CONSTRUCTION SITE PLAN DRAWINGS

FOR

CHAMBLISS & RABIL CONTRACTORS, INC.

PROPOSED

KNIGHTDALE MEDICAL OFFICE BUILDING

LOCATION OF SITE

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

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**

INFRASTRUCTURE INSPECTIONS QUANTITIES TABLE

PHASE NUMBER(S)	*PHASE 1*
NUMBER OF LOT(S)	N/A
LOT NUMBER(S) BY PHASE	N/A
NUMBER OF UNITS	N/A
LIVABLE BUILDINGS	N/A
OPEN SPACE	1
NUMBER OF OPEN SPACE LOTS	0
PUBLIC WATER (LF)	0
PRIVATE WATER* (LF)	0
PUBLIC SEWER (LF)	0
PUBLIC FORCE MAIN (LF)	0
PRIVATE SEWER** (LF)	0
PUBLIC STREET (LF) - PARTIAL	175
PUBLIC SIDEWALK (LF) - FULL	0
PUBLIC SIDEWALK (LF) - PARTIAL	0
MULTI-USE PATH*** (LF)	150
PUBLIC STORMDRAIN (LF)	322
STREET SIGNS (LF)	0
WATER SERVICE STUBS	2
SEWER SERVICE STUBS	1
AVERAGE DAILY FLOW PER PHASE****	2,000 GPD

*WATER MAINS 4" AND LARGER.
**SEWER MAINS AND MANHOLES AS PART OF A COLLECTION SYSTEM.
***10 OR 12 FT WIDE PATH IN LIEU OF SIDEWALK OR A MULTI-USE PATH AS PART OF A DEVELOPMENT AMENITY.
****ENTIRE PROJECT FLOW. BASED ON 75GPD PER BEDROOM FOR RESIDENTIAL (APARTMENTS, SINGLE FAMILY DWELLING, TOWNHOUSE, CONDOS), OR BASED ON 15A NCAC 02T .0114 WASTEWATER DESIGN FLOW RATES FOR COMMERCIAL AND INDUSTRIAL.

REFERENCES AND CONTACTS

REFERENCES

◆ BOUNDARY & TOPOGRAPHIC SURVEY:
BOHLER ENGINEERING NC, PLLC
4130 PARKLAKE AVE., SUITE 200
RALEIGH, NC 27612
DATED: 05/06/25
JOB # NS211122
ELEVATIONS: NAD 83-NSRS 2011

◆ GEOTECHNICAL INVESTIGATION REPORT:
NV5
3300 REGENCY PKWY, SUITE 100
CARY, NC 27518
DATED: 02/19/2025

◆ ARCHITECTURAL PLAN:
THE REDFOOT STUDIO ARCHITECTURE, PC
2515 SAXAPAHAW-BETHLEHEM CHURCH RD
GRAHAM, NC 27253
DATED: 05/19/2025

GOVERNING AGENCIES

◆ PLANNING, ZONING COMMITTEE
TOWN OF KNIGHTDALE
950 STEEPLE SQUARE CT
KNIGHTDALE, NC 27545
PHONE: (919) 217-2241
GIDEON SMITH, AICP
SENIOR PLANNER - CURRENT

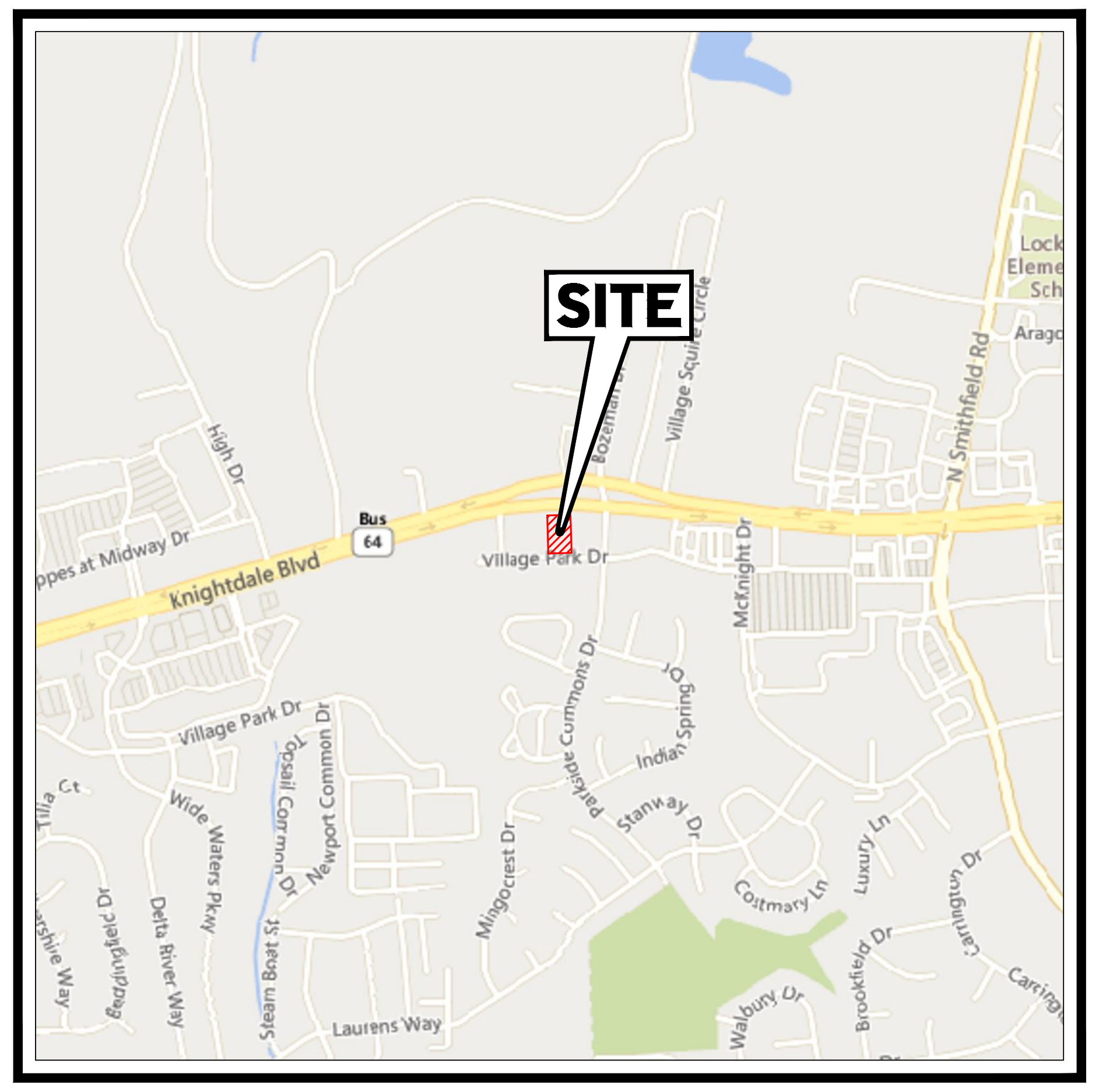
◆ BUILDING DEPARTMENT
950 STEEPLE SQUARE CT
KNIGHTDALE, NC. 27545
PHONE: (919) 217-2200

◆ FIRE DEPARTMENT
401 HESTER ST
KNIGHTDALE, NC. 27545
PHONE: (919) 217-2271

◆ WATER & SEWER
CITY OF RALEIGH
1 EXCHANGE PLAZA
RALEIGH, NC 27601
PHONE: (919) 996-2524
MIKE FOWLER

◆ STORMWATER
TOWN OF KNIGHTDALE
950 STEEPLE SQUARE CT.
KNIGHTDALE, NC 27545
PHONE: (919) 217-2255
KNIGHTDALENC.GOV
IKE ARCHER
STORMWATER PROGRAM MANAGER

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.



LOCATION MAP
SCALE: 1" = 1200'

Sheet List Table

Sheet Number	Sheet Title
C-101	COVER SHEET
C-102	GENERAL NOTES AND LEGEND
1 OF 1	BOUNDARY & TOPOGRAPHIC SURVEY
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C-301	SITE PLAN
C-302	VICINITY MAP
C-303	SIGNS & PAVEMENT MARKINGS PLAN
C-401	GRADING PLAN
C-501	UTILITY PLAN
C-801	EROSION AND SEDIMENT CONTROL PHASE I
C-802	EROSION AND SEDIMENT CONTROL PHASE II
C-803	EROSION AND SEDIMENT CONTROL DETAILS
C-901	CONSTRUCTION DETAILS
C-902	CONSTRUCTION DETAILS
C-903	UTILITY DETAILS
L-101	LANDSCAPE PLAN
L-102	LANDSCAPE NOTES & DETAILS
L-201	LIGHTING PLAN
L-202	LIGHTING DETAILS
--	ARCHITECTURAL ELEVATIONS

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) 883-8739
CHRIS@CHAMBLISS-RABIL.COM

PREPARED BY

BOHLER

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

EROSION AND SEDIMENT CONTROL
APPROVED PLAN
DATE: ______________________
PERMIT NO. SEC-____-____
Town of Knightdale Public Works
Sedimentation & Erosion Control
(919) 217-2250

KNIGHTDALE stormwater
EFFECTIVE: 05/16/2022

Town of Knightdale Construction Inspector Signature

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, __________________, 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) _________ of these drawings.
Seal By: ____________________, PE
Date: __________________

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 INITIATION OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DOCUMENTS RELATIVE TO 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 IN FULL CONFORMANCE WITH LOCAL REGULATIONS AND CODES.

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

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

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 I.D.:	

PROJECT:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL CONTRACTORS, INC.

PROPOSED DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

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

SEAL 055420
OLIVER A. KAIJA
08/19/2025

SHEET TITLE:
COVER SHEET

SHEET NUMBER:
C-101

REVISION 2 - 08/19/25

Aug 19, 2025
\\BOHLERENG.NET\SHARES\NC-PROJECTS\2023\NCB230070.00\LAND DEVELOPMENT\CAD\DRAWINGS\PLAN SETS\NCB230070-CNDS-0----->LAYOUT: C-101 COVR
RS

GENERAL NOTES

(Rev. 1/2023)

1. THESE PLANS ARE SOLELY BASED ON INFORMATION THE OWNER AND OTHERS PROVIDED TO BOHLER ENGINEERING NC, PLLC (HEREIN "BOHLER") PRIOR TO THE DATE ON WHICH THE PROFESSIONAL OF RECORD AND BOHLER PREPARED THESE PLANS. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS AND IMMEDIATELY NOTIFY BOHLER , IN WRITING, IF ANY ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THESE PLANS, OR IF THE PROPOSED WORK CONFLICTS WITH ANY OTHER SITE FEATURES.
2. THE CONTRACTOR MUST STRICTLY COMPLY WITH THESE NOTES AND ALL SPECIFICATIONS/REPORTS CONTAINED HEREIN. THE CONTRACTOR MUST ENSURE THAT ALL SUBCONTRACTORS FULLY AND COMPLETELY CONFORM TO AND COMPLY WITH THESE REQUIREMENTS, THESE NOTES, AND THE REQUIREMENTS ARTICULATED IN THE NOTES CONTAINED IN ALL THE OTHER DRAWINGS THAT COMPRISE THE PLAN SET OF DRAWINGS. ADDITIONAL NOTES AND SPECIFIC PLAN NOTES MAY BE FOUND ON THE INDIVIDUAL PLANS. THESE GENERAL NOTES APPLY TO THIS ENTIRE DOCUMENT PACKAGE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL CONSTRUCTION CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE, PRIOR TO THE INITIATION AND COMMENCEMENT OF CONSTRUCTION.
3. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST CONFIRM WITH THE PROFESSIONAL OF RECORD AND BOHLER THAT THE LATEST EDITION OF THE DOCUMENTS AND/OR REPORTS REFERENCED WITHIN THE PLAN REFERENCES ARE BEING USED FOR CONSTRUCTION. THIS IS THE CONTRACTOR'S SOLE AND COMPLETE RESPONSIBILITY.
4. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION IS TO BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED THE CONDITIONS OF APPROVAL TO ALL PLANS AND OTHER DOCUMENTS REVIEWED AND APPROVED BY THE PERMITTING AUTHORITIES AND HAS ALSO CONFIRMED THAT ALL NECESSARY AND REQUIRED PERMITS HAVE BEEN OBTAINED. THE CONTRACTOR MUST HAVE COPIES OF ALL PERMITS AND APPROVALS ON SITE AT ALL TIMES.
5. THE CONTRACTOR MUST ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS/REPORTS AND CONDITIONS OF APPROVAL, AND ALL APPLICABLE REQUIREMENTS, RULES, REGULATIONS, STATUTORY REQUIREMENTS, CODES, LAWS AND STANDARDS OF ALL GOVERNMENTAL ENTITIES WITH JURISDICTION OVER THIS PROJECT, AND ALL PROVISIONS IN AND CONDITIONS OF THE CONSTRUCTION CONTRACT WITH THE OWNER/DEVELOPER INCLUDING ALL EXHIBITS, ATTACHMENTS AND ADDENDA TO SAME.
6. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST COORDINATE THE BUILDING LAYOUT BY CAREFULLY REVIEWING THE MOST CURRENT ARCHITECTURAL, CIVIL AND STRUCTURAL CONSTRUCTION DOCUMENTS (INCLUDING, BUT NOT LIMITED TO, MECHANICAL, ELECTRICAL, PLUMBING AND FIRE SUPPRESSION PLANS, WHERE APPLICABLE). THE CONTRACTOR MUST IMMEDIATELY NOTIFY OWNER, ARCHITECT AND PROFESSIONAL OF RECORD AND BOHLER, IN WRITING, OF ANY CONFLICTS, DISCREPANCIES OR AMBIGUITIES WHICH EXIST BETWEEN THESE PLANS AND ANY OTHER PLANS THAT COMPRISE THE CONSTRUCTION DOCUMENTS.
7. CONTRACTOR MUST REFER TO AND ENSURE COMPLIANCE WITH THE APPROVED ARCHITECTURAL/BUILDING PLANS OF RECORD FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRY/EXIT POINTS, ELEVATIONS, PRECISE BUILDING DIMENSIONS, AND EXACT BUILDING UTILITY LOCATIONS.
8. THE CONTRACTOR MUST FIELD VERIFY ALL DIMENSIONS AND MEASUREMENTS SHOWN ON THESE PLANS, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR MUST IMMEDIATELY NOTIFY PROFESSIONAL OF RECORD AND BOHLER, IN WRITING, IF ANY CONFLICTS, DISCREPANCIES, OR AMBIGUITIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. NO EXTRA COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR WORK WHICH HAS TO BE RE-DONE OR REPAIRED DUE TO DIMENSIONS, MEASUREMENTS OR GRADES SHOWN INCORRECTLY ON THESE PLANS PRIOR TO BOTH (A) THE CONTRACTOR GIVING PROFESSIONAL OF RECORD AND BOHLER WRITTEN NOTIFICATION OF SAME AND (B) PROFESSIONAL OF RECORD AND BOHLER, THEREAFTER, PROVIDING THE CONTRACTOR WITH WRITTEN AUTHORIZATION TO PROCEED WITH SUCH ADDITIONAL WORK.
9. THE CONTRACTOR MUST VERIFY ALL DIMENSIONS AND MEASUREMENTS INCLUDED ON DESIGN DOCUMENTS HEREIN AND MUST NOT SCALE OFF THE DRAWINGS DUE TO POTENTIAL PRINTING INACCURACIES. ALL DIMENSIONS AND MEASUREMENTS ARE TO BE CHECKED AND CONFIRMED BY THE GENERAL CONTRACTOR PRIOR TO PREPARATION OF SHOP DRAWINGS, FABRICATION/ORDERING OF PARTS AND MATERIALS AND COMMENCEMENT OF SITE WORK. SITE PLAN DRAWINGS ARE NOT INTENDED AS SURVEY DOCUMENTS. DIMENSIONS SUPERSEDE GRAPHICAL REPRESENTATIONS. THE CONTRACTOR MUST MAKE CONTRACTOR'S OWN MEASUREMENTS FOR LAYOUT OF IMPROVEMENTS.
10. THE OWNER AND CONTRACTOR MUST BE FAMILIAR WITH AND RESPONSIBLE FOR THE PROCUREMENT OF ANY AND ALL CERTIFICATIONS REQUIRED FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
11. WHEN INCLUDED AS ONE OF THE REFERENCED DOCUMENTS, THE GEOTECHNICAL REPORT, SPECIFICATIONS AND RECOMMENDATIONS SET FORTH THEREIN ARE A PART OF THE REQUIRED CONSTRUCTION DOCUMENTS AND, IN CASE OF CONFLICT, DISCREPANCY OR AMBIGUITY, THE MORE STRINGENT REQUIREMENTS AND/OR RECOMMENDATIONS CONTAINED IN: (A) THE PLANS; AND (B) THE GEOTECHNICAL REPORT AND RECOMMENDATIONS, MUST TAKE PRECEDENCE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR MUST NOTIFY THE PROFESSIONAL OF RECORD AND BOHLER, IN WRITING, OF ANY SUCH CONFLICT, DISCREPANCY OR AMBIGUITY BETWEEN THE GEOTECHNICAL REPORT AND PLANS AND SPECIFICATIONS, PRIOR TO PROCEEDING WITH ANY FURTHER WORK. IF A GEOTECHNICAL REPORT WAS NOT CREATED, THEN THE CONTRACTOR MUST FOLLOW AND COMPLY WITH ALL OF THE REQUIREMENTS OF ANY AND ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE SPECIFICATIONS WHICH HAVE JURISDICTION OVER THIS PROJECT.
12. PROFESSIONAL OF RECORD AND BOHLER ARE NEITHER LIABLE NOR RESPONSIBLE FOR ANY SUBSURFACE CONDITIONS AND FURTHER, HAS NO LIABILITY FOR ANY HAZARDOUS MATERIALS, HAZARDOUS SUBSTANCES, OR POLLUTANTS ON, ABOUT OR UNDER THE PROPERTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING WHEN AND WHERE SHORING IS REQUIRED AND FOR INSTALLING ALL SHORING REQUIRED DURING EXCAVATION (TO BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA STANDARDS) AND ANY ADDITIONAL PRECAUTIONS TO BE TAKEN TO ASSURE THE STABILITY OF ADJACENT, NEARBY AND CONTIGUOUS STRUCTURES AND PROPERTIES. ALL OF THIS WORK IS TO BE PERFORMED AT CONTRACTOR'S SOLE COST AND EXPENSE.
14. THE CONTRACTOR MUST EXERCISE EXTREME CAUTION WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO PAVEMENT, STRUCTURES, ETC. WHICH ARE TO REMAIN EITHER FOR AN INITIAL PHASE OF THE PROJECT OR AS PART OF THE FINAL CONDITION. THE CONTRACTOR IS RESPONSIBLE FOR TAKING ALL APPROPRIATE MEASURES REQUIRED TO ENSURE THE STRUCTURAL STABILITY OF SIDEWALKS AND PAVEMENT, UTILITIES, BUILDINGS, AND INFRASTRUCTURE WHICH ARE TO REMAIN, AND TO PROVIDE A SAFE WORK AREA FOR THIRD PARTIES, PEDESTRIANS AND ANYONE INVOLVED WITH THE PROJECT.
15. DEBRIS MUST NOT BE BURIED ON THE SUBJECT SITE. ALL DEMOLITION AND CONSTRUCTION WASTES, UNSUITABLE EXCAVATED MATERIAL, EXCESS SOIL AND DEBRIS (SOLID WASTE) MUST BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF ANY AND ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE CODES WHICH HAVE JURISDICTION OVER THIS PROJECT OR OVER THE CONTRACTOR.
16. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAINTAIN RECORDS TO DEMONSTRATE PROPER AND FULLY COMPLIANT DISPOSAL ACTIVITIES, TO BE PROMPTLY PROVIDED TO THE OWNER UPON REQUEST.
17. THE CONTRACTOR MUST REPAIR, AT CONTRACTOR'S SOLE COST, ALL DAMAGE DONE TO ANY NEW OR EXISTING CONSTRUCTION OR PROPERTY DURING THE COURSE OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. AND MUST BEAR ALL COSTS ASSOCIATED WITH SAME TO INCLUDE, BUT NOT BE LIMITED TO, REDESIGN, RE-SURVEY, RE-PERMITTING AND CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR AND MUST REPLACE ALL SIGNAL INTERCONNECTION CABLE, WIRING CONDUITS, AND ANY UNDERGROUND ACCESSORY EQUIPMENT DAMAGED DURING CONSTRUCTION AND MUST BEAR ALL COSTS ASSOCIATED WITH SAME. THE REPAIR OF ANY SUCH NEW OR EXISTING CONSTRUCTION OR PROPERTY MUST RESTORE SUCH CONSTRUCTION OR PROPERTY TO A CONDITION EQUIVALENT TO OR BETTER THAN THE CONDITIONS PRIOR TO COMMENCEMENT OF THE CONSTRUCTION, AND IN CONFORMANCE WITH APPLICABLE CODES, LAWS, RULES, REGULATIONS, STATUTORY REQUIREMENTS AND STATUTES. THE CONTRACTOR MUST BEAR ALL COSTS ASSOCIATED WITH SAME. THE CONTRACTOR MUST, PROMPTLY, DOCUMENT ALL EXISTING DAMAGE AND NOTIFY, IN WRITING, THE OWNER AND THE CONSTRUCTION MANAGER PRIOR TO THE START OF CONSTRUCTION.
18. THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR AND HAVE NO CONTRACTUAL, LEGAL OR OTHER RESPONSIBILITIES FOR JOB SITE SAFETY JOB SITE SUPERVISION, OR ANYTHING RELATED TO SAME. THE PROFESSIONAL OF RECORD AND BOHLER HAVE NOT BEEN RETAINED TO PERFORM OR TO BE RESPONSIBLE FOR JOB SITE SAFETY, SAME BEING WHOLLY OUTSIDE OF PROFESSIONAL OF RECORD'S AND BOHLER SERVICES AS RELATED TO THE PROJECT. THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE TO IDENTIFY OR REPORT ANY JOB SITE SAFETY ISSUES OR ANY JOB SITE CONDITIONS, AT ANY TIME.
19. THE CONTRACTOR MUST IMMEDIATELY IDENTIFY IN WRITING, TO THE PROFESSIONAL OF RECORD AND BOHLER , ANY DISCREPANCIES THAT MAY OR COULD AFFECT THE PUBLIC SAFETY, HEALTH OR GENERAL WELFARE, OR PROJECT COST. IF THE CONTRACTOR PROCEEDS WITH CONSTRUCTION WITHOUT PROVIDING PROPER WRITTEN NOTIFICATION AS DESCRIBED ABOVE, IT WILL BE AT THE CONTRACTOR'S OWN RISK AND, FURTHER, THE CONTRACTOR MUST INDEMNIFY, DEFEND AND HOLD HARMLESS THE PROFESSIONAL OF RECORD AND BOHLER FOR ANY AND ALL DAMAGES, COSTS, INJURIES, ATTORNEY'S FEES AND THE LIKE WHICH RESULT FROM OR ARE IN ANY WAY RELATED TO SAME INCLUDING, BUT NOT LIMITED TO, ANY THIRD PARTY AND FIRST PARTY CLAIMS.
20. THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR ANY INJURY OR DAMAGES RESULTING FROM THE CONTRACTOR'S FAILURE TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH THE APPROVED PLANS, AND CURRENT CODES, RULES, STATUTES AND THE LIKE. IF THE CONTRACTOR AND/OR OWNER FAIL TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH APPROVED PLANS, RULES, STATUTES, CODES AND THE LIKE, THE CONTRACTOR AND/OR OWNER AGREE TO AND MUST JOINTLY, INDEPENDENTLY, SEPARATELY, AND SEVERALLY INDEMNIFY AND HOLD THE PROFESSIONAL OF RECORD AND BOHLER HARMLESS FOR AND FROM ALL INJURIES, CLAIMS AND DAMAGES THAT PROFESSIONAL OF RECORD AND BOHLER SUFFER AND ANY AND ALL COSTS THAT PROFESSIONAL OF RECORD AND BOHLER INCUR AS RELATED TO SAME.
21. ALL CONTRACTORS MUST CARRY AT LEAST THE MINIMUM AMOUNT OF THE SPECIFIED AND COMMERCIALLY REASONABLE STATUTORY WORKER'S COMPENSATION INSURANCE, EMPLOYER'S LIABILITY INSURANCE AND COMMERCIAL GENERAL LIABILITY INSURANCE (CGL) INCLUDING ALSO ALL UMBRELLA COVERAGES. ALL CONTRACTORS MUST HAVE THEIR CGL POLICIES ENDORSED TO NAME BOHLER , AND ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS AS ADDITIONAL NAMED INSUREDS AND TO PROVIDE CONTRACTUAL LIABILITY COVERAGE SUFFICIENT TO INSURE (DEFEND, IF APPLICABLE) AND HOLD HARMLESS AND INDEMNITY OBLIGATIONS ASSUMED AND AGREED TO BY THE CONTRACTOR HEREIN. ALL CONTRACTORS MUST FURNISH BOHLER WITH CERTIFICATIONS OF INSURANCE OR CERTIFICATES OF INSURANCE AS EVIDENCE OF THE REQUIRED INSURANCE COVERAGES PRIOR TO COMMENCING ANY WORK AND UPON RENEWAL OF EACH POLICY DURING THE ENTIRE PERIOD OF CONSTRUCTION AND FOR TWO YEARS AFTER THE COMPLETION OF CONSTRUCTION AND AFTER ALL PERMITS ARE ISSUED, WHICHEVER DATE IS LATER. IN ADDITION, ALL CONTRACTORS AGREE THAT THEY WILL, TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, INDEMNIFY, DEFEND AND HOLD HARMLESS BOHLER AND ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS FROM AND AGAINST ANY DAMAGES, INJURIES, CLAIMS, ACTIONS, PENALTIES, EXPENSES, PUNITIVE DAMAGES, TORT DAMAGES, STATUTORY CLAIMS, STATUTORY CAUSES OF ACTION, LOSSES, CAUSES OF ACTION, LIABILITIES OR COSTS, INCLUDING, BUT NOT LIMITED TO, REASONABLE ATTORNEYS' FEES AND DEFENSE COSTS, ARISING OUT OF OR IN ANY WAY CONNECTED WITH OR TO THE PROJECT, INCLUDING ALL CLAIMS BY EMPLOYEES OF THE CONTRACTOR(S), ALL CLAIMS BY THIRD PARTIES AND ALL CLAIMS RELATED TO THE PROJECT. THE CONTRACTOR MUST NOTIFY PROFESSIONAL OF RECORD, IN WRITING, AT LEAST THIRTY (30) DAYS PRIOR TO ANY TERMINATION, SUSPENSION OR CHANGE OF ITS INSURANCE HEREUNDER.
22. THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR CONSTRUCTION METHODS, MEANS, TECHNIQUES OR PROCEDURES, GENERALLY OR FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES OR PROCEDURES FOR COMPLETION OF THE WORK DEPICTED BOTH ON THESE PLANS, AND FOR ANY CONFLICTS IN SCOPE AND REVISIONS THAT RESULT FROM SAME. THE CONTRACTOR IS FULLY AND SOLELY RESPONSIBLE FOR DETERMINING THE MEANS AND METHODS FOR COMPLETION OF THE WORK, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
23. NEITHER THE PROFESSIONAL ACTIVITIES OF BOHLER, NOR THE PRESENCE OF BOHLER AND/OR ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS AT A CONSTRUCTION/PROJECT SITE (HEREIN "BOHLER PARTIES"), RELIEVES OR WILL RELIEVE THE CONTRACTOR OF AND FROM CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, OVERSEEING, SUPERINTENDING AND COORDINATING THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND COMPLIANCE WITH ALL HEALTH AND SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES WITH JURISDICTION OVER THE PROJECT AND/OR PROPERTY. BOHLER PARTIES HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER (OR ANY RESPONSIBILITY FOR) ANY CONSTRUCTION, THE CONTRACTOR OR ITS EMPLOYEES RELATING TO THEIR WORK AND ANY AND ALL HEALTH AND SAFETY PROGRAMS OR PROCEDURES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SITE SAFETY. THE CONTRACTOR MUST INDEMNIFY, DEFEND, PROTECT AND HOLD HARMLESS BOHLER PARTIES FOR AND FROM ANY LIABILITY TO BOHLER PARTIES RESULTING FROM THE CONTRACTOR'S WORK, SERVICES AND/OR VIOLATIONS OF THIS NOTE, THESE NOTES OR ANY NOTES IN THE PLAN SET AND, FURTHER, THE CONTRACTOR MUST NAME BOHLER AS AN ADDITIONAL INSURED UNDER THE GENERAL CONTRACTOR'S POLICIES OF GENERAL LIABILITY INSURANCE AS DESCRIBED ABOVE.
24. WHEN IT IS CLEARLY AND SPECIFICALLY WITHIN BOHLER'S SCOPE OF SERVICES CONTRACT WITH THE OWNER/DEVELOPER, BOHLER WILL REVIEW OR TAKE OTHER APPROPRIATE ACTION ON THE CONTRACTOR SUBMITTALS, SUCH AS SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND OTHER DATA, WHICH THE CONTRACTOR IS REQUIRED TO SUBMIT, BUT ONLY FOR THE LIMITED PURPOSE OF EVALUATING CONFORMANCE WITH THE DESIGN INTENT AND THE INFORMATION SHOWN IN THE CONSTRUCTION CONTRACT DOCUMENTS. CONSTRUCTION MEANS AND METHODS AND/OR TECHNIQUES OR PROCEDURES, COORDINATION OF THE WORK WITH OTHER TRADES, AND CONSTRUCTION SAFETY PRECAUTIONS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND BOHLER HAS NO RESPONSIBILITY OR LIABILITY FOR SAME. BOHLER WILL PERFORM ITS SHOP DRAWING REVIEW WITH REASONABLE PROMPTNESS, AS CONDITIONS PERMIT. ANY DOCUMENT, DOCUMENTING BOHLER'S REVIEW OF A SPECIFIC ITEM OR LIMITED SCOPE, MUST NOT INDICATE THAT BOHLER HAS REVIEWED THE ENTIRE ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. BOHLER IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR MUST, IN WRITING, PROMPTLY AND IMMEDIATELY BRING ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS TO BOHLER'S ATTENTION. BOHLER IS NOT REQUIRED TO REVIEW PARTIAL SUBMISSIONS OR THOSE FOR WHICH SUBMISSIONS OF CORRELATED ITEMS HAVE NOT BEEN RECEIVED.
25. IF THE CONTRACTOR DEVIATES FROM THESE PLANS AND/OR SPECIFICATIONS, INCLUDING THE NOTES CONTAINED HEREIN, WITHOUT FIRST OBTAINING THE PRIOR WRITTEN AUTHORIZATION OF THE PROFESSIONAL OF RECORD AND BOHLER FOR ALL DEVIATIONS WITHIN PROFESSIONAL OF RECORD'S SCOPE, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PAYMENT OF ALL COSTS INCURRED IN CORRECTING ANY WORK PERFORMED WHICH DEVIATES FROM THE PLANS, ALL FINES AND/OR PENALTIES ASSESSED WITH RESPECT THERETO AND ALL COMPENSATORY OR PUNITIVE DAMAGES RESULTING THEREFROM AND, FURTHER, MUST DEFEND, INDEMNIFY, PROTECT, AND HOLD HARMLESS THE PROFESSIONAL OF RECORD AND BOHLER PARTIES TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, FOR AND FROM ALL FEES, ATTORNEYS' FEES, DAMAGES, COSTS, JUDGMENTS, CLAIMS, INJURIES, PENALTIES AND THE LIKE RELATED TO SAME.
26. THE CONTRACTOR IS RESPONSIBLE FOR A MAINTAINING AND PROTECTING THE TRAFFIC CONTROL PLAN AND ELEMENTS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS, FOR ALL WORK THAT AFFECTS PUBLIC TRAVEL EITHER IN THE RIGHT OF WAY OR ON SITE. THE COST FOR THIS ITEM MUST BE INCLUDED IN THE CONTRACTOR'S PRICE AND IS THE CONTRACTOR'S SOLE RESPONSIBILITY.
27. OWNER MUST MAINTAIN AND PRESERVE ALL PHYSICAL SITE FEATURES AND DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS IN STRICT ACCORDANCE WITH THE APPROVED PLAN(S) AND DESIGN; AND, FURTHER, THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR ANY FAILURE TO SO MAINTAIN OR PRESERVE SITE AND/OR DESIGN FEATURES. IF OWNER FAILS TO MAINTAIN AND/OR PRESERVE ALL PHYSICAL SITE FEATURES AND/OR DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS, OWNER AGREES TO INDEMNIFY AND HOLD THE PROFESSIONAL OF RECORD AND BOHLER PARTIES, HARMLESS FOR ALL INJURIES, DAMAGES AND COSTS THAT PROFESSIONAL OF RECORD AND BOHLER INCUR AS A RESULT OF SAID FAILURE OR FAILURE TO PRESERVE.
28. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION ACTIVITIES AND MATERIALS COMPLY WITH AND CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL RULES AND REGULATIONS, LAWS, ORDINANCES, AND CODES, AND ALL APPLICABLE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, (29 U.S.C. 651 ET SEQ.) AS AMENDED, AND ANY MODIFICATIONS, AMENDMENTS OR REVISIONS TO SAME.
29. THE CONTRACTOR MUST STRICTLY COMPLY WITH THE LATEST AND CURRENT OSHA STANDARDS AND REGULATIONS, AND/OR ANY OTHER AGENCY WITH JURISDICTION OVER EXCAVATION AND TRENCHING PROCEDURES. PROFESSIONAL OF RECORD AND BOHLER HAS NO RESPONSIBILITY FOR OR AS RELATED TO EXCAVATION AND TRENCHING PROCEDURES AND WORK.
30. THE CONTRACTOR AND THE OWNER MUST INSTALL ALL ELEMENTS AND COMPONENTS IN STRICT COMPLIANCE WITH AND IN ACCORDANCE WITH MANUFACTURER'S STANDARDS AND RECOMMENDED INSTALLATION CRITERIA AND SPECIFICATIONS. IF THE CONTRACTOR AND/OR OWNER FAIL TO DO SO, THEY AGREE TO JOINTLY, INDEPENDENTLY, SEPARATELY, COLLECTIVELY, AND SEVERALLY INDEMNIFY, DEFEND, PROTECT AND HOLD PROFESSIONAL OF RECORD AND BOHLER PARTIES HARMLESS FOR ALL INJURIES AND DAMAGES THAT PROFESSIONAL OF RECORD SUFFERS AND COSTS THAT PROFESSIONAL OF RECORD INCURS AS A RESULT OF SAID FAILURE.
31. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN AN ON-SITE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN COMPLIANCE WITH THE ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIREMENTS OR LOCAL GOVERNING AGENCY FOR SITES WHERE ONE (1) ACRE OR MORE IS DISTURBED BY CONSTRUCTION ACTIVITIES (UNLESS THE LOCAL JURISDICTION REQUIRES A DIFFERENT THRESHOLD). THE CONTRACTOR MUST ENSURE THAT ALL ACTIVITIES, INCLUDING THOSE OF ALL SUBCONTRACTORS, ARE IN COMPLIANCE WITH THE SWPPP, INCLUDING BUT NOT LIMITED TO LOGGING ACTIVITIES (MINIMUM ONCE PER WEEK AND AFTER RAINFALL EVENTS) AND CORRECTIVE MEASURES, AS APPROPRIATE AND FURTHER, THE CONTRACTOR IS SOLELY AND COMPLETELY RESPONSIBLE FOR FAILING TO DO SO.
32. AS CONTAINED IN THESE DRAWINGS AND ASSOCIATED DOCUMENTS PREPARED BY THE PROFESSIONAL OF RECORD AND BOHLER, THE USE OF THE WORDS 'CERTIFY' OR 'CERTIFICATION' CONSTITUTE(S) AN EXPRESSION ONLY OF PROFESSIONAL OPINION REGARDING THE INFORMATION WHICH IS THE SUBJECT OF THE PROFESSIONAL OF RECORD'S AND BOHLER KNOWLEDGE OR BELIEF AND IN ACCORDANCE WITH COMMON AND ACCEPTED PROCEDURE CONSISTENT WITH THE APPLICABLE STANDARDS OF PRACTICE, AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE OF ANY NATURE OR TYPE, EITHER EXPRESSED OR IMPLIED, UNDER ANY CIRCUMSTANCES.

DEMOLITION NOTES

(Rev. 1/2023)

1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
2. THE CONTRACTOR MUST CONDUCT DEMOLITION/REMOVALS ACTIVITIES IN SUCH A MANNER AS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND ALL OTHER ADJACENT FACILITIES. THE CONTRACTOR MUST OBTAIN ALL APPLICABLE PERMITS FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY(IES) PRIOR TO THE COMMENCEMENT OF ANY ROAD OPENING OR DEMOLITION ACTIVITIES IN OR ADJACENT TO THE RIGHT-OF-WAY.
3. WHEN DEMOLITION-RELATED ACTIVITIES IMPACT ROADWAYS AND/OR ROADWAY RIGHT-OF-WAY, THE CONTRACTOR MUST PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED SAFE PRACTICES IN CONFORMANCE WITH THE CURRENT FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), AND THE FEDERAL, STATE, AND LOCAL REGULATIONS.
4. THE DEMOLITION (AND/OR REMOVALS) PLAN IS INTENDED TO PROVIDE GENERAL INFORMATION AND TO IDENTIFY ONLY CONDITIONS REGARDING ITEMS TO BE DEMOLISHED, REMOVED, AND/OR TO REMAIN.
   - A. THE CONTRACTOR MUST ALSO REVIEW ALL CONSTRUCTION DOCUMENTS AND INCLUDE WITHIN THE DEMOLITION ACTIVITIES ALL INCIDENTAL WORK NECESSARY FOR THE CONSTRUCTION OF THE NEW SITE IMPROVEMENTS.
   - B. THIS PLAN IS NOT INTENDED TO AND DOES NOT PROVIDE DIRECTION REGARDING THE MEANS, METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES TO BE EMPLOYED TO ACCOMPLISH THE WORK. ALL MEANS, METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES TO BE USED MUST BE IN STRICT ACCORDANCE AND CONFORMANCE WITH ALL STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR MUST COMPLY WITH ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE FOR THE CONTRACTOR AND THE PUBLIC.
5. THE CONTRACTOR MUST PROVIDE ALL "METHODS AND MEANS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES, AND ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE. THE CONTRACTOR, AT THE CONTRACTOR'S SOLE COST, MUST REPAIR ALL DAMAGE TO ALL ITEMS AND FEATURES THAT ARE TO REMAIN. CONTRACTOR MUST USE NEW MATERIAL FOR ALL REPAIRS. CONTRACTOR'S REPAIRS MUST INCLUDE THE RESTORATION OF ALL ITEMS AND FEATURES REPAIRED TO THEIR PRE-DEMOLITION CONDITION, OR BETTER. CONTRACTOR MUST PERFORM ALL REPAIRS AT THE CONTRACTOR'S SOLE EXPENSE.
6. THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. THE CONTRACTOR MUST PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, COMPLYING WITH ALL OSHA REQUIREMENTS, TO ENSURE PUBLIC AND CONTRACTOR SAFETY AND SAFETY TO ALL PROPERTY ON THE SITE OR ADJACENT OR NEAR TO THE SAME.
7. THE CONTRACTOR IS RESPONSIBLE FOR JOB SITE SAFETY, WHICH MUST INCLUDE, BUT IS NOT LIMITED TO, THE INSTALLATION AND MAINTENANCE OF BARRIERS, FENCING, OTHER APPROPRIATE AND/OR NECESSARY SAFETY FEATURES AND ITEMS NECESSARY TO PROTECT THE PUBLIC FROM AREAS OF CONSTRUCTION AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR MUST SAFEGUARD THE SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF ALL UNAUTHORIZED PERSONS AT ANY TIME, TO OR NEAR THE DEMOLITION AREA.
8. PRIOR TO THE COMMENCEMENT OF ANY SITE ACTIVITY AND ANY DEMOLITION ACTIVITY, THE CONTRACTOR MUST, IN WRITING, RAISE ANY QUESTIONS CONCERNING THE ACCURACY OR INTENT OF THESE PLANS AND/OR SPECIFICATIONS, ALL CONCERNS OR QUESTIONS REGARDING THE APPLICABLE SAFETY STANDARDS, AND/OR THE SAFETY OF THE CONTRACTOR AND/OR THIRD PARTIES IN PERFORMING THE WORK ON THIS PROJECT. ANY SUCH CONCERNS MUST BE CONVEYED TO THE PROFESSIONAL OF RECORD AND BOHLER, IN WRITING AND MUST ADDRESS ALL ISSUES AND ITEMS RESPONDED TO, BY THE PROFESSIONAL OF RECORD AND BY BOHLER, IN WRITING. ALL DEMOLITION ACTIVITIES MUST BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS AND ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, RULES, REQUIREMENTS, STATUTES, ORDINANCES AND CODES.
9. THE CONTRACTOR MUST BECOME FAMILIAR WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENTS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION AND/OR DISCONNECTION AS IDENTIFIED OR REQUIRED FOR THE PROJECT. THE CONTRACTOR MUST PROVIDE THE OWNER WITH WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED, REMOVED AND/OR ABANDONED IN ACCORDANCE WITH THE JURISDICTION AND UTILITY COMPANY REQUIREMENTS AND ALL OTHER APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES.
10. PRIOR TO COMMENCING ANY DEMOLITION, THE CONTRACTOR MUST:
    - A. OBTAIN ALL REQUIRED PERMITS AND MAINTAIN THE SAME ON SITE FOR REVIEW BY THE PROFESSIONAL OF RECORD AND ALL PUBLIC AGENCIES WITH JURISDICTION THROUGHOUT THE DURATION OF THE PROJECT, SITE WORK, AND DEMOLITION WORK.
    - B. NOTIFY, AT A MINIMUM, THE MUNICIPAL ENGINEER, DESIGN ENGINEER, AND LOCAL SOIL CONSERVATION JURISDICTION, AT LEAST 72 BUSINESS HOURS PRIOR TO THE COMMENCEMENT OF WORK.
    - C. INSTALL THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE DISTURBANCE, AND MAINTAIN SAID CONTROLS UNTIL SITE IS STABILIZED
    - D. IN ACCORDANCE WITH STATE LAW, THE CONTRACTOR MUST CALL THE STATE ONE-CALL DAMAGE PROTECTION SYSTEM FOR UTILITY MARK OUT, IN ADVANCE OF ANY EXCAVATION.
    - E. LOCATE AND PROTECT ALL UTILITIES AND SERVICES, INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN AND ADJACENT TO THE LIMITS OF PROJECT ACTIVITIES. THE CONTRACTOR MUST USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL UNDERGROUND UTILITIES.
    - F. PROTECT AND MAINTAIN IN OPERATION, ALL ACTIVE UTILITIES AND SYSTEMS THAT ARE NOT BEING REMOVED DURING ANY DEMOLITION ACTIVITIES.
    - G. ARRANGE FOR AND COORDINATE WITH THE APPLICABLE UTILITY SERVICE PROVIDER(S) FOR THE TEMPORARY OR PERMANENT TERMINATION OF SERVICE REQUIRED BY THE PROJECT PLANS AND SPECIFICATIONS REGARDING THE METHODS AND MEANS TO CONSTRUCT SAME. THESE ARE NOT THE PROFESSIONAL OF RECORD'S OR BOHLER RESPONSIBILITY. IN THE EVENT OF ABANDONMENT, THE CONTRACTOR MUST PROVIDE THE UTILITY ENGINEER AND OWNER WITH IMMEDIATE WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTIONAL AND UTILITY COMPANY REQUIREMENTS.
    - H. ARRANGE FOR AND COORDINATE WITH THE APPLICABLE UTILITY SERVICE PROVIDER(S) REGARDING WORKING "OFF-PEAK" HOURS OR ON WEEKENDS AS NECESSARY OR AS REQUIRED TO MINIMIZE THE IMPACT ON, OF, AND TO THE AFFECTED PARTIES. WORK REQUIRED TO BE PERFORMED "OFF-PEAK" IS TO BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.
    - I. IN THE EVENT THE CONTRACTOR DISCOVERS ANY HAZARDOUS MATERIAL, THE REMOVAL OF WHICH IS NOT ADDRESSED IN THE PROJECT PLANS AND SPECIFICATIONS OR THE CONTRACT WITH THE OWNER/DEVELOPER, THE CONTRACTOR MUST IMMEDIATELY CEASE ALL WORK IN THE AREA OF DISCOVERY, AND IMMEDIATELY NOTIFY, IN WRITING AND VERBALLY, THE OWNER, PROFESSIONAL OF RECORD AND BOHLER, THE DISCOVERY OF SUCH MATERIALS TO PURSUE PROPER AND COMPLIANT REMOVAL OF SAME.
11. THE CONTRACTOR MUST NOT PERFORM ANY EARTH MOVEMENT ACTIVITIES, DEMOLITION OR REMOVAL OF FOUNDATION WALLS, FOOTINGS, OR OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE, UNLESS SAME IS IN STRICT ACCORDANCE AND CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS, OR PURSUANT TO THE WRITTEN DIRECTION OF THE OWNER'S STRUCTURAL OR GEOTECHNICAL ENGINEER.
12. DEMOLITION ACTIVITIES AND EQUIPMENT MUST NOT USE OR INCLUDE AREAS OUTSIDE THE DEFINED PROJECT LIMIT LINE, WITHOUT SPECIFIC WRITTEN PERMISSION AND AUTHORITY OF AND FROM THE OWNER AND ALL GOVERNMENTAL AGENCIES WITH JURISDICTION.
13. THE CONTRACTOR MUST BACKFILL ALL EXCAVATION RESULTING FROM, OR INCIDENTAL TO, DEMOLITION ACTIVITIES. BACKFILL MUST BE ACCOMPLISHED WITH APPROVED BACKFILL MATERIALS AND MUST BE SUFFICIENTLY COMPACTED TO SUPPORT ALL NEW IMPROVEMENTS AND MUST BE PERFORMED IN COMPLIANCE WITH THE RECOMMENDATIONS AND GUIDANCE ARTICULATED IN THE GEOTECHNICAL REPORT. BACKFILLING MUST OCCUR IMMEDIATELY AFTER DEMOLITION ACTIVITIES AND MUST BE PERFORMED SO AS TO PREVENT WATER ENTERING THE EXCAVATION. FINISHED SURFACES MUST BE GRADED TO PROMOTE POSITIVE DRAINAGE. THE CONTRACTOR IS RESPONSIBLE FOR COMPACTION TESTING AND MUST SUBMIT SUCH REPORTS AND RESULTS TO THE PROFESSIONAL OF RECORD AND THE OWNER.
14. EXPLOSIVES MUST NOT BE USED WITHOUT PRIOR WRITTEN CONSENT FROM BOTH THE OWNER AND ALL APPLICABLE, NECESSARY AND REQUIRED GOVERNMENTAL AUTHORITIES. PRIOR TO COMMENCING ANY EXPLOSIVE PROGRAM AND/OR ANY DEMOLITION ACTIVITIES, THE CONTRACTOR MUST ENSURE AND OVERSEE THE INSTALLATION OF ALL OF THE REQUIRED PERMIT AND EXPLOSIVE CONTROL MEASURES THAT THE FEDERAL, STATE, AND LOCAL GOVERNMENTS REQUIRE. THE CONTRACTOR IS ALSO RESPONSIBLE TO CONDUCT AND PERFORM ALL INSPECTION AND SEISMIC VIBRATION TESTING THAT IS REQUIRED TO MONITOR THE EFFECTS ON ALL LOCAL STRUCTURES AND THE LIKE.
15. IN ACCORDANCE WITH FEDERAL, STATE, AND/OR LOCAL STANDARDS, THE CONTRACTOR MUST USE DUST CONTROL MEASURES TO LIMIT AIRBORNE DUST AND DIRT RISING AND SCATTERING IN THE AIR. AFTER THE DEMOLITION IS COMPLETE, THE CONTRACTOR MUST CLEAN ALL ADJACENT STRUCTURES AND IMPROVEMENTS TO REMOVE ALL DUST AND DEBRIS WHICH THE DEMOLITION OPERATIONS CAUSE. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR "PRE-DEMOLITION" CONDITION AT CONTRACTOR'S SOLE COST.
16. PAVEMENT MUST BE SAW CUT IN STRAIGHT LINES. ALL DEBRIS FROM REMOVAL OPERATIONS MUST BE REMOVED FROM THE SITE AT THE TIME OF EXCAVATION. STOCKPILING OF DEBRIS OUTSIDE OF APPROVED AREAS WILL NOT BE PERMITTED, INCLUDING BUT NOT LIMITED TO, THE PUBLIC RIGHT-OF-WAY.
17. THE CONTRACTOR MUST MAINTAIN A RECORD SET OF PLANS WHICH INDICATES THE LOCATION OF EXISTING UTILITIES THAT ARE CAPPED, ABANDONED IN PLACE, OR RELOCATED DUE TO DEMOLITION ACTIVITIES. THIS RECORD DOCUMENT MUST BE PREPARED IN A NEAT AND WORKMAN-LIKE MANNER AND TURNED OVER TO THE OWNER/DEVELOPER UPON COMPLETION OF THE WORK, ALL OF WHICH IS AT THE CONTRACTOR'S SOLE COST.
18. THE CONTRACTOR MUST EMPTY, CLEAN AND REMOVE FROM THE SITE ALL UNDERGROUND STORAGE TANKS, IF ENCOUNTERED, IN ACCORDANCE WITH FEDERAL, STATE, COUNTY AND LOCAL REQUIREMENTS, PRIOR TO CONTINUING CONSTRUCTION IN THE AREA AROUND THE TANK WHICH EMPTYING, CLEANING AND REMOVAL ARE AT THE CONTRACTOR'S SOLE COST.

SOIL EROSION & SEDIMENT CONTROL PLAN NOTES

(Rev. 4/2023)

1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
2. EROSION CONTROL MEASURES MUST CONFORM TO THE NORTH CAROLINA GUIDELINES FOR URBAN EROSION AND SEDIMENT CONTROL UNLESS OTHERWISE NOTED, OR UNLESS THE PROFESSIONAL OF RECORD CLEARLY AND SPECIFICALLY, IN WRITING, DIRECTS OTHERWISE. INSTALLATION OF EROSION CONTROL, CLEARING, AND SITE WORK MUST BE PERFORMED EXACTLY AS INDICATED IN THE EROSION CONTROL CONSTRUCTION NOTES.
3. THE DISTURBED LAND AREA OF THIS SITE IS APPROXIMATELY 1.15 ACRES.
4. INSTALLATION OF EROSION CONTROL DEVICES MUST BE IN ACCORDANCE WITH ALL OF THE MANUFACTURER'S RECOMMENDATIONS.
5. THE CONTRACTOR MUST INSPECT EROSION CONTROL MEASURES WEEKLY. THE CONTRACTOR MUST REMOVE ANY SILT DEPOSITS GREATER THAN 6" COLLECTED ON THE FILTER FABRIC AND/OR SILT SOCK BARRIERS AND EXCAVATE AND REMOVE ANY SILT FROM DROP INLET PROTECTION.
6. THE CONTRACTOR MUST APPLY TEMPORARY SEED AND MULCH TO ALL DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINISHED GRADE AND VEGETATED WITHIN 7 DAYS. WHEN AREAS ARE DISTURBED AFTER THE GROWING SEASON, THE CONTRACTOR MUST STABILIZE SAME WITH GEOTEXTILE FABRIC AND MAINTAIN SAME IN STRICT ACCORDANCE WITH BEST MANAGEMENT PRACTICES.
7. THE CONTRACTOR MUST INSTALL ADDITIONAL EROSION CONTROL MEASURES IF THE PROFESSIONAL OF RECORD SO REQUIRES, TO PREVENT ANY, INCLUDING THE INCIDENTAL, DISCHARGE OF SILT-LADEN RUNOFF FROM EXITING THE SITE.
8. THE CONTRACTOR MUST BE RESPONSIBLE FOR INSPECTING AND MAINTAINING ALL EROSION CONTROL MEASURES ON THE SITE UNTIL PERMANENT PAVING AND TURF/LANDSCAPING IS ESTABLISHED. THE COSTS OF INSTALLING AND MAINTAINING THE EROSION CONTROL MEASURES MUST BE INCLUDED IN THE BID PRICE FOR THE SITE WORK AND THE CONTRACTOR IS RESPONSIBLE FOR ALL SUCH COSTS.
9. THE CONTRACTOR MUST CONTINUE TO MAINTAIN ALL EROSION CONTROL MEASURES UNTIL THE COMPLETION OF CONSTRUCTION AND THE ESTABLISHMENT OF VEGETATION.
10. THE CONTRACTOR MUST REMOVE EROSION CONTROL MEASURES, SILT AND DEBRIS AFTER ESTABLISHING PERMANENT VEGETATION COVER OR OTHER INSTALLING A DIFFERENT, SPECIFIED METHOD OF STABILIZATION.
11. THIS PLAN REPRESENTS THE MINIMUM LEVEL OF IMPLEMENTATION OF TEMPORARY EROSION AND SEDIMENTATION CONTROL FACILITIES, MEASURES AND STRUCTURES. ADDITIONAL FACILITIES, MEASURES AND STRUCTURES MUST BE INSTALLED WHERE NECESSARY TO COMPLY WITH ALL APPLICABLE CODES AND STANDARDS AND/OR TO PREVENT ANY, INCLUDING THE INCIDENTAL DISCHARGE OF SILT-LADEN RUNOFF FROM EXITING THE SITE.
12. THE CONTRACTOR MUST PROTECT ALL EXISTING TREES AND SHRUBS. THE CONTRACTOR MUST REFER TO THE LANDSCAPE AND/OR DEMOLITION PLAN(S) FOR TREE PROTECTION, FENCE LOCATIONS AND DETAILS.
13. THE CONTRACTOR MUST REFER TO GRADING PLANS FOR ADDITIONAL INFORMATION.
14. THE CONTRACTOR MUST CLEAN EXISTING AND PROPOSED DRAINAGE STRUCTURES AND INTERCONNECTING PIPES ON OR OFF-SITE AS THE JURISDICTIONAL AGENCY REQUIRES, BOTH AT THE TIME OF SITE STABILIZATION AND AT END OF PROJECT.
15. SOIL EROSION CONTROL MEASURES MUST BE ADJUSTED OR RELOCATED BY THE CONTRACTOR AS IDENTIFIED DURING SITE OBSERVATION IN ORDER TO MAINTAIN THE COMPLETE EFFECTIVENESS OF ALL CONTROL MEASURES.
16. THE CONTRACTOR MUST IDENTIFY, ON THE PLAN, THE LOCATION OF WASTE CONTAINERS, FUEL STORAGE TANKS, CONCRETE WASHOUT AREAS AND ANY OTHER LOCATIONS WHERE HAZARDOUS MATERIALS ARE STORED.

SITE LAYOUT NOTES

(Rev. 1/2020)

1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
2. PRIOR TO THE COMMENCEMENT OF GENERAL CONSTRUCTION, THE CONTRACTOR MUST INSTALL SOIL EROSION CONTROL AND ANY STORMWATER POLLUTION PREVENTION PLAN (SWPPP) MEASURES NECESSARY, AS INDICATED ON THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN AND IN ACCORDANCE WITH APPLICABLE AND/OR APPROPRIATE AGENCIES' GUIDELINES TO PREVENT SEDIMENT AND/OR LOOSE DEBRIS FROM WASHING ONTO ADJACENT PROPERTIES OR THE RIGHT OF WAY.
3. ALL DIRECTIONAL/TRAFFIC SIGNING AND PAVEMENT STRIPING MUST CONFORM TO THE LATEST STANDARDS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND ANY APPLICABLE STATE OR LOCALLY APPROVED SUPPLEMENTS, GUIDELINES, RULES, REGULATIONS, STANDARDS AND THE LIKE.
4. THE LOCATIONS OF PROPOSED UTILITY POLES AND TRAFFIC SIGNS SHOWN ON THE PLANS ARE SCHEMATIC AND PRELIMINARY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR FIELD-VERIFYING THEIR LOCATION. THE CONTRACTOR MUST COORDINATE THE RELOCATION OF TRAFFIC SIGNS WITH THE ENTITY WITH JURISDICTION OVER THE PROJECT.
5. ALL DIMENSIONS SHOWN ARE TO BOTTOM FACE OF CURB, EDGE OF PAVEMENT, OR EDGE OF BUILDING, EXCEPT WHEN DIMENSION IS TO A PROPERTY LINE, STAKE OUT OF LOCATIONS OF INLETS, LIGHT POLES, ETC. MUST BE PERFORMED IN STRICT ACCORDANCE WITH THE DETAILS, UNLESS NOTED CLEARLY OTHERWISE.

GRADING NOTES

(Rev. 1/2023)

1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
2. SITE GRADING MUST BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT AS REFERENCED IN THIS PLAN SET. IF NO GEOTECHNICAL REPORT HAS BEEN REFERENCED, THE CONTRACTOR MUST HAVE A GEOTECHNICAL ENGINEER PROVIDE WRITTEN SPECIFICATIONS AND RECOMMENDATIONS PRIOR TO THE CONTRACTOR COMMENCING THE GRADING WORK. THE CONTRACTOR MUST FOLLOW THE REQUIREMENTS OF ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS, WHICH HAVE JURISDICTION OVER THIS PROJECT.
3. THE CONTRACTOR IS REQUIRED TO SECURE ALL NECESSARY AND/OR REQUIRED PERMITS AND APPROVALS FOR ALL OFF-SITE MATERIAL SOURCES AND DISPOSAL FACILITIES. THE CONTRACTOR MUST SUPPLY A COPY OF APPROVALS TO THE PROFESSIONAL OF RECORD, BOHLER AND THE OWNER PRIOR TO THE CONTRACTOR COMMENCING ANY WORK.
4. THE CONTRACTOR IS FULLY RESPONSIBLE FOR VERIFYING EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCING ANY CONSTRUCTION. SHOULD DISCREPANCIES BETWEEN THE PLANS AND INFORMATION OBTAINED THROUGH FIELD VERIFICATIONS BE IDENTIFIED OR EXIST, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROFESSIONAL OF RECORD AND BOHLER, IN WRITING.
5. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING AND REPLACING ALL UNSUITABLE MATERIALS WITH SUITABLE MATERIALS AS SPECIFIED IN THE GEOTECHNICAL REPORT. THE CONTRACTOR MUST COMPACT ALL EXCAVATED OR FILLED AREAS IN STRICT ACCORDANCE WITH THE GEOTECHNICAL REPORT'S GUIDANCE. MOISTURE CONTENT AT TIME OF PLACEMENT MUST BE SUBMITTED IN A COMPACTION REPORT PREPARED BY A QUALIFIED GEOTECHNICAL ENGINEER, REGISTERED WITH THE STATE WHERE THE WORK IS PERFORMED. THIS REPORT MUST VERIFY THAT ALL FILLED AREAS AND SUBGRADE AREAS WITHIN THE BUILDING PAD AREA AND AREAS TO BE PAVED HAVE BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT AND ALL APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES WHICH ARE IN EFFECT AND WHICH ARE APPLICABLE TO THE PROJECT. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT MUST BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE BY OWNER/DEVELOPER, OR OWNER/DEVELOPER'S REPRESENTATIVE, SUBBASE MUST BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL, COMPACTED AS THE GEOTECHNICAL REPORT DIRECTS. EARTHWORK ACTIVITIES INCLUDING, BUT NOT LIMITED TO, EXCAVATION, BACKFILL, AND COMPACTING MUST COMPLY WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT AND ALL APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES. EARTHWORK ACTIVITIES MUST COMPLY WITH THE STANDARD STATE DOT SPECIFICATIONS FOR ROADWAY CONSTRUCTION (LATEST EDITION) AND ANY AMENDMENTS OR REVISIONS THERETO.
6. IN THE EVENT OF A DISCREPANCY(IES) AND/OR A CONFLICT(S) BETWEEN PLANS, OR RELATIVE TO OTHER PLANS, THE GRADING PLAN TAKES PRECEDENCE AND CONTROLS. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROFESSIONAL OF RECORD AND BOHLER, IN WRITING, OF ANY DISCREPANCY(IES) AND/OR CONFLICT(S).
7. THE CONTRACTOR IS RESPONSIBLE TO IMPORT FILL OR EXPORT EXCESS MATERIAL AS NECESSARY TO CONFORM TO THE PROPOSED GRADING, AND TO BACKFILL EXCAVATIONS FOR THE INSTALLATION OF UNDERGROUND IMPROVEMENTS.

ACCESSIBILITY DESIGN GUIDELINES

(Rev. 1/2023)

1. ALL ACCESSIBLE (A.K.A. ADA) COMPONENTS AND ACCESSIBLE ROUTES MUST BE CONSTRUCTED TO MEET, AT A MINIMUM, THE MORE STRINGENT OF: (A) THE REQUIREMENTS OF THE "AMERICANS WITH DISABILITIES ACT" (ADA) CODE (42 U.S.C. § 12101 ET SEQ. AND 42 U.S.C. § 4151 ET SEQ.); AND (B) ANY APPLICABLE LOCAL AND STATE GUIDELINES, AND ANY AND ALL AMENDMENTS TO BOTH, WHICH ARE IN EFFECT WHEN THESE PLANS WERE COMPLETED.
2. THE CONTRACTOR MUST REVIEW ALL DOCUMENTS REFERENCED IN THESE NOTES FOR ACCURACY, COMPLIANCE AND CONSISTENCY WITH INDUSTRY GUIDELINES.
3. THE CONTRACTOR MUST EXERCISE APPROPRIATE CARE AND PRECISION IN CONSTRUCTION OF ACCESSIBLE (ADA) COMPONENTS AND ACCESSIBLE ROUTES FOR THE SITE. FINISHED SURFACES ALONG THE ACCESSIBLE ROUTE OF TRAVEL FROM PARKING SPACES, PUBLIC TRANSPORTATION, PEDESTRIAN ACCESS, AND INTER-BUILDING ACCESS, TO POINTS OF ACCESSIBLE BUILDING ENTRANCE/EXIT, MUST COMPLY WITH THE ACCESSIBLE GUIDELINES AND REQUIREMENTS WHICH INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
   - A. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SLOPES MUST NOT EXCEED 1:50 (2.0%) IN ANY DIRECTION.
   - B. PATH OF TRAVEL ALONG ACCESSIBLE ROUTE MUST PROVIDE A 36-INCHES MINIMUM WIDTH (48-INCHES PREFERRED), OR AS SPECIFIED BY THE GOVERNING AGENCY. UNOBSTRUCTED WIDTH OF TRAVEL (CAR OVERHANGS AND/OR HANDRAILS) MUST NOT REDUCE THIS MINIMUM WIDTH. THE SLOPE MUST NOT EXCEED 1:20 (5.0%) IN THE DIRECTION OF TRAVEL AND MUST NOT EXCEED 1:50 (2.0%) IN CROSS SLOPE. WHERE ACCESSIBLE PATH OF TRAVEL IS GREATER THAN 1:20 (5.0%), AN ACCESSIBLE RAMP MUST BE PROVIDED. ALONG THE ACCESSIBLE PATH OF TRAVEL, OPENINGS MUST NOT EXCEED 1/2-INCH IN WIDTH. VERTICAL CHANGES OF UP TO 1/2-INCH ARE PERMITTED ONLY IF THEY INCLUDES A 1/4-INCH BEVEL AT A SLOPE NOT STEEPER THAN 1:2. NO VERTICAL CHANGES OVER 1/4-INCH ARE PERMITTED.
   - C. ACCESSIBLE RAMPS MUST NOT EXCEED A SLOPE OF 1:12 (8.3%) AND A RISE OF 30-INCHES. LEVEL LANDINGS MUST BE PROVIDED AT EACH END OF ACCESSIBLE RAMPS. LANDING MUST PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES, AND MUST NOT EXCEED 1:50 (2.0%) SLOPE IN ANY DIRECTION. RAMPS THAT CHANGE DIRECTION BETWEEN RUNS AT LANDINGS MUST HAVE A CLEAR LANDING OF A MINIMUM OF 60-INCHES BY 60-INCHES. HAND RAILS ON BOTH SIDES OF THE RAMP MUST BE PROVIDED ON AN ACCESSIBLE RAMP WITH A RISE GREATER THAN 6-INCHES.
   - D. ACCESSIBLE CURB RAMPS MUST NOT EXCEED A SLOPE OF 1:12 (8.3%). WHERE FLARED SIDES ARE PROVIDED, THEY MUST NOT EXCEED 1:10 (10%) SLOPE. LEVEL LANDING MUST BE PROVIDED AT RAMPS TOP AT A MINIMUM OF 36-INCHES LONG (48-INCHES PREFERRED). IN ALTERATIONS, WHEN THERE IS NO LANDING AT THE TOP, FLARE SIDES SLOPES MUST NOT EXCEED A SLOPE OF 1:12 (8.3%).
   - E. DOORWAY LANDINGS AREAS MUST BE PROVIDED ON THE EXTERIOR SIDE OF ANY DOOR LEADING TO AN ACCESSIBLE PATH OF TRAVEL. THIS LANDING MUST BE SLOPED AWAY FROM THE DOOR NO MORE THAN 1:50 (2.0%) FOR POSITIVE DRAINAGE. THIS LANDING AREA MUST BE NO FEWER THAN 60-INCHES (5 FEET) LONG, EXCEPT WHERE OTHERWISE CLEARLY PERMITTED BY ACCESSIBLE STANDARDS FOR ALTERNATIVE DOORWAY OPENING CONDITIONS. (SEE ICC/ANSI A117.1-2009 AND OTHER REFERENCES INCORPORATED BY CODE).
   - F. WHEN THE PROPOSED CONSTRUCTION INVOLVES RECONSTRUCTION, MODIFICATION, REVISION OR EXTENSION OF OR TO ACCESSIBLE COMPONENTS FROM EXISTING DOORWAYS OR SURFACES, THE CONTRACTOR MUST VERIFY ALL EXISTING ELEVATIONS SHOWN ON THE PLAN. NOTE THAT TABLE 405.2 OF THE DEPARTMENT OF JUSTICE'S ADA STANDARDS FOR ACCESSIBLE DESIGN ALLOWS FOR STEEPER RAMP SLOPES, IN RARE CIRCUMSTANCES. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROFESSIONAL OF RECORD AND BOHLER, IN WRITING, OF ANY DISCREPANCIES AND/OR FIELD CONDITIONS THAT DIFFER IN ANY WAY OR IN ANY RESPECT FROM WHAT IS SHOWN ON THE PLANS BEFORE COMMENCING ANY WORK. CONSTRUCTED IMPROVEMENTS MUST FALL WITHIN THE MAXIMUM AND MINIMUM LIMITATIONS IMPOSED BY THE BARRIER FREE REGULATIONS AND THE ACCESSIBLE GUIDELINES.
   - G. THE CONTRACTOR MUST VERIFY ALL OF THE SLOPES OF THE CONTRACTOR'S FORMS PRIOR TO POURING CONCRETE. IF ANY NON-CONFORMANCE EXISTS OR IS OBSERVED OR DISCOVERED, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROFESSIONAL OF RECORD AND BOHLER, IN WRITING, PRIOR TO POURING CONCRETE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL COSTS TO REMOVE, REPAIR AND/OR REPLACE NON-CONFORMING CONCRETE AND/OR PAVEMENT SURFACES.
4. IT IS STRONGLY RECOMMENDED THAT THE CONTRACTOR REVIEW THE INTENDED CONSTRUCTION TO ENSURE SAME IS CONSISTENT WITH THE LOCAL BUILDING CODE PRIOR TO COMMENCING CONSTRUCTION.

DRAINAGE AND UTILITY NOTES

(Rev. 3/2023)

1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
2. LOCATIONS OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATE, AND THE CONTRACTOR MUST INDEPENDENTLY VERIFY AND CONFIRM THOSE LOCATIONS AND SERVICES WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCING ANY CONSTRUCTION OR EXCAVATION. THE CONTRACTOR MUST INDEPENDENTLY VERIFY AND CONFIRM ALL SANITARY CONNECTION POINTS AND ALL OTHER UTILITY SERVICE CONNECTION POINTS IN THE FIELD, PRIOR TO COMMENCING ANY CONSTRUCTION. THE CONTRACTOR MUST REPORT ALL DISCREPANCIES, ERRORS AND OMISSIONS IN WRITING, TO THE PROFESSIONAL OF RECORD AND BOHLER.
3. THE CONTRACTOR MUST VERTICALLY AND HORIZONTALLY LOCATE ALL UTILITIES AND SERVICES INCLUDING, BUT NOT LIMITED TO, GAS, WATER, ELECTRIC, SANITARY AND STORM, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN THE LIMITS OF DISTURBANCE OR WORK SPACE, WHICHEVER IS GREATER. THE CONTRACTOR MUST USE, REFER TO, AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL OF THE UNDERGROUND UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL DAMAGE TO ANY EXISTING UTILITIES WHICH OCCUR DURING CONSTRUCTION, AT NO COST TO THE OWNER AND AT CONTRACTOR'S SOLE COST AND EXPENSE. THE CONTRACTOR MUST BEAR ALL COSTS ASSOCIATED WITH DAMAGE TO ANY EXISTING UTILITIES WHICH OCCURS DURING CONSTRUCTION.
4. THE CONTRACTOR MUST FIELD VERIFY THE PROPOSED INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND UTILITIES BY USING A TEST PIT TO CONFIRM EXACT DEPTH, PRIOR TO COMMENCEMENT OF CONSTRUCTION.
5. STORMWATER ROOF DRAIN LOCATIONS ARE BASED ON ARCHITECTURAL PLANS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS, SIZE, AND MATERIAL OF SAME BASED UPON FINAL ARCHITECTURAL PLANS.
6. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING SITE PLAN DOCUMENTS AND ARCHITECTURAL PLANS FOR EXACT BUILDING UTILITY CONNECTION LOCATIONS; GREASE TRAP REQUIREMENTS; AND DETAILS, DOOR ACCESS, AND EXTERIOR GRADING. THE ARCHITECT WILL DETERMINE THE UTILITY SERVICE SIZES. THE CONTRACTOR MUST COORDINATE INSTALLATION OF UTILITY SERVICES WITH THE INDIVIDUAL COMPANIES TO AVOID CONFLICTS AND TO ENSURE THAT PROPER DEPTHS ARE ACHIEVED. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT INSTALLATION OF ALL IMPROVEMENTS COMPLIES WITH ALL UTILITY REQUIREMENTS OF THE APPLICABLE JURISDICTION AND REGULATORY AGENCIES AND ALL OTHER APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES AND, FURTHER, IS RESPONSIBLE FOR COORDINATING THE UTILITY TIE-INS/CONNECTIONS PRIOR TO CONNECTING TO THE EXISTING UTILITY/SERVICE. WHERE A CONFLICT(S) EXISTS BETWEEN THESE DOCUMENTS AND THE ARCHITECTURAL PLANS, OR WHERE ARCHITECTURAL PLAN UTILITY CONNECTION POINTS DIFFER, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROFESSIONAL OF RECORD AND BOHLER, IN WRITING, AND PRIOR TO CONSTRUCTION, MUST RESOLVE SAME.
7. ALL FILL, COMPACTION, AND BACKFILL MATERIALS REQUIRED FOR UTILITY INSTALLATION MUST BE EXACTLY AS PER THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT AND THE CONTRACTOR MUST COORDINATE SAME WITH THE APPLICABLE UTILITY COMPANY SPECIFICATIONS. WHEN THE PROJECT DOES NOT HAVE GEOTECHNICAL RECOMMENDATIONS, FILL AND COMPACTION MUST COMPLY WITH APPLICABLE REQUIREMENTS AND SPECIFICATIONS. THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR DESIGN OF TRENCH BACKFILL OR FOR COMPACTION REQUIREMENTS
8. DURING THE INSTALLATION OF SANITARY, STORM, AND ALL UTILITIES, THE CONTRACTOR MUST MAINTAIN A CONTEMPORANEOUS AND THOROUGH RECORD OF CONSTRUCTION TO IDENTIFY THE AS-INSTALLED LOCATIONS OF ALL UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR MUST CAREFULLY NOTE ANY INSTALLATIONS THAT DEVIATE, IN ANY RESPECT, FROM THE INFORMATION CONTAINED IN THESE PLANS. THIS RECORD MUST BE KEPT ON A CLEAN COPY OF THE APPROPRIATE PLAN(S), WHICH THE CONTRACTOR MUST PROMPTLY PROVIDE TO THE OWNER IMMEDIATELY UPON THE COMPLETION OF WORK.
9. THE CONTRACTOR MUST ENSURE THAT ALL UTILITY TRENCHES LOCATED IN EXISTING PAVED ROADWAYS INCLUDING SANITARY, WATER AND STORM SYSTEMS, ARE REPAIRED IN ACCORDANCE WITH REFERENCED MUNICIPAL, COUNTY AND OR STATE DOT DETAILS AS APPLICABLE. THE CONTRACTOR MUST COORDINATE INSPECTION AND APPROVAL OF COMPLETED WORK WITH THE AGENCY WITH JURISDICTION OVER SAME.
10. FINAL LOCATIONS OF PROPOSED UTILITY POLES, AND/ OR POLES TO BE RELOCATED ARE AT THE SOLE DISCRETION OF THE RESPECTIVE UTILITY COMPANY, REGARDLESS OF WHAT THIS PLAN DEPICTS.
11. WATER SERVICE MATERIALS, BURIAL DEPTH, AND COVER REQUIREMENTS MUST BE SPECIFIED BY THE LOCAL UTILITY COMPANY. THE CONTRACTOR MUST CONTACT THE APPLICABLE MUNICIPALITY TO CONFIRM THE PROPER WATER METER AND VAULT, PRIOR TO COMMENCING CONSTRUCTION.
12. THE TOPS OF EXISTING MANHOLES, INLET STRUCTURES, AND SANITARY CLEANOUT MUST BE ADJUSTED, AS NECESSARY, TO MATCH PROPOSED FINISHED GRADES WITH NO TRIPPING OR SAFETY HAZARD IN ACCORDANCE WITH ALL APPLICABLE STANDARDS, REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES.

