

400 North Greensboro - Mitchell  
Multifamily Residential Project  
SUP-A Public Hearing Presentation





400 North Greensboro Street  
Sam Mitchell

## Introduction and Key Project Features

This small infill residential project will help implement the goals of the new Carrboro Connects Comprehensive Plan. The high quality, three-story brick building will add needed density downtown with little impact on traffic or other infrastructure. The building addresses the street (with the limited parking behind). The building's residents will be able to support local businesses within walking and biking distance.

Primary facts regarding 400 North Greensboro:

- Multifamily residential building (new construction) with seven (7) units on .37 acre lot. The building is proposed as three-story (approximately 11,400 sf total) and has been rezoned from CT to B-1-G-CZ.
- On-site parking for 8 vehicles – one per unit plus one accessible space – parking behind building
- On-site storm water management control measures tied to new storm pipe in Parker St., available to future development
- Right-of-way dedication on Parker Street to increase width for emergency vehicles and to provide new sidewalks
- Payment in lieu for affordable housing
- Extensive landscaping and sustainability features in construction – EV vehicle and bike charging
- No new curb cuts/entry drives on North Greensboro, entry is from Parker Street
- Bicycle storage, wider sidewalks (10' min) to encourage walkable downtown
- High quality brick building with little impact on existing infrastructure

Development Owner – Bison Lodge, LLC, Sam Mitchell; Civil Engineering – Civil Consultants; Architect – JSA Architects, PA, Carrboro; Landscape Architect – David Swanson and Associates, Carrboro



400 N. GREENSBORO STREET

CARRBORO, NC 27510

PIN: 9778876328



SECTION		PROPOSED 400 N. GREENSBORO PER B1-G-CZ
#	REGULATION	
15-146	PERMISSABLE USE	1.321 MULTI-FAMILY PERMITTED & PROPOSED
15-178	DOWNTOWN ARCHITECTURAL STANDARDS	ARTICULATED ENTRIES GLAZING: 60% GROUND, 40% OVERALL, 20% SHADE FREE
15-181	MINIMUM LOT SIZE	3,000 SF RESIDENTIAL (OTHERWISE NO LIMIT)
15-182	RESIDENTIAL DENSITY	3,000 SF/UNIT MIN. = 5 + 2 (DENSITY BONUS) = 7 (DENSITY BONUS PER 15-141.4)
15-182.4	AFFORDABLE UNITS	PAYMENT IN-LIEU
15-183	LOT WIDTH	NO MINIMUM (107' ACTUAL)
15-184	SETBACKS	0' STREET ROW PERMITTED; 20' PROPOSED 0' LOT BOUNDARY PERMITTED; 4' MIN. @ REAR
15-185	BUILDING HEIGHT	ADJACENT TO N. GREENSBORO (OVER 50' ROW) & PARKER ST. (16' ROW) 3 STORIES BUILDING LENGTH ALONG BOUNDARY <80% LOT (86.4') OR 80' MAX, 10' STEP BACK FROM SECOND FLOOR FACADE
15-185.1	DNP BUFFER	
15-291	PARKING	1.3 NO PARKING MINIMUM, MAX = 1/BED+1 PER 4 UNITS 7 + 1 ADA = 8 PROVIDED
	BICYCLE PARKING	1.5/UNIT = 11 PROVIDED
15-250	SCREENING OF DUMPSTERS	REQUIRED IF CLEARLY VISIBLE
15-308	SCREENING & TREES	TREE CANOPY: 40% REDUCED TO 20% PER 15-319(b) SEE ATTACHED REQUEST BROKEN SCREEN TYPE "C"
15-196	RECREATIONAL AREA POINTS	SUBSECTION D-2: NOT REQUIRED FOR SUBDIVIDED RESIDENTIAL <15 UNITS N/A PER B1-G-CZ
15-198	OPEN SPACE	SUBSECTION J: NOT REQUIRED FOR SUBDIVIDED RESIDENTIAL <15 UNITS N/A PER B1-G-CZ
15-204	DOWNTOWN LIVABILITY AREA	>25% RESIDENTIAL: 12% OF TOTAL LAND AREA = 1,915 SF 2,200 SF PROVIDED

NOTE ADDED RD. 3-5-28.25  
ADDITION OF COMMERCIAL SPACE TO THIS SITE AT A LATER  
DATE WILL REQUIRE A MINOR MODIFICATION TO THE SUP-A

SHEET LIST

TITLE	#
PROJECT COVER SHEET	A0.0
CIVIL COVER & SITE DATA SURVEY	C1.1
EXISTING CONDITIONS & DEMOLITION PLAN	C2.1
GRADING & STORM DRAINAGE PLAN	C3.1
UTILITY PLAN	C4.1
STORM DRAINAGE PLAN & PROFILE	C6.1
DETAILS	C9.1
DETAILS	C11.1
DETAILS	C11.2
DETAILS	C11.3
DETAILS	C11.4
DETAILS	C11.5
DETAILS	C11.6
DETAILS	C11.7
DETAILS	C11.8
CONCEPT PLAN FOR CANOPY COVERAGE & BUFFER/SCREENING LANDSCAPE PLAN	L1.0
LANDSCAPE PLAN	L2.0
FLOOR PLATES	A1.0
ELEVATIONS	A2.0
REFERENCE PERSPECTIVES	A8.0
STRUCTURAL (RESERVED)	S
MECHANICAL (RESERVED)	M
PLUMBING (RESERVED)	P
ELECTRICAL (RESERVED)	E
FIRE ALARM (RESERVED)	FA



**JIM SPENCER ARCHITECTS, PA**  
109-A BREWER LANE  
CARRBORO, NC 27510  
919.940.6680  
JSPENCER.JSA@GMAIL.COM

**OWNER**

BISON LODGE, LLC  
50 ELM STREET, 2ND FLOOR  
NEW HAVEN, CT 06510

**STRUCTURAL ENGINEER**

**MEP**

**CIVIL**

CIVIL CONSULTANTS  
MICHAEL FIOCCO  
3708 LYCKAN PARKWAY, SUITE 201  
DURHAM, NC 27707  
919.321.6867  
MICHAEL.FIOCCO@CIVIL-CONSULTANTS.COM

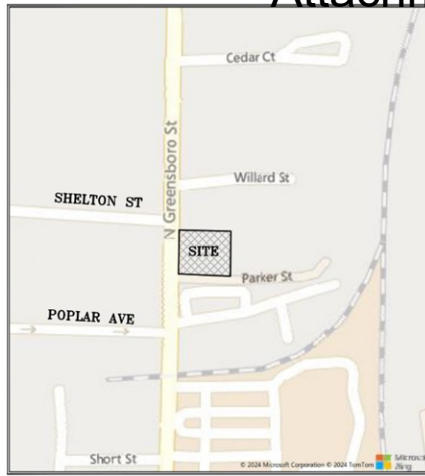
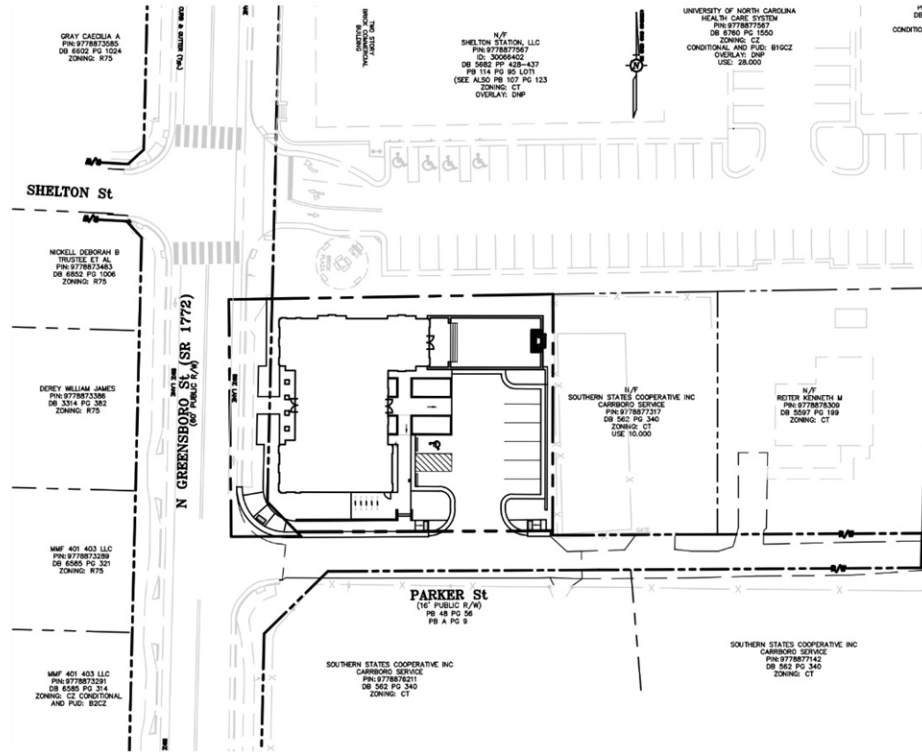
**LANDSCAPE**

SWANSON & ASSOCIATES P.A.  
DAVID SWANSON  
CHAPEL HILL, NC  
919.929.9000  
INFO@SWANSONLANDSCAPEARCHITECTURE.COM

**GENERAL CONTRACTOR**

**SUP-A APPLICATION**

DATE: 2025.04.03



VICINITY MAP  
NTS

DRAWING INDEX:

- C1.1 CIVIL COVER SHEET
- SURVEY
- C2.1 EXISTING CONDITIONS & DEMOLITION PLAN
- C3.1 SITE LAYOUT PLAN
- C4.1 GRADING & STORM DRAINAGE PLAN
- C6.1 UTILITY PLAN
- C9.1 STORM DRAINAGE PLAN & PROFILE
- C11.1 DETAILS
- C11.2 DETAILS
- C11.3 DETAILS
- C11.4 DETAILS
- C11.5 DETAILS
- C11.6 DETAILS
- C11.7 DETAILS
- C11.8 DETAILS

PREPARED FOR:  
JIM SPENCER ARCHITECTS, PA  
109-A BREWER LANE  
CARRBORO, NC 27510

# 400 North Greensboro SPECIAL USE PERMIT

Carrboro, North Carolina

SITE DATA:

PROJECT: 400 NORTH GREENSBORO STREET  
OWNER: BISON LODGE, LLC  
50 ELM STREET, 2ND FLOOR  
NEW HAVEN, CT 06510  
APPLICANT: JIM SPENCER ARCHITECTS, PA  
109-A BREWER LANE  
CARRBORO, NC 27510  
PIN/PARCEL: 9778876328  
ACREAGE: 0.37 ACRES  
CURRENT ZONING: B-1G-CZ  
DNP OVERLAY  
RIVER BASIN: CAPE FEAR

LEGEND

	NEW	EXISTING	REMOVE
DRAINAGE STRUCTURE	■ □ △	□ ○ □ △	□ ○ □ △
SANITARY SEWER MANHOLE	Ⓢ	Ⓢ	Ⓢ
SANITARY SEWER CLEANOUT	— C.O. —	— C.O. —	— C.O. —
WATER VALVE	⊗	⊗	⊗
FIRE HYDRANT	⊗	⊗	⊗
OVERHEAD UTILITY LINE	— OH —	— XOH —	— DXOH —
UNDERGROUND ELECTRIC LINE	— E —	— XE —	— DXE —
UNDERGROUND TELECOM/DATA LINE	— TD —	— XTD —	— DXTD —
FIBER OPTIC CABLE	— FO —	— XFO —	— DXFO —
GAS LINE	— G —	— XG —	— DXG —
STORM DRAINAGE PIPE	— SS —	— XSS —	— DXSS —
SANITARY SEWER LINE	— W —	— XW —	— DXW —
WATER LINE	— 400 —	— 400 —	— 400 —
SURFACE ELEVATION CONTOUR	— 356.44 —	— 356.44 —	— 356.44 —
SURFACE SPOT ELEVATION	⬆	⬆	⬆
TREE LINE	— — — — —	— — — — —	— — — — —
LIMIT OF DISTURBANCE/CLEARING	— — — — —	— — — — —	— — — — —
TREE PROTECTION FENCE	— — — — —	— — — — —	— — — — —
ROOF DRAIN	— RD —	— XRD —	— DXRD —
TYPICAL KEYED NOTE LABEL	1		



400 NORTH GREENSBORO  
CARRBORO, NORTH CAROLINA  
CIVIL COVER  
SHEET

REV.	DATE	DESCRIPTION
1	02/06/2025	PERMEABLE PAVERS SWM UPDATE
2	02/26/2025	ASPHALT PAVEMENT SWM UPDATE
3	02/27/2025	TOWN REVIEW COMMENTS
4	03/12/2025	SUNGATE AND OWASA COMMENTS
5	04/01/2025	FIRE SPRINKLER, DOMESTIC WATER & IRRIGATION

DATE: NOVEMBER 20, 2024

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(Or call: 1-800-632-4949)

SHEET NO.

C1.1



## NOTES:

APPARENT SOURCE OF TITLE: DB 576  
 PLAT REFERENCE: PB 48 PG 56  
 TAX PIN #9778-87-6328  
 AREA UNDER HEAVY LINE: 0.366 ACRES [15,955 Sq.Ft.], MORE OR LESS  
 AREA INCLUDES 0.047 AC. [2053 Sq.Ft.] ± LYING WITHIN  
 THE RIGHT-OF-WAY OF N. GREENSBORO ST.  
 THE RIGHT-OF-WAY OF N. GREENSBORO ST. [NCSR 172] WAS RE-ESTABLISHED  
 REFERENCE TO DB 337 PG 239 AND NCDOT HIGHWAY PLANS FOR PROJECT  
 #9.5070202.  
 ALL DEEDS AND MAPS NOTED HEREON WERE USED AS REFERENCES IN  
 PREPARING THIS SURVEY.

THIS SURVEY WAS PREPARED WITHOUT REFERENCE TO A CURRENT TITLE REPORT.  
 THERE MAY BE EASEMENTS, RIGHTS-OF-WAY, OR OTHER MATTERS AFFECTING  
 THIS PROPERTY WHICH ARE NOT SHOWN HEREON.  
 N.C. GRID COORDINATES AND ELEVATIONS SHOWN HEREON WERE ESTABLISHED BY  
 RAPID STATIC GPS METHODS USING SPECTRA PRECISION SP-80 GPS EQUIPMENT,  
 HOLDING LOCAL CORS STATIONS AS FIXED HORIZONTAL AND VERTICAL  
 REFERENCES. A WEIGHTED LEAST-SQUARES AVERAGE OF THREE INDEPENDENT  
 OBSERVATIONS WAS USED TO CALCULATE THE RESULTANT POSITIONS.

Date of Survey: A  
 Positional Accuracy: 0.03' Horiz. / 0.06' Vert.  
 Type of GPS field procedure: Rapid Static (VRS)  
 Date of Survey: 03 August, 2023  
 Datum/EPOCH: NAD 83 (2011)  
 Published/field-control used: Local CORS Stations  
 Geoid Model: Geoid 18  
 Combined grid factor: 0.99992176  
 Units: US Survey Feet

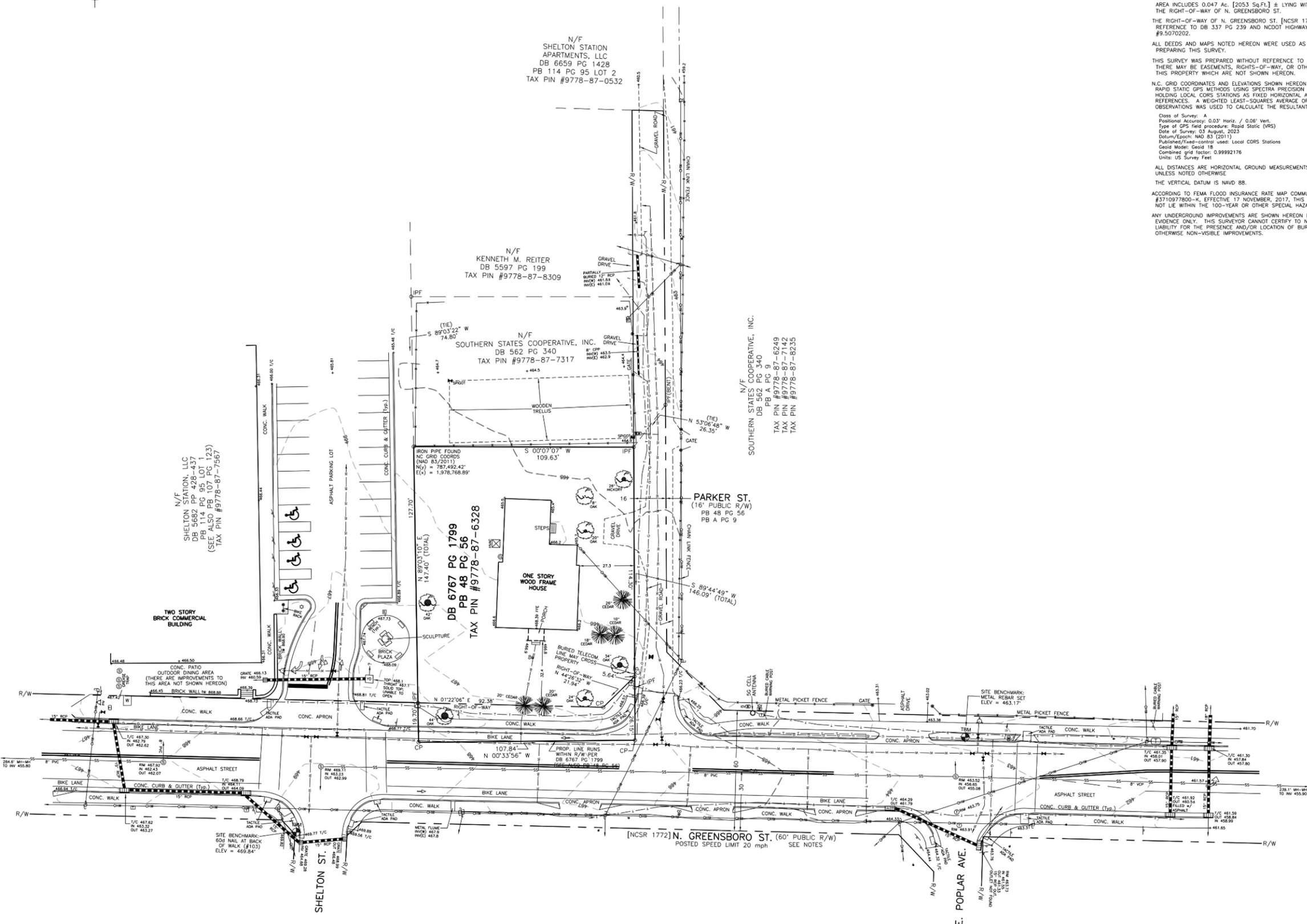
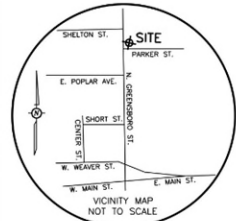
ALL DISTANCES ARE HORIZONTAL GROUND MEASUREMENTS  
 UNLESS NOTED OTHERWISE  
 THE VERTICAL DATUM IS NAVD 88.

ACCORDING TO FEMA FLOOD INSURANCE RATE MAP COMMUNITY PANEL  
 #3710977800-K, EFFECTIVE 17 NOVEMBER, 2017, THIS SITE DOES  
 NOT LIE WITHIN THE 100-YEAR OR OTHER SPECIAL HAZARD FLOOD ZONE.

ANY UNDERGROUND IMPROVEMENTS ARE SHOWN HEREON BASED ON SURFACE  
 EVIDENCE ONLY. THIS SURVEYOR CANNOT CERTIFY TO NOR ACCEPT  
 LIABILITY FOR THE PRESENCE AND/OR LOCATION OF BURIED OR  
 OTHERWISE NON-VISIBLE IMPROVEMENTS.

## LEGEND OF STANDARD SYMBOLS

UTILITY POLE	STORM WATER LINE
OUT ANCHOR	SS - SANITARY SEWER LINE
LIGHT POLE	OW - OVERHEAD WIRES
SPOT LIGHT	E - BURIED ELECTRIC LINE
ELECTRIC MANHOLE	G - BURIED GAS LINE
ELEC. SERVICE/ANCHOR	T - BURIED TELECOM. LINE
ELECTRICAL CABINET	W - BURIED WATER LINE
HEATING/AIR UNIT	M - METAL FENCE LINE
TELECOM. PEDestal	WO - WOODEN FENCE LINE
TELECOM. MANHOLE	TL - TREE LINE
TELECOM. VAULT	IPF - IRON PIPE FOUND
TRAFFIC SIGNAL CABINET	IRF - IRON REBAR FOUND
GAS VALVE	PMF - MAGNETIC NAIL FOUND
GAS METER	XF - CHISELED "X" FOUND
WATER VALVE	CMF - CONCRETE MONUMENT FOUND
WATER METER	IPS - IRON PIPE SET
IRRIGATION CONTROL VALVE	PKS - MAGNETIC NAIL SET
BACKFLOW PREVENTER	XS - CHISELED "X" SET
WATER VALVE MANHOLE	CP - COMPUTED POINT (NO CORNER MONUMENT FOUND OR SET)
FIRE HYDRANT	R/W - RIGHT OF WAY
POST INDICATOR VALVE	N/F - NOW OR FORMERLY
FIRE DEPT. CONNECTION	FFE - FINISHED FLOOR ELEVATION
WELL	H/C - HANDICAP
SANITARY MANHOLE	RCF - CONC. STORM PIPE
SANITARY CLEANOUT	CPP - CORRUGATED PLASTIC PIPE
CONCRETE CATCH BASIN	CMF - CORRUGATED METAL PIPE
CAST IRON CATCH BASIN	VCP - VITRIFIED CLAY PIPE
DROP INLET w/ GRATE	Ch - CHORD
CONCRETE YARD DRAIN	Typ - TYPICAL
STORM MANHOLE	T/C - TOP OF CURB
STORM PIPE END	EP - EDGE OF PAVEMENT
SIGN	TW - TOP OF WALL
MONITORING WELL	BS - BOTTOM OF WALL
MAIL BOX	TS - TOP OF STEPS
BOLLARD	BS - BOTTOM OF STEPS
	INV - INVERT ELEVATION
	C/L - CENTERLINE
	Temp. Bench Mark
	Survey Control Pt.



## SURVEYOR'S CERTIFICATE

I, MICHAEL A. MCKIBBIN, certify that this map was drawn under my supervision from an actual survey made under my supervision (best description recorded in book 8762, Page 1299, etc.), that the boundaries not surveyed are clearly indicated as drawn from information found in book 8762, Page 1299, etc., that the rate of precision as calculated is 1:30234, that this map meets the requirements of The Standards of Practice for Surveying in North Carolina (21 NCAC 56.16003), that topographic data is shown per an actual ground survey, and that the vertical accuracy of topographic data conforms to the United States National Map Accuracy Standards.

Witness my original signature, registration number and Seal this 17th day of August, 2023.

NOT A CERTIFIED DOCUMENT

SURVEYOR LICENSE NUMBER L-4519

UNLESS SHOWN, SCALES AND DIMENSIONS ARE A PRELIMINARY PUT NOT FOR RECORDING, SALES OR CONVEYANCES.



Land Surveyors  
 3309 B Edgfield Road  
 Greensboro, NC 27409  
 (336) 911-0566  
 FAX: 331-0558  
 WWW.SSMLAND.COM  
 TERRY@SSM.COM

ORIGINAL DOCUMENT SIGNED, SEALED, AND ISSUED BY MICHAEL A. MCKIBBIN, L.S., ON 17 AUGUST, 2023.  
 THIS MAP SHALL NOT BE CONSIDERED A CERTIFIED DOCUMENT.

