NETWORK TOWERS

NT SITE NAME: DOBBINS NT SITE ID: NC-T23.12

> 1721 E FRANKLIN ST CHAPEL HILL, NC 27514 TOWN OF CHAPEL HILL

PROJECT NARRATIVE

NETWORK TOWERS, LLC PLANS TO BUILD A NEW WIRELESS TELECOMMUNICATIONS FACILITY WHICH WILL INCLUDE A NEW 195' MONOPOLE TOWER AND A 35'x75' FENCED COMPOUND AS DEFINED ON THIS PLAN SET, AND A RETAINING WALL HAS BEEN PLANED TO BE CONSTRUCTED TO SUPPORT THE PROPOSED DEVELOPMENT. THE TOWER WILL BE DESIGNED WITH AVAILABLE SPACE ON THE TOWER FOR (3) TENANTS /COLLOCATORS. THE PROPOSED TOWER AND FENCED COMPOUND WILL NOT BE LOCATED INSIDE EXISTING WETLANDS OR RIPARIAN BUFFERS.

SITE INFORMATION

SITE ADDRESS (TOWER 911 ADDRESS TBD)

> 1721 E FRANKLIN ST CHAPEL HILL, NC 27514

35° 56' 16.2901" N LATITUDE (NAD 83): LONGITUDE (NAD 83): 79° 01' 37.1788" W

265.0' AMSL **GROUND ELEVATION:**

TOWN OF CHAPEL HILL JURISDICTION:

ZONING: PIN: 9799261213

PARCEL AREA: **4.29 ACRES**

PROPOSED COMPOUND AREA: 2,625 SQ.FT. (0.060 ACRES) PROPOSED DISTURBED AREA: 5,056 SQ.FT. (0.116 ACRES) PROPOSED IMPERVIOUS AREA: 3,000 SQ.FT. (0.069 ACRES)

PARKING:

WASTE COLLECTION: NONE

PARCEL OWNER: HOUSE HARRIS HOLDINGS LLC 199 CLIFFDALE RD

CHAPEL HILL, NC 27516

TOWER OWNER: NETWORK TOWERS, LLC. 120 EASTSHORE DRIVE, SUITE 300

GLEN ALLEN, VA 23059

STRUCTURE TYPE: MONOPOLE

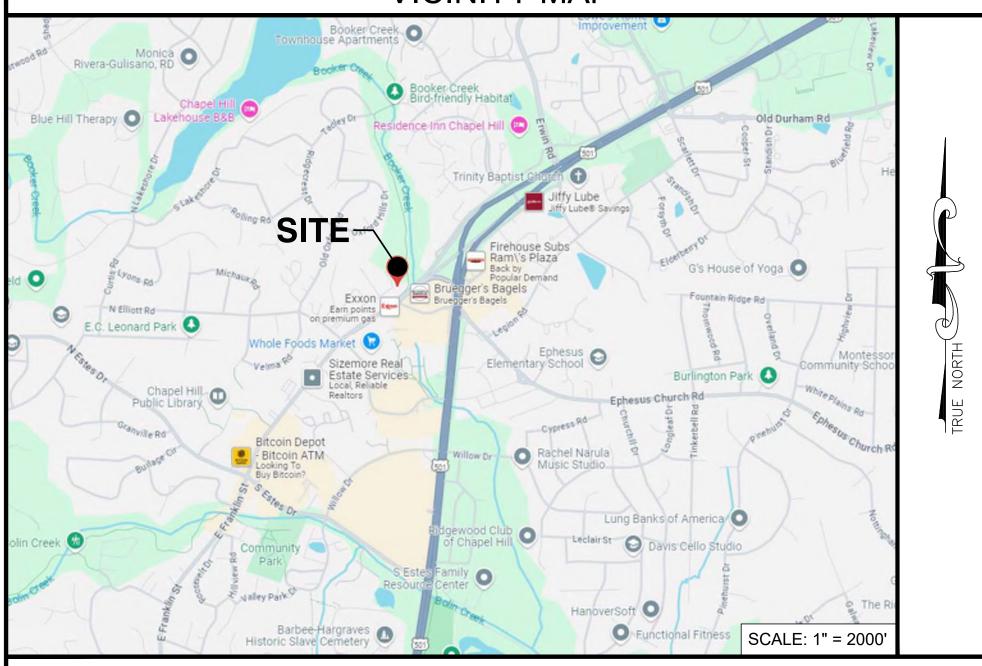
STRUCTURE HEIGHT: 195'-0" (AGL) (TOP OF TOWER)

199'-0" (AGL) (HIGHEST POINT)

CLASSIFICATION GROUP: 2B CONSTRUCTION TYPE:

DUKE ENERGY PROGRESS POWER SUPPLIER: WORK ORDER # TBD

VICINITY MAP



DIRECTIONS

FROM RALEIGH, NORTH CAROLINA: MERGE ONTO I-40 W, TAKE THE RAMP FOR I-40 W, KEEP LEFT, HEADING TOWARD DURHAM, AT EXIT 270, HEAD RIGHT ON THE RAMP FOR US-15 / US-501 TOWARD CHAPEL HILL / DURHAM, TURN LEFT ONTO US-501 S / US-15 S / DURHAM-CHAPEL HILL BLVD TOWARD CHAPEL HILL / PLANETARIUM / UNC-CH, TAKE THE RAMP ON THE RIGHT AND FOLLOW SIGNS FOR FRANKLIN STREET, KEEP STRAIGHT TO GET ONTO E FRANKLIN ST, TURN RIGHT AT 1721 E FRANKLIN ST, CHAPEL HILL, NC.

DRAWING INDEX

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ST-3	SEGMENT RETAINING WALL SECTIONS
ST-4	SEGMENT RETAINING WALL DETAILS & NOTES
ES-1	EROSION, SEDIMENT CONTROL & GRADING PLAN
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SWM-1	PRE-DEVELOPMENT DRAINAGE AREA MAP & CALCULATIONS
SWM-2	POST-DEVELOPMENT DRAINAGE AREA MAP & CALCULATIONS
F-1	FIRE SAFETY PLAN
CM-1	CONSTRUCTION MANAGEMENT PLAN

DO NOT SCALE DRAWINGS

CONSTRUCTION MANAGEMENT PLAN

CM-2

THESE DRAWINGS ARE FORMATTED TO BE FULL-SIZE AT 24"X36". CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE DESIGNER / ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICE TO PREVENT STORM WATER POLLUTION DURING CONSTRUCTION.

CODE COMPLIANCE

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

• 2018 NORTH CAROLINA BUILDING CODE

• 2009 NFPA 101, LIFE SAFETY CODE

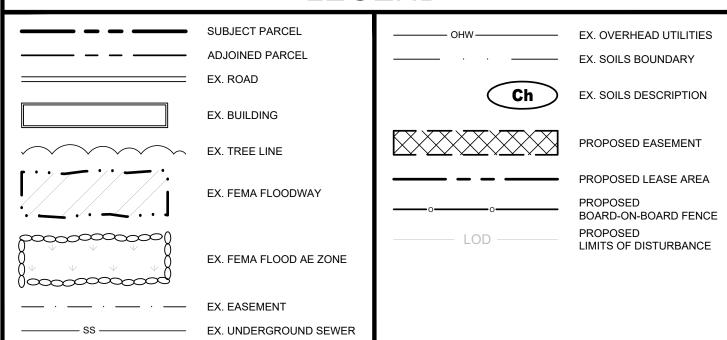
- ANSI/TIA-222-H
- 2020 NORTH CAROLINA STATE ELECTRICAL CODE
 - TIA 607
- INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEER 81

- 2018 NORTH CAROLINA FIRE PREVENTION CODE
- IEEE C2 NATIONAL ELECTRIC SAFETY CODE LATEST ED.

• TELECORDIA GR-1275

- AMERICAN INSTITUTE OF STEEL CONSTRUCTION
 ANSI/T 311
- AMERICAN CONCRETE INSTITUTE
- MANUAL OF STEEL CONSTRUCTION 13TH EDITION

LEGEND



NETWORK NETWORK TOWERS, LLC. GLEN ALLEN, VA 23059

TOTALLY COMMITTED. TKK ENGINEERING, P.C. 8601 SIX FORKS ROAD, SUITE 540

ENG

SITE INFORMATION

STAMP

SSIONAL

NT SITE NAME: DOBBINS NT SITE ID: NC-T23.12

NB+C PROJ. # 100793 (TOWER 911 ADDRESS TBD) 1721 E FRANKLIN STREET CHAPEL HILL, NC 27514 ORANGE COUNTY

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DESIGN RECORD	2	03/12/2025	REVISED SITE PLAN	OP
	1	01/31/2025	SITE PLAN	BMB
	0	11/14/2024	ZONING DRAWINGS	OP
	REV	DATE	DESCRIPTION	BY

THE CAROLL TOT T. SHELL DATE 09/18/2025

TRENT T. SNARR. P.E. NC PROFESSIONAL ENGINEER LIC. #037977

TITLE SHEET

T-1

NETWORK TOWERS, LLC. 6095 MARSHALEE DRIVE, SUITE 300

PROJECT TEAM

ELKRIDGE, MD 21075 (410) 712-7092

PROJECT MANAGEMENT FIRM: NETWORK BUILDING + CONSULTING, LLC.

120 EASTSHORE DRIVE, SUITE 300 GLEN ALLEN, VA 23059

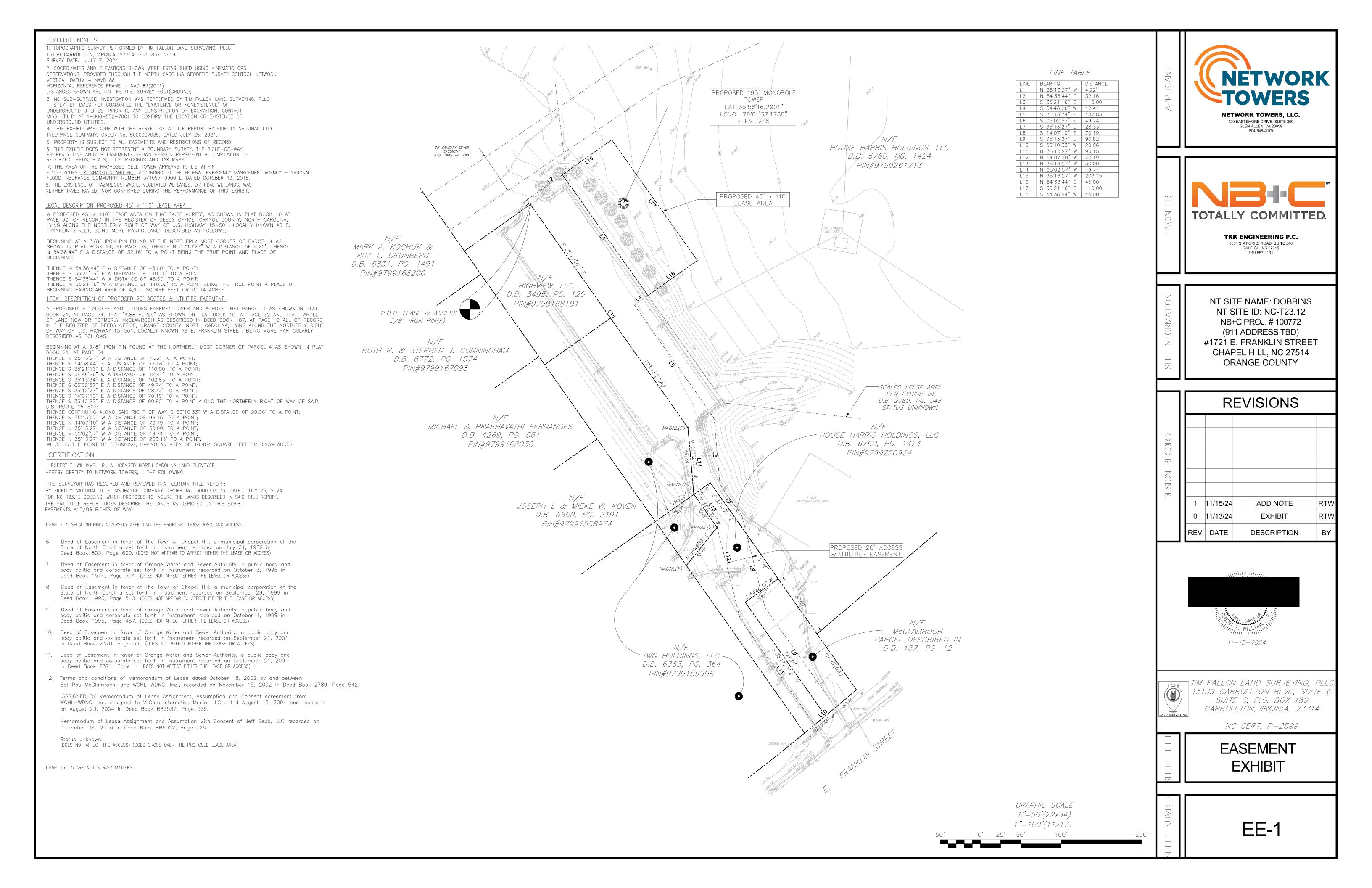
(804) 548-4079

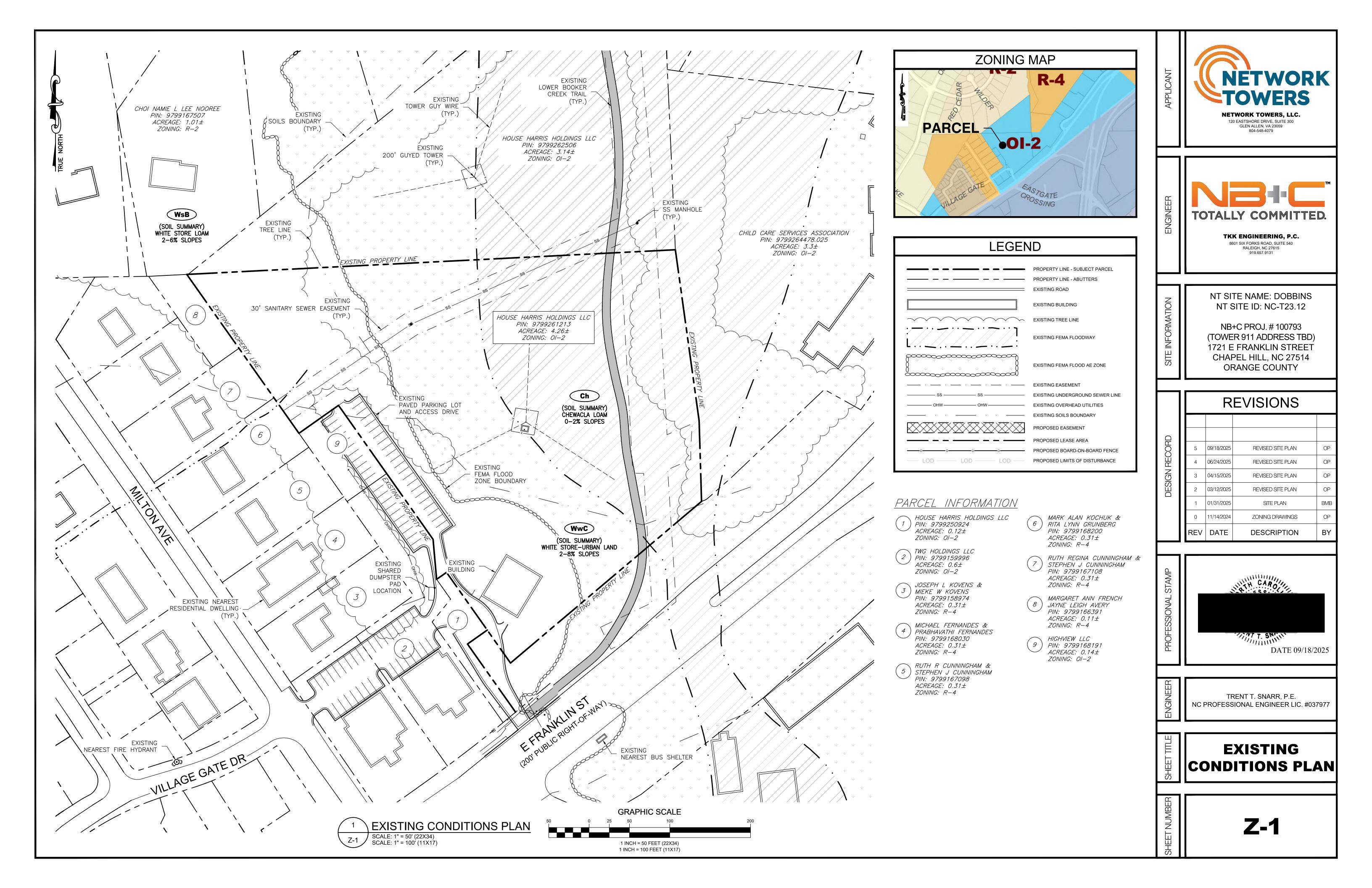
ENGINEERING FIRM:

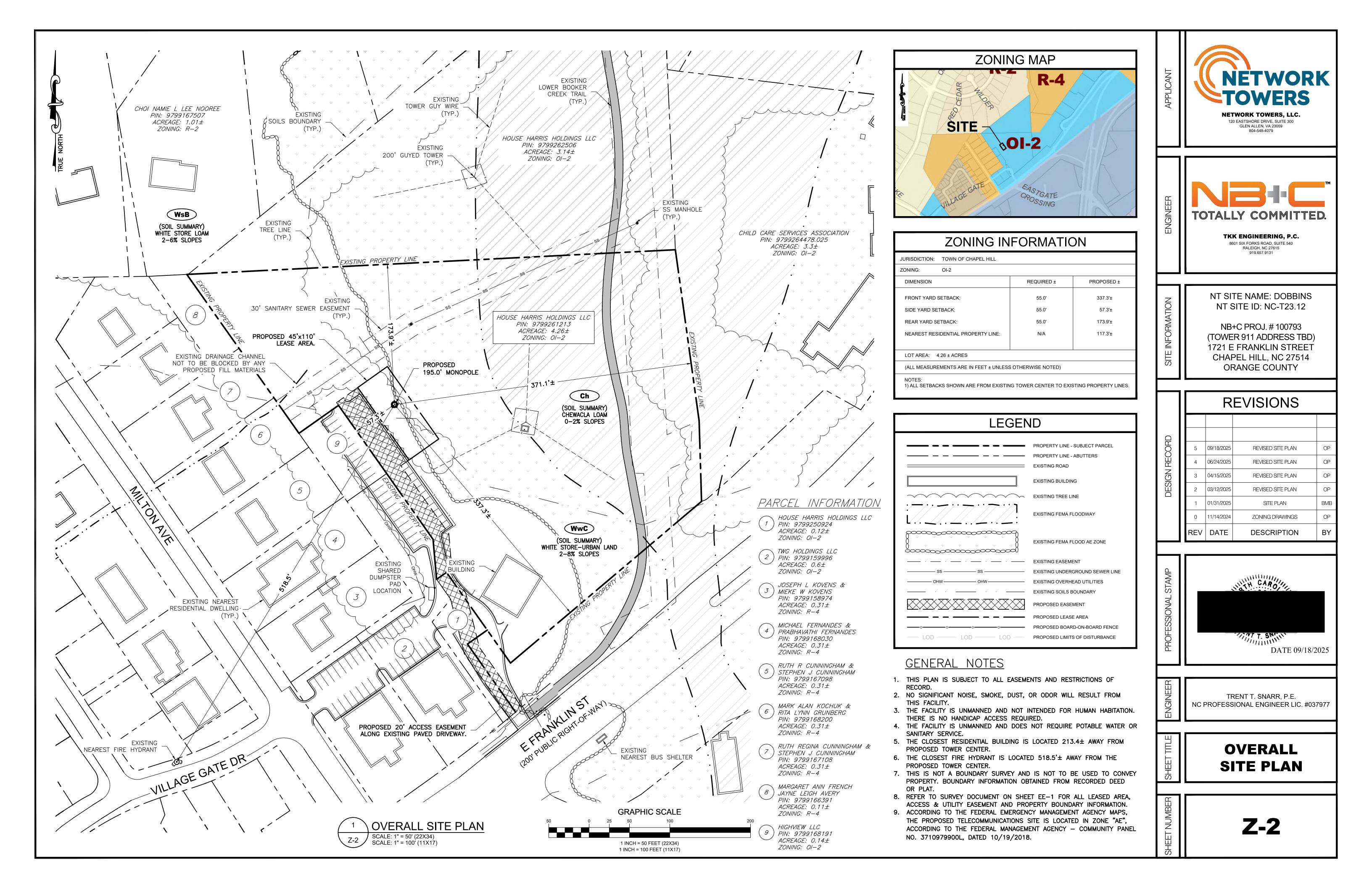
APPLICANT:

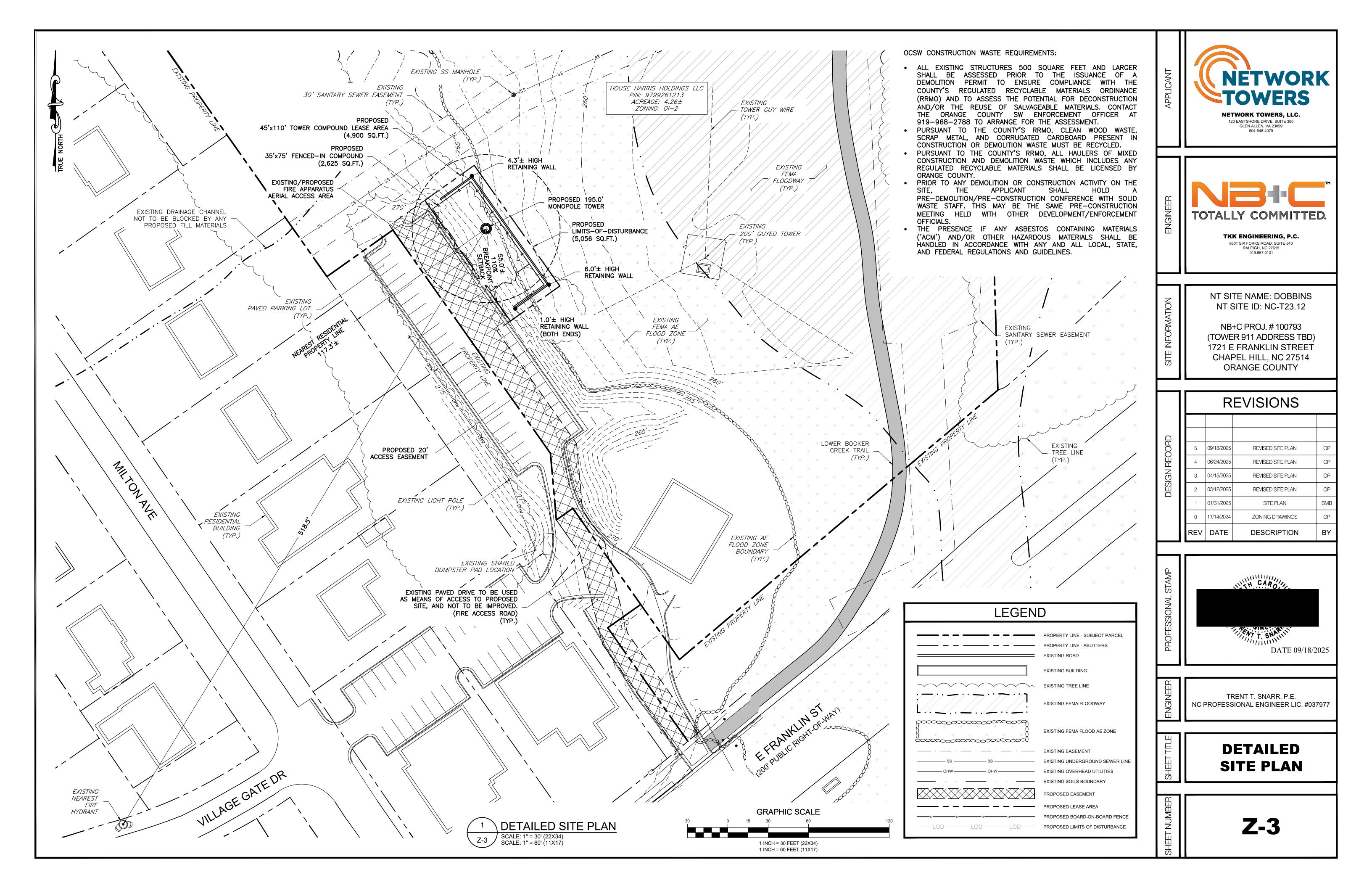
TKK ENGINEERING, P.C. 8601 SIX FORKS ROAD, SUITE 540

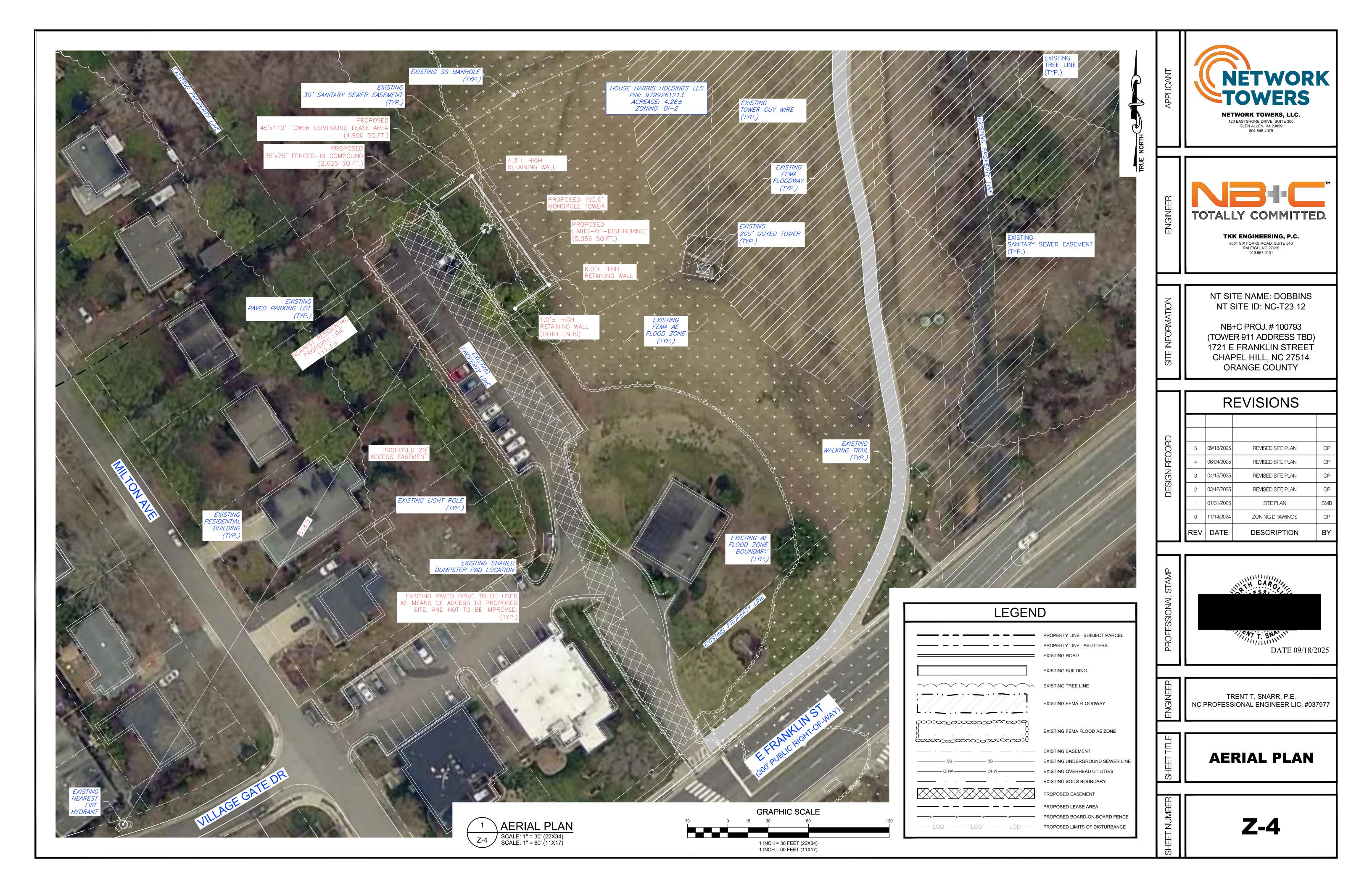
RALEIGH, NC 27615 919.657.9131

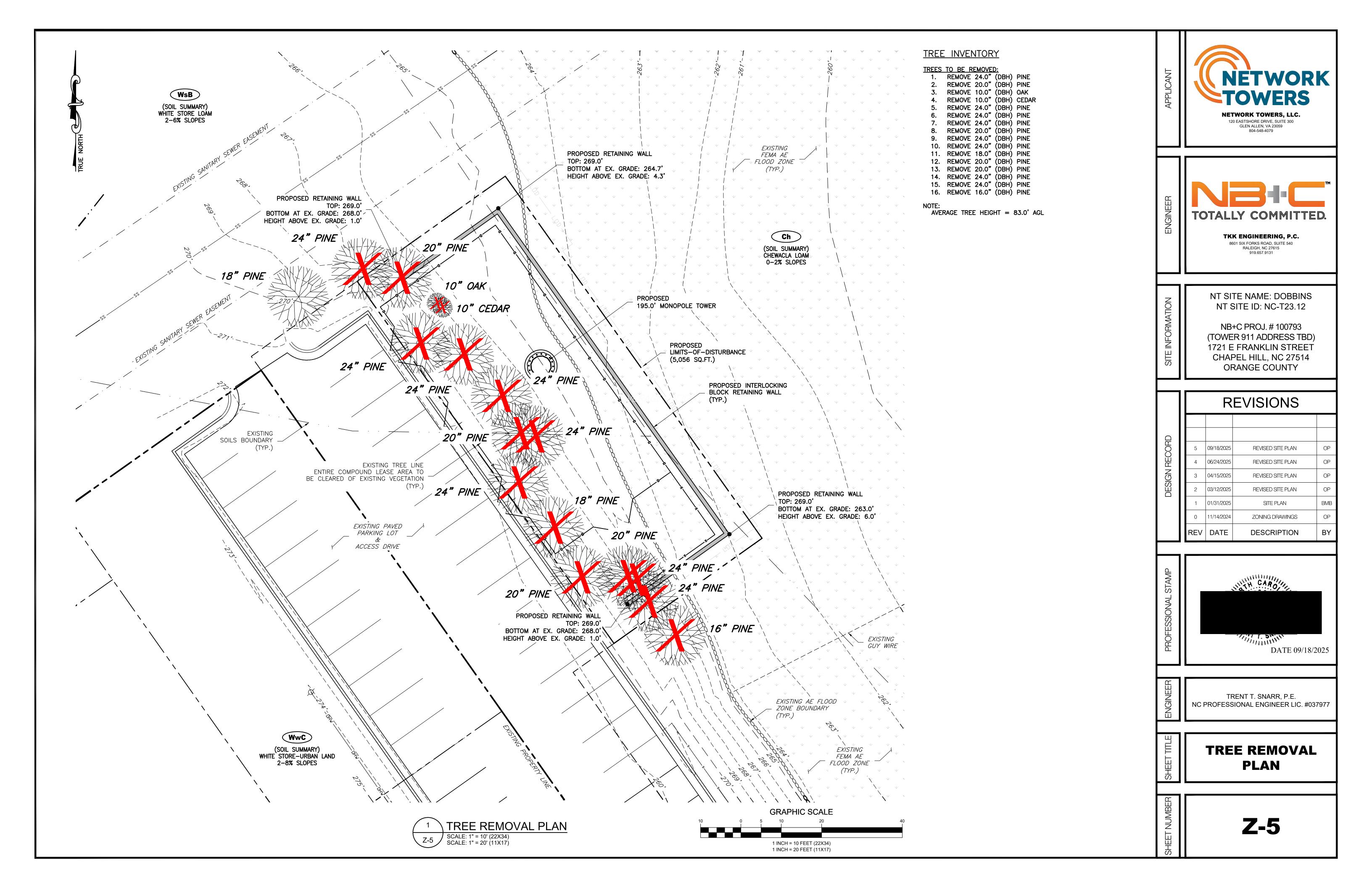


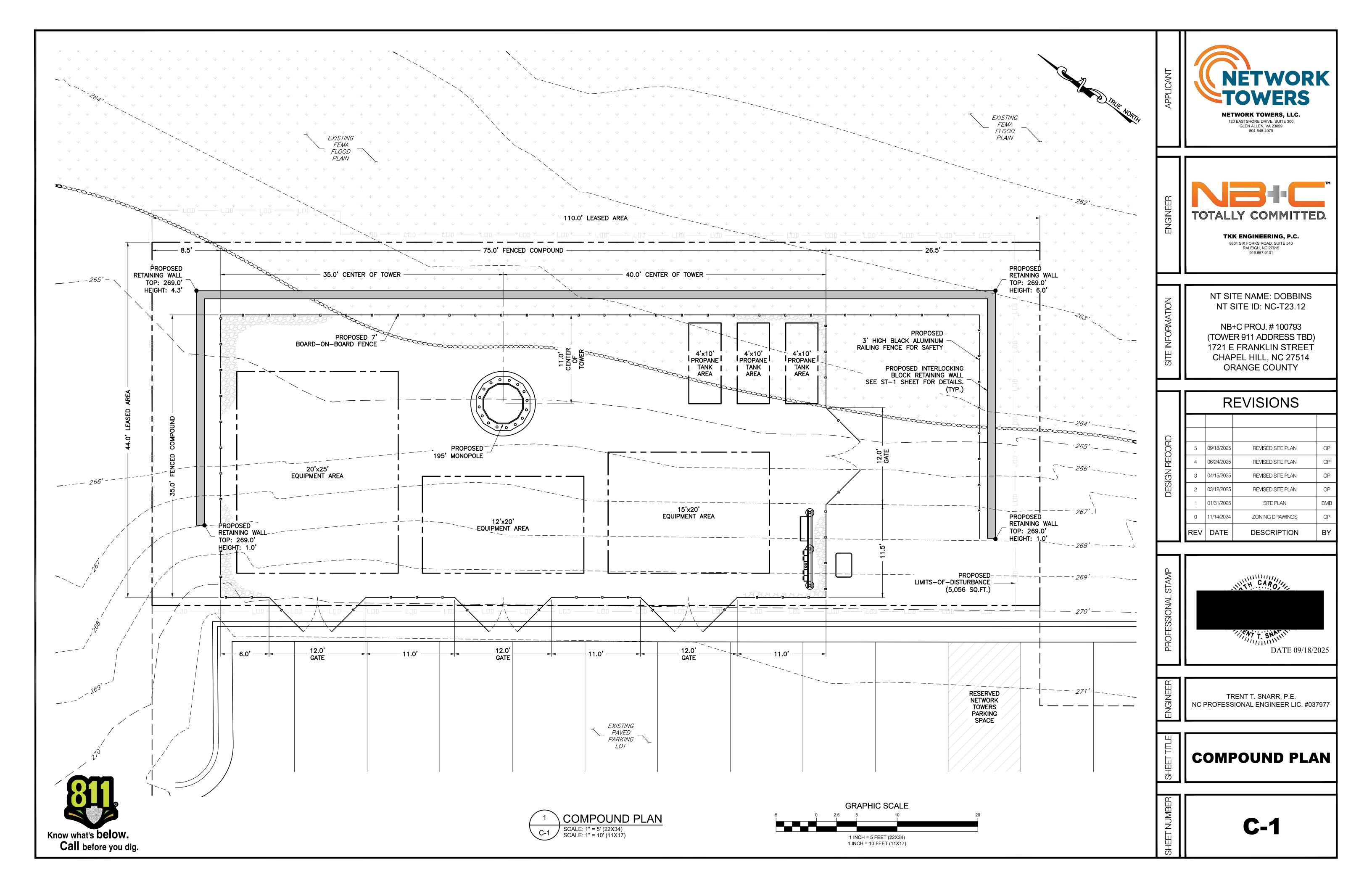


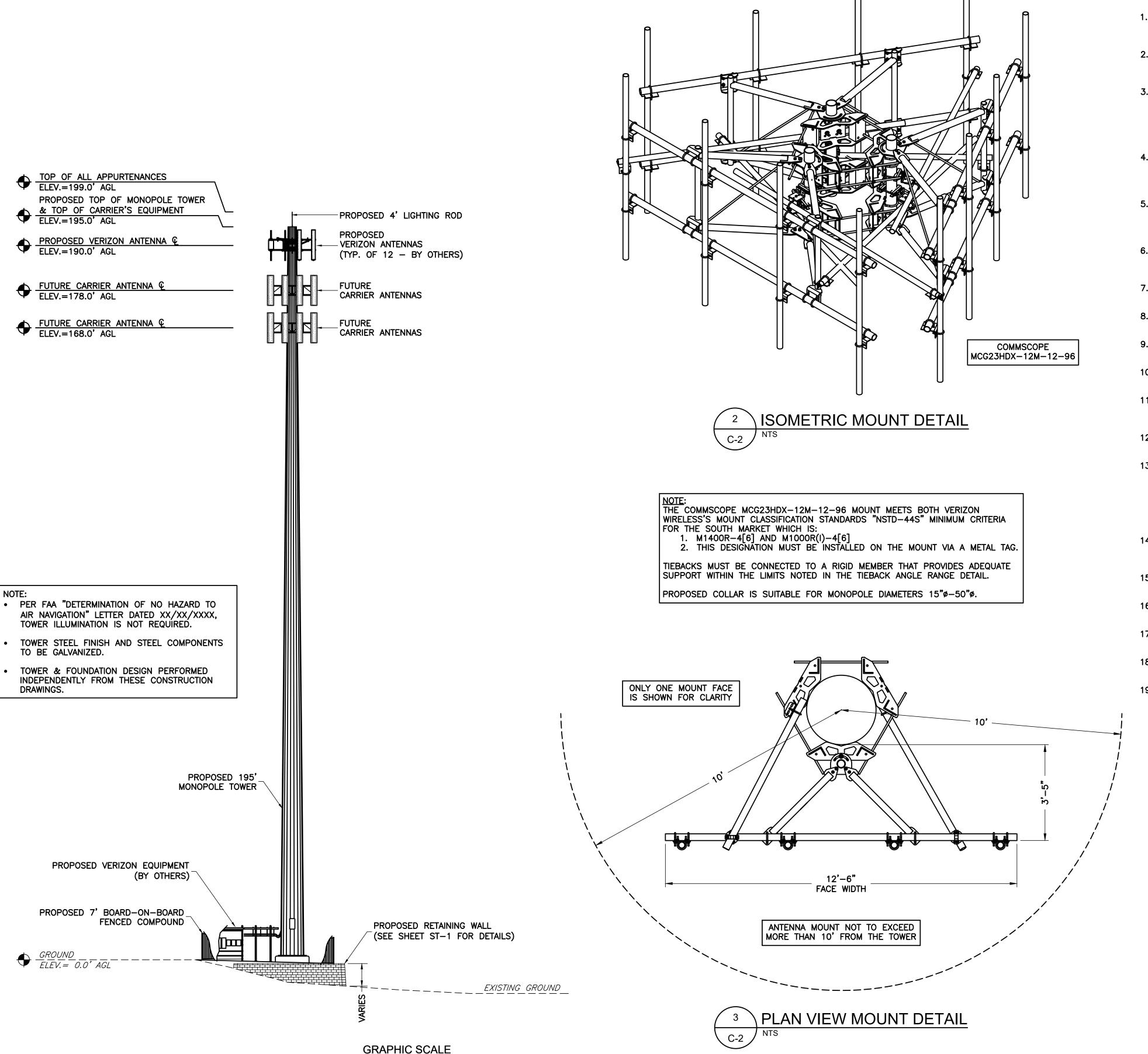












TOWER ELEVATION

1 INCH = 15 FEET (22X34) 1 INCH = 30 FEET (11X17)

SCALE: 1" = 15' (22X34) SCALE: 1" = 30' (11X17)

GENERAL NOTES

- 1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES COMPANY OR OTHER PUBLIC AUTHORITIES.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
- 3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
- 5. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 6. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- 7. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
- 8. TRANSMITTER EQUIPMENT AND ANTENNAS ARE DESIGNED TO MEET ANSI/EIA/TIA 222-H REQUIREMENTS.
- 9. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED
- 10. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
- 11. IF ANY UNDERGROUND UTILITIES OR STRUCTURES EXIST BENEATH THE PROJECT AREA, CONTRACTOR MUST LOCATE IT AND CONTACT THE APPLICANT & THE OWNER'S REPRESENTATIVE.
- 12. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION BY TECHNICIANS APPROXIMATELY 2 TIMES PER MONTH.
- 13. PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT OR MODIFICATION OF THE EXISTING STRUCTURE, A STRUCTURAL ANALYSIS SHALL BE PERFORMED BY THE OWNER'S AGENT TO CERTIFY THAT THE EXISTING/PROPOSED COMMUNICATION STRUCTURE AND COMPONENTS ARE STRUCTURALLY ADEQUATE TO SUPPORT ALL EXISTING AND PROPOSED ANTENNAS, COAXIAL CABLES AND OTHER APPURTENANCES.
- 14. PROPERTY LINE INFORMATION WAS PREPARED USING DEEDS, TAX MAPS, AND PLANS OF RECORD AND SHOULD NOT BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY.
- 15. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF
- 16. NO SIGNIFICANT NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
- 17. THE FACILITY IS UNMANNED AND NOT INTENDED FOR HUMAN HABITATION (NO HANDICAP ACCESS REQUIRED).
- 18. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
- 19. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE



SITE



TKK ENGINEERING, P.C. 8601 SIX FORKS ROAD, SUITE 540 RALEIGH, NC 27615

NT SITE NAME: DOBBINS NT SITE ID: NC-T23.12

NB+C PROJ. # 100793 (TOWER 911 ADDRESS TBD) 1721 E FRANKLIN STREET CHAPEL HILL, NC 27514 ORANGE COUNTY

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TRENT T. SNARR, P.E. NC PROFESSIONAL ENGINEER LIC. #037977

TOWER ELEVATION

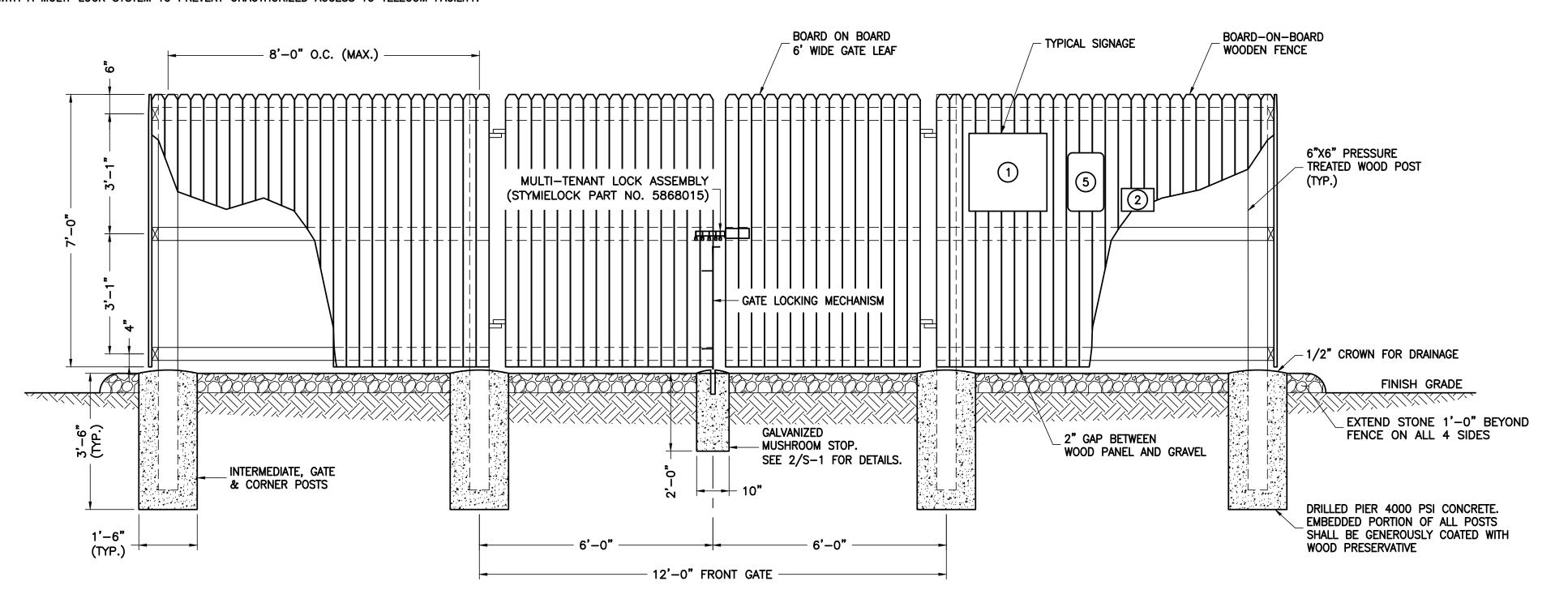
Know what's below. Call before you dig.