OUTSIDE SOURCE NOTES

(Rev. 11/2023)

ANY INFORMATION, DRAWINGS, DATA, PLANS, SPECIFICATIONS, MATERIALS, FIGURES, DOCUMENTATION, REPORTS, AND THE LIKE WHICH IS INDICATED TO HAVE BEEN PREPARED "BY OTHERS" (HEREIN, "BY OTHERS REPORTS, DOCUMENTS AND DETAILS") HAS BEEN OR WILL BE CREATED, DEVELOPED, PREPARED, PERFORMED, AND ANALYZED BY AN ENTITY OR PARTY OTHER THAN THE "BOHLER" ENTITY INVOLVED WITH THIS PROJECT. THE "BOHLER" ENTITY IS NOT IN ANY WAY RESPONSIBLE FOR THE BY OTHERS REPORTS, DOCUMENTS AND DETAILS EVEN IF/WHERE INCLUDED IN THE "BOHLER" ENTITY'S PLANS, REPORTS, ETC. SAME HAS BEEN INCLUDED ON THIS PLAN FOR THE CONVENIENCE, ONLY, OF THE PROJECT OWNER, DEVELOPERS, CONTRACTORS AND CONSULTANTS AND IN ORDER TO COORDINATE THE "BOHLER" ENTITY'S DESIGN WITH THAT OF "OTHERS". THE "BOHLER" ENTITY HAS ASSUMED, FOR PURPOSES OF THIS PLAN, THAT THE BY OTHERS REPORTS, DOCUMENTS AND DETAILS ARE CURRENT AND, IF APPLICABLE, PREPARED IN STRICT ACCORDANCE WITH ALL APPLICABLE COUNTY, STATE, FEDERAL AND OTHER STATUTES, LAWS, RULES, REGULATIONS, ORDINANCES AND THE LIKE. THE "BOHLER" ENTITY SPECIFICALLY DISCLAIMS ANY AND ALL LIABILITY AND RESPONSIBILITY FOR BY OTHERS REPORTS, DOCUMENTS AND DETAILS. THE ENTITY OR PERSON WHO CREATED THE INFORMATION CONTAINED IN THE BY OTHERS REPORTS, DOCUMENTS AND DETAILS (EXCLUDING INFORMATION AND/OR DETAILS SOLELY SUPPLIED BY A JURISDICTION AND/OR GOVERNING BODY) AGREES BY PARTICIPATING IN THIS PROJECT, RECEIVING, REVIEWING, USING AND/OR RELYING UPON THIS DOCUMENT, AND/OR BY AGREEING TO THE PROJECT OWNER/DEVELOPER'S CONTRACT DOCUMENTS, TO DEFEND, INDEMNIFY, PROTECT AND HOLD HARMLESS THE "BOHLER" ENTITY THAT PREPARED THIS DOCUMENT AND ITS EMPLOYEES FOR ANY AND ALL DAMAGES, INJURIES, COSTS, EXPENSES AND THE LIKE, TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, WHICH THE "BOHLER" ENTITY AND/OR ITS EMPLOYEES SUFFER OR INCUR AS A RESULT OF INCLUDING ANY BY OTHERS REPORTS, DOCUMENTS AND DETAILS IN AND ON OR IN THIS PLAN. ANYONE OR ANY ENTITY WHO RECEIVED, RELIES UPON AND/OR USES THIS PLAN, AGREES TO HOLD THE "BOHLER" ENTITY AND ITS EMPLOYEES HARMLESS FROM ANY CLAIMS, DAMAGES, INJURIES, COSTS AND EXPENSES, TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, FOR ANY DAMAGES, INJURIES, COSTS, EXPENSES AND THE LIKE, TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, WHICH IT OR THEY SUFFER OR INCUR AS A RESULT OF THE ANY BY OTHERS REPORTS, DOCUMENTS AND DETAILS INCORPORATED IN THE PLAN, AND EXPRESSLY CONFIRMS THAT BY RECEIVING, RELYING UPON AND/OR USING SAME, THE "BOHLER" ENTITY SHALL HAVE NO LIABILITY RELATED TO SAME. WITH RESPECT TO ALL BY OTHERS REPORTS, DOCUMENTS AND DETAILS, CONTRACTOR MUST VERIFY ALL INFORMATION CONTAINED IN THE SCOPE OF ALL PARTIES INVOLVED IN PREPARING THE BY OTHERS REPORTS, DOCUMENTS AND DETAILS PRIOR TO COMMENCING ANY CONSTRUCTION AND MUST VERIFY THAT THE INFORMATION IS THE LATEST, THE MOST RECENT AND THE MOST CURRENT REPORT, DOCUMENT AND DETAIL. REFERENCES ON THIS PLAN TO INFORMATION PREPARED OR CONTAINED IN BY OTHERS REPORTS, DOCUMENTS AND DETAILS DEPICTING AN OFF-SITE AREA WHERE NO DETAIL IS INCLUDED IS A REFERENCE TO AN AREA, DETAIL, SPECIFICATION OR DESIGN THAT HAS NOT BEEN DESIGNED OR CONSTRUCTED BY THE "BOHLER" ENTITY AND REGARDING WHICH THE "BOHLER" ENTITY HAS NO CONTROL OVER OR LIABILITY REGARDING, BUT IS ADDED TO THIS PLAN FOR INFORMATIONAL PURPOSES, ONLY.

STANDARD ABBREVIATIONS

FOR ENTIRE PLAN SET

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
AC	ACRE / ACRES
AD	AREA DRAIN
ADA	ACCESSIBLE / AMERICANS WITH DISABILITIES ACT
AG	ABOVE GROUND
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ASPH	ASPHALT
ASSF	AREA SUBJECT TO STORMWATER FLOWAGE
ASSOC	ASSOCIATION
BC	BOTTOM OF CURB
BF	BASEMENT FLOOR
BIO	BIOGARDEN
BIT	BITUMINOUS
BK	BLOCK
BL	BASELINE
BLDG	BUILDING
BM	BENCH MARK
BRL	BUILDING RESTRICTION LINE
BVW	BORDERING VEGETATIVE WETLAND
CB	CATCH BASIN
CF	CUBIC FEET
CI	CURB INLET
CIT	CHANGE IN TYPE
CL	CENTER LINE
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
CONC	CONCRETE
CONN	CONNECTION
COORD	COORDINATE
CPP	CORRUGATED PLASTIC PIPE
CY	CUBIC YARD
DEC	DECORATIVE
DEP	DEPARTMENT OF ENVIRONMENTAL PROTECTION
DET	DETENTION
DIA	DIAMETER
DMH	DRAINAGE MANHOLE
DOM	DOMESTIC
DOT	DEPARTMENT OF TRANSPORTATION
DP	DESIGN POINT
DWL	DASHED WHITE LINE
DYL	DOUBLE YELLOW LINE
EG	EXISTING GRADE
ELEC	ELECTRIC
ELEV	ELEVATION
EP / EOP	EDGE OF PAVEMENT
ES / EOS	EDGE OF SHOULDER
EW	END WALL
EX	EXISTING
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FES	FLARED END SECTION
FF	FINISH / FIRST FLOOR
FFE	FINISH / FIRST FLOOR ELEVATION
FG	FINISH GRADE
FH	FIRE HYDRANT
FM	FORCE MAIN
FO	FIBER OPTIC
G	GRADE
GC	GENERAL CONTRACTOR
GEO	GEOTECH/GEOTECHNICAL
GF / GFE	GARAGE FLOOR ELEVATION (AT DOOR)
GFA	GROSS FLOOR AREA
GH	GRADE HIGH (WALL)
GL	GRADE LOW (WALL)
GRT	GRATE
GT	GREASE TRAP
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HOR	HORIZONTAL
HP	HIGH POINT
HW	HEADWALL
ICS	INLET CONTROL STRUCTURE
INF	INFILTRATION
INT	INTERSECTION
INV	INVERT
LF	LINEAR FOOT
LOC	LIMIT OF CLEARING
LOD	LIMIT OF DISTURBANCE
LOS	LINE OF SIGHT
LOW	LIMIT OF WORK
LP	LOW POINT
LS	LANDSCAPE
LSA	LANDSCAPE AREA
MAX	MAXIMUM
ME	MATCH EXISTING
MEP	MECHANICAL, ELECTRICAL, AND PLUMBING
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
NOAA	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NRCS	NATIONAL RESOURCE CONSERVATION SERVICE
O&M	OPERATIONS AND MAINTENANCE
OC	ON CENTER
OCS	OUTLET CONTROL STRUCTURE
OGS	OIL AND GRIT SEPARATOR
ORD	ORDINANCE
PA / POA	POINT OF ANALYSIS
PC	POINT OF CURVATURE
PCCR	POINT OF CURVATURE, CURB RETURN
PERF	PERFORATED
PG	PROPOSED GRADE
PI	POINT OF INTERSECTION
POG	POINT OF GRADE
PP	POLYPROPYLENE PIPE
PROP	PROPOSED
PT	POINT OF TANGENCY
PTCR	POINT OF TANGENCY, CURB RETURN
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS / RADII
R/W	RIGHT-OF-WAY / RIGHTS-OF-WAY
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REGS	REGULATIONS
RELO	TO BE RELOCATED
REQ	REQUIRED
RET	RETENTION
RET WALL	RETAINING WALL
RETO	TO BE RETURNED TO OWNER
RG	RAIN GARDEN
S	SLOPE
SAN	SANITARY SEWER
SESC	SOIL EROSION AND SEDIMENT CONTROL
SHLO	STATE HIGHWAY LAYOUT
SMH	SANITARY MANHOLE
STA	STATION
STM	STORM WATER / STORM SEWER
SWL	SINGLE/SOLID WHITE LINE
SWPPP	STORMWATER POLLUTION PREVENTION PLAN
TBA	TO BE ABANDONED
TBD	TO BE DETERMINED
TBP	TO BE PROTECTED
TBR	TO BE REMOVED
TBRR	TO BE REMOVED AND REPLACED IN KIND
TBS	TO BE SALVAGED
TBV	TO BE VACATED
TC	TOP OF CURB
Tc	TIME OF CONCENTRATION
TD	TRENCH DRAIN
TELE	TELECOMMUNICATIONS / TELEDATA
TPF	TREE PROTECTION FENCE
TR	TO REMAIN
TRANS	TRANSITION
TYP	TYPICAL
UG	UNDERGROUND
UP	UTILITY POLE
USGS	UNITED STATES GEOLOGICAL SURVEY
VERT	VERTICAL
VIF	VERIFY IN FIELD
W	WIDE / WIDTH
W/L	WATER LINE
WM	WATER METER
WQU	WATER QUALITY UNIT
YD	YARD DRAIN
#	NUMBER
#:#	SLOPE EXPRESSED IN HORIZONTAL:VERTICAL IN FEET
±	PLUS OR MINUS
°	DEGREE
Ø	DIAMETER

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

STANDARD DRAWING LEGEND

FOR ENTIRE PLAN SET

LIMIT OF WORK — LOW — LOW —
LIMIT OF DISTURBANCE — LOD — LOD —
SAWCUT LINE ·····························

EXISTING NOTE	TYPICAL NOTE TEXT	PROPOSED NOTE
	ONSITE PROPERTY LINE / R.O.W. LINE	
	NEIGHBORING PROPERTY LINE / INTERIOR PARCEL LINE	
	EASEMENT LINE	
	SETBACK LINE	
	CONCRETE CURB & GUTTER	CURB AND GUTTER SPILL / TRANSITION DEPRESSED CURB AND GUTTER
	UTILITY POLE WITH LIGHT	
	POLE LIGHT	
	TRAFFIC LIGHT	
	UTILITY POLE	
	TYPICAL LIGHT	
	ACORN LIGHT	
	TYPICAL SIGN	
X	PARKING COUNTS	X
170 169	CONTOUR LINE	190 187
TC 516.4 OR 516.4	SPOT ELEVATIONS	TC 516.00 TC 516.00 BC 515.55 MATCH EX (518.02 ±)
SAN #	SANITARY LABEL	S-100
X #	STORM LABEL	A-100
SL	SANITARY SEWER LATERAL	SL
W	UNDERGROUND WATER LINE	W
	UNDERGROUND ELECTRIC LINE	E
	UNDERGROUND GAS LINE	G
	OVERHEAD WIRE	OH
	UNDERGROUND TELEPHONE LINE	T
	UNDERGROUND CABLE LINE	C
	STORM SEWER	
	SANITARY SEWER MAIN	S
	HYDRANT	
	SANITARY MANHOLE	S
	STORM MANHOLE	D
WM	WATER METER	WM
WV	WATER VALVE	
	GAS VALVE	GV
	GAS METER	G
	TYPICAL END SECTION	
	HEADWALL OR ENDWALL	
	GRATE INLET	
	CURB INLET	
	CLEAN OUT	C/O
	ELECTRIC MANHOLE	
	TELEPHONE MANHOLE	
	ELECTRIC BOX	E
	ELECTRIC PEDESTAL	EP
	MONITORING WELL	
	TEST PIT	
	BENCHMARK	
	BORING	

BOHLER//

BOHLER ENGINEERING NC, PLLC

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

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

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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
CHECKED BY:	OAK
DATE:	04/23/2025
CAD I.D.:	

PROJECT:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL CONTRACTORS, INC.

PROPOSED DEVELOPMENT
4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

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

SEAL 055420
08/19/2025

SHEET TITLE:
GENERAL NOTES AND LEGEND

SHEET NUMBER:
C-102

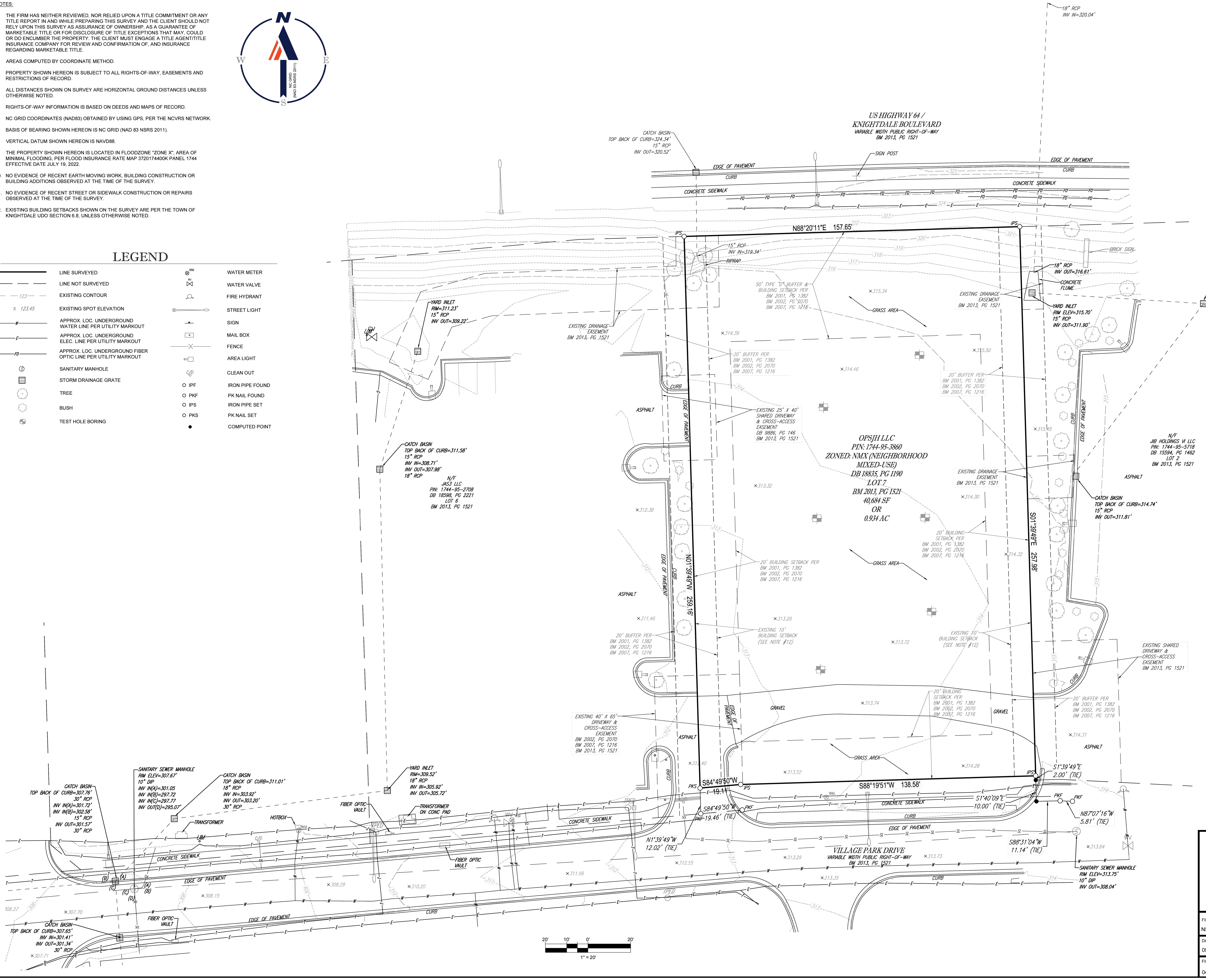
REVISION 2 - 08/19/25

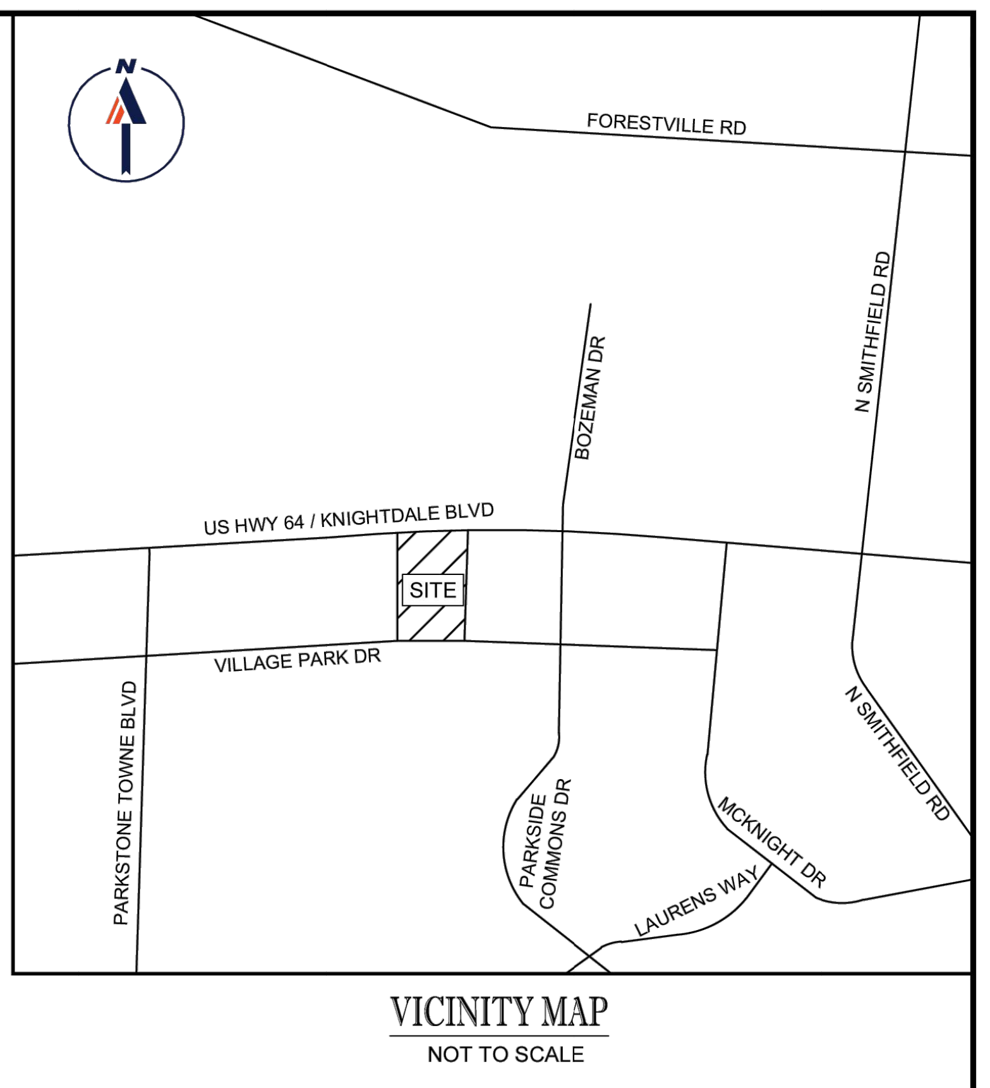
NOTES:

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.

LEGEND

━━━━	LINE SURVEYED	⊗ WM	WATER METER
— — —	LINE NOT SURVEYED	⋈ WV	WATER VALVE
— 123 —	EXISTING CONTOUR		FIRE HYDRANT
x 123.45	EXISTING SPOT ELEVATION		STREET LIGHT
—W—	APPROX. LOC. UNDERGROUND WATER LINE PER UTILITY MARKOUT		SIGN
—E—	APPROX. LOC. UNDERGROUND ELEC. LINE PER UTILITY MARKOUT	⊡	MAIL BOX
—FO—	APPROX. LOC. UNDERGROUND FIBER OPTIC LINE PER UTILITY MARKOUT	—×—	FENCE
Ⓢ	SANITARY MANHOLE		AREA LIGHT
▤	STORM DRAINAGE GRATE	C/O	CLEAN OUT
	TREE	○ IPF	IRON PIPE FOUND
	BUSH	○ PKF	PK NAIL FOUND
	TEST HOLE BORING	○ IPS	IRON PIPE SET
		○ PKS	PK NAIL SET
		●	COMPUTED POINT


N
W
E
S
NC GRID
(NAD 83-NSRS 2011)
US HIGHWAY 64 /
KNIGHTDALE BOULEVARD
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY
BM 2013, PG 1521
18" RCP
INV IN=320.04'
CATCH BASIN
TOP BACK OF CURB=324.34'
15" RCP
INV OUT=320.52'
SIGN POST
EDGE OF PAVEMENT
CURB
CONCRETE SIDEWALK
IPS
N88°20'11"E 157.65'
15" RCP
INV IN=319.34'
RIPRAP
50' TYPE "D" BUFFER & BUILDING SETBACK PER BM 2001, PG 1382 BM 2002, PG 2070 BM 2007, PG 1216
GRASS AREA
EXISTING DRAINAGE EASEMENT BM 2013, PG 1521
BRICK SIGN
18" RCP
INV OUT=316.61'
CONCRETE FLUME
YARD INLET
RIM ELEV=315.70'
15" RCP
INV OUT=311.90'
CATCH BASIN
TOP BACK OF CURB=315.05'
15" RCP
INV IN=311.10'
INV IN=311.04'
INV OUT=310.99'
YARD INLET
RIM=311.23'
15" RCP
INV OUT=309.22'
20' BUFFER PER BM 2001, PG 1382 BM 2002, PG 2070 BM 2007, PG 1216
EXISTING 25' X 40' SHARED DRIVEWAY & CROSS-ACCESS EASEMENT DB 9886, PG 146 BM 2013, PG 1521
ASPHALT
CATCH BASIN
TOP BACK OF CURB=311.58'
15" RCP
INV IN=308.71'
INV OUT=307.98'
18" RCP
N/F
JAS3 LLC
PIN: 1744-95-2708
DB 18598, PG 2221
LOT 6
BM 2013, PG 1521
OPSJH LLC
PIN: 1744-95-3860
ZONED: NMX (NEIGHBORHOOD MIXED-USE)
DB 18835, PG 1190
LOT 7
BM 2013, PG 1521
40,684 SF
OR
0.934 AC
N/F
JIB HOLDINGS VI LLC
PIN: 1744-95-5718
DB 15594, PG 1462
LOT 2
BM 2013, PG 1521
CATCH BASIN
TOP BACK OF CURB=314.74'
15" RCP
INV OUT=311.81'
N01°39'49"W 259.16'
S01°39'49"E 257.98'
20' BUILDING SETBACK PER BM 2001, PG 1382 BM 2002, PG 2070 BM 2007, PG 1216
EXISTING 10' BUILDING SETBACK (SEE NOTE #12)
EXISTING SHARED DRIVEWAY & CROSS-ACCESS EASEMENT BM 2013, PG 1521
EXISTING 40' X 65' DRIVEWAY & CROSS-ACCESS EASEMENT BM 2002, PG 2070 BM 2007, PG 1216 BM 2013, PG 1521
GRAVEL
PKS
S84°49'50"W 19.11'
S88°19'51"W 138.58'
S1°39'49"E 2.00' (TIE)
S1°40'09"E 10.00' (TIE)
S84°49'50"W 19.46' (TIE)
N1°39'49"W 12.02' (TIE)
PKF
N87°07'16"W 5.81' (TIE)
S88°31'04"W 11.14' (TIE)
VILLAGE PARK DRIVE
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY
BM 2013, PG 1521
SANITARY SEWER MANHOLE
RIM ELEV=313.75'
10" DIP
INV OUT=308.04'
CATCH BASIN
TOP BACK OF CURB=307.76'
30" RCP
INV IN(A)=301.72'
INV IN(B)=302.58'
15" RCP
INV OUT=301.57'
30" RCP
SANITARY SEWER MANHOLE
RIM ELEV=307.67'
10" DIP
INV IN(A)=301.05
INV IN(B)=297.72
INV IN(C)=297.77
INV OUT(D)=295.07'
CATCH BASIN
TOP BACK OF CURB=311.01'
18" RCP
INV IN=303.92'
INV OUT=303.20'
30" RCP
YARD INLET
RIM=309.52'
18" RCP
INV IN=305.92'
INV OUT=305.72'
TRANSFORMER
HOTBOX
FIBER OPTIC VAULT
TRANSFORMER ON CONC PAD
CATCH BASIN
TOP BACK OF CURB=307.65'
INV IN=301.41'
INV OUT=301.34'
30" RCP
20' 10' 0' 20'
1" = 20'


FORESTVILLE RD
N SMITHFIELD RD
BOZEMAN DR
US HWY 64 / KNIGHTDALE BLVD
SITE
VILLAGE PARK DR
PARKSTONE TOWNE BLVD
PARKSIDE COMMONS DR
LAURENS WAY
MCKNIGHT DR
N SMITHFIELD RD

VICINITY MAP
NOT TO SCALE

REFERENCES:

DB 17729, PG 1385
DB 10999, 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, PLS, 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 AS 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, NCAC, 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: 12/02/2021-05/06/2025
(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.

SURVEYOR NC L-3920

SEAL
L-3920
THOMAS E. TEABO
5/6/25

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
NCBELS: P-1132

BOHLER
4130 PARKLAKE AVENUE, SUITE 200 RALEIGH, NORTH CAROLINA 27612 919.578.9000
www.bohlerengineering.com
■ UPSTATE NEW YORK ■ BOSTON, MA ■ NEW YORK METRO ■ WARREN, NJ ■ PHILADELPHIA/SOUTHERN NJ ■ LEHIGH VALLEY, PA ■ SOUTHEASTERN PA ■ BALTIMORE, MD ■ SOUTHERN MARYLAND ■ NORTHERN VIRGINIA ■ WASHINGTON, DC ■ CENTRAL VIRGINIA ■ CHARLOTTE, NC ■ RALEIGH, NC

FILE NO.	DATE	FIELD DATE	CREW CHIEF	DRAWN	REVIEWED	APPROVED	SCALE	DWG. NO.
NS211122	05/06/2025	04/16/2025	AS	DET	TET	TET	1" = 20'	1 OF 1

BOHLER ENGINEERING- ALL RIGHTS RESERVED.
THE COPYING OR REUSE OF THIS DOCUMENT, OR PORTIONS THEREOF, FOR OTHER THAN THE ORIGINAL PROJECT OR THE PURPOSE ORIGINALLY 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

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

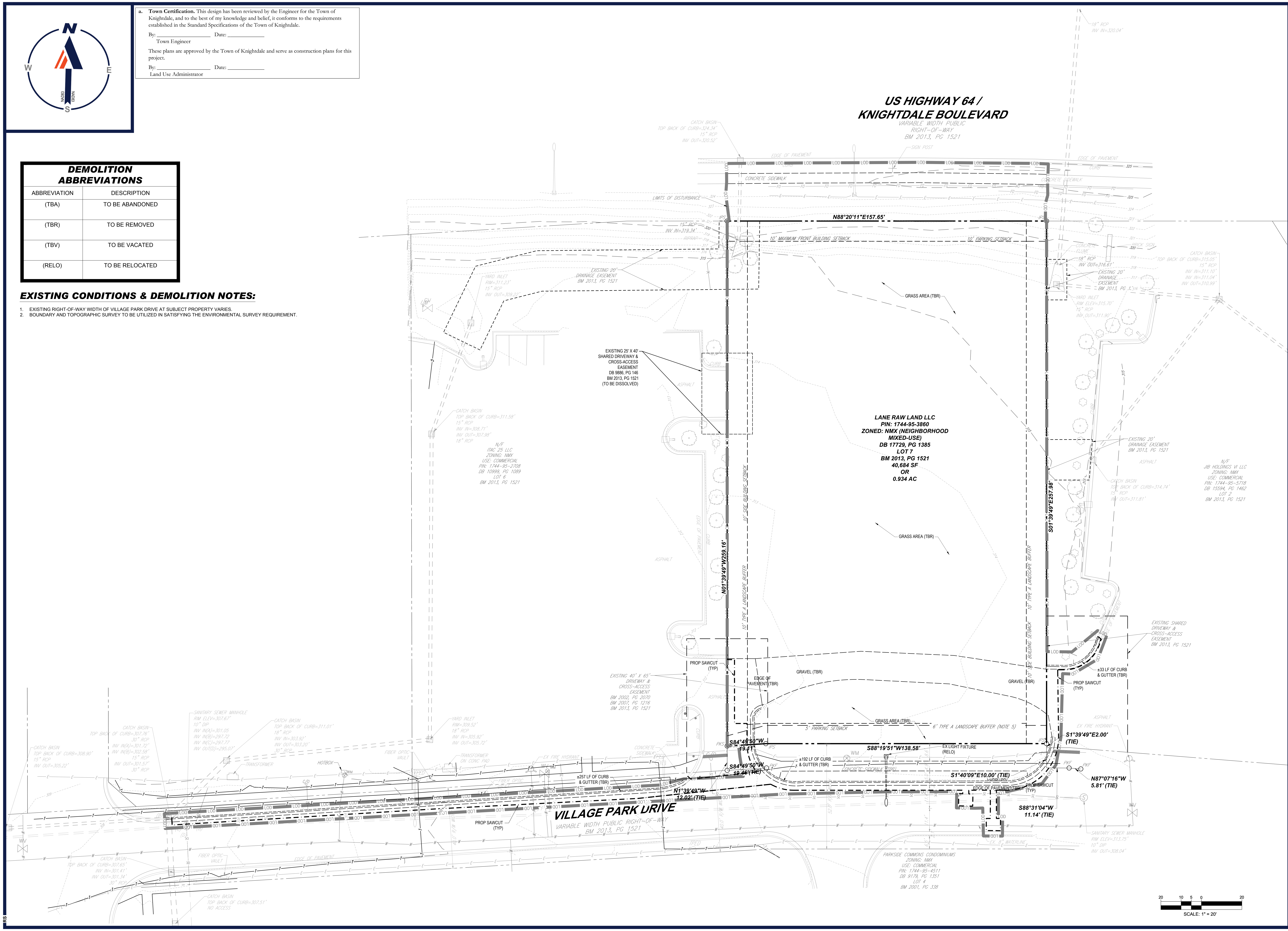
By: ____________________ Date: ______________
Land Use Administrator

DEMOLITION ABBREVIATIONS

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

EXISTING CONDITIONS & DEMOLITION NOTES:

1. EXISTING RIGHT-OF-WAY WIDTH OF VILLAGE PARK DRIVE AT SUBJECT PROPERTY VARIES.
2. BOUNDARY AND TOPOGRAPHIC SURVEY TO BE UTILIZED IN SATISFYING THE ENVIRONMENTAL SURVEY REQUIREMENT.


N
W
E
S
US HIGHWAY 64 / KNIGHTDALE BOULEVARD
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY
BM 2013, PG 1521
CATCH BASIN
TOP BACK OF CURB=324.34'
15" RCP
INV OUT=320.52'
SIGN POST
EDGE OF PAVEMENT
CURB
CONCRETE SIDEWALK
LIMITS OF DISTURBANCE
LOD
15" RCP
INV IN=319.34'
RIPRAP
IPS
N88°20'11"E157.65'
10' MAXIMUM FRONT BUILDING SETBACK
10' PARKING SETBACK
18" RCP
INV IN=320.04'
CONCRETE FLUME
18" RCP
INV OUT=316.61'
BRICK SIGN
EXISTING 20' DRAINAGE EASEMENT
BM 2013, PG 1521
YARD INLET
RIM ELEV=315.70'
15" RCP
INV OUT=311.90'
CATCH BASIN
TOP BACK OF CURB=315.05'
15" RCP
INV IN=311.10'
INV IN=311.04'
INV OUT=310.99'
GRASS AREA (TBR)
YARD INLET
RIM=311.23'
15" RCP
INV OUT=309.22'
EXISTING 25' X 40' SHARED DRIVEWAY & CROSS-ACCESS EASEMENT
DB 9886, PG 146
BM 2013, PG 1521
(TO BE DISSOLVED)
CURB
ASPHALT
CATCH BASIN
TOP BACK OF CURB=311.58'
15" RCP
INV IN=308.71'
INV OUT=307.98'
18" RCP
N/F
ITAC 25 LLC
ZONING: NMX
USE: COMMERCIAL
PIN: 1744-95-2708
DB 10999, PG 1089
LOT 6
BM 2013, PG 1521
LANE RAW LAND LLC
PIN: 1744-95-3860
ZONED: NMX (NEIGHBORHOOD MIXED-USE)
DB 17729, PG 1385
LOT 7
BM 2013, PG 1521
40,684 SF
OR
0.934 AC
10' SIDE BUILDING SETBACK
10' TYPE A LANDSCAPE BUFFER
N01°39'49"W259.16'
S01°39'49"E257.98'
EXISTING 20' DRAINAGE EASEMENT
BM 2013, PG 1521
CATCH BASIN
TOP BACK OF CURB=314.74'
15" RCP
INV OUT=311.81'
N/F
JIB HOLDINGS VI LLC
ZONING: NMX
USE: COMMERCIAL
PIN: 1744-95-5718
DB 15594, PG 1462
LOT 2
BM 2013, PG 1521
EXISTING SHARED DRIVEWAY & CROSS-ACCESS EASEMENT
BM 2013, PG 1521
±33 LF OF CURB & GUTTER (TBR)
PROP SAWCUT (TYP)
GRAVEL (TBR)
EDGE OF PAVEMENT (TBR)
EXISTING 40' X 65' DRIVEWAY & CROSS-ACCESS EASEMENT
BM 2002, PG 2070
BM 2007, PG 1216
BM 2013, PG 1521
5' PARKING SETBACK
6' TYPE A LANDSCAPE BUFFER (NOTE 5)
PKS
S84°49'50"W 19.11'
S84°49'50"W 19.46' (TIE)
S88°19'51"W138.58'
EX LIGHT FIXTURE (RELO)
±192 LF OF CURB & GUTTER (TBR)
CONCRETE SIDEWALK (TBR)
WM
PKF
S1°39'49"E2.00' (TIE)
S1°40'09"E10.00' (TIE)
N87°07'16"W 5.81' (TIE)
S88°31'04"W 11.14' (TIE)
EX FIRE HYDRANT
N1°39'49"W 12.02' (TIE)
±257 LF OF CURB & GUTTER (TBR)
VILLAGE PARK DRIVE
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY
BM 2013, PG 1521
EX. 8" WATERLINE
SANITARY SEWER MANHOLE
RIM ELEV=313.75'
10" DIP
INV OUT=308.04'
PARKSIDE COMMONS CONDOMINIUMS
ZONING: NMX
USE: COMMERCIAL
PIN: 1744-95-4511
DB 9179, PG 1351
LOT 4
BM 2001, PG 338
SANITARY SEWER MANHOLE
RIM ELEV=307.67'
10" DIP
INV IN(A)=301.05
INV IN(B)=297.72
INV IN(C)=297.77
INV OUT(D)=295.07'
CATCH BASIN
TOP BACK OF CURB=307.76'
30" RCP
INV IN(A)=301.72'
INV IN(B)=302.58'
15" RCP
INV OUT=301.57'
30" RCP
CATCH BASIN
TOP BACK OF CURB=308.90'
15" RCP
INV OUT=305.22'
CATCH BASIN
TOP BACK OF CURB=311.01'
18" RCP
INV IN=303.92'
INV OUT=303.20'
30" RCP
YARD INLET
RIM=309.52'
18" RCP
INV IN=305.92'
INV OUT=305.72'
TRANSFORMER
HOTBOX
FIBER OPTIC VAULT
TRANSFORMER ON CONC PAD
CONCRETE SIDEWALK
PROP SAWCUT (TYP)
CATCH BASIN
TOP BACK OF CURB=307.65'
INV IN=301.41'
INV OUT=301.34'
30" RCP
FIBER OPTIC VAULT
EDGE OF PAVEMENT
CATCH BASIN
TOP BACK OF CURB=307.51'
NO ACCESS
WV
20 10 5 0 20
SCALE: 1" = 20'

BOHLER// ™
BOHLER ENGINEERING NC, PLLC

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

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

811
Know what's **below.**
Call before you dig.
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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
CHECKED BY:	OAK
DATE:	04/23/2025
CAD I.D.:	

PROJECT:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL
CONTRACTORS, INC.

PROPOSED
DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

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

NC@BohlerEng.com

SEAL
055420
OLIVER A. KAIJA
08/19/2025

SHEET TITLE:

EXISTING CONDITIONS AND DEMOLITION PLAN

SHEET NUMBER:
C-201

REVISION 2 - 08/19/25

N
W
E
S
NAD83
NAD83

PAVEMENT LEGEND

☐	DELINEATES PROPOSED STANDARD DUTY ASPHALT
▨	DELINEATES PROPOSED STANDARD SIDEWALK
▨	DELINEATES PROPOSED HEAVY DUTY CONCRETE
■	DELINEATES PROPOSED HEAVY DUTY ASPHALT

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) = 78 SPACES

   MINIMUM PARKING REQUIRED: ½ MAXIMUM
   78 SPACES / 2 = 39 SPACES

   PROPOSED PARKING: 46 SPACES

   REQUIRED BICYCLE PARKING: 1 PER EVERY 10 PARKING SPACES
   46 SPACES / 10 SPACES = 5 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 6.8):
    - 10.1. FRONT: 0' MIN, 10' MAX
    - 10.2. SIDE: 10'
    - 10.3. REAR: 0'
11. PROVIDED BUILDING SETBACKS
    - 11.1. FRONT: 10'
    - 11.2. SIDE: 16.3'
    - 11.3. REAR: 178.3'
12. REQUIRED PARKING SETBACKS (SEC 6.8):
    - 12.1. FRONT: PARKING PROHIBITED
    - 12.2. SIDE: 0'
    - 12.3. REAR: 5'
13. PROVIDED PARKING SETBACKS:
    - 13.1. FRONT: N/A
    - 13.2. SIDE: 11'
    - 13.3. REAR: 11'
14. GATHERING SPACE (SEC 6.8):
    - 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

SITE PLAN NOTES:

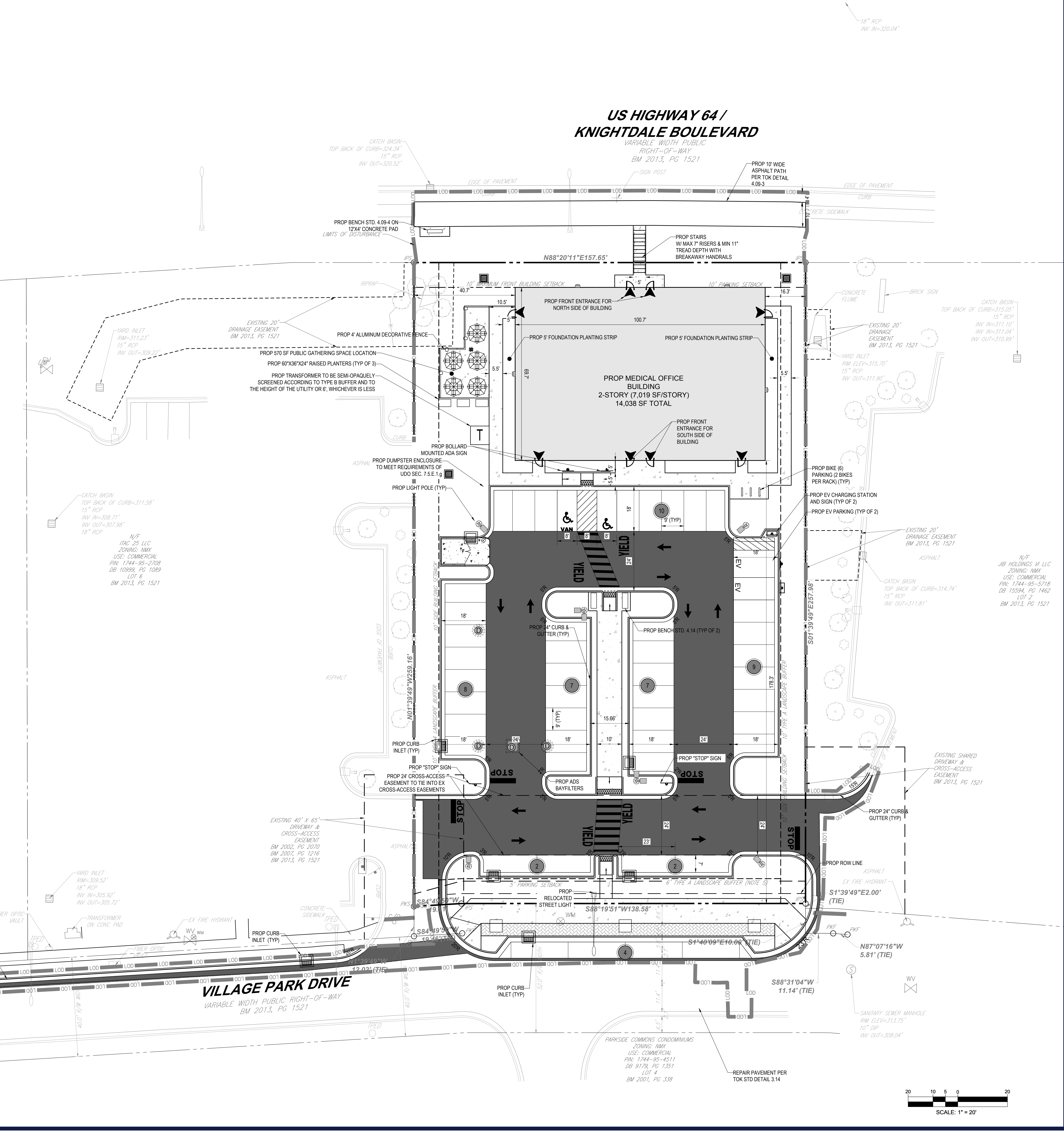
1. ALL PAVEMENT MARKINGS, INCLUDING TRAFFIC CONTROL, STOP BARS, FIRE LANES, CROSSWALKS, ETC. SHALL BE MADE WITH REFLECTORIZED THERMOPLASTIC STRIPING WITH A MINIMUM THICKNESS IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS & STRUCTURES
2. ALL PROPOSED SIGNAGE IS REVIEWED AND APPROVED THROUGH A SEPARATE SIGN PERMIT REVIEW PROCESS. ALL SIGNAGE MUST COMPLY WITH CHAPTER 8 OF THE UDO
3. TYPE A LANDSCAPE BUFFERS ARE FOR VEHICULAR SCREENING FROM STREET RIGHT-OF-WAYS AND ADJACENT PROPERTIES. THIS ADMINISTRATIVE FLEXIBILITY WAS GRANTED BY THE TOWN VIA EMAIL ON 4/17. 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
4. VILLAGE PARK DRIVE WILL BE CONSTRUCTED TO THE URBAN MAIN STREET ULTIMATE CROSS-SECTION. THE FINAL DESIGN OF VILLAGE PARK DRIVE ADJACENT TO THE SITE WILL BE DETERMINED PRIOR TO CONSTRUCTION DRAWING APPROVAL
5. ADMINISTRATIVE APPROVAL IS REQUESTED IN ACCORDANCE WITH UDO SECTION 7.4.B.2 TO REDUCE THE WIDTH OF THE 10' TYPE A LANDSCAPE BUFFER TO 6'

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
CATCH BASIN
TOP BACK OF CURB=324.34'
15" RCP
INV OUT=320.52'
SIGN POST
EDGE OF PAVEMENT
CURB
LOD
PROP 10' WIDE
ASPHALT PATH
PER TOK DETAIL
4.09-3
CONCRETE SIDEWALK
PROP BENCH STD. 4.09-4 ON
12'X4' CONCRETE PAD
LIMITS OF DISTURBANCE
PROP STAIRS
W/ MAX 7" RISERS & MIN 11"
TREAD DEPTH WITH
BREAKAWAY HANDRAILS
IPS
N88°20'11"E157.65'
RIPRAP
10' MAXIMUM FRONT BUILDING SETBACK
10' PARKING SETBACK
40.7'
16.3'
10.5'
5'
PROP FRONT ENTRANCE FOR
NORTH SIDE OF BUILDING
100.7'
CONCRETE
FLUME
BRICK SIGN
EXISTING 20'
DRAINAGE EASEMENT
BM 2013, PG 1521
YARD INLET
RIM ELEV=315.70'
15" RCP
INV OUT=311.90'
CATCH BASIN
TOP BACK OF CURB=315.05'
15" RCP
INV IN=311.10'
INV IN=311.04'
INV OUT=310.99'
PROP 4' ALUMINUM DECORATIVE FENCE
PROP 570 SF PUBLIC GATHERING SPACE LOCATION
PROP 60"X36"X24" RAISED PLANTERS (TYP OF 3)
PROP TRANSFORMER TO BE SEMI-OPAQUELY
SCREENED ACCORDING TO TYPE B BUFFER AND TO
THE HEIGHT OF THE UTILITY OR 6', WHICHEVER IS LESS
PROP 5' FOUNDATION PLANTING STRIP
PROP 5' FOUNDATION PLANTING STRIP
5.5'
69.7'
PROP MEDICAL OFFICE
BUILDING
2-STORY (7,019 SF/STORY)
14,038 SF TOTAL
YARD INLET
RIM=311.23'
15" RCP
INV OUT=309.22'
T
CURB
PROP FRONT
ENTRANCE FOR
SOUTH SIDE OF
BUILDING
PROP BOLLARD
MOUNTED ADA SIGN
PROP DUMPSTER ENCLOSURE
TO MEET REQUIREMENTS OF
UDO SEC. 7.5.E.1.g
PROP LIGHT POLE (TYP)
PROP BIKE (6)
PARKING (2 BIKES
PER RACK) (TYP)
PROP EV CHARGING STATION
AND SIGN (TYP OF 2)
PROP EV PARKING (TYP OF 2)
ASPHALT
CATCH BASIN
TOP BACK OF CURB=311.58'
15" RCP
INV IN=308.71'
INV OUT=307.98'
18" RCP
N/F
ITAC 25 LLC
ZONING: NMX
USE: COMMERCIAL
PIN: 1744-95-2708
DB 10999, PG 1089
LOT 6
BM 2013, PG 1521
10
9' (TYP)
18'
VAN
8'
8'
8'
YIELD
YIELD
24'
EV
EV
5'R
CATCH BASIN
TOP BACK OF CURB=314.74'
15" RCP
INV OUT=311.81'
N/F
JIB HOLDINGS VI LLC
ZONING: NMX
USE: COMMERCIAL
PIN: 1744-95-5718
DB 15594, PG 1462
LOT 2
BM 2013, PG 1521
S01°39'49"E257.98'
N01°39'49"W259.16'
10' SIDE BUILDING SETBACK
10' TYPE A LANDSCAPE BUFFER
EDGE OF PAVEMENT
PROP 24" CURB &
GUTTER (TYP)
PROP BENCH STD. 4.14 (TYP OF 2)
8
7
7
9
9' (TYP)
15.66'
10'
178.3'
PROP CURB
INLET (TYP)
D
24'
PROP "STOP" SIGN
PROP 24' CROSS-ACCESS
EASEMENT TO TIE INTO EX
CROSS-ACCESS EASEMENTS
STOP
PROP ADS
BAYFILTERS
PROP "STOP" SIGN
EXISTING SHARED
DRIVEWAY &
CROSS-ACCESS
EASEMENT
BM 2013, PG 1521
15'R
PROP 24" CURB &
GUTTER (TYP)
EXISTING 40' X 65'
DRIVEWAY &
CROSS-ACCESS
EASEMENT
BM 2002, PG 2070
BM 2007, PG 1216
BM 2013, PG 1521
23'
2
2
7'
3'R
10'R
PROP ROW LINE
EX FIRE HYDRANT
5' PARKING SETBACK
6' TYPE A LANDSCAPE BUFFER (NOTE 5)
PROP
RELOCATED
STREET LIGHT
S1°39'49"E2.00'
(TIE)
PKS
S84°49'50"W
19.46' (TIE)
S88°19'51"W138.58'
S1°40'09"E10.00' (TIE)
N87°07'16"W
5.81' (TIE)
PKF
4
20'R
23'R
N1°39'49"W
12.02' (TIE)
S88°31'04"W
11.14' (TIE)
CATCH BASIN
TOP BACK OF CURB=311.01'
18" RCP
INV IN=303.92'
INV OUT=303.20'
30" RCP
YARD INLET
RIM=309.52'
18" RCP
INV IN=305.92'
INV OUT=305.72'
FIBER OPTIC
VAULT
TRANSFORMER
ON CONC PAD
HOTBOX
WV
WM
TPED
CONCRETE
SIDEWALK
PROP ±254 LF CURB &
GUTTER PER TOWN OF
KNIGHTDALE STD DETAIL 4.01
PROP CURB
INLET (TYP)
VILLAGE PARK DRIVE
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY
BM 2013, PG 1521
40.0' R/W WIDTH
52.0' R/W WIDTH
PROP CURB
INLET (TYP)
SANITARY SEWER MANHOLE
RIM ELEV=313.75'
10" DIP
INV OUT=308.04'
PARKSIDE COMMONS CONDOMINIUMS
ZONING: NMX
USE: COMMERCIAL
PIN: 1744-95-4511
DB 9179, PG 1351
LOT 4
BM 2001, PG 338
REPAIR PAVEMENT PER
TOK STD DETAIL 3.14
20
10
5
0
20
SCALE: 1" = 20'
CATCH BASIN
TOP BACK OF CURB=308.90'
15" RCP
INV OUT=305.22'
CATCH BASIN
TOP BACK OF CURB=307.76'
30" RCP
INV IN(A)=301.72'
INV IN(B)=302.58'
15" RCP
INV OUT=301.57'
30" RCP
SANITARY SEWER MANHOLE
RIM ELEV=307.67'
10" DIP
INV IN(A)=301.05
INV IN(B)=297.72
INV IN(C)=297.77
INV OUT(D)=295.07'
TRANSFORMER
CATCH BASIN
TOP BACK OF CURB=307.65'
INV IN=301.41'
INV OUT=301.34'
30" RCP
FIBER OPTIC
VAULT
EDGE OF PAVEMENT
CATCH BASIN
TOP BACK OF CURB=307.51'
NO ACCESS

BOHLER
BOHLER ENGINEERING NC, PLLC

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

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

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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 I.D.:	

PROJECT:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL
CONTRACTORS, INC.

PROPOSED
DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

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

SEAL
055420
OLIVER A. KAIJA
08/19/2025

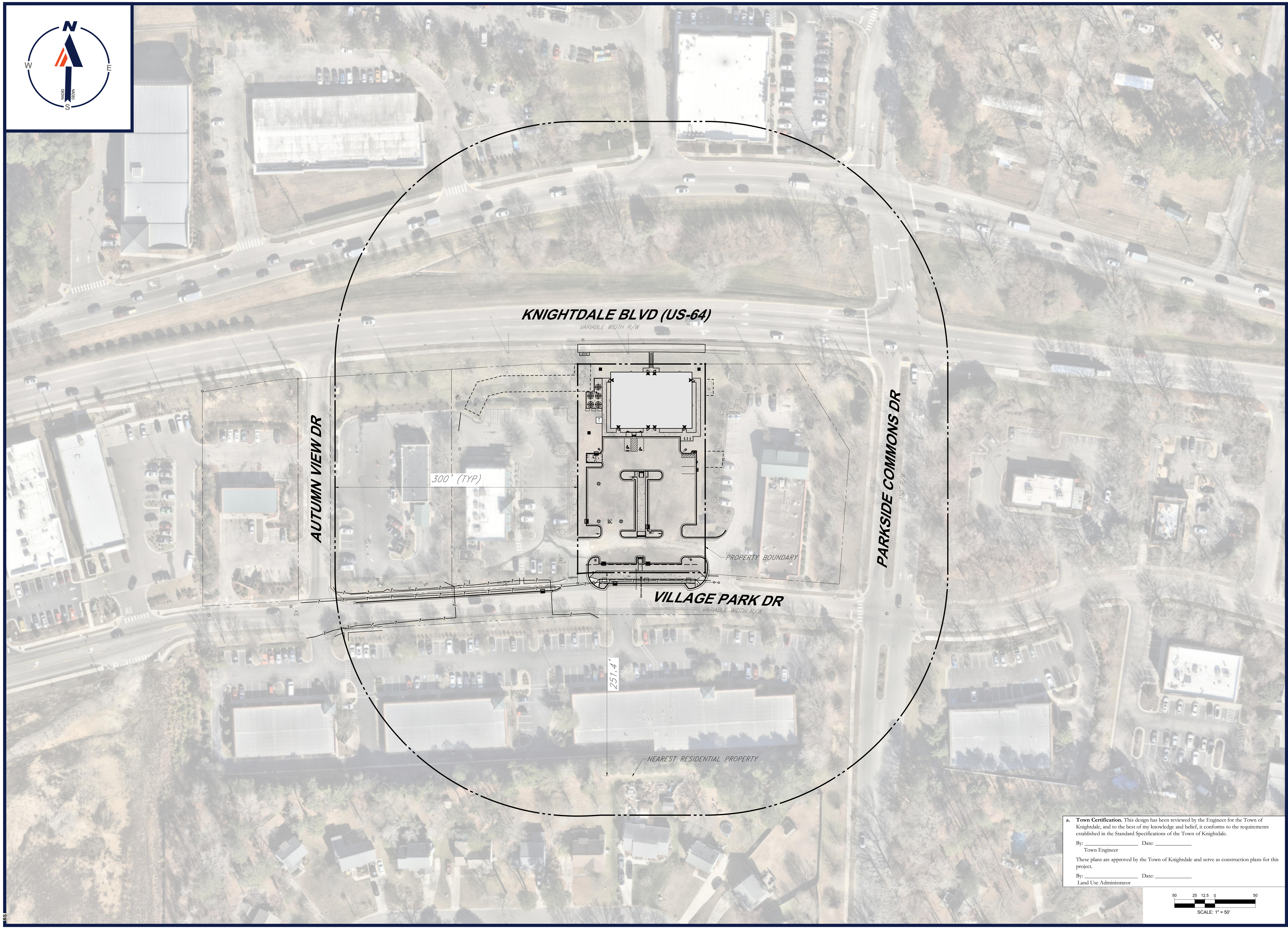
SHEET TITLE:

SITE PLAN

SHEET NUMBER:
C-301

REVISION 2 - 08/19/25

Aug 19, 2025
\\BOHLERENG.NET\SHARES\NC-PROJECTS\2023\NCB230070.00\LAND DEVELOPMENT\CAD\DRAWINGS\PLAN SETS\NCB230070-SITE-0----->LAYOUT: C-301 SITE
RS


N
W
E
S
NAD83
NAD83
KNIGHTDALE BLVD (US-64)
VARIABLE WIDTH R/W
AUTUMN VIEW DR
300' (TYP)
PARKSIDE COMMONS DR
150' R/W
PROPERTY BOUNDARY
VILLAGE PARK DR
VARIABLE WIDTH R/W
251.4'
NEAREST RESIDENTIAL PROPERTY
50
25
12.5
0
50
SCALE: 1" = 50'

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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BOHLER ENGINEERING NC, PLLC

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

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

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

PROJECT:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL
CONTRACTORS, INC.

PROPOSED
DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

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

SEAL
055420
OLIVER A. KAIJA
08/19/2025

SHEET TITLE:

VICINITY MAP

SHEET NUMBER:

C-302

REVISION 2 - 08/19/25

Aug 19, 2025
\\BOHLERENG.NET\SHARES\NC-PROJECTS\2023\NCB230070.00\LAND DEVELOPMENT\CAD\DRAWINGS\PLAN SETS\NCB230070-SITE-0----->LAYOUT: C-302 VMAP
RS

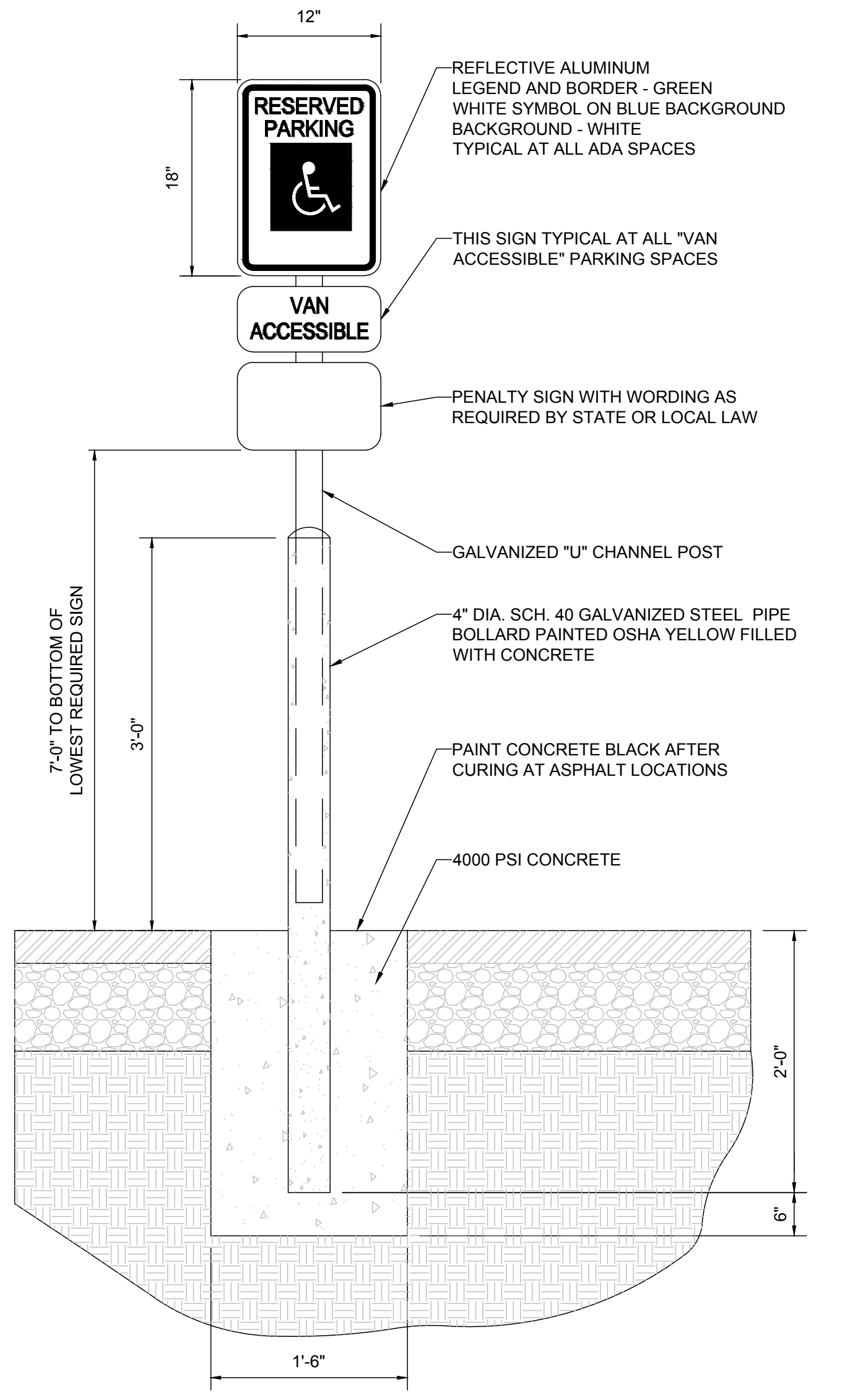
N
W
E
S
NAD83
NAD83

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

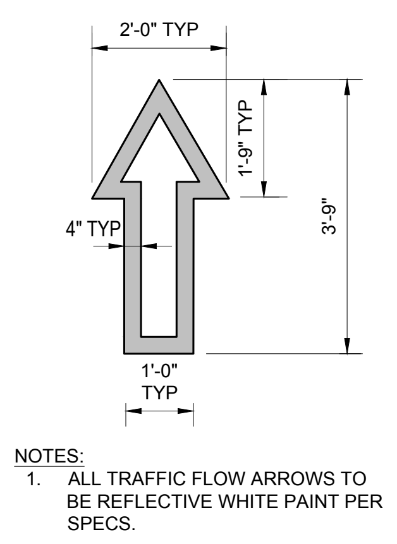

12"
18"
RESERVED PARKING
VAN ACCESSIBLE
REFLECTIVE ALUMINUM LEGEND AND BORDER - GREEN WHITE SYMBOL ON BLUE BACKGROUND BACKGROUND - WHITE TYPICAL AT ALL ADA SPACES
THIS SIGN TYPICAL AT ALL "VAN ACCESSIBLE" PARKING SPACES
PENALTY SIGN WITH WORDING AS REQUIRED BY STATE OR LOCAL LAW
GALVANIZED "U" CHANNEL POST
4" DIA. SCH. 40 GALVANIZED STEEL PIPE BOLLARD PAINTED OSHA YELLOW FILLED WITH CONCRETE
PAINT CONCRETE BLACK AFTER CURING AT ASPHALT LOCATIONS
4000 PSI CONCRETE
7'-0" TO BOTTOM OF LOWEST REQUIRED SIGN
3'-0"
2'-0"
6"
1'-6"

NOTE:

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

BOLLARD MOUNTED ADA PARKING SIGN DETAIL

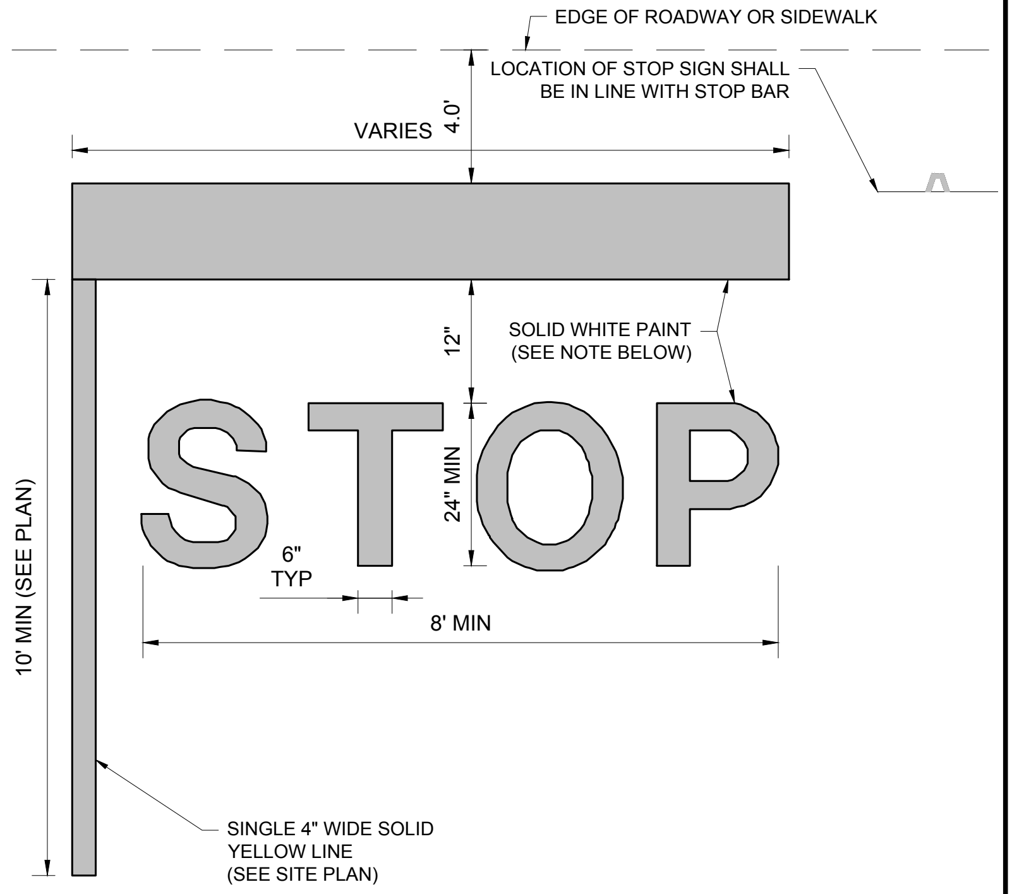
NOT TO SCALE


2'-0" TYP
1'-9" TYP
4" TYP
3'-9"
1'-0" TYP

NOTES:
1. ALL TRAFFIC FLOW ARROWS TO BE REFLECTIVE WHITE PAINT PER SPECS.

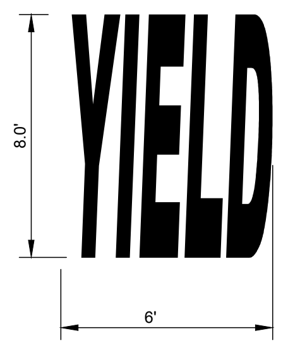
TRAFFIC FLOW ARROW

NOT TO SCALE (NE-S050302 - 10/2024)


EDGE OF ROADWAY OR SIDEWALK
LOCATION OF STOP SIGN SHALL BE IN LINE WITH STOP BAR
VARIES
4.0'
12"
SOLID WHITE PAINT (SEE NOTE BELOW)
STOP
24" MIN
6" TYP
8' MIN
10' MIN (SEE PLAN)
SINGLE 4" WIDE SOLID YELLOW LINE (SEE SITE PLAN)

STOP BAR

NOT TO SCALE (MS-S050301 - 07/2024)

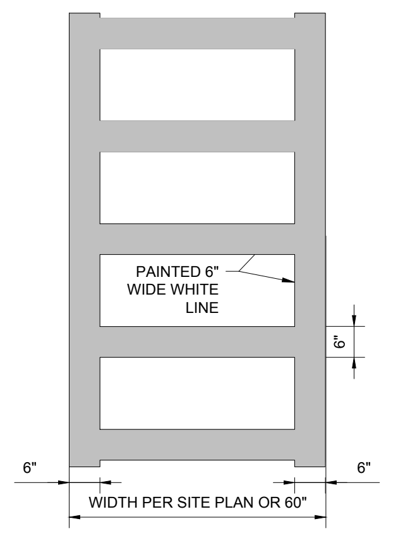


NOTE:
1. WORDS AND ARROWS FOR DRIVEWAYS SHALL BE APPLIED ACCORDING TO REQUIREMENTS AS OUTLINED IN SECTION 3B OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREET AND HIGHWAYS.
2. THESE WORDS AND ARROWS ARE TO BE PAINTED REFLECTIVE WHITE.

"YIELD" PAVEMENT MARKING

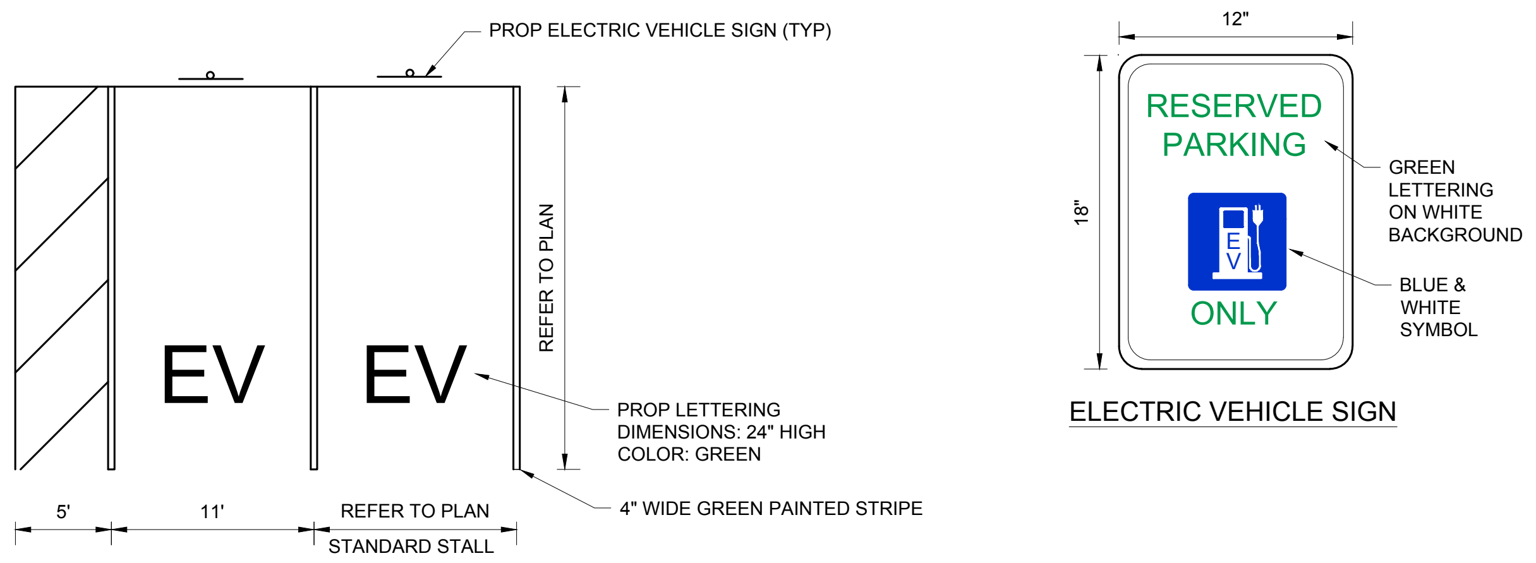
N.T.S.