BOUNDARY &  
 TOPOGRAPHIC SURVEY  
 400 N. GREENSBORO STREET  
 TAX PARCEL #9778-87-6328  
 TOWN OF CARRBORO, ORANGE COUNTY, N.C.  
 DATE OF LAST FIELD INSPECTION: 17 AUGUST, 2023  
 SCALE 1 INCH = 20 FEET  
 CONTOUR INTERVAL = ONE FOOT (NAVD 88)

DRAWING FILE NAME: 400GREENSBOROCARRBORO.DWG



REV.	DATE	DESCRIPTION
4	03/12/2025	SUNGATE AND OWASA COMMENTS

DATE: NOVEMBER 20, 2024  
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SHEET NO.  
C2.1

KEY KEYED NOTES -- DEMOLITION

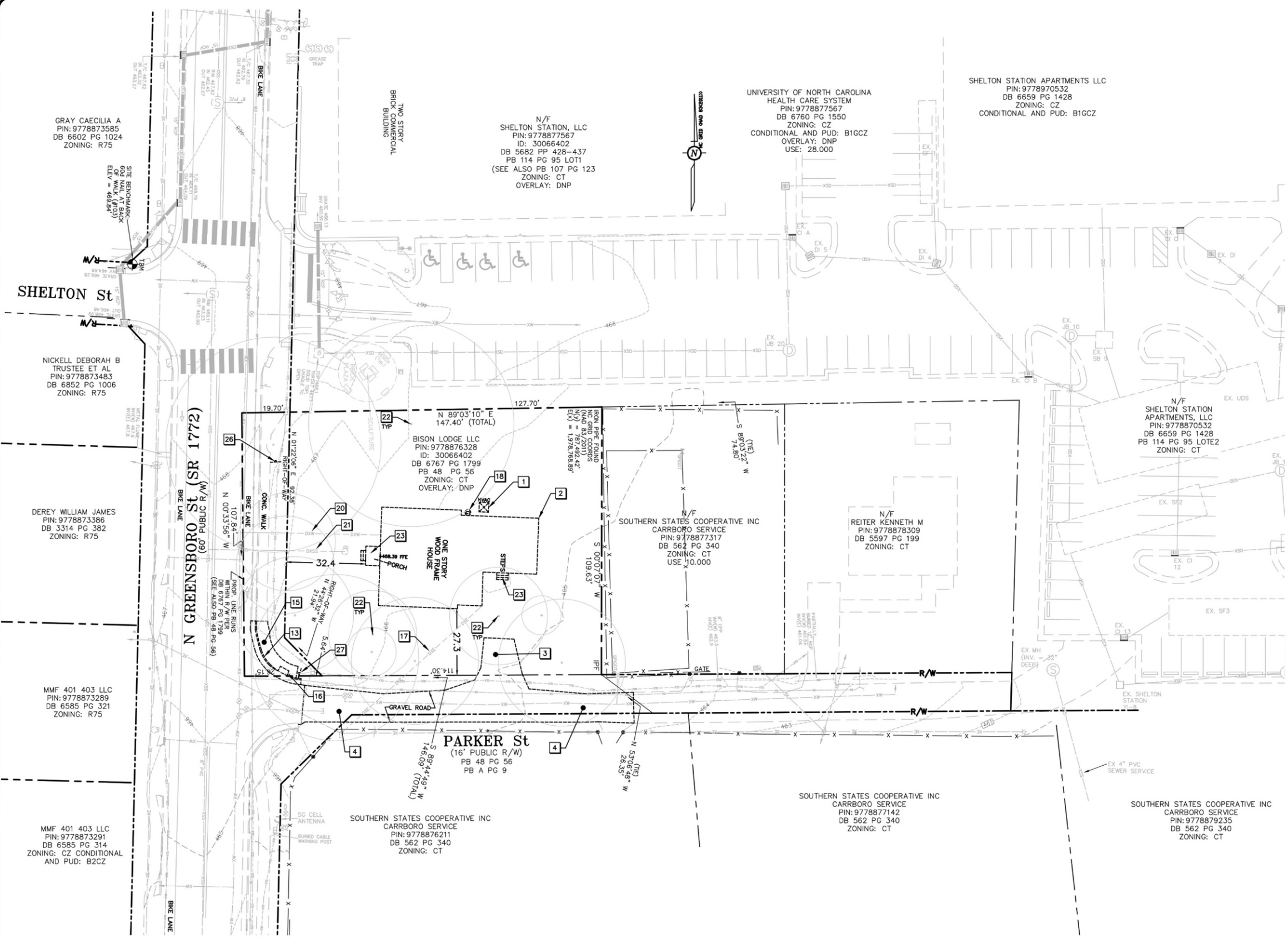
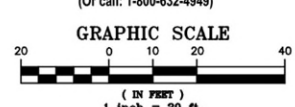
- 1 REMOVE EXISTING HVAC UNIT.
- 2 REMOVE STRUCTURE AND CONTENTS, INCLUDING ALL ABOVE-GROUND AND SUBSURFACE ELEMENTS, AND UTILITY CONNECTIONS. FOLLOW ALL APPLICABLE REGULATIONS AND REQUIREMENTS FOR REMOVAL, TRANSPORT, RECYCLING AND DISPOSAL. OBTAIN ALL PERMITS AS NEEDED.
- 3 REMOVE GRAVEL IN THIS AREA.
- 4 PORTION OF EXISTING GRAVEL ROAD TO BE PAVED PER TOWN STANDARDS. SEE SITE PLAN FOR EXTENTS.
- 13 REMOVE AND REPLACE CONCRETE CURB AND GUTTER. SEE SITE PLAN.
- 15 REMOVE WALKWAY AND REPLACE WITH EXPANDED WALKWAY. SEE SITE PLAN.
- 16 REMOVE AND REPLACE CURB RAMP. SEE SITE PLAN.
- 17 COORDINATE WITH ELECTRIC SERVICE PROVIDER FOR REMOVAL/RELOCATION OF ELECTRIC LINES AND APPURTENANCES. PROVIDE REASONABLE LEAD-TIMES AS NEEDED FOR WORK BY OTHERS.
- 18 COORDINATE WITH GAS SERVICE PROVIDER FOR REMOVAL/RELOCATION OF GAS LINES AND VALVES. PROVIDE REASONABLE LEAD-TIMES AS NEEDED FOR WORK BY OTHERS.
- 20 REMOVE SECTION OF WATERLINE AND APPURTENANCES AS REQUIRED FOR NEW IMPROVEMENTS. SEE UTILITY PLAN FOR NEW AND RELOCATED IMPROVEMENTS.
- 21 REMOVE SECTION OF SANITARY SEWER AS REQUIRED FOR NEW IMPROVEMENTS. SEE UTILITY PLAN FOR NEW AND RELOCATED IMPROVEMENTS. COV THE REMAINDER OF EXISTING SEWER LATERAL TO DOCUMENT ITS FITNESS FOR CONTINUED USE.
- 22 REMOVE TREE, STUMP AND ROOTS WITHIN 5 FEET ALL AROUND.
- 23 REMOVE STAIRS, RAILING AND LANDINGS.
- 26 RELOCATE EXISTING NO PARKING SIGN PER NCDOT AND TOWN STANDARDS.
- 27 RELOCATE EXISTING STOP AND ROAD SIGNS PER NCDOT AND TOWN STANDARDS.

NOTES:

EXISTING SITE CONDITIONS INFORMATION HAS BEEN TAKEN FROM VARIOUS SOURCES INCLUDING A FIELD SURVEY BY SACKS SURVEYING & MAPPING, P.C. ENTITLED BOUNDARY & TOPOGRAPHIC SURVEY 400 N. GREENSBORO STREET, DATED 17 AUGUST, 2023, PUBLICLY AVAILABLE GIS MAPPING, AND LIMITED FIELD OBSERVATIONS BY ENGINEER.  
INFORMATION ABOUT EXISTING UNDERGROUND FACILITIES AND SUBSURFACE CONDITIONS INDICATED ON THE CIVIL DRAWINGS IS NOT BASED ON AN EXHAUSTIVE INVESTIGATION; THEREFORE ENGINEER MAKES NO WARRANTY TO ANY PARTY REGARDING THEM. EXISTING UTILITY LOCATIONS SHOWN ARE CONSIDERED TO BE APPROXIMATE, AND ACTUAL UTILITIES AND CONDITIONS MAY DIFFER FROM THOSE INDICATED. DIFFERING UTILITIES OR CONDITIONS MAY BE ENCOUNTERED DURING THE COURSE OF PROJECT WORK AND MAY IMPACT PROJECT SCOPE AND TIME REQUIREMENTS.



Know what's below.  
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(Or call: 1-800-632-4949)







400 NORTH GREENSBORO  
CARRBORO, NORTH CAROLINA  
SITE LAYOUT  
PLAN

REV.	DATE	DESCRIPTION
3	02/27/2025	TOWN REVIEW COMMENTS

DATE: NOVEMBER 20, 2024  
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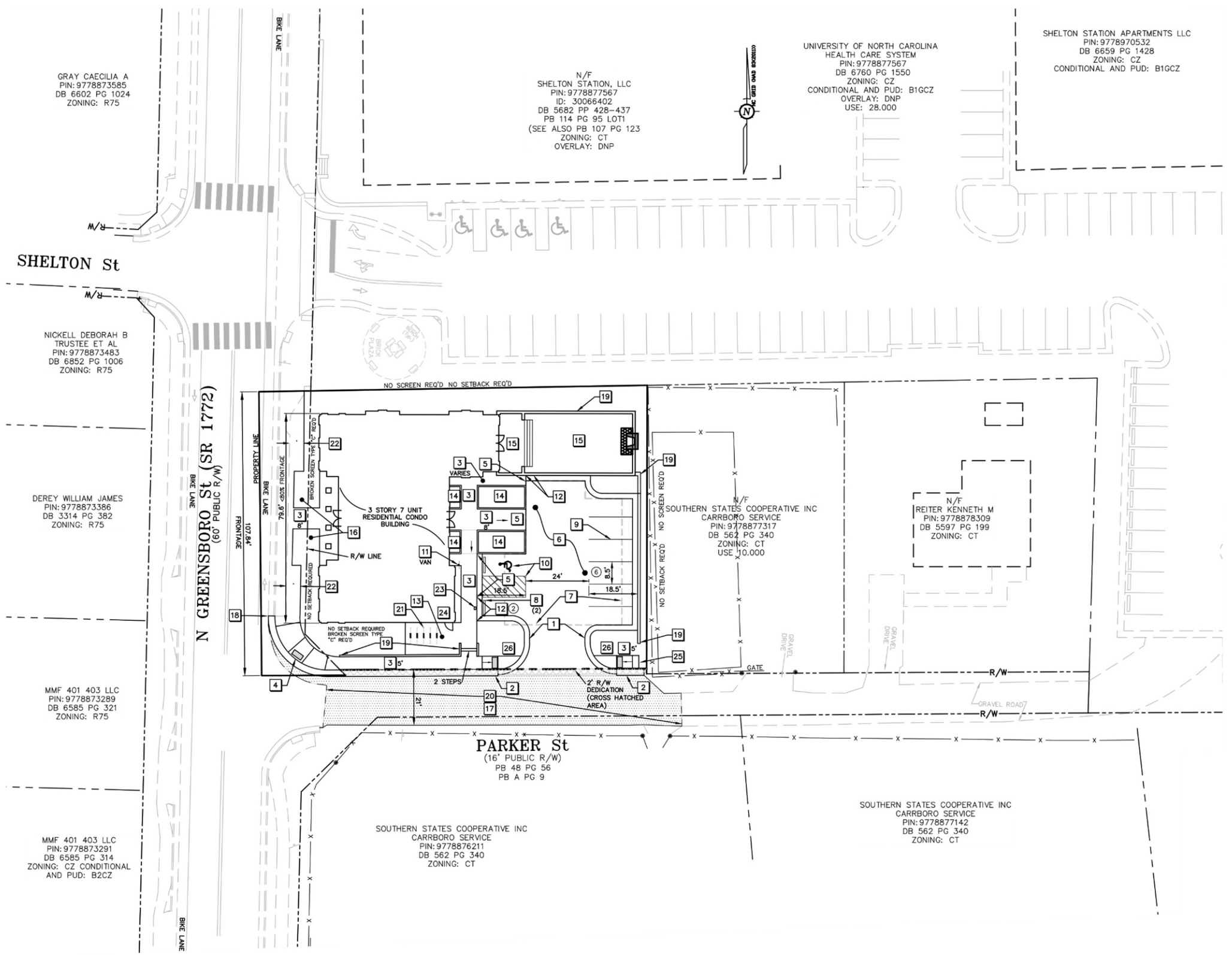
- KEY KEYED NOTES – SITE PLAN
- 24" CONCRETE CURB AND GUTTER.
  - 30" CONCRETE CURB AND GUTTER.
  - STANDARD CONCRETE WALK, 6' WIDE UNLESS OTHERWISE NOTED.
  - HANDICAP RAMP TYPE A.
  - SIDEWALK AND CURB FLUSH WITH PAVEMENT.
  - HEAVY DUTY PAVEMENT. USE FOR ALL PARKING SPACES AND DRIVE AISLES.
  - EXTENT OF STONE INFILTRATION SECTION. SEE GRADING AND STORM DRAINAGE PLAN AND DETAILS.
  - WHEEL STOP. SET 24" CLEAR FROM EDGE OF PARKING SPACE.
  - PAINTED PARKING SPACE STRIPING USING 4" WIDE WHITE STRIPES.
  - PAINTED UNIVERSAL HANDICAPPED SYMBOL AND HANDICAPPED ACCESS AISLE STRIPING. -VAN ACCESSIBLE SPACE
  - HANDICAPPED PARKING SIGNS ON POST. -VAN ACCESSIBLE SPACE
  - TRANSITION CURB TO FLUSH CONDITION.
  - 4" THICK CONCRETE BICYCLE PARKING PAD WITH BIKE RACKS.
  - PLANTERS. SEE ARCHITECT'S PLANS.
  - GARDEN WALLS, STEPS, LANDINGS AND CHIMNEY BY ARCHITECT, SEE ARCHITECT'S PLANS.
  - REDUCED SIDEWALK EXPANSION TO 6'-4" WIDTH FOR ENLARGED PLANTER SPACE
  - TIE IN TO EXISTING PAVEMENT.
  - TIE IN TO EXISTING CURB AND GUTTER OR SIDEWALK.
  - RETAINING WALL. DESIGN BY OTHERS. SEE GRADING PLAN FOR REQUIRED FINISHED GRADE ELEVATIONS AT TOP AND BOTTOM OF WALL.
  - NEW PAVEMENT TO REPLACE AND EXPAND EXISTING GRAVEL ROAD IN ACCORDANCE WITH NCDOT AND TOWN PAVING STANDARD. TYPICAL PAVING SECTION TO BE THE EQUIVALENT OF 8" ABC STONE AND 2" OF S9.5B UNLESS OTHERWISE SPECIFIED BY CARRBORO PUBLIC WORKS DIRECTOR.
  - 5 BIKE RACKS FOR 10 BIKE SPACES.
  - TIE NEW SIDEWALK EXPANSION TO EXISTING SIDEWALK FOR 10' WIDTH.
  - ELECTRIC CAR CHARGER. SEE ELECTRICAL PLANS FOR CONDUIT AND CABLING REQUIREMENTS
  - UTILITY ROOM.
  - STOP NEW SIDEWALK 3' FROM ADJOINING PROPERTY LINE TO AVOID ENCROACHMENT ON ADJOINING PROPERTY. PROVIDE A CONSTRUCTION EASEMENT TO ALLOW FUTURE ENCROACHMENT FOR CONTINUATION OF SIDEWALK BY OTHERS.
  - HANDICAP RAMP TYPE D.

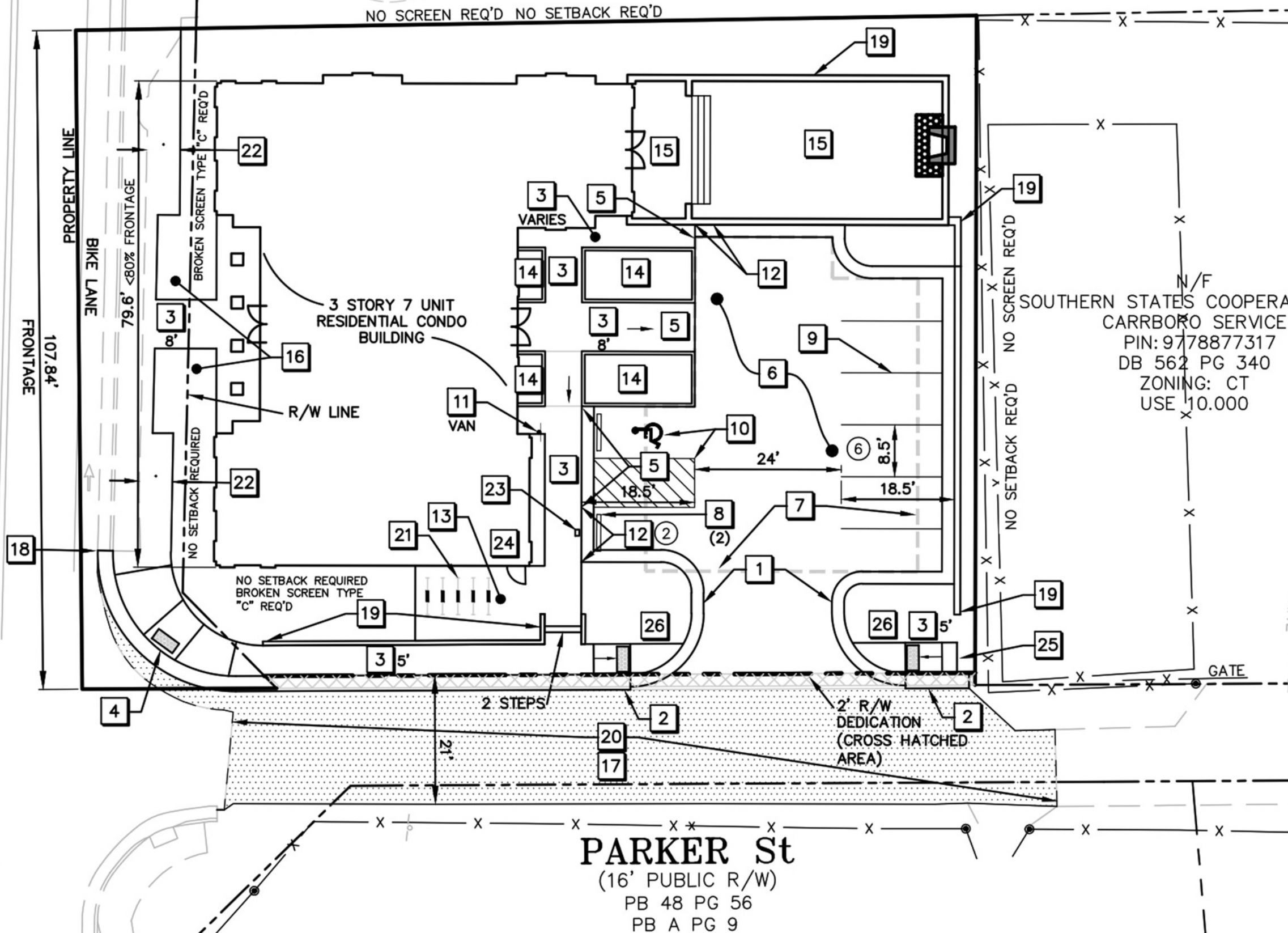
ORANGE COUNTY  
SOLID WASTE:

- ALL EXISTING STRUCTURES 500 SQUARE FEET AND LARGER SHALL BE ASSESSED PRIOR TO THE ISSUANCE OF A DEMOLITION PERMIT TO ENSURE COMPLIANCE WITH THE COUNTY'S REGULATED RECYCLABLE MATERIALS ORDINANCE (RRMO) AND TO ASSESS THE POTENTIAL FOR DECONSTRUCTION AND/OR THE REUSE OF SALVAGEABLE MATERIALS. CONTACT THE ORANGE COUNTY SW ENFORCEMENT OFFICER AT 315-308-2788 TO ARRANGE FOR THE ASSESSMENT.
- PURSUANT TO THE COUNTY'S RRMO, CLEAN WOOD WASTE, SCRAP METAL, AND CORRUGATED CARDBOARD PRESENT IN CONSTRUCTION OR DEMOLITION WASTE MUST BE RECYCLED.
- PURSUANT TO THE COUNTY'S RRMO, ALL HAULERS OF MIXED CONSTRUCTION AND DEMOLITION WASTE WHICH INCLUDES ANY REGULATED RECYCLABLE MATERIALS SHALL BE LICENSED BY ORANGE COUNTY.
- PRIOR TO ANY DEMOLITION OR CONSTRUCTION ACTIVITY ON THE SITE, THE APPLICANT SHALL HOLD A PRE-DEMOLITION/PRE-CONSTRUCTION CONFERENCE WITH SOLID WASTE STAFF. THIS MAY BE THE SAME PRE-CONSTRUCTION MEETING HELD WITH OTHER DEVELOPMENT/ENFORCEMENT OFFICIALS.
- THE PRESENCE IF ANY ASBESTOS CONTAINING MATERIALS (ACM) AND/OR OTHER HAZARDOUS MATERIALS SHALL BE HANDLED IN ACCORDANCE WITH ANY AND ALL LOCAL, STATE, AND FEDERAL REGULATIONS AND GUIDELINES.

NCDOT NOTES:

- WORK WITHIN THE R/W FOR SIDEWALK IMPROVEMENTS, NEW CURB AND GUTTER AND PAVING SHOWN SHALL REQUIRE NCDOT ENCROACHMENT AGREEMENTS.



