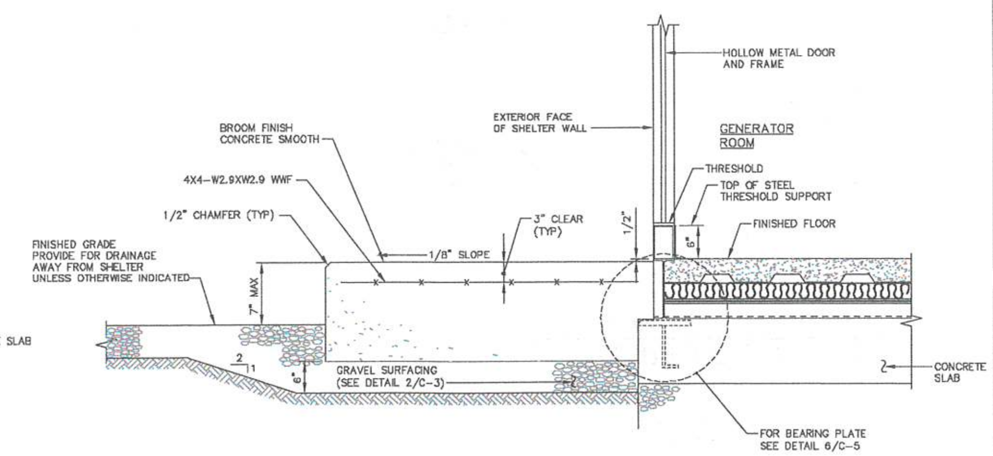
2 / C-5 SECTION

SCALE: 1/2" = 1'-0"



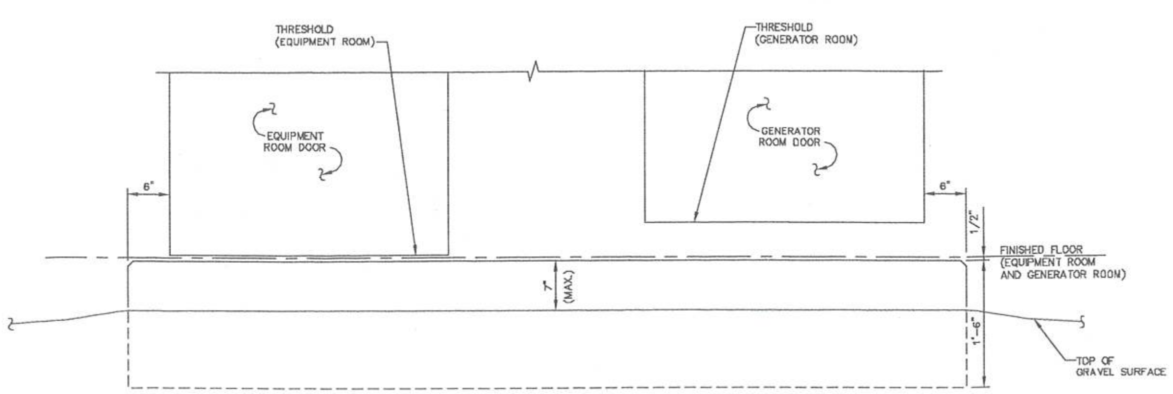
3 / C-5 CONCRETE PAD DETAIL (EQUIPMENT ROOM)

SCALE: 3/4" = 1'-0"



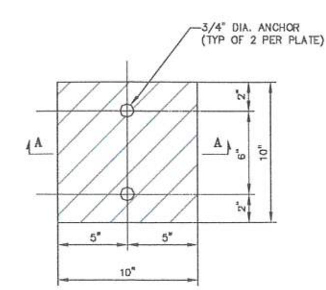
4 / C-5 CONCRETE PAD DETAIL (GENERATOR ROOM)

SCALE: 3/4" = 1'-0"



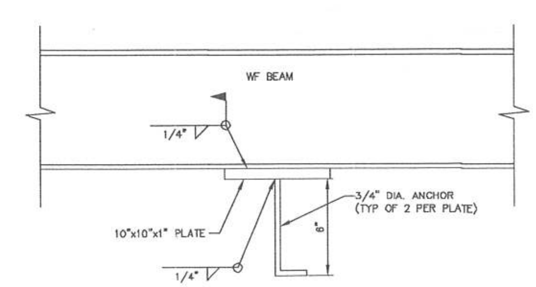
5 / C-5 SECTION

SCALE: 1" = 1'-0"



6 / C-5 BEARING PLATE DETAIL

SCALE: NTS



SECTION A–A

CONCRETE NOTES

1. DESIGN AND CONSTRUCTION SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" ACI 318.
2. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 3000 PSI.
3. SUBMIT CONCRETE MIX DESIGN AND REINFORCING STEEL SHOP DRAWINGS FOR REVIEW, AS DIRECTED BY THE CONSTRUCTION MANAGER, NOT LESS THAN 7 DAYS PRIOR TO START OF CONSTRUCTION.
4. CONCRETE WORK AND MATERIALS SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 301.
5. CEMENT SHALL BE PORTLAND CEMENT CONFORMING TO ASTM C150 TYPE II. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615-GR 60, "DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT."
6. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185, "WELDED STEEL WIRE FABRIC FOR CONCRETE REINFORCEMENT".
7. JOINT FILLER SHALL BE PREFORMED RESILIENT BITUMINOUS EXPANSION JOINT FILLER CONFORMING TO ASTM D1751.
8. CONCRETE SLUMP SHALL NOT EXCEED 5 INCHES UNLESS SPECIFICALLY AUTHORIZED BY THE ENGINEER. SLUMP SHALL BE DETERMINED IN ACCORDANCE WITH ASTM C143.
9. READY MIX CONCRETE SHALL COMPLY WITH ACI-304 AND ASTM C-94 WITH A MAXIMUM WATER CEMENT RATIO OF 0.50. TIME BETWEEN INTRODUCTION OF WATER AND THE PLACEMENT OF CONCRETE SHALL NOT EXCEED 1- 1/2 HOURS. TESTING OF CONCRETE SHALL BE PERFORMED UNDER THE DIRECTION OF THE CONSTRUCTION MANAGER. CONTRACTOR SHALL HAVE 6 CYLINDERS PREPARED FOR EVERY 50 CY OF CONCRETE CAST OR FRACTION THEREOF. CYLINDERS SHALL BE TESTED AT A CERTIFIED TESTING FACILITY W/ 2 @ 3 DAYS, 2 @ 7 DAYS, AND 2 @ 28 DAYS. SUBMIT TEST RESULTS TO THE CONSTRUCTION MANAGER.
10. PROVIDE AIR ENTRAINMENT IN EXTERIOR EXPOSED CONCRETE TO OBTAIN TOTAL AIR CONTENT OF 5% ± 1% IN ACCORDANCE WITH ACI 301.
11. CONCRETE AGGREGATES SHALL BE NORMAL WEIGHT, CONFORMING TO ASTM C33. MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE 1".
12. PROVIDE A 3/4" CHAMFER AT ALL EXPOSED EDGES OF CONCRETE, UNLESS OTHERWISE NOTED. PROVIDE NOT LESS THAN 48 HOURS NOTICE TO THE CLIENT FIELD REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE.
13. WHEN AMBIENT TEMPERATURE IS BELOW 50 DEGREES F, CONCRETE MATERIALS AND PLACEMENT SHALL CONFORM TO THE RECOMMENDATIONS OF ACI 306R "COLD WEATHER CONCRETING".
14. WHEN AMBIENT TEMPERATURE IS ABOVE 90 DEGREES F, CONCRETE MATERIALS AND PLACEMENT SHALL CONFORM TO THE RECOMMENDATIONS OF ACI 305R "HOT WEATHER CONCRETING".
15. CONCRETE COVER FOR REINFORCING SHALL BE 3 INCHES FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH. AT ALL OTHER CONCRETE SURFACES, MINIMUM COVER SHALL BE 2 INCHES FOR #6 AND LARGER BARS, AND 1 1/2 INCHES FOR #5 AND SMALLER BARS.
16. WELDING OF REINFORCING STEEL IS SPECIFICALLY PROHIBITED.
17. ALL REINFORCING, ANCHOR BOLTS, EMBEDDED STEEL, INSERTS AND ALL OTHER EMBEDDED ITEMS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.
18. LAP SPLICES FOR REINFORCING STEEL SHALL BE 40 BAR DIAMETERS.
19. REMOVE ALL LOOSE MATERIAL AND DEBRIS FROM COMPACTED SUBGRADE SURFACE PRIOR TO PLACING CONCRETE.
20. THE TOP OF ALL FOUNDATIONS SHALL BE SQUARE AND LEVEL WITH A SMOOTH FLOAT FINISH. ALL DIMENSIONS SHALL BE WITHIN ± 1/8 INCH.
21. EXTERIOR WALKING SURFACES SHALL RECEIVE A BROOM FINISH.
22. THROUGHOUT CONSTRUCTION, THE CONCRETE WORK SHALL BE ADEQUATELY PROTECTED AGAINST DAMAGE DUE TO EXCESSIVE LOADING, CONSTRUCTION EQUIPMENT, MATERIALS OR METHODS, ICE, RAIN, SNOW, EXCESSIVE HEAT, AND FREEZING.
23. CONTRACTOR SHALL TAKE SPECIAL MEASURES TO PREVENT DRYING OUT OF CONCRETE FOLLOWING ITS PLACEMENT; ESPECIALLY DURING THE INITIAL 24 HOURS FOLLOWING PLACEMENT. ALL SURFACES SHALL BE MOIST CURED OR PROTECTED USING A MEMBRANE CURING AGENT APPLIED AS SOON AS FORMS ARE REMOVED. IF MEMBRANE CURING AGENT IS USED, EXERCISE CARE NOT TO DAMAGE SURFACE.
24. CONTRACTOR SHALL BRING TO THE IMMEDIATE ATTENTION OF THE CONSTRUCTION MANAGER ANY DEFECTS OR ERRORS IN THE WORK, PRIOR TO MAKING REPAIRS. CONTRACTOR SHALL OBTAIN PERMISSION FROM THE CONSTRUCTION MANAGER TO PATCH OR REPAIR DEFECTS OTHER THAN MINOR HONEYCOMBING.
25. CONCRETE ANCHORS SHALL BE HEADED STEEL STUDS MEETING THE REQUIREMENTS OF ASTM A108 "STEEL BARS, CARBON, COLD FINISHED, STANDARD QUALITY".
26. GROUT SHALL BE NON METALLIC, NON SHRINK PREPACKAGED GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS. GROUT SHALL BE FIVE STAR GROUT AS MANUFACTURED BY US GROUT CORP., FAIRFIELD, CT OR APPROVED EQUAL.

FOUNDATION DESIGN CRITERIA

1. SHELTER FOUNDATION DESIGN IS BASED ON INFORMATION PROVIDED BY KULLMAN INDUSTRIES INC. AND VERIZON WIRELESS WITH AN ASSUMED TOTAL WEIGHT OF 40,350 LBS, A MAXIMUM FLAT ROOF SNOW LOAD OF 90 PSF, AND A MAXIMUM FLOOR LIVE LOAD OF 150 PSF.
2. SHELTER FOUNDATION DESIGN IS BASED UPON AN ASSUMED ALLOWABLE SOIL BEARING CAPACITY OF 1,000 PSF.
3. DESIGN AND CONSTRUCTION OF THE EQUIPMENT SHELTER SHALL BE IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE, LATEST EDITION, AND THE NEW YORK STATE UNIFORM FIRE PREVENTION AND ITS REFERENCED STANDARDS.

