COHEN and WOLF P.C.
ATTORNEYS AT LAW

DAVID A. BALL

Please Reply To Bridgeport
E-Mail: dball@cohenandwolf.com

July 3, 2024

Via e-mail and Federal Express

Attorney Melanie Bachman
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Docket No. 518 - Tarpon Towers III, LLC and New Cingular Wireless PCS, LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a telecommunications facility located at 99 Dart Hill Road, South Windsor, Connecticut

Development and Management Plan

Dear Attorney Bachman:

On behalf of Tarpon Towers III, LLC ("Tarpon"), I've enclosed an original and fifteen (15) copies of Tarpon's Development and Management Plan pertaining to the telecommunications facility approved by the Connecticut Siting Council ("Council") in the above-captioned docket (the "D&M Plan"). Tarpon submits this D&M Plan in accordance with the Council's Decision and Order dated April 11, 2024 ("Decision").

Development and Management Plan

Pursuant to Order Number 1, the telecommunications facility to be located at 99 Dart Hill Road, South Windsor, Connecticut ("Facility") includes a monopole at a height of 165 feet above ground level ("AGL"). The monopole will accommodate the antennas of New Cingular Wireless PCS, LLC d/b/a AT&T ("AT&T"), and other co-locators, both public and private. AT&T's

1115 Broad Street
P.O. Box 1821
Bridgeport, CT 06601-1821
Tel: (203) 368-0211
Fax: (203) 394-9901

158 Deer Hill Avenue
Danbury, CT 06810
Tel: (203) 792-2771
Fax: (203) 791-8149

320 Post Road West
Westport, CT 06880
Tel: (203) 222-1034
Fax: (203) 227-1373

antennas will be located at a centerline height of 155 feet AGL. It is anticipated that Verizon Wireless will be filing a tower sharing application with the Council.

Pursuant to Order Number 2, Tarpon has prepared a D&M Plan in accordance with the Decision and applicable Regulations.

The proposed D&M Plan includes:

a) Pursuant to Condition 2(a) of the Order, Tarpon has provided the enclosed final site plans for the development of the facility that employ the governing standard in the State of Connecticut for tower design in accordance with the currently adopted International Building Code, and include specifications for the tower, tower foundation, antenna, equipment compound including, but not limited to, fence design with privacy slats, ground equipment, access road, utility installation, and emergency backup power.

b) Pursuant to Condition 2(b) of the Order, Tarpon has provided the enclosed construction plans for site clearing, grading, water drainage and stormwater control, site stabilization measures during construction, and erosion and sedimentation (E&S) controls consistent with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*, as amended, and has also provided a Geotechnical Study dated May 20, 2024 prepared by Welti Geotechnical, P.C.

c) Pursuant to Condition 2(c) of the Order, Tarpon has provided an approved application for permitted use of the Eversource right of way (ROW) dated June 17, 2024.

d) Pursuant to Condition 2(d) of the Order, Tarpon has provided Tapp Tower Drawings providing a tower and foundation design that incorporates a yield point on the tower to ensure that the tower setback radius does not encroach upon the Eversource ROW and remains within the boundaries of the host property.

e) Pursuant to Condition 2(e) of the Order, Tarpon has provided the enclosed construction schedule including hours and days of the week for construction activities. Construction will occur Mondays through Fridays, 7:30 a.m. to 6:30 p.m. Tarpon will coordinate with the Town of South Windsor, as necessary.

COHEN and WOLF PC ATTORNEYS AT LAW

Pursuant to Order Number 4, prior to commencement of operation, the Certificate Holders will provide the Council with a rigorous cumulative far-field radio frequency analysis for the facility that accounts for all entities on the tower, a 6-foot tall person at ground level and the actual antenna pattern for antennas on the facility with a cumulative percent maximum permissible exposure at or below 100 percent, consistent with FCC, Office of Engineering and Technology, Bulletin No. 65, August 1997.

Pursuant to Order Number 7, prior to commencement of operation, the Certificate Holders will provide the Council with copies of necessary permits from any other state or federal agency with concurrent jurisdiction prior to the commencement of construction.

Conclusion

Tarpon respectfully requests that this matter be included on the Council's next agenda for review and approval.

As indicated below, a copy of this Tarpon submittal has been provided to the service list.

Please contact me if you have any questions.

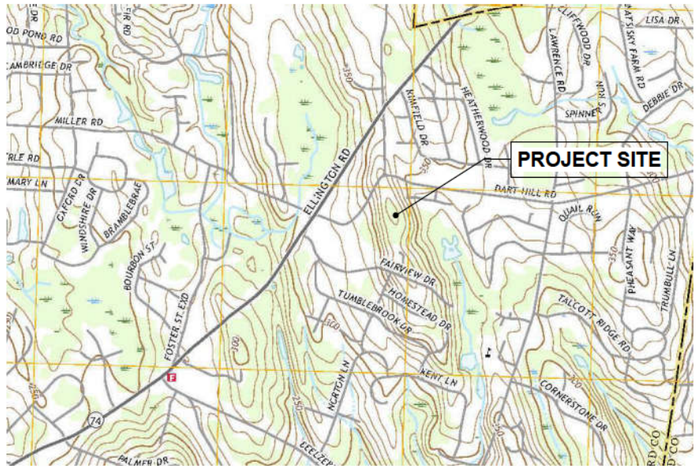
Very truly yours,

David A. Ball

Enclosures

cc: Service List

USGS TOPOGRAPHIC MAP



TARPON TOWERS

WIRELESS COMMUNICATIONS FACILITY

CT1207 SOUTH WINDSOR
99 DART HILL ROAD
SOUTH WINDSOR, CT 06074

SHEET INDEX

SHEET NUMBER	SHEET NAME	CURRENT REVISION	CURRENT REVISION DATE
T - 001	TITLE SHEET	1	July 3, 2024
GN - 101	GENERAL NOTES	1	July 3, 2024
C - 1	SITE PLAN		
C - 2	PLANS AND PROFILES		
C - 3	SEDIMENTATION AND EROSION CONTROL DETAILS		
C - 4	ACESS ROAD NOTES		
C - 101	ABUTTERS PLAN	1	July 3, 2024
C - 102	COMPOUND PLAN AND ELEVATION	1	July 3, 2024
C - 103	SITE DETAILS	1	July 3, 2024
C - 104	SEDIMENTATION AND EROSION CONTROL DETAILS	1	July 3, 2024
A - 101	AT&T ANTENNAS AND TOWER MOUNTED EQUIPMENT	1	July 3, 2024
A - 102	AT&T EQUIPMENT AND DETAILS	1	July 3, 2024
A - 103	TOWN OF SOUTH WINDSOR EQUIPMENT AND DETAILS	1	July 3, 2024
A - 104	VERIZON EQUIPMENT AND DETAILS	1	July 3, 2024
A - 105	VERIZON EQUIPMENT AND DETAILS	1	July 3, 2024

VICINITY MAP

CBYD.COM 811 Call Before You Dig, Inc.

CODE REFERENCES

2022 Connecticut State Building Code

2021 International Building Code
2021 International Existing Building Code
2021 International Plumbing Code
2021 International Mechanical Code
2021 International Residential Code
2021 International Energy Conservation Code
2020 National Electrical Code (NFPA 70)

PROJECT SUMMARY

PROJECT NAME:	CT1207 SOUTH WINDSOR
SITE ADDRESS:	99 DART HILL ROAD SOUTH WINDSOR, CT 06074
PARCEL ID:	104-21-1
TARPON TOWERS CONTACT:	KEITH COPPINS 110 WASHINGTON AVENUE FOURTH FLOOR NORTH HAVEN, CT 06473 203.623.3287
LEGAL/REGULATORY COUNSEL:	COHEN AND WOLF, P.C. 1115 BROAD STREET BRIDGEPORT, CT 06604 203.337.4134
LAND LORD CONTACT:	JUDITH ECKHOUSE.
ARCHITECT:	DOUGLAS J. ROBERTS - ARCHITECT 110 WASHINGTON AVENUE FOURTH FLOOR NORTH HAVEN, CT 06473
SURVEYOR:	NORTHEAST SURVEY CONSULTANTS 3 FERRY STREET, STUDIO 1 EAST EASTHAMPTON, MA 01027
LATITUDE:	N 41° - 50' - 49.55"
LONGITUDE:	W 72° - 31' - 12.67"
GRADE (PROPOSED)	375' - 0" +/- AMSL

SCOPE OF WORK

TARPON TOWERS IS PROPOSING TO INSTALL THE FOLLOWING IMPROVEMENTS ON PROPOSED TELECOMMUNICATION SITE:

1. 60' x 60' FENCED COMPOUND WITHIN A 75' X 75' LEASE AREA AND THE REMOVAL OF 61 TREES
2. A 12 FOOT WIDE ACCESS ROAD FROM DART HILL ROAD TO THE COMPOUND, APPROXIMATELY 250' WILL BE OVER AN EXISTING EVERSOURCE ACCESS ROAD
3. 165' MONOPOLE FOR FOUR CARRIER PLATFORMS WITH ANTENNAS AND ANCILLARY EQUIPMENT AND TOWN ANTENNAS.
4. POWER AND TELCO SERVICES WILL BE ROUTED UNDERGROUND FROM EXISTING OVERHEAD UTILITIES ON DART HILL ROAD (SNET POLE 5159) TO PROPOSED ELECTRICAL METER AND UTILITY BOX ON PROPOSED H-FRAME.

AT&T IS PROPOSING TO INSTALL THE FOLLOWING IMPROVEMENT ON THE PROPOSED TELECOMMUNICATION SITE:

1. A WALK IN EQUIPMENT SHELTER ON A CONCRETE SLAB
2. BACK UP DIESEL GENERATOR ON A CONCRETE SLAB
3. ANTENNAS AND ANCILLARY EQUIPMENT ON A 12' - 0" PLATFORM

TOWN OF SOUTH WINDSOR

1. TOWN ANTENNAS ON PIPE MOUNTS
2. TOWN EQUIPMENT ON A CONCRETE SLAB

VERIZON IS PROPOSING TO INSTALL THE FOLLOWING IMPROVEMENT ON THE PROPOSED TELECOMMUNICATION SITE:

1. RADIOS, BACK UP GENERATOR ON A CONCRETE SLAB
2. ANTENNAS AND ANCILLARY EQUIPMENT ON A 12' - 0" PLATFORM

CONNECTICUT SITING COUNCIL DEVELOPMENT & MANAGEMENT DOCUMENTS

TARPON TOWERS

Site Number:
CT1207

Site Name:
SOUTH WINDSOR

99 DART HILL ROAD
SOUTH WINDSOR, CT 06074

Prepared For:
TARPON TOWERS III
8916 77TH TERRACE EAST
SUITE 103
LAKEWOOD RANCH, FL 34202

Project No: 2022.17

DOUGLAS J. ROBERTS – ARCHITECT
110 Washington Avenue
Fourth Floor
North Haven, CT 06473

Tel: 203.234.6368
Email: droberts - architect@outlook.com

STATE OF CONNECTICUT · DOUGLAS J. ROBERTS · No. 4310 · LICENSED ARCHITECT

Key Plan

Do not scale dimensions from drawings
Site verify all dimensions prior to construction
Report all discrepancies to Architect immediately
This drawing is to be read in conjunction with all relevant documents and drawings

REVISION SCHEDULE

REVISION	DESCRIPTION	DATE
1	Revision 1	July 3, 2024

Drawing By: Zachary J. Roberts
Drawing Date: July 2, 2024
Reviewed By: Niddrie Rowe
Project No: 2022.17
Scale:

Sheet Title:
TITLE SHEET

Original drawing is ANSI - D.
Do not scale contents of this drawing.

Sheet Number: T - 001
Revision: 1

GENERAL NOTES

1 FOR THE PURPOSE OF THE CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITION SHALL APPY:

CONTRACTOR - TARPON TOWERS II OR IT'S AFFILIATES

SUB CONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)

OWNER - PROPERTY OWNER OF RECORDED / TARPON TOWERS II

2 PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE SITE TO FORMULARIZE THEMSELF WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DOCUMENTS

3 ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDNANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS IR ANT PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

4 ALL WORK SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL, STATE AND FEDERAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS

5 DRAWINGS PROVIDED HERE ARE NOT RO BE SCALED

6 UNLESS OTHERWISE NOTED, THE WORK SHALL INCLUDE ALL FINISHED MATERIALS, EQUIPMENT, APPURTENANCES AND ALL LABOR NEEDED TO COMPLETE THE INSTALLATIONS AS SHOWN ON THE CONTRACT DOCUMENTS.

7 THE SUB CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN APPROACNED EITIH THE MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.

8 IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THE CONTRACT DOCUMENTS, THE SUBCONTRACTOR SHALL PROPOSE AND ALTERNATIVE INSTALLED FOR APPROVAL BY THE CONTRACTOR AND A&E.

9 SUBCONTRACTOR SHALL DETERMINE THE ACTUAL ROUTING OF ALL CONDUITS, TOWER, FIBER, AND GROUNDING CABLE AS SHOWN ON THE POWER, GROUNDING AND TELCO DRAWINGS.

10 THE SUB CONTRACTOR SHALL PROTECT EXISTING SITE IMPROVEMENTS, PAYMENTS, CURB, LANDSCAPING AND STRUCTURES. ANY DAMAGE PORTIONS SHALL BE REPAIRED AT THE SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER

11 THE SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATURES FOR THE SITE.

12 THE SUB CONTRACTOR SHALL LEAVE THE PREMISES IN A CLEANED CONDITION AND RETURN DISTURBED AREAS TO THERE ORIGINAL CONDITIONS.

13 THE SUBCONTRACTOR SHALL SUPERVISED AND THE PROJECT SCOPE AS DESCRIBED WITHIN THESE DOCUMENTS

14 THE SUB CONTRACTOR SHALL COMELY WITH ALL REQUIREMENT OF TARPON TOWERS II STANDARDS, SPECIFICATIONS AND ENVIRONMENTAL REPORTS

15 THE SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR RO COMMENCING AND Y WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY THE SUBCONTRACTOR. THE SUB CONTRACTOR SHALL NOTIFY THE CONTRACTOR AND A&E OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH THE CONSTRUCTION.

16 IN THE CASE OF A COLOCATION OR TOWER SWAP PLEASE NOTE THAT THE EQUIPMENT ON SITE MAY BE IN OPERATION AND ANY WORK ON OR NEAR THIS EQUIPMENT MUST BE COORDINATIZED WITH THE CONTRACTOR.

17 IF ANY RADIO EQUIPMENT IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROTECHNICAL RADIATION. THIS EQUIPMENT SHOULD BE SHUT DOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE ANY WORKERS TO DANGER. PERSONNEL rf MONITORS ARE RO BE WORN TO ALERT ONE OF ANY DANGEROUS EXPOSURE LEVELS IF WORKING NEAR ANTENNAS

SITE WORK GENERAL NOTES

1 THE SUBCONTRACTOR SHALL CONTRACT WITH A UTILITY LOCATION SERVICE AND HAVE ANY UTILITY'S MARKED THAT ARE NOT LOCATED BY CBYD PRIOR TO THE START OF CONSTRUCTION.

2 ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTIC AND ANY OTHER UTILITY'S WHERE ENCOUNTERED DURING CONSTRUCTION SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPOSED EXECUTION OF THE WORK, SHALL BE RELOCATION AS DIRECTED BY THE A&E. EXTREAM CAUTION SHALL BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING NEAR UTILITY'S AND ANY SITE IMPROVEMENTS. THE SUBCONTRACTOR SHALL PROVIDED SAFETY TRAINING FOR ALL STAFF, THIS TRAINING WILL INCUDE BUT IS NOT LIMITED TO, FALL PROTECTION, CONFINED SPACE, ELECTRICAL SAFETY, AND TRENCHING AND EXCAVATION.

3 ALL SITE WORK IS SHOWN AND INDICATED ON THE CONTRACT DRAWINGS AND SPECIFICATIONS.

4 ALL RUBBISH STUMPS, STONE, ORGANIC MATERIALS NOT BEING REUSED ON SITE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

5 THE SITE SHALL BE GRADED TO PREVENT SURFACE WATER FROM PONDING WITHIN THE COMPOUND AND EQUIPMENT.

6 NO MATERIAL SHALL BE PLACED ON FROZEN MATERIALS NORE SNOW OR ICE.

7 THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO THE INSTALLATION OF THE FINISHED SURFACE MATERIALS.

8 ALL ABANDON OR INACTIVE SEWER, WATER, GAS, ELECTRIC AND MISALANIOUS UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED , PLUGED OR OTHERWISE DISCONTINUED AT POINTS WHITCH WILL NOT INTERFERE WITH THE EXECUTION OF THE PROPOSED WORK, SUBJECT TO THE APPROVALS OR THE A&E, OWNER/LAND LORD AND/OR LOCAL UTILITIES.

9 THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE PROPOSED WORK IMPACTED BY THE PROPOSED TOWER, EQUIPMENT OR ACCESS ROAD AND TURNAROUND, SHALL BE GRADED TI A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT DOCUMENTS.

10 THE SUBCONTRACTOR SHALL MINIMIZE THERE DISTURBANCE TO THE SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMATIONS WITH THE GUYED LINES FOR SEDIMENTATION AND EROSION CONTROL.

11 THE SUBCONTRACTOR SHALL COMPLY WITH WORK HOURS OF 8:00 AM TO 5:00 PM UNLESS OTHERWISE NOTED.

12 THE SUB CONTRACTOR SHALL PROVIDE AND INSTALL SITE SIGNAGE IN ACCORDANCE WITH THE TARPOMN TOWERS II SPECIFICATIONS FOR SIGNAGE.

STRUCTURAL NOTES

1 DESIGN REQUIREMENTS ARE PER STATE OF CONNECTICUT BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE (IBC 2015), ASCE 7-05, EIA/TIA-222-H STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.

2 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 CONSTRUCTION MANAGER AND ENGINEER OF RECORD.

3 DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".

4 STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.

5 STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.

6 STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.

7 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.

8 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.

9 FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.

10 CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". 14TH EDITION.

11 INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.

12 UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.

13 EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-20 AND OR HY-150 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.

14 EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

15 LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.

16 WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.

17 ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.

18 NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17)

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

SPECIAL INSPECTION CHECK LIST

PRE CONSTRUCTION ACTIVATES

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	ENGINEER OF RECORD APPROVED SHOP DRAWINGS
REQUIRED	MATERIAL CERTIFICATION REPORTS
REQUIRED	PACKING SLIPS
REQUIRED	BORROWED FILL CERTIFICATION
REQUIRED	CONCRETE MIX DESIGN

DURING CONSTRUCTION ACTIVATES

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	SUB BASE INSPECTIONS
REQUIRED	BASE INSPECTIONS
REQUIRED	FORMWORK INSPECTIONS
REQUIRED	REINFORCEMENT STEEL INSPECTIONS
REQUIRED	ANCHOR BOLT INSPECTIONS
REQUIRED	CONCRETE SLUMP AND AIR ENTRAINMENT INSPECTIONS
REQUIRED	CONCRETE COMPRESSIVE TESTING
REQUIRED	CONCRETE PROTECTION
REQUIRED	BACK FILL COMPACTION TESTING

POST CONSTRUCTION

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	CONCRETE COMPRESSIVE TESTS REPOTS
REQUIRED	BACK FILL COMPACTION TEST REPORTS
REQUIRED	AS BUILT DRAWINGS
REQUIRED	PHOTOS OF ALL CONSTRUCTION ACTIVATES

CONNECTICUT SITING COUNCIL DEVELOPMENT & MANAGEMENT DOCUMENTS

TARPON TOWERS

Site Number:
CT1207

Site Name:
SOUTH WINDSOR

99 DART HILL ROAD
SOUTH WINDSOR, CT 06074

Prepared For:
TARPON TOWERS III
8916 77TH TERRACE EAST
SUITE 103
LAKEWOOD RANCH, FL 34202

Project No: 2022.17

DOUGLAS J. ROBERTS – ARCHITECT
110 Washington Avenue
Fourth Floor
North Haven, CT 06473

Tel: 203.234.6368
Email: droberts - architect@outlook.com

STATE OF CONNECTICUT · DOUGLAS J. ROBERTS · No. 4310 · LICENSED ARCHITECT

Key Plan

Do not scale dimensions from drawings
Site verify all dimensions prior to construction
Report all discrepancies to Architect immediately
This drawing is to be read in conjunction with all relevant documents and drawings

REVISION SCHEDULE

REVISION	DESCRIPTION	DATE
1	Revision 1	July 3, 2024

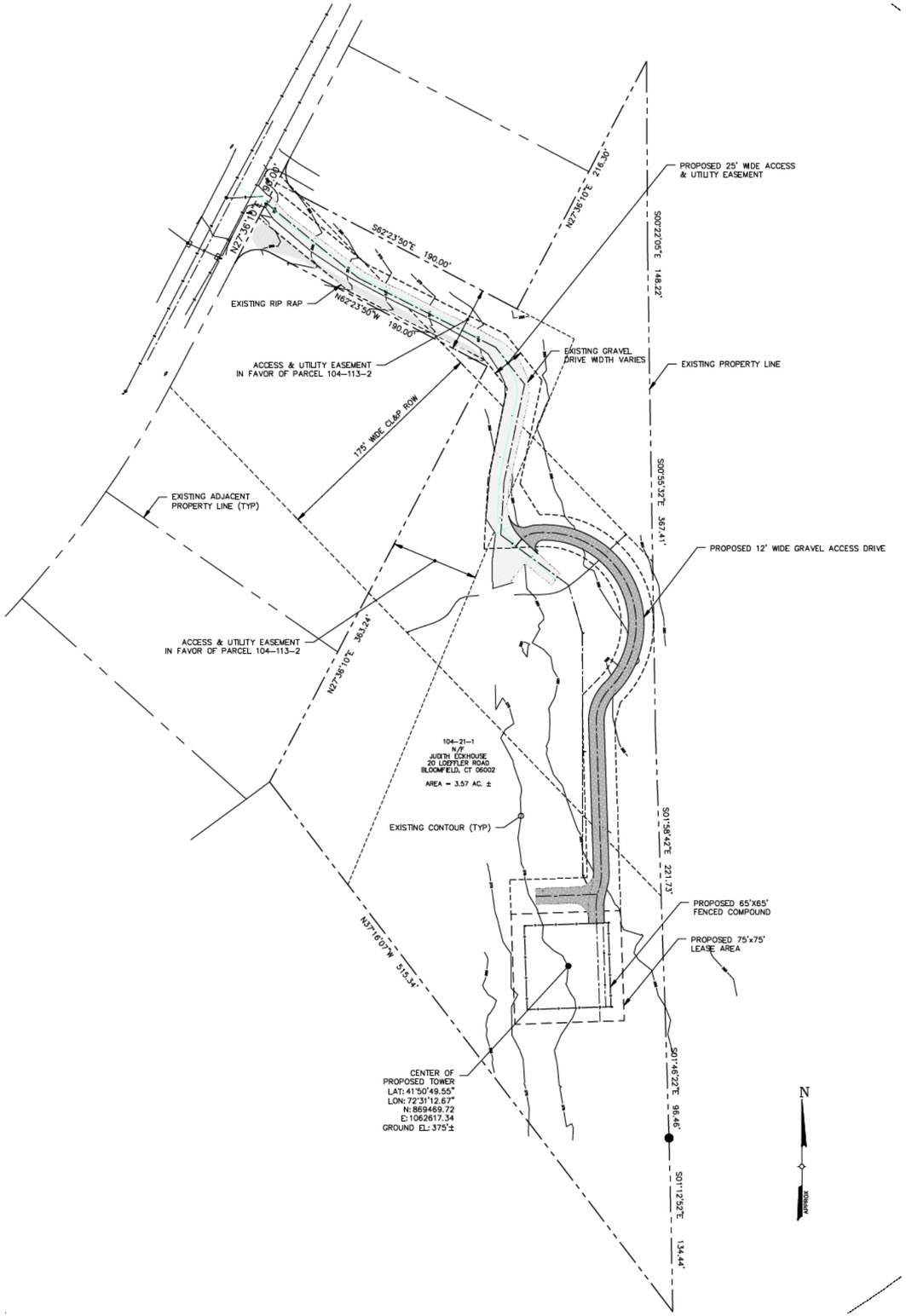
Drawing By: Author
Drawing Date: July 2, 2024
Reviewed By: Checker
Project No: 2022.17
Scale: 12" = 1'-0"

