ToK Project # ZCP-7-24

7800 KNIGHTDALE BLVD.

7800 KNIGHTDALE BLVD.
KNIGHTDALE, NC 27545

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

MASTER PLAN
PIN# 1754773240

owner:

Axiom Holdings, LLC
3739 National Drive, STE 105
Raleigh, NC 27612
(919) 760-0101
Contact: Tom White

landscape architect:

TMTLA Associates
5011 Southpark Drive, Ste. 200
Durham, North Carolina 27713
(919) 484-8880
Contact: Andy Porter, PLA

civil engineer:

Stocks Engineering
801 East Washington Street
Nashville, North Carolina 27856
(252) 459-8196
Contact: Ethan Averette, PE

architect:

Evolution Design & Development
409 Sadie Drive
Matthews, NC 28105
(980) 579-0581
Contact: Brian Fifolt, Designer

surveyor:

Stewart-Proctor, LLC
319 Chapanoke Rd # 106
Raleigh, North Carolina 27603
(919) 779-1855
Contact: Herbert Proctor, PLS

ATTENTION CONTRACTORS

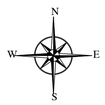
THE CONSTRUCTION CONTRACTOR RESPONSIBLE FOR THE EXTENSION OF WATER, SEWER, AND/OR REUSE, AS APPROVED IN THESE PLANS, IS RESPONSIBLE FOR CONTACTING THE PUBLIC WORKS DEPARTMENT AT (919) 996-2409, AND THE PUBLIC UTILITIES DEPARTMENT AT (919) 996-4540 AT LEAST TWENTY FOUR HOURS PRIOR TO BEGINNING ANY OF THEIR CONSTRUCTION.

FAILURE TO NOTIFY BOTH CITY DEPARTMENTS IN ADVANCE OF BEGINNING CONSTRUCTION, WILL RESULT IN THE ISSUANCE OF MONETARY FINES, AND REQUIRE REINSTALLATION OF ANY WATER OR SEWER FACILITIES NOT INSPECTED AS A RESULT OF THIS NOTIFICATION FAILURE.

FAILURE TO CALL FOR INSPECTION, INSTALL A DOWNSTREAM PLUG, HAVE PERMITTED PLANS ON THE JOBSITE, OR ANY OTHER VIOLATION OF CITY OF RALEIGH STANDARDS WILL RESULT IN A FINE AND POSSIBLE EXCLUSION FROM FUTURE WORK IN THE CITY OF RALEIGH



VICINITY MAP
NOT TO SCALE



SITE DATA

OWNER:	AXIOM HOLDINGS, LLC
OWNER ADDRESS:	3739 NATIONAL DR. STE. 105, RALEIGH, NC 27612
PROPERTY ADDRESS:	7800 KNIGHTDALE BLVD.
PIN	1754773240
REID	0115243
DEED	DB19287/DP1910
PROPERTY AREA:	217,652 SF / 5.00 AC
EX. USE:	VEHICLE/HEAVY EQUIPMENT SALES: AUTO PARTS SALES (R&K MARINE, INC.)
PROPOSED USE:	GENERAL RETAIL / MEDICAL SERVICES
EX. ZONING:	HB - HIGHWAY BUSINESS
OVERLAYS:	NONE
JURISDICTION:	TOWN OF KNIGHTDALE
BUILDING AREA:	3,454 SF EXISTING TO BE DEMOLISHED BLDG #1 - 7,917 SF RETAIL BLDG #2 - 7,917 SF RETAIL BLDG #3 - 14,008 SF MEDICAL SERVICES TOTAL BLDG SF PROPOSED = 29,842 SF
FRONT SETBACK:	10' MIN., 30' MAX.
SIDE SETBACK:	6' MIN.
REAR SETBACK:	0' MIN.
PARKING REAR SETBACK:	5 '
BUILDING HEIGHT:	70' MAX (5-STORIES) BLDG. 1 & 2 - 30' PROPOSED (1-STORY) (SEE BLDG. ELEVATIONS) BLDG. 3 - 23' PROPOSED (1-STORY) (SEE BLDG. ELEVATIONS)
WATERSHED:	MARKS CREEK
WATERSHED OVERLAY:	NONE
RIVER BASIN:	NEUSE RIVER BASIN
PUBLIC GATHERING SPACE :	UDO SEC. 6.9. A MINIMUM OF 1 SF PER EVERY 25 SF OF GROSS FLOOR AREA OR 500 SF, WHICHEVER IS LESS, OF PUBLIC GATHERING SPACE SHALL BE PROVIDED. 2,250 SF PUBLIC GATHERING SPACE WITH MOVABLE TABLES AND CHAIRS, SEAT WALLS, RAISED LANDSCAPE PLANTERS PROVIDED
TREE COVERAGE:	EXISTING PARCEL PERIMETER = 2,037 LF REQUIRED TREE COVER AREA = 2,037 X 20 = 40,740 SF / 0.94 AC (0.94 AC / 5.0 AC = 18.8%) EXISTING PARCEL AREA = 217,652 SF MAX TREE COVER AREA (10%) = 217,652 SF X 0.1 = 21,765 SF / 0.50 AC PRESERVED TREE COVER AREA #1 = 19,927 SF PRESERVED TREE COVER AREA #2 = 4,315 SF PRESERVED TREE COVER AREA #3 = 2,766 SF PRESERVED TREE COVER AREA #4 = 3,216 SF PRESERVED TREE COVER AREA TOTAL = 30,224 SF / 0.69 AC (0.69 AC / 5.0 AC = 13.8%)
LANDSCAPE BUFFERS:	NORTH - HB ZONING TO HB ZONING, NO BUFFER YARD REQUIRED EAST-1 - HB ZONING TO NMX PUD ZONING, 20' TYPE B BUFFER YARD EAST-2 - HB ZONING TO UR12 ZONING, 30' TYPE C BUFFER YARD SOUTH-1 - HB ZONING TO NMX PUD ZONING, 20' TYPE B BUFFER YARD WEST - KNIGHTDALE BLVD., NO BUFFER YARD REQUIRED
VEHICULAR PARKING:	UDO SEC. 7.1.G, BASED ON PROPOSED USE BLDG #1 GENERAL RETAIL (10K SF OR LESS) MIN- PARKING SPACES 1/2 MAXIMUM ALLOWED (14 MIN. SPACES) MAX- PARKING SPACES 3.5 PER KSF GFA 7,917 / 1,000 SF = 7.9 X 3.5 = 27.6 (28) MAX PARKING SPACES ALLOWED BLDG #2 GENERAL RETAIL (10K SF OR LESS) MIN- PARKING SPACES 1/2 MAXIMUM ALLOWED (14 MIN. SPACES) MAX- PARKING SPACES 3.5 PER KSF GFA 7,917 / 1,000 SF = 7.9 X 3.5 = 27.6 (28) MAX PARKING SPACES ALLOWED BLDG #3 MEDICAL SERVICES MIN- PARKING SPACES 1/2 MAXIMUM ALLOWED (39 MIN. SPACES) MAX- PARKING SPACES 5.5 PER KSF GFA 14,008 / 1,000 SF = 14.008 X 5.5 = 77.04 (77) MAX PARKING SPACES ALLOWED MIN- PARKING REQUIRED = 67 SPACES MAX- PARKING ALLOWED = 133 SPACES 124 TOTAL PARKING SPACES PROVIDED INCLUDING 6 ADA VAN SPACES BLDG. 1 & 25 SPACES PROVIDED BLDG. 2 = 25 SPACES PROVIDED BLDG. 3 = 74 SPACES PROVIDED
ELECTRIC VEHICLE PARKING:	UDO SEC. 7.1.I NONRESIDENTIAL USES WITH OFF-STREET PARKING FOR MOTORIZED VEHICLES OF MORE THAN FORTY (40) SPACES SHALL PROVIDE ELECTRIC VEHICLE CHARGING STATIONS AT A RATE OF ONE (1) ELECTRIC VEHICLE CHARGING STATION FOR EVERY FORTY 40 MOTORIZED VEHICLE SPACES BLDG 1&2 - 51 / 40= 1.2 (2) EV CHARGING STATIONS REQUIRED/PROVIDED BLDG 3 - 76 / 40= 1.9 (2) EV CHARGING STATIONS REQUIRED/PROVIDED
BICYCLE PARKING:	UDO SEC. 7.1.F. ONE (1) BICYCLE PARKING SPACE FOR EVERY TEN (10) MOTORIZED VEHICLE SPACES BLDG 1&2 - 51 MOTOR VEHICLE SPACES / 10 = 5.1 (6) BIKE PARKING SPACES REQUIRED/ 8 PROVIDED BLDG 3 - 74 MOTOR VEHICLE SPACES / 10 = 7.4 (8) BIKE PARKING SPACES REQUIRED/PROVIDED

WATER ALLOCATION SUMMARY

WATER ALLOCATION SUMMARY
PER TOWN OF KNIGHTDALE MUNICIPAL WATER ALLOCATION POLICY - PROJECTS MUST BE AWARDED 50 TOTAL POINTS OR MORE TO MERIT WATER ALLOCATION.

BASE POINTS
ALL OTHER USES NOT CATEGORIZED
THIS CATEGORY OF USE CAPTURES ALL OTHER USES NOT CATEGORIZED ELSEWHERE. ALLOCATIONS FOR SUCH USES ARE LEFT TO THE DISCRETION OF THE TOWN COUNCIL UPON RECOMMENDATION OF THE LAND USE REVIEW BOARD AND ACTED ON A CASE-BY-CASE BASIS. **30 BASE POINTS**

BONUS POINTS

SECTION 1A - ABATEMENT OF NONCONFORMITIES	**(MAX - 3 POINTS)**
ABATEMENT OF ANY EXISTING NON-CONFORMING STRUCTURES.	**3 POINTS**
THE EXISTING NON-CONFORMING STRUCTURE IS PROPOSED TO BE ABATED.	
SECTION 2B - PARKING LOTS AND STORMWATER BMP'S	**(MAX -10 POINTS)**
CONSTRUCT A FOUNTAIN OR OTHER STORMWATER AMENITY WITHIN THE BMP (AS APPROVED BY STAFF)	**4 POINTS**
PROPOSED FOUNTAIN IN SCM.	
PROVISION OF ON-STREET PUBLIC PARKING (1 POINT PER STALL UP TO 4 MAX)	**4 POINTS**
6 ON-STREET PUBLIC PARKING SPACES PROVIDED.	
SECTION 3A - OUTDOOR ENHANCEMENT	**(MAX -10 POINTS)**
OUTDOOR DISPLAY OF PUBLIC ART (SUBJECT TO TRC APPROVAL)	**4 POINTS**
PROPOSED PUBLIC ART ALONG THE PROJECT FRONTAGE ON KNIGHTDALE BLVD. BETWEEN BUILDINGS 1&2.	
ENHANCED ROADSIDE LANDSCAPING (SUBJECT TO TRC APPROVAL)	**2 POINTS**
SUPPLEMENTAL ROADSIDE LANDSCAPING IS NOW PROVIDED ALONG KNIGHTDALE BLVD. AND METROLINER PLACE.	
SECTION 3B - TRANSIT	**(MAX - 8 POINTS)**
PROVISION OF 10 DESIGNATED PARK & RIDE STALLS	**3 POINTS**
10 DESIGNATED PARK & RIDE STALLS PROVIDED ON-SITE	

