

FILED 04, 2025 BOHLER ENGINEERING INC. PROJECT NO. 2025-02/04/2026 PLAN SET NO. NC250070.CADD-04-1 LAYOUT: C-101 COVER

SITE PLAN & ZONING NOTES:

- 1. SITE ADDRESS: 4012 VILLAGE PARK DRIVE KNIGHTDALE, NC 27545
2. OWNER: OPSJH LLC (252) 883-6216 821 COUNTRY CLUB ROAD ROCKY MOUNT, NC 27804
3. PIN: 1744-95-3860
4. SITE ACREAGE: 0.934 AC
5. ZONING: NMX
6. LAND USE: EXISTING LAND USE: VACANT PROPOSED LAND USE: MEDICAL OFFICE
7. NATURAL DEVELOPMENT CONSTRAINTS: N/A
8. PROPOSED BUILDING AREA: 14,038 SF (7,019 SF PER FLOOR)
9. VEHICLE PARKING (SEC. 7.1 G 2 c. xiv.):
MAXIMUM PARKING ALLOWED: 5.5 SPACES PER 1,000 GFA 5.5 SPACES * (14,038 SF / 1000 SF) = 77 SPACES
MINIMUM PARKING REQUIRED: 1/2 MAXIMUM 78 SPACES / 2 = 39 SPACES
PROPOSED PARKING: 44 OFF-STREET SPACES AND 4 ON-STREET SPACES ALONG VILLAGE PARK DRIVE
REQUIRED BICYCLE PARKING: 1 PER EVERY 10 PARKING SPACES 44 SPACES / 10 SPACES = 4 SPACES
PROPOSED BICYCLE PARKING: 6 SPACES
REQUIRED EV PARKING: 1 PER EVERY 40 SPACES, MIN 2 SPACES 2 SPACES
PROPOSED EV PARKING: 2 SPACES
10. REQUIRED BUILDING SETBACKS (SEC 8.8):
10.1. FRONT: 0' MIN, 10' MAX
10.2. SIDE: 10' MIN
10.3. REAR: 0' MIN
11. PROVIDED BUILDING SETBACKS
11.1. FRONT: 10'
11.2. SIDE: 16.3'
11.3. REAR: 178.3'
12. REQUIRED PARKING SETBACKS (SEC 8.8):
12.1. FRONT: PARKING PROHIBITED
12.2. SIDE: 0' MIN
12.3. REAR: 5' MIN
13. PROVIDED PARKING SETBACKS:
13.1. FRONT: N/A
13.2. SIDE: 11'
13.3. REAR: 11'
14. GATHERING SPACE (SEC 8.8):
14.1. REQUIRED: 1 SF PER 25 SF OF GFA OR 500 SF, WHICHEVER IS LESS 14,038 SF / 25 SF = 562 SF
14.2. PROVIDED: 570 SF
15. LIMIT OF DISTURBANCE AREA: 1.20 AC

CONSTRUCTION SITE PLAN DRAWINGS



PROPOSED KNIGHTDALE MEDICAL OFFICE BUILDING

LOCATION OF SITE
4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY
ST. MATTHEWS TOWNSHIP
SEC-000024-2025
TOK PROJECT # ZCP-5-24



LOCATION MAP SCALE: 1" = 1200'

OWNER OPSJH LLC 821 COUNTRY CLUB RD ROCKY MOUNT, NC 27804 (252) 883-6216

DEVELOPER CHAMBLISS & RABIL 405 ROGERS VIEW CT SUITE 107 RALEIGH, NC 27610 CHRIS DOUGHERTY (252) 883-8759 CHRIS@CHAMBLISS-RABIL.COM

PREPARED BY



CONTACT: OLIVER KAIJA, P.E. PHONE: (919) 578-9000 EMAIL: OKAIJA@BOHLERENG.COM

WATER ALLOCATION POLICY POINT ELEMENTS

Table with 2 columns: Policy Element, Points. Includes categories like Single Use Office, Stormwater, and Enhanced Roadside.

INFRASTRUCTURE INSPECTIONS QUANTITIES TABLE

Table with 2 columns: Phase Number(s), Phase 1. Lists various infrastructure items like Public Water, Sewer, Stormwater, and Street Signs.

*WATER MAINS 4" AND LARGER. **SEWER MAINS AND MANHOLES AS PART OF A COLLECTION SYSTEM. ***10 FT WIDE PATH IN LIEU OF SIDEWALK OR A MULTI-USE PATH AS PART OF A DEVELOPMENT AMENITY.

SHEET LIST TABLE

Table listing sheet numbers and titles, including Cover Sheet, General Notes, Boundary & Topographic Survey, and various construction details.

REFERENCES AND CONTACTS

- REFERENCES: BOUNDARY & TOPOGRAPHIC SURVEY, GEOTECHNICAL INVESTIGATION REPORT, ARCHITECTURAL PLAN, GOVERNING AGENCIES, DEVELOPMENT SERVICES, WAKE COUNTY PLANNING, DEVELOPMENT & INSPECTIONS, FIRE DEPARTMENT, WATER & SEWER, STORMWATER.
CONTACTS: BOHLER ENGINEERING INC., CHAMBLISS & RABIL, OPSJH LLC.

THE ABOVE REFERENCED DOCUMENTS ARE INCORPORATED BY REFERENCE AS PART OF THESE PLANS, HOWEVER, BOHLER ENGINEERING DOES NOT CERTIFY THE ACCURACY OF THE WORK REFERENCED OR DERIVED FROM THESE DOCUMENTS, BY OTHERS.

GENERAL NOTE: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT. WORK SCOPE PRIOR TO THE START OF CONSTRUCTION SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE SPECIFICATIONS OR APPLICABLE CODES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD IN WRITING PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF THE WORK AS DEFINED BY THE DRAWINGS AND ALL FULL PERFORMANCE WITH LOCAL, STATE, FEDERAL AND CODES.



REVISIONS table with columns: REV, DATE, COMMENT, CHECKED BY, DRAWN BY. Lists several revisions to the drawings.



Know what's below. Call before you dig. ALWAYS CALL 811 It's fast. It's free. It's the law.

MUNICIPAL REVIEW

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.: NCB230070.00
DRAWN BY: CC/RBS
CHECKED BY: OAK
DATE: 04/23/2025
CAD ID: [blank]

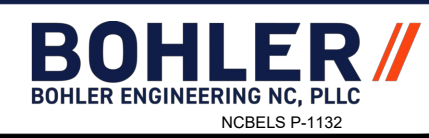
PROJECT:

CONSTRUCTION PLANS

FOR

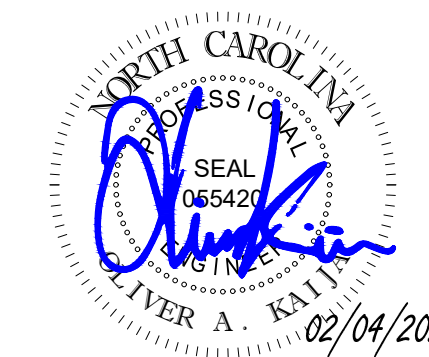


PROPOSED DEVELOPMENT
4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY
TOK PROJECT # ZCP-5-24



4130 PARKLAKE AVENUE, SUITE 200
RALEIGH, NC 27612
Phone: (919) 578-9000

NC@BohlerEng.com



SHEET TITLE:

COVER SHEET

SHEET NUMBER:

C-101

REVISION 6 - 02/04/26

a. Town Certification. This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: [Signature] Date: [blank]
Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.

By: [Signature] Date: [blank]
Land Use Administrator

a. Town Approved Standards Shall Control. In the event of a conflict or inconsistency between these construction drawings and the Town of Knightdale's Approved Standards for this project, the Approved Standards shall control. Town of Knightdale Approved Standards shall mean all development documents necessary for approval for the Property including, but not limited to, any special use permit, subdivision plan, site plan, subdivision plat(s), phasing schedule, Development Agreement, Utility Allocation Agreement, Annexation Agreement, the Town of Knightdale Standard Specification and Details Manual and applicable provisions of the North Carolina State Building Code.

b. Professional Design Engineer Certification. These improvements shall be constructed in accordance with the following drawings and with the Standard Specifications of the Town of Knightdale. I, Oliver Kaija, PE, certify that the Standard Specifications of the Town of Knightdale have been thoroughly checked and found to be applicable to this project. All exceptions to the applicable Town standards have been previously approved by the Town of Knightdale and said exceptions are shown on Sheet(s) NA of these drawings. Seal By: Oliver Kaija, PE. 055420 Date: 02/24/26

EROSION AND SEDIMENT CONTROL APPROVED PLAN

DATE: [blank]

PERMIT NO. SEC-000024-2025

Town of Knightdale Public Works Sedimentation & Erosion Control (919) 217-2250



Town of Knightdale Construction Inspector Signature

NOTES:

1. THE FIRM HAS NEITHER REVIEWED, NOR RELIED UPON A TITLE COMMITMENT OR ANY TITLE REPORT IN AND WHILE PREPARING THIS SURVEY AND THE CLIENT SHOULD NOT RELY UPON THIS SURVEY AS ASSURANCE OF OWNERSHIP, AS A GUARANTEE OF MARKETABLE TITLE OR FOR DISCLOSURE OF TITLE EXCEPTIONS THAT MAY, COULD OR DO ENCUMBER THE PROPERTY. THE CLIENT MUST ENGAGE A TITLE AGENT/TITLE INSURANCE COMPANY FOR REVIEW AND CONFIRMATION OF, AND INSURANCE REGARDING MARKETABLE TITLE.
2. AREAS COMPUTED BY COORDINATE METHOD.
3. PROPERTY SHOWN HEREON IS SUBJECT TO ALL RIGHTS-OF-WAY, EASEMENTS AND RESTRICTIONS OF RECORD.
4. ALL DISTANCES SHOWN ON SURVEY ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
5. RIGHTS-OF-WAY INFORMATION IS BASED ON DEEDS AND MAPS OF RECORD.
6. NC GRID COORDINATES (NAD83) OBTAINED BY USING GPS, PER THE NCVRS NETWORK.
7. BASIS OF BEARING SHOWN HEREON IS NC GRID (NAD 83 NSRS 2011).
8. VERTICAL DATUM SHOWN HEREON IS NAVD88.
9. THE PROPERTY SHOWN HEREON IS LOCATED IN FLOODZONE "ZONE X", AREA OF MINIMAL FLOODING, PER FLOOD INSURANCE RATE MAP 3720174400K PANEL 1744 EFFECTIVE DATE JULY 19, 2022.
10. NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS OBSERVED AT THE TIME OF THE SURVEY.
11. NO EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS OBSERVED AT THE TIME OF THE SURVEY.
12. EXISTING BUILDING SETBACKS SHOWN ON THE SURVEY ARE PER THE TOWN OF KNIGHTDALE UDO SECTION 6.8, UNLESS OTHERWISE NOTED.



a. **Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

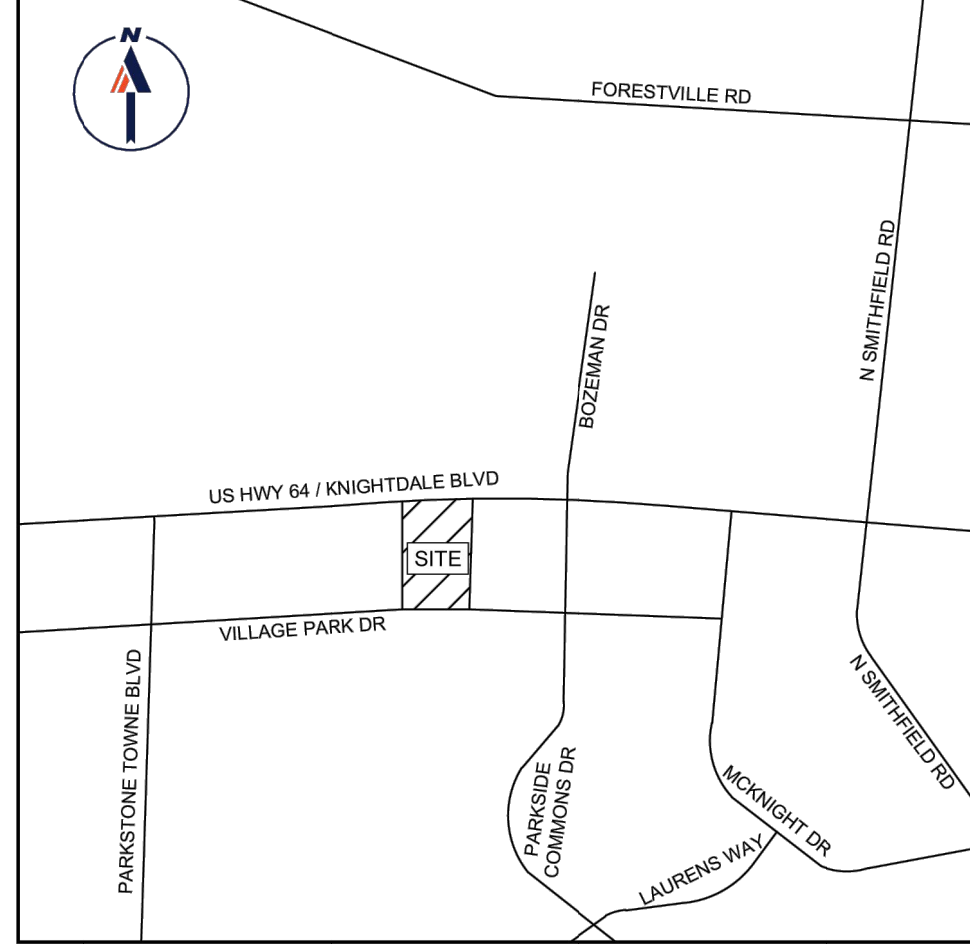
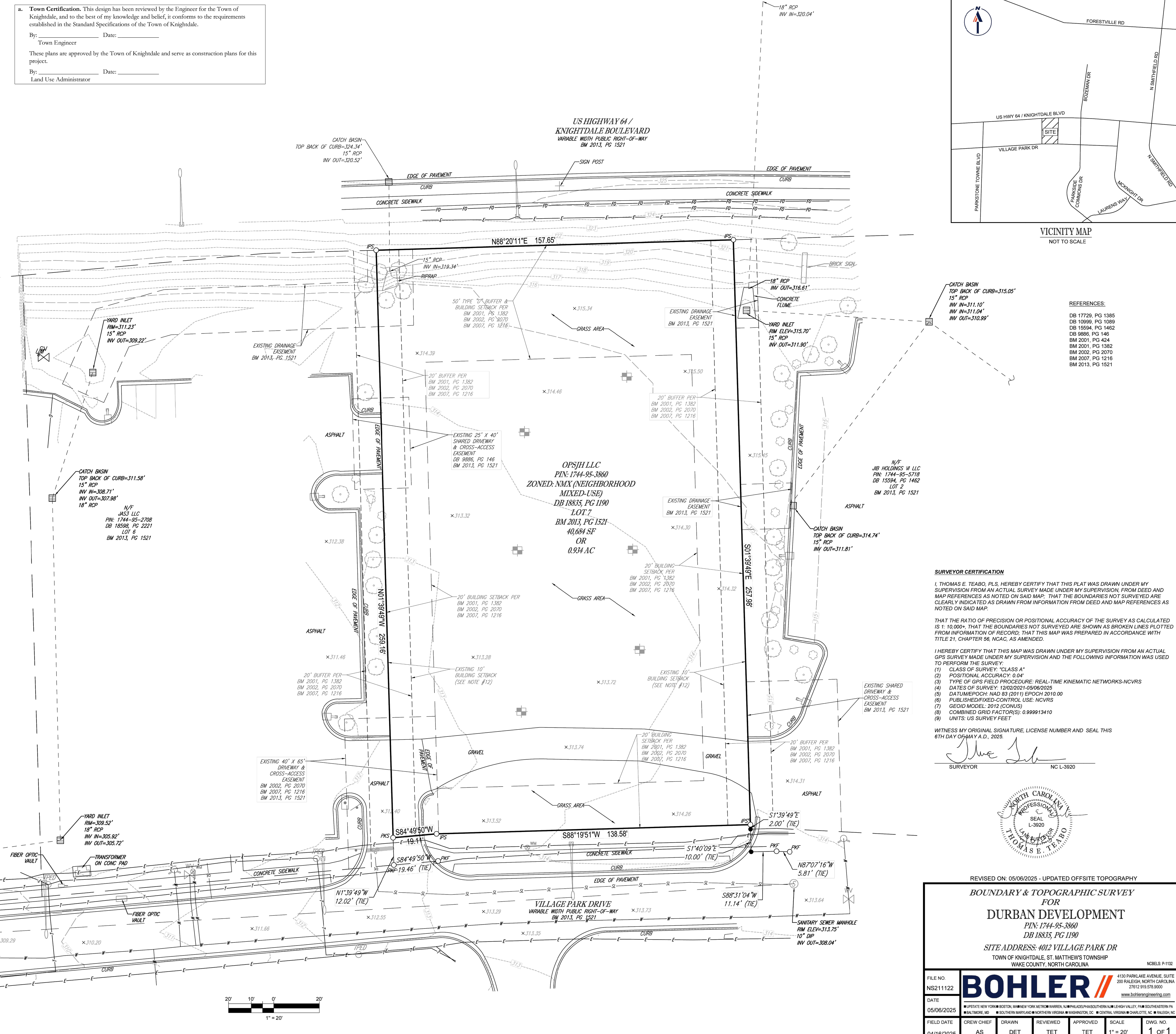
By: _____ Date: _____
Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.

By: _____ Date: _____
Land Use Administrator

LEGEND

	LINE SURVEYED		WATER METER
	LINE NOT SURVEYED		WATER VALVE
	EXISTING CONTOUR		FIRE HYDRANT
	EXISTING SPOT ELEVATION		STREET LIGHT
	APPROX. LOC. UNDERGROUND WATER LINE PER UTILITY MARKOUT		SIGN
	APPROX. LOC. UNDERGROUND ELEC. LINE PER UTILITY MARKOUT		MAIL BOX
	APPROX. LOC. UNDERGROUND FIBER OPTIC LINE PER UTILITY MARKOUT		FENCE
	SANITARY MANHOLE		AREA LIGHT
	STORM DRAINAGE GRATE		CLEAN OUT
	TREE		IRON PIPE FOUND
	BUSH		PK NAIL FOUND
	TEST HOLE BORING		IRON PIPE SET
			PK NAIL SET
			COMPUTED POINT



VICINITY MAP NOT TO SCALE

- REFERENCES:
- DB 17729, PG 1385
 - DB 10989, PG 1089
 - DB 15594, PG 1462
 - DB 9886, PG 146
 - BM 2001, PG 424
 - BM 2001, PG 1382
 - BM 2002, PG 2070
 - BM 2007, PG 1216
 - BM 2013, PG 1521

SURVEYOR CERTIFICATION

I, THOMAS E. TEABO, P.L.S., HEREBY CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION, FROM DEED AND MAP REFERENCES AS NOTED ON SAID MAP; THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FROM DEED AND MAP REFERENCES AS NOTED ON SAID MAP.

THAT THE RATIO OF PRECISION OR POSITIONAL ACCURACY OF THE SURVEY OR CALCULATED IS 1: 10,000+; THAT THE BOUNDARIES NOT SURVEYED ARE SHOWN AS BROKEN LINES PLOTTED FROM INFORMATION OF RECORD; THAT THIS MAP WAS PREPARED IN ACCORDANCE WITH TITLE 21, CHAPTER 56, N.C.A.C., AS AMENDED.

I HEREBY CERTIFY THAT THIS MAP WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL GPS SURVEY MADE UNDER MY SUPERVISION AND THE FOLLOWING INFORMATION WAS USED TO PERFORM THE SURVEY:

- (1) CLASS OF SURVEY: "CLASS A"
- (2) POSITIONAL ACCURACY: 0.04'
- (3) TYPE OF GPS FIELD PROCEDURE: REAL-TIME KINEMATIC NETWORKS-NCVRS
- (4) DATES OF SURVEY: 10/02/2021-09/08/2025
- (5) DATUM/EPOCH: NAD 83 (2011) EPOCH 2010.00
- (6) PUBLISHED/FIXED-CONTROL USE: NCVRS
- (7) GEOID MODEL: 2012 (CONUS)
- (8) COMBINED GRID FACTOR(S): 0.999913410
- (9) UNITS: US SURVEY FEET

WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS 6TH DAY OF MAY A.D., 2025.

Thomas E. Teabo
SURVEYOR NC L-3920



REVISED ON: 05/06/2025 - UPDATED OFFSITE TOPOGRAPHY

BOUNDARY & TOPOGRAPHIC SURVEY FOR DURBAN DEVELOPMENT

PIN: 1744-95-3860
DB 18835, PG 1190

SITE ADDRESS: 4012 VILLAGE PARK DR
TOWN OF KNIGHTDALE, ST. MATTHEW'S TOWNSHIP
WAKE COUNTY, NORTH CAROLINA

FILE NO. NS211122	DATE 05/06/2025	FIELD DATE 04/16/2025	CREW CHIEF AS	DRAWN DET	REVIEWED TET	APPROVED TET	SCALE 1" = 20'	DWG. NO. 1 OF 1
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BOHLER ENGINEERING - ALL RIGHTS RESERVED. NO OTHER THAN THE ORIGINAL PROJECT OR THE PURPOSE ORIGINALY INTENDED, WITHOUT THE WRITTEN PERMISSION OF BOHLER ENGINEERING IS PROHIBITED.



a. **Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: _____ Date: _____
Town Engineer

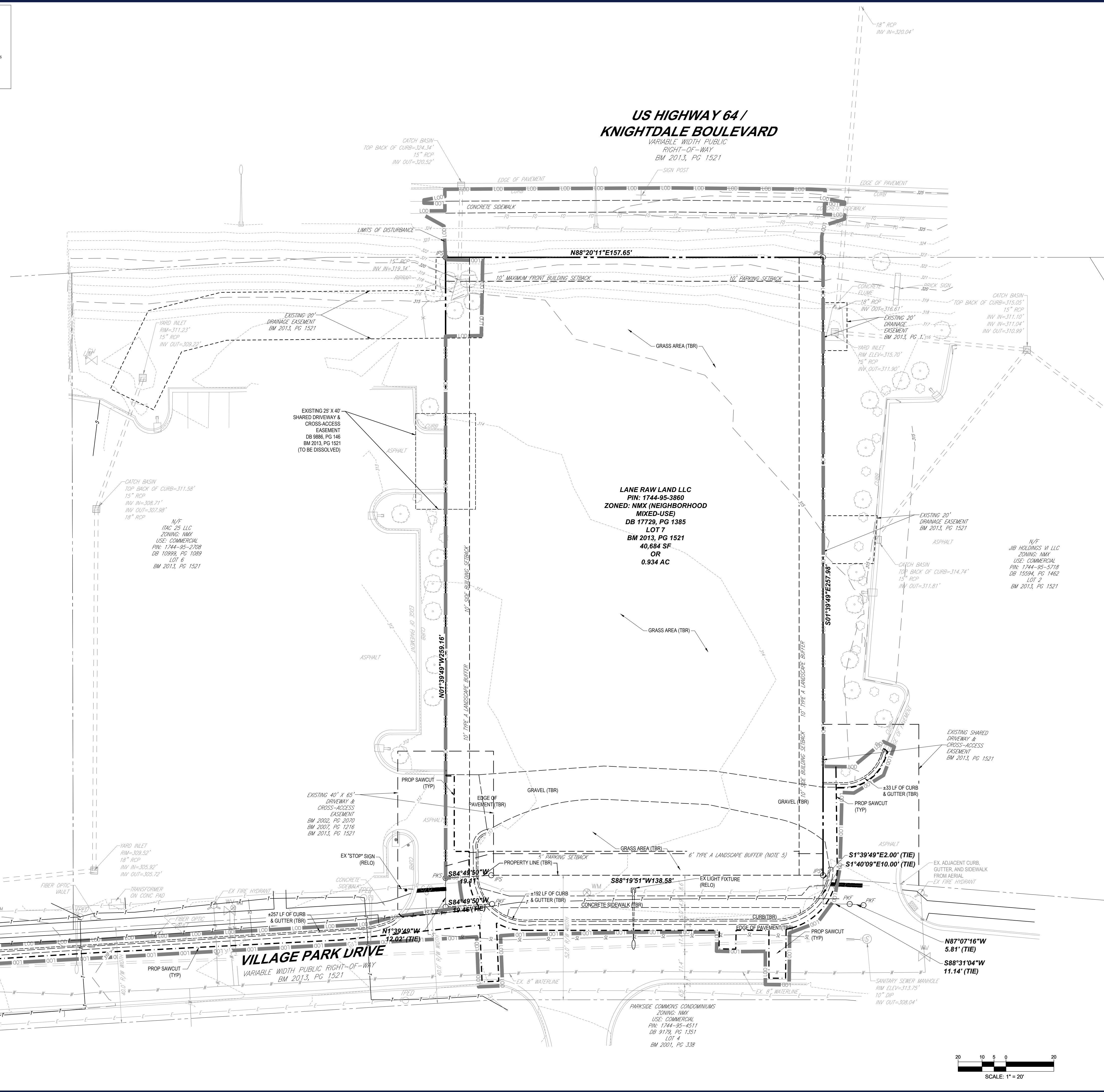
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By: _____ Date: _____
Land Use Administrator

DEMOLITION ABBREVIATIONS	
ABBREVIATION	DESCRIPTION
(TBA)	TO BE ABANDONED
(TBR)	TO BE REMOVED
(TBV)	TO BE VACATED
(RELO)	TO BE RELOCATED

EXISTING CONDITIONS & DEMOLITION NOTES:

- EXISTING RIGHT-OF-WAY WIDTH OF VILLAGE PARK DRIVE AT SUBJECT PROPERTY VARIES.
- BOUNDARY AND TOPOGRAPHIC SURVEY TO BE UTILIZED IN SATISFYING THE ENVIRONMENTAL SURVEY REQUIREMENT.
- LANDSCAPED AREAS REQUIRED BY CHAPTER 7 OF THE UDO SHALL NOT CONTAIN ANY DEVELOPMENT, IMPERVIOUS SURFACES, OR SITE FEATURES THAT DO NOT FUNCTION TO MEET THE APPLICABLE STANDARDS FOR THAT AREA OR THAT REQUIRE REMOVAL OF EXISTING SIGNIFICANT VEGETATION (UDO, SEC. 7.4.E.1).
- NO GRADING, DEVELOPMENT, OR LAND-DISTURBING ACTIVITIES SHALL OCCUR WITHIN A BUFFER YARD IF FOREST CANOPY, SPECIMEN TREES, OR SIGNIFICANT VEGETATION EXISTS WITHIN THESE AREAS, UNLESS APPROVED BY THE LAND USE ADMINISTRATOR. IF GRADING WITHIN A BUFFER YARD IS PROPOSED, SLOPES OF 1:3 OR LESS ARE ENCOURAGED TO ENSURE THE PROPER TRANSITION OF GRADES TO THE ADJACENT PROPERTY AND TO FACILITATE LANDSCAPING AND MAINTENANCE (UDO, SEC. 7.4.E.2).
- ALL AREAS WITHIN FLOODWAYS, REQUIRED STREAM BUFFERS, REQUIRED BUFFER YARDS, SLOPE AREAS GREATER THAN 25%, AND WETLANDS ARE TREE SAVE AREAS AND ALL VEGETATION AND SOIL IS TO REMAIN UNDISTURBED (UDO, SEC. 4.7.4.H.1).
- TREE PROTECTION FENCES SHALL BE PLACED AROUND ALL PROTECTED TREES DESIGNATED TO BE SAVED PRIOR TO THE START OF DEVELOPMENT ACTIVITIES OR GRADING IN ACCORDANCE WITH STANDARD 2.10 OF THE TOWN OF KNIGHTDALE STANDARD SPECIFICATIONS AND DETAILS MANUAL. TREE PROTECTION FENCES SHALL REMAIN IN PLACE UNTIL DEVELOPMENT ACTIVITIES ARE COMPLETED. TO PREVENT UNINTENDED COMPACTION OF SOIL, THE AREA WITHIN THE PROTECTIVE BARRICADE SHALL REMAIN FREE OF ALL BUILDING MATERIALS, DIRT OR OTHER CONSTRUCTION DEBRIS, CONSTRUCTION TRAFFIC, STORAGE OF VEHICLES AND MATERIALS, AND MASS GRADING (UDO, SEC. 7.4.D.4.a.i.b).
- EXCEPT FOR DRIVEWAY ACCESS POINTS, SIDEWALKS, CURB, AND GUTTER; NO PAVING WITH CONCRETE OR OTHER IMPERVIOUS MATERIALS WITHIN FIVE (5) FEET OF A TREE DIP LINE SHALL BE ALLOWED UNLESS OTHERWISE APPROVED. WHERE GRADING WITHIN A TREE DRIP LINE CANNOT BE AVOIDED, CUT AND FILL SHALL BE LIMITED TO ONE-QUARTER (1/4) TO ONE-HALF (1/2) OF THE AREA WITHIN THE DRIP LINE, AND TREE ROOTS MUST BE PRUNED WITH CLEAN CUTS AT THE EDGE OF THE DISTURBED AREA. NO FILL SHALL BE PLACED WITHIN THE DRIP LINE OF A TREE WITHOUT VENTING TO ALLOW AIR AND WATER TO REACH THE ROOTS (UDO, SEC. 7.4.D.4.a.i.c).



BOHLER
BOHLER ENGINEERING NC, PLLC

SITE CIVIL AND CONSULTING ENGINEERING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	CHECKED BY
1	05/23/25	MASTER PLAN COMMENTS	RBS/CC
2	08/19/25	CONSTRUCTION DRAWINGS	RBS
3	10/08/25	CONSTRUCTION DRAWING	EM/OAK
4	01/07/26	CONSTRUCTION DRAWING	RBS
5	01/23/26	EROSION CONTROL COMMENTS	EM/OAK
6	02/04/26	CONSTRUCTION DRAWING	RBS

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MUNICIPAL REVIEW

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.: NCB230070.00
DRAWN BY: CC/RBS
DATE: 04/23/2025
CAD ID:

CONSTRUCTION PLANS

FOR

CHAMBLISS & BRABIL
CONTRACTORS, INC.

PROPOSED DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY
TOK PROJECT # ZCP-5-24

BOHLER
BOHLER ENGINEERING NC, PLLC
NCBELS P-1132

4130 PARKLAKE AVENUE, SUITE 200
RALEIGH, NC 27612
Phone: (919) 578-9000
NC@BohlerEng.com

SEAL
065420
02/04/2026
TAYLOR A. KAY

SHEET TITLE:
EXISTING CONDITIONS AND DEMOLITION PLAN

SHEET NUMBER:
C-201

REVISION 6 - 02/04/26



PAVEMENT LEGEND

Table with 2 columns: Pavement Type and Description. Includes Standard Duty Asphalt, Standard Duty Concrete, Heavy Duty Asphalt, and Dumpster Enclosure Concrete.

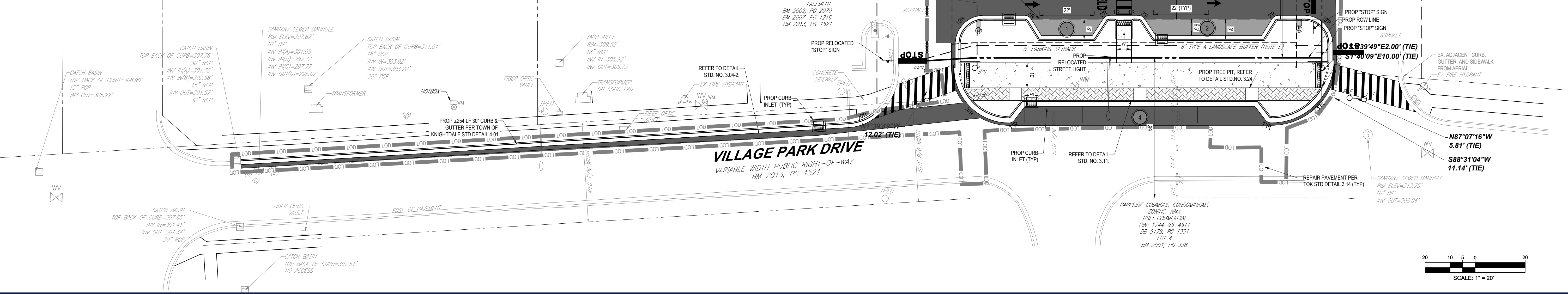
SITE PLAN & ZONING NOTES:

- 1. SITE ADDRESS: 4012 VILLAGE PARK DRIVE KNIGHTDALE, NC 27545
2. OWNER: OPSJH LLC
3. PIN: 1744-95-3860
4. SITE ACREAGE: 0.934 AC
5. ZONING: NMX
6. LAND USE: EXISTING LAND USE: VACANT PROPOSED LAND USE: MEDICAL OFFICE
7. NATURAL DEVELOPMENT CONSTRAINTS: N/A
8. PROPOSED BUILDING AREA: 14,038 SF (7,019 SF PER FLOOR)
9. VEHICLE PARKING (SEC. 7.1.G.2.c.xiv): MAXIMUM PARKING ALLOWED: 5.5 SPACES PER 1,000 GFA...

SITE PLAN NOTES:

- 1. ALL PAVEMENT MARKINGS, INCLUDING TRAFFIC CONTROL, STOP BARS, FIRE LANES, CROSSWALKS, ETC. SHALL BE MADE WITH REFLECTORIZED THERMOPLASTIC STRIPING...
2. ALL PROPOSED SIGNAGE IS REVIEWED AND APPROVED THROUGH A SEPARATE SIGN PERMIT REVIEW PROCESS...
3. TYPE A LANDSCAPE BUFFERS ARE FOR VEHICULAR SCREENING FROM STREET RIGHT-OF-WAYS AND ADJACENT PROPERTIES...

Town Certification. This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.



US HIGHWAY 64 / KNIGHTDALE BOULEVARD

BOHLER logo and company information: BOHLER ENGINEERING NC, PLLC. Services include Site Civil and Consulting Engineering, Program Management, Landscape Architecture, Sustainable Design, and Transportation Services.

REVISIONS table with columns: REV, DATE, COMMENT, DRAWN BY, CHECKED BY. Lists 6 revisions from 05/23/25 to 02/04/26.

811 logo and text: Know what's below. Call before you dig. ALWAYS CALL 811. It's fast. It's free. It's the law.

MUNICIPAL REVIEW section with project details: PROJECT No.: NCB23070.00, DRAWN BY: CCR/BS, CHECKED BY: OAK, DATE: 04/23/2025.

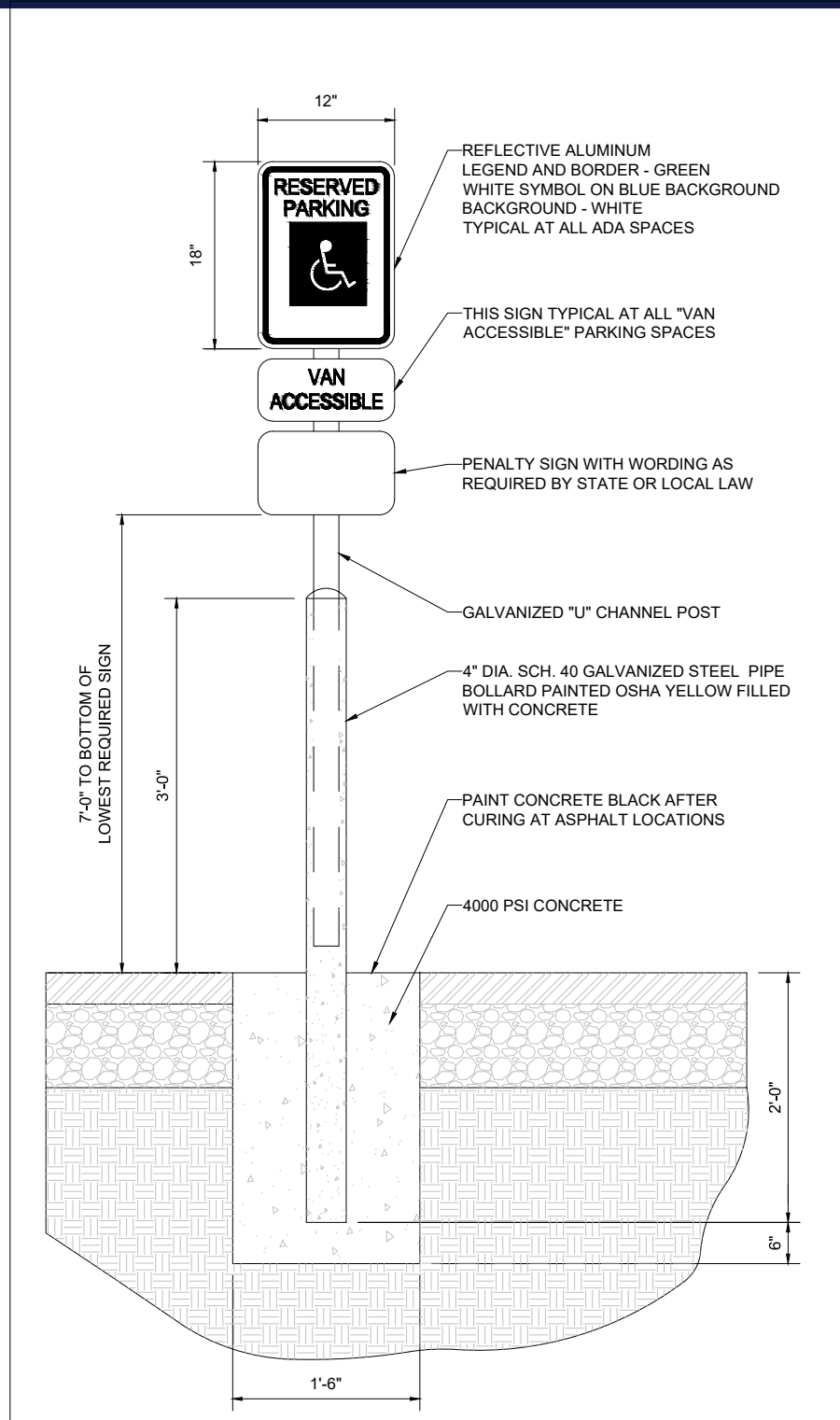
CONSTRUCTION PLANS FOR CHAMBLISS & RABIL CONTRACTORS, INC. PROPOSED DEVELOPMENT at 4012 VILLAGE PARK DRIVE, WAKE COUNTY, TOK PROJECT # ZCP-5-24.