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DESIGN APPROVAL

PRELIMARY/CONSTRUCTION

RF ENG.________ DATE:______
EQPT. ENG.________ DATE:______
OPERATIONS________ DATE:______
CONST. MGR.________ DATE:______
NETWORK ENG.________ DATE:______
REAL ESTATE________ DATE:______

WORK ORDER NUMBER	DRAWN BY
2248.66514	RDD

NO.	DATE	ISSUE
0	5/3/07	FOR CONSTRUCTION
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2	9/4/07	FOR BP APPLICATION
3	1/15/08	AS BUILTS

RELEASED BY	DATE

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

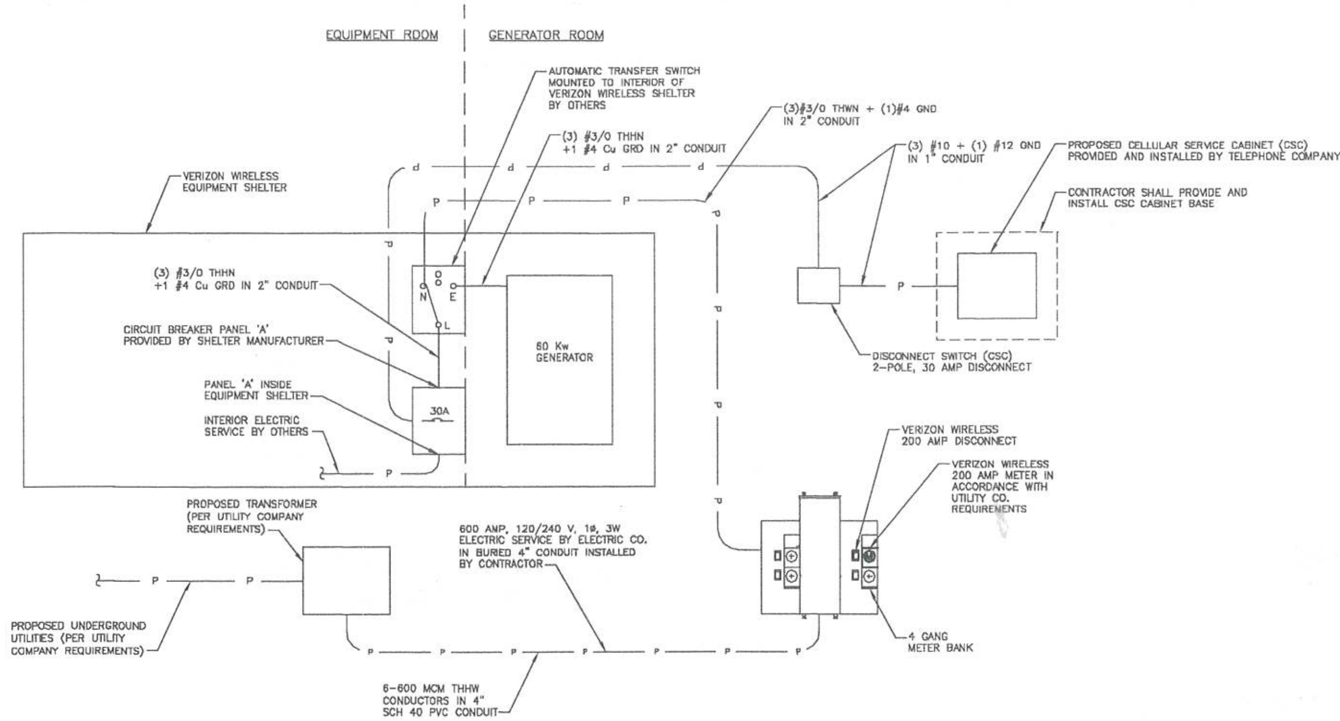
2004066514
NEW HACKENSACK
AIRPORT DRIVE
TOWN OF WAPPINGER
DUTCHESS COUNTY
NEW YORK

SHEET TITLE

FOUNDATION PLAN,
SECTIONS & NOTES

SHEET NUMBER

C-6

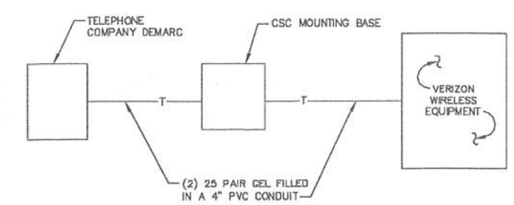


NOTES:

1. RGS CONDUIT SHALL BE USED ABOVE GRADE
2. SCH 40 PVC CONDUIT SHALL BE USED BELOW GRADE
3. SCH 80 PVC CONDUIT SHALL BE USED UNDER ROADWAY

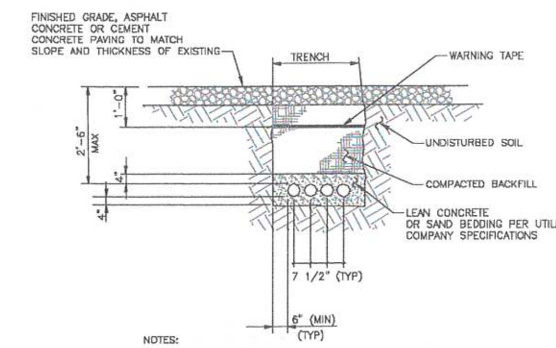
1 / E-1 POWER LINE DIAGRAM

SCALE: NONE



2 / E-1 TELEPHONE LINE DIAGRAM

SCALE: NONE

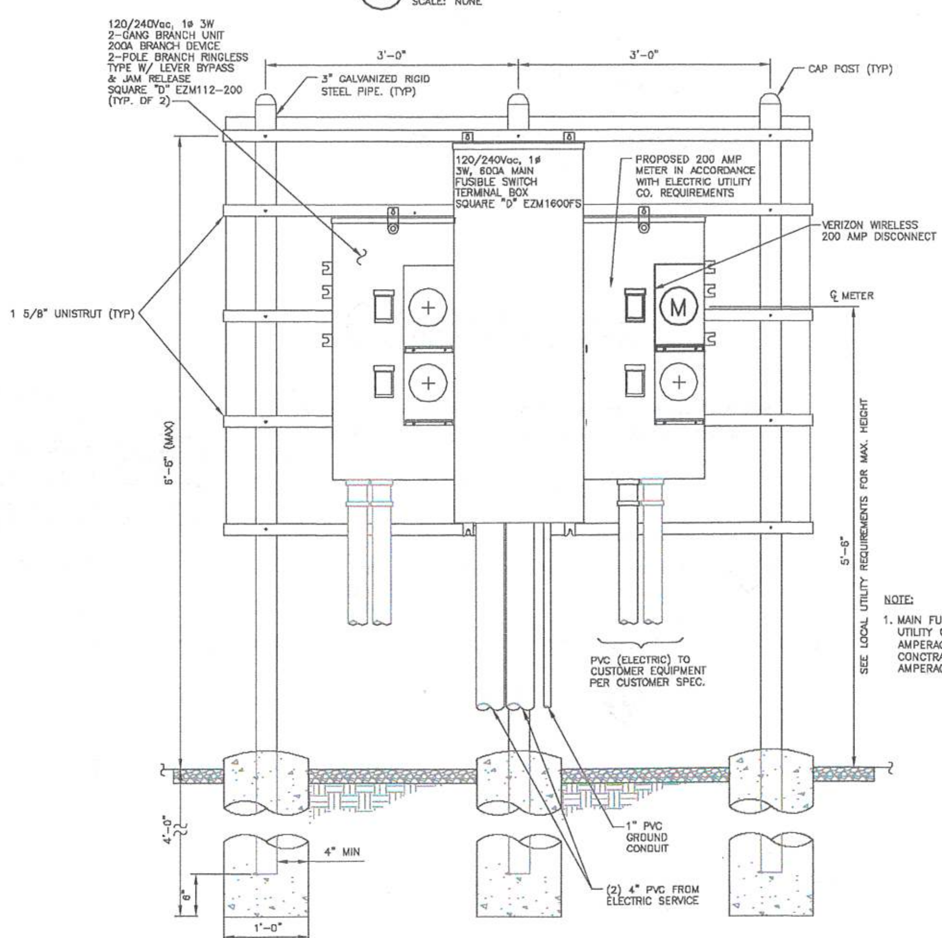


NOTES:

1. BACKFILL SHALL BE CLEAN FILL WITHOUT STONES AND SHALL BE THOROUGHLY COMPACTED IN 12" LAYERS BY TAMPING OR APPROVED EQUAL METHOD. NO BELLYING OF TRENCH SHALL BE ALLOWED.
2. SCH 80 PVC CONDUIT SHALL BE USED UNDER ROADWAY

3 / E-1 ELECTRIC/TELEPHONE TRENCH DETAIL

SCALE: NONE

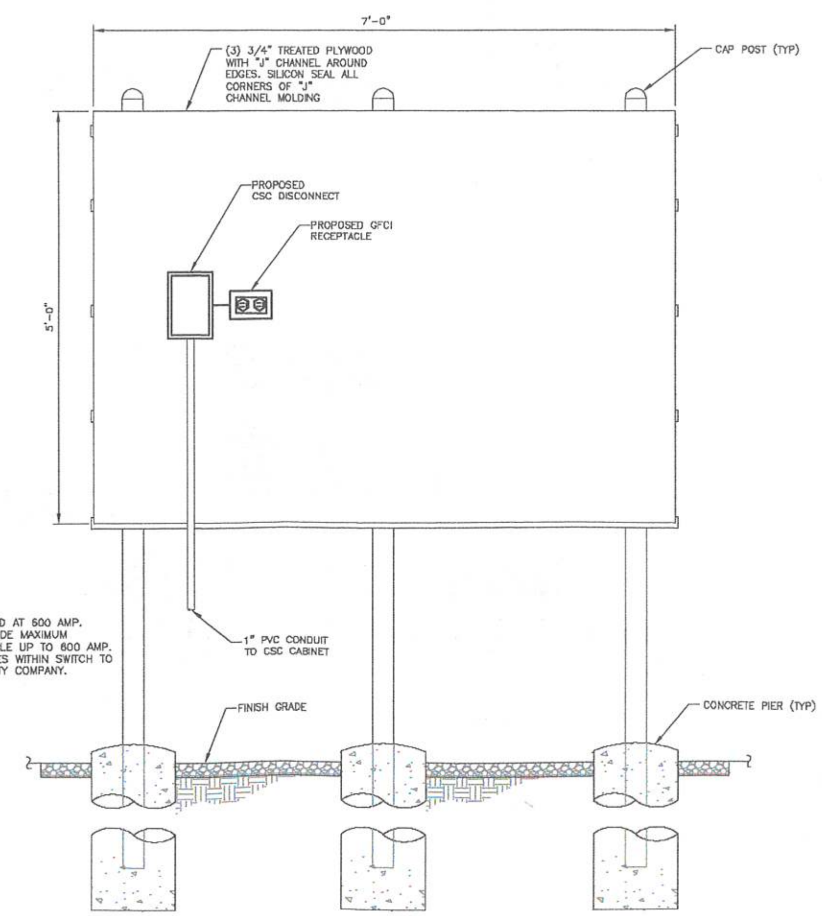


NOTE:

1. MAIN FUSIBLE SWITCH IS RATED AT 600 AMP. UTILITY COMPANY SHALL PROVIDE MAXIMUM AMPERAGE AVAILABLE/ALLOWABLE UP TO 600 AMP. CONCTRACTOR TO MATCH FUSES WITHIN SWITCH TO AMPERAGE PROVIDED BY UTILITY COMPANY.

4 / E-1 ELECTRICAL BACKBOARD

SCALE: NONE



5 / E-1 TELEPHONE BACKBOARD

SCALE: NONE

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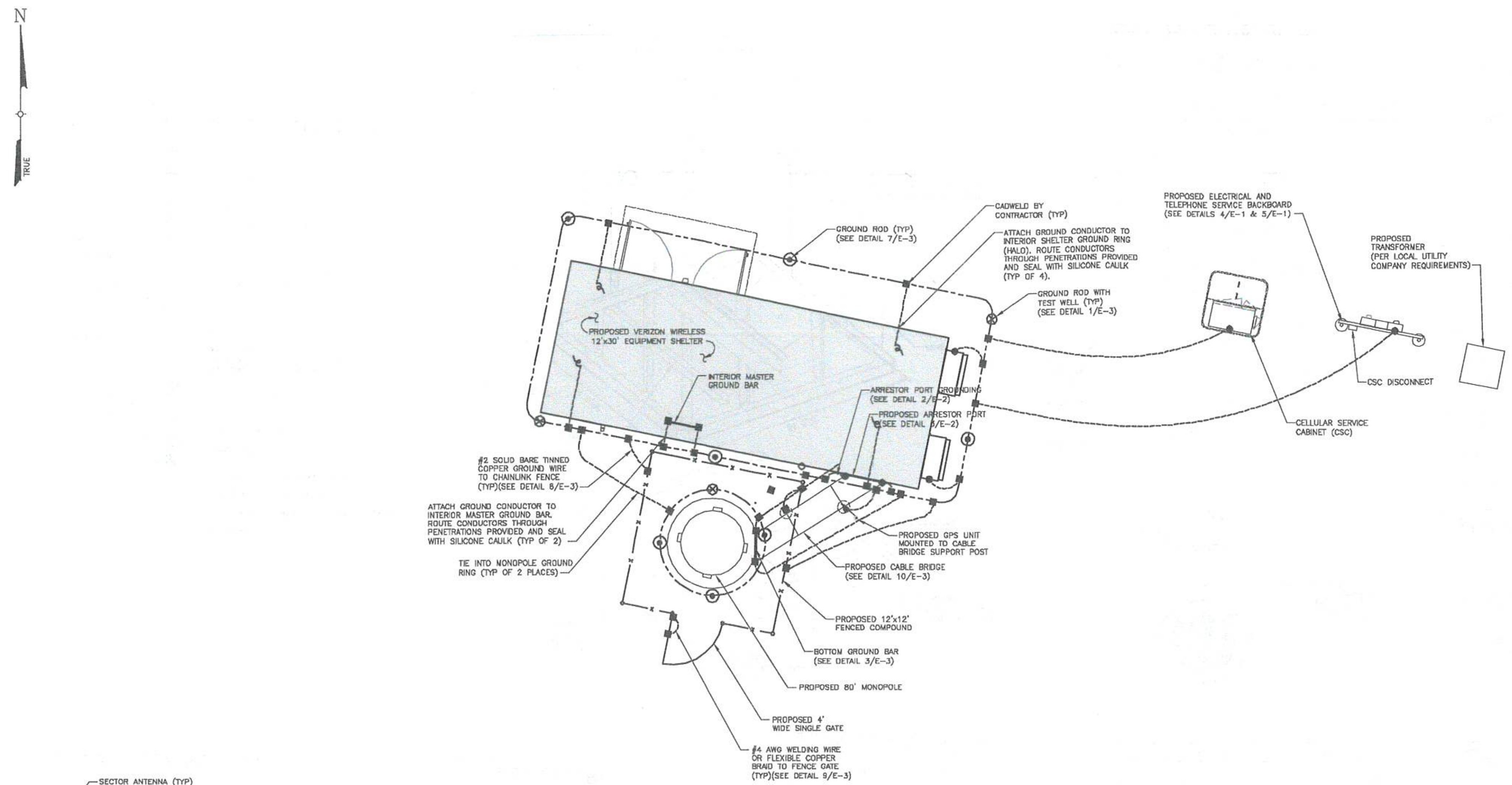
AIRPORT DRIVE
TOWN OF WAPPINGER
DUTCHESS COUNTY
NEW YORK