DTYIELDM	12/04/01	


PAINTED 6" WIDE WHITE LINE
6"
6"
6"
WIDTH PER SITE PLAN OR 60"

CROSSWALK LADDER

NOT TO SCALE (NE-S050401 - 07/2024)

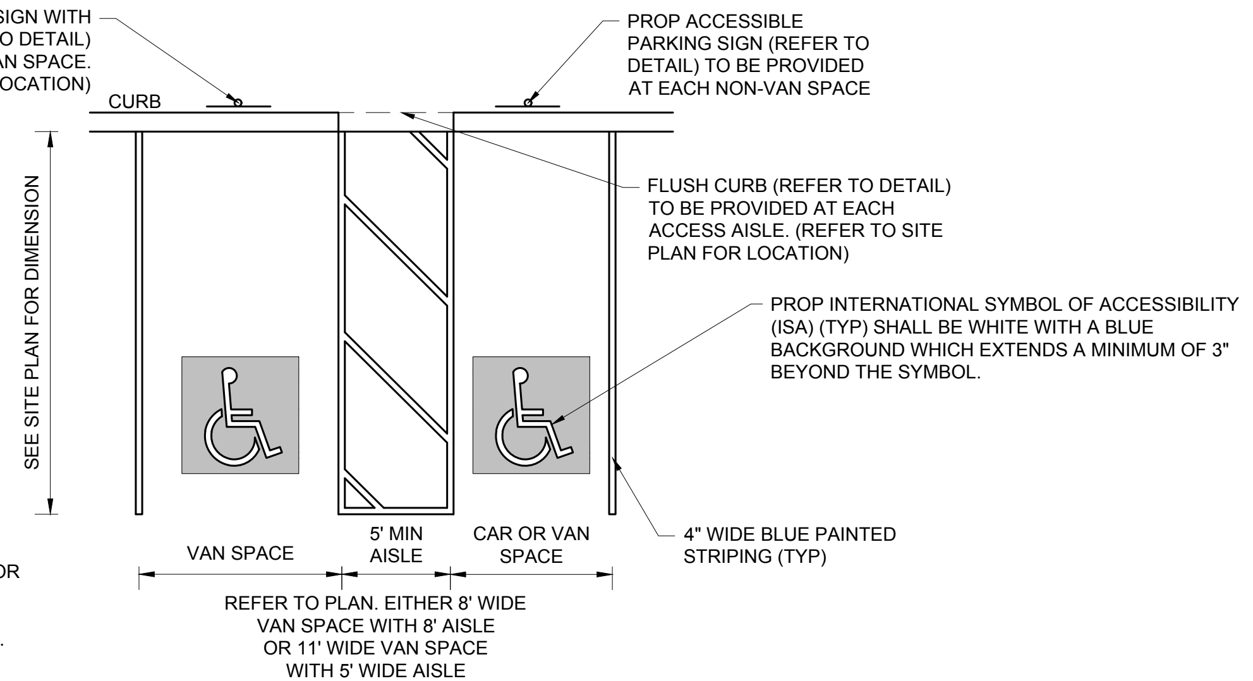

PROP ELECTRIC VEHICLE SIGN (TYP)
EV
EV
REFER TO PLAN
PROP LETTERING DIMENSIONS: 24" HIGH COLOR: GREEN
4" WIDE GREEN PAINTED STRIPE
5'
11'
REFER TO PLAN
STANDARD STALL
12"
18"
RESERVED PARKING
ONLY
GREEN LETTERING ON WHITE BACKGROUND
BLUE & WHITE SYMBOL

ELECTRIC VEHICLE SIGN

NOTES:
1. THE LAYOUT AND NUMBER OF PARKING SPACES VARIES. REFER TO PLAN FOR LOCATION AND CONFIGURATION.
2. STALL DIMENSIONS ARE MEASURED TO THE CENTERLINE OF THE PAINTED STRIPE.
3. REFER TO PLAN FOR EV EQUIPMENT PLACEMENT AND PROTECTION.
4. THE LOWEST SIGN SHALL BE MOUNTED APPROXIMATELY 60" ABOVE THE PARKING LOT OR SIDEWALK SURFACE WHEN SIGN IS PARALLEL TO SIDEWALK AND APPROXIMATELY 84" ABOVE THE PARKING LOT OR SIDEWALK WHEN THE SIGN IS PERPENDICULAR TO THE SIDEWALK OR IN AN AREA OF PEDESTRIAN CIRCULATION.

ELECTRIC VEHICLE CHARGING PARKING STRIPING AND SIGNAGE (EV LETTERS ONLY)

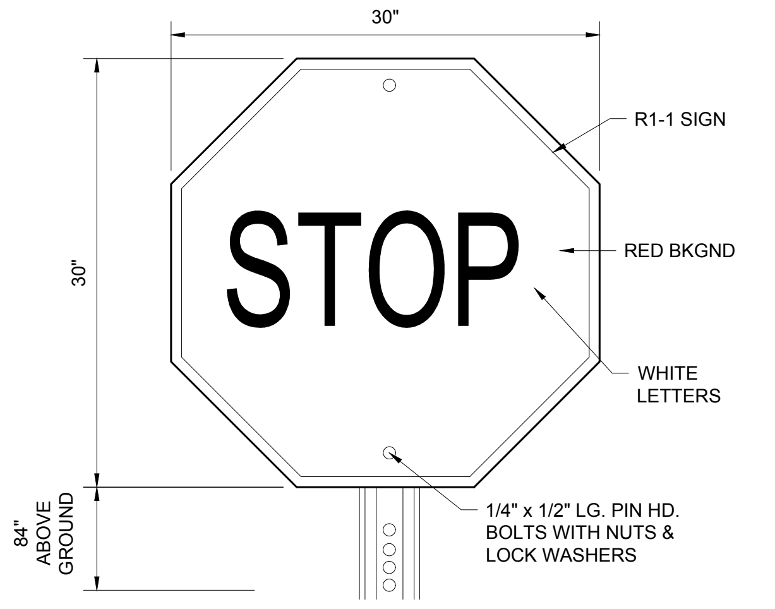
NOT TO SCALE (BE-S050203 - 04/2024)


PROP ACCESSIBLE PARKING SIGN WITH "VAN" IDENTIFICATION (REFER TO DETAIL) TO BE PROVIDED AT EACH VAN SPACE. (REFER TO SITE PLAN FOR LOCATION)
CURB
PROP ACCESSIBLE PARKING SIGN (REFER TO DETAIL) TO BE PROVIDED AT EACH NON-VAN SPACE
FLUSH CURB (REFER TO DETAIL) TO BE PROVIDED AT EACH ACCESS AISLE. (REFER TO SITE PLAN FOR LOCATION)
PROP INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA) (TYP) SHALL BE WHITE WITH A BLUE BACKGROUND WHICH EXTENDS A MINIMUM OF 3" BEYOND THE SYMBOL.
SEE SITE PLAN FOR DIMENSION
VAN SPACE
5' MIN AISLE
CAR OR VAN SPACE
4" WIDE BLUE PAINTED STRIPING (TYP)
REFER TO PLAN. EITHER 8' WIDE VAN SPACE WITH 8' AISLE OR 11' WIDE VAN SPACE WITH 5' WIDE AISLE

NOTE:
1. REFER TO "ACCESSIBILITY NOTES" PROVIDED HEREIN FOR ADDITIONAL REQUIREMENTS AND SPECIFICATIONS.
2. THE LAYOUT AND NUMBER OF PARKING SPACES VARIES. REFER TO PLAN FOR LOCATION AND CONFIGURATION.
3. STALL DIMENSIONS ARE MEASURED TO THE CENTERLINE OF THE PAINTED STRIPE.
4. ACCESS AISLES CAN NOT OVERLAP VEHICULAR WAYS.
5. AN ACCESS AISLE AT LEAST 5' WIDE AND AT LEAST AS LONG AS THE PARKING SPACE IS REQUIRED ON EITHER SIDE OF THE PARKING SPACE AND MUST BE MARKED TO DISCOURAGE PARKING IN IT. TWO SPACES CAN SHARE ONE AISLE.

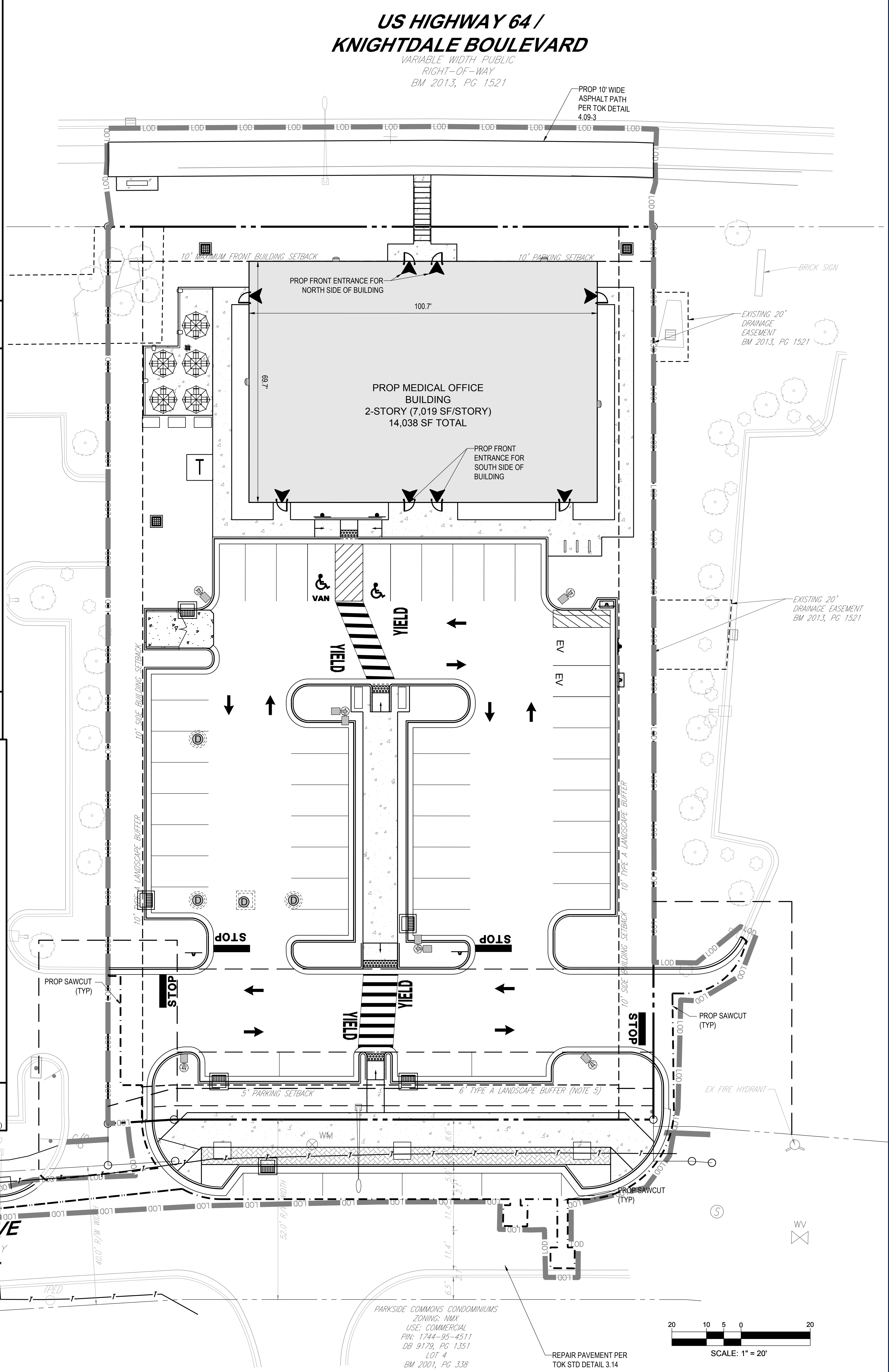
ADA PARKING STALL MARKING (2 SPACES)

NOT TO SCALE (BE-S050104 - 05/2025)


30"
R1-1 SIGN
STOP
RED BKGND
WHITE LETTERS
30"
84" ABOVE GROUND
1/4" x 1/2" LG. PIN HD. BOLTS WITH NUTS & LOCK WASHERS

STOP SIGN

NOT TO SCALE (NE-S060202 - 09/2023)


US HIGHWAY 64 / KNIGHTDALE BOULEVARD
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY BM 2013, PG 1521
PROP 10' WIDE ASPHALT PATH PER TOK DETAIL 4.09-3
LOD
10' MAXIMUM FRONT BUILDING SETBACK
10' PARKING SETBACK
PROP FRONT ENTRANCE FOR NORTH SIDE OF BUILDING
100.7'
69.7'
PROP MEDICAL OFFICE BUILDING 2-STORY (7,019 SF/STORY) 14,038 SF TOTAL
PROP FRONT ENTRANCE FOR SOUTH SIDE OF BUILDING
T
BRICK SIGN
EXISTING 20' DRAINAGE EASEMENT BM 2013, PG 1521
EXISTING 20' DRAINAGE EASEMENT BM 2013, PG 1521
VAN
YIELD
YIELD
EV
EV
D
STOP
STOP
STOP
STOP
YIELD
YIELD
10' SIDE BUILDING SETBACK
10' TYPE A LANDSCAPE BUFFER
10' TYPE A LANDSCAPE BUFFER
10' SIDE BUILDING SETBACK
PROP SAWCUT (TYP)
PROP SAWCUT (TYP)
PROP SAWCUT (TYP)
PROP SAWCUT (TYP)
5' PARKING SETBACK
6' TYPE A LANDSCAPE BUFFER (NOTE 5)
EX FIRE HYDRANT
WM
WV
TPED
C/O
VILLAGE PARK DRIVE
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY BM 2013, PG 1521
40.0' R/W WIDTH
52.0' R/W WIDTH
PARKSIDE COMMONS CONDOMINIUMS ZONING: NMX USE: COMMERCIAL PIN: 1744-95-4511 DB 9179, PG 1351 LOT 4 BM 2001, PG 338
REPAIR PAVEMENT PER TOK STD DETAIL 3.14
20 10 5 0 20
SCALE: 1" = 20'

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

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

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

PROJECT:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL CONTRACTORS, INC.

PROPOSED DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

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

SEAL 055420
OLIVER A. KAIJA
08/19/2025

SHEET TITLE:

SIGNS & PAVEMENT MARKINGS PLAN

SHEET NUMBER:

C-303

REVISION 2 - 08/19/25

Aug 19, 2025
\\BOHLERENG.NET\SHARES\NC-PROJECTS\2023\NCB230070.00\LAND DEVELOPMENT\CAD\DRAWINGS\PLAN SETS\NCB230070-SITE-0----->LAYOUT: C-303 PVMT
RS

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.

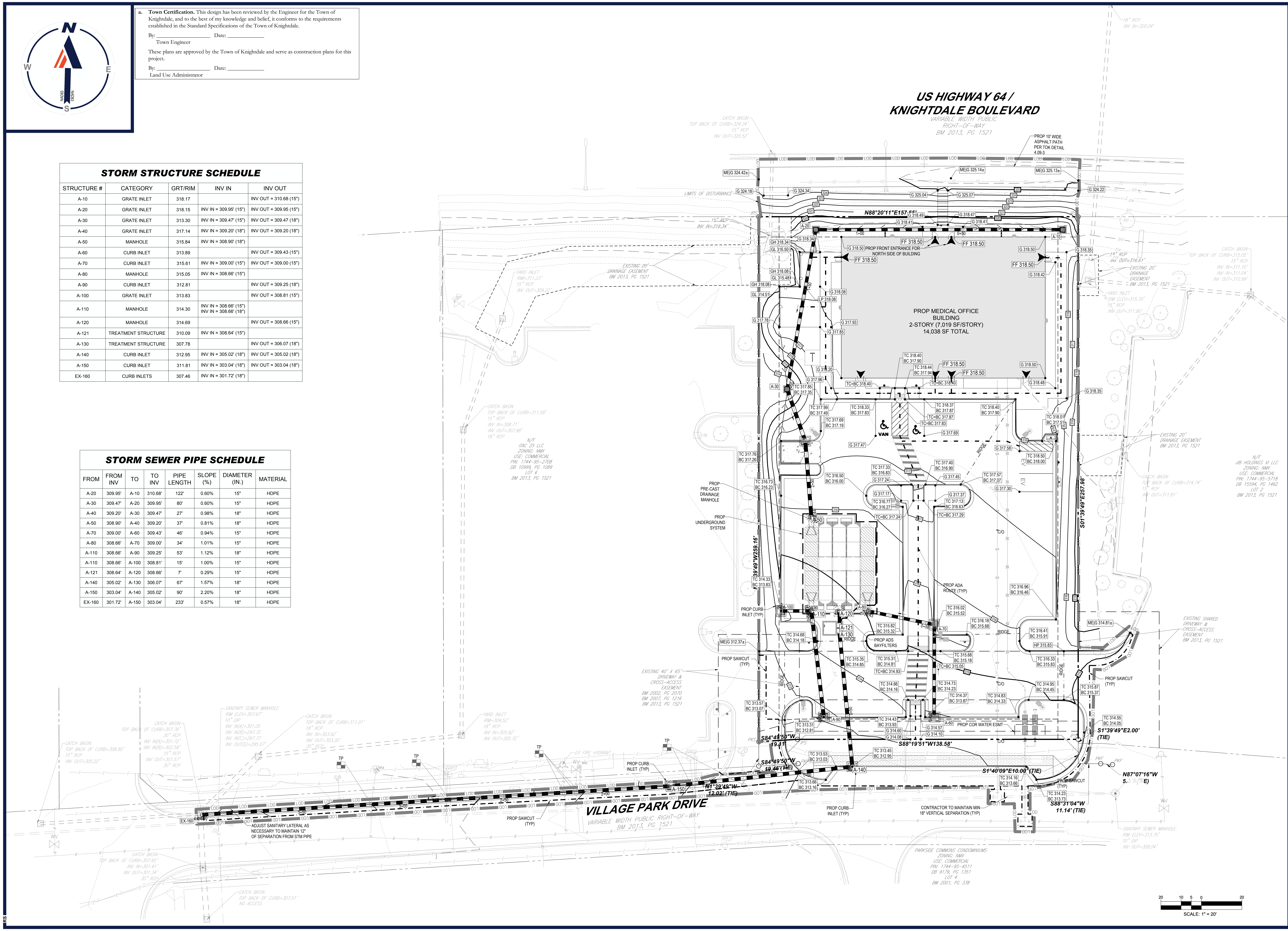
By: ____________________ Date: ______________
Land Use Administrator

STORM STRUCTURE SCHEDULE

STRUCTURE #	CATEGORY	GRT/RIM	INV IN	INV OUT
A-10	GRATE INLET	318.17		INV OUT = 310.68 (15")
A-20	GRATE INLET	318.15	INV IN = 309.95' (15")	INV OUT = 309.95 (15")
A-30	GRATE INLET	313.30	INV IN = 309.47' (15")	INV OUT = 309.47 (18")
A-40	GRATE INLET	317.14	INV IN = 309.20' (18")	INV OUT = 309.20 (18")
A-50	MANHOLE	315.84	INV IN = 308.90' (18")	
A-60	CURB INLET	313.89		INV OUT = 309.43 (15")
A-70	CURB INLET	315.61	INV IN = 309.00' (15")	INV OUT = 309.00 (15")
A-80	MANHOLE	315.05	INV IN = 308.66' (15")	
A-90	CURB INLET	312.81		INV OUT = 309.25 (18")
A-100	GRATE INLET	313.83		INV OUT = 308.81 (15")
A-110	MANHOLE	314.30	INV IN = 308.66' (15") INV IN = 308.66' (18")	
A-120	MANHOLE	314.69		INV OUT = 308.66 (15")
A-121	TREATMENT STRUCTURE	310.09	INV IN = 308.64' (15")	
A-130	TREATMENT STRUCTURE	307.78		INV OUT = 306.07 (18")
A-140	CURB INLET	312.95	INV IN = 305.02' (18")	INV OUT = 305.02 (18")
A-150	CURB INLET	311.81	INV IN = 303.04' (18")	INV OUT = 303.04 (18")
EX-160	CURB INLETS	307.46	INV IN = 301.72' (18")	

STORM SEWER PIPE SCHEDULE

FROM	FROM INV	TO	TO INV	PIPE LENGTH	SLOPE (%)	DIAMETER (IN.)	MATERIAL
A-20	309.95'	A-10	310.68'	122'	0.60%	15"	HDPE
A-30	309.47'	A-20	309.95'	80'	0.60%	15"	HDPE
A-40	309.20'	A-30	309.47'	27'	0.98%	18"	HDPE
A-50	308.90'	A-40	309.20'	37'	0.81%	18"	HDPE
A-70	309.00'	A-60	309.43'	46'	0.94%	15"	HDPE
A-80	308.66'	A-70	309.00'	34'	1.01%	15"	HDPE
A-110	308.66'	A-90	309.25'	53'	1.12%	18"	HDPE
A-110	308.66'	A-100	308.81'	15'	1.00%	15"	HDPE
A-121	308.64'	A-120	308.66'	7'	0.29%	15"	HDPE
A-140	305.02'	A-130	306.07'	67'	1.57%	18"	HDPE
A-150	303.04'	A-140	305.02'	90'	2.20%	18"	HDPE
EX-160	301.72'	A-150	303.04'	233'	0.57%	18"	HDPE


N
W
E
S
US HIGHWAY 64 / KNIGHTDALE BOULEVARD
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY
BM 2013, PG 1521
PROP 10' WIDE ASPHALT PATH PER TOK DETAIL 4.09-3
LIMITS OF DISTURBANCE
N88°20'11"E157.55'
PROP MEDICAL OFFICE BUILDING
2-STORY (7,019 SF/STORY)
14,038 SF TOTAL
FF 318.50
PROP FRONT ENTRANCE FOR NORTH SIDE OF BUILDING
VAN
EXISTING 20' DRAINAGE EASEMENT BM 2013, PG 1521
N/F ITAC 25 LLC ZONING: NMX USE: COMMERCIAL PIN: 1744-95-2708 DB 10999, PG 1089 LOT 6 BM 2013, PG 1521
N/F JIB HOLDINGS VI LLC ZONING: NMX USE: COMMERCIAL PIN: 1744-95-5718 DB 15594, PG 1462 LOT 2 BM 2013, PG 1521
PROP PRE-CAST DRAINAGE MANHOLE
PROP UNDERGROUND SYSTEM
PROP CURB INLET (TYP)
PROP ADS BAYFILTERS
PROP ADA ROUTE (TYP)
PROP SAWCUT (TYP)
PROP COR WATER ESMT
EXISTING 40' X 65' DRIVEWAY & CROSS-ACCESS EASEMENT BM 2002, PG 2070 BM 2007, PG 1216 BM 2013, PG 1521
EXISTING SHARED DRIVEWAY & CROSS-ACCESS EASEMENT BM 2013, PG 1521
S01°39'49"E257.98'
N01°39'49"W259.16'
S84°49'50"W 19.21'
S84°49'50"W 19.46' (TIE)
N1°39'49"W 12.02' (TIE)
S88°19'51"W138.58'
S1°40'09"E10.00' (TIE)
S1°39'49"E2.00' (TIE)
N87°07'16"W
S88°31'04"W 11.14' (TIE)
VILLAGE PARK DRIVE
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY
BM 2013, PG 1521
ADJUST SANITARY LATERAL AS NECESSARY TO MAINTAIN 12" OF SEPARATION FROM STM PIPE
CONTRACTOR TO MAINTAIN MIN 18" VERTICAL SEPARATION (TYP)
PARKSIDE COMMONS CONDOMINIUMS ZONING: NMX USE: COMMERCIAL PIN: 1744-95-4511 DB 9179, PG 1351 LOT 4 BM 2001, PG 338
A-10
A-20
A-30
A-40
A-50
A-60
A-70
A-80
A-90
A-100
A-110
A-120
A-121
A-130
A-140
A-150
EX-160
SCALE: 1" = 20'

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

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BOHLER ENGINEERING NC, PLLC

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

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MUNICIPAL REVIEW

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

PROJECT:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL
CONTRACTORS, INC.

PROPOSED DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

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

SEAL 055420
OLIVER A. KAIJA
08/19/2025

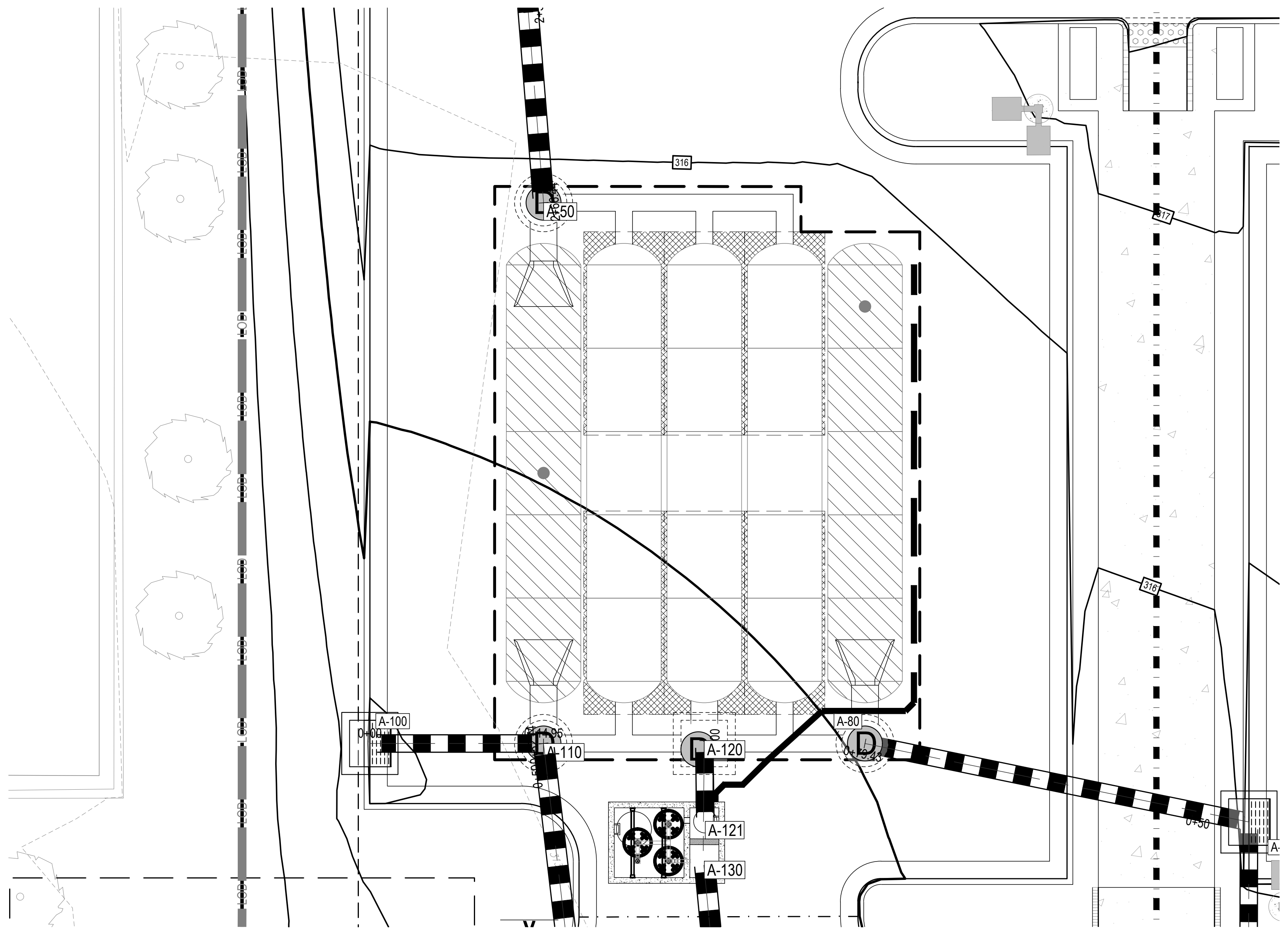
SHEET TITLE:

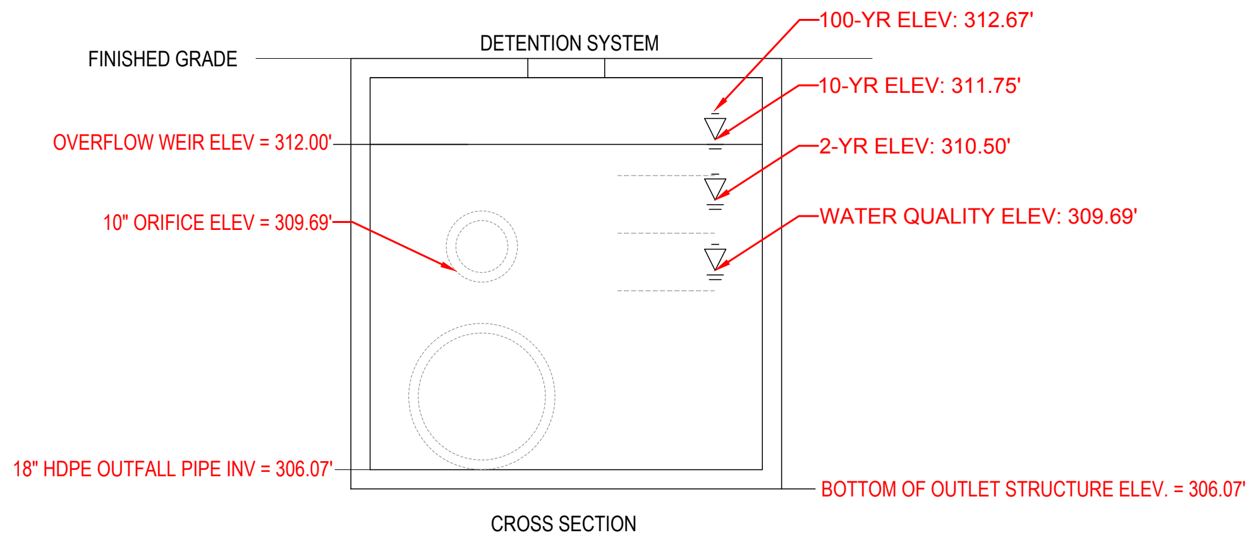
GRADING PLAN

SHEET NUMBER:
C-401

REVISION 2 - 08/19/25

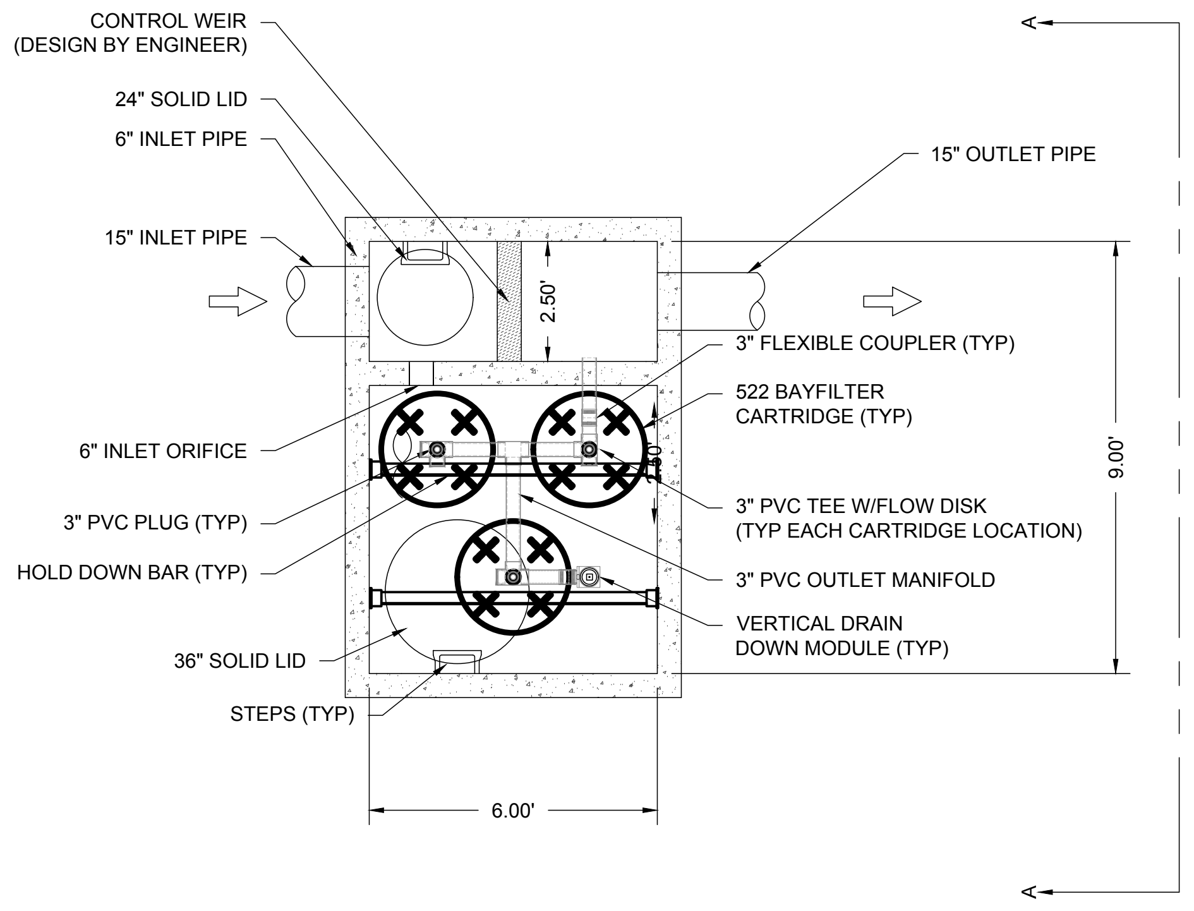
N
W
E
S
NAD83
NORTH




FINISHED GRADE
DETENTION SYSTEM
100-YR ELEV: 312.67'
10-YR ELEV: 311.75'
2-YR ELEV: 310.50'
WATER QUALITY ELEV: 309.69'
OVERFLOW WEIR ELEV = 312.00'
10" ORIFICE ELEV = 309.69'
18" HDPE OUTFALL PIPE INV = 306.07'
BOTTOM OF OUTLET STRUCTURE ELEV. = 306.07'
CROSS SECTION

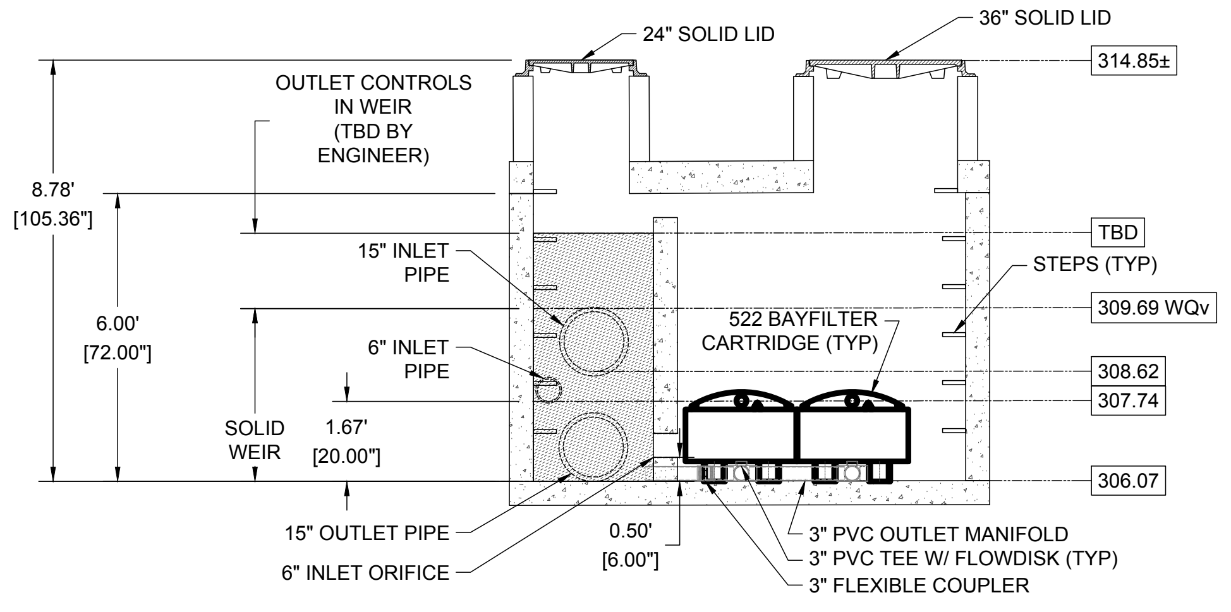
A-110 - DETENTION OUTLET

NOT TO SCALE



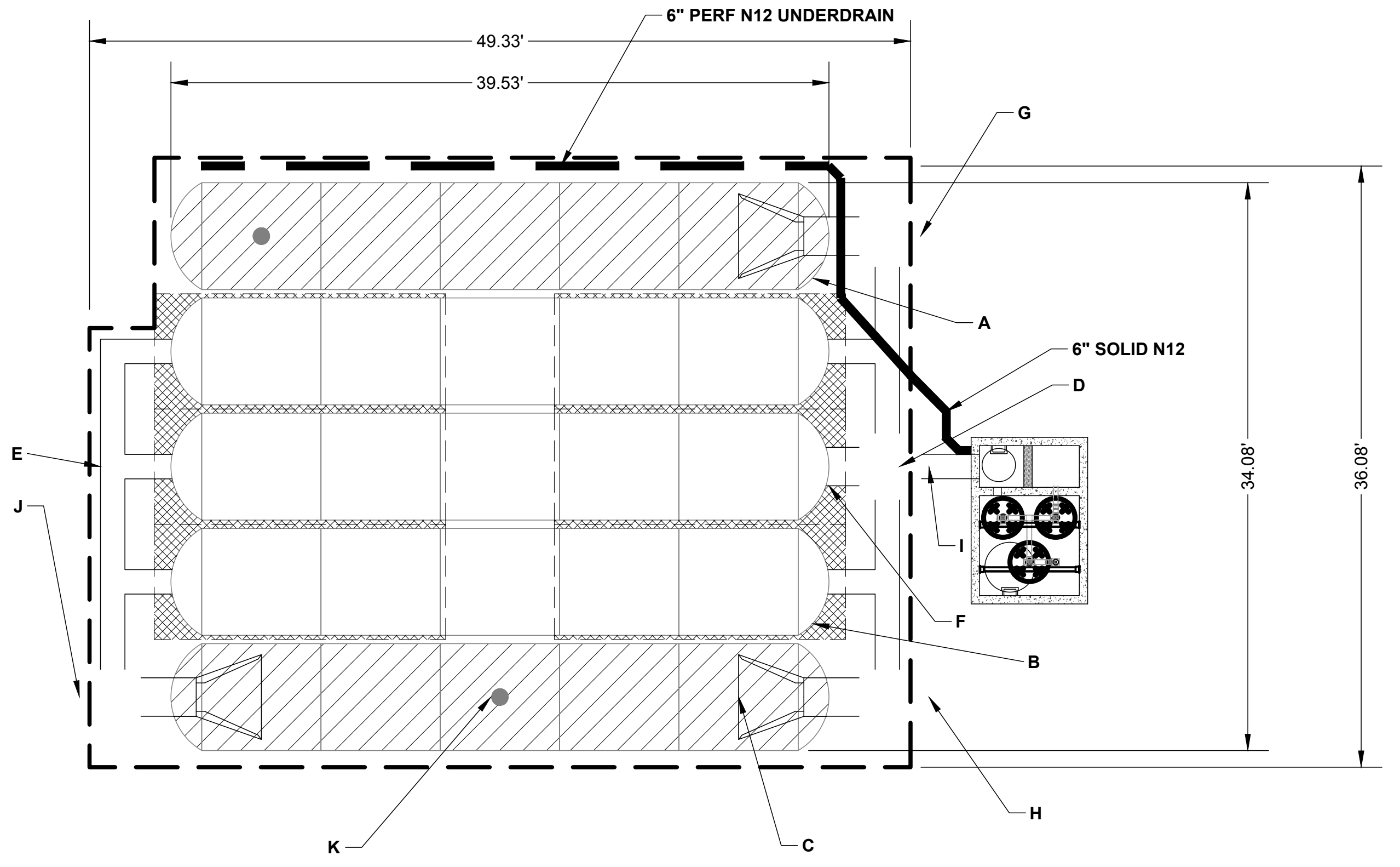
PLAN VIEW

SCALE : 1/4" = 1'



SECTION A-A

SCALE : 1/4" = 1'



PROPOSED LAYOUT	
25	STORMTECH MC-3500 CHAMBERS
10	STORMTECH MC-3500 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
40	STONE VOID
5572	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
1742	SYSTEM AREA (SF)
170.8	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS	
MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	320.24
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	314.24
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	313.74
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	313.74
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	313.74
TOP OF STONE:	313.24
TOP OF MC-3500 CHAMBER:	312.24
15" x 15" TOP MANIFOLD INVERT:	310.44
15" x 15" TOP MANIFOLD INVERT:	310.44
24" ISOLATOR ROW PLUS INVERT:	308.66
24" ISOLATOR ROW PLUS INVERT:	308.66
24" ISOLATOR ROW PLUS INVERT:	308.66
24" BOTTOM CONNECTION INVERT:	308.66
BOTTOM OF MC-3500 CHAMBER:	308.49
BOTTOM OF STONE:	307.74

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	24" BOTTOM PRE-CORED END CAP, PART#: MC3500IEPP24BC / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.06"	
PREFABRICATED END CAP	B	15" TOP PRE-CORED END CAP, PART#: MC3500IEPP15T / TYP OF ALL 15" TOP CONNECTIONS	23.39"	
FLAMP	C	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MCFLAMP (TYP 3 PLACES)		
MANIFOLD	D	15" x 15" TOP MANIFOLD, ADS N-12	23.39"	
MANIFOLD	E	15" x 15" TOP MANIFOLD, ADS N-12	23.39"	
PIPE CONNECTION	F	24" BOTTOM CONNECTION	2.06"	
CONCRETE STRUCTURE	G	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		5.2 CFS IN
CONCRETE STRUCTURE	H	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		5.2 CFS IN
CONCRETE STRUCTURE	I	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		14.0 CFS OUT
CONCRETE STRUCTURE	J	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		5.2 CFS IN
INSPECTION PORT	K	6" SEE DETAIL (TYP 2 PLACES)		

▧	ISOLATOR ROW PLUS (SEE DETAIL)
▩	PLACE MINIMUM 17.50' OF ADSPLUS125 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS
—	BED LIMITS

DETAIL A - STORMTECH MC-3500 CHAMBER SYSTEM

NOT TO SCALE

MC-3500 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-3500.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. 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.
6. 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.
7. 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/FT/%. 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.
8. 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.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
10. MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 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 COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
11. 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 GEOTEXTILE PROFESSIONAL AND INSTALLED BY A QUALIFIED CONTRACTOR.

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

1. STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
    - STONESHOOTER 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.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE; AASHTO M43 #3, 357, 4, 467, 5, 56, OR 57.
9. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
10. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
11. 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

1. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. 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".
3. 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.

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

20 10 5 0 20
SCALE: 1" = 20'

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PERMITTING SERVICES
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REVISIONS

REV	DATE	COMMENT	DRAWN BY CHECKED BY
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2	08/19/25	CONSTRUCTION DRAWINGS	RBS EM/OAK

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PROJECT:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL
CONTRACTORS, INC.

PROPOSED DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

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

SEAL 055420
OLIVER A. KAIJA
08/19/2025

SHEET TITLE:

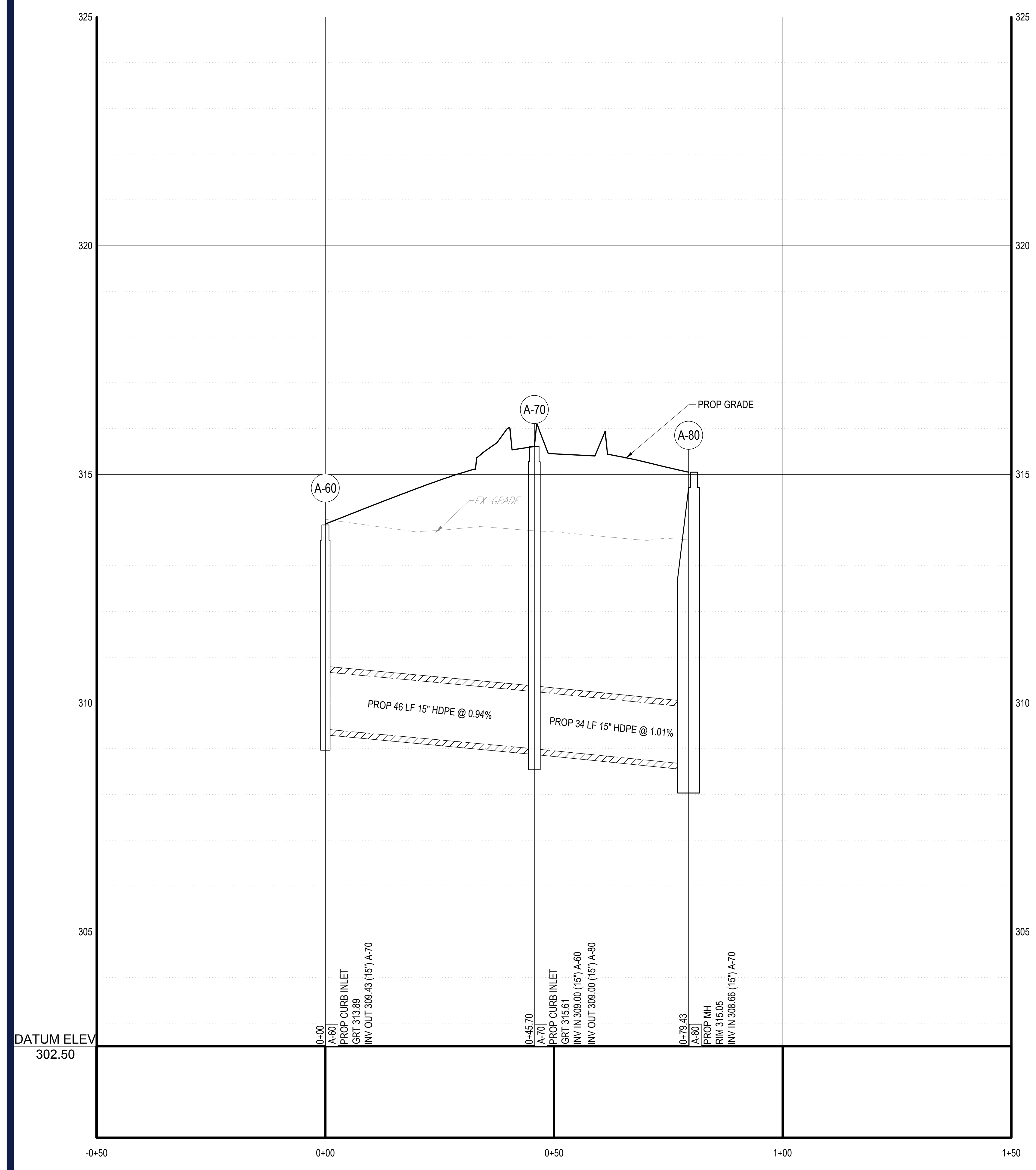
UNDERGROUND DETENTION

SHEET NUMBER:

C-402

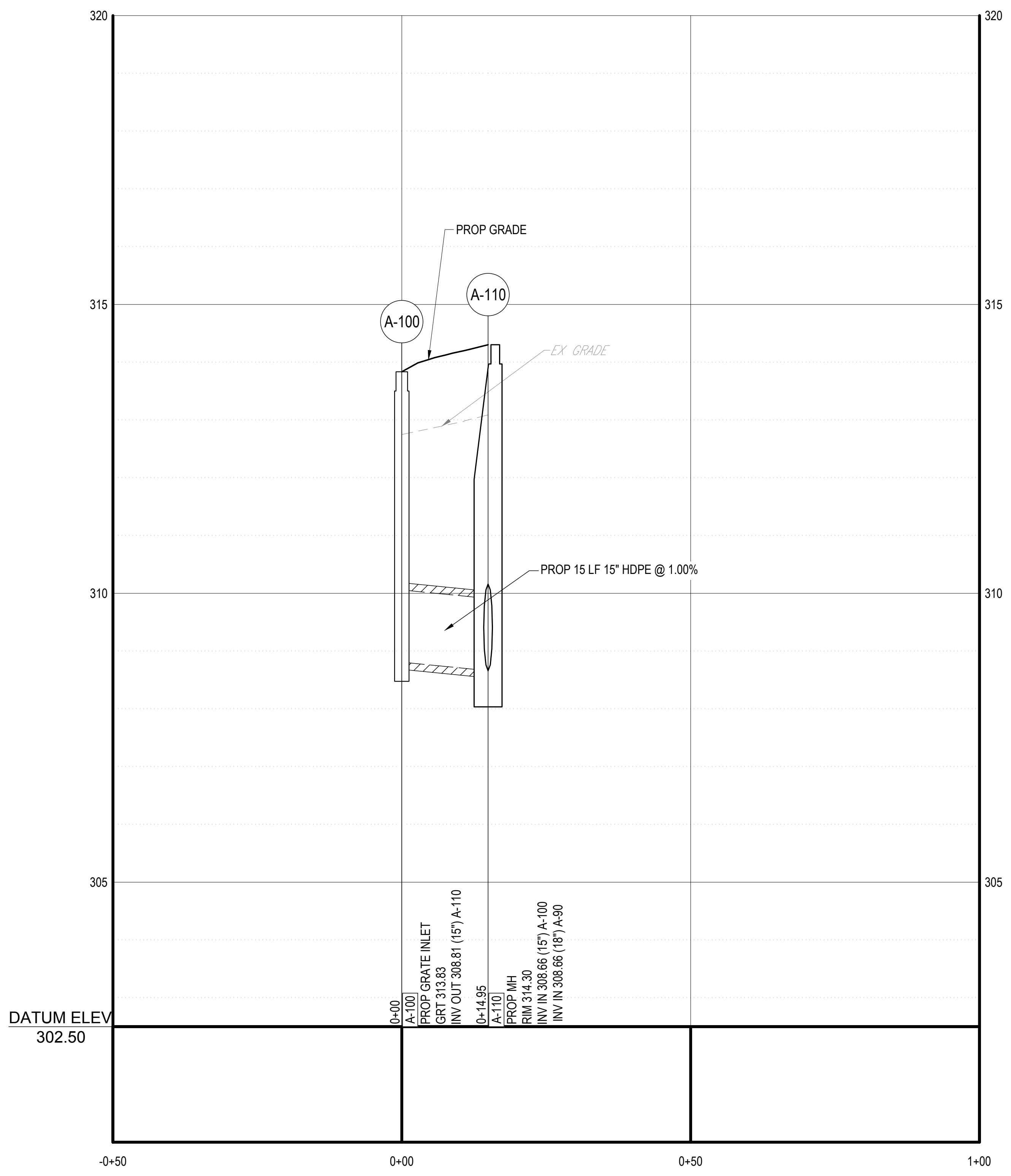
REVISION 2 - 08/19/25

Aug 19, 2025
\\BOHLERENG.NET\SHARES\NC-PROJECTS\2023\NCB230070.00\LAND DEVELOPMENT\CAD\DRAWINGS\PLAN SETS\NCB230070-GRAD-0---->LAYOUT: C-402 UNDERGROUND DETENTION
RS


325
320
315
310
305
A-60
A-70
A-80
PROP GRADE
EX. GRADE
PROP 46 LF 15" HDPE @ 0.94%
PROP 34 LF 15" HDPE @ 1.01%
0+00 A-60 PROP CURB INLET GRT 313.89 INV OUT 309.43 (15") A-70
0+45.70 A-70 PROP CURB INLET GRT 315.61 INV IN 309.00 (15") A-60 INV OUT 309.00 (15") A-80
0+79.43 A-80 PROP MH RIM 315.05 INV IN 308.66 (15") A-70
DATUM ELEV 302.50
-0+50
0+00
0+50
1+00
1+50

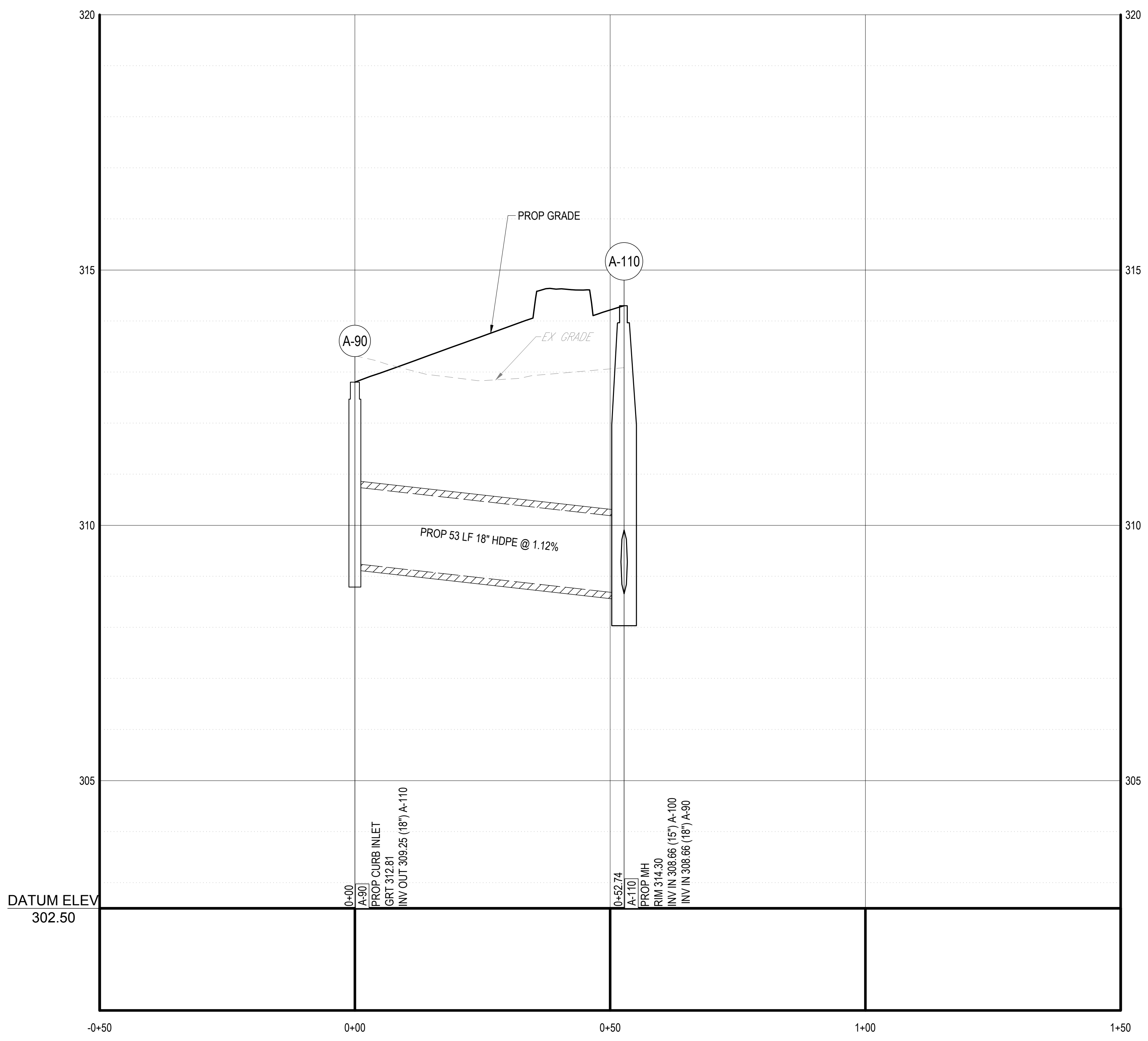
PROPOSED STORM PROFILE (A-60 - A-80)

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


320
315
310
305
A-100
A-110
PROP GRADE
EX. GRADE
PROP 15 LF 15" HDPE @ 1.00%
0+00 A-100 PROP GRATE INLET GRT 313.83 INV OUT 308.81 (15") A-110
0+14.95 A-110 PROP MH RIM 314.30 INV IN 308.66 (15") A-100 INV IN 308.66 (18") A-90
DATUM ELEV 302.50
-0+50
0+00
0+50
1+00

PROPOSED STORM PROFILE (A-100 - A-110)

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


320
315
310
305
A-90
A-110
PROP GRADE
EX. GRADE
PROP 53 LF 18" HDPE @ 1.12%
0+00 A-90 PROP CURB INLET GRT 312.81 INV OUT 309.25 (18") A-110
0+52.74 A-110 PROP MH RIM 314.30 INV IN 308.66 (15") A-100 INV IN 308.66 (18") A-90
DATUM ELEV 302.50
-0+50
0+00
0+50
1+00
1+50

PROPOSED STORM PROFILE (A-90 - A-110)

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

20 10 5 0 20
SCALE: 1" = 20'

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

SEAL
055420
OLIVER A. KAIJA
08/19/2025

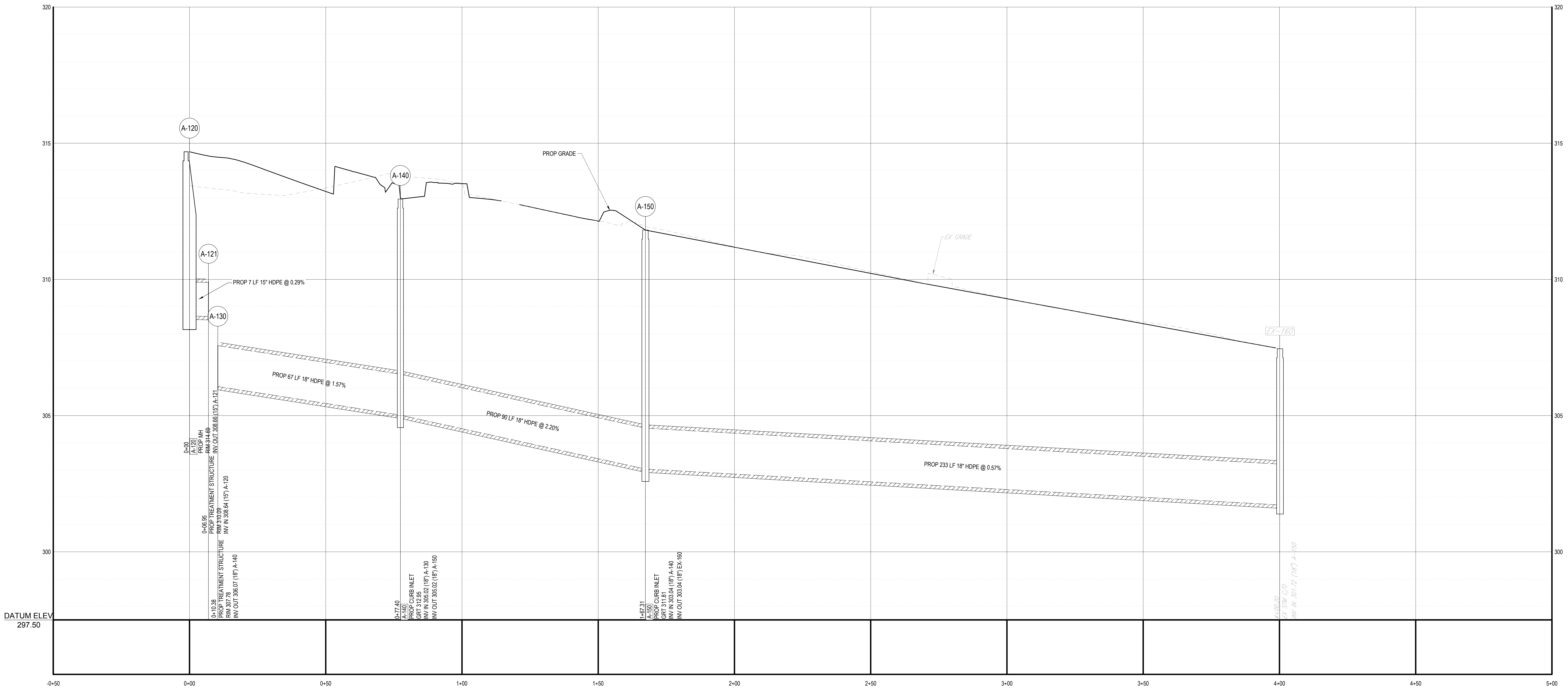
SHEET TITLE:

STORM PROFILE

SHEET NUMBER:
C-403

REVISION 2 - 08/19/25

Aug 19, 2025
\\BOHLERENG.NET\SHARES\NC-PROJECTS\2023\NCB230070.00\LAND DEVELOPMENT\CAD\DRAWINGS\PLAN SETS\NCB230070-GRAD-0----->LAYOUT: C-403 STM PROFILE
RS


320
315
310
305
300
DATUM ELEV
297.50
A-120
A-121
A-130
A-140
A-150
EX-160
PROP GRADE
EX GRADE
PROP 7 LF 15" HDPE @ 0.29%
PROP 67 LF 18" HDPE @ 1.57%
PROP 90 LF 18" HDPE @ 2.20%
PROP 233 LF 18" HDPE @ 0.57%
0+00
A-120
PROP MH
RIM 314.69
INV OUT 308.66 (15") A-121
0+06.95
PROP TREATMENT STRUCTURE
RIM 310.09
INV IN 308.64 (15") A-120
0+10.38
PROP TREATMENT STRUCTURE
RIM 307.78
INV OUT 306.07 (18") A-140
0+77.40
A-140
PROP CURB INLET
GRT 312.95
INV IN 305.02 (18") A-130
INV OUT 305.02 (18") A-150
1+67.31
A-150
PROP CURB INLET
GRT 311.81
INV IN 303.04 (18") A-140
INV OUT 303.04 (18") EX-160
4+00.20
EX STM C/O
INV IN 301.72 (18") A-150
-0+50
0+00
0+50
1+00
1+50
2+00
2+50
3+00
3+50
4+00
4+50
5+00

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

20 10 5 0 20
SCALE: 1" = 20'

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BOHLER ENGINEERING NC, PLLC

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

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

Know what's below.
Call before you dig.
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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 I.D.:	

PROJECT:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL
CONTRACTORS, INC.

PROPOSED
DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

BOHLER//
BOHLER ENGINEERING NC, PLLC
NCBELS P-1132
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RALEIGH, NC 27612
Phone: (919) 578-9000
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NORTH CAROLINA
PROFESSIONAL ENGINEER
SEAL
055420
OLIVER A. KALI
08/19/2025

SHEET TITLE:

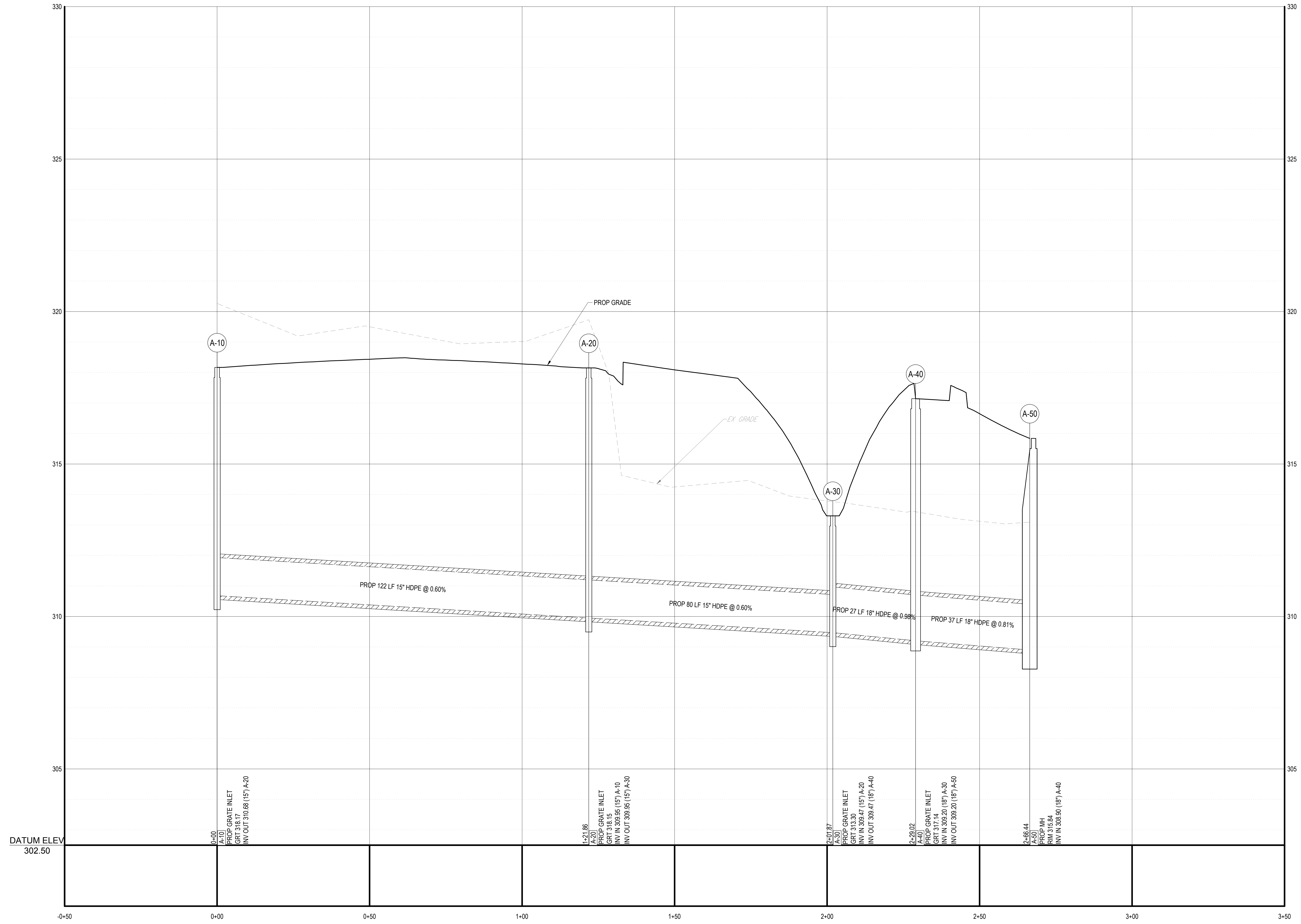
STORM PROFILE

SHEET NUMBER:

C-404

REVISION 2 - 08/19/25

Aug 19, 2025
\\BOHLERENG.NET\SHARES\NC-PROJECTS\2023\NCB230070.00\LAND DEVELOPMENT\CAD\DRAWINGS\PLAN SETS\NCB230070-GRAD-0----->LAYOUT: C-404 STM PROFILE
RS


330
325
320
315
310
305
PROP GRADE
EX. GRADE
A-10
A-20
A-30
A-40
A-50
PROP 122 LF 15" HDPE @ 0.60%
PROP 80 LF 15" HDPE @ 0.60%
PROP 27 LF 18" HDPE @ 0.98%
PROP 37 LF 18" HDPE @ 0.81%
DATUM ELEV
302.50
0+00
A-10
PROP GRATE INLET
GRT 318.17
INV OUT 310.68 (15") A-20
1+21.86
A-20
PROP GRATE INLET
GRT 318.15
INV IN 309.95 (15") A-10
INV OUT 309.95 (15") A-30
2+01.87
A-30
PROP GRATE INLET
GRT 313.30
INV IN 309.47 (15") A-20
INV OUT 309.47 (18") A-40
2+29.02
A-40
PROP GRATE INLET
GRT 317.14
INV IN 309.20 (18") A-30
INV OUT 309.20 (18") A-50
2+66.44
A-50
PROP MH
RIM 315.84
INV IN 308.90 (18") A-40
-0+50
0+00
0+50
1+00
1+50
2+00
2+50
3+00
3+50

PROPOSED STORM PROFILE (A-10 - A-50)

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

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By: ____________________ Date: _____________
Town Engineer

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By: ____________________ Date: _____________
Land Use Administrator

20 10 5 0 20
SCALE: 1" = 20'

Aug 19, 2025
\\BOHLERENG.NET\SHARES\NC-PROJECTS\2023\NCB230070.00\LAND DEVELOPMENT\CAD\DRAWINGS\PLAN SETS\NCB230070-GRAD-0----->LAYOUT: C-405 STM PROFILE
RS

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CONSTRUCTION PLANS

FOR

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**PROPOSED
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SEAL
055420
OLIVER A. KAIJA
08/19/2025

SHEET TITLE:

STORM PROFILE

SHEET NUMBER:

C-405

REVISION 2 - 08/19/25

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E
W
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NAD83
NAD83

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**

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 100' 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, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' 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, DIP MATERIALS OR STEEL ENCASEMENT 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-41 & S-49).
   - 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 TRAVERSING 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'X2' 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 WATER MAINS OF THE PRIVATE DISTRIBUTION SYSTEM WILL 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; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' 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 / 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@RALEIGHNC.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.