BOHLER logo and contact information: BOHLER ENGINEERING NC, PLLC, 4130 PARKLAKE AVENUE, SUITE 200, RALEIGH, NC 27612.

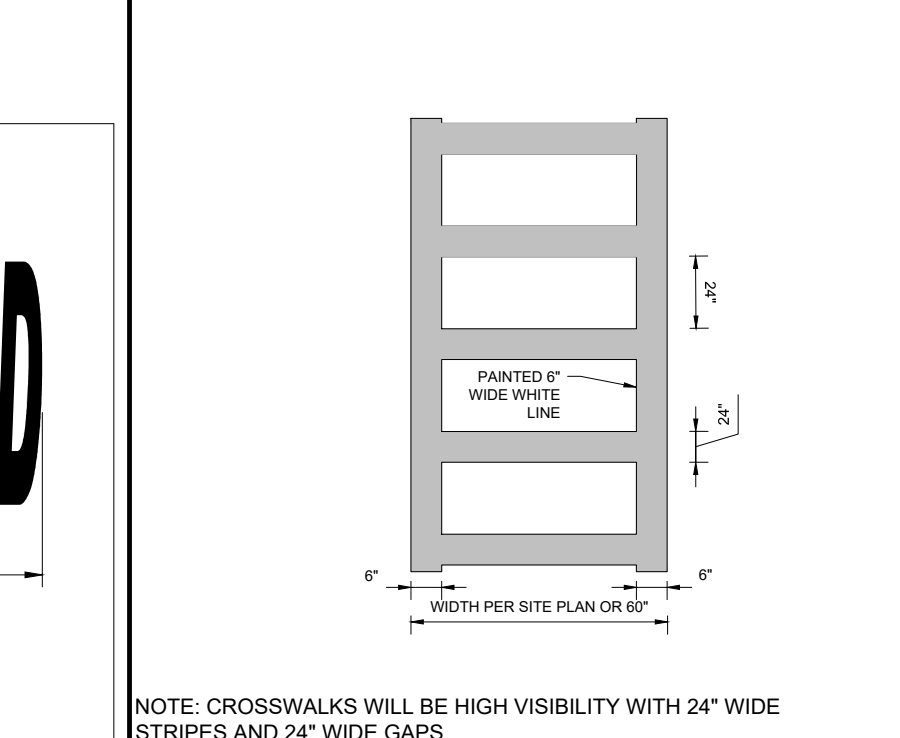
Professional seal and signature of Tyler A. Kelli, dated 02/04/2026.

SITE PLAN SHEET NUMBER: C-302. REVISION 6 - 02/04/26.

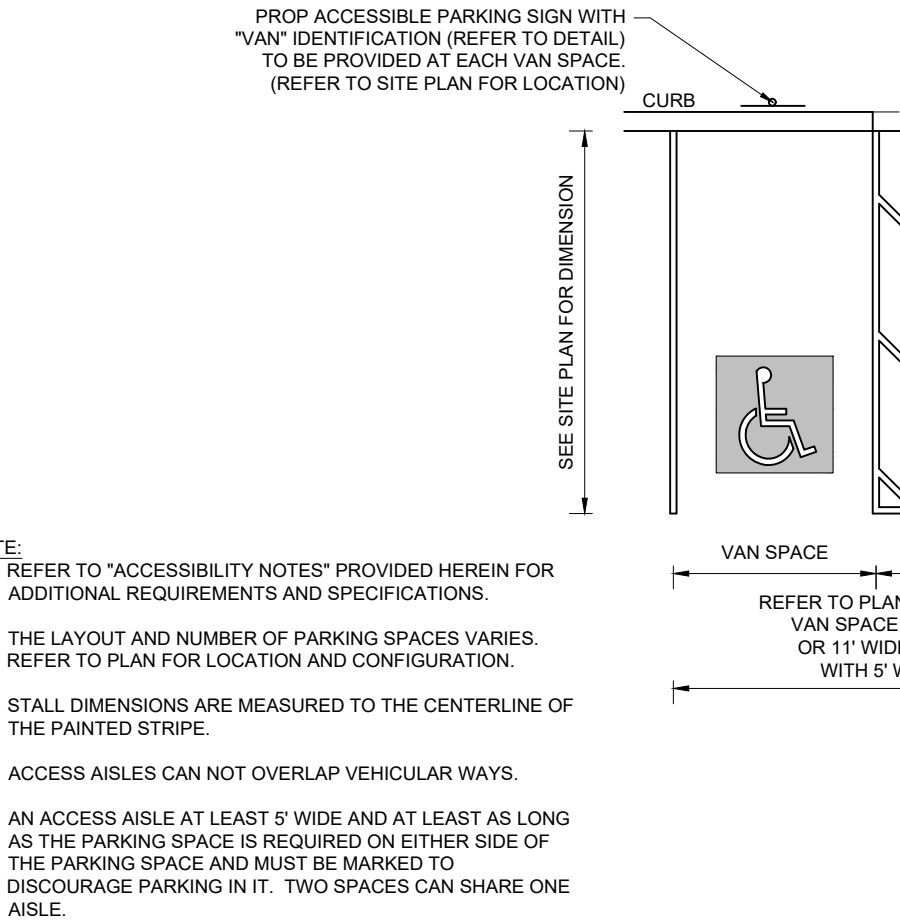
FILED: 2025 FEB 04 10:58 AM BOHLER ENGINEERING NC, PLLC PROJECT: 23070.00 LAND DEVELOPMENT CAD DRAWINGS PLAN SET: NCB23070.00 SITE PLAN - LAYOUT: C-302 SITE



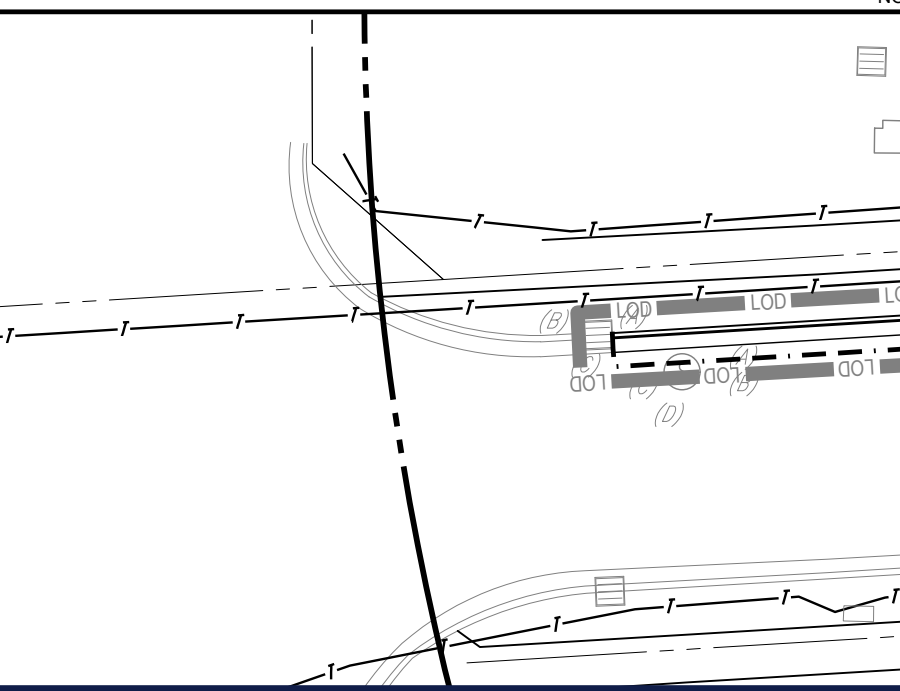
NOTE: ONE AT EACH ADA SPACE. WHERE ADA SPACES FACE EACH OTHER WITHOUT WALKWAY, THERE SHALL BE ONE POST WITH SIGNS MOUNTED BOTH SIDES.



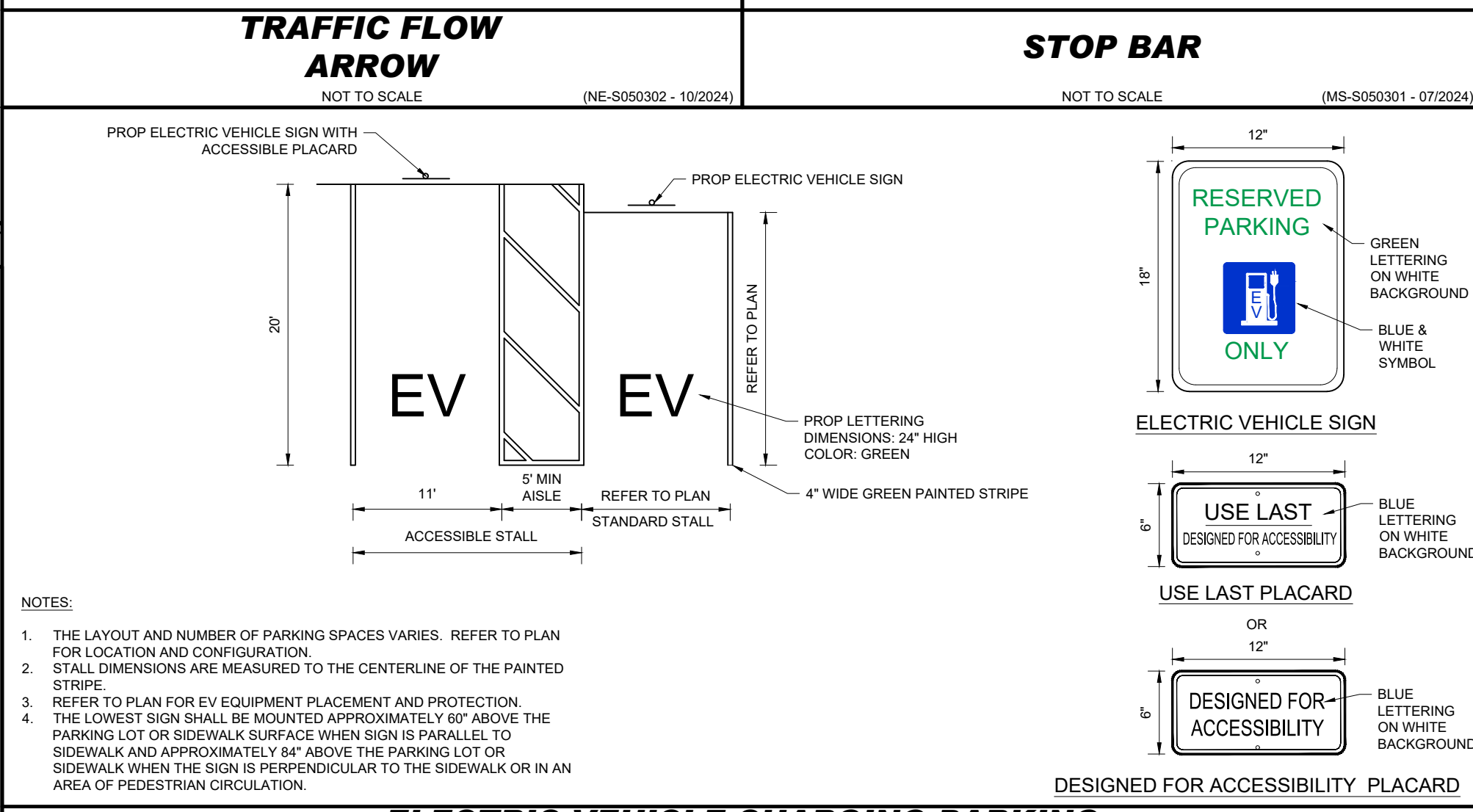
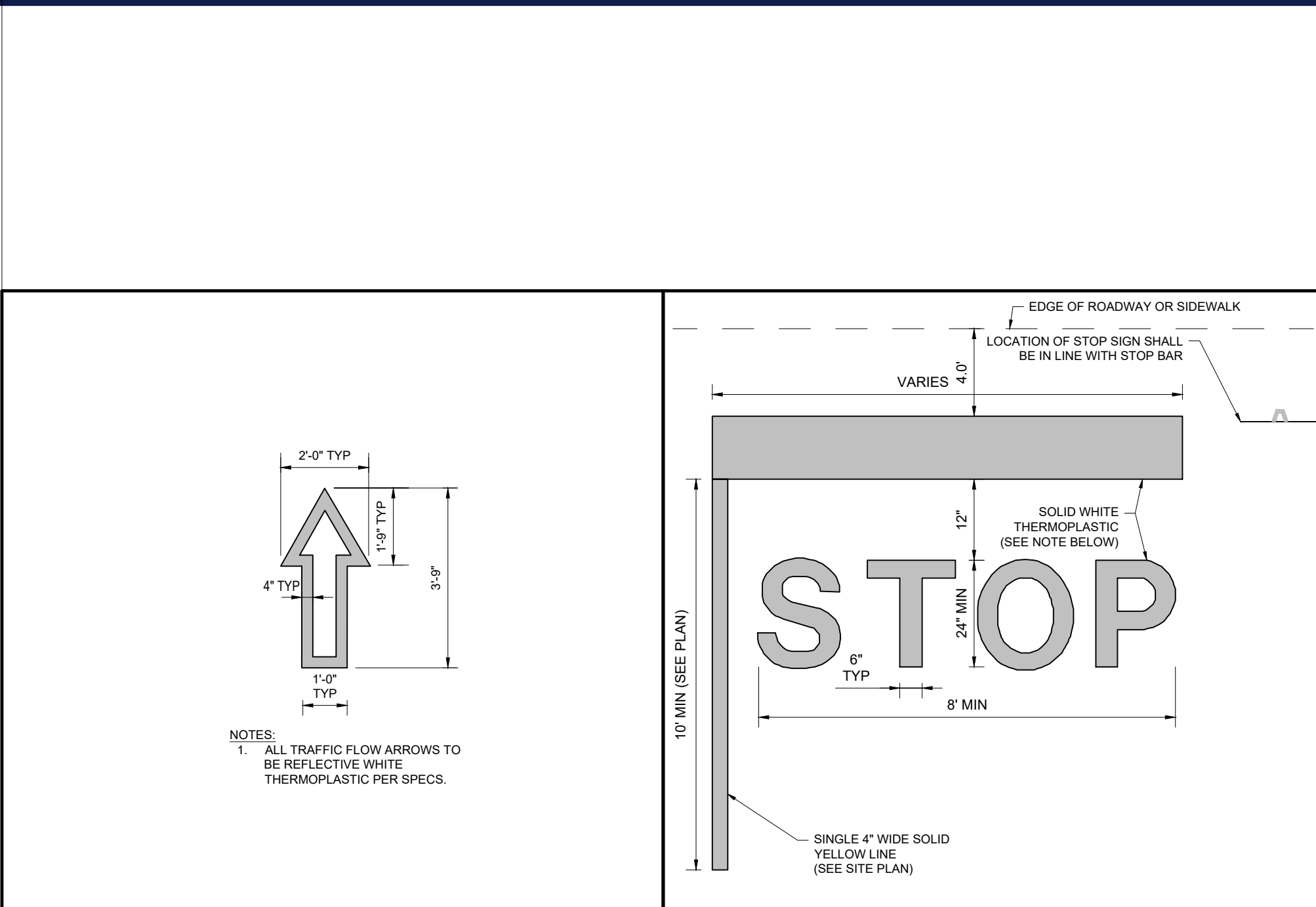
STOP BAR. NOT TO SCALE. (MS-S050301 - 07/2024)



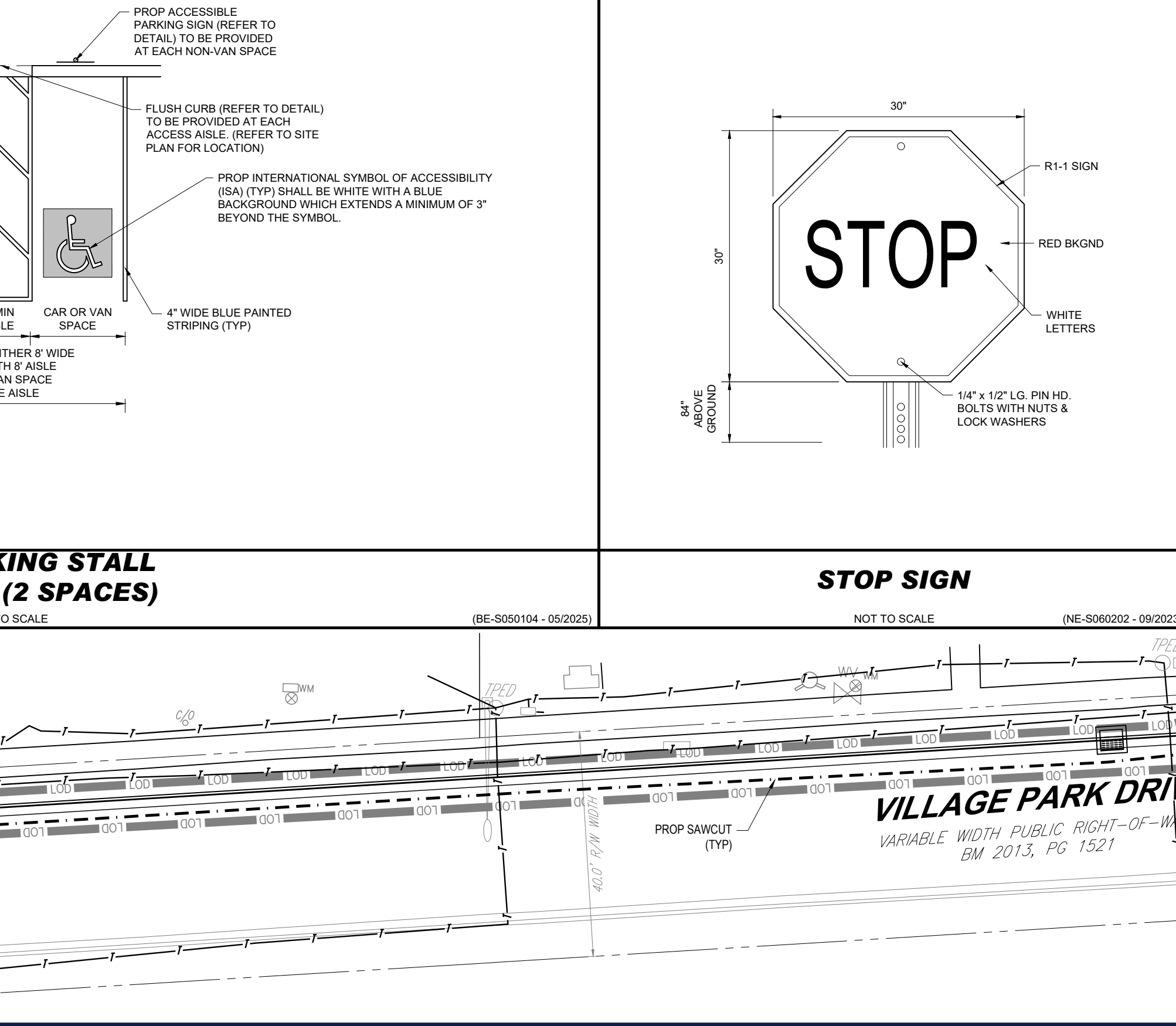
ELECTRIC VEHICLE SIGNING AND SIGNAGE (EV LETTERS ONLY). NOT TO SCALE. (BE-S050203 - 04/2024)



STOP SIGN. NOT TO SCALE. (NE-S060202 - 09/2023)

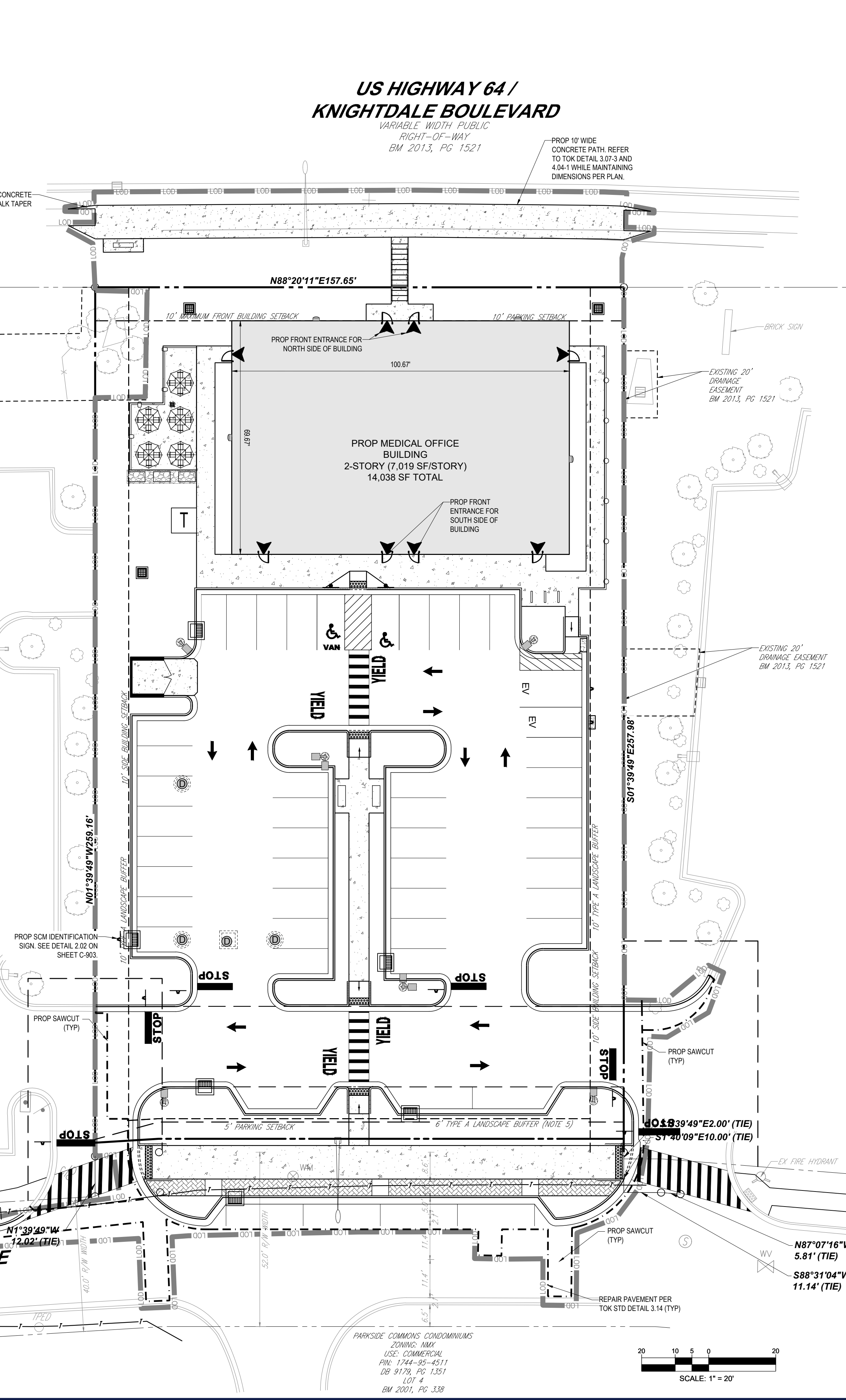


YIELD PAVEMENT MARKING. N.T.S. (DT/YIELD 120491)



US HIGHWAY 64 / KNIGHTDALE BOULEVARD. VARIABLE WIDTH PUBLIC RIGHT-OF-WAY. BM 2013, PG 1521.

PAVEMENT PLAN NOTES: 1. ALL PAVEMENT MARKINGS AND STRIPING MUST BE THERMOPLASTIC (EXCEPT PARKING STALLS).



REVISIONS table with columns for REV, DATE, COMMENT, and CHECKED BY. Includes a scale bar (1 inch = 20 feet) and a north arrow.

BOHLER ENGINEERING NC, PLLC. SITE CIVIL AND CONSULTING ENGINEERING. PROGRAM MANAGEMENT. LANDSCAPE ARCHITECTURE. SUSTAINABLE DESIGN. PERMITTING SERVICES. TRANSPORTATION SERVICES.

REVISIONS table with columns: REV, DATE, COMMENT, CHECKED BY. Includes entries for master plan comments, construction drawings, and erosion control.

811 logo with text: Know what's below. Call before you dig. ALWAYS CALL 811. It's fast. It's free. It's the law.

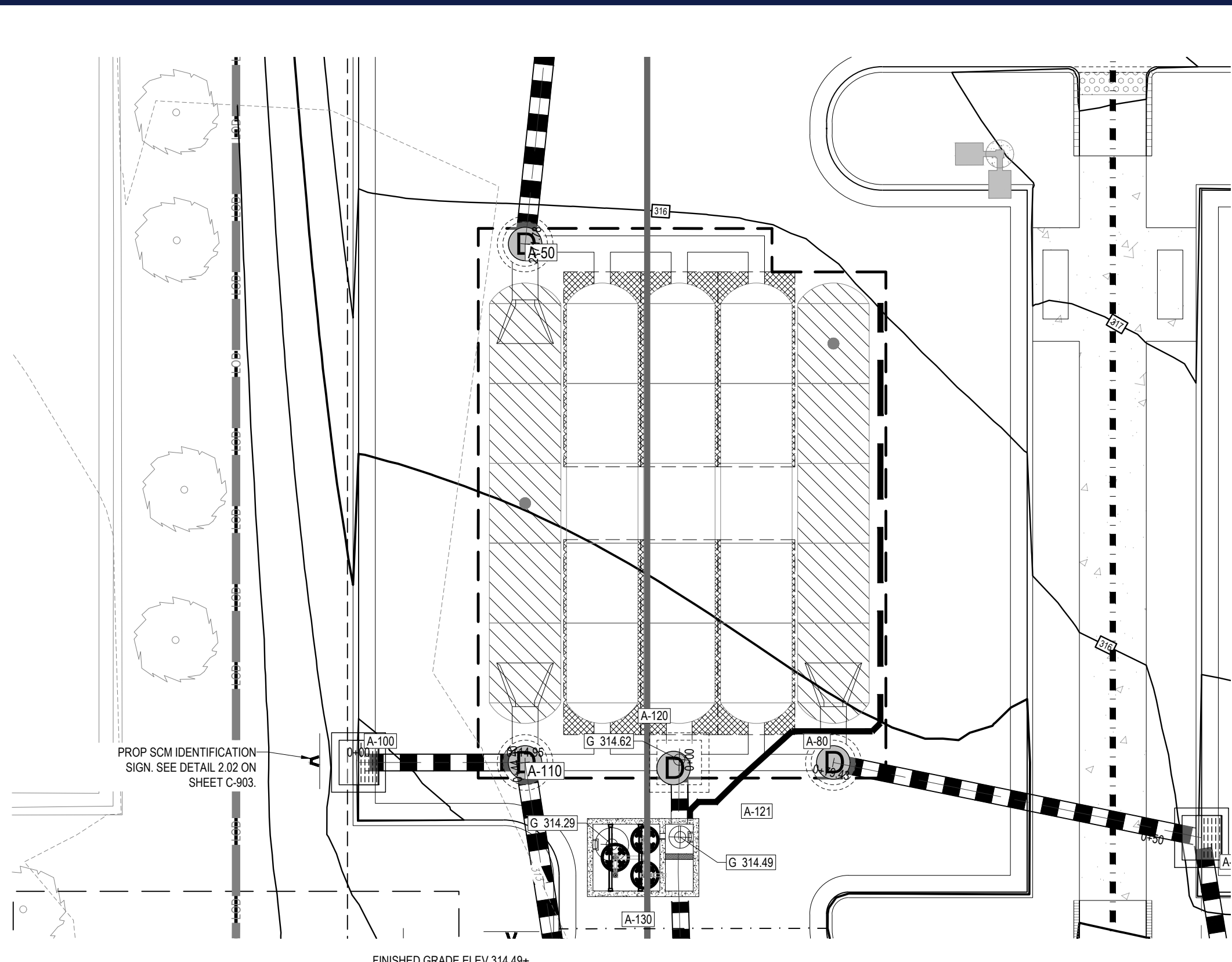
MUNICIPAL REVIEW. THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

CONSTRUCTION PLANS FOR CHAMBLISS & BRABILL CONTRACTORS, INC. PROPOSED DEVELOPMENT. 4012 VILLAGE PARK DRIVE, KNIGHTDALE, NC 27545. WAKE COUNTY, TOK PROJECT # ZCP-5-24.

BOHLER ENGINEERING NC, PLLC. 4130 PARKLAKE AVENUE, SUITE 200, RALEIGH, NC 27612. Phone: (919) 578-9000. NC@BohlerEng.com

Professional seal for Tyler A. Kelly, State of North Carolina, License No. 065420, dated 02/04/2026.

SHEET TITLE: SIGNS & PAVEMENT MARKINGS PLAN. SHEET NUMBER: C-303. REVISION 6 - 02/04/26.



REQUIRED SCM INSPECTION SEQUENCE - SCM INSTALLATION:

- WHEN SCHEDULING INSPECTIONS, PLEASE CALL THE PUBLIC WORKS ADMINISTRATIVE ASSISTANT AT (919) 217-2250. PLEASE NOTE: THE FOLLOWING PERSONNEL MUST BE PRESENT AT ALL INSPECTIONS:
- SITE SUPERVISOR
 - GEOTECH
 - AS-BUILT CERTIFYING ENGINEER OR SOMEONE UNDER THEIR SUPERVISION
- THE FOLLOWING ITEMS MUST BE INSPECTED BY TOK STAFF DURING THE INSTALLATION OF ANY SCM WITH DAM:
- KEY TRENCH EXCAVATION
 - PRINCIPAL SPILLWAY PIPE AND ASSOCIATED COMPONENTS:
 - CONCRETE CRADLE
 - ANTI-SEEP COLLAR
 - SEEPAGE DIAPHRAGM
 - OUTLET STRUCTURE
 - ANTI-FLOTATION BALLAST
 - ANY SITE-CONSTRUCTED REINFORCED CONCRETE STRUCTURES
- THE FOLLOWING ITEMS MUST BE INSPECTED BY TOK STAFF DURING THE INSTALLATION OF ANY SAND FILTERS OR BIORETENTION DEVICES:
- SUBGRADE OR CONSTRUCTED FOUNDATION
 - OUTLET OR RISER IN COMBINATION WITH CONNECTING UNDERDRAINS
 - FILTER MEDIA
 - DAM ITEMS ON PREVIOUS LIST IF APPLICABLE

MC-3500 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-3500.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT². THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE 46.32 FOR MANIFOLD SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- ADS DOES NOT DESIGN OR PROVIDE MEMBRANE LINER SYSTEMS. TO MINIMIZE THE LEAKAGE POTENTIAL OF LINER SYSTEMS, THE MEMBRANE LINER SYSTEM SHOULD BE DESIGNED BY A KNOWLEDGEABLE GEOTECHNICAL PROFESSIONAL AND INSTALLED BY A QUALIFIED CONTRACTOR.