TOTAL BASE POINTS = 30
TOTAL BONUS POINTS = 20
OVERALL TOTAL POINTS = 50

SUBMITTAL DATES

SKETCH PLAN FIRST SUBMITTAL————4/9/2024
SKETCH PLAN SECOND SUBMITTAL————10/14/2024
MASTER PLAN FIRST SUBMITTAL————11/24/2025
MASTER PLAN SECOND SUBMITTAL————3/6/2026

SHEET INDEX

L-0.0————COVER SHEET
L-1.0————EX. CONDITIONS & PRELIM DEMO PLAN
L-2.0————SITE LAYOUT PLAN
L-2.1————PHASING AND FIRE PROTECTION PLAN
L-2.2————SITE SIGNAGE & PAVEMENT MARKING PLAN
L-2.3————EXPANDED PLAN VIEWS
L-2.4————EXPANDED PLAN VIEWS
CE-01————UTILITY PLAN
CE-02————GRADING PLAN
CE-03————ROAD WIDENING PLAN
25-0515A—SITE LIGHTING ARRANGEMENT
L-4.0————LANDSCAPE PLAN
L-4.1————ENHANCED ROADSIDE LANDSCAPE
L-5.0————SITE DETAILS
L-5.1————SITE DETAILS
L-5.2————SITE DETAILS
L-5.3————SITE DETAILS
L-5.4————SITE DETAILS
D-01————SEWER NOTES + DETAIL 1
D-02————SEWER NOTES + DETAIL 2
D-03————WATER NOTES + DETAIL 1
D-04————WATER NOTES + DETAIL 2
A101————FLOOR PLAN BUILDING ONE
A201————BUILDING ONE EXTERIOR ELEVATIONS
A202————BUILDING ONE EXTERIOR ELEVATIONS
A101————BUILDING TWO FLOOR PLANS
A201————BUILDING TWO EXTERIOR ELEVATIONS
A202————BUILDING TWO EXTERIOR ELEVATIONS
A101————FLOOR PLAN BUILDING THREE
A201————BUILDING THREE EXTERIOR ELEVATIONS
A202————BUILDING THREE EXTERIOR ELEVATIONS

Know what's **below.**
Call before you dig.
Dial 811 or 1-800-632-4949

TMTLA ASSOCIATES
LANDSCAPE ARCHITECTURE & LAND PLANNING
5011 SOUTHPARK DRIVE, STE.200-DURHAM, NC 27713
p: (919) 484-8880 e: info@tmtla.com

NORTH CAROLINA — No. C-551 — REGISTERED LANDSCAPE ARCHITECTURAL CORPORATION — PORTLAND DESIGN PLLC
DBA TMTLA ASSOCIATES

NORTH CAROLINA — 1826 — REGISTERED LANDSCAPE ARCHITECT — ANDREW J. PORTER

3-6-2026

PRELIMINARY
NOT FOR
CONSTRUCTION

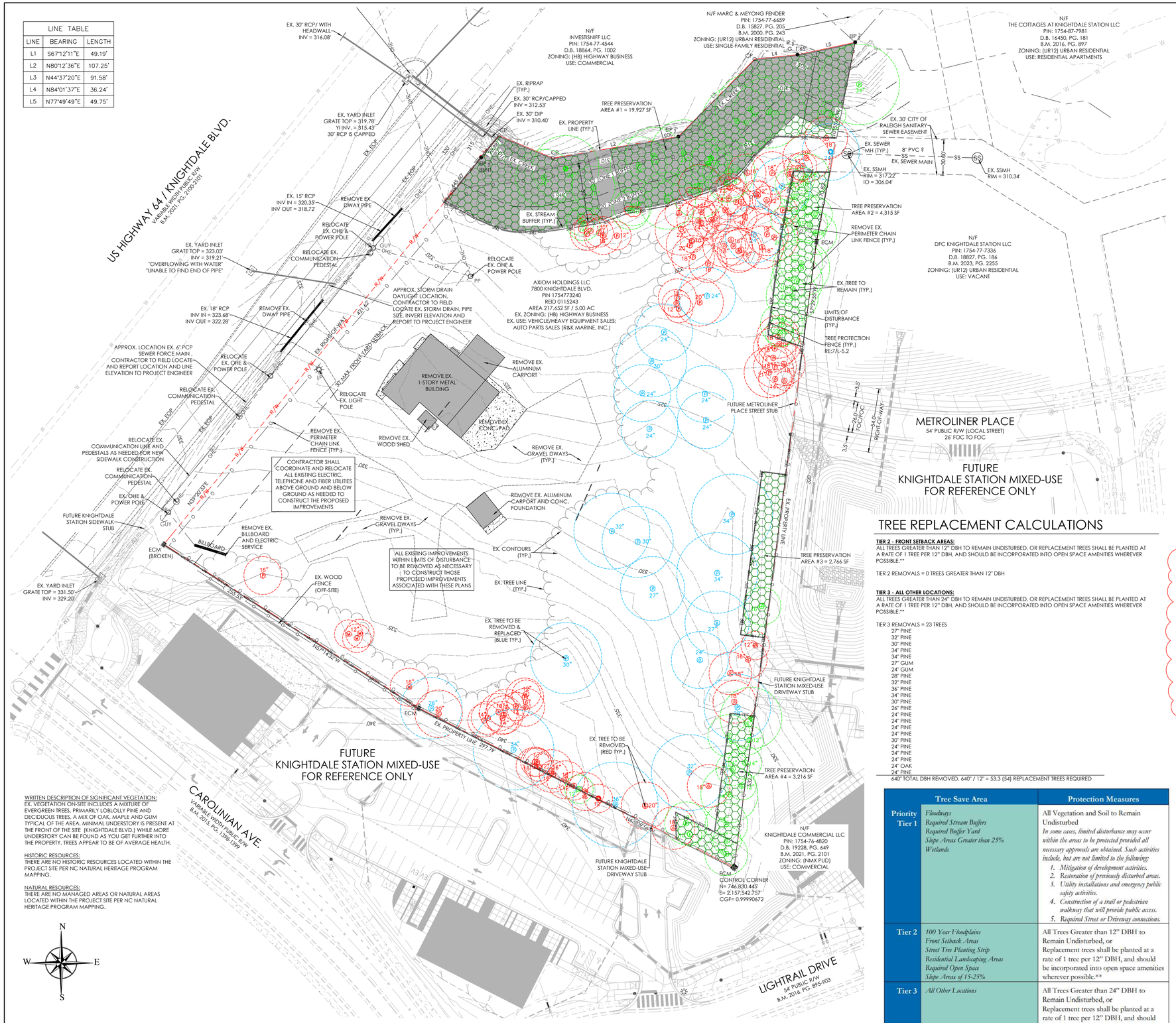
REVISIONS:

1. ToK Sketch Plan 1st review Comments 2024-10-14
~~2. ToK Sketch Plan 2nd review Comments 2025-11-24~~
3. ToK Master Plan 1st review Comments 2026-3-6

COVER SHEET
7800 KNIGHTDALE BLVD.
7800 KNIGHTDALE BLVD
KNIGHTDALE, NC 27545
TOK PROJECT #ZCP-7-24

SCALE:
AS NOTED
DRAWN BY:
AJP
PROJECT #
24029
DATE:
11/13/2025
SHEET
L-0.0
OF

LINE TABLE		
LINE	BEARING	LENGTH
L1	S67°12'11"E	49.19'
L2	N80°12'36"E	107.25'
L3	N44°37'20"E	91.58'
L4	N84°01'37"E	36.24'
L5	N77°49'49"E	49.75'



WRITTEN DESCRIPTION OF SIGNIFICANT VEGETATION:
EX. VEGETATION ON-SITE INCLUDES A MIXTURE OF EVERGREEN TREES, PRIMARILY LOBLOLLY PINE AND DECIDUOUS TREES, A MIX OF OAK, MAPLE AND GUM TYPICAL OF THE AREA. MINIMAL UNDERSTORY IS PRESENT AT THE FRONT OF THE SITE (KNIGHTDALE BLVD.) WHILE MORE UNDERSTORY CAN BE FOUND AS YOU GET FURTHER INTO THE PROPERTY. TREES APPEAR TO BE OF AVERAGE HEALTH.

HISTORIC RESOURCES:
THERE ARE NO HISTORIC RESOURCES LOCATED WITHIN THE PROJECT SITE PER NC NATURAL HERITAGE PROGRAM MAPPING.

NATURAL RESOURCES:
THERE ARE NO MANAGED AREAS OR NATURAL AREAS LOCATED WITHIN THE PROJECT SITE PER NC NATURAL HERITAGE PROGRAM MAPPING.

1 L-1.0 EXISTING CONDITIONS & PRELIMINARY DEMOLITION PLAN
SCALE: 1"=40'

TREE REPLACEMENT CALCULATIONS

TIER 2 - FRONT SETBACK AREAS:
ALL TREES GREATER THAN 12" DBH TO REMAIN UNDISTURBED, OR REPLACEMENT TREES SHALL BE PLANTED AT A RATE OF 1 TREE PER 12" DBH, AND SHOULD BE INCORPORATED INTO OPEN SPACE AMENITIES WHEREVER POSSIBLE.**

TIER 2 REMOVALS = 0 TREES GREATER THAN 12" DBH

TIER 3 - ALL OTHER LOCATIONS:
ALL TREES GREATER THAN 24" DBH TO REMAIN UNDISTURBED, OR REPLACEMENT TREES SHALL BE PLANTED AT A RATE OF 1 TREE PER 12" DBH, AND SHOULD BE INCORPORATED INTO OPEN SPACE AMENITIES WHEREVER POSSIBLE.**

TIER 3 REMOVALS = 23 TREES
27" PINE
32" PINE
30" PINE
34" PINE
34" PINE
27" GUM
24" GUM
28" PINE
32" PINE
36" PINE
34" PINE
30" PINE
26" PINE
24" PINE
24" PINE
24" PINE
24" PINE
30" PINE
24" PINE
24" PINE
24" PINE
24" OAK
24" PINE
640" TOTAL DBH REMOVED, 640" / 12" = 53.3 (54) REPLACEMENT TREES REQUIRED

Priority	Tree Save Area	Protection Measures
Tier 1	*Floodways* *Required Stream Buffers* *Required Buffer Yard* *Slope Areas Greater than 25%* *Wetlands*	All Vegetation and Soil to Remain Undisturbed *In some cases, limited disturbance may occur within the areas to be protected provided all necessary approvals are obtained. Such activities include, but are not limited to the following:* *1. Mitigation of development activities.* *2. Restoration of previously disturbed areas.* *3. Utility installations and emergency public safety activities.* *4. Construction of a trail or pedestrian walkway that will provide public access.* *5. Required Street or Driveway connections.*
Tier 2	*100 Year Floodplains* *Front Setback Areas* *Street Tree Planting Strip* *Residential Landscaping Areas* *Required Open Space* *Slope Areas of 15-25%*	All Trees Greater than 12" DBH to Remain Undisturbed, or Replacement trees shall be planted at a rate of 1 tree per 12" DBH, and should be incorporated into open space amenities wherever possible.**
Tier 3	*All Other Locations*	All Trees Greater than 24" DBH to Remain Undisturbed, or Replacement trees shall be planted at a rate of 1 tree per 12" DBH, and should be incorporated into open space amenities wherever possible.**