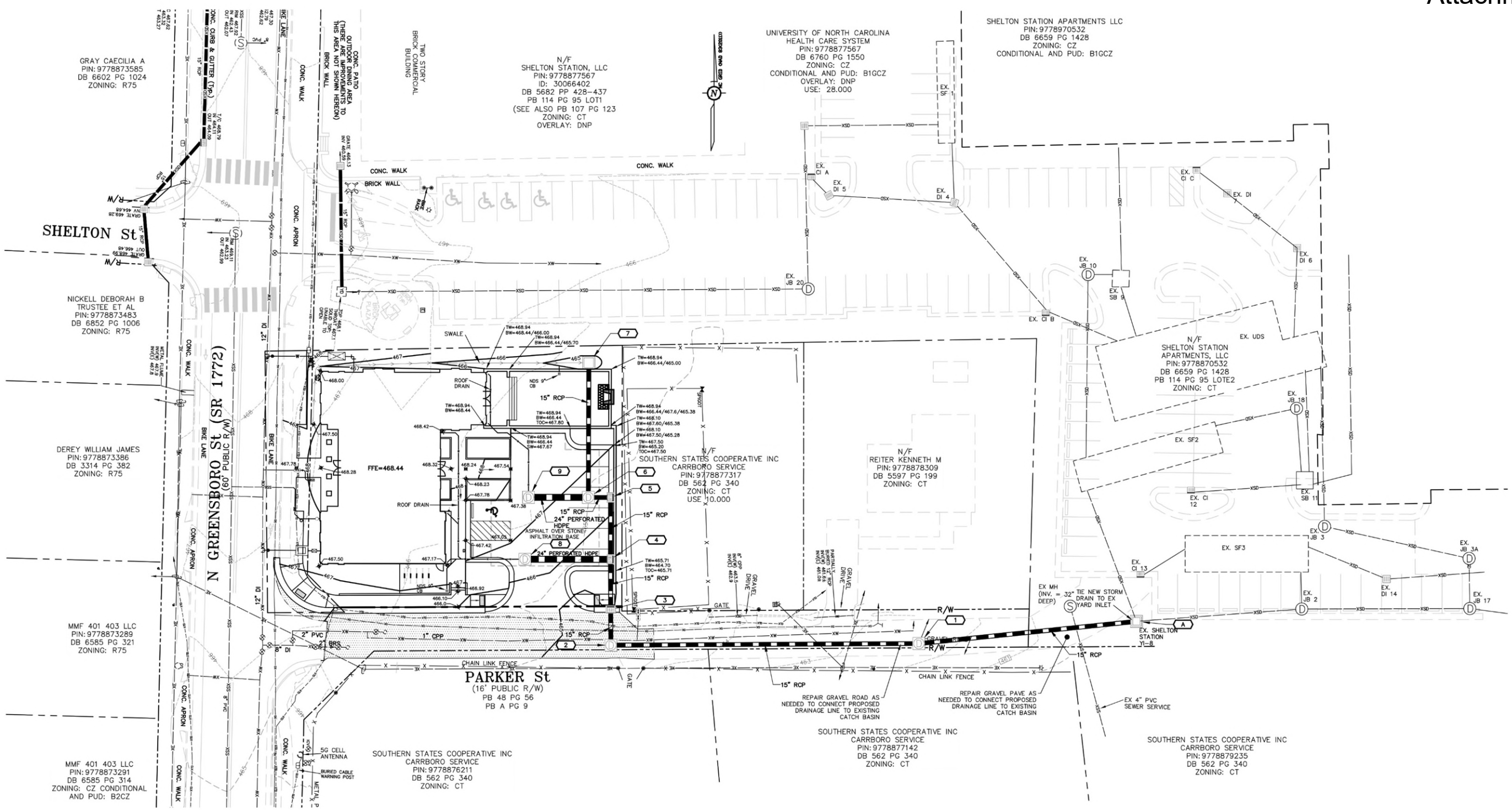




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2	02/26/2025	ASPHALT PAVEMENT SWIM UPDATE
3	02/27/2025	TOWN REVIEW COMMENTS
4	03/12/2025	SUNGATE AND OWSA COMMENTS
5	04/01/2025	FIRE SPRINKLER, DOMESTIC WATER & IRRIGATION

DATE: NOVEMBER 20, 2024  
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SHEET NO.  
**C4.1**



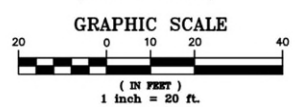
STORM DRAINAGE SCHEDULE								
Note: See Storm Drainage Specifications for more information.								
Structure Number	Structure Type	Structure Rim Elevation	Structure Inverts IN (or FES Invert Out)	Structure Invert OUT (or FES Invert In)	To Structure	Pipe Length Out	Pipe Slope %	Pipe Diameter and Material
A	EXISTING CATCH BASIN	458.90	452.45 (from 1)					
1	NCDOT 840.34	462.42	457.67 (from 2)	457.57	A	90.33'	5.68%	15" RCP
2	NCDOT 840.34	464.66	459.05 (from 3)	458.94	1	126.98'	1.00%	15" RCP
3	NCDOT 840.02	465.20	459.30 (from 4)	459.20	2	14.78'	1.00%	15" RCP
4	NCDOT 840.02	465.71	461.46 (from 5) 461.46 (from 8)	460.88	3	20.67'	7.67%	15" RCP
5	NCDOT 840.02	466.25	461.82 (from 6)	461.72	4	25.54'	1.00%	15" RCP
6	NCDOT 840.31	466.60	462.11 (from 7) 462.11 (from 9)	462.01	5	9.20'	2.07%	15" RCP
7	NCDOT 840.04	464.60		462.67	6	55.59'	1.00%	15" RCP
8	NCDOT 840.31	466.50		461.64	4	35.25'	0.50%	24" PERFORATED HDPE
9	NCDOT 840.31	467.30		462.23	6	24.68'	0.50%	24" PERFORATED HDPE

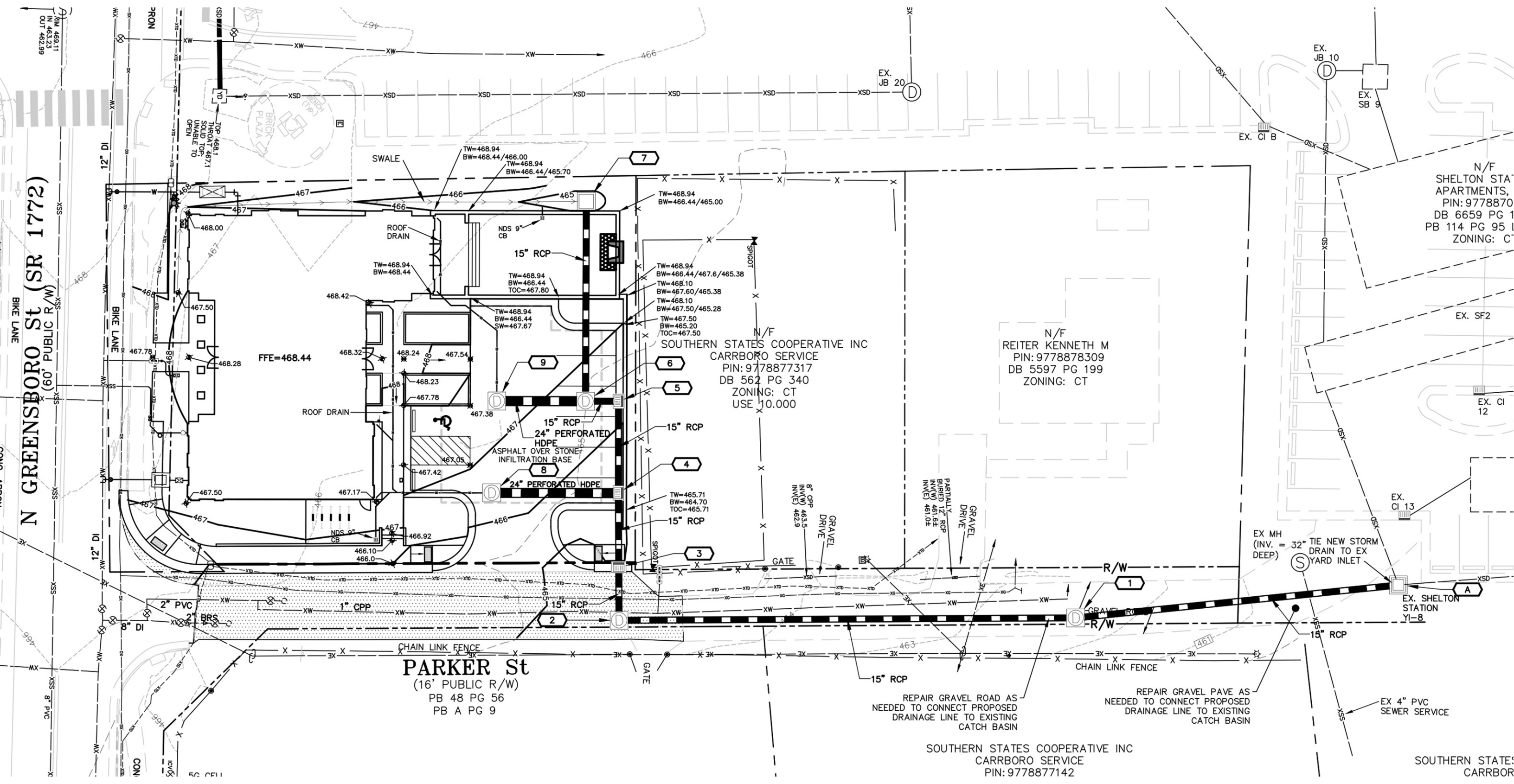
**SCM NOTES:**

- SCM's MUST BE CERTIFIED BY THE ENGINEER OF RECORD AS CONSTRUCTED PER THE APPROVED CONSTRUCTION PLANS PRIOR TO ISSUANCE OF THE CERTIFICATE OF OCCUPANCY.
- AS-BUILT DRAWINGS WILL BE SUBMITTED TO THE TOWN OF CARRBORO.



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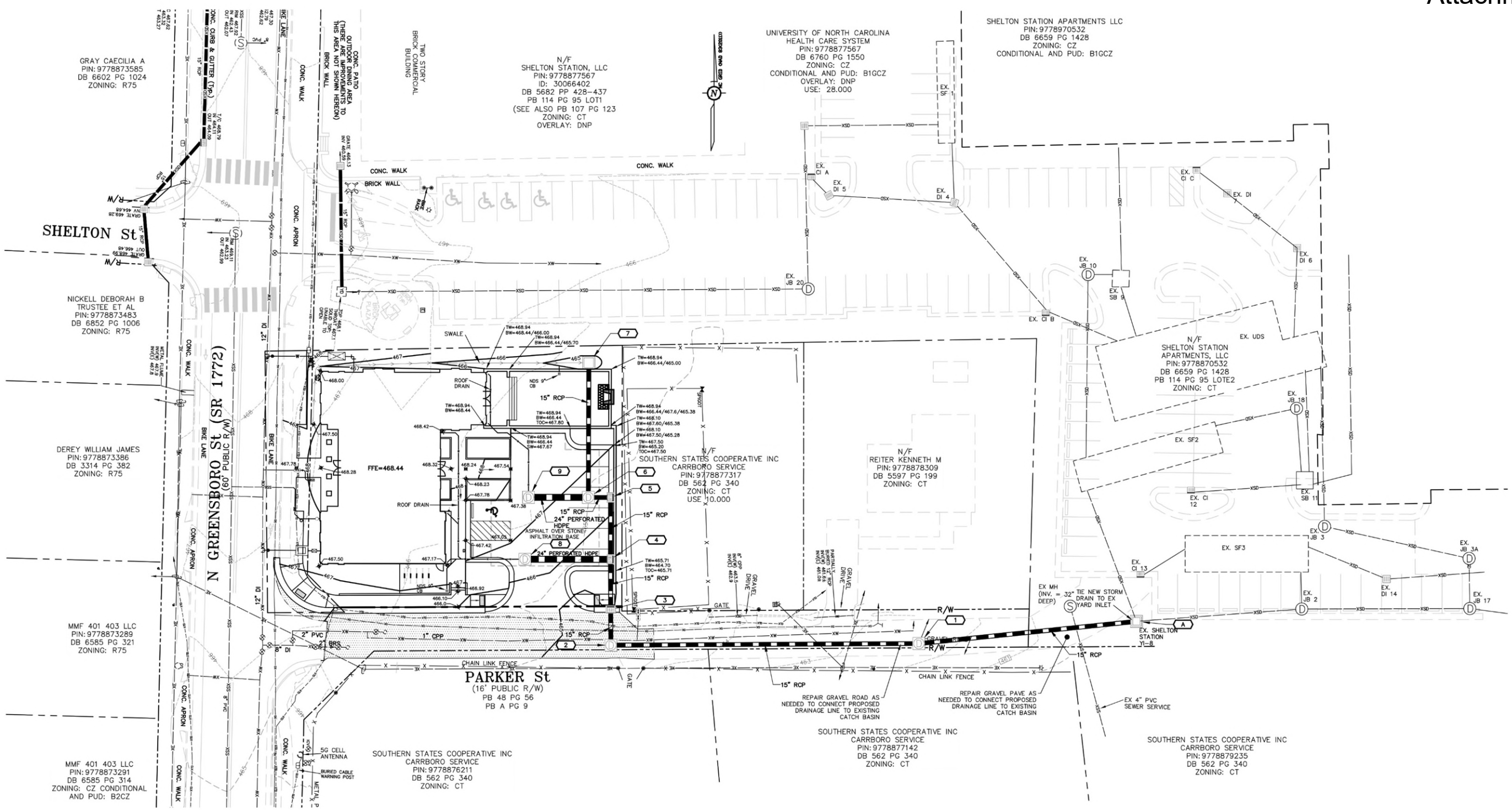




REV.	DATE	DESCRIPTION
1	02/06/2025	PERMEABLE PAVEMENT SWIM UPDATE
2	02/26/2025	ASPHALT PAVEMENT SWIM UPDATE
3	02/27/2025	TOWN REVIEW COMMENTS
4	03/12/2025	SUNGATE AND OWASA COMMENTS
5	04/01/2025	FIRE SPRINKLER, DOMESTIC WATER & IRRIGATION

DATE: NOVEMBER 20, 2024  
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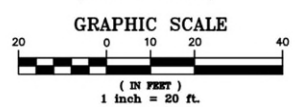
STORM DRAINAGE SCHEDULE								
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- AS-BUILT DRAWINGS WILL BE SUBMITTED TO THE TOWN OF CARRBORO.



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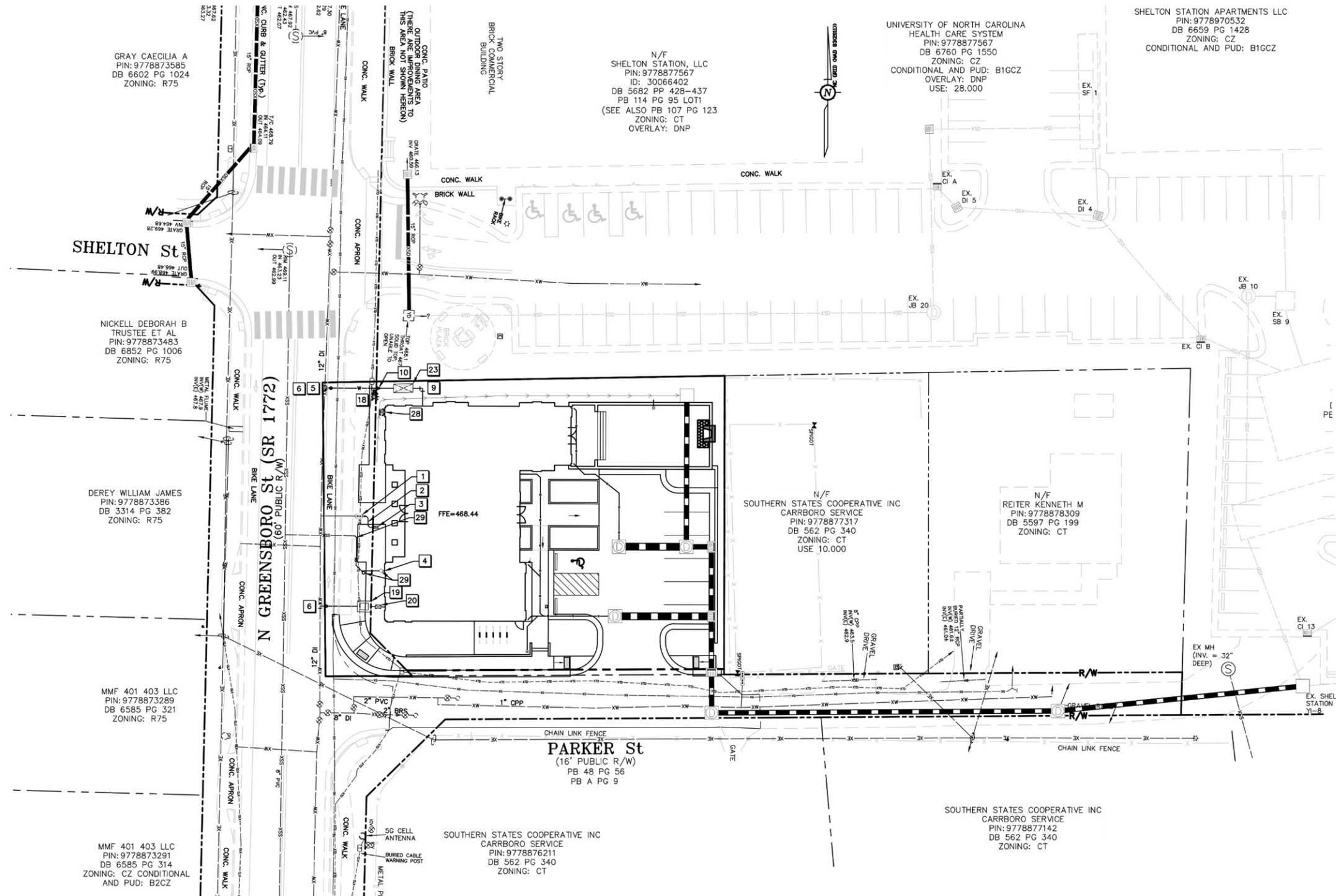




REV.	DATE	DESCRIPTION
3	02/27/2025	TOWN REVIEW COMMENTS
4	03/12/2025	SURGATE AND OWASA COMMENTS
5	04/01/2025	FIRE SPRINKLER, DOMESTIC WATER & IRRIGATION

DATE: NOVEMBER 20, 2024  
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SHEET NO.  
**C6.1**



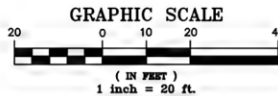
- KEY**
- EX. WATER METER TO REMAIN FOR FUTURE IRRIGATION USE.
  - FUTURE WATER SERVICE TO FUTURE IRRIGATION BACKFLOW PREVENTER.
  - FUTURE BACKFLOW PREVENTER DEVICE FOR FUTURE IRRIGATION USE IN AN INSULATED ABOVE-GROUND ENCLOSURE. DEVICE SHALL BE A 1" REDUCED PRESSURE PRINCIPLE LEAD-FREE ASSEMBLY. ENCLOSURE WILL ACCOMMODATE DEVICE SIZE, CONFIGURATION, CLEARANCE, ACCESS, AND MAINTENANCE REQUIREMENTS IN ACCORDANCE WITH OWASA STANDARDS. (SEE DETAILS). FUTURE EXTENSION OF ELECTRIC SERVICE TO BOX WITH GFCI WILL BE PROVIDED IN ACCORDANCE WITH OWASA STANDARDS.
  - RE-ROUTED 4" PVC SEWER LATERAL.
  - CONNECT TO EXISTING WATERLINE USING 12" X 8" TAPPING SLEEVE AND 8" TAPPING VALVE. WITH THRUST RESTRAINT. VERIFY EXISTING PIPE SIZE & MATERIAL, AND PROVIDE SUITABLE SLEEVE AND EQUIPMENT FOR THE TAP. INSTALL SLEEVE WITH AT LEAST 12" SEPARATION FROM ANY JOINT, BELL, FITTING, OR TAP. EXTEND 8" DI WATER LINE TO REDUCER AND 4" DI WATER LINE BEYOND REDUCER.
  - PAVEMENT CUT AND PATCH AS NEEDED FOR UTILITY LINE INSTALLATION. CONFORM TO ALL RIGHT-OF-WAY ENCROACHMENT CONDITIONS FOR THE WORK.
  - 22.5 DEGREE MJ BEND MATCHING PIPE SIZE. PROVIDE THRUST RESTRAINT AS REQUIRED.
  - 45 DEGREE MJ BEND MATCHING PIPE SIZE. PROVIDE THRUST RESTRAINT AS REQUIRED.
  - 90 DEGREE MJ BEND MATCHING PIPE SIZE. PROVIDE THRUST RESTRAINT AS REQUIRED.
  - 8" X 4" MJ REDUCER FITTING MATCHING PIPE SIZES. PROVIDE THRUST RESTRAINT AS REQUIRED.
  - 8" X 6" MJ HYDRANT TEE, 6" GATE VALVE WITH VALVE BOX AND CONCRETE COLLAR, AND FIRE HYDRANT ASSEMBLY IN ACCORDANCE WITH OWASA STANDARDS.
  - 2" WATER SERVICE TAP, 2" GATE VALVE, 2" HARD COPPER SERVICE LINE TO METER, AND 1" METER ASSEMBLY IN 2" METER BOX FOR DOMESTIC WATER SERVICE. PROVIDE ALL COMPONENTS WITH LEAD-FREE RATING.
  - BACKFLOW PREVENTER DEVICE FOR DOMESTIC WATER SERVICE INSTALLED IN AN INSULATED ABOVE-GROUND ENCLOSURE. DEVICE SHALL BE A 1" REDUCED PRESSURE PRINCIPLE LEAD-FREE ASSEMBLY. PROVIDE AN ENCLOSURE THAT WILL ACCOMMODATE DEVICE SIZE, CONFIGURATION, CLEARANCE, ACCESS, AND MAINTENANCE REQUIREMENTS IN ACCORDANCE WITH OWASA STANDARDS. (SEE DETAILS). RUN ELECTRIC SERVICE TO BOX WITH GFCI IN ACCORDANCE WITH OWASA STANDARDS.
  - BACKFLOW PREVENTER DEVICE FOR FIRE SPRINKLER SYSTEM INSTALLED IN AN INSULATED ABOVE-GROUND ENCLOSURE. DEVICE SHALL BE A 4" REDUCED PRESSURE PRINCIPLE LEAD-FREE ASSEMBLY. PROVIDE AN ENCLOSURE THAT WILL ACCOMMODATE DEVICE SIZE, CONFIGURATION, CLEARANCE, ACCESS, AND MAINTENANCE REQUIREMENTS IN ACCORDANCE WITH OWASA STANDARDS. (SEE DETAILS). RUN ELECTRIC SERVICE TO BOX WITH GFCI IN ACCORDANCE WITH OWASA STANDARDS.
  - NOT USED.
  - FIRE DEPARTMENT CONNECTION INSTALLED ON EXTERIOR BUILDING WALL, WITH SIGNAGE AS REQUIRED BY LOCAL FIRE CODE OFFICIAL. VERIFY LOCATIONS WITH ARCHITECT AND FIRE CODE OFFICIAL.
  - CONNECT TO EXISTING 4" PVC SEWER LATERAL PIPE AND ROUTE NEW 4" PVC SEWER LATERAL PIPE AS SHOWN. INSTALL 4" PVC SANITARY SEWER CLEANOUT ASSEMBLIES AS SHOWN. CCTV THE REMAINDER OF EXISTING SEWER LATERAL TO DOCUMENT ITS FITNESS FOR CONTINUED USE.

**NCDOT NOTES:**

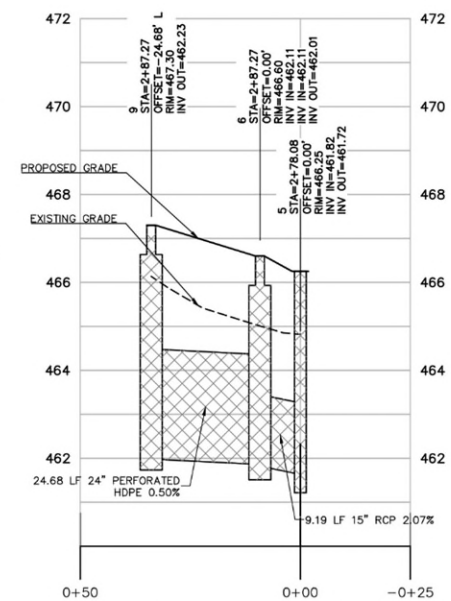
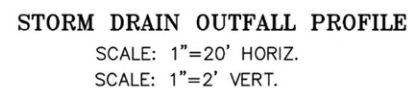
- WORK WITHIN THE R/W FOR FOR WATER EXTENSION SHOWN, AND ASSOCIATED CUTTING AND PATCHING, SHALL REQUIRE NCDOT ENCROACHMENT AGREEMENTS.