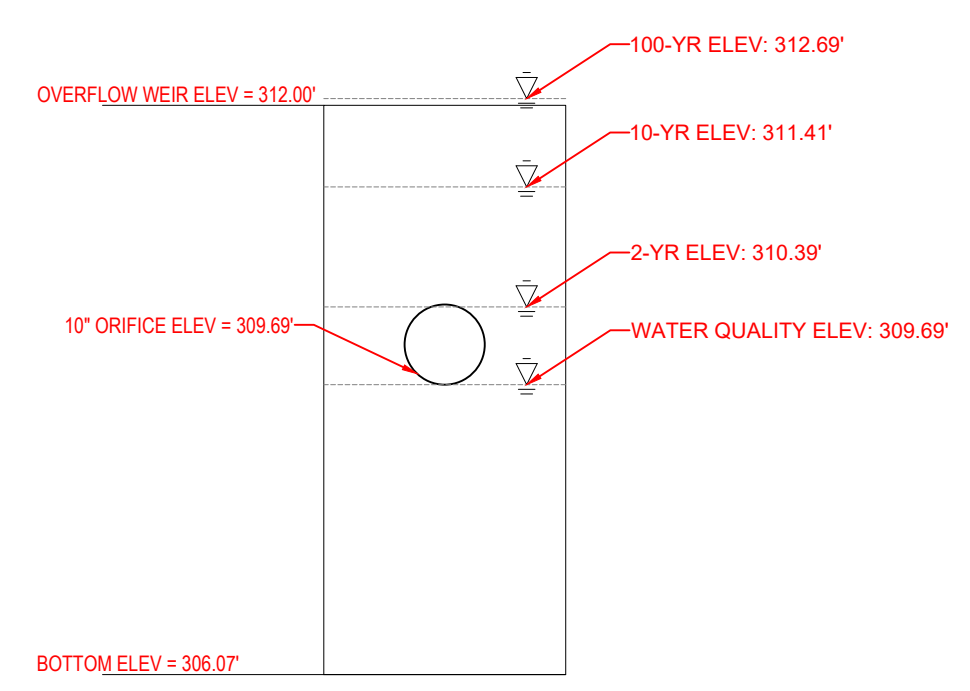
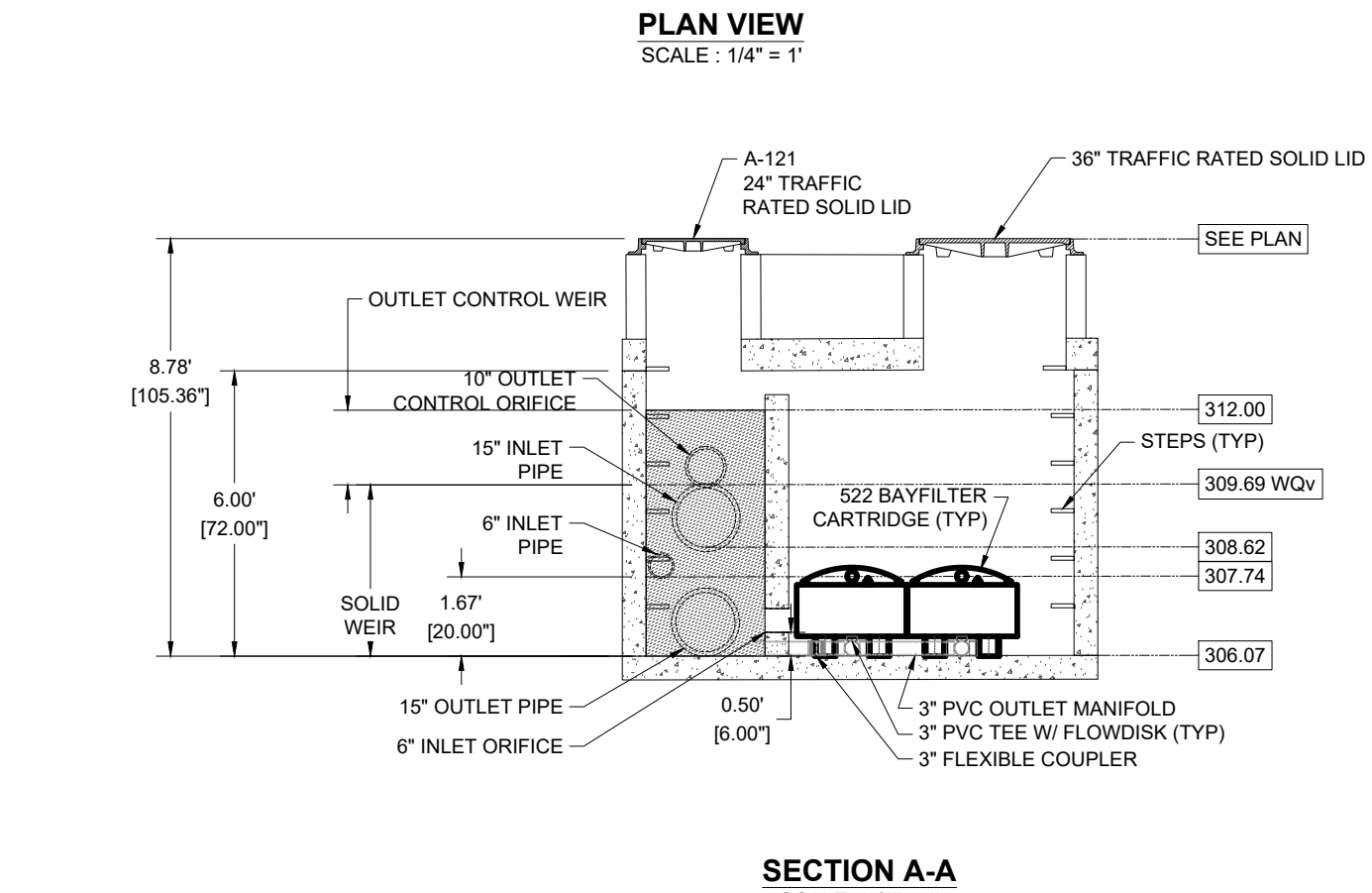
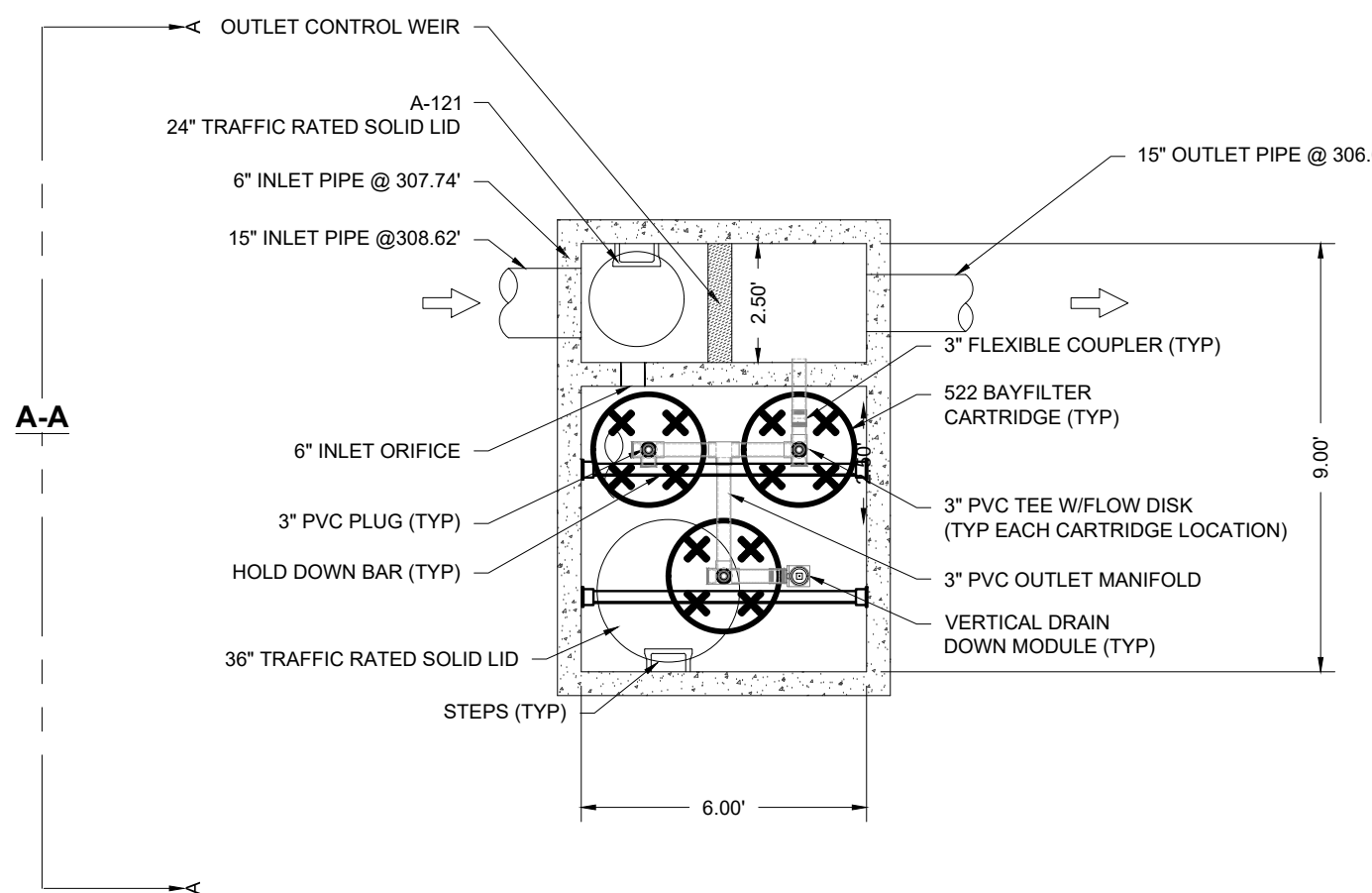
IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

- STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOTTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELLED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEALED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE; AASHTO M43 #3, 357, 4, 467, 5, 56, OR 57.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

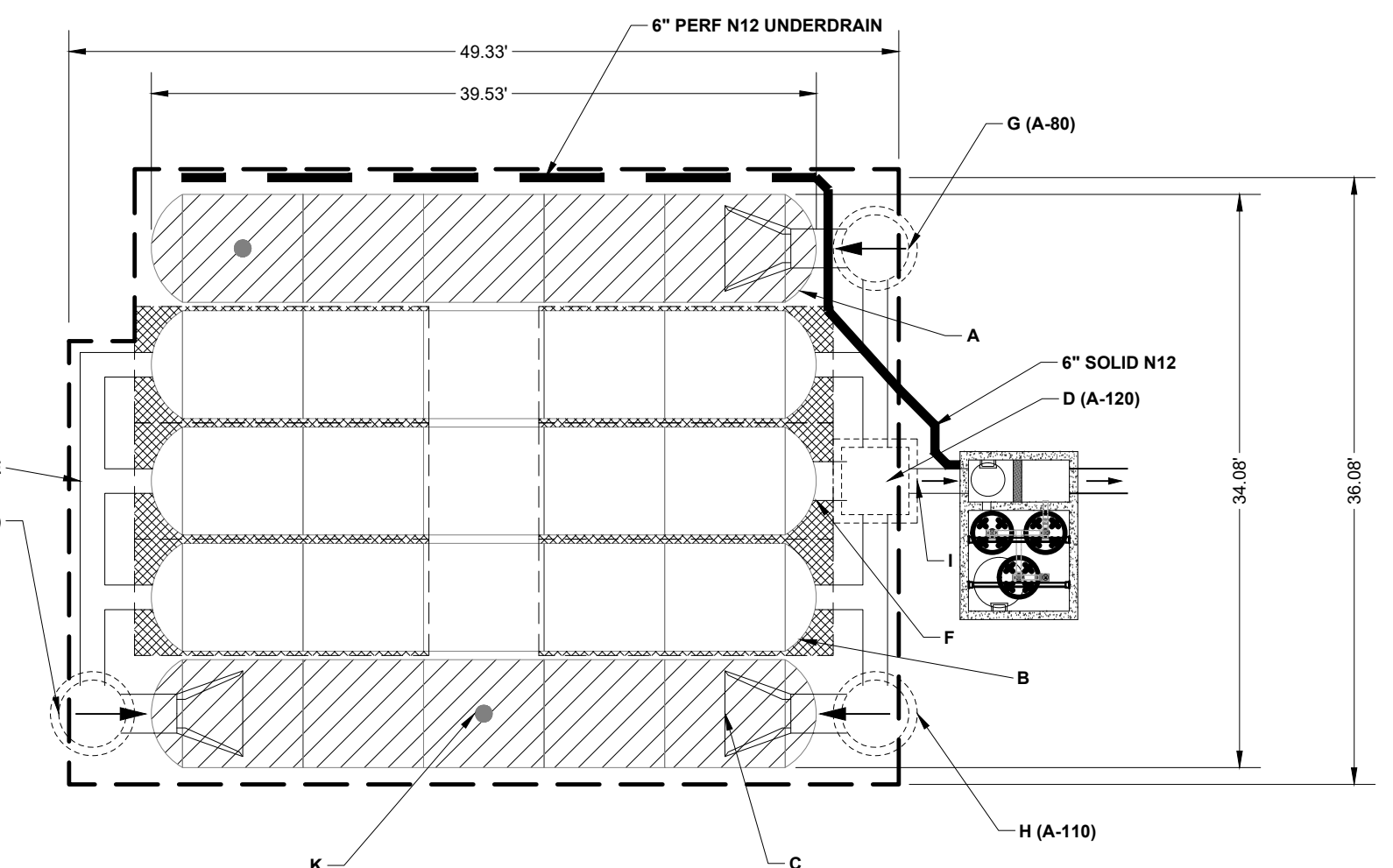
NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING. USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-800-821-6710 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



OUTLET CONTROL WEIR
SCALE: 1/2\"/>



DETAIL A - STORMTECH MC-3500 CHAMBER SYSTEM
SCALE: 1/2\"/>

PROPOSED LAYOUT	PROPOSED ELEVATIONS	PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT	MAX FLOW
25 STORMTECH MC-3500 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	320.24	A	24\"/>		
10 STORMTECH MC-3500 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	314.24	A	24\"/>	2.06'	
12 STONE ABOVE (IN)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	313.74	A	15\"/>	23.39'	
9 STONE BELOW (IN)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	313.74	B	15\"/>	23.39'	
40 STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	313.74	C	15\"/>	23.39'	
5572 INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED)	TOP OF MC-3500 CHAMBER:	312.24	D	15\"/>	23.39'	
	15\"/>	310.44	E	15\"/>	23.39'	
	15\"/>	310.44	F	24\"/>	2.06'	
1742 SYSTEM AREA (SF)	24\"/>	308.68	G	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		5.2 CFS IN
170.8 SYSTEM PERIMETER (LI)	24\"/>	308.68	H	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		5.2 CFS IN
	24\"/>	308.68	I	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		14.0 CFS OUT
	24\"/>	308.68	J	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		5.2 CFS IN
	BOTTOM OF MC-3500 CHAMBER:	307.74	K	6\"/>		

- ISOLATOR ROW PLUS (SEE DETAIL)
- PLACE MINIMUM 17.5' OF ADSPLUS125 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS
- BED LIMITS

UNDERGROUND DETENTION DESIGN SUMMARY

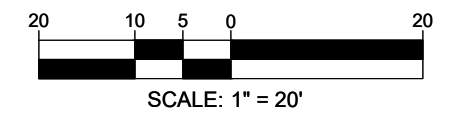
DESCRIPTION	PRE-DEVELOPMENT	POST DEVELOPMENT (TO UNDERGROUND DETENTION)
DRAINAGE AREA (AC)	1.00	1.00
COMPOSITE CURVE NUMBER	75	90
TIME OF CONCENTRATION (MIN)	9	5
2-YEAR, 24-HOUR PEAK FLOW RATE (CFS)	2.02	1.83
10-YEAR, 24-HOUR PEAK FLOW RATE (CFS)	4.01	3.76

a. **Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: _____ Date: _____
Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.

By: _____ Date: _____
Land Use Administrator



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PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	CHECKED BY
1	05/23/25	MASTER PLAN COMMENTS	RBS/CC OAK
2	08/19/25	CONSTRUCTION DRAWINGS	RBS EMO/OK RBS
3	10/08/25	CONSTRUCTION DRAWING	RBS EMO/OK RBS
4	01/07/26	CONSTRUCTION DRAWING	RBS EMO/OK RBS
5	01/23/26	EROSION CONTROL COMMENTS	RBS EMO/OK RBS
6	02/04/26	CONSTRUCTION DRAWING	RBS EMO/OK RBS

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PROJECT No.: NCB230070.00
DRAWN BY: CR/RBS
CHECKED BY: OAK
DATE: 04/23/2025
CAD LD: _____

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL
CONTRACTORS, INC.

PROPOSED DEVELOPMENT
4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY
TOK PROJECT # ZCP-5-24

BOHLER
BOHLER ENGINEERING NC, PLLC
NCBELS P-1132

4130 PARKLAKE AVENUE, SUITE 200
RALEIGH, NC 27612
Phone: (919) 578-9000
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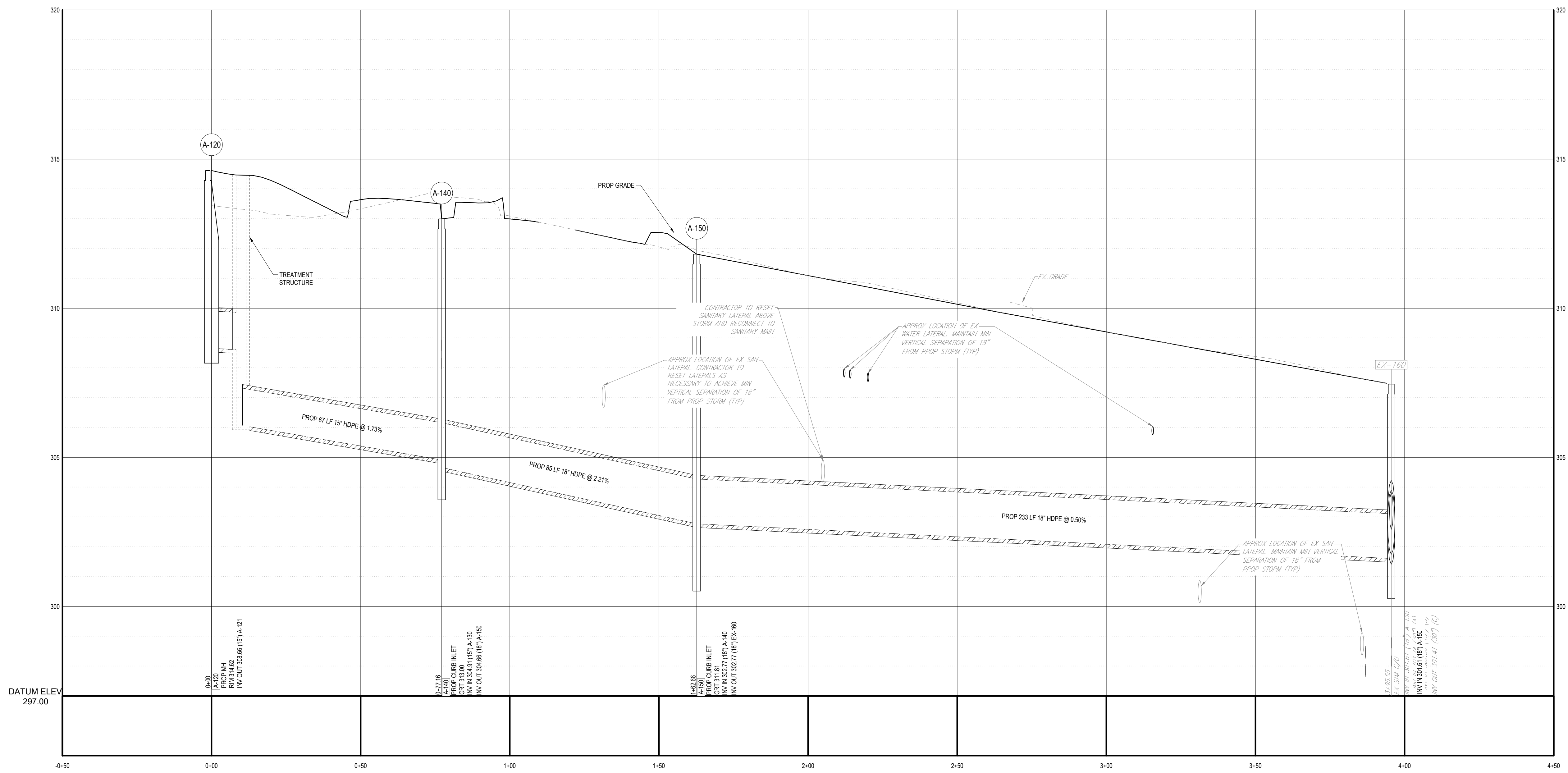
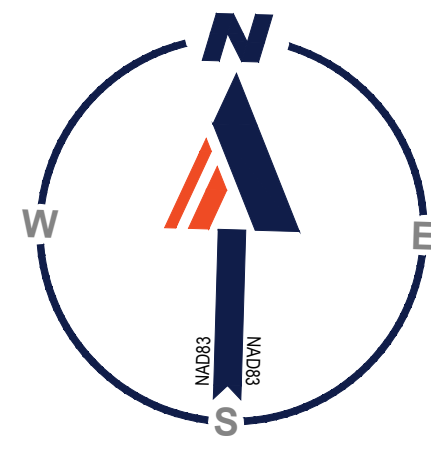
SEAL
065420
APR 17 2026
TAYLOR A. KALIN

02/04/2026

SHEET TITLE:
UNDERGROUND DETENTION

SHEET NUMBER:
C-402

REVISION 6 - 02/04/26



PROPOSED STORM PROFILE (A-120 - EX-160)

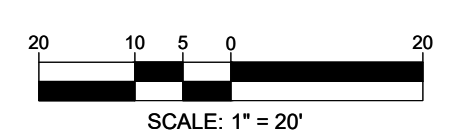
SCALE: 1" = 20' HORIZONTAL
1" = 2' VERTICAL

a. **Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: _____ Date: _____
Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.

By: _____ Date: _____
Land Use Administrator



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5	01/23/26	EROSION CONTROL COMMENTS	RBS EMO/OAK
6	02/04/26	CONSTRUCTION DRAWING	RBS EMO/OAK

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FOR

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CONTRACTORS, INC.

PROPOSED DEVELOPMENT
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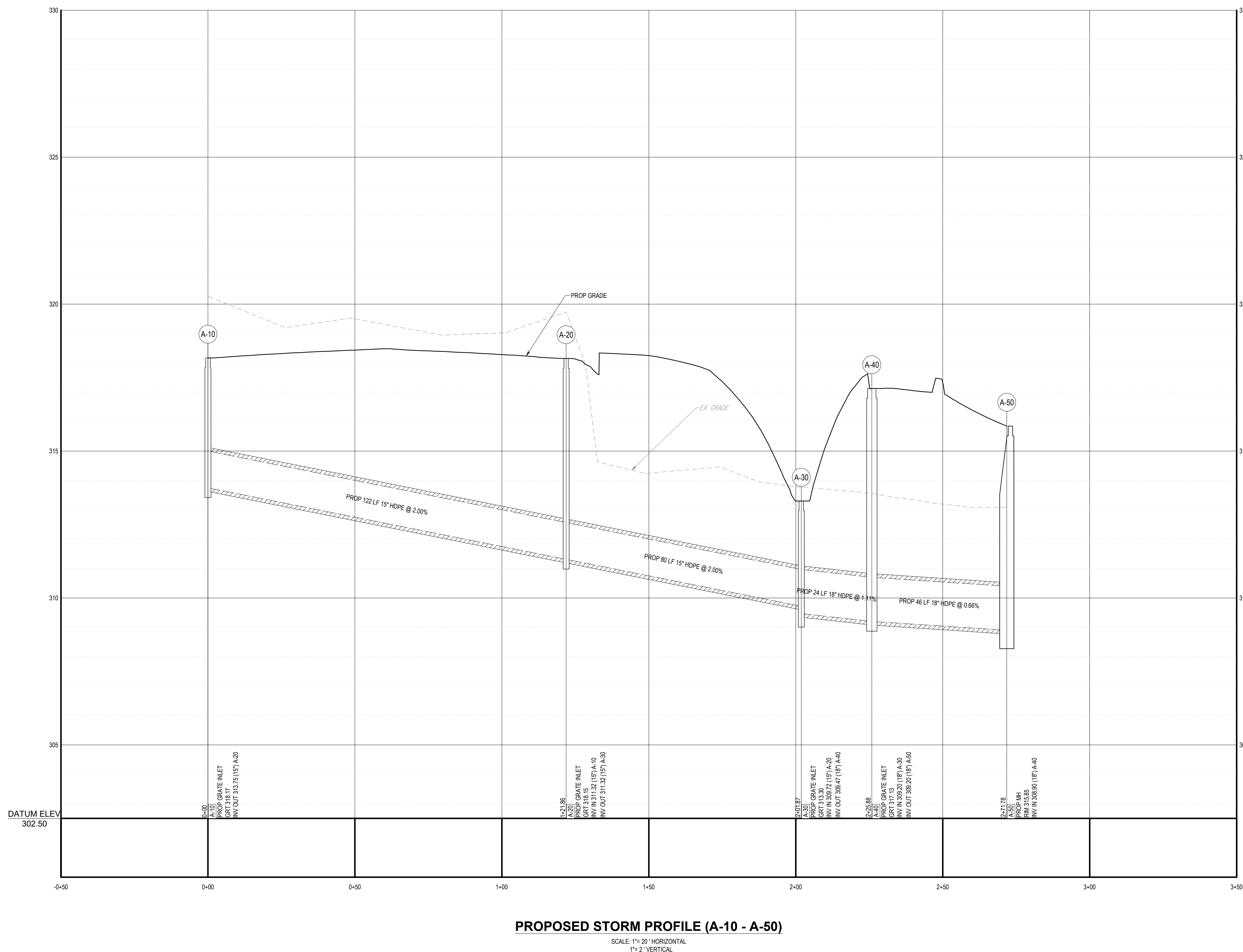
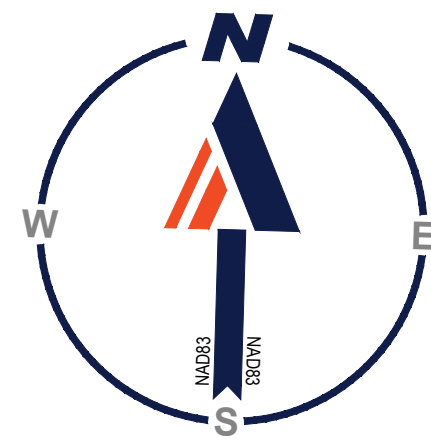
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RALEIGH, NC 27612
Phone: (919) 578-9000
NC@BohlerEng.com

SEAL
065420
TAYLOR A. KOLLI
02/04/2026

SHEET TITLE:
STORM PROFILE

SHEET NUMBER:
C-404

REVISION 6 - 02/04/26



FILED: 04/23/2025 10:04 AM BOHLER ENGINEERING, INC. PROJECT: 2023-2025 NCB230070-00 LAND DEVELOPMENT CAD DRAWINGS PLAN SET NCB230070-00 LAYOUT C-405 STM PROFILE

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REVISIONS

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5	01/23/26	EROSION CONTROL COMMENTS	RBS
6	02/04/26	CONSTRUCTION DRAWING	EM/OAK

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 CAD ID:

CONSTRUCTION PLANS
 FOR

CHAMBLISS & RABIL
 CONTRACTORS, INC.

PROPOSED DEVELOPMENT
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 KNIGHTDALE, NC 27545
 WAKE COUNTY
 TOK PROJECT # ZCP-5-24

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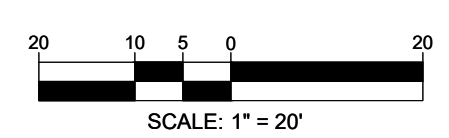
SEAL
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 IVER A. KOLLI
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By: _____ Date: _____
 Town Engineer

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By: _____ Date: _____
 Land Use Administrator



SHEET TITLE:
STORM PROFILE

SHEET NUMBER:
C-405

REVISION 6 - 02/04/26



WATER ALLOCATION POLICY POINT ELEMENTS	
SINGLE USE OFFICE	41 BASE POINTS
SEC. 2B STORMWATER - UNDERGROUND	5 BONUS POINTS
SEC. 2C EXCLUSIVE USE OF NATIVE LANDSCAPE SPECIES	5 BONUS POINTS
SEC. 3 ENHANCED ROADSIDE LANDSCAPING AND HARDSCAPING	2 BONUS POINTS
TOTAL	53 POINTS

GENERAL UTILITY NOTES:

1. WET UTILITIES CONNECTION TO BUILDING TO BE COORDINATED BY ARCHITECT.
2. ELECTRIC SECONDARY CONNECTION TO BUILDING TO BE COORDINATED BY MEP.

CITY OF RALEIGH STANDARD UTILITY NOTES

(Rev. 01/2025)

1. ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH RALEIGH WATER DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: RALEIGH WATER HANDBOOK, CURRENT EDITION).
2. UTILITY SEPARATION REQUIREMENTS:
 - 2.1. A DISTANCE OF 10' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 2' FROM A PRIVATE WELL OR 5' FROM A PUBLIC WELL.
 - 2.2. WHEN INSTALLING WATER OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE RALEIGH WATER DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER.
 - 2.3. WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DP MATERIALS OR STEEL ENCASUREMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS.
 - 2.4. 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
 - 2.5. MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS, MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS, WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER RALEIGH WATER DETAILS W-14 & S-48).
 - 2.6. ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
3. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL FOR AN AMENDED PLAN &/OR PROFILE BY RALEIGH WATER PRIOR TO CONSTRUCTION.
4. DEVELOPER SHALL PROVIDE 30 DAYS ADVANCE WRITTEN NOTICE TO OWNER FOR ANY WORK REQUIRED WITHIN AN EXISTING CITY OF RALEIGH UTILITY EASEMENT TRAVELING PRIVATE PROPERTY.
5. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24-HOUR ADVANCE NOTICE TO RALEIGH WATER.
6. SEWER BYPASS PUMPING - A BYPASS PLAN SEALED BY AN NC PROFESSIONAL ENGINEER SHALL BE PROVIDED TO RALEIGH WATER PRIOR TO PUMPING OPERATIONS FOR APPROVAL. THE OPERATIONS AND EQUIPMENT SHALL COMPLY WITH THE RALEIGH WATER HANDBOOK.
7. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCE MAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
8. IS IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY RALEIGH WATER. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER RALEIGH WATER HANDBOOK PROCEDURE.
9. INSTALL WATER SERVICES WITH METERS LOCATED AT ROW WITHIN A 2' X 2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE.
10. INSPECTIONS OF 4" AND LARGER DIAMETER PRIVATE DISTRIBUTION SYSTEMS SHALL BE INSPECTED AS PART OF THE INFRASTRUCTURE PERMIT.
11. PRIVATE SEWER MAINS AS PART OF A COLLECTION SYSTEM ARE PERMITTED AND INSPECTED UNDER THE PRIVATE INFRASTRUCTURE PERMIT FOR SEWER.
12. ANY WATER OR SEWER SERVICES ON PRIVATE PROPERTY THAT WILL BE INSTALLED UNDER CONSTRUCTION DRAWINGS MAY REQUIRE A PLUMBING UTILITY PERMIT IN THE CITY OF RALEIGH. CONSULT WITH THE ENGINEERING INSPECTION COORDINATOR DURING THE PRE-CONSTRUCTION MEETING ON THE NECESSARY PERMITS.
13. INSTALL SEWER SERVICES WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED PER THE CURRENT NC PLUMBING CODE.
14. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI. BACKFLOW VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1' ABOVE THE NEXT UPSTREAM MANHOLE.
15. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS RESPECTIVELY PRIOR TO CONSTRUCTION.
16. NCDOT 7 RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
17. GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS & INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE RW FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A UC AND/OR BUILDING PERMIT. CONTACT (919) 996-4516 OR FOG@RALEIGH.GOV FOR MORE INFORMATION.
18. CROSS-CONNECTION REQUIREMENTS:
 - 18.1. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON THE DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA.
 - 18.2. THE DEVICES SHALL MEET THE AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS AND BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST.
 - 18.3. THE DEVICE AND INSTALLATION SHALL MEET THE GUIDELINES OF APPENDIX A - GUIDELINES AND REQUIREMENTS FOR THE CROSS CONNECTION PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT CROSS.CONNECTION@RALEIGH.GOV FOR MORE INFORMATION.
19. NOTICE FOR PROJECTS THAT INVOLVE AN OVERSIZED MAIN OR URBAN MAIN REPLACEMENT. ANY CITY REIMBURSEMENT GREATER THAN \$250,000.00 MUST UNDERGO THE PUBLIC BIDDING PROCESS.
20. PRIVATE SUB-METERING - NO RESALE OF WATER SHALL OCCUR WITHOUT APPROVAL OF THE NORTH CAROLINA UTILITY COMMISSION. SUB-METERING SHALL BE IN ACCORDANCE WITH SECTION 1400 OF THE 'SAFE DRINKING WATER ACT'.

a. **Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: _____ Date: _____
Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.

By: _____ Date: _____
Land Use Administrator

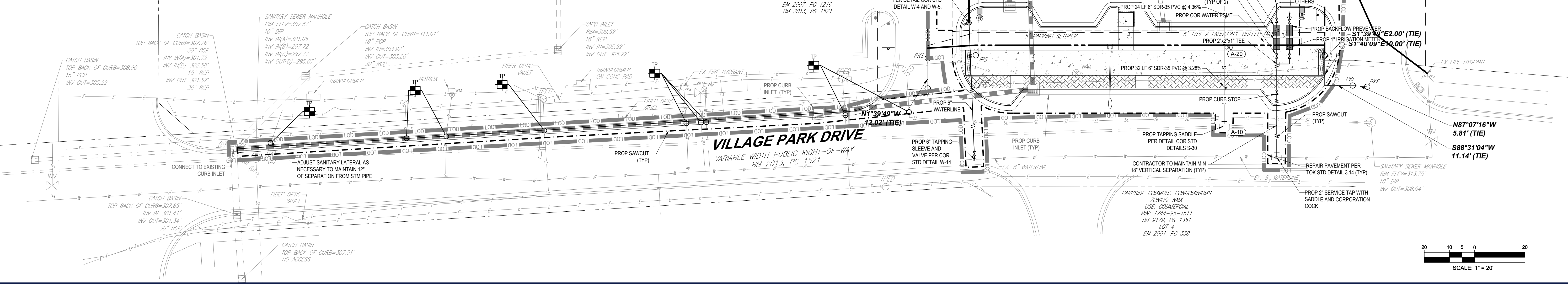
SANITARY STRUCTURE SCHEDULE

STRUCTURE #	CATEGORY	RIM	INV IN	INV OUT
A-10	PROP SADDLE CONNECTION		INV IN = 307.27' (6")	INV OUT = 306.80' (10")
A-20	PROP CLEANOUT	314.66	INV IN = 308.33' (6")	INV OUT = 308.33' (6")
A-30	PROP CLEANOUT	315.09	INV IN = 309.39' (6")	INV OUT = 309.39' (6")
A-40	PROP CLEANOUT	316.92	INV IN = 312.19' (6")	INV OUT = 312.19' (6")
A-50	PROP CLEANOUT		INV IN = 314.85' (6")	INV OUT = 314.85' (6")
A-60	PROP BUILDING CONNECTION	318.50		INV OUT = 315.00' (6")

SANITARY SEWER PIPE SCHEDULE

FROM	FROM INV	TO	TO INV	PIPE LENGTH	SLOPE (%)	DIAMETER (IN.)	MATERIAL
A-60	315.00'	A-50	314.85'	4'	3.73%	6"	SDR-35 PVC
A-50	314.85'	A-40	312.19'	73'	3.65%	6"	SDR-35 PVC
A-40	312.19'	A-30	309.39'	75'	3.73%	6"	SDR-35 PVC
A-30	309.39'	A-20	308.33'	24'	4.36%	6"	SDR-35 PVC
A-20	308.33'	A-10	307.27'	32'	3.28%	6"	SDR-35 PVC

FILED: 2025 10:04 AM BOHLER ENGINEERING INC. PROJECT: 2023-2024 NCB23007000 PLAN SET: NCB23007000 PLAN LAYOUT: C-501 UTIL



US HIGHWAY 64 / KNIGHTDALE BOULEVARD
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY
BM 2013, PG 1521

BOHLER
BOHLER ENGINEERING NC, PLLC

SITE CIVIL AND CONSULTING ENGINEERING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	DRAWN BY
1	05/23/25	MASTER PLAN COMMENTS	RBS/CC
2	08/19/25	CONSTRUCTION DRAWINGS	EM/OAK
3	10/08/25	CONSTRUCTION DRAWING	RBS
4	01/07/26	CONSTRUCTION DRAWING	EM/OAK
5	01/23/26	EROSION CONTROL COMMENTS	RBS
6	02/04/26	CONSTRUCTION DRAWING	EM/OAK

811
Know what's below.
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MUNICIPAL REVIEW

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.: NCB230070.00
DRAWN BY: CO/RBS
DATE: 04/23/2025
CAD LID: _____

CONSTRUCTION PLANS

FOR

CHAMBLISS & BRABILL
CONTRACTORS, INC.

PROPOSED DEVELOPMENT
4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY
TOK PROJECT # ZCP-5-24

BOHLER
BOHLER ENGINEERING NC, PLLC
NCBLS P-1132

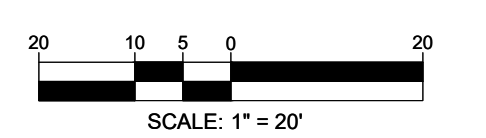
4130 PARKLAKE AVENUE, SUITE 200
RALEIGH, NC 27612
Phone: (919) 578-9000
NC@BohlerEng.com

SEAL
06/24/2026
EVER A. KALIT

SHEET TITLE:
UTILITY PLAN

SHEET NUMBER:
C-501

REVISION 6 - 02/04/26





- ### CONSTRUCTION SEQUENCE
- SCHEDULE AN INITIAL PRE-CONSTRUCTION MEETING WITH THE TOWN OF KNIGHTDALE. OBTAIN A LAND-DISTURBANCE PERMIT.
 - INSTALL ALL PERIMETER CONTROLS AS SHOWN ON THE APPROVED PLANS. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. CLEARING SHOULD BE LIMITED TO A MAXIMUM 35' RIBBON AROUND PERIMETER TO INSTALL CONTROLS. NO GRADING OR EXCAVATION SHOULD OCCUR.
 - SCHEDULE AN ONSITE PRE-CONSTRUCTION MEETING WITH THE TOWN OF KNIGHTDALE TO INSPECT THE INSTALLED PERIMETER CONTROLS.
 - IF APPROVED, PROCEED WITH INSTALLING GRAVEL CONSTRUCTION PAD, TEMPORARY DIVERSIONS, SILT FENCE, OR OTHER MEASURES AS SHOWN ON THE APPROVED PLANS. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS, BERMS, AND BASINS IMMEDIATELY AFTER CONSTRUCTION.
 - CALL TOWN OF KNIGHTDALE EROSION CONTROL INSPECTOR TO SCHEDULE AN ONSITE INSPECTION AND OBTAIN A CERTIFICATE OF COMPLIANCE.
 - BEGIN CLEARING AND GRUBBING. MAINTAIN DEVICES AS NEEDED. ROUGH GRADE SITE.
 - INSTALL STORM SEWER AND PROTECT INLETS WITH BLOCK AND GRAVEL CONTROLS, AND OTHER APPROVED MEASURES AS SHOWN IN THE APPROVED PLAN. DO NOT INSTALL THE FILTER CARTRIDGES IN THE BAYFILTER AT THIS TIME. BEGIN CONSTRUCTION OF SITE UTILITIES, BUILDING, SITE WORK, ETC.
 - WHEN INSTALLING THE UNDERGROUND DETENTION SYSTEM, INSTALL INFLATABLE PLUGS OR APPROVED EQUAL IN EACH INLET PIPE ENTERING THIS DEVICE WHILE ACTIVE CONSTRUCTION IS BEING CONDUCTED. PLUGS ARE TO REMAIN AND UNDERGROUND SYSTEM IS TO BE PROTECTED FROM ANY STORMWATER FLOW UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND THERE IS NO THREAT OF SEDIMENTATION OF THE SYSTEM.
 - STABILIZE SLOPE AREAS AS NEEDED. BRING UP TO FINISH GRADE WITH VEGETATION, PAVING, DITCH LININGS, ETC. SEED AND MULCH DENuded AREAS PER GROUND STABILIZATION TIME FRAMES.
 - WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL EROSION CONTROL INSPECTOR FOR AN INSPECTION.
 - IF SITE IS APPROVED, REMOVE TEMPORARY DIVERSIONS, SILT FENCE, SEDIMENT BASINS, ETC., AND SEED OUT OR STABILIZE ANY RESULTING BARE AREAS. ALL REMAINING PERMANENT EROSION CONTROL DEVICES, SUCH AS VELOCITY DISSIPATORS, SHOULD NOW BE INSTALLED. CLEAN OUT ANY SEDIMENT FROM STORM INLETS, PIPE, UNDERGROUND SYSTEM, BAYFILTER, ETC. INSTALL THE FILTER CARTRIDGES IN THE BAYFILTER AND REMOVE ANY PIPE PLUGS THAT MAY HAVE BEEN INSTALLED TO PROTECT THE SYSTEM DURING CONSTRUCTION.
 - WHEN VEGETATION HAS BECOME ESTABLISHED (90% GERMINATION), CALL FOR A FINAL INSPECTION BY THE EROSION CONTROL INSPECTOR. OBTAIN A CERTIFICATE OF COMPLETION.

a. Town Certification. This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: _____ Date: _____
Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.