Sheet Title:
GENERAL NOTES

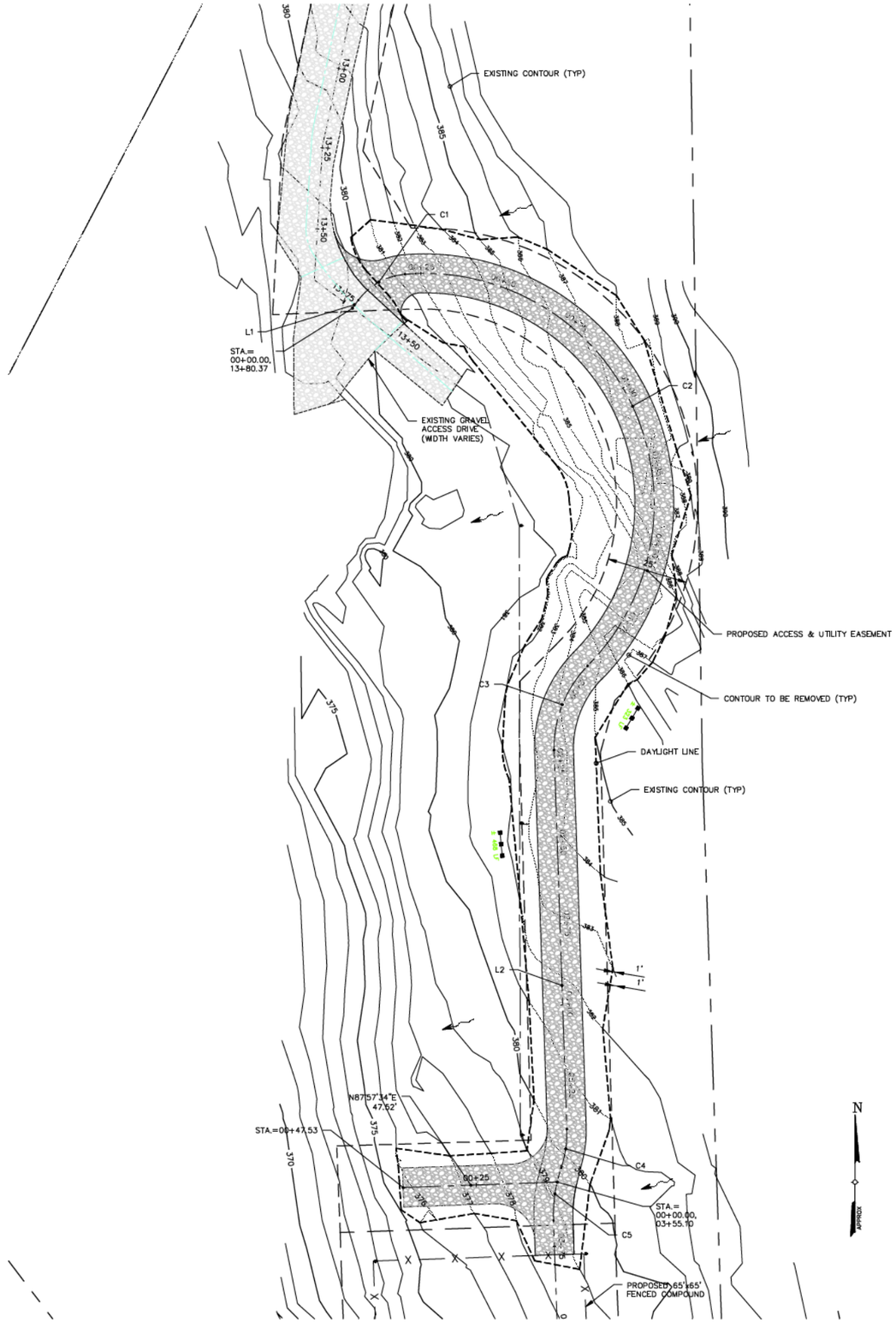
Original drawing is ANSI - D.
Do not scale contents of this drawing.

Sheet Number: GN - 101
Revision: 1

PLOT DATE: 6/19/2024 3:45 PM



1 C-1 OVERALL SITE PLAN
SCALE: 1 = 50'



2 C-1 PROJECT AREA SITE PLAN
SCALE: 1 = 20'

DATE	REVISION DESCRIPTION	PM	ENG CHK
05/13/24	FOR COMMENT		GB JMP
06/19/24	FOR COMMENT		GB JMP

Tectonic
PRACTICAL SOLUTIONS, EXCEPTIONAL SERVICE.
Tectonic Engineering Consultants, Geologists & Land Surveyors, P.C., Inc.
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STATE OF CONNECTICUT
EDWARD N. TARGETT
No. 28473
LICENSED PROFESSIONAL ENGINEER

DEVELOPER:

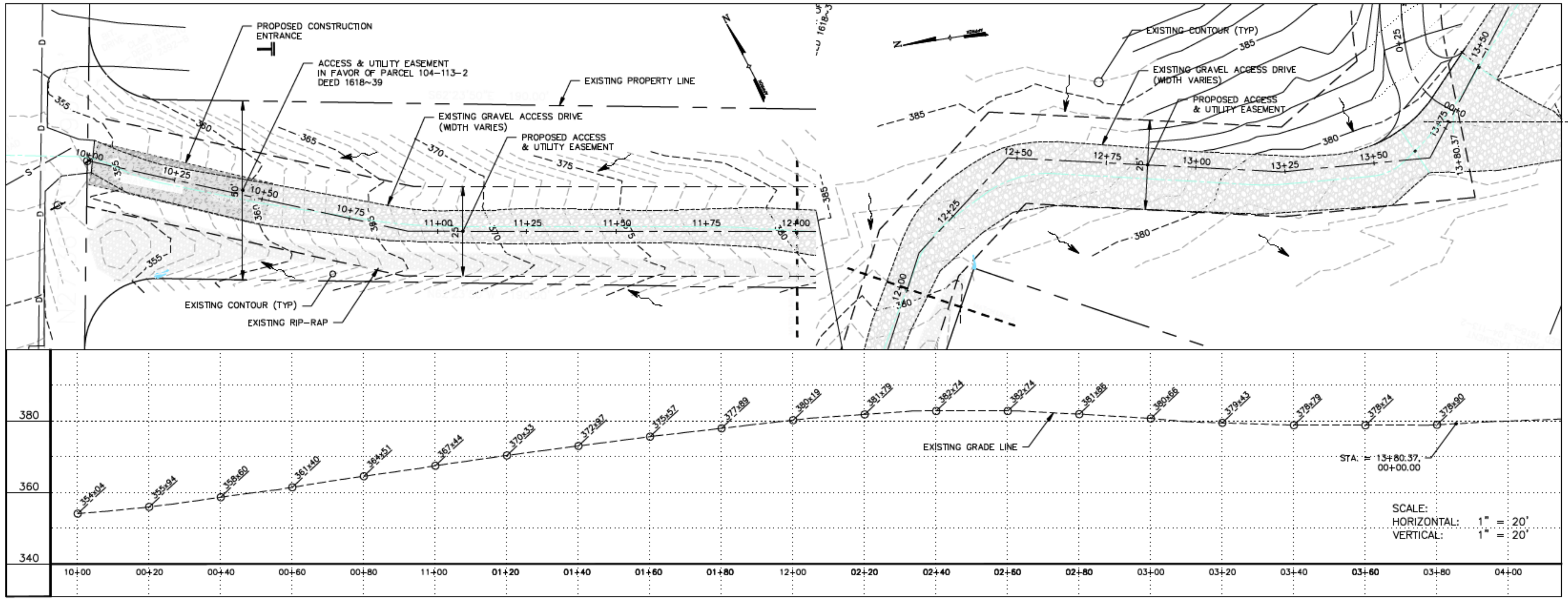
PAGE SIZE: 34" x 22"
PROJECT #: 12576.01

PROJECT NAME: SOUTH WINDSOR

SHEET NAME:

Revision:

DRAWING #: C1



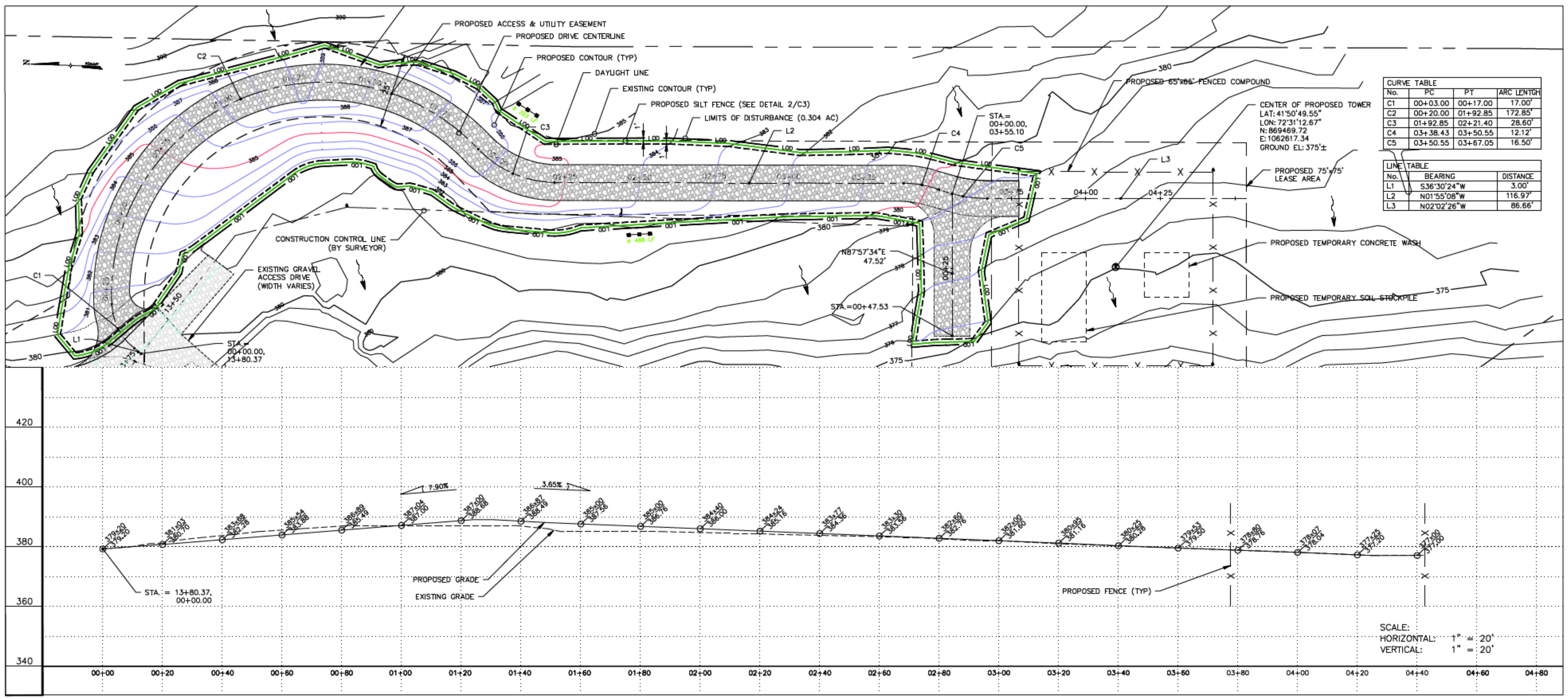
PLAN & PROFILE 10+00–13+80.37

1 / C2

SCALE: 1" = 20' (22"X34")

LEGEND:

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- PROPOSED LEASE AREA
- PROPOSED EASEMENT
- EXISTING CONTOUR LINES
- PROPOSED CONTOUR LINES
- DAYLIGHT LINE
- LIMITS OF DISTURBANCE
- PROPOSED SILT FENCE
- EXISTING GRAVEL
- EXISTING RIP-RAP
- PROPOSED GRAVEL DRIVE
- CONTOUR TO BE REMOVED
- FLOW ARROW
- CONSTRUCTION ENTRANCE



CURVE TABLE			
No.	PC	PT	ARC LENTGH
C1	00+03.00	00+17.00	17.00'
C2	00+20.00	01+92.85	172.85'
C3	01+92.85	02+21.40	28.60'
C4	03+38.43	03+50.55	12.12'
C5	03+50.55	03+67.05	16.50'

LINE TABLE		
No.	BEARING	DISTANCE
L1	S36°30'24"W	3.00'
L2	N01°55'08"W	116.97'
L3	N02°02'26"W	86.66'

PLAN & PROFILE 00+00–04+42

2 / C2

SCALE: 1" = 20' (22"X34")

DATE	REVISION DESCRIPTION	PM	ENG	CHK
05/13/24	FOR COMMENT		GB	JMP
06/19/24	FOR COMMENT		GB	JMP

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PROJECT #: 12576.01

PROJECT NAME: SOUTH WINDSOR

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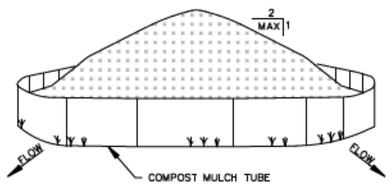
DRAWING #: C2

PLOT DATE: 6/19/2024 3:45 PM

SYMBOL

SP

TEMPORARY STOCKPILE (NTS)



NOTE:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1V : 2H.
3. UPON COMPLETION OF SOIL STOCKPILE, EACH PILE SHALL BE SURROUNDED WITH SILT FENCING. THEN STABILIZED WITH VEGETATION OR COVERED.
4. SEE SPECIFICATIONS FOR INSTALLATION OF SILT FENCE.
5. SOIL STOCKPILES MUST BE PROTECTED BY THE USE OF ESTABLISHED VEGETATION, ANCHORED STRAW MULCH ROLLED STABILIZATION MATTING OR OTHER DURABLE COVERING. A BARRIER MUST BE INSTALLED AT LEAST 15 FEET FROM THE TOE OF THE STOCKPILE TO PREVENT SOIL MIGRATION AND TO CAPTURE LOOSE SOIL.

TEMPORARY STOCKPILE

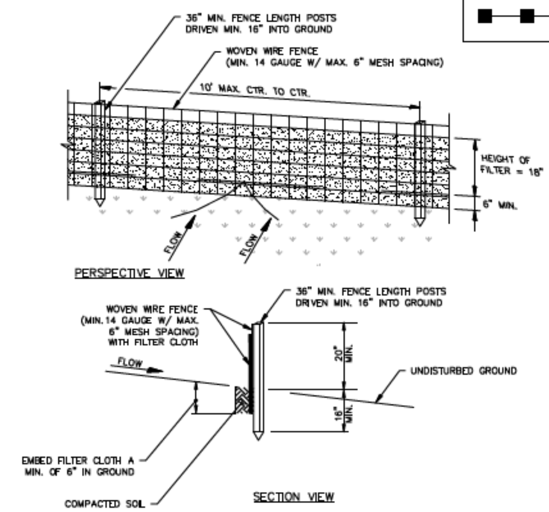
(NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL)

1 / C3 TEMPORARY SOIL STOCKPILE DETAIL

SCALE: NTS

FIGURE 5.30
REINFORCED SILT FENCE

SYMBOL



CONSTRUCTION SPECIFICATIONS:

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY T FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAX. MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL MEET THE MINIMUM REQUIREMENTS SHOWN.
5. MAINTENANCE SHALL BE PREFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

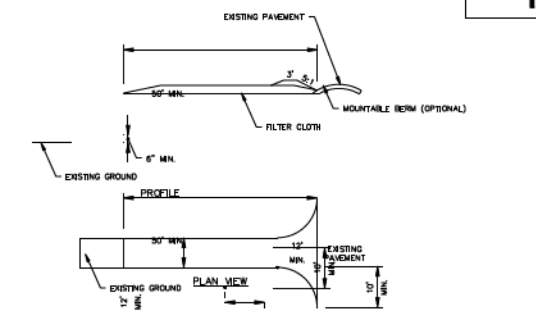
REINFORCED SILT FENCE

2 / C3 TEMPORARY SOIL STOCKPILE DETAIL

SCALE: NTS

FIGURE 2.1
STABILIZED CONSTRUCTION ACCESS

SYMBOL



CONSTRUCTION SPECIFICATIONS:

1. STONE SIZE – USE 1–4 INCH STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH– TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ACCESS SHALL BE PIPED BENEATH 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 CONDITIONS WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAYS, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

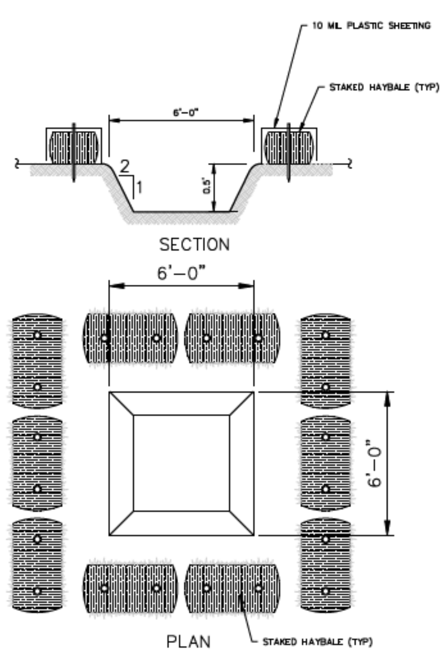
STABILIZED CONSTUCTION ACCESS

3 / C3 TEMPORARY SOIL STOCKPILE DETAIL

SCALE: NTS

SYMBOL

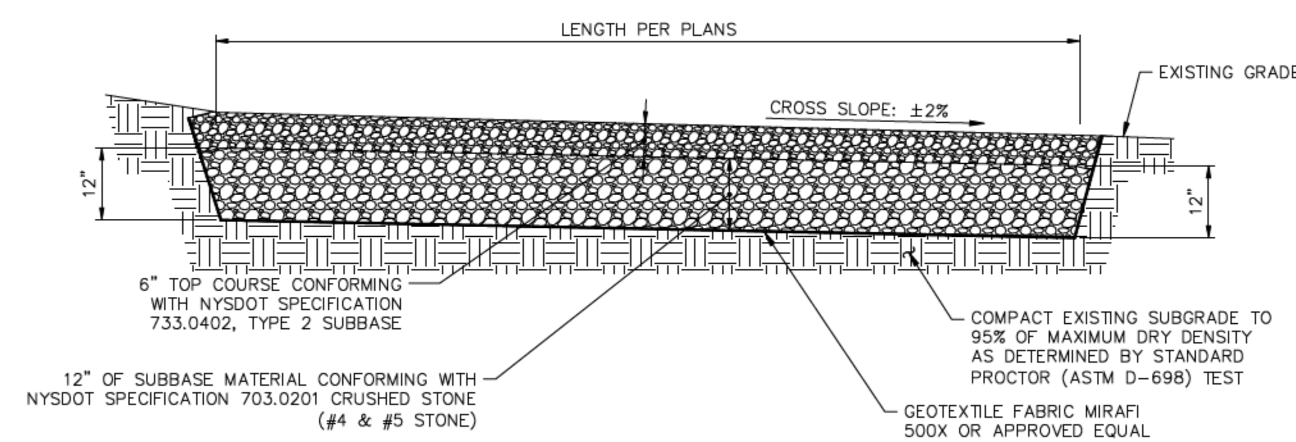
WB



STABILIZED CONSTUCTION ACCESS

4 / C3 TEMPORARY CONCRETE WASH DETAIL

SCALE: NTS



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 MODIFIED PROCTOR TEST (ASTM D–1557) AND WITHIN PLUS OR MINUS 3% OF OPTIMUM MOISTURE CONTENT.
3. CONTRACTOR TO ASSURE THAT EXISTING DRAINAGE PATTERNS ARE MAINTAINED.

5 / C3 GRAVEL DRIVE CROSS SECTION

SCALE: 3/8" = 1'-0" (11x17 SIZE)
3/4" = 1'-0" (22x34 SIZE)

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C3

PLOT DATE: 6/19/2024 3:45 PM

Section 11 – Erosion and Sediment Control

11-1 General

A. The Soil Erosion and Sediment Control Measures set forth in the following paragraphs and the *New York State Standard Specifications for Erosion and Sediment Control (Blue Book) (2016)*, or latest revision, shall be incorporated into the final plans and employed prior to and during any construction in order to minimize the degree of soil erosion and sedimentation caused by construction activity. The *Blue Book* sections and appendices are available at the following link: New York State Standard Specifications for Erosion and Sediment Control.

B. The Developer or its Contractor shall be responsible for the implementation, construction and maintenance of all soil erosion and sediment control measures in accordance with all applicable federal, state and local laws, rules and regulations.

C. Damage to surface waters resulting from erosion and sedimentation shall be minimized by stabilizing disturbed areas and by removing sediment from construction site discharges.

D. Insofar as practicable, existing vegetation shall be preserved.

E. Site preparation activities shall be planned to minimize the area and duration of soil disruption.

F. Permanent traffic corridors shall be established and "routes of convenience" shall be avoided.

G. Construction traffic shall not cross streams or ditches except at suitable crossing facilities, and shall not operate unnecessarily within the waterways or drainage ditches.