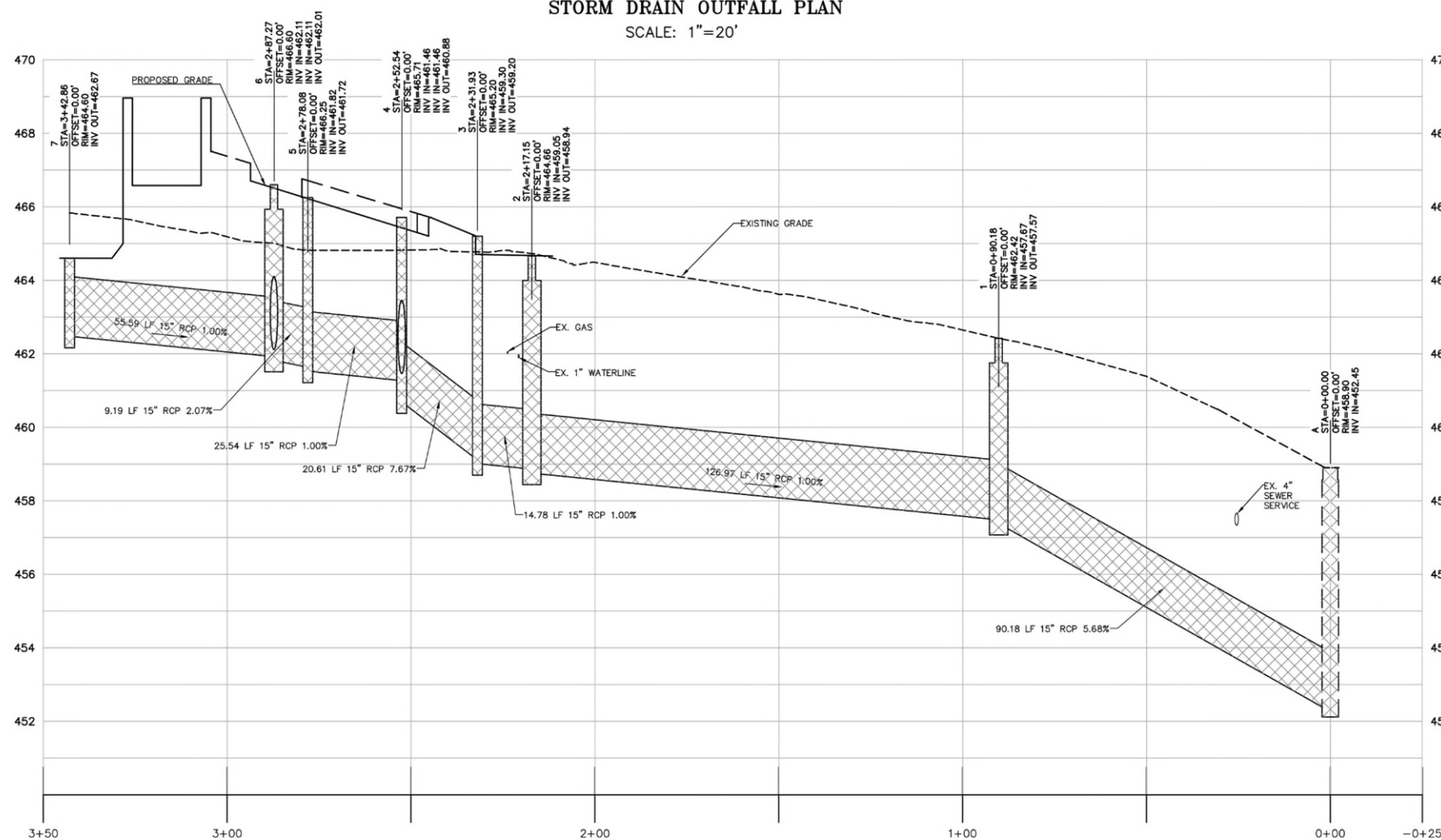
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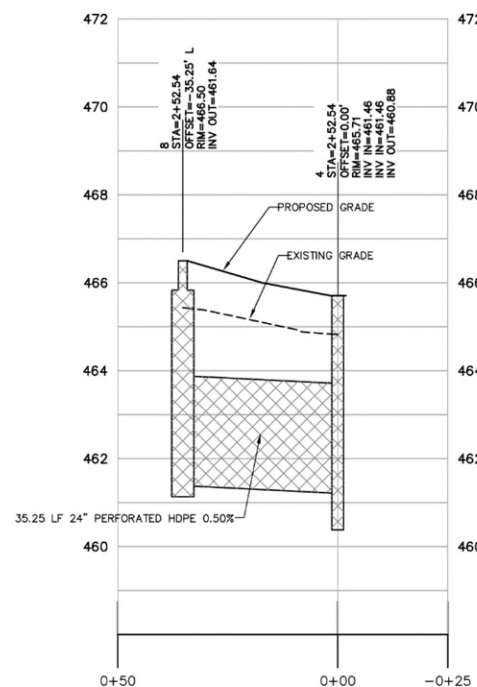




STORM DRAIN OUTFALL PROFILE  
(STRUCTURES 5, 6, AND 9)  
SCALE: 1"=20' HORIZ.  
SCALE: 1"=2' VERT.



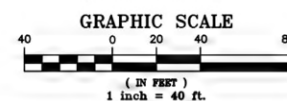
**STORM DRAIN OUTFALL PROFILE**  
**(STRUCTURES 4 AND 8)**  
SCALE: 1"=20' HORIZ.  
SCALE: 1"=2' VERT.



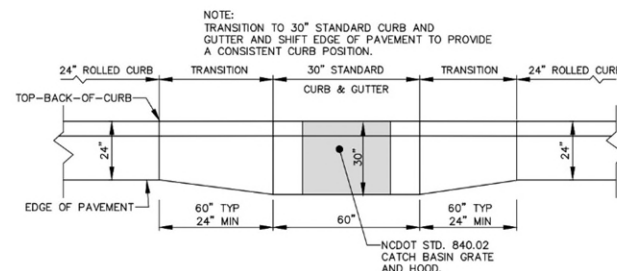
**STORM DRAIN OUTFALL PROFILE**  
**(STRUCTURES 4 AND 8)**  
SCALE: 1"=20' HORIZ.  
SCALE: 1"=2' VERT.



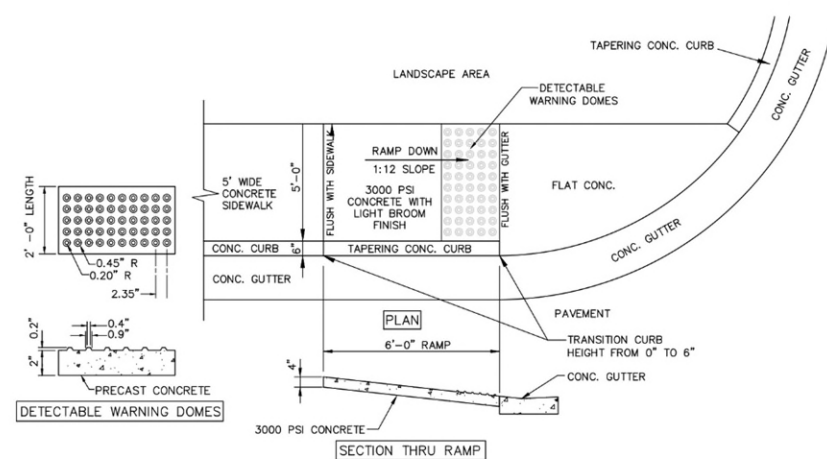
Know what's **below**.  
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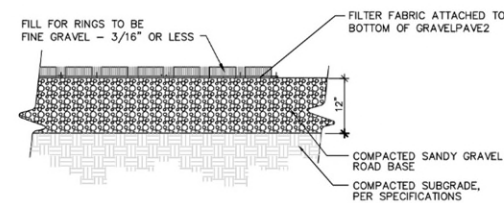




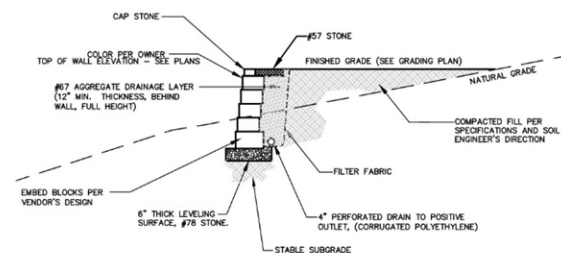
CURB TRANSITION AT CATCH BASINS  
MAINTAIN CURB  
NTS



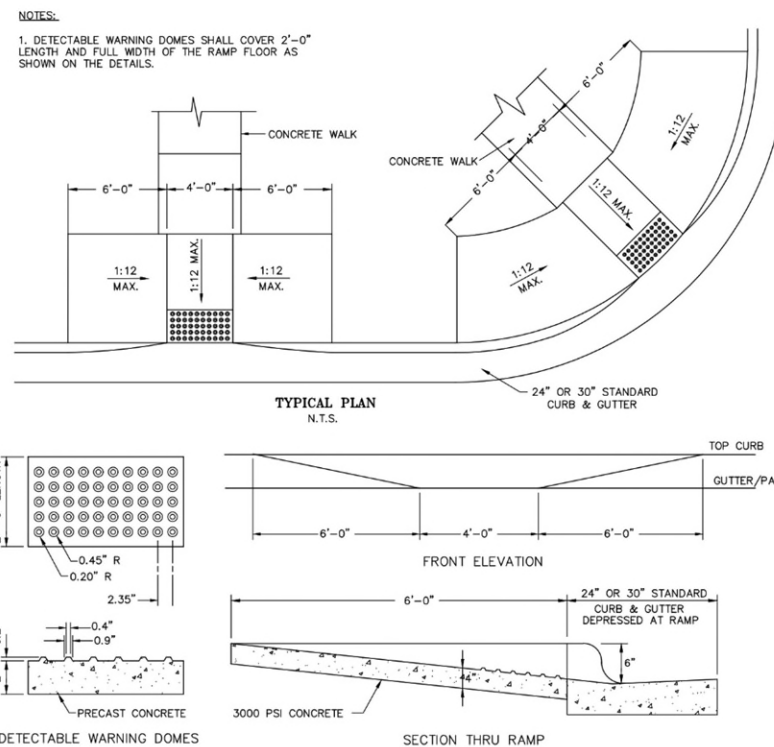
TYPE 'D' HANDICAP RAMP  
NTS



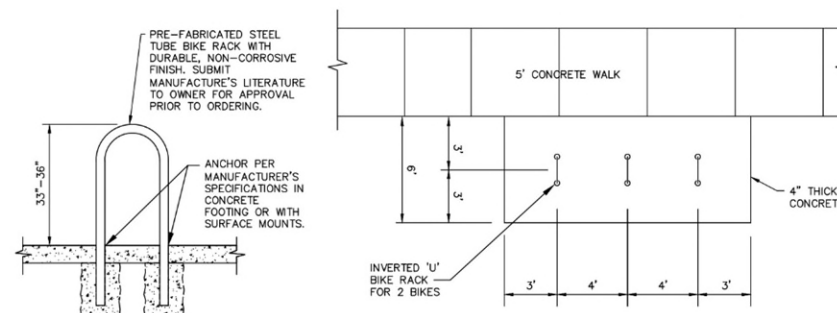
GRAVELPAVE<sup>2</sup> DETAIL  
(NTS)



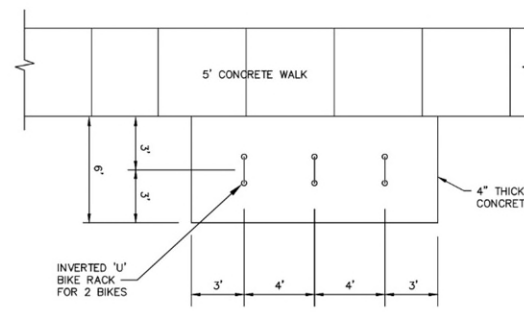
MODULAR BLOCK RETAINING WALL - SCHEMATIC SECTION



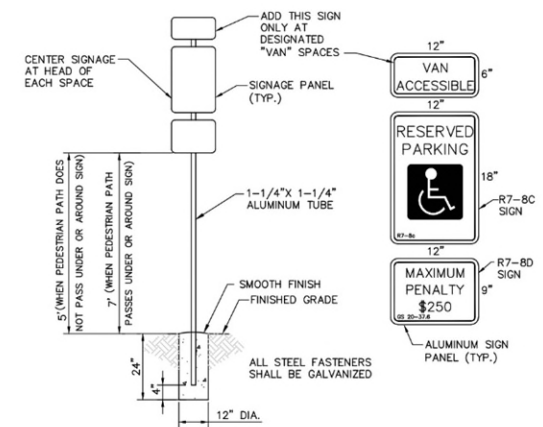
TYPE 'A' HANDICAP RAMP  
N.T.S.



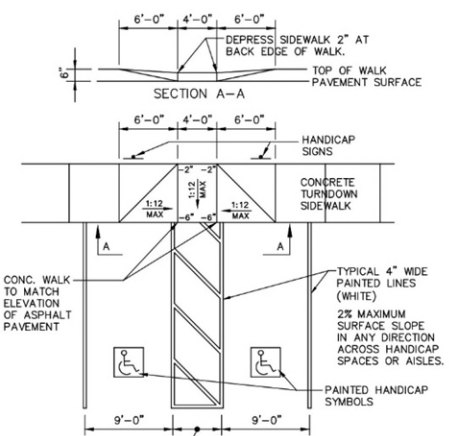
**INVERTED 'U' BIKE RACK**  
PROVIDES PARKING FOR TWO BICYCLES  
NTS



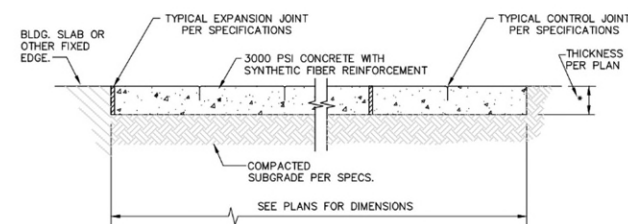
TYPICAL BICYCLE PARKING PLAN  
NTS



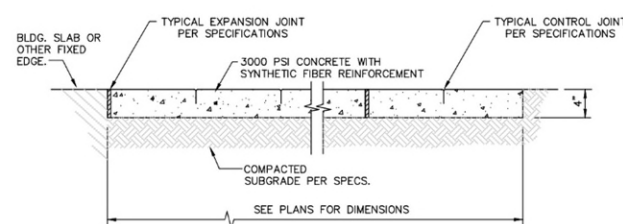
## HANDICAP PARKING SIGNAGE



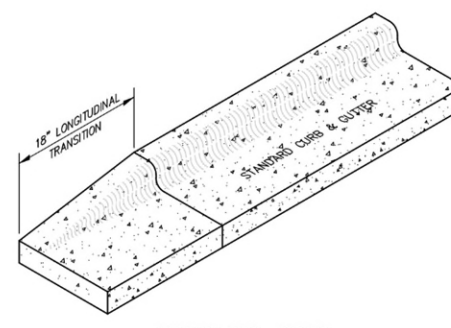
HANDICAP PARKING AND RAMP  
NTS



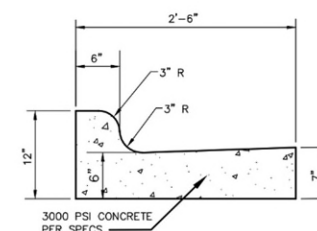
CONCRETE PAD DETAIL—TYPE 1



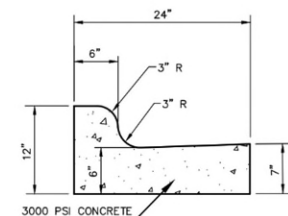
TYPICAL SIDEWALK DETAIL



STANDARD CURB  
LONGITUDINAL TRANSITION  
NTS



STANDARD 30"  
CURB & GUTTER SECTION  
NTS



STANDARD 24"  
CURB & GUTTER SECTION  
NTS





400 NORTH GREENSBORO  
CARRBORO, NORTH CAROLINA  
DETAILS

REV.	DATE	DESCRIPTION
2	02/26/2025	ASPHALT PAVEMENT SWM UPDATE
3	02/27/2025	TOWN REVIEW COMMENTS
4	03/12/2025	SUNDATE AND OWSA COMMENTS

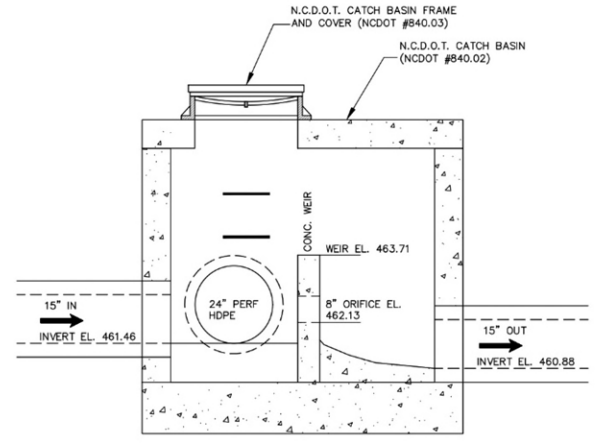
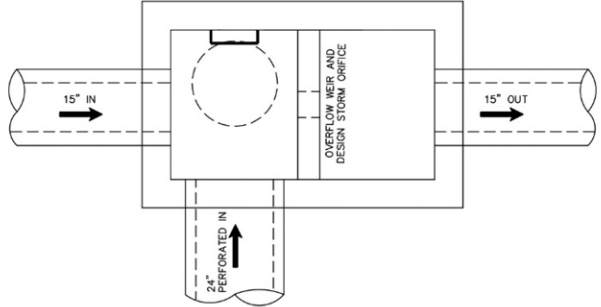
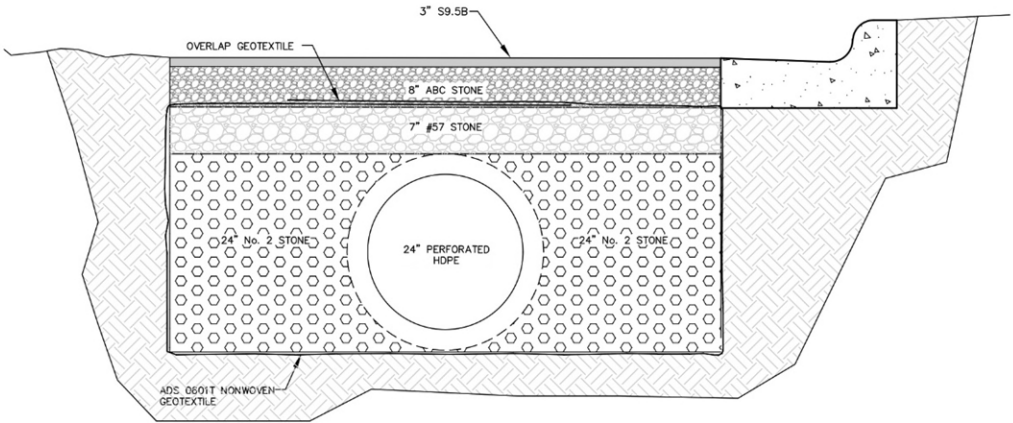
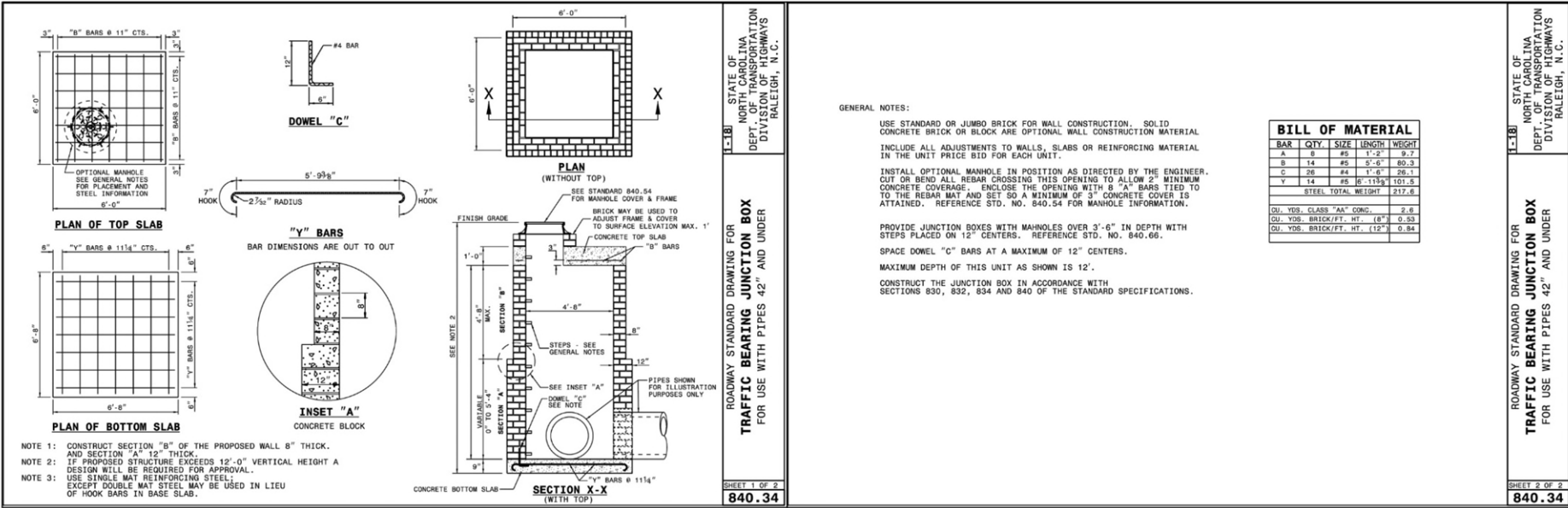
DATE: NOVEMBER 20, 2024