By: _____ Date: _____
Land Use Administrator

NOTE

1. LIMIT OF DISTURBANCE AREA: 1.20 AC

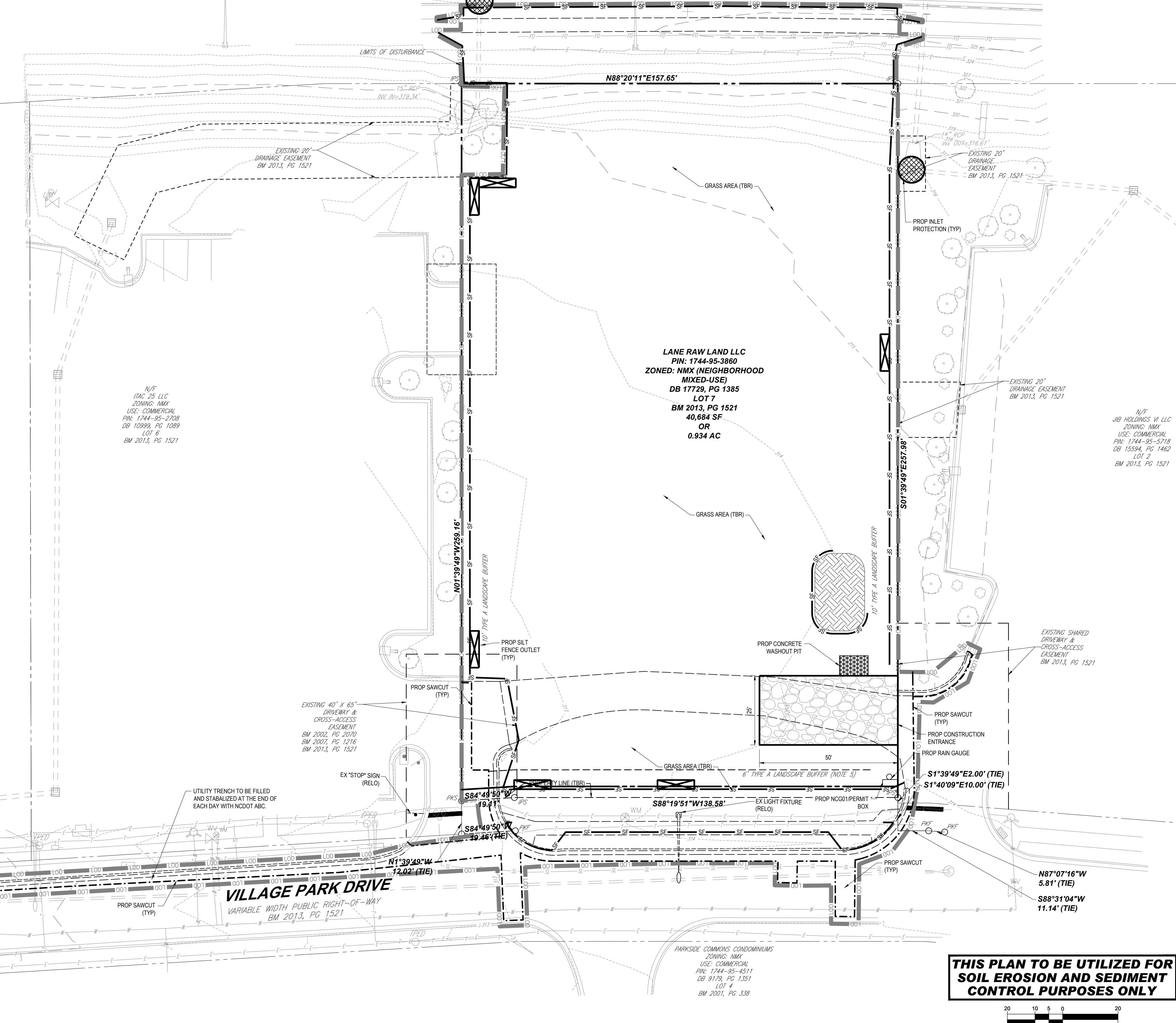
EROSION CONTROL LEGEND

PROPOSED NOTE	TYPICAL NOTE TEXT
SF	SILT FENCE
TPF	TREE PROTECTION FENCE
LOD	LIMITS OF DISTURBANCE
[Symbol]	CONCRETE WASH
[Symbol]	INLET PROTECTION
[Symbol]	TEMPORARY SOIL STOCKPILE
[Symbol]	PROP. CONST. ENTRANCE
[Symbol]	SILT FENCE OUTLET
[Symbol]	EX. CONTOUR LABEL
[Symbol]	PROP. CONTOUR LABEL

**US HIGHWAY 64 /
KNIGHTDALE BOULEVARD**
VARIABLE WIDTH PUBLIC
RIGHT-OF-WAY
BM 2013, PG 1521

- ### PERMITTING AND ENVIRONMENTAL REGULATIONS NOTES
- ESD PERMITTING AND INSPECTIONS:
 - ONCE THE EROSION AND SEDIMENT CONTROL (ESC) PLAN HAS BEEN REVIEWED AND ACCEPTED BY THE TOWN OF KNIGHTDALE (TOK), A FORMAL PLAN APPROVAL LETTER WILL BE ISSUED TO THE TRP AND APPLICANT. NOTE: AN ESC APPROVAL LETTER DOES NOT INDICATE PERMIT ISSUANCE.
 - AN NCGO1 CERTIFICATE OF COVERAGE MUST BE OBTAINED FROM THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCEM). THE MAINTENANCE PERMIT CAN BE OBTAINED BY FILING OUT THE ELECTRONIC NOTICE OF INTENT (E-NOI) FORM AT DEQ.NC.GOV/NOI. PLEASE NOTE, THE E-NOI FORM MAY ONLY BE COMPLETED ONCE ESC PLANS HAVE BEEN APPROVED (A).
 - THE TOWN OF KNIGHTDALE STORMWATER DEPARTMENT REQUIRES AN ON-SITE PRECONSTRUCTION (PRECON) MEETING PRIOR TO ISSUING A DEVELOPMENT PERMIT. THIS MEETING IS AN OPPORTUNITY TO GO OVER SITE MANAGEMENT EXPECTATIONS AND DISCUSS ANY PROJECT CONCERNS.
 - BEFORE THE PRECON MEETING HAS BEEN HELD AND ALL FEES PAID, THE LAND DEVELOPMENT PERMIT (LDP) WILL BE ISSUED FOR THE PROJECT.
 - FOLLOWING SITE MOBILIZATION, ROUTINE "CONSTRUCTION SITE INSPECTIONS" BY TOK STAFF WILL OCCUR AS OUTLINED IN THE TOK EROSION AND SEDIMENT CONTROL ENFORCEMENT GUIDE TO NOTE: "CONSTRUCTION SITE INSPECTIONS WILL NEED TO OCCUR FOLLOWING: INSTALLATION OF INITIAL ESC PERIMETER CONTROLS (SF, SFT, SFS) ONLY CLEARING THE PERIMETER RIBBON (25' MAX) - "PERIMETER CONTROL INSPECTION".
 - INSTALLATION OF ALL PHASE I ESC MEASURES INCLUDING ENGINEERED STRUCTURES - "CERTIFICATE OF COMPLIANCE INSPECTION". IT IS THE RESPONSIBILITY OF THE SITE MANAGER TO FORMALLY REQUEST THESE TYPES OF INSPECTIONS BY CONTACTING TOK PUBLIC WORKS.
 - CLEARING/GRUBBING OUTSIDE OF THE LIMITED AREAS REQUIRED TO COMPLETE THE ABOVE ITEMS WILL RESULT IN ENFORCEMENT ACTION BY THE TOK.
 - FOLLOWING THE COMPLETION OF THE ITEMS ABOVE, THE SITE CAN BE CLEARED AND DEVELOPED IN ACCORDANCE WITH THE APPROVED PLAN.
 - PERMITS BOX CONTENTS - A COPY OF THE TOK LAND DEVELOPMENT PERMIT, THE NCGO1 CERTIFICATE OF COVERAGE (COC) AND REGULAR NPDES INSPECTIONS, A COPY OF THE APPROVED/REVISED ESC PLAN, AND (WHEN OBTAINED) THE TOK CERTIFICATE OF COMPLIANCE - MUST BE KEPT ON SITE PREFERABLY IN A PERMITS BOX, AND ACCESSIBLE DURING INSPECTION. LOCATE A RAIN GAUGE ON SITE FOR FACILITATION OF INSPECTIONS AND RECORD KEEPING.
 - 401H4A PERMITS - APPROVAL OF THIS EROSION AND SEDIMENTATION CONTROL PLAN DOES NOT AUTHORIZE IMPACTS TO WETLANDS, COASTAL MARSH, STREAMS, OR OTHER WATERS OF THE STATE OR UNITED STATES OR SUPERSEDE ANY OTHER PERMITTING REQUIREMENT OF ANY FEDERAL, STATE OR LOCAL AGENCY.
 - IF APPLICABLE, PROVIDE A COPY OF THE USACE 404 PERMIT AND DWR 401 CERTIFICATIONS. PROVIDE A COPY OF THE DWR BUFFER AUTHORIZATION.
 - SUBMIT DOCUMENTATION WITH MAPS SHOWING LOCATION AND EXTENT OF IMPACTS TO STREAMS AND WETLANDS WITH ANY SPECIAL CONDITIONS PERTAINING TO EROSION AND SEDIMENT CONTROL AND RESTORATION OF AFFECTED AREAS.
 - IDENTIFY THE STREAMS, WETLANDS, AND BUFFERS ON THE PLAN SHEETS. INCLUDE ANY ADDITIONAL MEASURES, CONSTRUCTION SPECIFICATIONS, MAINTENANCE REQUIREMENTS AND CONSTRUCTION SEQUENCING AS REQUIRED BY THE 404/401/BUFFER DETERMINATION AND BUFFER AUTHORIZATION ON THE PLAN SHEETS.
 - FOLLOW ALL CONDITIONS LISTED IN THE CERTIFICATIONS, SPECIFICALLY REPORTING ANY DISCHARGES OUTSIDE OF THE PERMITTED SCOPE OF WORK.
 - AREAS OF ENVIRONMENTAL CONCERN AND CULTURAL RESOURCES - BEFORE ANY SITE WORK OCCURS, ADEQUATELY IDENTIFY KEY ENVIRONMENTAL AND/OR CULTURAL RESOURCES BY USING APPROPRIATE IDENTIFIERS IN THE FIELD (TREE PROTECTION FENCING, FLAGGING, ETC.)
 - FILL/BORROW - ANY OFF-SITE BORROW AND/OR FILL REQUIRED FOR THIS PROJECT MUST COME FROM A SITE WITH AN APPROVED EROSION CONTROL PLAN. A SITE REGULATED UNDER THE MINING ACT OF 1971, OR A LANDFILL REGULATED BY THE NC DIVISION OF SOLID WASTE MANAGEMENT. TRASH/DEBRIS FROM DEMOLITION ACTIVITIES OR GENERATED BY ANY ACTIVITIES ON SITE MUST BE DISPOSED OF AT A FACILITY REGULATED BY THE NC DIVISION OF SOLID WASTE MANAGEMENT, OR PER NC DIVISION OF SOLID WASTE MANAGEMENT OR NC DIVISION OF WATER RESOURCES RULES AND REGULATIONS.

- ### TOWN OF KNIGHTDALE REQUIRED ESC PLAN MAINTENANCE NOTES
- PROVIDE A PLAN DETAIL, CONSTRUCTION SPECIFICATIONS, AND SPECIFIC MAINTENANCE REQUIREMENTS FOR ALL PROPOSED SEDIMENT AND EROSION CONTROL STRUCTURES INCLUDED ON THE PLAN. RECOMMEND PLACING MAINTENANCE REQUIREMENTS WITH THE ASSOCIATED CONSTRUCTION DETAIL.
 - MAINTENANCE AND/OR CLEAN OUT IS NECESSARY ANYTIME THE DEVICE IS AT 50% CAPACITY. ALL SEDIMENT STORAGE MEASURES WILL REMAIN ON SITE AND FUNCTIONAL UNTIL ALL GRADING AND FINAL LANDSCAPING OF THE PROJECT IS COMPLETE.
 - AS DESIGNATED BY NCGO1 PERMITTING, SELF-INSPECTIONS FOR EROSION AND SEDIMENTATION CONTROL MEASURES ARE TO BE PERFORMED AT LEAST EVERY SEVEN CALENDAR DAYS AND WITHIN THE HOURS OF 7:00 AM OR GREATER. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN MEASURES AS DESIGNED.
 - PROVIDE THE MINIMUM MAINTENANCE STANDARDS AS SPECIFIED BELOW:
 - SURVEYOR FLAG/TAPE/STAKES
 - REPLACE IDENTIFIERS IF DAMAGED OR KNOCKED DOWN DURING DEVELOPMENT.
 - ENSURE KEY ENVIRONMENTAL AND/OR CULTURAL RESOURCES MAINTAIN IDENTIFIERS.
 - COLORS SHOULD ADHERE TO THE APHA UNIFORM COLOR CODE. USE ACCEPTED SURVEY SYMBOLS AND ENSURE OPERATORS UNDERSTAND DESIGNATIONS. UTILITY LINE OWNERS/OPERATORS SHALL IDENTIFY THE DESIGNATING FIRM.
 - PERMITS/NGO1 INSPECTIONS BOX
 - CONFIRM SECURE FASHIONS TO A POST OR WALL IN A VISIBLE LOCATION IN PROXIMITY TO THE CONSTRUCTION ENTRANCE.
 - MAINTAIN RELEVANT IDENTIFICATION ON THE EXTERIOR OF THE BOX.
 - ENSURE PAPER DOCUMENTS REMAIN DRY (LEADIBLE, LAMINATION, TICKET HOLDERS, BINDERS, ETC.)
 - REPLACE ANY MISSING DOCUMENTS IMMEDIATELY. CONSIDER PLACING TIES OR FASTENERS IF NECESSARY.
 - RAIN GAUGE
 - CHECK AND REMOVE ANY ITEMS FROM THE RAIN FUNNEL AND THE DEBRIS FILTER (E.G., DUST, BUGS AND OTHER DEBRIS).
 - REPLACE THE RAIN GAUGE AND REMOVE ANY FOREIGN OBJECTS.
 - PERFORM ROUTINE MAINTENANCE AS SPECIFIED BY THE MANUFACTURER.
 - CHECK THAT THE GAUGE IS NOT BEING OBSTRUCTED FROM RAIN CAPTURE AND IS LEVEL BEFORE AND AFTER REASSEMBLY.
 - TREE PROTECTION FENCE
 - PRUNE ANY DAMAGED TREES. (IF) DAMAGE TO PROTECTED TREES OCCURS, REPAIR ANY DAMAGE TO THE CROWN, TRUNK, OR ROOT SYSTEM IMMEDIATELY.
 - REPAIR ROOTS BY CUTTING OFF THE DAMAGED AREAS AND PAINTING THEM WITH TREE PAINT. SPREAD PEAT MOSS OR MOST TOPSOIL OVER EXPOSED ROOTS.
 - REPAIR DAMAGE TO BARK BY TRIMMING AROUND THE DAMAGED AREA, TAPER THE CUT TO PROVIDE DRAINAGE AND PAINT WITH TREE PAINT.
 - CUT OFF ALL DAMAGED TREE LIMBS ABOVE THE TREE COLLAR AT THE TRUNK OR MAIN BRANCH. USE THREE SEPARATE CUTS TO AVOID PEELING BARK FROM HEALTHY AREAS OF THE TREE.
 - SILT FENCE
 - SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
 - REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUTS.
 - REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
 - SILT FENCE OUTLET
 - FRESHEN STONE WHEN SEDIMENT ACCUMULATION EXCEEDS 6 INCHES.
 - KEEP MESH FREE OF DEBRIS TO PROVIDE ADEQUATE FLOW AND REPLACE STONE AS NEEDED TO FACILITATE DE-WATERING. CONSTRUCTION ENTRANCE.
 - MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2INCH STONE.
 - IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.
 - SKIMMER
 - CONFIRM SKIMMER IS FUNCTIONAL. INSTALLED IN THE CORRECT ORIENTATION AND HAS MOBILITY TO FLOAT ON TOP OF THE WATER COLUMN.
 - ENSURE ROCK PAD STABILIZATION IS PRESENT UNDER THE SKIMMER.
 - REPAIR ANY STRUCTURAL DEFICIENCIES (E.G., DRIFGE DISK, FLEX HOSE CONNECTION, VENT FUNCTIONING, CRACKED PVC) SEDIMENT BASIN
 - BASIN REQUIRES MAINTENANCE WHEN THE INLET ZONE (1ST QUADRANT) HAS BEEN FILLED WITH SEDIMENT.
 - BAFFLE MATERIAL SHALL BE MAINTAINED IN GOOD CONDITION FOR THE LIFE OF THE POND UNTIL REMOVAL OR CONVERSION.
 - SEDIMENT BASIN / ROLLED EROSION CONTROL PRODUCT
 - INSPECT INITIAL CHANNEL ANCHORING HAS BEEN INSTALLED CORRECTLY. CONFIRM SEGMENTS ARE ROLLED IN CORRECT ORIENTATION.
 - ANY AREAS THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED.
 - MONITOR AND REPAIR THE RECP AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.
 - BASIN CONVEYANCES / SLOPE DRAIN / RIP-RAP LINED CHANNEL
 - ANY EROSION OF THE SLOPE, BERM OR OUTLET SHOULD BE REPAIRED IMMEDIATELY TO PREVENT HEAD CUTTING BACK INTO THE SLOPE.
 - CONVEYANCES SHOULD BE REFRESHED IF POOR SPACE HAS BEEN COMPROMISED. CLOSED DRAINS SHOULD BE FLUSHED OUT OR REPLACED.
 - ADDITIONAL PERFORMANCE MEASURES MAY BE REQUIRED AT CONVEYANCE ENTRANCE TO SLOW WATER ENTERING THE BASIN.
 - FILTER BAG / DEWATERING ACTIVITIES
 - ENSURE THE DEWATERING PAD IS IN A GOOD STABILIZED CONDITION.
 - PRIOR TO USE INSPECT BAGS FOR ANY DEFECTS. ENSURE PUMP HOE IS SECURE AND A FLOATING INTAKE IS BEING USED (WHEN POSSIBLE).
 - FOLLOW ALL MANUFACTURER RECOMMENDATIONS FOR INSPECTION AND MAINTENANCE GUIDELINES. REPLACE WHEN TRAPPED SEDIMENT HAS ACCUMULATED TO 50% OF THE BAG CAPACITY OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 - TEMPORARY DIVERSION DITCHES / ROLLED EROSION CONTROL PRODUCT
 - ANY AREAS THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED.
 - MONITOR AND REPAIR THE RECP AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.
 - WITH WATTLES / SILT SOCKS
 - REMOVE SEDIMENT ACCUMULATION BEHIND MEASURE AS NECESSARY TO PREVENT DAMAGE TO CHANNEL VEGETATION.
 - REPLACE WATTLE/SOCK IF CLOGGED OR TORN. REINSTALL PER DETAIL IF DAMAGED OR DISLODGED.
 - IF PONDING BECOMES EXCESSIVE, REPLACE WITH A LARGER DIAMETER WATTLE/SOCK OR A DIFFERENT MEASURE.
 - WITH CHECK DAMS
 - REMOVE SEDIMENT ACCUMULATION BEHIND MEASURE AS NECESSARY TO PREVENT DAMAGE TO CHANNEL VEGETATION.
 - CHECK FOR EROSION, RIPING, ROCK DISPLACEMENT, AND CORRECT STONE SIZES. REPAIR IMMEDIATELY.
 - CONFIRM WEIR PRESENT AND LOCATED AT THE CENTER OF THE DEVICE.
 - INLET PROTECTIONS (PIPE / YARD / DROP / CURB)
 - INSPECT INLET PROTECTION AND REMOVE SEDIMENT AFTER EACH RAIN EVENT.
 - KEEP FREE OF DEBRIS TO PROVIDE ADEQUATE FLOW AND IF PRESENT REPLACE STONE AS NEEDED TO FACILITATE DE-WATERING.



**THIS PLAN TO BE UTILIZED FOR
SOIL EROSION AND SEDIMENT
CONTROL PURPOSES ONLY**

BOHLER
BOHLER ENGINEERING NC, PLLC

SITE CIVIL AND CONSULTING ENGINEERING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	DRAWN BY
1	05/23/25	MASTER PLAN COMMENTS	RBS/CC
2	08/19/25	CONSTRUCTION DRAWINGS	RBS
3	10/08/25	CONSTRUCTION DRAWING	EM/OAK
4	01/07/26	CONSTRUCTION DRAWING	RBS
5	01/23/26	EROSION CONTROL COMMENTS	RBS
6	02/04/26	CONSTRUCTION DRAWING	RBS

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MUNICIPAL REVIEW

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.: NCB23070.00
DRAWN BY: CO/RBS
CHECKED BY: OAK
DATE: 04/23/2025
JOB HOLDINGS: 11 LCC
ZONING: NM-X
USE: COMMERCIAL
PIN: 1744-95-5718
DB 15594, PG 1462
LOT 2
BM 2013, PG 1521

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL
CONTRACTORS, INC.

PROPOSED DEVELOPMENT
4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY
TOK PROJECT # ZCP-5-24

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BOHLER ENGINEERING NC, PLLC
NCBLS P-1132

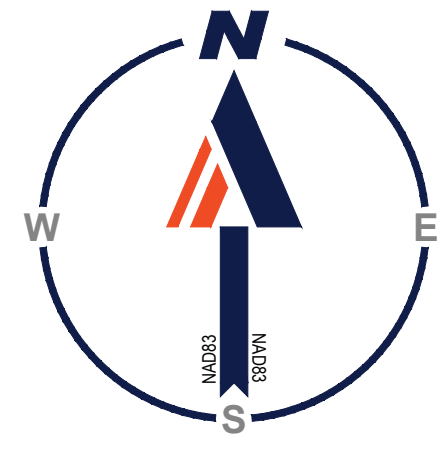
4130 PARKLAKE AVENUE, SUITE 200
RALEIGH, NC 27612
Phone: (919) 578-9000
NC@BohlerEng.com

SEAL
065420
EVER A. KALIT
02/04/2026

SHEET TITLE:
**EROSION AND
SEDIMENT
CONTROL PLAN
PHASE 1**

SHEET NUMBER:
C-801

REVISION 6 - 02/04/26



a. Town Certification. This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: _____ Date: _____
Town Engineer

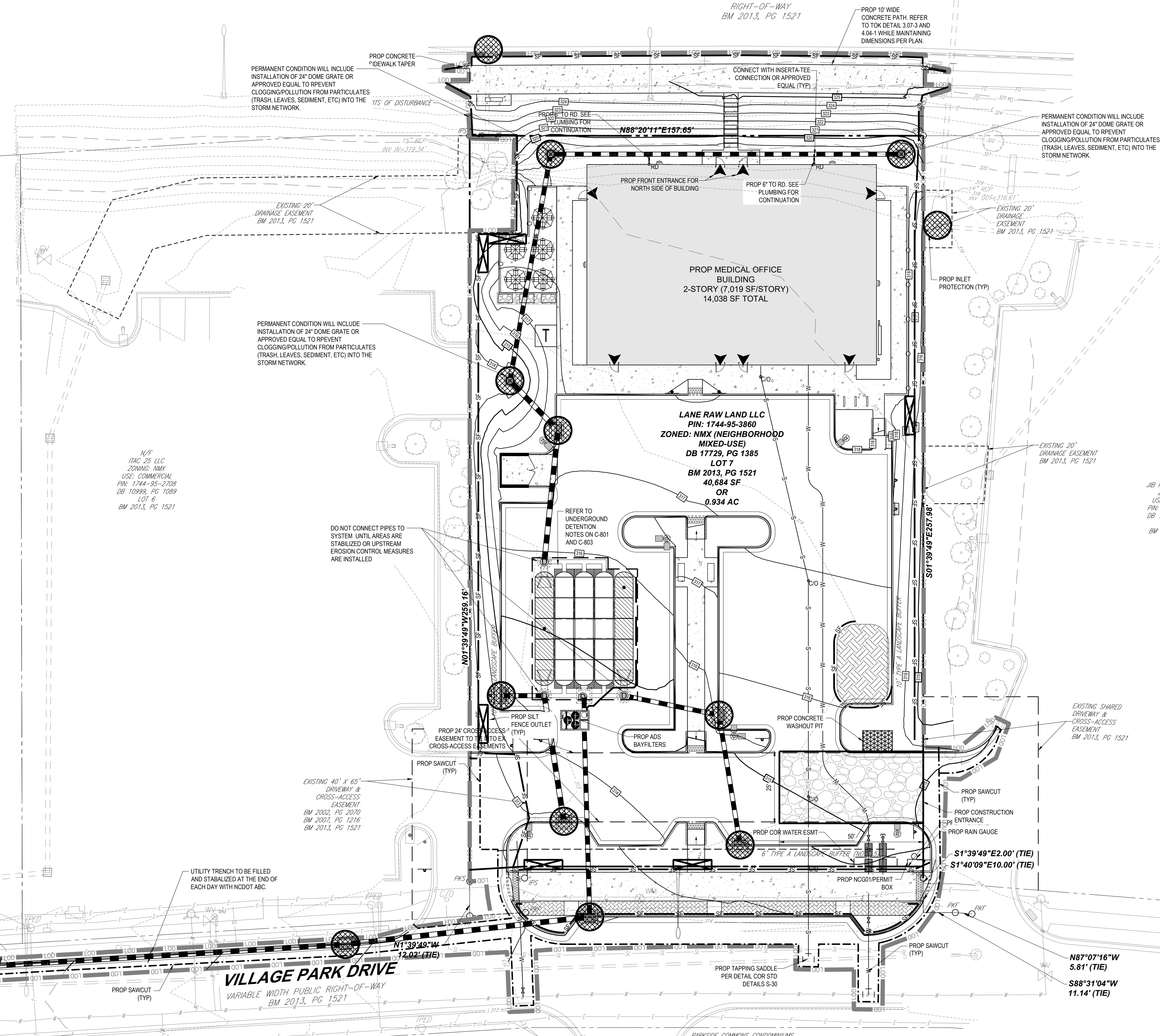
These plans are approved by the Town of Knightdale and serve as construction plans for this project.

By: _____ Date: _____
Land Use Administrator

NOTE
1. PROP UNDERGROUND STORMWATER SYSTEM SHOULD NOT BE CONNECTED OR FILTERS INSTALLED PRIOR TO FULL SITE STABILIZATION TO PREVENT ANY SEDIMENT OR TURBIDITY WITHIN THE UNDERGROUND SYSTEM. REFER TO CONSTRUCTION SEQUENCE IN C-801 FOR PROTECTION MEASURES.

PROPOSED NOTE	TYPICAL NOTE TEXT
SF	SILT FENCE
TPF	TREE PROTECTION FENCE
LOD	LIMITS OF DISTURBANCE
	CONCRETE WASH
	INLET PROTECTION
	TEMPORARY SOIL STOCKPILE
	PROP. CONST. ENTRANCE
	SILT FENCE OUTLET
	EX. CONTOUR LABEL
	PROP. CONTOUR LABEL

**US HIGHWAY 64 /
KNIGHTDALE BOULEVARD**
VARIABLE WIDTH PUBLIC
RIGHT-OF-WAY
BM 2013, PG 1521



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REVISIONS

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2	08/19/25	CONSTRUCTION DRAWINGS	RBS
3	10/08/25	CONSTRUCTION DRAWING	EM/OAK
4	01/07/26	CONSTRUCTION DRAWING	RBS
5	01/23/26	EROSION CONTROL COMMENTS	EM/OAK
6	02/04/26	CONSTRUCTION DRAWING	RBS

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PROJECT No.: NCB230070.00
DRAWN BY: CCRBS
CHECKED BY: OAK
DATE: 04/23/2025
CAD ID:

CONSTRUCTION PLANS
FOR

CHAMBLISS & RABIL
CONTRACTORS, INC.

PROPOSED DEVELOPMENT
4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY
TOK PROJECT # ZCP-5-24

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NCBELS P-1132

4130 PARKLAKE AVENUE, SUITE 200
RALEIGH, NC 27612
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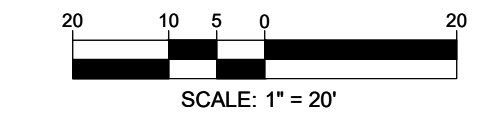
SEAL
02/04/2026