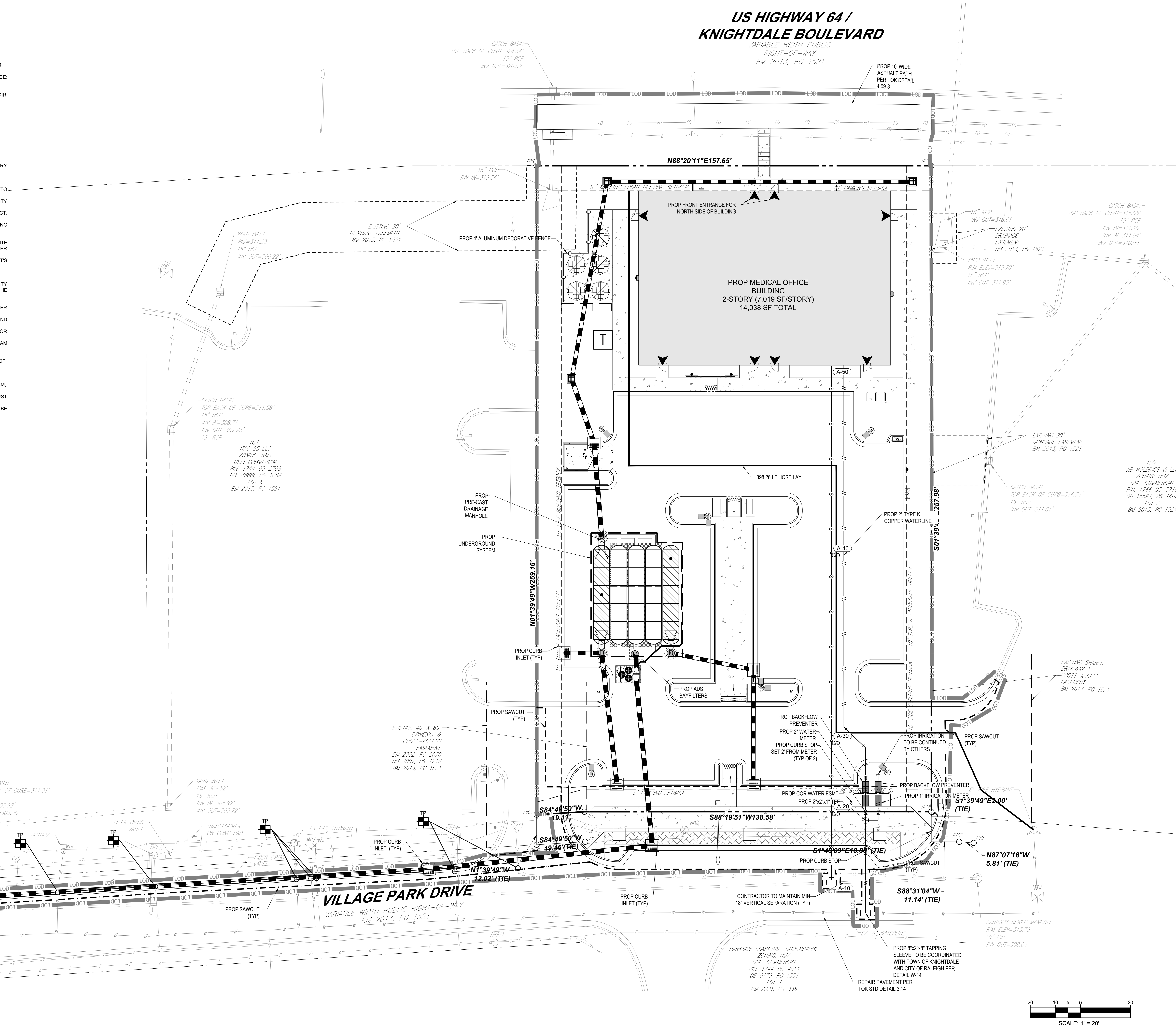
By: ____________________ Date: ______________
Land Use Administrator

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	314.46	INV IN = 308.33' (6")	INV OUT = 308.33 (6")
A-30	PROP CLEANOUT	314.91	INV IN = 309.39' (6")	INV OUT = 309.39 (6")
A-40	PROP CLEANOUT	316.85	INV IN = 312.19' (6")	INV OUT = 312.19 (6")
A-50	PROP BUILDING CONNECTION			INV OUT = 315.00 (6")

SANITARY SEWER PIPE SCHEDULE

FROM	FROM INV	TO	TO INV	PIPE LENGTH	SLOPE (%)	DIAMETER (IN.)	MATERIAL
A-50	315.00'	A-40	312.19'	75'	3.75%	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'	28'	3.74%	6"	SDR-35 PVC
A-20	308.33'	A-10	307.27'	28'	3.75%	6"	SDR-35 PVC


US HIGHWAY 64 / KNIGHTDALE BOULEVARD
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY BM 2013, PG 1521
PROP 10' WIDE ASPHALT PATH PER TOK DETAIL 4.09-3
CATCH BASIN TOP BACK OF CURB=324.34' 15" RCP INV OUT=320.52'
15" RCP INV IN=319.34'
N88°20'11"E157.65'
10' MAXIMUM FRONT BUILDING SETBACK
10' PARKING SETBACK
PROP FRONT ENTRANCE FOR NORTH SIDE OF BUILDING
PROP 4' ALUMINUM DECORATIVE FENCE
PROP MEDICAL OFFICE BUILDING 2-STORY (7,019 SF/STORY) 14,038 SF TOTAL
18" RCP INV OUT=316.61'
EXISTING 20' DRAINAGE EASEMENT BM 2013, PG 1521
YARD INLET RIM ELEV=315.70' 15" RCP INV OUT=311.90'
CATCH BASIN TOP BACK OF CURB=315.05' 15" RCP INV IN=311.10' INV IN=311.04' INV OUT=310.99'
YARD INLET RIM=311.23' 15" RCP INV OUT=309.07'
EXISTING 20' DRAINAGE EASEMENT BM 2013, PG 1521
CATCH BASIN TOP BACK OF CURB=311.58' 15" RCP INV IN=308.71' INV OUT=307.98' 18" RCP
N/F ITAC 25 LLC ZONING: NMX USE: COMMERCIAL PIN: 1744-95-2708 DB 10999, PG 1089 LOT 6 BM 2013, PG 1521
A-50
398.26 LF HOSE LAY
PROP PRE-CAST DRAINAGE MANHOLE
PROP UNDERGROUND SYSTEM
10' SIDE BUILDING SETBACK
10' TYPE A LANDSCAPE BUFFER
N01°39'49"W259.16'
S01°39'49"E257.98'
PROP 2" TYPE K COPPER WATERLINE
A-40
C/O
EXISTING 20' DRAINAGE EASEMENT BM 2013, PG 1521
CATCH BASIN TOP BACK OF CURB=314.74' 15" RCP INV OUT=311.81'
N/F JIB HOLDINGS VI LLC ZONING: NMX USE: COMMERCIAL PIN: 1744-95-5718 DB 15594, PG 1462 LOT 2 BM 2013, PG 1521
PROP CURB INLET (TYP)
PROP ADS BAYFILTERS
PROP SAWCUT (TYP)
EXISTING 40' X 65' DRIVEWAY & CROSS-ACCESS EASEMENT BM 2002, PG 2070 BM 2007, PG 1216 BM 2013, PG 1521
EXISTING SHARED DRIVEWAY & CROSS-ACCESS EASEMENT BM 2013, PG 1521
PROP BACKFLOW PREVENTER
PROP 2" WATER METER
PROP CURB STOP SET 2' FROM METER (TYP OF 2)
A-30
PROP IRRIGATION TO BE CONTINUED BY OTHERS
PROP SAWCUT (TYP)
PROP BACKFLOW PREVENTER
PROP 1" IRRIGATION METER
PROP COR WATER ESMT
PROP 2"x2"x1" TEE
A-20
5' PARKING SETBACK
EX FIRE HYDRANT
S84°49'50"W 19.11'
S88°19'51"W138.58'
S1°39'49"E2.00' (TIE)
S84°49'50"W 19.46' (TIE)
S1°40'09"E10.00' (TIE)
N87°07'16"W 5.81' (TIE)
PROP CURB STOP
PROP SAWCUT (TYP)
N1°39'49"W 12.02' (TIE)
A-10
S88°31'04"W 11.14' (TIE)
CONTRACTOR TO MAINTAIN MIN 18" VERTICAL SEPARATION (TYP)
VILLAGE PARK DRIVE
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY BM 2013, PG 1521
EX. 8" WATERLINE
PROP 8"x2"x8" TAPPING SLEEVE TO BE COORDINATED WITH TOWN OF KNIGHTDALE AND CITY OF RALEIGH PER DETAIL W-14
REPAIR PAVEMENT PER TOK STD DETAIL 3.14
SANITARY SEWER MANHOLE RIM ELEV=313.75' 10" DIP INV OUT=308.04'
PARKSIDE COMMONS CONDOMINIUMS ZONING: NMX USE: COMMERCIAL PIN: 1744-95-4511 DB 9179, PG 1351 LOT 4 BM 2001, PG 338
SANITARY SEWER MANHOLE RIM ELEV=307.67' 10" DIP INV IN(A)=301.05 INV IN(B)=297.72 INV IN(C)=297.77 INV OUT(D)=295.07'
CATCH BASIN TOP BACK OF CURB=307.76' 30" RCP INV IN(A)=301.72' INV IN(B)=302.58' 15" RCP INV OUT=301.57' 30" RCP
CATCH BASIN TOP BACK OF CURB=308.90' 15" RCP INV OUT=305.22'
CATCH BASIN TOP BACK OF CURB=311.01' 18" RCP INV IN=303.92' INV OUT=303.20' 30" RCP
YARD INLET RIM=309.52' 18" RCP INV IN=305.92' INV OUT=305.72'
TRANSFORMER
HOTBOX
FIBER OPTIC VAULT
TRANSFORMER ON CONC PAD
EX FIRE HYDRANT
TP
CONNECT TO EXISTING CURB INLET
ADJUST SANITARY LATERAL AS NECESSARY TO MAINTAIN 12" OF SEPARATION FROM STM PIPE
CATCH BASIN TOP BACK OF CURB=307.65' INV IN=301.41' INV OUT=301.34' 30" RCP
CATCH BASIN TOP BACK OF CURB=307.51' NO ACCESS
20 10 5 0 20
SCALE: 1" = 20'

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CONTRACTORS, INC.

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Phone: (919) 578-9000
NC@BohlerEng.com

SEAL 055420
OLIVER A. KAIJA
08/19/2025

SHEET TITLE:

UTILITY
PLAN

SHEET NUMBER:
C-501

REVISION 2 - 08/19/25

Aug 19, 2025
\\BOHLERENG.NET\SHARES\NC-PROJECTS\2023\NCB230070.00\LAND DEVELOPMENT\CAD\DRAWINGS\PLAN SETS\NCB230070-UTIL-0----->LAYOUT: C-501 UTIL
RS

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NAD83
NAD83

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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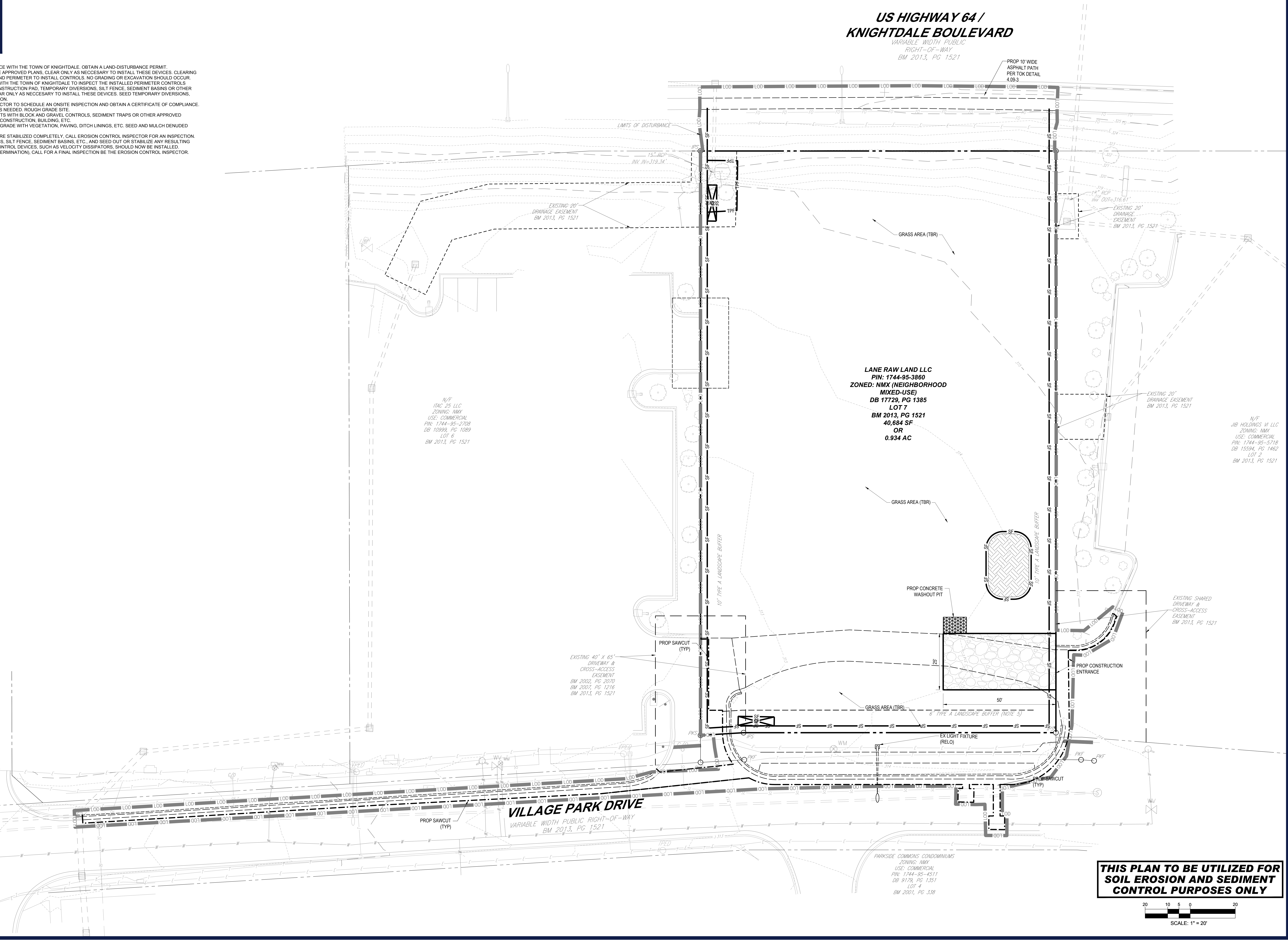
By: ____________________ Date: ______________
Land Use Administrator

CONSTRUCTION SEQUENCE

1. SCHEDULE AN INITIAL PRE-CONSTRUCTION CONFERENCE WITH THE TOWN OF KNIGHTDALE. OBTAIN A LAND-DISTURBANCE PERMIT.
2. INSTALL ALL PERIMETER CONTROLS AS SHOWN ON THE APPROVED PLANS, CLEAR ONLY AS NECCESARY TO INSTALL THESE DEVICES. CLEARING SHOULD BE LIMITED TO A MAXIMUM 35' "RIBBON" AROUND PERIMETER TO INSTALL CONTROLS. NO GRADING OR EXCAVATION SHOULD OCCUR.
3. SCHEDULE AN ONSITE PRE-CONSTRUCTION MEETING WITH THE TOWN OF KNIGHTDALE TO INSPECT THE INSTALLED PERIMETER CONTROLS
4. IF APPROVED, PROCEED WITH INSTALLING GRAVEL CONSTRUCTION PAD, TEMPORARY DIVERSIONS, SILT FENCE, SEDIMENT BASINS OR OTHER MEASURES AS SHOWN ON THE APPROVED PLANS. CLEAR ONLY AS NECCESARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS, BERMS, AND BASINS IMMEDIATELY AFTER CONSTRUCTION.
5. CALL TOWN OF KNIGHTDALE EROSION CONTROL INSPECTOR TO SCHEDULE AN ONSITE INSPECTION AND OBTAIN A CERTIFICATE OF COMPLIANCE.
6. BEGIN CLEARING AND GRUBBING. MAINTAIN DEVICES AS NEEDED. ROUGH GRADE SITE.
7. INSTALL STORM SEWER, IF SHOWN, AND PROTECT INLETS WITH BLOCK AND GRAVEL CONTROLS, SEDIMENT TRAPS OR OTHER APPROVED MEASURES AS SHOWN IN THE APPROVED PLAN. BEING CONSTRUCTION, BUILDING, ETC.
8. STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, PAVING, DITCH LININGS, ETC. SEED AND MULCH DENUDED AREAS PER GROUND STABILIZATION TIME FRAMES.
9. WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL EROSION CONTROL INSPECTOR FOR AN INSPECTION.
10. 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.
11. WHEN VEGETATION HAS BECOME ESTABLISHED (90% GERMINATION), CALL FOR A FINAL INSPECTION BE THE EROSION CONTROL INSPECTOR. OBTAIN A CERTIFICATE OF COMPLETION.


US HIGHWAY 64 /
KNIGHTDALE BOULEVARD
VARIABLE WIDTH PUBLIC
RIGHT-OF-WAY
BM 2013, PG 1521
PROP 10' WIDE
ASPHALT PATH
PER TOK DETAIL
4.09-3
LOD
SF
TPF
IPS
LIMITS OF DISTURBANCE
15" RCP
INV IN=319.34'
EXISTING 20'
DRAINAGE EASEMENT
BM 2013, PG 1521
18" RCP
INV OUT=316.61'
EXISTING 20'
DRAINAGE
EASEMENT
BM 2013, PG 1521
GRASS AREA (TBR)
N/F
ITAC 25 LLC
ZONING: NMX
USE: COMMERCIAL
PIN: 1744-95-2708
DB 10999, PG 1089
LOT 6
BM 2013, PG 1521
LANE RAW LAND LLC
PIN: 1744-95-3860
ZONED: NMX (NEIGHBORHOOD
MIXED-USE)
DB 17729, PG 1385
LOT 7
BM 2013, PG 1521
40,684 SF
OR
0.934 AC
EXISTING 20'
DRAINAGE EASEMENT
BM 2013, PG 1521
N/F
JIB HOLDINGS VI LLC
ZONING: NMX
USE: COMMERCIAL
PIN: 1744-95-5718
DB 15594, PG 1462
LOT 2
BM 2013, PG 1521
GRASS AREA (TBR)
10' TYPE A LANDSCAPE BUFFER
PROP CONCRETE
WASHOUT PIT
EXISTING SHARED
DRIVEWAY &
CROSS-ACCESS
EASEMENT
BM 2013, PG 1521
PROP SAWCUT
(TYP)
EXISTING 40' X 65'
DRIVEWAY &
CROSS-ACCESS
EASEMENT
BM 2002, PG 2070
BM 2007, PG 1216
BM 2013, PG 1521
25'
PROP CONSTRUCTION
ENTRANCE
50'
GRASS AREA (TBR)
6' TYPE A LANDSCAPE BUFFER (NOTE 5)
PKS
IPS
PKF
WM
EX LIGHT FIXTURE
(RELO)
PROP SAWCUT
(TYP)
VILLAGE PARK DRIVE
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY
BM 2013, PG 1521
PROP SAWCUT
(TYP)
TPED
PARKSIDE COMMONS CONDOMINIUMS
ZONING: NMX
USE: COMMERCIAL
PIN: 1744-95-4511
DB 9179, PG 1351
LOT 4
BM 2001, PG 338
20 10 5 0 20
SCALE: 1" = 20'

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

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

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

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 I.D.:	

PROJECT:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL
CONTRACTORS, INC.

PROPOSED
DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

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

SEAL
055420
OLIVER A. KAIJA
08/19/2025

SHEET TITLE:
EROSION AND SEDIMENT CONTROL PLAN PHASE 1

SHEET NUMBER:
C-801

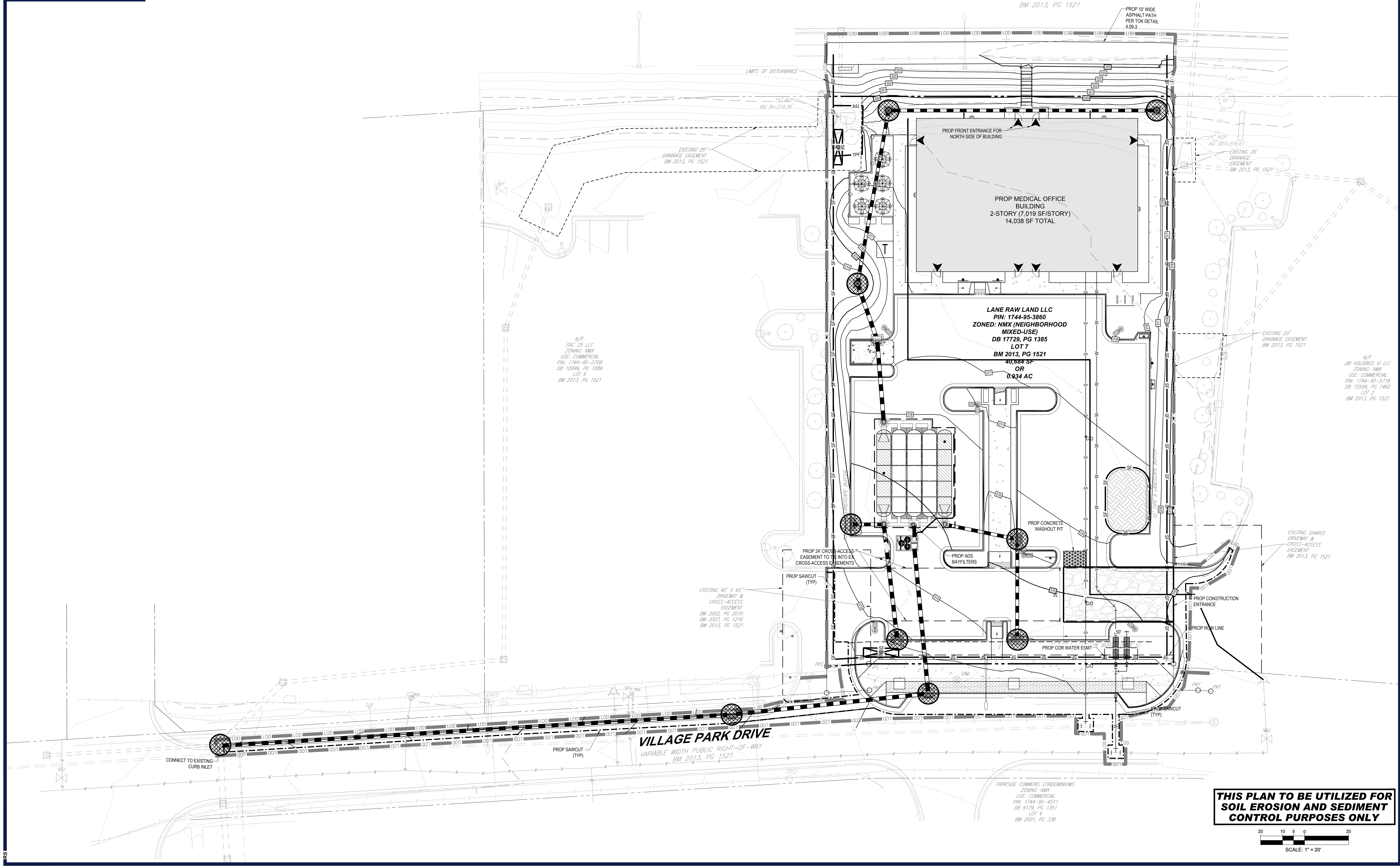
REVISION 2 - 08/19/25

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


N
W
E
S
NAD83
US HIGHWAY 64 /
KNIGHTDALE BOULEVARD
VARIABLE WIDTH PUBLIC
RIGHT-OF-WAY
BM 2013, PG 1521
PROP 10' WIDE
ASPHALT PATH
PER TOK DETAIL
4.09-3
LIMITS OF DISTURBANCE
15" RCP
INV IN=319.34'
EXISTING 20'
DRAINAGE EASEMENT
BM 2013, PG 1521
TPF
PROP FRONT ENTRANCE FOR
NORTH SIDE OF BUILDING
PROP MEDICAL OFFICE
BUILDING
2-STORY (7,019 SF/STORY)
14,038 SF TOTAL
18" RCP
INV OUT=316.61'
EXISTING 20'
DRAINAGE
EASEMENT
BM 2013, PG 1521
N/F
ITAC 25 LLC
ZONING: NMX
USE: COMMERCIAL
PIN: 1744-95-2708
DB 10999, PG 1089
LOT 6
BM 2013, PG 1521
LANE RAW LAND LLC
PIN: 1744-95-3860
ZONED: NMX (NEIGHBORHOOD
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DB 17729, PG 1385
LOT 7
BM 2013, PG 1521
40,684 SF
OR
0.934 AC
EXISTING 20'
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N/F
JIB HOLDINGS VI LLC
ZONING: NMX
USE: COMMERCIAL
PIN: 1744-95-5718
DB 15594, PG 1462
LOT 2
BM 2013, PG 1521
PROP CONCRETE
WASHOUT PIT
PROP 24' CROSS-ACCESS
EASEMENT TO TIE INTO EX
CROSS-ACCESS EASEMENTS
PROP ADS
BAYFILTERS
PROP SAWCUT
(TYP)
EXISTING 40' X 65'
DRIVEWAY &
CROSS-ACCESS
EASEMENT
BM 2002, PG 2070
BM 2007, PG 1216
BM 2013, PG 1521
EXISTING SHARED
DRIVEWAY &
CROSS-ACCESS
EASEMENT
BM 2013, PG 1521
PROP CONSTRUCTION
ENTRANCE
PROP ROW LINE
PROP COR WATER ESMT
50'
PROP SAWCUT
(TYP)
PKS
IPS
PKF
C/O
VILLAGE PARK DRIVE
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY
BM 2013, PG 1521
PROP SAWCUT
(TYP)
CONNECT TO EXISTING
CURB INLET
PARKSIDE COMMONS CONDOMINIUMS
ZONING: NMX
USE: COMMERCIAL
PIN: 1744-95-4511
DB 9179, PG 1351
LOT 4
BM 2001, PG 338
LOD
SF
325
324
323
322
321
320
318
317
316
315
314
313

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20 10 5 0 20
SCALE: 1" = 20'

BOHLER//
BOHLER ENGINEERING NC, PLLC

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

SEAL
055420
OLIVER A. KAIJA
08/19/2025

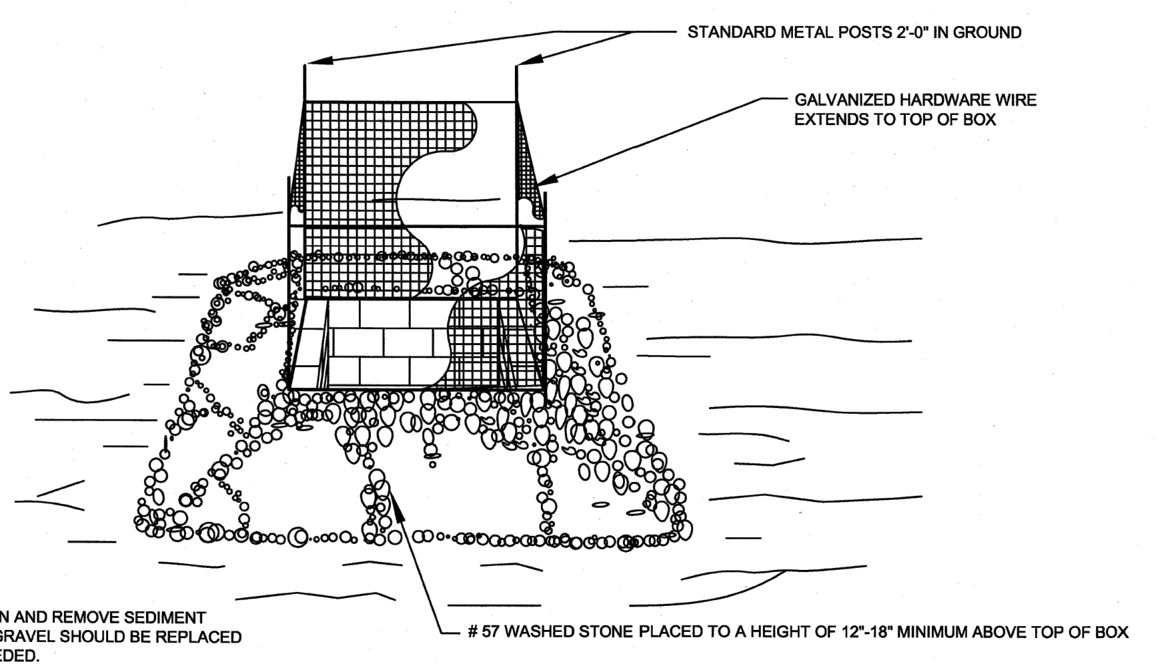
SHEET TITLE:

EROSION AND SEDIMENT CONTROL PLAN PHASE 2

SHEET NUMBER:
C-802

REVISION 2 - 08/19/25

Aug 19, 2025
\\BOHLERENG.NET\SHARES\NC-PROJECTS\2023\NCB230070.00\LAND DEVELOPMENT\CAD\DRAWINGS\PLAN SETS\NCB230070-EROS-0----->LAYOUT: C-802 EROS II
RS

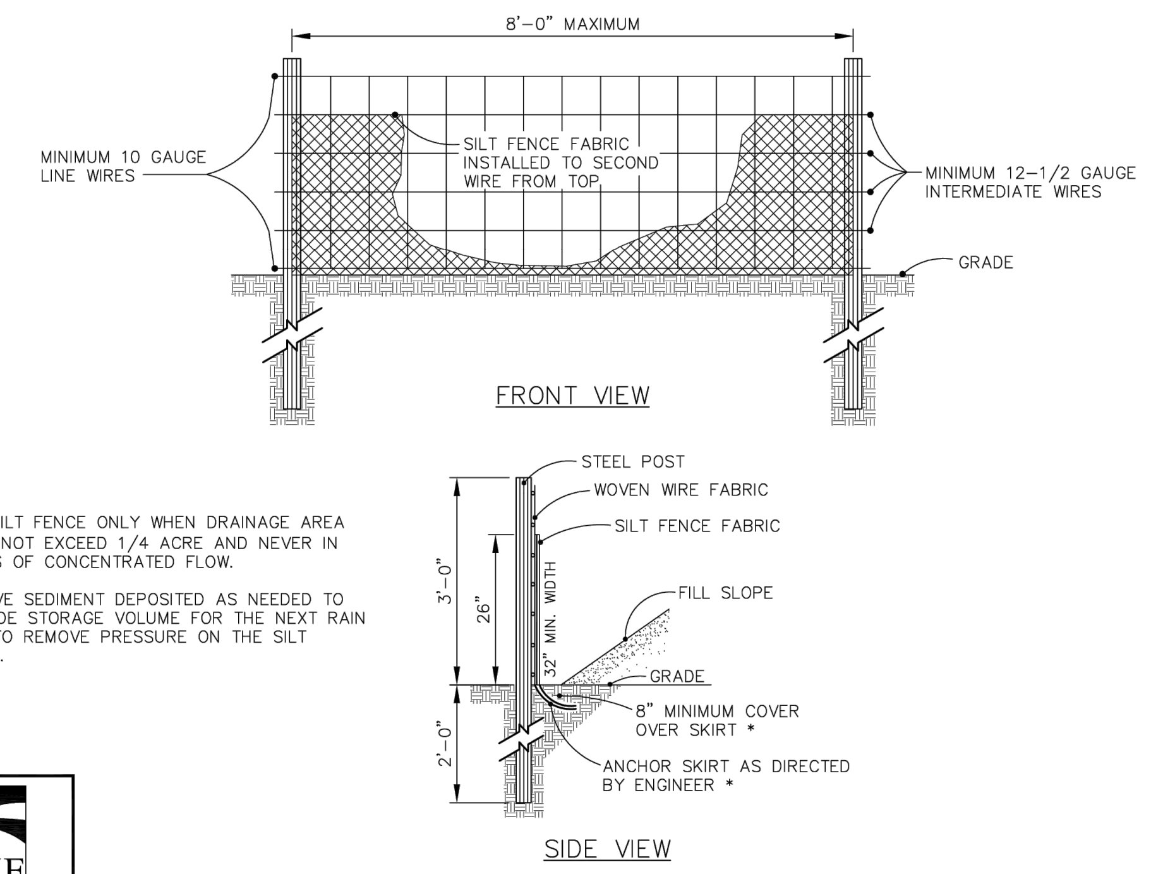

STANDARD METAL POSTS 2'-0" IN GROUND
GALVANIZED HARDWARE WIRE EXTENDS TO TOP OF BOX
# 57 WASHED STONE PLACED TO A HEIGHT OF 12"-18" MINIMUM ABOVE TOP OF BOX

NOTE:

1. INSPECT INLET PROTECTION AND REMOVE SEDIMENT AFTER EACH RAIN EVENT. GRAVEL SHOULD BE REPLACED AND REPAIRS MADE AS NEEDED.

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD GRAVEL YARD INLET PROTECTION

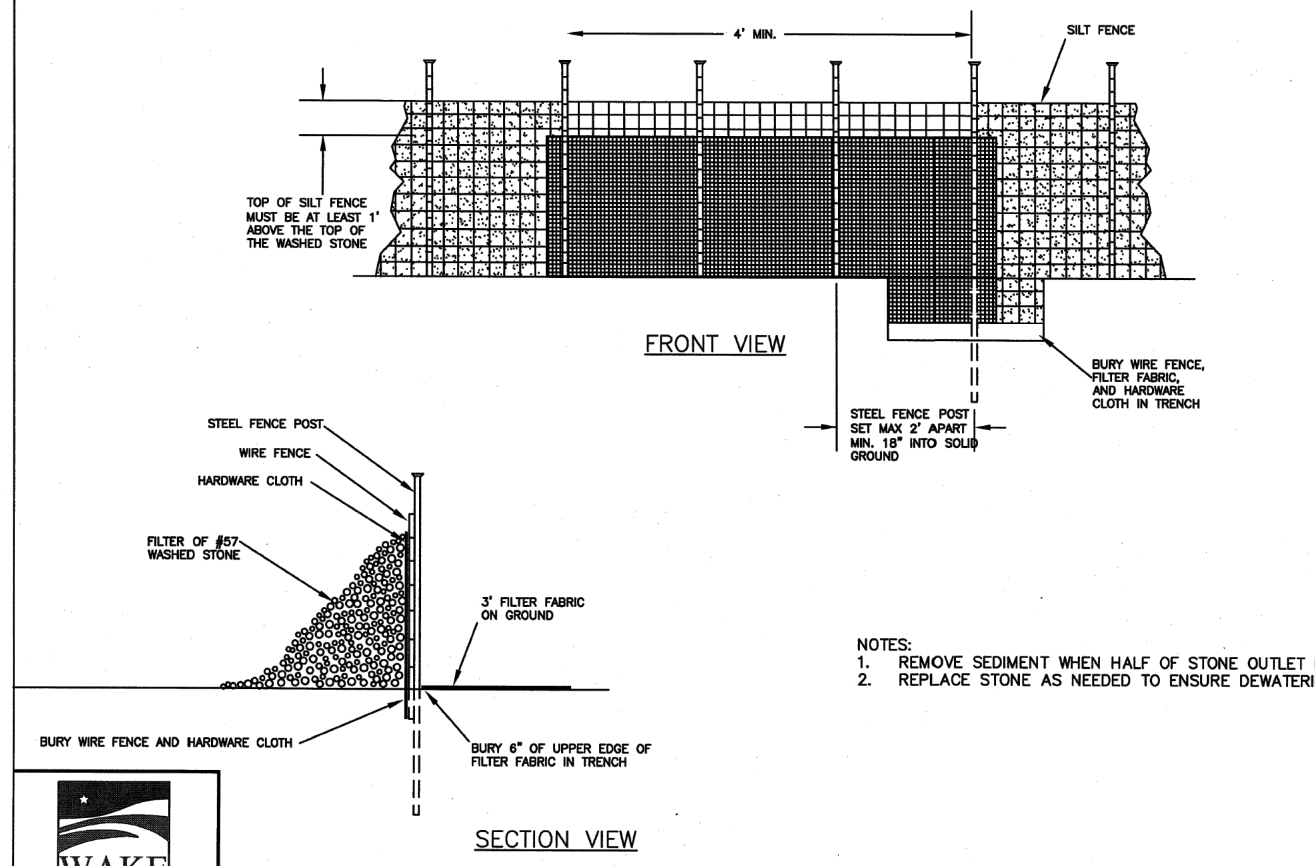

8'–0" MAXIMUM
MINIMUM 10 GAUGE LINE WIRES
SILT FENCE FABRIC INSTALLED TO SECOND WIRE FROM TOP
MINIMUM 12–1/2 GAUGE INTERMEDIATE WIRES
GRADE
FRONT VIEW
STEEL POST
WOVEN WIRE FABRIC
SILT FENCE FABRIC
FILL SLOPE
GRADE
3'–0"
26"
32" MIN. WIDTH
2'–0"
8" MINIMUM COVER OVER SKIRT *
ANCHOR SKIRT AS DIRECTED BY ENGINEER *
SIDE VIEW

NOTE:

1. USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.
2. REMOVE SEDIMENT DEPOSITED AS NEEDED TO PROVIDE STORAGE VOLUME FOR THE NEXT RAIN AND TO REMOVE PRESSURE ON THE SILT FENCE.

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

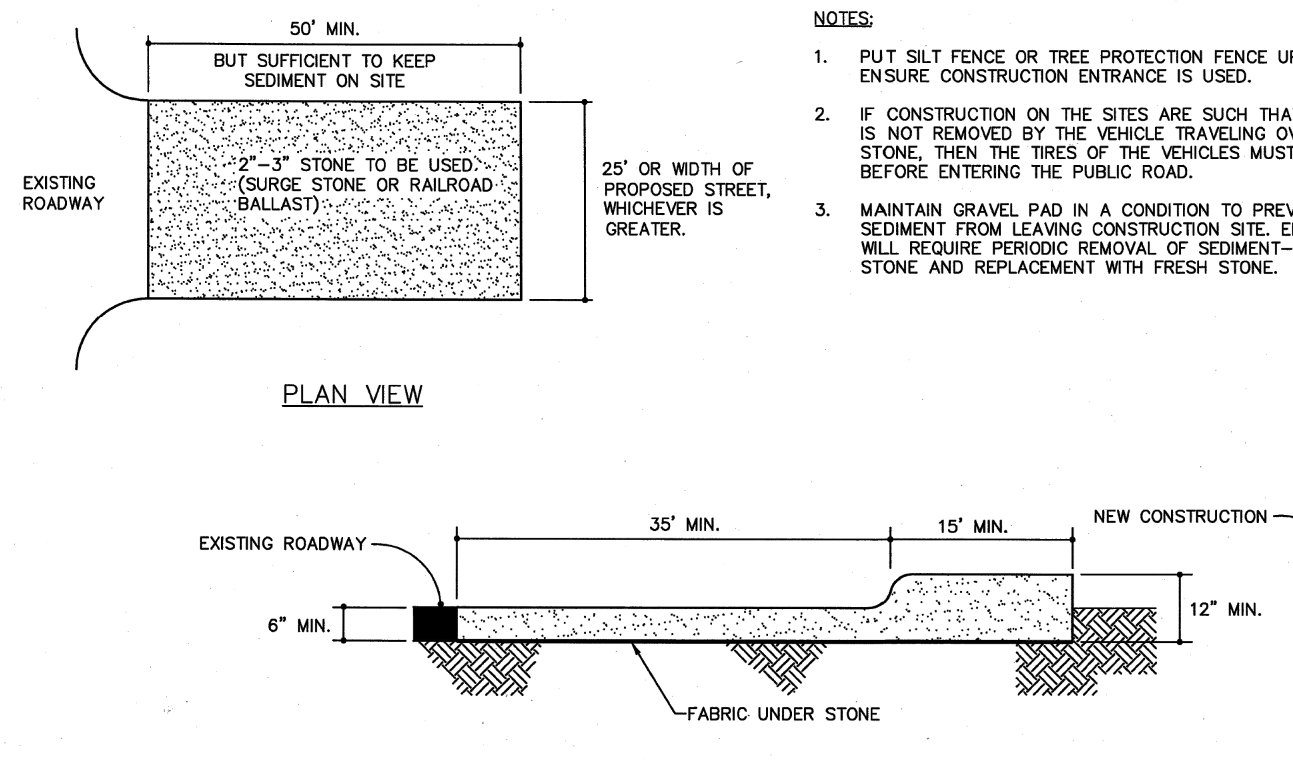
STANDARD TEMPORARY SILT FENCE


4' MIN.
SILT FENCE
TOP OF SILT FENCE MUST BE AT LEAST 1' ABOVE THE TOP OF THE WASHED STONE
FRONT VIEW
BURY WIRE FENCE, FILTER FABRIC, AND HARDWARE CLOTH IN TRENCH
STEEL FENCE POST SET MAX 2' APART MIN. 18" INTO SOLID GROUND
STEEL FENCE POST
WIRE FENCE
HARDWARE CLOTH
FILTER OF #57 WASHED STONE
3' FILTER FABRIC ON GROUND
BURY WIRE FENCE AND HARDWARE CLOTH
BURY 6" OF UPPER EDGE OF FILTER FABRIC IN TRENCH
SECTION VIEW

NOTES:
1. REMOVE SEDIMENT WHEN HALF OF STONE OUTLET IS COVERED.
2. REPLACE STONE AS NEEDED TO ENSURE DEWATERING.

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD SILT FENCE OUTLET

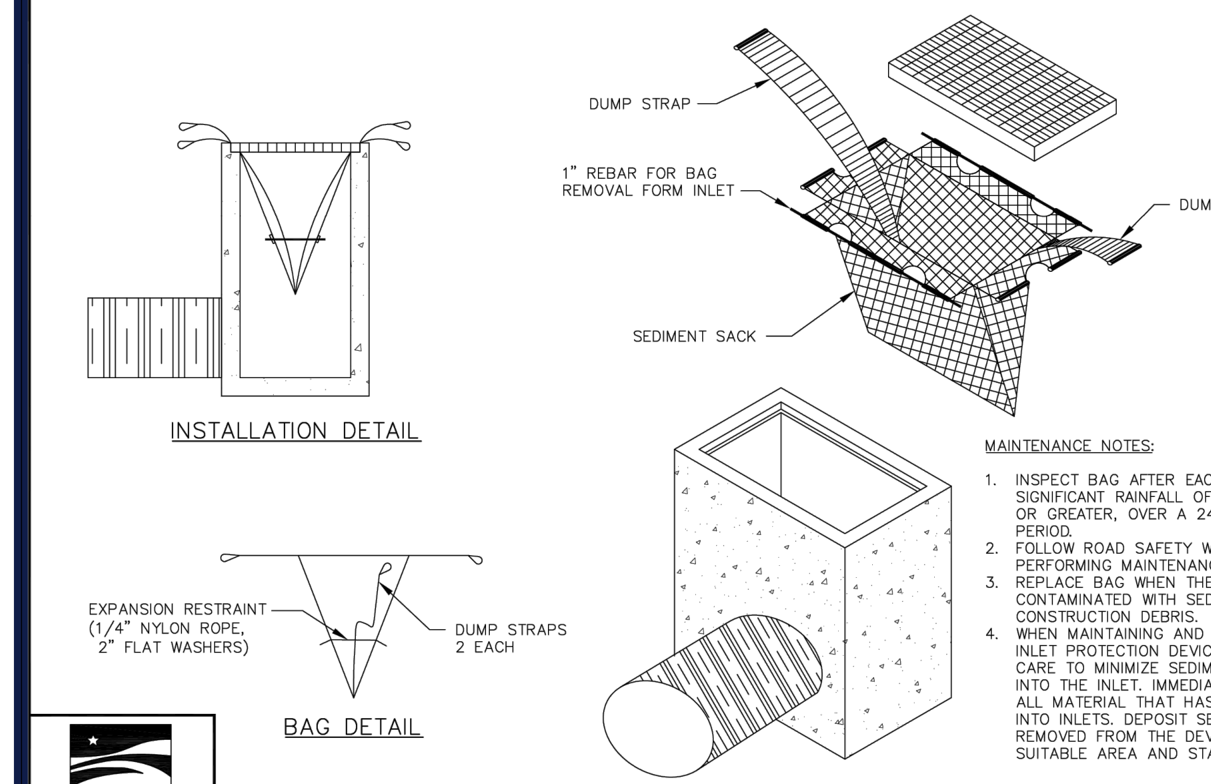

50' MIN.
BUT SUFFICIENT TO KEEP SEDIMENT ON SITE
EXISTING ROADWAY
2"–3" STONE TO BE USED. (SURGE STONE OR RAILROAD BALLAST)
25' OR WIDTH OF PROPOSED STREET, WHICHEVER IS GREATER.
PLAN VIEW
EXISTING ROADWAY
35' MIN.
15' MIN.
NEW CONSTRUCTION
6" MIN.
12" MIN.
FABRIC UNDER STONE
CROSS SECTION

NOTES:

1. PUT SILT FENCE OR TREE PROTECTION FENCE UP TO ENSURE CONSTRUCTION ENTRANCE IS USED.
2. IF CONSTRUCTION ON THE SITES ARE SUCH THAT THE MUD IS NOT REMOVED BY THE VEHICLE TRAVELING OVER THE STONE, THEN THE TIRES OF THE VEHICLES MUST BE WASHED BEFORE ENTERING THE PUBLIC ROAD.
3. MAINTAIN GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING CONSTRUCTION SITE. ENTRANCE WILL REQUIRE PERIODIC REMOVAL OF SEDIMENT–LADEN STONE AND REPLACEMENT WITH FRESH STONE.

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD CONSTRUCTION ENTRANCE

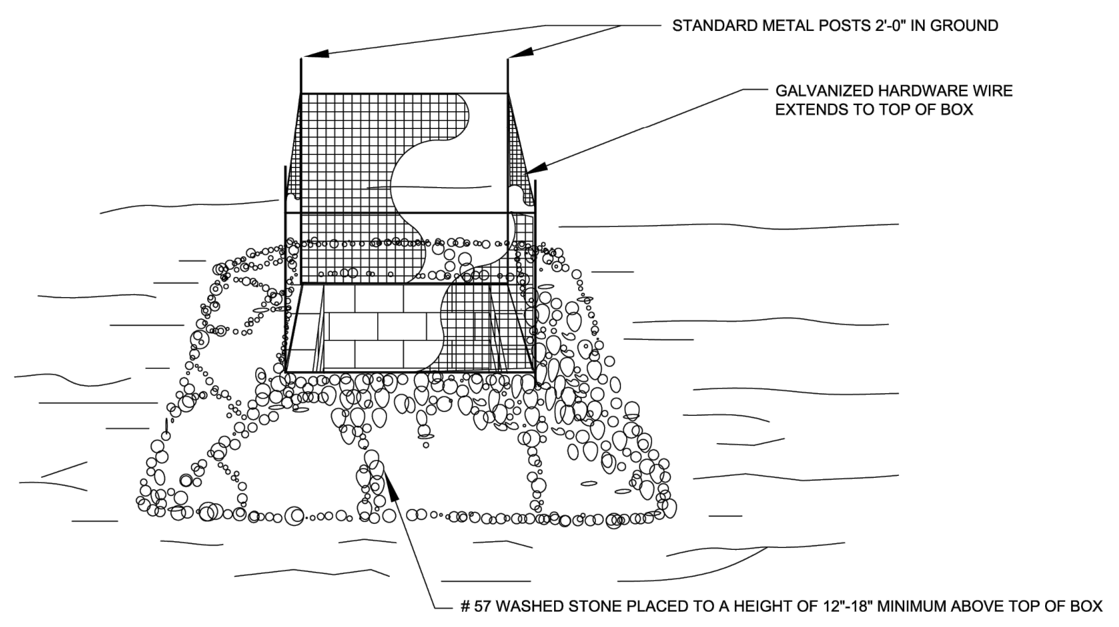

DUMP STRAP
1" REBAR FOR BAG REMOVAL FORM INLET
DUMP STRAP
SEDIMENT SACK
INSTALLATION DETAIL
EXPANSION RESTRAINT (1/4" NYLON ROPE, 2" FLAT WASHERS)
DUMP STRAPS 2 EACH
BAG DETAIL

MAINTENANCE NOTES:

1. INSPECT BAG AFTER EACH SIGNIFICANT RAINFALL OF 1 INCHES OR GREATER, OVER A 24–HOUR PERIOD.
2. FOLLOW ROAD SAFETY WHILE PERFORMING MAINTENANCE.
3. REPLACE BAG WHEN THEY BECOME CONTAMINATED WITH SEDIMENT AND CONSTRUCTION DEBRIS.
4. WHEN MAINTAINING AND REMOVING INLET PROTECTION DEVICES, EXERCISE CARE TO MINIMIZE SEDIMENT FALLING INTO THE INLET. IMMEDIATELY REMOVE ALL MATERIAL THAT HAS FALLEN INTO INLETS. DEPOSIT SEDIMENT REMOVED FROM THE DEVICE IN A SUITABLE AREA AND STABILIZE.

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD SILT BAG - INLET SEDIMENT CONTROL DEVICE

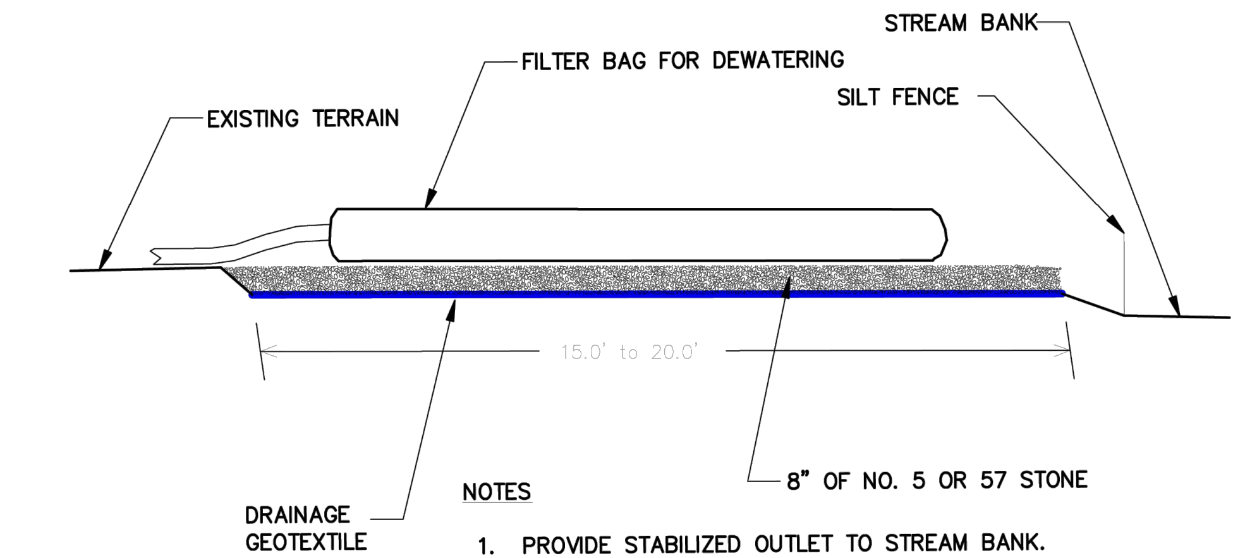

STANDARD METAL POSTS 2'-0" IN GROUND
GALVANIZED HARDWARE WIRE EXTENDS TO TOP OF BOX
# 57 WASHED STONE PLACED TO A HEIGHT OF 12"-18" MINIMUM ABOVE TOP OF BOX

MAINTENANCE NOTES:

1. REMOVE SEDIMENT WHEN HALF HEIGHT OF STONE AND CLEAR HARDWARE OF DEBRIS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS, TAKING CARE NOT TO DAMAGE OR UNDERCUT HARDWARE DURING SEDIMENT REMOVAL.
2. REPLACE STONE AS NEEDED.

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD GRAVEL YARD INLET PROTECTION


STREAM BANK
FILTER BAG FOR DEWATERING
SILT FENCE
EXISTING TERRAIN
15.0' to 20.0'
8" OF NO. 5 OR 57 STONE
DRAINAGE GEOTEXTILE

NOTES

1. PROVIDE STABILIZED OUTLET TO STREAM BANK.
2. WOOD PALLETS MAY BE USED IN LIEU OF STONE AND GEOTEXTILE AS DIRECTED. A SUFFICIENT NUMBER OF PALLETS MUST BE PROVIDED TO ELEVATE THE ENTIRE FILTER BAG FOR DEWATERING ABOVE NATURAL GROUND.

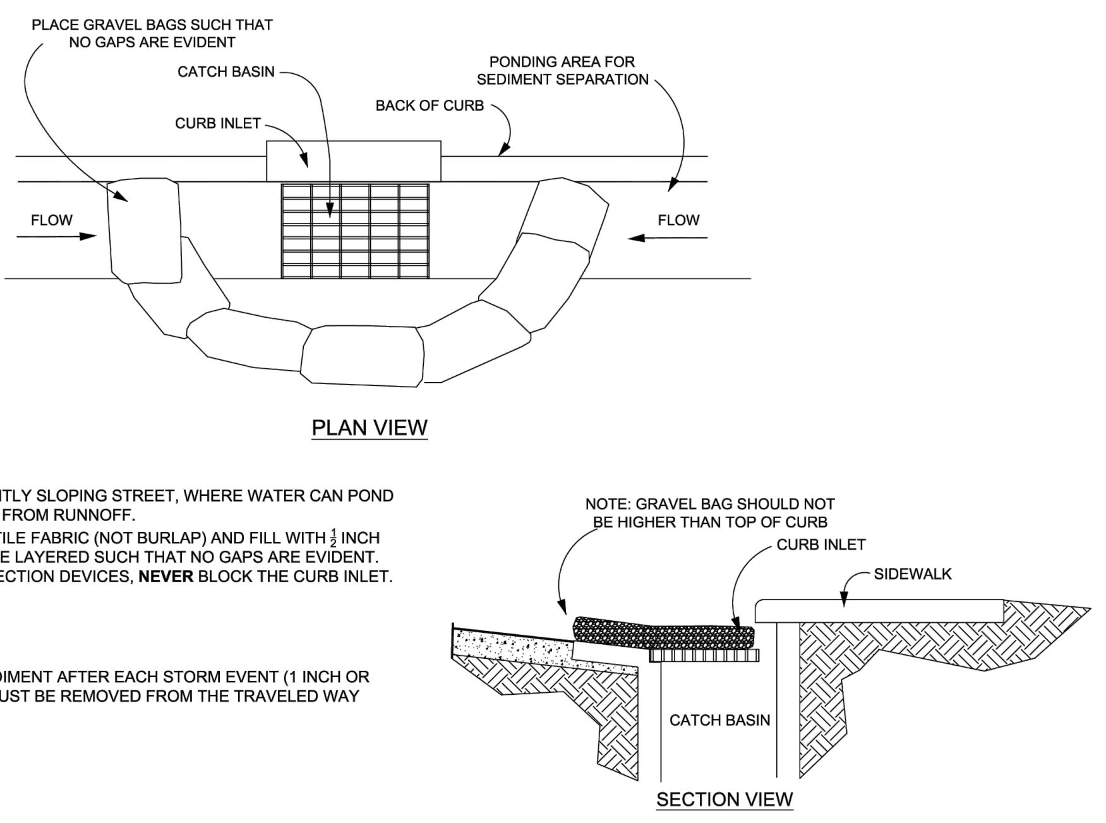
MAINTENANCE NOTES

1. REPLACE AND DISPOSE OF FILTER BAG(S) WHEN IT IS ¾ FULL OF SEDIMENT OR WHEN IT IS IMPRCTICAL FOR BAG TO FILTER SEDIMENT.
2. PROVIDE A SUFFICEINT QUANTITY OF FILTER BAGS TO CONTAIN SILT FROM PUMPED EFFLUENT.

NOT TO SCALE

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD FILTER BAG FOR DEWATERING ACTIVITIES


PLACE GRAVEL BAGS SUCH THAT NO GAPS ARE EVIDENT
CATCH BASIN
CURB INLET
BACK OF CURB
PONDING AREA FOR SEDIMENT SEPARATION
FLOW
FLOW
PLAN VIEW
NOTE: GRAVEL BAG SHOULD NOT BE HIGHER THAN TOP OF CURB
CURB INLET
SIDEWALK
CATCH BASIN
SECTION VIEW

NOTES:

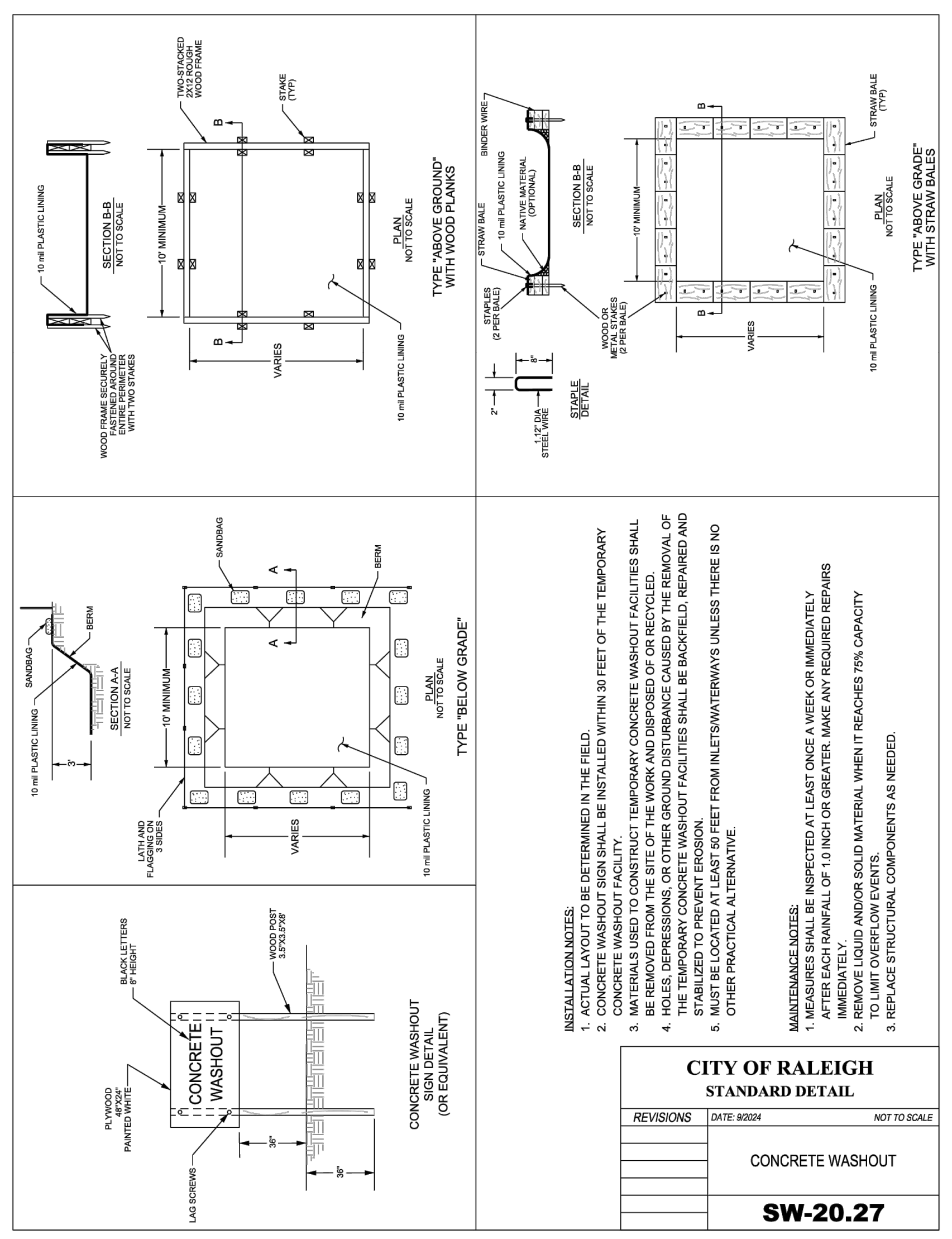
1. PLACE GRAVEL BAG BARRIER ON GENTLY SLOPING STREET, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNNOFF.
2. USE SAND BAGS OF WOVEN GEOTEXTILE FABRIC (NOT BURLAP) AND FILL WITH ¾ INCH (OR SMALLER) GRAVEL. BAGS MUST BE LAYERED SUCH THAT NO GAPS ARE EVIDENT.
3. WHEN INSTALLING CURB INLET PROTECTION DEVICES, **NEVER** BLOCK THE CURB INLET.

MAINTENANCE NOTES:

1. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT (1 INCH OR GREATER), SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD GRAVEL BAG CURB INLET PROTECTION

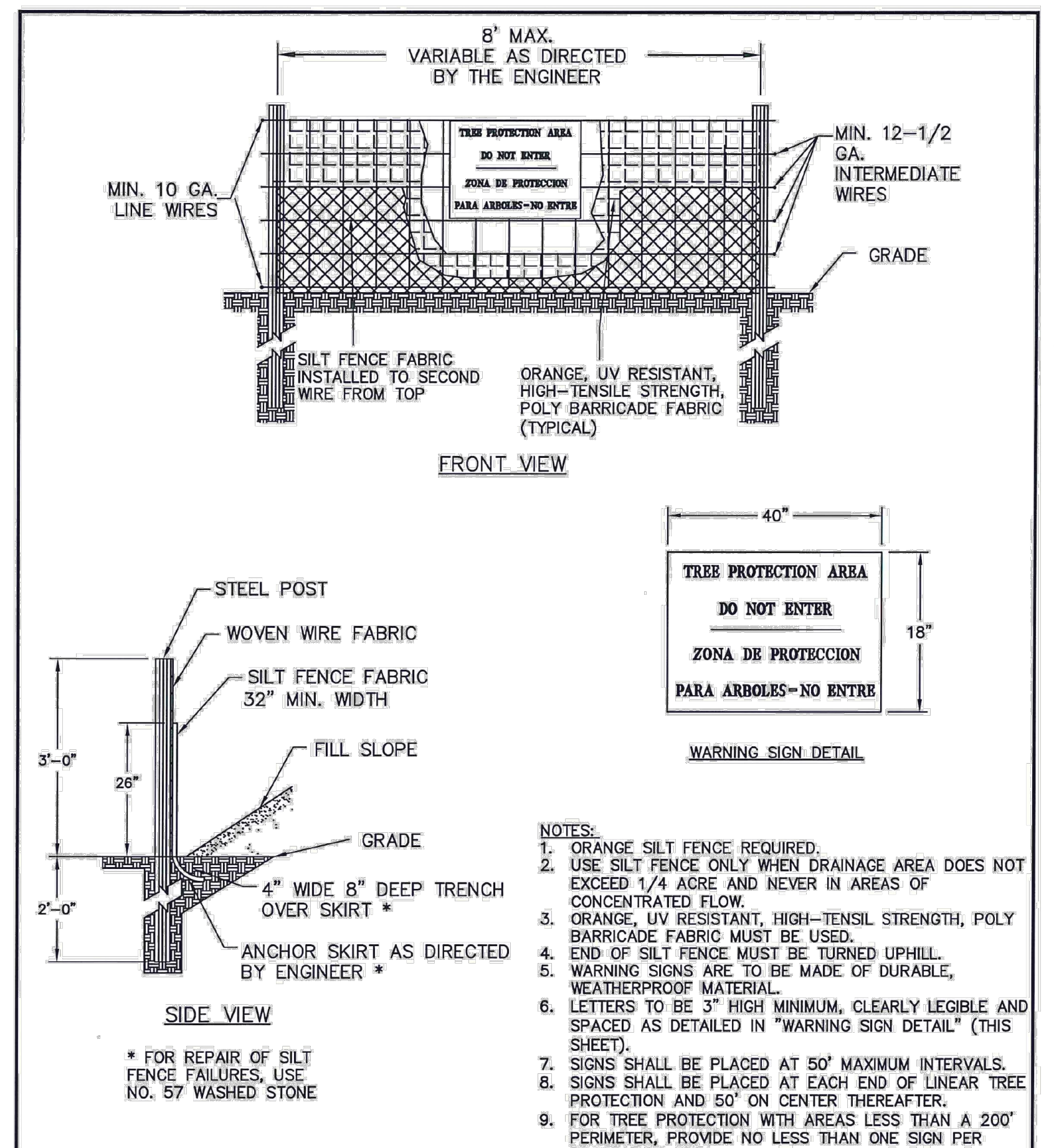

TWO-STACKED 2X12 ROUGH WOOD FRAME
STAKE (TYP)
10 mil PLASTIC LINING
WOOD FRAME SECURELY FASTENED AROUND ENTIRE PERIMETER WITH TWO STAKES
SECTION B-B NOT TO SCALE
10' MINIMUM
VARIES
PLAN NOT TO SCALE
TYPE "ABOVE GROUND" WITH WOOD PLANKS
BINDER WIRE
STRAW BALE
NATIVE MATERIAL (OPTIONAL)
STAPLES (2 PER BALE)
WOOD OR METAL STAKES (2 PER BALE)
STAPLE DETAIL
1 1/2" DIA STEEL WIRE
STRAW BALE (TYP)
TYPE "ABOVE GRADE" WITH STRAW BALES
SANDBAG
BERM
SECTION A-A NOT TO SCALE
LATH AND FLAGGING ON 3 SIDES
TYPE "BELOW GRADE"
BLACK LETTERS 6" HEIGHT
WOOD POST 3.5"X3.5"X8'
PLYWOOD 48"X24" PAINTED WHITE
CONCRETE WASHOUT
LAG SCREWS
36"
CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

INSTALLATION NOTES:
1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS, OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFIELD, REPAIRED AND STABILIZED TO PREVENT EROSION.
5. MUST BE LOCATED AT LEAST 50 FEET FROM INLETS/WATERWAYS UNLESS THERE IS NO OTHER PRACTICAL ALTERNATIVE.