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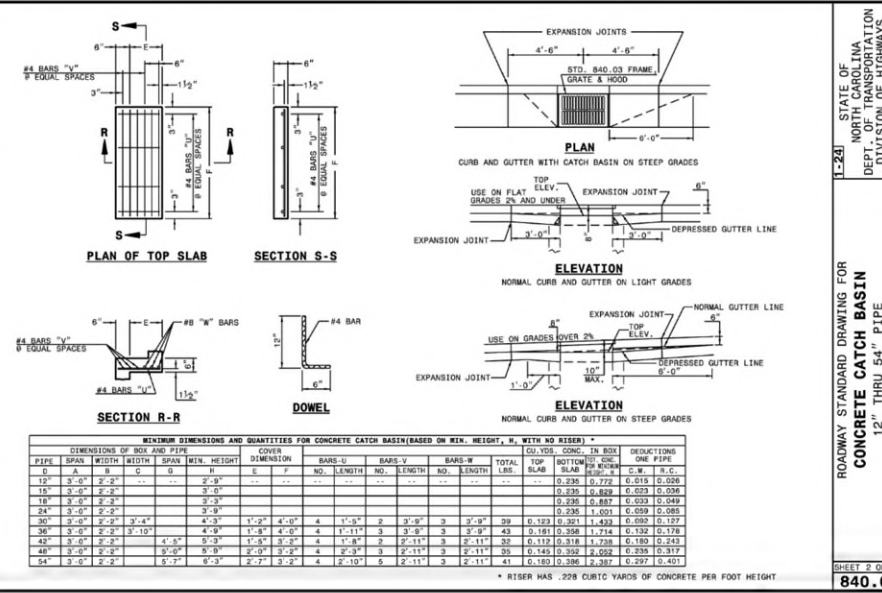
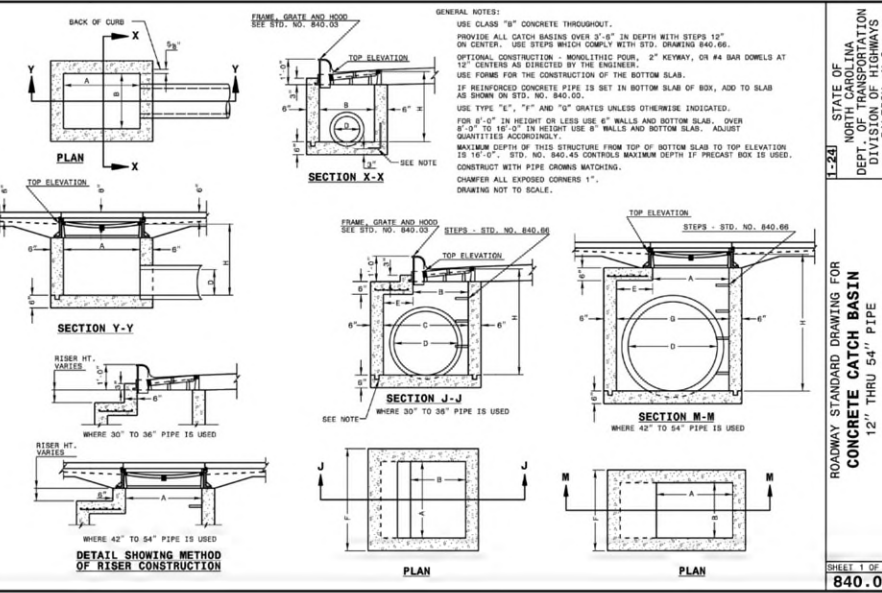
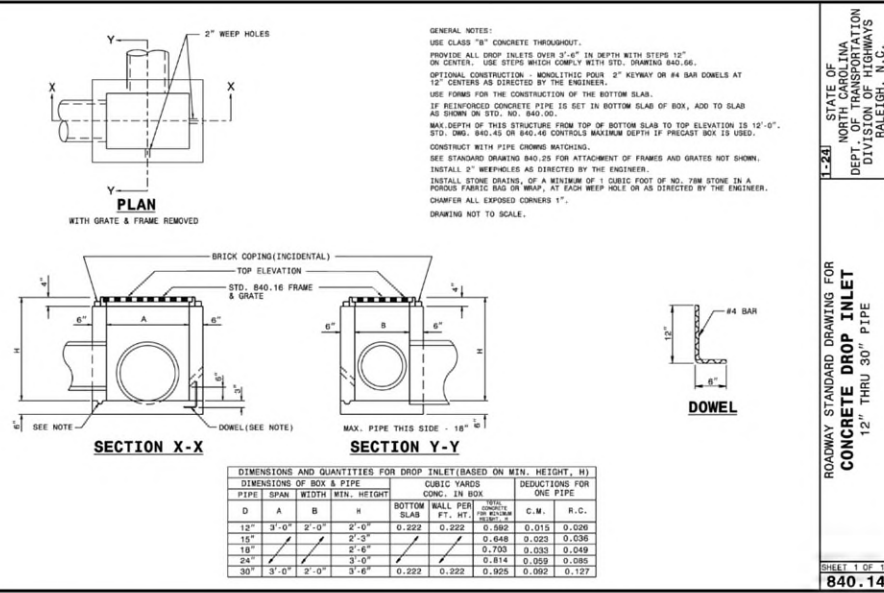
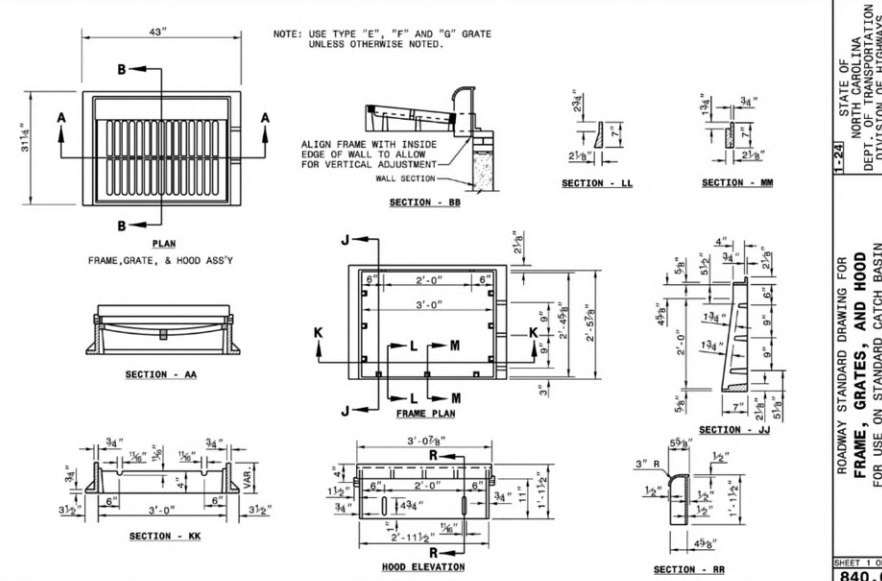
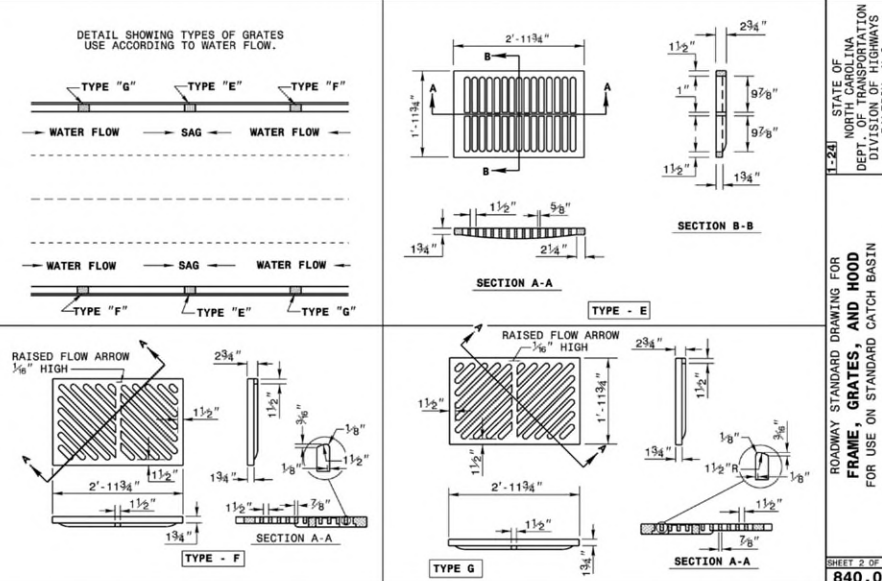
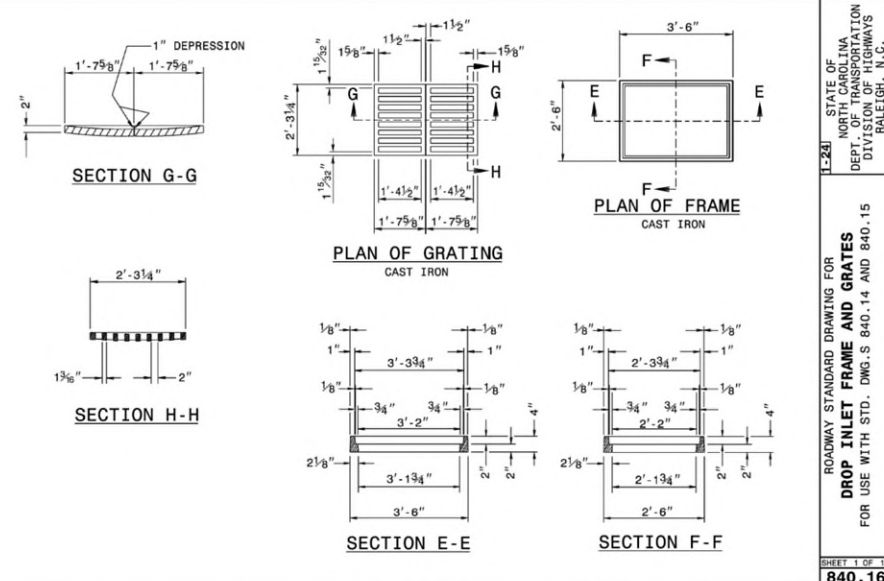
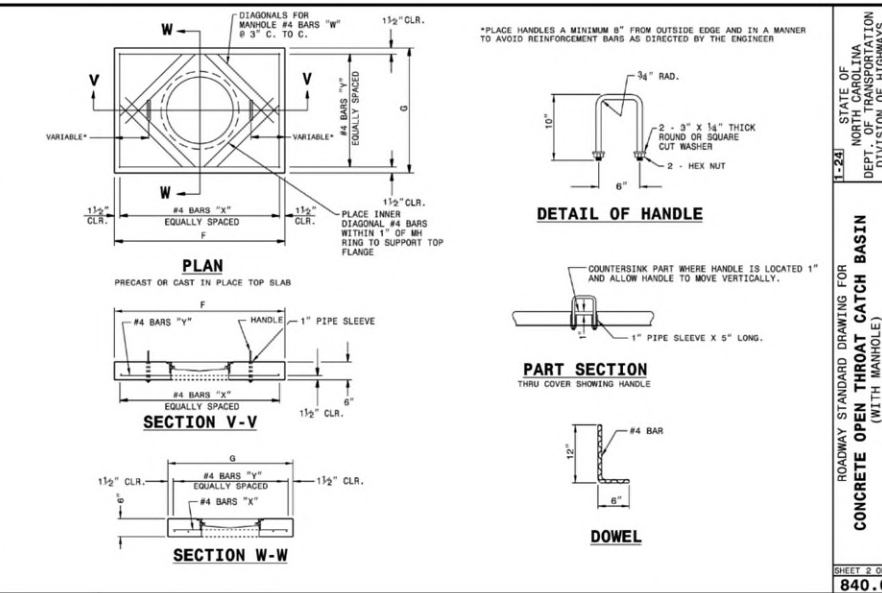
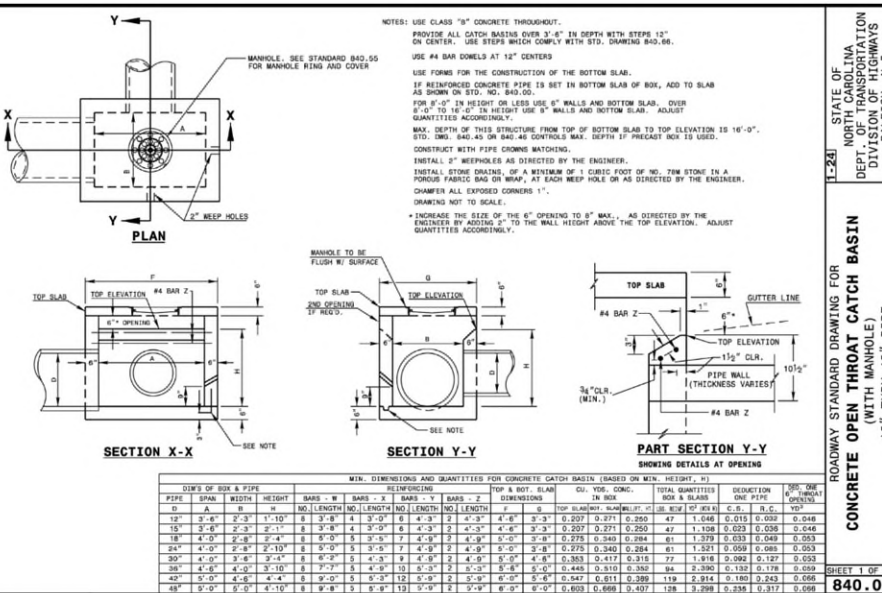
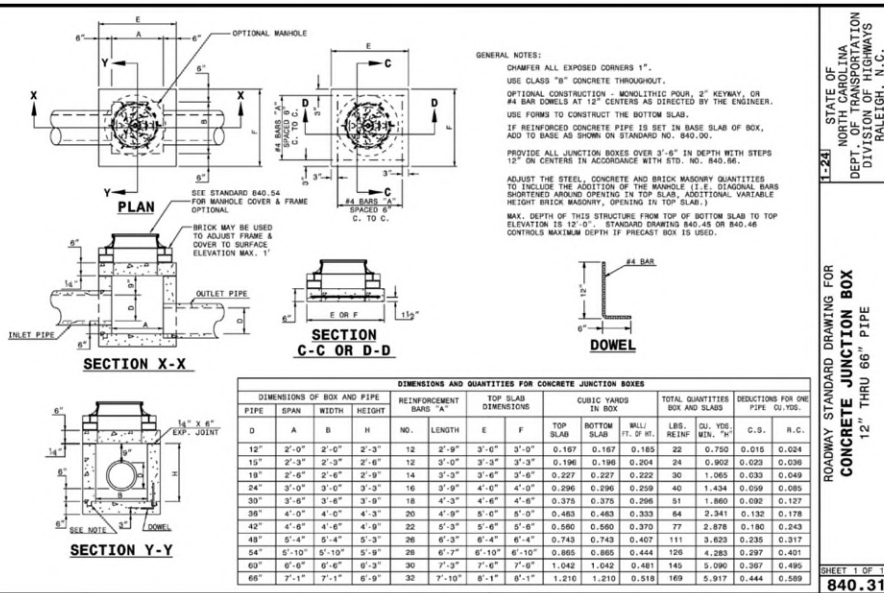
SHEET NO.

C11.2



FLOW SPLITTER BOX DETAIL  
CI #4  
N.T.S.

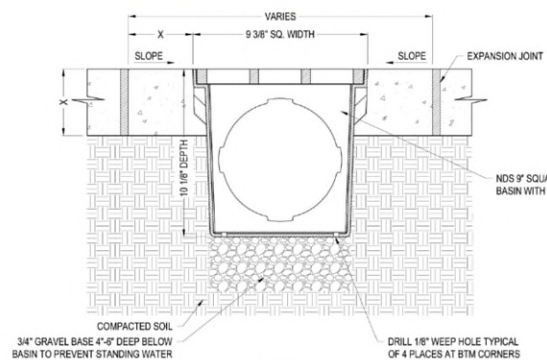








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851 N. HARVARD AVE.  
LINDSAY, CA 93247  
TOLL FREE: 1-800-726-1994 EXT 3  
www.ndspro.com  
techservice@ndspro.com

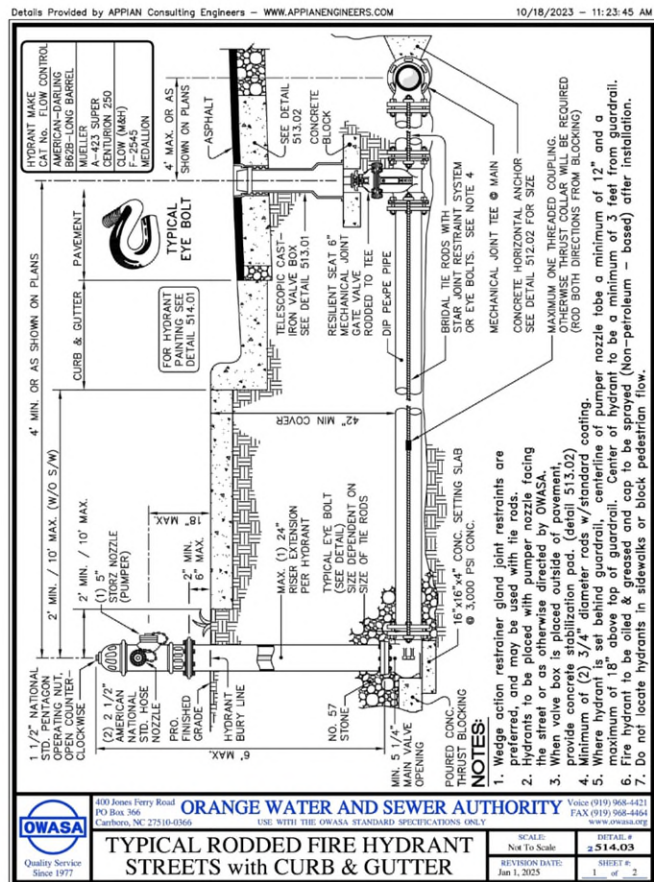


LOAD CLASS			
CLASS A	CLASS B	CLASS C	CLASS D
PEDESTRIAN 15 KN/375 LBS X=4"	LIGHT DUTY 25 KN/560 LBS X=4"	MEDIUM DUTY 250 KN/55,000 LBS X=6"	HEAVY DUTY 400 KN/89,000 LBS X=8"

- MANUFACTURER NOTES:
- GRATE TO BE ATTACHED TO CATCH BASIN WITH SCREW PROVIDED AT TIME OF INSTALLATION.
  - RISER CAN BE CUT TO ACHIEVE EXACT ELEVATION.
  - EXISTING SOILS SHOULD BE EVALUATED TO ENSURE PROPER STRUCTURAL AND PERMEABILITY PROPERTIES.
  - RECESS CHANNEL AND GRATE 1/8" FOR PEDESTRIAN TRAFFIC, 1/4" FOR VEHICULAR TRAFFIC.
  - FOR PRODUCT ASSISTANCE, CONTACT NDS TECHNICAL SERVICE AT TECHSERVICE@NDSPRO.COM.
- NOTES:
- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
  - DO NOT SCALE DRAWING.
  - THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
  - ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
  - CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT WWW.CADDDETAILS.COM/INFORM AND ENTER REFERENCE NUMBER 558-510.



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REVISION DATE 2019/02/01  
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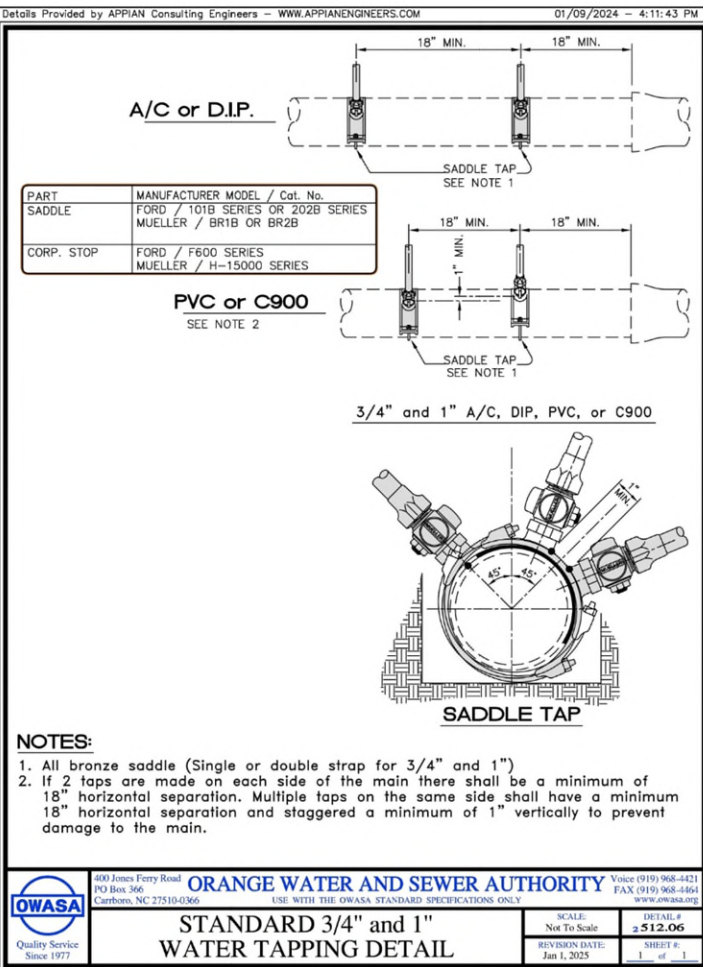


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PO Box 366  
Carrboro, NC 27510-0366  
Voice (919) 968-4421  
FAX (919) 968-4464  
www.owasa.org

**ORANGE WATER AND SEWER AUTHORITY**  
USE WITH THE OWASA STANDARD SPECIFICATIONS ONLY

**TYPICAL RODDE FIRE HYDRANT  
STREETS with CURB & GUTTER**

SCALE: Not To Scale  
REVISION DATE: Jun 1, 2025  
SHEET # 1 of 2

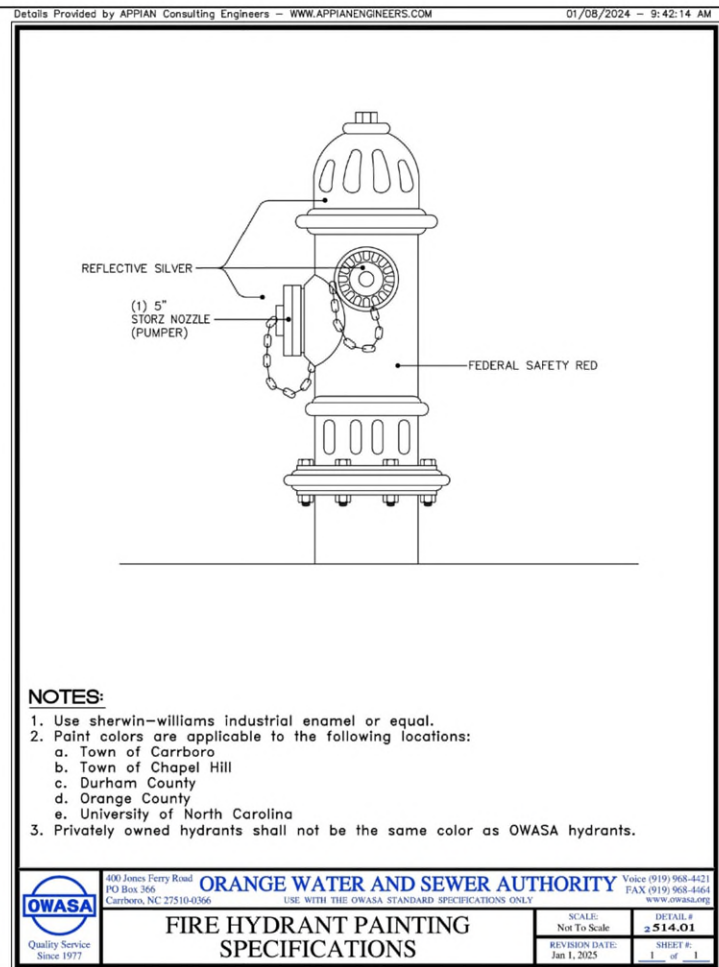


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Carrboro, NC 27510-0366  
Voice (919) 968-4421  
FAX (919) 968-4464  
www.owasa.org

**ORANGE WATER AND SEWER AUTHORITY**  
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**STANDARD 3/4" and 1" WATER TAPPING DETAIL**