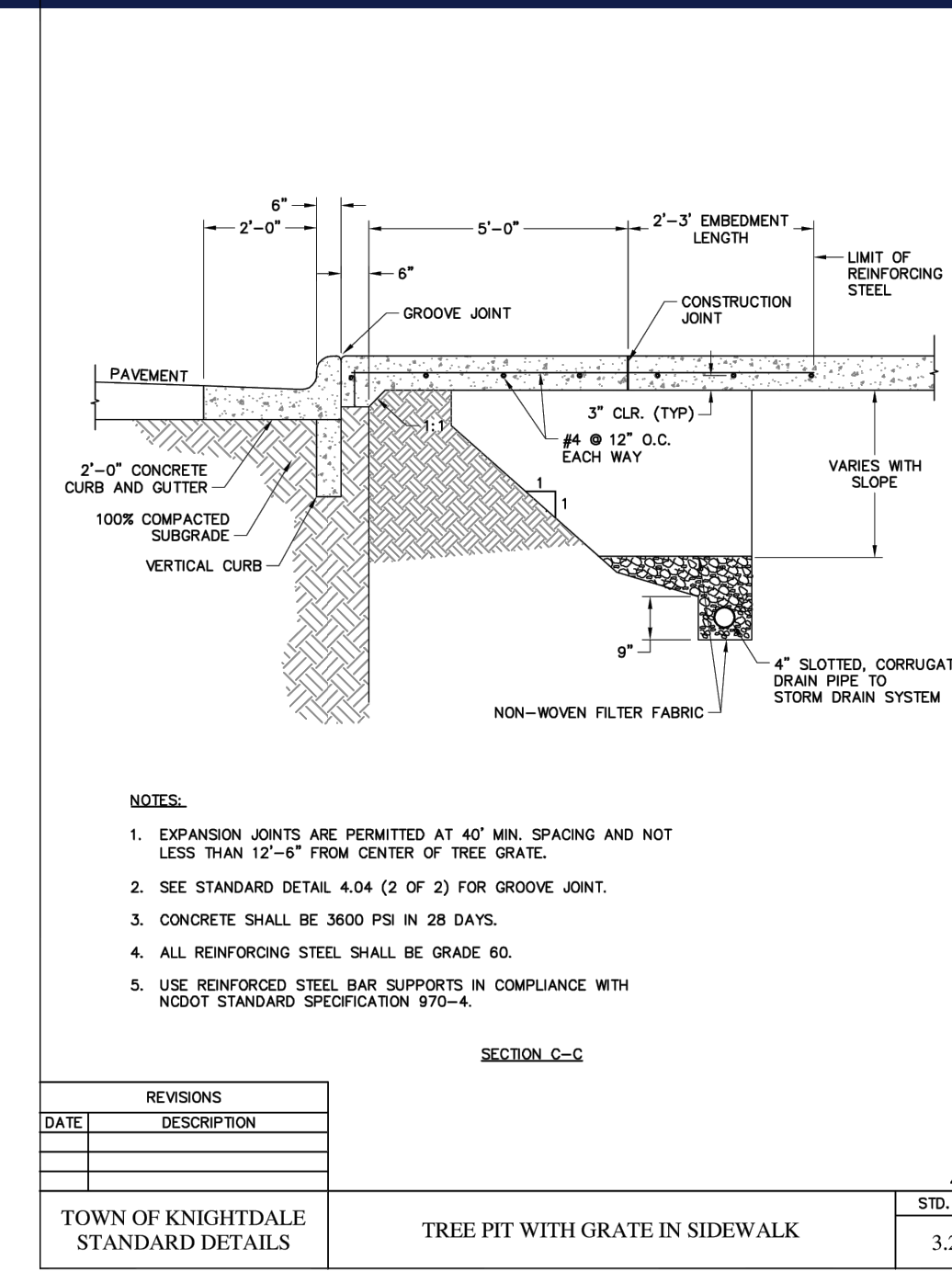
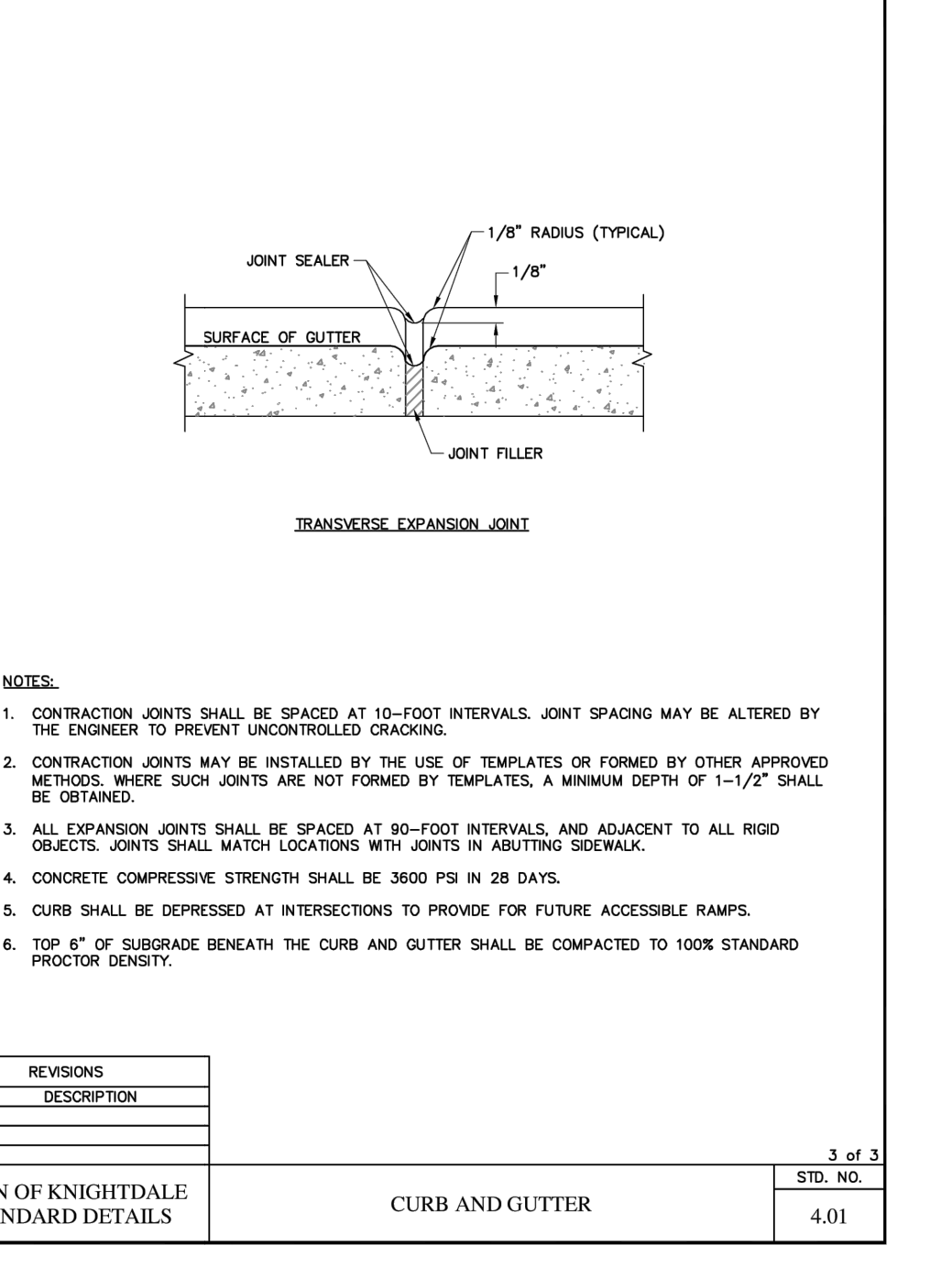
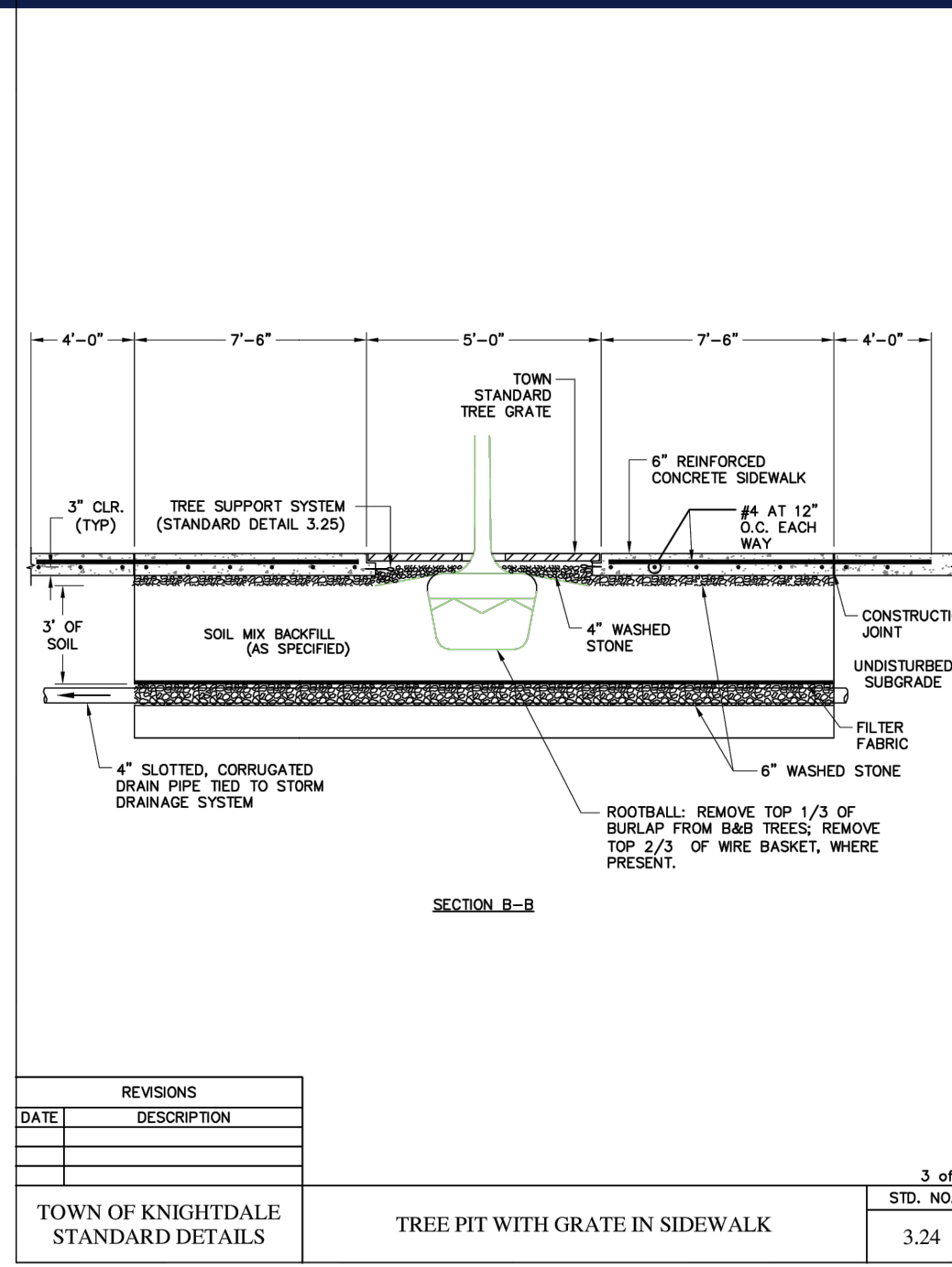
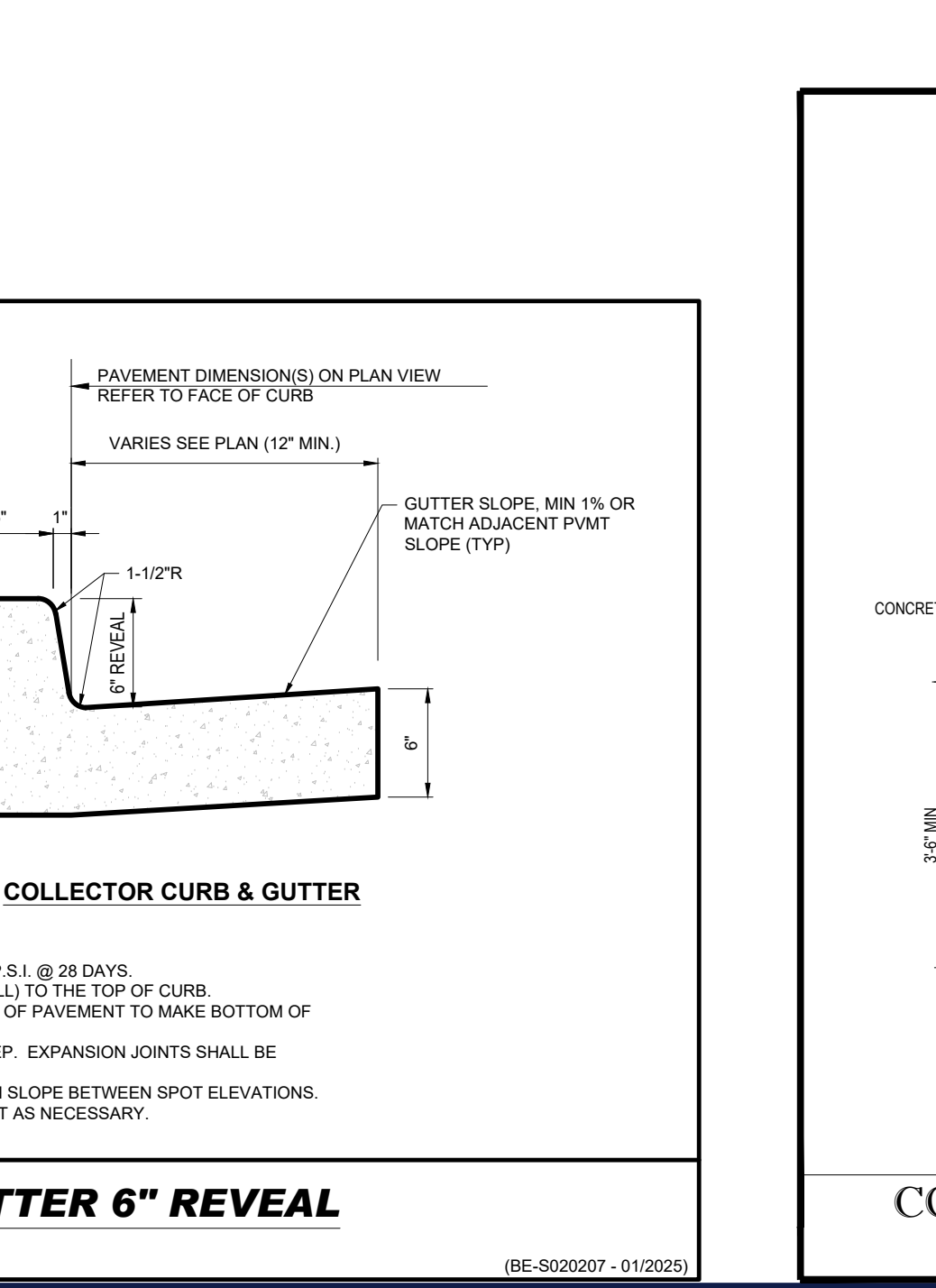
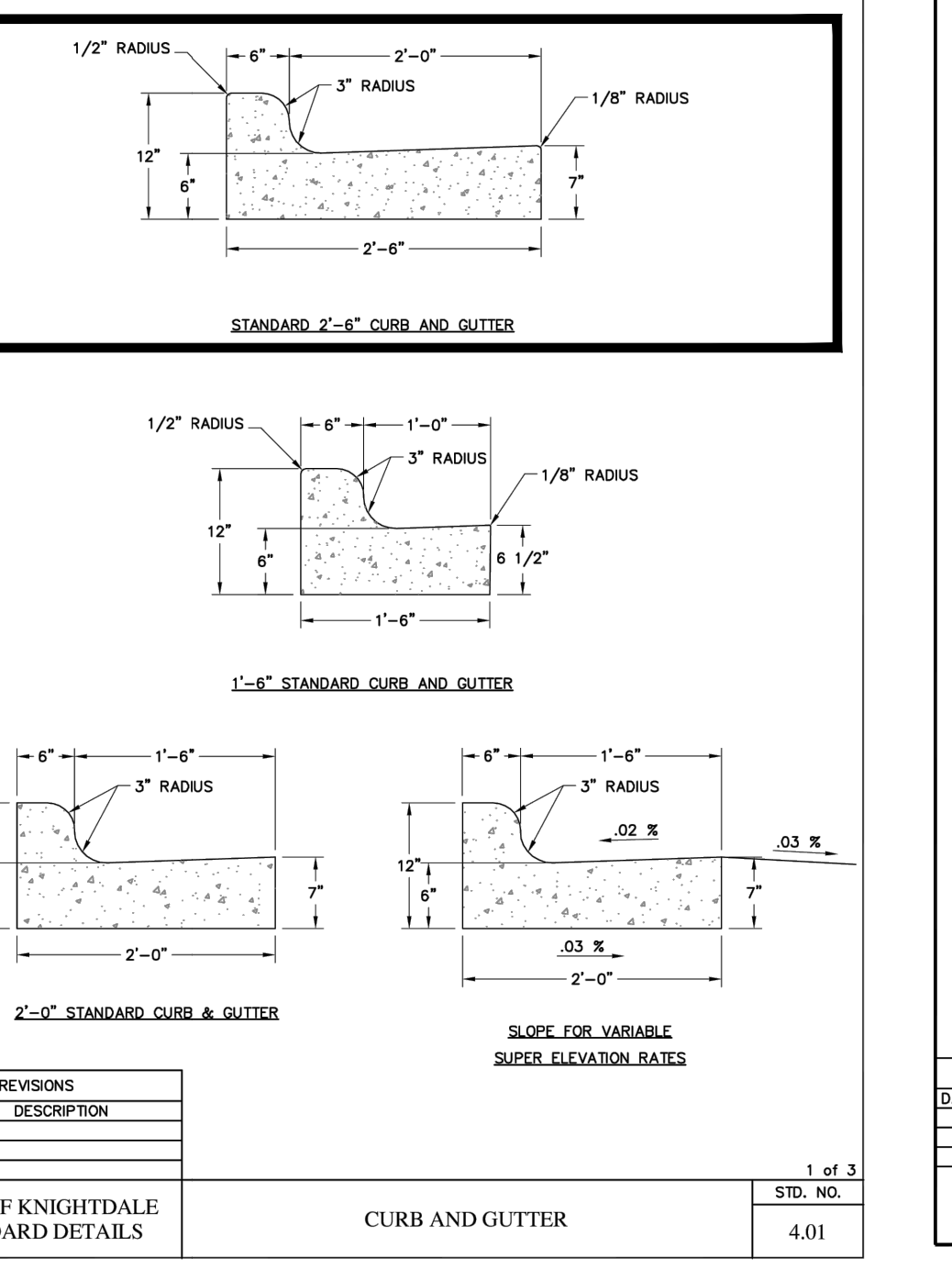
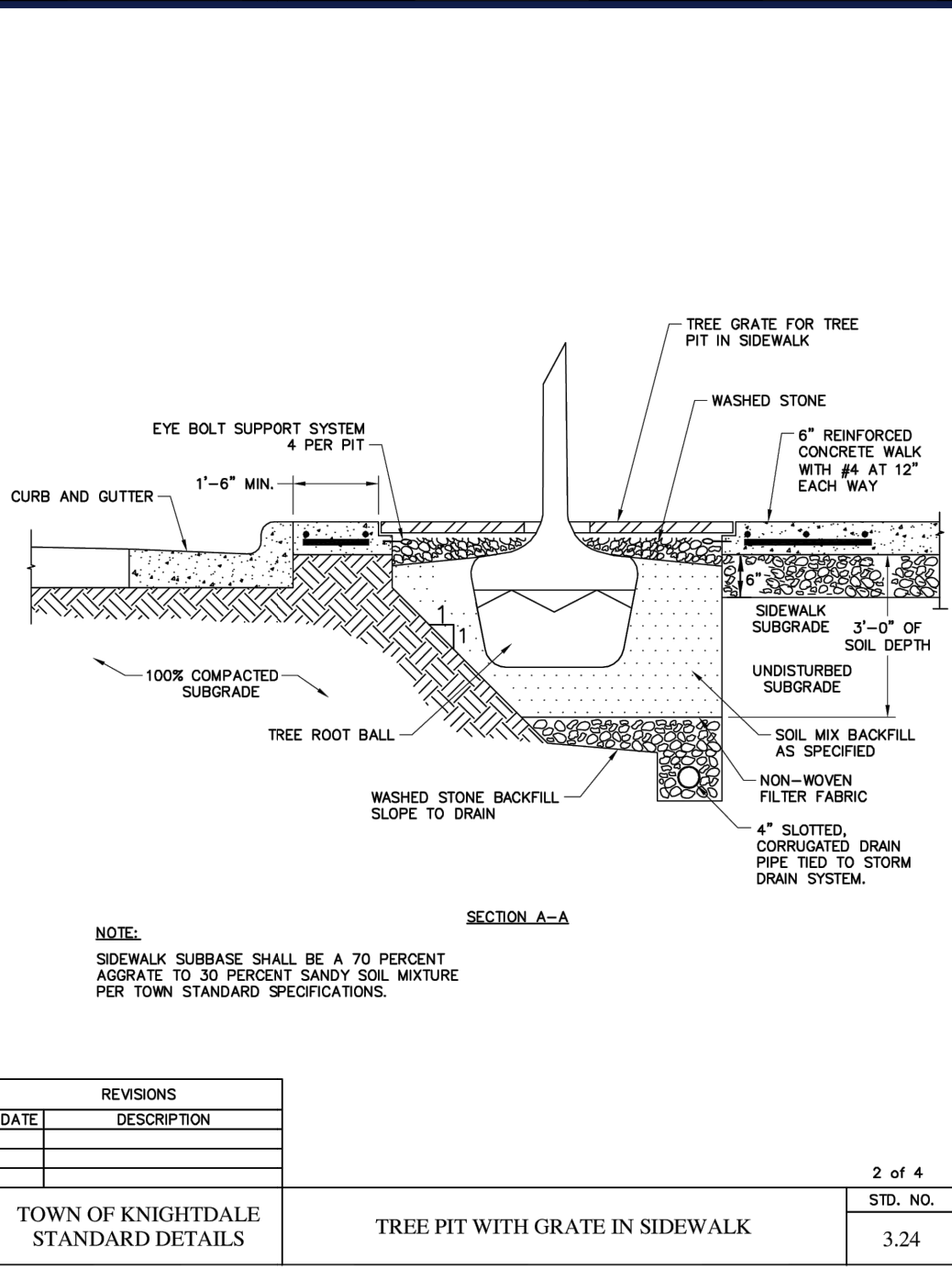
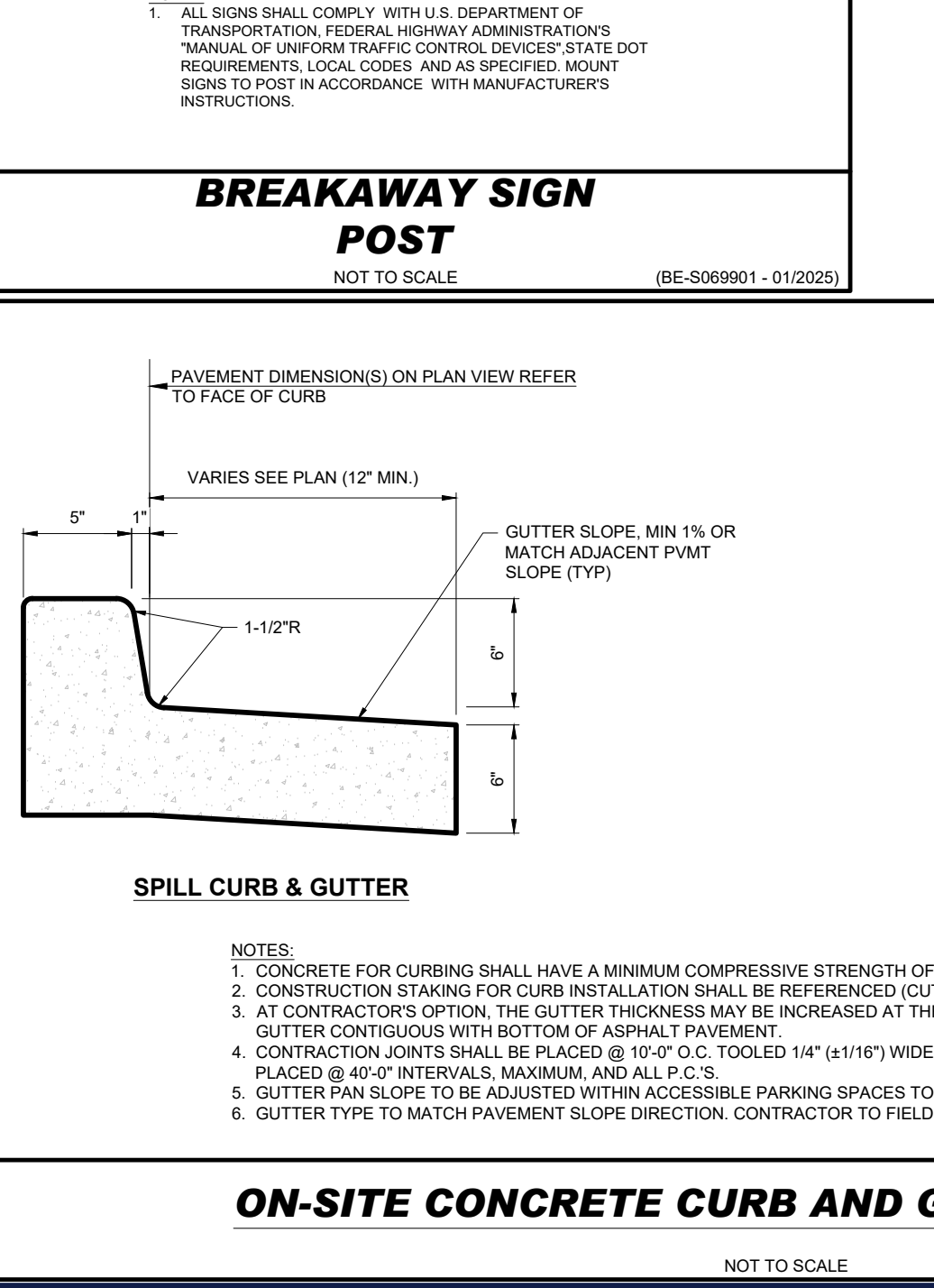
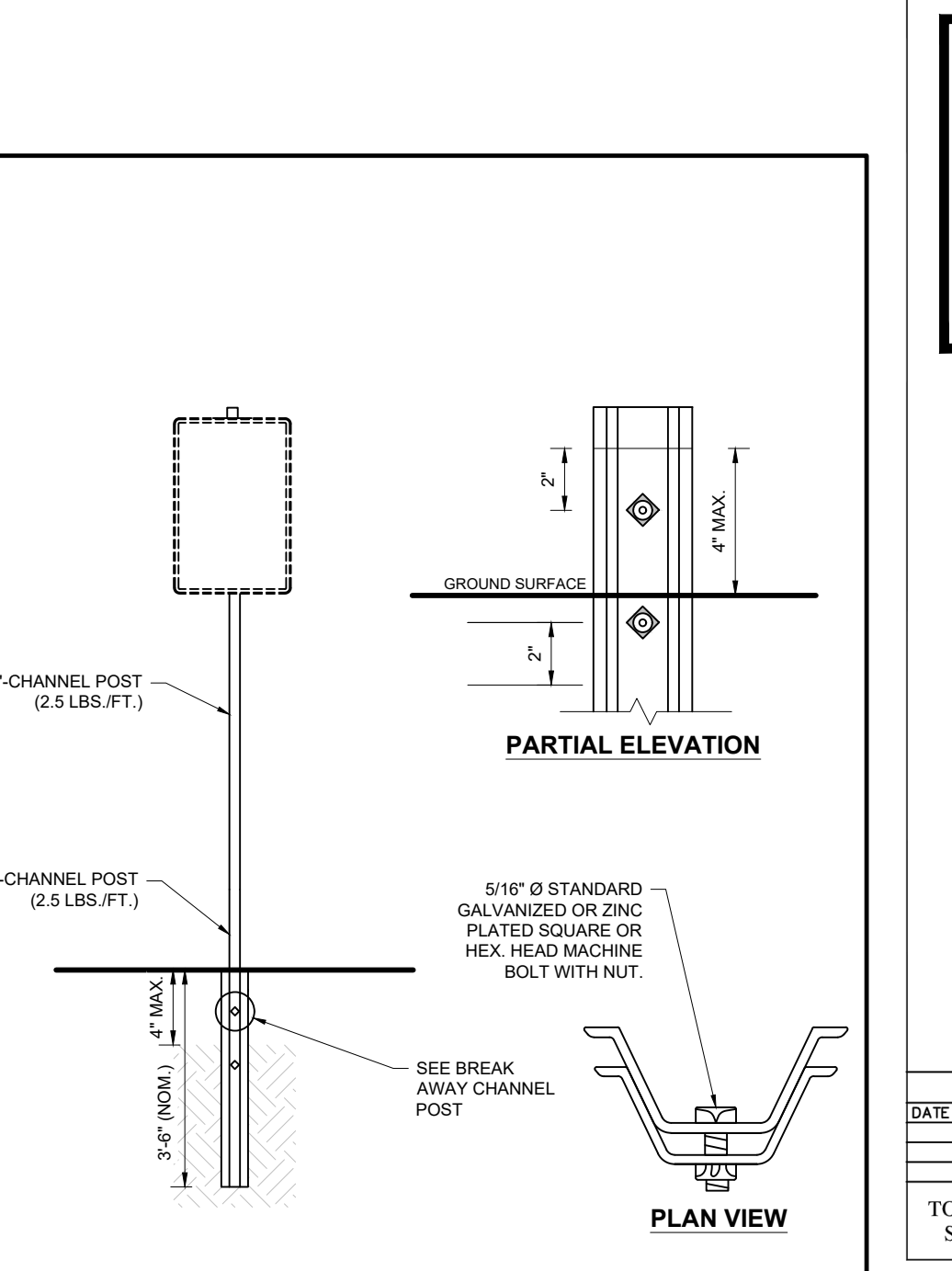
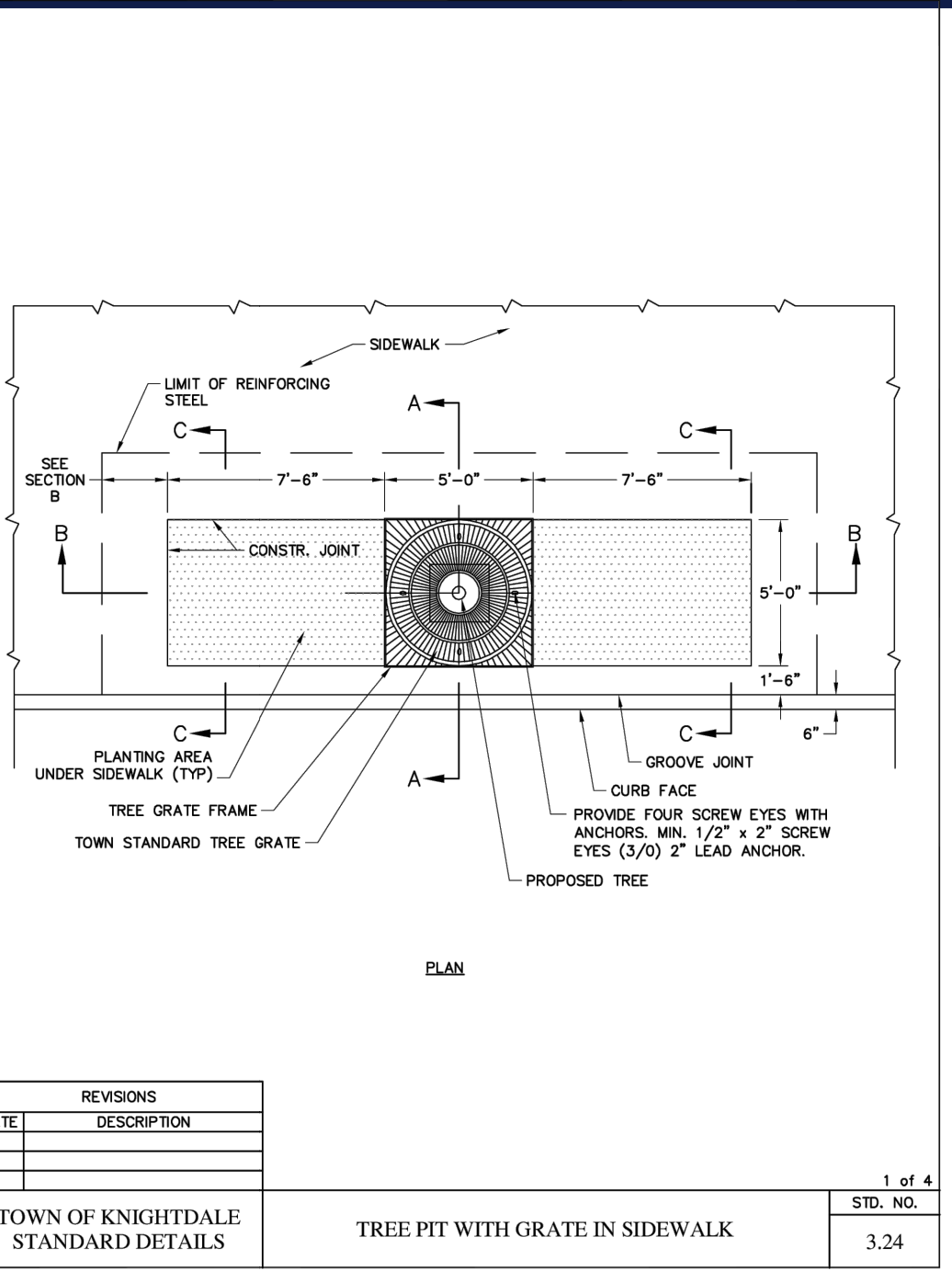
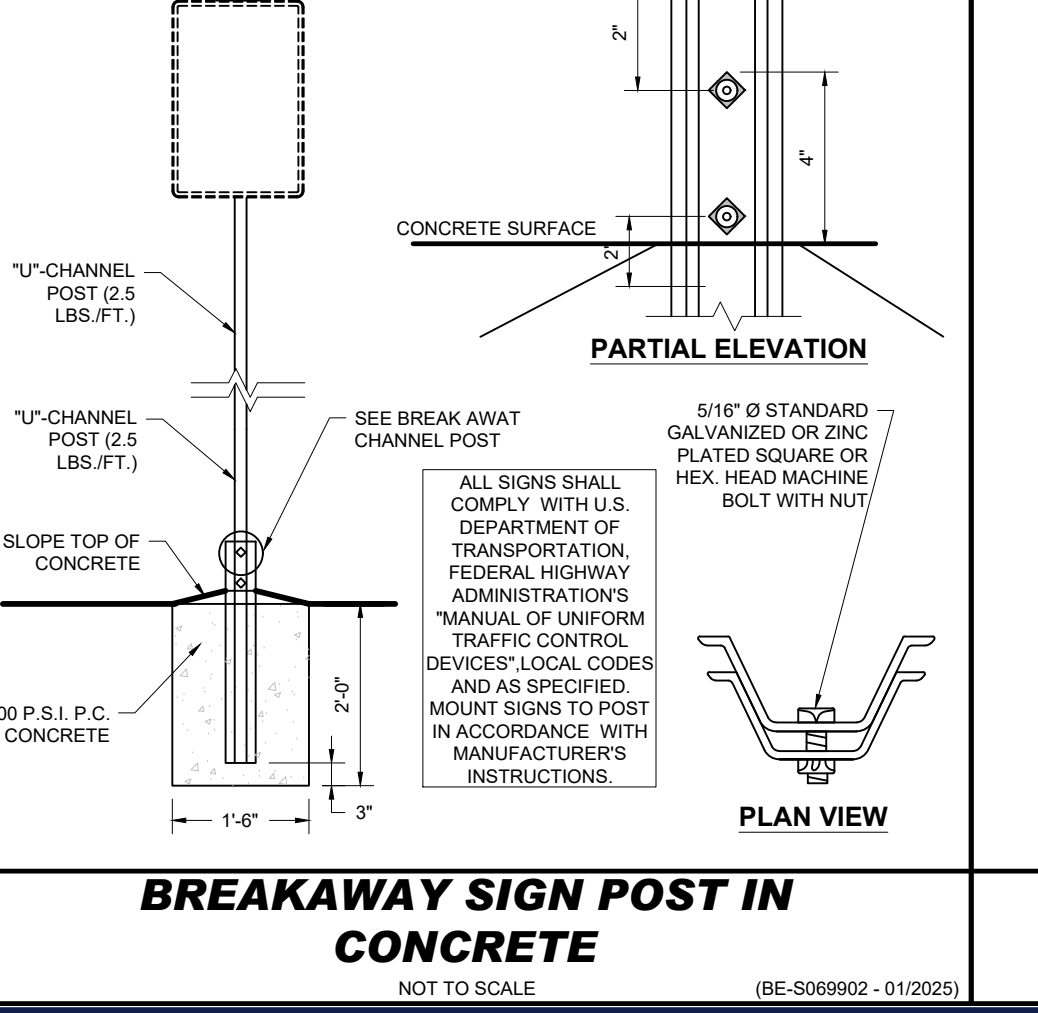
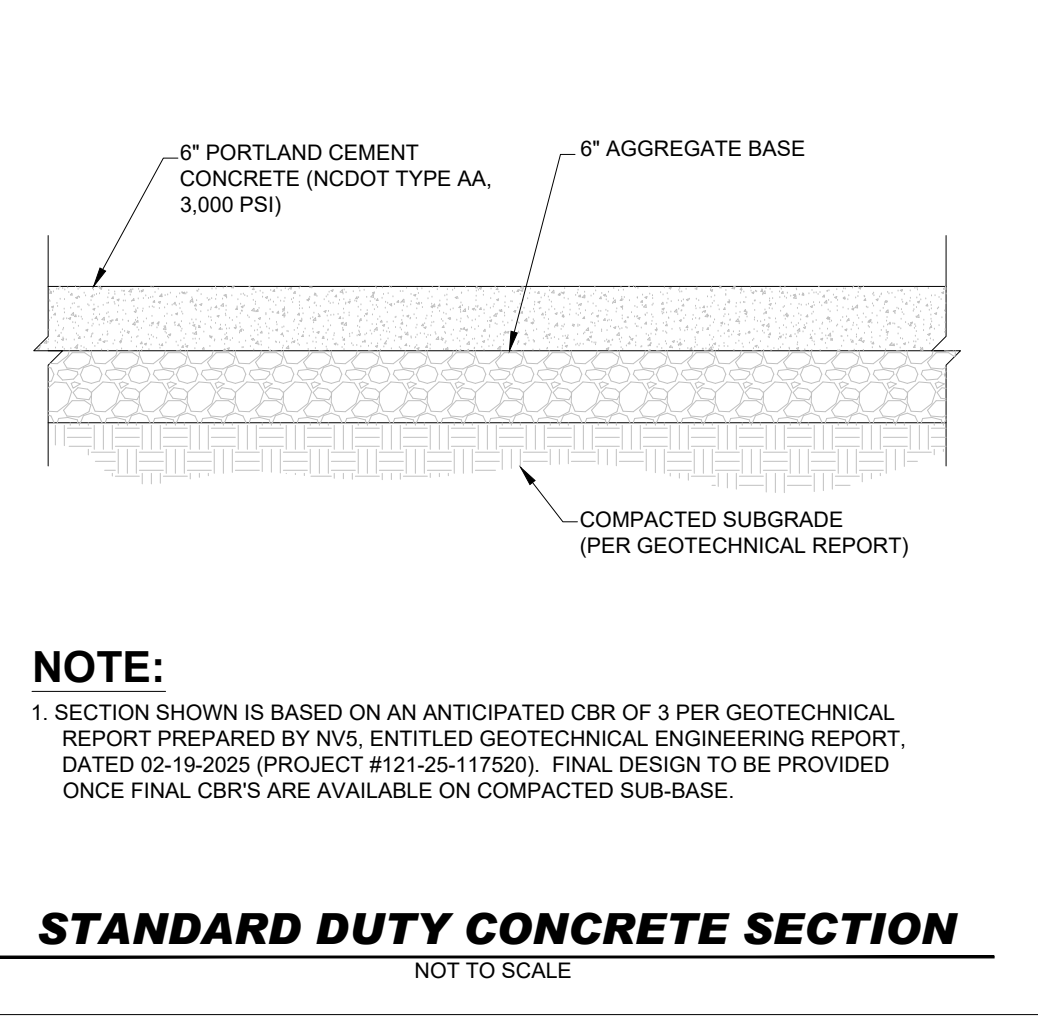
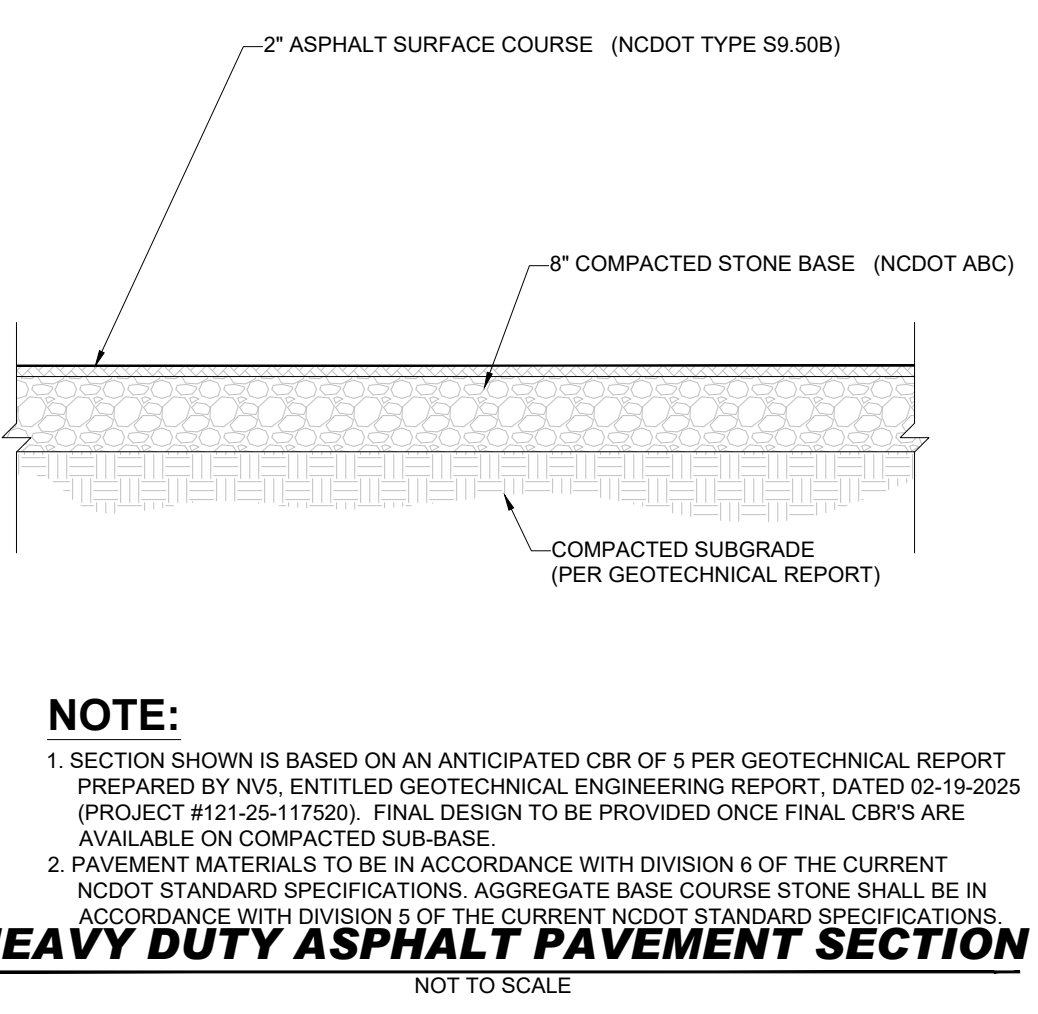
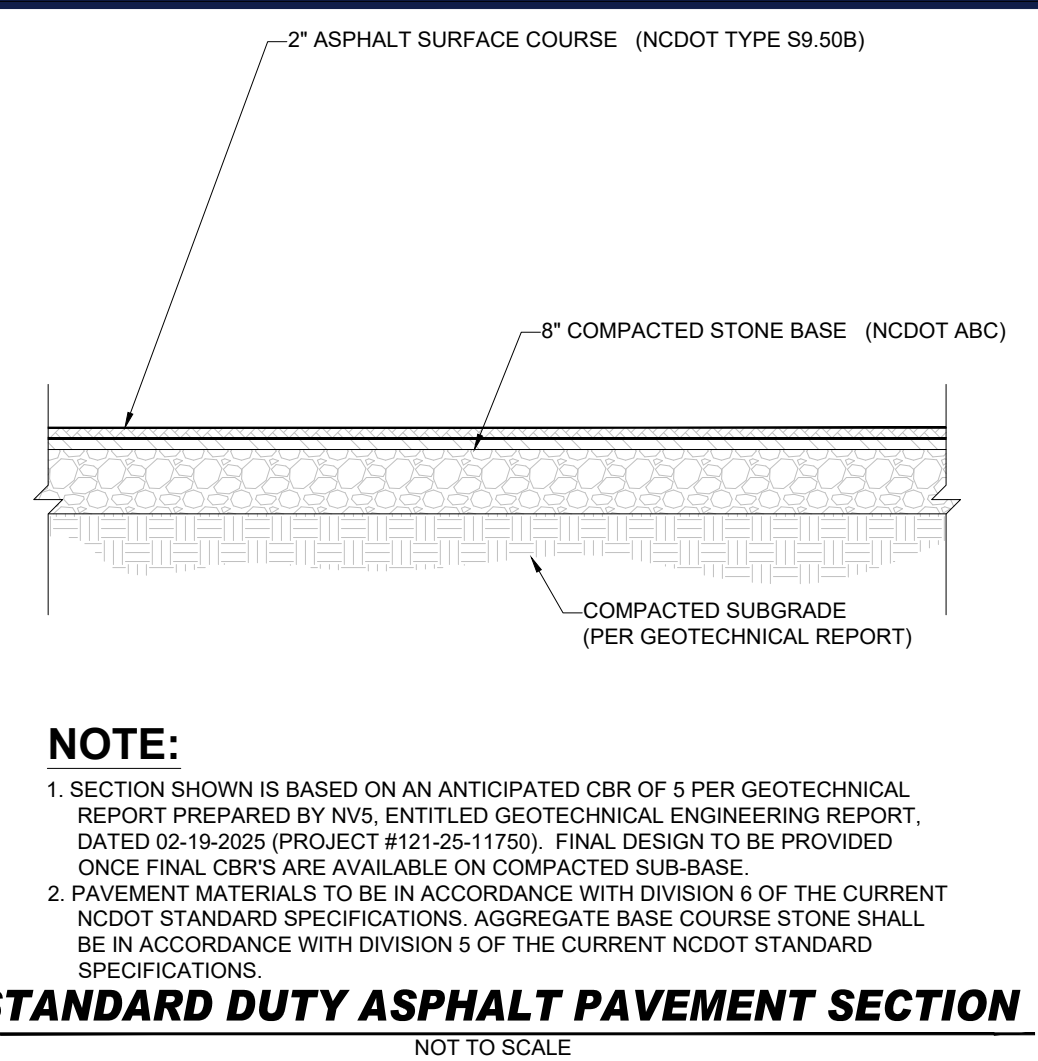
SHEET TITLE:
**EROSION AND
SEDIMENT
CONTROL PLAN
PHASE 2**

SHEET NUMBER:
C-802

REVISION 6 - 02/04/26

**THIS PLAN TO BE UTILIZED FOR
SOIL EROSION AND SEDIMENT
CONTROL PURPOSES ONLY**





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REVISIONS

REV	DATE	COMMENT	DRAWN BY	CHECKED BY
1	05/23/25	MASTER PLAN COMMENTS	RBS/CC	OAK
2	08/19/25	CONSTRUCTION DRAWINGS	RBS	EM/OAK
3	10/08/25	CONSTRUCTION DRAWING	RBS	EM/OAK
4	01/07/26	CONSTRUCTION DRAWING	RBS	EM/OAK
5	01/23/26	EROSION CONTROL COMMENTS	RBS	EM/OAK
6	02/04/26	CONSTRUCTION DRAWING	RBS	EM/OAK

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PROJECT No.: NCB230070.00
DRAWN BY: CC/RBS
CHECKED BY: OAK
DATE: 04/23/2025
CAD ID:

CONSTRUCTION PLANS
FOR
CHAMBLISS & RABIL
CONTRACTORS, INC.