*** Required street trees, parking lot landscaping, residential landscaping and buffer yard plantings may not be counted towards replacement requirements.*

EXISTING CONDITIONS NOTES

1. BOUNDARY AND FIELD TOPOGRAPHIC SURVEY PROVIDED BY STEWART-PROCTOR, MAY 2024.
2. ADDITIONAL BASE INFORMATION PER WAKE COUNTY GIS.
3. PROJECT SITE IS NOT LOCATED WITHIN ANY SPECIAL FLOOD HAZARD AREAS OR FUTURE CONDITIONS FLOOD HAZARD AREAS, AS SHOWN ON FIRM PANEL #3720175400K (ZONE X) DATED JULY 19, 2022.
4. THERE ARE NO PROTECTED WETLANDS WITHIN THE PROJECT SITE AS DETERMINED BY SOIL & ENVIRONMENTAL CONSULTANTS, INC.
5. THERE ARE BUFFERED STREAMS WITHIN THE PROJECT SITE AS DETERMINED BY SOIL & ENVIRONMENTAL CONSULTANTS, INC.
6. EXISTING CONDITIONS AS SHOWN ON THESE PLANS ARE GENERAL AND ILLUSTRATIVE IN NATURE AND DO NOT INCLUDE MECHANICAL, ELECTRICAL AND MISCELLANEOUS STRUCTURES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW THE PROJECT SITE AND FAMILIARIZE WITH ACTUAL FIELD CONDITIONS PRIOR TO BIDDING AND COMMENCING WORK. IF FIELD CONDITIONS ARE FOUND TO BE SIGNIFICANTLY DIFFERENT THE CONTRACTOR SHALL NOTIFY THE PROJECT LANDSCAPE ARCHITECT OR ENGINEER IMMEDIATELY.

DEMOLITION NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL LOCAL AND STATE PERMITS TO PERFORM DEMOLITION WORK ON-SITE AND IN THE RIGHT-OF-WAY.
2. IF ANY HAZARDOUS MATERIALS ARE FOUND ON SITE, THEY SHALL BE REMOVED BY A LICENSED HAZARDOUS MATERIALS HANDLER. CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY IF HAZARDOUS MATERIALS ARE ENCOUNTERED.
3. CONTRACTOR SHALL PROTECT ADJACENT STRUCTURES AND INFRASTRUCTURE FROM DAMAGE DUE TO DEMOLITION ACTIVITIES. ANY DAMAGE OUTSIDE OF THE PROJECT LIMITS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST.
4. DEMOLITION SHALL BE PERFORMED WITH DUE CARE AND DILIGENCE. ALL STRUCTURES AND UTILITIES NOT DESIGNATED FOR REMOVAL OR MODIFICATION SHALL REMAIN AND BE PROTECTED FROM DAMAGE DURING CONSTRUCTION. ANY DAMAGED INFRASTRUCTURE ON-SITE OR IN THE RIGHT-OF-WAY SHALL BE REPAIRED TO NCDOT OR TOWN OF KNIGHTDALE STANDARDS AND SPECIFICATIONS BY THE CONTRACTOR AT NO ADDITIONAL COST.
5. ALL EXISTING IMPROVEMENTS WITHIN THE LIMITS OF DISTURBANCE ABOVE AND BELOW GROUND SHALL BE DEMOLISHED AS NECESSARY TO CONSTRUCT THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. THIS INCLUDES, BUT IS NOT LIMITED TO, EXISTING TREES, VEGETATION, FENCES, PAVEMENTS, CURB AND GUTTER, STRUCTURES, FOUNDATIONS, POLES, SIGNAGE, WALLS, AND OTHER MISCELLANEOUS SITE ELEMENTS.
6. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES ABOVE AND BELOW GROUND AND SHALL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM THEIR ACTIVITIES. CONTRACTOR SHALL NOTIFY NORTH CAROLINA ONE CALL (1-800-632-4949) LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR TO CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF NORTH CAROLINA ONE CALL. THE CONTRACTOR MAY ALSO NEED TO ENGAGE A PRIVATE UTILITY LOCATING FIRM AT THEIR OWN COST TO EFFICIENTLY HAVE ALL UTILITIES LOCATED. CONTRACTOR SHALL REPORT ALL DISCOVERED UTILITIES DURING CONSTRUCTION TO THE PROJECT LANDSCAPE ARCHITECT OR ENGINEER.
7. CONTRACTOR SHALL COORDINATE UTILITY ABANDONMENT, REMOVAL, AND RELOCATION WITH THE APPROPRIATE UTILITY SERVICE PROVIDER. ALL UTILITY ABANDONMENT, REMOVAL AND RELOCATION WORK SHALL BE PERFORMED PER THE SERVICE PROVIDERS STANDARDS AND SPECIFICATIONS.
8. REFERENCE SITE LAYOUT PLAN SHEET L-2 FOR LAYOUT DIMENSIONS AND EXTENT OF DEMOLITION AREAS. ALL PAVEMENT, CURB AND GUTTER AND SIDEWALK TO BE REMOVED SHALL BE SAW CUT TO PROVIDE A STRAIGHT AND UNIFORM LINE FOR REMOVAL. EXISTING PAVEMENT, CURB AND GUTTER, AND SIDEWALK NOT INDICATED FOR REMOVAL, WHICH IS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED TO MATCH ORIGINAL CONFIGURATION.
9. ALL DEMOLITION AND CONSTRUCTION WASTE SHALL BE REMOVED FROM THE PROJECT SITE BY THE CONTRACTOR AND DISPOSED OF PROPERLY PER STATE, LOCAL, AND FEDERAL REGULATIONS.
10. UNLESS OTHERWISE DIRECTED, THE CONTRACTOR SHALL PROTECT ALL TREES THAT ARE TO REMAIN AND FENCE THOSE WHICH MAY RISK DAMAGE FROM CONSTRUCTION EQUIPMENT OR WORK. TREE PROTECTION FENCING SHALL BE INSTALLED AS SHOWN ON THESE PLANS. ALL TREES WHICH ARE TO BE REMOVED SHALL BE DONE IN A MANNER WHICH WILL NOT INJURE PLANT MATERIAL TO REMAIN. STUMPS SHALL BE COMPLETELY REMOVED AND HAULED OFF.
11. CONTRACTOR SHALL STRIP TOPSOIL AND STOCKPILE FOR LATER REUSE.
12. EROSION AND SEDIMENTATION CONTROL MEASURES PER APPROVED EROSION CONTROL PLANS SHALL BE IN PLACE AND IN WORKING ORDER PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES.
13. LANDSCAPED AREAS REQUIRED BY CHAPTER 7 OF THE UDO SHALL NOT CONTAIN ANY DEVELOPMENT, IMPERVIOUS SURFACES, OR SITE FEATURES THAT DO NOT FUNCTION TO MEET THE APPLICABLE STANDARDS FOR THAT AREA OR THAT REQUIRE REMOVAL OF EXISTING SIGNIFICANT VEGETATION [UDO, SEC. 7.4.E.1]
14. NO GRADING, DEVELOPMENT, OR LANDDISTURBING ACTIVITIES SHALL OCCUR WITHIN A BUFFER YARD IF FOREST CANOPY, SPECIMEN TREES, OR SIGNIFICANT VEGETATION EXISTS WITHIN THESE AREAS, UNLESS APPROVED BY THE LAND USE ADMINISTRATOR. IF GRADING WITHIN A BUFFER YARD IS PROPOSED, SLOPES OF 1:3 OR LESS ARE ENCOURAGED TO ENSURE THE PROPER TRANSITION OF GRADES TO THE ADJACENT PROPERTY AND TO FACILITATE LANDSCAPING AND MAINTENANCE [UDO, SEC. 7.4.E.2].
15. TREE PROTECTION FENCES SHALL BE PLACED AROUND ALL PROTECTED TREES DESIGNATED TO BE SAVED PRIOR TO THE START OF DEVELOPMENT ACTIVITIES OR GRADING IN ACCORDANCE WITH STANDARD 2.10 OF THE TOWN OF KNIGHTDALE STANDARD SPECIFICATIONS AND DETAILS MANUAL. TREE PROTECTION FENCES SHALL REMAIN IN PLACE UNTIL DEVELOPMENT ACTIVITIES ARE COMPLETED, TO PREVENT UNINTENDED COMPACTION OF SOIL. THE AREA WITHIN THE PROTECTIVE BARRICADE SHALL REMAIN FREE OF ALL BUILDING MATERIALS, DIRT OR OTHER CONSTRUCTION DEBRIS. CONSTRUCTION TRAFFIC, STORAGE OF VEHICLES AND MATERIALS, AND MASS GRADING [UDO, SEC. 7.4.D.4.A.II.B].
16. EXCEPT FOR DRIVEWAY ACCESS POINTS, SIDEWALKS, CURB, AND GUTTER; NO PAVING WITH CONCRETE OR OTHER IMPERVIOUS MATERIALS WITHIN FIVE (5) FEET OF A TREE DRIP LINE SHALL BE ALLOWED UNLESS OTHERWISE APPROVED. WHERE GRADING WITHIN A TREE DRIPLINE CANNOT BE AVOIDED, CUT AND FILL SHALL BE LIMITED TO ONE-QUARTER (¼) TO ONE-HALF (½) OF THE AREA WITHIN THE DRIPLINE, AND TREE ROOTS MUST BE PRUNED WITH CLEAN CUTS AT THE EDGE OF THE DISTURBED AREA. NO FILL SHALL BE PLACED WITHIN THE DRIPLINE OF A TREE WITHOUT VENTING TO ALLOW AIR AND WATER TO REACH THE ROOTS [UDO, SEC. 7.4.D.4.A.II.C].