SHEET TITLE

ELECTRICAL DIAGRAMS & DETAILS

SHEET NUMBER

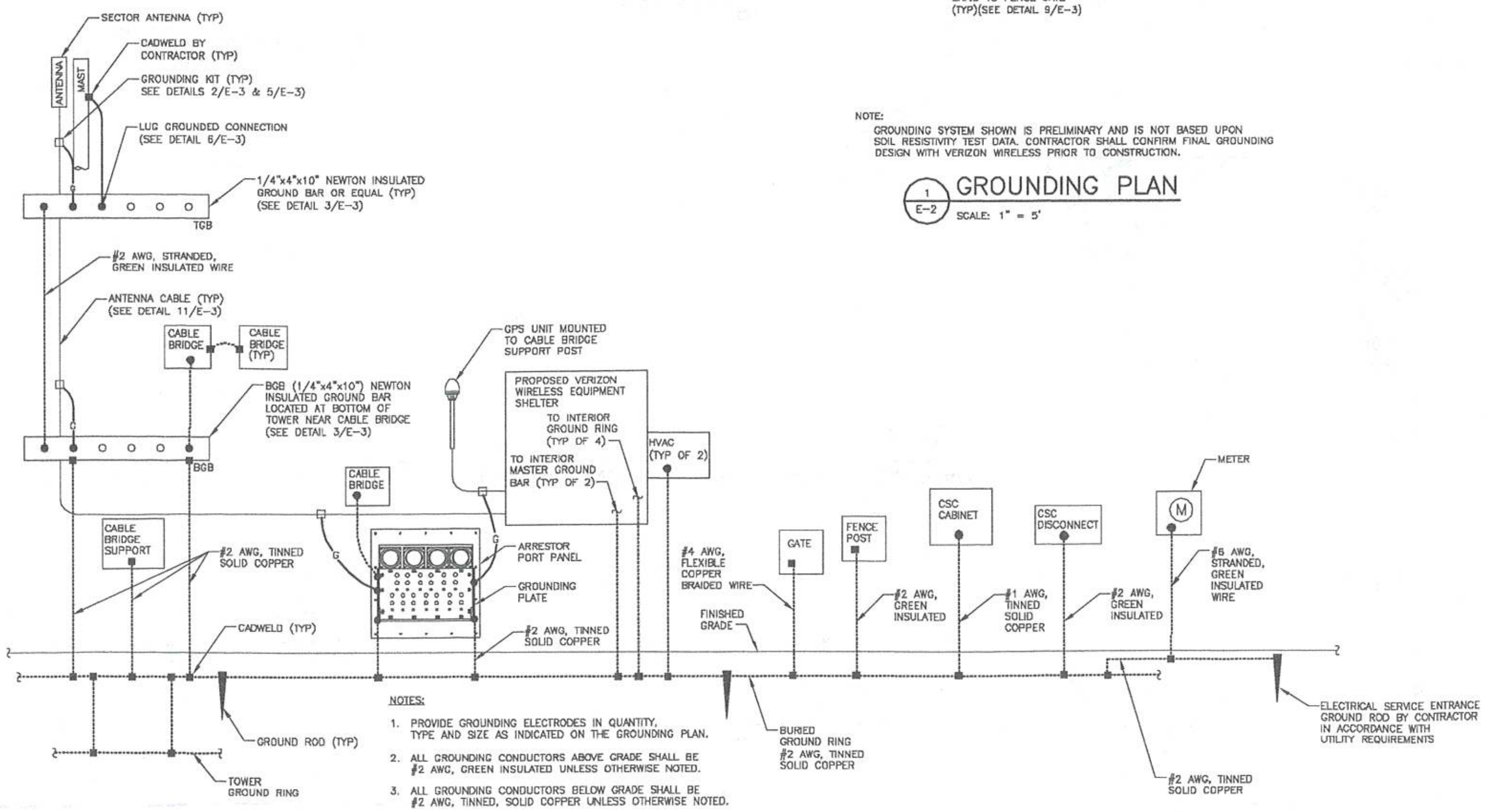
E-1



NOTE:
GROUNDING SYSTEM SHOWN IS PRELIMINARY AND IS NOT BASED UPON SOIL RESISTIVITY TEST DATA. CONTRACTOR SHALL CONFIRM FINAL GROUNDING DESIGN WITH VERIZON WIRELESS PRIOR TO CONSTRUCTION.

1/E-2 GROUNDING PLAN

SCALE: 1" = 5'

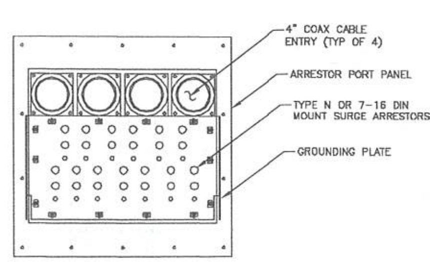


NOTES:

1. PROVIDE GROUNDING ELECTRODES IN QUANTITY, TYPE AND SIZE AS INDICATED ON THE GROUNDING PLAN.
2. ALL GROUNDING CONDUCTORS ABOVE GRADE SHALL BE #2 AWG, GREEN INSULATED UNLESS OTHERWISE NOTED.
3. ALL GROUNDING CONDUCTORS BELOW GRADE SHALL BE #2 AWG, TINNED, SOLID COPPER UNLESS OTHERWISE NOTED.

2/E-2 GROUNDING RISER DIAGRAM

SCALE: NONE



3/E-2 ARRESTOR PORT DETAIL

SCALE: NONE

GROUNDING NOTES

GROUND TESTING AFTER CONSTRUCTION

1. AFTER COMPLETION OF CONSTRUCTION OF THE CELL SITE GROUND SYSTEM, A QUALIFIED INDEPENDENT ELECTRICAL TESTING FIRM WITH A QUALIFIED TECHNICIAN USING APPROVED TEST EQUIPMENT, SHALL TEST THE SITE TO ASCERTAIN THE RESISTANCE TO EARTH AS SPECIFIED IN THE VERIZON WIRELESS STANDARDS & NATIONAL ELECTRICAL CODE.
2. TESTING METHOD TO BE THREE (3) POINT FALL OF POTENTIAL GROUND RESISTANCE TESTING, WITH A DESIRED RESULT LIMIT OF FIVE (5) OHMS OR LESS.

   NOTE: GROUNDING TEST TO BE TAKEN BEFORE A/C POWER NEUTRAL / GROUND BOND IS CONNECTED.
3. A GROUNDING RESISTANCE TEST REPORT SHALL BE PREPARED UPON COMPLETION OF THE TESTING. THE TEST REPORT SHALL SHOW THE RESISTANCE IN OHMS AT 62% SPACING AND WITH AUXILIARY POTENTIAL ELECTRODES READINGS AT 10% INTERVALS WITH A TOTAL DISTANCE OF AT LEAST 250 FT. OR UNTIL THE AVERAGE RESISTANCE STARTS INCREASING. TESTING SHOULD BE COMPLETED IN A MINIMUM OF TWO (2) DIFFERENT DIRECTIONS AT 90 DEGREES APART.
4. TEST REPORT SHALL CONTAIN 10 TO 15 PHOTOGRAPHS TAKEN DURING CONSTRUCTION TO PROVIDE PROOF THAT THE ENTIRE EXTERNAL GROUND RING SYSTEM WAS COMPLETE BEFORE BACKFILLING. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION SUPERVISOR NO LESS THAN 48 HOURS IN ADVANCE OF BACKFILL.
5. REPORT: CONTRACTOR SHALL PREPARE THREE (3) TEST REPORTS, CERTIFIED BY THE TESTING ORGANIZATION. INCLUDE OBSERVATIONS OF WEATHER, SOIL CONDITIONS, AND OTHER PHENOMENA THAT MAY AFFECT TEST RESULTS. DESCRIBE MEASURES TO IMPROVE TEST RESULTS. REPORTS SHALL BE SUBMITTED TO CLIENT WITHIN ONE WEEK OF TEST COMPLETION FOR SITE.
6. WIRELESS SHELTER SHALL BE FURNISHED WITH AN INTERIOR SHELTER GROUND RING (HALO).

LEGEND

Ⓜ	METER	○○○○○	COPPER GROUND BAR
	CIRCUIT BREAKER	- - - - - -	GROUND CONDUCTOR BY CONTRACTOR
■	CADWELD TYPE CONNECTION BY CONTRACTOR	—— – – ——	GROUND RING BY CONTRACTOR
□	COAXIAL CABLE SHIELD GROUND KIT CONNECTION	⊗	GROUND ROD WITH TEST WELL
●	COMPRESSION FITTING GROUND CONNECTION	◉	GROUND ROD

ABBREVIATIONS

A	AMPERE	W	WIRE
C	CONDUIT	WP	WEATHERPROOF
GND	GROUND	ø	PHASE
KWH	KILOWATT HOUR	TGB	TOP GROUND BAR
P	POLE	MGB	MASTER GROUND BAR
SN	SOLID NEUTRAL	BGB	BOTTOM GROUND BAR
SW	SWITCH	EGB	EXISTING GROUND BAR
V	VOLT		

POWER COMPANY

CHG&E: 1-800-527-2714

- CONTRACTOR SHALL NOTIFY UNDERGROUND FACILITIES PROTECTIVE ORGANIZATION AT TELEPHONE NUMBER 1-800-962-7962 PRIOR TO EXCAVATION AT SITE
- CONTRACTOR TO LOCATE AND VERIFY ALL EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION
- ALL EXCAVATION WORK WITHIN 36" OF EITHER SIDE OF UNDERGROUND UTILITIES MUST BE DONE BY HAND EXCAVATION METHODS

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DESIGN APPROVAL

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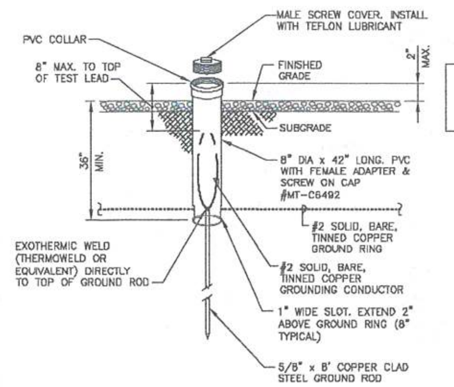
NEW HACKENSACK
AIRPORT DRIVE
TOWN OF WAPPINGER
DUTCHESS COUNTY
NEW YORK