MAINTENANCE NOTES:
1. MEASURES SHALL BE INSPECTED AT LEAST ONCE A WEEK OR IMMEDIATELY AFTER EACH RAINFALL OF 1.0 INCH OR GREATER. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. REMOVE LIQUID AND/OR SOLID MATERIAL WHEN IT REACHES 75% CAPACITY TO LIMIT OVERFLOW EVENTS.
3. REPLACE STRUCTURAL COMPONENTS AS NEEDED.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 9/2024	NOT TO SCALE
	CONCRETE WASHOUT	
	SW-20.27	


8' MAX. VARIABLE AS DIRECTED BY THE ENGINEER
TREE PROTECTION AREA DO NOT ENTER ZONA DE PROTECCION PARA ARBOLES–NO ENTRE
MIN. 10 GA. LINE WIRES
MIN. 12–1/2 GA. INTERMEDIATE WIRES
GRADE
SILT FENCE FABRIC INSTALLED TO SECOND WIRE FROM TOP
ORANGE, UV RESISTANT, HIGH–TENSILE STRENGTH, POLY BARRICADE FABRIC (TYPICAL)
FRONT VIEW
40"
TREE PROTECTION AREA
DO NOT ENTER
ZONA DE PROTECCION
PARA ARBOLES–NO ENTRE
18"
WARNING SIGN DETAIL
STEEL POST
WOVEN WIRE FABRIC
SILT FENCE FABRIC 32" MIN. WIDTH
FILL SLOPE
GRADE
3'–0"
26"
2'–0"
4" WIDE 8" DEEP TRENCH OVER SKIRT *
ANCHOR SKIRT AS DIRECTED BY ENGINEER *
SIDE VIEW

* FOR REPAIR OF SILT FENCE FAILURES, USE NO. 57 WASHED STONE

NOTES:
1. ORANGE SILT FENCE REQUIRED.
2. USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.
3. ORANGE, UV RESISTANT, HIGH–TENSIL STRENGTH, POLY BARRICADE FABRIC MUST BE USED.
4. END OF SILT FENCE MUST BE TURNED UPHILL.
5. WARNING SIGNS ARE TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
6. LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED IN "WARNING SIGN DETAIL" (THIS SHEET).
7. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS.
8. SIGNS SHALL BE PLACED AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
9. FOR TREE PROTECTION WITH AREAS LESS THAN A 200' PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
10. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
11. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
12. ADDITIONAL SIGNS MAY BE REQUIRED BY TOWN OF KNIGHTDALE ENGINEERING DEPARTMENT BASED ON ACTUAL FIELD CONDITIONS.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	STANDARD TEMPORARY SILT/TREE PROTECTION FENCE	STD. NO. 2.10-2

PERMITTING AND ENVIRONMENTAL REGULATIONS NOTES

1. ESC PERMITTING AND INSPECTIONS:
   - 1.1. 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 FRP AND APPLICANTS. NOTE: AN ESC APPROVAL LETTER DOES NOT INDICATE PERMIT ISSUANCE.
   - 1.2. AN NCG01 CERTIFICATE OF COVERAGE MUST BE OBTAINED FROM THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ). THE MAINTENANCE PERMIT CAN BE OBTAINED BY FILLING OUT THE ELECTRONIC NOTICE OF INTENT (E-NOI) FORM AT DEQ.NC.GOV/NCG01. PLEASE NOTE, THE E-NOI FORM MAY ONLY BE COMPLETED ONCE ESC PLANS HAVE BEEN APPROVED (A).
   - 1.3. 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.
   - 1.4. ONCE THE PRECON MEETING HAS BEEN HELD AND ALL FEES PAID, THE LAND DEVELOPMENT PERMIT (LDP) WILL BE ISSUED FOR THE PROJECT.
   - 1.5. FOLLOWING SITE MOBILIZATION, ROUTINE "CONSTRUCTION SITE INSPECTIONS" BY TOK STAFF WILL OCCUR AS OUTLINED IN THE TOK EROSION AND SEDIMENT CONTROL ENFORCEMENT TREE. TO NOTE, "COMPLIANT/SATISFACTORY" INSPECTIONS WILL NEED TO OCCUR FOLLOWING: I.INSTALLATION OF INITIAL ESC PERIMETER CONTROLS (SF, SF/TP, SFOS) ONLY CLEARING THE PERIMETER RIBBON (25' MAX) - "PERIMETER CONTROL INSPECTION". II.INSTALLATION OF ALL PHASE 1 ESC MEASURES INCLUDING ENGINEERED STRUCTURES - "CERTIFICATE OF COMPLANCE 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.
   - 1.6. FOLLOWING THE COMPLETION OF THE ITEMS ABOVE - THE SITE CAN BE CLEARED AND DEVELOPED IN ACCORDANCE WITH THE APPROVED PLAN.
2. PERMITS BOX CONTENTS - A COPY OF THE TOK LAND DEVELOPMENT PERMIT, THE NCG01 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.
3. 401/404 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.
   - 3.1. IF APPLICABLE, PROVIDE A COPY OF THE USACE 404 PERMIT AND DWR 401 CERTIFICATIONS. PROVIDE A COPY OF THE DWR BUFFER AUTHORIZATION.
     - 3.1.1. 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.
     - 3.1.2. 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.
     - 3.1.3. FOLLOW ALL CONDITIONS OUTLINED IN THE CERTIFICATIONS, SPECIFICALLY REPORTING ANY DISCHARGES OUTSIDE OF THE PERMITTED SCOPE OF WORK.
4. 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.).
5. 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

1. 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.
2. 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.
3. AS DESIGNATED BY NCDEQ NCG01 PERMITTING, SELF-INSPECTIONS FOR EROSION AND SEDIMENTATION CONTROL MEASURES ARE TO BE PERFORMED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF EVERY RAIN EVENT OF 1 INCH OR GREATER. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN MEASURES AS DESIGNED.
4. PROVIDE THE MINIMUM MAINTENANCE STANDARDS AS SPECIFIED BELOW:
   - 4.1. SURVEYOR FLAGS/TAPE/STAKES:
     - 4.1.1. REPLACE IDENTIFIERS IF DAMAGED OR KNOCKED DOWN DURING DEVELOPMENT.
     - 4.1.2. ENSURE KEY ENVIRONMENTAL AND/OR CULTURAL RESOURCES MAINTAIN IDENTIFIERS.
     - 4.1.3. COLORS SHOULD ADHERE TO THE APWA UNIFORM COLOR CODE. USE ACCEPTED SURVEY SYMBOLS AND ENSURE OPERATORS UNDERSTAND DESIGNATIONS. UTILITY LINE OWNERS/OPERATORS SHALL IDENTIFY THE DESIGNATING FIRM.
   - 4.2. PERMITS/NCGO1 INSPECTIONS BOX:
     - 4.2.1. CONFIRM BOX IS SECURELY FASHIONS TO A POST OR WALL IN A VISIBLE LOCATION IN PROXIMITY TO THE CONSTRUCTION ENTRANCE.
     - 4.2.2. MAINTAIN RELEVANT IDENTIFICATION ON THE EXTERIOR OF THE BOX.
     - 4.2.3. ENSURE PAPER DOCUMENTS REMAIN DRY / LEGIBLE (LAMINATION, TICKET HOLDERS, BINDERS, ETC.)
     - 4.2.4. REPLACE ANY MISSING DOCUMENTS IMMEDIATELY. CONSIDER PLACING TIES OR FASTENERS IF NECESSARY.
   - 4.3. RAIN GUAGE:
     - 4.3.1. CHECK AND REMOVE ANY ITEMS FROM THE RAIN FUNNEL AND THE DEBRIS FILTER (E.G., DUST, BUGS AND OTHER DEBRIS).
     - 4.3.2. OPEN THE RAIN GAUGE AND REMOVE ANY FOREIGN OBJECTS.
     - 4.3.3. PERFORM ROUTINE MAINTENANCE AS SPECIFIED BY THE MANUFACTURER.
     - 4.3.4. CHECK THAT THE GAUGE IS NOT BEING OBSTRUCTED FROM RAIN CAPTURE AND IS LEVEL BEFORE AND AFTER REASSEMBLY.
   - 4.4. TREE PROTECTION FENCE:
     - 4.4.1. PRUNE ANY DAMAGED TREES. (IF) DAMAGE TO PROTECTED TREES OCCURS, REPAIR ANY DAMAGE TO THE CROWN, TRUNK, OR ROOT SYSTEM IMMEDIATELY.
     - 4.4.2. REPAIR ROOTS BY CUTTING OFF THE DAMAGED AREAS AND PAINTING THEM WITH TREE PAINT. SPREAD PEAT MOSS OR MOIST TOPSOIL OVER EXPOSED ROOTS.
     - 4.4.3. REPAIR DAMAGE TO BARK BY TRIMMING AROUND THE DAMAGED AREA, TAPER THE CUT TO PROVIDE DRAINAGE AND PAINT WITH TREE PAINT.
     - 4.4.4. 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.
   - 4.5. SILT FENCE:
     - 4.5.1. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
     - 4.5.2. 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.
     - 4.5.3. 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.
   - 4.6. SILT FENCE OUTLET:
     - 4.6.1. FRESHEN STONE WHEN SEDIMENT ACCUMULATION EXCEEDS 6 INCHES.
     - 4.6.2. KEEP MESH FREE OF DEBRIS TO PROVIDE ADEQUATE FLOW AND REPLACE STONE AS NEEDED TO FACILITATE DE-WATERING. CONSTRUCTION ENTRANCE:
     - 4.6.3. 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.
     - 4.6.4. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.
   - 4.7. SKIMMER:
     - 4.7.1. CONFIRM SKIMMER IS FUNCTIONAL, INSTALLED IN THE CORRECT ORIENTATION AND HAS MOBILITY TO FLOAT ON TOP OF THE WATER COLUMN.
     - 4.7.2. ENSURE ROCK PAD STABILIZATION IS PRESENT UNDER THE SKIMMER.
     - 4.7.3. REPAIR ANY STRUCTURAL DEFICIENCIES (E.G., ORIFICE DISK, FLEX HOSE CONNECTION, VENT FUNCTIONING, CRACKED PVC) SEDIMENT BASIN
     - 4.7.4. BASIN REQUIRES MAINTENANCE WHEN THE INLET ZONE (1ST QUADRANT) HAS BEEN FILLED WITH SEDIMENT.
     - 4.7.5. BAFFLE MATERIAL SHALL BE MAINTAINED IN GOOD CONDITION FOR THE LIFE OF THE POND UNTIL REMOVAL OR CONVERSION.
   - 4.8. SEDIMENT BASIN / ROLLED EROSION CONTROL PRODUCT:
     - 4.8.1. INSPECT INITIAL CHANNEL ANCHORING HAS BEEN INSTALLED CORRECTLY, CONFIRM SEGMENTS ARE ROLLED IN CORRECT ORIENTATION.
     - 4.8.2. ANY AREAS THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED.
     - 4.8.3. MONITOR AND REPAIR THE RECP AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.
   - 4.9. BASIN CONVEYANCES / SLOPE DRAIN / RIP-RAP LINED CHANEL:
     - 4.9.1. ANY EROSION OF THE SLOPE, BERM OR OUTLET SHOULD BE REPAIRED IMMEDIATELY TO PREVENT HEAD CUTTING BACK INTO THE SLOPE.
     - 4.9.2. CONVEYANCE SHOULD BE REFRESHED IF PORE SPACE HAS BEEN COMPROMISED. CLOGGED DRAINS SHOULD BE FLUSHED OUT OR REPLACED.
     - 4.9.3. ADDITIONAL PERFORMANCE MEASURES MAY BE REQUIRED AT CONVEYANCE ENTRANCE TO SLOW WATER ENTERING THE BASIN.
   - 4.10. FILTER BAG / DEWATERING ACTIVITIES:
     - 4.10.1. ENSURE THE DEWATERING PAD IS IN A GOOD STABILIZED CONDITION.
     - 4.10.2. PRIOR TO USE INSPECT BAGS FOR ANY DEFECTS. ENSURE PUMP HOE IS SECURE AND A FLOATING INTAKE IS BEING USED (WHEN POSSIBLE).
     - 4.10.3. 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.
   - 4.11. TEMPORARY DIVERSION DITCHES / ROLLED EROSION CONTROL PRODUCT:
     - 4.11.1. ANY AREAS THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED.
     - 4.11.2. MONITOR AND REPAIR THE RECP AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.
     - 4.11.3. WITH WATTLES / SILT SOCKS
       - 4.11.3.1. REMOVE SEDIMENT ACCUMULATION BEHIND MEASURE AS NECESSARY TO PREVENT DAMAGE TO CHANNEL VEGETATION.
       - 4.11.3.2. REPLACE WATTLE/SOCK IF CLOGGED OR TORN. REINSTALL PER DETAIL IF DAMAGED OR DISLODGED.
       - 4.11.3.3. IF PONDING BECOMES EXCESSIVE, REPLACE WITH A LARGER DIAMETER WATTLE/SOCK OR A DIFFERENT MEASURE.
     - 4.11.4. WITH CHECK DAMS
       - 4.11.4.1. REMOVE SEDIMENT ACCUMULATION BEHIND MEASURE AS NECESSARY TO PREVENT DAMAGE TO CHANNEL VEGETATION.
       - 4.11.4.2. CHECK FOR EROSION, PIPING, ROCK DISPLACEMENT, AND CORRECT STONE SIZES. REPAIR IMMEDIATELY.
       - 4.11.4.3. CONFIRM WEIR PRESENT AND LOCATED AT THE CENTER OF THE DEVICE.
   - 4.12. INLET PROTECTIONS (PIPE / YARD / DROP / CURB):
     - 4.12.1. NSPECT INLET PROTECTION AND REMOVE SEDIMENT AFTER EACH RAIN EVENT.
     - 4.12.2. EEP FREE OF DEBRIS TO PROVIDE ADEQUATE FLOW AND IF PRESENT REPLACE STONE AS NEEDED TO FACILITATE DE-WATERING.

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

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

BOHLER™
BOHLER ENGINEERING NC, PLLC

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

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

811
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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
CHECKED BY:	OAK
DATE:	04/23/2025
CAD I.D.:	

PROJECT:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL CONTRACTORS, INC.

PROPOSED DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

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

SEAL 055420
OLIVER A. KAIJA
08/19/2025

SHEET TITLE:

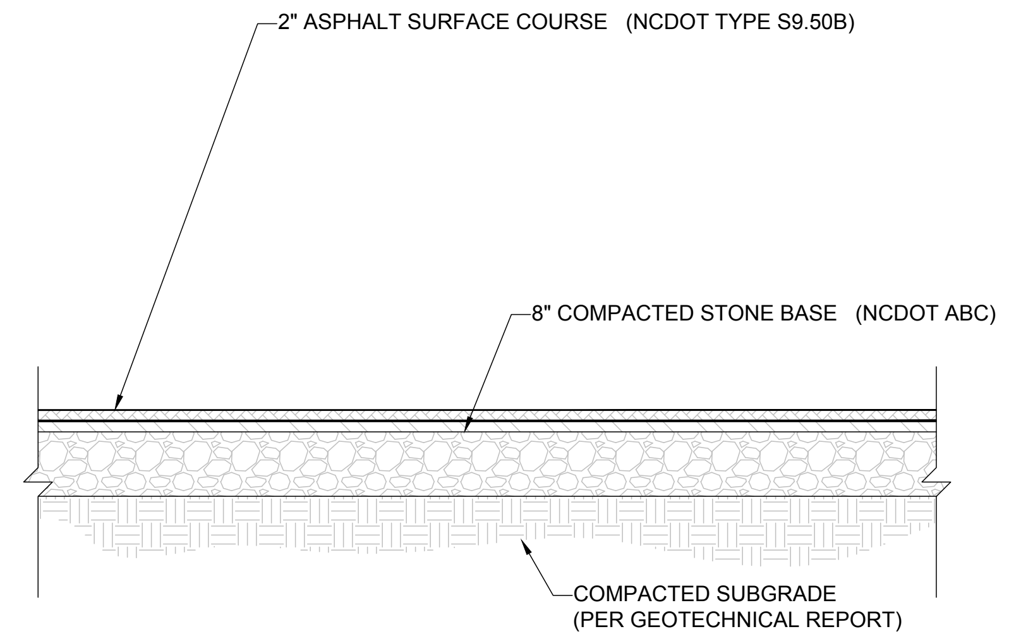
SOIL EROSION AND SEDIMENT CONTROL PLAN

SHEET NUMBER:

C-803

REVISION 2 - 08/19/25

Aug 19, 2025
\\BOHLERENG.NET\SHARES\NC-PROJECTS\2023\NCB230070.00\LAND DEVELOPMENT\CAD\DRAWINGS\PLAN SETS\NCB230070-EROS-0------>LAYOUT: C-803 EROD
RS

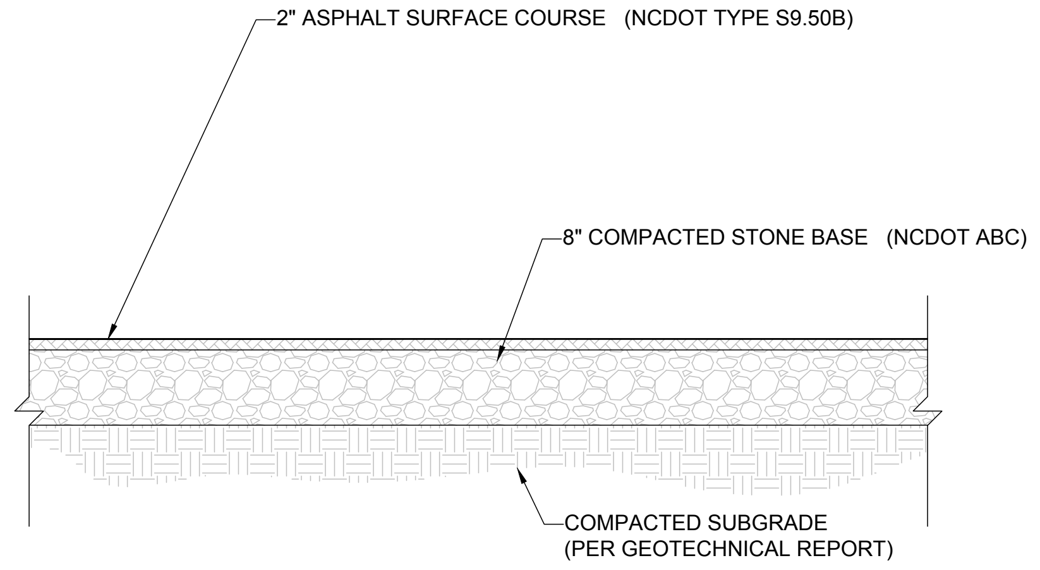

2" ASPHALT SURFACE COURSE (NCDOT TYPE S9.50B)
8" COMPACTED STONE BASE (NCDOT ABC)
COMPACTED SUBGRADE (PER GEOTECHNICAL REPORT)

NOTE:

1. SECTION SHOWN IS BASED ON AN ANTICIPATED CBR OF 5 PER GEOTECHNICAL REPORT PREPARED BY NV5, ENTITLED GEOTECHNICAL ENGINEERING REPORT, DATED 02-19-2025 (PROJECT #121-25-11750). FINAL DESIGN TO BE PROVIDED ONCE FINAL CBR'S ARE AVAILABLE ON COMPACTED SUB-BASE.
2. PAVEMENT MATERIALS TO BE IN ACCORDANCE WITH DIVISION 6 OF THE CURRENT NCDOT STANDARD SPECIFICATIONS. AGGREGATE BASE COURSE STONE SHALL BE IN ACCORDANCE WITH DIVISION 5 OF THE CURRENT NCDOT STANDARD SPECIFICATIONS.

STANDARD DUTY ASPHALT PAVEMENT SECTION

NOT TO SCALE

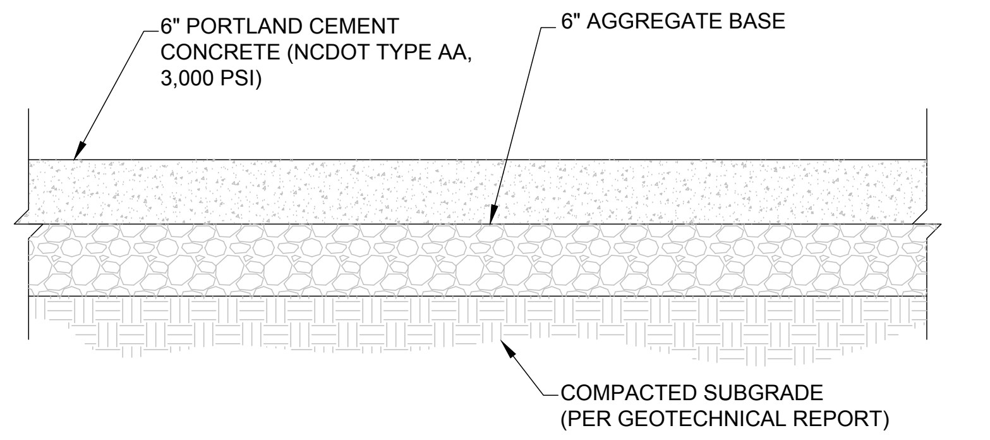

2" ASPHALT SURFACE COURSE (NCDOT TYPE S9.50B)
8" COMPACTED STONE BASE (NCDOT ABC)
COMPACTED SUBGRADE (PER GEOTECHNICAL REPORT)

NOTE:

1. SECTION SHOWN IS BASED ON AN ANTICIPATED CBR OF 5 PER GEOTECHNICAL REPORT PREPARED BY NV5, ENTITLED GEOTECHNICAL ENGINEERING REPORT, DATED 02-19-2025 (PROJECT #121-25-117520). FINAL DESIGN TO BE PROVIDED ONCE FINAL CBR'S ARE AVAILABLE ON COMPACTED SUB-BASE.
2. PAVEMENT MATERIALS TO BE IN ACCORDANCE WITH DIVISION 6 OF THE CURRENT NCDOT STANDARD SPECIFICATIONS. AGGREGATE BASE COURSE STONE SHALL BE IN ACCORDANCE WITH DIVISION 5 OF THE CURRENT NCDOT STANDARD SPECIFICATIONS.

HEAVY DUTY ASPHALT PAVEMENT SECTION

NOT TO SCALE

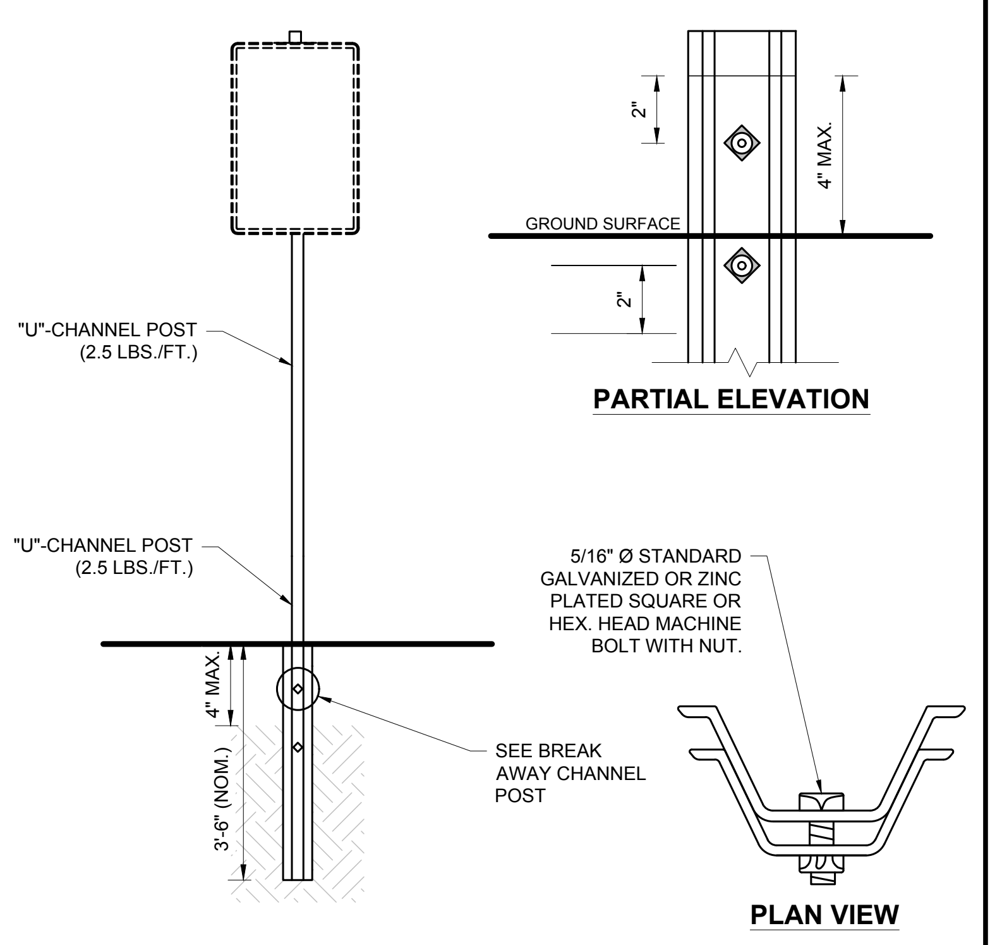

6" PORTLAND CEMENT CONCRETE (NCDOT TYPE AA, 3,000 PSI)
6" AGGREGATE BASE
COMPACTED SUBGRADE (PER GEOTECHNICAL REPORT)

NOTE:

1. SECTION SHOWN IS BASED ON AN ANTICIPATED CBR OF 3 PER GEOTECHNICAL REPORT PREPARED BY ____, ENTITLED GEOTECHNICAL ENGINEERING REPORT, DATED XX-XX-XXXX (PROJECT #XX). FINAL DESIGN TO BE PROVIDED ONCE FINAL CBR'S ARE AVAILABLE ON COMPACTED SUB-BASE.

STANDARD DUTY CONCRETE SECTION

NOT TO SCALE

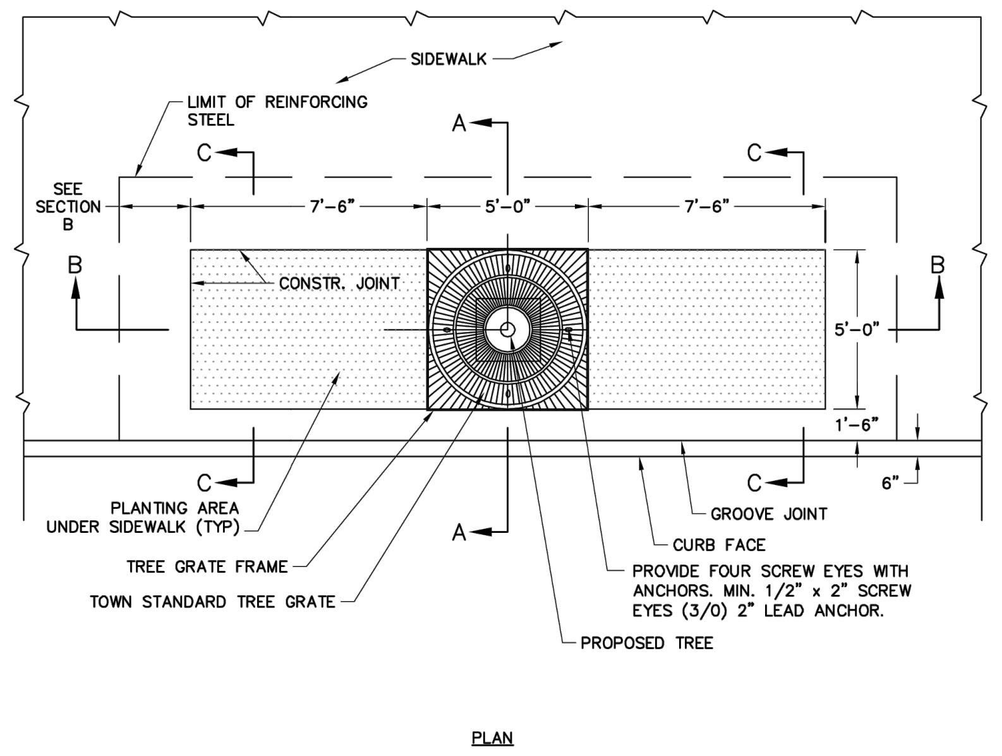

"U"-CHANNEL POST (2.5 LBS./FT.)
"U"-CHANNEL POST (2.5 LBS./FT.)
4" MAX.
3'-6" (NOM.)
SEE BREAK AWAY CHANNEL POST
GROUND SURFACE
2"
4" MAX.
2"
PARTIAL ELEVATION
5/16" Ø STANDARD GALVANIZED OR ZINC PLATED SQUARE OR HEX. HEAD MACHINE BOLT WITH NUT.
PLAN VIEW

NOTES:

1. ALL SIGNS SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES",STATE DOT REQUIREMENTS, LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

BREAKAWAY SIGN POST

NOT TO SCALE (BE-S069901 - 01/2025)

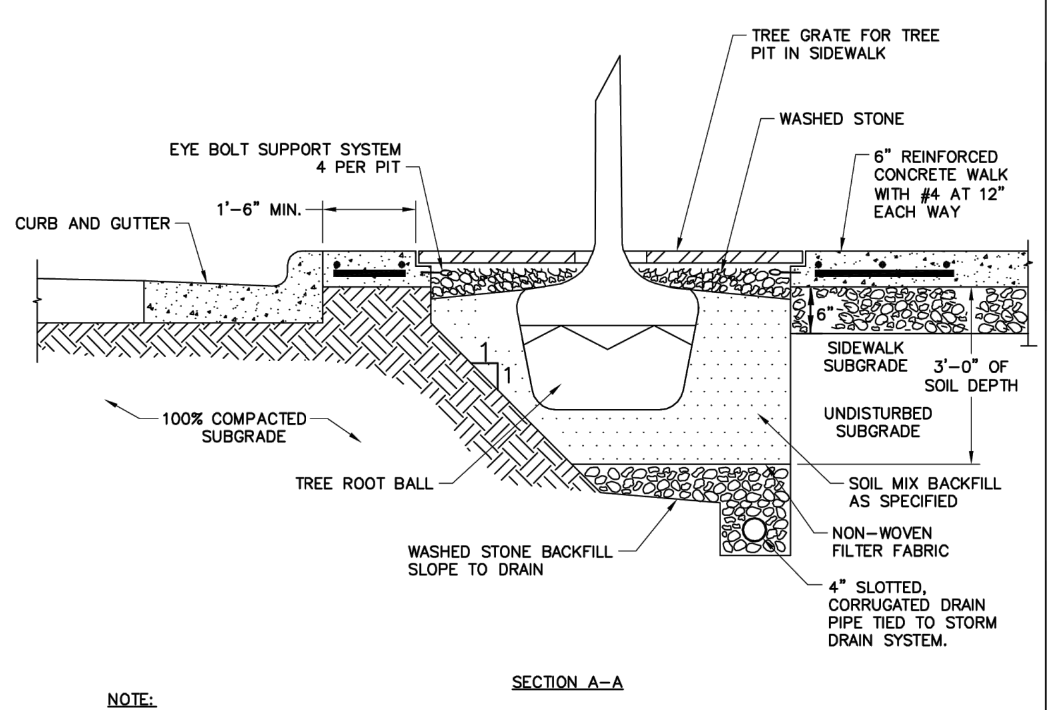

SIDEWALK
LIMIT OF REINFORCING STEEL
SEE SECTION B
A
C
C
7'-6"
5'-0"
7'-6"
B
B
CONSTR. JOINT
5'-0"
1'-6"
6"
PLANTING AREA UNDER SIDEWALK (TYP)
TREE GRATE FRAME
TOWN STANDARD TREE GRATE
GROOVE JOINT
CURB FACE
PROVIDE FOUR SCREW EYES WITH ANCHORS. MIN. 1/2" x 2" SCREW EYES (3/0) 2" LEAD ANCHOR.
PROPOSED TREE

PLAN

REVISIONS	
DATE	DESCRIPTION

1 of 4

TOWN OF KNIGHTDALE STANDARD DETAILS	TREE PIT WITH GRATE IN SIDEWALK	STD. NO. 3.24


TREE GRATE FOR TREE PIT IN SIDEWALK
WASHED STONE
EYE BOLT SUPPORT SYSTEM 4 PER PIT
6" REINFORCED CONCRETE WALK WITH #4 AT 12" EACH WAY
1'-6" MIN.
CURB AND GUTTER
6"
SIDEWALK SUBGRADE
3'-0" OF SOIL DEPTH
UNDISTURBED SUBGRADE
100% COMPACTED SUBGRADE
TREE ROOT BALL
SOIL MIX BACKFILL AS SPECIFIED
NON-WOVEN FILTER FABRIC
WASHED STONE BACKFILL SLOPE TO DRAIN
4" SLOTTED, CORRUGATED DRAIN PIPE TIED TO STORM DRAIN SYSTEM.

SECTION A–A

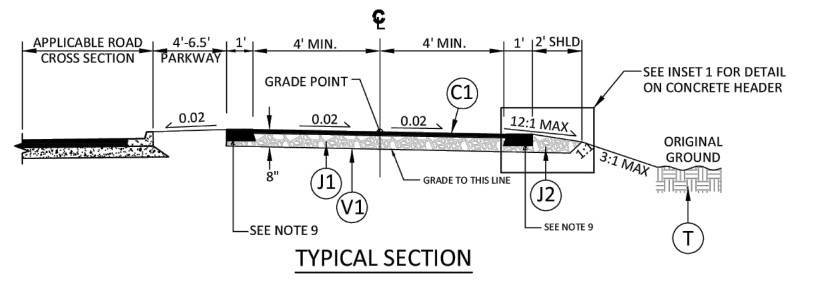
NOTE:

SIDEWALK SUBBASE SHALL BE A 70 PERCENT AGGRATE TO 30 PERCENT SANDY SOIL MIXTURE PER TOWN STANDARD SPECIFICATIONS.

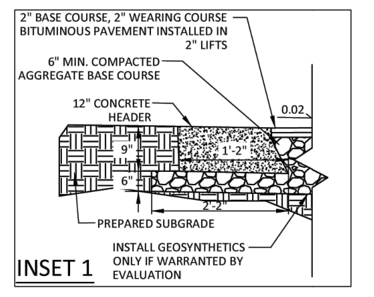
REVISIONS	
DATE	DESCRIPTION

2 of 4

TOWN OF KNIGHTDALE STANDARD DETAILS	TREE PIT WITH GRATE IN SIDEWALK	STD. NO. 3.24


℄
APPLICABLE ROAD CROSS SECTION
4'-6.5' PARKWAY
1'
4' MIN.
4' MIN.
1'
2' SHLD
GRADE POINT
C1
SEE INSET 1 FOR DETAIL ON CONCRETE HEADER
0.02
0.02
0.02
12:1 MAX
1:1
3:1 MAX
ORIGINAL GROUND
8"
J1
V1
GRADE TO THIS LINE
J2
SEE NOTE 9
SEE NOTE 9
T

TYPICAL SECTION


2" BASE COURSE, 2" WEARING COURSE BITUMINOUS PAVEMENT INSTALLED IN 2" LIFTS
6" MIN. COMPACTED AGGREGATE BASE COURSE
12" CONCRETE HEADER
0.02
9"
1'-2"
6"
2'-2"
PREPARED SUBGRADE
INSTALL GEOSYNTHETICS ONLY IF WARRANTED BY EVALUATION

INSET 1

PAVEMENT SCHEDULE	
C1	2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 220 LBS. PER SQ. YD. OR 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
J1	6" AGGREGATE BASE COURSE
J2	VARIABLE DEPTH AGGREGATE BASE COURSE
T	EARTH MATERIAL
V1	GEOTEXTILE FOR PAVEMENT STABILIZATION

TABLE 1 - MAXIMUM RUNNING SLOPE AND TRAIL SEGMENT LENGTH

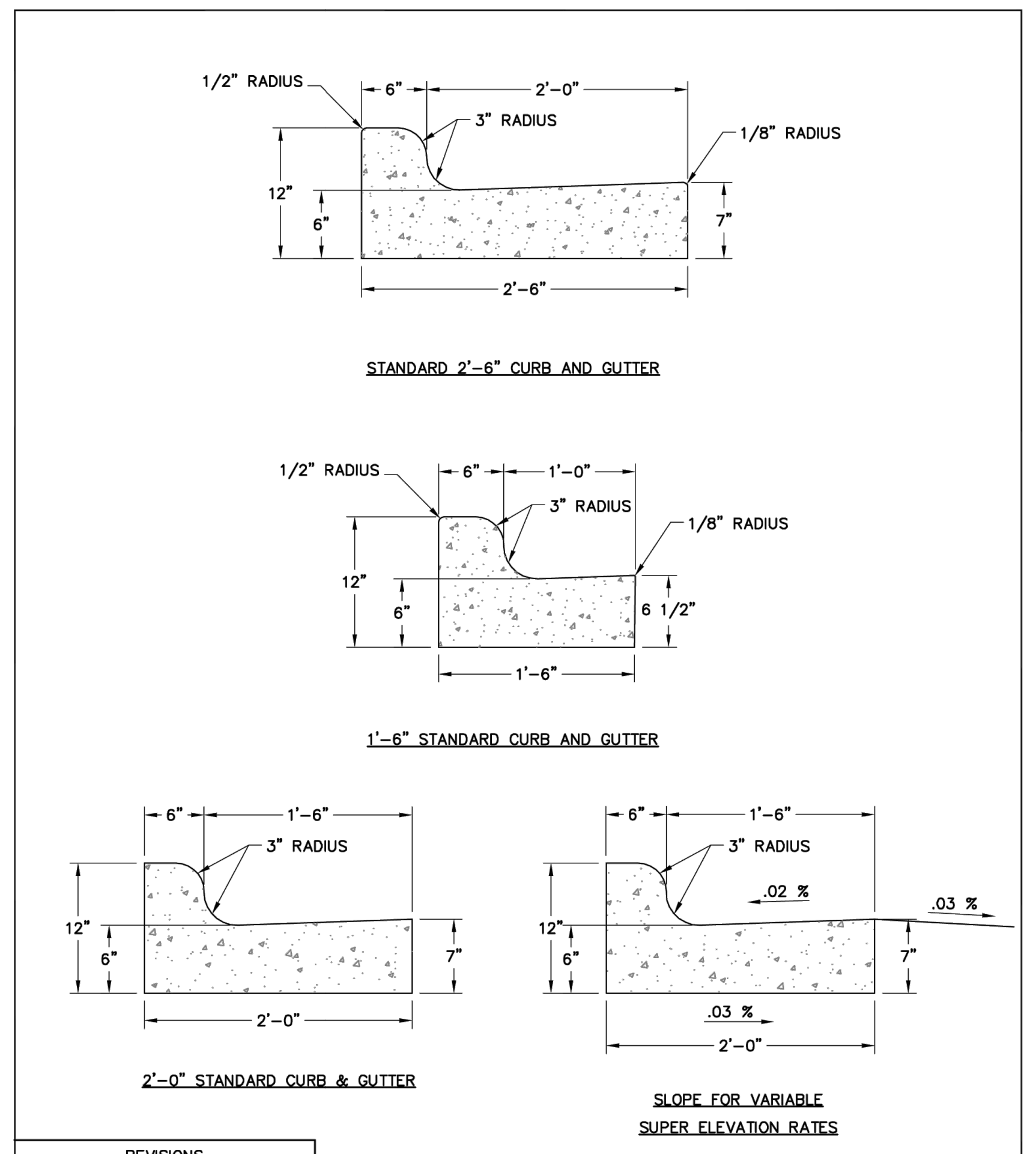
RUNNING SLOPE	MAX LENGTH OF SEGMENT
1:20 (5%)	200 FT
1:12(8.33%)	30 FT

NOTES:

1. TRAIL WIDTH TO BE DETERMINED BY THE TOWN OF KNIGHTDALE
2. PROVIDE MINIMUM 2' SHOULDER OF UNPLANTED AGGREGATE BASE COURSE.
3. TRAILS OR TRAIL SEGMENTS OF ANY LENGTH MAY BE CONSTRUCTED WITH RUNNING SLOPES/VERTICAL GRADES UP TO 1:20 (5%). TO ACCOMMODATE STEEP TERRAIN, TRAILS MAY BE DESIGNED WITH STEEPER SECTIONS OF CONSTRAINED LENGTH AS SHOWN IN TABLE 1. RESTING INTERVALS WITH FLATTER GRADES ARE REQUIRED BETWEEN TRAIL SEGMENTS ANY TIME RUNNING SLOPE EXCEEDS 1:20 (5%). RESTING INTERVALS SHALL BE LOCATED ON UPHILL SIDE OF TRAIL IF ONLY PROVIDED ON ONE SIDE.
4. TO ENSURE THAT A TRAIL IS NOT DESIGNED AS A SERIES OF STEEP SEGMENTS, NO MORE THAN 30% OF THE TOTAL LENGTH OF TRAIL MAY HAVE A RUNNING SLOPE/VERTICAL GRADE OF 7.5% (8.33% OR 1:12 MAX). RESTING INTERVALS MUST BE PROVIDED FREQUENTLY AS THE RUNNING SLOPE INCREASES.
5. RUNNING SLOPE/VERTICAL GRADE RECOMMENDATIONS MAY NOT BE ABLE TO BE ACHIEVED FOR TRAIL REPLACEMENT PROJECTS. FOR THESE TYPE OF PROJECTS, REPLACEMENT OF EXISTING CONDITION IN KIND IS SUFFICIENT.
6. TYPICAL CROSS SLOPE SHALL BE 2.0% (2.08% OR 1:48 MAX). CROSS SLOPE DIRECTION VARIES. SLOPE SHOULDERS FOR POSITIVE DRAINAGE WHICH MAY REQUIRE CONTINUING PAVEMENT OR SHOULDER SLOPE UNTIL TIE-IN WITH NATURAL GROUND. SEE PLAN SHEETS AND CROSS SECTIONS.
7. WHEN CONDITIONS PERMIT, SHOULDERS TO MATCH CROSS SLOPE OF TRAIL AND SIDE SLOPES TO BE 3:1 OR FLATTER.
8. CONTRACTOR IS RESPONSIBLE FOR RE-ESTABLISHING ALL SLOPES DISTURBED DURING CONSTRUCTION.
9. PROOF ROLLING SHALL OCCUR IN PRESENCE OF THE OWNER OR THE OWNER'S TESTING AGENCY AT THE FOLLOWING STAGES: 1)PRIOR TO PLACING FILL IN LOW AREAS; 2) AFTER THE PREPARATION OF SUBGRADE PRIOR TO PLACING ABC; 3) AFTER THE PLACEMENT OF ABC PRIOR TO PAVING.
10. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.
11. NO ABOVE-GROUND UTILITIES OR UTILITY SURFACE COVERS/PLATES/MANHOLES SHALL BE LOCATED WITHIN THE TRAIL AND SHALL BE A MINIMUM OF 2' FROM THE EDGE OF TRAIL. RAISED MANHOLES SHALL BE A MINIMUM OF 4' FROM THE EDGE OF TRAIL.
12. DO NOT PLANT TREES WITHIN 2'-0" SHOULDER, RECOMMENDED 6'-0" DISTANCE FROM TRAIL EDGE OR GREATER IF SWALE OR SCM IS PRESENT.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	ASPHALT TYPICAL SIDEPATH	STD. NO. 4.09-3


1/2" RADIUS
6"
2'-0"
3" RADIUS
1/8" RADIUS
12"
6"
7"
2'-6"
STANDARD 2'-6" CURB AND GUTTER
1/2" RADIUS
6"
1'-0"
3" RADIUS
1/8" RADIUS
12"
6"
6 1/2"
1'-6"
1'-6" STANDARD CURB AND GUTTER
6"
1'-6"
3" RADIUS
12"
6"
7"
2'-0"
2'-0" STANDARD CURB & GUTTER
6"
1'-6"
3" RADIUS
.02 %
.03 %
12"
6"
7"
.03 %
2'-0"
SLOPE FOR VARIABLE SUPER ELEVATION RATES

REVISIONS	
DATE	DESCRIPTION

1 of 3

TOWN OF KNIGHTDALE STANDARD DETAILS	CURB AND GUTTER	STD. NO. 4.01

1'-6" MEDIAN CURB AND GUTTER

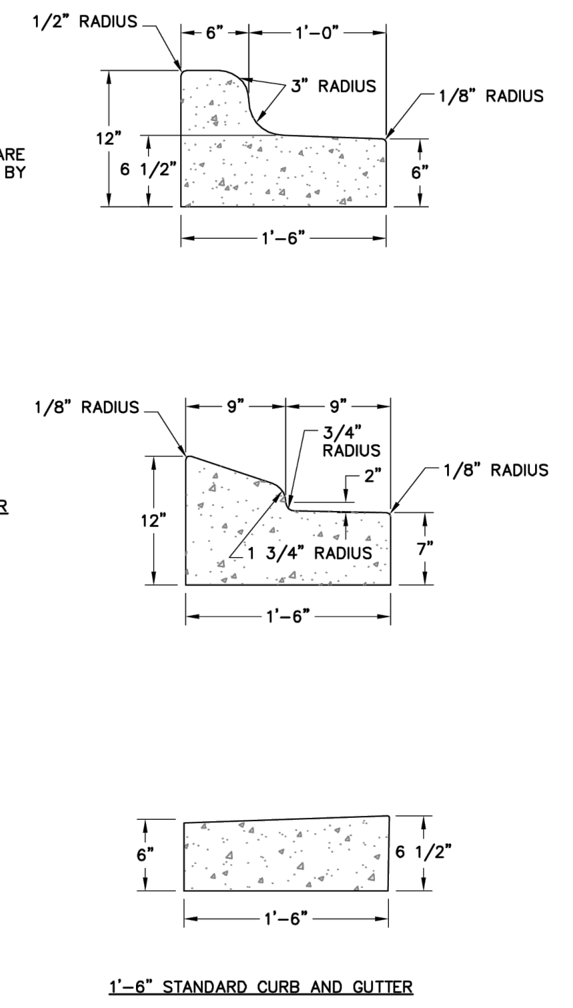
TO BE USED IN MEDIANS WHEN LANES ARE SLOPED FROM ISLAND OR AS SPECIFIED BY THE TOWN ENGINEER.

1'-6" MOUNTABLE CURB AND GUTTER

TO BE USED IN MEDIANS ONLY WHEN SPECIFIED BY THE TOWN ENGINEER.

1'-6" BINDER CURB

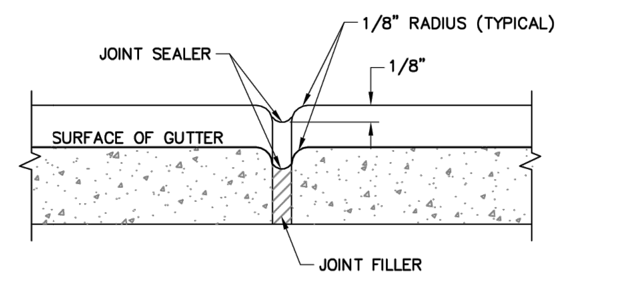
TO BE USED IN ALLEYS ONLY WHEN SPECIFIED BY THE TOWN ENGINEER.


1/2" RADIUS
6"
1'-0"
3" RADIUS
1/8" RADIUS
12"
6 1/2"
6"
1'-6"
1/8" RADIUS
9"
9"
3/4" RADIUS
2"
1/8" RADIUS
12"
1 3/4" RADIUS
7"
1'-6"
6"
6 1/2"
1'-6"
1'-6" STANDARD CURB AND GUTTER

REVISIONS	
DATE	DESCRIPTION

2 of 3

TOWN OF KNIGHTDALE STANDARD DETAILS	CURB AND GUTTER	STD. NO. 4.01


1/8" RADIUS (TYPICAL)
JOINT SEALER
1/8"
SURFACE OF GUTTER
JOINT FILLER

TRANSVERSE EXPANSION JOINT

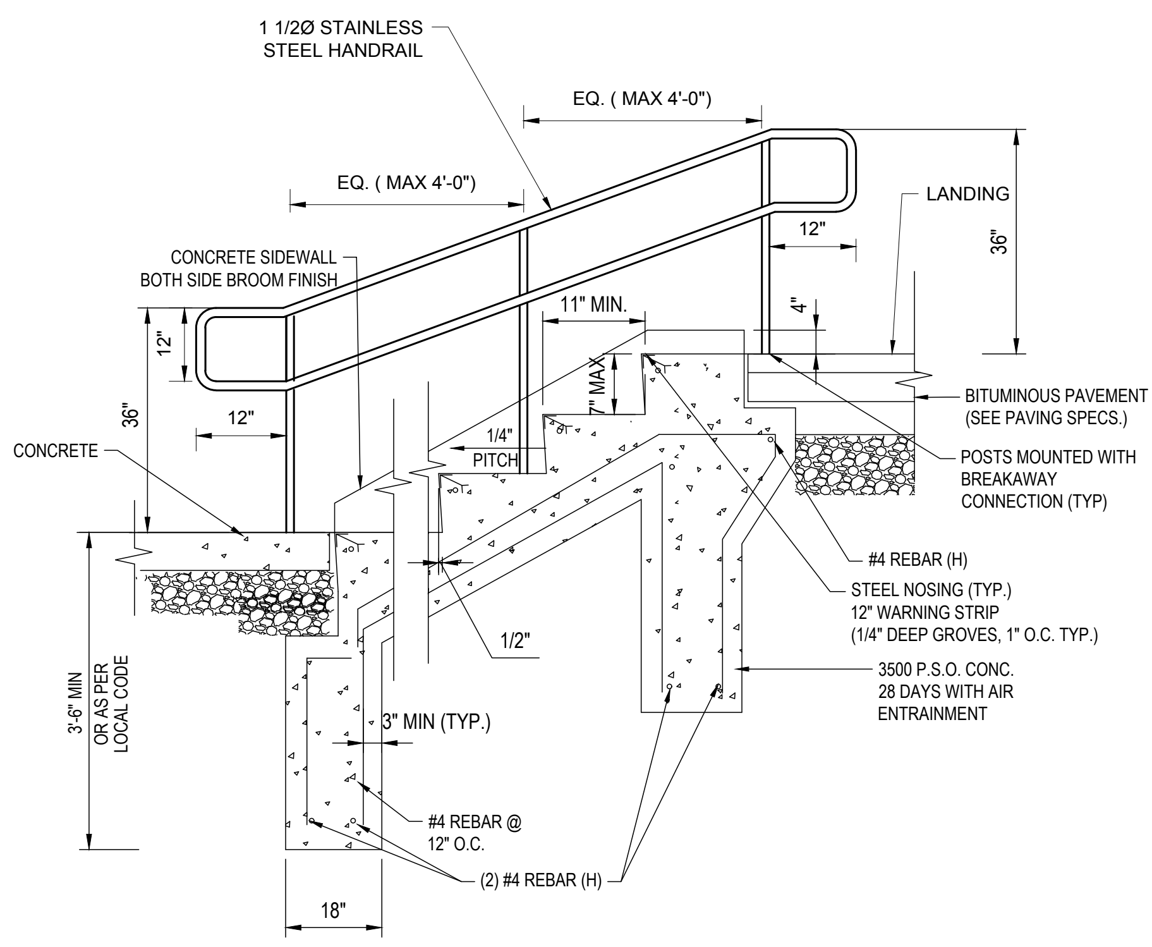
NOTES:

1. CONTRACTION JOINTS SHALL BE SPACED AT 10–FOOT INTERVALS. JOINT SPACING MAY BE ALTERED BY THE ENGINEER TO PREVENT UNCONTROLLED CRACKING.
2. CONTRACTION JOINTS MAY BE INSTALLED BY THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. WHERE SUCH JOINTS ARE NOT FORMED BY TEMPLATES, A MINIMUM DEPTH OF 1–1/2" SHALL BE OBTAINED.
3. ALL EXPANSION JOINTS SHALL BE SPACED AT 90–FOOT INTERVALS, AND ADJACENT TO ALL RIGID OBJECTS. JOINTS SHALL MATCH LOCATIONS WITH JOINTS IN ABUTTING SIDEWALK.
4. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3600 PSI IN 28 DAYS.
5. CURB SHALL BE DEPRESSED AT INTERSECTIONS TO PROVIDE FOR FUTURE ACCESSIBLE RAMPS.
6. TOP 6" OF SUBGRADE BENEATH THE CURB AND GUTTER SHALL BE COMPACTED TO 100% STANDARD PROCTOR DENSITY.

REVISIONS	
DATE	DESCRIPTION

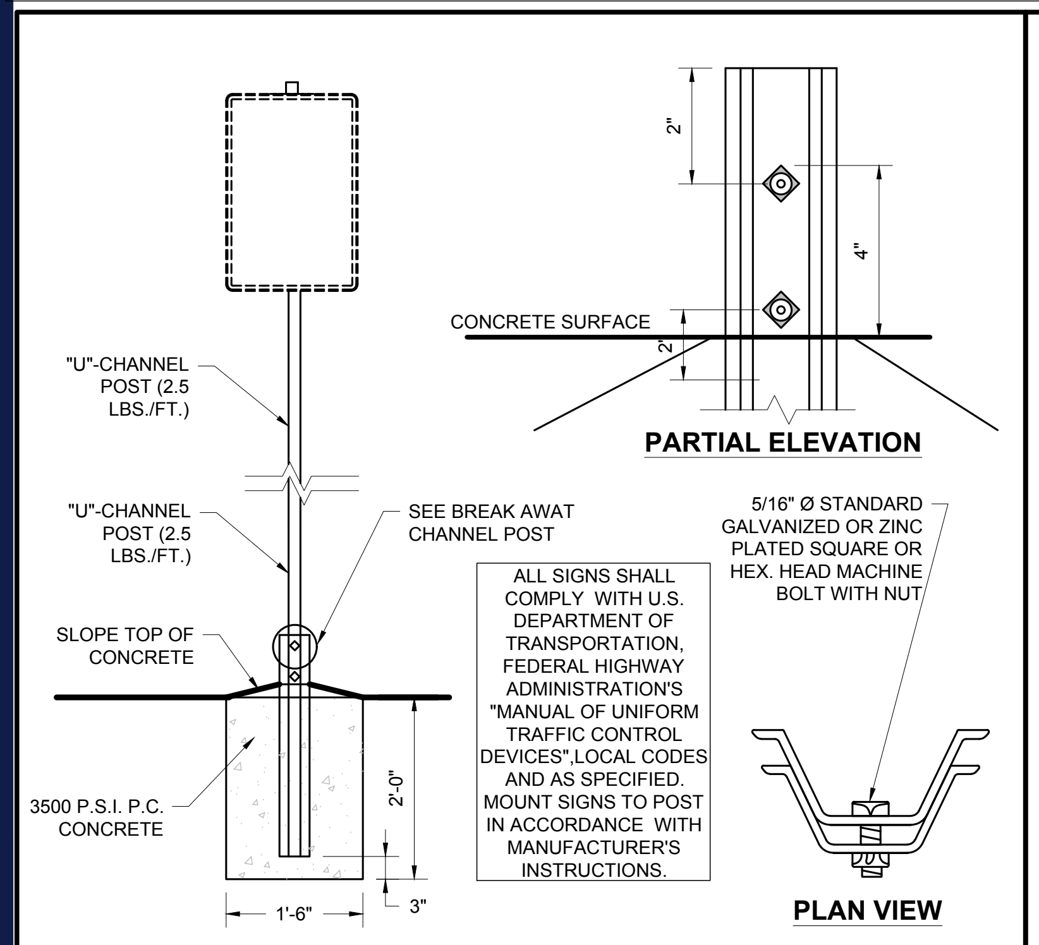
3 of 3

TOWN OF KNIGHTDALE STANDARD DETAILS	CURB AND GUTTER	STD. NO. 4.01


1 1/2Ø STAINLESS STEEL HANDRAIL
EQ. (MAX 4'-0")
EQ. (MAX 4'-0")
LANDING
12"
36"
CONCRETE SIDEWALL BOTH SIDE BROOM FINISH
11" MIN.
4"
12"
36"
12"
7" MAX
1/4" PITCH
CONCRETE
BITUMINOUS PAVEMENT (SEE PAVING SPECS.)
POSTS MOUNTED WITH BREAKAWAY CONNECTION (TYP)
#4 REBAR (H)
STEEL NOSING (TYP.)
12" WARNING STRIP
(1/4" DEEP GROVES, 1" O.C. TYP.)
1/2"
3500 P.S.O. CONC. 28 DAYS WITH AIR ENTRAINMENT
3'-6" MIN OR AS PER LOCAL CODE
3" MIN (TYP.)
#4 REBAR @ 12" O.C.
(2) #4 REBAR (H)
18"

CONCRETE STEPS W/ SIDE WALLS AND RAILING

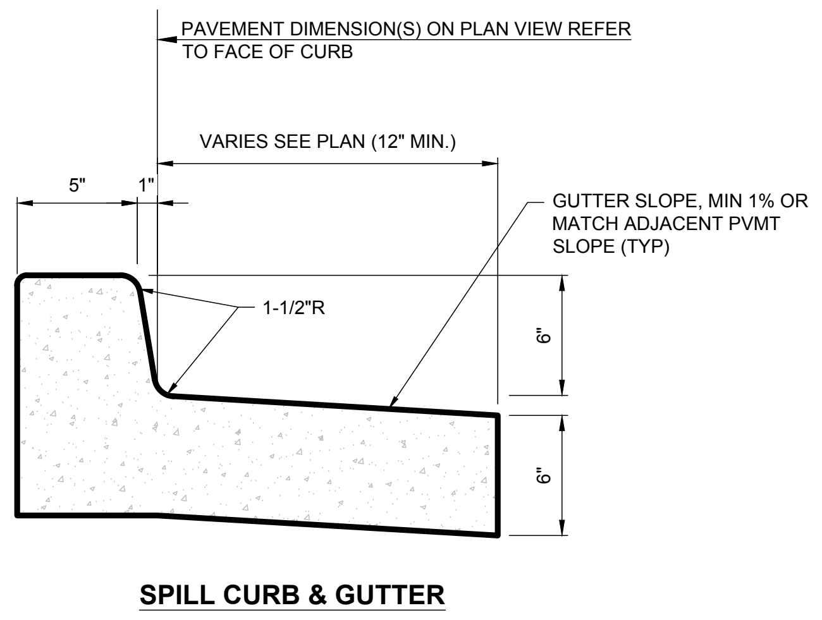
N.T.S.


"U"-CHANNEL POST (2.5 LBS./FT.)
"U"-CHANNEL POST (2.5 LBS./FT.)
SEE BREAK AWAT CHANNEL POST
SLOPE TOP OF CONCRETE
3500 P.S.I. P.C. CONCRETE
2'-0"
1'-6"
3"
CONCRETE SURFACE
2"
4"
2"
PARTIAL ELEVATION
5/16" Ø STANDARD GALVANIZED OR ZINC PLATED SQUARE OR HEX. HEAD MACHINE BOLT WITH NUT
PLAN VIEW

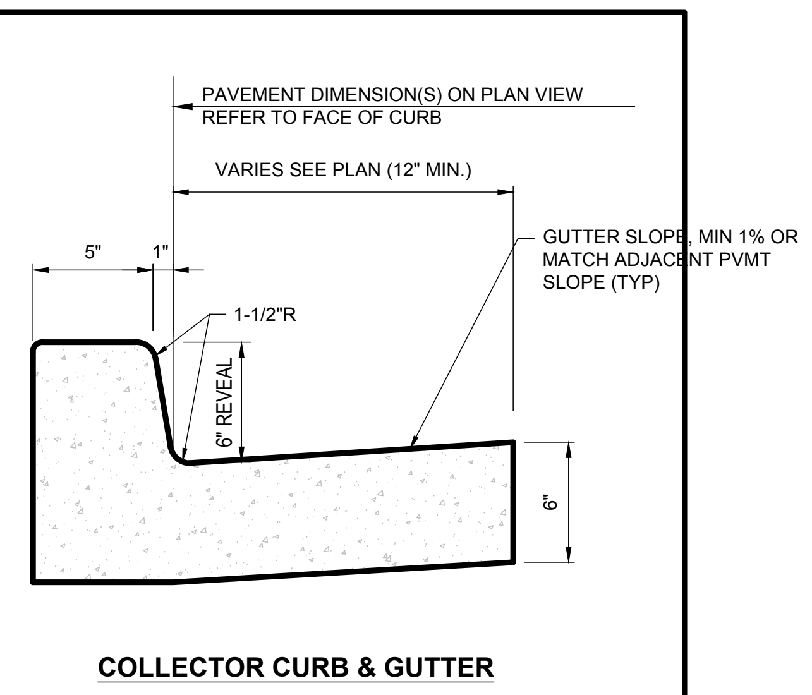
ALL SIGNS SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES",LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

BREAKAWAY SIGN POST IN CONCRETE

NOT TO SCALE (BE-S069902 - 01/2025)


PAVEMENT DIMENSION(S) ON PLAN VIEW REFER TO FACE OF CURB
VARIES SEE PLAN (12" MIN.)
5"
1"
GUTTER SLOPE, MIN 1% OR MATCH ADJACENT PVMT SLOPE (TYP)
1-1/2"R
6"
6"

SPILL CURB & GUTTER


PAVEMENT DIMENSION(S) ON PLAN VIEW REFER TO FACE OF CURB
VARIES SEE PLAN (12" MIN.)
5"
1"
1-1/2"R
6" REVEAL
GUTTER SLOPE, MIN 1% OR MATCH ADJACENT PVMT SLOPE (TYP)
6"

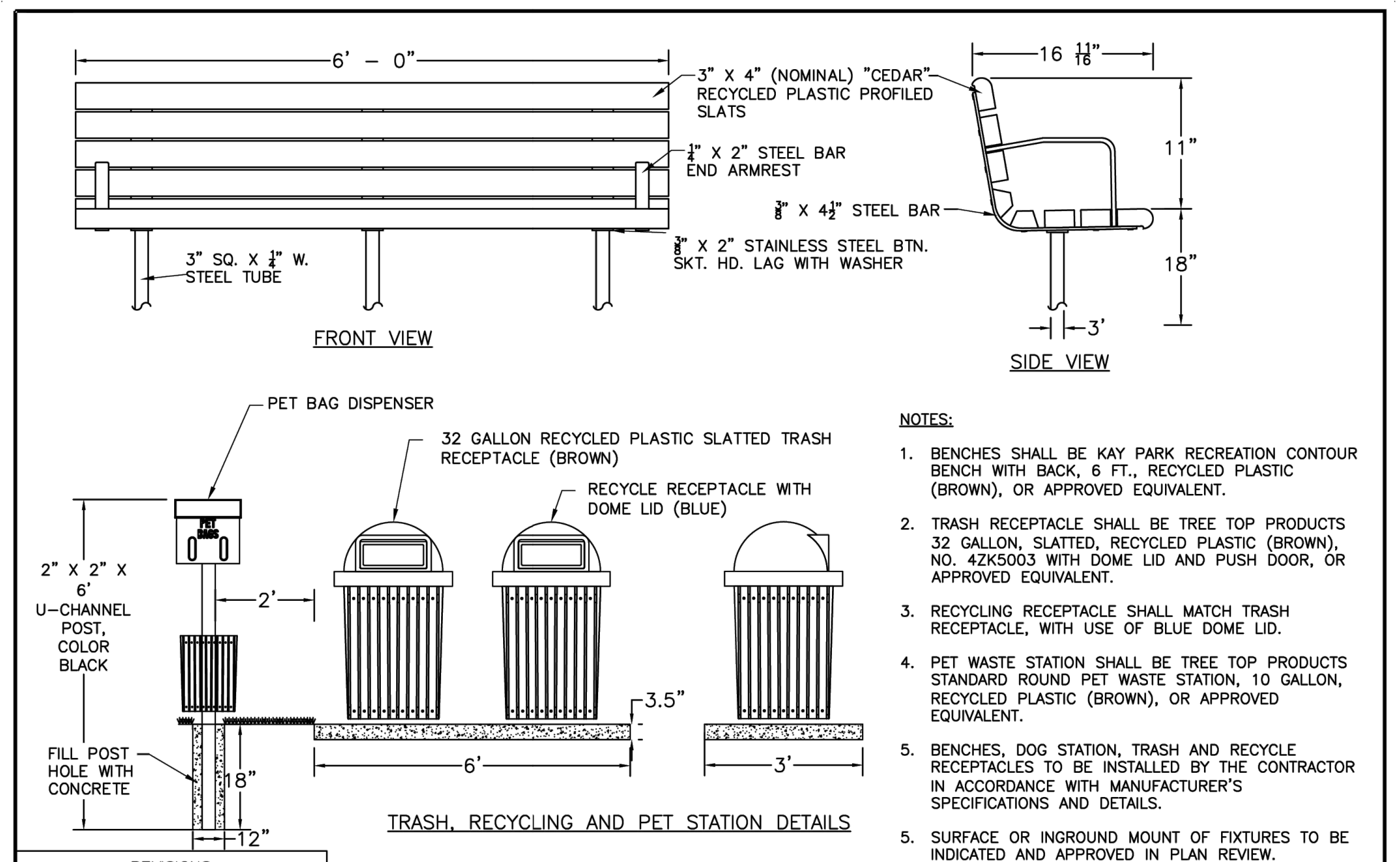
COLLECTOR CURB & GUTTER

NOTES:

1. CONCRETE FOR CURBING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 P.S.I. @ 28 DAYS.
2. CONSTRUCTION STAKING FOR CURB INSTALLATION SHALL BE REFERENCED (CUT OR FILL) TO THE TOP OF CURB.
3. AT CONTRACTOR'S OPTION, THE GUTTER THICKNESS MAY BE INCREASED AT THE EDGE OF PAVEMENT TO MAKE BOTTOM OF GUTTER CONTIGUOUS WITH BOTTOM OF ASPHALT PAVEMENT.
4. CONTRACTION JOINTS SHALL BE PLACED @ 10'-0" O.C. TOOLED 1/4" (±1/16") WIDE, 1" DEEP. EXPANSION JOINTS SHALL BE PLACED @ 40'-0" INTERVALS, MAXIMUM, AND ALL P.C.'S.
5. GUTTER PAN SLOPE TO BE ADJUSTED WITHIN ACCESSIBLE PARKING SPACES TO MATCH SLOPE BETWEEN SPOT ELEVATIONS.
6. GUTTER TYPE TO MATCH PAVEMENT SLOPE DIRECTION. CONTRACTOR TO FIELD ADJUST AS NECESSARY.

ON-SITE CONCRETE CURB AND GUTTER 6" REVEAL

NOT TO SCALE (BE-S020207 - 01/2025)


6' – 0"
3" X 4" (NOMINAL) "CEDAR" RECYCLED PLASTIC PROFILED SLATS
1/4" X 2" STEEL BAR END ARMREST
3" SQ. X 1/4" W. STEEL TUBE
3/8" X 2" STAINLESS STEEL BTN. SKT. HD. LAG WITH WASHER
FRONT VIEW
16 11/16"
11"
3/8" X 4 1/2" STEEL BAR
18"
3'
SIDE VIEW
PET BAG DISPENSER
PET BAGS
32 GALLON RECYCLED PLASTIC SLATTED TRASH RECEPTACLE (BROWN)
RECYCLE RECEPTACLE WITH DOME LID (BLUE)
2" X 2" X 6' U–CHANNEL POST, COLOR BLACK
2'
3.5"
FILL POST HOLE WITH CONCRETE
18"
12"
6'
3'

TRASH, RECYCLING AND PET STATION DETAILS

NOTES:

1. BENCHES SHALL BE KAY PARK RECREATION CONTOUR BENCH WITH BACK, 6 FT., RECYCLED PLASTIC (BROWN), OR APPROVED EQUIVALENT.
2. TRASH RECEPTACLE SHALL BE TREE TOP PRODUCTS 32 GALLON, SLATTED, RECYCLED PLASTIC (BROWN), NO. 4ZK5003 WITH DOME LID AND PUSH DOOR, OR APPROVED EQUIVALENT.
3. RECYCLING RECEPTACLE SHALL MATCH TRASH RECEPTACLE, WITH USE OF BLUE DOME LID.
4. PET WASTE STATION SHALL BE TREE TOP PRODUCTS STANDARD ROUND PET WASTE STATION, 10 GALLON, RECYCLED PLASTIC (BROWN), OR APPROVED EQUIVALENT.
5. BENCHES, DOG STATION, TRASH AND RECYCLE RECEPTACLES TO BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND DETAILS.
5. SURFACE OR INGROUND MOUNT OF FIXTURES TO BE INDICATED AND APPROVED IN PLAN REVIEW.
6. AMENITIES TO BE PLACED IN ACCORDANCE WITH UDO AND APPROVED CONSTRUCTION PLANS.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	PUBLIC GREENWAY AMENITIES (BENCH, TRASH, RECYCLING, PET STATION)	STD. NO. 4.09-4

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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BOHLER ENGINEERING NC, PLLC

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

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

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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
CHECKED BY:	OAK
DATE:	04/23/2025
CAD I.D.:	

PROJECT:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL CONTRACTORS, INC.

PROPOSED DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

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

SEAL 055420
OLIVER A. KAIJA
08/19/2025

SHEET TITLE:

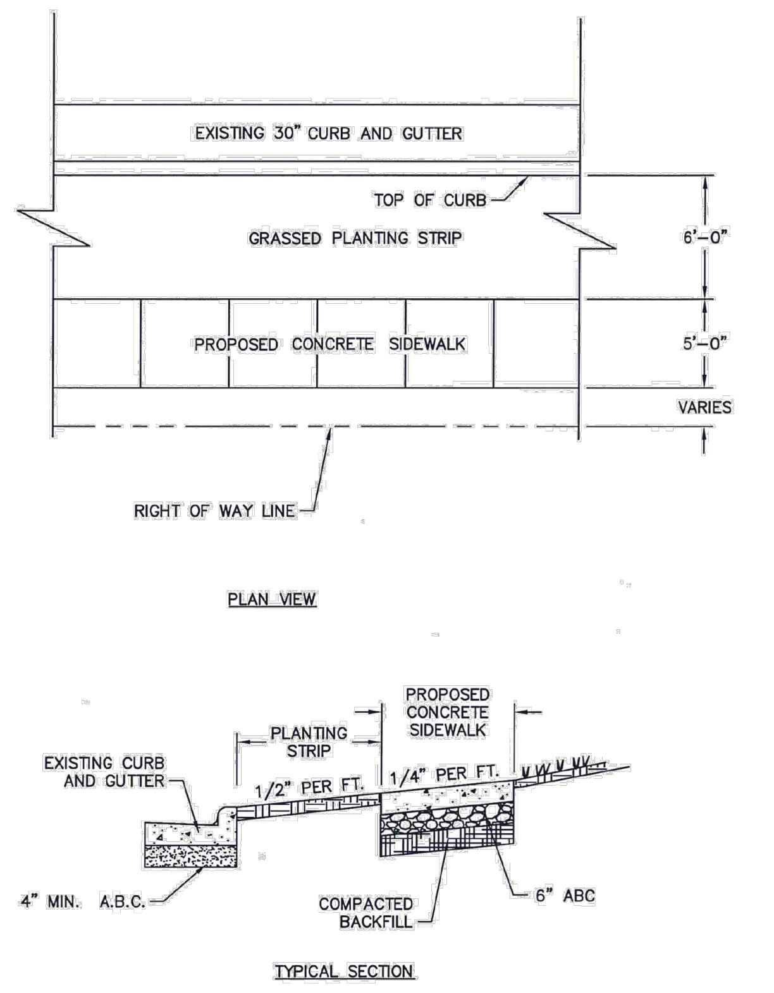
CONSTRUCTION DETAILS

SHEET NUMBER:

C-901

REVISION 2 - 08/19/25

Aug 19, 2025
\\BOHLERENG.NET\SHARES\NC-PROJECTS\2023\NCB230070.00\LAND DEVELOPMENT\CAD\DRAWINGS\PLAN SETS\NCB230070-CNDS-0----->LAYOUT: C-901 DETL
RS


EXISTING 30" CURB AND GUTTER
TOP OF CURB
GRASSED PLANTING STRIP
6'–0"
PROPOSED CONCRETE SIDEWALK
5'–0"
VARIES
RIGHT OF WAY LINE
PLAN VIEW
EXISTING CURB AND GUTTER
PLANTING STRIP
PROPOSED CONCRETE SIDEWALK
1/2" PER FT.
1/4" PER FT.
4" MIN. A.B.C.
COMPACTED BACKFILL
6" ABC
TYPICAL SECTION

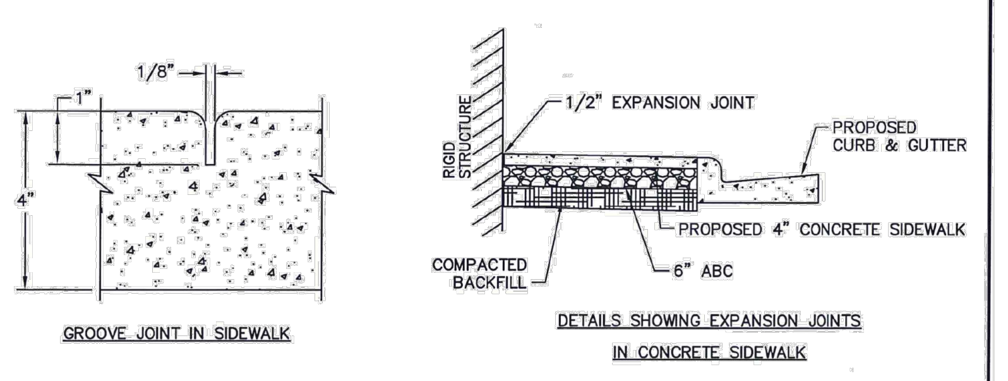
NOTES:

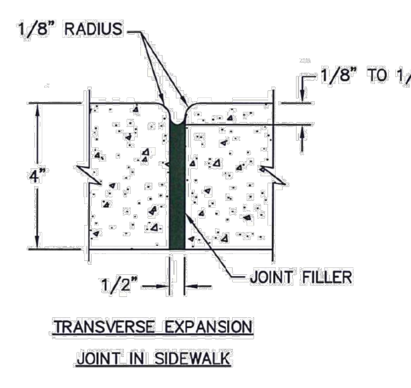
1. TRANSVERSE EXPANSION JOINTS TO BE A MAXIMUM OF 50 FEET APART.
2. CONTROL JOINTS TO BE AT 5 FEET O.C.
3. ALL CONCRETE TO BE FINISHED WITH CURING COMPOUND.

REVISIONS	
DATE	DESCRIPTION

1 of 2

TOWN OF KNIGHTDALE STANDARD DETAILS | CONCRETE SIDEWALKS | STD. NO. 4.04-1


1/8"
1"
4"
GROOVE JOINT IN SIDEWALK
RIGID STRUCTURE
1/2" EXPANSION JOINT
PROPOSED CURB & GUTTER
PROPOSED 4" CONCRETE SIDEWALK
COMPACTED BACKFILL
6" ABC
DETAILS SHOWING EXPANSION JOINTS IN CONCRETE SIDEWALK


1/8" RADIUS
1/8" TO 1/4"
4"
1/2"
JOINT FILLER
TRANSVERSE EXPANSION JOINT IN SIDEWALK

NOTES:

1. A GROOVE JOINT 1" DEEP WITH 1/8" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 45' INTERVALS NOT TO EXCEED 50' AND MATCHING EXPANSION/CONSTRUCTION JOINT IN ADJACENT CURB. A SEALED 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.
2. SIDEWALK AT DRIVEWAY ENTRANCES TO BE 6" THICK.
3. WIDTH OF SIDEWALK SHALL CORRESPOND TO STREET CROSS SECTION BUT SHALL BE 5' AT A MINIMUM.
4. SIDEWALK ADJACENT TO CURB AND GUTTER IN PARKING LOT OR ALONG STREET SHALL BE 6' WIDE AT A MINIMUM.
5. SIDEWALK TO BE POURED TO END OF RADIUS AT INTERSECTING STREETS.
6. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3600 PSI IN 28 DAYS.

REVISIONS	
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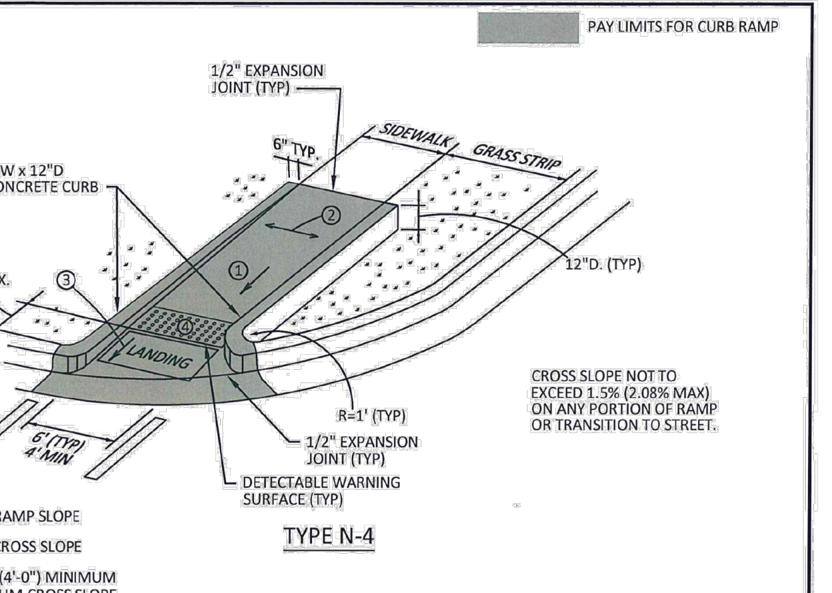
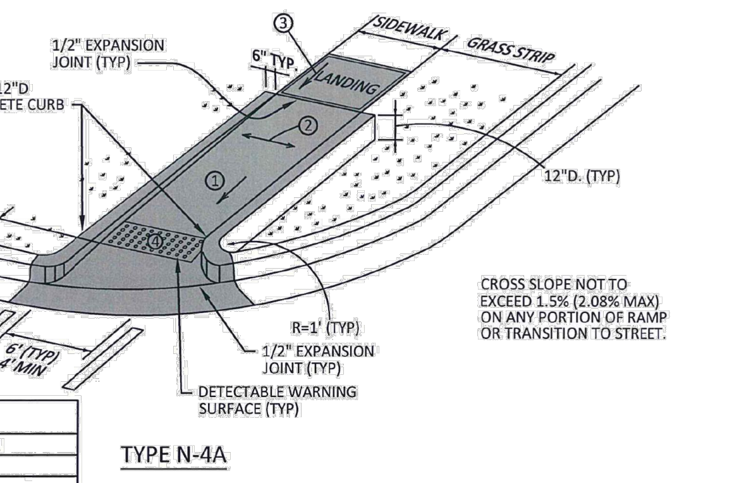
2 of 2

TOWN OF KNIGHTDALE STANDARD DETAILS | CONCRETE SIDEWALKS | STD. NO. 4.04-2


PAY LIMITS FOR CURB RAMP
1/2" EXPANSION JOINT (TYP)
6" TYP.
SIDEWALK
GRASS STRIP
6"W x 12"D CONCRETE CURB
5' MAX.
LANDING
12"D. (TYP)
R=1' (TYP)
1/2" EXPANSION JOINT (TYP)
DETECTABLE WARNING SURFACE (TYP)
6' (TYP) 4' MIN
CROSS SLOPE NOT TO EXCEED 1.5% (2.08% MAX) ON ANY PORTION OF RAMP OR TRANSITION TO STREET.
TYPE N-4

① 7.5%; 8.33% (1:12) MAX RAMP SLOPE
② 1.5%; 2.08% (1:48) MAX CROSS SLOPE
③ CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 1.5 (2.08% MAX) WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.
④ RAMPS AND DOMES SHALL BE INSTALLED THE SAME WIDTH AS THE SIDEWALK.
⑤ IF LENGTH EXCEEDS 5', TRUNCATED DOMES SHALL BE INSTALLED ALONG THE BACK OF THE CURB COVERING THE FULL WIDTH OF THE RAMP.