PROVIDE HALF MOON CONCRETE GATE KEEPER FOR DROP ROD

PROVIDE GATE CATCHES AT REQUIRED LOCATIONS

- 3. FENCE SHALL BE INSTALLED WITH THE FINISHED SIDE FACING OUTWARD
- GATE TO BE SECURE WITH A MULTI-LOCK SYSTEM TO PREVENT UNAUTHORIZED ACCESS TO TELECOM FACILITY.

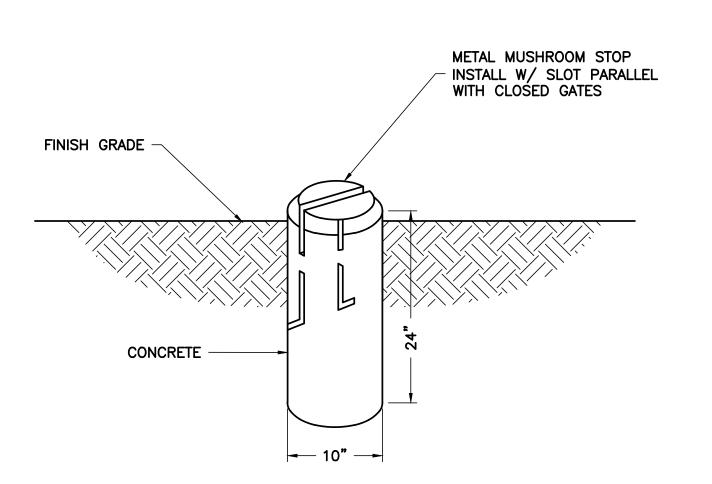


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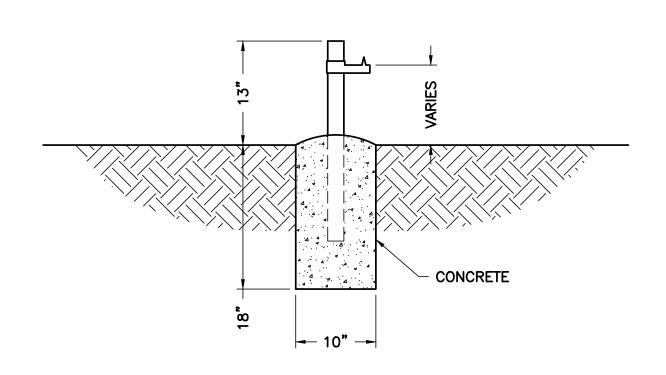
FENCE & GATE DETAIL FOR REFERENCE PURPOSES ONLY.

FOR ACTUAL FENCE & GATE DIMENSIONS REFER TO SHEET C-1



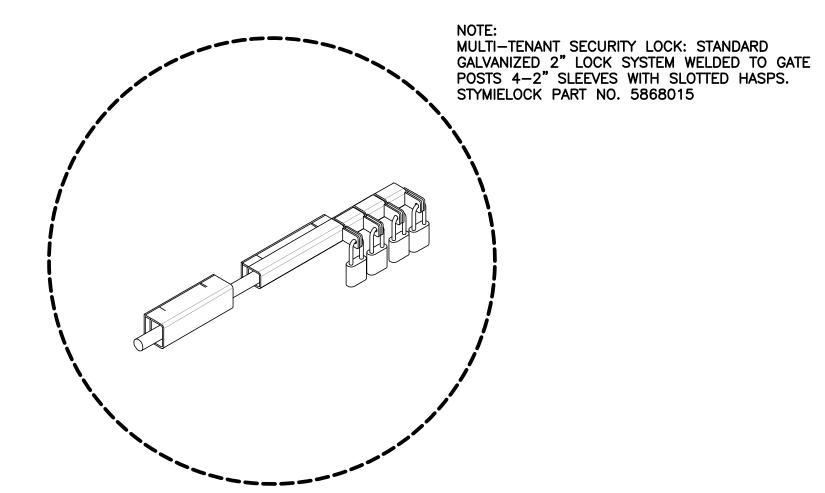






GATE KEEPER DETAIL

NTS



4 MULTI-LOCK DETAIL
S-1 NTS



ENGINEER



TKK ENGINEERING, P.C. 8601 SIX FORKS ROAD, SUITE 540 RALEIGH, NC 27615 919.657.9131

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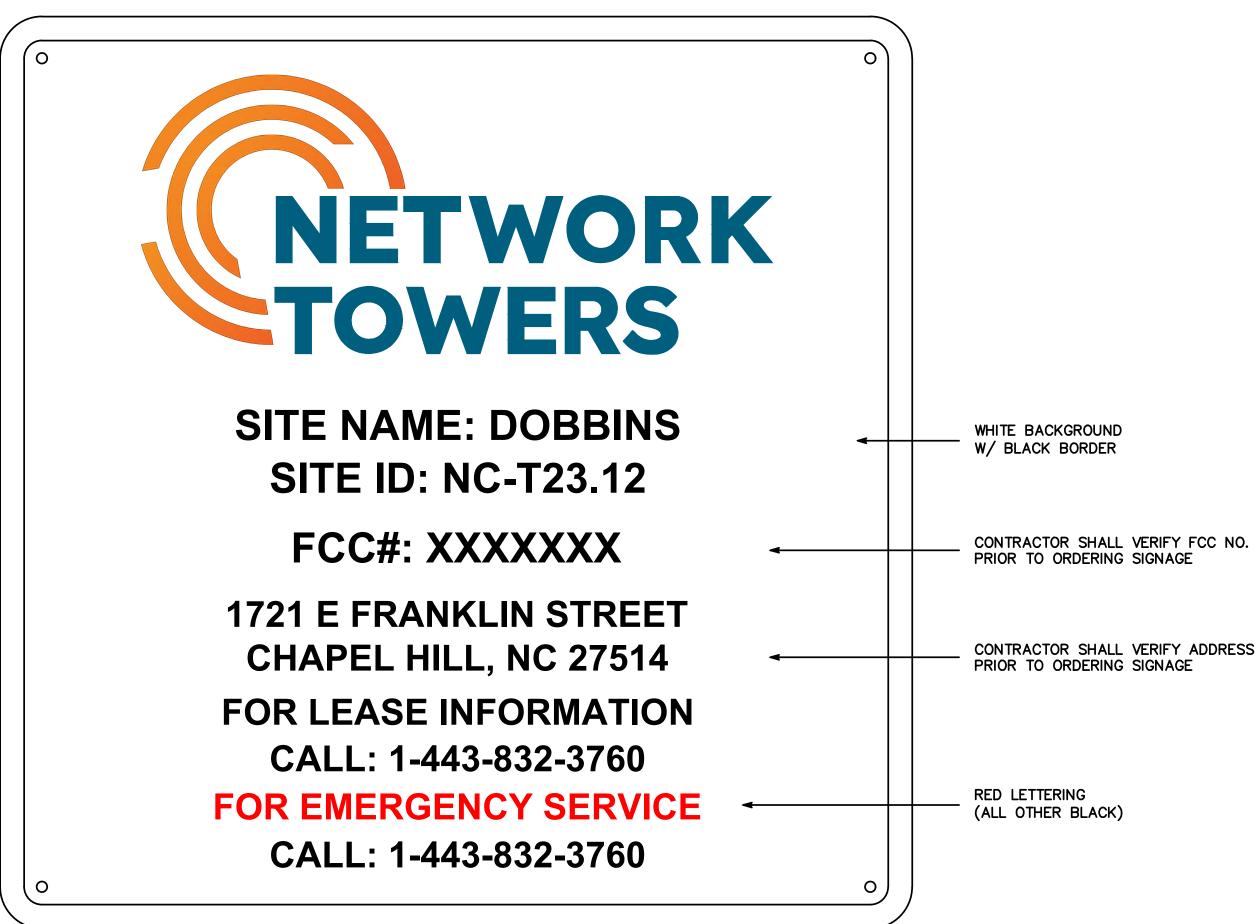
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CARO!!! CARO!!! DATE 09/18/2025
DATE 09/18/2025

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	TRENT T. SNARR, P.E. NC PROFESSIONAL ENGINEER LIC. #037977

SHEET TITLE	FENCE DETAILS
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SIGNAGE NOTES

- 1. SIGNS SHALL BE FABRICATED FROM CORROSION RESISTANT PRESSED METAL AND PAINTED WITH LONG LASTING UV RESISTANT
- 2. SIGNS UNLESS NOTED OTHERWISE SHALL BE MOUNTED TO THE TOWER, GATE AND FENCE USING A MINIMUM OF 9 GAUGE ALUMINUM WIRE, HOG RINGS (AS UTILIZED IN FENCE INSTALLATIONS) OR BRACKETS WHERE NECESSARY. BRACKETS SHALL BE OF SIMILAR METAL AS THE STRUCTURE TO AVOID GALVANIC CORROSION.
- 3. CONTRACTOR TO PROVIDE AND INSTALL ALL SIGNAGE.

QTY: (1) ON RIGHT SIDE OF MAIN COMPOUND GATE, (1) AT ACCESS ROAD GATE, IF EXIST CONTRACTOR SHALL VERIFY FCC NUMBER PRIOR TO ORDERING SIGNAGE

NETWORK TOWERS II - SITE SIGN 24" WIDE X 24" HIGH

NOTICE **NO TRESPASSING** IN THIS PROPERTY **UNDER PENALTY** OF LAW

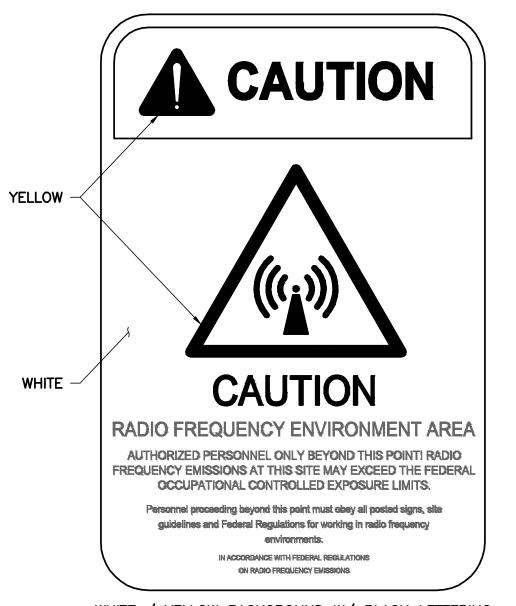
QTY: (4) EACH SIDE OF COMPOUND

NO TRESPASSING - SIGN 10" WIDE X 7" HIGH

NOTICE COMPETENT CLIMBERS ONLY **BEYOND THIS POINT** Climbers of this antenna/tower structure must comply 100% with all governing State and Federal regulations.
Climbers must also comply with all OSHA regulations.
This includes, but not limited to, being tied-off 100% at all times. Failure to comply could result in serious injury or death.

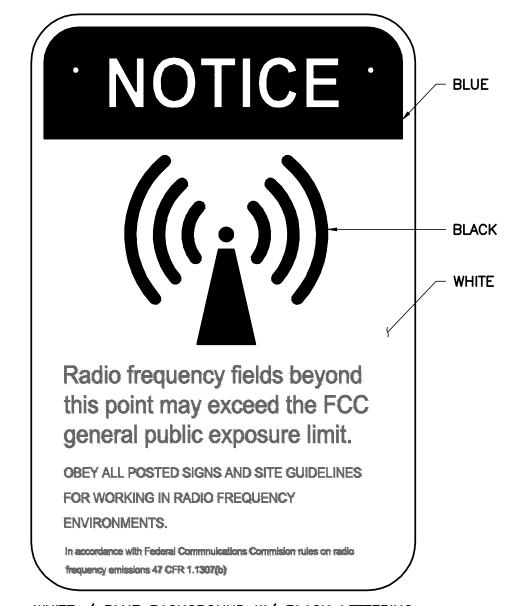
QTY: (1) MOUNT SIGN ON CLIMBING FACE AT EYE LEVEL.

COMPETENT CLIMBER - SIGN 10" WIDE X 7" HIGH



WHITE / YELLOW BACKGROUND W/ BLACK LETTERING QTY: (1) TO BE MOUNTED AT EYE LEVEL ON TOWER NEAR SAFETY CLIMB





WHITE / BLUE BACKGROUND W/ BLACK LETTERING QTY: (1) TO BE MOUNTED AT COMPOUND ACCESS GATE



NETWORK

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SITE INFORMATION

TKK ENGINEERING, P.C. 8601 SIX FORKS ROAD, SUITE 540

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NB+C PROJ. # 100793 (TOWER 911 ADDRESS TBD) 1721 E FRANKLIN STREET CHAPEL HILL, NC 27514 ORANGE COUNTY

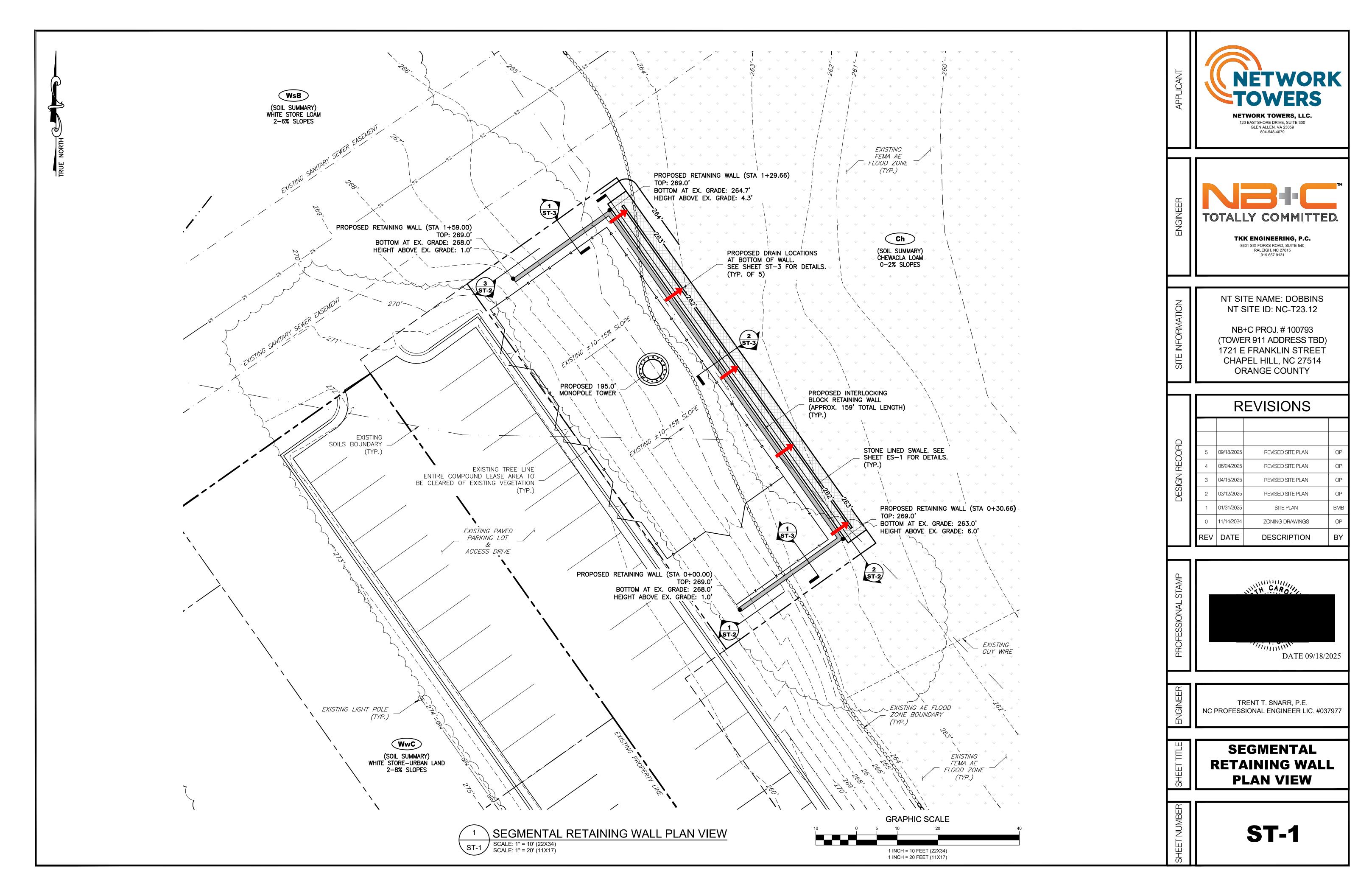
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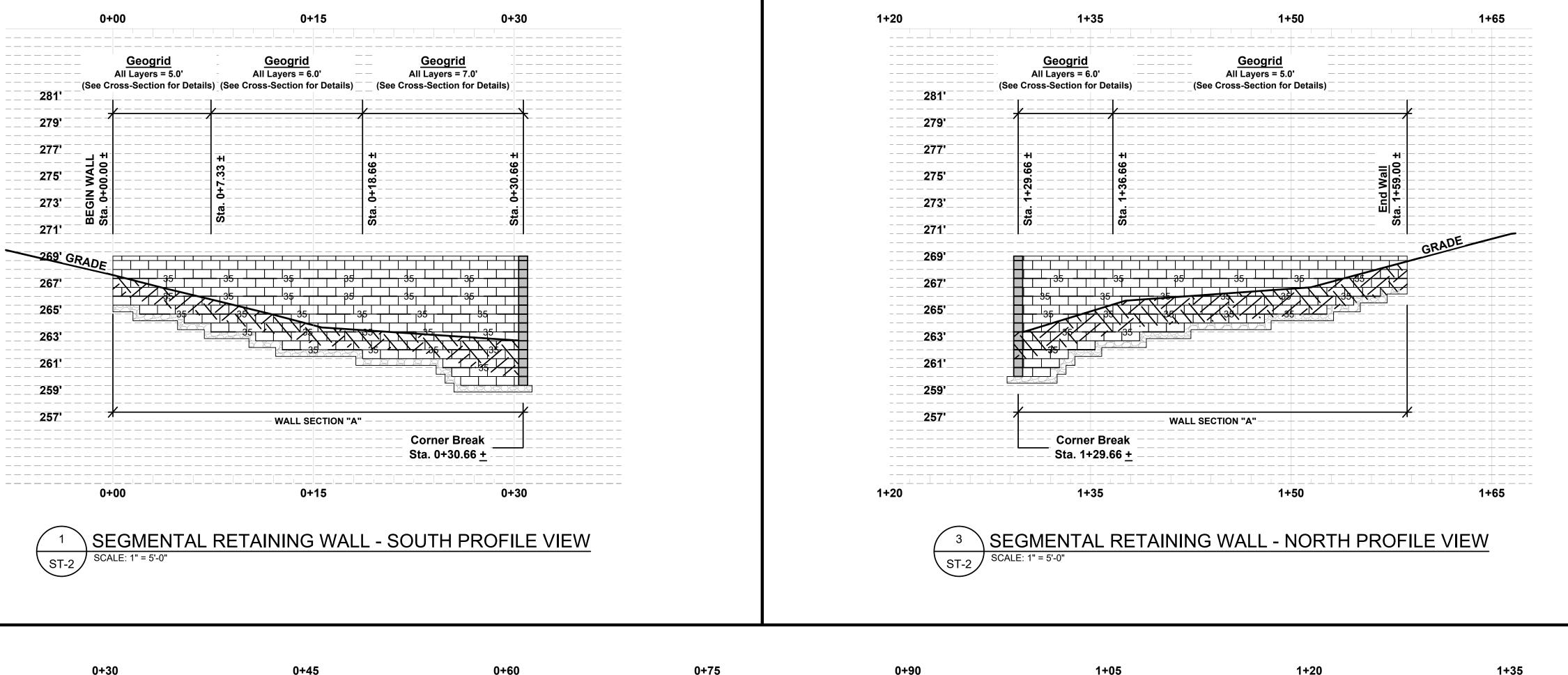
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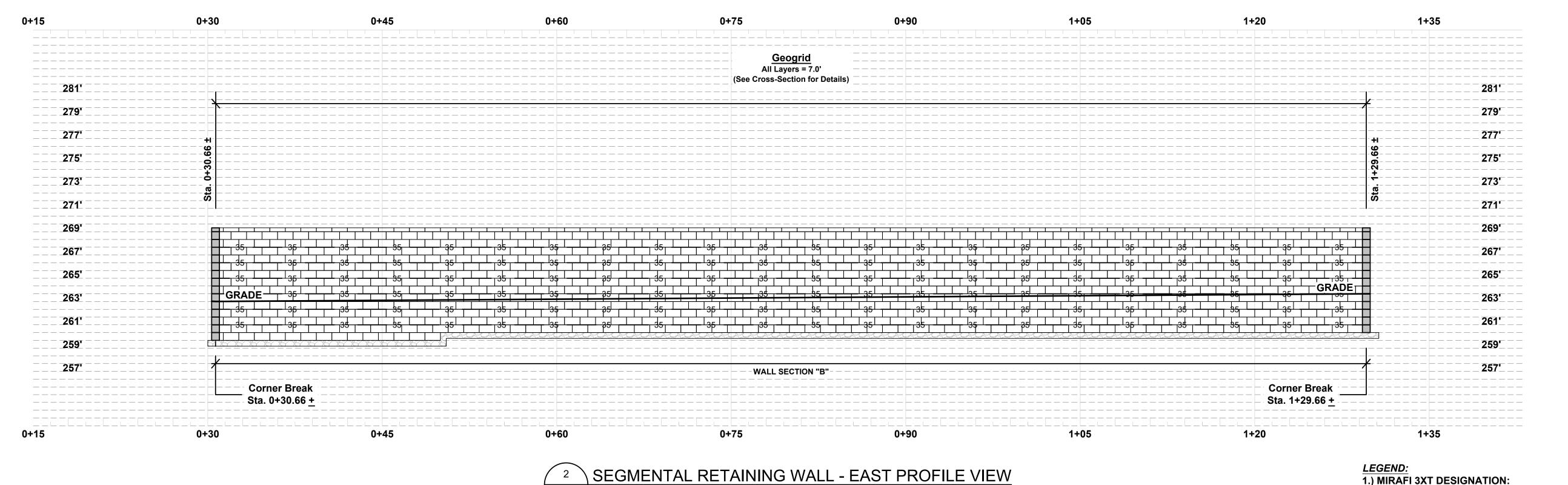
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S-2