LEGEND

- EXISTING NEUSE RIVER BUFFER
- EXISTING PRESERVED TREE COVER AREA
- PROPERTY BOUNDARY LINES
- EXISTING ROW
- EXISTING STREAM BUFFER
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING OVERHEAD ELECTRIC
- EXISTING SANITARY SEWER
- EXISTING SEWER FORCE MAIN
- EXISTING STORM DRAIN
- EXISTING WATER MAIN
- EXISTING UTILITY EASEMENT
- = EXISTING PINE 12" OR GREATER
- = EXISTING GUM 12" OR GREATER
- = EXISTING ELM 12" OR GREATER
- = EXISTING CEDAR 12" OR GREATER
- = EXISTING OAK 12" OR GREATER
- = EXISTING MAPLE 12" OR GREATER
- = EXISTING MIMOSA 12" OR GREATER
- = EXISTING POPLAR 12" OR GREATER
- = EXISTING PLUM 12" OR GREATER
- = EX. TREE TO BE REMOVED
- = EX. TREE TO BE REMOVED AND REPLACED
- = EX. TREE TO BE PRESERVED

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

TMTLA ASSOCIATES
LANDSCAPE ARCHITECTURE & LAND PLANNING
5011 SOUTHPARK DRIVE, STE.200-DURHAM, NC 27713
p: (919) 484-8880 e: info@tmtla.com
NORTH CAROLINA No. C-551 REGISTERED LANDSCAPE ARCHITECTURAL DESIGN FIRM
DBA TMTLA ASSOCIATES
NORTH CAROLINA 1826 REGISTERED LANDSCAPE ARCHITECT ANDREW J. PORTER

3-6-2026
PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS:
1. ToK Sketch Plan 1st review Comments 2024-10-14
2. ToK Sketch Plan 2nd review Comments 2025-11-24
3. ToK Master Plan 1st review Comments 2026-3-6

EXISTING CONDITIONS & PRELIMINARY DEMOLITION PLAN
7800 KNIGHTDALE BLVD.
7800 KNIGHTDALE BLVD
KNIGHTDALE, NC 27545
TOK PROJECT #ZCP-7-24

SCALE: AS NOTED
DRAWN BY: AJP
PROJECT # 24029
DATE: 11/13/2025
SHEET L-1.0
OF

LINE TABLE		
LINE	BEARING	LENGTH
L1	S67°12'11"E	49.19'
L2	N80°12'36"E	107.25'
L3	N44°37'20"E	91.58'
L4	N84°01'37"E	36.24'
L5	N77°49'49"E	49.75'

REFERENCE PLAN SHEET CE-03 FOR US HWY 64 WIDENING AND STRIPING IMPROVEMENTS

US HIGHWAY 64 / KNIGHTDALE BLVD.
VARIABLE WIDTH PUBLIC R/W
B.M. 2021, PG. 2106-2108

METROLINER PLACE
54' PUBLIC R/W (LOCAL STREET)
26' FOC TO FOC

CAROLINIAN AVE.
VARIABLE WIDTH PUBLIC R/W
B.M. 2015, PG. 1398-1399

LIGHTRAIL DRIVE
54' PUBLIC R/W
B.M. 2016, PG. 895-903

FUTURE KNIGHTDALE STATION MIXED-USE FOR REFERENCE ONLY

FUTURE KNIGHTDALE STATION MIXED-USE FOR REFERENCE ONLY

METROLINER PLACE STREET EXTENSION BY KNIGHTDALE STATION MIXED-USE PROJECT

IF FUTURE ROAD EXTENSION IS NOT CONSTRUCTED "BY OTHERS" BEFORE THE 7800 KNIGHTDALE BLVD. DEVELOPMENT IS CONSTRUCTED, TEMPORARY BARRICADES FOR DEAD END ROADS (STD. NO. 3.18) SHALL BE PLACED AT THE END OF METROLINER AVE RE:2/L-2.1

BLDG. #1 GENERAL RETAIL 110'X75' 7,917 SF BLDG. 1-STORY

BLDG. #2 GENERAL RETAIL 110'X75' 7,917 SF BLDG. 1-STORY

BLDG. #3 OFFICE BLDG. 120'X140' 14,008 SF BLDG. 1-STORY

LOT-1 73,440 SF / 1.68 AC

NEW LOT-2 77,623 SF / 1.78 AC

NEW LOT-3 47,799 SF / 1.10 AC

TREE PRESERVATION AREA #1 = 19,927 SF

TREE PRESERVATION AREA #2 = 4,315 SF

TREE PRESERVATION AREA #3 = 2,766 SF

TREE PRESERVATION AREA #4 = 3,216 SF

WALL-1 SEGMENTAL BLOCK RETAINING WALL (DESIGNED BY OTHERS)

WALL-2 SEGMENTAL BLOCK RETAINING WALL (DESIGNED BY OTHERS)

WALL-3 SEGMENTAL BLOCK RETAINING WALL (DESIGNED BY OTHERS)

WALL-4 SEGMENTAL BLOCK RETAINING WALL (DESIGNED BY OTHERS)

WALL-5 SEGMENTAL BLOCK RETAINING WALL (DESIGNED BY OTHERS)

WALL-6 SEGMENTAL BLOCK RETAINING WALL (DESIGNED BY OTHERS)

ADA RAMPS W/ GUARD RAILS AND HANDRAILS AND ASSOCIATED WALLS (DESIGNED BY OTHERS)

NCDOT APPROVED BUS SHELTER BRASCO SL510-C RE: SHEET L-2.3

NCDOT TYPE 1D DIRECTIONAL ADA RAMPS RE:14/L-5.2

(2) BIKE RACKS (4) BIKE PARKING SPACES RE:4/L-5.0

NEW 10' ASPHALT SIDEPATH RE:2/L-5.1

PROPOSED PUBLIC ART SCULPTURE ON CONC. PEDESTAL

(2) 6' CONC. SIDEWALKS RE:14/L-5.0

WIDEN US HWY 64 TO PROVIDE (3) 11' TRAVEL LANES AND NEW C&G ALONG THE PROPERTY FRONTAGE

NEW 30' C&G US 64 (TYP.) RE:4/L-5.1

(3) 11' TRAVEL LANES

(2) BENCH RE:3/L-5.0

30'X75' 2,250 SF PUBLIC GATHERING SPACE

OVERHEAD DOORS

10' CONC. SIDEWALK RE:14/L-5.0

(1) EV CHARGING STATION RE:13/L-5.2

ADA RAMP RE:6/L-5.0

6' CONC. SIDEWALK RE:14/L-5.0

DIRECTIONAL ADA RAMPS RE:6/L-5.0

PARALLEL ADA RAMP RE:6/L-5.0

5' STEPS W/ HANDRAILS RE:8/L-5.1

8' CONC. SIDEWALK RE:14/L-5.0

24' C&G ON-SITE (TYP.) RE:4/L-5.1

(10) DESIGNATED PARK & RIDE STALLS

DUMPSTER ENCLOSURE RE:1/L-5.3

NEW PROPERTY LINE (TYP.)

4' ALUMINUM PICKET FENCE ON TOP OF ALL WALLS GREATER THAN 30" HEIGHT (TYP.) RE:7/L-5.1

6' STEPS W/ HANDRAILS (DESIGNED BY OTHERS)

6' CONC. SIDEWALK RE:14/L-5.0

4' ALUMINUM PICKET FENCE TOP OF WALL RE:7/L-5.1

6' MIN. SIDEYARD SETBACK

10' MIN. FRONTYARD SETBACK

30' MAX. ROAD-MASS SETBACK PRIMARY BLDG. ENTRANCES FRONTING KNIGHTDALE BLVD.

SECONDARY BLDG. ENTRANCES FRONTING INTERNAL PARKING

PRIMARY BLDG. ENTRANCES FRONTING METROLINER PL.

(4) BIKE RACKS / (8) BIKE PARKING SPACES RE:4/L-5.0

CONC. PATIO RE:14/L-5.0

(2) EV CHARGING STATIONS RE:13/L-5.2

CONC. WHEEL STOP RE:12/L-5.2

20' CROSS ACCESS ESMT.

PARALLEL ADA RAMP RE:6/L-5.0

DIRECTIONAL ADA RAMP RE:6/L-5.0

ADA PATH TO ROW (BOLD DASHED LINE TYP.)

CONNECT TO EX. DRIVEWAY STUB

DIRECTIONAL ADA RAMP RE:6/L-5.0

20' CROSS ACCESS ESMT.

DIRECTIONAL ADA RAMP RE:6/L-5.0

ECM CONTROL CORNER N= 746,830.445' E= 2,157,542.757' CGF= 0.99990672

EX. RIPRAP (TYP.)

EX. PROPERTY LINE (TYP.)

EX. CREEK

EX. STREAM BUFFER (TYP.)

HB ZONING TO HB ZONING NO BUFFER YARD REQUIRED

HB ZONING TO NX-PRK ZONING CU-323 I.F. 20' TYPE B BUFFER YARD

HB ZONING TO NX-12 ZONING CU-250 I.F. 50' TYPE B BUFFER YARD

20' ZONES BUFFER

SCM ACCESS & MAINTENANCE EASEMENT (TYP.)

(SCM) STORMWATER CONTROL MEASURE (wet pond/basin) RE:10/L-5.2

30' C&G METROLINER PL (TYP.) RE:4/L-5.1

NEW 30' CITY OF RALEIGH SANITARY SEWER EASEMENT

EX. 30' CITY OF RALEIGH SANITARY SEWER EASEMENT

LIMITS OF DISTURBANCE (TYP.)

TREE PROTECTION FENCE (TYP.) RE:7/L-5.2

ECM

SITE LAYOUT PLAN NOTES

1. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL TOWN OF KNIGHTDALE, AND NCDOT STANDARDS AND SPECIFICATIONS AS APPLICABLE. IF DISCREPANCIES ARE FOUND THE MORE STRINGENT REQUIREMENTS WILL PREVAIL.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS TO COMPLETE THE PROPOSED WORK. NO CHANGES MAY BE MADE TO THE APPROVED DRAWINGS WITHOUT WRITTEN PERMISSION FROM THE ISSUING AUTHORITY.
3. DIMENSIONS ARE TO EDGE OF PAVEMENT, EDGE OF SIDEWALK, BACK OF CURB, CENTERLINE OF COLUMN AND FACE OF BUILDING WALL UNLESS OTHERWISE NOTED. ALL ANGLES ARE 90 DEGREES UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL COORDINATE ALL WORK WITH ALL CONSTRUCTION TRADES PRIOR TO START OF CONSTRUCTION. CONTRACTOR TO REFERENCE CURRENT ARCHITECTURAL DRAWINGS FOR BUILDING INFORMATION.
5. ALL LANDSCAPE ISLANDS SHALL HAVE RAISED CURB AND GUTTER, MINIMUM CURB RADII SHALL BE 3' UNLESS OTHERWISE NOTED.
6. THE SITE WILL BE FULLY COMPLIANT WITH THE NORTH CAROLINA ACCESSIBILITY CODES (ANSI 117.1 -2009 AND CHAPTER 11 OF THE NCBC) UNLESS AND EXCEPT IN AREAS WHERE AN APPROVED STATEMENT FROM A SITE ENGINEER, SURVEYOR OR ARCHITECT VERIFIES THAT SITE CONDITIONS EXIST WHERE THE TOPOGRAPHY OF THE SITE IS EXTREME AND ONLY ALTERNATE METHODS OF COMPLIANCE ARE POSSIBLE.
7. ALL PAVEMENT PATCHING SHALL BE PERFORMED PER TOWN OF KNIGHTDALE OR NCDOT STANDARDS AND SPECIFICATION, AS APPLICABLE.
8. CONTRACTOR SHALL UTILIZE SIGNS, BARRICADES, FLAGMEN OR GUARDS AS REQUIRED TO PROTECT THE SAFETY OF ALL VEHICULAR AND PEDESTRIAN TRAFFIC DURING CONSTRUCTION.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT OF ALL WORK AS ILLUSTRATED ON THE PLANS. ALL PROJECT STAKING SHALL BE PERFORMED BY A REGISTERED PROFESSIONAL SURVEYOR PAID BY THE CONTRACTOR. DO NOT SCALE THE DRAWINGS. DIGITAL INFORMATION IS PROVIDED FOR CONSTRUCTION DRAWINGS, IF EXISTING CONDITIONS DIFFER FROM THOSE ILLUSTRATED ON THE PLANS, NOTIFY THE LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.
10. CONTRACTOR SHALL FURNISH ALL MATERIALS AND LABOR TO COMPLETE THE WORK ILLUSTRATED ON THE DRAWINGS.
11. WITHIN THE SIGHT TRIANGLES SHOWN ON THIS PLAN, NO OBSTRUCTION BETWEEN TWO (2) FEET AND EIGHT (8) FEET IN HEIGHT ABOVE THE CURB LINE ELEVATION OR THE NEAREST TRAVELED WAY IF NO CURBING EXISTS.
12. ALL NEW UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS OTHERWISE NOTED.
13. RETAINING WALLS SHALL BE WOOD, BRICK, OR STONE PER UDO SEC. 7.6.B.3.B.