PROPOSED DEVELOPMENT
4012 VILLAGE PARK DRIVE
KNIIGHTDALE, NC 27545
WAKE COUNTY
TOK PROJECT # ZCP-5-24

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SEAL
065420
EVER A. KALIT
02/04/2026

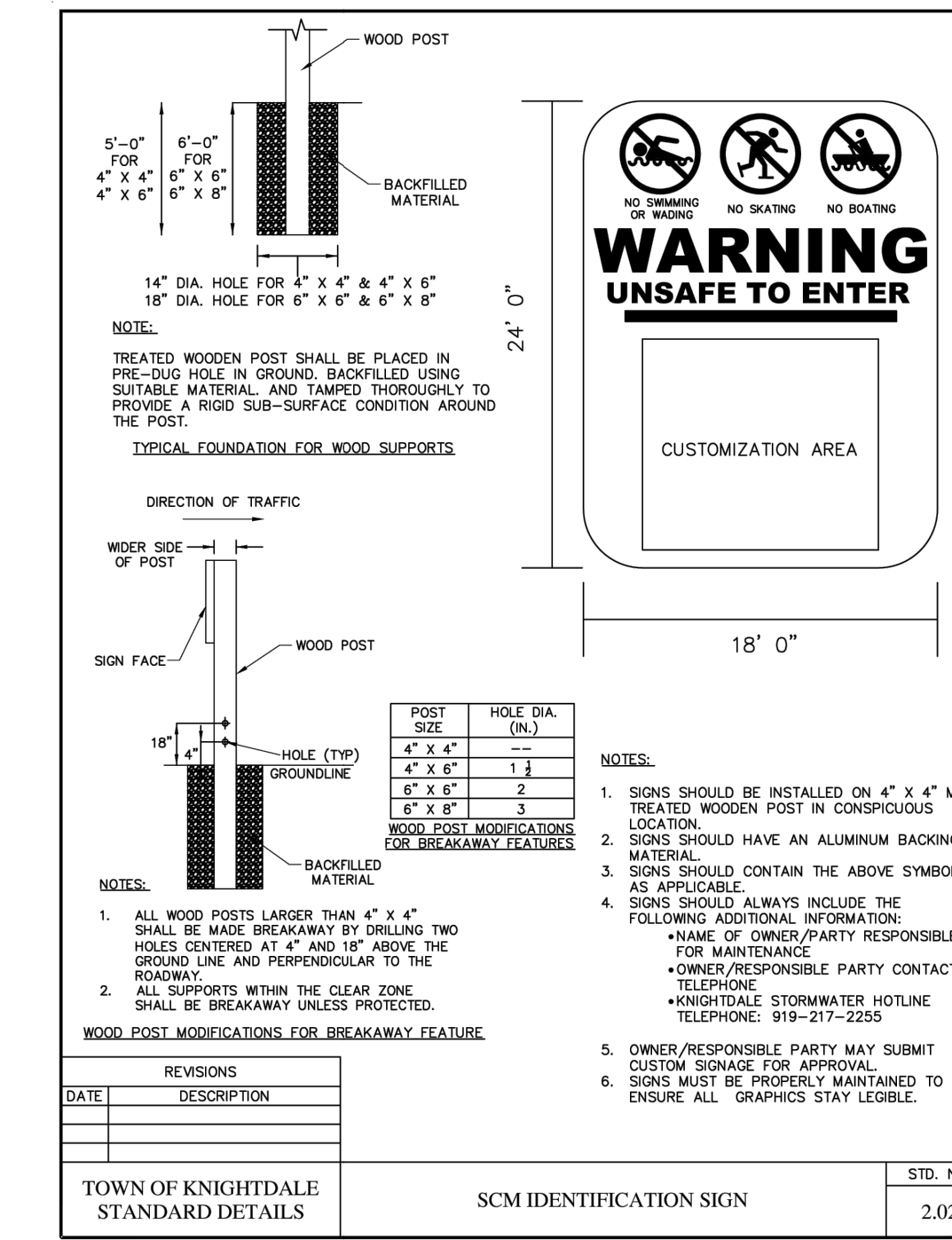
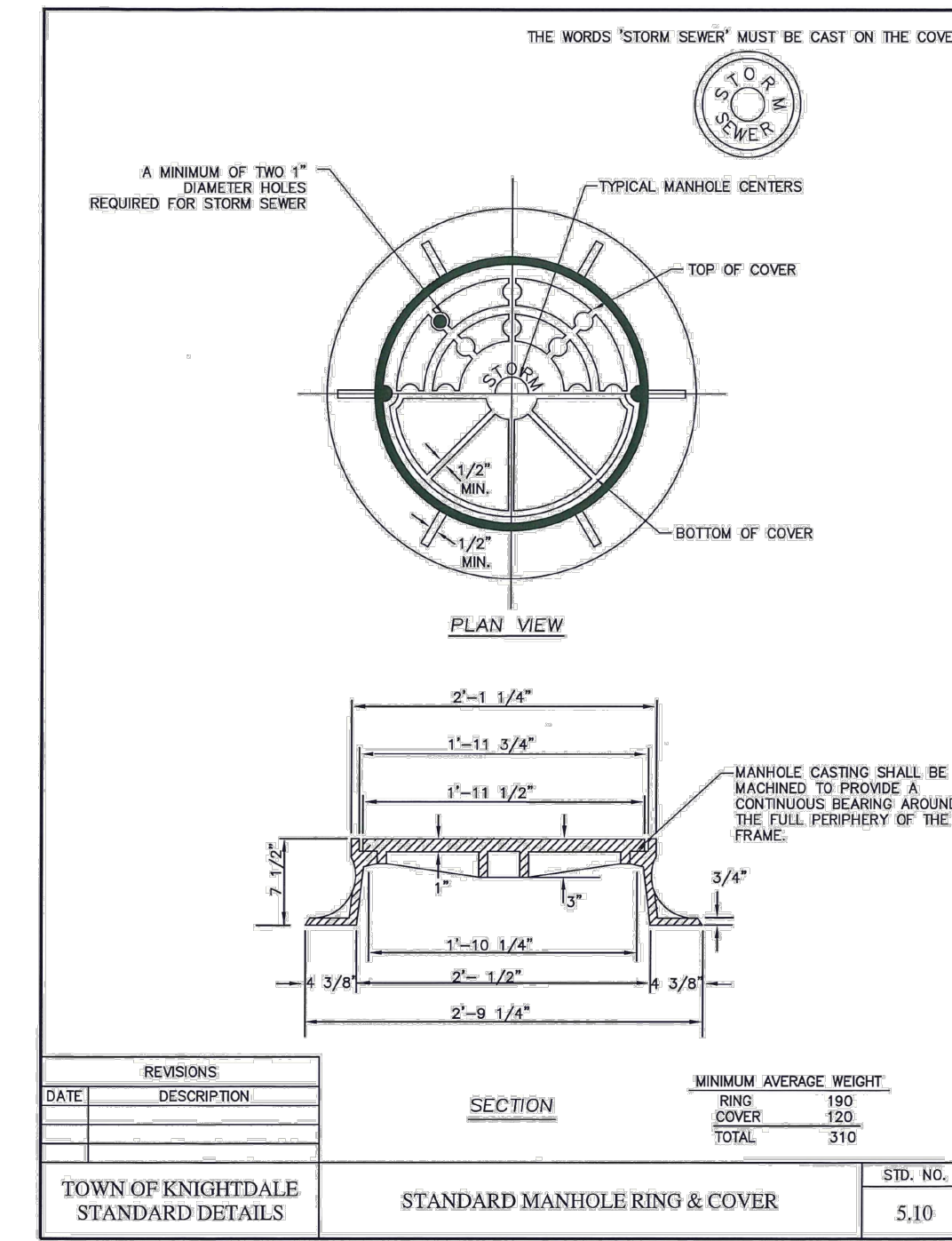
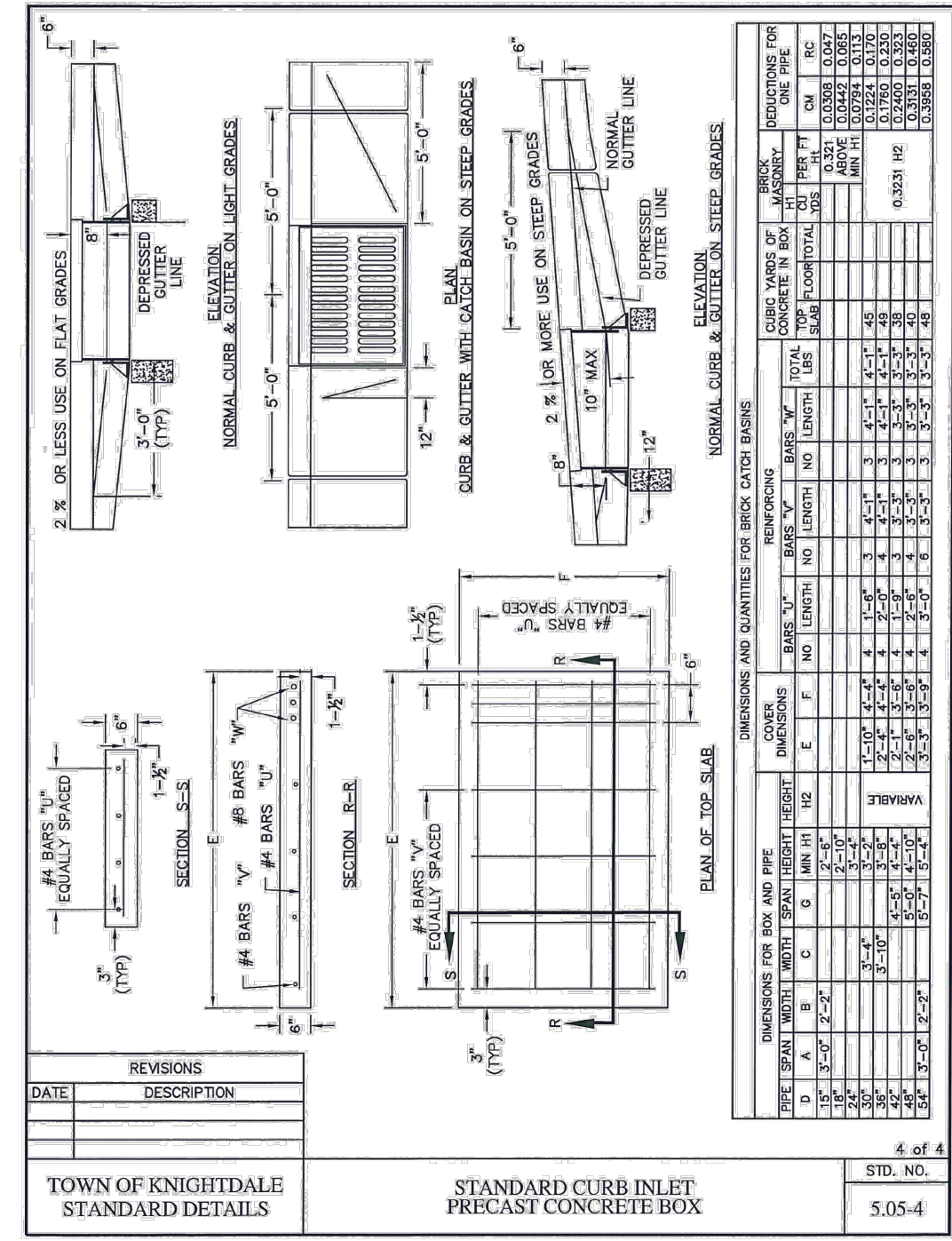
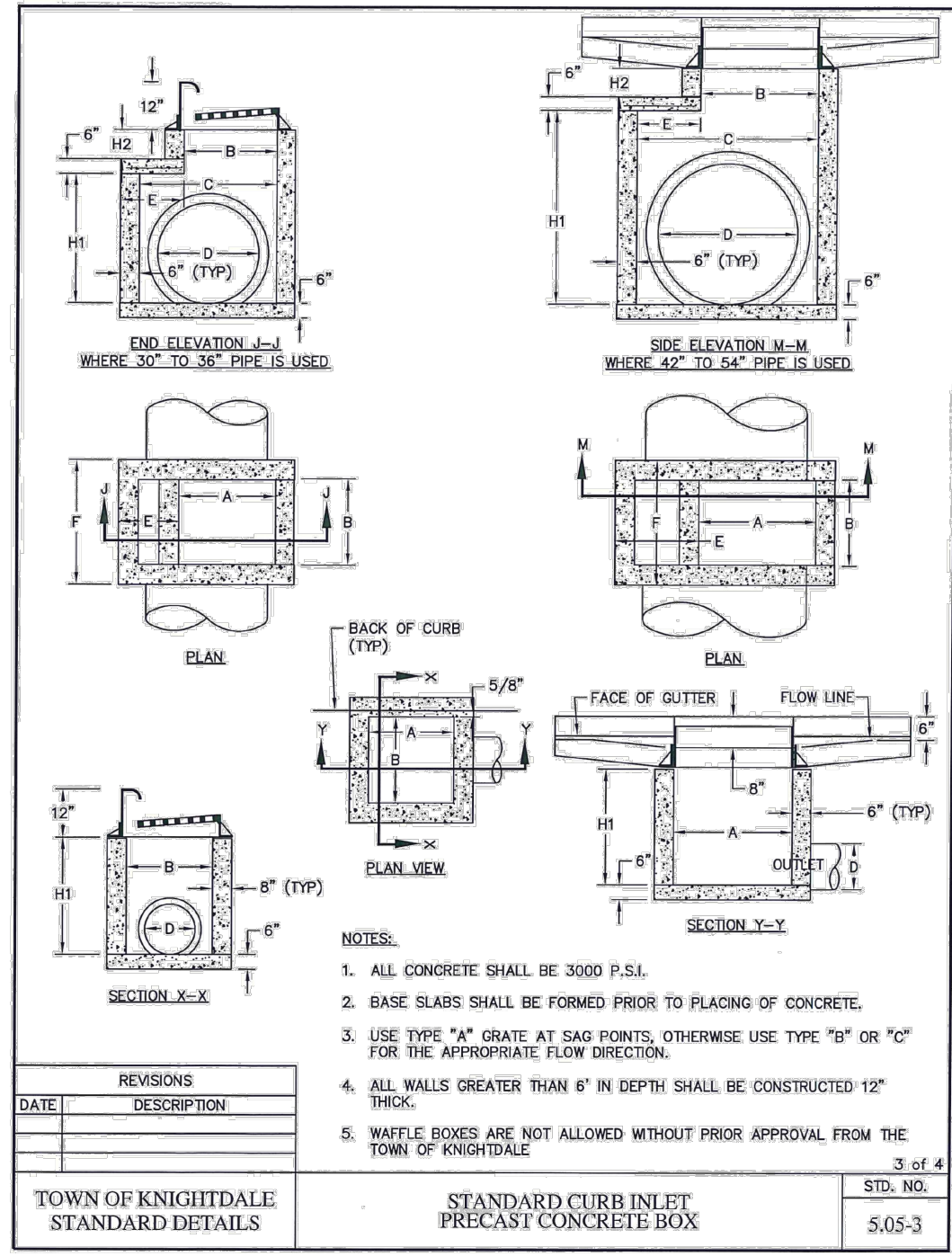
CONSTRUCTION DETAILS
SHEET NUMBER:
C-901
REVISION 6 - 02/04/26

a. **Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: _____ Date: _____
Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.

By: _____ Date: _____
Land Use Administrator



POLYMADE IN THE USA

1. EXPANDED POLYSTYRENE CORE
Provides insulation, protects roots and conserves water.

2. ENCASED IN POLYUREA
Provides strength and restricts permeability.

3. EXTERIOR SYNTHETIC STUCCO
Provides surface colors, texture, and protection against the elements.

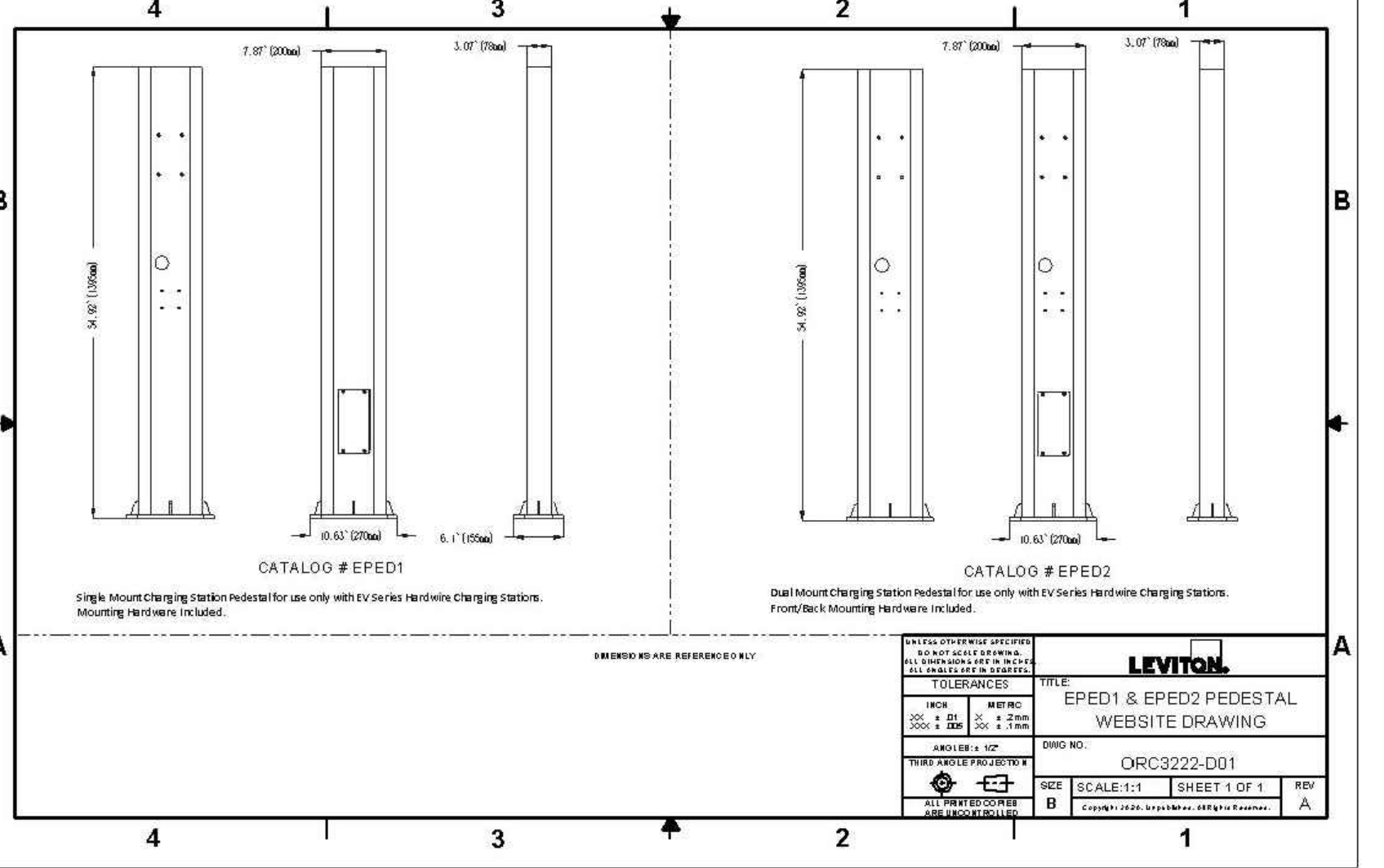
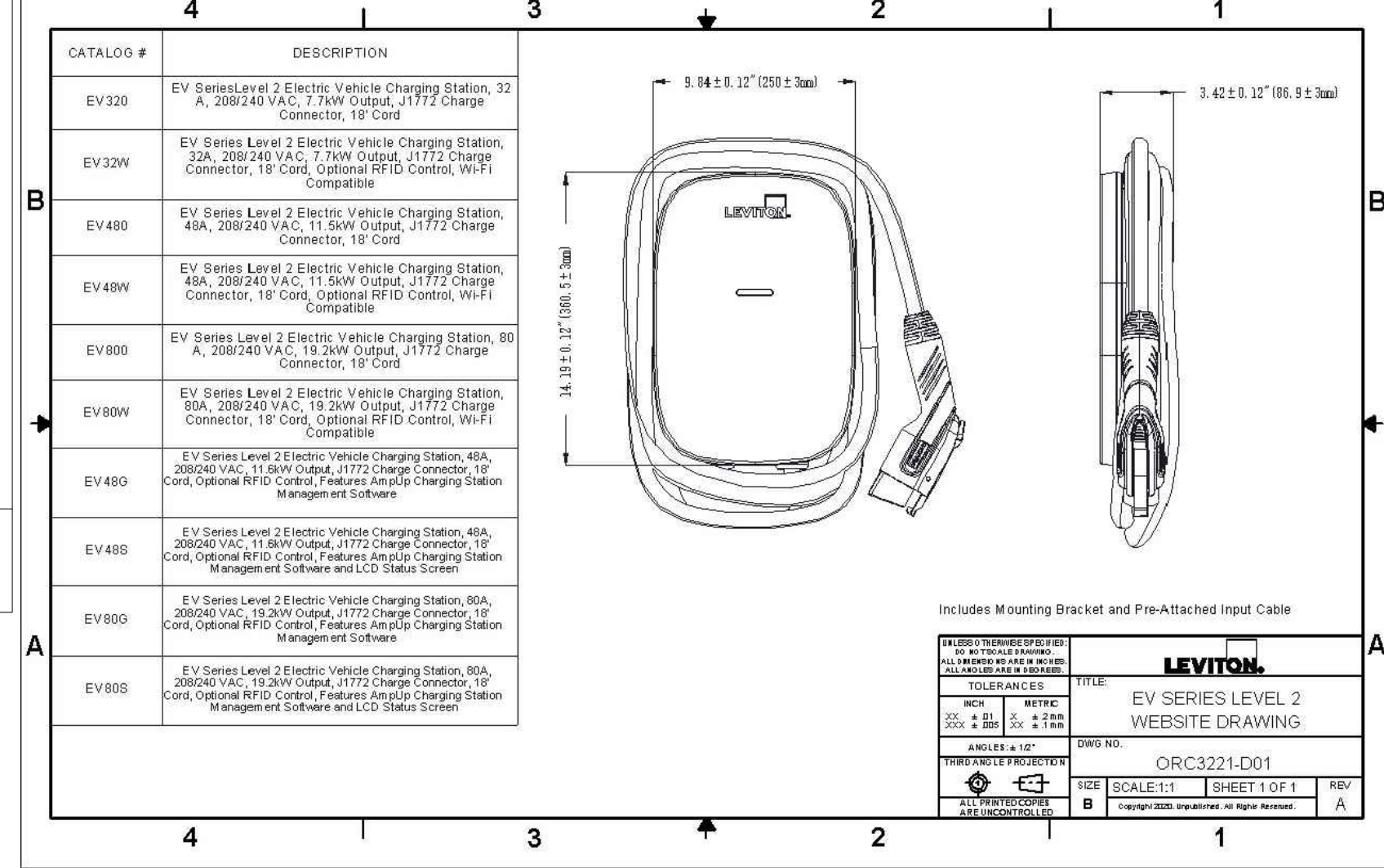
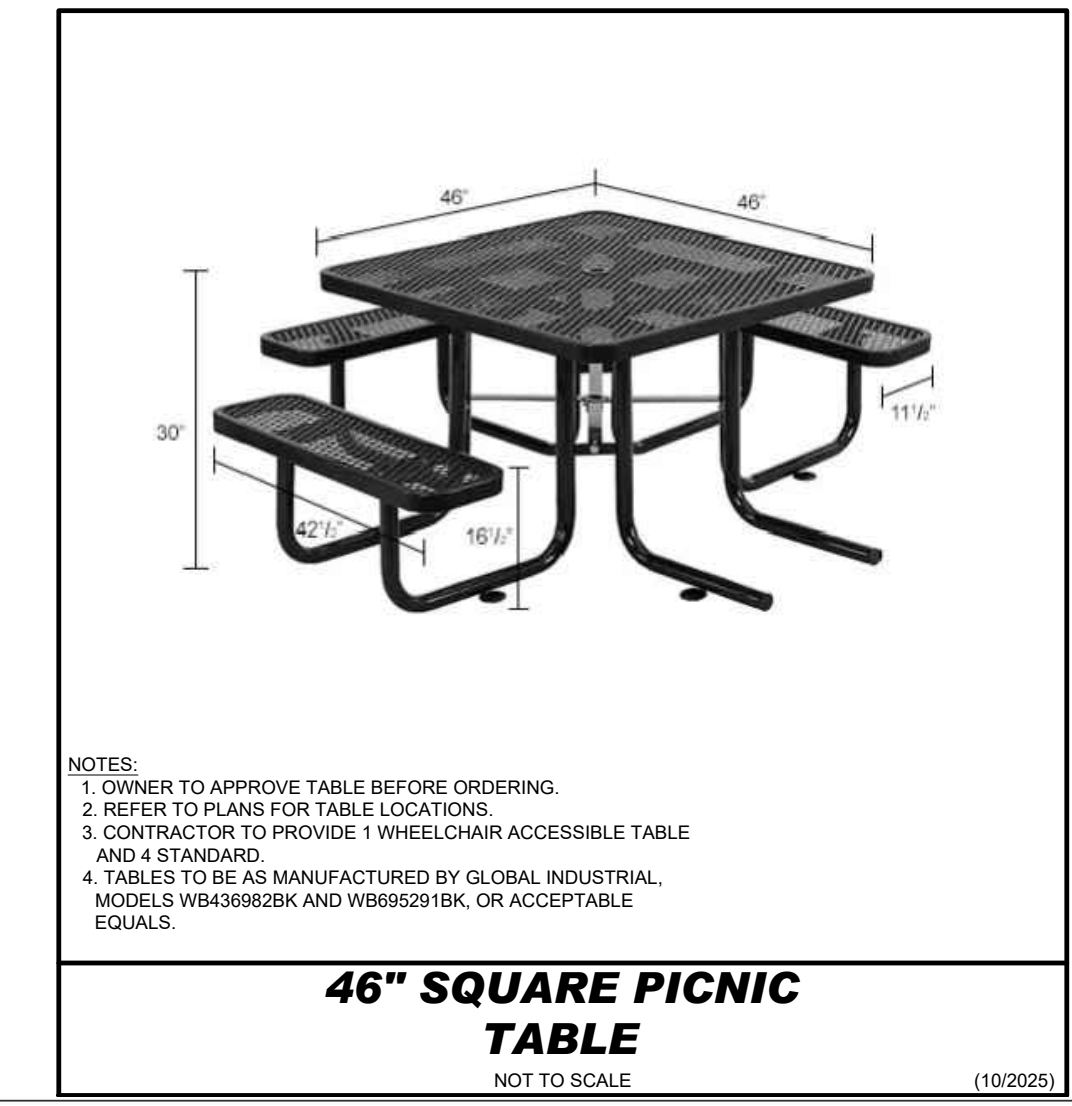
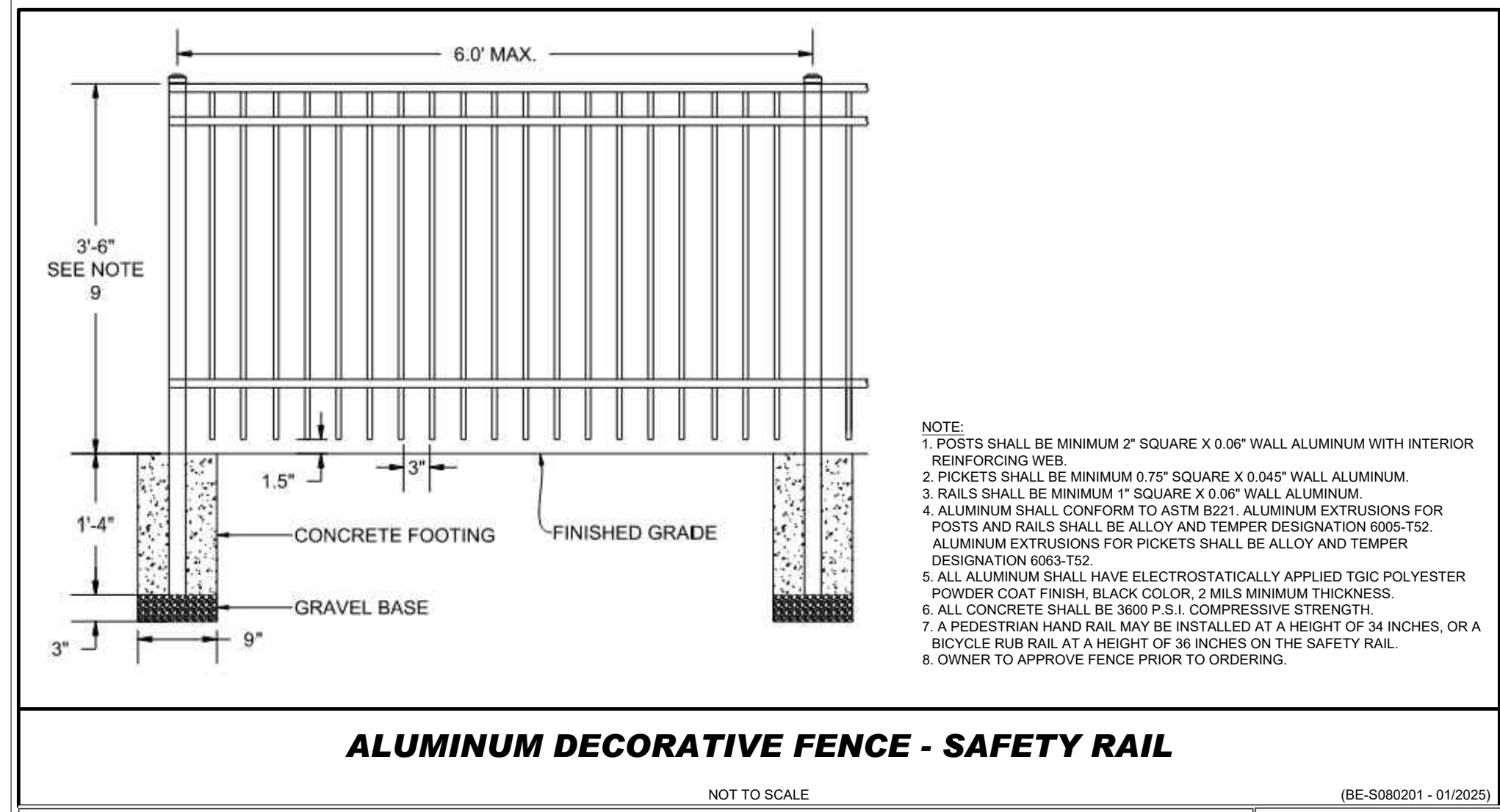
4. 3X DURABILITY
Polymade products consist of three distinct layers.

2-1/2" Thick Side Walls—Standard
 1" Thick Bottom Pad—Standard
 Drain Holes & Exit Channels are Standard
 *ALL ARE CUSTOMIZABLE

913-213-3740 phone SALES@POLYMADE.COM
 913-575-3412 cell JEFF@POLYMADE.COM

480 S. 55th Street, Kansas City, KS 66106

NOTES:
 1. OWNER TO MATCH PLANTER COLOR WITH BUILDING FACADE OR ACCEPTABLE EQUAL.
 2. PLANTER SIZE WILL BE 60"X36"X25"
 3. PLANTERS TO BE AS MANUFACTURED BY POLYMADE, OR ACCEPTABLE EQUAL.



RAISED PLANTERS

NOT TO SCALE

BOHLER ENGINEERING NC, PLLC

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REVISIONS

REV	DATE	COMMENT	CHECKED BY
1	05/23/25	MASTER PLAN COMMENTS	RBS/CC
2	08/19/25	CONSTRUCTION DRAWINGS	RBS
3	10/08/25	CONSTRUCTION DRAWING	EMO/OK
4	01/07/26	CONSTRUCTION DRAWING	RBS
5	01/23/26	EROSION CONTROL COMMENTS	RBS
6	02/04/26	CONSTRUCTION DRAWING	RBS

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MUNICIPAL REVIEW

PROJECT No.: NCB230070.00
 DRAWN BY: C/RBS
 CHECKED BY: OAK
 DATE: 04/23/2025
 CAD ID:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL CONTRACTORS, INC.

PROPOSED DEVELOPMENT
 4012 VILLAGE PARK DRIVE
 KNIGHTDALE, NC 27545
 WAKE COUNTY
 TOK PROJECT # ZCP-5-24

BOHLER ENGINEERING NC, PLLC
 NCBELS P-1132
 4130 PARKLAKE AVENUE, SUITE 200
 RALEIGH, NC 27612
 Phone: (919) 578-9000
 NC@BohlerEng.com

CONSTRUCTION DETAILS

SHEET TITLE: **C-903**

SHEET NUMBER: REVISION 6 - 02/04/26

a. **Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: _____ Date: _____
 Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.