LEGEND:

1.) MIRAFI 3XT DESIGNATION:

35

2.) EMBEDDED BLOCK DESIGN

2.) EMBEDDED BLOCK DESIGNATION:
3.) LEVELING PAD DESIGNATION:

RARARARA

NETWORK TOWERS, LLC.

120 EASTSHORE DRIVE, SUITE 300
GLEN ALLEN, VA 23059
804-548-4079

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TKK ENGINEERING, P.C.

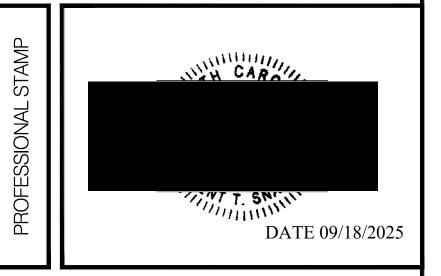
8601 SIX FORKS ROAD, SUITE 540
RALEIGH, NC 27615

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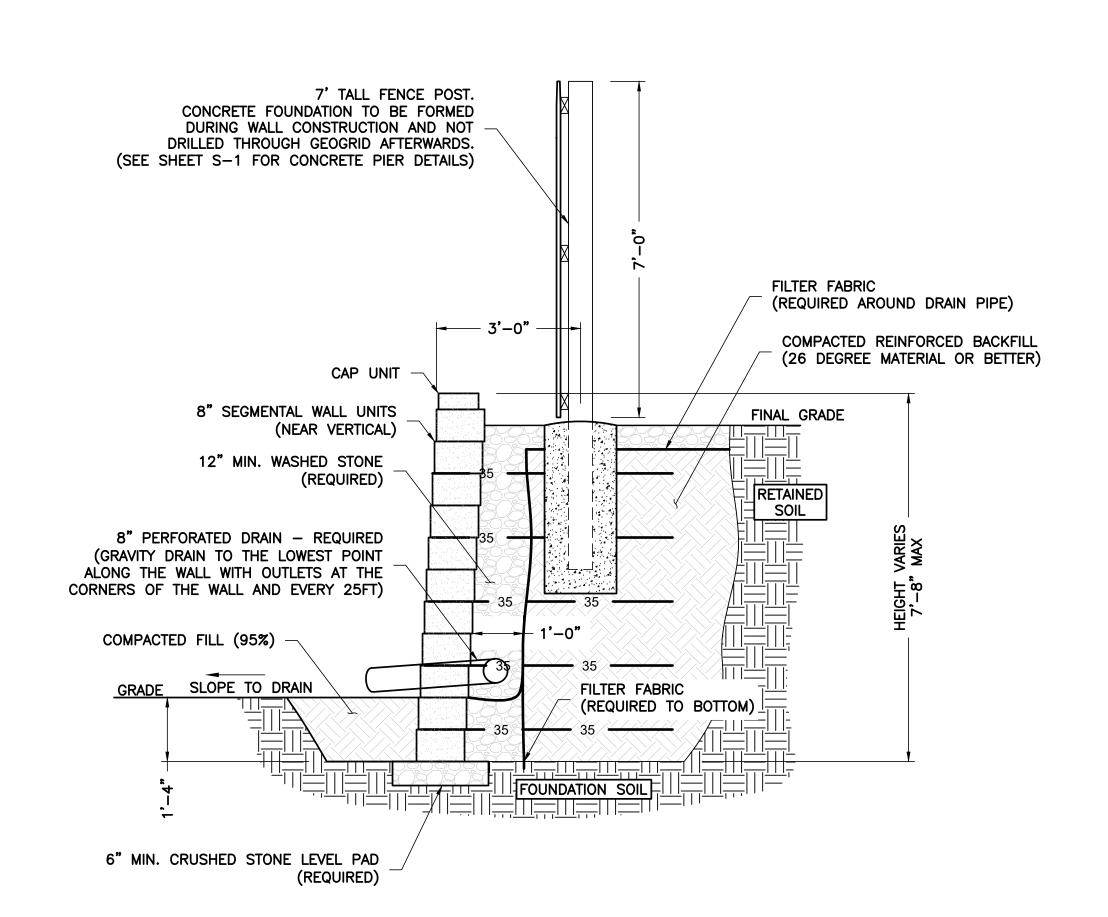
TRENT T. SNARR, P.E.

NC PROFESSIONAL ENGINEER LIC. #03797

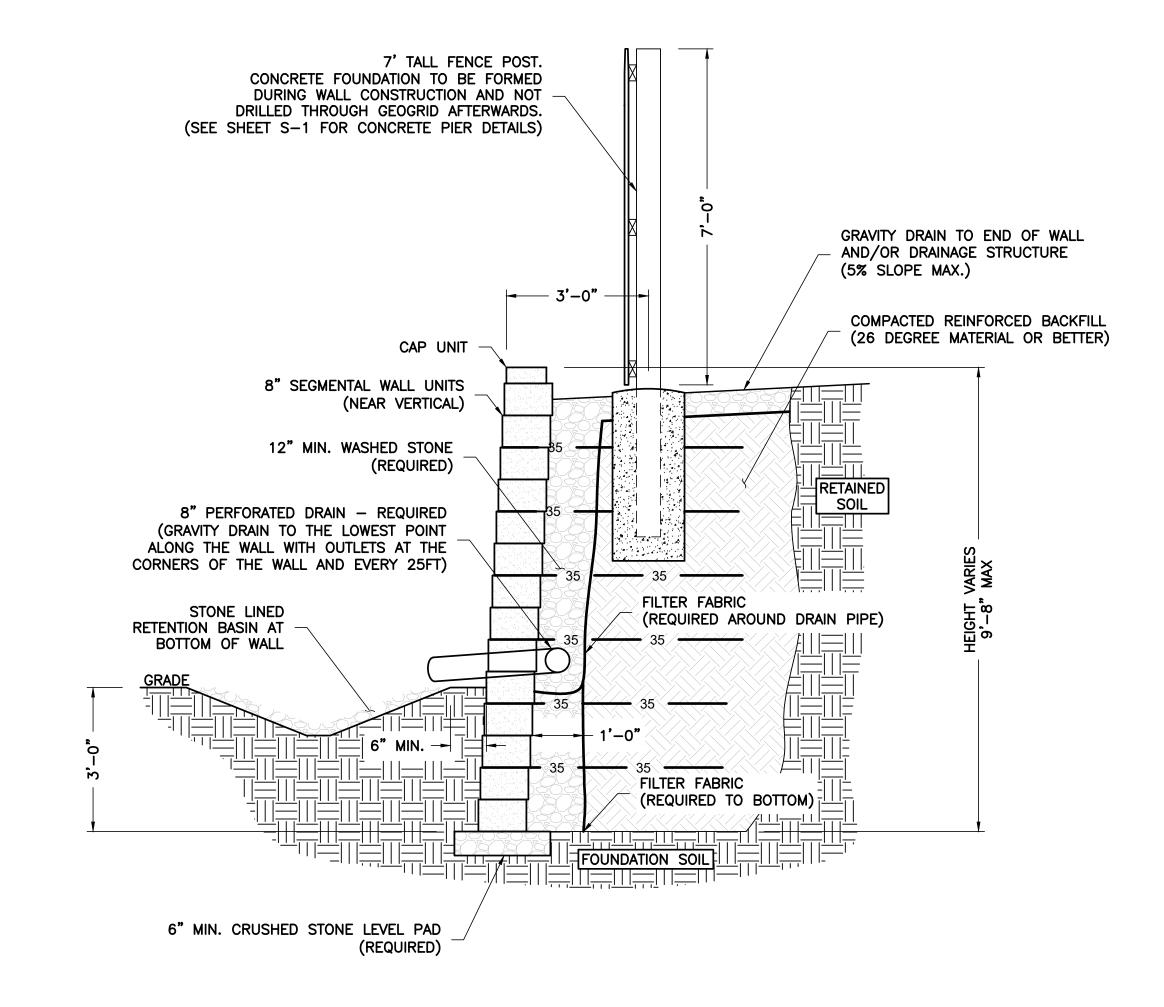
SEGMENTAL RETAINING WALL PROFILE

ST-2

SEGMENTAL RETAINING WALL CRITERIA TABLE						
WALL SECTION	GEOGRID LENGTH & TYPE	MIN. WASHED STONE REQUIRED BEHIND WALL	MIN. BEARING PRESSURE REQUIRED	MIN. EMBEDMENT REQUIRED	NOTES / REMARKS	
А	LAYERS = 5.0' - 7.0' MIRAFI 3XT OR EQUIV.	12"	1.5 KSF	1'-4"	SEE PROFILE (SHEET ST-2)	
В	LAYERS = 7.0' MIRAFI 3XT OR EQUIV.	12"	1.5 KSF	3'-0"	SEE PROFILE (SHEET ST-2)	



1 SEGEMENTAL RETAINING WALL "A" - SECTION VIEW
ST-3 SCALE: 1/2" = 1'-0"



2 SEGEMENTAL RETAINING WALL "B" - SECTION VIEW
ST-3 SCALE: 1/2" = 1'-0"

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ENGINEER



TKK ENGINEERING, P.C. 8601 SIX FORKS ROAD, SUITE 540 RALEIGH, NC 27615 919.657.9131

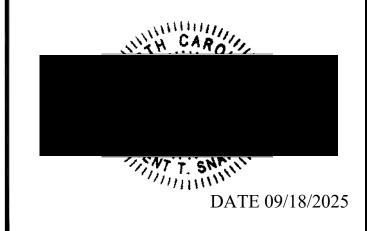
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PROFESSIONAL STAMP



ENGINEER

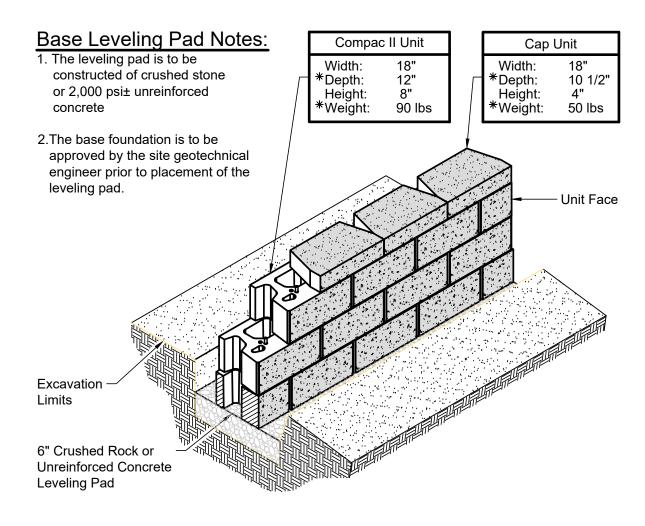
TRENT T. SNARR, P.E. NC PROFESSIONAL ENGINEER LIC. #037977

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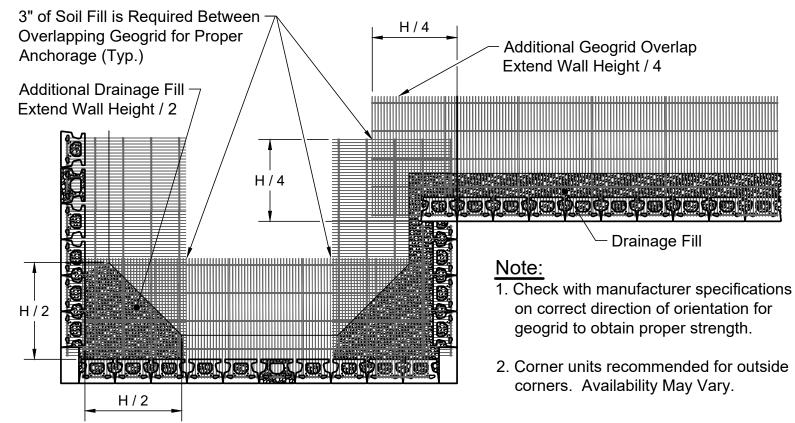
SEGMENTAL RETAINING WALL SECTIONS

SHEET NUMBER

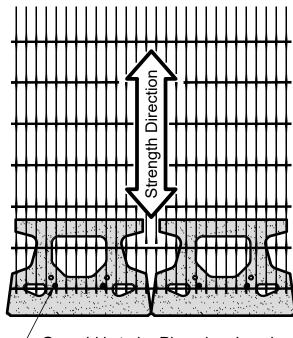
ST-3



Compac II Unit/Base Pad Isometric Section View * Dimensions & Weight May Vary by Region

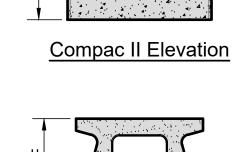






 Geogrid is to be Placed on Level Backfill and Extended Over the Fiberglass Pins. Place Next Unit. Pull Grid Taught and Backfill. Stake as required.

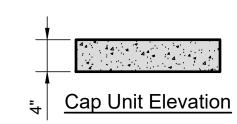
Grid & Pin Connection

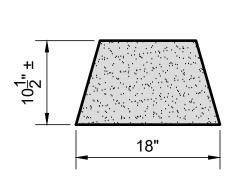


O• 18"

Compac II Plan

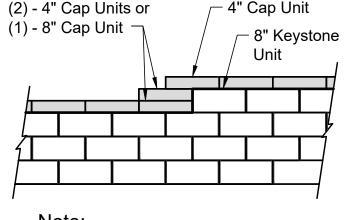
Compac II Unit * Dimensions May Vary by Region





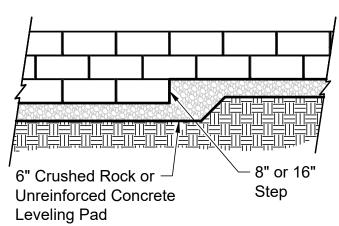
Cap Unit Plan Universal Cap Unit Option

* Dimensions & Availability Will Vary by Region



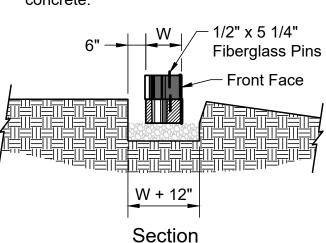
1. Secure all cap units with Keystone Kapseal or equal.

Top of Wall Steps

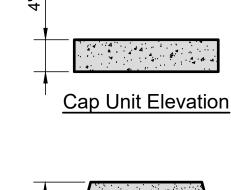


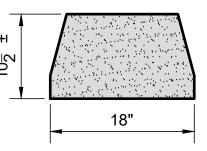
Elevation

1. The leveling pad is to be constructed of crushed stone or 2000 psi ± unreinforced concrete.



Leveling Pad Detail





Cap Unit Plan

Straight Split Cap Unit Option * Dimensions & Availability Will Vary by Region

TKK ENGINEERING. P.C.. REQUESTS THAT REPRESENTATIVES OF THE OWNER AND/OR GENERAL CONTRACTOR ARRANGE A PRE-CONSTRUCTION MEETING WITH ALL PERTINENT PARTIES INVOLVED FOR THE CONSTRUCTION OF THE RETAINING WALL SHOWN ON THESE PLANS. UNLESS INDICATED BY A SUPPLEMENTAL WRITTEN CONTACT, TKK ENGINEERING, P.C. RESPONSIBILITY IS LIMITED TO PROVIDING ONLY THE DESIGN SERVICES OF THE PROJECT'S RETAINING WALLS CONTAINED HEREIN. RETAINING WALL CONSTRUCTION MONITORING, RETAINING WALL CERTIFYING, ETC. ARE BEYOND THE SCOPE OF OUR ORIGINAL DESIGN SERVICES. TKK ENGINEERING, P.C. SHALL NOT BE REQUIRED TO SIGN ANY DOCUMENTS, NO MATTER BY WHOM REQUESTED, IN WHICH TKK ENGINEERING, P.C. IS REQUIRED TO CERTIFY, GUARANTEE, OR WARRANT THE EXISTENCE OF CONDITIONS, THE EXISTENCE OF WHICH TKK ENGINEERING, P.C. HAS NOT OR CANNOT ASCERTAIN.

1. CONFIRM DISTANCE FROM PROPERTY LINE, TREE BUFFER, CURB & GUTTER AND/OR BUILDINGS TO FACE OF PROPOSED RETAINING WALL PRIOR TO CONSTRUCTION. (DON'T FORGET TO INCLUDE THE BATTER OF THE WALL.)

2. CONFIRM EXISTING UTILITIES LOCATIONS (STORMWATER, SEWER, WATER, ELECTRICAL, & GAS) & COORDINATE FUTURE UTILITIES LOCATIONS PRIOR TO WALL CONSTRUCTION

3. CONFIRM IN-SITU AND PROPOSED/FUTURE GRADES PRIOR TO WALL

4. COORDINATE ALL FENCE, GUARDRAIL, CURB & GUTTER, &/OR PAVEMENT INSTALLATION PRIOR TO CONSTRUCTION, TO AVOID DAMAGING UPPER LAYERS OF REINFORCEMENT.

SEGMENTAL RETAINING WALL SYSTEMS ARE DESIGNED AS A GRAVITY RETAINING WALL UTILIZING A HIGH DENSITY POLYESTER GEOGRID TO REINFORCE THE SOIL ZONE BEHIND THE WALL. THE GEOGRID IS POSITIVELY CONNECTED TO THE MODULAR CONCRETE BLOCK CREATING A REINFORCED SOIL MASS CAPABLE OF RESISTING LATERAL EARTH PRESSURES AND SURCHARGED LOADS. ALL REFERENCES TO THE ENGINEER REFER TO TKK ENGINEERING, P.C.

WORK SHALL BE PERFORMED ONLY BY AN EXPERIENCED CONTRACTOR WHO HAS SUCCESSFULLY COMPLETED AT LEAST FIVE RETAINING WALLS OF EQUAL OR GREATER SCOPE.