SCALE: Not To Scale  
REVISION DATE: Jan 1, 2025  
SHEET # 1 of 1

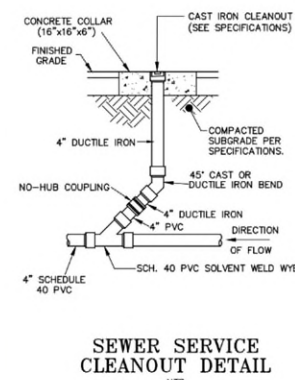


400 Jones Ferry Road  
PO Box 366  
Carrboro, NC 27510-0366  
Voice (919) 968-4421  
FAX (919) 968-4464  
www.owasa.org

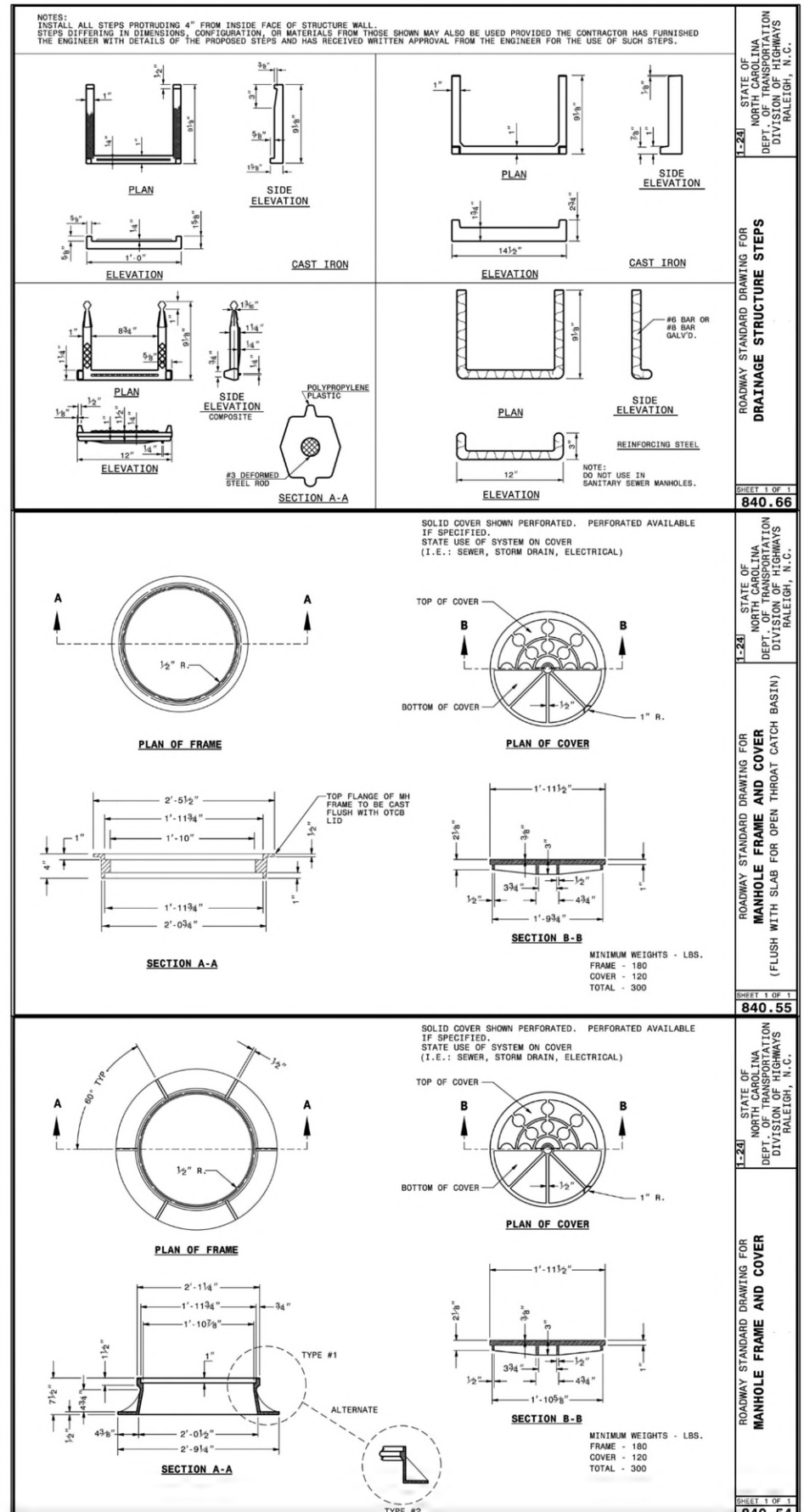
**ORANGE WATER AND SEWER AUTHORITY**  
USE WITH THE OWASA STANDARD SPECIFICATIONS ONLY

**FIRE HYDRANT PAINTING SPECIFICATIONS**

SCALE: Not To Scale  
REVISION DATE: Jan 1, 2025  
SHEET # 1 of 1



**SEWER SERVICE CLEANOUT DETAIL**  
NTS



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**ORANGE WATER AND SEWER AUTHORITY**  
USE WITH THE OWASA STANDARD SPECIFICATIONS ONLY

**MANHOLE FRAME AND COVER**

SCALE: Not To Scale  
REVISION DATE: Jan 1, 2025  
SHEET # 1 of 1

**civil consultants**  
LAND PLANNERS & CIVIL ENGINEERS  
WWW.CIVILCONSULTANTS.COM  
3768 LYON PARKWAY • SUITE 201 • DURHAM, NC 27707  
Lic. #C-1030



**400 NORTH GREENSBORO**  
CARRBORO, NORTH CAROLINA  
DETAILS

REV.	DATE	DESCRIPTION
3	02/27/2025	TOWN REVIEW COMMENTS
4	03/12/2025	SUNGATE AND OWASA COMMENTS

DATE: NOVEMBER 20, 2024

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SHEET NO.  
**C11.4**



Details Provided by APIAN Consulting Engineers - WWW.APIANENGINEERS.COM 01/09/2024 - 4:03:25 PM

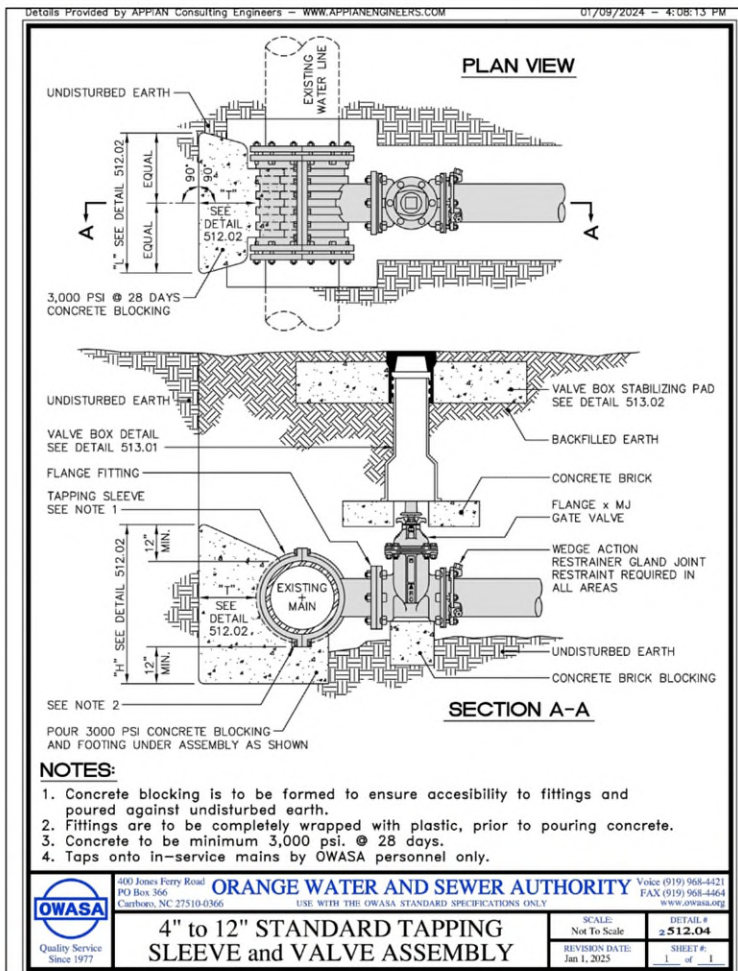
TEST PRESSURE = 250 P.S.I.					
PIPE SIZE	TYPE FITTING	DIMENSIONS (Ft.)			VOLUME, CONCRETE CU. YD.
		"L"	"H"	"T"	
<4 INCHES	11 1/4"	1.00	1.00	1.00	0.04
	22 1/2"	1.00	1.00	1.50	0.06
	45"	1.00	1.00	1.50	0.06
	90"	1.50	1.50	2.50	0.15
	TEE / PLUG	1.50	1.50	2.00	0.12
4 INCHES	11 1/4"	1.00	1.00	2.50	0.09
	22 1/2"	1.00	1.00	2.50	0.09
	45"	1.50	1.50	2.50	0.15
	90"	2.00	2.00	2.50	0.23
	TEE / PLUG	2.00	2.00	2.00	0.19
6 INCHES	11 1/4"	1.50	1.50	2.50	0.15
	22 1/2"	1.50	1.50	2.50	0.15
	45"	2.00	1.50	2.50	0.19
	90"	3.00	2.00	3.00	0.39
	TEE / PLUG	3.00	2.00	2.50	0.32
8 INCHES	11 1/4"	2.00	2.00	2.50	0.23
	22 1/2"	2.00	2.00	2.50	0.23
	45"	2.50	2.00	2.50	0.28
	90"	4.00	2.50	3.00	0.61
	TEE / PLUG	4.00	2.50	2.50	0.51
12 INCHES	11 1/4"	2.00	2.00	3.00	0.28
	22 1/2"	3.50	2.00	3.00	0.44
	45"	4.50	2.75	3.00	0.74
	90"	6.00	3.50	3.50	1.43
	TEE / PLUG	6.00	3.50	3.00	1.22
16 INCHES	11 1/4"	2.50	2.00	3.00	0.33
	22 1/2"	4.00	2.50	3.00	0.61
	45"	6.00	3.50	3.50	1.43
	90"	8.00	4.50	4.00	2.74
	TEE / PLUG	8.00	4.50	3.50	2.40

**CHART NOTES:**

- If blocking excavation is in lightly compacted fill areas, or in areas where boulders or stumps have been removed, blocking size must be re-sized for the specific location/circumstance by a NC licensed Professional Engineer.
- Blocking sizes shown in these tables assume the following:
  - Blocking is constructed in residual soils as shown in detail
  - Soil bearing pressure = 2000 psf
  - Velocity of flow = 15 fps
- This detail not applicable to reducing bends.
- Neither the weight of the concrete blocking nor friction between concrete blocking and soil was added into blocking sizes computation. Therefore, blocking size is conservative.

**ORANGE WATER AND SEWER AUTHORITY** Voice (919) 968-4421  
 PO Box 366 Carboro, NC 27510-0366 FAX (919) 968-4464  
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**BLOCKING DETAIL for HORIZONTAL BENDS AND TEE** SCALE: Not To Scale DETAIL # 512.02  
 REVISION DATE: Jan 1, 2025 SHEET # 4 of 4



Details Provided by APIAN Consulting Engineers - WWW.APIANENGINEERS.COM 01/09/2024 - 4:02:41 PM

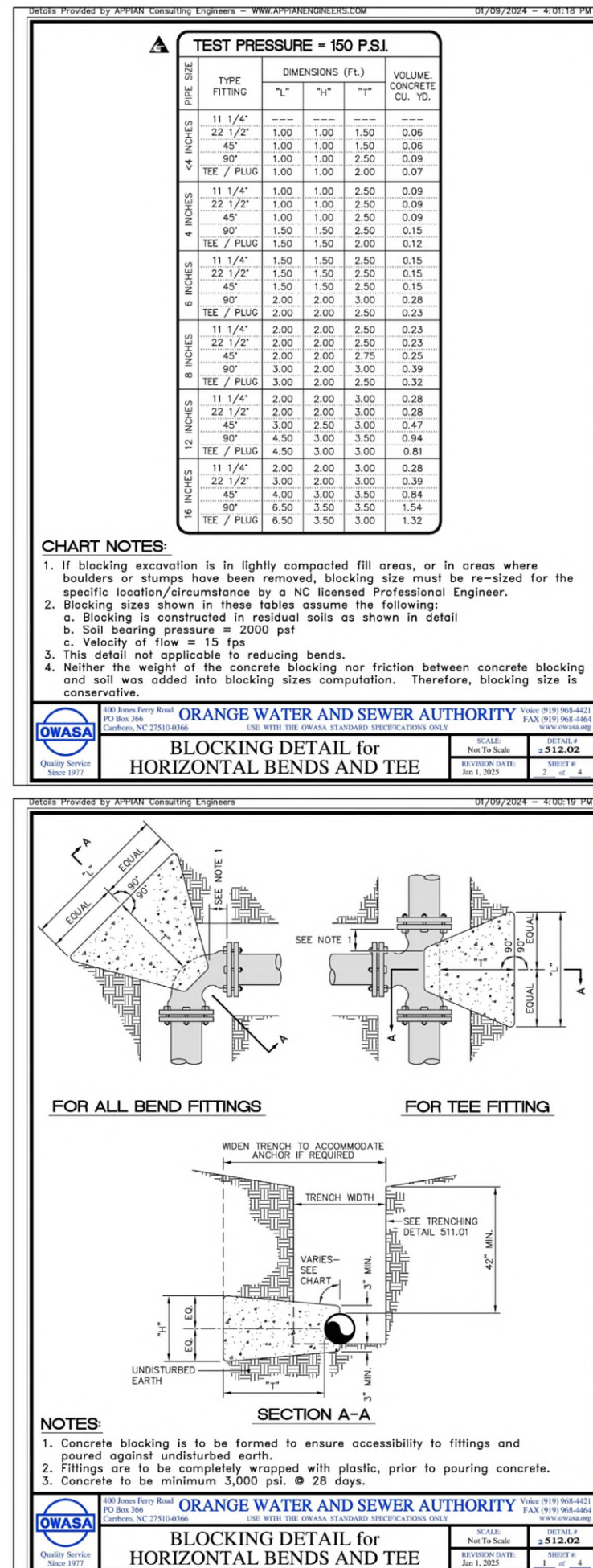
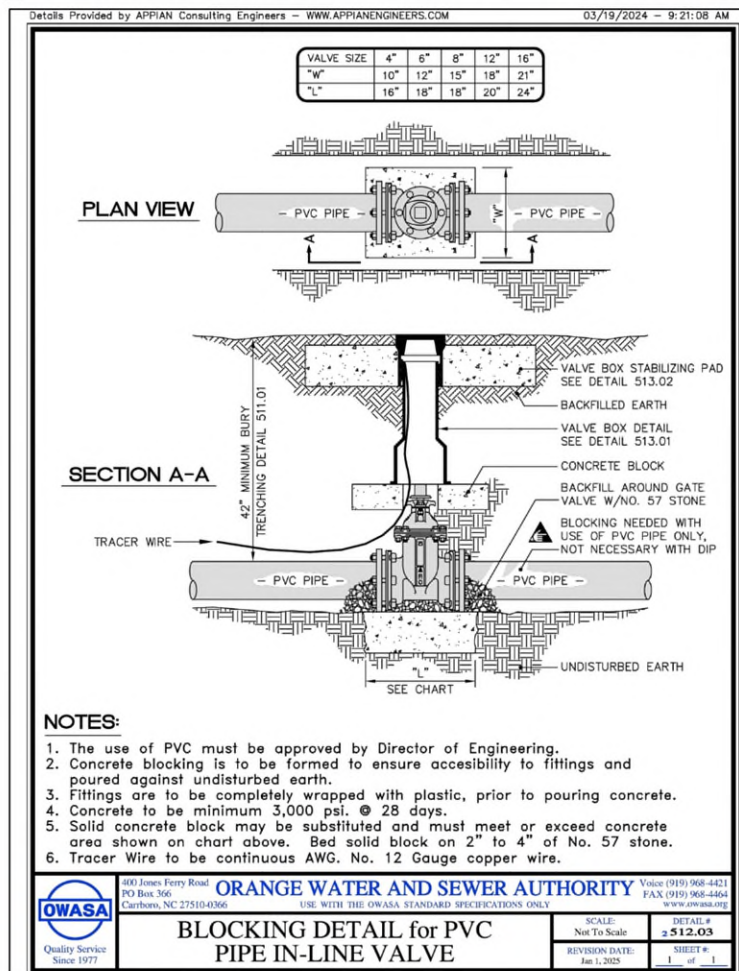
TEST PRESSURE = 200 P.S.I.					
PIPE SIZE	TYPE FITTING	DIMENSIONS (Ft.)			VOLUME, CONCRETE CU. YD.
		"L"	"H"	"T"	
<4 INCHES	11 1/4"	1.00	1.00	1.00	0.04
	22 1/2"	1.00	1.00	1.50	0.06
	45"	1.00	1.00	1.50	0.06
	90"	1.50	1.50	2.50	0.15
	TEE / PLUG	1.50	1.50	2.00	0.12
4 INCHES	11 1/4"	1.00	1.00	2.50	0.09
	22 1/2"	1.00	1.00	2.50	0.09
	45"	1.50	1.50	2.50	0.15
	90"	1.50	1.50	2.50	0.15
	TEE / PLUG	1.50	1.50	2.00	0.12
6 INCHES	11 1/4"	1.50	1.50	2.50	0.15
	22 1/2"	1.50	1.50	2.50	0.15
	45"	1.50	1.50	2.50	0.15
	90"	2.50	2.00	3.00	0.33
	TEE / PLUG	2.50	2.00	2.50	0.28
8 INCHES	11 1/4"	2.00	2.00	2.50	0.23
	22 1/2"	2.00	2.00	2.50	0.23
	45"	2.00	2.00	2.50	0.23
	90"	4.00	2.00	3.00	0.50
	TEE / PLUG	4.00	2.00	2.50	0.42
12 INCHES	11 1/4"	2.00	2.00	3.00	0.28
	22 1/2"	3.00	2.00	3.00	0.39
	45"	4.00	2.50	3.00	0.61
	90"	5.50	3.00	3.50	1.13
	TEE / PLUG	5.50	3.00	3.00	0.97
16 INCHES	11 1/4"	2.00	2.00	3.00	0.28
	22 1/2"	4.00	2.00	3.00	0.50
	45"	5.50	3.00	3.50	1.13
	90"	7.50	4.00	3.50	2.01
	TEE / PLUG	7.50	4.00	3.00	1.72

**CHART NOTES:**

- If blocking excavation is in lightly compacted fill areas, or in areas where boulders or stumps have been removed, blocking size must be re-sized for the specific location/circumstance by a NC licensed Professional Engineer.
- Blocking sizes shown in these tables assume the following:
  - Blocking is constructed in residual soils as shown in detail
  - Soil bearing pressure = 2000 psf
  - Velocity of flow = 15 fps
- This detail not applicable to reducing bends.
- Neither the weight of the concrete blocking nor friction between concrete blocking and soil was added into blocking sizes computation. Therefore, blocking size is conservative.

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 PO Box 366 Carboro, NC 27510-0366 FAX (919) 968-4464  
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**BLOCKING DETAIL for HORIZONTAL BENDS AND TEE** SCALE: Not To Scale DETAIL # 512.02  
 REVISION DATE: Jan 1, 2025 SHEET # 3 of 4