LEGEND

- EXISTING NEUSE RIVER BUFFER
- EXISTING PRESERVED TREE COVER AREA
- CONCRETE PAVEMENT
- HEAVY DUTY ASPHALT
- STANDARD DUTY ASPHALT
- ASPHALT SIDEPATH

- PROPERTY BOUNDARY LINES
- EXISTING ROW
- EXISTING STREAM BUFFER
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING OVERHEAD ELECTRIC
- EXISTING SANITARY SEWER
- EXISTING SEWER FORCE MAIN
- EXISTING STORM DRAIN
- EXISTING WATER MAIN
- EXISTING UTILITY EASEMENT
- PROPOSED ROW
- PROPOSED PROPERTY LINE
- PROPOSED TREE PROTECTION FENCE
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED RETAINING WALL
- PROPOSED CHAIN LINK FENCE
- PROPOSED ALUMINUM PICKET FENCE
- PROPOSED UTILITY EASEMENT
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED STORM PIPE
- PROPOSED SANITARY SEWER
- PROPOSED WATER
- ADA ROUTE TO ROW
- PROPOSED BUILDING SETBACK
- PROPOSED LANDSCAPE BUFFER

SITE LIGHTING NOTES

1. PROPOSED SITE LIGHTING SHALL MEET ALL STANDARDS AND SPECIFICATIONS OF THE TOWN OF KNIGHTDALE AND NCDOT AS APPLICABLE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS TO COMPLETE THE PROPOSED WORK.
3. LIGHTING SHALL BE ORIENTED NOT TO DIRECT GLARE OR EXCESSIVE ILLUMINATION ONTO STREETS IN A MANNER THAT MAY DISTRACT OR INTERFERE WITH THE VISION OF MOTOR VEHICLE DRIVES ON SUCH STREETS.
4. CONTRACTOR TO COORDINATE ALL BUILDING MOUNTED LIGHTING WITH ELECTRICAL DESIGNER.
5. CONTRACTOR SHALL COORDINATE LIGHT FIXTURE, AND LIGHT POLE INSTALLATION WITH DUKE ENERGY.
6. CONTRACTOR TO PROVIDE 2" SCHEDULE 40 PVC ELECTRICAL CONDUIT UNDER PAVEMENT. UNDER HEAVILY LANDSCAPED AREAS AND AS NECESSARY TO PROVIDE ACCESS TO ALL LIGHT FIXTURES/POLES AND CONNECT BACK TO ELECTRICAL TIE IN LOCATION.
7. CONTRACTOR TO COORDINATE LIGHT POLE AND CONDUIT LOCATIONS PRIOR TO PAVING.
8. ALL ELECTRICAL CONDUIT, LIGHT POLES, AND FIXTURES TO BE FURNISHED BY THE CONTRACTOR.
9. ALL CONDUIT ENDS ARE TO BE CAPPED TO PREVENT ENTRY OF DEBRIS.
10. ALL CONDUITS MORE THAN 20' IN LENGTH SHALL HAVE A POLY STRING INSTALLED.
11. ALL PVC JOINTS ARE TO BE SOLVENT WELDED.

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

1 / L-2.0 SITE LAYOUT PLAN
SCALE: 1"=40'

40' 20' 0 40' 80'
SCALE: 1" = 40'

TMTLA ASSOCIATES
LANDSCAPE ARCHITECTURE & LAND PLANNING
5011 SOUTHPARK DRIVE, STE.200-DURHAM, NC 27713
p: (919) 484-8880 e: info@tmtla.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No. C-551 PORTLAND DESIGN PLLC
DBA TMTLA ASSOCIATES

NORTH CAROLINA 1826 REGISTERED LANDSCAPE ARCHITECT ANDREW J. PORTER

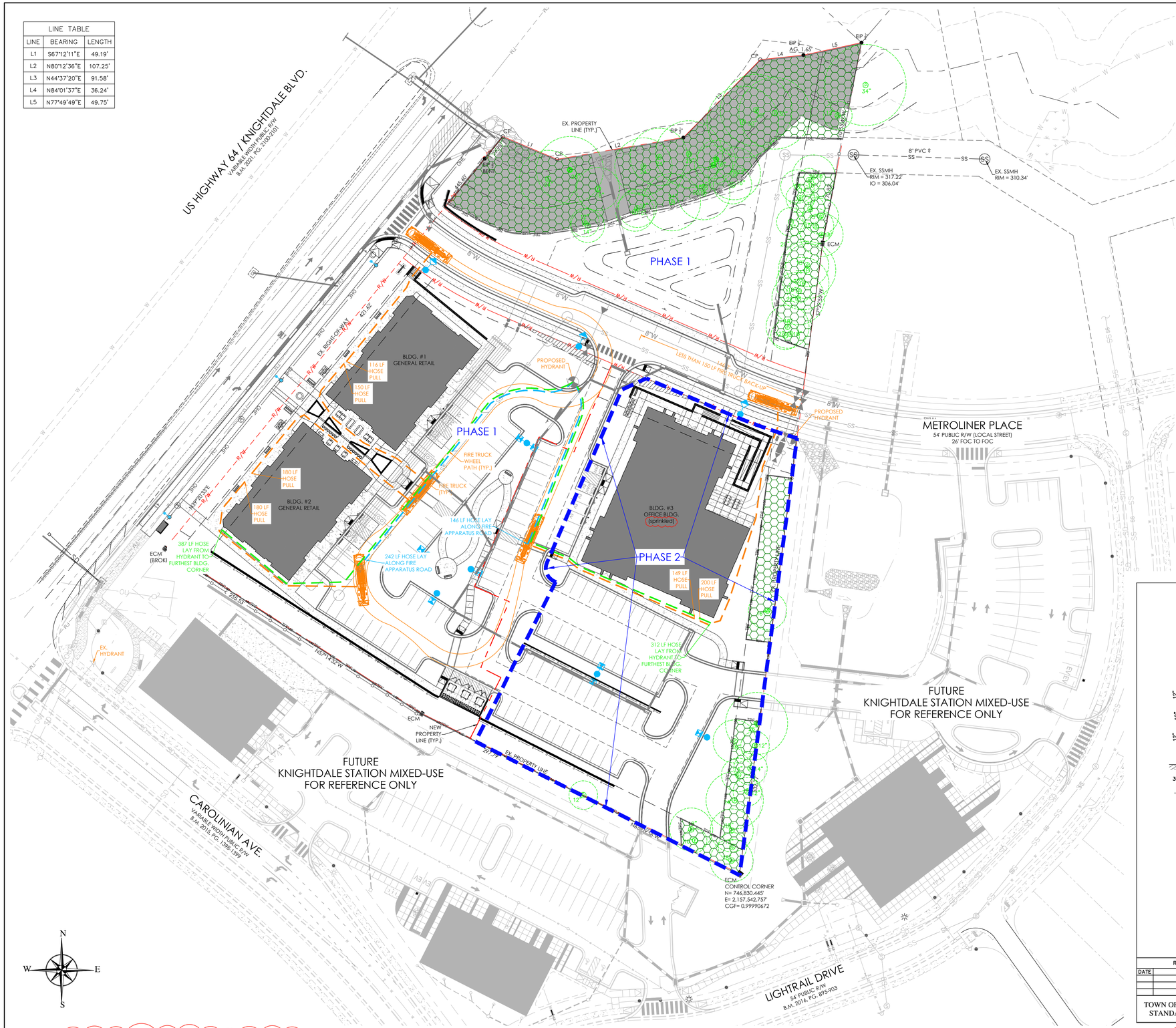
3-6-2026
PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS:
1. ToK Sketch Plan 1st review Comments 2024-10-14
2. ToK Sketch Plan 2nd review Comments 2025-11-24
3. ToK Master Plan 1st review Comments 2026-3-6

SITE LAYOUT PLAN
7800 KNIGHTDALE BLVD.
7800 KNIGHTDALE BLVD
KNIGHTDALE, NC 27545
TOK PROJECT #ZCP-7-24

SCALE: AS NOTED
DRAWN BY: AJP
PROJECT # 24029
DATE: 11/13/2025
SHEET L-2.0
OF

LINE TABLE		
LINE	BEARING	LENGTH
L1	S67°12'11"E	49.19'
L2	N80°12'36"E	107.25'
L3	N44°37'20"E	91.58'
L4	N84°01'37"E	36.24'
L5	N77°49'49"E	49.75'



1 L-2.1 PHASING AND FIRE PROTECTION PLAN
SCALE: 1"=40'

40' 20' 0 40' 80'
SCALE: 1" = 40'

PHASING PLAN NOTES

1. THE 7800 KNIGHTDALE BLVD. PROJECT WILL BE CONSTRUCTED IN TWO PHASES.
   - PHASE 1 - ALL WORK OUTSIDE OF THE PHASE 2 AREA SHOWN ON THIS PLAN.
   - PHASE 2 - ALL WORK INSIDE THE PHASE 2 AREA SHOWN ON THIS PLAN.

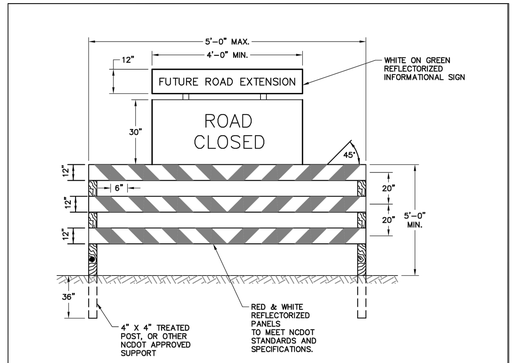
FIRE ACCESS NOTES

1. A FIRE HYDRANT MUST BE WITHIN 400 LF OF ALL PORTIONS OF THE EXTERIOR OF THE BUILDING FOR NON-SPRINKLED BUILDINGS, AND 600 LF FOR SPRINKLED BUILDINGS.
2. ALL PORTIONS OF THE BUILDINGS MUST BE WITHIN 150 LF OF THE APPARATUS ACCESS ROAD SURFACE, 200 LF WITH A SPRINKLER SYSTEM.