A. CONTRACTOR SHALL SUBMIT TO THE ENGINEER, PRIOR TO START OF WORK, EVIDENCE OF QUALIFICATIONS AND REFERENCES ON PROJECTS OF SIMILAR SCOPE. EVIDENCE SHALL BE SUBMITTED IN WRITING TO THE ENGINEER ON THE CONTRACTOR'S LETTERHEAD AND SHALL CONTAIN AT A MINIMUM: 1) A LIST OF FIVE REFERENCE PROJECTS OF EQUAL OR GREATER SCOPE WITH CONTACT INFORMATION, 2) A LIST OF EXPERIENCE COMMENSURATE WITH THE PROJECT SCOPE (WALL DIMENSIONS, ERECTION TOLERANCES, SOIL PARAMETERS, AND MATERIALS).

B. ENGINEER SHALL REVIEW QUALIFICATIONS AND REPORT TO THE CLIENT ON THE ENGINEER RESERVES THE RIGHT TO REJECT ANY AND ALL QUALIFICATION SUBMITTALS, WHEN IN THE ENGINEER'S OPINION SUCH QUALIFICATIONS ARE DEEMED UNSATISFACTORY. ENGINEER'S APPROVAL OF CONTRACTOR'S QUALIFICATIONS SHALL NOT RELIEVE THE CONTRACTOR OF ANY OR ALL CONTRACT RESPONSIBILITIES FOR QUANTITIES, PERFORMANCE, OR OTHER REQUIREMENTS OF THE CONTRACT DOCUMENTS. ENGINEER'S APPROVAL OF CONTRACTOR QUALIFICATIONS SHALL NOT BE CONSTRUED AS A WARRANTY OR GUARANTEE OF THE CONTRACTOR'S WORK.

C. THE OWNER AND/OR GENERAL CONTRACTOR SHOULD PROVIDE A SPECIAL INSPECTOR AS A FULL-TIME CONTINUOUS MONITOR OF WORK QUALITY. THE SPECIAL INSPECTOR WILL REPORT BACK TO THE BUILDING OFFICIAL AND ENGINEER ON QUALITY AND PROGRESS OF WORK. THE SPECIAL INSPECTOR WILL REQUIRE TESTING BE DONE BEFORE THE WORK PROCEEDS.

THE SOIL MATERIAL ASSOCIATED WITH THE RETAINING WALL IN THE REINFORCED ZONE, THE RETAINED ZONE, OR THE FOUNDATION BEDDING SHALL HAVE THE FOLLOWING PROPERTIES:

A. FOUNDATION SOILS RETAINED SOILS

C. REINFORCED SOILS $\emptyset = 26$ DEGREES, COHESION = 0 PSF, UNIT WGT. = 100 LBS/CU.FT. Ø= 26 DEGREES. COHESION = 0 PSF. UNIT WGT. = 100 LBS/CU.FT. \emptyset = 26 DEGREES, COHESION = 0 PSF, UNIT WGT. = 100 LBS/CU.FT.

THE SOILS CHARACTERISTICS ABOVE WERE ASSUMED BASED ON INFORMATION SUPPLIED TO THE ENGINEER. IF THIS INFORMATION DOES NOT REPRESENT THE ACTUAL SOIL TO BE USED, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY AND THE WALL SHALL BE REDESIGNED.

1.4 SEISMIC DESIGN CRITERIA PEAK ACCELERATION = N/A

VERTICAL ACCELERATION = N/A

THE MAXIMUM APPLIED FOUNDATION LOAD FOR THIS WALL IS 1.5 KIPS/SQ.FT. 1.6 CONCRETE MASONRY WALL UNITS

CONCRETE WALL UNITS SHALL BE SEGMENTAL UNITS MANUFACTURED IN ACCORDANCE WITH ASTM-C1372 AND ASTM C140 AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI. UNITS SHALL BE INTERLOCKED IN ACCORDANCE WITH MANUFACTURES SPECIFICATIONS.

1.7 GEOGRID REINFORCEMENT

GEOSYNTHETIC REINFORCEMENT SHALL CONSIST OF HIGH TENACITY GEOGRIDS OR GEOTEXTILES MANUFACTURED FOR SOIL REINFORCEMENT APPLICATIONS. THE TYPE, AND PLACEMENT LOCATION OF THE REINFORCING GEOSYNTHETIC SHALL BE AS SHOWN ON THE PLANS.

BATTER FOR THE ENTIRE WALL SHALL BE MAINTAINED AT NEAR VERTICAL.

THE FOUNDATION BEARING CAPACITY THAT WAS ASSUMED FOR DESIGN SHALL BE VERIFIED IN THE FIELD, AND COPIES OF THE TEST DATA FILED WITH THE ENGINEER. THE FOOTING SHALL BE CLEARED OF LOOSE SOIL. A MINIMUM OF 12" OF WASHED STONE SHALL BE PLACED AT THE BACK OF EACH BLOCK AS INDICATED ON THE DETAILS.

2.1 LEVELING PAD

MATERIAL SHALL CONSIST OF COMPACTED SAND, GRAVEL, CRUSHED ROCK, WASHED STONE, OR UNREINFORCED CONCRETE. THE PAD SHALL BE 6" THICK (UNO). SAND OR GRAVEL MATERIAL SHALL BE COMPACTED TO 95% STANDARD PROCTOR. AGGREGATE MATERIAL SHALL RECEIVE A MINIMUM OF ONE PASS OF THE COMPACTION EQUIPMENT. THE TOP OF THE LEVELING PAD FOR THE WALL SECTIONS SHALL BE MAINTAINED AT A MINIMUM DEPTH OF 10% OF TOTAL WALL HEIGHT OR MORE(6" MIN.) (UNO).

THE VOID WITHIN EACH UNIT SHALL BE FILLED WITH A WASHED STONE (#57 STONE) HAVING 100% OF THE AGGREGATE PASSING THE 2" SIEVE. A MINIMUM OF 3/8" WASHED STONE SIZE IS REQUIRED (NO MORE THAN 5% PASSING THE #200 SIEVE). THIS SAME MATERIAL SHALL BE PLACED BEHIND EACH BLOCK PER SEC. 2.0. ALL EXCESS MATERIAL SHALL BE SWEPT CLEAN FROM THE TOP OF THE BLOCK PRIOR TO INSTALLING THE NEXT COURSE. EACH COURSE OF BLOCK SHALL BE COMPLETELY FILLED BEFORE PROCEEDING TO THE NEXT COURSE.

<u>2.3 FIRST BLOCK COURSE</u>
THE FIRST COURSE OF BLOCK SHALL BE PLACED ON TOP OF AND IN FULL CONTACT WITH THE LEVELING PAD. THE UNITS SHALL MAINTAIN A DISTANCE OF MINIMUM 6" FROM THE FRONT AND BACK OF THE LEVELING PAD. PROPER ALIGNMENT MAY BE ACHIEVED WITH THE AID OF A STRING LINE. PROCEED TO THE NEXT COURSE OF BLOCK. EACH UNIT SHALL CONTACT THE UNITS ON BOTH SIDES AS WELL AS ABOVE AND BELOW. SOME ADJUSTMENTS MAY BE REQUIRED FOR WALLS WITH CURVES AND A BATTER.

CONSTRUCTION ADHESIVE TO THE UNITS TO PREVENT THEIR REMOVAL.

3.0 GEOGRID INSTALLATION

THE GEOGRID REINFORCEMENT SHALL BE LAID HORIZONTALLY ON COMPACTED BACK FILL AND CONNECTED TO THE CONCRETE WALL UNITS, IN ACCORDANCE WITH MANUFACTURES SPECIFICATIONS. GEOGRID SHALL BE PULLED TAUT REMOVING ALL SLACK FROM THE MATERIAL AND ANCHORED BEFORE ADDING FILL. GEOGRID SHALL BE INSTALLED AT THE ELEVATIONS AND LENGTHS REQUIRED AS SHOWN ON THE PLANS (REFER TO DETAILS FOR THE APPROPRIATE ORIENTATION). SOIL SURFACE SHALL BE SMOOTH AND LEVEL AND HAVE BEEN COMPACTED TO 95% STANDARD PROCTOR BEFORE INSTALLING THE GRID.

BACK FILL MATERIAL SHALL BE PLACED ON A MAXIMUM 8" COMPACTED LIFT, 95% STANDARD PROCTOR WITH A MOISTURE CONTROL OF $\pm 1/2$ 3% OF OPTIMUM. ONLY HAND OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET OF THE SEGMENTAL UNITS. BACK FILL SHALL BE PLACED FROM THE WALL REARWARD TO INSURE TAUTNESS OF THE GEOGRID. CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOGRID.

SOILS CONTAINING ROOTS. BRUSH, SOD OR OTHER ORGANIC MATERIAL SHALL NOT BE PERMITTED AS BACKFILL. FROZEN SOILS, SNOW, ICE , HEAVY CLAYS, OR WET SOILS SHALL NOT BE PERMITTED AS BACKFILL. MATERIAL PASSING THE #40 SIEVE SHALL NOT HAVE A LIQUID LIMIT OF GREATER THAN 40 AND A PLÄSTICITY INDEX OF GREATER THAN 15, UNLESS WRITTEN CONSENT IS OBTAINED FROM THE ENGINEER PRIOR TO PLACEMENT.

MINIMUM INTERNAL ANGLE OF FRICTION SHALL EQUAL OR BE GREATER THAN REFERENCE IN SECTION 1.3. VERIFICATION SHALL BE FILED WITH THE ENGINEER THAT THE SOIL WILL MEET THIS CRITERIA.

COMPACTION TESTING SHALL BE PERFORMED FOR EVERY LIFT ELEVATION REQUIRING GEOGRID OR EVERY 3RD LIFT AS A MINIMUM. TESTS SHALL BE FILED WITH THE ENGINEERS OFFICE.

5.0 HYDROSTATIC PRESSURE POTENTIAL

THE ENGINEER SHALL BE NOTIFIED IF ANY OF THE FOLLOWING SHOULD BECOME EVIDENT:

 WATER OR WETNESS FROM OR IN A CUT BANK - LOCAL SPRINGS, LOCAL STORM DRAINS, SEWER, WATER LINES UNDER OR BEHIND THE WALL

6.0 ACCEPTABLE BLOCK

SEGMENTAL UNITS SHALL BE USED AND KEPT FREE OF DEFECTS THAT WOULD INTERFERE WITH THE PLACING OR POSITIONING OF THE UNIT OR IMPAIR ITS STRENGTH. MINOR CRACKS INCIDENTAL TO THE USUAL METHOD OF MANUFACTURING OR MINOR CHIPPING RESULTING FROM SHIPMENT AND DELIVERY ARE NOT GROUNDS FOR REJECTION.

7.0 ACCEPTABLE GEOGRID
GEOGRID SHALL BE REJECTED IF 20% OR MORE OF A STRUCTURAL RIB HAS BEEN CUT OR RIPPED. THE CONTRACTOR SHALL INSPECT ALL GEOGRID DELIVERED TO THE SITE AND REJECT MATERIALS THAT MEETS THIS CRITERIA. IF THE GEOGRID IS DAMAGED ON THE CONSTRUCTION SITE, IT SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.

(APPLIES TO CUT WALL APPLICATIONS ONLY), WHERE SITE CONDITIONS WARRANT DRAINAGE COMPOSITE SHALL BE INSTALLED TO COVER 30% OF THE CUT BEHIND THE GEOGRID LAYERS. STRATA-DRAIN (6FT. WIDE SECTIONS) PROVIDES 30% COVERAGE WHEN INSTALLED ON 15 FT CENTERS AND 2/3 THE WALL HEIGHT.

9.0 SPECIAL PROVISIONS
A. GENERAL CONTRACTOR SHALL COORDINATE UPPER GEOGRID LAYERS

INSTALLATION WITH PAVING INSTALLATION. B. MAINTAIN THE DIRECTION OF DRAINAGE AWAY FROM THE WALL FACE AT ALL TIMES DURING CONSTRUCTION OF THE WALL AND FINISH GRADING AS SHOWN ON PLANS.

C. PLACEMENT OF GEOGRID SHALL BE AS PER PLANS, WITH REGARDS TO PLAN SPECIFIED LENGTH AND ELEVATIONS. D. THE ENGINEER SHALL BE NOTIFIED BY THE INSTALLING CONTRACTOR

SHOULD THE EMBEDMENT DEPTH OF THE WALL BE LESS THAN 10% OF THE TOTAL WALL HEIGHT (6" MIN.) (UNO). E. THE REINFORCED SOIL IS ASSUMED TO BE: ML, SC, SM, SP, SW, & ETC.

(HIGH PLASTICITY SILTS AND CLAYS) ARE NOT ACCEPTABLE. GENERAL CONTRACTOR SHALL INQUIRE TO SEE IF A BUILDING PERMIT MUST BE OBTAINED PRIOR TO WALL CONSTRUCTION. CONTACT YOUR

LOCAL CITY, COUNTY, MUNICIPALITY, OR TOWN CODE ENFORCEMENT TO OBTAIN BUILDING PERMIT.

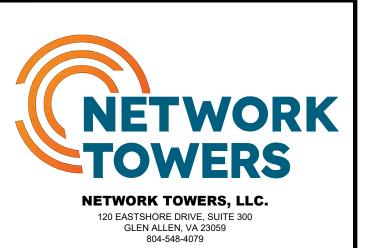
STEEPNESS= 1.5H:1V.

10.0 QUALIFICATION OF DESIGN

A. STABILITY OF ANY TEMPORARY SLOPES REQUIRED BY THE INSTALLATION OF A SEGMENTAL RETAINING WALL SHALL BE ADDRESSED BY A QUALIFIED GEOTECHNICAL ENGINEER. RESPONSIBILITY OF THESE TEMPORARY SLOPES RESTS WITH THE OWNER AND/ OR ARCHITECT OF THIS PROJECT AND THE SLOPES SHALL MEET ALL OSHA STANDARDS OF MAX. SLOPE

B. HANDRAIL/ GUARDRAIL REQUIREMENTS SHALL BE DETERMINED BY THE OWNER OR GENERAL CONTRACTOR.

C. NOTIFY THE DESIGN ENGINEER PRIOR TO MODIFYING WALL CONSTRUCTION IF EXISTING SITE CONDITIONS DEVIATE FROM CONDITIONS OUTLINED ON RETAINING WALL PROFILE.



ENGIL

SITE



TKK ENGINEERING. P.C. 8601 SIX FORKS ROAD. SUITE 540 RALEIGH, NC 27615

NT SITE NAME: DOBBINS NT SITE ID: NC-T23.12

NB+C PROJ. # 100793 (TOWER 911 ADDRESS TBD) 1721 E FRANKLIN STREET CHAPEL HILL, NC 27514 ORANGE COUNTY

REVISIONS 09/18/2025 REVISED SITE PLAN 06/24/2025 REVISED SITE PLAN 04/15/2025 REVISED SITE PLAN REVISED SITE PLAN 03/12/2025 0 | 11/14/2024 | **ZONING DRAWINGS**

DESCRIPTION

BY

HILL CAROLL ST TINT T SHALL

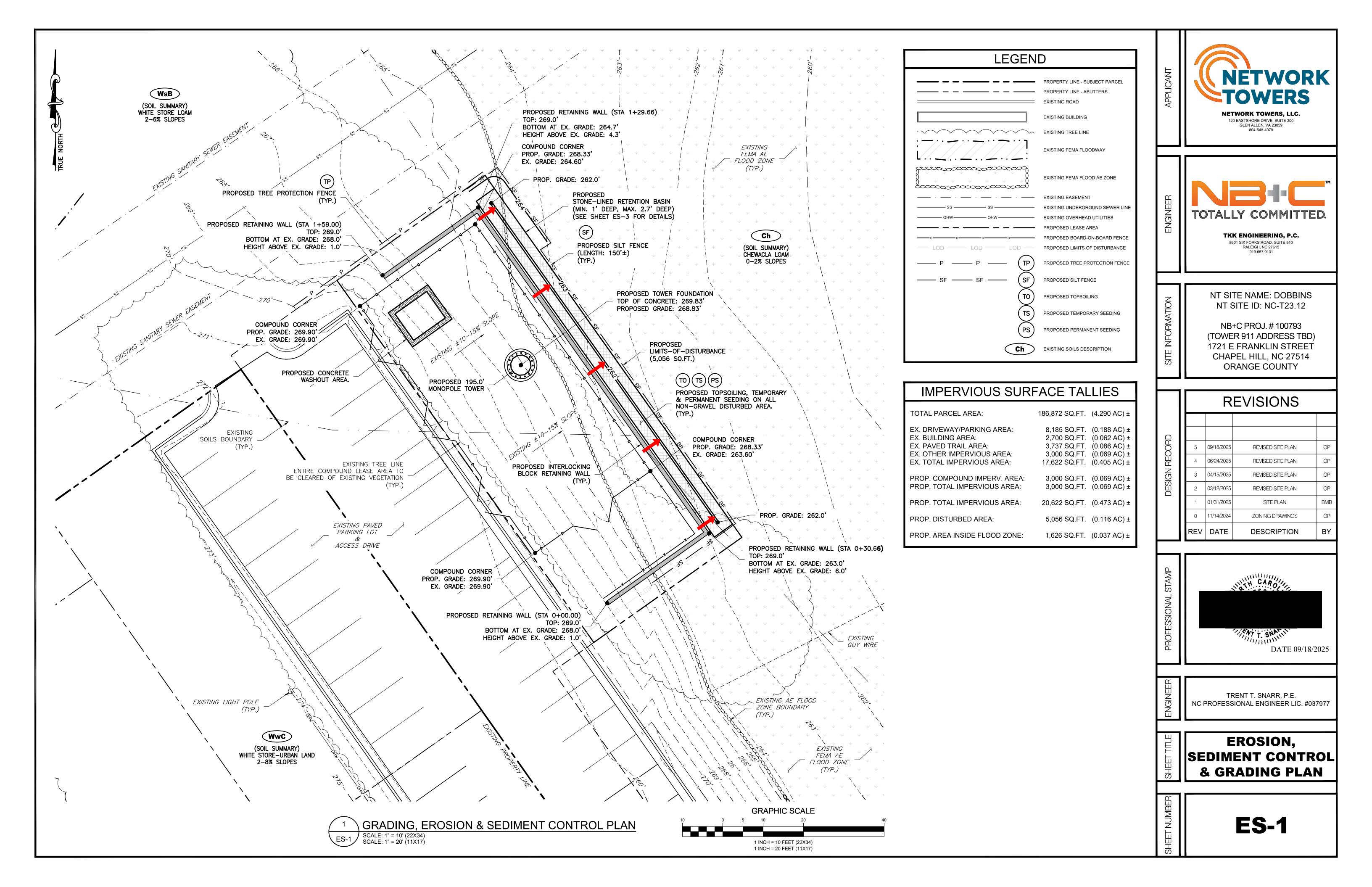
REV DATE

DATE 09/18/2025

TRENT T. SNARR. P.E. NC PROFESSIONAL ENGINEER LIC. #037977

SEGMENTAL RETAINING WALL DETAILS & NOTES

ST-4



EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION
THE PURPOSE OF THIS PROJECT IS THE CONSTRUCTION OF A MONOPOLE TOWER AND FENCED COMPOUND, ALONG WITH ASSOCIATED UTILITIES. THE LEASE AREA OF THE TOWER AND COMPOUND IS 4,840 SF.; THE TOTAL DISTURBED AREA IS 5,056 S.F. OF WHICH 3,000 S.F. WILL BE IMPERVIOUS SURFACE AND THE REMAINING 2,056 S.F. WILL BE MANAGED TURF.

THE EXISTING SITE CONDITIONS ARE MAINLY OPEN GRASSLAND WITH AN EXISTING COMMERCIAL BUILDING. ASSOCIATED PARKING LOT AND OTHER STRUCTURES ON THE PROPERTY. THE PROPOSED COMPOUND LOCATION IS WITHIN AN EXISTING DROP BETWEEN AN EXISTING PARKING LOT AND EXISTING GRASSLAND. THE PROPOSED ACCESS WILL BE UTILIZING AN EXISTING PAVED DRIVEWAY.

THE ADJACENT AREAS ARE MOSTLY RESIDENTIAL PROPERTIES & A WALKING TRAIL.

OFF-SITE AREAS

ALL ORGANIC MATERIAL, TREE VEGETATION, ROCKS GREATER THAN 12" IN ANY DIRECTION AND EXCESS CUT MATERIAL TO BE HAULED OFF SITE. CONTRACTOR TO ENSURE MATERIAL IS DISPOSED OF AT AN APPROVED AND PERMITTED SOIL DISPOSAL LOCATION.

CHEWACLA LOAM - 0% TO 2% SLOPES (WsB) WHITE STORE LOAM - 2% TO 6% SLOPES

(WwC) WHITE STORE-URBAN LOAND COMPLEX - 0% TO 8% SLOPES

A LARGE AREA OF THE PROPERTY IS INSIDE A FEMA FLOOD PLAIN & FLOODWAY, A SMALL PORTION OF THE COMPOUND IS LOCATED INSIDE A FLOOD PLAIN. THE COMPOUND WILL BE RAISED ABOVE THE FLOOD ELEVATION WITH THE USE OF A RETAINING WALL.