400 NORTH GREENSBORO  
 CARRBORO, NORTH CAROLINA  
 DETAILS

REV.	DATE	DESCRIPTION
4	03/12/2025	SUNGATE AND OWASA COMMENTS

DATE: NOVEMBER 20, 2024

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SHEET NO.  
**C11.5**



REV.	DATE	DESCRIPTION
4	03/12/2025	SINGATE AND OWASA COMMENTS

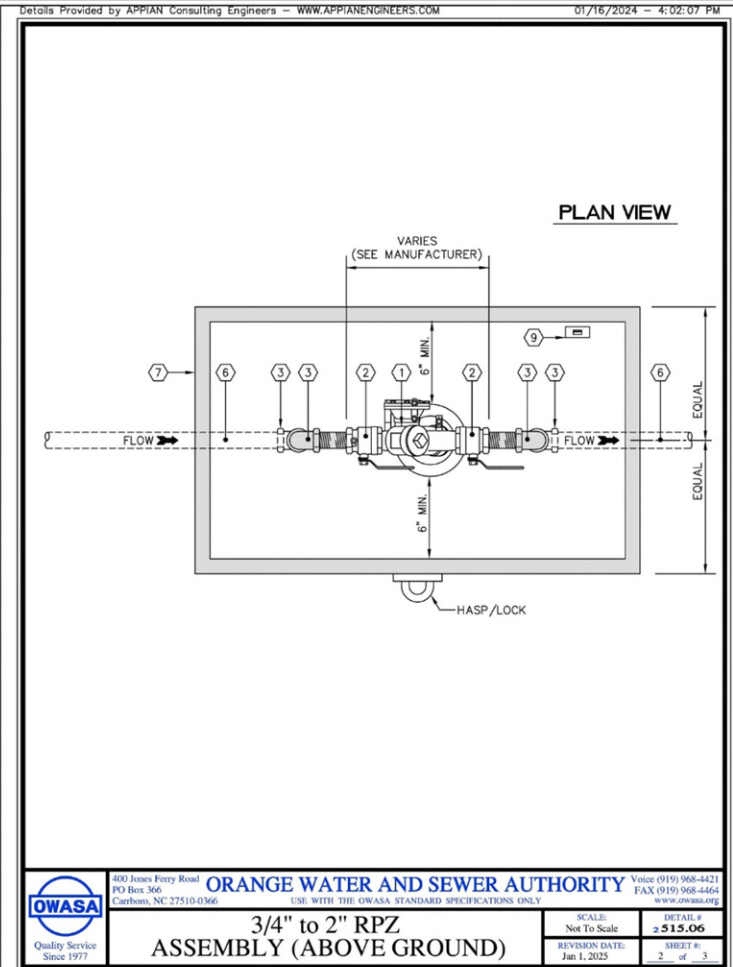
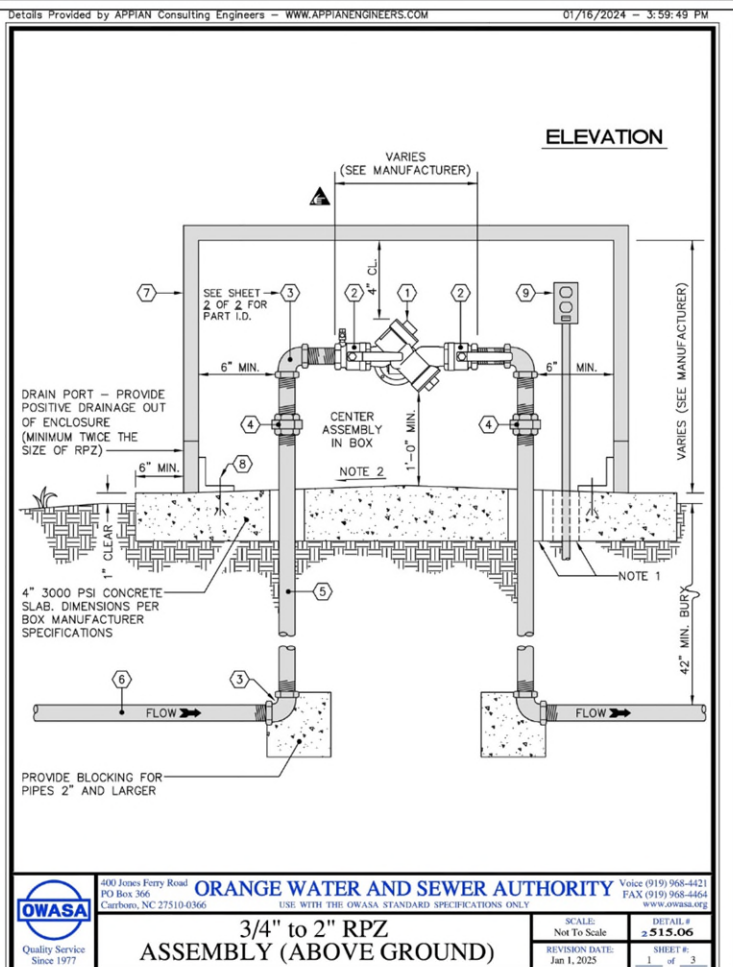
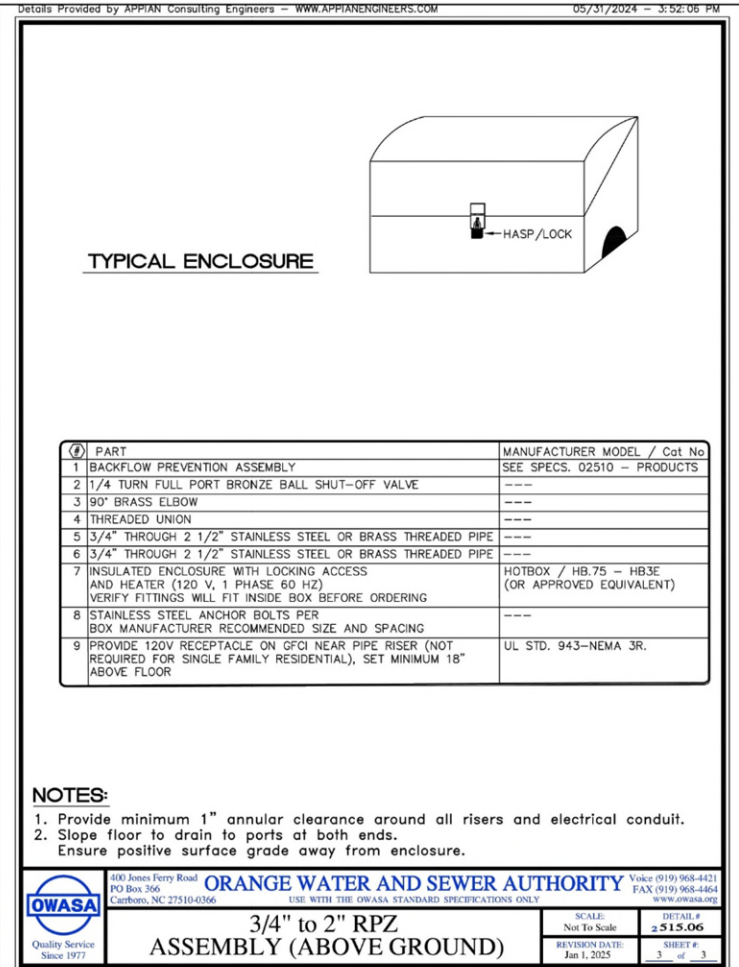
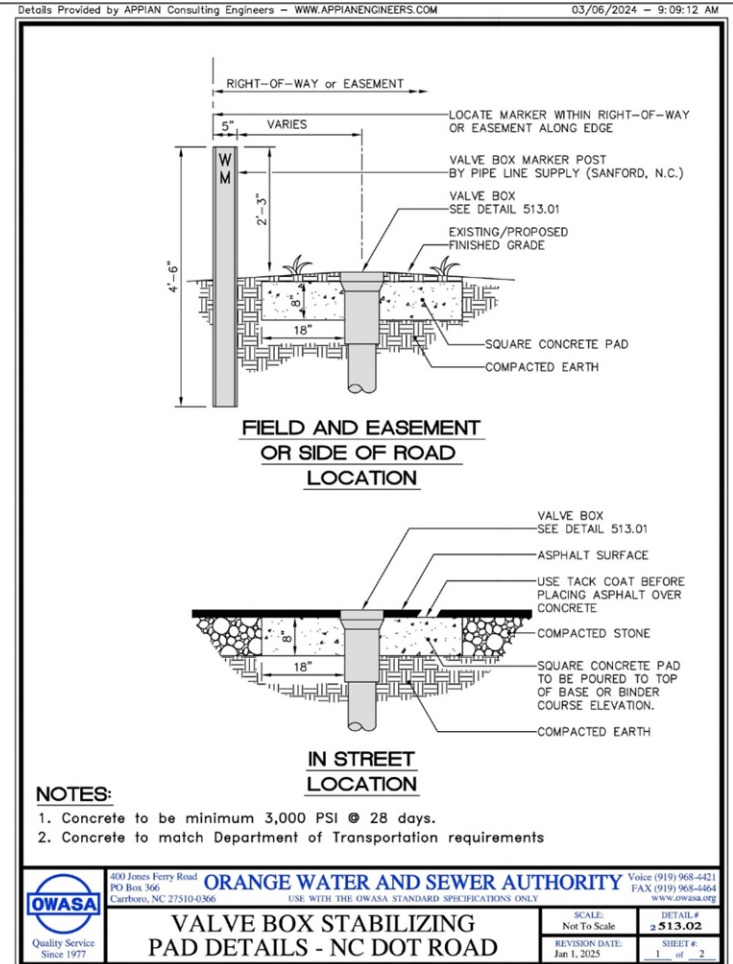
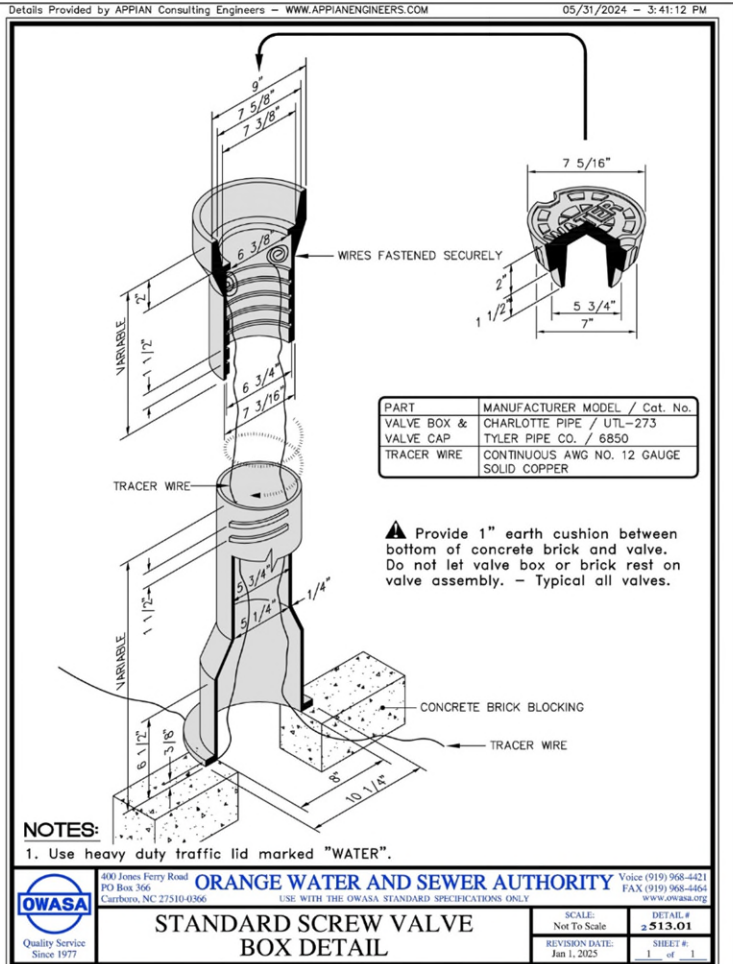
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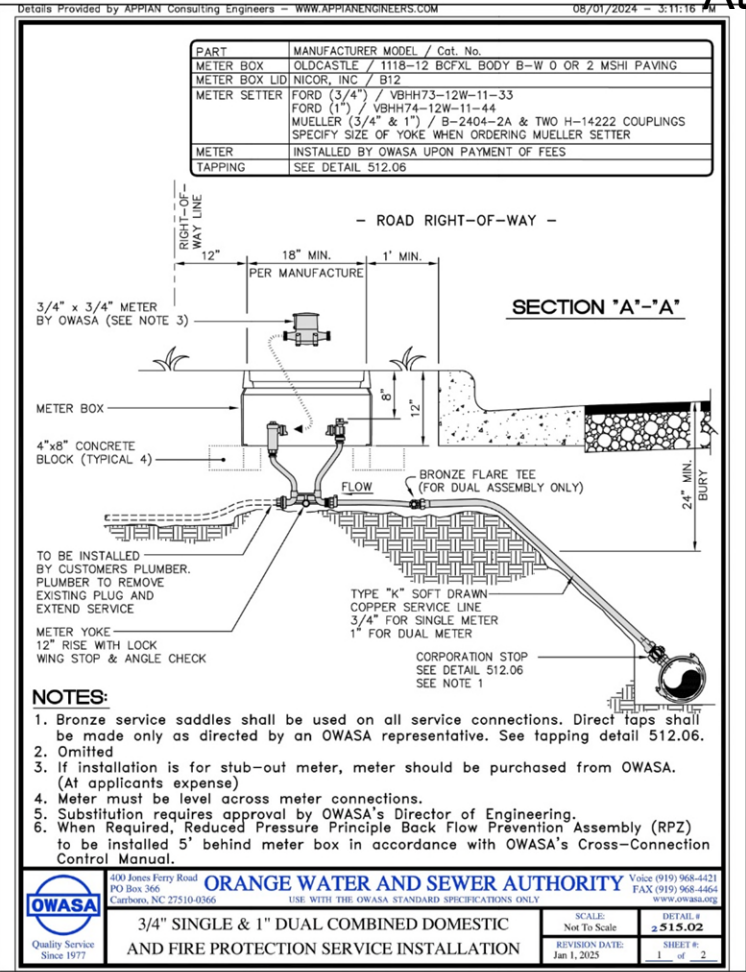
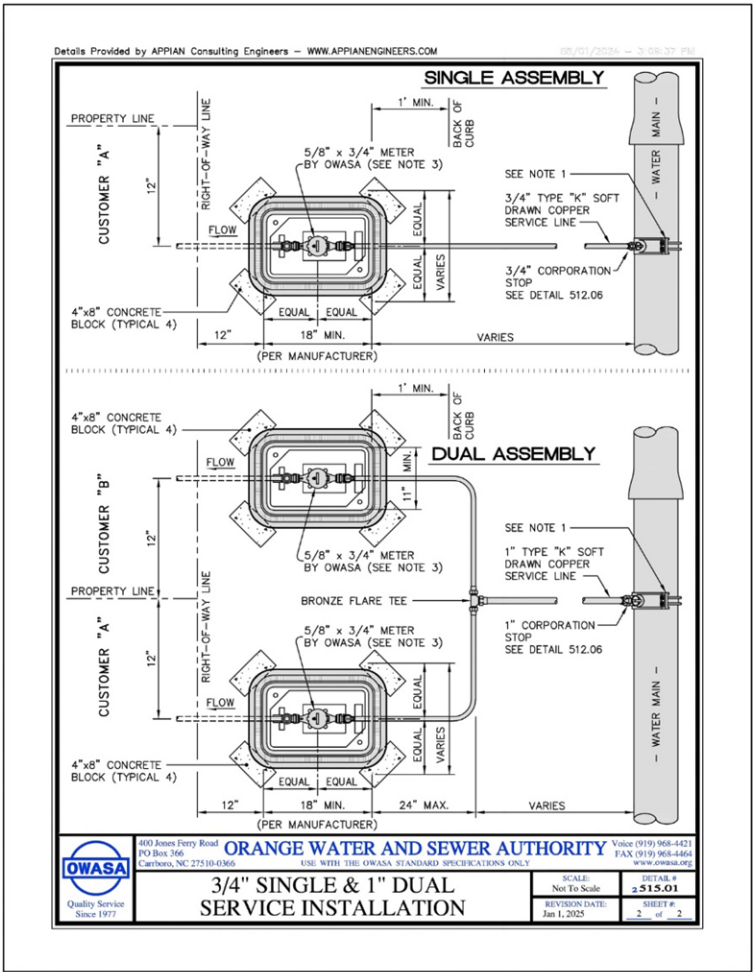
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C11.6

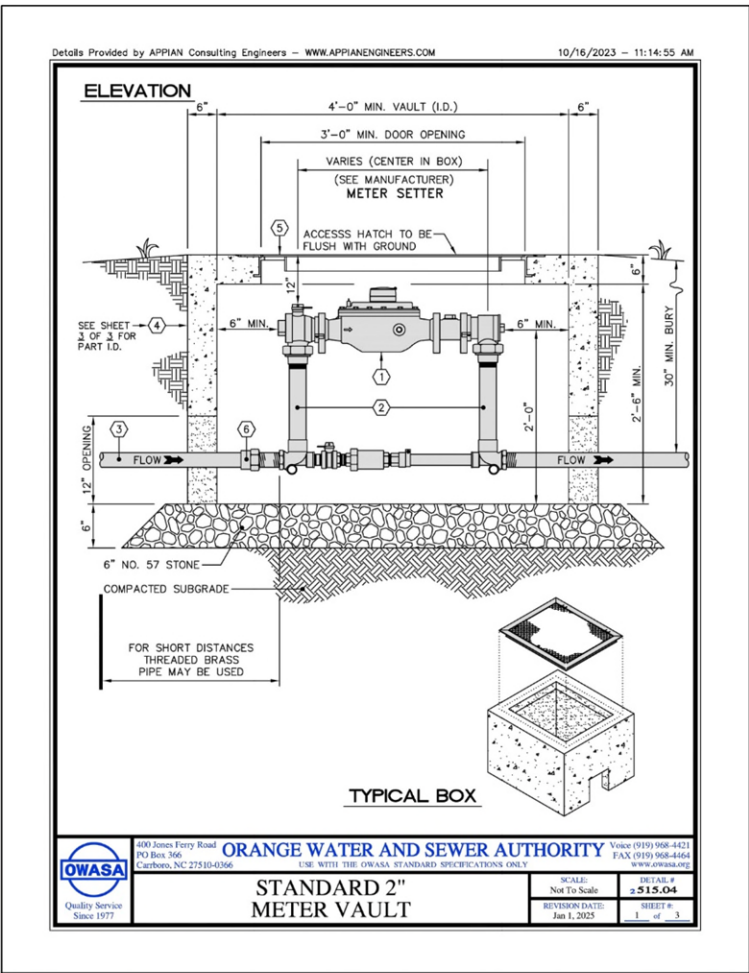
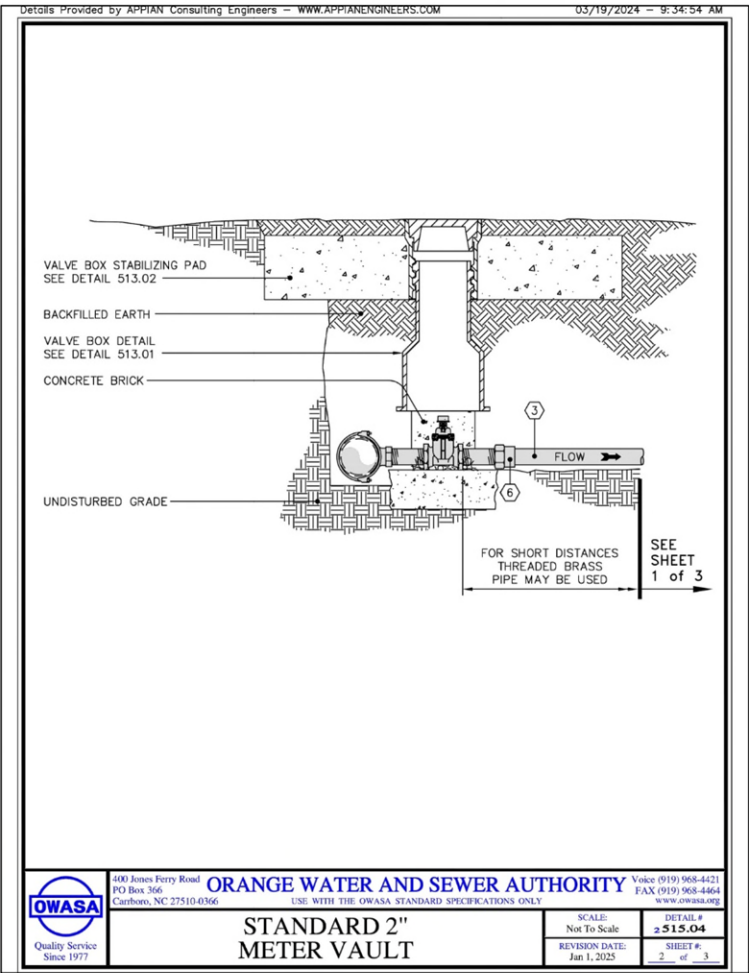
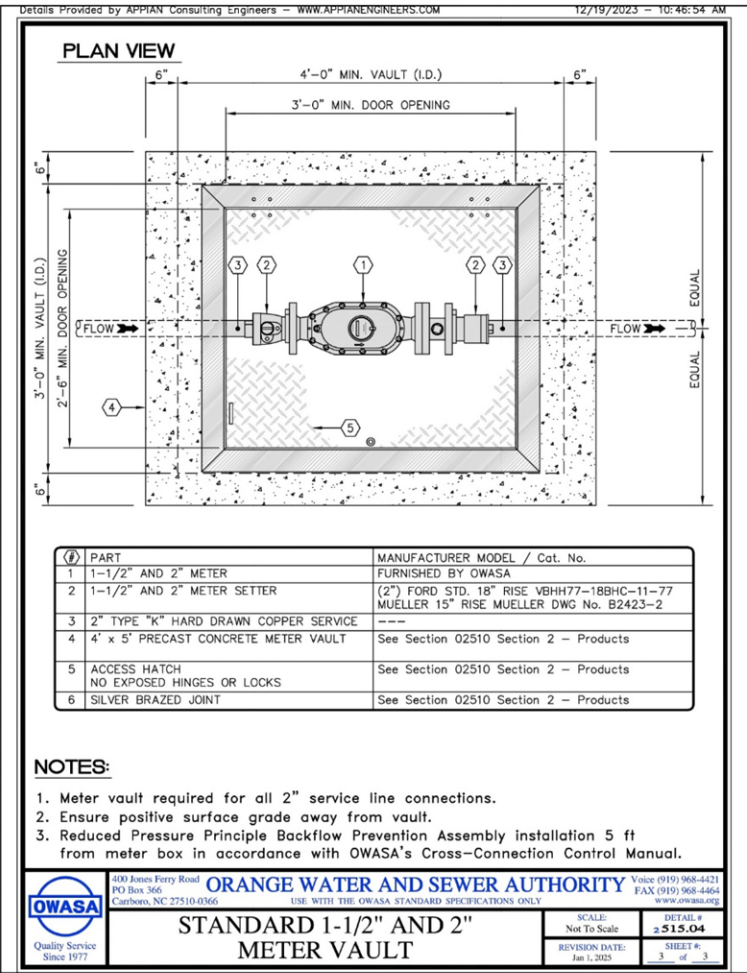








400 NORTH GREENSBORO  
CARRBORO, NORTH CAROLINA  
DETAILS



REV.	DATE	DESCRIPTION
4	03/12/2025	SINGATE AND OWASA COMMENTS

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SHEET NO.  
**C11.8**



TOWN OF CARRBORO: E-3 Formula for Calculating 35% Shading of Vehicle Accommodation Areas	
1 Calculate square footage of the vehicle accommodation area. Include parking spaces, driveways, loading areas, sidewalks, and other circulation areas. Do not include building area and any area which will remain completely undeveloped:	5,455 sq. ft.
2 Multiply	x .35
3 Areas to be shaded:	1,909 sq. ft.
Add:	
4 Area shaded by existing trees to be retained in and around the vehicle accommodation area: *	- sq. ft.
5 Area shaded by required screening trees, if any: *	255 sq. ft.
6 Area shaded by required street trees, if any: *	1,850 sq. ft.
7 Subtotal:	2,105 sq. ft.
(if line 7 is greater than line 3, then the shading requirements has been met. If not, go on to line 8)	
8 Enter the difference between line 7 and line 3:	n/a sq. ft.
9 Divide line 8:	1707
10 Total number of shade trees required within the vehicle accommodation area:	5

\* Existing trees retained in compliance with Section 15-316 will be credited according to their actual crown radius. Shaded area may be calculated as follows:  
 $3.14 \times (\text{crown radius})^2 = \text{shaded area}$

Trees planted within the vehicle accommodation area are credited with shading 707 sq. ft. (based on a crown radius of 15'). New or existing trees on the perimeter of the parking lot are credited for having only half a crown over the vehicle accommodation area (e.g., trees on the perimeter will be credited for shading 354 sq. ft.). Generally, all trees planted in compliance with the screening requirements of Article XIX, Part I and the street tree requirements of Section 15-315 will be considered perimeter trees. When smaller trees such as Dogwoods are planted, the credited shading area will be adjusted downward to 314 sq. ft. for interior trees and 157 sq. ft. for perimeter trees (based on a crown radius of 10 ft.). (REWRITTEN 6/24/14)

Informal Loose plantings of native woody shrubs for relaxed look

Buffer/Screening from Garden Patio to adjoining property/parking

Hedge of narrow, upright Evergreen trees/arce shrubs to provide green screening to adjoining property

OPTIONS SUITABLE for CONSIDERATION

- Eastern Red Cedar
- Carolina Cherry Laurel
- American Holly or Lusterleaf Holly
- Osmanthus

Buffer/Screening from parking to adjoining property

Hedge of narrow, upright Evergreen shrubs to provide green screening of parking court

OPTIONS SUITABLE for CONSIDERATION

- Carolina Cherry Laurel or English Laurel
- Chindo Viburnum
- Yaupon Holly or Foster Holly
- Yellow Anise Tree (Illicium parvifolium)

Medium Size Canopy Tree and Tall, upright Tree to provide formal entry to building and around perimeter of building and parking.

upright tree to provide formal canopy to entry and low shrubs to define planter spaces

OPTIONS SUITABLE for CONSIDERATION

- Hornbeam
- Bald Cypress
- Redbud
- Black Gum
- Yaupon Holly (tree-form)

Shade tree for canopy coverage for parking

Trees for shading of parking court to meet min. canopy coverage requirements. Provide Oak trees with diversity for carbon sequestration.

OPTIONS SUITABLE for CONSIDERATION

- Scarlet Oak or Laurel Oak,
- Shumard Oak or Swamp Chestnut White Oak, or Overcup Oak, Willow Oak
- Red Maple

Mitchell

400 N. Greensboro St.  
Carrboro, NC 27510

Site Plan  
PIN 9778-87-6328

Issued: March 14, 2025

Revised: 1.

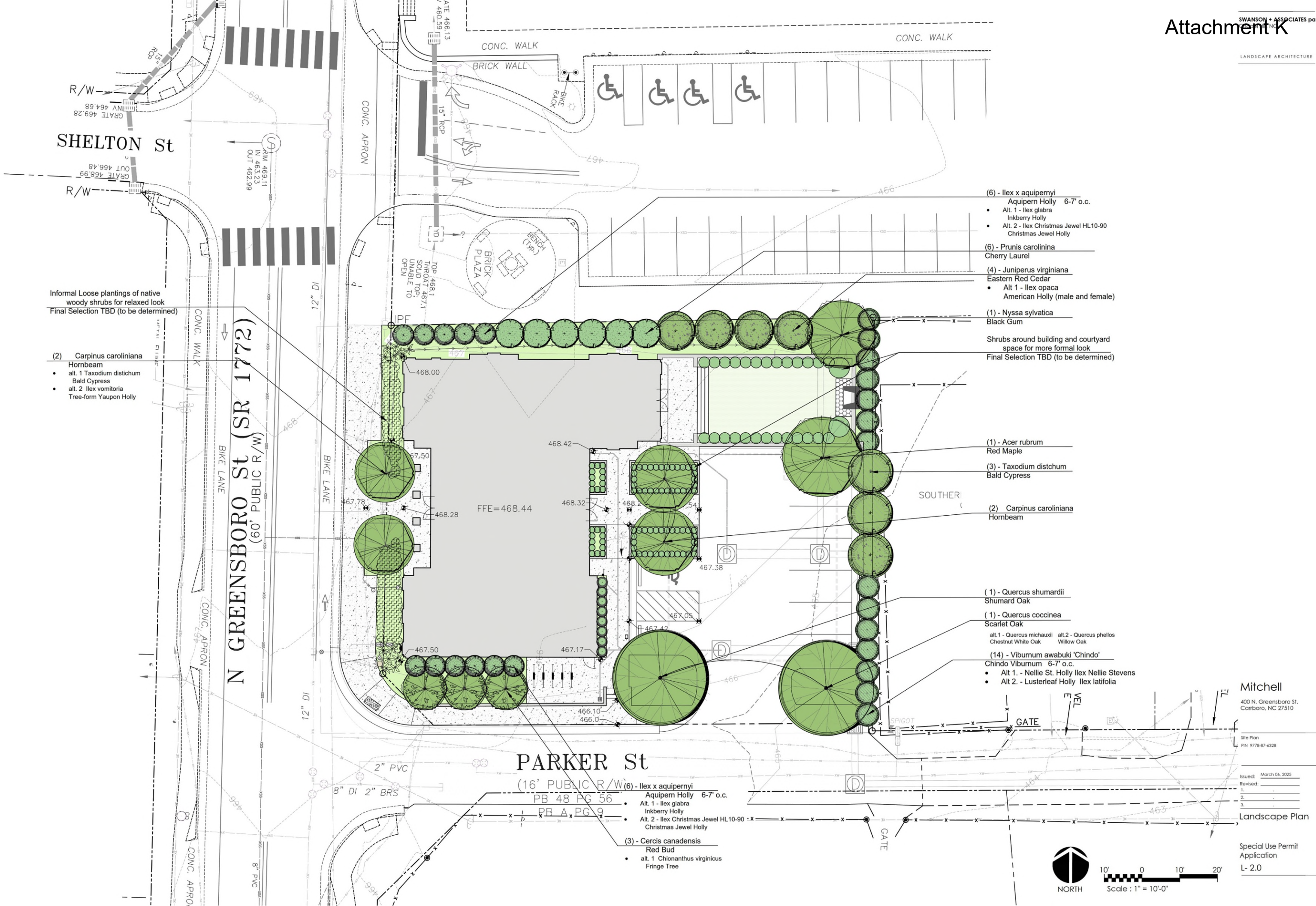
2.