Storm Sewer Drainage Structure

A. All storm sewer drainage structures having an open grate shall be required to have inlet protection in conformance with the *Blue Book*.

Stone Check Dams or Aggregate Sediment Filters

A. Stone check dams or aggregate sediment filter shall be constructed at least every 200 feet along the course of each drainage ditch and at its downstream terminus. Dams shall be installed such that the elevation of the crest of the downstream dam is at the same elevation of the toe of the upstream dam.

B. Ditches less than 200 feet in total length shall have a stone sediment filter constructed at the downstream termini.

C. Additional stone check dams or aggregate sediment filters shall be constructed as deemed necessary by the Commissioner of Public Works or Public Works Operations Supervisor.

Temporary Dewatering Sediment Basins

A. Whenever the discharge from dewatering operations cannot be directed over stable areas, i.e. paved or well vegetated areas, temporary shallow ditches shall be cut to convey the flow to temporary sediment basins.

B. Such temporary sediment basins shall be shallow excavated basins and be of suitable size to permit the settling of solids.

C. The outlets of all such temporary basins shall be stabilized with graded aggregate in sizes ranging up to one-and-one-half inch (1-1/2") diameter.

Headwalls and Riprap

A. Headwalls shall be designed and installed such that their location will be as far from the edge of the roadway as is necessary to provide a safe and stable slope. A suitable access area for maintenance shall be provided within the ROW or easement.

B. The soils downstream of all headwalls shall be stabilized with riprap.

C. Rip rap shall be installed at a minimum depth thickness of 18 inches and grouted in place.

D. Prior to the installation of riprap, a geotextile undercut fabric shall be installed upon the subgrade, in an anchoring trench one-foot deep and one-foot wide, with the length equal to the width of the riprap apron at that point. The anchoring trench shall be backfilled with pea gravel.

11-2 Materials

A. Geotextile underdrain fabric shall be *"WINFAB 200W"* by WINFAB or an approved or equal. The material and manufacture of an approved or equal, must be listed in the *NYSDOT Engineering Division Approved Materials, Equipment, Methods and Procedures (July 14, 2022)*.

B. Aggregate used for aggregate sediment filter construction shall consist of well-graded stone up to one-and-one-half inches (1-1/2") in diameter.

C. Outlet stabilization aggregate for temporary dewatering sediment basins shall be graded, ranging up to one-and-one-half inch (1-1/2") diameter stone.

D. All riprap will fall within the weight range of 20 to 35 pounds with 75 percent (75%) of the riprap in the 25- to 35-pound weight range. Riprap shall be grouted in place.

E. Pea gravel shall be U.S. Standard Sieve Mesh No. 6.

F. Mulch shall be wood fiber hydromulch or another sprayable product approved for erosion control (nylon web or mesh) applied according to the manufacturers' specification.

G. Mulching blanket for steep slopes and drainage swales: *"Curlex Enforcer"* by American Excelsior Company, *"GEOWEB Slope Protection System"* by Presto Geosystems, or an approved or equal. For all slopes exceeding three-on-one (3:1), slope protection shall be *"GEOWEB Slope Protection System"* by Presto Geosystems. The material and manufacture of an approved or equal must be listed in the *NYSDOT Engineering Division Approved Materials, Equipment, Methods and Procedures (July 14, 2022)*.

H. Topsoil shall be fertile, friable, natural loam free of subsoil, clay lumps, brush, stones or other deleterious materials larger than two inches in the greatest dimension, conforming to the requirements of the *Blue Book* and meeting the gradation requirements in Table 11-1.

Topsoil shall have a pH range of 5.5 to 7.5 standard units (s.u.) and an organic content of two (2) to 20 percent (20%).

Table 11-1 – Topsoil Gradation

Sieve	Percent Passing
1-1/2 inch	100
1 inch	85-100
1/4 inch	65-100
No.200	20-100

I. Seed shall be by weight as shown in Table 11-2 unless a specific mixture is indicated on the plans and approved by the Town. Total pure live seed shall be 80 pounds per acre and weed seed content shall not exceed one-quarter percent (0.25%).

Table 11-2 – Seed Mixture

Name	Variety	Weight of Pure Live Seed	Percent Generation
Creeping Red Fescue (Festuca Rubra)	Commercial	20	85
Perennial Ryegrass (Lolium Perenne)	Norley	20	85
Tall Fescue (Fesyuca Elatior Var.)	Kentucky 31	30	85
Blue Grass	Merion	10	80

11-3 Installation

Storm Sewer Drainage Structure

A. The developer or his representative shall be responsible for maintaining all inlet protection until such time as the roadways are dedicated to the Town or in the opinion of the Commissioner of Public Works or the Public Works Operations Supervisor that sufficient vegetation has been established.

B. Immediately following completion of any and all of the proposed storm sewer drainage structures outside of the proposed roadway, storm sewer drainage structures and inlet protection shall be installed in accordance with the *Blue Book*. The structure shall function to prevent any sediment entrance into the storm sewer drainage structure. They shall be maintained in good condition until final vegetation cover is well established.

Aggregate Sediment Filters and Silt Fence

A. Until such time as final site stabilization is completed with permanent drainage ditches, all drainage flows will receive treatment with aggregate sediment filters so as to effectively trap sediment and minimize its release off-site in accordance with the *Blue Book*.

B. Aggregate sediment filters shall be placed in a ditch prior to disturbance of the area which that ditch drains.

C. The aggregate sediment filter shall be placed so as to fully span the ditch cross section such that all flow shall pass through rather than around or over the filters.

D. Downstream of the aggregate sediment filter, exposed soil over which dewatering discharge occurs shall be protected with hay mulch anchored by stapled jute or plastic netting.

E. The developer or his representative shall be responsible for maintaining the proper function of the aggregate sediment filters throughout the construction period and until such time as final stabilization of the upstream areas contributing flow is achieved.

F. The developer or the Public Works Operations Supervisor shall be responsible for removing aggregate sediment filters after, in the opinion of the Commissioner of Public Works or the Public Works Operations Supervisor, stabilization of upstream contributory areas is achieved.

G. Silt fence, or approved equal form of erosion and sediment control, shall be constructed around all stockpiles of fill, topsoil or excavated overburden that are to remain exposed for longer than 14 days.

H. Silt fence 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.

Temporary Dewatering Sediment Basins

A. Stabilize outlets of basins with graded aggregate.

B. The aggregate shall be placed in and across the outlets and maintained so as to span the entire cross section of flow, and be of sufficient thickness and width such that all flow passes through it, rather than around or over it.

C. The anchored netting shall extend to the point where flow will occur over permanently stabilized areas (vegetated or paved).

D. The developer or his representative shall be responsible for constructing and maintaining the temporary ditches and sediment traps such that they function effectively for the life of the dewatering operations.

Headwalls and Riprap

A. Install riprap a minimum depth thickness of 18 inches.

B. Install geotextile undercut fabric upon the subgrade prior to the installation of riprap. The fabric shall be installed in accordance with the manufacturer's recommended methods for installation.

C. The fabric shall be installed in an anchoring trench one-foot deep and one-foot wide with the length equal to the width of the riprap apron at that point.

D. Backfill the anchoring trench with pea gravel.

E. The fabric shall be installed to extend the length and width of the area to have riprap installed.

Stockpiled Material

A. Topsoil and fill that is to remain stockpiled on-site for periods greater than 14 days shall be stabilized and seeded. Prior to the seeding 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.

B. Following grading, fertilizer (5-5-5) shall be applied at the rate of two pounds of nitrogen per 1,000 square feet or equivalent and pulverized dolomitic lime ("lime") at the rate of 20 pounds per 1,000 square feet. Fertilizer and "lime" shall then be worked into the soil as nearly as practical to a depth of four inches with a disc, spring tooth harrow or other suitable equipment.

C. Annual rye grass seed shall then be uniformly spread at a rate of seventh-tenths (0.7) pounds per 1,000 square feet. If seeding takes place in late fall or early winter, apply Certified "Aroostook" winter rye at a rate of two-and-one-half (2.5) pounds per 1,000 square feet. Optimum seeding dates for this type seed are during the period of March 15 to May 1, or August 15 to November 1.

D. Seed application shall be performed by hand, cyclone, and drill or cultipack seeder or by an appropriate hydro seeding method.

E. If stabilization by seeding cannot occur during the recommended seeding periods above, topsoil, fill and excavated materials shall be stabilized with anchored mulch, or an approved or equal until such time as effective seeding may occur.

F. Mulch shall be spread in accordance with the *Blue Book Table 4.2 (2016)*.

G. Liquid mulch binder shall consist of asphalt emulsion or cutback asphalt, applied at 0.075 gallon per square yard, heavier at the edges and at the crests of banks. The remainder of the stockpile shall receive uniform treatment.

H. Application of liquid mulch binder shall be heavier at the edges and at the crests of banks. The remainder of the stockpile shall receive a uniform treatment.

I. In no case shall erodible material be stockpiled within 25 feet of any ditch, stream or other surface water body.

Permanent Vegetative Cover

A. Immediately following the completion of construction activities in any portion of the site, permanent vegetation shall be established on all exposed soils. Such areas shall include, but not be limited to lawn areas and exposed soil overlying sub-surface pipes.

B. Apply liquid mulch binder to equipment staging areas, abandoned roadways, and any areas adjacent to these which have also been disturbed by construction activities.

C. Stabilization with permanent vegetation cover shall be performed only between April 1 to October 15, or as weather permits.

D. In the event that stabilization is necessary at a time outside these periods, the disturbed area shall be temporarily stabilized with anchored mulch or an approved or equal until such time as effective seeding may occur.

E. Areas to be stabilized with permanent vegetation shall be prepared by applying topsoil to a uniform depth of four (4) inches.

F. The Contractor may amend natural topsoil with approved materials and by approved methods to meet the above specifications.

G. Immediately prior to topsoil application, the surface shall be scarified to provide a good bond with the topsoil.

H. When topsoil is deemed unnecessary, seedbed preparation shall be employed. Apply lime in accordance with the *Blue Book page 4.29 (2016)*.

I. The seed mixture shall be applied in accordance with *Blue Book Table 4.5 (2016)*.

J. Mulch shall be applied to all newly seeded areas immediately following seeding.

K. Provide and install a mulch adequate to protect the seeding during its growing period. It shall be the responsibility of the Contractor to determine the appropriate mulching techniques for the particular site conditions and acquire approval of the same from the Commissioner of Public Works or the Public Works Operations Supervisor.

End of Section

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PROJECT NAME: SOUTH WINDSOR

SHEET NAME: EROSION AND SEDIMENT CONTROL DETAILS

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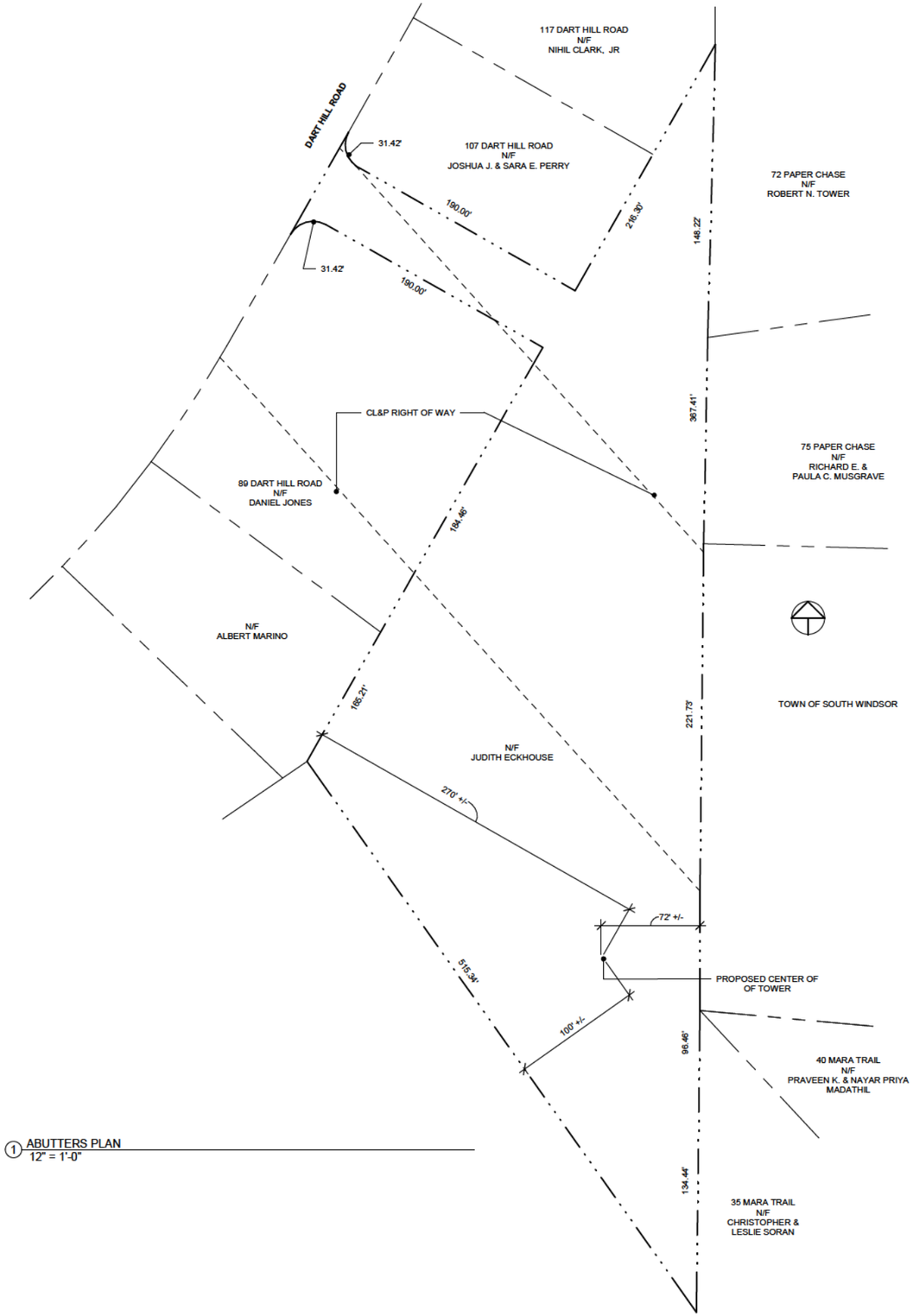
DRAWING # C4



1 ABUTTERS PLAN
12" = 1'-0"

CONNECTICUT SITING COUNCIL DEVELOPMENT & MANAGEMENT DOCUMENTS

TARPON TOWERS

Site Number:
CT1207

Site Name:
SOUTH WINDSOR

99 DART HILL ROAD
SOUTH WINDSOR, CT 06074

Prepared For:
TARPON TOWERS III
8916 77TH TERRACE EAST
SUITE 103
LAKEWOOD RANCH, FL 34202

Project No: 2022.17

DOUGLAS J. ROBERTS – ARCHITECT
110 Washington Avenue
Fourth Floor
North Haven, CT 06473

Tel: 203.234.6368
Email: droberts - architect@outlook.com

STATE OF CONNECTICUT
DOUGLAS J. ROBERTS
No. 4310
LICENSED ARCHITECT

Key Plan

Do not scale dimensions from drawings
Site verify all dimensions prior to construction
Report all discrepancies to Architect immediately
This drawing is to be read in conjunction with all relevant documents and drawings

REVISION SCHEDULE

REVISION	DESCRIPTION	DATE
1	Revision 1	July 3, 2024

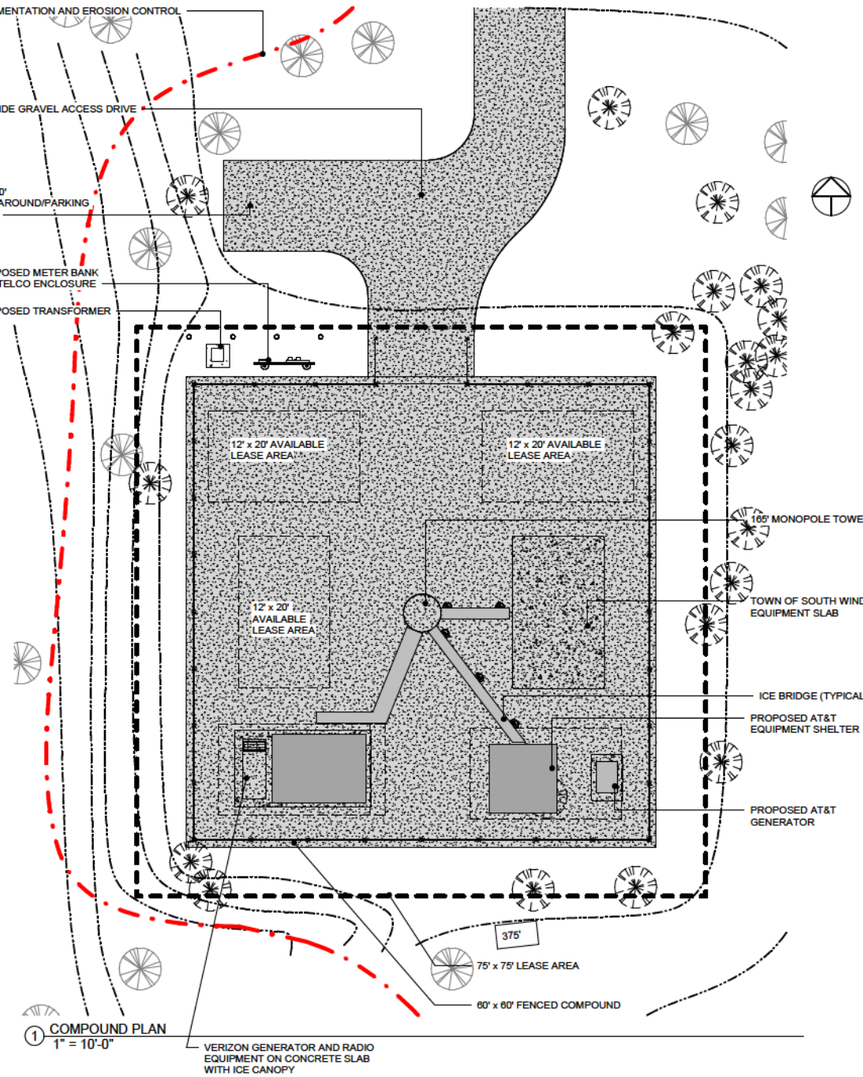
Drawing By: Zachary J. Roberts
Drawing Date: July 2, 2024
Reviewed By: Niddrie Rowe
Project No: 2022.17
Scale: 12" = 1'-0"

Sheet Title:
ABUTTERS PLAN

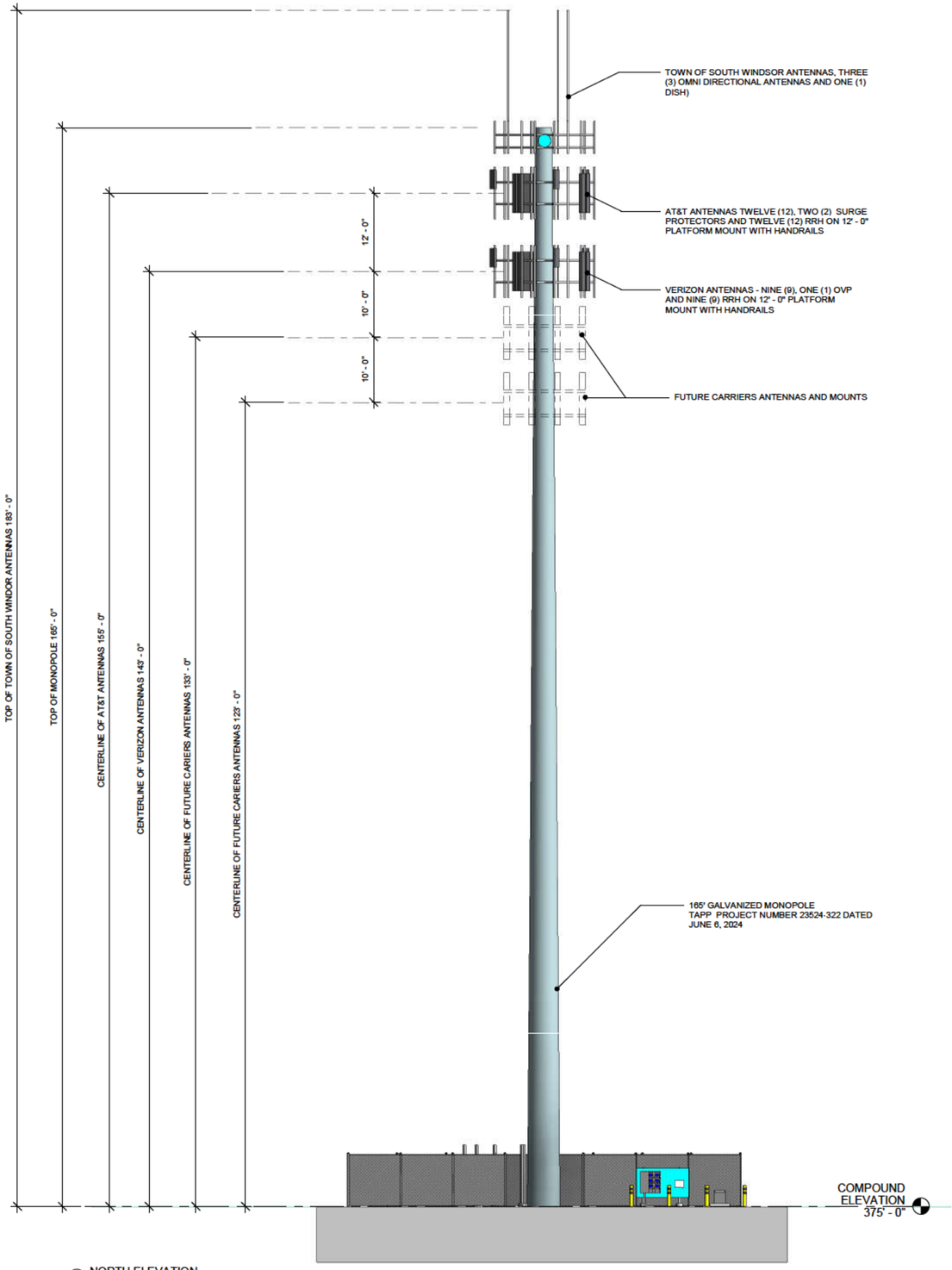
Original drawing is ANSI - D.
Do not scale contents of this drawing.