CONCRETE DEPTH	
RAMP/FLARE	6"
LANDING	4"


1/2" EXPANSION JOINT (TYP)
6" TYP.
SIDEWALK
GRASS STRIP
LANDING
6"W x 12"D CONCRETE CURB
5' MAX.
12"D. (TYP)
R=1' (TYP)
1/2" EXPANSION JOINT (TYP)
DETECTABLE WARNING SURFACE (TYP)
6' (TYP) 4' MIN
CROSS SLOPE NOT TO EXCEED 1.5% (2.08% MAX) ON ANY PORTION OF RAMP OR TRANSITION TO STREET.
TYPE N-4A

REVISIONS	
DATE	DESCRIPTION

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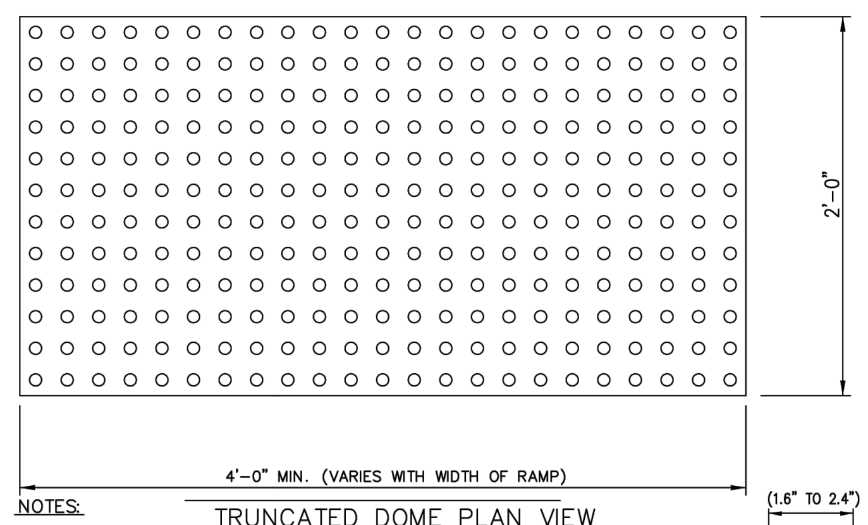
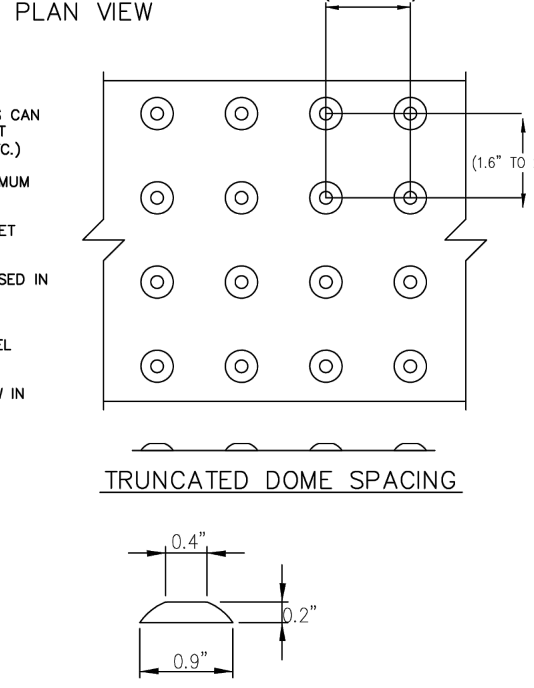
TOWN OF KNIGHTDALE STANDARD DETAILS | WHEELCHAIR CURB RAMPS (NEW DEVELOPMENT) | STD. NO. 4.06-3


2'–0"
4'–0" MIN. (VARIES WITH WIDTH OF RAMP)
TRUNCATED DOME PLAN VIEW

NOTES:

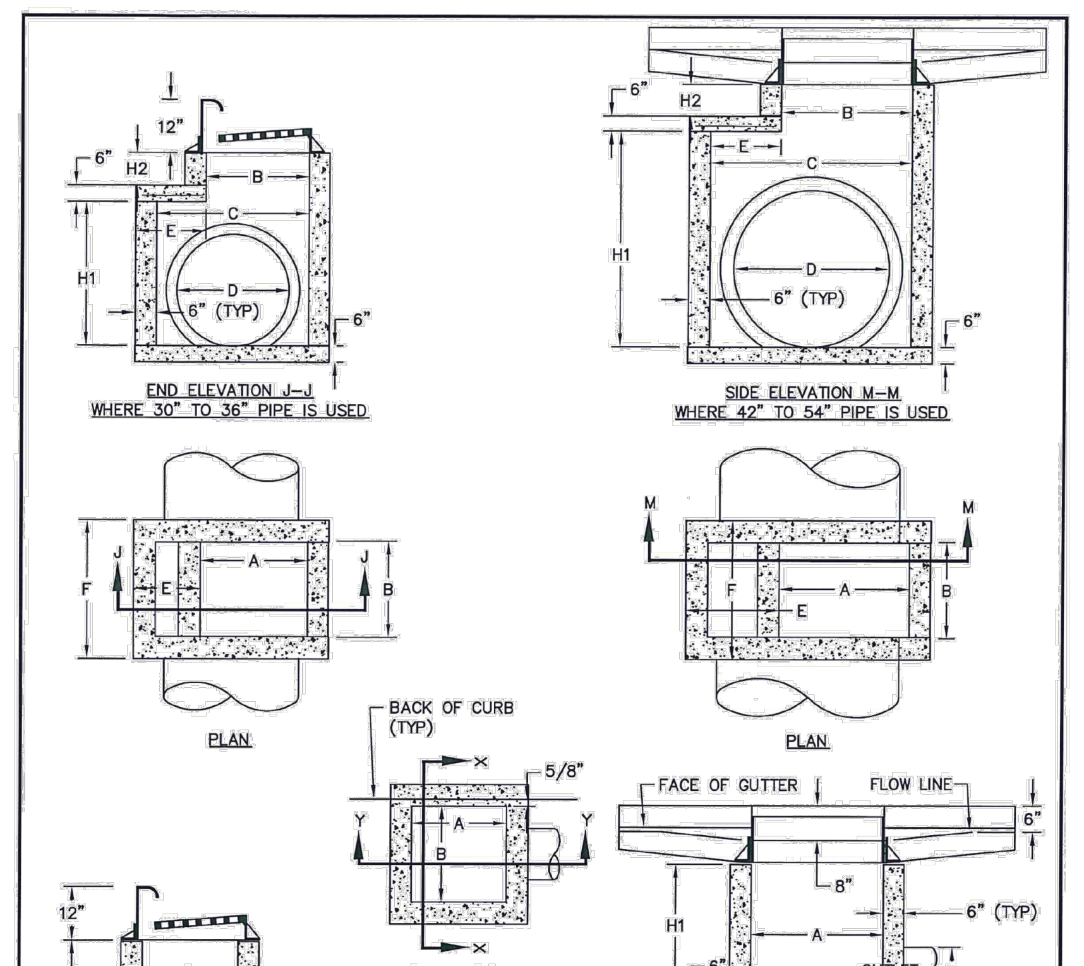
1. ALL MATS SHALL BE REPLACEABLE MATS. PLASTIC MATS CAN BE EITHER SURFACE APPLIED OR WET–SET FRAMES THAT ACCEPT THE PLASTIC MATS. (NO PRE–CAST PAVERS, ETC.)
2. WIDTH OF DETECTABLE WARNING AREA SHALL BE A MINIMUM OF 4 FEET AND VARY WITH WIDTH OF RAMP.
3. LENGTH OF DETECTABLE WARNING AREA SHALL BE 2 FEET REGARDLESS OF SECTION WIDTH.
4. DETECTABLE WARNING AREA CAN BE SQUARE WHERE USED IN A CURB RADIUS.
5. DETECTABLE WARNING DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
6. DETECTABLE WARNING AREA SHALL BE COLORED YELLOW IN ALL LOCATIONS.


(1.6" TO 2.4")
(1.6" TO 2.4")
TRUNCATED DOME SPACING
0.4"
0.2"
0.9"
TRUNCATED DOME SECTION

REVISIONS	
DATE	DESCRIPTION

1 of 1

TOWN OF KNIGHTDALE STANDARD DETAILS | TRUNCATED DOMES PLAN AND CROSS SECTION | STD. NO. 4.07


12"
6"
H2
B
C
E
H1
D
6" (TYP)
6"
END ELEVATION J–J WHERE 30" TO 36" PIPE IS USED
SIDE ELEVATION M–M WHERE 42" TO 54" PIPE IS USED
J
F
A
M
PLAN
PLAN
BACK OF CURB (TYP)
5/8"
X
Y
PLAN VIEW
FACE OF GUTTER
FLOW LINE
8"
6" (TYP)
OUTLET
SECTION Y–Y
8" (TYP)
SECTION X–X

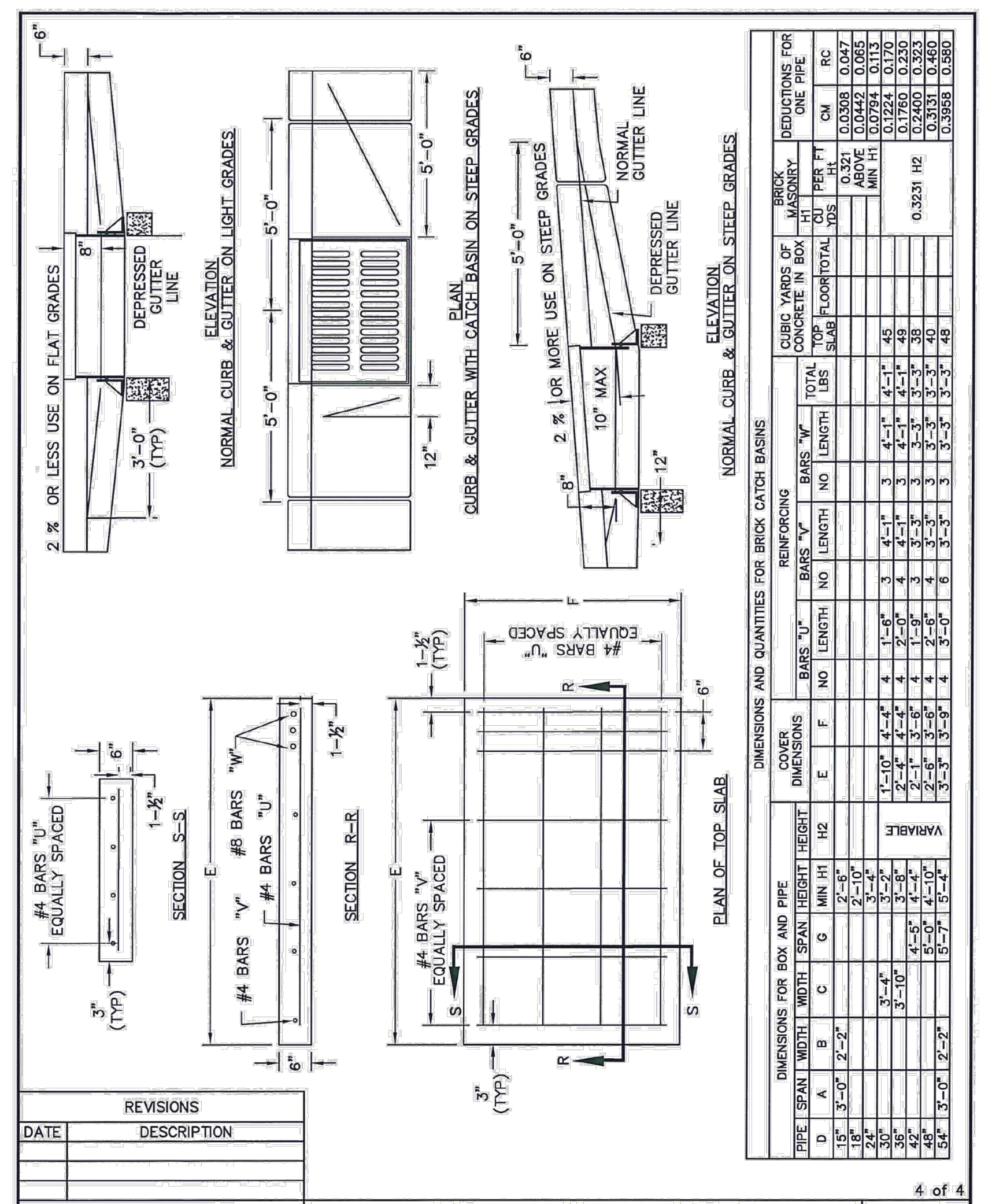
NOTES:

1. ALL CONCRETE SHALL BE 3000 P.S.I.
2. BASE SLABS SHALL BE FORMED PRIOR TO PLACING OF CONCRETE.
3. USE TYPE "A" GRATE AT SAG POINTS, OTHERWISE USE TYPE "B" OR "C" FOR THE APPROPRIATE FLOW DIRECTION.
4. ALL WALLS GREATER THAN 6' IN DEPTH SHALL BE CONSTRUCTED 12" THICK.
5. WAFFLE BOXES ARE NOT ALLOWED WITHOUT PRIOR APPROVAL FROM THE TOWN OF KNIGHTDALE

REVISIONS	
DATE	DESCRIPTION

3 of 4

TOWN OF KNIGHTDALE STANDARD DETAILS | STANDARD CURB INLET PRECAST CONCRETE BOX | STD. NO. 5.05-3

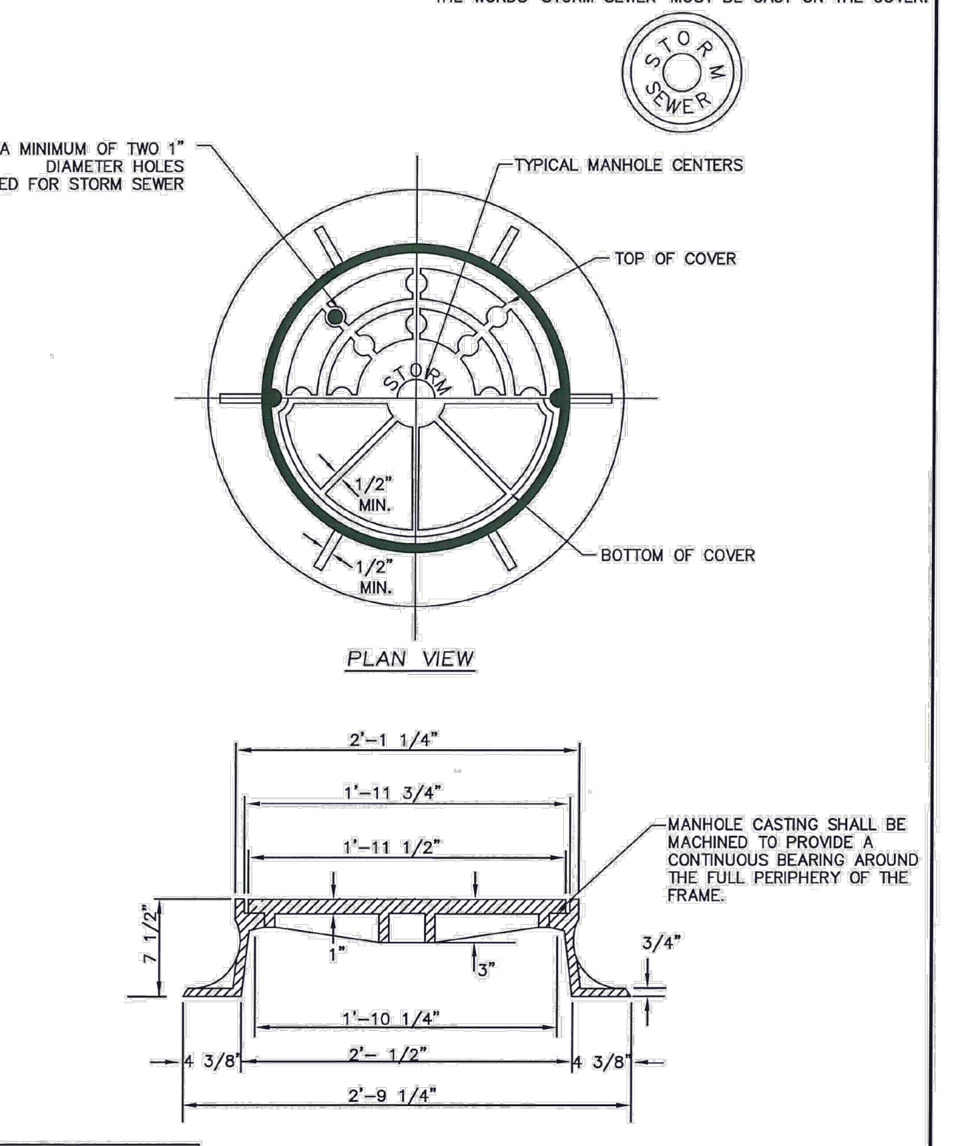

6"
2' OR LESS USE ON FLAT GRADES
NORMAL CURB & GUTTER ON FLAT GRADES
ELEVATION
DEPRESSED GUTTER LINE
5'–0"
3'–0"
CURB & GUTTER WITH CATCH BASIN ON STEEP GRADES
2' OR MORE USE ON STEEP GRADES
NORMAL GUTTER LINE
DEPRESSED GUTTER LINE
NORMAL CURB & GUTTER ON STEEP GRADES
SECTION S–S
SECTION R–R
PLAN OF TOP SLAB
DIMENSIONS FOR BOX AND QUANTITIES FOR CATCH BASINS

REVISIONS	
DATE	DESCRIPTION

4 of 4

TOWN OF KNIGHTDALE STANDARD DETAILS | STANDARD CURB INLET PRECAST CONCRETE BOX | STD. NO. 5.05-4

THE WORDS 'STORM SEWER' MUST BE CAST ON THE COVER.


STORM SEWER
A MINIMUM OF TWO 1" DIAMETER HOLES REQUIRED FOR STORM SEWER
TYPICAL MANHOLE CENTERS
TOP OF COVER
STORM
1/2" MIN.
1/2" MIN.
BOTTOM OF COVER
PLAN VIEW
2'–1 1/4"
1'–11 3/4"
1'–11 1/2"
MANHOLE CASTING SHALL BE MACHINED TO PROVIDE A CONTINUOUS BEARING AROUND THE FULL PERIPHERY OF THE FRAME.
7 1/2"
1"
3"
3/4"
1'–10 1/4"
4 3/8"
2'– 1/2"
4 3/8"
2'–9 1/4"

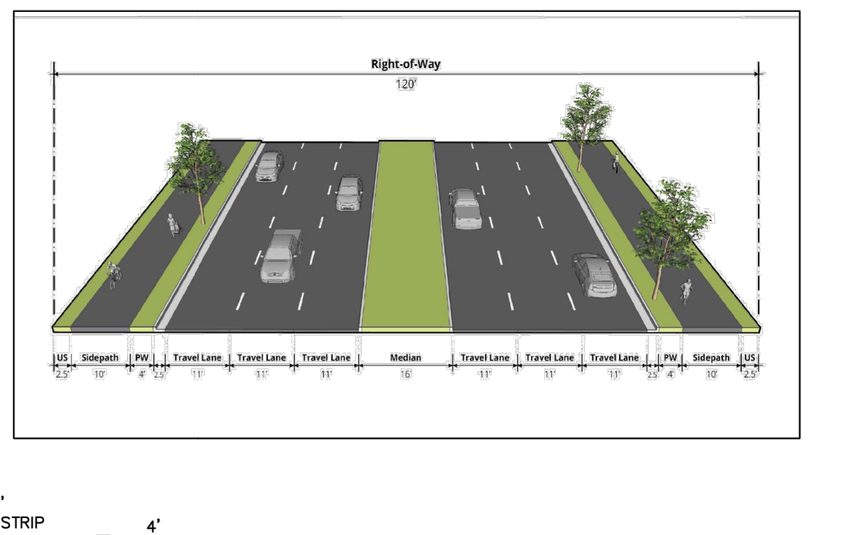
SECTION

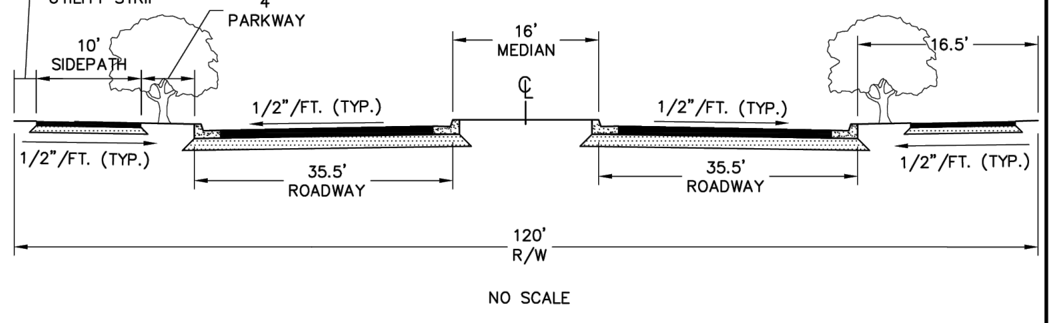
MINIMUM AVERAGE WEIGHT

RING	190
COVER	120
TOTAL	310

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS | STANDARD MANHOLE RING & COVER | STD. NO. 5.10


Right-of-Way
120'
US
Sidepath
PW
Travel Lane
Travel Lane
Travel Lane
Median
Travel Lane
Travel Lane
Travel Lane
PW
Sidepath
US
2.5'
10'
4'
2.5
11'
11'
11'
16'
11'
11'
11'
2.5'
4'
10'
2.5'


2.5' UTILITY STRIP
4' PARKWAY
10' SIDEPATH
16' MEDIAN
℄
16.5'
1/2"/FT. (TYP.)
1/2"/FT. (TYP.)
1/2"/FT. (TYP.)
1/2"/FT. (TYP.)
35.5' ROADWAY
35.5' ROADWAY
120' R/W

NO SCALE

MINIMUM PAVEMENT DESIGN:

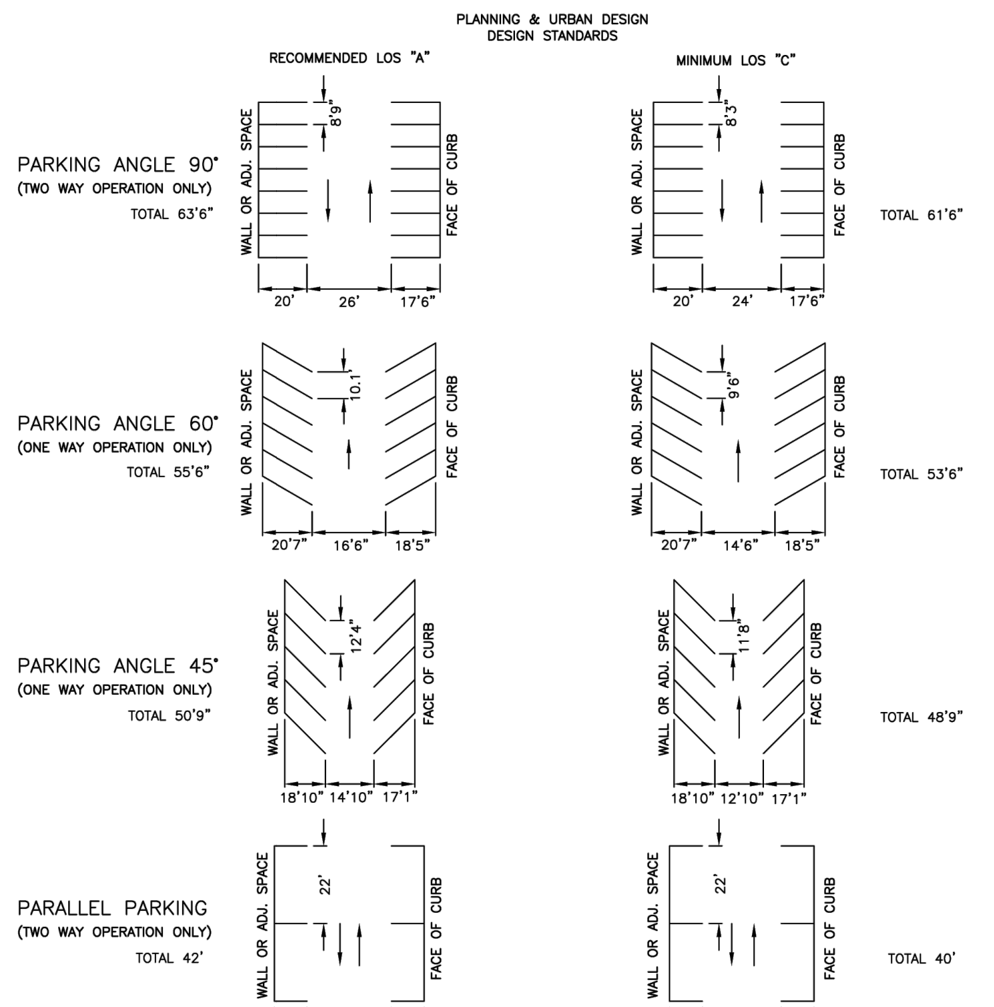
BITUMINOUS SURFACE COURSE: 1 1/2" S 9.5B
INTERMEDIATE COURSE: 2 1/2" I 19.0B
BASE COURSE: 8" ABC

STREET FEATURES:

MEDIAN OF 16 FT.
TRAVEL LANES OF 11 FT.
CURB & GUTTER
PARKWAY – 4 FT. ON EACH SIDE
SIDEPATH – 10 FT. ON EACH SIDE
REQUIRES 120 FT. OF RIGHT–OF–WAY
UTILITY LOCATION UNDERGROUND
AVERAGE SPEED 35–45 MPH
STREET TREES LOCATED IN PARKWAY
UTILITY LOCATION BEHIND CURB ON NCDOT FACILITIES

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS | KNIGHTDALE BOULEVARD - 6 LANE MEDIAN SIDEPATHS | STD. NO. 3.07-3


PLANNING & URBAN DESIGN DESIGN STANDARDS
RECOMMENDED LOS "A"
MINIMUM LOS "C"
PARKING ANGLE 90° (TWO WAY OPERATION ONLY) TOTAL 63'6"
8'9"
8'3"
WALL OR ADJ. SPACE
FACE OF CURB
20' 26' 17'6"
20' 24' 17'6"
TOTAL 61'6"
PARKING ANGLE 60° (ONE WAY OPERATION ONLY) TOTAL 55'6"
10.1'
9'6"
20'7" 16'6" 18'5"
20'7" 14'6" 18'5"
TOTAL 53'6"
PARKING ANGLE 45° (ONE WAY OPERATION ONLY) TOTAL 50'9"
12'4"
11'8"
18'10" 14'10" 17'1"
18'10" 12'10" 17'1"
TOTAL 48'9"
PARALLEL PARKING (TWO WAY OPERATION ONLY) TOTAL 42'
22'
22'
8' 26' 8"
8' 24' 8'
TOTAL 40'

NOTE:

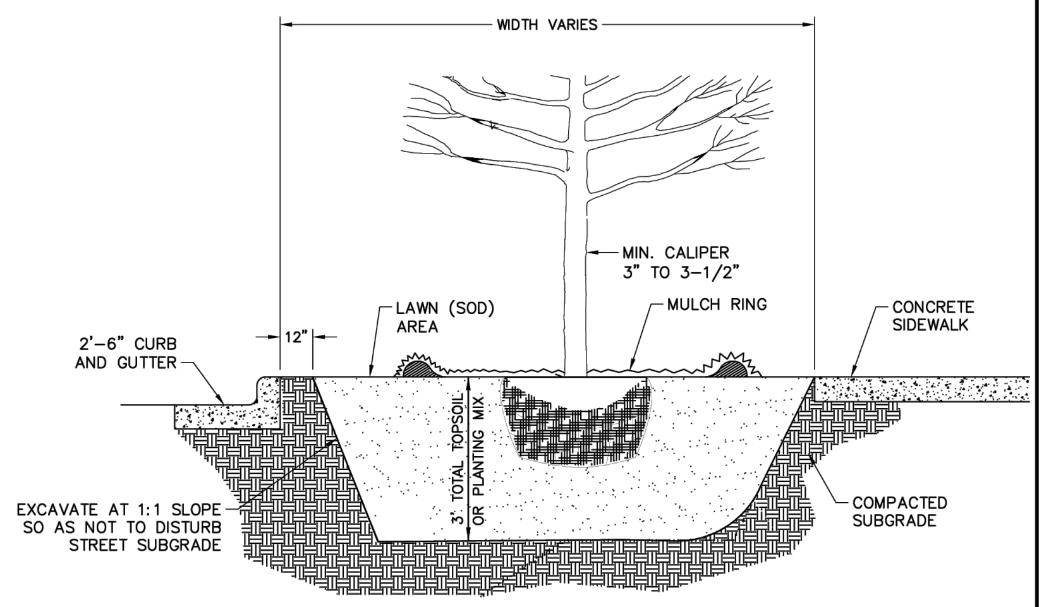
1. FOR ACCESSIBLE PARKING STANDARDS SEE TOWN UNIFIED DEVELOPMENT ORDINANCE.
2. PAVEMENT MARKINGS SHALL BE 4" WHITE PAINT TO TOWN STANDARDS.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS | PARKING STANDARDS | STD. NO. 3.20

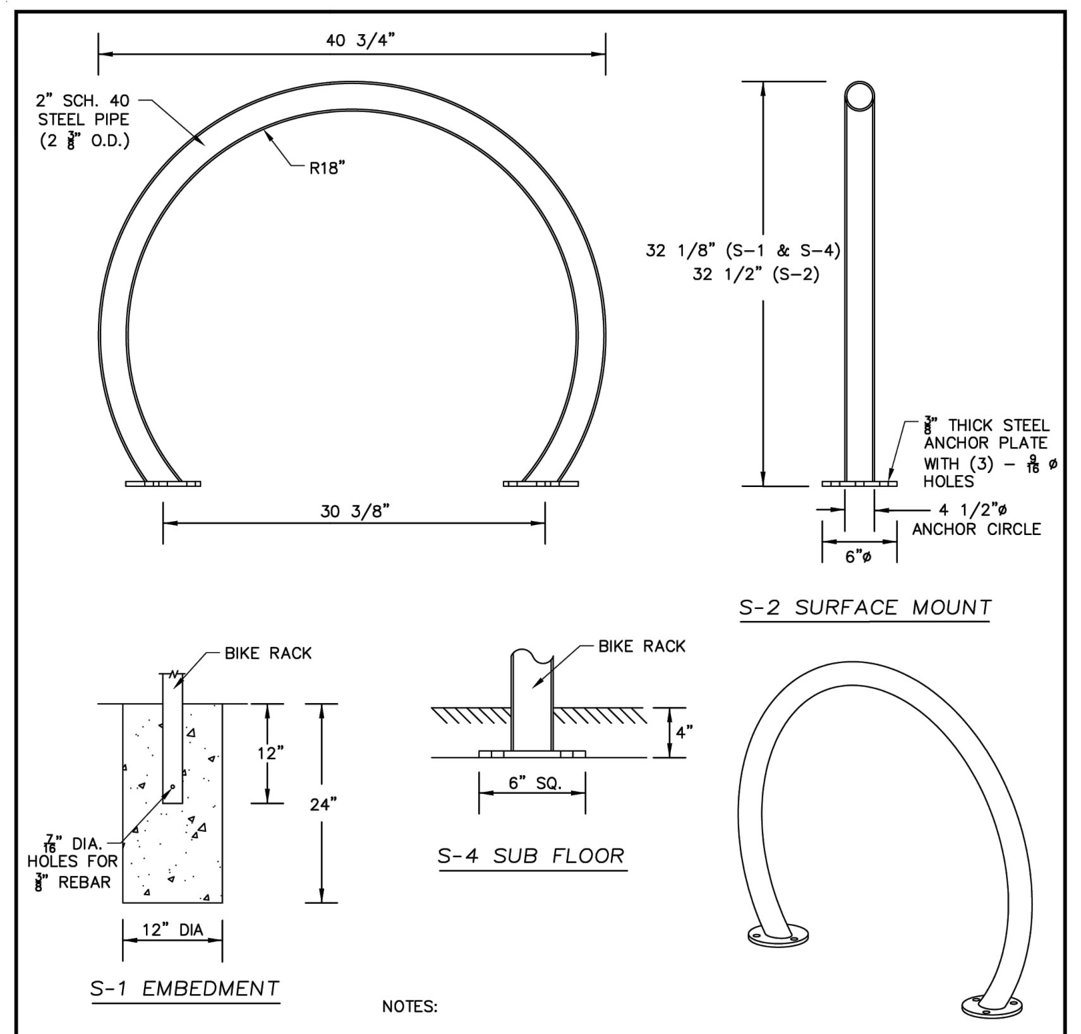
NOTES:

1. MEANT TO PROVIDE GUIDANCE ON STREET TREE PLANTING. REFERENCE SPECIFIC CROSS SECTION FOR PLANTING LOCATION AND WIDTH.
2. 6 FT. PLANTING WIDTH PREFERRED, WHERE POSSIBLE.
3. FOR NEW PLANTING AREAS, REMOVE ALL PAVEMENT, GRAVEL, SUB–BASE, AND CONSTRUCTION DEBRIS BEFORE PREPARING SOIL AND PLANTING TREES.
4. REMOVE COMPACTED SOIL AND ADD 24" NEW TOPSOIL WITH PLANT MIX OR UNCOMPACT AND AMEND TO 24" OF EXISTING SOIL TO MEET TOPSOIL WITH PLANTING MIX STANDARDS FOR TREES.
5. MULCH SHALL NOT BE STACKED AGAINST BASE OF PLANTING.


WIDTH VARIES
MIN. CALIPER 3" TO 3–1/2"
LAWN (SOD) AREA
MULCH RING
CONCRETE SIDEWALK
2'–6" CURB AND GUTTER
12"
3' TOTAL TOPSOIL OR PLANTING MIX
EXCAVATE AT 1:1 SLOPE SO AS NOT TO DISTURB STREET SUBGRADE
COMPACTED SUBGRADE

REVISIONS	
DATE	DESCRIPTION
	07.01.2024

TOWN OF KNIGHTDALE STANDARD DETAILS | STREET TREE PLANTING | STD. NO. 3.26

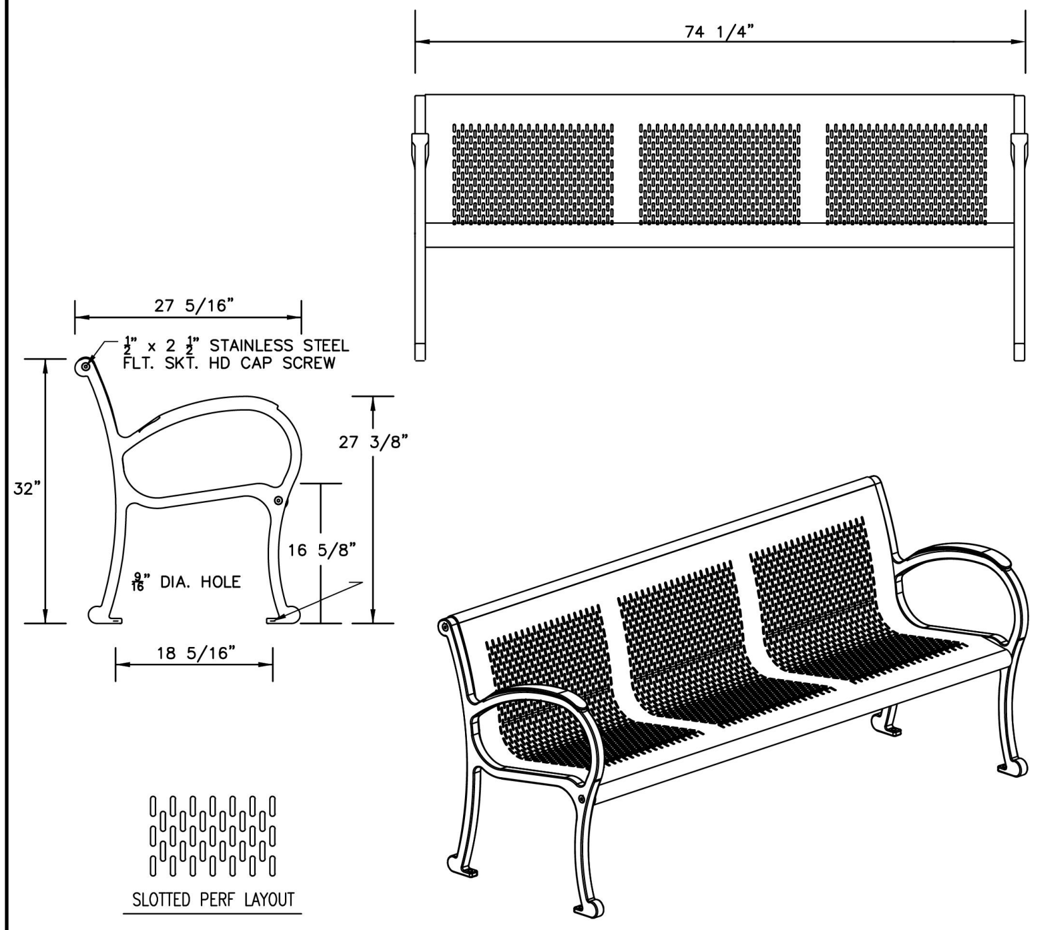

40 3/4"
2" SCH. 40 STEEL PIPE (2 3/8" O.D.)
R18"
30 3/8"
32 1/8" (S–1 & S–4)
32 1/2" (S–2)
3/8" THICK STEEL ANCHOR PLATE WITH (3) – 9/16 ø HOLES
4 1/2"ø ANCHOR CIRCLE
6"ø
S–2 SURFACE MOUNT
BIKE RACK
12"
24"
7/16" DIA. HOLES FOR 3/8" REBAR
12" DIA
S–1 EMBEDMENT
BIKE RACK
4"
6" SQ.
S–4 SUB FLOOR

NOTES:

1. BIKE RACK SHALL BE DUMOR 292 SERIES POWDER COATED (BLACK), OR EQUIVALENT.
2. OTHER DESIGNS MAY BE ALLOWED PER TOWN OF KNIGHTDALE REVIEW AND APPROVAL.
3. BIKE RACK TO BE INSTALLED BY CONTRACTORS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND DETAILS.
4. ALL STEEL MEMBERS COATED WITH ZINC RICH EPOXY COATING THEN FINISHED WITH POLYESTER POWDER COATED.
5. 1/2" X 3 3/4" EXPANSION ANCHOR BOLTS PROVIDED FOR OPTIONS S–2 & S–4.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS | TYPICAL BIKE RACK | STD. NO. 4.15

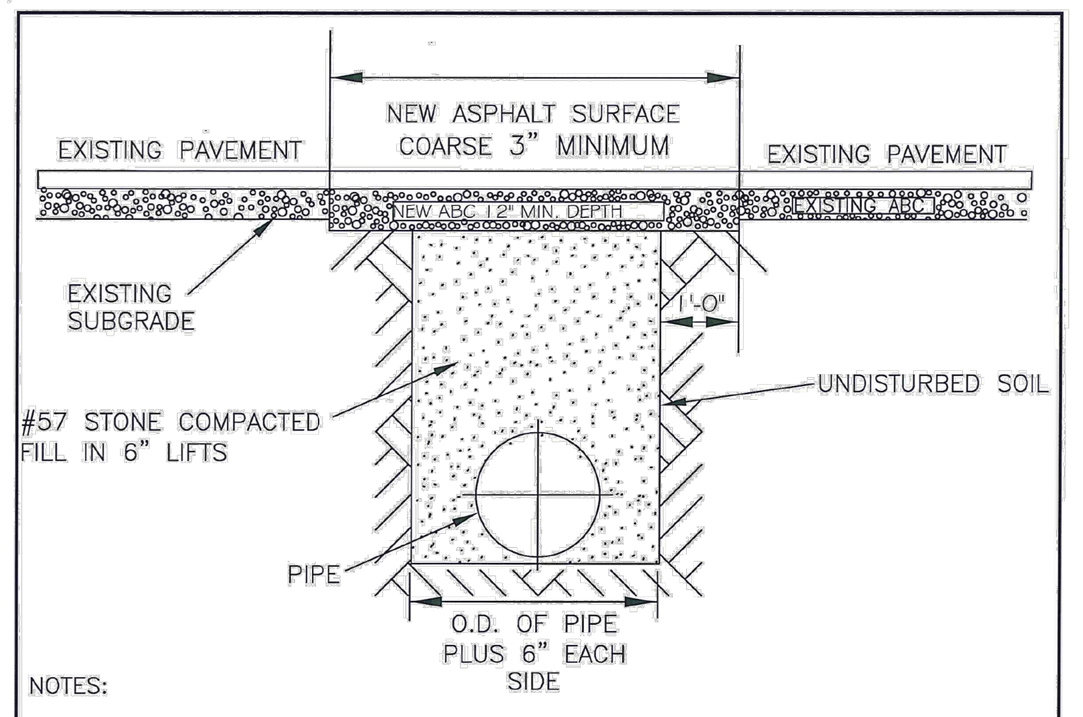

74 1/4"
27 5/16"
1/2" x 2 1/2" STAINLESS STEEL FLT. SKT. HD CAP SCREW
32"
27 3/8"
16 5/8"
9/16" DIA. HOLE
18 5/16"
SLOTTED PERF LAYOUT

NOTES:

1. BENCH SHALL BE DUMOR 169 SERIES 6 FT. STEEL PERFORATED SEAT (BLACK), OR EQUIVALENT.
2. OTHER DESIGNS MAY BE ALLOWED PER TOWN OF KNIGHTDALE REVIEW AND APPROVAL.
3. BENCH TO BE INSTALLED BY CONTRACTORS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND DETAILS.
4. ALL STEEL MEMBERS COATED WITH ZINC RICH COATING THEN POLYESTER POWDER COATED.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS | TYPICAL BENCH | STD. NO. 4.14

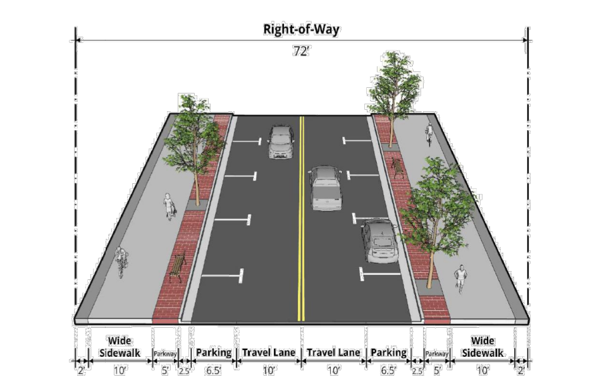

NEW ASPHALT SURFACE COARSE 3" MINIMUM
EXISTING PAVEMENT
EXISTING PAVEMENT
NEW ABC 12" MIN. DEPTH
EXISTING ABC
EXISTING SUBGRADE
1'-0"
UNDISTURBED SOIL
#57 STONE COMPACTED FILL IN 6" LIFTS
PIPE
O.D. OF PIPE PLUS 6" EACH SIDE

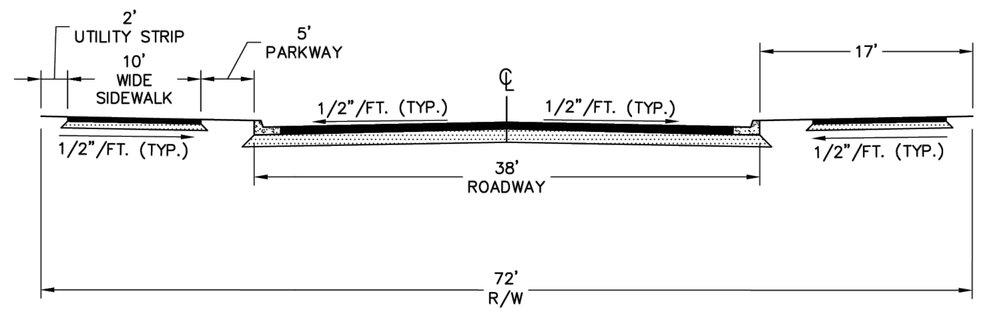
NOTES:

1. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROVED SAW CUT MACHINE.
2. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T–99 AS MODIFIED BY NCDOT.
3. THE FINAL 1' OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T–80 AS MODIFIED BY NCDOT.
4. THE ENTIRE THICKNESS/ VERTICAL EDGE OF CUT SHALL BE TACKED.
5. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 3" THICK.
6. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY WITH A SMOOTH DRUM ROLLER TO ACHIEVE A SMOOTH LEVEL PATCH.
7. NO HAND PATCHING ALLOWED.
8. PAVEMENT CUTS WITHIN NCDOT ROW SHALL CONFORM TO THE APPROVED ON SITE ENCROACHMENT PERMIT.
9. MINIMUM PATCH WIDTH TO BE WIDTH OF THE ROADWAY.
10. ANY EXISTING PAVEMENT MARKINGS DISTURBED BY WORK SHALL BE REPLACED.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS | STANDARD ASPHALT PAVEMENT PATCH DETAIL | STD. NO. 3.14


Right-of-Way
72'
Wide Sidewalk
Parkway
Parking
Travel Lane
Travel Lane
Parking
Parkway
Wide Sidewalk
2'
10'
5'
2.5'
6.5'
10'
10'
6.5'
2.5'
5'
10'
2'


2' UTILITY STRIP
5' PARKWAY
10' WIDE SIDEWALK
℄
17'
1/2"/FT. (TYP.)
1/2"/FT. (TYP.)
1/2"/FT. (TYP.)
1/2"/FT. (TYP.)
38' ROADWAY
72' R/W

MINIMUM PAVEMENT DESIGN:

BITUMINOUS SURFACE COURSE: 1 1/2" S 9.5B
INTERMEDIATE COURSE: 2 1/2" I 19.0B
BASE COURSE: 8" ABC

STREET FEATURES:

TRAVEL LANES OF 10 FT.
STREET PARKING 8.5 FT. FROM FACE OF CURB
CURB & GUTTER
STRIPED PARALLEL PARKING
PARKWAY – 5 FT. ON EACH SIDE
WIDE SIDEWALK – 10 FT. ON EACH SIDE
REQUIRES 72 FT. OF RIGHT–OF–WAY
UTILITY LOCATION UNDERGROUND OR ALLEY
AVERAGE SPEED 20–25 MPH
STREET TREES LOCATED IN PARKWAY
UTILITY LOCATION BEHIND CURB ON NCDOT FACILITIES
PROVIDE ELEMENTS PER URBAN STREETSCAPE DESIGN FEATURES DETAIL

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS | URBAN MAIN STREET - 2 LANES WIDE SIDEWALK | STD. NO. 3.04-2

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

Aug 19, 2025
\\BOHLERENG.NET\SHARES\NC-PROJECTS\2023\NCB230070.00\LAND DEVELOPMENT\CAD\DRAWINGS\PLAN SETS\NCB230070-CNDS-0---->LAYOUT: C-902 DETL
RS

BOHLER//™
BOHLER ENGINEERING NC, PLLC

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

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

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 I.D.:	

PROJECT:

CONSTRUCTION PLANS

— FOR —

CHAMBLISS & RABIL
CONTRACTORS, INC.

PROPOSED DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

BOHLER//
BOHLER ENGINEERING NC, PLLC
NCBELS P-1132

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

NC@BohlerEng.com

NORTH CAROLINA
PROFESSIONAL
SEAL
055420
ENGINEER
OLIVER A. KAIJA
08/19/2025

SHEET TITLE:

CONSTRUCTION DETAILS

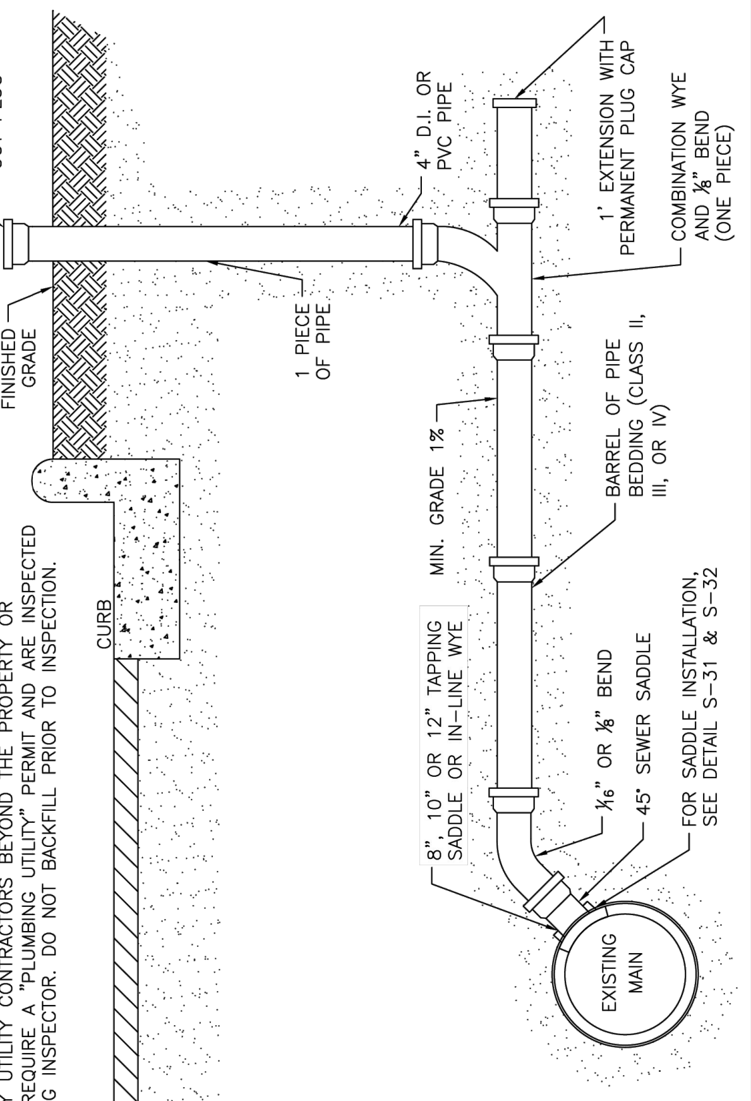
SHEET NUMBER:

C-902

REVISION 2 - 08/19/25

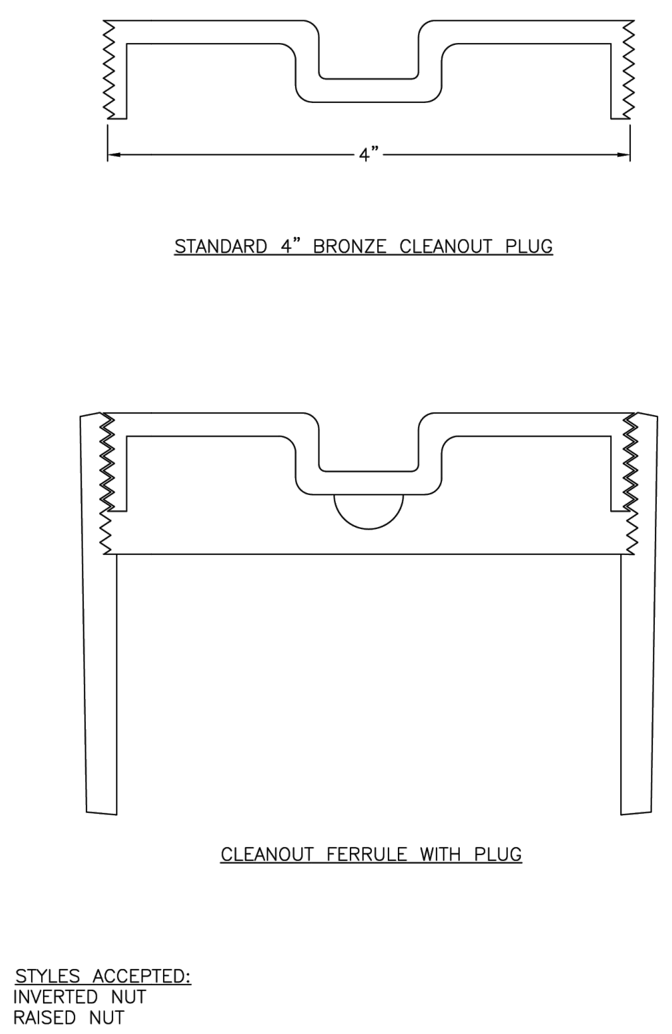
NOTES:

1. THE FULL LENGTH OF THE SERVICE DITCH SHALL BE COMPACTED IN 6" LIFTS WITH MECHANICAL TAMP. ALL TAPS WILL BE MADE USING MECHANICAL TAPPING MACHINE. FOR PVC INSTALLATIONS, SADDLE AND BEND MUST BE BEDDED IN #67 STONE. BEDDING AND HAUNCHING OF PIPE BARREL MUST COMPLY WITH REQUIREMENTS OF DETAIL S-4 OR S-5 ACCORDING TO PIPE MATERIAL.
2. WHEN SEWER CLEAN OUT IS IN PAVEMENT OR IMPERVIOUS SURFACE, IT SHALL BE INSTALLED AS SHOWN IN DETAIL S-30B.
3. INSTALLATIONS BY UTILITY CONTRACTORS BEYOND THE PROPERTY OR EASEMENT LINE REQUIRE A "PLUMBING UTILITY" PERMIT AND ARE INSPECTED BY THE PLUMBING INSPECTOR. DO NOT BACKFILL PRIOR TO INSPECTION.


* SERVICE LATERAL MATERIAL AS REQUIRED
PROPERTY LINE
CAST IRON OR BRONZE CLEAN OUT PLUG
FINISHED GRADE
1 PIECE OF PIPE
CURB
PAVEMENT
4" D.I. OR PVC PIPE
1' EXTENSION WITH PERMANENT PLUG CAP
COMBINATION WYE AND ⅛" BEND (ONE PIECE)
MIN. GRADE 1%
BARREL OF PIPE BEDDING (CLASS II, III, OR IV)
8", 10" OR 12" TAPPING SADDLE OR IN-LINE WYE
⅛" OR ⅙" BEND
45° SEWER SADDLE
FOR SADDLE INSTALLATION, SEE DETAIL S-31 & S-32
EXISTING MAIN

CITY OF RALEIGH
STANDARD DETAIL

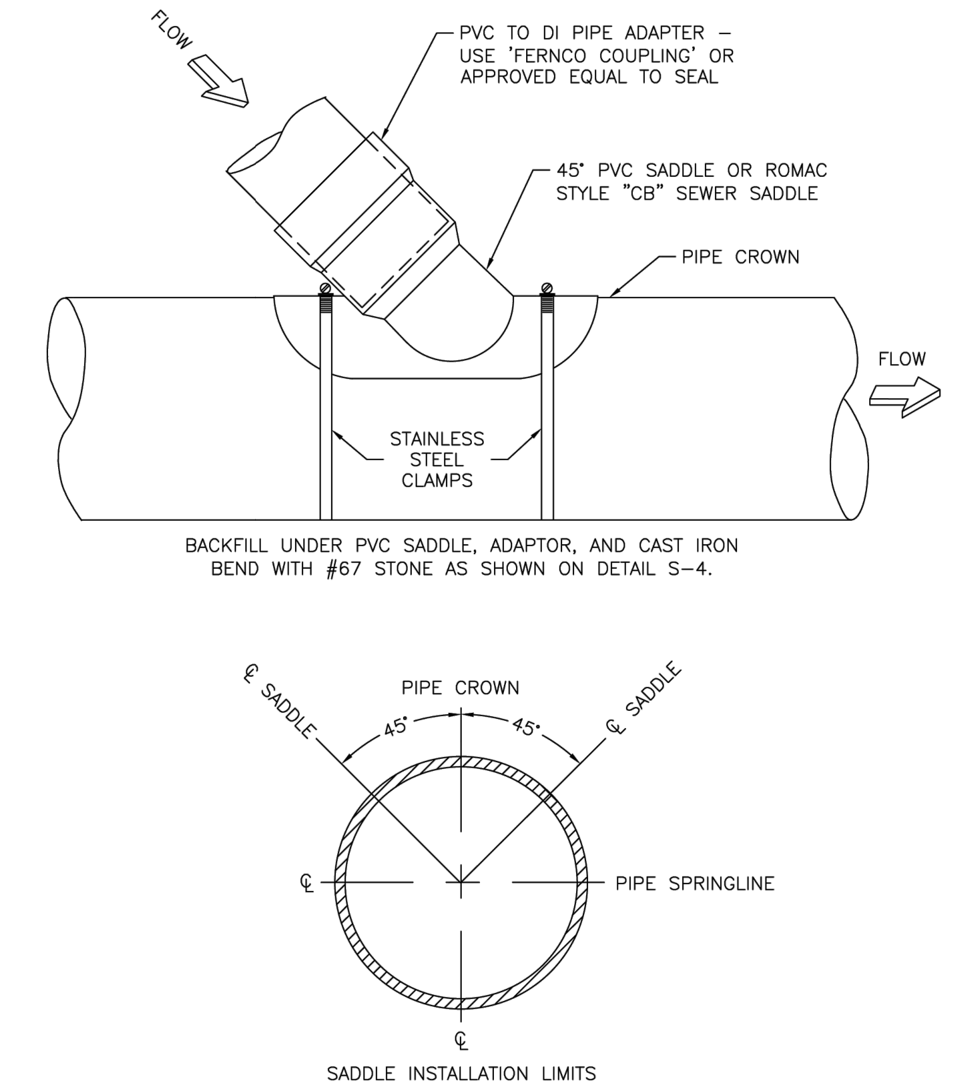
REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	TYPICAL SANITARY SEWER LATERAL CONNECTION	
	S-30	


4"
STANDARD 4" BRONZE CLEANOUT PLUG
CLEANOUT FERRULE WITH PLUG

STYLES ACCEPTED:
INVERTED NUT
RAISED NUT

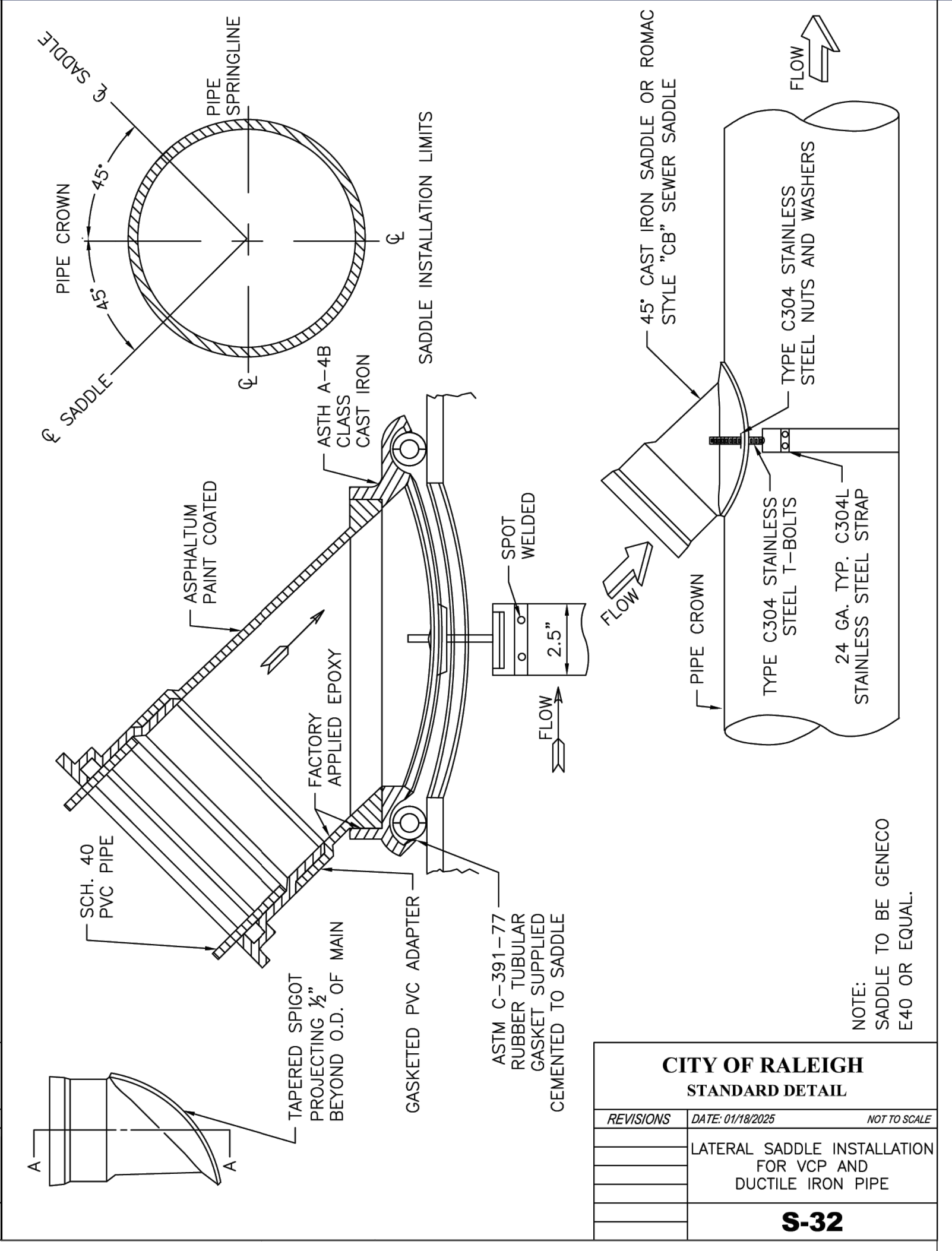
CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	4" CLEANOUT PLUG	
	S-34	


FLOW
PVC TO DI PIPE ADAPTER – USE "FERNCO COUPLING" OR APPROVED EQUAL TO SEAL
45° PVC SADDLE OR ROMAC STYLE "CB" SEWER SADDLE
PIPE CROWN
FLOW
STAINLESS STEEL CLAMPS
BACKFILL UNDER PVC SADDLE, ADAPTOR, AND CAST IRON BEND WITH #67 STONE AS SHOWN ON DETAIL S-4.
PIPE CROWN
SADDLE
45°
45°
SADDLE
PIPE SPRINGLINE
SADDLE INSTALLATION LIMITS

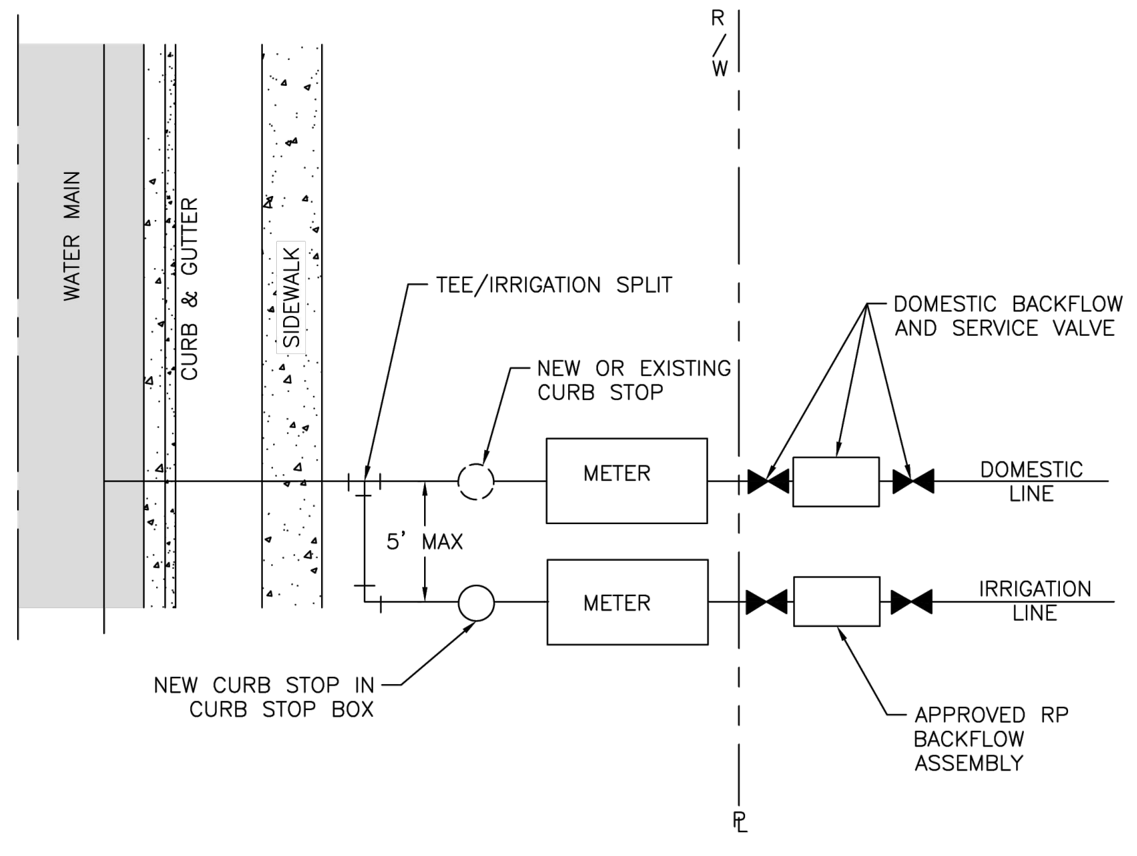
CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	LATERAL SADDLE INSTALLATION DETAIL FOR PVC PIPE	
	S-31	


SADDLE
PIPE SPRINGLINE
PIPE CROWN
45°
45°
SADDLE
SADDLE INSTALLATION LIMITS
ASTM A-48 CLASS CAST IRON
ASPHALTUM PAINT COATED
SPOT WELDED
2.5"
FLOW
FACTORY APPLIED EPOXY
45° CAST IRON SADDLE OR ROMAC STYLE "CB" SEWER SADDLE
TYPE C304 STAINLESS STEEL NUTS AND WASHERS
FLOW
TYPE C304 STAINLESS STEEL T-BOLTS
24 GA. TYP. C304L STAINLESS STEEL STRAP
PIPE CROWN
SCH. 40 PVC PIPE
TAPERED SPIGOT PROJECTING ½" BEYOND O.D. OF MAIN
GASKETED PVC ADAPTER
ASTM C-361-77 RUBBER TUBULAR GASKET SUPPLIED CEMENTED TO SADDLE
NOTE: SADDLE TO BE GENECO 0°45 OR EQUAL
A
A

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	LATERAL SADDLE INSTALLATION FOR VCP AND DUCTILE IRON PIPE	
	S-32	

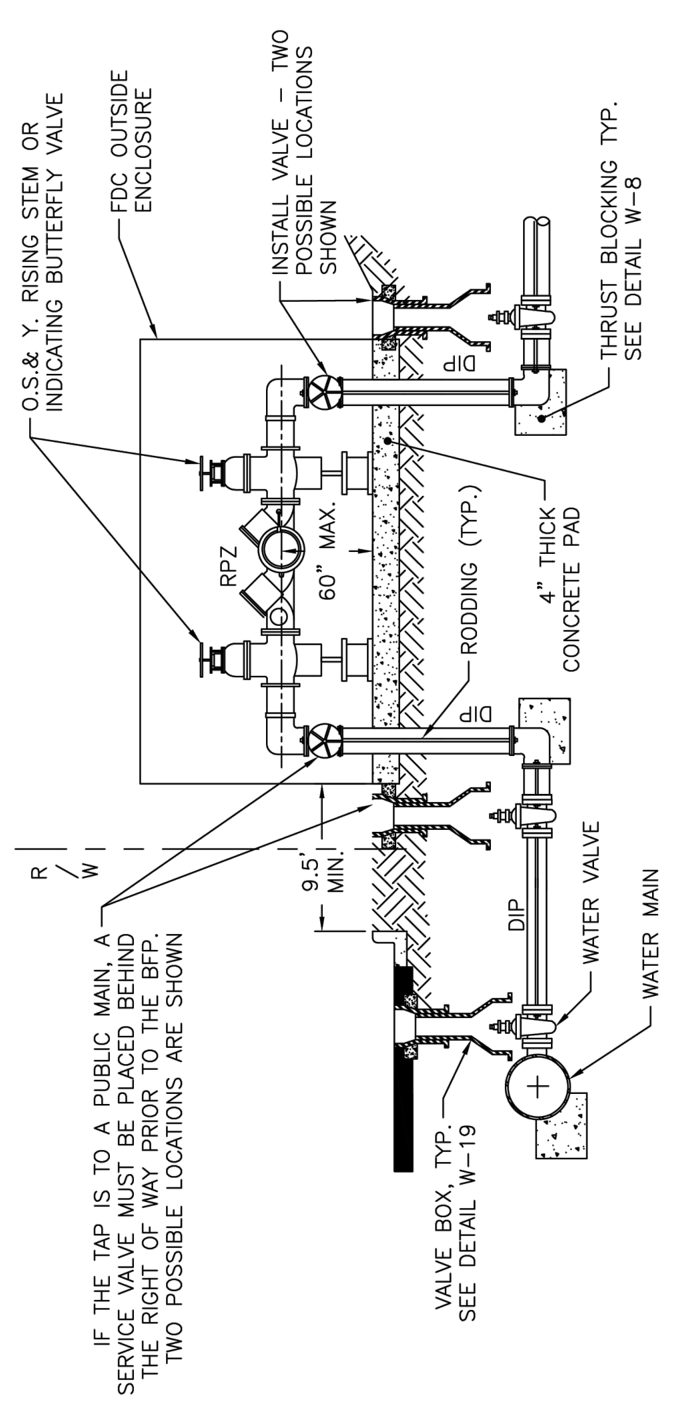

WATER MAIN
CURB & GUTTER
SIDEWALK
R/W
TEE/IRRIGATION SPLIT
NEW OR EXISTING CURB STOP
METER
5' MAX
METER
DOMESTIC BACKFLOW AND SERVICE VALVE
DOMESTIC LINE
IRRIGATION LINE
NEW CURB STOP IN CURB STOP BOX
APPROVED RP BACKFLOW ASSEMBLY
PL

NOTES:

1. IRRIGATION METER SHALL BE LOCATED ON THE SIDE OF DOMESTIC METER WITH INCREASING ADDRESSES.
2. REQUIRED CONTAINMENT BACKFLOWS ARE TO BE INSTALLED WITHIN 50 LINEAR PIPING FEET OF THE METER OR RIGHT-OF-WAY FOR FIRE SERVICE LINES AND MEET INSTALLATION REQUIREMENTS AS LISTED IN APPENDIX A: GUIDELINES AND REQUIREMENTS OF THE CROSS CONNECTION AND HYDRANT METER PROGRAM.
3. BACKFLOW RISER/STANDPIPE SHALL BE OF COPPER OR BRASS.
4. THE RP RELIEF VALVE SHALL BE A MINIMUM OF 12" ABOVE ANY MATERIAL (MULCH INCLUDED) OR GRADE.
5. A SERVICE VALVE IS REQUIRED BEFORE AND AFTER THE BACKFLOW ASSEMBLY FOR MAINTENANCE AND REPLACEMENT PURPOSES.
6. ENCLOSURE MUST BE ASSE 1060 APPROVED AND HAVE ADEQUATE DRAINAGE.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	IRRIGATION TAP ON NEW AND EXISTING SERVICES	
	W-35	

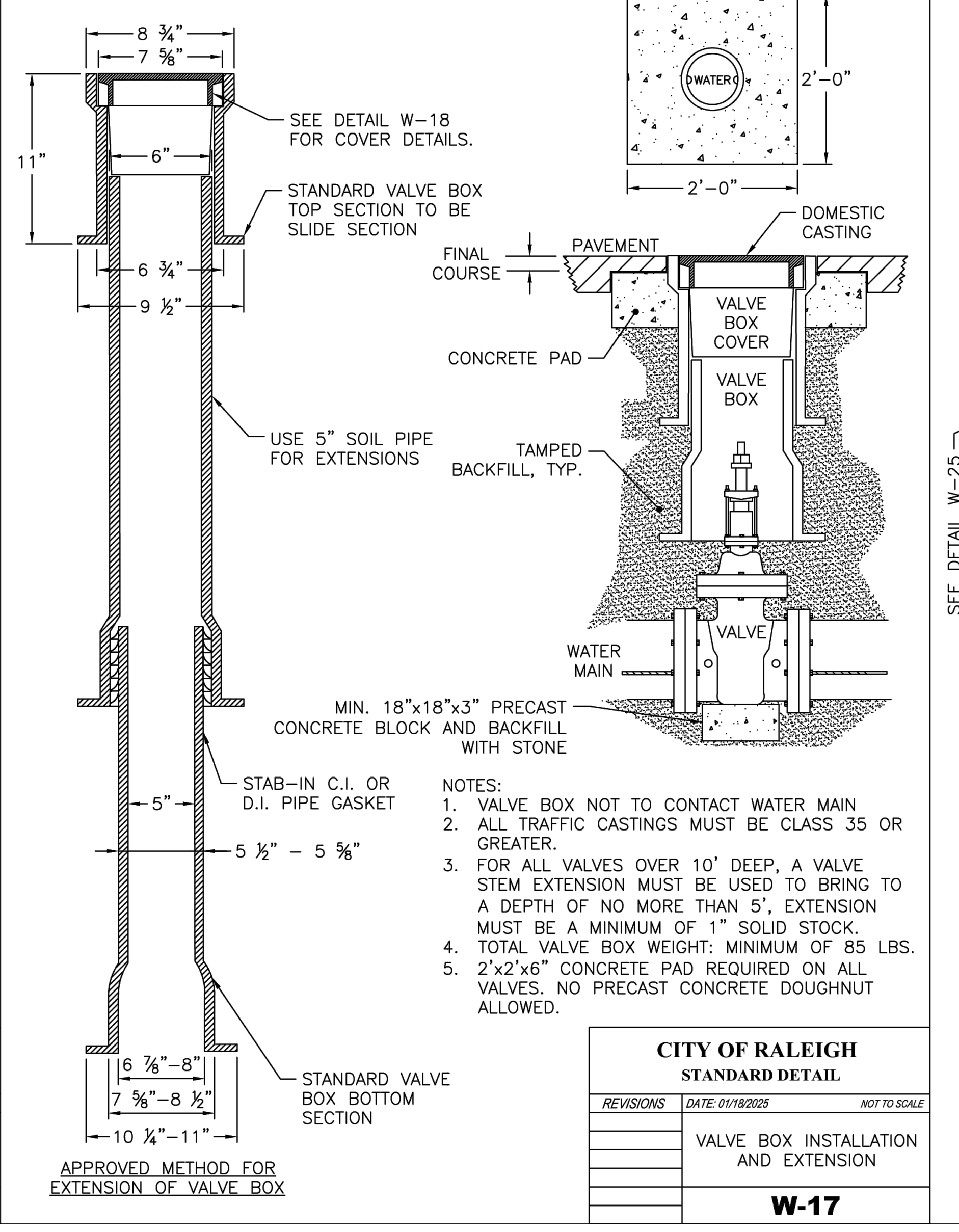

O.S.& Y. RISING STEM OR INDICATING BUTTERFLY VALVE
FDC OUTSIDE ENCLOSURE
INSTALL VALVE – TWO POSSIBLE LOCATIONS SHOWN
THRUST BLOCKING TYP. SEE DETAIL W-8
DIP
RPZ
60" MAX.
RODDING (TYP.)
4" THICK CONCRETE PAD
DIP
R/W
9.5' MIN.
DIP
WATER VALVE
WATER MAIN
VALVE BOX, TYP. SEE DETAIL W-19
IF THE TAP IS TO A PUBLIC MAIN, A SERVICE VALVE MUST BE PLACED BEHIND THE RIGHT OF WAY PRIOR TO THE BFP. TWO POSSIBLE LOCATIONS ARE SHOWN

NOTES:

1. ENCLOSURE MUST BE ASSE 1060 APPROVED AND HAVE ADEQUATE DRAINAGE.
2. CONTAINMENT RPZ/RPDA BACKFLOW ASSEMBLIES ARE TO BE INSTALLED WITHIN 50 LINEAR PIPING FEET OF THE METER OR RIGHT-OF-WAY FOR FIRE SERVICE LINES AND MEET INSTALLATION REQUIREMENTS AS LISTED IN APPENDIX A: GUIDELINES AND REQUIREMENTS OF THE CROSS CONNECTION AND HYDRANT METER PROGRAM.
3. NO VALVE IN THE EXISTING SYSTEM SHALL BE OPERATED WITHOUT FOLLOWING THE PROCEDURE OUTLINED IN THE RALEIGH WATER PUBLIC UTILITY DESIGN MANUAL. THE CONTRACTOR SHALL NOTIFY RALEIGH WATER'S DISTRIBUTION DIVISION AT 919-996-3245 TO REQUEST THE OPERATION OF ANY VALVE.
4. RESIDENTIAL LAWN IRRIGATION R.P. ASSEMBLIES THAT ARE REMOVED TO PREVENT FREEZING IN THE WINTER MONTHS MUST BE CAPPED OFF. ALL ABOVE GROUND ASSEMBLIES, EXCEPT RESIDENTIAL LAWN IRRIGATION ASSEMBLIES, MUST BE PROTECTED FROM FROST.
5. ALL CONTAINMENT BACKFLOW ASSEMBLIES MUST BE ASSE AND USC APPROVED.
6. STEEL RODS AND BOLTS SHALL BE ¾" 316 STAINLESS STEEL.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	REDUCED PRESSURE ZONE AND REDUCED PRESSURE DETECTOR ASSEMBLY	
	W-36	

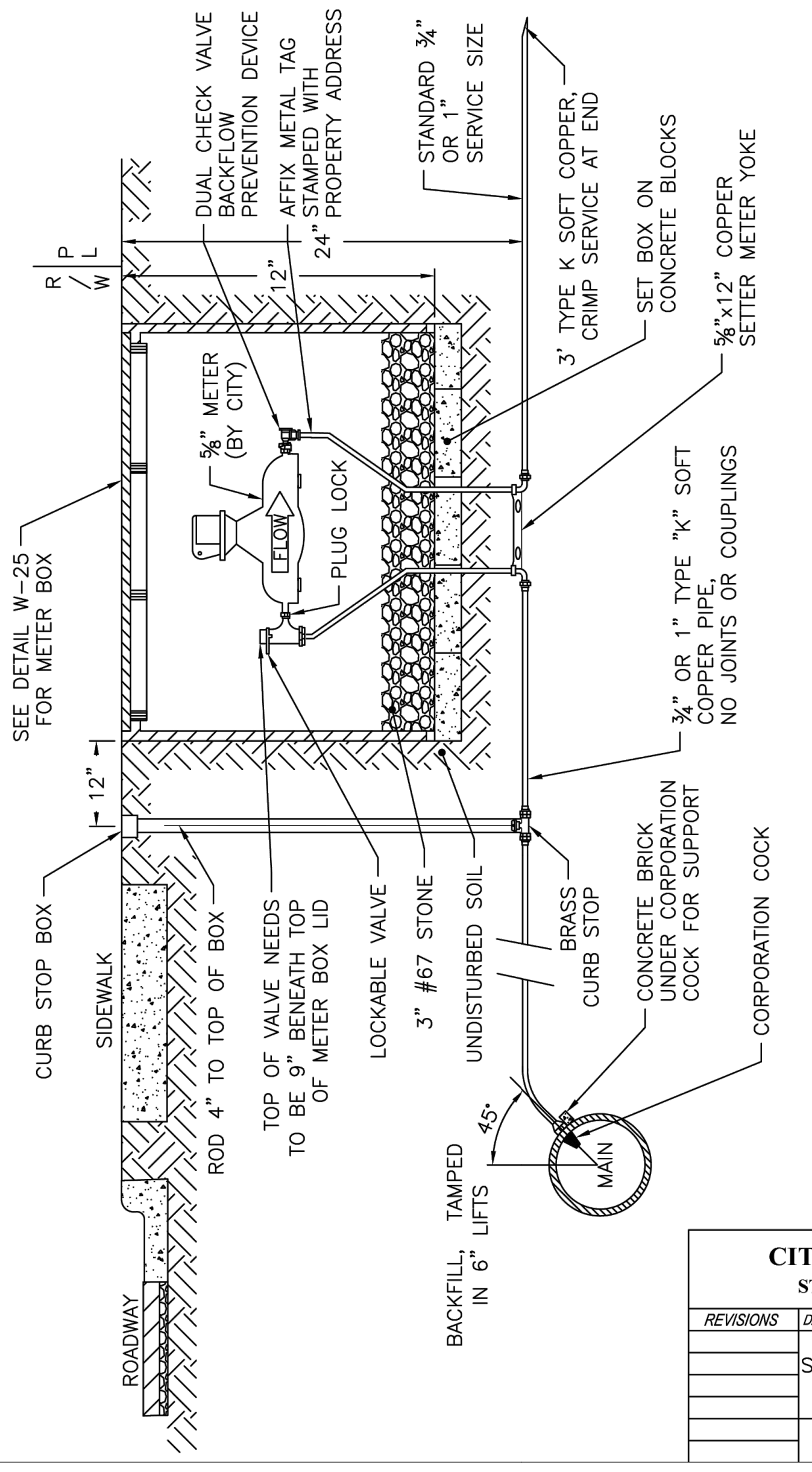

8 ¾"
7 ⅜"
11"
6"
6 ¾"
9 ½"
SEE DETAIL W-18 FOR COVER DETAILS.
STANDARD VALVE BOX TOP SECTION TO BE SLIDE SECTION
USE 5" SOIL PIPE FOR EXTENSIONS
5"
STAB-IN C.I. OR D.I. PIPE GASKET
5 ½" – 5 ⅝"
6 ⅞"–8"
7 ⅝"–8 ½"
10 ¼"–11"
STANDARD VALVE BOX BOTTOM SECTION
APPROVED METHOD FOR EXTENSION OF VALVE BOX
WATER
2'-0"
2'-0"
DOMESTIC CASTING
PAVEMENT
FINAL COURSE
VALVE BOX COVER
VALVE BOX
CONCRETE PAD
TAMPED BACKFILL, TYP.
WATER MAIN
VALVE
MIN. 18"x18"x3" PRECAST CONCRETE BLOCK AND BACKFILL WITH STONE

NOTES:

1. VALVE BOX NOT TO CONTACT WATER MAIN
2. ALL TRAFFIC CASTINGS MUST BE CLASS 35 OR GREATER.
3. FOR ALL VALVES OVER 10' DEEP, A VALVE STEM EXTENSION MUST BE USED TO BRING TO A DEPTH OF NO MORE THAN 5', EXTENSION MUST BE A MINIMUM OF 1" SOLID STOCK.
4. TOTAL VALVE BOX WEIGHT: MINIMUM OF 85 LBS.
5. 2'x2'x6" CONCRETE PAD REQUIRED ON ALL VALVES. NO PRECAST CONCRETE DOUGHNUT ALLOWED.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	VALVE BOX INSTALLATION AND EXTENSION	
	W-17	

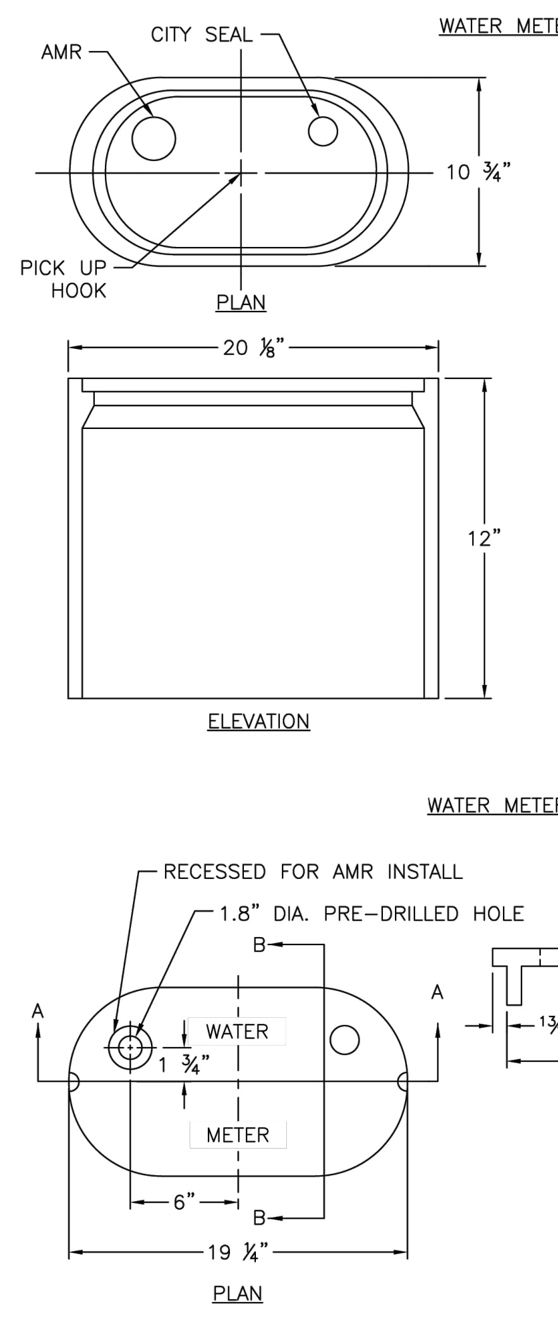

P/L
R/W
DUAL CHECK VALVE BACKFLOW PREVENTION DEVICE
AFFIX METAL TAG STAMPED WITH PROPERTY ADDRESS
24"
12"
STANDARD ¾" OR 1" SERVICE SIZE
3" TYPE K SOFT COPPER, CRIMP SERVICE AT END
SET BOX ON CONCRETE BLOCKS
⅝"x12" COPPER SETTER METER YOKE
¾" METER (BY CITY)
FLOW
PLUG LOCK
SEE DETAIL W-25 FOR METER BOX
12"
CURB STOP BOX
SIDEWALK
ROD 4" TO TOP OF BOX
TOP OF VALVE NEEDS TO BE 9" BENEATH TOP OF METER BOX LID
LOCKABLE VALVE
3" #67 STONE
UNDISTURBED SOIL
BRASS CURB STOP
CONCRETE BRICK UNDER CORPORATION COCK FOR SUPPORT
¾" OR 1" TYPE "K" SOFT COPPER PIPE, NO JOINTS OR COUPLINGS
CORPORATION COCK
45°
MAIN
BACKFILL TAMPED IN 6" LIFTS
ROADWAY

NOTES:

1. METER TO BE PROVIDED BY RALEIGH WATER.
2. DIRECT TAP ALLOWED ON MAINS NO LARGER THAN 16" LINE,
3. METER BOX TO BE LOCATED IN R/W ADJACENT TO PROPERTY OR IN APPROVED EASEMENT ADJACENT TO R/W.
4. WHEN THE GRADE CHANGES ON EXISTING SERVICES, A COPPER RESETTER CAN BE USED TO ADJUST TO GRADE. COPPER RESETTERS ARE PROHIBITED ON NEW SERVICES.
5. CURB STOP BOX SHALL HAVE PLUG STYLE LID WITH PENTAGON BOLT, 1-¼" STEEL UPPER SECTION, AND ARCH STYLE BASE. STEEL STATIONARY ROD TO BE PROVIDED FOR CURB STOP OPERATION.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	STANDARD ¾" & 1" WATER SERVICE INSTALLATION	
	W-23	


AMR
CITY SEAL
10 ¾"
PICK UP HOOK
PLAN
20 ⅜"
12"
ELEVATION
¼"
¼"
5 ¼"
1 ½"
SECTION
WATER METER COVER
RECESSED FOR AMR INSTALL
1.8" DIA. PRE-DRILLED HOLE
B
A
A
1 ⅞"
WATER
METER
6"
B
19 ¼"
PLAN
1 ³⁄₁₆" TYP.
17 ⅞"
SECTION A–A
⅞"
¼"
9 ⅝"
8 ⅜"
SECTION B–B

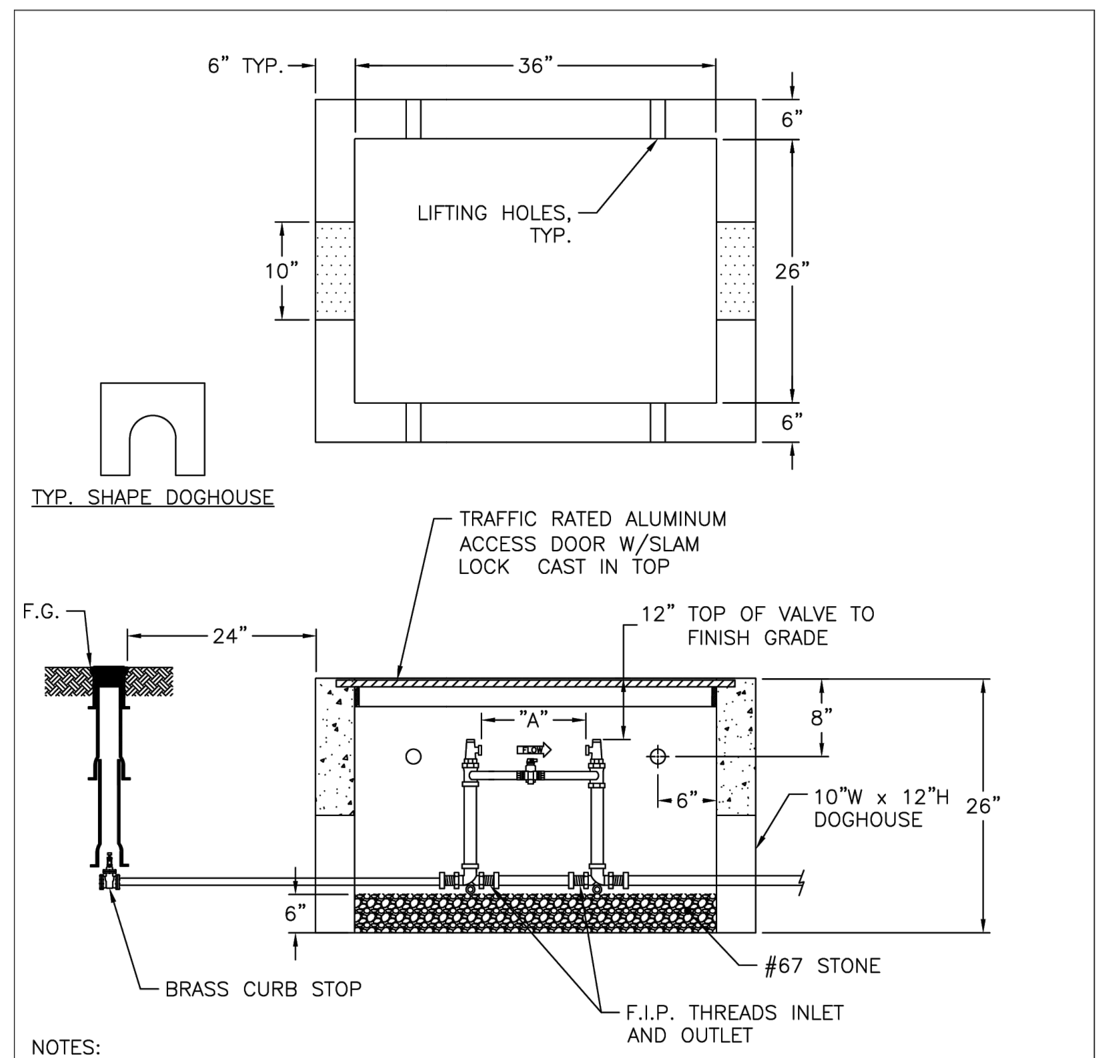
WATER METER BOX

NOTES:

1. COVER WEIGHT: 13 LBS ± 5%.
2. LIDS TO BE COATED WITH BITUMINOUS COAL TAR COATING.
3. HOLE SHALL BE FITTED WITH A METAL GROMMET.
4. BOXES AND LIDS MUST BE MANUFACTURED FROM THE SAME DOMESTIC FOUNDRY.
5. HEIGHT ADJUSTMENTS ALLOWED BY PRECAST RISERS OR BRICK AND MORTAR. DRY STACKING OF BLOCK IS NOT ALLOWED.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	WATER METER BOX	
	W-25	


6" TYP.
36"
6"
LIFTING HOLES, TYP.
10"
26"
6"
TYP. SHAPE DOGHOUSE
TRAFFIC RATED ALUMINUM ACCESS DOOR W/SLAM LOCK CAST IN TOP
12" TOP OF VALVE TO FINISH GRADE
F.G.
24"
"A"
8"
10"W x 12"H DOGHOUSE
26"
6"
6"
BRASS CURB STOP
#67 STONE
F.I.P. THREADS INLET AND OUTLET

NOTES:

1. METER AS MANUFACTURED BY SENSUS OR NEPTUNE. METER TO BE PROVIDED BY RALEIGH WATER.
2. BACKFILL TAMPED IN 6" LIFTS.
3. REINFORCEMENT: #4 @ 6" O.C.E.W.
4. CONCRETE: 4,000 PSI @ 28 DAYS.
5. ALL RPZ BACKFLOW PREVENTION DEVICES MUST BE INSTALLED PRIOR TO METER BEING SET.
6. ALL COPPER SETTERS ARE TO HAVE A BALL TYPE SHUT OFF VALVE ON BOTH SIDES OF COPPER SETTER WITH HIGH RISE BYPASS THAT IS MANUFACTURED BY FORD, MUELLER, OR AY McDONALD (NO EXCEPTIONS).
7. HEIGHT ADJUSTMENTS ALLOWED BY PRECAST RISERS OR BRICK AND MORTAR. DRY STACKING OF BLOCK IS NOT ALLOWED.

	"A"
1 ½" METER	13 ¼"
2" METER	17 ¼"

** TRAFFIC RATED VAULT WALL THICKNESS

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	TYPICAL 1 ½"-2" WATER METER BOX INSTALLATION	
	W-31	

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

BOHLER ENGINEERING NC, PLLC

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

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

Know what's below. Call before you dig.
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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
CHECKED BY:	OAK
DATE:	04/23/2025
CAD I.D.:	

PROJECT:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL CONTRACTORS, INC.

PROPOSED DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

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
08/19/2025

SHEET TITLE:

UTILITY DETAILS

SHEET NUMBER:

C-903

REVISION 2 - 08/19/25

Aug 19, 2025
\\BOHLERENG.NET\SHARES\NC-PROJECTS\2023\NCB230070.00\LAND DEVELOPMENT\CAD\DRAWINGS\PLAN SETS\NCB230070-CNDS-0——LAYOUT: C-903 DETL
RS

PLANTING NOTES:

1. ALL LANDSCAPE AREAS ARE TO RECEIVE A MINIMUM OF 4" OF TOPSOIL.
2. ALL PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, AND FREE OF PEST AND DISEASE.
3. ALL PLANT MATERIAL SHALL BE CONTAINER GROWN OR BALLED & BURLAPPED AS INDICATED IN THE PLANT LIST.
4. ALL LAWN AREAS SHALL BE SEEDED 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.
5. ALL TREES SHALL TRUNK, FULL HEAD, AND MEET ALL REQUIREMENTS SPECIFIED.
6. ALL MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT BEFORE, DURING, AND AFTER INSTALLATION.
7. ALL TREES MUST BE GUYED OR STAKED AS SHOWN IN THE DETAILS.
8. 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.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLAN BEFORE PRICING THE WORK.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DELIVERY SCHEDULE AND PROTECTION BETWEEN DELIVERY AND PLANTING PER SPECIFICATIONS TO MAINTAIN HEALTHY PLANT CONDITIONS.
11. THE CONTRACTOR SHALL COMPLETELY GUARANTEE AND BE RESPONSIBLE FOR FULLY MAINTAINING (INCLUDING BUT NO LIMITED TO: WATERING, SPRAYING, MULCHING, FERTILIZING, ETC.) ALL OF THE PLANT MATERIALS AND LAWN FOR A ONE YEAR GROWING PERIOD.
12. 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.
13. STANDARDS SET FORTH IN THE "AMERICAN STANDARD FOR NURSERY STOCK" REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTES MINIMUM QUALITY REQUIREMENT FOR PLANT MATERIAL.
14. 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.
15. ALL LANDSCAPING SHALL AVOID CONFLICT WITH UNDERGROUND STORMWATER MANAGEMENT MEASURES.
16. ALL TRANSFORMERS AND AIR HANDLERS TO BE AT A MINIMUM SEMI-OPAQUELY SCREENED WITH THE SPECIFED PLANTINGS.
17. 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.

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.

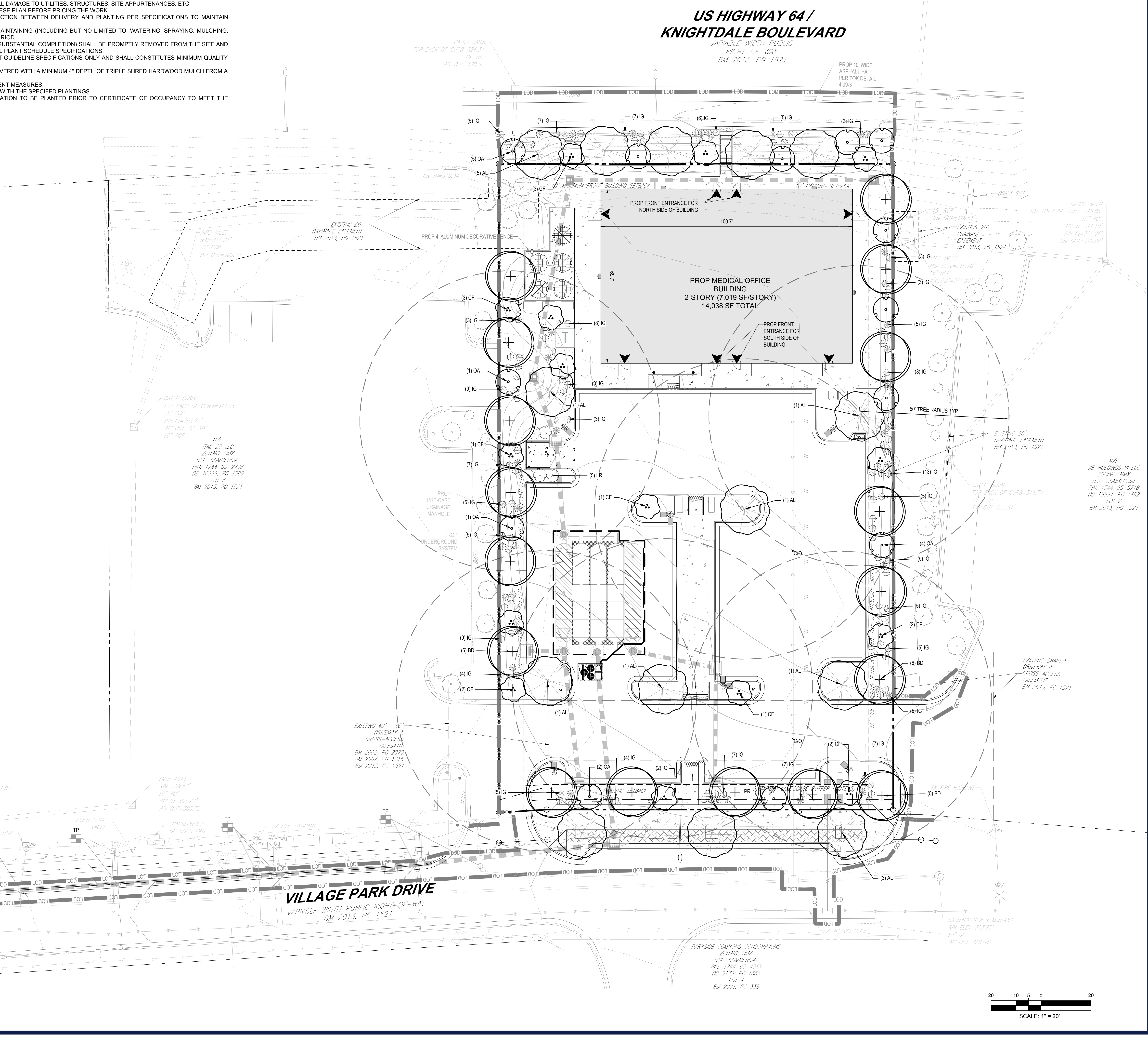
By: ____________________ Date: ______________
Land Use Administrator

LANDSCAPE COMPLIANCE CHART

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. 92 LF / 100 LF = 0.92 0.92 X 3 = 3 CANOPY TREES REQUIRED 0.92 X 2 = 2 UNDERSTORY TREES REQUIRED 0.92 X 20 = 18 SHRUBS REQUIRED	5 CANOPY TREES 4 UNDERSTORY TREES 28 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. 90 LF / 100 LF = 0.90 0.9 X 3 = CANOPY TREES REQUIRED 0.9 X 2 = UNDERSTORY TREES REQUIRED 0.9 X 20 = SHRUBS REQUIRED	4 CANOPY TREES 3 UNDERSTORY TREES 31 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. 90 LF / 100 LF = 0.90 0.9 X 3 = CANOPY TREES REQUIRED 0.9 X 2 = UNDERSTORY TREES REQUIRED 0.9 X 20 = SHRUBS REQUIRED	4 CANOPY TREES 4 UNDERSTORY TREES 30 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 8 UNDERSTORY TREES 32 SHRUBS
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.

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
CANOPY TREES						
	AL	14	ACER SACCHARUM 'LEGACY'	LEGACY SUGAR MAPLE	2.5" CAL.	B&B
	BD	17	BETULA NIGRA 'BNMTF'	DURA HEAT RIVER BIRCH	2.5" CAL.	B&B
UNDERSTORY TREES						
	CF	15	CORNUS FLORIDA	FLOWERING DOGWOOD	2.5" CAL.	
	OA	13	OXYDENDRUM ARBOREUM	SOURWOOD TREE	2.5" CAL.	
SHRUBS						
	IG	172	ILEX GLABRA	INKBERRY HOLLY	18-24" HT.	CONTAINER
	LR	6	LOROPETALUM CHINENSE RUBRUM	PURPLELEAF FRINGE FLOWER	18-24" HT.	CONTAINER


US HIGHWAY 64 /
KNIGHTDALE BOULEVARD
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY
BM 2013, PG 1521
PROP 10' WIDE ASPHALT PATH PER TOK DETAIL 4.09-3
PROP MEDICAL OFFICE BUILDING
2-STORY (7,019 SF/STORY)
14,038 SF TOTAL
100.7'
69.7'
PROP FRONT ENTRANCE FOR NORTH SIDE OF BUILDING
PROP FRONT ENTRANCE FOR SOUTH SIDE OF BUILDING
10' MAXIMUM FRONT BUILDING SETBACK
10' PARKING SETBACK
PROP 4' ALUMINUM DECORATIVE FENCE
EXISTING 20' DRAINAGE EASEMENT BM 2013, PG 1521
60' TREE RADIUS TYP.
BRICK SIGN
PROP PRE-CAST DRAINAGE MANHOLE
PROP UNDERGROUND SYSTEM
EXISTING 40' X 65' DRIVEWAY & CROSS-ACCESS EASEMENT BM 2002, PG 2070 BM 2007, PG 1216 BM 2013, PG 1521
EXISTING SHARED DRIVEWAY & CROSS-ACCESS EASEMENT BM 2013, PG 1521
N/F ITAC 25 LLC ZONING: NMX USE: COMMERCIAL PIN: 1744-95-2708 DB 10999, PG 1089 LOT 6 BM 2013, PG 1521
N/F JJB HOLDINGS VI LLC ZONING: NMX USE: COMMERCIAL PIN: 1744-95-5718 DB 15594, PG 1462 LOT 2 BM 2013, PG 1521
PARKSIDE COMMONS CONDOMINIUMS ZONING: NMX USE: COMMERCIAL PIN: 1744-95-4511 DB 9179, PG 1351 LOT 4 BM 2001, PG 338
VILLAGE PARK DRIVE
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY BM 2013, PG 1521
CONNECT TO EXISTING CURB INLET
(5) IG
(7) IG
(6) IG
(2) IG
(5) OA
(5) AL
(3) CF
(8) IG
(3) IG
(1) OA
(9) IG
(1) AL
(1) CF
(7) IG
(5) LR
(13) IG
(4) OA
(2) CF
(6) BD
(4) IG
(2) OA
(5) BD
(3) AL
LOD
SCALE: 1" = 20'
20 10 5 0 20

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

BOHLER ENGINEERING NC, PLLC

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

PROJECT:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL CONTRACTORS, INC.

PROPOSED DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

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

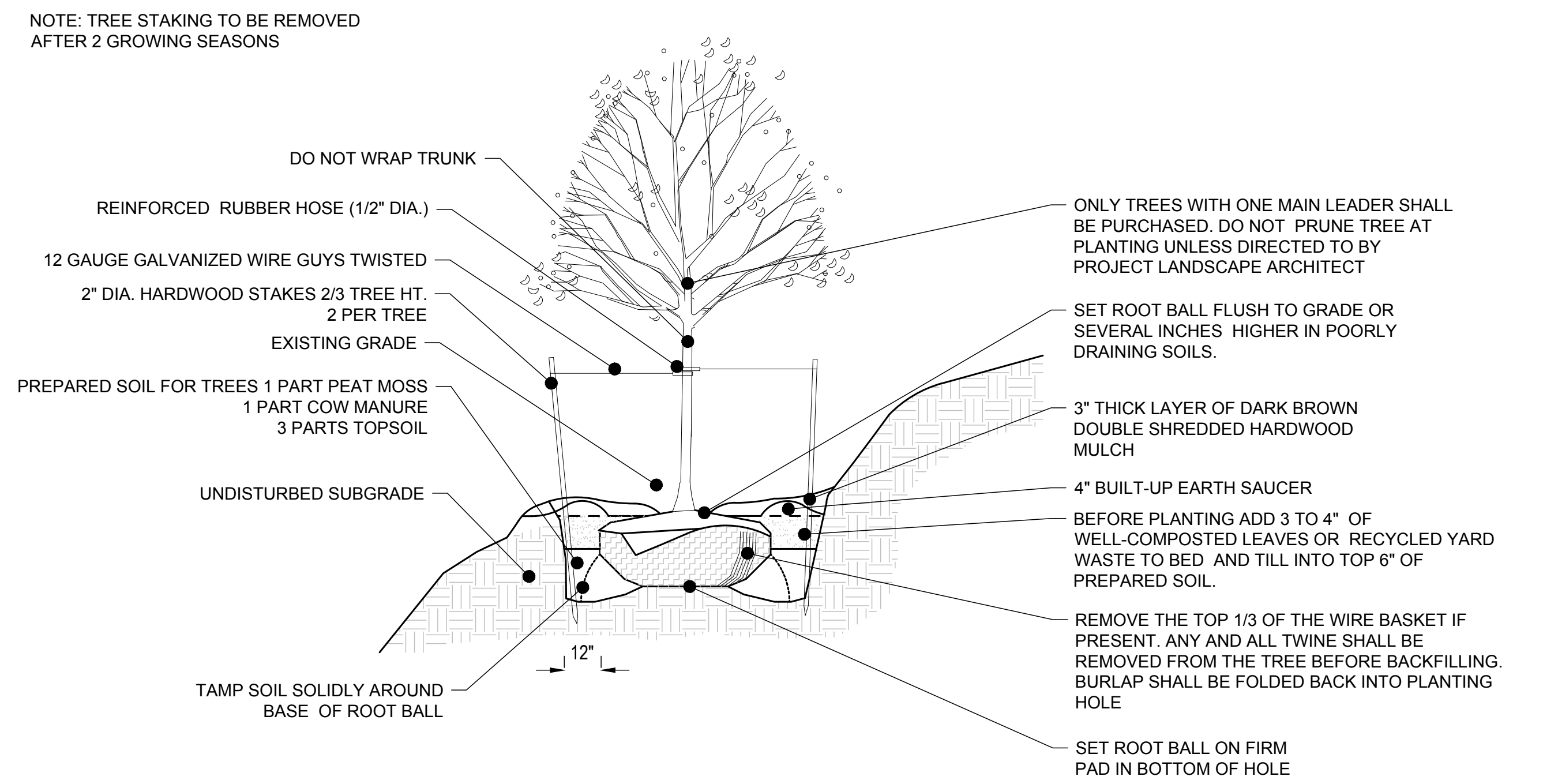
SEAL 055420
OLIVER A. KAIJA
08/19/2025

SHEET TITLE:

LANDSCAPE PLAN

SHEET NUMBER:
L-101

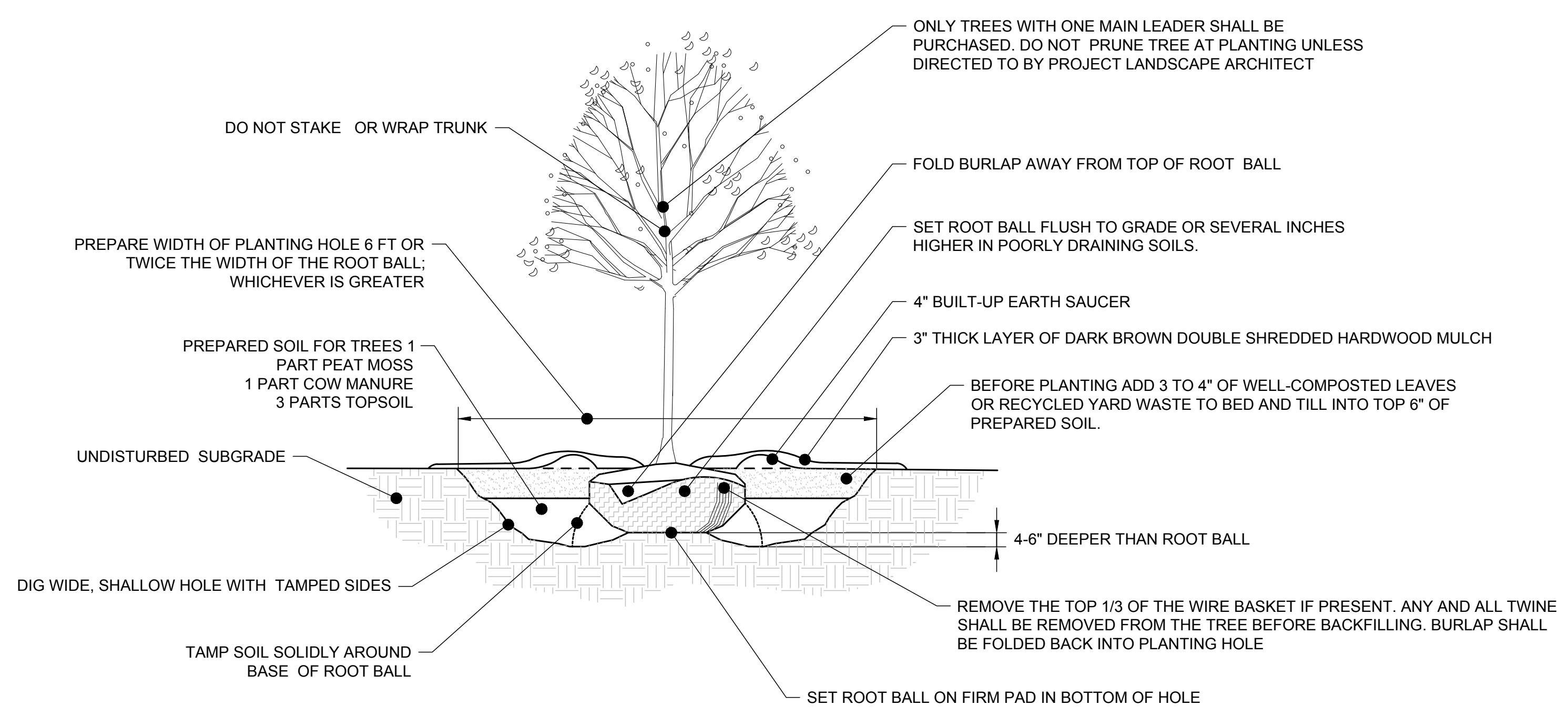
REVISION 2 - 08/19/25


NOTE: TREE STAKING TO BE REMOVED AFTER 2 GROWING SEASONS
DO NOT WRAP TRUNK
REINFORCED RUBBER HOSE (1/2" DIA.)
12 GAUGE GALVANIZED WIRE GUYS TWISTED
2" DIA. HARDWOOD STAKES 2/3 TREE HT. 2 PER TREE
EXISTING GRADE
PREPARED SOIL FOR TREES 1 PART PEAT MOSS 1 PART COW MANURE 3 PARTS TOPSOIL
UNDISTURBED SUBGRADE
12"
TAMP SOIL SOLIDLY AROUND BASE OF ROOT BALL
ONLY TREES WITH ONE MAIN LEADER SHALL BE PURCHASED. DO NOT PRUNE TREE AT PLANTING UNLESS DIRECTED TO BY PROJECT LANDSCAPE ARCHITECT
SET ROOT BALL FLUSH TO GRADE OR SEVERAL INCHES HIGHER IN POORLY DRAINING SOILS.
3" THICK LAYER OF DARK BROWN DOUBLE SHREDDED HARDWOOD MULCH
4" BUILT-UP EARTH SAUCER
BEFORE PLANTING ADD 3 TO 4" OF WELL-COMPOSTED LEAVES OR RECYCLED YARD WASTE TO BED AND TILL INTO TOP 6" OF PREPARED SOIL.
REMOVE THE TOP 1/3 OF THE WIRE BASKET IF PRESENT. ANY AND ALL TWINE SHALL BE REMOVED FROM THE TREE BEFORE BACKFILLING. BURLAP SHALL BE FOLDED BACK INTO PLANTING HOLE
SET ROOT BALL ON FIRM PAD IN BOTTOM OF HOLE

TREE PLANTING ON SLOPE DETAIL

NOT TO SCALE

(MS-L070101 - 06/2024)

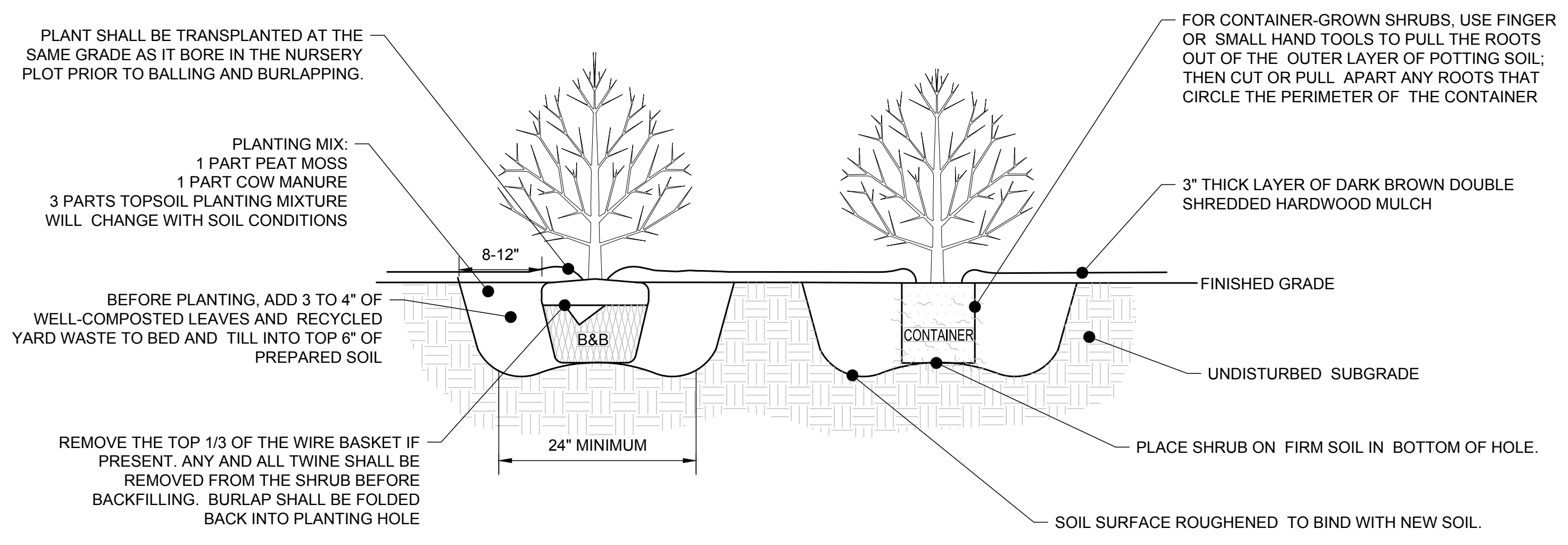

DO NOT STAKE OR WRAP TRUNK
PREPARE WIDTH OF PLANTING HOLE 6 FT OR TWICE THE WIDTH OF THE ROOT BALL; WHICHEVER IS GREATER
PREPARED SOIL FOR TREES 1 PART PEAT MOSS 1 PART COW MANURE 3 PARTS TOPSOIL
UNDISTURBED SUBGRADE
DIG WIDE, SHALLOW HOLE WITH TAMPED SIDES
TAMP SOIL SOLIDLY AROUND BASE OF ROOT BALL
ONLY TREES WITH ONE MAIN LEADER SHALL BE PURCHASED. DO NOT PRUNE TREE AT PLANTING UNLESS DIRECTED TO BY PROJECT LANDSCAPE ARCHITECT
FOLD BURLAP AWAY FROM TOP OF ROOT BALL
SET ROOT BALL FLUSH TO GRADE OR SEVERAL INCHES HIGHER IN POORLY DRAINING SOILS.
4" BUILT-UP EARTH SAUCER
3" THICK LAYER OF DARK BROWN DOUBLE SHREDDED HARDWOOD MULCH
BEFORE PLANTING ADD 3 TO 4" OF WELL-COMPOSTED LEAVES OR RECYCLED YARD WASTE TO BED AND TILL INTO TOP 6" OF PREPARED SOIL.
4-6" DEEPER THAN ROOT BALL
REMOVE THE TOP 1/3 OF THE WIRE BASKET IF PRESENT. ANY AND ALL TWINE SHALL BE REMOVED FROM THE TREE BEFORE BACKFILLING. BURLAP SHALL BE FOLDED BACK INTO PLANTING HOLE
SET ROOT BALL ON FIRM PAD IN BOTTOM OF HOLE

REFERENCE: ARCHITECTURAL GRAPHIC STANDARDS 1998 CUMULATIVE SUPPLEMENT.

DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE

(MS-L070103 - 06/2024)

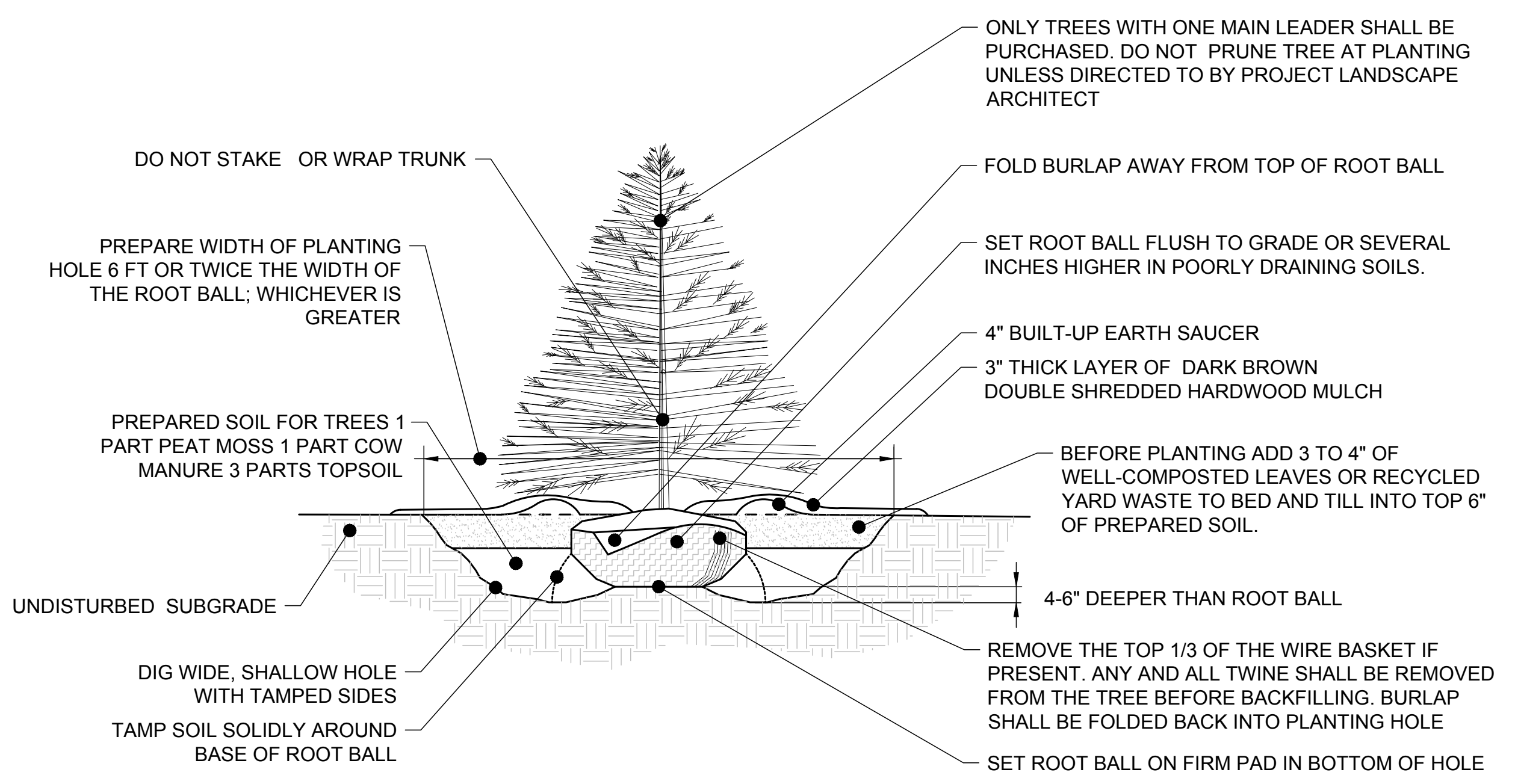

PLANT SHALL BE TRANSPLANTED AT THE SAME GRADE AS IT BORE IN THE NURSERY PLOT PRIOR TO BALLING AND BURLAPPING.
PLANTING MIX: 1 PART PEAT MOSS 1 PART COW MANURE 3 PARTS TOPSOIL PLANTING MIXTURE WILL CHANGE WITH SOIL CONDITIONS
8-12"
BEFORE PLANTING, ADD 3 TO 4" OF WELL-COMPOSTED LEAVES AND RECYCLED YARD WASTE TO BED AND TILL INTO TOP 6" OF PREPARED SOIL
B&B
CONTAINER
24" MINIMUM
REMOVE THE TOP 1/3 OF THE WIRE BASKET IF PRESENT. ANY AND ALL TWINE SHALL BE REMOVED FROM THE SHRUB BEFORE BACKFILLING. BURLAP SHALL BE FOLDED BACK INTO PLANTING HOLE
FOR CONTAINER-GROWN SHRUBS, USE FINGER OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS THAT CIRCLE THE PERIMETER OF THE CONTAINER
3" THICK LAYER OF DARK BROWN DOUBLE SHREDDED HARDWOOD MULCH
FINISHED GRADE
UNDISTURBED SUBGRADE
PLACE SHRUB ON FIRM SOIL IN BOTTOM OF HOLE.
SOIL SURFACE ROUGHENED TO BIND WITH NEW SOIL.

REFERENCE: ARCHITECTURAL GRAPHIC STANDARDS 1998 CUMULATIVE SUPPLEMENT

DECIDUOUS AND EVERGREEN SHRUB PLANTING DETAIL

NOT TO SCALE

(MS-L070201 - 06/2024)


DO NOT STAKE OR WRAP TRUNK
PREPARE WIDTH OF PLANTING HOLE 6 FT OR TWICE THE WIDTH OF THE ROOT BALL; WHICHEVER IS GREATER
PREPARED SOIL FOR TREES 1 PART PEAT MOSS 1 PART COW MANURE 3 PARTS TOPSOIL
UNDISTURBED SUBGRADE
DIG WIDE, SHALLOW HOLE WITH TAMPED SIDES
TAMP SOIL SOLIDLY AROUND BASE OF ROOT BALL
ONLY TREES WITH ONE MAIN LEADER SHALL BE PURCHASED. DO NOT PRUNE TREE AT PLANTING UNLESS DIRECTED TO BY PROJECT LANDSCAPE ARCHITECT
FOLD BURLAP AWAY FROM TOP OF ROOT BALL
SET ROOT BALL FLUSH TO GRADE OR SEVERAL INCHES HIGHER IN POORLY DRAINING SOILS.
4" BUILT-UP EARTH SAUCER
3" THICK LAYER OF DARK BROWN DOUBLE SHREDDED HARDWOOD MULCH
BEFORE PLANTING ADD 3 TO 4" OF WELL-COMPOSTED LEAVES OR RECYCLED YARD WASTE TO BED AND TILL INTO TOP 6" OF PREPARED SOIL.
4-6" DEEPER THAN ROOT BALL
REMOVE THE TOP 1/3 OF THE WIRE BASKET IF PRESENT. ANY AND ALL TWINE SHALL BE REMOVED FROM THE TREE BEFORE BACKFILLING. BURLAP SHALL BE FOLDED BACK INTO PLANTING HOLE
SET ROOT BALL ON FIRM PAD IN BOTTOM OF HOLE

REFERENCE: ARCHITECTURAL GRAPHIC STANDARDS 1998 CUMULATIVE SUPPLEMENT.

EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE

(MS-L070102 - 06/2024)

OWNER MAINTENANCE RESPONSIBILITIES

UPON OWNER'S (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 SODDING, PLANTING AND MULCHING INCLUDING 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, FRIABLE, 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 CLODS.

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.
1.1. SOD SHALL BE STRONGLY ROOTED, WEED AND DISEASE/PEST FREE WITH A UNIFORM THICKNESS.
1.2. 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 1¼", WHICH HAVE NOT BEEN COMPLETELY CALLUSED, 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 SHOULD 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 SHALL 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 'VISI-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 ATTAIN 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 MORE THAN 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 COMPACTED 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 TRANSPLANT 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	POPULOUS VARIETIES
CARPINUS VARIETIES	PRUNUS VARIETIES
CRATAEGUS VARIETIES	PYRUS VARIETIES
KOELREUTERIA	QUERCUS VARIETIES
LIQUIDAMBER STYRACIFLUA	TILIA TOMENTOSA
LIRIODENDRON TULIPIFERA	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
- 21 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 ½" 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 ¼" 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.

10. TRANSPLANTING (WHEN REQUIRED)

A. ALL TRANSPLANTS SHALL BE DUG WITH INTACT ROOT BALLS CAPABLE OF SUSTAINING THE PLANT.

B. IF PLANTS ARE TO BE STOCKPILED BEFORE REPLANTING, THEY SHALL BE HEALED IN WITH MULCH OR SOIL, ADEQUATELY WATERED AND PROTECTED FROM EXTREME HEAT, SUN AND WIND.

C. PLANTS SHALL NOT BE DUG FOR TRANSPLANTING BETWEEN APRIL 10 AND JUNE 30.

D. UPON REPLANTING, BACKFILL SOIL SHALL BE AMENDED WITH FERTILIZER AND ROOT GROWTH HORMONE.

E. TRANSPLANTS SHALL BE GUARANTEED FOR THE LENGTH OF THE GUARANTEE PERIOD SPECIFIED HEREIN.

F. IF TRANSPLANTS DIE, SHRUBS AND TREES LESS THAN SIX INCHES (6") DBH SHALL BE REPLACED IN KIND. TREES GREATER THAN SIX INCHES (6") DBH MAY BE REQUIRED TO BE REPLACED IN ACCORDANCE WITH THE MUNICIPALITY'S TREE REPLACEMENT GUIDELINES.

11. WATERING

A. NEW PLANTINGS OR LAWN AREAS SHALL BE ADEQUATELY IRRIGATED BEGINNING IMMEDIATELY AFTER PLANTING. WATER SHALL BE APPLIED TO EACH TREE AND SHRUB IN SUCH MANNER AS NOT TO DISTURB BACKFILL AND TO THE EXTENT THAT ALL MATERIALS IN THE PLANTING HOLE ARE THOROUGHLY SATURATED. WATERING SHALL CONTINUE AT LEAST UNTIL PLANTS ARE ESTABLISHED.

B. SITE OWNER SHALL PROVIDE WATER IF AVAILABLE ON SITE AT TIME OF PLANTING. IF WATER IS NOT AVAILABLE ON SITE, CONTRACTOR SHALL SUPPLY ALL NECESSARY WATER. THE USE OF WATERING BAGS IS RECOMMENDED FOR ALL NEWLY PLANTED TREES.

C. IF AN IRRIGATION SYSTEM HAS BEEN INSTALLED ON THE SITE, IT SHALL BE USED TO WATER PROPOSED PLANT MATERIAL, BUT ANY FAILURE OF THE SYSTEM DOES NOT ELIMINATE THE CONTRACTOR'S RESPONSIBILITY OF MAINTAINING THE DESIRED MOISTURE LEVEL FOR VIGOROUS, HEALTHY GROWTH.

12. GUARANTEE

A. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR A PERIOD OF ONE (1) YEAR FROM APPROVAL OF LANDSCAPE INSTALLATION BY THE APPROVING AGENCY. CONTRACTOR SHALL SUPPLY THE OWNER WITH A MAINTENANCE BOND FOR TEN PERCENT (10%) OF THE VALUE OF THE LANDSCAPE INSTALLATION WHICH WILL BE RELEASED AT THE CONCLUSION OF THE GUARANTEE PERIOD AND WHEN A FINAL INSPECTION HAS BEEN COMPLETED AND APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.

B. ANY DEAD OR DYING PLANT MATERIAL SHALL BE REPLACED FOR THE LENGTH OF THE GUARANTEE PERIOD. REPLACEMENT OF PLANT MATERIAL SHALL BE CONDUCTED AT THE FIRST SUCCEEDING PLANTING SEASON. ANY DEBRIS SHALL BE DISPOSED OF OFF-SITE, WITHOUT EXCEPTION.

C. TREES AND SHRUBS SHALL BE MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION AND THROUGHOUT THE 90 DAY MAINTENANCE PERIOD AS SPECIFIED HEREIN. CULTIVATION, WEEDING, WATERING AND THE PREVENTATIVE TREATMENTS SHALL BE PERFORMED AS NECESSARY TO KEEP PLANT MATERIAL IN GOOD CONDITION AND FREE OF INSECTS AND DISEASE.

D. LAWNS SHALL BE MAINTAINED THROUGH WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING AND OTHER OPERATIONS SUCH AS ROLLING, REGARDING AND REPLANTING AS REQUIRED TO ESTABLISH A SMOOTH, ACCEPTABLE LAWN, FREE OF ERODED OR BARE AREAS.

13. CLEANUP

A. UPON THE COMPLETION OF ALL LANDSCAPE INSTALLATION AND BEFORE THE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL UNUSED MATERIALS, EQUIPMENT AND DEBRIS FROM THE SITE. ALL PAVED AREAS ARE TO BE CLEANED.

B. THE SITE SHALL BE CLEANED AND LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.

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

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

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MUNICIPAL REVIEW

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

PROJECT:

CONSTRUCTION PLANS

FOR

CHAMBLISS & RABIL CONTRACTORS, INC.

PROPOSED DEVELOPMENT

4012 VILLAGE PARK DRIVE
KNIGHTDALE, NC 27545
WAKE COUNTY

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

SEAL 055420
OLIVER A. KAIJA
08/19/2025

SHEET TITLE:

LANDSCAPE NOTES & DETAILS

SHEET NUMBER:

L-102

REVISION 2 - 08/19/25

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. AGI 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.
2. 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	MAX/MIN
OVERALL PROPERTY CALCULATION POINTS	ILLUMINANCE	FC	0.86	0.0	4.8	N/A	N/A
PARKING LOT	ILLUMINANCE	FC	1.24	0.4	2.6	3.10	6.50

GENERAL LIGHTING PLAN NOTES:

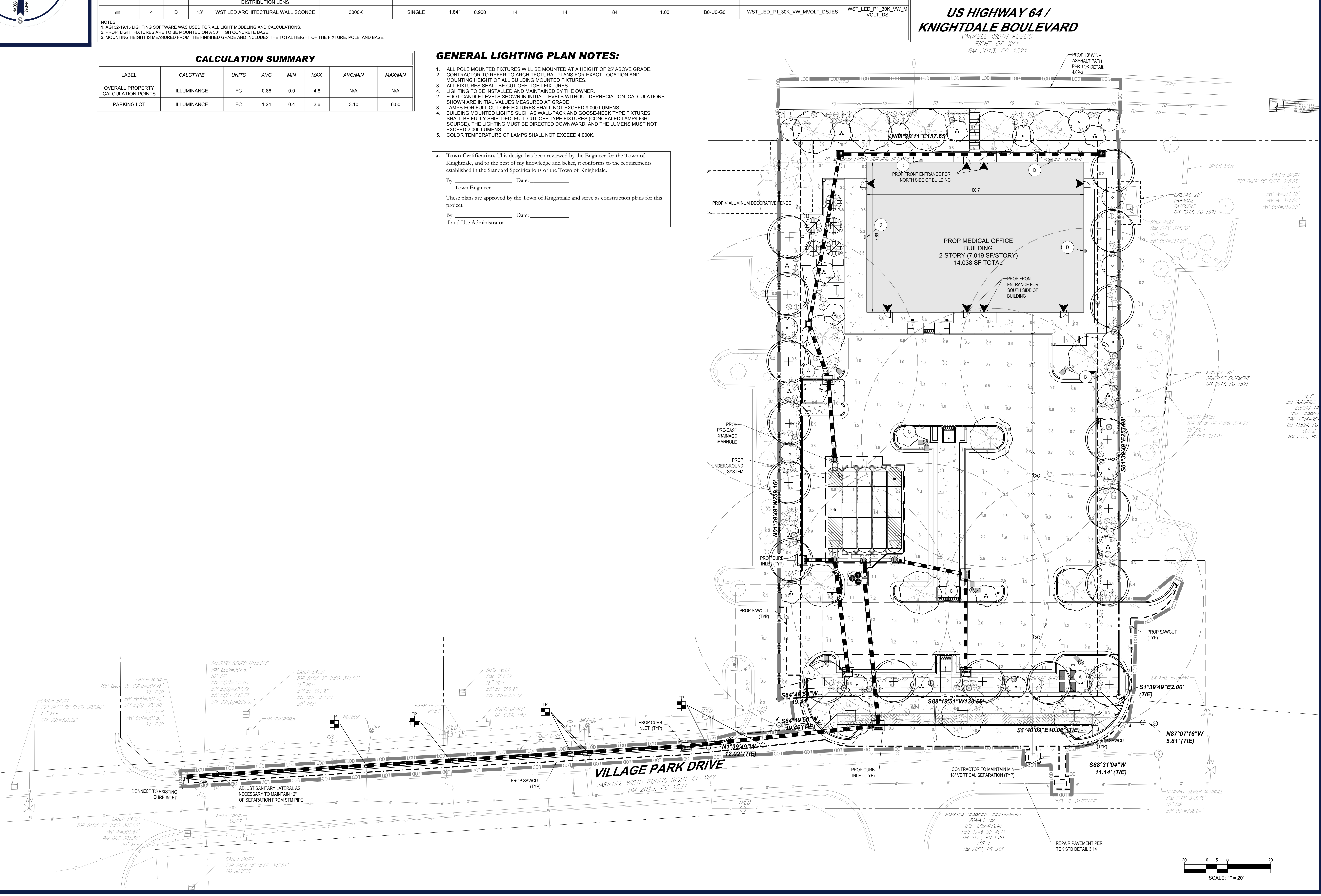
1. ALL POLE MOUNTED FIXTURES WILL BE MOUNTED AT A HEIGHT OF 25' ABOVE GRADE.
2. CONTRACTOR TO REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHT OF ALL BUILDING MOUNTED FIXTURES.
3. ALL FIXTURES SHALL BE CUT OFF LIGHT FIXTURES.
4. LIGHTING TO BE INSTALLED AND MAINTAINED BY THE OWNER.
2. FOOT-CANDLE LEVELS SHOWN IN INITIAL LEVELS WITHOUT DEPRECIATION. CALCULATIONS SHOWN ARE INITIAL VALUES MEASURED AT GRADE
3. LAMPS FOR FULL CUT-OFF FIXTURES SHALL NOT EXCEED 9,000 LUMENS
4. BUILDING MOUNTED LIGHTS SUCH AS WALL-PACK AND GOOSE-NECK TYPE FIXTURES SHALL BE FULLY SHIELDED, FULL CUT-OFF TYPE FIXTURES (CONCEALED LAMP/LIGHT SOURCE). THE LIGHTING MUST BE DIRECTED DOWNWARD, AND THE LUMENS MUST NOT EXCEED 2,000 LUMENS.
5. 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
PROP 10' WIDE ASPHALT PATH PER TOK DETAIL 4.09-3
N88°20'11"E157.65'
PROP FRONT ENTRANCE FOR NORTH SIDE OF BUILDING
100.7'
PROP 4' ALUMINUM DECORATIVE FENCE
PROP MEDICAL OFFICE BUILDING
2-STORY (7,019 SF/STORY)
14,038 SF TOTAL
PROP FRONT ENTRANCE FOR SOUTH SIDE OF BUILDING
EXISTING 20' DRAINAGE EASEMENT BM 2013, PG 1521
PROP PRE-CAST DRAINAGE MANHOLE
PROP UNDERGROUND SYSTEM
N01°39'49"W259.16'
S01°39'49"E257.98'
PROP CURB INLET (TYP)
PROP SAWCUT (TYP)
S84°49'52"W 19.11'
S88°19'51"W138.58'
S84°49'50"W 19.46'(TIE)
S1°40'09"E10.00'(TIE)
S1°39'49"E2.00' (TIE)
N87°07'16"W 5.81' (TIE)
S88°31'04"W 11.14' (TIE)
N1°39'49"W 12.02' (TIE)
VILLAGE PARK DRIVE
VARIABLE WIDTH PUBLIC RIGHT-OF-WAY
BM 2013, PG 1521
CONNECT TO EXISTING CURB INLET
ADJUST SANITARY LATERAL AS NECESSARY TO MAINTAIN 12" OF SEPARATION FROM STM PIPE
PROP CURB INLET (TYP)
CONTRACTOR TO MAINTAIN MIN 18" VERTICAL SEPARATION (TYP)
REPAIR PAVEMENT PER TOK STD DETAIL 3.14
PARKSIDE COMMONS CONDOMINIUMS
ZONING: NMX
USE: COMMERCIAL
PIN: 1744-95-4511
DB 9179, PG 1351
LOT 4
BM 2001, PG 338
SCALE: 1" = 20'

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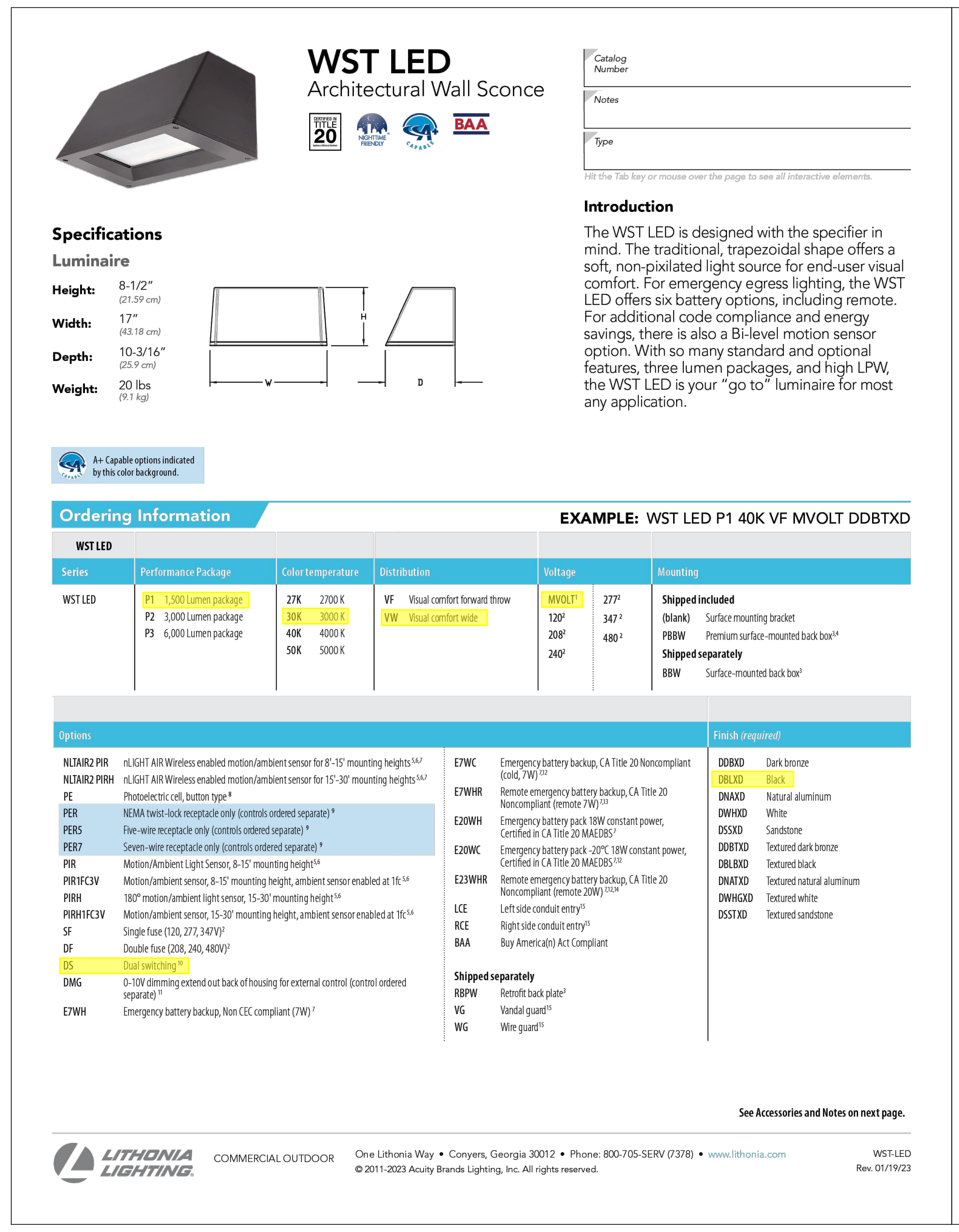
SEAL 055420
OLIVER A. KAIJA
08/19/2025

SHEET TITLE:

LIGHTING PLAN

SHEET NUMBER:
C-702

REVISION 2 - 08/19/25



WST LED

Architectural Wall Sconce

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

Luminaire

Height:	8-1/2" (21.59 cm)
Width:	17" (43.18 cm)
Depth:	10-3/16" (25.9 cm)
Weight:	20 lbs (9.1 kg)

Introduction

The WST LED is designed with the specifier in mind. The traditional, trapezoidal shape offers a soft, non-pixilated light source for end-user visual comfort. For emergency egress lighting, the WST LED offers six battery options, including remote. For additional code compliance and energy savings, there is also a Bi-level motion sensor option. With so many standard and optional features, three lumen packages, and high LPW, the WST LED is your "go to" luminaire for most any application.