Concept Plan for  
Canopy Coverage  
and Buffer/Screening  
Landscape Plan  
Special Use Permit  
Application

L- 1.0



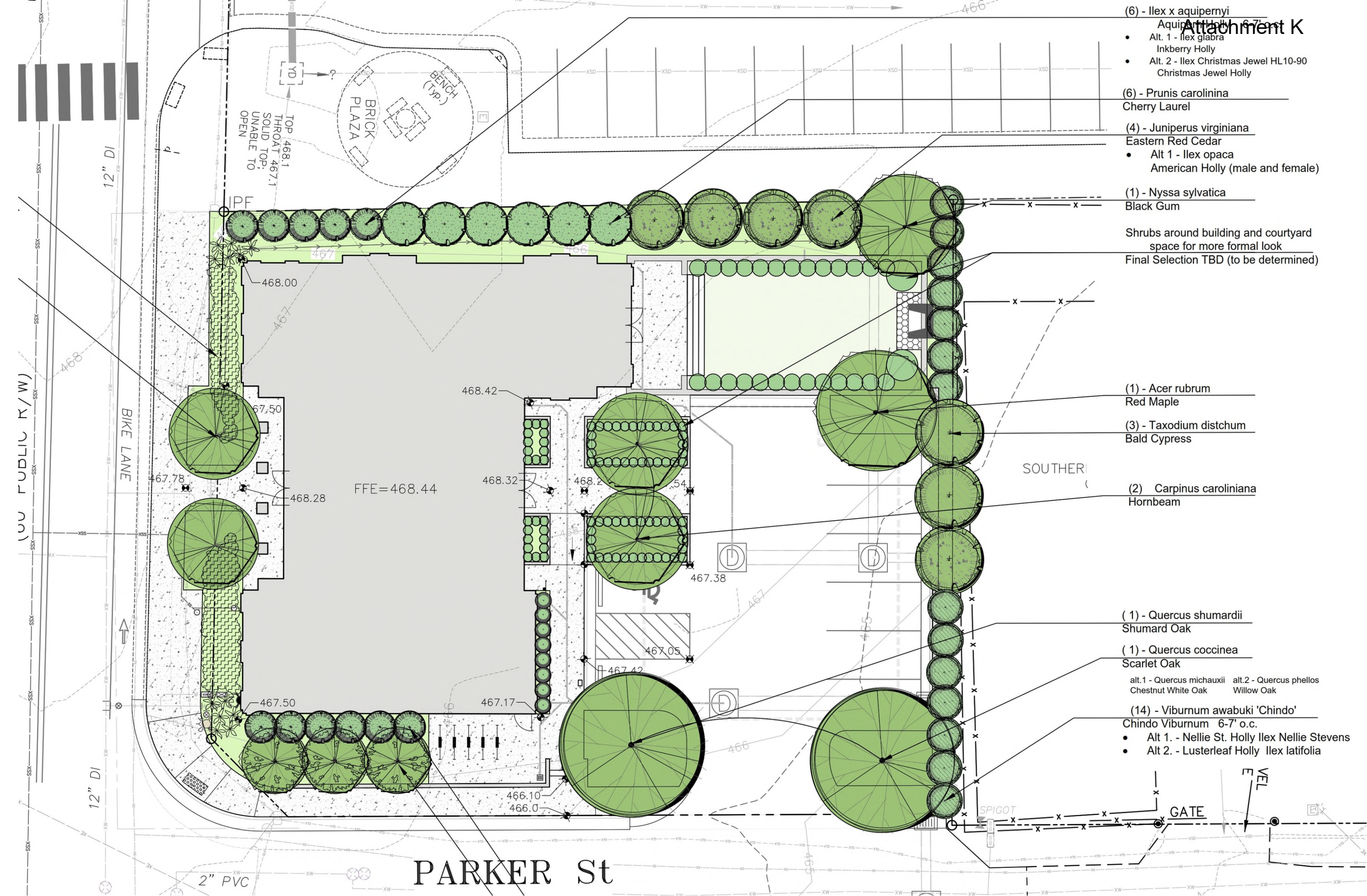






# Attachment K

- (6) - *Ilex x aquipernyi*  
Aquifer Holly 6-7' o.c.
  - Alt. 1 - *Ilex glabra*  
Inkberry Holly
  - Alt. 2 - *Ilex Christmas Jewel HL10-90*  
Christmas Jewel Holly
- (6) - *Prunus caroliniana*  
Cherry Laurel
- (4) - *Juniperus virginiana*  
Eastern Red Cedar
  - Alt 1 - *Ilex opaca*  
American Holly (male and female)
- (1) - *Nyssa sylvatica*  
Black Gum
- Shrubs around building and courtyard  
space for more formal look
- Final Selection TBD (to be determined)
- (1) - *Acer rubrum*  
Red Maple
- (3) - *Taxodium distichum*  
Bald Cypress
- (2) *Carpinus caroliniana*  
Hornbeam
- (1) - *Quercus shumardii*  
Shumard Oak
- (1) - *Quercus coccinea*  
Scarlet Oak
  - alt.1 - *Quercus michauxii* alt.2 - *Quercus phellos*  
Chestnut White Oak Willow Oak
- (14) - *Viburnum awabuki 'Chindo'*  
Chindo Viburnum 6-7' o.c.
  - Alt 1. - *Nellie St. Holly Ilex Nellie Stevens*
  - Alt 2. - *Lusterleaf Holly Ilex latifolia*







JIM SPENCER ARCHITECTS, PA  
109-A BREWER LANE  
CARRBORO, NC 27510  
919.960.6680  
JSPENCERJSA@GMAIL.COM

400 N. GREENSBORO STREET

CARRBORO, NC 27510  
PIN: 9778876328

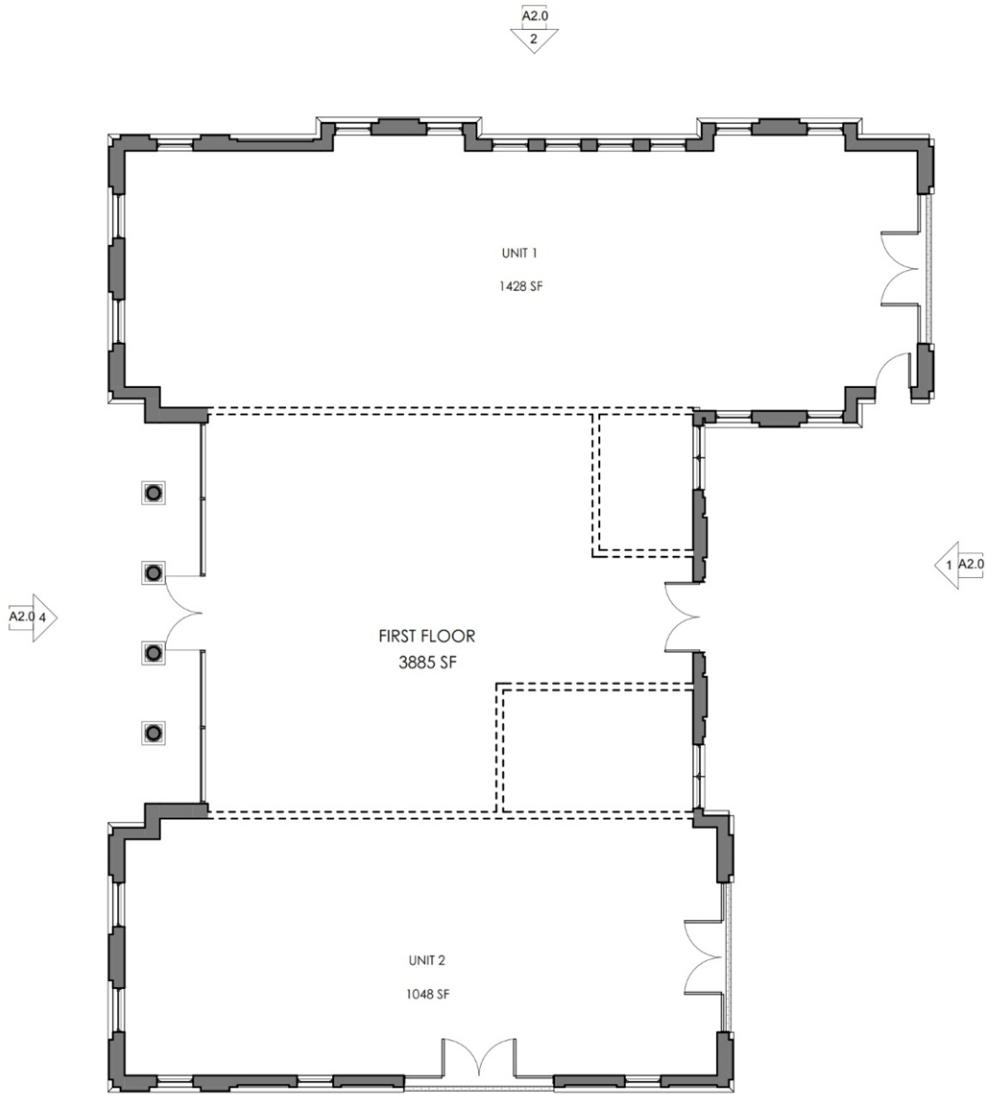
SUP-A  
APPLICATION

No.	Description	Date

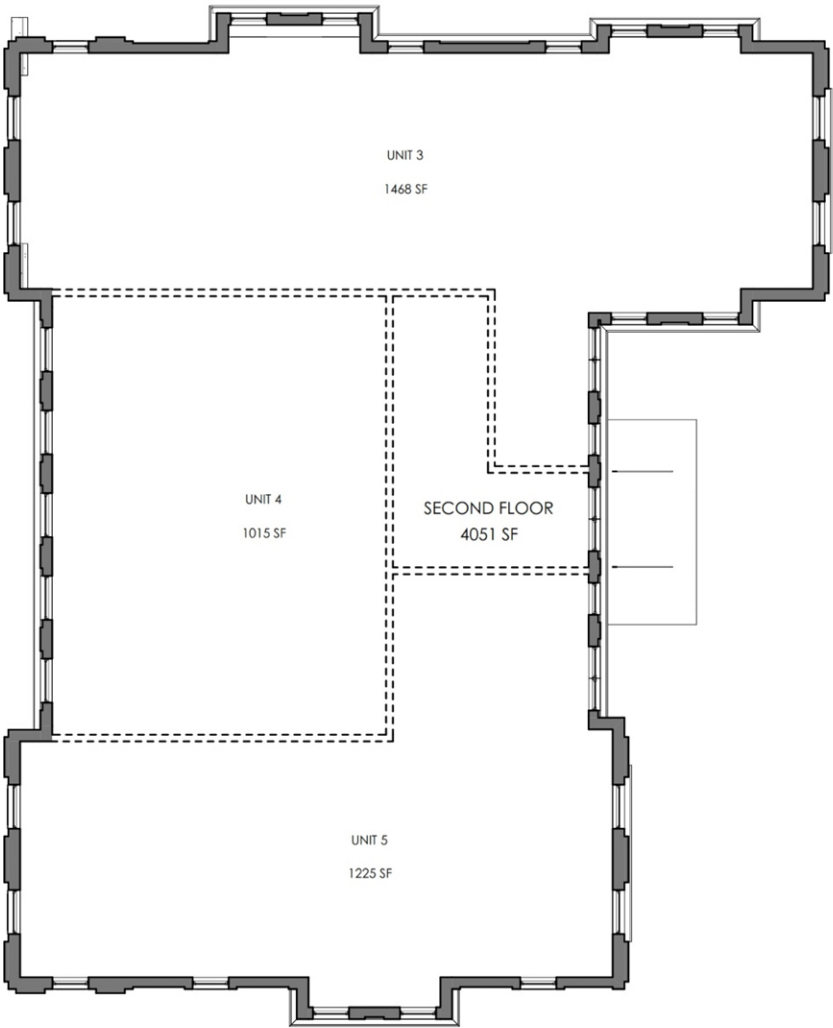
DATE: 2025.04.03  
DRAWN BY: JSA  
CHECKED BY: Checker

FLOOR PLATES

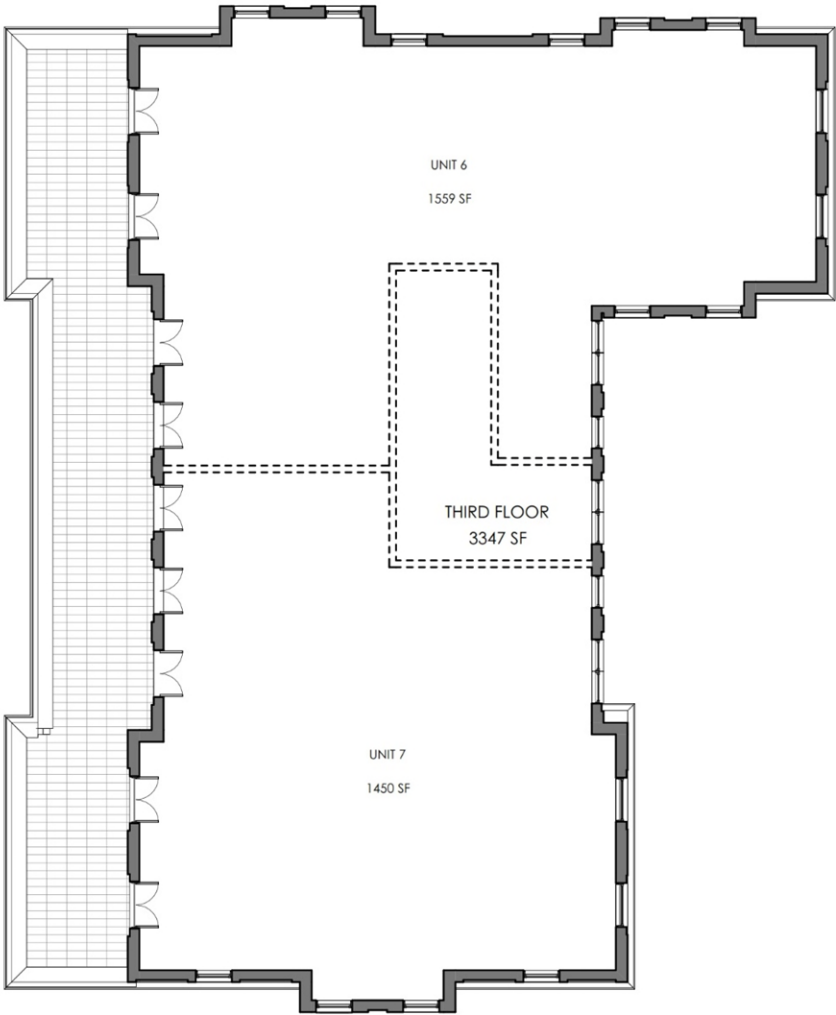
A1.0



1 FIRST FLOOR  
1/8" = 1'-0"



2 SECOND FLOOR  
1/8" = 1'-0"



3 THRID FLOOR  
1/8" = 1'-0"

INTERIOR AREA & UNITS BY LEVEL

LEVEL	AREA	UNITS
FIRST FLOOR	3,885 SF	2
SECOND FLOOR	4,051 SF	3
THIRD FLOOR	3,347 SF	2
TOTAL	11,282 SF	





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JSPENCERJSA@GMAIL.COM

400 N.  
GREENSBORO  
STREET

CARRBORO, NC 27510  
PIN: 9778876328

SUP-A  
APPLICATION

No.	Description	Date

DATE: 2025.04.03  
DRAWN BY: JSA  
CHECKED BY: JCS

ELEVATIONS

A2.0



4 WEST ELEVATION  
1/8" = 1'-0"



2 NORTH ELEVATION  
1/8" = 1'-0"



1 EAST ELEVATION  
1/8" = 1'-0"



3 SOUTH ELEVATION  
1/8" = 1'-0"





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400 N.  
GREENSBORO  
STREET

CARRBORO, NC 27510  
PIN: 9778876328

SUP-A  
APPLICATION

No.	Description	Date

DATE: 2025.04.03  
DRAWN BY: 2-JSA  
CHECKED BY: Checker

REFERENCE  
PERSPECTIVES

A8.0



1 AERIAL



4 FRONT PERSPECTIVE



2 EAST ENTRANCE



3 FRONT FACADE







The following ordinance was introduced by Council Member Fray and duly seconded by Council Member Nowell:

AN ORDINANCE AMENDING THE CARRBORO ZONING MAP TO REZONE APPROXIMATELY 0.37 ACRES OF PROPERTY KNOWN AS 400 NORTH GREENSBORO STREET FROM CT (CORPORATE TOWN) TO B-1G-CZ (GENERAL BUSINESS, CONDITIONAL)

(Ordinance No. 23)

\*\*05-15-2024\*\*

THE TOWN COUNCIL OF THE TOWN OF CARRBORO ORDAINS:

SECTION 1. The Official Zoning Map of the Town of Carrboro is hereby amended as follows:

That the property being described on Orange County Tax Maps as Chapel Hill Township, 400 North Greensboro Street (PIN 9778-87-6328) encompassing approximately 0.37 acres as shown on the accompanying map titled "Rezoning Exhibit CT to B-1G-CZ" is hereby rezoned from CT (Corporate Town) to B-1G-CZ (General Business, Conditional) subject to the following conditions.

1. The Concept Plan labeled "400 North Greensboro Street, Conditional Rezoning Drawing Set," dated March 21, 2024, is approved and incorporated herein to indicate all potential land uses, the general location of the building and parking areas, vehicular and bicycle-pedestrian access points, stormwater management features, areas of preserved trees and other landscaped areas. Other features and issues remain to be decided at the time a special use permit is requested for the development. Those features and issues include, but are not necessarily limited to, the location of EV charging stations, open space and recreation facilities, sidewalk facilities along North Greensboro Street, and all other elements necessary to determine compliance with the Land Use Ordinance.
2. The residential density of the project shall be capped at a maximum of seven (7) dwelling units, including a combination of use classifications 1.331 (multi-family apartments with maximum 20% units with > 3 bedrooms/du) and 1.332 (multi-family apartments with no bedroom limits).
3. Construction of the building shall allow for future conversion to commercial use on the entire ground floor.
4. Seven non-residential uses shall be allowed in the development subject to compliance with Town standards. These include use classifications: 2.120 (retail, low volume traffic generation); 3.110 (office, clerical, research and services, all operations conducted entirely within fully enclosed building: operations designed to attract and serve customers or clients on the premises, such as the offices of attorneys, physicians, other professionals, insurance and stock brokers, travel agents, government office buildings, etc.); 3.120 (office, operations designed to attract little or no customer or client traffic other than employees of the entity operating the principal use), 3.220 (office, operations conducted within or outside fully enclosed building, operations designed to attract little or no customer or client traffic other than employees of the entity operating the principal use); 8.100 (restaurant, bars and night clubs; 8.200 (restaurant with outside service or consumption); and 8.900 (neighborhood cafes) if

available in the B-1G zoning district at the time such use is proposed to be added to the building.

5. The project shall contain at least three of the following features: water conservation, energy conservation, on-site energy production, provisions for affordable housing, alternative transportation, and provisions for public art/outdoor amenities and stormwater management that exceeds the Town's standards. The project will detain the post-development runoff to the pre-development runoff levels for the 25-year storm.
6. The applicant is offering to make a payment to the Town's Affordable Housing Fund for the cost of one unit at the time when the special use permit is approved.
7. The project shall include the components necessary for EV vehicle charging and E-bike charging, final locations to be determined as part of the special use permit.
8. The rooftop pergola will never be enclosed.

SECTION 2. This ordinance shall become effective upon adoption.

The foregoing ordinance having been submitted to a vote received the following vote and was duly adopted this the 21<sup>st</sup> day of May 2024:

The motion was carried 6-0.

AYES: Mayor Foushee, Council Member Nowell, Council Member Fray, Council Member Merrill, Council Member Posada, Council Member Haven-O'Donnell

Noes: None

Absent or Excused: None

*B.M. Foushee*  
Barbara M. Foushee  
Mayor, Town of Carrboro

Attest: *Lamar Joyner*  
Lamar Joyner, Town Clerk





JIM SPENCER ARCHITECTS, PA  
109A Brewer Lane | PO Box 385  
Carrboro, NC 27510  
919.960.6680

May 20, 2025

Town of Carrboro  
Planning, Zoning, and Inspections Division  
301 West Main Street  
Carrboro, NC 27510

Re: **Formal request for Modification to Canopy Coverage Standards**  
Mitchell project, 400 North Greensboro, SUP-A application

Dear Town of Carrboro PZI staff,

Please consider this our formal request for modification of the tree canopy requirements in the Carrboro Land Use Ordinance section 15-319. During our Conditional Zoning review, the issue was discussed at length with staff and the site plan approved with the CZ ordinance included a proposal for 20% canopy coverage as "substantially compliant". We have made minor landscaping changes associated with the site plan for this SUP-A, but have once again proposed this 20% canopy coverage for this very small urban site.

Our design team and owners feel that this proposed coverage supports the goals of the new comprehensive plan and further, that it complies with section 15-319(b)(1) of the ordinance. This section allows the permit issuing authority to approve a development application that does not fully comply with the standards when it finds that the application substantially complies with these standards and enables the project to better achieve other Town objectives. In this project's case, the reduced canopy enables improved storm water management greatly, allows the building to have better solar access for potential active and passive solar energy use, and allows for more residential density in the downtown area. The comprehensive plan specifically (and repeatedly) mentions the Town's desire for infill, dense residential development along already established transit corridors with existing infrastructure. We feel our project is a perfect addition to the town in this location and should be allowed this modification to the ordinance standard.

Best regards,

Jim Spencer, AIA, LEED BD+C  
Jim Spencer Architects, PA

I SAM MITCHELL & THOMAS LAYTON,  
petitioner(s) for the requested rezoning, hereby agree to all conditions described above, including the site plan, building elements and notes shown on the concept plan referenced in Condition #1 and acknowledge the subsequent requirement for a special use permit.

PETITIONER SIGNATURE

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