Sheet Number: C - 101
Revision: 1

7/3/2024 12:06:32 PM
E:\@ PROJECTS\TARPON TOWERS\CT\CT1207 SOUTH WINDSOR 99 Dart Hill Road South Windsor\1 - TARPON TOWERS - MACRO\5 - DOCUMENTS\3 - CONNECTICUT SITING COUNCIL\3 - DEVELOPMENT AND MANAGEMENT PLAN\CT1207 SOUTH WINDSOR CSC D&M REV 1 07032024.rvt



① COMPOUND PLAN
1" = 10'-0"



② NORTH ELEVATION
1" = 10'-0"

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Drawing Date: July 2, 2024
Reviewed By: Niddrie Rowe
Project No: 2022.17
Scale: 1" = 10'-0"

Sheet Title:
COMPOUND PLAN AND ELEVATION

Original drawing is ANSI - D.
Do not scale contents of this drawing.

Sheet Number: C - 102
Revision: 1

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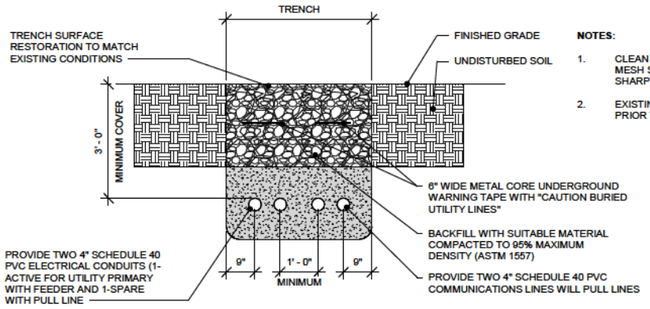
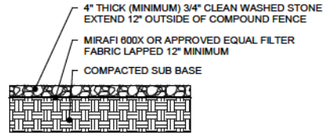
E:\@ PROJECTS\TARPON TOWERS\CT\CT1207 SOUTH WINDSOR 99 Dart Hill Road South Windsor\1 - TARPON TOWERS - MACRO\6 - DOCUMENTS\3 - CONNECTICUT SITING COUNCIL\3 - DEVELOPMENT AND MANAGEMENT PLAN\CT1207 SOUTH WINDSOR CSC D&M REV 1 07032024.rvt



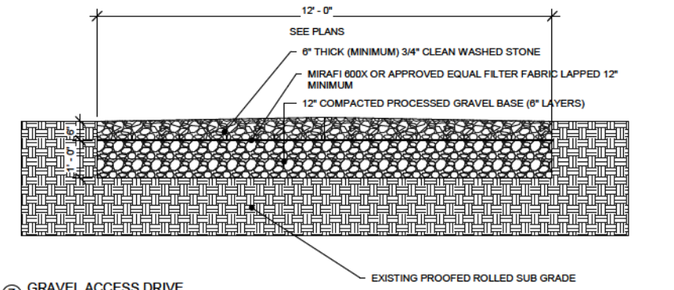
NOTES:

1. CLEAN FILL SHALL PASS THROUGH A 3/8" MESH SCREEN AND SHALL NOT CONTAIN SHARP STONES
2. EXISTING PAVEMENT SHALL BE SAW-CUT PRIOR TO TRENCH EXCAVATION

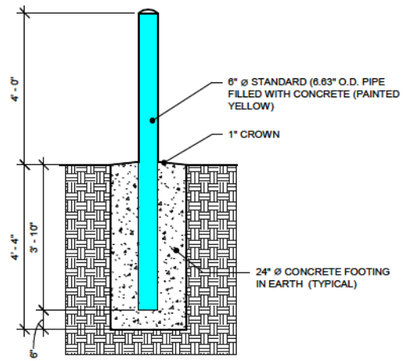
⑤ ELECTRIC AND TELCO BURRED CONDUIT DETAIL
1/2" = 1'-0"



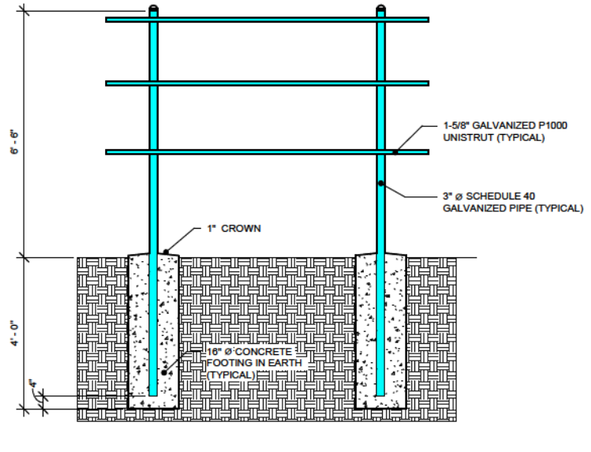
⑥ COMPOUND SURFACE DETAIL
1/2" = 1'-0"



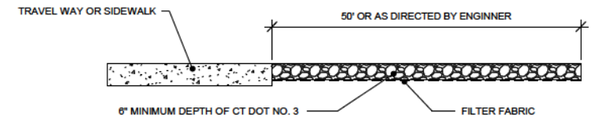
⑦ GRAVEL ACCESS DRIVE
1/2" = 1'-0"



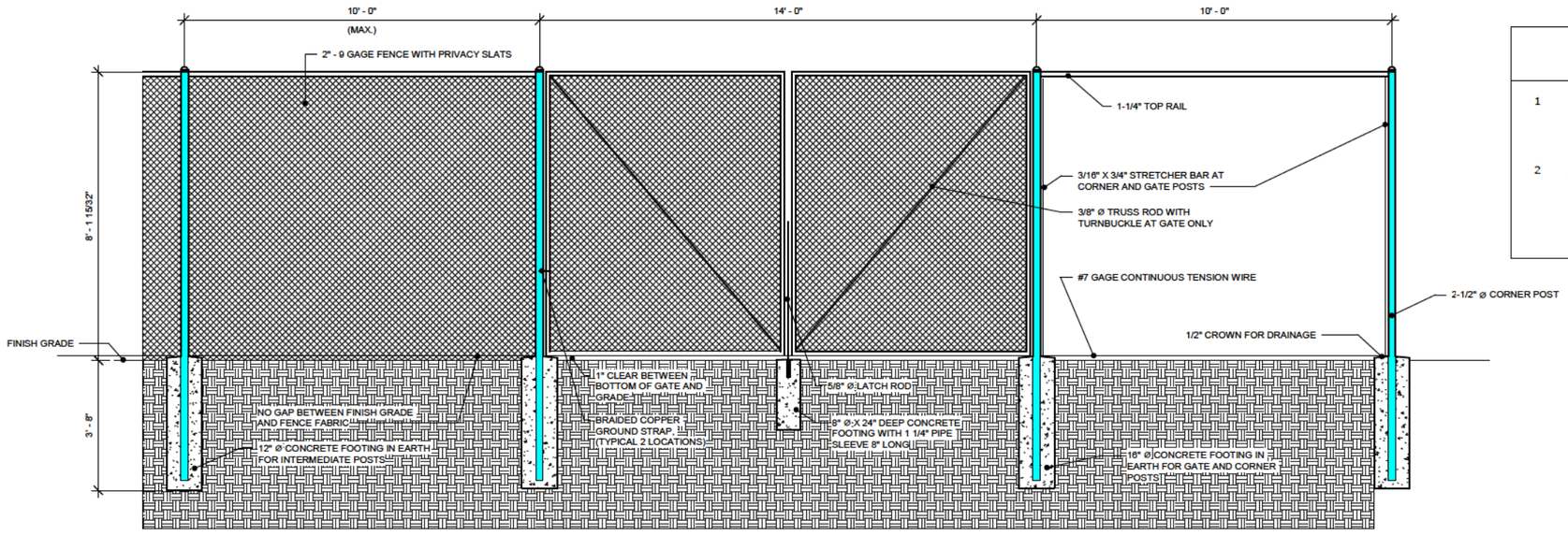
② CONCRETE FILLED BOLLARD
1/2" = 1'-0"



③ TYPICAL H - FRAME DETAIL
1/2" = 1'-0"



④ CONSTRUCTION ENTRANCE ANTI TRACKING PAD DETAIL
1/2" = 1'-0"



① CHAINLINK FENCE DETAIL
1/2" = 1'-0"

FENCE NOTES

1 POST IN THE HOLE AND FILL WITH CONCRETE OR GROUT. IF LEDGE IS BELOW FINISH GRADE, COAT BACKFILLED SECTION OF POST WITH COAL TAR, AND BACKFILL WITH WELL-DRAINING GRAVEL.

2 ATTACH EACH GATE WITH 1-1/2 PAIR OF NON-LIFT-OFF TYPE, MALLEABLE IRON OR FORGING, PIN-TYPE HINGES. ASSEMBLIES SHALL ALLOW FOR 180° OF GATE TRAVEL.

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99 DART HILL ROAD
SOUTH WINDSOR, CT 06074

Prepared For:
TARPON TOWERS III
8916 77TH TERRACE EAST
SUITE 103
LAKEWOOD RANCH, FL 34202

Project No: 2022.17

DOUGLAS J. ROBERTS – ARCHITECT
110 Washington Avenue
Fourth Floor
North Haven, CT 06473

Tel: 203.234.6368
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STATE OF CONNECTICUT · DOUGLAS J. ROBERTS · No. 4310 · LICENSED ARCHITECT

Key Plan

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REVISION SCHEDULE

REVISION	DESCRIPTION	DATE
1	Revision 1	July 3, 2024

Drawing By: Zachary J. Roberts
Drawing Date: July 2, 2024
Reviewed By: Niddrie Rowe
Project No: 2022.17
Scale: As indicated

Sheet Title:
SITE DETAILS

Original drawing is ANSI - D.
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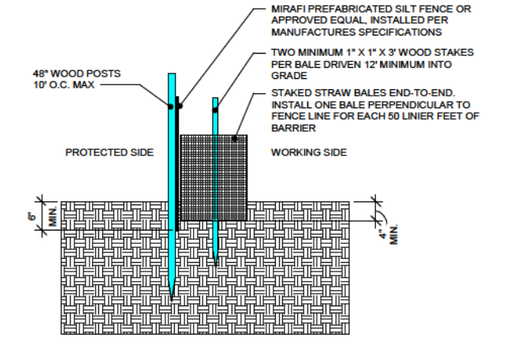
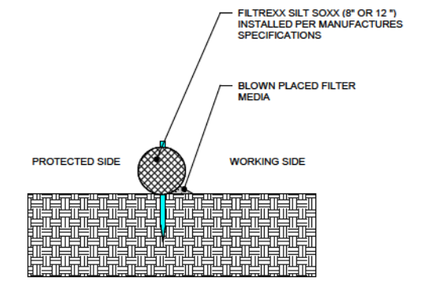
Sheet Number: C - 103
Revision: 1



① EROSION CONTROL BARRIER HAY BALE
3/4" = 1'-0"



② EROSION CONTROL BARRIER SILT SOXX
3/4" = 1'-0"

SILT SOXX NOTES

1 USE SILT SOXX WHERE CONDITIONS DO NOT ALLOW STAKES TO BE DRIVEN.

2 STRAW BALES TO BE TIED WITH BIODEGRADABLE TWINE

3 SILT SOXX FILL TO MEET FILTER SPECIFICATIONS AND APPLICATION REQUIREMENTS

4 SILT SOXX COMPOSE MATERIAL TO BE DISPERSED ON SITE OR AS DETERMINED BY THE ARCHITECT

EROSION CONTROL MEASURE NOTES

1 DISTURBED AREAS SHALL BE KEPT TO THE MINIMUM AREA NECESSARY TO CONSTRUCT THE ROADWAYS AND ASSOCIATED DRAINAGE FACILITIES.

2 HAY BALE BARRIERS AND SEDIMENT TRAPS SHALL BE INSTALLED AS REQUIRED. BARRIERS AND TRAPS ARE TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.

3 BALED HAY AND MULCH SHALL BE MOWING'S OF ACCEPTABLE HERBACEOUS GROWTH, FREE FROM NOXIOUS WEEDS OR WOODY STEMS, AND SHALL BE DRY. NO SALT HAY SHALL BE USED.

4 FILL MATERIAL SHALL BE FREE FROM STUMPS, WOOD, ROOTS, ETC.

5 STOCKPILED MATERIALS SHALL BE PLACED ONLY IN AREAS SHOWN ON THE PLANS. STOCKPILES SHALL BE PROTECTED BY SILTATION FENCE AND SEEDED TO PREVENT EROSION. THESE MEASURES SHALL REMAIN UNTIL ALL MATERIAL HAS BEEN PLACED OR DISPOSED OFF SITE.

6 ALL DISTURBED AREAS SHALL BE LOAMED AND SEEDED. A MINIMUM OF 4 INCHES OF LOAM SHALL BE INSTALLED WITH NOT LESS THAN ONE POUND OF SEED PER 50 SQUARE YARDS OF AREAS.

7 APPLICATION OF GRASS SEED, FERTILIZERS AND MULCH SHALL BE ACCOMPLISHED BY BROADCAST SEEDING OR HYDROSEEDING AT THE RATES OUTLINED.

8 AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED.

9 PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.

10 ALL CATCH BASIN INLETS WILL BE PROTECTED WITH LOW POINT SEDIMENTATION BARRIER.

11 ALL STORM DRAINAGE OUTLETS WILL BE STABILIZE AND CLEANED AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.

12 ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA.

13 NO DISCHARGE SHALL BE DIRECTED TOWARDS ANY PROPOSED DITCHES, SWALES, OR PONDS UNTIL THEY HAVE BEEN PROPERLY STABILIZED.

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SUITE 103
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REVISION	DESCRIPTION	DATE
1	Revision 1	July 3, 2024

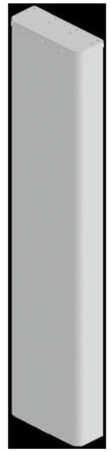
Drawing By:	Zachary J. Roberts
Drawing Date:	July 2, 2024
Reviewed By:	Niddrie Rowe
Project No:	2022.17
Scale:	As indicated

Sheet Title:
SEDIMENTATION AND EROSION CONTROL DETAILS

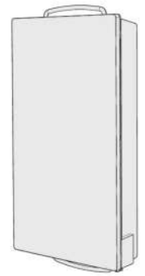
Original drawing is ANSI - D.
Do not scale contents of this drawing.

Sheet Number: C - 104
Revision: 1

AT&T - CCI - TPA65R-BU8DA-K						
MANUFACTURER	MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT	QUANTITY
CCI	TPA65R-BU8DA-K	21"	7.8"	96"	87.5 LBS	3

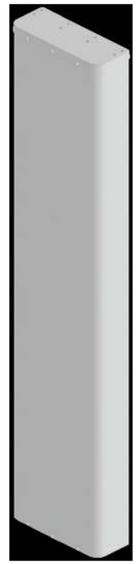


AT&T - ERICSSON - AIR 6419 N77G						
MAUNUFATURER	MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT	QUANTITY
ERICSSON	AIR 6419 N77G	16.1"	7.3"	31.1"	55.4 LBS	3



AT&T - ERICSSON - AIR 6449 B77D						
MANUFACTURER	MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT	QUANTITY
ERICSSON	AIR 6449 B77D	15.9"	10.6"	30.6"	95.5 LBS.	3

AT&T - CCI - OPA65R-BU8DA-K						
MANUFACTURER	MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT	QUANTITY
CCI	OPA65R-BU8DA-K	20.7"	7.7"	96"	81.5 LBS	3



AT&T - SQUID DC9-48-60-24-8C-EV					
MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT	QUANTITY
SQUID DC9-48-60-24-8C-EV	10.24"	24"	33"	28.7 LBS	2

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Drawing By: Author
Drawing Date: July 2, 2024
Reviewed By: Checker
Project No: 2022.17
Scale: As indicated

Sheet Title:
AT&T ANTENNAS AND TOWER MOUNTED EQUIPMENT

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Sheet Number: A - 101
Revision: 1

AT&T - ERICSSON - RRU 4494 B14/B29					
MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT	QUANITY
RRU 4494 B14/B29	13.2"	7.3"	15"	57.3 LBS	3

AT&T - ERICSSON - LTE RRU 4890 B25/B66					
MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT	QUANITY
RRU 4890 B25/B66	15.1"	6.9"	17.5"	68 LBS	3

AT&T - ERICSSON RRU 4415 B30 WCS					
MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT	QUANTITY
RRU 4415 B30 WCS	13.4"	9.6"	16.5"	47.4 LBS	3

AT&T - ERICSSON - LTE RRU 4490 B5/B12					
MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT	QUANITY
LTE RRU 4490 B5/B12	15.1"	6.8"	17.5"	68 LBS	3

AT&T - DIESEL GENERATOR SPECIFICATIONS				
MODEL NUMBER	LENGTH	WIDTH	HEIGHT	WEIGHT
20 kW 48Vdc H020DYA360TEH	50"	32"	72"	1,024 LBS.

AT&T WALK-IN-CABINET SPECIFICATIONS				
MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT
XTE 801 SERIES CABINET	79.2"	79.2"	114"	7,500 LBS.

CONNECTICUT SITING COUNCIL DEVELOPMENT & MANAGEMENT DOCUMENTS

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AT&T EQUIPMENT AND DETAILS

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Revision: 1

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TOWN OF SOUTH WINDSOR - DISH				
MANUFACTURER	MODEL NUMBER	DIAMETER	WEIGHT	QUANTITY
TBD	TBD	24"	17 LBS	1

TOWN OF SOUTH WINDSOR - WHIPS					
MANUFACTURER	MODEL NUMBER	DIAMETER	HEIGHT	WEIGHT	QUANTITY
RFI	CC450-09	3"	205"	55 LBS	3

TOWN OF SOUTH WINDSOR - EQUIPMENT SHELTER				
MANUFACTURER	MODEL NUMBER	SIZE	WEIGHT	QUANTITY
TBD	TBD	TBD	TBD	1

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TOWN OF SOUTH WINDSOR EQUIPMENT AND DETAILS

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Sheet Number: A - 103
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VERIZON - SAMSUNG MT6413-77A						
MANUFACTURER	MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT	QUANTITY
SAMSUNG	MT6413-77A	15.75"	5.51"	28.9"	57.32 LBS	3

VERIZON - COMSCOPE NHH-65B-R2B						
MANUFACTURER	MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT	QUANTITY
COMSCOPE	NHH-65B-R2B	11.85"	7.087"	71.969"	43.65 LBS	3

VERIZON - COMSCOPE NHH-65B-R2BT4						
MANUFACTURER	MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT	QUANTITY
COMSCOPE	NHH-65B-R2BT4	11.85"	7.087"	71.969"	50.927 LBS	3

VERIZON GENERATOR SPECIFICATIONS						
MANUFACTURER	MODEL NUMBER	LENGTH	WIDTH	HEIGHT	FUEL CAPACITY	WEIGHT
KOHLER	50REOZJE	90.6"	41"	57.7"	317 GALLONS	1,770 LBS.

VERIZON RADIO CABINET SPECIFICATIONS				
MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT
RBA84 EQUIPMENT CABINET	32"	35.4"	85.2"	1,955 LBS

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VERIZON EQUIPMENT AND DETAILS

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Sheet Number: A - 104
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VERIZON - SAMSUNG RF4423-48A						
MANUFACTURER	MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT	QUANTITY
SAMSUNG	SAMSUNG RF4461d-13A	8.7"	4.2"	11.8"	15.4 LBS	3

VERIZON - OVP BOX RCMDC-6627-PF-48				
MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT
OVP BOX RCMDC-6627-PF-48	21"	18"	35"	45.15 LBS.

VERIZON - SAMSUNG RF4439d-25A						
MANUFACTURER	MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT	QUANTITY
SAMSUNG	SAMSUNG RF4439d-25A	14.96"	10.4"	14.96"	74.7 LBS	3

VERIZON - SAMSUNG RF4461d-13A						
MANUFACTURER	MODEL NUMBER	WIDTH	DEPTH	HEIGHT	WEIGHT	QUANTITY
SAMSUNG	SAMSUNG RF4461d-13A	14.96"	10.24"	14.96"	79.1 LBS	3

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Sheet Number: A - 105
Revision: 1

WELTI GEOTECHNICAL, P.C.

227 Williams Street · P.O. Box 397
Glastonbury, CT 06033-0397

(860) 633-4623 / FAX (860) 657-2514

May 20, 2024

Mr. Keith Coppins
ARX Wireless
110 Washington Avenue
North Haven, CT 06473

Ref: Geotechnical Study for Proposed Cell Tower (CT1207), 99 Dart Hill Road, South Windsor, CT

Dear Keith:

1.0 Herewith are the data from the test boring taken at the above referenced site. One boring was drilled at the proposed tower location to a depth of 31.5 feet below the existing grade. The tower location was staked in the field by others. A tower/boring location plan is included with boring logs. *The boring was drilled by Clarence Welti Associates, Inc. and sampling was conducted by this firm solely to obtain indications of subsurface conditions as part of a geotechnical exploration program. No services were performed to evaluate subsurface environmental conditions.*

2.0 The **Subject Project** will include the construction of a 165 foot monopole tower.

3.0 The **Soils Cross Section** from the boring is generally as follows:

Topsoil to 2"

Fine SAND and SILT, trace Roots to 2 feet, loose

Moraine; fine to medium SAND and SILT, little to some Gravel to 31.5+ feet, dense to very dense

Groundwater was evident in the borehole at 12.5 feet below the existing grade at the completion of the boring. It should be assumed that the water table could be within 8 feet of grade during wet periods.

4.0 In general the criteria for tower support is that the foundation capacity would exceed the loads,

which might collapse the tower. **Movements from strains in the soils should be limited to differential settlement (or lateral movements of less than ½").**

5.0 The **foundation for the tower** can be with a large mat designed to prevent overturning by gravity resistance of the weight of the mat and soil cover. The mat foundation can be placed on the natural inorganic soils at least 4 feet below the existing grade. There should be a minimum 6" layer of 3/8" crushed stone beneath foundations on the natural soils. The **Allowable Bearing Pressure** on the crushed stone atop the natural soils can be 3.0 Tons/sf.

5.1 In **summary** the following soil properties and design values would apply to alternate 1.

Soil Property/Parameter	Value
Soil Unit Weight (Backfill)	125 pcf
Soil Unit Weight (Natural)	125 pcf
Soil Unit Weight Submerged (Natural)	63 pcf
Angle of Internal Friction (φ)	34°
Cohesion	0
Pull Out Angle from Vertical	30°
Sliding Coefficient	0.6
Frost Protection Depth (by code)	3.5 feet
Allowable Soil Bearing Pressure on the natural soil inorganic at 4+ feet below the existing grade	3.0 Tons/sf

6.0 Regarding **backfill of foundations**, the material should conform to the following or be 3/8" crushed stone.

Percent Passing	Sieve Size
100	3.5"
50 - 100	3/4"
25 - 85	No.4

The fraction, passing the No.4 sieve should have less than 15% passing the No. 200 sieve.

All backfill and fill must be compacted to at least 95% of modified optimum density in

accordance with ASTM D-1557.