By: _____ Date: _____
 Land Use Administrator



PLANTING NOTES:

- ALL LANDSCAPE AREAS ARE TO RECEIVE A MINIMUM OF 4" OF TOPSOIL.
- ALL PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, AND FREE OF PEST AND DISEASE.
- ALL PLANT MATERIAL SHALL BE CONTAINER GROWN OR BALLED & BURLAPPED AS INDICATED IN THE PLANT LIST.
- ALL LAWN AREAS SHALL BE SEED WITH LOCALLY GROWN FESCUE SEED MIX MEETING THE LATEST NORTH CAROLINA DEPT. OF AGRICULTURE STANDARD FOR SEED AND PLANT CERTIFICATION. CONSULT LOCAL N.C.S.U. AGRICULTURAL EXTENSION OFFICE FOR PROPER FERTILIZER AND LIME APPLICATION RATES FOR LAWN SEEDING.
- ALL TREES SHALL TRUNK, FULL HEAD, AND MEET ALL REQUIREMENTS SPECIFIED.
- ALL MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT BEFORE, DURING, AND AFTER INSTALLATION.
- ALL TREES MUST BE GUYPED OR STAKED AS SHOWN IN THE DETAILS.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF WORK. LOCATIONS OF EXISTING BURIED UTILITY LINES SHOWN OF THE PLANS ARE BASE UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR 1) TO VERIFY THE LOCATION OF UTILITY LINES ADJACENT TO THE WORK AREA 2) TO PROTECT ALL UTILITY LINES DURING THE CONSTRUCTION PERIOD 3) TO REPAIR ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS BEFORE PRICING THE WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DELIVERY SCHEDULE AND PROTECTION BETWEEN DELIVERY AND PLANTING PER SPECIFICATIONS TO MAINTAIN HEALTHY PLANT CONDITIONS.
- THE CONTRACTOR SHALL COMPLETELY GUARANTEE AND BE RESPONSIBLE FOR FULLY MAINTAINING (INCLUDING BUT NOT LIMITED TO: WATERING, SPRAYING, MULCHING, FERTILIZING, ETC.) ALL OF THE PLANT MATERIALS AND LAWN FOR A ONE YEAR GROWING PERIOD.
- ANY PLANT MATERIAL WHICH IS DISEASED, DISTRESSED, DEAD, OR REJECTED (PRIOR TO SUBSTANTIAL COMPLETION) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE WHILE MEETING ALL PLANT SCHEDULE SPECIFICATIONS.
- STANDARDS SET FORTH IN THE "AMERICAN STANDARD FOR NURSERY STOCK" REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENT FOR PLANT MATERIAL.
- WHERE SHOWN ON THE PLANS AND DETAILS, PLANTING BEDS ARE TO BE COMPLETELY COVERED WITH A MINIMUM 4" DEPTH OF TRIPLE SHRED HARDWOOD MULCH FROM A LOCAL MULCH SOURCE HARVESTED IN A SUSTAINABLE MANNER.
- ALL LANDSCAPING SHALL AVOID CONFLICT WITH UNDERGROUND STORMWATER MANAGEMENT MEASURES.
- ALL TRANSFORMERS AND AIR HANDLERS TO BE AT A MINIMUM SEMI-OPAQUELY SCREENED WITH THE SPECIFIED PLANTINGS.
- THE LAND USE ADMINISTRATOR RESERVES THE RIGHT TO REQUIRE ADDITIONAL VEGETATION TO BE PLANTED PRIOR TO CERTIFICATE OF OCCUPANCY TO MEET THE PERFORMANCE STANDARDS OF THE TYPE A BUFFER.
- ADMINISTRATIVE APPROVAL WAS REQUESTED IN ACCORDANCE WITH UDO SECTION 7.4.B.2 TO REDUCE THE WIDTH OF THE 10' TYPE A LANDSCAPE BUFFER TO 6' ALONG VILLAGE PARK DRIVE. ADMINISTRATIVE FLEXIBILITY CAN BE EXERCISED IN THIS SITUATION TO REDUCE THE WIDTH OF THE TYPE A BUFFER IN ORDER TO REALIZE THE GOALS OF THE CIP THROUGH THE CONSTRUCTION OF THE URBAN MAIN STREET - 2 LANES-WIDE SIDEWALK CROSS-SECTION PER SECTION 10.4.A.2.B AND STD. NO. 3.04-2. THE SAME QUANTITY OF PLANTINGS PER THE TYPE A BUFFER REMAIN REQUIRED WITH THE WIDTH REDUCTION.

a. **Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: _____ Date: _____
Town Engineer

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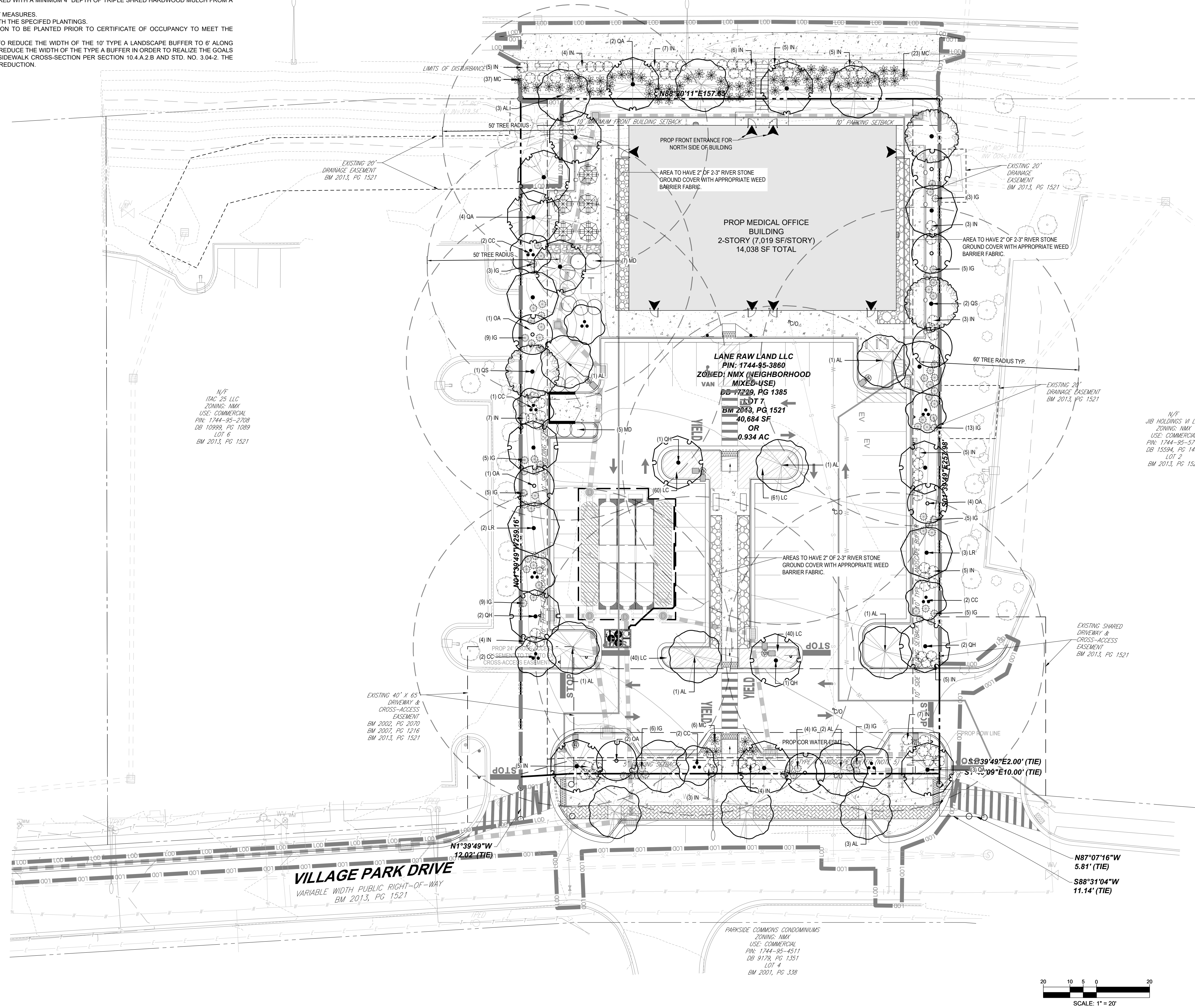
By: _____ Date: _____
Land Use Administrator

**US HIGHWAY 64 /
KNIGHTDALE BOULEVARD**
VARIABLE WIDTH PUBLIC
RIGHT-OF-WAY
BM 2013, PG 1521

SECTION	REQUIREMENT	PROVIDED
7.5.B VUA SCREENING - TYPE A BUFFER VILLAGE PARK DR	ALL SIDES OF VEHICULAR ACCOMMODATION AREAS FRONTING A PUBLIC ROW SHALL BE SCREENED WITH A TYPE A BUFFER. SIDE ADJACENT TO AN ARTERIAL SHALL BE SCREENED WITH A TYPE B BUFFER SUBJECT TO TOWN ADMINISTRATOR DISCRETION. 144 LF / 100 LF = 1.44 1.44 X 3 = 5 CANOPY TREES REQUIRED 1.44 X 2 = 3 UNDERSTORY TREES REQUIRED 1.44 X 20 = 29 SHRUBS REQUIRED	5 CANOPY TREES 4 UNDERSTORY TREES 30 SHRUBS
7.5.B VUA SCREENING - TYPE A BUFFER RIGHT SIDE	ALL SIDES OF VEHICULAR ACCOMMODATION AREAS FRONTING A PUBLIC ROW SHALL BE SCREENED WITH A TYPE A BUFFER. SIDE ADJACENT TO AN ARTERIAL SHALL BE SCREENED WITH A TYPE B BUFFER SUBJECT TO TOWN ADMINISTRATOR DISCRETION. 214 LF / 100 LF = 2.14 2.14 X 3 = 7 CANOPY TREES REQUIRED 2.14 X 2 = 5 UNDERSTORY TREES REQUIRED 2.14 X 20 = 42 SHRUBS REQUIRED	7 CANOPY TREES 5 UNDERSTORY TREES 42 SHRUBS
7.5.B VUA SCREENING - TYPE A BUFFER LEFT SIDE	ALL SIDES OF VEHICULAR ACCOMMODATION AREAS FRONTING A PUBLIC ROW SHALL BE SCREENED WITH A TYPE A BUFFER. SIDE ADJACENT TO AN ARTERIAL SHALL BE SCREENED WITH A TYPE B BUFFER SUBJECT TO TOWN ADMINISTRATOR DISCRETION. 214 LF / 100 LF = 2.14 2.14 X 3 = 7 CANOPY TREES REQUIRED 2.14 X 2 = 5 UNDERSTORY TREES REQUIRED 2.14 X 20 = 42 SHRUBS REQUIRED	7 CANOPY TREES 5 UNDERSTORY TREES 42 SHRUBS
7.4.I STREET TREE PLANTINGS VILLAGE PARK DR	STREET TREES SHALL BE CANOPY TREES AND SHALL BE INSTALLED AT A MINIMUM AVERAGE DISTANCE OF FORTY (40) FEET ON CENTER IN A PLANTING STRIP A MINIMUM OF FIVE (5) FEET IN WIDTH BETWEEN SIDEWALK AND ROADWAY. MAXIMUM STREET TREES: 123 LF / 40 LF = 3 STREET TREES	3 CANOPY TREES
7.4.I STREET TREE PLANTINGS KNIGHTDALE BLVD	STREET TREES SHALL BE CANOPY TREES AND SHALL BE INSTALLED AT A MINIMUM AVERAGE DISTANCE OF FORTY (40) FEET ON CENTER IN A PLANTING STRIP A MINIMUM OF FIVE (5) FEET IN WIDTH IN ACCORDANCE WITH NCDOT SPECIFICATIONS. MAXIMUM STREET TREES: 158 LF / 40 LF = 4 STREET TREES	5 CANOPY TREES 60 SHRUBS
7.5.D ABOVE GROUND UTILITIES SCREENING	ALL CONTAINMENT AREAS SHALL BE SCREENED BY THE ELEMENTS OF A TYPE B BUFFER YARD (7.4.I)(3)) THAT PERTAIN TO SEMI-OPAQUE SCREENS UP TO SIX (6) FEET IN HEIGHT OR THE HEIGHT OF THE ENCLOSURE, WHICHEVER IS LESS.	NATIVE EVERGREEN SHRUBS TO REACH 6' MINIMUM HEIGHT PROVIDED AROUND ABOVE GROUND UTILITIES. FINAL LOCATION IS SUBJECT TO CHANGE BASED ON UTILITY PROVIDER REQUIREMENTS.
7.5.E.2 LANDSCAPE SCREENING	ALL CONTAINMENT AREAS SHALL BE SCREENED BY THE ELEMENTS OF A TYPE B BUFFER YARD (7.4.I)(3)) THAT PERTAIN TO SEMI-OPAQUE SCREENS UP TO SIX (6) FEET IN HEIGHT OR THE HEIGHT OF THE ENCLOSURE, WHICHEVER IS LESS.	EVERGREEN SHRUBS PROVIDED AROUND TRASH ENCLOSURE.
6.8 PUBLIC IMPROVEMENTS	PUBLIC GATHERING SPACE ACTIVATION FEATURE THROUGH USE OF SHADE TREES	2 CANOPY TREES

*PROPOSED PLANTINGS ARE TO COMPLY WITH THE WATER ALLOCATION POLICY.

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	LOCATION
CANOPY TREES							
	AL	14	ACER SACCHARUM 'LEGACY'	LEGACY SUGAR MAPLE	2' CAL, 8' MIN HT.	B&B	STREET + PARKING LOT
	LR	5	LIQUIDAMBAR STYRACIFLUA 'ROTUNDILOBA'	ROUND-LOBED SWEET GUM	2' CAL, 8' MIN HT.	B&B	BUFFERS
	QA	9	QUERCUS ACUTISSIMA	SAWTOOTH OAK	2' CAL, 8' MIN HT.	B&B	STREET + AMENITY
	QH	6	QUERCUS LYRATA 'QLFTB'	HIGHBEAM OVERCUP OAK	2' CAL, 8' MIN HT.	B&B	BUFFERS + PARKING LOT
	QS	3	QUERCUS SHUMARDII	SHUMARD OAK	2' CAL, 8' MIN HT.	B&B	BUFFERS
UNDERSTORY TREES							
	CC	9	CERCIS CANADENSIS	EASTERN REDBUD	1.5' CAL. MIN.	B&B	BUFFERS
	OA	8	OXYDENDRUM ARBOREUM	SOURWOOD TREE	1.5' CAL. MIN.	B&B	BUFFERS
SHRUBS							
	IG	75	ILEX GLABRA	INKBERRY HOLLY	2-3'	CONTAINER	
	IN	83	ILEX VOMITORIA 'NANA'	DWARF YAUPON HOLLY	2-3'	CONTAINER	
	MC	66	MUHLENBERGIA CAPILLARIS	PINK MUHLY GRASS	1 GAL.	CONTAINER	
	MD	12	MYRICA CERIFERA 'DON'S DWARF'	DON'S DWARF WAX MYRTLE	3' HT.	CONTAINER	
SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
	LC	201	LIRIOPE SPICATA	CREEPING LILLYTURF	1 GAL.	CONTAINER	24" o.c.



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SITE CIVIL AND CONSULTING ENGINEERING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
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REVISIONS				
REV	DATE	COMMENT	CHECKED BY	DRAWN BY
1	05/23/25	MASTER PLAN COMMENTS	RBS/CC	OAK
2	08/19/25	CONSTRUCTION DRAWINGS	RBS	EMO/OAK
3	10/08/25	DRAWING	RBS	EMO/OAK
4	01/07/26	CONSTRUCTION DRAWING	RBS	EMO/OAK
5	01/23/26	EROSION CONTROL COMMENTS	RBS	EMO/OAK
6	02/04/26	CONSTRUCTION DRAWING	RBS	EMO/OAK

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PROJECT No.: NCB230070.00
DRAWN BY: C/CRBS
CHECKED BY: OAK
DATE: 04/23/2025
CAD LID: 101 2
BM 2013, PG 1521

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL
CONTRACTORS, INC.

PROPOSED DEVELOPMENT
4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY
TOK PROJECT # ZCP-5-24

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NCBELS P-1132

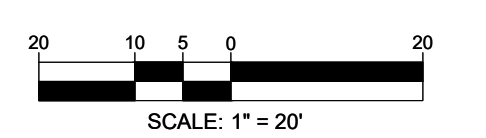
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NC@BohlerEng.com

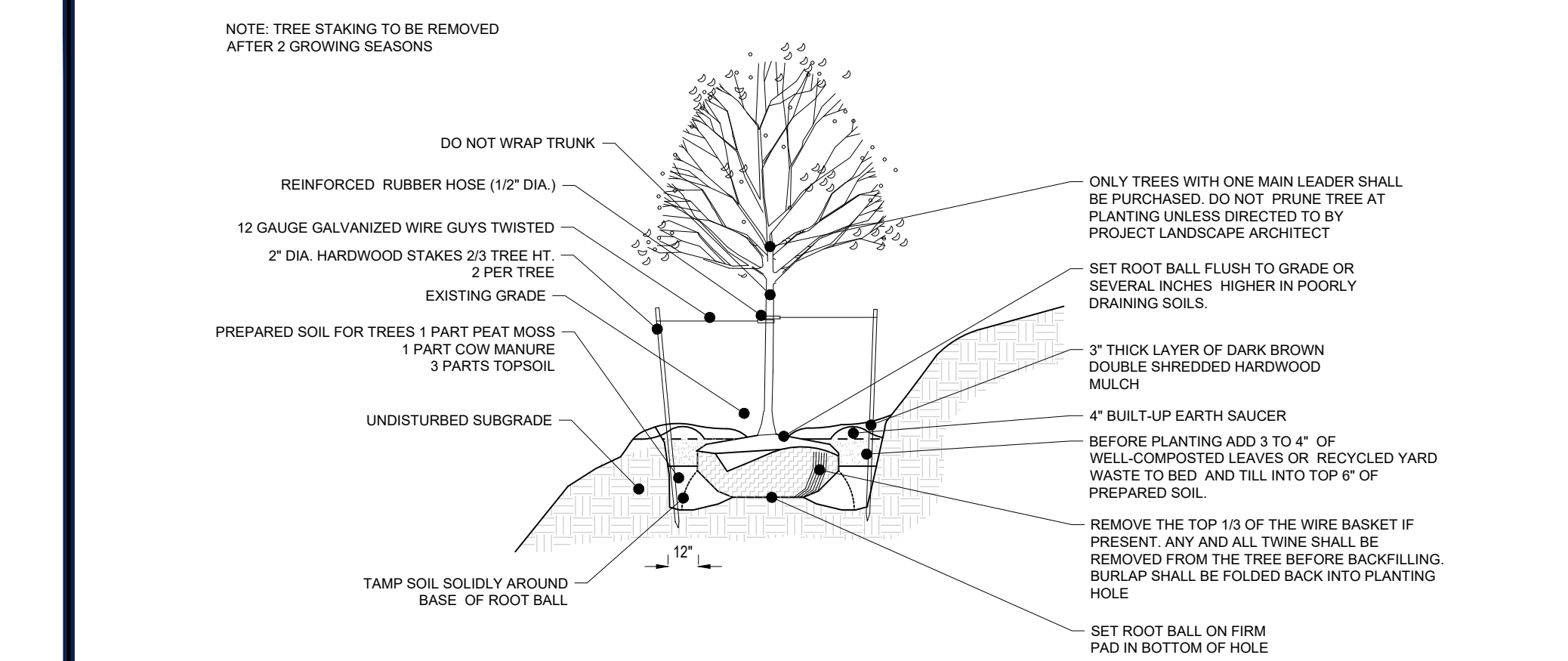
SEAL
065420
APR 11 2026
02/04/2026

SHEET TITLE:
LANDSCAPE PLAN

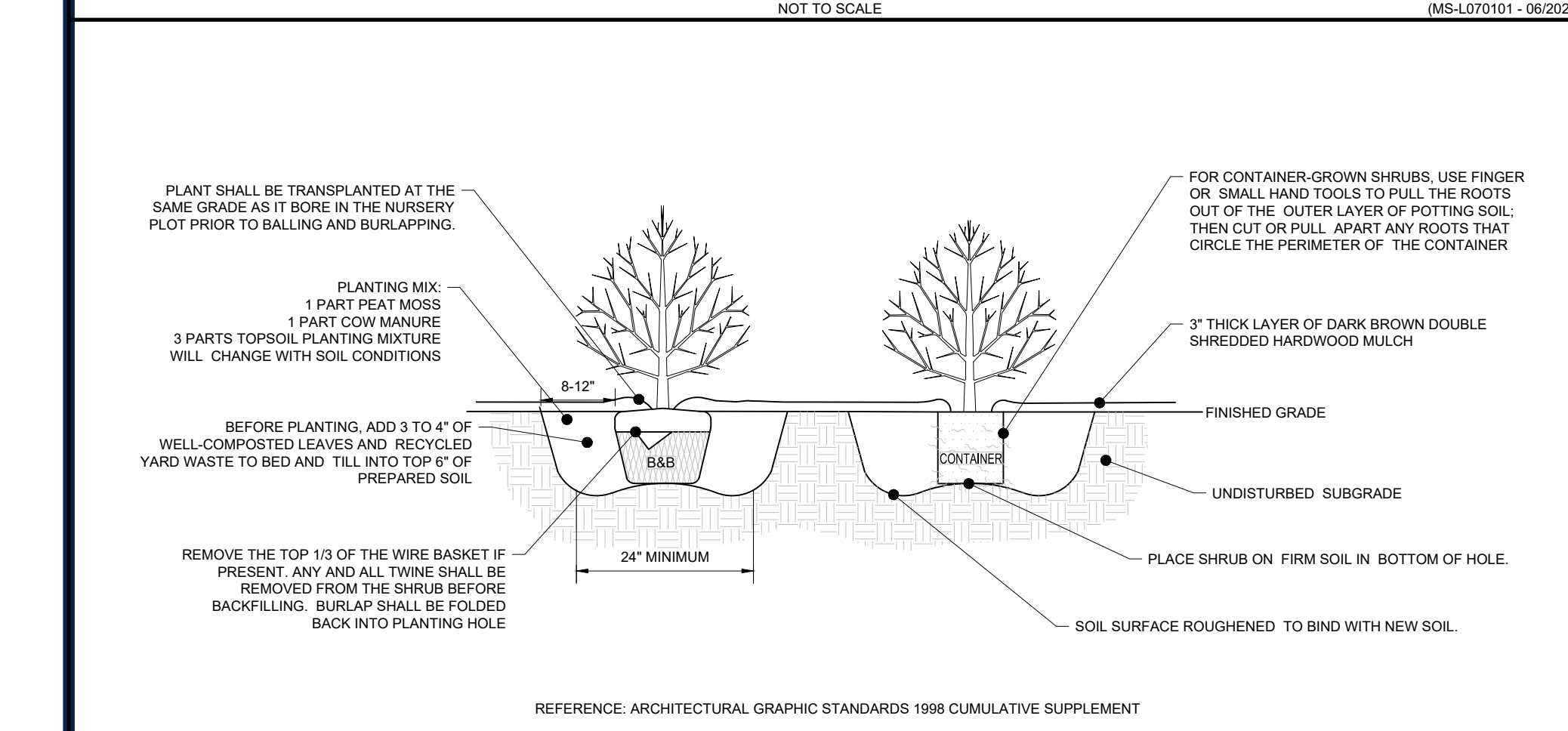
SHEET NUMBER:
L-101

REVISION 6 - 02/04/26





TREE PLANTING ON SLOPE DETAIL



DECIDUOUS AND EVERGREEN SHRUB PLANTING DETAIL



OWNER MAINTENANCE RESPONSIBILITIES

UPON OWNERS (OR OWNER CONTRACTOR'S) COMPLETION OF LANDSCAPING WORK, THE OWNER IS FULLY RESPONSIBLE FOR ALL FUTURE MAINTENANCE, CARE, UPKEEP, WATERING, AND TRIMMING OF ALL INSTALLED VEGETATION, PLANTS, TREE, BUSHES, SHRUBS, GRASSES, GRASS, ORNAMENTAL PLANTS AND FLOWERS, FLOWERS, GROUND COVER, AND LANDSCAPING, INCLUDING ALL LANDSCAPE ISLANDS AND AREAS ADJACENT OR PART OF THE LANDSCAPED AREAS. THIS RESPONSIBILITY INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

- TREES ADJACENT TO WALKWAYS AND AREAS OF PEDESTRIAN TRAFFIC MUST BE MAINTAINED TO ASSURE THAT ANY BRANCHES MUST BE LIMBED UP TO A CLEARANCE HEIGHT OF 7 FT. FROM ALL PEDESTRIAN SURFACES) OR PRUNED BACK TO AVOID ANY INTERFERENCE WITH THE TYPICAL PATH OF TRAVEL.
- TREES WITHIN VEHICULAR SIGHT LINES, AS ILLUSTRATED ON THE LANDSCAPE PLAN, ARE TO BE TRIMMED TO A CLEARANCE HEIGHT OF 7 FT. (FROM ALL PAVED, TRAVELED SURFACES), OR AS OTHERWISE INDICATED ON THE PLANS.
- VEGETATIVE GROUND COVER, SHRUBS AND ORNAMENTAL PLANTS AND GRASSES MUST BE TRIMMED SO THAT NO PORTION OF THE PLANT EXCEEDS 30 INCHES ABOVE GRADE (OF ALL PAVED, TRAVEL SURFACES) ALONG AND WITHIN THE SIGHT LINES OF PARKING LOTS AND INGRESS-EGRESS WAYS.
- FALLEN PLANT FLOWERS, FRUIT, SEEDS AND DEBRIS DROPPINGS ARE TO BE REMOVED IMMEDIATELY FROM VEHICULAR AND PEDESTRIAN TRAFFIC AREAS TO PREVENT TRIPPING, SLIPPING OR ANY OTHER HAZARDS.

THESE REQUIREMENTS DO NOT AFFECT THE PLANT LIFE GUARANTEES THE LANDSCAPE CONTRACTOR IS REQUIRED TO PROVIDE.

LANDSCAPE SPECIFICATIONS

1. SCOPE OF WORK:
THE LANDSCAPE CONTRACTOR SHALL BE REQUIRED TO PERFORM ALL CLEARING, FINISHED GRADING, SOIL PREPARATION, PERMANENT SEEDING OR SOILING, PLANTING AND MULCHING ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT NECESSARY FOR THE COMPLETION OF THIS PROJECT, UNLESS OTHERWISE CONTRACTED BY THE GENERAL CONTRACTOR.

2. MATERIALS

A. GENERAL - ALL HARDSCAPE MATERIALS SHALL MEET OR EXCEED SPECIFICATIONS AS OUTLINED IN THE STATE DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS.

B. TOPSOIL - NATURAL, FRAGILE, LOAMY SILT SOIL HAVING AN ORGANIC CONTENT NOT LESS THAN 5%, A PH RANGE BETWEEN 4.5-7.0. IT SHALL BE FREE OF DEBRIS, ROCKS LARGER THAN ONE INCH (1"), WOOD, ROOTS, VEGETABLE MATTER AND CLAY CLOSURE.

C. LAWN - ALL DISTURBED AREAS ARE TO BE TREATED WITH A MINIMUM SIX INCH (6") THICK LAYER OF TOPSOIL, OR AS DIRECTED BY THE LOCAL ORDINANCE OR CLIENT, AND SODDED IN ACCORDANCE WITH THE PERMANENT STABILIZATION METHODS INDICATED WITHIN THE SOIL EROSION AND SEDIMENT CONTROL NOTES:
1. SOD SHALL BE STRONGLY ROOTED, WEED AND DISEASE/PEST FREE WITH A UNIFORM THICKNESS.
2. SOD INSTALLED ON SLOPES GREATER THAN 4:1 SHALL BE PEGGED TO HOLD SOD IN PLACE.

D. MULCH - ALL AREAS SHALL BE MULCHED WITH A 3" LAYER OF DOUBLE SHREDDED DARK BROWN HARDWOOD BARK MULCH, UNLESS OTHERWISE STATED ON THE LANDSCAPE PLAN.

E. FERTILIZER
1.1. FERTILIZER SHALL BE DELIVERED TO THE SITE MIXED AS SPECIFIED IN THE ORIGINAL UNOPENED STANDARD BAGS SHOWING WEIGHT, ANALYSIS AND NAME OF MANUFACTURER. FERTILIZER SHALL BE STORED IN A WEATHERPROOF PLACE SO THAT IT CAN BE KEPT DRY PRIOR TO USE.
1.2. FOR THE PURPOSE OF BIDDING, ASSUME THAT FERTILIZER SHALL BE 10% NITROGEN, 6% PHOSPHORUS AND 4% POTASSIUM BY WEIGHT. A FERTILIZER SHOULD NOT BE SELECTED WITHOUT A SOIL TEST PERFORMED BY A CERTIFIED SOIL LABORATORY.

F. PLANT MATERIAL
1.1. ALL PLANTS SHALL IN ALL CASES CONFORM TO THE REQUIREMENTS OF THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1), LATEST EDITION, AS PUBLISHED BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION.
1.2. IN ALL CASES, BOTANICAL NAMES SHALL TAKE PRECEDENCE OVER COMMON NAMES FOR ANY AND ALL PLANT MATERIAL.
1.3. PLANTS SHALL BE LEGIBLY TAGGED WITH THE PROPER NAME AND SIZE. TAGS ARE TO REMAIN ON AT LEAST ONE PLANT OF EACH SPECIES FOR VERIFICATION PURPOSES DURING THE FINAL INSPECTION.
1.4. TREES WITH ABRASION OF THE BARK, SUN SCALDS, DISFIGURATION OR FRESH CUTS OF LIMBS OVER 1/2", WHICH HAVE NOT BEEN COMPLETELY CALLEDUS, SHALL BE REJECTED. PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES.
1.5. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OF GROWTH; WELL DEVELOPED BRANCHES, DENSELY FOLIATED, VIGOROUS ROOT SYSTEMS AND BE FREE OF DISEASE, INSECTS, PESTS, EGGS OR LARVAE.
1.6. CALIPER MEASUREMENTS OF NURSERY GROWN TREES SHALL BE TAKEN AT A POINT ON THE TRUNK SIX INCHES (6") ABOVE THE NATURAL GRADE FOR TREES UP TO AND INCLUDING A FOUR INCH (4") CALIPER SIZE. IF THE CALIPER AT SIX INCHES (6") ABOVE THE GROUND EXCEEDS FOUR INCHES (4") IN CALIPER, THE CALIPER SHALL BE MEASURED AT A POINT 12" ABOVE THE NATURAL GRADE.
1.7. SHRUBS SHALL BE MEASURED TO THE AVERAGE HEIGHT OR SPREAD OF THE SHRUB, AND NOT TO THE LONGEST BRANCH.
1.8. TREES AND SHRUBS SHALL BE HANDLED WITH CARE BY THE ROOT BALL.

3. GENERAL WORK PROCEDURES

A. CONTRACTOR TO UTILIZE WORKMANLIKE INDUSTRY STANDARDS IN PERFORMING ALL LANDSCAPE CONSTRUCTION. THE SITE IS TO BE LEFT IN A CLEAN STATE AT THE END OF EACH WORKDAY. ALL DEBRIS, MATERIALS AND TOOLS SHALL BE PROPERLY STORED, STOCKPILED OR DISPOSED OF.

B. WASTE MATERIALS AND DEBRIS SHALL BE COMPLETELY DISPOSED OF AT THE CONTRACTOR'S EXPENSE. DEBRIS, NOT BE BURIED, INCLUDING ORGANIC MATERIALS, BUT SHALL BE REMOVED COMPLETELY FROM THE SITE.

4. SITE PREPARATIONS

A. BEFORE AND DURING PRELIMINARY GRADING AND FINISHED GRADING, ALL WEEDS AND GRASSES SHALL BE DUG OUT BY THE ROOTS AND DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES OUTLINED HEREIN.

B. ALL EXISTING TREES TO REMAIN SHALL BE PRUNED TO REMOVE ANY DAMAGED BRANCHES. THE ENTIRE LIMB OF ANY DAMAGED BRANCH SHALL BE CUT OFF AT THE TRUNK. CONTRACTOR SHALL ENSURE THAT CUTS ARE SMOOTH AND STRAIGHT. ANY EXPOSED ROOTS SHALL BE CUT BACK WITH CLEAN, SHARP TOOLS AND TOPSOIL SHALL BE PLACED AROUND THE REMAINDER OF THE ROOTS. EXISTING TREES SHALL BE MONITORED ON A REGULAR BASIS FOR ADDITIONAL ROOT OR BRANCH DAMAGE AS A RESULT OF CONSTRUCTION. ROOTS SHALL NOT BE LEFT EXPOSED FOR MORE THAN ONE (1) DAY. CONTRACTOR SHALL WATER EXISTING TREES AS NEEDED TO PREVENT SHOCK OR DECLINE.

C. CONTRACTOR SHALL ARRANGE TO HAVE A UTILITY STAKE-OUT TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY LANDSCAPE MATERIAL. UTILITY COMPANIES SHALL BE CONTACTED THREE (3) DAYS PRIOR TO THE BEGINNING OF WORK.

5. TREE PROTECTION

A. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING TREES TO REMAIN. A TREE PROTECTION ZONE SHALL BE ESTABLISHED AT THE DRIP LINE OR 15 FEET FROM THE TRUNK OR AT THE LIMIT OF CONSTRUCTION DISTURBANCE, WHICHEVER IS GREATER. LOCAL STANDARDS THAT MAY REQUIRE A MORE STRICT TREE PROTECTION ZONE SHALL BE HONORED.

B. A FORTY-EIGHT INCH (48") HIGH WOODEN SNOW FENCE OR ORANGE COLORED HIGH-DENSITY WIS-FENCE, OR APPROVED EQUAL, MOUNTED ON STEEL POSTS SHALL BE PLACED ALONG THE BOUNDARY OF THE TREE PROTECTION ZONE. POSTS SHALL BE LOCATED AT A MAXIMUM OF EIGHT FEET (8') ON CENTER OR AS INDICATED WITHIN THE TREE PROTECTION DETAIL.

C. WHEN THE TREE PROTECTION FENCING HAS BEEN INSTALLED, IT SHALL BE INSPECTED BY THE APPROVING AGENCY PRIOR TO DEMOLITION, GRADING, TREE CLEARING OR ANY OTHER CONSTRUCTION. THE FENCING ALONG THE TREE PROTECTION ZONE SHALL BE REGULARLY INSPECTED BY THE LANDSCAPE CONTRACTOR AND MAINTAINED UNTIL ALL CONSTRUCTION ACTIVITY HAS BEEN COMPLETED.

D. AT NO TIME SHALL MACHINERY, DEBRIS, FALLEN TREES OR OTHER MATERIALS BE PLACED, STOCKPILED OR LEFT STANDING IN THE TREE PROTECTION ZONE.

6. SOIL MODIFICATIONS

A. CONTRACTOR SHALL ATAIN A SOIL TEST FOR ALL AREAS OF THE SITE PRIOR TO CONDUCTING ANY PLANTING. SOIL TESTS SHALL BE PERFORMED BY A CERTIFIED SOIL LABORATORY.

B. LANDSCAPE CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE GROWTH OF PLANT MATERIAL. SOIL MODIFICATIONS, AS SPECIFIED HEREIN, MAY NEED TO BE CONDUCTED BY THE LANDSCAPE CONTRACTOR DEPENDING ON SITE CONDITIONS.

C. THE FOLLOWING AMENDMENTS AND QUANTITIES ARE APPROXIMATE AND ARE FOR BIDDING PURPOSES ONLY. COMPOSITION OF AMENDMENTS SHOULD BE REVISED DEPENDING ON THE OUTCOME OF A TOPSOIL ANALYSIS PERFORMED BY A CERTIFIED SOIL LABORATORY.
1.1. TO INCREASE A SANDY SOIL'S ABILITY TO RETAIN WATER AND NUTRIENTS, THOROUGHLY TILL ORGANIC MATTER INTO THE TOP 6-12". USE COMPOSTED BARK, COMPOSTED LEAF MULCH OR PEAT MOSS. ALL PRODUCTS SHOULD BE COMPOSTED TO A DARK COLOR AND BE FREE OF PIECES WITH IDENTIFIABLE LEAF OR WOOD STRUCTURE. AVOID MATERIAL WITH A PH HIGHER THAN 7.5.
1.2. TO INCREASE DRAINAGE, MODIFY HEAVY CLAY OR SILT (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) AND/OR AGRICULTURAL GYPSUM. COARSE SAND MAY BE USED IF ENOUGH IS ADDED TO BRING THE SAND CONTENT TO BE 60% OF THE TOTAL MIX. SUBSURFACE DRAINAGE LINES MAY NEED TO BE ADDED TO INCREASE DRAINAGE.
1.3. MODIFY EXTREMELY SANDY SOILS (MORE THAN 85%) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX.

7. FINISHED GRADING

A. UNLESS OTHERWISE CONTRACTED, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF TOPSOIL AND THE ESTABLISHMENT OF FINE-GRADING WITHIN THE DISTURBANCE AREA OF THE SITE.

B. LANDSCAPE CONTRACTOR SHALL VERIFY THAT SUBGRADE FOR INSTALLATION OF TOPSOIL HAS BEEN ESTABLISHED. THE SUBGRADE OF THE SITE MUST MEET THE FINISHED GRADE LESS THE REQUIRED TOPSOIL THICKNESS (1").

C. ALL LAWN AND PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN AND UNIFORM PLANE WITH NO ABRUPT CHANGE OF SURFACE AS DEPICTED WITHIN THIS SET OF CONSTRUCTION PLANS, UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER OR LANDSCAPE ARCHITECT.

D. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW FREE FLOW OF SURFACE WATER IN AND AROUND THE PLANTING BEDS. STANDING WATER SHALL NOT BE PERMITTED IN PLANTING BEDS.

8. TOPSOILING

A. CONTRACTOR SHALL PROVIDE A SIX INCH (6") THICK MINIMUM LAYER OF TOPSOIL, OR AS DIRECTED BY THE LOCAL ORDINANCE OR CLIENT, IN ALL PLANTING AREAS. TOPSOIL SHOULD BE SPREAD OVER A PREPARED SURFACE IN A UNIFORM LAYER TO ACHIEVE THE DESIRED COUPLED THICKNESS.

B. ON-SITE TOPSOIL MAY BE USED TO SUPPLEMENT THE TOTAL AMOUNT REQUIRED. TOPSOIL FROM THE SITE MAY BE REJECTED IF IT HAS NOT BEEN PROPERLY REMOVED, STORED AND PROTECTED PRIOR TO CONSTRUCTION.

C. CONTRACTOR SHALL FURNISH TO THE APPROVING AGENCY AN ANALYSIS OF BOTH IMPORTED AND ON-SITE TOPSOIL TO BE UTILIZED IN ALL PLANTING AREAS. THE PH AND NUTRIENT LEVELS MAY NEED TO BE ADJUSTED THROUGH SOIL MODIFICATIONS AS NEEDED TO ACHIEVE THE REQUIRED LEVELS AS SPECIFIED IN THE MATERIALS SECTION ABOVE.