SHEET TITLE

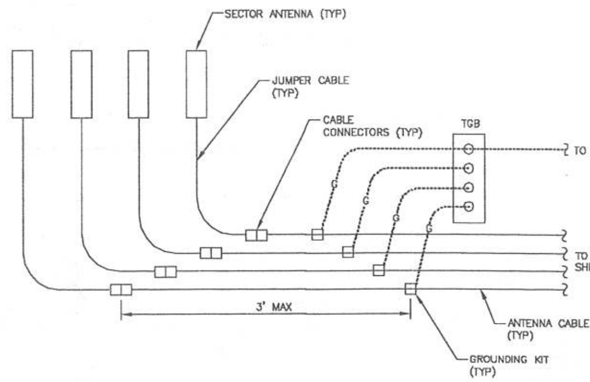
GROUNDING PLAN & NOTES

SHEET NUMBER

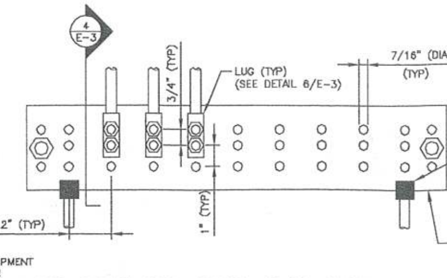
E-2



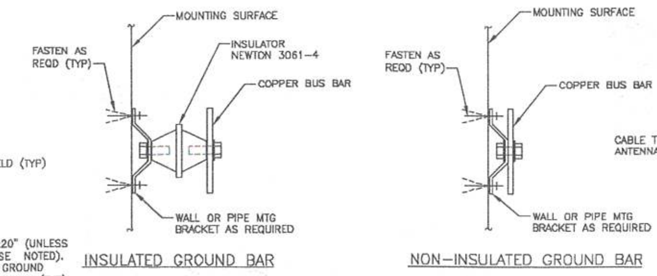
1 E-3 GROUND ROD WITH TEST WELL
SCALE: NONE



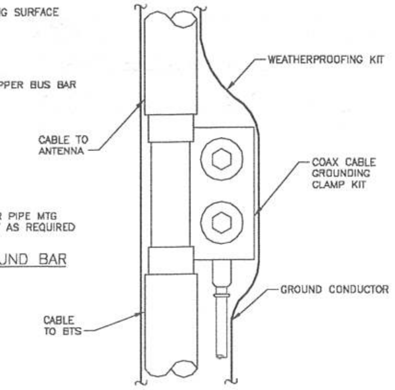
2 E-3 GROUNDING KIT INSTALLATION DIAGRAM
SCALE: NONE



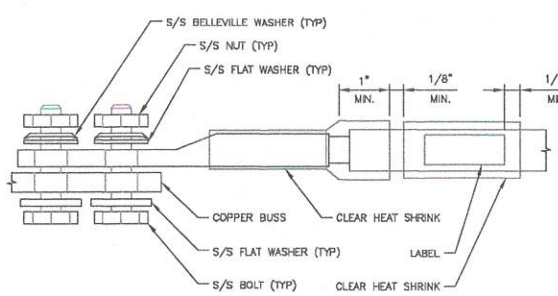
3 E-3 GROUND BUS BAR DETAIL
SCALE: 3" = 1'-0"



4 E-3 SECTION
SCALE: 3"=1'-0"



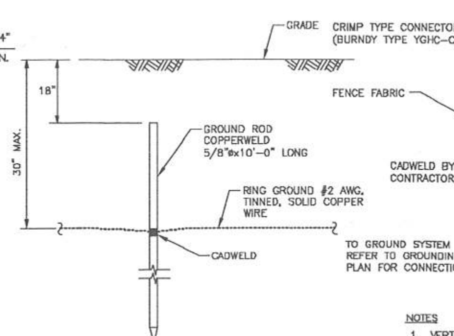
5 E-3 COAX CABLE GROUNDING DETAIL
SCALE: NONE



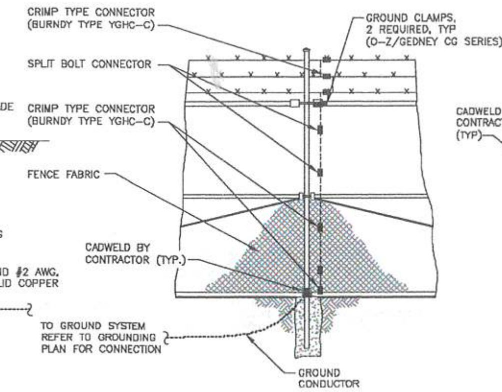
NOTES:

1. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING BELLEVILLES; COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL; COAT ALL SURFACES WITH KOPR-SHIELD.

6 E-3 LUG GROUND CONNECTION
SCALE: NONE



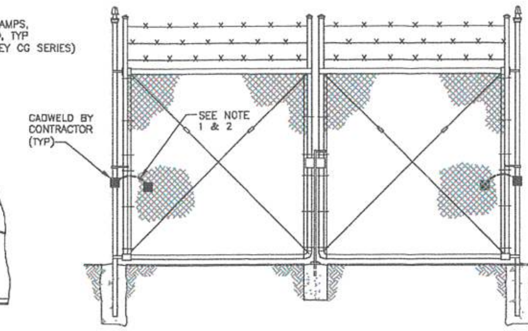
7 E-3 GROUND ROD
SCALE: 1/4" = 1'-0"



NOTES

1. VERTICAL POSTS SHALL BE BONDED TO THE GROUND SYSTEM AS SPECIFIED ON THE GROUNDING PLAN AND AT EACH GATE POST. AS A MINIMUM ONE VERTICAL POST SHALL BE BONDED TO THE GROUND RING IN EVERY 100 FOOT STRAIGHT RUN OF FENCE.

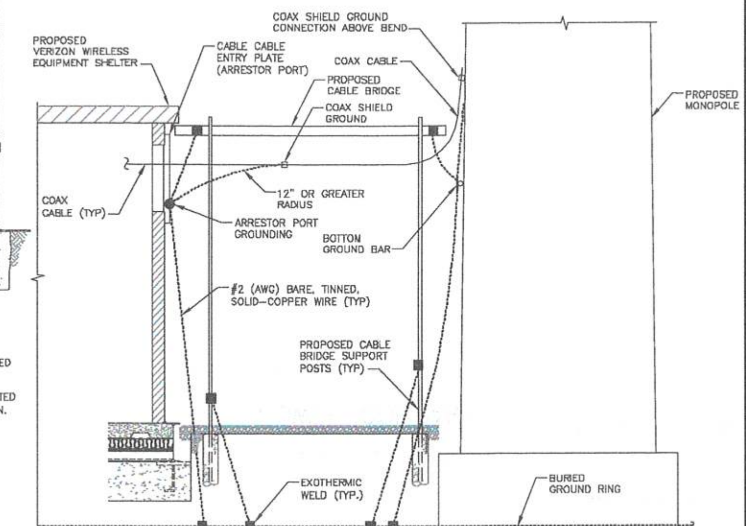
8 E-3 FENCE GROUNDING
SCALE: NONE



NOTES:

1. GATE JUMPER SHALL BE #4/0 AWG WELDING CABLE OR FLEXIBLE COPPER BRAID BURNDY TYPE B WITH SLEEVES ON EACH END DESIGNED FOR EXOTHERMIC WELDING.
2. GATE JUMPER SHALL BE INSTALLED SO THAT IT WILL NOT BE SUBJECTED TO DAMAGING STRAIN WHEN GATE IS FULLY OPEN IN EITHER DIRECTION.

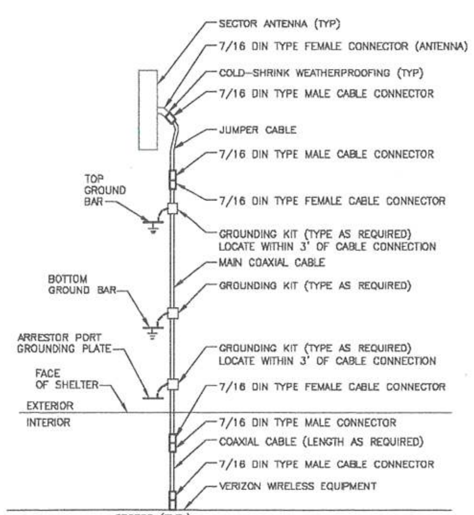
9 E-3 FENCE GATE GROUNDING
SCALE: NONE



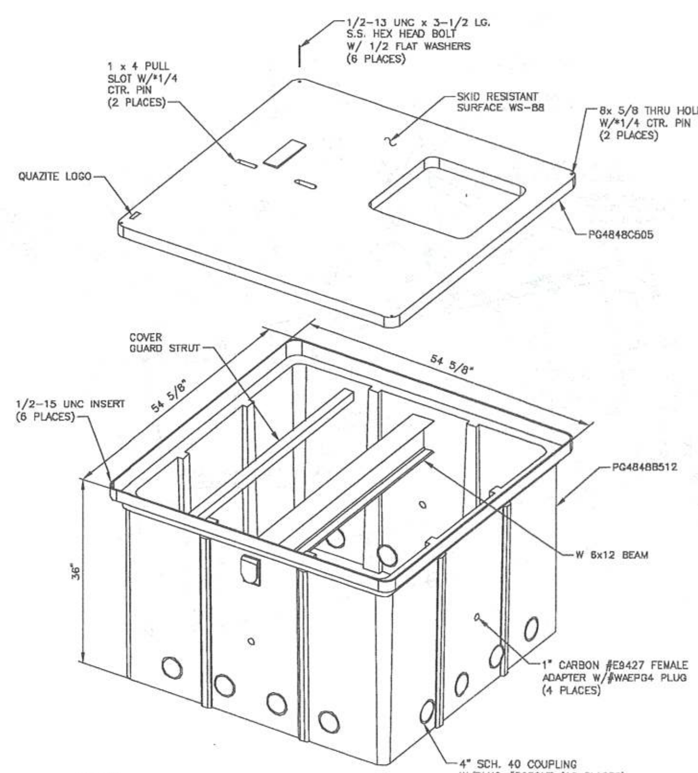
NOTE:

CABLE BRIDGE MAY BE GROUNDED TO ARRESTOR PORT GROUNDING OR BOTTOM GROUND BAR. THE SUPPORT POLES MAY BE GROUNDED TO THE BURIED GROUND RING.

10 E-3 CABLE BRIDGE GROUNDING
SCALE: NONE



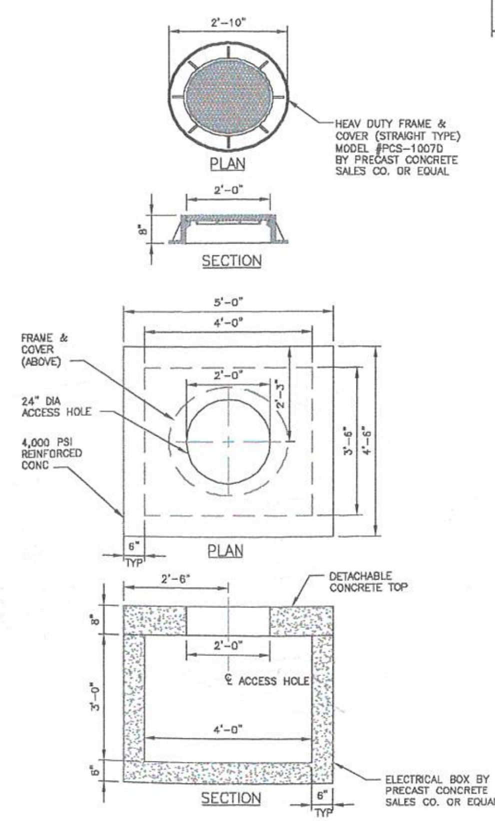
11 E-3 ANTENNA CABLE SCHEMATIC
SCALE: NONE



NOTES:

1. THIS ASSEMBLY IS RATED FOR PEDESTRIAN TRAFFIC ONLY
2. THIS ASSEMBLY WILL FIT A HUB "CFL ENHANCED" CABINET
3. PROVIDE 1#, 30A CKT. FROM EQUIPMENT SHELTER TO PAD LOCATION
4. LOCATE THIS ASSEMBLY 4' TO 6' ADJACENT TO THE METER BOARD

12 E-3 CSC MOUNTING BASE
SCALE: NONE



NOTES: 1. MANHOLE SHOULD BE DESIGNED FOR HS-20 LOADING.
2. WALL OPENINGS TO BE LOCATED BY CONTRACTOR.