A+ Capable options indicated by this color background.

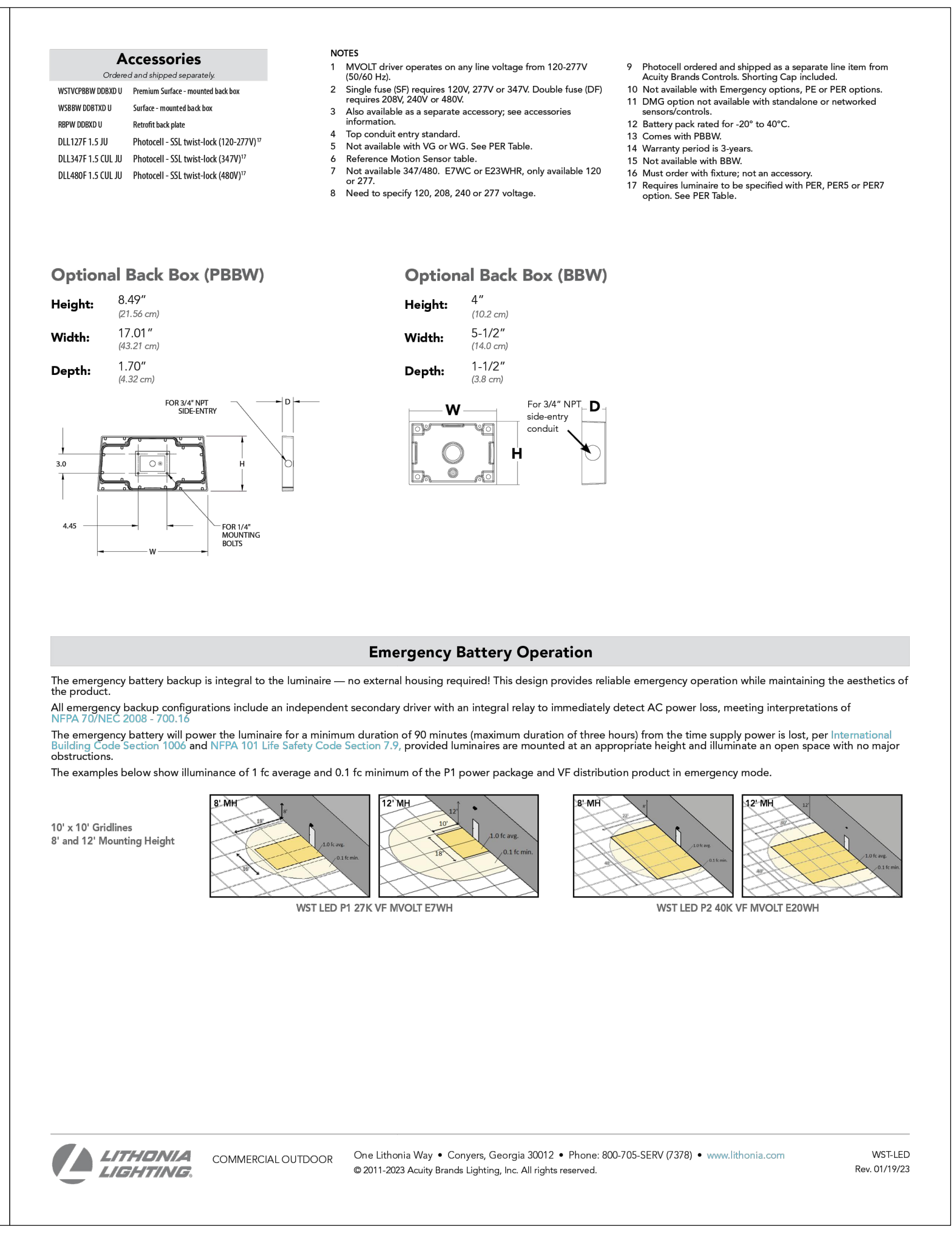
Ordering Information

EXAMPLE: WST LED P1 40K VF MVOLT DDBTXD

WST LED					
Series	Performance Package	Color temperature	Distribution	Voltage	Mounting
WST LED	P1 1,500 Lumen package P2 3,000 Lumen package P3 6,000 Lumen package	27K 2700 K 30K 3000 K 40K 4000 K 50K 5000 K	VF Visual comfort forward throw VW Visual comfort wide	MVOLT[1] 277[2] 120[2] 347[2] 208[2] 480[2] 240[2]	**Shipped included** (blank) Surface mounting bracket PBBW Premium surface-mounted back box[3,4] **Shipped separately** BBW Surface-mounted back box[3]

Options: NLTAIR2 PIR nLIGHT AIR Wireless enabled motion/ambient sensor for 8'-15' mounting heights[5,6,7]; E7WC Emergency battery backup, CA Title 20 Noncompliant

Finish (required): DDBXD Dark bronze

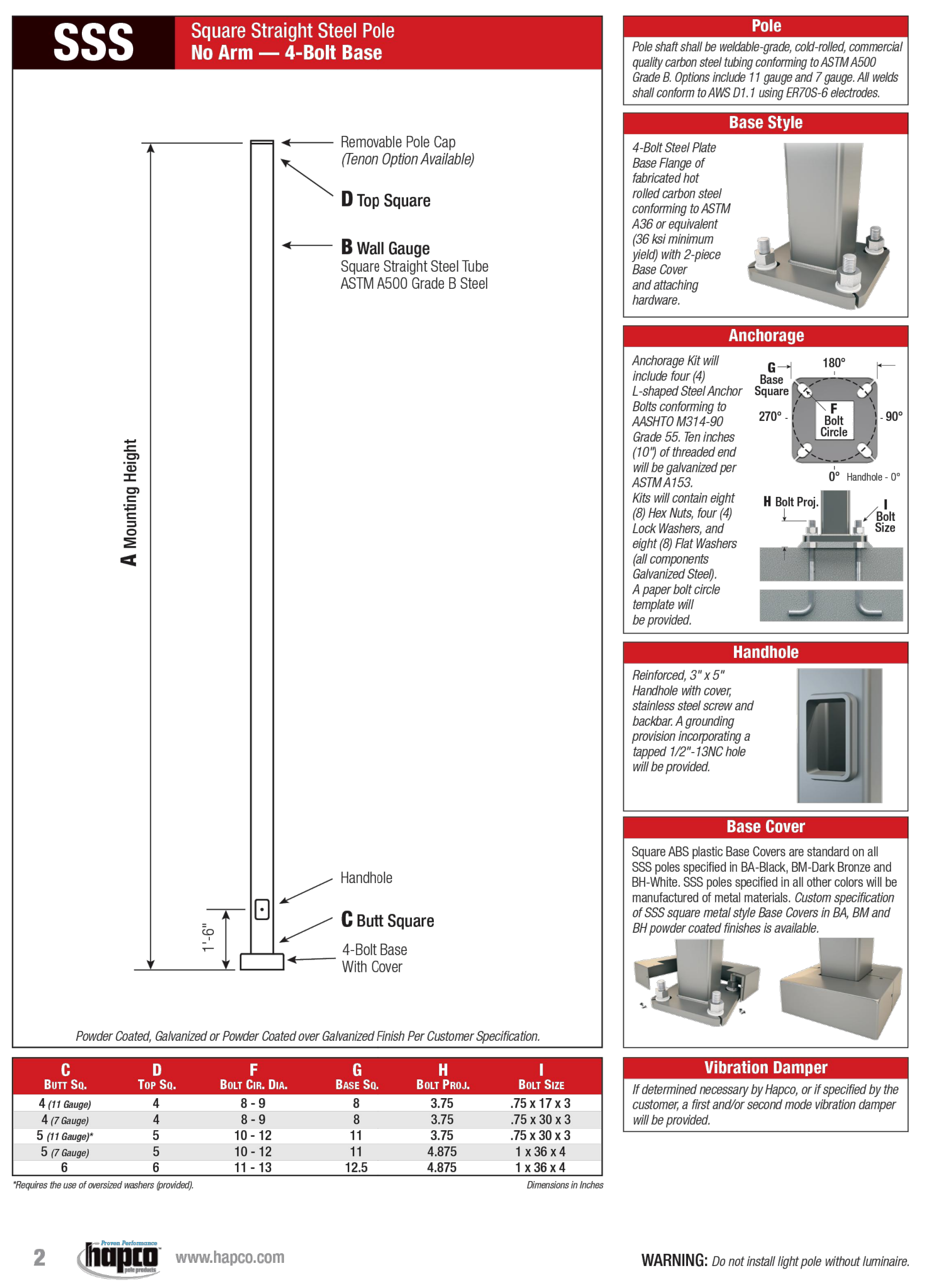


Accessories

Optional Back Box (PBBW)

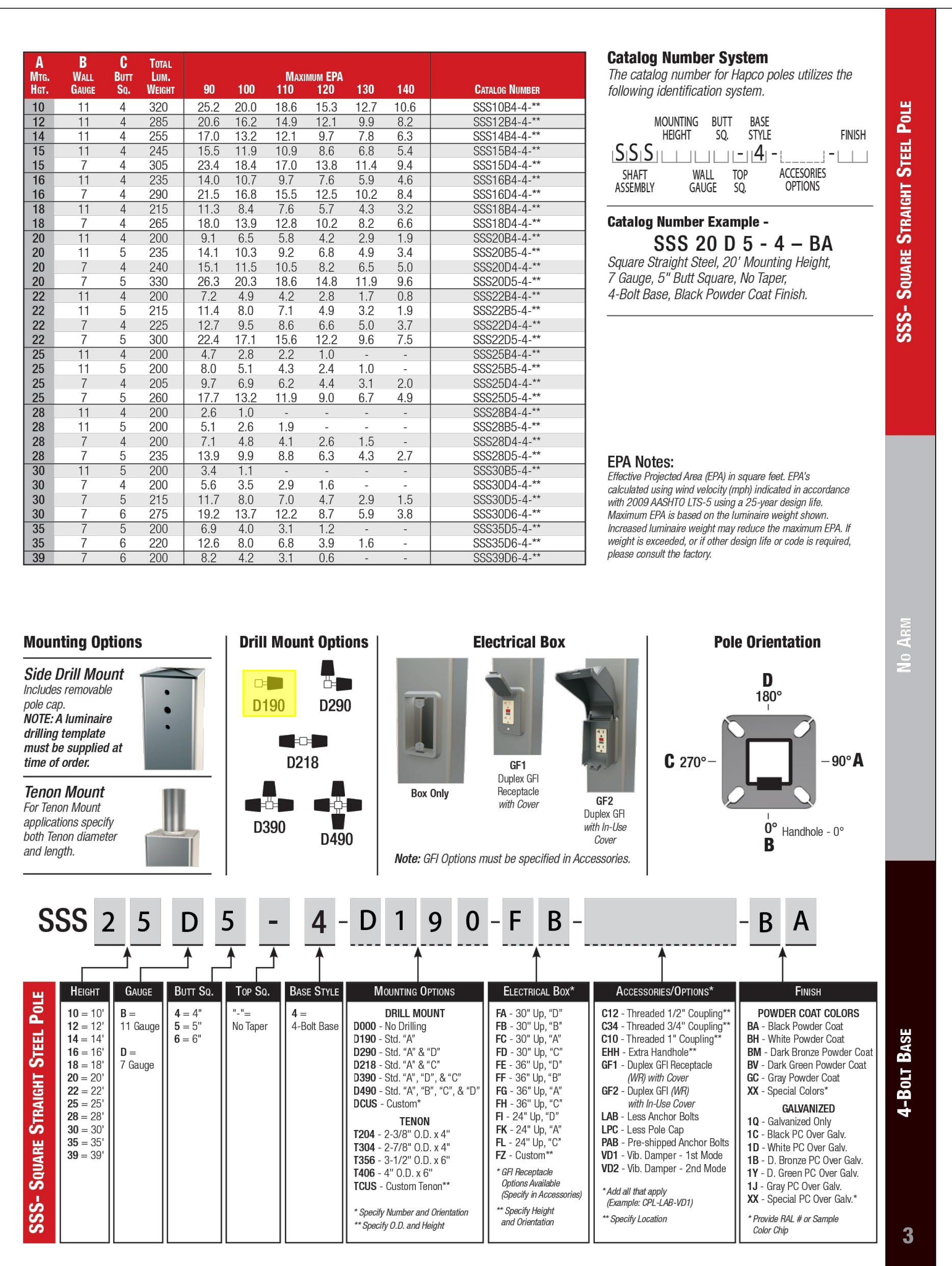
Optional Back Box (BBW)

Emergency Battery Operation



SSS Square Straight Steel Pole No Arm — 4-Bolt Base

WARNING: Do not install light pole without luminaire.



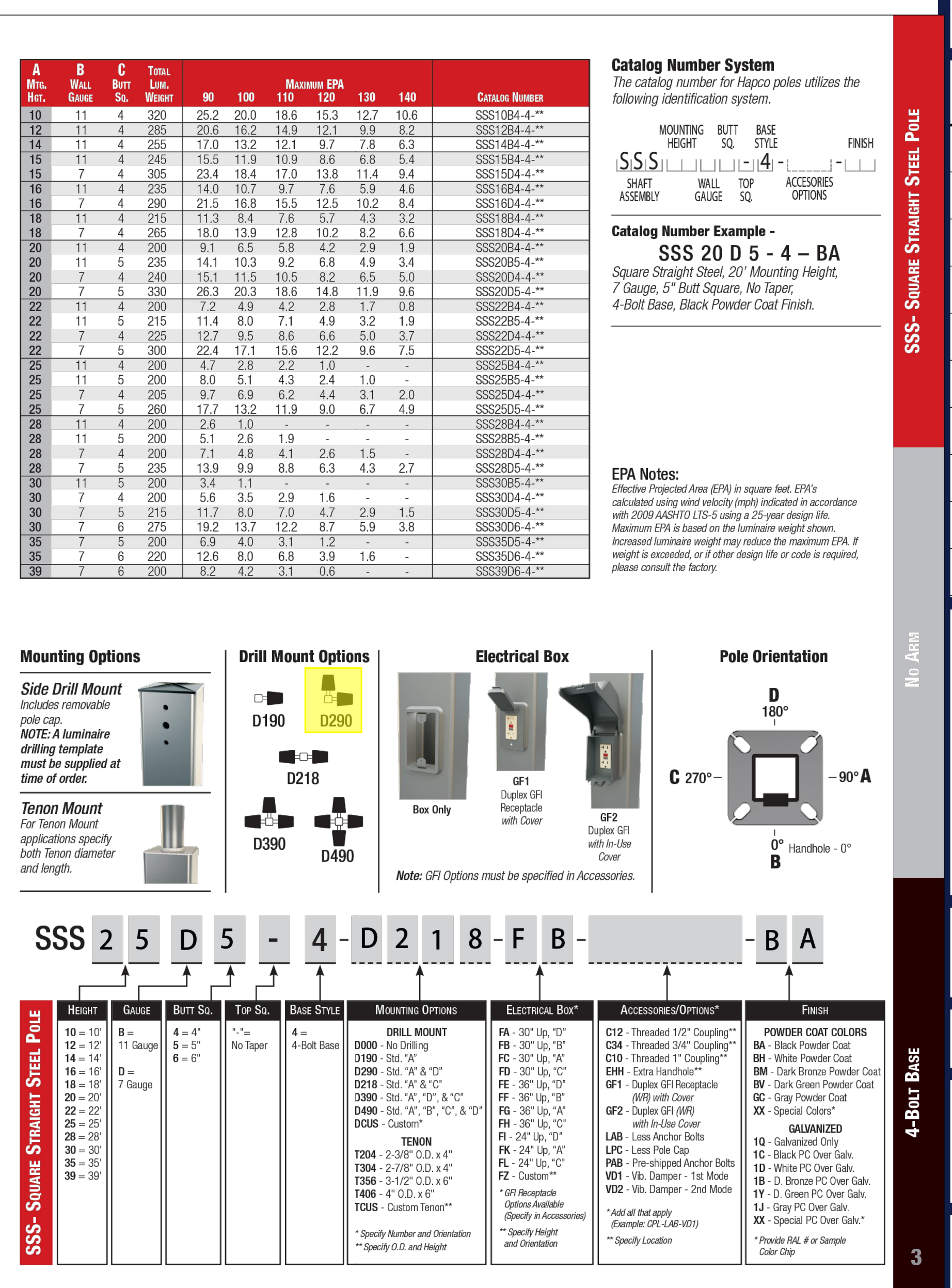
Catalog Number System

SSS- Square Straight Steel Pole

No Arm

4-Bolt Base

3



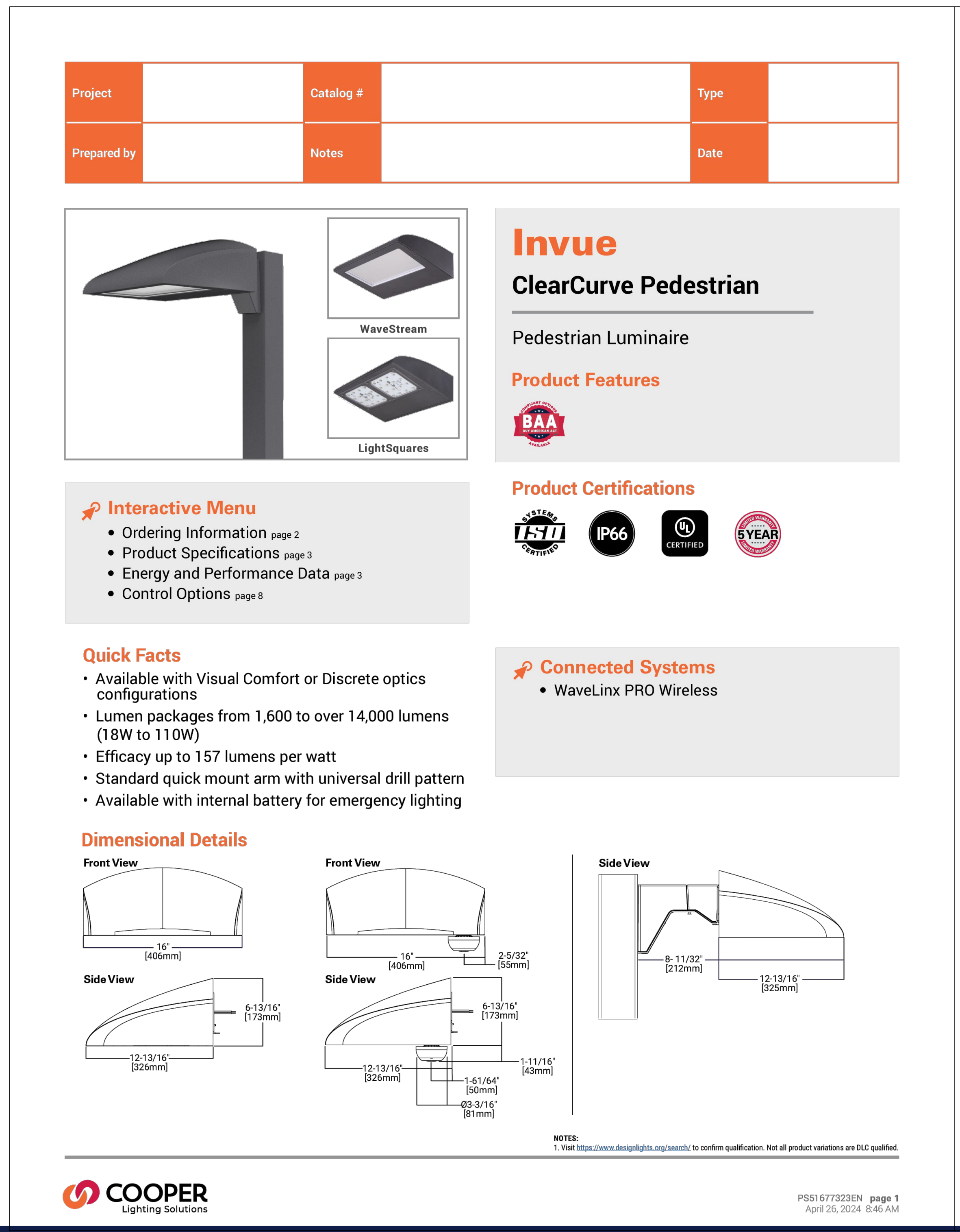
Catalog Number System

SSS- Square Straight Steel Pole

No Arm

4-Bolt Base

3



Project		Catalog #		Type	
Prepared by		Notes		Date	

Invue

ClearCurve Pedestrian

Pedestrian Luminaire

WaveStream

LightSquares

Product Features

Product Certifications

Interactive Menu

- Ordering Information page 2
- Product Specifications page 3
- Energy and Performance Data page 3
- Control Options page 8

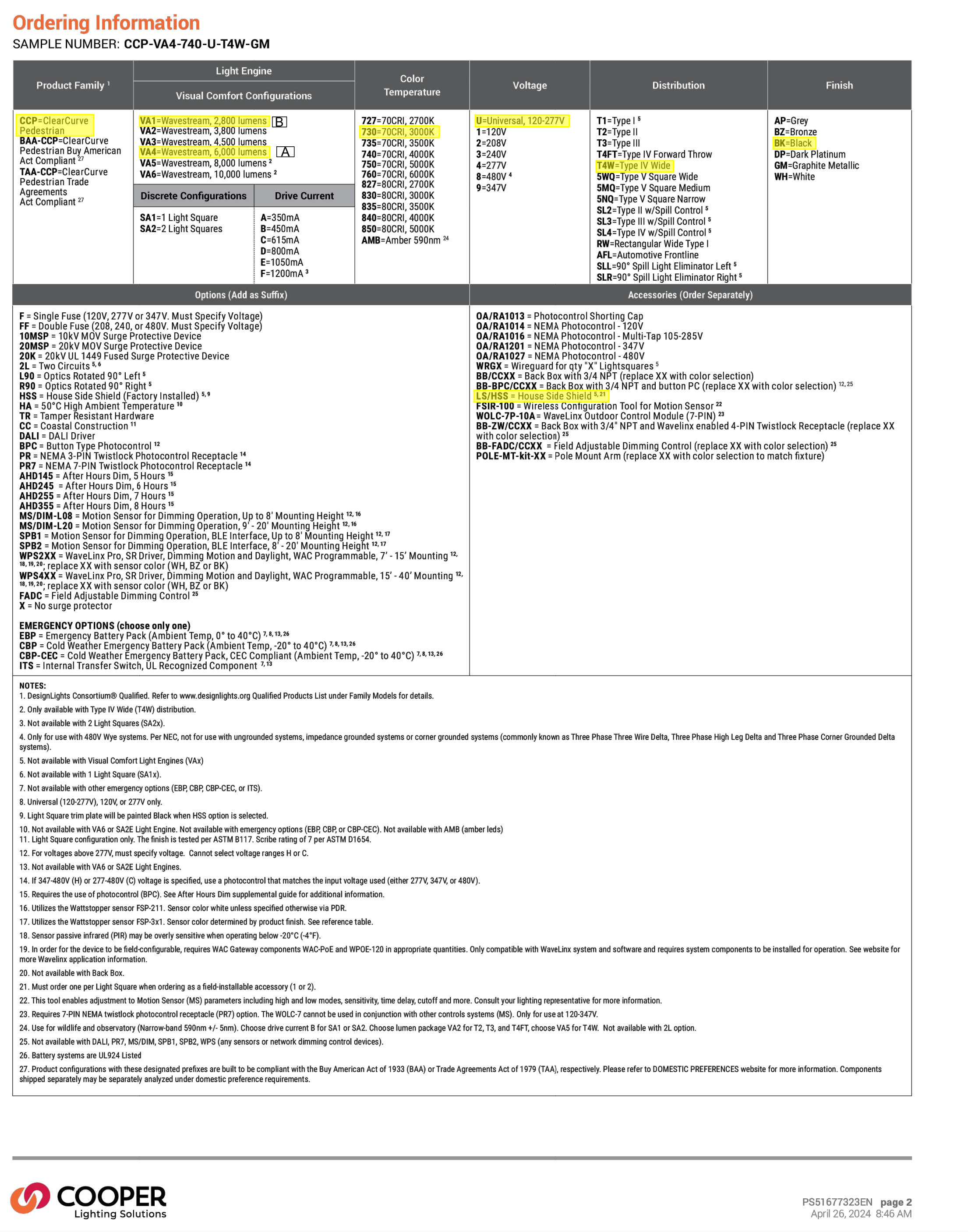
Connected Systems

- WaveLinx PRO Wireless

Quick Facts

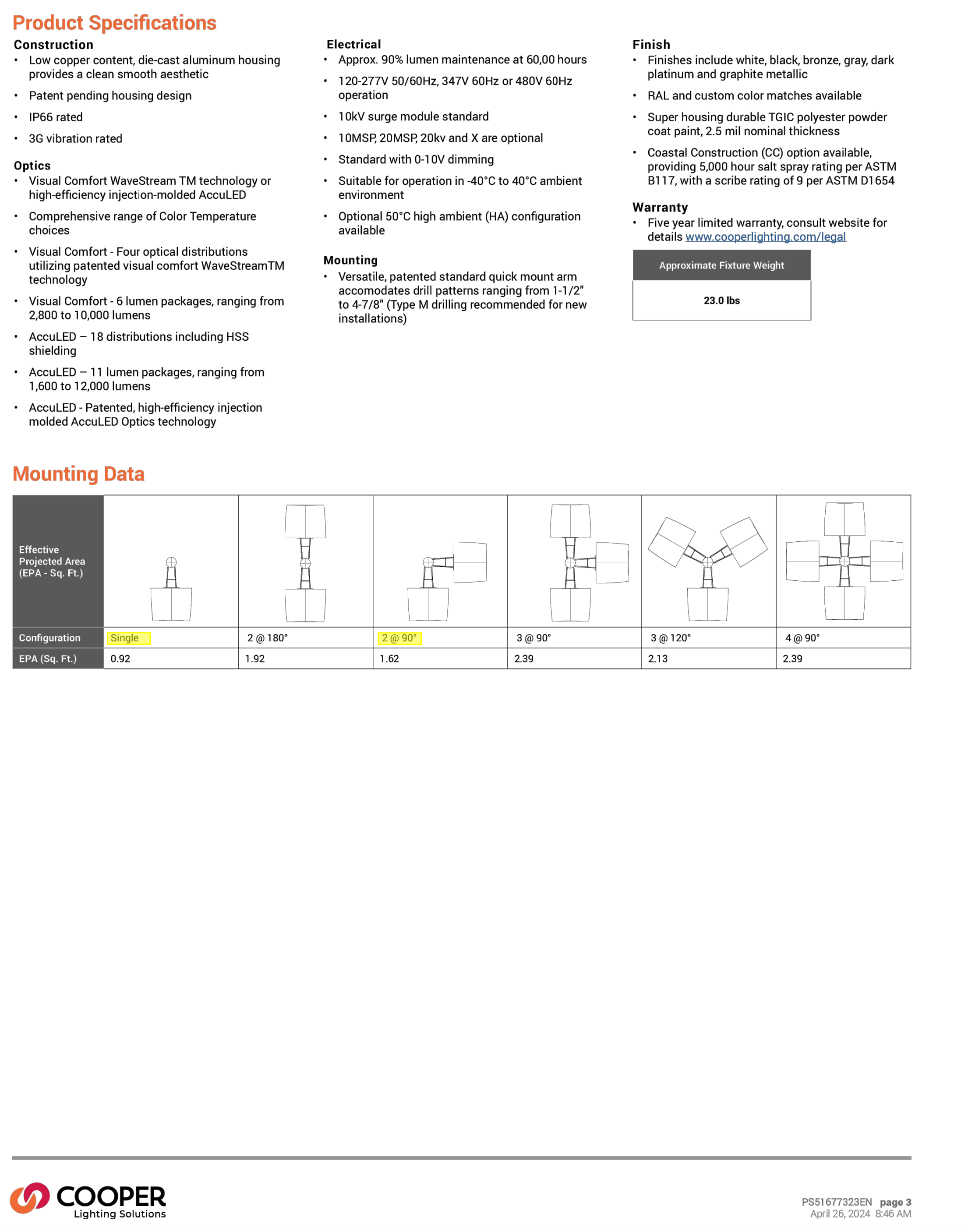
- Available with Visual Comfort or Discrete optics configurations
- Lumen packages from 1,600 to over 14,000 lumens (18W to 110W)
- Efficacy up to 157 lumens per watt
- Standard quick mount arm with universal drill pattern
- Available with internal battery for emergency lighting

Dimensional Details



Invue ClearCurve Pedestrian

Ordering Information



Invue ClearCurve Pedestrian

Product Specifications

Construction

- Low copper content, die-cast aluminum housing provides a clean smooth aesthetic
- Patent pending housing design
- IP66 rated
- 3G vibration rated

Optics

- Visual Comfort WaveStream TM technology or high-efficiency injection-molded AccuLED
- Comprehensive range of Color Temperature choices
- Visual Comfort - Four optical distributions utilizing patented visual comfort WaveStreamTM technology
- Visual Comfort - 6 lumen packages, ranging from 2,800 to 10,000 lumens
- AccuLED – 18 distributions including HSS shielding
- AccuLED – 11 lumen packages, ranging from 1,600 to 12,000 lumens
- AccuLED - Patented, high-efficiency injection molded AccuLED Optics technology

Electrical

- Approx. 90% lumen maintenance at 60,00 hours
- 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation
- 10kV surge module standard
- 10MSP, 20MSP, 20kv and X are optional
- Standard with 0-10V dimming
- Suitable for operation in -40°C to 40°C ambient environment
- Optional 50°C high ambient (HA) configuration available

Mounting

- Versatile, patented standard quick mount arm accomodates drill patterns ranging from 1-1/2" to 4-7/8" (Type M drilling recommended for new installations)

Finish

- Finishes include white, black, bronze, gray, dark platinum and graphite metallic
- RAL and custom color matches available
- Super housing durable TGIC polyester powder coat paint, 2.5 mil nominal thickness
- Coastal Construction (CC) option available, providing 5,000 hour salt spray rating per ASTM B117, with a scribe rating of 9 per ASTM D1654

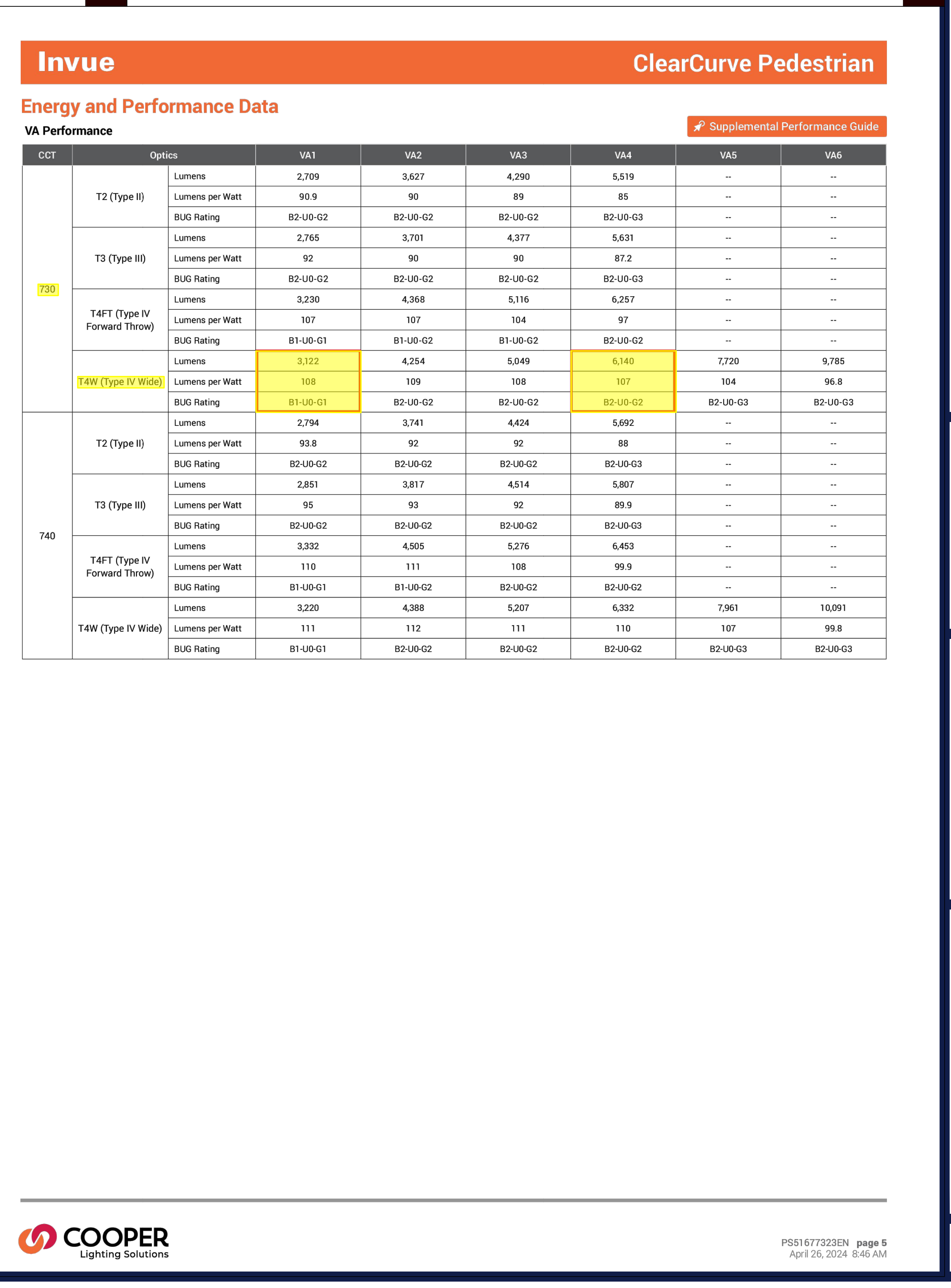
Warranty

- Five year limited warranty, consult website for details www.cooperlighting.com/legal

Approximate Fixture Weight
23.0 lbs

Mounting Data

Effective Projected Area (EPA - Sq. Ft.)						
Configuration	Single	2 @ 180°	2 @ 90°	3 @ 90°	3 @ 120°	4 @ 90°
EPA (Sq. Ft.)	0.92	1.92	1.62	2.39	2.13	2.39



Invue ClearCurve Pedestrian

Energy and Performance Data

---

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SEAL 055420
OLIVER A. KAIJA
08/19/2025

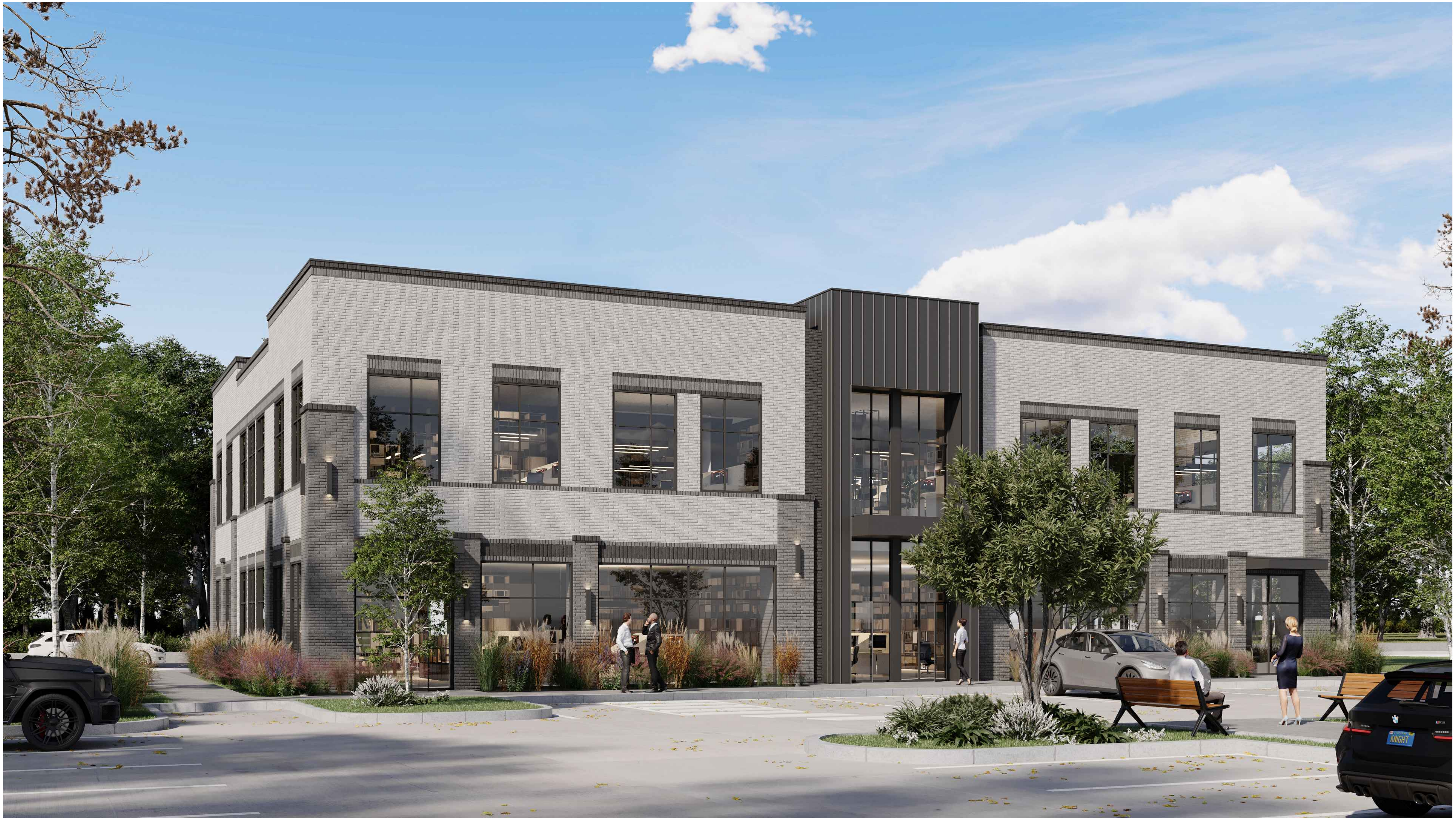
SHEET TITLE:

LIGHTING DETAILS

SHEET NUMBER:

C-702

REVISION 2 - 08/19/25



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2515 SAXAPAHAW BETHLEHEM CHURCH ROAD
GRAHAM, NORTH CAROLINA 27253-9218
(919) 931-7134 MAIL@REDFOOTSTUDIO.COM
WWW.REDFOOTSTUDIO.COM

MEDICAL OFFICE BUILDING
KNIGHTDALE, NORTH CAROLINA

The Redfoot Studio Architecture,P.C.
51430

CORPORATE STAMP

ARCHITECT'S STAMP

No	Rev./Submissons	Date
	PLANNING	//

SCALE N.T.S.	PROJECT NO 231202
DESIGNED RSR	DATE 20 JAN 25
DRAWN RSR	CHECKED RSR

DRAWINGS
RENDERING

DRAWING NO
A0.0

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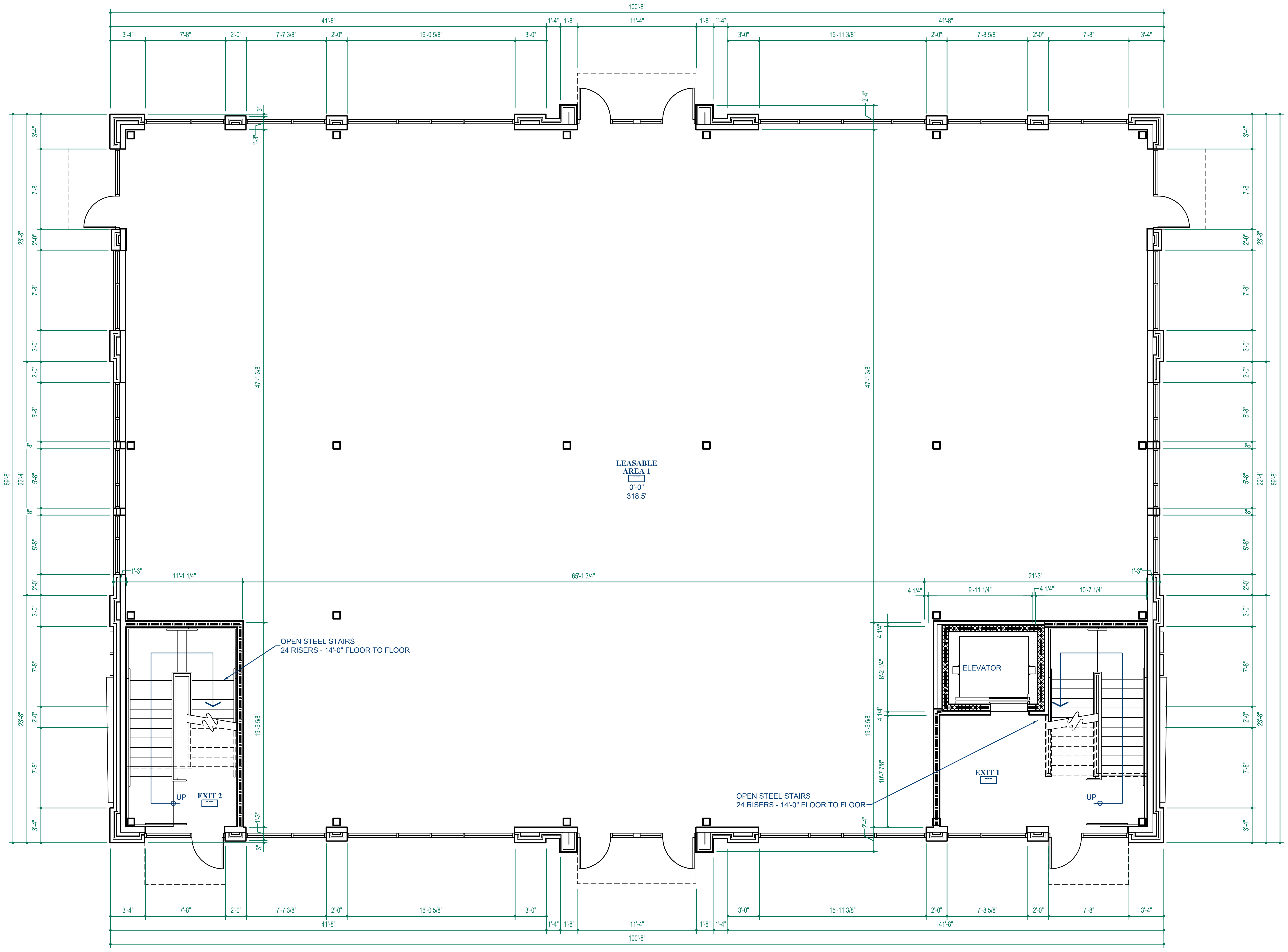
100'-8"
41'-8"
1'-4"
1'-8"
11'-4"
1'-8"
1'-4"
41'-8"
3'-4"
7'-8"
2'-0"
7'-7 3/8"
2'-0"
16'-0 5/8"
3'-0"
3'-0"
15'-11 3/8"
2'-0"
7'-8 5/8"
2'-0"
7'-8"
3'-4"
69'-8"
23'-8"
22'-4"
23'-8"
47'-1 3/8"
19'-6 5/8"
10'-7 7/8"
8'-2 1/4"
4 1/4"
2'-4"
1'-3"
3"
1'-3"
11'-1 1/4"
65'-1 3/4"
21'-3"
1'-3"
4 1/4"
9'-11 1/4"
4 1/4"
10'-7 1/4"
LEASABLE
AREA 1

0'-0"
318.5'
OPEN STEEL STAIRS
24 RISERS - 14'-0" FLOOR TO FLOOR
ELEVATOR
UP
EXIT 2

EXIT 1

UP
OPEN STEEL STAIRS
24 RISERS - 14'-0" FLOOR TO FLOOR

1 **First Floor Plan**
SCALE 3/16" = 1'-0"

PROJECT
NORTH

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MEDICAL OFFICE BUILDING
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KNIGHTDALE, NORTH CAROLINA 27545

51430
Graham, NC
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ARCHITECT'S STAMP

No	Rev./Submissons	Date
	PLANNING	07/18/25

SCALE 3/16" = 1'-0"	PROJECT NO 231202
DESIGNED RSR	DATE 18 JULY 25
DRAWN RSR	CHECKED RSR

DRAWINGS
FIRST
FLOOR PLAN

DRAWING NO
A1.0

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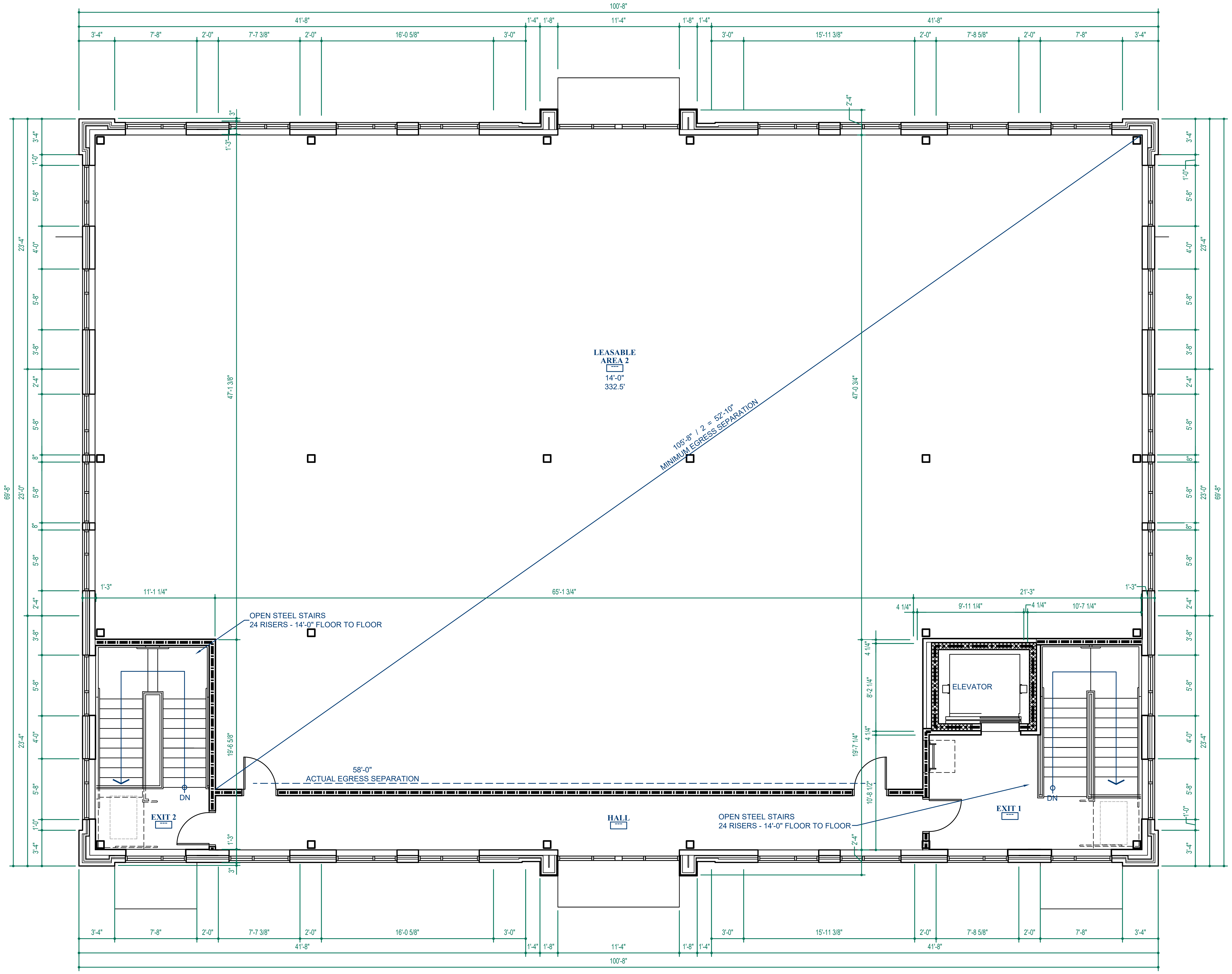
100'-8"
41'-8"
11'-4"
LEASABLE AREA 2
14'-0"
332.5'
105'-8" / 2 = 52'-10"
MINIMUM EGRESS SEPARATION
OPEN STEEL STAIRS
24 RISERS - 14'-0" FLOOR TO FLOOR
58'-0"
ACTUAL EGRESS SEPARATION
DN
EXIT 2
HALL
OPEN STEEL STAIRS
24 RISERS - 14'-0" FLOOR TO FLOOR
ELEVATOR
DN
EXIT 1
65'-1 3/4"
47'-1 3/8"
47'-0 3/4"
69'-8"
23'-4"
23'-0"

① Second Floor Plan

SCALE 3/16" = 1'-0"

PROJECT NORTH

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No	Rev./Submissions	Date
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SCALE	PROJECT NO
3/16" = 1'-0"	231202
DESIGNED	DATE
RSR	18 JULY 25
DRAWN	CHECKED
RSR	RSR

DRAWINGS
SECOND FLOOR PLAN

DRAWING NO
A1.1

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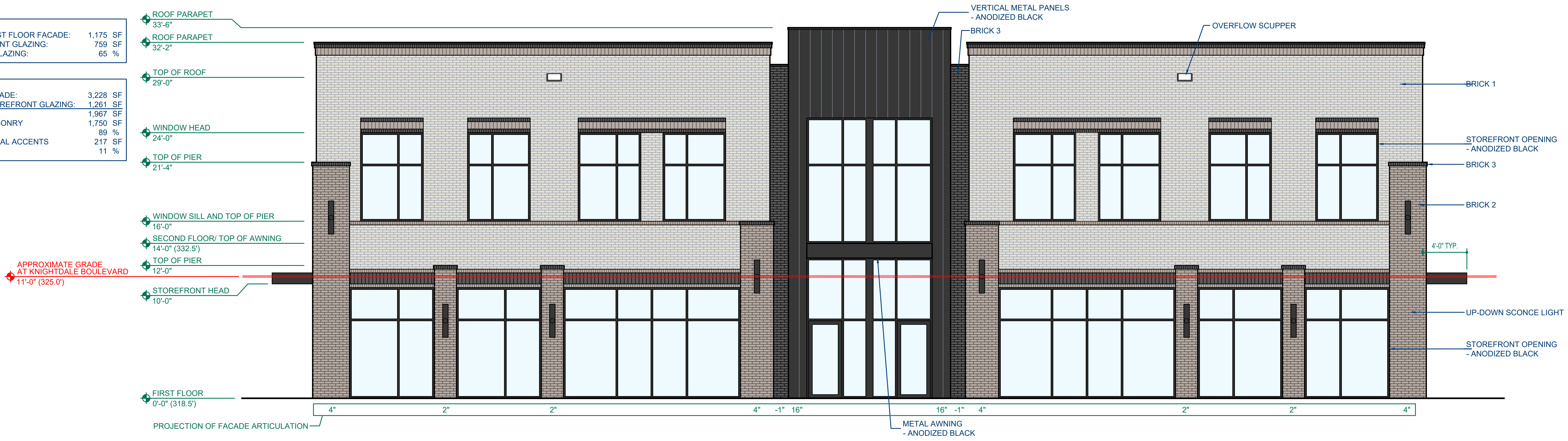
TRANSPARENCY CALCULATIONS:		
TOTAL SQUARE FOOTAGE OF FIRST FLOOR FACADE:	1,175	SF
SQUARE FOOTAGE OF STOREFRONT GLAZING:	759	SF
PERCENTAGE OF STOREFRONT GLAZING:	65	%

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	1,750	SF
PERCENTAGE OF MASONRY	89	%
TOTAL SQUARE FOOTAGE OF METAL ACCENTS	217	SF
PERCENTAGE OF METAL:	11	%

NOTE:
ALL ROOFTOP EQUIPMENT TO BE SCREENED FROM PUBLIC VIEW.


ROOF PARAPET
33'-6"
ROOF PARAPET
32'-2"
TOP OF ROOF
29'-0"
WINDOW HEAD
24'-0"
TOP OF PIER
21'-4"
WINDOW SILL AND TOP OF PIER
16'-0"
SECOND FLOOR/ TOP OF AWNING
14'-0" (332.5')
TOP OF PIER
12'-0"
APPROXIMATE GRADE
AT KNIGHTDALE BOULEVARD
11'-0" (325.0')
STOREFRONT HEAD
10'-0"
FIRST FLOOR
0'-0" (318.5')
PROJECTION OF FACADE ARTICULATION
VERTICAL METAL PANELS
- ANODIZED BLACK
BRICK 3
OVERFLOW SCUPPER
BRICK 1
STOREFRONT OPENING
- ANODIZED BLACK
BRICK 3
BRICK 2
4'-0" TYP.
UP-DOWN SCONCE LIGHT
STOREFRONT OPENING
- ANODIZED BLACK
METAL AWNING
- ANODIZED BLACK
4"
2"
2"
4"
-1"
16"
16"
-1"
4"
2"
2"
4"

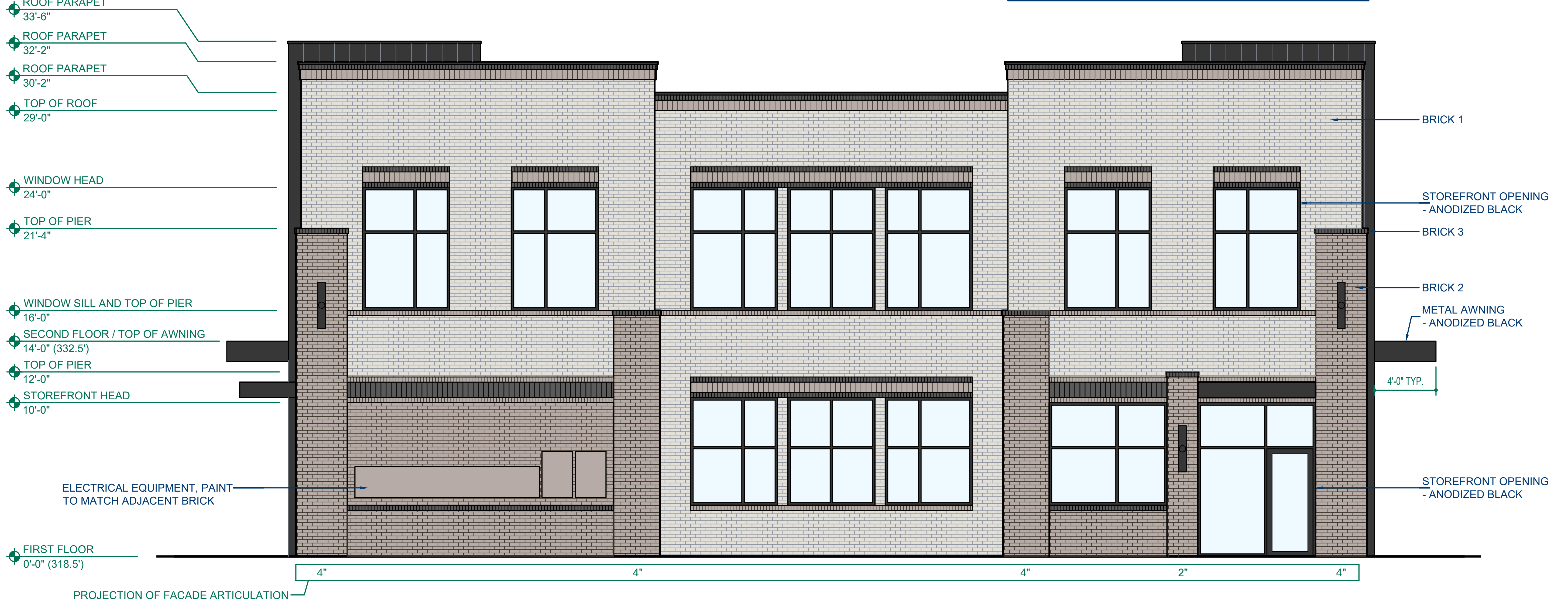
① North Elevation

SCALE 3/16" = 1'-0"

NOTE:
ALL ROOFTOP EQUIPMENT TO BE SCREENED FROM PUBLIC VIEW.

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	%


ROOF PARAPET
33'-6"
ROOF PARAPET
32'-2"
ROOF PARAPET
30'-2"
TOP OF ROOF
29'-0"
WINDOW HEAD
24'-0"
TOP OF PIER
21'-4"
WINDOW SILL AND TOP OF PIER
16'-0"
SECOND FLOOR / TOP OF AWNING
14'-0" (332.5')
TOP OF PIER
12'-0"
STOREFRONT HEAD
10'-0"
ELECTRICAL EQUIPMENT, PAINT
TO MATCH ADJACENT BRICK
FIRST FLOOR
0'-0" (318.5')
PROJECTION OF FACADE ARTICULATION
BRICK 1
STOREFRONT OPENING
- ANODIZED BLACK
BRICK 3
BRICK 2
METAL AWNING
- ANODIZED BLACK
4'-0" TYP.
STOREFRONT OPENING
- ANODIZED BLACK
4"
4"
4"
2"
4"

② East Elevation

SCALE 3/16" = 1'-0"

BRICK 1

BRICK 2

BRICK 3

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

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2515 SAXAPAHAW BETHLEHEM CHURCH ROAD
GRAHAM, NORTH CAROLINA 27253-9218
(919) 931-7134 MAIL@REDFOOTSTUDIO.COM
WWW.REDFOOTSTUDIO.COM

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

The Redfoot Studio Architecture,P.C.
51430

CORPORATE STAMP

ARCHITECT'S STAMP

No	Rev./Submissons	Date
	PLANNING	07/18/25

SCALE 1/4" = 1'-0"	PROJECT NO 231202
DESIGNED RSR	DATE 18 JULY 25
DRAWN RSR	CHECKED RSR

DRAWINGS
NORTH & EAST ELEVATIONS

DRAWING NO
A2.0

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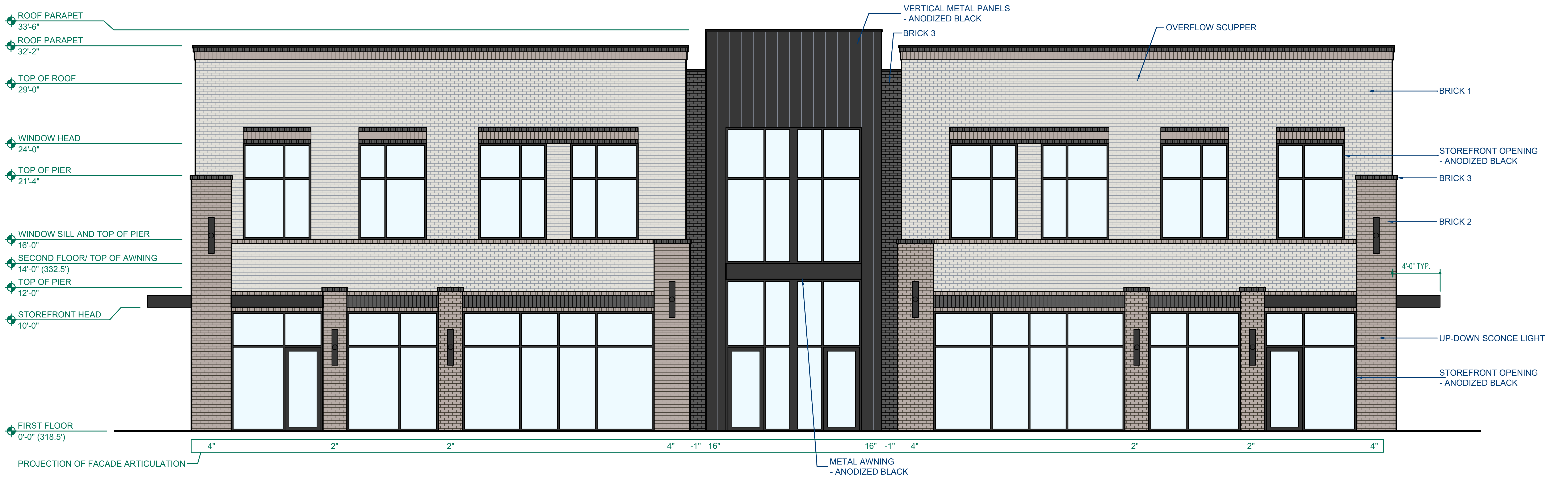
TRANSPARENCY CALCULATIONS:		
TOTAL SQUARE FOOTAGE OF FIRST FLOOR FACADE:	1,175	SF
SQUARE FOOTAGE OF STOREFRONT GLAZING:	759	SF
PERCENTAGE OF STOREFRONT GLAZING:	65	%

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	%

NOTE:
ALL ROOFTOP EQUIPMENT TO BE SCREENED FROM PUBLIC VIEW.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33'-6"
ROOF PARAPET
32'-2"
TOP OF ROOF
29'-0"
WINDOW HEAD
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WINDOW SILL AND TOP OF PIER
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SECOND FLOOR/ TOP OF AWNING
14'-0" (332.5')
TOP OF PIER
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STOREFRONT HEAD
10'-0"
FIRST FLOOR
0'-0" (318.5')
4"
2"
2"
4"
-1"
16"
16"
-1"
4"
2"
2"
4"
PROJECTION OF FACADE ARTICULATION
METAL AWNING
- ANODIZED BLACK
VERTICAL METAL PANELS
- ANODIZED BLACK
BRICK 3
OVERFLOW SCUPPER
BRICK 1
STOREFRONT OPENING
- ANODIZED BLACK
BRICK 3
BRICK 2
4'-0" TYP.
UP-DOWN SCONCE LIGHT
STOREFRONT OPENING
- ANODIZED BLACK

1 South Elevation

SCALE 3/16" = 1'-0"

NOTE:
ALL ROOFTOP EQUIPMENT TO BE SCREENED FROM PUBLIC VIEW.

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SQUARE FOOTAGE OF STOREFRONT GLAZING:	350	SF
PERCENTAGE OF STOREFRONT GLAZING:	43	%

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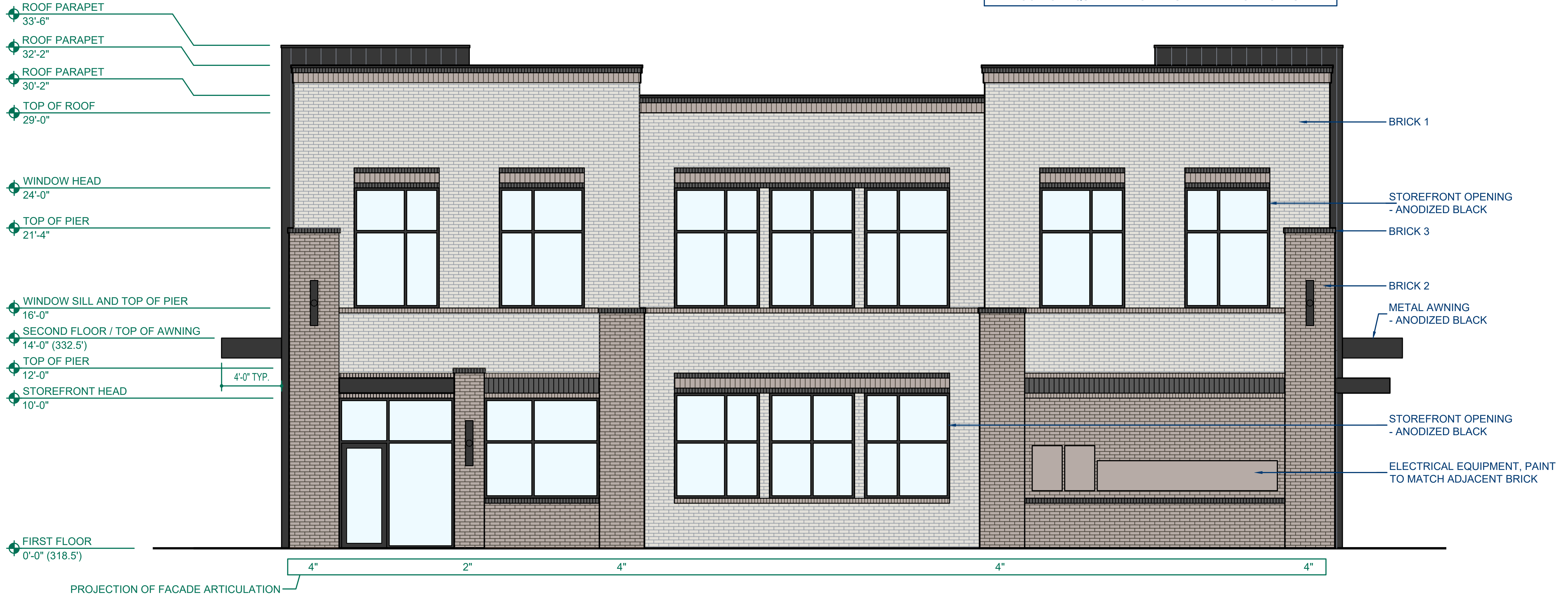
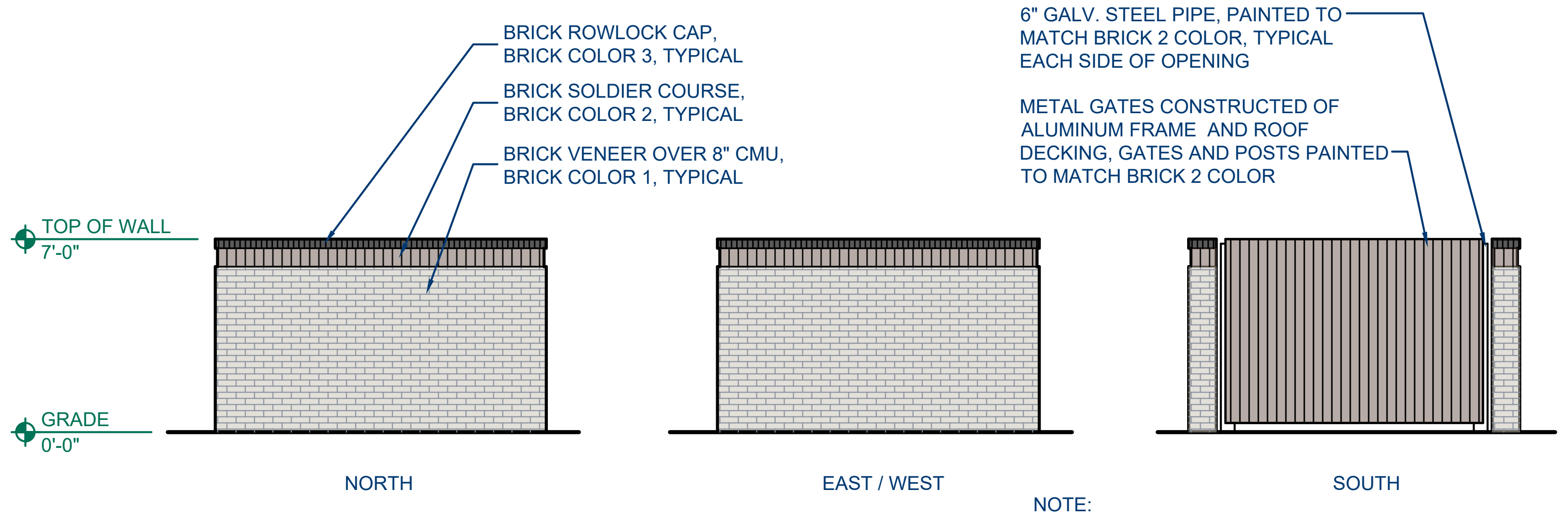
TOTAL SQUARE FOOTAGE OF STOREFRONT GLAZING:	667	SF
NET WALL AREA:	1,582	SF
TOTAL SQUARE FOOTAGE OF MASONRY	1,491	SF
PERCENTAGE OF MASONRY	94	%
TOTAL SQUARE FOOTAGE OF METAL ACCENTS	91	SF
PERCENTAGE OF METAL:	6	%


ROOF PARAPET
33'-6"
ROOF PARAPET
32'-2"
ROOF PARAPET
30'-2"
TOP OF ROOF
29'-0"
WINDOW HEAD
24'-0"
TOP OF PIER
21'-4"
WINDOW SILL AND TOP OF PIER
16'-0"
SECOND FLOOR / TOP OF AWNING
14'-0" (332.5')
TOP OF PIER
12'-0"
4'-0" TYP.
STOREFRONT HEAD
10'-0"
FIRST FLOOR
0'-0" (318.5')
4"
2"
4"
4"
4"
PROJECTION OF FACADE ARTICULATION
BRICK 1
STOREFRONT OPENING
- ANODIZED BLACK
BRICK 3
BRICK 2
METAL AWNING
- ANODIZED BLACK
STOREFRONT OPENING
- ANODIZED BLACK
ELECTRICAL EQUIPMENT, PAINT
TO MATCH ADJACENT BRICK

2 West Elevation

SCALE 3/16" = 1'-0"


BRICK ROWLOCK CAP,
BRICK COLOR 3, TYPICAL
BRICK SOLDIER COURSE,
BRICK COLOR 2, TYPICAL
BRICK VENEER OVER 8" CMU,
BRICK COLOR 1, TYPICAL
6" GALV. STEEL PIPE, PAINTED TO
MATCH BRICK 2 COLOR, TYPICAL
EACH SIDE OF OPENING
METAL GATES CONSTRUCTED OF
ALUMINUM FRAME AND ROOF
DECKING, GATES AND POSTS PAINTED
TO MATCH BRICK 2 COLOR
TOP OF WALL
7'-0"
GRADE
0'-0"
NORTH
EAST / WEST
SOUTH

NOTE:
PAINT CMU WITHIN ENCLOSURE
TO MATCH BRICK COLOR 2

3 Dumpster Elevations

SCALE 3/16" = 1'-0"

BRICK 1

BRICK 2

BRICK 3

FINISHES:	
STOREFRONT:	ANODIZED BLACK ALUMINUM
METAL WALL PANELS:	ANODIZED BLACK ALUMINUM
METAL AWNING:	ANODIZED BLACK ALUMINUM
BRICK 1:	BLACKSON BRICK, LIGHT GREY WIRECUT
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SOUTH & WEST
ELEVATIONS

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