7.0 The soils at the subject site are generally in OSHA class C which would require excavations that are in excess of 5 feet to have slopes which are less than 34° (i.e., 1.5H to1.0V).

8.0 This report has been prepared for specific application to the subject project in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made. In the event that any changes in the nature, design and location of structures are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing.

The analyses and recommendations submitted in this report are based in part upon data obtained from referenced explorations. The extent of variations between explorations may not become evident until construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report.

Welti Geotechnical, P.C., should perform a general review of the final design and specifications in order that geotechnical design recommendations may be properly interpreted and implemented as they were intended.

If you have any questions please call me.

Very truly yours,

Max Welti

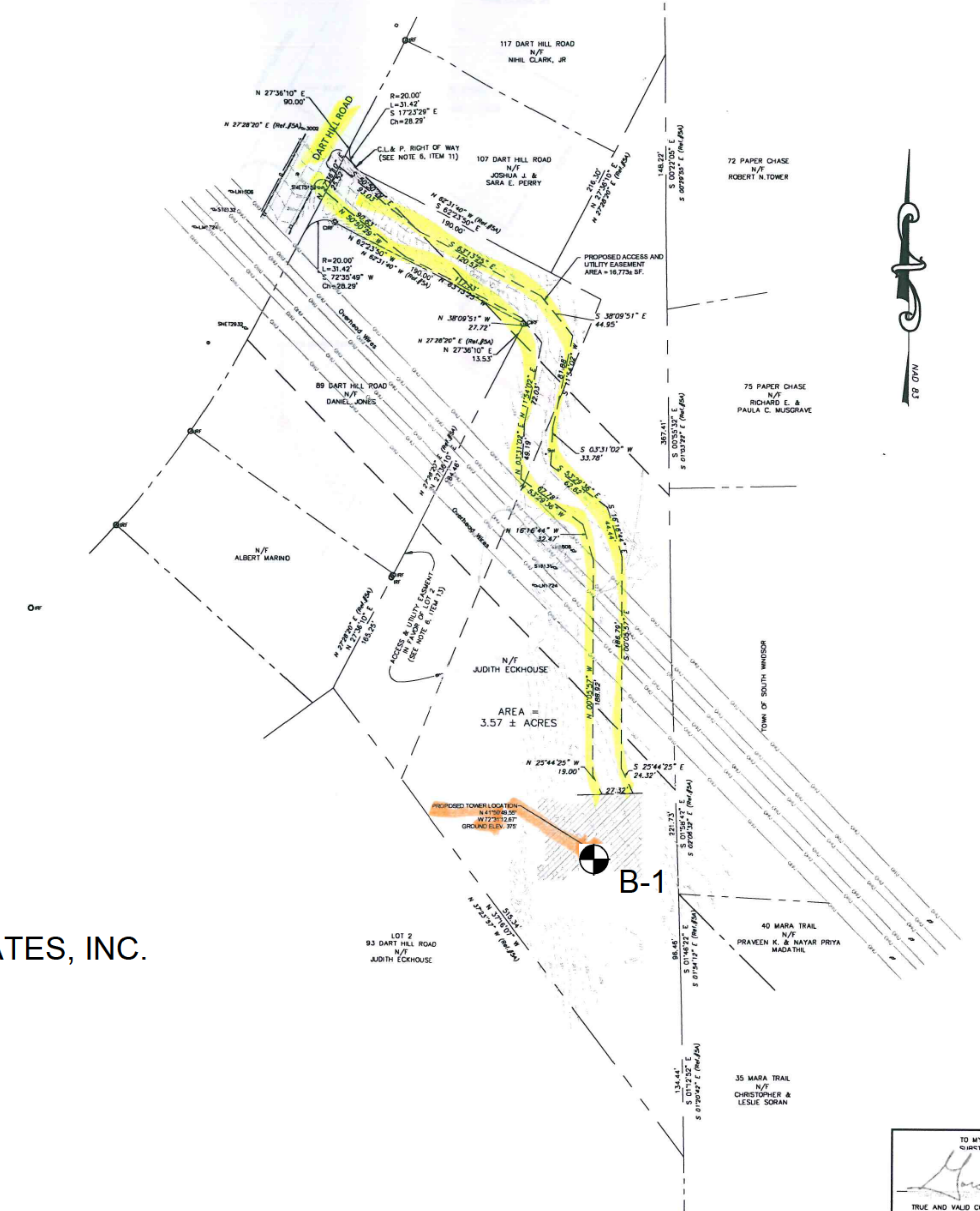
Max Welti, P. E.
President, Welti Geotechnical, P.C.

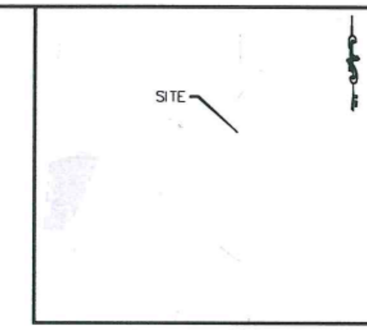
APPENDIX

TEST BORING LOCATION
+
TEST BORING DATA

LEGEND

	EDGE OF WOODS	—— ST ——	STORM SEWER LINE
	DECIDUOUS TREE	—— S ——	SANITARY SEWER LINE
	CONIFEROUS TREE	—— W ——	WATER LINE
	SHRUB/BUSH	—— G ——	GAS LINE
	SIGN	—— SIG ——	SIGNAL WIRE LINE
	UTILITY POLE	—— C ——	CABLE LINE
	LIGHT POLE	—— FO ——	FIBER OPTIC LINE
	HYDRANT	—— LPS ——	LOW PRESSURE SEWER LINE
	WATER SHUTOFF	—— E ——	ELECTRIC LINE
GV	GAS VALVE	—— OHU ——	OVERHEAD UTILITIES
WV	WATER VALVE	—— T ——	TELEPHONE LINE
	MONUMENT	Ⓢ	SANITARY MANHOLE (SMH)
O CIRF	CAPPED IRON PIPE FOUND	Ⓓ	DRAINAGE MANHOLE (DMH)
O IPF	IRON PIPE FOUND		CATCHBASIN (CB)
O IRF	IRON ROD FOUND	O Bol.	METAL POST/BOLLARD (BOL)
● IRS	IRON ROD SET	Ⓔ	ELECTRIC MANHOLE (MHE)
	HANDICAP SPACE	Ⓤ	UNKNOWN MANHOLE
HH	HAND HOLE	Ⓣ	TELEPHONE MANHOLE (MHT)
E	ELEC. METER	VP	VENT PIPE
G	GAS METER	CNO	COULD NOT OPEN
Gran.	GRANITE		FLOW DIRECTION
Conc.	CONCRETE	MAG NAIL	MAGNETIC CONCRETE NAIL
Bit.	BITUMINOUS	WLF #TOB1	WETLAND FLAG (DELINEATED BY OTHERS)
	PROPERTY LINE	—— WET ——	WETLAND LINE (DELINEATED BY OTHERS)
	EASEMENT		EDGE OF WATER (BY AERIAL IMAGE)
—— 10 ——	MAJOR CONTOUR LINE	P	ELECTRIC PEDESTAL
—— 5 ——	MINOR CONTOUR LINE		GUY WIRE
—O——O—	CHAIN LINK FENCE		FINISHED FLOOR ELEVATION
—□——□—	WOOD FENCE	× 318.5'	SPOT ELEVATION
—X——X—	FENCE	MB	MAILBOX
	STONEWALL	O CO	CLEANOUT
		MW	MONITORING WELL
		W/F	WOOD FRAMED
		N/F	NOW OR FORMERLY





LOCATION MAP
NOT TO SCALE

TEST BORING LOCATION
CLARENCE WELTI ASSOCIATES, INC.
5/1/24

NOTES:

1. THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300b-1 THRU 20-300b-20 AS AMENDED, AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. THE TYPE OF SURVEY IS A PROPERTY SURVEY AND A T-2 TOPOGRAPHIC SURVEY, THE BOUNDARY DETERMINATION CATEGORY IS A RESURVEY. THE SURVEY CONFORMS TO A-2 HORIZONTAL ACCURACY, T-2 TOPOGRAPHIC ACCURACY AND V-3 VERTICAL ACCURACY.
2. SURVEY PERFORMED BY KCI TECHNOLOGIES, INC. IN AUGUST 2022.
3. BEARINGS REFER TO THE CONNECTICUT COORDINATE SYSTEM (NAD 83) AS DERIVED USING GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) SURVEY METHODS IN AUGUST 2022.
4. ELEVATIONS REFER TO THE 1988 NORTH AMERICAN VERTICAL DATUM (NAVD 88) AS DERIVED USING GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) SURVEY METHODS IN AUGUST 2022.
5. REFERENCE IS MADE TO THE FOLLOWING MAP:
   A. SUBDIVISION PLAN HIDDEN WOODS SUBDIVISION PREPARED FOR LAWRENCE A. FIANO, SOUTH WINDSOR, CONN. BY AESCHLIMAN LAND SURVEYING, PC DATED 8-7-87 AND LAST REVISED 7-7-09.
6. REFERENCE IS MADE TO A TITLE COMMITMENT BY FIDELITY NATIONAL TITLE INSURANCE COMPANY, DATED January 2, 2016, FILE No.: 22171096.

   SCHEDULE B - PART II SURVEY RELATED ITEMS

   Item 8. Plat recorded in Plat Map No. 3669.

   Item 9. Easement in favor of The Connecticut Light and Power Company, set forth in instrument recorded on 12/20/1956 in Deed Book 54, Page 11.

   Item 10. Zoning Regulations to allow the Construction of a One Family Home recorded on 09/21/1994 in Deed Book 812, Page 223.

   Item 11. Permanent Easement recorded on 03/02/1998 in Deed Book 991, Page 10.

   Item 13. Declaration of Easement for Driveway and Utilities recorded on 06/10/2004 in Deed Book 1618, Page 36.

   Item 14. Terms, provisions, covenants, conditions, restrictions, reservations, easements, charges, assessments and liens provided in a Deed or Covenants, Conditions and Restrictions recorded in Deed Book 1618, Page 39, but omitting any covenants or restrictions, if any, based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law.
7. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING AND OTHER DATA SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES, GOVERNMENTAL AGENCIES AND/OR OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO KCI TECHNOLOGIES. THE EXISTENCE, SIZE AND LOCATION OF ALL SUCH FEATURES MUST BE DETERMINED AND VERIFIED IN THE FIELD BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG 1-800-922-4455.

TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON

Gordon R. Matson 9/29/22
LICENSE NO. 70445

TRUE AND VALID COPIES OF THIS MAP OR PLAN MUST BEAR THE ORIGINAL SIGNATURE AND EMBOSSED SEAL OF THE ABOVE NAMED LAND SURVEYOR. UNAUTHORIZED REPRODUCTION OR ALTERATION IS FORBIDDEN.

STATE OF CONNECTICUT
GORDON R MATSON
70445
LICENSED
LAND SURVEYOR

DATE	REVISION

OWNER/DEVELOPER:
TARPON TOWERS

KCI TECHNOLOGIES, INC.
ENGINEERS - PLANNERS - SURVEYORS
712 BROOK ST. - SUITE 103 - ROCKY HILL, CT 06067
PHONE: (410) 316-7896 Website: www.kci.com

SCALE - PLAN: 1"=50'
50 0 50 100

PROPERTY AND TOPOGRAPHIC SURVEY
PROPOSED TOWER SITE CT1207
99 DART HILL ROAD

TOWN OF SOUTH WINDSOR
HARTFORD COUNTY
CONNECTICUT

SCALE: 1"=50'
DATE: SEPTEMBER 2022
KCI JOB #: 292200877.06
SHEET: 1

CLARENCE WELTI ASSOC., INC.
P.O. BOX 397
GLASTONBURY, CONN 06033

CLIENT
ARX WIRELESS

PROJECT NAME
PROPOSED CELL TOWER - CT1207 SOUTH WINDSOR

LOCATION
99 DART HILL ROAD, SOUTH WINDSOR, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV.

HOLE NO. B-1

GROUND WATER OBSERVATIONS
AT 12.5 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 5/1/24
FINISH DATE 5/1/24

DEPTH	SAMPLE NO.	SAMPLE BLOWS/6"	SAMPLE DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0	1	1-0-3-7	0.0'-2.0'		TOPSOIL 0.10	
					BR.FINE SAND AND SILT	
	2	11-13-14-17	2.0'-4.0'		2.0 RED/BR.FINE-MED.SAND AND SILT, LITTLE TO SOME GRAVEL	
	3	20-17-27-19	4.0'-6.0'			
5						
10	4	19-25-30	10.0'-11.5'			
15	5	23-26-28	15.0'-16.5'			
20	6	25-27-30	20.0'-21.5'			
25	7	23-20-32	25.0'-26.5'			
30	8	15-30-20	30.0'-31.5'			
35					BOTTOM OF BORING @ 31.5' 31.5	

LEGEND: COL. A:
SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON
PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: J. BREWER
INSPECTOR:

SHEET 1 OF 1

HOLE NO. B-1

EVERSOURCE ENERGY

107 Selden Street
Berlin, CT 06037

June 17, 2024

This Permit is null and void unless signed by Applicant and received by The Connecticut Light and Power Company dba Eversource Energy within 30 days of the above date.

Keith Coppins
ARX Wireless
110 Washington Ave.
North Haven, CT 06473
for
Tarpon Towers III, LLC (Applicant)
8916 77th Terrace East, Suite 103
Lakewood Ranch, FL 34202

Re: Request to Encroach and Allow twelve foot wide, gravel access road and underground electric & communication wires within a CL&P Right of Way
699 Dart Hill Road, South Windsor, CT
Real Estate Project/Index No. 000-51.230C – 16 & TC-0006

Permit

Dear Mr. Coppins,

The Connecticut Light and Power Company ("CL&P") doing business as Eversource Energy ("ES"), has approved your request for a Permit to encroach the Right-of-Way and allow construction & installation of a twelve foot wide, gravel access road and underground electric & communication wires through portions of CL&P's Right of Way (as that term is hereinafter defined), in accordance with the terms provided herein and as shown on the attached Exhibits A-1 through A-6.

Your ability to use CL&P's Right of Way is subject to the following terms and conditions:

1. This Permit shall not amend, waive, release or restrict any of CL&P's easements and rights described in: (a) the easement deeded to CL&P by John Shuteran and recorded in Volume 50 Page 38-39 of the Town of South Windsor Land Records ("CL&P's Right of Way") b) any other rights-of-way or easements in favor of CL&P.

2. In the event of any conflict between this Permit and CL&P's Right of Way, then CL&P's Right of Way shall prevail and the Applicant will be responsible for eliminating the conflict within 30 days of CL&P's request therefore, and if such conflict is not resolved by the Applicant within said 30 day period, then immediately thereafter (a) CL&P shall be entitled to relocate and/or remove any portion of the Permitted Improvements that CL&P deems necessary or appropriate,

(b) the Applicant shall be responsible for reimbursing CL&P (within 15 days of CL&P's request for reimbursement) for the costs incurred by CL&P to perform such relocation and/or removal and (c) CL&P shall have no liability for any damages of any kind to Applicant or any third party resulting from CL&P's exercise of its rights in this paragraph.

3. The Applicant agrees to indemnify and hold harmless ES, CL&P, their affiliate companies and each of their respective trustees, directors, officers, employees, successors and assigns (collectively, "Eversource Energy") against any losses, damages, suits, claims, costs, judgments and expenses, including attorneys' fees, which any of them or any third party may directly or indirectly suffer, sustain, be liable for or subject to arising out of or connected with this Permit.

4. Eversource Energy will not be responsible for any damage to the Permitted Improvements caused by (i) their vehicular access in and to CL&P's Right of Way area and (ii) when exercising any of their rights and easements under CL&P's Right of Way.

5. The Applicant cannot implement any changes or revisions to the Permitted Improvements without CL&P's prior review and written approval.

6. Applicant is responsible for ensuring that Applicant and all of its employees, contractors, subcontractors and agents working within CL&P's Right of Way, including but not limited to maintenance activities, are aware of the requirements of, and comply with the requirements of, the latest version of ES document OTRM222- "Eversource Overhead Transmission Standards", as it may be amended from time to time by ES. A copy of ES document OTRM222 is attached.

7. Within CL&P's Right of Way, Applicant shall not store fill under phase wires, fill shall not exceed four feet (4') in height, and fill shall not cover guys, concrete or steel foundations and survey monuments.

8. Within CL&P's Right of Way, Applicant is responsible for ensuring that slopes must be stable and not steeper than 3:1 with an access way along CL&P's Right of Way, not steeper than 10:1.

9. No Permitted Improvement shall be placed except as depicted on the attached Exhibit A.

10. Within CL&P's Right of Way, any clearing of vegetation by Applicant, its contractors, subcontractors and agents that is within 20 feet, or has the potential to fall within 20 feet of, any overhead electric conductors shall be done by qualified personnel trained in accordance with OSHA Standard 29CFR Part 1910.269, as it may be amended from time to time. See attached guideline for the planting of woody vegetation.

11. If any buried counterpoise (grounding) wires are encountered while excavating within CL&P's Right Of Way, the Applicant, its contractor, subcontractor or agent must notify Joe Nesdale- Manager, ES Transmission Construction Line Maintenance at (860) 828-2690 or ES Customer Service at (800) 286-2000.

12. Prior to performing any construction within CL&P's Right Of Way, Applicant, its contractor, subcontractor or agent must notify Joe Nesdale- Manager, ES Transmission Construction Line Maintenance at (860) 828-2690 or ES Customer Service at (800) 286-2000.

13. No structures, buildings or improvements of any type are allowed within the limits of CL&P's Right of Way, except for any Permitted Improvement except as depicted on the attached Exhibit A.

14. The Applicant agrees to provide CL&P with continuous and uninterrupted access over and across adjoining land and roadways of the Applicant to CL&P's Right of Way.

15. This Permit is personal to the Applicant, and shall not be recorded in any town hall, or assigned, transferred or delegated without the prior written approval of CL&P, which approval CL&P may grant or deny in its sole discretion. Notwithstanding any provision hereof to the contrary, if any of the aforementioned occurs without such written approval from CL&P, then this Permit shall immediately terminate.

16. Maximum vehicle height using gravel road not to exceed thirteen feet six inches (13'6").

17. (a) Applicant shall be in breach of this Permit if Applicant violates or fails to perform any term, covenant, condition or obligation in this Permit and such violation or failure is not cured within 30 days of Applicant's receipt of notice thereof.

    (b) In the event that Applicant breaches any term, covenant, condition or obligation in this Permit and the applicable cure period (if any) has expired, then immediately thereafter CL&P shall be entitled to: (i) terminate this Permit and/or (ii) seek any and all remedies available to CL&P under this Permit, at law and/or in equity, including but not limited to specific performance and/or injunctive relief because the Applicant acknowledges that monetary damages alone are an insufficient remedy for CL&P. All costs incurred by CL&P to enforce its rights under this Permit, including but not limited to CL&P's attorneys' fees, legal expenses and court costs, shall be paid for by the Applicant within 30 days' of the Applicant's receipt of a request for such reimbursement from CL&P regardless of whether CL&P is the prevailing party in any court or dispute resolution proceeding associated with this Permit.

    (c) Notwithstanding any provision hereof to the contrary, CL&P shall be entitled to terminate this Permit (i) immediately in the event of an emergency as determined by CL&P in its sole discretion or (ii) for convenience upon providing 90 days prior written notice if CL&P determines (in CL&P's sole and absolute discretion) that such termination is necessary or appropriate in order for (A) CL&P or ES to exercise any of the easements and rights set forth in CL&P's Right of Way or (B) for the business purposes of CL&P or ES.

    (d) Upon termination of this Permit, if Applicant has not removed Applicant's Permitted Improvement(s) from CL&P's Right of Way, then (i) CL&P shall be entitled to relocate and/or remove any portion of the Permitted Improvement(s) that CL&P deems necessary or appropriate, (ii) the Applicant shall be responsible for reimbursing CL&P (within 15 days of CL&P's request for reimbursement) for the costs incurred by CL&P to perform such relocation and/or removal and (iii) CL&P shall have no liability for any damages of any kind to Applicant or any third party resulting from CL&P's exercise of its rights in this paragraph.

    (e) This Permit is governed by and construed in accordance with the laws of the State of Connecticut.

[signature page follows]

Please indicate acceptance of these terms and conditions, as the property Applicant, in the area provided and return both signed documents to me. Please note that this Permit is not official, and work cannot commence until Applicant signs the Permit and then CL&P signs the Permit and sends one fully signed copy back to you.