13 E-3 PULL BOX DETAIL
SCALE: 1/2"= 1'-0"

STANDARD ANTENNA COLOR CODES

ENTRY PORT POSITION (LOOKING FROM THE INSIDE OF THE EQUIPMENT SHELTER)

SECTOR SITE				
ALPHA	1	2	3	4
FREQUENCY	850 TX/RX	1900 TX/RX	1900 RX	850 RX
COLOR STRIPE	1 RED	1 RED & 1 WHITE	2 RED & 1 WHITE	2 RED
TAG	ANT 1, RXO	ANT 2, RX1	ANT 3, TXO, TXS	ANT 4, TX1
BETA	5	6	7	8
FREQUENCY	850 TX/RX	1900 TX/RX	1900 RX	850 RX
COLOR STRIPE	1 BLUE	1 BLUE & 1 WHITE	2 BLUE & 1 WHITE	2 BLUE
TAG	ANT 5, RXO	ANT 6, RX1	ANT 7, TXO, TXS	ANT 8, TX1
GAMMA	9	10	11	12
FREQUENCY	850 TX/RX	1900 TX/RX	1900 RX	850 RX
COLOR STRIPE	1 GREEN	1 GREEN & 1 WHITE	2 GREEN & 1 WHITE	2 GREEN
TAG	ANT 9, RXO	ANT 10, RX1	ANT 11, TXO, TXS	ANT 12, TX1
	13	14	15	16
	OPEN	OPEN	OPEN	GPS

NOTE: VERIZON WILL COLOR CODE AND TAG THE COAX AT BOTH THE TOP OF THE TOWER AND INSIDE THE CELL SITE BUILDING AT THE CABLE ENTRY PORT. THE MARKING SYSTEM WILL BE COMPRISED OF COLOR TAPE WITH A MINIMUM WIDTH OF 3/4 INCHES, 7 MIL VINYL PLASTIC TAPE, SCOTCH 35 OR EQUIVALENT.

THE TAGGING WILL BE DONE WITH METAL "DOG" TAGS. A TAG WILL BE PLACED ON THE COAX AT THE ANTENNA AND ON THE COAX IN THE CELL SITE BUILDING. THE TAG WILL IDENTIFY THE ANTENNA NUMBER AND FUNCTION; TX, RX, ETC.

THE ENTRY PORT ASSIGNMENT SHOULD BE FOLLOWED WHERE POSSIBLE. THE STANDARD ARRESTOR PORT CONSISTS OF 13 OPENINGS FOR TYPE N OR 7-16 DIN BULKHEAD MOUNT SURGE ARRESTORS AND ONE ROW OF FOUR 4" HOLES FOR STANDARD WAVEGUIDE BOOTS. INTEGRATED UNIVERSAL GROUNDING BARS HAVE PROVISIONS FOR EIGHT TWO-HOLE GROUNDING LEADS ON EACH SIDE OF THE BULKHEAD GROUNDING PLATE.

verizon wireless

175 CALKINS ROAD
ROCHESTER, NEW YORK 14623

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DESIGN APPROVAL

PRELIMINARY/CONSTRUCTION

RF ENG.	DATE:
EQPT. ENG.	DATE:
OPERATIONS	DATE:
CONST. MGR.	DATE:
NETWORK ENG.	DATE:
REAL ESTATE	DATE:

WORK ORDER NUMBER	DRAWN BY
2248.66514	RDD

NO.	DATE	ISSUE
0	5/3/07	FOR CONSTRUCTION
1	8/8/07	REV PER ZONING
2	9/4/07	FOR BP APPLICATION
3	1/15/08	AS BUILTS

RELEASED BY	DATE

UNAUTHORIZED ALTERATION OR ADDITIONS TO A PLAN BEARING THE SEAL OF A LICENSED ENGINEER OR LAND SURVEYOR IS A VIOLATION OF SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

COPIES OF THIS DOCUMENT WITHOUT A FACSIMILE OF THE SIGNATURE AND AN ORIGINAL EMBOSSED SEAL OR ORIGINAL STAMP IN BLUE OR RED INK OF THE PROFESSIONAL ENGINEER OR LAND SURVEYOR SHALL NOT BE CONSIDERED VALID COPIES.

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

2004066514
NEW HACKENSACK
AIRPORT DRIVE
TOWN OF WAPPINGER
DUTCHESS COUNTY
NEW YORK

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

E-3

PART 1 – GENERAL

1.1 VERIFICATION
A. CONTRACTOR SHALL PERFORM ALL VERIFICATION, OBSERVATION, TESTS, AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ENGINEER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.

1.2 COMPLETE SYSTEMS
A. GENERAL:
FURNISH AND INSTALL ALL MATERIALS AS REQUIRED FOR COMPLETE SYSTEMS, INCLUDING ALL PARTS OBVIOUSLY OR REASONABLY INCIDENTAL TO A COMPLETE INSTALLATION, WHETHER SPECIFICALLY INDICATED OR NOT. ALL SYSTEMS SHALL BE COMPLETELY ASSEMBLED, TESTED, ADJUSTED AND DEMONSTRATED TO BE READY FOR OPERATION PRIOR TO OWNER'S ACCEPTANCE.

B. DRAWINGS, PLANS AND DETAILS ARE DIAGRAMMATIC AND DO NOT SHOW ALL INTERFERENCES AND CONDITIONS VISIBLE AND/OR HIDDEN THAT MAY EXIST. THE CONTRACTOR MUST VISIT THE JOB SITE TO BECOME FAMILIAR WITH CONDITIONS AND ASSUME RESPONSIBILITY FOR CONDITIONS THEREOF, BEFORE BIDDING AND DURING THE CONDUCT OF THE WORK.

1.3 CODES AND REGULATIONS
A. GENERAL:
COMPLY WITH THE NATIONAL ELECTRIC CODE (NEC) AND ALL GOVERNING FEDERAL, STATE, AND LOCAL LAWS, ORDINANCES, CODES, RULES, AND REGULATIONS. WHERE THE CONTRACT DOCUMENTS EXCEED THESE REQUIREMENTS, THE CONTRACT DOCUMENTS SHALL GOVERN. IN NO CASE SHALL WORK BE INSTALLED CONTRARY TO OR BELOW MINIMUM LEGAL STANDARDS.

B. UTILITIES:
COMPLY WITH ALL APPLICABLE RULES, RESTRICTIONS, AND REQUIREMENTS OF THE UTILITY COMPANIES SERVING THE PROJECT SITE/FACILITIES.

C. NON-COMPLIANCE:
SHOULD ANY WORK BE PERFORMED WHICH IS FOUND NOT TO COMPLY WITH ANY OF THE ABOVE CODES AND REGULATIONS, PROVIDE ALL WORK AND PAY ALL COSTS NECESSARY TO CORRECT THE DEFICIENCIES.

D. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND ARRANGE FOR ALL REQUIRED INSPECTIONS IN ACCORDANCE WITH STATE AND LOCAL GOVERNING AUTHORITIES.

1.4 QUALITY ASSURANCE
A. INCIDENTAL WORK:
PAINTING, PATCHING, WELDING, CARPENTRY, MECHANICAL WORK AND THE LIKE WORK SHALL BE PERFORMED BY CRAFTSMEN SKILLED IN THE APPROPRIATE TRADE.

B. WARRANTIES:

1. GENERAL:
CONTRACTOR SHALL PROVIDE WARRANTIES FOR ALL WORK AS STATED IN THE CONTRACT.

2. ROOF WARRANTIES:
ALL WORK AFFECTING THE INTEGRITY OF THE ROOF SHALL BE COMPLETED IN ACCORDANCE WITH THE ROOF MANUFACTURER'S INSTRUCTIONS SO AS TO MAINTAIN THE INTEGRITY AND ALL WARRANTIES OF THE ROOF. CONTRACTOR IS RESPONSIBLE TO IDENTIFY PRE-EXISTING ROOF INTEGRITY PROBLEMS PRIOR TO THE START OF WORK.

C. SUPPLY TWO (2) COPIES OF THE WARRANTIES COUNTERSIGNED AND GUARANTEED BY THE CONTRACTOR STATING THAT IMPERFECT SYSTEM OPERATION AND ALL DEFECTS IN LABOR AND MATERIALS OF WORK WILL BE REPAIRED WITHOUT COST TO THE OWNER FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION, AND STATING THAT ALL EQUIPMENT HAS BEEN FULLY SERVICED AND LEFT IN PROPER OPERATING CONDITION. ALSO GUARANTEE THAT ANY ADDITIONAL SERVICING REQUIRED WILL BE PROVIDED WITHOUT COST DURING THE GUARANTEE PERIOD.

1.5 INSPECTIONS
A. GENERAL:
DURING AND UPON COMPLETION OF THE WORK, ARRANGE AND PAY ALL ASSOCIATED COSTS FOR INSPECTIONS OF ALL ELECTRICAL WORK INSTALLED UNDER THIS CONTRACT, IN ACCORDANCE WITH THE CONDITIONS OF THE CONTRACT.

B. INSPECTIONS REQUIRED:
AS PER THE LAWS AND REGULATIONS OF THE LOCAL AND/OR STATE AGENCIES HAVING JURISDICTION AT THE PROJECT SITE.

C. INSPECTION AGENCY:
APPROVED BY THE LOCAL AND/OR STATE AGENCIES HAVING JURISDICTION AT THE PROJECT SITE.

D. CERTIFICATES:
SUBMIT ALL REQUIRED INSPECTION CERTIFICATES.

1.6 DEFINITIONS
A. THE TERM "INDICATED" SHALL MEAN "AS SHOWN ON THE CONTRACT DOCUMENTS, SPECIFICATIONS, DRAWINGS AND RELATED ATTACHMENT(S)".

B. THE TERM "PROVIDE" SHALL MEAN "TO FURNISH, INSTALL AND CONNECT COMPLETELY, AND MAKE OPERABLE".

C. THE TERM "REMOVE" SHALL MEAN "TO DISCONNECT, REMOVE AND LEGALLY DISPOSE OF BACK TO THE LAST ACTIVE DEVICE, IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS".

D. THE DEFINITION OF ELECTRICAL TERMS USED SHALL BE AS DEFINED IN THE 1999 EDITION OF THE NATIONAL ELECTRIC CODE (NEC).

E. THE TERM "SIZE" SHALL MEAN ONE OR MORE OF THE FOLLOWING: "LENGTH, CURRENT AND VOLTAGE RATING, NUMBER OF POLES, NEMA SIZE AND OTHER SIMILAR ELECTRICAL CHARACTERISTICS".

1.7 COORDINATION
A. WRITTEN REQUESTS FOR APPROVAL FOR PLANNED SHUTDOWNS OR INTERRUPTIONS OF OWNER'S EXISTING SYSTEMS AND EQUIPMENT SHALL BE MADE 72 HOURS PRIOR TO START OF REQUESTED SHUTDOWN PERIODS.

B. THE CONTRACTOR SHALL VERIFY ALL MANUFACTURERS CATALOG NUMBERS WITH THE MANUFACTURER FOR CURRENT CONFIGURATIONS AND FUNCTIONS.

C. BEFORE SELECTING MATERIAL AND EQUIPMENT TO BE INSTALLED CHECK NEEDED SPACE FOR PLACEMENT, CLEARANCES AND INTERCONNECTIONS, TO INSURE SUITABILITY.

PART 2 – PRODUCTS

2.1 GENERAL
A. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORIES (U.L.) AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL COVERNING BODIES HAVING JURISDICTION AND SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU.

B. COMMON ITEMS:
WHERE MORE THAN ONE OF ANY SPECIFIC ITEM IS REQUIRED, ALL SHALL BE OF THE SAME TYPE AND MANUFACTURER.

C. UL LISTING:
ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE UNDERWRITERS' LABORATORIES (UL) LISTED AND LABELED, WHERE UL STANDARDS AND LISTINGS EXIST FOR SUCH MATERIALS OR EQUIPMENT.

2.2 SOIL MATERIALS
A. BACKFILL AND FILL MATERIALS:
MATERIALS COMPLYING WITH ASTM D2487 SOIL CLASSIFICATION GROUPS GW, GP, GM, SM, SW, AND SP, FREE OF CLAY, ROCK, OR GRAVEL LARGER THAN 2 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETABLE, AND OTHER DELETERIOUS MATTER.

2.3 RACEWAY SYSTEMS
A. RACEWAY SIZING:
AS REQUIRED BY THE NEC (MINIMUM) WITH OVERSIZED RACEWAYS AS INDICATED AND WHERE REQUIRED FOR EASE OF PULLING CABLE. MINIMUM CONDUIT SIZE: 1/2-INCH, UNLESS INDICATED OTHERWISE.

B. RACEWAY TYPES:
RIGID GALVANIZED STEEL CONDUIT, ELECTRICAL METALLIC TUBING (EMT), FLEXIBLE STEEL CONDUIT, LIQUID-TIGHT FLEXIBLE STEEL CONDUIT AND SCHEDULE 40 HEAVYWALL AND SCHEDULE 80 EXTRA-HEAVYWALL RIGID NON-METALLIC (PVC) CONDUIT, CONFORMING TO APPLICABLE ANSI, NEMA AND UL STANDARDS.