LEGEND

- EXISTING NEUSE RIVER BUFFER
- EXISTING PRESERVED TREE COVER AREA
- CONCRETE PAVEMENT
- HEAVY DUTY ASPHALT
- STANDARD DUTY ASPHALT
- ASPHALT SIDEPATH

- PHASE LINE
- HOSE LAY FROM FIRE TRUCK
- HOSE LAY TO FURTHEST BUILDING CORNER
- HOSE PULL
- PROPERTY BOUNDARY LINES
- EXISTING ROW
- EXISTING STREAM BUFFER
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING OVERHEAD ELECTRIC
- EXISTING SANITARY SEWER
- EXISTING SEWER FORCE MAIN
- EXISTING STORM DRAIN
- EXISTING WATER MAIN
- EXISTING UTILITY EASEMENT
- PROPOSED ROW
- PROPOSED PROPERTY LINE
- PROPOSED TREE PROTECTION FENCE
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED RETAINING WALL
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- PROPOSED SANITARY SEWER
- PROPOSED WATER
- ADA ROUTE TO ROW
- PROPOSED BUILDING SETBACK
- PROPOSED LANDSCAPE BUFFER



NOTES:

1. BARRICADE(S) TO BE ERECTED ACROSS ENTIRE ROADWAY INCLUDING CURB & GUTTER.
2. ADVANCE WARNING SIGN W14-1 (DEAD END) SHALL BE PLACED JUST AFTER LAST INTERSECTING STREET.
3. MARKINGS FOR BARRICADE RAILS SHALL BE REFLECTIVE AND ALTERNATE RED AND WHITE STRIPS.
4. "ROAD CLOSED" SIGN SHALL MEET SPECIFICATIONS OF M.U.T.C.D R11-2 AND BE REQUIRED ATOP EACH BARRICADE USED.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	TEMPORARY BARRICADE FOR DEAD END ROADS	STD. NO. 3.18

2 L-2.1 TEMP. BARRICADE FOR DEAD END ROADS
NTS

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

TMTLA ASSOCIATES
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NORTH CAROLINA No. C-551 REGISTERED LANDSCAPE ARCHITECTURAL FIRM
DBA TMTLA ASSOCIATES
NORTH CAROLINA 1826 REGISTERED LANDSCAPE ARCHITECT ANDREW J. PORTER

3-6-2026

PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS:

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2. ToK Sketch Plan 2nd review Comments 2025-11-24
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PHASING AND FIRE PROTECTION PLAN
7800 KNIGHTDALE BLVD.
7800 KNIGHDALE BLVD
KNIGHTDALE, NC 27545
TOK PROJECT #ZCP-7-24

SCALE: AS NOTED
DRAWN BY: AJP
PROJECT # 24029
DATE: 11/13/2025
SHEET L-2.1
OF

LINE TABLE		
LINE	BEARING	LENGTH
L1	S67°12'11"E	49.19'
L2	N80°12'36"E	107.25'
L3	N44°37'20"E	91.58'
L4	N84°01'37"E	36.24'
L5	N77°49'49"E	49.75'

REFERENCE PLAN SHEET CE-03 FOR US HWY 64 WIDENING AND STRIPING IMPROVEMENTS

US HIGHWAY 64 / KNIGHTDALE BLVD.
VARIABLE WIDTH PUBLIC R/W
B.M. 2001, PG. 2100-2101

METROLINER PLACE
STREET EXTENSION
54' PUBLIC R/W (LOCAL STREET)
26' FOC TO FOC

CAROLINIAN AVE.
VARIABLE WIDTH PUBLIC R/W
B.M. 2015, PG. 1998-1999

LIGHTRAIL DRIVE
54' PUBLIC R/W
B.M. 2016, PG. 895-903

FUTURE
KNIGHTDALE STATION MIXED-USE
FOR REFERENCE ONLY

BLDG. #1 GENERAL RETAIL

BLDG. #2 GENERAL RETAIL

BLDG. #3 OFFICE BLDG.

FUTURE SIGN (TO BE PERMITTED SEPARATELY)

10' HI-VIS CROSSWALK STRIPING (WHITE)

2' WHITE STOP BAR

NEW 10' ASPHALT SIDEPATH RE:2/L-5.1

NO-PARKING FIRE LANE STRIPING 4" SOLID YELLOW (TYP.) RE:5/L-5.1

6' HI-VIS CROSSWALK STRIPING (WHITE)

D SCM WARNING UNSAFE TO ENTER SIGN

IF FUTURE ROAD EXTENSION IS NOT CONSTRUCTED "BY OTHERS" BEFORE THE 7800 KNIGHTDALE BLVD. DEVELOPMENT IS CONSTRUCTED, TEMPORARY BARRICADES FOR DEAD END ROADS (STD. NO. 3.18) SHALL BE PLACED AT THE END OF METROLINER AVE RE:2/L-2.1

H (2) EV PARKING SIGNS

B (2) ADA PARKING SIGNS RE:9/L-5.0

CONC. PAVEMENT RE:12/L-5.0

6' CROSSWALK STRIPING (WHITE)

4' WHITE PARKING STRIPING (TYP.)

H (4) EV PARKING SIGNS

COR - BUS STOP SIGN RE:4/L2.3

C (10) PARK & RIDE SIGNS

HEAVY DUTY ASPHALT PAVEMENT (ALL DRIVE LANES) RE:10/L-5.0

HD CONC. DUMPSTER PAD RE:11/L-5.0

STANDARD DUTY ASPHALT PAVEMENT (PARKING BAYS) RE:12/L5.0

ECM (BROKEN)

ECM CONTROL CORNER
N= 746,830.445'
E= 2,157,542.757'
CGF= 0.99990672

LEGEND	
EXISTING NEUSE RIVER BUFFER	PROPERTY BOUNDARY LINES
EXISTING PRESERVED TREE COVER AREA	EXISTING ROW
CONCRETE PAVEMENT	EXISTING STREAM BUFFER
HEAVY DUTY ASPHALT	EXISTING MAJOR CONTOUR
STANDARD DUTY ASPHALT	EXISTING MINOR CONTOUR
ASPHALT SIDEPATH	EXISTING OVERHEAD ELECTRIC
	EXISTING SANITARY SEWER
	EXISTING SEWER FORCE MAIN
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	PROPOSED STORM PIPE
	PROPOSED SANITARY SEWER
	PROPOSED WATER
	ADA ROUTE TO ROW
	PROPOSED BUILDING SETBACK
	PROPOSED LANDSCAPE BUFFER

SIGNAGE & PAVEMENT MARKING NOTES

1. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL TOWN OF KNIGHTDALE, AND NCDOT STANDARDS AND SPECIFICATIONS AS APPLICABLE. IF DISCREPANCIES ARE FOUND THE MORE STRINGENT REQUIREMENTS WILL PREVAIL.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS TO COMPLETE THE PROPOSED WORK. NO CHANGES MAY BE MADE TO THE APPROVED DRAWINGS WITHOUT WRITTEN PERMISSION FROM THE ISSUING AUTHORITY.
3. ALL PAINT STRIPING, PAVEMENT MARKINGS, AND SIGNAGE SHALL CONFORM TO THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. PAINT STRIPING SHALL BE WHITE UNLESS OTHERWISE NOTED.
4. ALL PAVEMENT MARKINGS INCLUDING TRAFFIC CONTROL, STOP BARS FIRE LANES AND CROSSWALKS SHALL BE MADE WITH REFLECTORIZED THERMOPLASTIC STRIPING WITH A MINIMUM THICKNESS IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS & STRUCTURES [TOK STANDARD SPECS & DETAILS MANUAL, SEC. 3.05.A].
5. ANY EXISTING PAVEMENT STRIPING THAT IS IN CONFLICT WITH THE PROPOSED STRIPPING SHOWN ON THIS PLAN SHALL BE REMOVED.
6. A SEPARATE PERMIT AND APPROVAL IS REQUIRED FOR DEVELOPMENT ENTRY SIGNS.
7. FIRE LANE MARKING AND SIGNAGE TO BE IN ACCORDANCE WITH LOCAL GUIDELINES. CONTRACTOR TO CONTACT THE LOCAL FIRE MARSHAL FOR INSTRUCTIONS.

SIGN LEGEND

A — STOP
R1-1
30"X30"

B — RESERVED PARKING
R7-8 / 12"X18"
RE:9/L-5.0

C — PARK & RIDE
12"X18" / K-4323
SMARTSIGN

D — WARNING UNSAFE TO ENTER
18"X24"
RE:6/L-5.2

E
WP11 -2
30"X30"

F
WP16 -7P
24"X12"

G — INSTALLATION OF STREET NAME SIGN
STREET NAME SIGN
RE:3/L-5.1

H — RESERVED PARKING / EV / ELECTRIC VEHICLE CHARGING ONLY / 2 HOUR LIMIT
PAR-1353
STOPSIGNSANDMORE
12"X18"

1 L-2.2 SITE SIGNAGE & PAVEMENT MARKING PLAN
SCALE: 1"=40'

40' 20' 0 40' 80'
SCALE: 1" = 40'

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

TMTLA ASSOCIATES
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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECTURAL CORPORATION No. C-551
DBA TMTLA ASSOCIATES

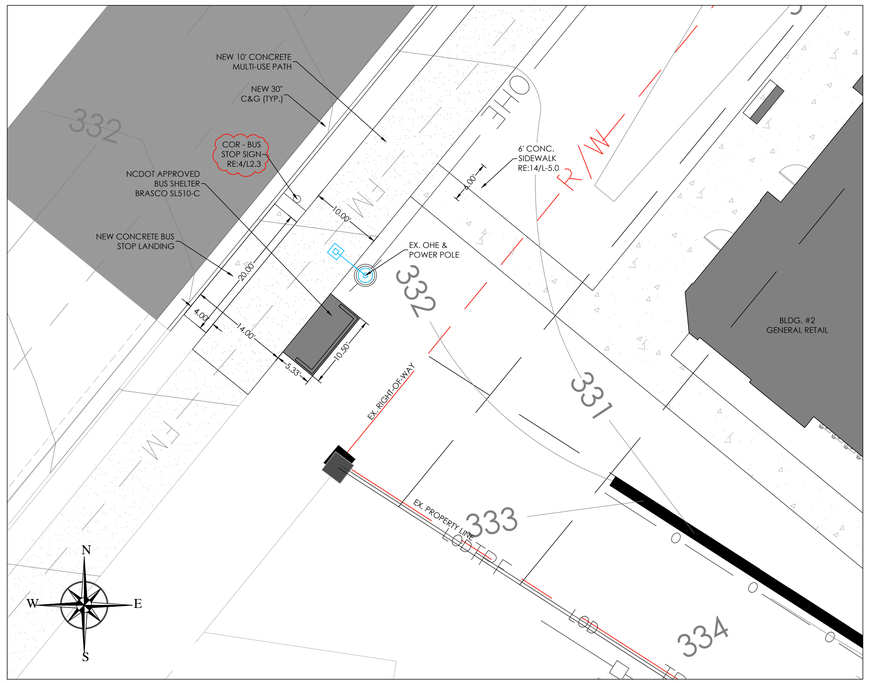
NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1826 ANDREW J. PORTER

3-6-2026
PRELIMINARY NOT FOR CONSTRUCTION

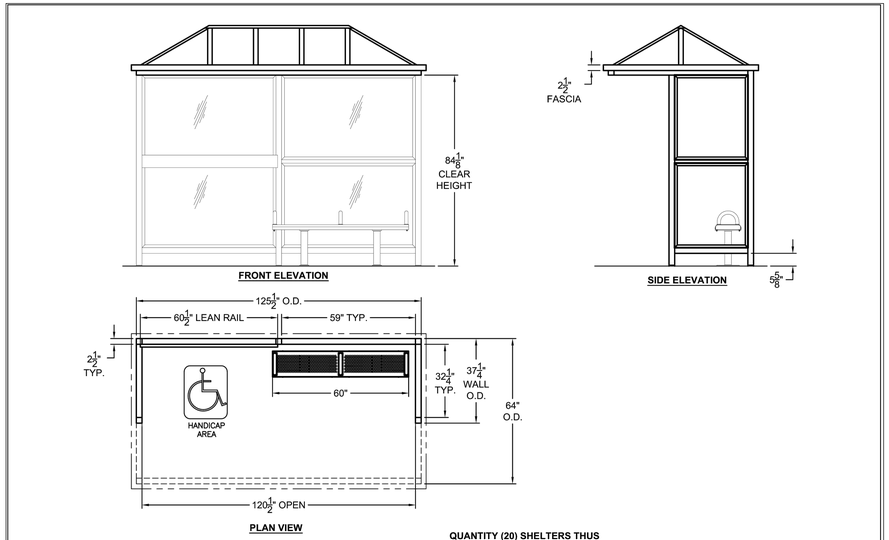
REVISIONS:
1. ToK Sketch Plan 1st review Comments 2024-10-14
2. ToK Sketch Plan 2nd review Comments 2025-11-24
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SITE SIGNAGE & PAVEMENT MARKING PLAN
7800 KNIGHTDALE BLVD.
7800 KNIGHTDALE BLVD
KNIGHTDALE, NC 27545
TOK PROJECT #ZCP-7-24