ESC MEASURES - STRUCTURAL PRACTICES

STRUCTURAL MEASURES TO BE USED ON THE SITE INCLUDE STANDARD SILT FENCE (TOWN OF CHAPEL HILL SPEC. EC-9.00), STANDARD SILT FENCE OUTLET (TOWN OF CHAPEL HILL SPEC. EC-10.00), TREE PROTECTION (TOWN OF CHAPEL HILL SPEC. EC-12.00), TEMPORARY SOIL STOCK PILE (NC E&S MANUAL SPEC. 6.04.1). AND CONCRETE WASHOUT (TOWN OF CHAPEL HILL SPEC. EC-18.00). ALL MEASURES SELECTED ARÉ STANDARD ESC ITEMS FOR THIS APPLICATION. ANY DISTURBED AREA DENUDED FOR SEVEN DAYS THAT IS NOT IN ACTIVE WORK AREA TO BE TEMPORARILY SEEDED.

ESC MEASURES - VEGETATIVE PRACTICES

VEGETATION PRACTICES INCLUDE TEMPORARY AND PERMANENT SEEDING (NC E&S MANUAL SPEC. 6.10.1 & 6.11.1).

PERMANENT STABILIZATION

- 1. UNTIL AN ADEQUATE ROOT SYSTEM IS ESTABLISHED AND IN THE ABSENCE OF ADEQUATE RAINFALL, WHATEVER VEGETATION IS USED SHALL BE IRRIGATED AS OFTEN AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. IN GENERAL, WATERING SHALL BE PERFORMED IN ACCORDANCE WITH THE NC E&S MANUAL.
- 2. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISHED GRADING. SEEDING SHALL BE DONE WITH KENTUCKY 31 TALL FESCUE ACCORDING TO STD. AND SPEC. 6.11.1, PERMANENT SEEDING, OF THE NC HANDBOOK EROSION CONTROL BLANKETS WILL BE INSTALLED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEEDED TO PROTECT THE SLOPES PROPERLY, MULCH (STRAW OR FIBER) WILL BE USED ON RELATIVELY FLAT AREAS. IN ALL SEEDING OPERATIONS, SEED FERTILIZER AND LIMÉ WILL BE APPLIED PRIOR TO MULCHING. FINAL STABILIZATION IS CONSIDERED COMPLETED WHEN 100% OF THE DISTURBED SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER.

STORM WATER RUNOFF CONSIDERATIONS

THE NATURAL DRAINAGE CONDITION FROM THE PROPOSED SITE WILL BE MAINTAINED TO THE GREATEST EXTENT POSSIBLE. ALL DRAINAGE FROM THE DISTURBED AREA WILL BE IN SHEET FLOW.

MANAGEMENT STRATEGIES

- CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
- 2. TEMPORARY SEEDING OR OTHER STABILIZATION WILL FOLLOW IMMEDIATELY AFTER GRADING. SEE NC E&S MANUAL 6.10.1 & 6.11.1 FOR SEEDING SPECIFICATION.
- 3. SEASONAL NURSE CROP MAY BE REQUIRED.
- 4. AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC. 5. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL ESC PRACTICES.
- 6. AFTER ACHIEVING ADEQUATE STABILIZATION THE TEMPORARY ESC MEASURES WILL BE CLEANED UP FROM ACCUMULATED SEDIMENT AND REMOVED, ONLY AFTER APPROVAL OF THE JURISDICTION ESC INSPECTOR.

- 1. GENERAL CONTRACTOR MAY RELOCATE OR REVISE EROSION AND SEDIMENT CONTROLS AS DEEMED NECESSARY DURING CONSTRUCTION TO MAINTAIN PROPER SEDIMENT CONTROL.
- 2. ALL EXISTING UNDERGROUND AND ABOVE GROUND UTILITIES TO BE RELOCATED AS NECESSARY TO ACCOMMODATE THE PROPOSED IMPROVEMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING LOCAL UTILITY COMPANIES PRIOR TO CONSTRUCTION.
- 3. ALL ONSITE DRAINAGE EASEMENTS INCLUDING STORMWATER/B.M.P. DRAINAGE EASEMENTS MUST BE RECORDED PRIOR TO ISSUANCE OF A BUILDING PERMIT FOR THIS PROJECT.

UNDERGROUND UTILITY LINE INSTALLATION

UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

- 1. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
- 2. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. 3. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
- 4. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
- 5. DESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS. 6. COMPLY WITH APPLICABLE SAFETY REGULATIONS.

CONSTRUCTION SEQUENCE

AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OWNER/OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPRÓPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER, AND THE CONSERVATION DISTRICT TO AN ON-SITE MEETING. ALSO, AT LEAST 3 WORKING DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES. ALL NORTH CAROLINA CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE NORTH CAROLINA ONE CALL SYSTEM "MISS UTILITY" INCORPORATED AT 811 FOR BURIED UTILITIES LOCATIONS.

EROSION AND SEDIMENT BMPS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPS.

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

- 1. INSTALL ALL PERIMETER BMP'S AND TREE PROTECTION FENCE AS SHOWN ON THE PLANS.
- 2. CLEAR TREES AND LIMBS FOR FULL WIDTH OF LEASE AREA, GROUND TO SKY.
- 3. STRIP TOPSOIL AND STORE AT DESIGNATED LOCATIONS AS SHOWN ON THE PLANS OR LOCATION AS AGREED UPON WITH THE CONSTRUCTION MANAGER.
- 4. BEGIN GRADING AND RETAINING WALL CONSTRUCTION.
- 5. INSTALL COMPOUND GRAVEL & IMMEDIATELY STABILIZE FILL AND CUT SLOPES WITH EROSION CONTROL MATTING OR ROCK.
- 6. ONCE CONSTRUCTION OF COMPOUND IS COMPLETE, BEGIN CONSTRUCTION OF TOWER AND ASSOCIATED FACILITIES AND UTILITIES AS SHOWN ON THE DRAWINGS.
- 7. IF CONSTRUCTION IS TERMINATED OR SUSPENDED PRIOR TO CONSTRUCTION COMPLETION, ALL EXPOSED

SOIL AREAS SHALL BE SEEDED WITH TEMPORARY SEEDING AND MULCHED IMMEDIATELY.

- 8. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL SEDIMENT AND EROSION CONTROL FACILITIES IN EFFECTIVE WORKING ORDER DURING CONSTRUCTION AND UNTIL ALL EXPOSED SOIL AREAS HAVE BEEN STABILIZED.
- ALL STOCKPILES MUST BE REMOVED PRIOR TO COMPLETION OF THE PROJECT AND THE RELEASE OF THE ROAD AND DRAINAGE BOND FOR THE PROJECT.

IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE O/RP SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING PERIODS. MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED. TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMPS MUST BE STABILIZED IMMEDIATELY.

GRADING NOTES

- 1. SOILS USED FOR SUBGRADE MUST BE COMPACTED SO THAT THE MINIMUM DRY DENSITY ACHIEVED EXCEEDS 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. THE CONTRACTOR MAY ONLY USE CUT MATERIAL AS FILL IF IT CAN BE COMPACTED TO 95% OF ITS STANDARD PROCTOR MAXIMUM DRY DENSITY. PROCTOR READING MUST BE INSPECTED AND APPROVED BY A THIRD PARTY DURING CONSTRUCTION.
- NATIVE TOPSOIL SHALL BE SAVED, STOCKPILED, MULCHED, AND REUSED AS MUCH AS POSSIBLE ON THE SITE. SILTATION FENCE SHALL BE INSTALLED AT THE BASE OF STOCKPILES AT THE DOWNHILL LIMIT TO PROTECT AGAINST EROSION. STOCKPILES WILL BE STABILIZED BY SEEDING AND MULCHING UPON FORMATION OF THE PILES. UPHILL OF THE STOCKPILES, STABILIZED DITCHES AND/OR BERMS WILL BE CONSTRUCTED TO DIVERT STORMWATER RUNOFF AWAY FROM THE PILES. EXCESS CUT SOIL NOT REUSED AS FILL SHALL BE HAULED OFF SITE TO AN APPROVED AND PERMITTED SOIL DISPOSAL SITE AS SOON AS FINAL GRADE HAS BEEN ESTABLISHED.
- 3. FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY TO BE CONSIDERED PERMANENTLY STABILIZED, THE DISTURBED AREAS SHALL BE COVERED BY A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
- 4. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS.
- 5. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR ORGANIC MATERIAL THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS. ANY ROCK GREATER THAN 12" IN ANY DIRECTION SHOULD BE DISPOSED OF AND NOT USED AS FILL. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
- 6. PLOW, SCARIFY, BENCH, OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SO FILL MATERIAL WILL BOND WITH EXISTING MATERIAL. IF FILL EXCEEDS 4' IN HEIGHT FROM TOE TO CREST, FILL MUST BE BENCHED AND KEYED IN.
- 7. PLACE SOIL FILL ON SUB-GRADES FREE OF ORGANIC MATERIAL, MUD, FROST, SNOW, OR ICE
- 8. PLACE BACKFILL AND FILL MATERIALS IN LAYERS NOT MORE THAN 8 INCHES THICK IN LOOSE DEPTH COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND OPERATED TAMPERS.
- 9. UNDER ACCESS ROADS WITH MARGINAL TO EXCESSIVE SLOPES AND MARGINAL SUBGRADE, CLEAR, GRUB AND SCARIFY ROAD AREA. INSTALL ONE LAYER OF GEO-TEXTILE FABRIC (US 160 NW OR EQUIVALENT) AND PIN TO SUBGRADE. INSTALL BASE LAYER, AND TRACK IN WITH A BULLDOZER OR SHEEPSFOOT ROLLER, INSTALL SURFACE LAYER, DRESS ROAD AS REQUIRED AFTER CONSTRUCTION WITH MOTOR GRADER AND COMPACT WITH A VIBRATORY ROAD ROLLER.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

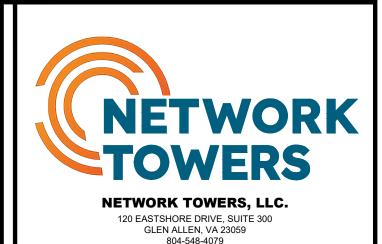
- 1. THE OWNER/DEVELOPER MUST NOTIFY THE TOWN OF CHAPEL HILL AT LEAST 24 HOURS PRIOR TO THE START OF THE CONSTRUCTION IN ACCORDANCE WITH APPLICABLE TOWN OF CHAPEL HILL ORDINANCES AND POLICIES.
- 2. THE OWNER/DEVELOPER GRANTS THE RIGHT-OF-ENTRY ON TO THIS PROPERTY TO THE DESIGNATED TOWN OF CHAPEL HILL PERSONNEL FOR THE PURPOSE OF INSPECTING AND MONITORING
- 3. ALL EROSION CONTROL MEASURES SHOWN ON THE APPROVED PLAN MUST BE IN PLACE AND INSPECTED AND APPROVED BY THE TOWN OF CHAPEL HILL PUBLIC WORKS INSPECTOR PRIOR TO CLEARING, STRIPPING OF TOPSOIL OR GRADING.
- 4. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND PERMIT SHALL BE KEPT ON THE SITE AT ALL TIMES.
- 5. THE DEVELOPER/DEVELOPERS'S REPRESENTATIVE IS RESPONSIBLE FOR THE INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE TOWN OF CHAPEL HILL.
- 6. ALL DISTRIBUTED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL COMPLETE AND ADEQUATE STABILIZATION IS ACHIEVED.
- 7. WATER MUST BE PUMPED INTO AN APPROVED FILTERING DEVICE DURING DEWATERING OPERATIONS.
- 8. ALL EROSION AND SEDIMENT CONTROL PRACTICES MUST BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL AND TO THE TOWN OF CHAPEL HILL DESIGN AND CONSTRUCTION STANDARDS. THE DEVELOPER/DEVELOPER'S REPRESENTATIVE WILL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCÉ OF ALL EROSION AND SEDIMENT CONTROL PRACTICES AT ALL TIMES.
- 9. THE DEVELOPERS/ DEVELOPER'S REPRESENTATIVE SHALL INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES DAILY AND AFTER EACH SIGNIFICANT RAINFALL THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR:
 - A. SILT FENCE BARRIERS WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF WAY TO THE TOP OF THE BARRIER.
 - B. SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RE-SEEDED AS NEEDED.
- 10. SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING AND WILL BE SEEDED AND MULCHED IMMEDIATELY FOLLOWING INSTALLATION.
- 11. PERMANENT SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZED SHALL BE APPLIED WITH IN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN UNDISTURBED FOR LONGER THAN FOURTEEN (14) DAYS. SEEDING AND SELECTION OF THE SEED MIXTURE SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK STANDARDS AND SPECIFICATIONS. ROADS AND PARKING AREAS SHALL BE STABILIZED WITH SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED.
- 12. ELECTRIC POWER, TELEPHONE, CABLE T.V. AND GAS SUPPLY TRENCHES SHALL BE COMPACTED, SEEDED AND MULCHED WITHIN FIVE DAYS AFTER BACKFILL.
- 13. ALL TEMPORARY EARTH BERMS, DIVERSIONS AND SILT DAMS SHALL BE MULCHED WITHIN FIVE DAYS AFTER GRADING. STRAW OR HAY MULCH IS REQUIRED.
- 14. DURING CONSTRUCTION. ALL STORM SEWER INLETS SHALL BE PROTECTED BY INLET PROTECTION MAINTAINED AND MODIFIED DURING CONSTRUCTION AS REQUIRED.
- 15. AT THE COMPLETION OF ANY PROJECT CONSTRUCTION AND PRIOR TO BOND RELEASE, ALL TEMPORARY SEDIMENT CONTROL MEASURES SHALL BE REMOVED.
- 16. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WILL BE REMOVED WITHIN 30 DAYS AFTER ADEQUATE SITE STABILIZATION AND AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, AS AUTHORIZED BY THE TOWN OF CHAPEL HILL PUBLIC WORKS E&S INSPECTORS. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES WILL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
- 17. WHEN SEDIMENT IS TRANSPORTED ONTO A PAVED ROAD SURFACE. THE ROAD WILL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT WILL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING WILL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
- 18. AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC.
- 19. RPA AND FLOOD PLAIN LIMITS SHALL BE CLEARLY MARKED IN THE FIELD BY FLAGS, SIGNS, ETC.
- 20. TREE SAVE AREAS SHALL BE CLEARLY MARKED IN THE FIELD BY ORANGE SAFETY FENCE. APPROPRIATE TREE PRESERVATIONS SIGNS (WATERPROOF) TO IDENTIFY TREE PRESERVATION AREA SHALL BE LOCATED ON TREE PROTECTIONS FENCING (INCLUDES SUPER SILT FENCING) AND SHOULD BE LOCATED ALTERNATE BETWEEN ENGLISH AND SPANISH EVERY 30 FEET.
- 21. ORANGE SAFETY FENCE MUST BE INSTALLED AROUND ALL SILT TRAPS AND SEDIMENT BASINS.

MAINTENANCE

- 1. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY. THE FOLLOWING ITEMS WILL BE CHECKED, IN PARTICULAR:
- 2. THE SILT FENCE BARRIER WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF WAY TO THE TOP OF THE BARRIER.
- 3. THE SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RE-SEEDED AS NEEDED.
- 4. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ECS CONTROLS DURING CONSTRUCTION.
- 5. INSPECTION TO BE CONDUCTED SHALL BE PER TOWN OF CHAPEL HILL STANDARDS AND REQUIREMENTS. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING ALL INSPECTIONS.
- SEDIMENT SHALL BE REMOVED AFTER IT BECOMES 1/3 HEIGHT OF SILT FENCE.

6. SILT FENCE SHALL BE CHECKED AFTER EACH MAJOR STORM EVENT OR ONCE EVERY FIVE DAYS.

7. ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL WILL BE CONSTRUCTED ACCORDING TO THE STANDARDS AND SPECIFICATIONS OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL, 6TH ED, 2013.



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TOTALLY COMMITTED.

TKK ENGINEERING, P.C. 8601 SIX FORKS ROAD. SUITE 540 RALEIGH, NC 27615

NT SITE NAME: DOBBINS NT SITE ID: NC-T23.12

NB+C PROJ. # 100793 (TOWER 911 ADDRESS TBD) 1721 E FRANKLIN STREET CHAPEL HILL, NC 27514 ORANGE COUNTY

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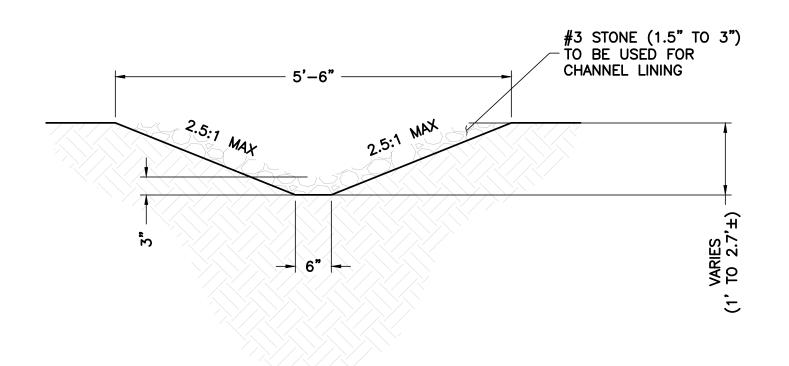
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TRENT T. SNARR. P.E. NC PROFESSIONAL ENGINEER LIC. #037977

> **EROSION AND SEDIMENT CONTROL** NOTES

ES-2

TENTATIVE ACTIVITY SCHEDULE	М	ON	TH	1	MONTH :			2
TENTATIVE ACTIVITY SCHEDULE	1	2	3	4	1	2	3	4
INSTALL INITIAL PHASE E&SC BMP'S (START-UP)	Х	X						
INSTALL INTERMIDIATE PHASE E&SC BMP'S			Х	Х	Х	Х		
INSTALL FINAL PHASE E&SC BMP'S							Х	X
ROUGH GRADING		X	Х					
FOUNDATION INSTALLATION				Х	Х	Х		
UNDERGROUND UTILITIES				Х	Х	Х		
FINAL GRADING					Х	Х	Х	
INSTALL AND MAINTAIN TEMPORARY GRASSING DS-2			Х	X	Х	X	Х	X
REMOVE ALL TEMPORARY BMP'S								X