C. FITTINGS:
ALL RACEWAY FITTINGS (EXCEPT FOR RIGID NON-METALLIC CONDUIT) TO BE STEEL OR MALLEABLE IRON, AND UL-LISTED FOR THE INTENDED APPLICATION. EMT FITTINGS TO BE COMPRESSION TYPE.

D. OUTLET BOXES (CONCEALED IN WALLS):
NON-GANGABLE, GALVANIZED STEEL, WITH SQUARE CORNERED TILE (OR MASONRY) TYPE EXTENSION RINGS OR COVER.
MINIMUM SIZE: TWO-GANG MASONRY BOX OR 4" SQUARE BOX WITH SINGLE-GANG EXTENSION RING.
MINIMUM DEPTH: 1-1/2". MINIMUM CAPACITY: 21 CUBIC INCHES.

E. OUTLET BOXES (SURFACE MOUNTED):
CADMIUM PLATED CAST OR MALLEABLE IRON.

F. PULL AND JUNCTION BOXES, AND WIREWAYS:
USE AS INDICATED AND REQUIRED. JUNCTION AND PULL BOXES FOR GENERAL INDOOR USE (DRY LOCATIONS) TO BE OF GALVANIZED CODE GAUGE STEEL CONSTRUCTION, MINIMUM 4" SQUARE BY 1-1/2" DEEP, WITH SCREW-ON COVERS. WIREWAYS TO BE UL LISTED, SHEET STEEL CONSTRUCTION WITH SCREW-ON COVERS. FOR EXTERIOR AND DAMP OR WET INDOOR LOCATIONS, USE BOXES AND WIREWAYS APPROVED FOR SUCH USE.

G. PIPE SLEEVES:
RIGID STEEL CONDUIT OR IRON PIPE.

H. CONDUIT SEALS:
FOR CAST-IN-PLACE CONCRETE APPLICATIONS: ACCEPTABLE MANUFACTURERS: O-Z/GEDNEY TYPE "FSK;" THUNDERLINE CORP. "LINK SEAL" WITH " LINK SEAL WALL SLEEVE."
FOR CORE DRILLED AND PRE-CAST OPENING APPLICATIONS: ACCEPTABLE MANUFACTURERS: O-Z/GEDNEY TYPE "CSML;" THUNDERLINE CORP. "LINK SEAL."

I. SWEEPS:
ALL SWEEPS FOR COMMUNICATION EQUIPMENT OR INTO CONCRETE PAD SHALL BE 24" RADIUS.

2.4 CLASS WIRE CONDUCTORS – 600 VOLT AND BELOW
A. GENERAL:
SINGLE-CONDUCTOR, 98% CONDUCTIVITY, ANNEALED, UNCOATED COPPER CONDUCTORS WITH 600-VOLT RATED TYPE "THHN/THWN" INSULATION. ALUMINUM CONDUCTORS ARE NOT ALLOWED.

B. CONNECTORS:
NYLON SHELL INSULATED METALLIC SCREW-ON CONNECTORS FOR #14-10 AWG, AND BOLTED PRESSURE OR COMPRESSION TYPE LUGS AND CONNECTORS WITH INSULATING COVERS FOR #8 AWG AND LARGER.

2.5 HANGERS AND SUPPORTS
A. GENERAL:
ALL HANGERS, SUPPORTS, FASTENERS AND HARDWARE SHALL BE ZINC-COATED OR OF EQUIVALENT CORROSION RESISTANCE BY TREATMENT OR INHERENT PROPERTY, AND SHALL BE MANUFACTURED PRODUCTS DESIGNED FOR THE APPLICATION. PRODUCTS FOR OUTDOOR USE SHALL BE HOT DIP GALVANIZED.

B. TYPES:
HANGERS, STRAPS, RISER SUPPORTS, CLAMPS, U-CHANNEL, THREADED RODS, ETC. AS INDICATED OR REQUIRED.

2.6 ELECTRICAL IDENTIFICATION
A. NAMEPLATES:
THREE-LAYER LAMINATED PLASTIC WITH MINIMUM 3/16" HIGH WHITE ENGRAVED CHARACTERS ON BLACK BACKGROUND, AND PUNCHED FOR MECHANICAL FASTENING. FASTENERS: SELF-TAPPING STAINLESS-STEEL SCREWS OR NUMBER 10-32 STAINLESS STEEL MACHINE SCREWS WITH NUTS AND FLAT AND LOCK WASHERS.

B. UNDERGROUND WARNING TAPE:
SIX-INCH WIDE POLYETHYLENE TAPE, PERMANENTLY BRIGHT COLORED WITH CONTINUOUS-PRINTED LEGEND INDICATING GENERAL TYPE OF UNDERGROUND LINE BELOW AND "CAUTION." COLORS AS FOLLOWS:

1. RED – ELECTRIC

2. ORANGE – COMMUNICATIONS

C. MARKING PENS:
PERMANENT, WATERPROOF, QUICK DRYING BLACK INK. ACCEPTABLE MANUFACTURERS: SANFORD FINE POINT "SHARPIE," OR EQUAL.

D. WIRE TAGS:
VINYL OR VINYL-CLOTH SELF-ADHESIVE WRAPAROUND TYPE INDICATING APPROPRIATE CIRCUIT NUMBER, ETC.

2.7 SAFETY SWITCHES
A. GENERAL:
HEAVY DUTY, HORSEPOWER RATED, FULLY ENCLOSED, FUSIBLE (WITH REJECTION FUSE CLIPS) OR NON-FUSED AS INDICATED, QUICK-MAKE, QUICK BREAK SWITCHING MECHANISM INTERLOCKED WITH COVER, AND NEMA-1 ENCLOSURE FOR DRY LOCATIONS, AND NEMA-3R ENCLOSURE FOR OUTDOOR LOCATIONS, UNLESS INDICATED OTHERWISE. SWITCHES TO BE LABELED AS "SUITABLE FOR USE AS SERVICE ENTRANCE EQUIPMENT," WHERE REQUIRED.

B. RATINGS:
VOLTAGE, PHASES, AMPERAGES AND FUSING AS INDICATED.

C. IN THE FUSED CONFIGURATION, SWITCHES SHALL HAVE AN INTERRUPTING CAPACITY OF AT LEAST 100,000 AMPS SYMMETRICAL AT SIX HUNDRED (600) VOLTS WHEN USED WITH CLASS RK-5 TIME DELAY CURRENT LIMITING FUSES, AND 200,000 AMPERES SYMMETRICAL AT 600 VOLTS WHEN USED WITH CLASS RK-1 CURRENT LIMITING FUSES.

D. GUARDS:
LINE SHIELD GUARDS TO PREVENT CONTACT WITH LIVE PARTS.

E. CONTACTS:
SILVER ALLOY. SWITCH BLADES SHALL BE DE-ENERGIZED IN THE OPEN POSITION.

F. LUGS:
SOLDERLESS TYPE.

G. REJECTION FUSE CLIPS:
PROVIDE FOR FUSIBLE SWITCHES (30-600A) TO PREVENT THE INSTALLATION OF CLASS H AND CLASS K NON-CURRENT-LIMITING FUSES.

H. ACCEPTABLE MANUFACTURER:
GENERAL ELECTRIC, SQUARE D, SIEMANS.

2.8 GROUNDING
A. GENERAL:
GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.

B. SYSTEM DESCRIPTION:
GROUNDING NETWORK SYSTEM SHALL ESTABLISH A EARTH RESISTANCE TO THE REFERENCE GROUND POINT NOT TO EXCEED 5 OHMS, CONSISTING OF BONDING OF STRUCTURE AND OTHER METAL OBJECTS: GROUNDING ELECTRODES; AND INTERCONNECTING CONDUCTORS.

C. MATERIAL:
INDICATED AS FOLLOWING.

1. GROUND RODS:
5/8" DIA. X 10'-0" LONG COPPER CLAD GROUND ROD TREATED WITH EXCITE.

2. PROTECTIVE BOX:
8" DIA. X 42" LONG SCHEDULE 40 PVC PIPE WITH THREADED CAP.

3. CONDUCTORS:
INSTALL #2 AWG GREEN-INSULATED STRANDED WIRE FOR ABOVE GRADE GROUNDING AND #2 BARE SOLID TIN-COATED WIRE FOR BELOW GRADE GROUNDING UNLESS OTHERWISE NOTED.

4. GROUND WIRE CLAMPS:
HEAVY DUTY CLAMPS AS MANUFACTURED BY BURNDY.

5. WELDS:
GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE ("CADWELDS") TO FENCE POSTS, ANTENNA MASTS, AND GROUND RING. REMAINING GROUNDING CONNECTIONS SHALL BE COMPRESSION FITTINGS. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE LUGS.
WELDS SHALL BE PROTECTED FROM CORROSION WITH ZRC COLD GALVANIZING COMPOUND AS MANUFACTURED BY ZRC CHEMICAL PRODUCTS CO.

6. CHEMICAL GROUND RODS:
LENGTH AND TYPE AS INDICATED.

7. ROUTING:
ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 12" RADIUS.

D. TESTING:

1. TEST AND VERIFY THAT THE RESISTANCE DOES NOT EXCEED 5 OHMS TO GROUND USING AN EARTH/GROUND RESISTANCE TESTER. GROUNDING AND OTHER OPERATIONAL TESTING SHALL BE WITNESSED BY OWNER'S REPRESENTATIVE.

2. SYSTEM TESTING SHALL BE PERFORMED PRIOR TO CONNECTING ELECTRICAL SYSTEM GROUND TO GROUND RING.

2.9 PANELBOARDS
A. GENERAL:
PANELBOARD RATING, MAINS, MOUNTING, AND COMPLEMENT OF BREAKERS TO BE INDICATED ON THE PANELBOARD SCHEDULE.

B. CONSTRUCTION:
CODE GAUGE GALVANIZED STEEL, WITH INTURNED FLANGES ON ALL SIDES OF FRONT, MINIMUM 20 INCHES WIDE.

C. FRONT COVERS:
DEAD FRONT, SHEET STEEL, WITH RUST INHIBITIVE PRIMER AND BAKED LIGHT GREY ENAMEL INSIDE AND OUT FOR SURFACE MOUNTED PANELBOARDS. DOORS OVER PROTECTIVE DEVICES WITH HINGES CONCEALED AND WELDED TO THE BACK OF THE DOOR AND COVER WITH DOOR STOPS ON THE OTHER THREE SIDES.

D. LATCHES:
METALLIC, FLUSH TYPE WITH LOCK.

E. INTERIORS AND BUSSING:

1. PANELS TO BE DESIGNED SO THAT REMOVAL OF ANY BRANCH CIRCUIT DEVICE DOES NOT DISTURB ADJACENT DEVICES.

2. BUSSING:
COPPER ONLY. BUSSING TO BE ARRANGED FOR ALTERNATING PHASE CONNECTION OF BRANCH DEVICES, ALL SPACES EQUIPPED TO RECEIVE BRANCH CIRCUIT DEVICES. PHASE BUS AMPACITY AS INDICATED WITH NEUTRAL BUSSING HAVING AMPACITY EQUAL TO PHASE BUS AMPACITY.

3. EQUIPMENT GROUND BUS:
COPPER ONLY. FOR BRANCH CIRCUIT PANELBOARDS PROVIDE TERMINALS FOR AT LEAST (20) #14 – #8 CONDUCTORS AND A LUG FOR THE FEEDER EQUIPMENT GROUNDING CONDUCTOR. FOR DISTRIBUTION PANELS PROVIDE TERMINALS FOR ALL GROUNDING CONDUCTORS PRESENT, PLUS 25% SPARES.

F. SHORT CIRCUIT RATINGS:
AS INDICATED (MINIMUM). EACH PANELBOARD SHALL BE LABELED WITH THE REQUIRED SHORT CIRCUIT RATING, TAKING INTO ACCOUNT THE BUS BRACING AND OVERCURRENT PROTECTIVE DEVICE INTERRUPTING RATINGS. ALL DEVICES SHALL BE FULLY RATED. LOWER RATED OVER-CURRENT PROTECTIVE DEVICES BASED ON SERIES RATING WITH UPSTREAM DEVICES WILL NOT BE ACCEPTABLE.

2.10 CIRCUIT BREAKERS
A. GENERAL:
MOLDED CASE WITH THERMAL AND MAGNETIC TRIPS UNLESS INDICATED OTHERWISE. MINIMUM 14,000 AMPS INTERRUPTING CAPACITY, HIGHER RATINGS AS INDICATED OR REQUIRED BY AVAILABLE FAULT CURRENT.

2.11 FUSES
A. UL CLASS RK-1, 250 VOLT OR 600 VOLT AS REQUIRED FOR SYSTEM VOLTAGE, DUAL ELEMENT, TIME DELAY, CURRENT LIMITING, 200,000 AIC, AMPERE RATINGS AS INDICATED.