SCALE: AS NOTED
DRAWN BY: AJP
PROJECT # 24029
DATE: 11/13/2025
SHEET L-2.2
OF



1 L-2.3 **BUS STOP PLAN**
SCALE: 1"=10'



QUANTITY (20) SHELTERS THUS

SPECIFICATIONS:
-POWDER COATED ALUMINUM STRUCTURE (RAL 9017 TRAFFIC BLACK)
-3/8" CLEAR TEMPERED SAFETY GLASS
-BRONZE ACRYLIC GLAZED ROOF WITH FASCIA/GUTTER SYSTEM
-5' STEEL PERFORATED PEDESTAL BENCH
-5' ALUMINUM LEAN RAIL

Brasco

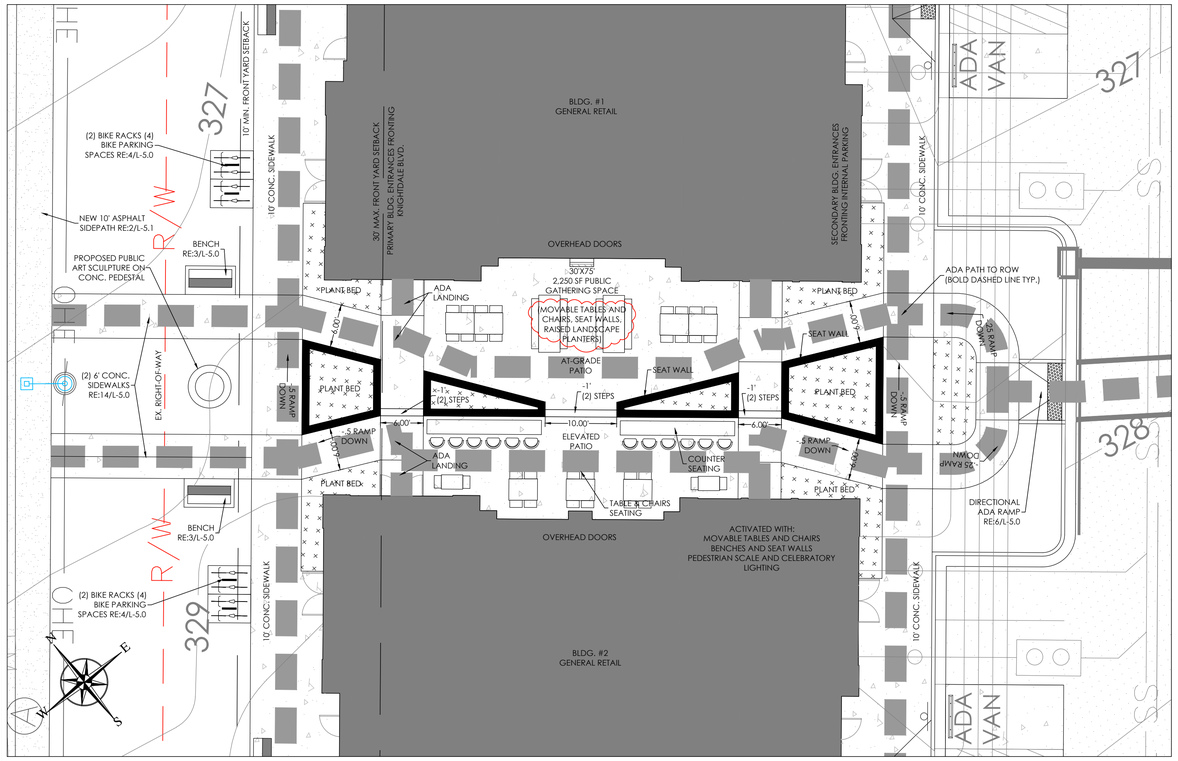
BRASCO INTERNATIONAL, INC.
32400 INDUSTRIAL DRIVE
MADISON HEIGHTS, MICHIGAN 48071
1-800-893-3665 WWW.BRASCO.COM

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© SIGNED:_____ DATE:_____

CUSTOMER:	BRASCO INTERNATIONAL			ENGINEER:	ZTL
				DATE:	3-9-17
PROJECT:	GLAZED HIP STYLE TRANSIT SHELTER			CHECKER:	SJT
				DATE:	3-23-17
MODEL:	SLIMLINE SERIES - SL510-C	JOB #:	4910A	SHEET #:	4910A-1

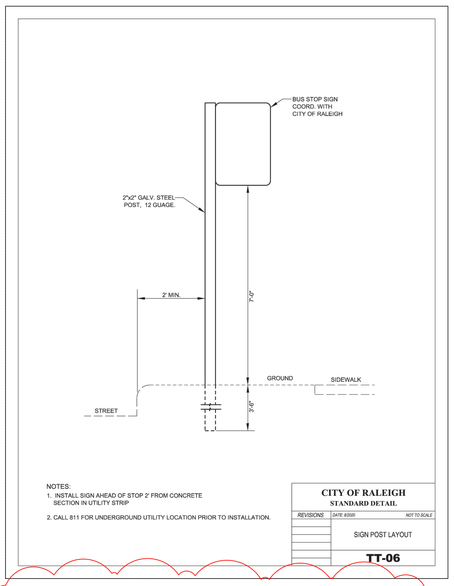
2 L-2.3 **BUS SHELTER DETAIL**
SCALE: NTS

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



3 L-2.3 **PUBLIC GATHERING SPACE**
SCALE: 1"=10'

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



4 L-2.3 **COR - BUS STOP SIGN & POST LAYOUT**
SCALE: 1"=10'

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

TMTLA ASSOCIATES
LANDSCAPE ARCHITECTURE & LAND PLANNING
5011 SOUTHPARK DRIVE, STE.200-DURHAM, NC 27713
p: (919) 484-8880 e: info@tmtla.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No. C-551 PORTLAND DESIGN PLLC
DBA TMTLA ASSOCIATES

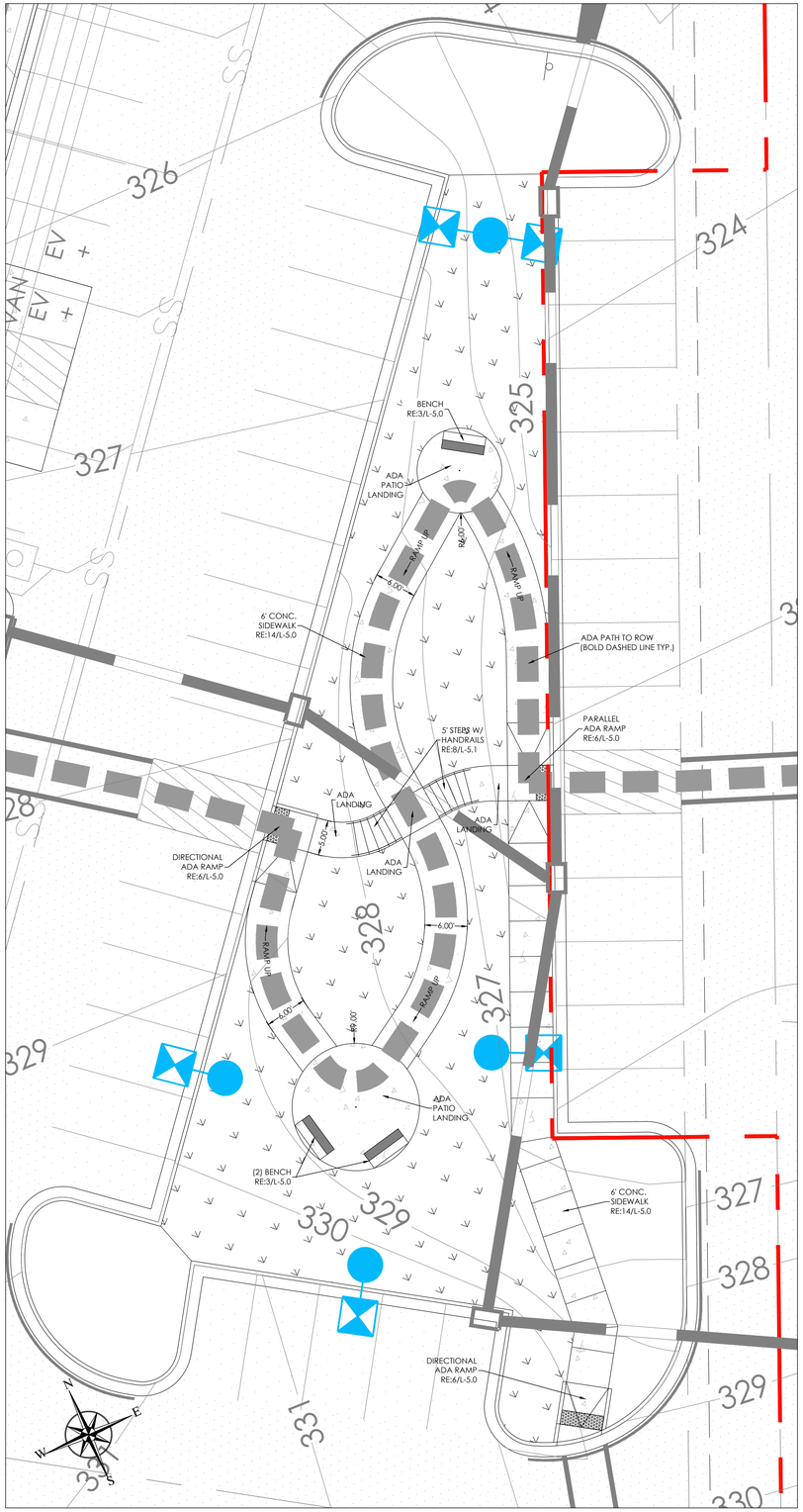
NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1826 ANDREW J. PORTER
3-6-2026

PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS:
1. ToK Sketch Plan 1st review Comments 2024-10-14
2. ToK Sketch Plan 2nd review Comments 2025-11-24
3. ToK Master Plan 1st review Comments 2026-3-6