The Connecticut Light and Power Company
dba Eversource Energy

By: Kimberly A. Bianchi
Kimberly A. Bianchi
Supervisor, T&D Right of Way
Eversource Energy
Its Agent

Date: June 19, 2024

Applicant: **Tarpon Towers III, LLC**

By: _____

Print Name: Brett Buggeln

Its: COO

Date: June 17, 2024

cc: K. Bianchi
C. Soderman
J. Nesdale
S. Southworth

EXHIBIT A-1
Reduced Copy

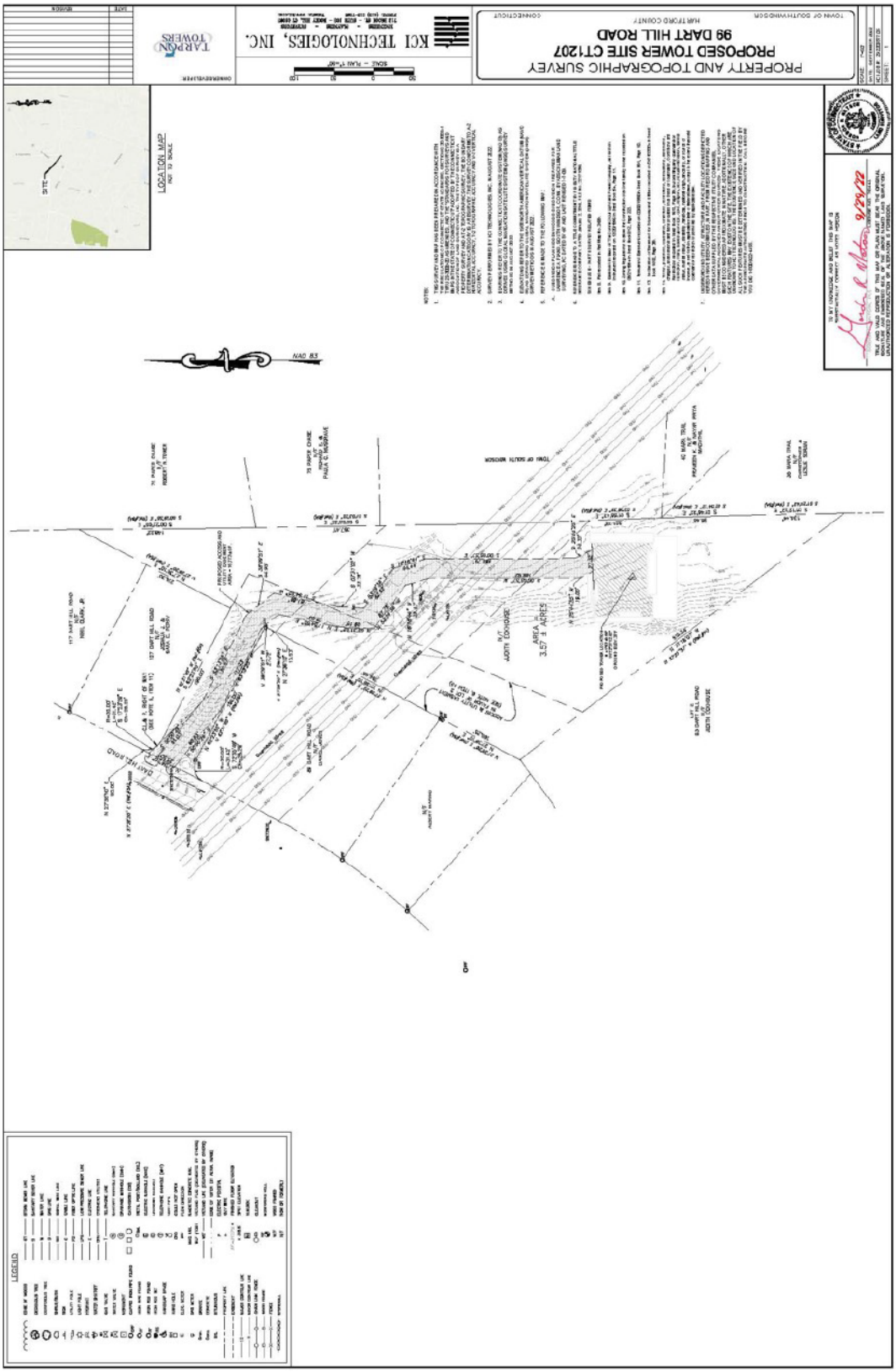


EXHIBIT A-2
Reduced Copy

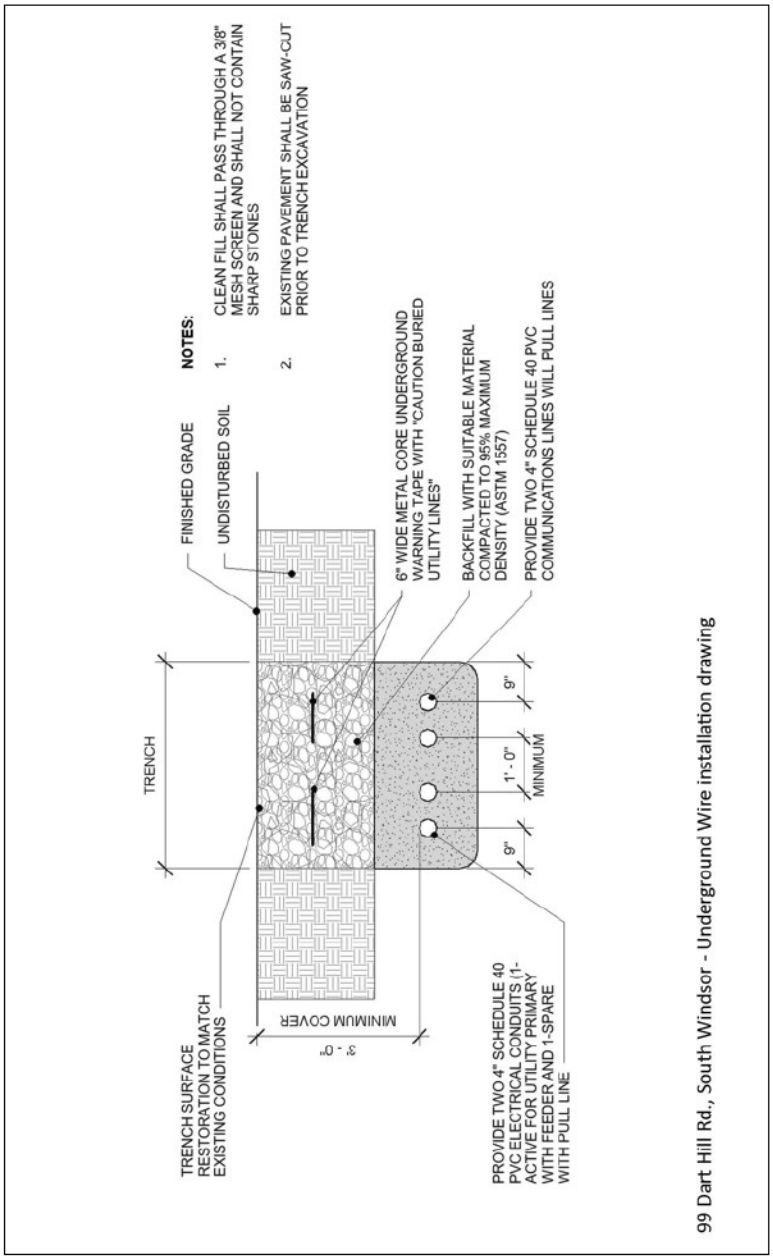


EXHIBIT A-3
Reduced Copy

Grading Plan

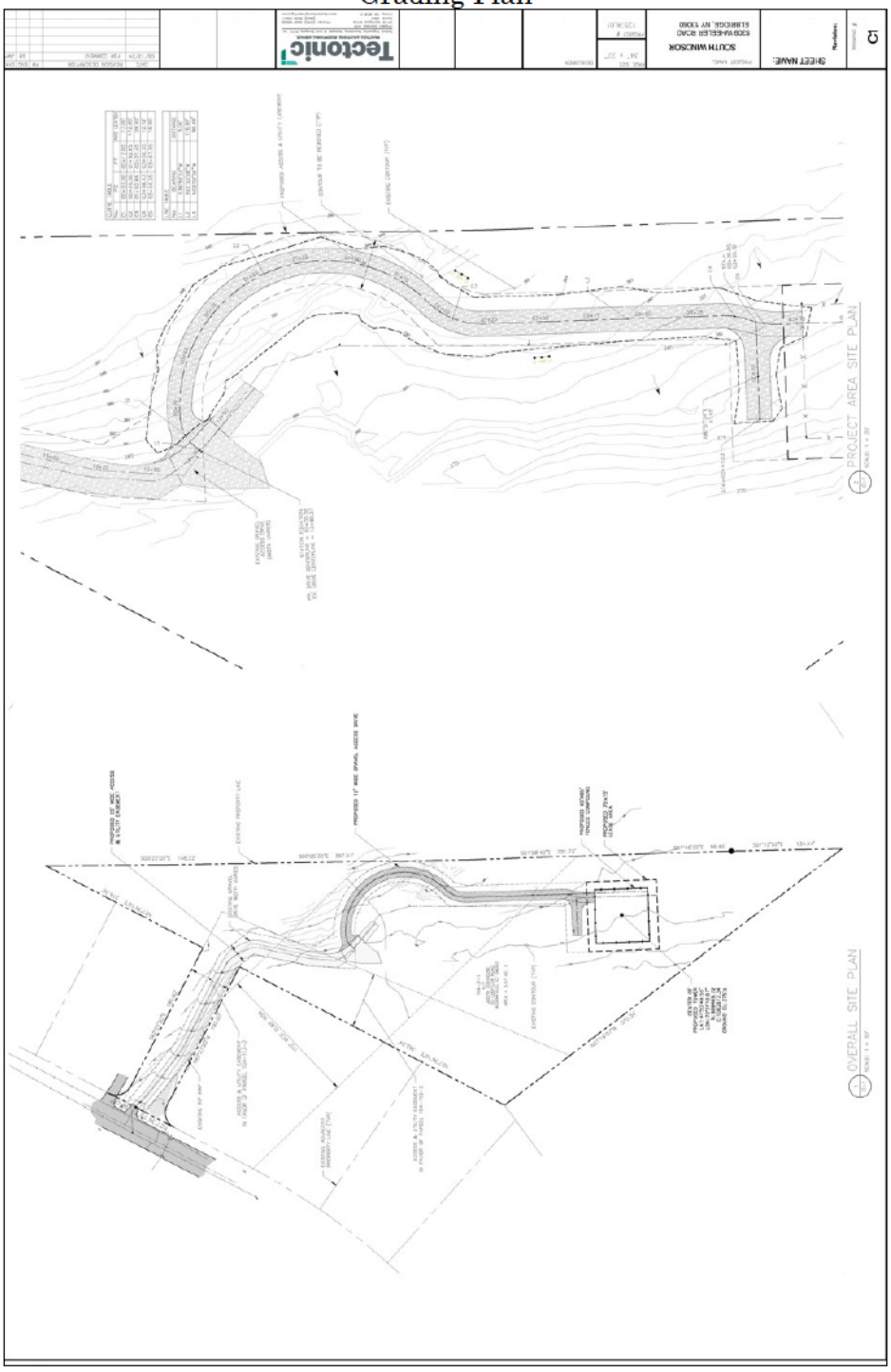


EXHIBIT A-4
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Grading Plan

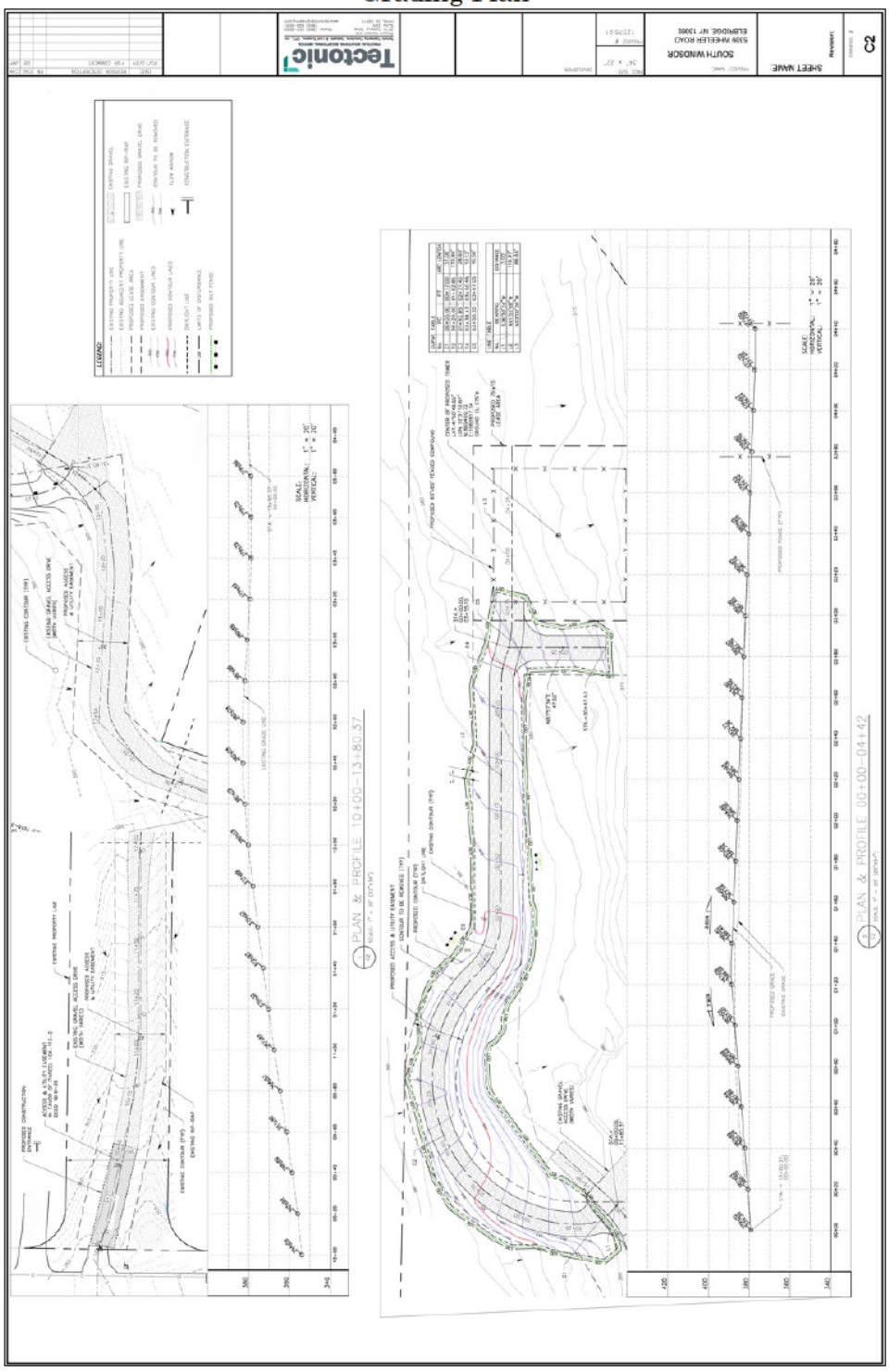


EXHIBIT A-5
Grading Plan

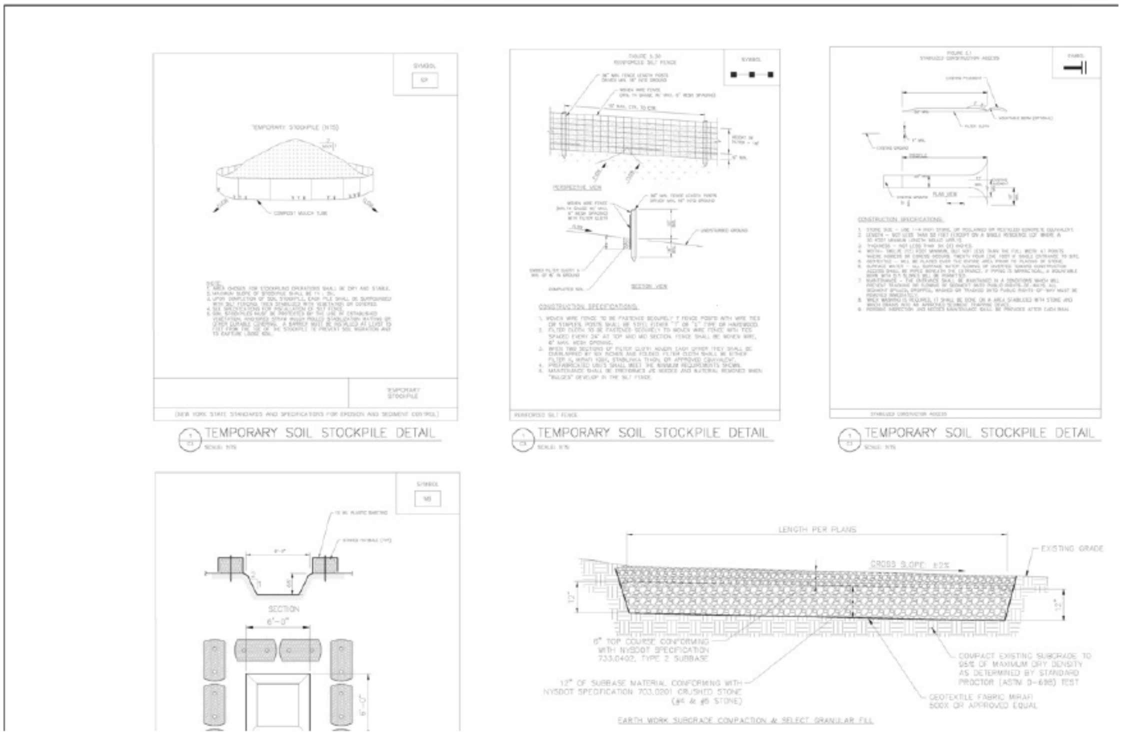
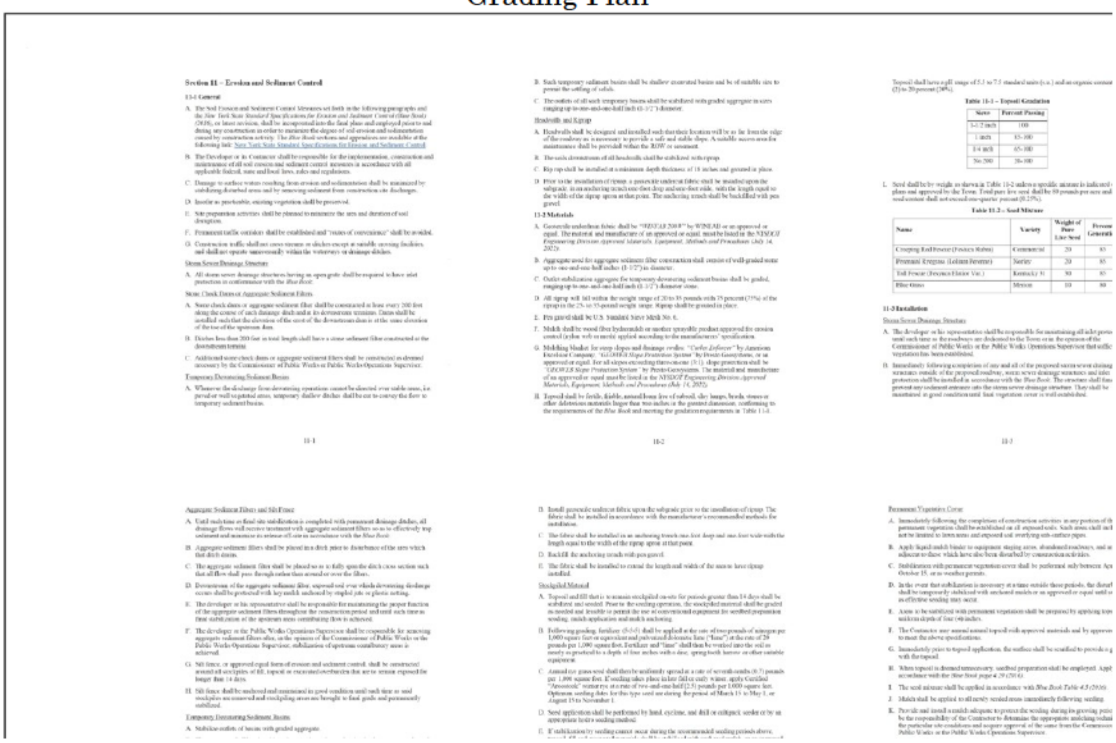


EXHIBIT A-6
Grading Plan



ES VER: 05/2015

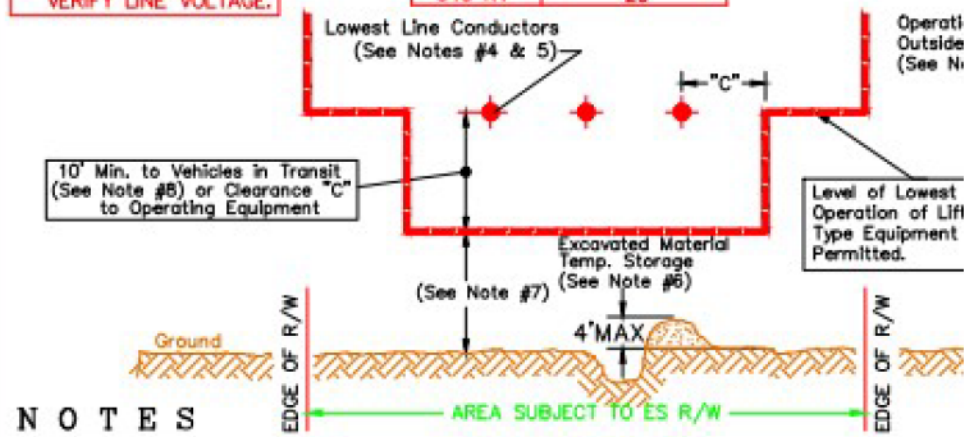
OPERATION OF EQUIPMENT UNDER AND ADJACENT TO EVERSOURCE LINES ON

(See Note # 1)

* CONTACT ES TRANSMISSION LINE ENGINEERING TO VERIFY LINE VOLTAGE.

RATED VOLTAGE	CLEARANCE "C" (See Note #2)
*< 50 KV	10'
*115 KV	15'
*345 KV	20'

REFERENCE



N O T E S

1. PRIOR WRITTEN APPROVAL FROM ES IS REQUIRED FOR ANY DEVELOPMENT ACTIVITY WITHIN F
2. REFER TO OSHA 1926 SUBPART CC 1926.1407–1411 FOR DETAILED EXPLANATION PERTAININ REQUIREMENTS STIPULATED WITHIN THIS DOCUMENT.
3. OPERATION OF LIFT BODY, BOOM–TYPE OR OTHER AERIAL EQUIPMENT OUTSIDE THE RIGHT–O SHALL RECOGNIZE THE EXISTENCE OF ANY ENERGIZED CONDUCTORS. OPERATION SHALL BE SUCH THAT CLEARANCE "C" IS MAINTAINED AT ALL TIMES INCLUDING FOR UNEXPECTED OR ACCIDENTAL CONDITIONS (E.G. EMERGENCY LINE LOAD OR CRANE OVEF
4. THE NORMALLY OBSERVED CONDUCTOR HEIGHT ABOVE GROUND CAN RAPIDLY AND SIGNIFICA AS LITTLE AS 19' @ 115kV, 24' @ 345kV, UNLESS OTHERWISE DETERMINED BY ES ENGINEERI ANY TIME DUE TO AN UNAPPARENT EMERGENCY LINE LOAD. OSHA EQUIPMENT CLEARANCES MAINTAINED FROM THE LOWEST POTENTIAL POSITION OF THE CONDUCTOR.
5. A SPOTTER IN COMMUNICATION WITH THE EQUIPMENT OPERATOR MUST USE A REMOTE MEAS DEVICE (E.G. SONIC OR LASER) TO MONITOR CONDUCTOR HEIGHTS DURING WORK WITHIN THE RIGHT–OF–WAY.
6. ONLY AFTER WRITTEN APPROVAL FROM ES TRANSMISSION LINE ENGINEERING: EXCAVATED MA STORED TEMPORARILY AT A HEIGHT NOT TO EXCEED 4 FEET ABOVE ORIGINAL GRADE. NO EQ VEHICLE OF ANY KIND IS ALLOWED ON EXCAVATED MATERIAL ABOVE ORIGINAL GRADE.
7. 13'–6" MAXIMUM LEGAL OVER–THE–ROAD VEHICLES MAY RESULT IN A VIOLATION OF OSHA IN OFF–ROAD AREAS.
8. CLEARANCES MAY EXIST TO SATISFY OSHA EQUIPMENT IN–TRANSIT RULE BUT NOT OPERATION RULE.