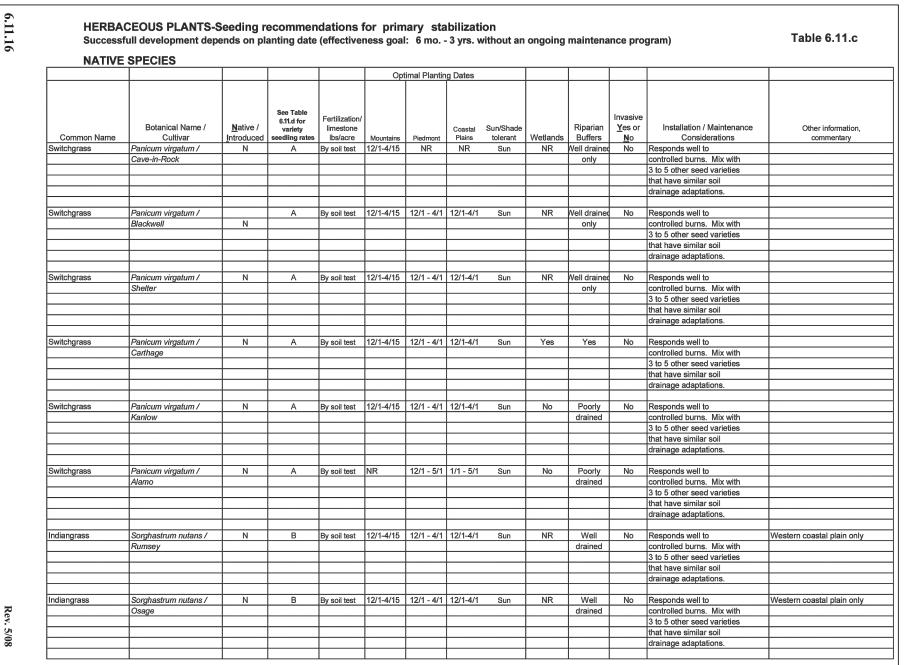


PROPOSED STONE-LINED RETENTION BASIN (NCESCH 6.10.1) RECOMMENDATIONS FOR FALL

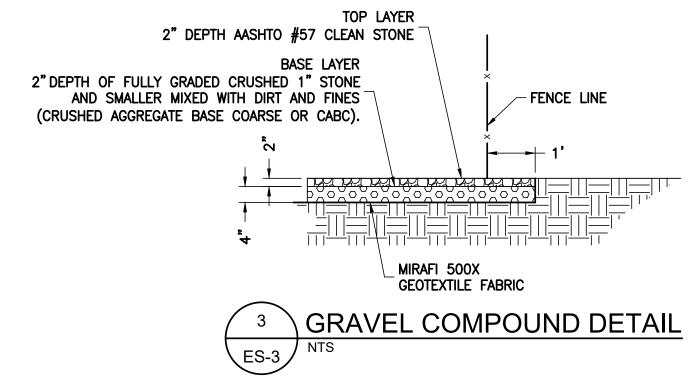
TOPSOIL SPECIFICATIONS

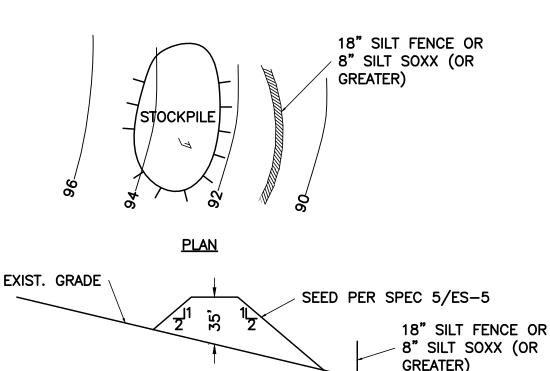
TOPSOIL SPECIFICATIONS

- A. THE CONTRACTOR SHALL FURNISH ALL LABOR, SUPERVISION, MATERIAL (EXCEPT AS HEREIN PROVIDED), TOOLS EQUIPMENT, SUPPLIES, AND SERVICES; AND, SHALL PERFORM ALL WORK NECESSARY FOR PROVIDING (TYPE B AS NECESSARY) AND APPLYING TOPSOIL IN ACCORDANCE WITH THE REQUIREMENTS OF THESE SPECIFICATIONS AND IN CONFORMITY TO THE DEPTHS AND LIMITS SHOWN ON THE DRAWINGS OR AS ESTABLISHED BY THE OWNER.
- B. PRIOR TO USE OR PLACEMENT, THE CONTRACTOR SHALL SUBMIT CERTIFICATIONS OF SOIL TESTS FOR APPROVAL. SOIL TESTS SHALL BE PROVIDED AT THE RATE OF ONE TEST PER 10.000 SQUARE FEET OF DISTURBED AREA.
- C. UNLESS OTHERWISE DIRECTED BY THE OWNER, AREAS DESIGNATED TO RECEIVE TOPSOIL SHALL BE GRADED, SHAPED, AND THEN SCARIFIED OR TILLED BY DISKING, HARROWING, OR OTHER APPROVED METHODS TO A DEPTH OF APPROXIMATELY 2". TOPSOIL SHALL BE APPLIED ONLY WHEN THE SUBSOIL IS IN A LOOSE, FRIABLE CONDITION.
- D. THE CONTRACTOR SHALL PROTECT BENCHMARKS, UTILITIES, AND EXISTING TREES, SHRUBS, AND OTHER LANDSCAPE FEATURES DESIGNATED FOR PRESERVATION WITH TEMPORARY FENCING OR BARRICADES SATISFACTORY TO THE OWNER.
- E. SUBSOIL ON SLOPES THAT HAVE BEEN HORIZONTALLY GROOVED IN ACCORDANCE WITH THE DRAWINGS SHALL NOT BE LOOSENED.
- F. THE LOOSE DEPTH OF THE CLASS OF TOPSOIL SHALL BE NO LESS THAN 4" (NOT LESS THAN 6" IN MEDIANS: AND SHALL BE SUFFICIENT TO ALLOW THE AREA TO CONFORM TO THE ELEVATIONS SHOWN ON THE DRAWINGS AFTER TOPSOIL SETTLES. IN NO CASE SHALL THE CONSOLIDATED FINISH ELEVATION OF TOPSOIL EXCEED THE ELEVATION OF ADJACENT STRUCTURES. CONSOLIDATED ELEVATION SHALL BE FLUSH WITH THE ADJACENT STRUCTURES.
- G. AFTER TOPSOIL HAS BEEN APPLIED, LARGE CLODS, HARD LUMPS, AND STONES MORE THAN 1" IN THE GREATEST DIMENSION, BRUSH, ROOTS, STUMPS, LITTER, AND FOREIGN MATERIAL SHALL BE REMOVED FROM THE AREA. WHEN THE OPERATION IS COMPLETE, THE AREA SHALL BE IN A CONDITION TO RECEIVE SEED, SOD, OR PLANTS WITHOUT FURTHER SOIL PREPARATION. AREAS SHALL BE STABILIZED WITHIN 15 DAYS AFTER TOPSOIL IS APPLIED.
- H. THE CONTRACTOR SHALL BE REQUIRED TO BACKFILL ALONG EDGES OF CURBS, SIDEWALKS AND ENTRANCES WHERE SETTLEMENT HAS OCCURRED AND RESHAPE AND RESLOPE, WHERE DIRECTED, PRIOR TO PLACEMENT OF TOPSOIL AS WELL AS TO ADD ADDITIONAL TOPSOIL AS REQUIRED DUE TO SETTLEMENT OR EROSION AT NO ADDITIONAL COST TO THE OWNER.









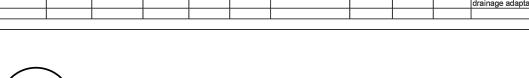
NOTES:

- 1. INSTALL SILT FENCE AROUND ENTIRE STOCKPILE.
- 2. PLACE STOCKPILE IN AREAS SHOWN ON EROSION CONTROL PLAN WITHOUT BLOCKING NATURAL DRAINAGE PATTERNS.

ELEVATION

- 3. FOLLOW DIMENSIONS SHOWN ABOVE. HEIGHT SHOULD NOT EXCEED 35 FT. SIDE SLOPES
- SHOULD NOT BE STEEPER THAN 2(H):1(V).
 4. SEED IMMEDIATELY IF MATERIAL IS NOT TO BE USED WITHIN 20 DAYS. FOLLOW "SEEDING,
- FERTILIZATION SCHEDULE & SPECIFICATIONS."
- 5. LOCATION(S) AND SIZE(S) OF SOIL STOCKPILES ARE APPROXIMATE AND SHALL BE ADJUSTED PER FIELD AND CONSTRUCTION SEQUENCE CONDITIONS. CONTRACTOR SHALL VERIFY REQUIRED SIZE(S). REQUIREMENTS FROM THE STANDARDS DETAIL MUST BE FOLLOWED FOR STOCKPILES.







used as a mulch anchoring tool.

Seeding mixture

Annual lespedeza (Kobe in Piedmont and Coastal Plain,

Korean in Mountains)

Mountains—Above 2500 feet: Feb. 15 - May 15

immediately following erosion or other damage.

Below 2500 feet: Feb. 1- May 1

agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Species

Rye (grain)

extend beyond June.

Piedmont—Jan. 1 - May 1 Coastal Plain—Dec. 1 - Apr. 15

Seeding dates

Soil amendments

Maintenance

Seeding mixture Species Rate (lb/acre) German millet

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.

Omit annual lespedeza when duration of temporary cover is not to

Follow recommendations of soil tests or apply 2,000 lb/acre ground

Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be

Refertilize if growth is not fully adequate. Reseed, refertilize and mulch

Rate (lb/acre)

120

Mountains—May 15 - Aug. 15

Seeding dates

Piedmont—May 1 - Aug. 15 Coastal Plain—Apr. 15 - Aug. 15

Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance

Refertilize if growth is not fully adequate. Reseed, refertilize and mulch mmediately following erosion or other damage.



Seeding mixture Rate (lb/acre) **Species** Rye (grain) Seeding dates Mountains—Aug. 15 - Dec. 15

Coastal Plain and Piedmont—Aug. 15 - Dec. 30

Soil amendments

Follow soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 lb/acre 10-10-10 fertilizer.

Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance

Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extent temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.



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NETWORK NETWORK TOWERS, LLC. 120 EASTSHORE DRIVE, SUITE 300 804-548-4079

TOTALLY COMMITTED

TKK ENGINEERING, P.C. 8601 SIX FORKS ROAD, SUITE 540 RALEIGH, NC 27615

NT SITE NAME: DOBBINS NT SITE ID: NC-T23.12

NB+C PROJ. # 100793 (TOWER 911 ADDRESS TBD) 1721 E FRANKLIN STREET CHAPEL HILL, NC 27514 ORANGE COUNTY

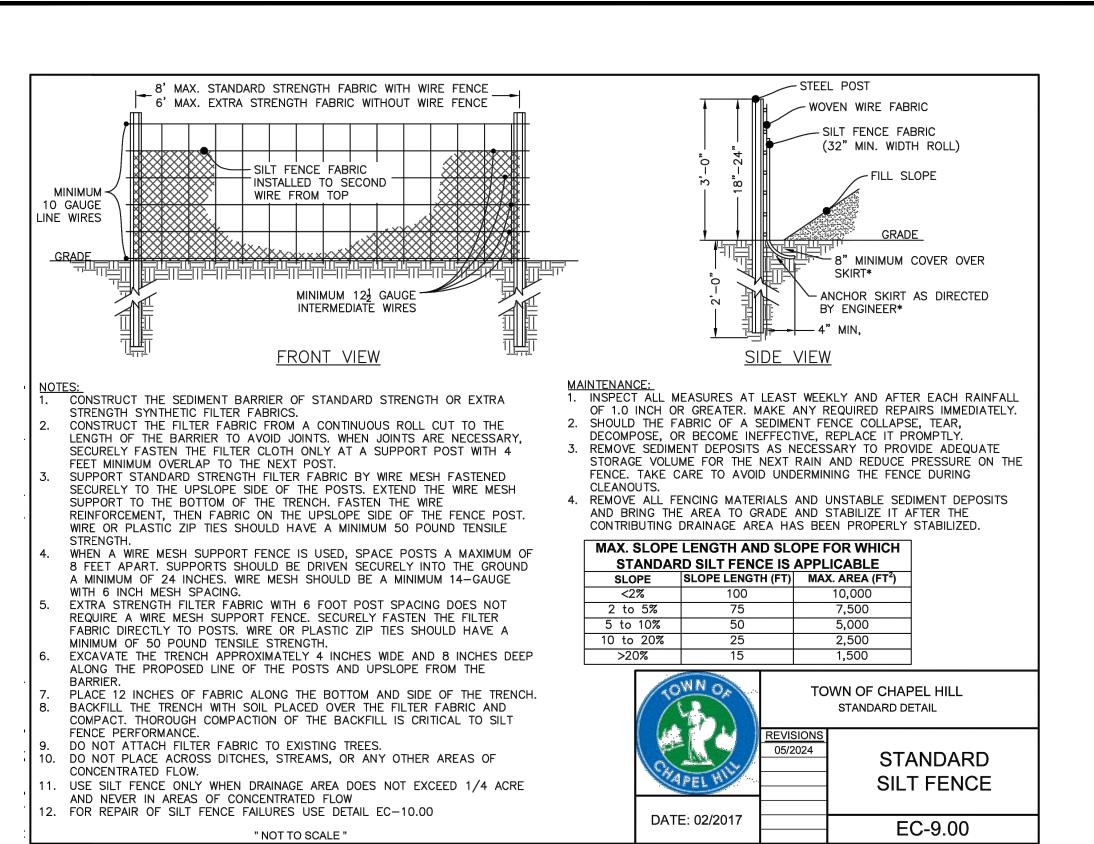
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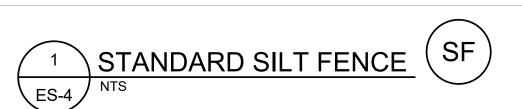
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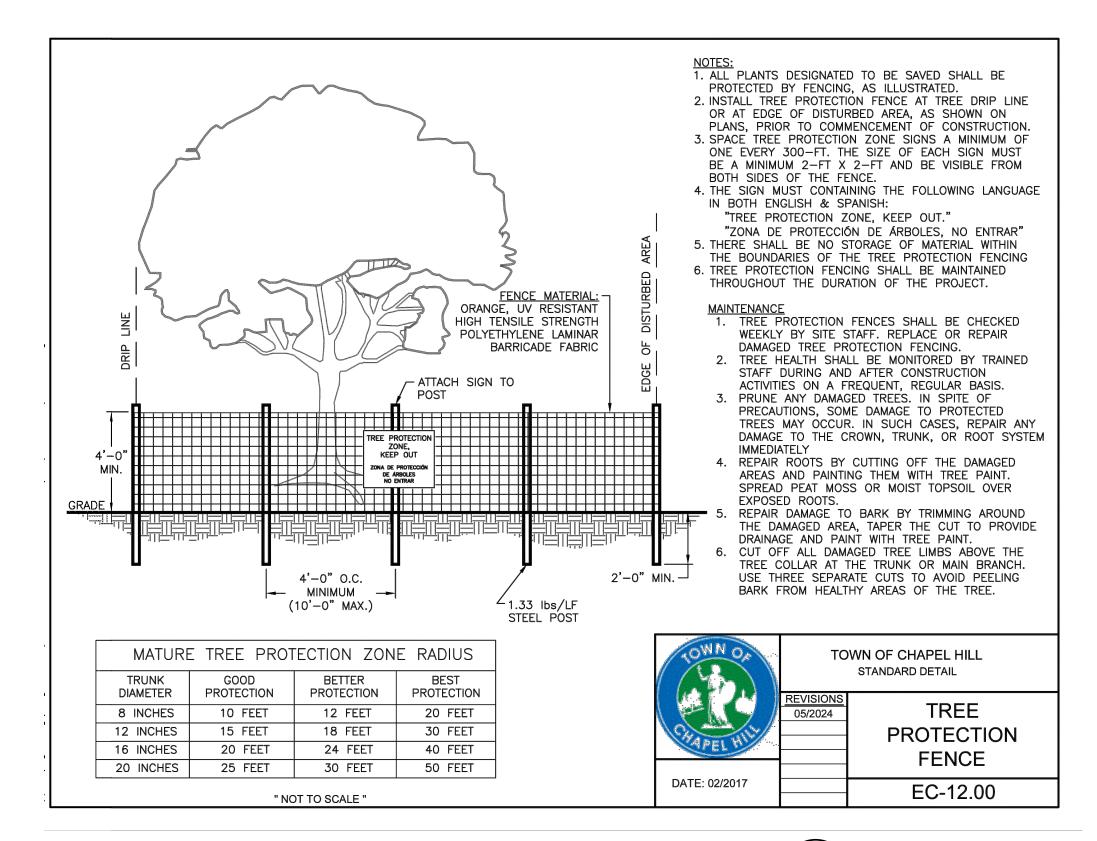
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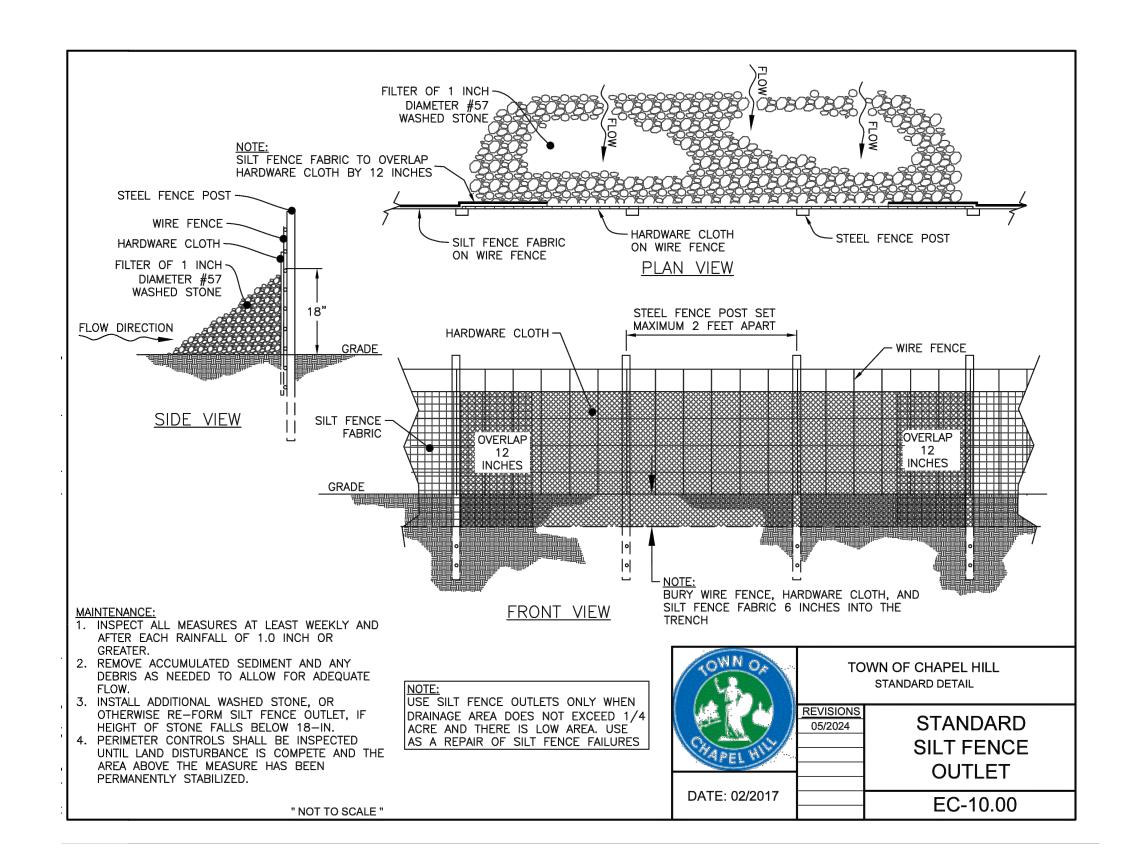
EROSION AND SEDIMENT CONTROL DETAILS

ES-3

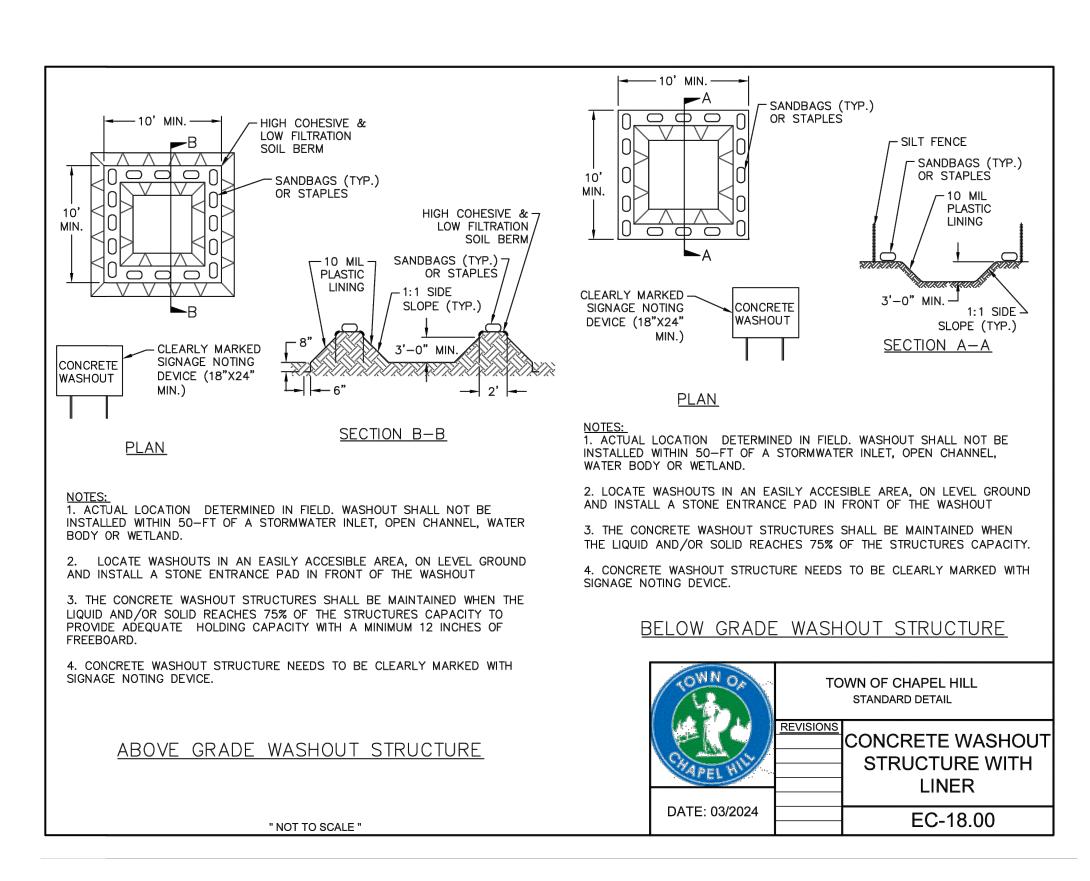


















TOTALLY COMMITTED.

TKK ENGINEERING, P.C.

8601 SIX FORKS ROAD, SUITE 540

RALEIGH, NC 27615

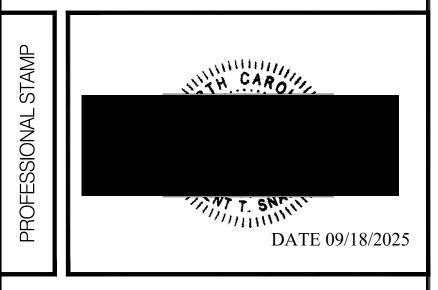
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NT SITE NAME: DOBBINS NT SITE ID: NC-T23.12

NB+C PROJ. # 100793 (TOWER 911 ADDRESS TBD) 1721 E FRANKLIN STREET CHAPEL HILL, NC 27514 ORANGE COUNTY

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TRENT T. SNARR, P.E.
NC PROFESSIONAL ENGINEER LIC. #037977

EROSION AND SEDIMENT CONTROL DETAILS

ES-4

STORMWATER RUNOFF CALCULATIONS:

NARRATIVE
THE SUBJECT PARCEL (4.29 ACRES) CONTAINS A PARKING LOT, DENTIST OFFICE, AND EXISTING
GUY TOWER. THE REST OF THE PARCEL IS MADE UP OF GRASS AND WOODED AEA, WITH EXISTING SLOPES GOING UP TO 14%. THE PARCEL IS ALSO IN AN EXISTING FLOOD ZONE. THE LAND OBSERVED DRAINS WATER TO THE EAST. PROPOSED SITE CONSTRUCTION WILL CREATE A TOTAL DISTURBED AREA OF 4,900 SQUARE FEET, OF WHICH 3,000 S.F. WILL BE IMPERVIOUS SURFACE AND THE REMAINING 1,900 S.F. WILL BE MANAGED TURF.