B. ACCEPTABLE MANUFACTURERS: BUSSMANN "FUSETRON"; OR EQUAL BY GOULD SHAWMUT.

PART 3 – EXECUTION

3.1 GENERAL
A. INSTALLATION REQUIREMENTS:
ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED AS RECOMMENDED BY THE RESPECTIVE MANUFACTURERS, BY MECHANICS EXPERIENCED AND SKILLED IN THEIR PARTICULAR TRADE, IN A NEAT AND WORKMANLIKE MANNER, IN ACCORDANCE WITH THE STANDARDS OF THE TRADE, AND SO AS NOT TO VOID ANY WARRANTY OR UL LISTING.

3.2 EXAMINATION
A. CONDITIONS VERIFICATION:
EXAMINE THE AREAS AND CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED, AND IDENTIFY ANY CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY COMPLETION OF THE WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.3 COORDINATION
A. CHASES, SLOTS, AND OPENINGS:
ARRANGE FOR CHASES, SLOTS, AND OPENINGS DURING THE PROGRESS OF CONSTRUCTION, AS REQUIRED TO ALLOW FOR INSTALLATION OF THE ELECTRICAL WORK.

B. SUPPORTS AND SLEEVES:
COORDINATE THE INSTALLATION OF REQUIRED SUPPORTING DEVICES AND SLEEVES TO BE SET IN POURED-IN-PLACE CONCRETE AND OTHER STRUCTURAL COMPONENTS, AS THEY ARE CONSTRUCTED.

C. OBSTACLES AND INTERFERENCES:
WHEN INSTALLING EQUIPMENT AND RACEWAYS, PROVIDE OFFSETS, FITTINGS, ACCESSORIES AND CHANGES IN ELEVATION OR LOCATION AS NECESSARY TO AVOID OBSTACLES AND INTERFERENCES, PER ACTUAL FIELD CONDITIONS.

3.4 ELECTRICAL INSTALLATION – GENERAL

A. UNFINISHED AND FINISHED AREAS:
FOR THE PURPOSES OF THESE ELECTRICAL SPECIFICATIONS, "UNFINISHED" AREAS SHALL INCLUDE MECHANICAL, ELECTRICAL AND TELEPHONE EQUIPMENT ROOMS. ALL OTHER AREAS SHALL BE CONSIDERED "FINISHED" SPACES, UNLESS INDICATED OR APPROVED OTHERWISE.

B. IN UNFINISHED AREAS:
RACEWAYS, EQUIPMENT AND DEVICES MAY BE INSTALLED CONCEALED OR EXPOSED, UNLESS INDICATED OTHERWISE.

C. IN FINISHED AREAS:
CONCEAL ALL RACEWAY AND FLUSH MOUNT ALL ELECTRICAL BOXES, EQUIPMENT, AND DEVICES UNLESS INDICATED OR APPROVED OTHERWISE. THE SPACE ABOVE SUSPENDED CEILINGS OR BEHIND FURRED SPACES IS CONSIDERED OUTSIDE FINISHED AREAS AND ELECTRICAL MATERIALS INSTALLED WITHIN THESE AREAS ARE CONSIDERED CONCEALED.

D. MINIMUM MOUNTING HEIGHT:
INSTALL EXPOSED RACEWAY AND ALL OTHER ELECTRICAL EQUIPMENT (E.G., LIGHTING FIXTURES) WITH NOT LESS THAN 7'-6" CLEAR TO FINISHED FLOOR, UNLESS INDICATED OR APPROVED OTHERWISE, AND EXCLUDING RACEWAY AND EQUIPMENT MOUNTED ON WALLS.

E. DIMENSIONS AND CLEARANCES:
FIELD MEASURE ALL DIMENSIONS AND CLEARANCES AFFECTING THE INSTALLATION OF ELECTRICAL WORK, IN RELATION TO ESTABLISHED DATUM, BUILDING OPENINGS AND CLEARANCES, AND WORK OF OTHER TRADES, AS CONSTRUCTION PROGRESSES.

F. ROUGH-IN LOCATIONS:
VERIFY FINAL LOCATIONS FOR ROUGH-INS WITH FIELD MEASUREMENTS AND REQUIREMENTS OF ACTUAL EQUIPMENT BEING INSTALLED.

G. ALL CONDUIT ABOVE GRADE SHALL BE SCHEDULE 80 EXTRA-HEAVYWALL RIGID NON-METALLIC, UNLESS INDICATED OR APPROVED OTHERWISE.

3.5 LAYOUT
A. GENERAL:
INSTALL ELECTRICAL SYSTEMS, MATERIALS AND EQUIPMENT LEVEL AND PLUMB, AND PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS, WHERE INSTALLED EXPOSED.

B. SERVICEABILITY:
INSTALL ELECTRICAL EQUIPMENT AND RACEWAYS, ETC. TO READILY FACILITATE SERVICING, MAINTENANCE AND REPAIR OR REPLACEMENT OF COMPONENTS, AND SO AS TO MINIMIZE INTERFERENCE WITH OTHER EQUIPMENT AND INSTALLATIONS.

3.6 MOUNTING HEIGHTS
A. GENERAL:
INDICATED HEIGHTS ARE MEASURED FROM THE CENTER OF THE DEVICE OUTLET BOX TO FINISHED FLOOR OR GRADE, UNLESS INDICATED OTHERWISE. REQUEST INSTRUCTIONS FOR MOUNTING HEIGHTS NOT INDICATED.

3.7 HOLES, SLEEVES, AND OPENINGS
A. GENERAL:
PROVIDE ALL HOLES, SLEEVES, AND OPENINGS REQUIRED FOR THE COMPLETION OF THE WORK AND RESTORE ALL SURFACES DAMAGED, TO MATCH SURROUNDING SURFACES. MAINTAIN INTEGRITY OF ALL FIRE AND SMOKE RATED BARRIERS USING APPROVED FIRESTOPPING SYSTEMS. WHEN CUTTING HOLES OR OPENINGS, OR INSTALLING SLEEVES, DO NOT CUT, DAMAGE OR DISTURB STRUCTURAL ELEMENTS OR REINFORCING STEEL, UNLESS APPROVED, IN WRITING, BY THE PROJECT STRUCTURAL ENGINEER.

B. CONDUIT PENETRATIONS:
SIZE CORE DRILLED HOLES SO THAT AN ANNULAR SPACE OF NOT LESS THAN 1/4" AND NOT MORE THAN 1" IS LEFT AROUND THE CONDUIT. WHEN OPENINGS ARE CUT IN LIEU OF CORE DRILLED, PROVIDE SLEEVE IN ROUGH OPENING. SIZE SLEEVES TO PROVIDE AN ANNULAR SPACE OF NOT LESS THAN 1/4" AND NOT MORE THAN 1" AROUND THE CONDUIT. PATCH AROUND SLEEVE TO MATCH SURROUNDING SURFACES.

3.8 CUTTING AND PATCHING
A. GENERAL:
PROVIDE ALL CUTTING, DRILLING, CHASING, FITTING AND PATCHING NECESSARY FOR ACCOMPLISHING THE WORK.

B. BUILDING STRUCTURE:
DO NOT ENDANGER THE INTEGRITY OF THE BUILDING STRUCTURE BY CUTTING, DRILLING OR OTHERWISE MODIFYING ANY STRUCTURAL MEMBER, WITHOUT SPECIFIC APPROVAL. DO NOT PROCEED WITH ANY STRUCTURAL MODIFICATIONS WITHOUT WRITTEN PERMISSION OF THE PROJECT STRUCTURAL ENGINEER.

C. REPAIRS:
REPAIR ANY AND ALL DAMAGE TO WORK OF OTHER TRADES CAUSED BY CUTTING AND PATCHING OPERATIONS, USING SKILLED MECHANICS OF THE TRADES INVOLVED.

3.9 UNDERGROUND ELECTRICAL WORK
A. GENERAL:
PERFORM ALL EXCAVATING, TRENCHING AND BACKFILLING, ETC. AS INDICATED OR REQUIRED FOR THE INSTALLATION OF ALL UNDERGROUND ELECTRICAL WORK. COORDINATE WORK WITH OTHER TRADES AND VERIFY EXISTING UNDERGROUND SERVICES AND CONDITIONS.

B. CONDUIT BURIAL DEPTH: 30" BELOW FINISHED GRADE, UNLESS INDICATED OTHERWISE. ALL EXCAVATION AND BURIAL DEPTHS INDICATED ARE BELOW FINISHED GRADE.

C. EXCAVATING: DO NOT EXCAVATE BELOW REQUIRED DEPTH, EXCEPT AS NECESSARY FOR REMOVAL OF UNSTABLE SOIL OR WHEN ROCK IS ENCOUNTERED. WHEN ROCK IS ENCOUNTERED, EXCAVATE SIX INCHES BELOW THE REQUIRED DEPTH AND BACKFILL WITH A MINIMUM 6" LAYER OF CRUSHED STONE OR GRAVEL BETWEEN ROCK BEARING SURFACE AND THE ELECTRICAL INSTALLATION. STOCKPILE SATISFACTORY EXCAVATED MATERIALS WHERE DIRECTED, UNTIL REQUIRED FOR BACKFILLING. REMOVE AND LEGALLY DISPOSE OF EXCESS EXCAVATED MATERIALS AND MATERIALS NOT SUITABLE FOR BACKFILL USE. SHORE AND BRACE AS REQUIRED FOR STABILITY OF EXCAVATION. REMOVE SHORING AND BRACING WHEN NO LONGER REQUIRED. WHERE SHEETING IS ALLOWED TO REMAIN, CUT TOP OF SHEETING OFF AT AN ELEVATION OF 30" BELOW FINISHED GRADE.

D. TRENCHING: CUT ALL TRENCHES NEATLY AND UNIFORMLY AND SO AS TO PROVIDE AMPLE WORKING ROOM AND AT LEAST SIX INCHES CLEARANCE ON BOTH SIDES OF RACEWAYS, ETC. TAKE NECESSARY PRECAUTIONS WHEN WORKING NEAR EXISTING UNDERGROUND UTILITIES, AND COORDINATE WITH THE INSTALLATION OF CONCURRENT UTILITIES BY OTHER TRADES. UNLESS INDICATED OTHERWISE, PITCH ALL ELECTRICAL CONDUIT RUNS DOWNWARD AWAY FROM BUILDINGS, MANHOLES, AND PAD MOUNTED EQUIPMENT. EXCAVATE TRENCHES TO DEPTH INDICATED OR REQUIRED. LIMIT LENGTH OF OPEN TRENCH TO THAT IN WHICH INSTALLATIONS CAN BE MADE AND TRENCHES BACKFILLED WITHIN THE SAME DAY.

E. SAND ENVELOPE: INSTALL A MINIMUM ENVELOPE OF THREE INCHES (TOP, BOTTOM AND SIDES: THREE INCHES EACH) OF FINE GRAIN SAND ALL AROUND ALL ELECTRICAL CABLES AND CONDUITS INSTALLED BELOW GRADE UNLESS INDICATED OTHERWISE.

F. PREPARATION FOR BACKFILLING: BACKFILLING EXCAVATIONS AS PROMPTLY AS WORK PERMITS, BUT NOT UNTIL COMPLETION OF INSPECTION, TESTING, APPROVALS, AND RECORDING OF UNDERGROUND UTILITY LOCATIONS. PRIOR TO BACKFILLING, REMOVE ALL CONCRETE FORM WORK, SHORING, BRACING, TRASH AND DEBRIS.

G. BACKFILLING:
USE ONLY APPROVED MATERIALS FREE FROM BOULDERS, SHARP OBJECTS AND OTHER UNSUITABLE MATERIALS. MATCH THE FINAL ELEVATIONS AND MATERIALS OF AREAS AFFECTED BY ELECTRICAL EXCAVATING, TRENCHING AND BACKFILLING. REPLACE CONDUIT AND CABLES DAMAGED BY IMPROPER BACKFILLING. REPLACE SURFACE MATERIALS TO MATCH EXISTING SURFACE MATERIALS IF NO OTHER UTILITY OR SITE WORK IS BEING DONE IN AREA. PLACE SPECIFIED SOIL MATERIALS IN 4" – 8" LAYERS TO REQUIRED SUBGRADE ELEVATIONS.