EVERSO

ml – S:\09000\09000-99001.dwg – As Built

Michael F. Plahovinsak, P.E.
18301 State Route 161, Plain City, Ohio 43064
(614) 398-6250 - mike@mfpeng.com

June 6, 2024

Tarpon Towers

Re: Proposed 165-ft Monopole
Located in Hartford Co., CT: CT1207 South Windsor II
MFP Project #: 23524-322 / TAPP Project Number: TP-23372

I understand that there may be some concern on the part of local building officials regarding the potential for failure of the proposed communication monopole. Communication structures are designed in accordance with the Telecommunications Industry Association TIA-222-H , "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures". This Structure is to be fabricated by TransAmerican Power Products

I have designed this monopole to withstand a 3-sec. gusted wind speed of 118 mph as recommended by TIA-222-H for Hartford Co., CT. The design also conforms to the requirements of the 2022 Connecticut Building Code.

This monopole has been designed to accommodate a theoretical fall radius. The upper 43' of the pole has been designed to meet the wind loads of the design, however, the lower portion of the pole has been designed with a minimum 10% extra capacity. Assuming the pole has been fabricated according to my design, and well maintained, in the event of a failure due to extreme wind and comparable appurtenance antenna load (winds in excess of the design wind load), it would yield/buckle at the 122' elevation. The yielded section would result in a maximum 43' fall radius, but would most likely remain connected and hang from the standing section.

The structure has been designed with all of the applicable factors as required by the code. A properly designed, constructed and maintained pole has never collapsed; monopoles are safe structures with a long history of reliable operation.

I hope this review of the monopole design has given you a greater degree of comfort regarding the design capacity inherent in pole structures. If you have any additional questions please call me at 614-398-6250 or email mike@mfpeng.com.

Sincerely,

Michael F. Plahovinsak, P.E.
Michael Plahovinsak 2024.06.06 10:29:15 -04'00'

TAPP
QUALITY STEEL POLES. DELIVERED.
2427 Kelly Lane
Houston, Texas 77066
281-444-8277

Page 1 of 3		Job Number:	23524-322
Eng: MFP		Customer Ref:	TP-23372
		Date:	6/6/2024
Structure:	165-FT MONOPOLE		
Site:	CT1207 SOUTH WINDSOR II		
Location:	HARTFORD CO., CT / 41°50'49.55", -72°31'12.67"		
Owner:	TARPON TOWERS		
Revision No.:	Revision Date:		

DESIGN

Building Code:	2022 CONNECTICUT BUILDING CODE		
Design Standard:	TIA-222-H		
Wind Speed Load Cases:	ASCE-7-16 WIND SPEED		
Load Case #1:	118 MPH Design Wind Speed		
Load Case #2:	50 MPH Wind with	1.5"	Ice Accumulation
Load Case #3	60 MPH Service Wind Speed		

Structure Class Risk Category	Exposure Cat.	Topography Cat.	Crest Height
II	B	1	

EQUIPMENT LIST

Elev.	Description
172	(3) 20-FT x 3" WHIP ANTENNAS
162	6-FT SIDE ARM MOUNTS
155	(3) TPA65R + (4) AIR6449 + (3) AIR6419 + (3) OPA65R +
155	(13) RRU + (2) RAYCAP + 12-FT PLATFORM WITH HANDRAIL
143	(12) NHH-65C-R2B + (7) RRU + (2) RAYCAP
143	12-FT PLATFORM WITH HANDRAIL
133	(12) NHH-65C-R2B + (7) RRU + (2) RAYCAP
133	12-FT PLATFORM WITH HANDRAIL

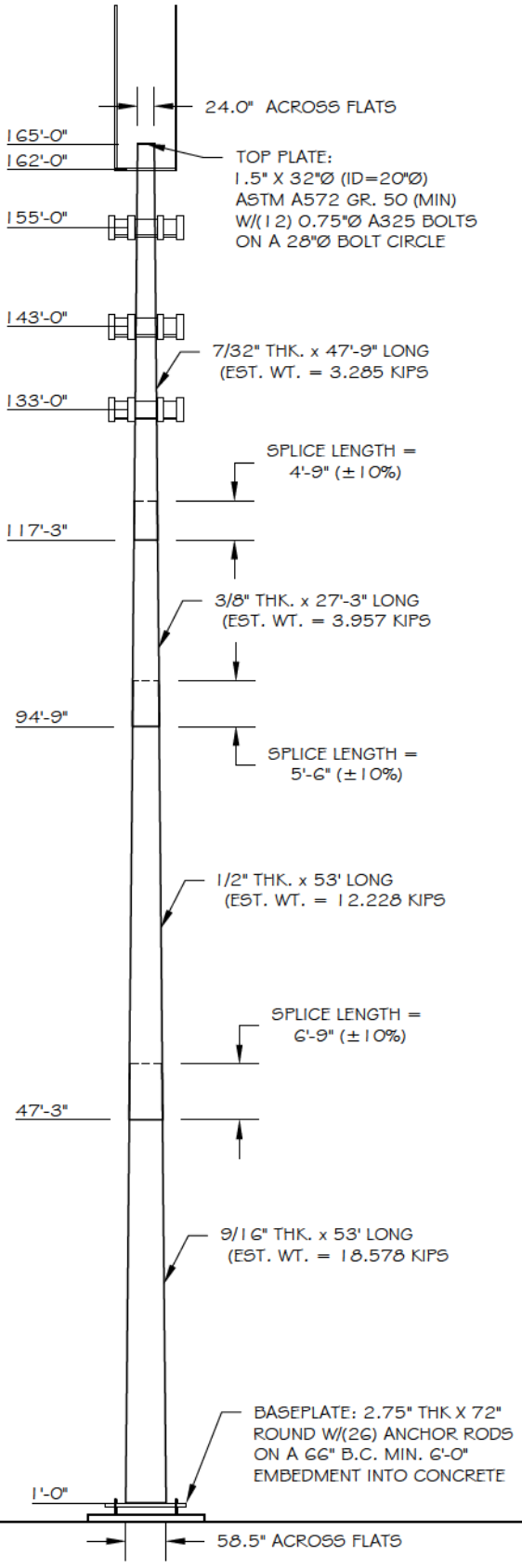
ANTENNA FEED LINES ROUTED ON THE INSIDE OF THE POLE

POLE DESIGNED FOR A MAX 43-FT FALL RADIUS

STRUCTURE PROPERTIES

Cross-Section: 18-Sided	Taper: 0.22370 in/ft
Shaft Steel: ASTM A572 GR 65	Baseplate Steel: ASTM A572 GR 50
Anchor Rods: 2.25 in. A615 GR. 75 X 7'-0"	

Sect.	Length (ft)	Thickness (in)	Splice (ft)	Top Dia. (in)	Bot Dia. (in)
1	47.75	0.2188	4.75	24.00	34.68
2	27.25	0.3750	5.50	33.18	39.28
3	53.00	0.5000	6.75	37.30	49.15
4	53.00	0.5625	0.00	46.64	58.50



STATE OF CONNECTICUT
MICHAEL F. PLAHOVINSAK
No. 25849
PROFESSIONAL ENGINEER
6.6.2024

MICHAEL F. PLAHOVINSAK, P.E. #25849
Sole Proprietor - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
614-398-6250 / mike@mfpeng.com

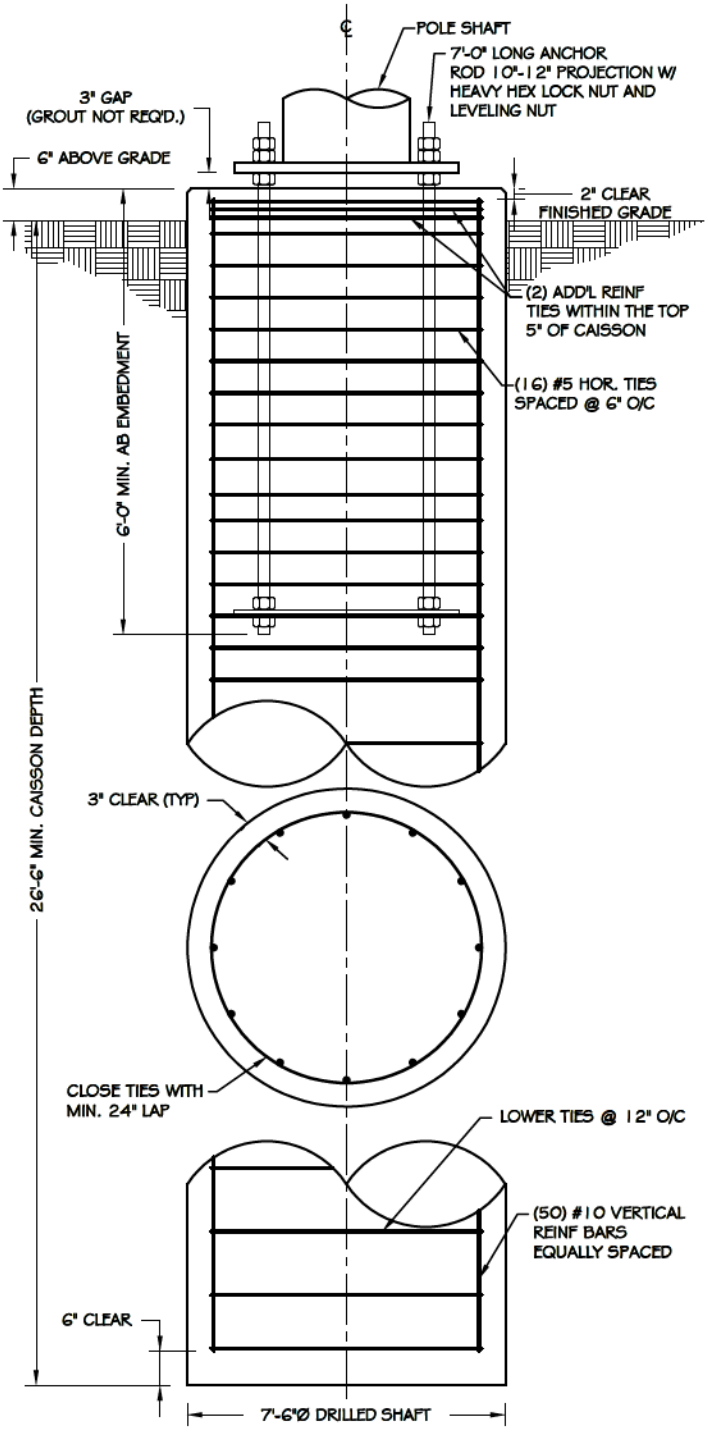
Michael Plahovinsak 2024.06.06 11:55:03 -04'00'

BASE REACTIONS FOR FOUNDATION DESIGN

Moment:	8854 ft-kip
Shear:	71 kip
Axial:	69 kip

TAPP
QUALITY STEEL POLES. DELIVERED.
2427 Kelly Lane
Houston, Texas 77066
281-444-8277

Page 2 of 3		Job Number:	23524-322
Eng: MFP		Customer Ref:	TP-23372
		Date:	6/6/2024
Structure:	165-FT MONOPOLE		
Site:	CT1207 SOUTH WINDSOR II		
Location:	HARTFORD CO., CT / 41°50'49.55", -72°31'12.67"		
Owner:	TARPON TOWERS		
Revision No.:	Revision Date:		



CAISSON FOUNDATION

NOT TO SCALE

FOUNDATION NOTES:

1. ALL FOUNDATION CONCRETE SHALL USE TYPE II CEMENT AND ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4500 PSI AT 28 DAYS. CONCRETE SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.45. IN AREAS OF POTENTIAL FREEZING, CONCRETE SHALL BE AIR ENTRAINED 6% (±1.5%). ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318, "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", LATEST EDITION.

2. ALL REINFORCING STEEL SHALL CONFORM TO ASTM AG15 VERTICAL BARS SHALL BE GRADE 60, AND TIES OR STIRRUPS SHALL BE A MINIMUM OF GRADE 40. THE PLACEMENT OF ALL REINFORCEMENT SHALL CONFORM TO ACI 315, "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", LATEST EDITION.

3. CAISSON FOUNDATION INSTALLATION SHALL BE IN ACCORDANCE WITH ACI 336, "STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF DRILLED PIERS", LATEST EDITION.

4. THE CONTRACTOR SHALL DETERMINE THE MEANS AND METHODS TO SUPPORT THE EXCAVATION DURING CONSTRUCTION. THE CONTRACTOR SHALL READ THE GEOTECHNICAL REPORT AND SHALL CONSULT THE GEOTECHNICAL ENGINEER AS NECESSARY PRIOR TO CONSTRUCTION.

5. FOUNDATION DESIGN IS BASED ON GEOTECHNICAL REPORT BY:
ENGINEER: WELTI GEOTECHNICAL
REPORT NO.: N/A (DATED 5/20/24)

6. ESTIMATED CONCRETE VOLUME = 44 CUBIC YARDS.

7. THE FOUNDATION HAS BEEN DESIGNED TO RESIST THE FOLLOWING FACTORED LOADS:
MOMENT: 8854 FT*KIPS
SHEAR: 71 KIPS
AXIAL: 69 KIPS

8. GEOTECHNICAL REPORT INDICATES GROUNDWATER MAY BE ENCOUNTERED AT 12'-6" BELOW GRADE.

STATE OF CONNECTICUT
MICHAEL F. PLAHOVINSAK
No. 25849
PROFESSIONAL ENGINEER
6.6.2024

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Sole Proprietor - Independent Engineer
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614-398-6250 / mike@mfpeng.com

TAPP
QUALITY STEEL POLES. DELIVERED.
2427 Kelly Lane
Houston, Texas 77066
281-444-8277

Page 3 of 3		Job Number:	23524-322
Eng: MFP		Customer Ref:	TP-23372
		Date:	6/6/2024
Structure:	165-FT MONOPOLE		
Site:	CT1207 SOUTH WINDSOR II		
Location:	HARTFORD CO., CT / 41°50'49.55", -72°31'12.67"		
Owner:	TARPON TOWERS		
Revision No.:	Revision Date:		

FOUNDATION NOTES:

1. ALL FOUNDATION CONCRETE SHALL USE TYPE II CEMENT AND ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4500 PSI AT 28 DAYS. CONCRETE SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.45 AND SHALL BE AIR ENTRAINED 6% (±1.5%). ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318, "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", LATEST EDITION.

2. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 VERTICAL BARS SHALL BE GRADE 60, AND TIES OR STIRRUPS SHALL BE A MINIMUM OF GRADE 40. THE PLACEMENT OF ALL REINFORCEMENT SHALL CONFORM TO ACI 315, "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", LATEST EDITION.

3. THE CONTRACTOR SHALL DETERMINE THE MEANS AND METHODS TO SUPPORT THE EXCAVATION DURING CONSTRUCTION. THE CONTRACTOR SHALL READ THE GEOTECHNICAL REPORT AND SHALL CONSULT THE GEOTECHNICAL ENGINEER AS NECESSARY PRIOR TO CONSTRUCTION.

4. FOUNDATION DESIGN IS BASED ON GEOTECHNICAL REPORT BY:
ENGINEER: WELTI GEOTECHNICAL
REPORT NO.: N/A (DATED 5/20/24)

5. ESTIMATED CONCRETE VOLUME = 138.5 CUBIC YARDS.

6. THE FOUNDATION HAS BEEN DESIGNED TO RESIST THE FOLLOWING FACTORED LOADS:
MOMENT: 8854 FT*KIPS
SHEAR: 71 KIPS
AXIAL: 69 KIPS

STATE OF CONNECTICUT
MICHAEL F. PLAHOVINSAK
No. 25849
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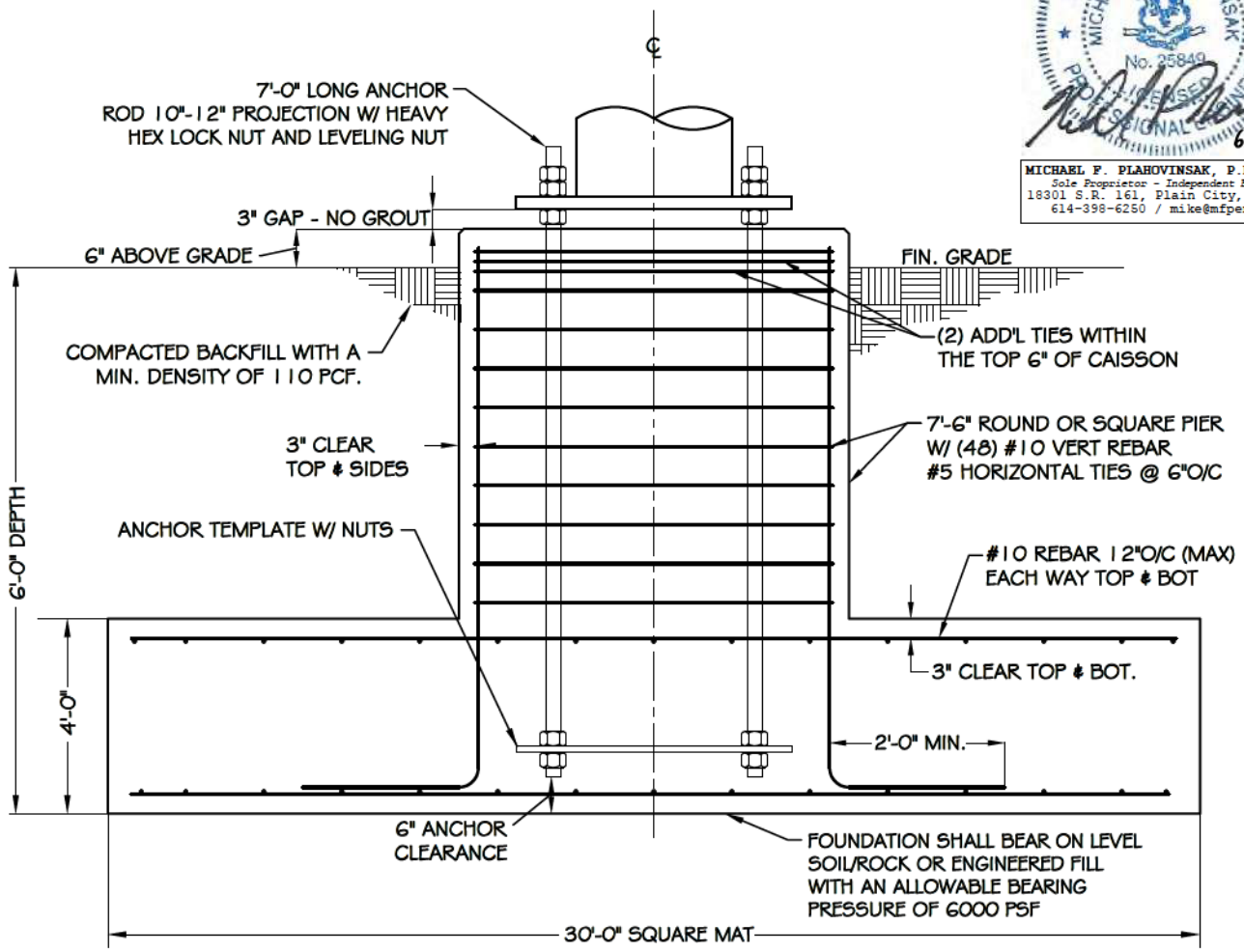

SPREAD FOOTING

NOT TO SCALE

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower base elevation above sea level: 375.00 ft.
Basic wind speed of 118 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.5000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	165.00-117.25	47.75	4.75	18	24.0000	34.6819	0.2188	0.8750	A572-65 (65 ksi)
L2	117.25-94.75	27.25	5.50	18	33.1818	39.2777	0.3750	1.5000	A572-65 (65 ksi)
L3	94.75-47.25	53.00	6.75	18	37.2974	49.1537	0.5000	2.0000	A572-65 (65 ksi)
L4	47.25-1.00	53.00		18	46.6437	58.5000	0.5625	2.2500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	24.3365	16.5116	1179.7676	8.4423	12.1920	96.7657	2361.0876	8.2574	3.8390	17.55
	35.1832	23.9282	3590.5134	12.2344	17.6184	203.7934	7185.7513	11.9664	5.7190	26.144
L2	34.7148	39.0483	5309.6588	11.6464	16.8563	314.9946	10626.3043	19.5278	5.1800	13.813
	39.8258	46.3040	8853.5146	13.8105	19.9531	443.7166	17718.6790	23.1564	6.2529	16.674
L3	39.0449	58.3974	9989.9668	13.0631	18.9471	527.2570	19993.0786	29.2042	5.6843	11.369
	49.8348	77.2134	23091.9924	17.2721	24.9701	924.7869	46214.3699	38.6140	7.7710	15.542
L4	48.8098	82.2722	22071.7874	16.3588	23.6950	931.4961	44172.6174	41.1439	7.2193	12.834
	59.3157	103.4402	43867.8302	20.5678	29.7180	1476.1367	87793.3828	51.7299	9.3060	16.544

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 165.00-117.25				1	1	1			
L2 117.25-94.75				1	1	1			
L3 94.75-47.25				1	1	1			
L4 47.25-1.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft²/ft	Weight plf
1 5/8"	C	No	Yes	Inside Pole	162.00 - 1.00	18	No Ice	0.00	0.92
							1/2" Ice	0.00	0.92
							1" Ice	0.00	0.92
							2" Ice	0.00	0.92
1 5/8"	C	No	Yes	Inside Pole	155.00 - 1.00	18	No Ice	0.00	0.92
							1/2" Ice	0.00	0.92
							1" Ice	0.00	0.92
							2" Ice	0.00	0.92
1 5/8"	C	No	Yes	Inside Pole	143.00 - 1.00	18	No Ice	0.00	0.92
							1/2" Ice	0.00	0.92
							1" Ice	0.00	0.92
							2" Ice	0.00	0.92
1 5/8"	C	No	Yes	Inside Pole	133.00 - 1.00	18	No Ice	0.00	0.92
							1/2" Ice	0.00	0.92
							1" Ice	0.00	0.92
							2" Ice	0.00	0.92

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
L1	165.00-117.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	2.05
L2	117.25-94.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1.49
L3	94.75-47.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	3.14
L4	47.25-1.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	3.05

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	165.00-117.25	A	1.733	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	2.05
L2	117.25-94.75	A	1.685	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1.49
L3	94.75-47.25	A	1.619	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	3.14
L4	47.25-1.00	A	1.451	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	3.05