ANALYSIS METHODOLOGIES AND PROCEDURES
PRE AND POST DEVELOPMENT RUNOFF VALUES FOR THE DRAINAGE AREA WERE CALCULATED USING THE SCS METHOD, OUTLINED IN THE JOHNSTON COUNTY STORMWATER DESIGN MANUAL, USING THE MODELING PROGRAM HYDRAFLOW HYDROGRAPHS EXTENSION FOR AUTOCAD CIVIL 3D 2022. THE DRAINAGE AREAS WERE DETERMINED USING A LOCAL SURVEY. PERVIOUS AND IMPERVIOUS AREAS WERE DETERMINED BY AERIAL PHOTOGRAPHY.

STORMWATER RUNOFF CONSIDERATIONS:

THE NATURAL DRAINAGE CONDITION FROM THE THE PROPOSED SITE WILL BE MAINTAINED TO THE GREATEST EXTENT POSSIBLE. PEAK FLOW FOR POST-DEVELOPMENT PEAK FLOW FOR THE 1-YEAR, 2-YEAR, AND 25-YEAR STORMS DO NOT EXCEED THE PRE-DEVELOPMENT PEAK FLOW THUS SATISFYING THE STANDARD SET IN SECTION II-B IN THE TOWN OF CHAPEL HILL STORMWATER IMPACT STATEMENT AND STORMWATER MANAGEMENT PLAN GUIDELINES.

FOR WATER QUALITY CONTROL, 12" DEEP, ROCK-LINED RETENTION POND IS BEING PROPOSED TO SATISFY THE STANDARD SET IN SECTION II-B IN THE TOWN OF CHAPEL HILL STORMWATER IMPACT STATEMENT AND STORMWATER MANAGEMENT PLAN GUIDELINES.

PREDEVELOPMENT - 1-YEAR, 24-HOUR

Hydrograph type	= SCS Runoff	Peak discharge	= 8.206 cfs
Storm frequency	= 1 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 33,615 cuft
Drainage area	= 7.590 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 28.90 min
Total precip.	= 2.96 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

PREDEVELOPMENT - 2-YEAR, 24-HOUR

Hydrograph type	= SCS Runoff	Peak discharge	= 11.59 cfs
Storm frequency	= 2 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 46,840 cuft
Drainage area	= 7.590 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 28.90 min
Total precip.	= 3.58 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

PREDEVELOPMENT - 25-YEAR, 24-HOUR

Hydrograph type	= SCS Runoff	Peak discharge	= 26.67 cfs
Storm frequency	= 25 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 106,669 cuft
Drainage area	= 7.590 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 28.90 min
Total precip.	= 6.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

	DRAINAGE AREA TOTALS STORM EVENT PEAK DISCHARGE (CFS)				
SITE CONDITION	1-YR	2-YR	25-YR		
PREDEVELOPMENT:	8.2060	11.5900	26.6700		
POSTDEVELOPMENT:	8.2060	11.5900	26.6700		
POSTDEVELOPMENT - TREATED:	8.1090	11.4500	26.3500		

IMPERVIOUS SURFACE TALLIES

TOTAL PARCEL AREA:	186,872 SQ.FT.	(4.290 AC) ±
EX. DRIVEWAY/PARKING AREA: EX. BUILDING AREA: EX. PAVED TRAIL AREA: EX. OTHER IMPERVIOUS AREA: EX. TOTAL IMPERVIOUS AREA:	8,185 SQ.FT. 2,700 SQ.FT. 3,737 SQ.FT. 3,000 SQ.FT. 17,622 SQ.FT.	(0.062 AC) ± (0.086 AC) ± (0.069 AC) ±
PROP. COMPOUND IMPERV. AREA: PROP. TOTAL IMPERVIOUS AREA:	3,000 SQ.FT. 3,000 SQ.FT.	,
PROP. TOTAL IMPERVIOUS AREA:	20,622 SQ.FT.	(0.473 AC) ±
PROP. DISTURBED AREA:	5,056 SQ.FT.	(0.116 AC) ±
PROP. AREA INSIDE FLOOD ZONE:	1,626 SQ.FT.	(0.037 AC) ±

PREDEVELOPMENT						
HYDRO SOIL GROUP GROUND CONDITION CN AREA (SQ.FT.) AREA (
D	WOODED	77	163,032	3.74		
	GRASS	80	139,111	3.19		
	IMPERVIOUS	98	28,314	0.65		
TOTAL AREA			330,457	7.59		
WEIGHTED CN		80				

GRADING, EROSION & SEDIMENT CONTROL PLAN

SCALE: 1" = 60' (22X34) SCALE: 1" = 120' (11X17)

	POSTDEVELOPMENT						
HYDRO SOIL GROUP	GROUND CONDITION	CN	AREA (SQ.FT.)	AREA (ACRES)			
D	WOODED	7.	159,742	3.67			
	GRASS	80	139,111	3.19			
***************************************	IMPERVIOUS	98	31,604	0.73			
TOTAL AREA			330,457	7.59			
WEIGHTED CN		80)				

POSTDEVELOPMENT					
HYDRO SOIL GROUP	GROUND CONDITION	CN	AREA (SQ.FT.)	AREA (ACRES)	
D	WOODED	77	159,742	3.67	
	GRASS	80	139,111	3.19	
***************************************	IMPERVIOUS	98	31,604	0.73	
TOTAL AREA			330,457	7.59	
WEIGHTED CN		80			

POSTDEVELOPMENT - RETENTION BASIN						
YDRO SOIL GROUP	GROUND CONDITION	CN	AREA (SQ.FT.)	AREA (ACRES)		
	GRASS	77	662	0.015		
	IMPERVIOUS	98	3,290	0.076		
OTAL			3,952	0.091		
EIGHTED CN		94				

	POSTDEVELOPME	NT - BYP	ASS	
HYDRO SOIL GROUP	GROUND CONDITION	CN	AREA (SQ.FT.)	AREA (ACRES)
D	WOODED	77	159,742	3.67
	GRASS	80	138,449	3.18
	IMPERVIOUS	98	28,314	0.65
TOTAL AREA			326,505	7.50
WEIGHTED CN		80		

TOPO NOTES:

CONTOURS FROM AUTODESK INFRAWORKS 2023



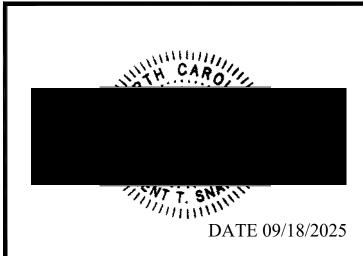
TOTALLY COMMITTED.

TKK ENGINEERING, P.C. 8601 SIX FORKS ROAD, SUITE 540 RALEIGH, NC 27615

NT SITE NAME: DOBBINS NT SITE ID: NC-T23.12

NB+C PROJ. # 100793 (TOWER 911 ADDRESS TBD) 1721 E FRANKLIN STREET CHAPEL HILL, NC 27514 **ORANGE COUNTY**

		R	EVISIONS	
Ω				
)OR	5	09/18/2025	REVISED SITE PLAN	OP
RE(4	06/24/2025	REVISED SITE PLAN	OP
DESIGN RECORD	3	04/15/2025	REVISED SITE PLAN	OP
DES	2	03/12/2025	REVISED SITE PLAN	OP
	1	01/31/2025	SITE PLAN	BMB
	0	11/14/2024	ZONING DRAWINGS	OP
	REV	DATE	DESCRIPTION	BY



TRENT T. SNARR, P.E. NC PROFESSIONAL ENGINEER LIC. #037977

EXISTING BUILDING

booooooooooooood

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EXISTING FEMA FLOODWAY

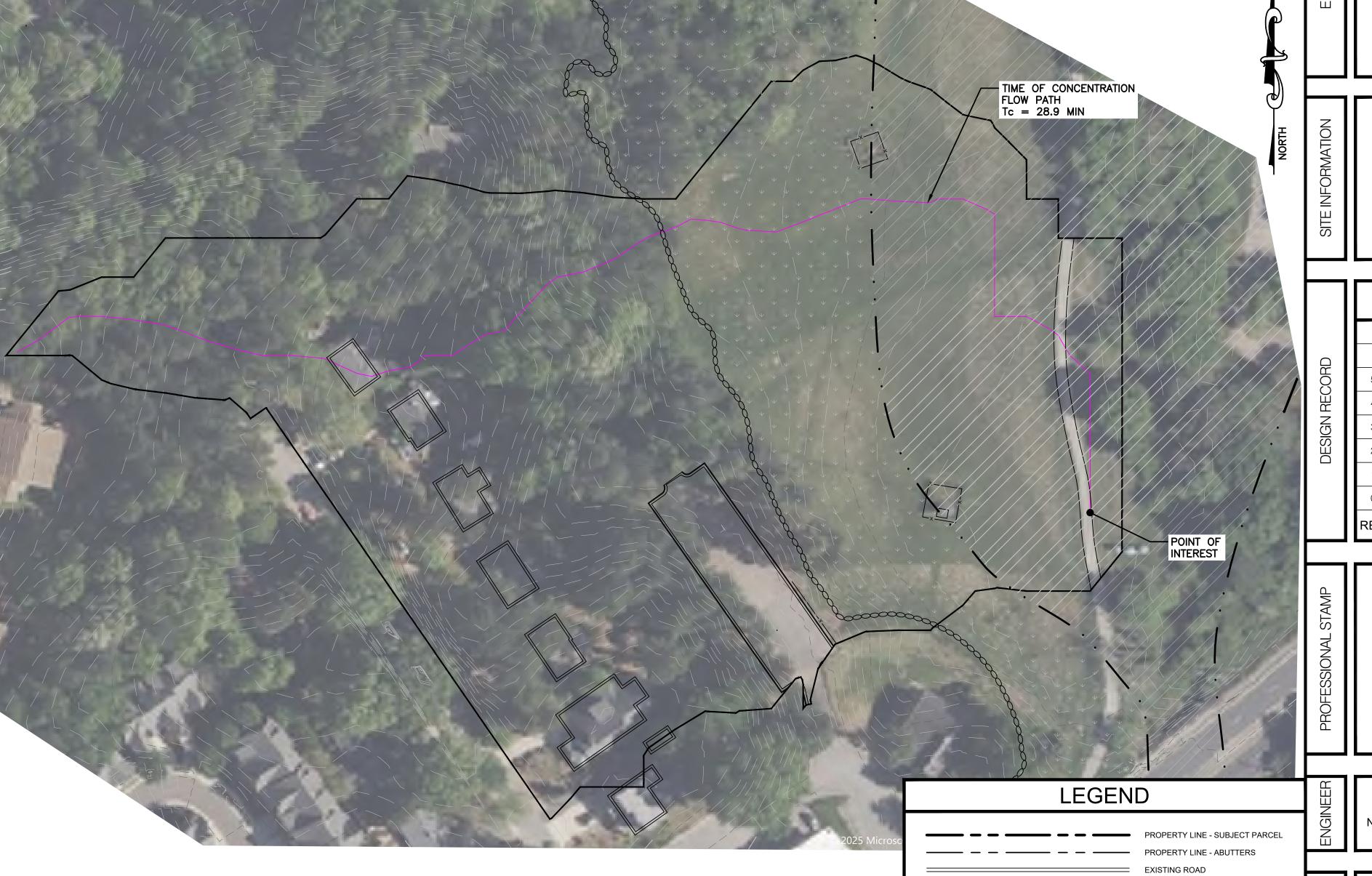
EXISTING FEMA FLOOD AE ZONE

EXISTING MAJOR CONTOUR

PRE-DEVELOPMENT

DRAINAGE AREA MAP

SWM-1



GRAPHIC SCALE

1 INCH = 60 FEET (22X34) 1 INCH = 120 FEET (11X17)

REQUIRED STORAGE VOLUME: 301ft (1in)(1ft) = 274ft2

NARRATIVE
THE SUBJECT PARCEL (4.29 ACRES) CONTAINS A PARKING LOT, DENTIST OFFICE, AND EXISTING
GUY TOWER. THE REST OF THE PARCEL IS MADE UP OF GRASS AND WOODED AEA, WITH EXISTING SLOPES GOING UP TO 14%. THE PARCEL IS ALSO IN AN EXISTING FLOOD ZONE. THE LAND OBSERVED DRAINS WATER TO THE EAST. PROPOSED SITE CONSTRUCTION WILL CREATE A TOTAL DISTURBED AREA OF 5,056 SQUARE FEET, OF WHICH 3,000 S.F. WILL BE IMPERVIOUS SURFACE AND THE REMAINING 2,056 S.F. WILL BE MANAGED TURF.

ANALYSIS METHODOLOGIES AND PROCEDURES

PRE AND POST DEVELOPMENT RUNOFF VALUES FOR THE DRAINAGE AREA WERE CALCULATED USING THE SCS METHOD, OUTLINED IN THE JOHNSTON COUNTY STORMWATER DESIGN MANUAL, USING THE MODELING PROGRAM HYDRAFLOW HYDROGRAPHS EXTENSION FOR AUTOCAD CIVIL 3D 2022. THE DRAINAGE AREAS WERE DETERMINED USING A LOCAL SURVEY. PERVIOUS AND IMPERVIOUS AREAS WERE DETERMINED BY AERIAL PHOTOGRAPHY.

STORMWATER RUNOFF CONSIDERATIONS:

THE NATURAL DRAINAGE CONDITION FROM THE THE PROPOSED SITE WILL BE MAINTAINED TO THE GREATEST EXTENT POSSIBLE. PEAK FLOW FOR POST-DEVELOPMENT PEAK FLOW FOR THE 1-YEAR, 2-YEAR, AND 25-YEAR STORMS DO NOT EXCEED THE PRE-DEVELOPMENT PEAK FLOW THUS SATISFYING THE STANDARD SET IN SECTION II-B IN THE TOWN OF CHAPEL HILL STORMWATER IMPACT STATEMENT AND STORMWATER MANAGEMENT PLAN GUIDELINES.

FOR WATER QUALITY CONTROL, A 12" DEEP, ROCK-LINED RETENTION BASIN IS BEING PROPOSED. THE RETENTION BASIN HAS A TOTAL STORAGE CAPACITY OF 233 CU. FT. WHICH IS SUFFICIENT TO CONTROL THE FIRST 1" OF RUNOFF FROM THE PROPOSED IMPERVIOUS COMPOUND (220 CU. FT.). THIS SATISFIES THE STANDARD SET IN SECTION II-D IN THE TOWN OF CHAPEL HILL STÓRMWATER IMPACT STATEMENT AND STORMWATER MANAGEMENT PLAN GUIDELINES.

POSTDEVELOPMENT (TREATED) - 1-YEAR, 24-HOUR

Combine1 yrs2 min4, 5	Peak discharge Time to peak Hyd. volume Contrib. drain. area	= 8.109 cfs = 732 min = 33,217 cuft = 7.500 ac
- - - - - - - - - - -	Contrib. drain. area	- 7.000 ac
	= 1 yrs = 2 min	= 1 yrs Time to peak = 2 min Hyd. volume

POSTDEVELOPMENT (TREATED) - 2-YEAR, 24-HOUR

Hydrograph type	= Combine	Peak discharge	= 11.45 cfs
Storm frequency	= 2 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 46,284 cuft
Inflow hyds.	= 4, 5	Contrib. drain. area	= 7.500 ac

POSTDEVELOPMENT (TREATED) - 25-YEAR, 24-HOUR

3 3 3	•	k = 730 min = 105,404 cuft
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3,952 0.091

REQUIRED STORAGE VOLUME:

	TOTAL ATE
$R_V = 0.05 + 0.9 * I_A$ = 0.05 + 0.9(3290/3952) = 0.799	

 $V = 3630 * R_D * R_V * A$ =3630*1*0.799*0.091 =264.0 CU. FT.

AVAILABLE STORAGE VOLUME = 301.0 CU. FT.

SITE CONDITION	DRAINAGE AREA TOTALS STORM EVENT PEAK DISCHARGE (CFS)					
SITE SONSTITION	1-YR	2-YR	25-YR			
PREDEVELOPMENT:	8.2060	11.5900	26.6700			
POSTDEVELOPMENT:	8.2060	11.5900	26.6700			
POSTDEVELOPMENT - TREATED:	8.1090	11.4500	26.3500			

IMPERVIOUS SURFACE TALLIES

IMPLIANIOUS SUIAI	ACL IAL	LILO
TOTAL PARCEL AREA:	186,872 SQ.FT.	(4.290 AC) ±
EX. DRIVEWAY/PARKING AREA: EX. BUILDING AREA: EX. PAVED TRAIL AREA: EX. OTHER IMPERVIOUS AREA: EX. TOTAL IMPERVIOUS AREA:	8,185 SQ.FT. 2,700 SQ.FT. 3,737 SQ.FT. 3,000 SQ.FT. 17,622 SQ.FT.	(0.062 AC) ± (0.086 AC) ± (0.069 AC) ±
PROP. COMPOUND IMPERV. AREA: PROP. TOTAL IMPERVIOUS AREA:	3,000 SQ.FT. 3,000 SQ.FT.	` '
PROP. TOTAL IMPERVIOUS AREA:	20,622 SQ.FT.	(0.473 AC) ±
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PROP. AREA INSIDE FLOOD ZONE:	1,626 SQ.FT.	(0.037 AC) ±

PREDEVELOPMENT				
HYDRO SOIL GROUP	GROUND CONDITION	CN	AREA (SQ.FT.)	AREA (ACRES)
D	WOODED	77	163,032	3.74
	GRASS	80	139,111	3.19
	IMPERVIOUS	98	28,314	0.65
TOTAL AREA			330,457	7.59
WEIGHTED CN		80		

	POSTDEVELOPMENT						
ES)	HYDRO SOIL GROUP	GROUND CONDITION	CN		AREA (SQ.FT.)	AREA (ACRES)	
.74	D	WOODED		77	159,742	3.67	
.19		GRASS		80	139,111	3.19	
.65		IMPERVIOUS		98	31,604	0.73	
.59	TOTAL AREA				330,457	7.59	
	WEIGHTED CN			80			

POSTDEVELOPMENT								
HYDRO SOIL GROUP	GROUND CONDITION	CN	AREA (SQ.FT.)	AREA (ACRES)				
D	WOODED	77	159,742	3.67				
	GRASS	80	139,111	3.19				
	IMPERVIOUS	98	31,604	0.73				
TOTAL AREA			330,457	7.59				
WEIGHTED CN		80						

POSTDEVELOPMENT - RETENTION BASIN							
GROUND CONDITION	CN	AREA (SQ.FT.)	AREA (ACRES)				
GRASS	77	662	0.015				
IMPERVIOUS	98	3,290	0.076				
		3,952	0.091				
	94						
	GROUND CONDITION GRASS	GROUND CONDITION CN GRASS 77 IMPERVIOUS 98	GROUND CONDITION CN AREA (SQ.FT.) GRASS 77 662 IMPERVIOUS 98 3,290 3,952 3,952				

POSTDEVELOPMENT - BYPASS								
HYDRO SOIL GROUP	GROUND CONDITION	CN	AREA (SQ.FT.)	AREA (ACRES)				
0	WOODED	77	159,742	3.67				
	GRASS	80	138,449	3.18				
	IMPERVIOUS	98	28,314	0.65				
TOTAL AREA			326,505	7.50				
WEIGHTED CN		80						

PROPOSED COMPOUND AND RETAINING WALL

> PROPOSED RETENTION POND

CONTOURS FROM AUTODESK INFRAWORKS 2023

TIME OF CONCENTRATION

FLOW PATH Tc = 28.9 MIN



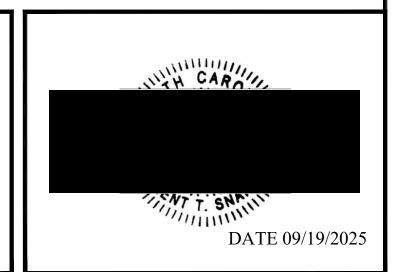
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REVISIONS 09/18/2025 REVISED SITE PLAN 06/24/2025 REVISED SITE PLAN 04/15/2025 REVISED SITE PLAN 03/12/2025 REVISED SITE PLAN 0 | 11/14/2024 | ZONING DRAWINGS REV DATE DESCRIPTION



SITE

POINT OF INTEREST

EXISTING BUILDING

EXISTING FEMA FLOODWAY

EXISTING FEMA FLOOD AE ZONE

EXISTING MAJOR CONTOUR

EXISTING MINOR CONTOUR

LEGEND

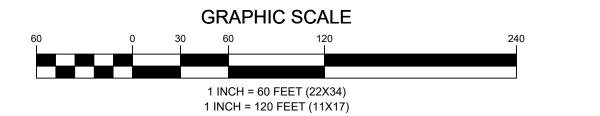
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TRENT T. SNARR, P.E. NC PROFESSIONAL ENGINEER LIC. #037977

POST-DEVELOPMENT DRAINAGE AREA MAP

GRADING, EROSION & SEDIMENT CONTROL PLAN SCALE: 1" = 60' (22X34) SCALE: 1" = 120' (11X17)



SWM-2