D. ALL PLANTING AND LAWN AREAS ARE TO BE CULTIVATED TO A DEPTH OF SIX INCHES (6"). ALL DEBRIS EXPOSED FROM EXCAVATION AND CULTIVATION SHALL BE DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES SECTION ABOVE. THE FOLLOWING SHALL BE TILLED INTO THE TOP FOUR INCHES (4") IN TWO DIRECTIONS (QUANTITIES BASED ON A 1,000 SQUARE FOOT AREA):
1.1. 20 POUNDS GROW POWER OR APPROVED EQUAL.
1.2. 20 POUNDS NITRO-FORM (COURSE) 38-0-0 BLUE CHIP

E. THE SPREADING OF TOPSOIL SHALL NOT BE CONDUCTED UNDER MUDDY OR FROZEN CONDITIONS.

9. PLANTING

A. INSOFAR THAT IT IS FEASIBLE, PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THAT THIS IS NOT POSSIBLE, LANDSCAPE CONTRACTOR SHALL PROTECT UNINSTALLED PLANT MATERIAL. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE DAY PERIOD AFTER DELIVERY. PLANTS THAT WILL NOT BE PLANTED FOR A PERIOD OF TIME GREATER THAN THREE DAYS SHALL BE HEALED IN WITH TOPSOIL OR MULCH TO HELP PRESERVE ROOT MOISTURE.

B. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTS SHALL NOT BE INSTALLED IN TOPSOIL THAT IS IN A MUDDY OR FROZEN CONDITION.

C. ANY INJURED ROOTS OR BRANCHES SHALL BE PRUNED TO MAKE CLEAN-CUT ENDS PRIOR TO PLANTING UTILIZING CLEAN, SHARP TOOLS. ONLY INJURED OR DISEASED BRANCHING SHALL BE REMOVED.

D. ALL PLANTING CONTAINERS AND NON-BIODEGRADABLE MATERIALS SHALL BE REMOVED FROM ROOT BALLS DURING PLANTING. NATURAL FIBER BURLAP MUST BE CUT FROM AROUND THE TRUNK OF THE TREE AND FOLDED DOWN AGAINST THE ROOT BALL PRIOR TO BACKFILLING.

E. POSITION TREES AND SHRUBS AT THEIR INTENDED LOCATIONS AS PER THE PLANS AND SECURE THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO EXCAVATING PITS, MAKING NECESSARY ADJUSTMENTS AS DIRECTED.

F. PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY, THE PROPOSED LANDSCAPE, AS SHOWN ON THE APPROVED LANDSCAPE PLAN, MUST BE INSTALLED, INSPECTED AND APPROVED BY THE APPROVING AGENCY. THE APPROVING AGENCY SHALL TAKE INTO ACCOUNT SEASONAL CONSIDERATIONS IN THIS REGARD AS FOLLOWS. THE PLANTING OF TREES, SHRUBS, VINES OR GROUND COVER SHALL OCCUR ONLY DURING THE FOLLOWING PLANTING SEASONS:
1.1. PLANTS: MARCH 15 TO DECEMBER 15
1.2. LAWN: MARCH 15 TO JUNE 15 OR SEPT. 1 TO DECEMBER 1

G. PLANTINGS REQUIRED FOR A CERTIFICATE OF OCCUPANCY SHALL BE PROVIDED DURING THE NEXT APPROPRIATE SEASON AT THE MUNICIPALITY'S DISCRETION. CONTRACTOR SHOULD CONTACT APPROVING AGENCY FOR POTENTIAL SUBSTITUTIONS.

H. FURTHERMORE, THE FOLLOWING TREE VARIETIES ARE UNUSUALLY SUSCEPTIBLE TO WINTER DAMAGE. WITH TRANSPARENT SHOCK AND THE SEASONAL LACK OF NITROGEN AVAILABILITY, THE RISK OF PLANT DEATH IS GREATLY INCREASED. IT IS NOT RECOMMENDED THAT THESE SPECIES BE PLANTED DURING THE FALL PLANTING SEASON:
ACER RUBRUM PLATANUS X ACERIFOLIA
BETULA VARIETIES POPULUS VARIETIES
CARPINUS VARIETIES PRUNUS VARIETIES
CRATAEGUS VARIETIES PYRUS VARIETIES
HOELLETIERIA QUERCUS VARIETIES
LIQUIDAMBER STYRACIFLUA TILIA TOMENTOSA
LIRODENDRON LULIPIFERA ZELKOVA VARIETIES

I. PLANTING PITS SHALL BE DUG WITH LEVEL BOTTOMS, WITH THE WIDTH TWICE THE DIAMETER OF ROOT BALL. THE ROOT BALL SHALL REST ON UNDISTURBED GRADE. EACH PLANT PIT SHALL BE BACKFILLED IN LAYERS WITH THE FOLLOWING PREPARED SOIL MIXED THOROUGHLY:
• 1 PART PEAT MOSS
• 1 PART COMPOSTED COW MANURE BY VOLUME
• 3 PARTS TOPSOIL BY VOLUME
• 2 GRAMS AGRIFORM PLANTING TABLETS (OR APPROVED EQUAL) AS FOLLOWS:
A) 2 TABLETS PER 1 GALLON PLANT
B) 3 TABLETS PER 5 GALLON PLANT
C) 4 TABLETS PER 15 GALLON PLANT
D) LARGER PLANTS: 2 TABLETS PER 1/2" CALIPER OF TRUNK

J. FILL PREPARED SOIL AROUND BALL OF PLANT HALF-WAY AND INSERT PLANT TABLETS. COMPLETE BACKFILL AND WATER THOROUGHLY.

K. ALL PLANTS SHALL BE PLANTED SO THAT THE TOP OF THE ROOT BALL, THE POINT AT WHICH THE ROOT FLARE BEGINS, IS SET AT GROUND LEVEL AND IN THE CENTER OF THE PIT. NO SOIL IS TO BE PLACED DIRECTLY ON TOP OF THE ROOT BALL.

L. ALL PROPOSED TREES DIRECTLY ADJACENT TO WALKWAYS OR DRIVEWAYS SHALL BE PRUNED AND MAINTAINED TO A MINIMUM BRANCHING HEIGHT OF 7' FROM GRADE.

M. GROUND COVER AREAS SHALL RECEIVE A 1/2" LAYER OF HUMUS RAKED INTO THE TOP 1" OF PREPARED SOIL PRIOR TO PLANTING. ALL GROUND COVER AREAS SHALL BE WEEDED AND TREATED WITH A PRE-EMERGENT CHEMICAL AS PER MANUFACTURER'S RECOMMENDATION.

N. NO PLANT, EXCEPT GROUND COVERS, GRASSES OR VINES, SHALL BE PLANTED LESS THAN TWO FEET (2') FROM EXISTING STRUCTURES AND SIDEWALKS.

O. ALL PLANTING AREAS AND PLANTING PITS SHALL BE MULCHED AS SPECIFIED HEREIN TO FILL THE ENTIRE BED AREA OR SAUCER. NO MULCH IS TO TOUCH THE TRUNK OF THE TREE OR SHRUB.

P. ALL PLANTING AREAS SHALL BE WATERED IMMEDIATELY UPON INSTALLATION IN ACCORDANCE WITH THE WATERING SPECIFICATIONS AS LISTED HEREIN.

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REVISIONS

REV	DATE	COMMENT	DRAWN BY	CHECKED BY
1	05/23/25	MASTER PLAN COMMENTS	RBS/CC	OAK
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PROJECT No.: NC8230070.00
DRAWN BY: CCR/RBS
CHECKED BY: OAK
DATE: 04/23/2025
CAD ID:

CONSTRUCTION PLANS

CHAMBLISS & RABIL
CONTRACTORS, INC.

PROPOSED DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY
TOK PROJECT # ZCP-5-24

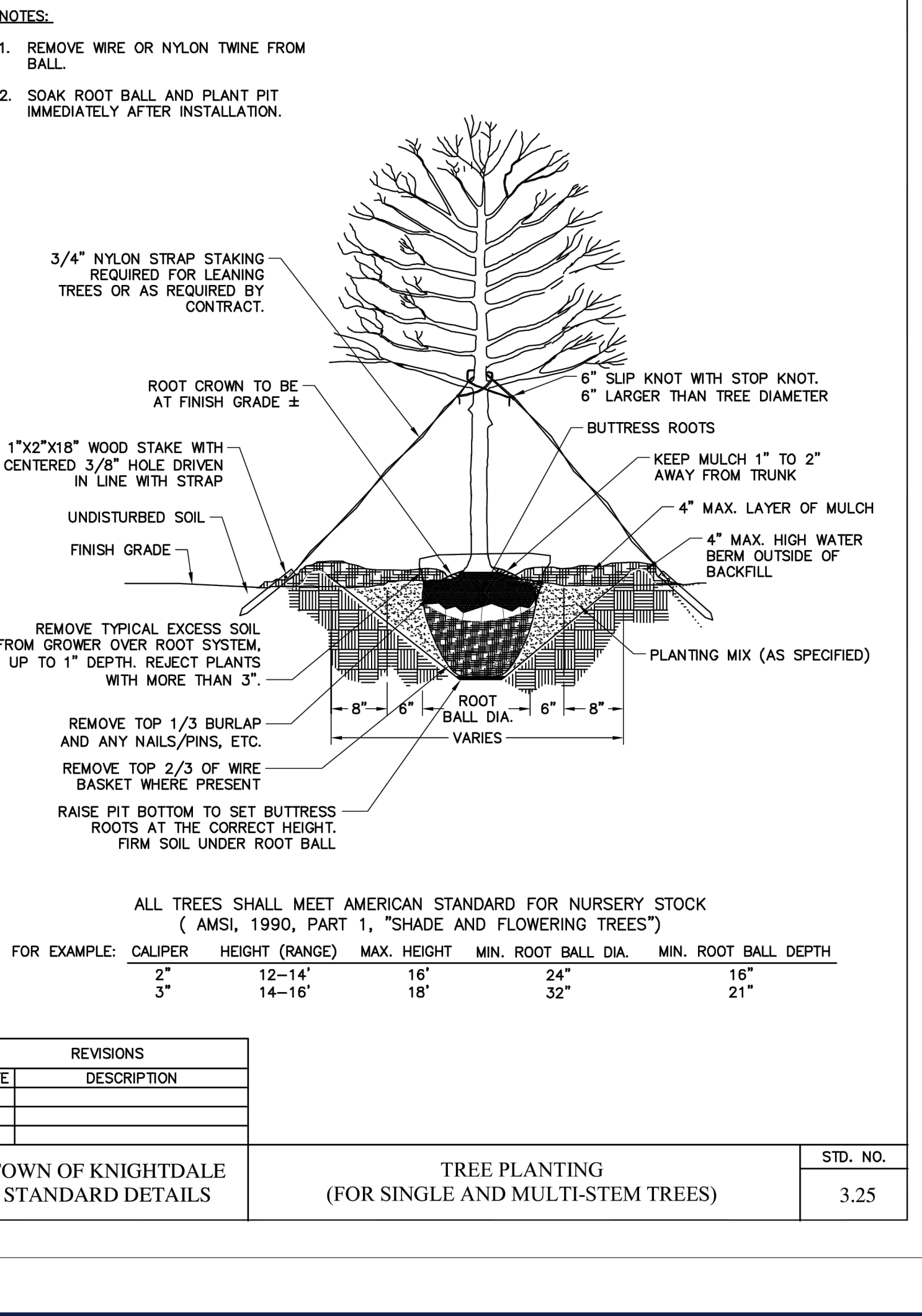
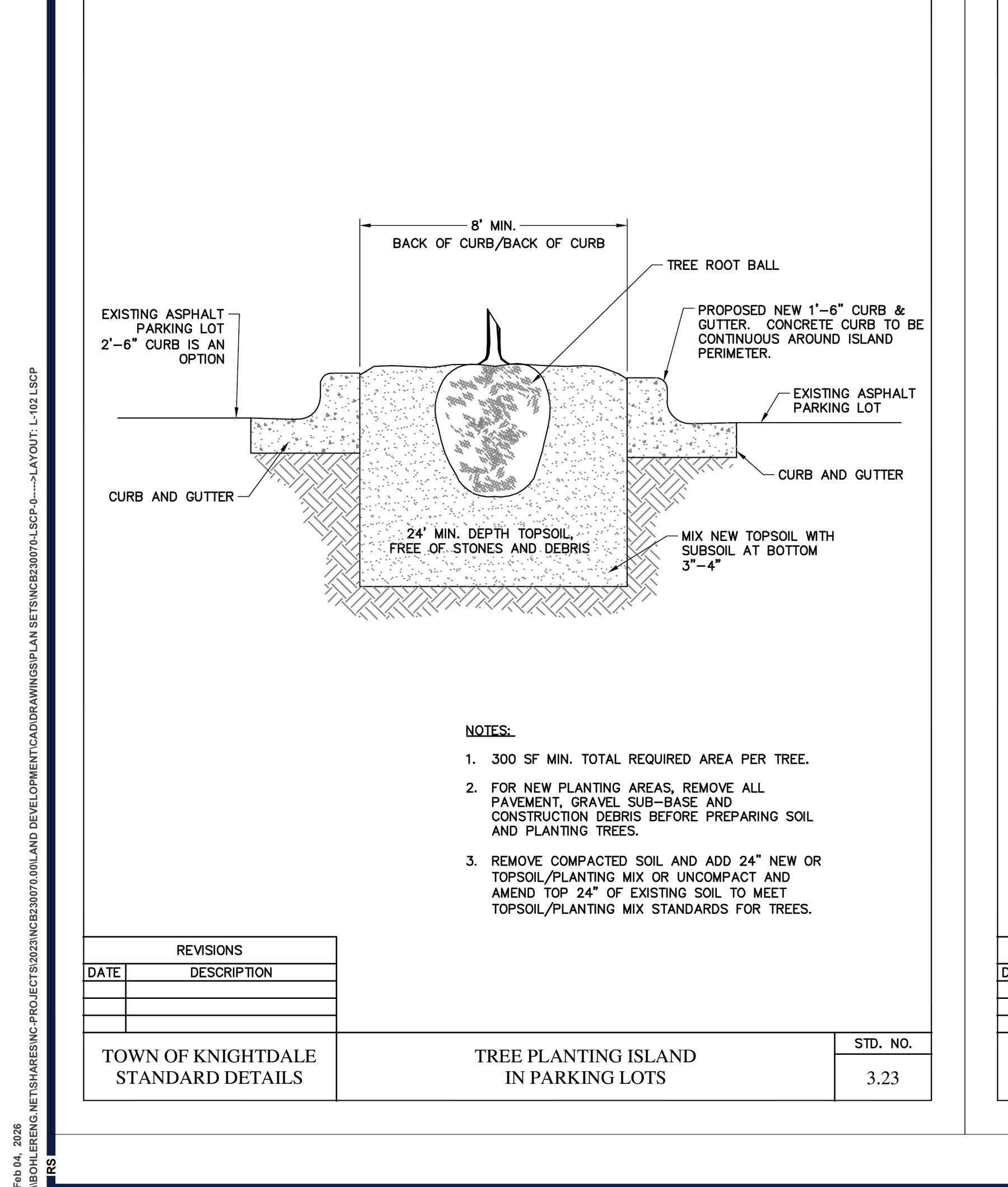
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SEAL
02/04/2026
VERA A. KALIT

SHEET TITLE:
LANDSCAPE NOTES & DETAILS

SHEET NUMBER:
L-102

REVISION 6 - 02/04/26



ALL TREES SHALL MEET AMERICAN STANDARD FOR NURSERY STOCK (AMSI, 1990, PART 1, "SHADE AND FLOWERING TREES")

FOR EXAMPLE:	CALIPER	HEIGHT (RANGE)	MAX. HEIGHT	MIN. ROOT BALL DIA.	MIN. ROOT BALL DEPTH
	2"	12-14'	16'	24"	16"
	3"	14-16'	18'	32"	21"

REVISIONS	DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS

REVISIONS	DATE	DESCRIPTION

TREE PLANTING (FOR SINGLE AND MULTI-STEM TREES)

STD. NO.
3.25



LUMINAIRE SCHEDULE															
SYMBOL	QTY	LABEL	MTG. HT.	DESCRIPTION	COLOR TEMPERATURE	ARRNGMNT.	LUMENS	LLF	LUM. WATTS	ARR. WATTS	TOTAL WATTS	S/P RATIO	BUG RATING	IES FILE NAME	CATALOG #
☉	3	A	25'	INVUE CLEARCURVE POLE MOUNT WAVE STREAM LUMINAIRE WITH T4W DISTRIBUTION LENS	3000K	SINGLE	6,140	0.900	57.6	57.6	172.8	1.00	B2-U0-G2	CCP-VA-4-730-U-T4W.IES	CCP-VA-4-730-U-T4W
☉	1	B	25'	INVUE CLEARCURVE POLE MOUNT WAVE STREAM LUMINAIRE WITH T4W DISTRIBUTION LENS	3000K	SINGLE	3,122	0.900	29	29	29	1.00	B1-U0-G1	CCP-VA-1-730-U-T4W.IES	CCP-VA-1-730-U-T4W
☉	2	C	25'	INVUE CLEARCURVE POLE MOUNT WAVE STREAM LUMINAIRE WITH T4W DISTRIBUTION LENS	3000K	DOUBLE @ 90	6,140	0.900	57.6	115.2	230.4	1.00	B2-U0-G2	CCP-VA-4-730-U-T4W.IES	CCP-VA-4-730-U-T4W
☐	4	D	13'	WST LED ARCHITECTURAL WALL SCONCE	3000K	SINGLE	1,841	0.900	14	14	84	1.00	B0-U0-G0	WST_LED_P1_30K_VW_MVOLT_DS.IES	WST_LED_P1_30K_VW_MVOLT_DS

NOTES:
 1. AEG 32-19.15 LIGHTING SOFTWARE WAS USED FOR ALL LIGHT MODELING AND CALCULATIONS.
 2. PROP. LIGHT FIXTURES ARE TO BE MOUNTED ON A 30" HIGH CONCRETE BASE.
 3. MOUNTING HEIGHT IS MEASURED FROM THE FINISHED GRADE AND INCLUDES THE TOTAL HEIGHT OF THE FIXTURE, POLE, AND BASE.

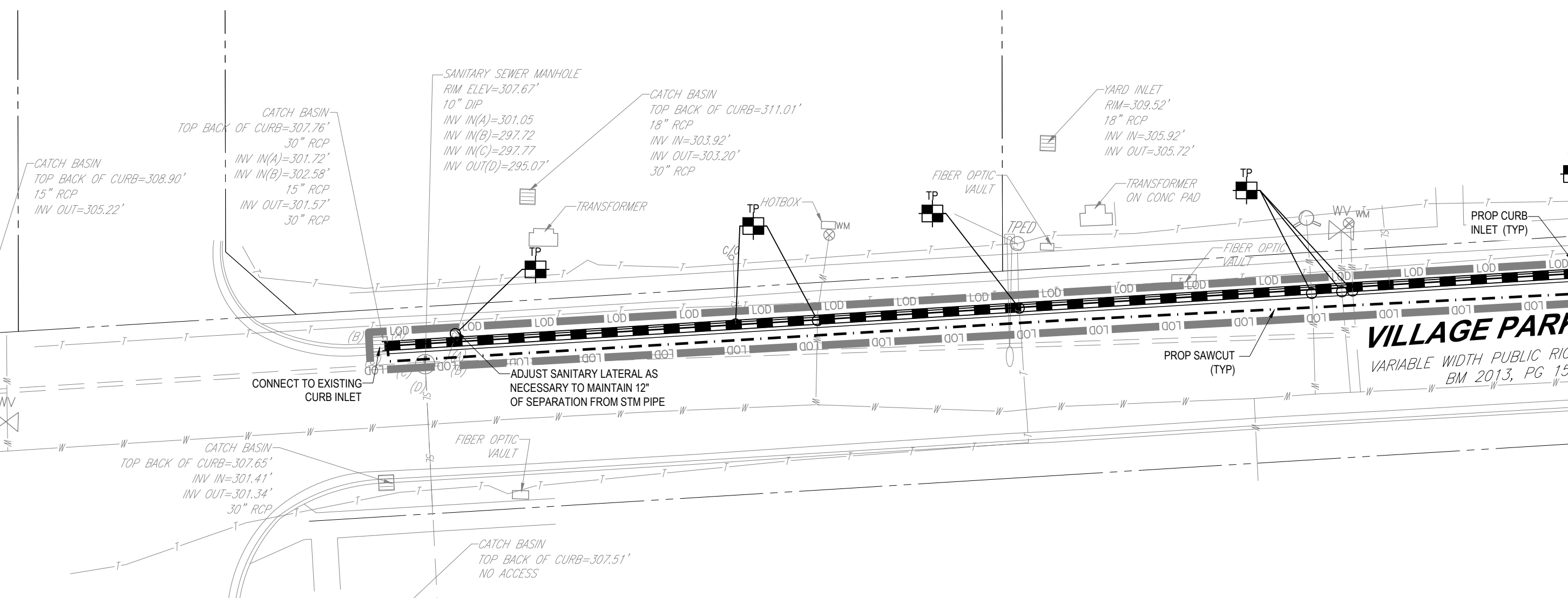
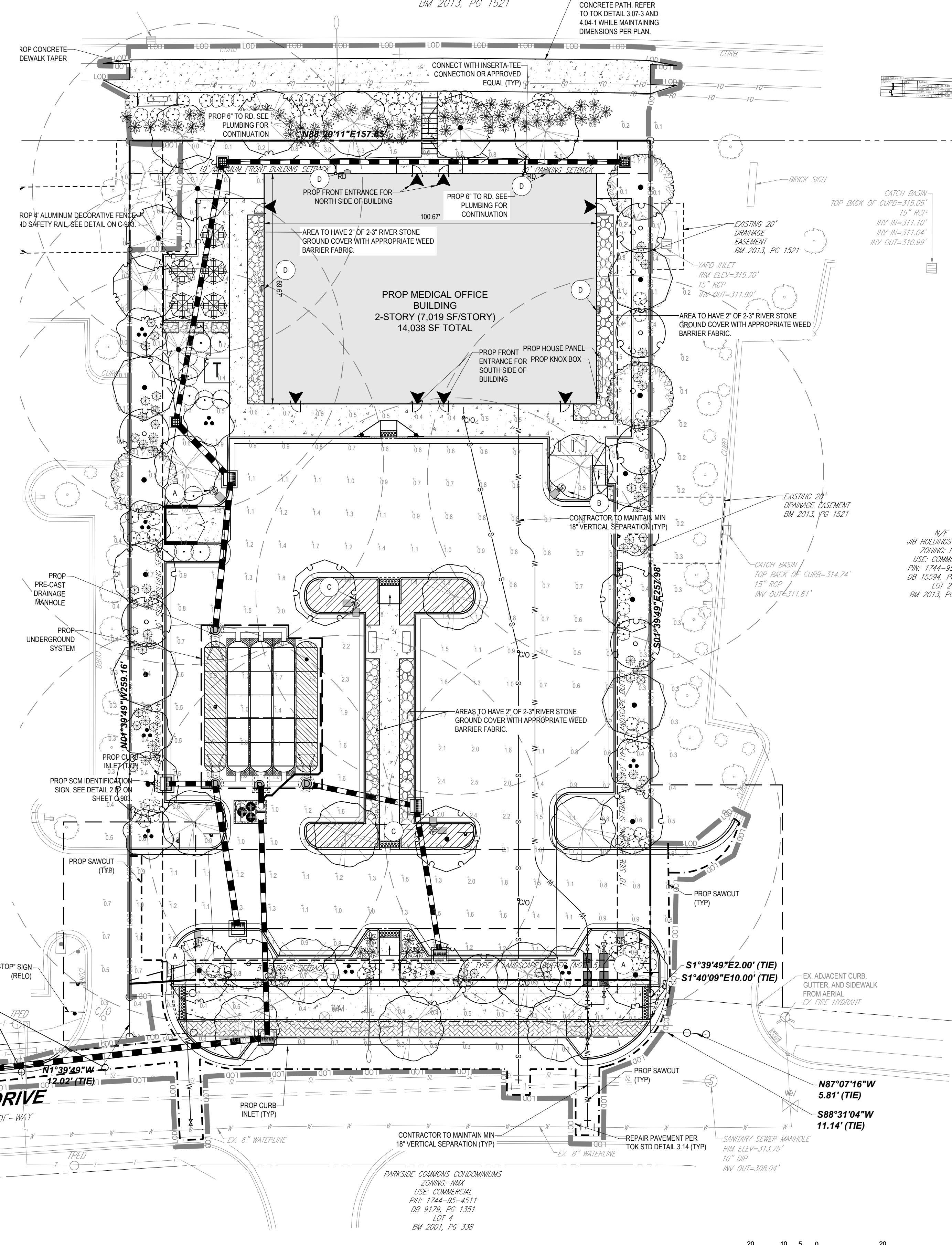
CALCULATION SUMMARY						
LABEL	CALCTYPE	UNITS	AVG	MIN	MAX	AVG/MIN
OVERALL PROPERTY CALCULATION POINTS	ILLUMINANCE	FC	0.85	0.0	4.5	N/A
PARKING LOT	ILLUMINANCE	FC	1.22	0.4	2.5	3.05

GENERAL LIGHTING PLAN NOTES:

1. ALL POLE MOUNTED FIXTURES WILL BE MOUNTED AT A HEIGHT OF 25' ABOVE GRADE. CONTRACTOR TO REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHT OF ALL BUILDING MOUNTED FIXTURES.
2. ALL FIXTURES SHALL BE CUT OFF LIGHT FIXTURES.
3. LIGHTING TO BE INSTALLED AND MAINTAINED BY THE OWNER.
4. FOOT-CANDLE LEVELS SHOWN IN INITIAL LEVELS WITHOUT DEPRECIATION. CALCULATIONS SHOWN ARE INITIAL VALUES MEASURED AT GRADE.
5. LAMPS FOR FULL CUT-OFF FIXTURES SHALL NOT EXCEED 9,000 LUMENS.
6. BUILDING MOUNTED LIGHTS SUCH AS WALL-PACK AND GOOSE-NECK TYPE FIXTURES SHALL BE FULLY SHIELDED. FULL CUT-OFF TYPE FIXTURES (CONCEALED LAMPLIGHT SOURCE), THE LIGHTING MUST BE DIRECTED DOWNWARD, AND THE LUMENS MUST NOT EXCEED 2,000 LUMENS.
7. COLOR TEMPERATURE OF LAMPS SHALL NOT EXCEED 4,000K.

a. **Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.
 By: _____ Date: _____
 Town Engineer
 These plans are approved by the Town of Knightdale and serve as construction plans for this project.
 By: _____ Date: _____
 Land Use Administrator

US HIGHWAY 64 / KNIGHTDALE BOULEVARD
 VARIABLE WIDTH PUBLIC RIGHT-OF-WAY
 BM 2013, PG 1521



BOHLER
 BOHLER ENGINEERING NC, PLLC
 SITE CIVIL AND CONSULTING ENGINEERING
 PROGRAM MANAGEMENT
 LANDSCAPE ARCHITECTURE
 SUSTAINABLE DESIGN
 PERMITTING SERVICES
 TRANSPORTATION SERVICES

REVISIONS				
REV	DATE	COMMENT	CHECKED BY	DRAWN BY
1	05/23/25	MASTER PLAN COMMENTS	RBS/CC	OAK
2	08/19/25	CONSTRUCTION DRAWINGS	RBS	EMO/OAK
3	10/08/25	CONSTRUCTION DRAWING	RBS	EMO/OAK
4	01/07/26	CONSTRUCTION DRAWING	RBS	EMO/OAK
5	01/23/26	EROSION CONTROL COMMENTS	RBS	EMO/OAK
6	02/04/26	CONSTRUCTION DRAWING	RBS	EMO/OAK

811
 Know what's below.
 Call before you dig.
 ALWAYS CALL 811
 It's fast. It's free. It's the law.

MUNICIPAL REVIEW
 THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.
 PROJECT No.: NCB230070.00
 DRAWN BY: CC/RBS
 CHECKED BY: OAK
 DATE: 04/23/2025
 CAD ID: _____

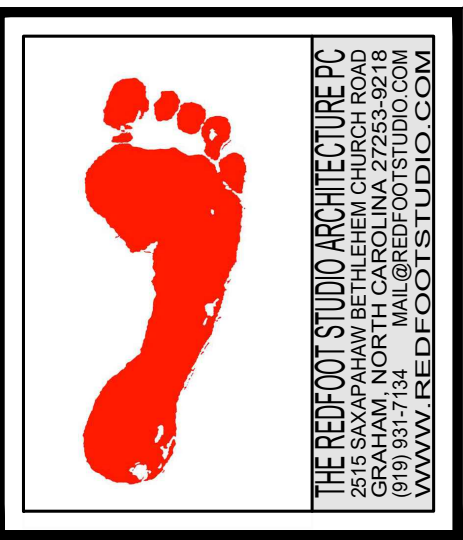
CONSTRUCTION PLANS
 FOR
CHAMBLISS & RABIL
 CONTRACTORS, INC.
 PROPOSED DEVELOPMENT
 4012 VILLAGE PARK DRIVE
 KNIGHTDALE, NC 27545
 WAKE COUNTY
 TOK PROJECT # ZCP-5-24

BOHLER
 BOHLER ENGINEERING NC, PLLC
 NCBELS P-1132
 4130 PARKLAKE AVENUE, SUITE 200
 RALEIGH, NC 27612
 Phone: (919) 578-9000
 NC@BohlerEng.com

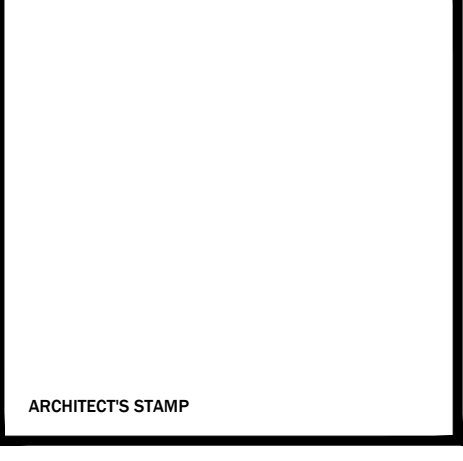
SEAL
 065420
 IVER A. KALIT
 02/04/2026

SHEET TITLE:
LIGHTING PLAN
 SHEET NUMBER:
C-702
 REVISION 6 - 02/04/26

FILE 04_2026 UNBOHLERENG-NET\SHARES\BNC-PROJECT\2023\NCB230070.00\LAND DEVELOPMENT\CADD\DRAWINGS\PLAN SET\BNC230070.DWG - LAYOUT: L-201 LIGHT



MEDICAL OFFICE BUILDING
 4012 VILLAGE PARK DRIVE
 KNIGHTDALE, NORTH CAROLINA 27545



No	Rev./Submissions	Date
	PLANNING	07/18/25
	PLANNING	10/07/25
	PERMIT	08/27/25

SCALE	PROJECT NO
1/4" = 1'-0"	231202
DESIGNED	DATE
RSR	7 OCT 25
DRAWN	CHECKED
RSR	RSR

SOUTH & WEST ELEVATIONS
 DRAWING NO
A2.1

TRANSPARENCY CALCULATIONS:

TOTAL SQUARE FOOTAGE OF FIRST FLOOR FACADE:	1,175 SF
SQUARE FOOTAGE OF STOREFRONT GLAZING:	759 SF
PERCENTAGE OF STOREFRONT GLAZING:	65 %

MATERIAL CALCULATIONS:

TOTAL SQUARE FOOTAGE OF FACADE:	3,228 SF
TOTAL SQUARE FOOTAGE OF STOREFRONT GLAZING:	1,261 SF
NET WALL AREA:	1,967 SF
TOTAL SQUARE FOOTAGE OF MASONRY:	1,736 SF
PERCENTAGE OF MASONRY:	88 %
TOTAL SQUARE FOOTAGE OF METAL ACCENTS:	231 SF
PERCENTAGE OF METAL:	12 %



1 South Elevation
 SCALE 3/16" = 1'-0"

TRANSPARENCY CALCULATIONS:

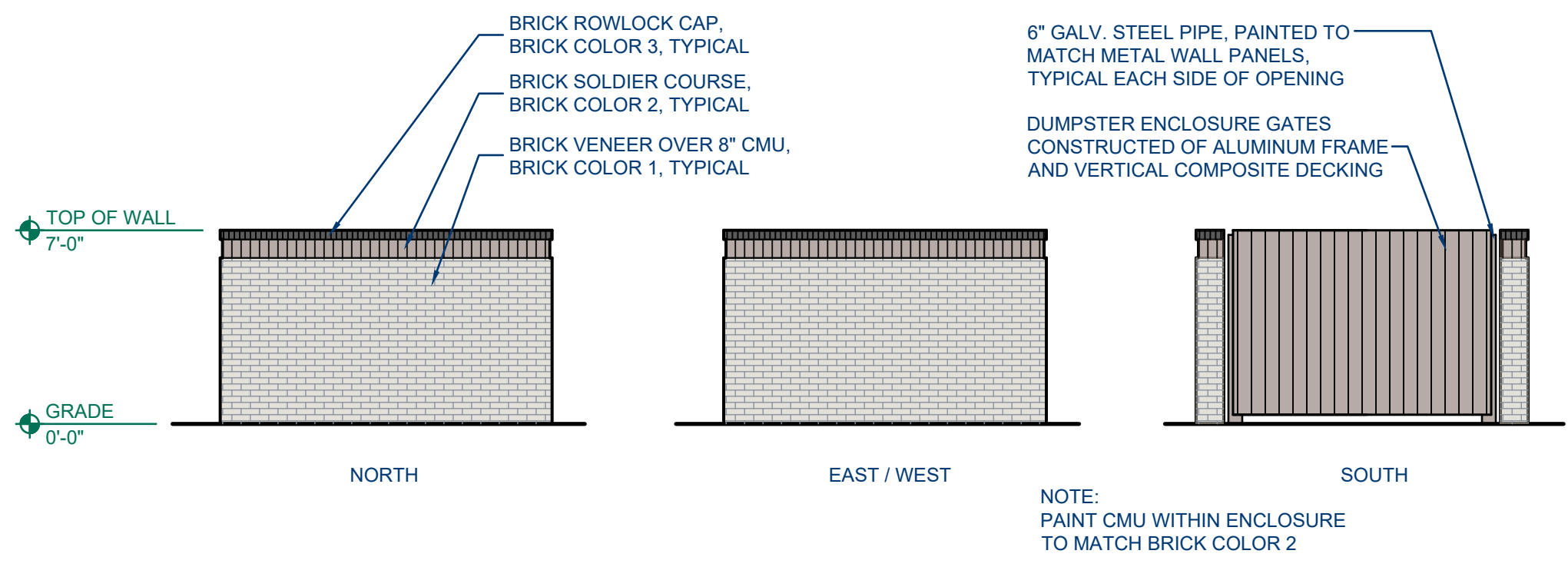
TOTAL SQUARE FOOTAGE OF FIRST FLOOR FACADE:	813 SF
SQUARE FOOTAGE OF STOREFRONT GLAZING:	350 SF
PERCENTAGE OF STOREFRONT GLAZING:	43 %

MATERIAL CALCULATIONS:

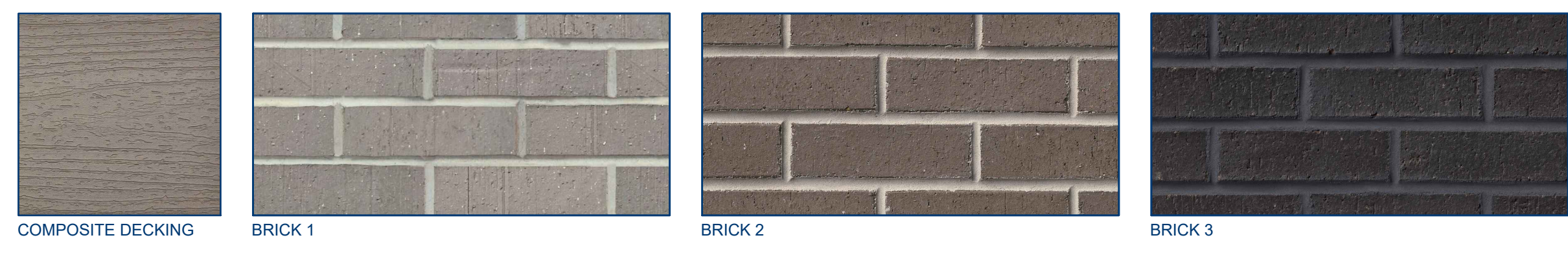
TOTAL SQUARE FOOTAGE OF FACADE:	2,249 SF
TOTAL SQUARE FOOTAGE OF STOREFRONT GLAZING:	667 SF
NET WALL AREA:	1,582 SF
TOTAL SQUARE FOOTAGE OF MASONRY:	1,491 SF
PERCENTAGE OF MASONRY:	94 %
TOTAL SQUARE FOOTAGE OF METAL ACCENTS:	91 SF
PERCENTAGE OF METAL:	6 %



2 West Elevation
 SCALE 3/16" = 1'-0"



3 Dumpster Elevations
 SCALE 3/16" = 1'-0"



FINISHES:
 STOREFRONT: ANODIZED BLACK ALUMINUM
 METAL WALL PANELS: ANODIZED BLACK ALUMINUM
 METAL AWNING: ANODIZED BLACK ALUMINUM
 BRICK 1: BLACKSON BRICK, LIGHT GREY WIRECUT
 BRICK 2: WATSONTOWN BRICK, DARK GREY WIRECUT
 BRICK 3: WATSONTOWN BRICK, BLACK MATTE
 COMPOSITE DECKING: WATSONTOWN BRICK, BLACK MATTE TREX ENHANCE, TIDE POOL

Town Certification. This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.
 By: _____ Date: _____
 Town Engineer
 These plans are approved by the Town of Knightdale and serve as construction plans for this project.
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