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
20 ft x 3" dia whip	A	From Face	5.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.00 8.03 10.08 14.23	6.00 8.03 10.08 14.23	0.06 0.10 0.16 0.31
20 ft x 3" dia whip	B	From Face	5.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.00 8.03 10.08 14.23	6.00 8.03 10.08 14.23	0.06 0.10 0.16 0.31
20 ft x 3" dia whip	C	From Face	5.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.00 8.03 10.08 14.23	6.00 8.03 10.08 14.23	0.06 0.10 0.16 0.31
(3) 6' Side Arm Mount	C	None		0.0000	162.00	No Ice 1/2" Ice 1" Ice 2" Ice	10.00 13.00 16.00 22.00	10.00 13.00 16.00 22.00	0.10 0.15 0.20 0.30
**									
(3) CCI TPA65R-BU8DA-K w/ mount pipe	A	From Face	3.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice	17.87 18.50 19.14 20.44	10.02 11.44 12.72 14.94	0.12 0.23 0.36 0.66
(4) Ericsson AIR-6449B77D w/ mount pipe	B	From Face	3.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.87 5.42 5.90 6.91	4.17 4.89 5.49 6.74	0.12 0.17 0.22 0.35
(3) Ericsson AIR-6419N77G w/ mount pipe	C	From Face	3.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.66 5.22 5.70 6.70	3.36 4.06 4.63 5.83	0.09 0.13 0.18 0.30
(3) CCI OPA65R-BU8DA-K w/ mount pipe	A	From Face	3.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice	18.09 18.72 19.36 20.66	10.10 11.52 12.80 15.02	0.11 0.23 0.36 0.65
(2) Raycap DC9-48-60-24-8C	A	From Face	2.00	0.0000	155.00	No Ice	1.56	4.78	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	1.72	5.06	0.14
			0.00			1" Ice	1.89	5.35	0.18
						2" Ice	2.25	5.95	0.27
(3) Ericsson Radio 4415 B25	B	From Face	2.00	0.0000	155.00	No Ice	1.62	0.64	0.06
			0.00			1/2" Ice	1.78	0.75	0.07
			0.00			1" Ice	1.95	0.86	0.09
						2" Ice	2.31	1.13	0.12
(3) Ericsson 4494 RRU	B	From Face	2.00	0.0000	155.00	No Ice	1.65	1.16	0.07
			0.00			1/2" Ice	1.81	1.30	0.08
			0.00			1" Ice	1.98	1.45	0.10
						2" Ice	2.34	1.76	0.15
(3) Ericsson RRUS-4890	B	From Face	2.00	0.0000	155.00	No Ice	0.98	2.85	0.08
			0.00			1/2" Ice	1.11	3.06	0.11
			0.00			1" Ice	1.25	3.28	0.13
						2" Ice	1.56	3.74	0.19
(4) Ericsson RRUS-4490	B	From Face	2.00	0.0000	155.00	No Ice	0.98	2.85	0.08
			0.00			1/2" Ice	1.11	3.06	0.11
			0.00			1" Ice	1.25	3.28	0.13
						2" Ice	1.56	3.74	0.19
12' Platform w/ Handrail	C	None		0.0000	155.00	No Ice	30.00	30.00	1.80
						1/2" Ice	35.00	35.00	2.60
						1" Ice	40.00	40.00	3.40
						2" Ice	50.00	50.00	5.00
**									
(4) Commscope NHH-65C-R2B w/ mount pipe	A	From Face	3.00	0.0000	143.00	No Ice	11.35	9.54	0.08
			0.00			1/2" Ice	11.96	10.96	0.17
			0.00			1" Ice	12.59	12.23	0.26
						2" Ice	13.83	14.44	0.49
(4) Commscope NHH-65C-R2B w/ mount pipe	B	From Face	3.00	0.0000	143.00	No Ice	11.35	9.54	0.08
			0.00			1/2" Ice	11.96	10.96	0.17
			0.00			1" Ice	12.59	12.23	0.26
						2" Ice	13.83	14.44	0.49
(4) Commscope NHH-65C-R2B w/ mount pipe	C	From Face	3.00	0.0000	143.00	No Ice	11.35	9.54	0.08
			0.00			1/2" Ice	11.96	10.96	0.17
			0.00			1" Ice	12.59	12.23	0.26
						2" Ice	13.83	14.44	0.49
(3) Samsung RFV01U-D2A	A	From Face	2.00	0.0000	143.00	No Ice	1.87	1.02	0.07
			0.00			1/2" Ice	2.03	1.15	0.09
			0.00			1" Ice	2.21	1.29	0.11
						2" Ice	2.59	1.59	0.15
(4) Samsung RFV01U-D1A	B	From Face	2.00	0.0000	143.00	No Ice	1.87	1.25	0.08
			0.00			1/2" Ice	2.03	1.39	0.10
			0.00			1" Ice	2.21	1.54	0.12
						2" Ice	2.59	1.87	0.18
(2) Raycap RVZDC-6627-PF-48	C	From Face	2.00	0.0000	143.00	No Ice	4.06	3.10	0.03
			0.00			1/2" Ice	4.32	3.34	0.07
			0.00			1" Ice	4.58	3.58	0.11
						2" Ice	5.14	4.09	0.20
12' Platform w/ Handrail	C	None		0.0000	143.00	No Ice	30.00	30.00	1.80
						1/2" Ice	35.00	35.00	2.60
						1" Ice	40.00	40.00	3.40
						2" Ice	50.00	50.00	5.00
**									
(4) Commscope NHH-65C-R2B w/ mount pipe	A	From Face	3.00	0.0000	133.00	No Ice	11.35	9.54	0.08
			0.00			1/2" Ice	11.96	10.96	0.17
			0.00			1" Ice	12.59	12.23	0.26
						2" Ice	13.83	14.44	0.49

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(4) Commscope NHH-65C-R2B w/ mount pipe	B	From Face	3.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.35 11.96 12.59 13.83	9.54 10.96 12.23 14.44	0.08 0.17 0.26 0.49
(4) Commscope NHH-65C-R2B w/ mount pipe	C	From Face	3.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.35 11.96 12.59 13.83	9.54 10.96 12.23 14.44	0.08 0.17 0.26 0.49
(3) Samsung RFV01U-D2A	A	From Face	2.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.03 2.21 2.59	1.02 1.15 1.29 1.59	0.07 0.09 0.11 0.15
(4) Samsung RFV01U-D1A	B	From Face	2.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.03 2.21 2.59	1.25 1.39 1.54 1.87	0.08 0.10 0.12 0.18
(2) Raycap RVZDC-6627-PF-48	C	From Face	2.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.06 4.32 4.58 5.14	3.10 3.34 3.58 4.09	0.03 0.07 0.11 0.20
12' Platform w/ Handrail	C	None		0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice	30.00 35.00 40.00 50.00	30.00 35.00 40.00 50.00	1.80 2.60 3.40 5.00

**

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 90 deg - No Ice
5	0.9 Dead+1.0 Wind 90 deg - No Ice
6	1.2 Dead+1.0 Wind 180 deg - No Ice
7	0.9 Dead+1.0 Wind 180 deg - No Ice
8	1.2 Dead+1.0 Ice+1.0 Temp
9	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
10	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
11	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
12	Dead+Wind 0 deg - Service
13	Dead+Wind 90 deg - Service
14	Dead+Wind 180 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	165 - 117.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-47.07	2.39	13.22
			Max. Mx	4	-18.23	-520.78	5.10
			Max. My	2	-18.28	-2.49	508.63
			Max. Vy	4	22.44	-520.78	5.10
			Max. Vx	2	-21.96	-2.49	508.63
			Max. Torque	5			8.93
L2	117.25 - 94.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-54.89	2.47	13.68
			Max. Mx	4	-24.19	-1026.35	5.31
			Max. My	2	-24.23	-2.45	1003.66
			Max. Vy	4	24.03	-1026.35	5.31
			Max. Vx	2	-23.55	-2.45	1003.66
			Max. Torque	5			8.92
L3	94.75 - 47.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-76.80	2.58	14.27
			Max. Mx	4	-41.92	-2217.89	5.56
			Max. My	2	-41.94	-2.44	2172.78
			Max. Vy	4	27.38	-2217.89	5.56
			Max. Vx	2	-26.90	-2.44	2172.78
			Max. Torque	5			8.92
L4	47.25 - 1	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-109.00	2.58	14.29
			Max. Mx	4	-68.92	-3753.81	5.62
			Max. My	2	-68.92	-2.46	3683.55
			Max. Vy	4	30.41	-3753.81	5.62
			Max. Vx	2	-29.95	-2.46	3683.55
			Max. Torque	5			8.90

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	165 - 117.25	17.511	13	0.9566	0.0097
L2	122 - 94.75	9.402	13	0.7637	0.0032
L3	100.25 - 47.25	6.235	13	0.6103	0.0019
L4	54 - 1	1.737	13	0.3028	0.0007

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
172.00	20 ft x 3" dia whip	13	17.511	0.9566	0.0157	58049
162.00	(3) 6' Side Arm Mount	13	16.908	0.9458	0.0149	58049
155.00	(3) CCI TPA65R-BU8DA-K w/ mount pipe	13	15.505	0.9202	0.0130	29024
143.00	(4) Commscope NHH-65C-R2B w/ mount pipe	13	13.156	0.8724	0.0099	13192
133.00	(4) Commscope NHH-65C-R2B w/ mount pipe	13	11.295	0.8258	0.0077	9069

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	165 - 117.25	75.799	4	4.1274	0.0421
L2	122 - 94.75	40.775	4	3.3096	0.0138
L3	100.25 - 47.25	27.050	4	2.6474	0.0083
L4	54 - 1	7.536	4	1.3140	0.0028

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
172.00	20 ft x 3" dia whip	4	75.799	4.1274	0.0680	13750
162.00	(3) 6' Side Arm Mount	4	73.193	4.0821	0.0645	13750
155.00	(3) CCI TPA65R-BU8DA-K w/ mount pipe	4	67.141	3.9745	0.0562	6874
143.00	(4) Commscope NHH-65C-R2B w/ mount pipe	4	56.999	3.7731	0.0429	3123
133.00	(4) Commscope NHH-65C-R2B w/ mount pipe	4	48.960	3.5752	0.0332	2145

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	165 - 117.25 (1)	TP34.6819x24x0.2188	47.75	0.00	0.0	23.1904	-18.23	1356.64	0.013
L2	117.25 - 94.75 (2)	TP39.2777x33.1818x0.375	27.25	0.00	0.0	44.8395	-24.19	2623.11	0.009
L3	94.75 - 47.25 (3)	TP49.1537x37.2974x0.5	53.00	0.00	0.0	74.8170	-41.92	4376.80	0.010
L4	47.25 - 1 (4)	TP58.5x46.6437x0.5625	53.00	0.00	0.0	103.4400	-68.92	6051.25	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	165 - 117.25 (1)	TP34.6819x24x0.2188	520.80	1028.53	0.506	0.00	1028.53	0.000
L2	117.25 - 94.75 (2)	TP39.2777x33.1818x0.375	1026.37	2572.77	0.399	0.00	2572.77	0.000
L3	94.75 - 47.25 (3)	TP49.1537x37.2974x0.5	2217.90	5373.96	0.413	0.00	5373.96	0.000
L4	47.25 - 1 (4)	TP58.5x46.6437x0.5625	3753.81	9071.83	0.414	0.00	9071.83	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	165 - 117.25 (1)	TP34.6819x24x0.2188	22.44	406.99	0.055	8.89	1190.47	0.007
L2	117.25 - 94.75 (2)	TP39.2777x33.1818x0.375	24.03	786.93	0.031	8.88	2596.22	0.003
L3	94.75 - 47.25 (3)	TP49.1537x37.2974x0.5	27.38	1313.04	0.021	8.87	5421.02	0.002
L4	47.25 - 1 (4)	TP58.5x46.6437x0.5625	30.41	1815.37	0.017	8.87	9211.00	0.001

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	165 - 117.25 (1)	0.013	0.506	0.000	0.055	0.007	0.524 ✔	1.000	✔
L2	117.25 - 94.75 (2)	0.009	0.399	0.000	0.031	0.003	0.409 ✔	1.000	✔
L3	94.75 - 47.25 (3)	0.010	0.413	0.000	0.021	0.002	0.423 ✔	1.000	✔
L4	47.25 - 1 (4)	0.011	0.414	0.000	0.017	0.001	0.425 ✔	1.000	✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	165 - 117.25	Pole	TP34.6819x24x0.2188	1	-18.23	1356.64	52.4	Pass
L2	117.25 - 94.75	Pole	TP39.2777x33.1818x0.375	2	-24.19	2623.11	40.9	Pass
L3	94.75 - 47.25	Pole	TP49.1537x37.2974x0.5	3	-41.92	4376.80	42.3	Pass
L4	47.25 - 1	Pole	TP58.5x46.6437x0.5625	4	-68.92	6051.25	42.5	Pass
							Summary	
						Pole (L1)	52.4	Pass
						RATING =	**52.4**	**Pass**

Michael F. Plahovinsak, P.E.
18301 State Route 161 W
Plain City, OH 43064
Phone: 614-398-6250
email: mike@mfpeng.com

Job	165-ft monopole - MFP #23524-322
Page	BP & AB Calc
Project	CT1207 South Windsor II
Date	6/6/2024
Client	TAPP TP-23372
Designed by	Mike

Anchor Rod and Base Plate Calculation

TIA-222-H

Factored Base Reactions:		***Pole Shape:***	***Anchor Rods:***	***Base Plate:***
Moment:	3754 ft-kips	18-Sided	(26) 2.25 in. A615 GR. 75	2.75 in. x 72 in. Round
Shear:	30 kips	***Pole Dia. (D_f):***	Anchor Rods Evenly Spaced	fy = 50 ksi
Axial:	69 kips	58.50 in	On a 66 in Bolt Circle	

Anchor Rod Calculation According to TIA-222-H section 4.9.9

ϕ_t , ϕ_v = 0.75 TIA 4.9.6
I_{bolts} = 14157.00 in^2 Momet of Inertia
P_u = 102 kips Tension Force
V_u = 1.2 kips Shear Force
Rnt = 325.00 kips Nominal Tensile Strength
Rnv = 198.80 kips (0.5 x fu x ag)
Stress Rating = **42.0%** Satisfies TIA-H 4.9.9

Base Plate Calculation According to TIA-222-H

ϕ = 0.90 TIA 4.7
M_{PL} = 248.5 in-kip Plate Moment
L = 7.1 in Section Length
Z = 13.4 Plastic Section Modulus
M_P = 668.2 in-kip Plastic Moment
ϕM_n = 601.4 in-kip Factored Resistance

Calculated Moment vs Factored Resistance
248.46 in-kip $\leq$ 601 in-kip

Stress Rating = **41.3%**

Anchor Rods Are Adequate	**42.0%**	☑
Base Plate is Adequate	**41.3%**	☑

Michael F. Plahovinsak, P.E.
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Plain City, OH 43064
Phone: 614-398-6250
email: mike@mfpeng.com

Job	Page
165-ft monopole - MFP #23524-322	FND
Project	**Date**
CT1207 South Windsor II	6/6/2024
Client	**Designed by**
TAPP TP-23372	Mike

Caisson Calculation

According to TIA-222-H

1. Foundation overturning resistance calculated with PLS Caisson, for Brom's method for rigid piles. Soil layers modeled after recommendations from the geotechnical report.
2. Cohesion strength for the upper 22.5 ft has been reduced by 50%
3. An additional load factor of 1.3 has been applied to the reinforcement design
4. Foundation has been designed with applied loads per TIA-222-H
5. Design water table = 12.5 ft below grade

*** PIER PROPERTIES CONCRETE STRENGTH (ksi) = 4.50 STEEL STRENGTH (ksi) = 60.00

DIAMETER (ft) = 7.500 DISTANCE FROM TOP OF PIER TO GROUND LEVEL (ft) = 0.50

*** SOIL PROPERTIES

LAYER	TYPE	THICKNESS (ft)	DEPTH AT TOP OF LAYER (ft)	DENSITY (pcf)	CU (psf)	KP	PHI (degrees)
1	S	4.00	0.00	100.0		1.000	-0.00
2	S	8.50	4.00	125.0		3.537	34.00
3	S	19.00	12.50	63.0		3.537	34.00

*** DESIGN (FACTORED) LOADS AT TOP OF PIER MOMENT (ft-k) = 8854.0 VERTICAL (k) = 69.0 SHEAR (k) = 71.0
ADDITIONAL SAFETY FACTOR AGAINST SOIL FAILURE = 1.33

*** CALCULATED PIER LENGTH (ft) = 27.000

*** CHECK OF SOILS PROPERTIES AND ULTIMATE RESISTING FORCES ALONG PIER

TYPE	TOP OF LAYER BELOW TOP OF PIER (ft)	THICKNESS (ft)	DENSITY (pcf)	CU (psf)	KP	FORCE (k)	ARM (ft)
S	0.50	4.00	100.0		1.000	18.00	3.17
S	4.50	8.50	125.0		3.537	629.95	9.56
S	13.00	5.97	63.0		3.537	783.98	16.10
S	18.97	8.03	63.0		3.537	-1336.81	23.15

*** SHEAR AND MOMENTS ALONG PIER

DISTANCE BELOW TOP OF PIER (ft)	WITH THE ADDITIONAL SAFETY FACTOR SHEAR (k)	WITH THE ADDITIONAL SAFETY FACTOR MOMENT (ft-k)	WITHOUT ADDITIONAL SAFETY FACTOR SHEAR (k)	WITHOUT ADDITIONAL SAFETY FACTOR MOMENT (ft-k)
0.00	95.1	12243.9	71.3	9183.1
2.70	89.7	12496.7	67.3	9372.7
5.40	44.4	12703.2	33.3	9527.6
8.10	-102.0	12641.8	-76.5	9481.6
10.80	-320.9	12087.4	-240.6	9065.7
13.50	-611.7	10844.1	-458.8	8133.2
16.20	-951.0	8742.8	-713.2	6557.2
18.90	-1326.8	5676.0	-995.1	4257.1
21.60	-934.4	2588.8	-700.8	1941.6
24.30	-485.5	663.6	-364.1	497.7
27.00	0.0	0.0	0.0	0.0

*** TOTAL REINFORCEMENT PCT = 0.96 REINFORCEMENT AREA (in^2) = 61.07
*** USABLE AXIAL CAP. (k) = 69.0 USABLE MOMENT CAP. (ft-k) = 9698.0

For Design:

7.5-ft Diameter caisson x 27-ft long (26.5-ft Embeded with 0.5-ft above grade)
Concrete strength =4500 PSI @ 28 days. Estimated Concrete Volume = 44 CY3.
(50) #10 Vertical Rebar. Steel Cross-Section = 63.5 in2

Monopole Spread Footing Calculation

TIA-222-H

Factored Base Reactions:		**Footing Dimensions:**		**Concrete:**
Moment:	8854 ft-kips	30 ft x 30 ft	7.5 ft Square Pier	f'c = 4500 psi
Shear:	71 kips	x 4 ft thick	w/6 in Reveal	Steel fy = 60 ksi
Axial:	69 kips	Bearing 6 ft B.G.	138.5 Yd3 Concrete	f = 0.75
Soil Backfill	125 pcf	Ultimate Bearing:	12000 psf	Water Table n/a

Foundation Weight

Weight of Pole	69.0	kips
Weight of Concrete	561.09375	kips
Weight of Soil	210.9375	kips
Bouyancy of Water	0.0	kips
Total	841.0	kips

Overturning Resistance:

Overturning Moment (M_u)	9315.5	ft-kips	8854 ft-kips + (71 kips x 6.5 ft)
Resisting Moment (R_s)	12615.469	ft-kips	841.03125 kips x 30 ft / 2
$\phi \times R_s > M_u$	$M_{overturning} / f M_{resist}$		**98.5%** **OK**

Soil Bearing Pressure:

Eccentricity (e)	11.08	ft	9315.5 ft-kips / 841.03125 kips
6(e)	66.5 ft	>	30.0 ft 6e > 30
Maximum Soil Bearing	4280.3255	psf	Calculated across corners
Soil Overburden	-750	psf	
Net Soil Bearing	3530.3255	psf	
Resisting Soil Bearing (R_s)	12000	psf	
Net Soil Bearing < $\phi \times R_s$	Net Bearing / f R_s		**39.2%** **OK**

Bending Moment in Pier:

Bending Moment	9031.5	ft-kips	8854 ft-kips + (71 kips x 2.5 ft)
Min. Pier Steel	40.5	in^2	1/2% (Based on Square Pier)

Bending Moment in Footing:

Max Bending Moment	6161.9192	ft-kips	Σ Moments about pier face
Footing Steel Req'd (Loads)	1.65	in^2/ft	
Min. Footing Steel	1.04	in^2/ft	0.18%

Site Name: South Windsor
Site Number: CT 1107
Site Address: 99 Dart Hill Rd

Keith Coppins
203-623-3287

Week of:	8/5/2024							8/12/2024							8/19/2024						
ACTIVITY	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S
Mobilization	x																				
Easement		x	x	x	x																
Primary Utilities									x	x	x	x			x	x	x	x	x		
Compound Clearing, Cut and Fill																					
Foundation - Set Hole																					
Foundation - Rebar and Formwork																					
Foundation - Pour																					
Foundation - Strip and backfill																					
Ground Ring																					
Compund Stone/Finish																					
Tower Delivery & Erection																					
Fencing																					
Clean up and restoration																					

Week of:	8/26/2024							9/3/2024							9/9/2024						
ACTIVITY	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S
Mobilization																					
Easement																					
Primary Utilities																					
Compound Clearing, Cut and Fill	x	x	x																		
Foundation - Set Hole				x	x																
Foundation - Rebar and Formwork								x	x	x	x										
Foundation - Pour												x									
Foundation - Strip and backfill															x	x					
Ground Ring															x						
																	x	x	x		
Compund Stone/Finish																					
Tower Delivery & Erection																					
Fencing																					
Clean up and restoration																					

Week of:	9/16/2024							9/23/2024							9/30/2024						
ACTIVITY	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S
Mobilization																					
Easement																					
Primary Utilities																					
Compound Clearing, Cut and Fill																					
Foundation - Set Hole																					
Foundation - Rebar and Formwork																					
Foundation - Pour																					
Foundation - Strip and backfill																					
Ground Ring																					
	x	x	x	x	x																
																			x		
Compund Stone/Finish											x	x									
Tower Delivery & Erection																		x			
Fencing								x	x	x											
Clean up and restoration																					

Week of:	10/7/2024							10/14/2024																				
ACTIVITY	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S
Mobilization																												
Easement																												
Primary Utilities																												
Compound Clearing, Cut and Fill																												
Foundation - Set Hole																												
Foundation - Rebar and Formwork																												
Foundation - Pour																												
Foundation - Strip and backfill																												
Ground Ring																												
	x	x	x	x	x			x	x	x	x	x																
Compund Stone/Finish																												
Tower Delivery & Erection																												
Fencing																												
Clean up and restoration	x	x	x	x	x																							

Notes:

Hours of Operation will be from 7:30 am until 6:30 pm Monday through Friday