H. BACKFILL PLACEMENT:
PLACE BACKFILL AND FILL MATERIALS IN LAYERS OF NOT MORE THAN 8" IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY EQUIPMENT, AND NOT MORE THAN 4" IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS. BEFORE COMPACTION, MOISTEN OR AERATE EACH LAYER AS NECESSARY TO PROVIDE OPTIMUM MOISTURE CONTENT. COMPACT EACH LAYER TO REQUIRED PERCENTAGE OF MAXIMUM DRY DENSITY OR RELATIVE DRY DENSITY FOR EACH AREA CLASSIFICATION SPECIFIED BELOW. DO NOT PLACE BACKFILL OR FILL MATERIAL ON SURFACES THAT ARE MUDDY, FROZEN, OR CONTAIN FROST OR ICE. PLACE BACKFILL AND FILL MATERIALS EVENLY ADJACENT TO STRUCTURES, PIPING, AND EQUIPMENT TO REQUIRED ELEVATIONS. PREVENT DISPLACEMENT OF RACEWAYS AND EQUIPMENT BY CARRYING MATERIAL UNIFORMLY AROUND THEM TO APPROXIMATELY SAME ELEVATION IN EACH LIFT.

3.10 RACEWAY SYSTEMS
A. RACEWAY TYPES:
UNLESS INDICATED OTHERWISE, USE RACEWAY TYPES AS FOLLOWS:

1. INDOORS, CONCEALED IN WALLS OR ABOVE CEILINGS:
EMT.

2. INDOORS, EXPOSED:
USE RIGID GALVANIZED STEEL CONDUIT BELOW TEN FEET ABOVE FINISHED FLOOR. EMT MAY BE USED ABOVE TEN FEET.

3. INDOORS, BELOW FLOOR SLAB:
(MINIMUM 3/4 INCH SIZE). SCHEDULE 80 RIGID NON-METALLIC CONDUIT. STUB UP USING RIGID GALVANIZED STEEL ELBOWS.

4. OUTDOORS, BELOW GRADE:
(MINIMUM 1-INCH SIZE). SCHEDULE 40 RIGID NON-METALLIC CONDUIT. STUB UP USING RIGID GALVANIZED STEEL ELBOWS.

5. OUTDOORS, EXPOSED:
RIGID GALVANIZED STEEL CONDUIT.

6. FLEXIBLE STEEL CONDUIT:
USE (IN DRY LOCATIONS ONLY) FOR CONNECTIONS TO TRANSFORMERS, VIBRATING EQUIPMENT, AND EQUIPMENT REQUIRING MINOR ADJUSTMENTS IN POSITIONS, FOR FINAL CONNECTIONS TO RECESSED LIGHTING FIXTURES, AND BETWEEN OUTLET BOXES IN METAL STUD PARTITIONS.

7. LIQUID-TIGHT FLEXIBLE STEEL CONDUIT:
USE WHERE FLEXIBLE STEEL CONDUIT CONNECTIONS ARE REQUIRED IN DAMP, WET OR OILY LOCATIONS, AND FOR FINAL CONNECTIONS TO ALL

B. RACEWAY ROUTING:
AS REQUIRED BY JOB CONDITIONS UNLESS SPECIFIC ROUTES OR DIMENSIONED POSITIONS ARE INDICATED ON THE DRAWINGS. INSTALL TIGHT TO SLABS, BEAMS AND JOISTS WHEREVER POSSIBLE. ROUTE EXPOSED CONDUIT, AND CONDUIT INSTALLED ABOVE CEILINGS, PARALLEL OR PERPENDICULAR TO WALLS CEILINGS AND STRUCTURAL MEMBERS. INSTALL TO MAINTAIN MINIMUM HEADROOM AND TO PRESENT A NEAT APPEARANCE. RUN PARALLEL RACEWAYS TOGETHER WITH BENDS MADE FROM SAME CENTER LINE. VERIFY EXACT LOCATIONS OF ALL RACEWAYS, PULL BOXES, AND JUNCTION BOXES. RESOLVE ANY CONFLICTS BEFORE INSTALLATION.

C. BOXES:
INSTALL ALL OUTLET, PULL AND JUNCTION BOXES RIGIDLY, PLUMB AND LEVEL. SUPPORT AND SECURE BOXES INDEPENDENTLY FROM CONDUITS TERMINATING AT BOX. INSTALL ALL BOXES SO AS TO BE ACCESSIBLE AND SO THAT COVERS MAY BE EASILY REMOVED.

D. CONDUIT SEALS:
INSTALL CONDUIT SEAL FOR EACH CONDUIT PENETRATING AN EXTERIOR BUILDING WALL BELOW GRADE (UNLESS PENETRATION IS BELOW LOWEST BUILDING FLOOR SLAB), AND ELSEWHERE AS INDICATED, AND SO AS TO ACHIEVE A SEALED WATERTIGHT INSTALLATION.

3.11 CONDUCTORS – 600 VOLT AND BELOW
A. MINIMUM CONDUCTOR SIZE:
ALL BRANCH CIRCUIT WIRING SHALL BE MINIMUM #12 AWG. ALL CONTROL CIRCUIT WIRING SHALL BE MINIMUM #14 AWG, UNLESS INDICATED OTHERWISE. PROVIDE LARGER SIZES AS INDICATED OR REQUIRED.

B. IN RACEWAY:
INSTALL ALL WIRING IN CONDUIT OR OTHER SPECIFIED RACEWAY, UNLESS INDICATED OTHERWISE.

3.12 HANGERS AND SUPPORTS
A. GENERAL:
RIGIDLY SUPPORT AND SECURE ALL ELECTRICAL MATERIALS, RACEWAY AND EQUIPMENT TO BUILDING STRUCTURE USING HANGERS, SUPPORTS AND FASTENERS, SUITABLE FOR THE USE, MATERIALS AND LOADS ENCOUNTERED. PROVIDE ALL NECESSARY HARDWARE.

B. STRUCTURAL MEMBERS:
DO NOT CUT, DRILL OR WELD ANY STRUCTURAL MEMBER EXCEPT AS SPECIFICALLY APPROVED BY THE ENGINEER.

C. INDEPENDENT SUPPORT:
DO NOT SUPPORT ELECTRICAL MATERIALS OR EQUIPMENT FROM OTHER EQUIPMENT, PIPING, DUCTWORK OR SUPPORTS FOR SAME.

D. BACKBOARD:
IF EXISTING SPACE IS NOT AVAILABLE, PROVIDE 5/8" PLYWOOD BACKBOARD FOR TELCO TEMINATION EQUIPMENT IN ACCORDANCE WITH TELCO COMPANY REQUIREMENTS AS NECESSARY.

3.13 ELECTRICAL IDENTIFICATION
A. GENERAL:
LOCATE NAMEPLATE, MARKING, OR OTHER IDENTIFICATION MEANS ON OUTSIDE OF EQUIPMENT OR BOX FRONT COVERS WHEN ABOVE CEILINGS AND WHEN IN MECHANICAL OR ELECTRICAL EQUIPMENT ROOMS OR OTHER UNFINISHED AREAS, AND ON INSIDE OF FRONT COVER WHEN IN FINISHED ROOMS/AREAS. USE CONTRACT DOCUMENT DESIGNATIONS FOR IDENTIFICATION UNLESS INDICATED OTHERWISE.

B. NAMEPLATES:
PROVIDE NAMEPLATE ENGRAVED WITH EQUIPMENT DESIGNATION FOR EACH SAFETY SWITCH, PANELBOARD, TRANSFORMER, MOTOR STARTER, AND ALL OTHER ELECTRICAL CABINETS, ETC.

C. UNDERGROUND WARNING TAPE:
DURING TRENCH BACKFILLING FOR EACH UNDERGROUND ELECTRICAL, TELEPHONE, SIGNAL AND COMMUNICATIONS LINE, PROVIDE A CONTINUOUS UNDERGROUND WARNING TAPE LOCATED DIRECTLY ABOVE LINE, AT SIX TO EIGHT INCHES BELOW FINISHED GRADE.

D. MARKING PEN LABELING:
MARK EACH JUNCTION AND PULL BOX INDICATING SOURCE DESIGNATION AND CIRCUIT NUMBER(S) FOR THE ENCLOSED CONDUCTORS.

E. WIRE TAGS:
FOR POWER CIRCUITS, APPLY WIRE TAG INDICATING APPROPRIATE CIRCUIT OR FEEDER NUMBER TO EACH CONDUCTOR PRESENT IN DISTRIBUTION PANEL AND PANELBOARD GUTTERS, AND TO EACH CONDUCTOR IN PULL AND JUNCTION BOXES WHERE MORE THAN ONE FEEDER OR MULTI-WIRE BRANCH CIRCUIT IS PRESENT. WHERE ONLY A SINGLE FEEDER OR MULTI-WIRE BRANCH CIRCUIT IS PRESENT, BOX COVER LABELING AND CONDUCTOR COLOR CODING IS SUFFICIENT. FOR CONTROL, COMMUNICATIONS AND SIGNAL CIRCUITS, APPLY WIRE TAG INDICATING CIRCUIT OR TERMINATION NUMBER AT ALL TERMINATIONS AND AT ALL INTERMEDIATE LOCATIONS AND BOXES WHERE MORE THAN ONE CIRCUIT IS PRESENT.

F. PANELBOARD CIRCUIT DIRECTORIES:
AT COMPLETION OF PROJECT, ACCURATELY COMPLETE EACH PANELBOARD CIRCUIT DIRECTORY CARD, IDENTIFYING LOAD SERVED OR "SPARE" OR "SPACE" FOR EACH CIRCUIT POLE. WHEN MODIFYING, ADDING OR DELETING CIRCUITS AT AN EXISTING PANELBOARD, UPDATE THE EXISTING (OR PROVIDE NEW) CIRCUIT DIRECTORY CARD TO ACCURATELY REFLECT FINAL CONDITIONS.

3.14 ELECTRIC SERVICE
A. GENERAL:
ARRANGE WITH THE LOCAL ELECTRIC UTILITY COMPANY, AND PAY ALL COSTS FOR PROVIDING TEMPORARY ELECTRIC SERVICE (IF REQUIRED) AND PERMANENT ELECTRIC SERVICE FOR THE PROJECT AS INDICATED AND REQUIRED. COMPLY WITH AND COORDINATE ALL REQUIREMENTS OF THE UTILITY COMPANY.

B. GROUNDING:
PROVIDE GROUNDING ELECTRODE SYSTEM FOR THE SERVICE, PER THE NEC AND UTILITY COMPANY REQUIREMENTS.

3.15 TELEPHONE SERVICE
A. GENERAL:
ARRANGE WITH THE LOCAL TELEPHONE COMPANY, AND PAY ALL COSTS FOR PROVIDING TELEPHONE SERVICE FOR THE PROJECT. INDICATED AND REQUIRED. COMPLY WITH AND COORDINATE ALL REQUIREMENTS OF THE TELEPHONE COMPANY.

B. PROVIDE UNDERGROUND TELEPHONE CONDUIT(S) WITH PULL WIRE(S) BETWEEN EXISTING UTILITY POLE AND TELCO BOX MOUNTED ON ELECTRICAL / TELCO BOARD.

3.16 GROUNDING SYSTEM
A. GENERAL:
INSTALL MATERIALS AND EQUIPMENT AS INDICATED AND IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S INSTRUCTIONS.

A. FIELD QUALITY CONTROL:

1. THE CONTRACTOR SHALL VERIFY THAT THE SYSTEM IS EFFECTIVELY GROUNDED, MEETS NEC ARTICLE 250 REQUIREMENTS, IS ACCEPTABLE TO THE LOCAL UTILITY COMPANY AND LOCAL AUTHORITY HAVING JURISDICTION AND MEETS THE OWNER'S ELECTRICAL AND GROUNDING SPECIFICATIONS.

2. THE CONTRACTOR SHALL MAKE ALL MEASUREMENTS REQUIRED TO TEST THE GROUNDING NETWORK SYSTEM. SYSTEM SHALL BE TESTED AT THE TIME OF INSTALLATION.

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DESIGN APPROVAL

PRELIMINARY/CONSTRUCTION

RF ENG. ______ DATE: ______
EQPT. ENG. ______ DATE: ______
OPERATIONS ______ DATE: ______
CONST. MGR. ______ DATE: ______
NETWORK ENG. ______ DATE: ______
REAL ESTATE ______ DATE: ______

WORK ORDER NUMBER	DRAWN BY
2248.66514	RDD

NO.	DATE	ISSUE
0	5/3/07	FOR CONSTRUCTION
1	8/8/07	REV PER ZONING
2	9/4/07	FOR BP APPLICATION
3	1/15/08	AS BUILTS

RELEASED BY | DATE

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

2004066514
NEW HACKENSACK
AIRPORT DRIVE
TOWN OF WAPPINGER
DUTCHESS COUNTY
NEW YORK

SHEET TITLE

ELECTRICAL NOTES

SHEET NUMBER

E-4