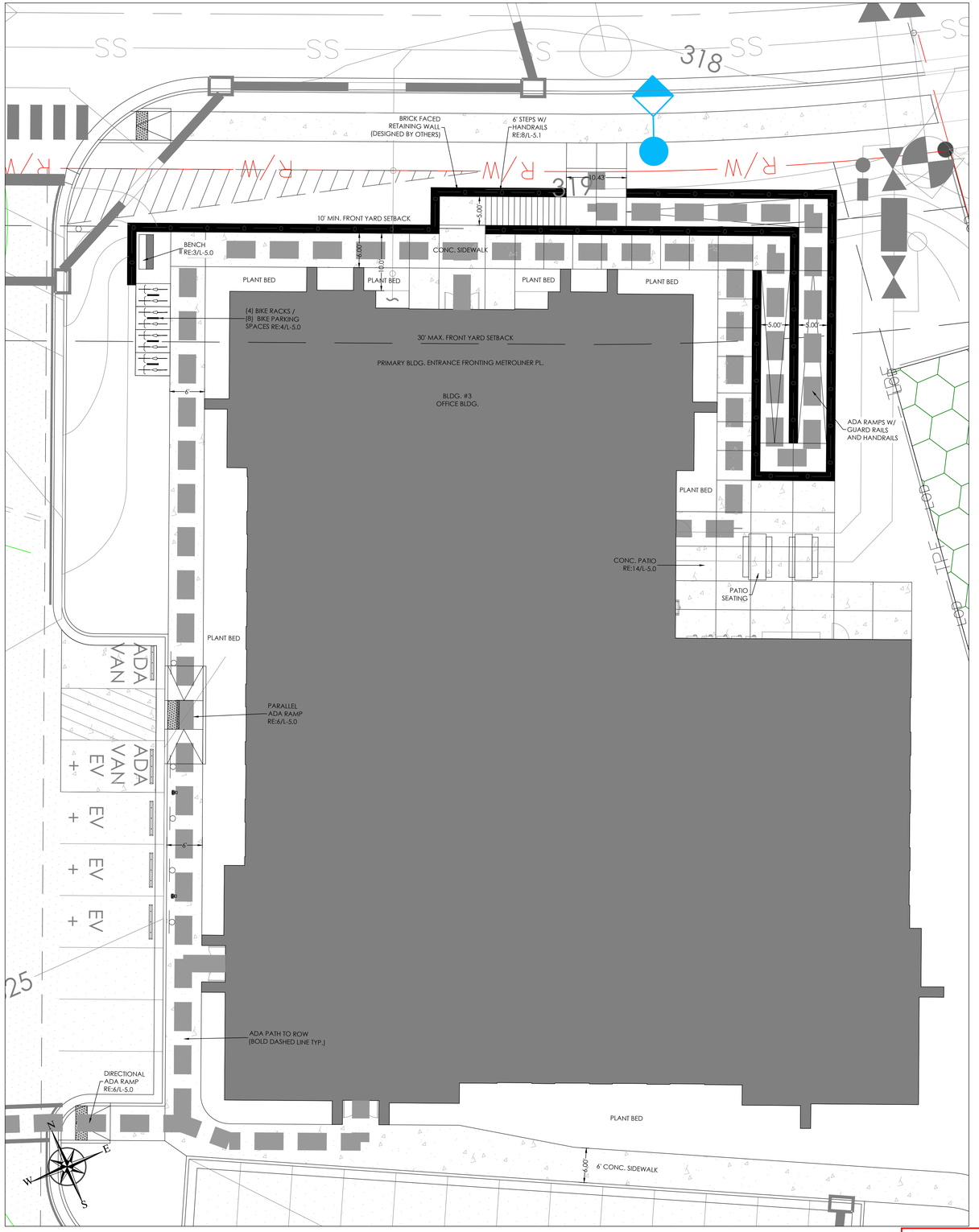
EXPANDED PLAN VIEWS
7800 KNIGHTDALE BLVD.
7800 KNIGHTDALE BLVD
KNIGHTDALE, NC 27545
TOK PROJECT #ZCP-7-24

SCALE: AS NOTED
DRAWN BY: AJP
PROJECT # 24029
DATE: 11/13/2025
SHEET L-2.3
OF



1 L-2.4 PUBLIC GATHERING SPACE
SCALE: 1"=10'

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



2 L-2.4 PUBLIC GATHERING SPACE
SCALE: 1"=10'

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

APPROVED MASTER PLAN
Town of Knightdale
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3-6-2026

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REVISIONS:

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EXPANDED PLAN VIEWS
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SCALE:
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DRAWN BY:
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11/13/2025

SHEET
L-2.4
OF

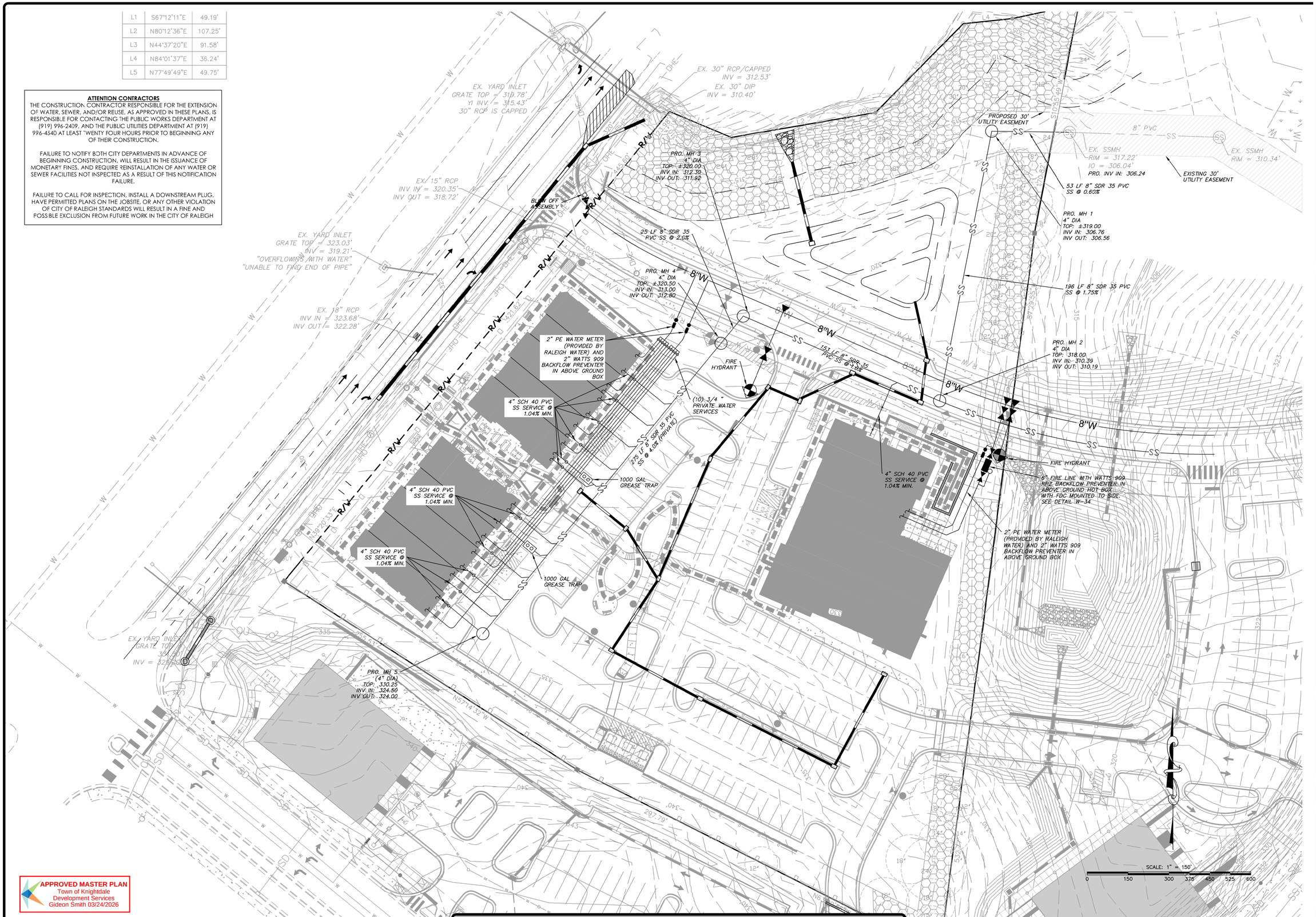
L1	S67°12'11"E	49.19'
L2	N80°12'36"E	107.25'
L3	N44°37'20"E	91.58'
L4	N84°01'37"E	36.24'
L5	N77°49'49"E	49.75'

ATTENTION CONTRACTORS

THE CONSTRUCTION CONTRACTOR RESPONSIBLE FOR THE EXTENSION OF WATER, SEWER, AND/OR REUSE, AS APPROVED IN THESE PLANS, IS RESPONSIBLE FOR CONTACTING THE PUBLIC WORKS DEPARTMENT AT (919) 996-2409, AND THE PUBLIC UTILITIES DEPARTMENT AT (919) 996-4540 AT LEAST TWENTY FOUR HOURS PRIOR TO BEGINNING ANY OF THEIR CONSTRUCTION.

FAILURE TO NOTIFY BOTH CITY DEPARTMENTS IN ADVANCE OF BEGINNING CONSTRUCTION, WILL RESULT IN THE ISSUANCE OF MONETARY FINES, AND REQUIRE REINSTALLATION OF ANY WATER OR SEWER FACILITIES NOT INSPECTED AS A RESULT OF THIS NOTIFICATION FAILURE.

FAILURE TO CALL FOR INSPECTION, INSTALL A DOWNSTREAM PLUG, HAVE PERMITTED PLANS ON THE JOBSITE, OR ANY OTHER VIOLATION OF CITY OF RALEIGH STANDARDS WILL RESULT IN A FINE AND POSSIBLE EXCLUSION FROM FUTURE WORK IN THE CITY OF RALEIGH



APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

You make known to me the path of life; in your presence there is fullness of joy; at your right hand are pleasures forevermore. Psalms 16:11

STOCKS ENGINEERING
P.O. BOX 1108
801 EAST WASHINGTON STREET
NASHVILLE, N.C. 27856
PHONE: (252) 459-8196
WWW.STOCKSENGINEERING.COM

BLN-C-1874

7800 KNIGHTDALE BLVD.
KNIGHTDALE, NC 27545

NORTH CAROLINA PROFESSIONAL SEAL 19843 ENGINEER J. MICHAEL STOCKS
11/22/2024

UTILITY PLAN

REVISIONS

FILE NO.	2024-081
HORZ. SCALE:	1"=150'
VERT. SCALE:	NONE

CE-01

L3	N44°37'20"E	91.58'
L4	N84°01'37"E	36.24'
L5	N77°49'49"E	49.75'

ATTENTION CONTRACTORS

THE CONSTRUCTION CONTRACTOR RESPONSIBLE FOR THE EXTENSION OF WATER, SEWER, AND/OR REUSE, AS APPROVED IN THESE PLANS, IS RESPONSIBLE FOR CONTACTING THE PUBLIC WORKS DEPARTMENT AT (919) 996-2409, AND THE PUBLIC UTILITIES DEPARTMENT AT (919) 996-4540 AT LEAST TWENTY FOUR HOURS PRIOR TO BEGINNING ANY OF THEIR CONSTRUCTION.

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EX. YARD INLET
GRATE TOP = 319.78'
YI INV. = 315.43'
30" RCP IS CAPPED

EX. 30" RCP/CAPPED
INV = 312.53'
EX. 30" DIP
INV = 310.40'

INV 24" ±313.0

CB
TOP: 322.0
INV F/L: 318.50

24" RCP

TOW 322
BOW 318

TOW 327
BOW 319

EX. 15" RCP
INV IN = 320.35'
INV OUT = 318.72'

CB
TOP: 323.36
INV F/L: 319.86

EX. YARD INLET
GRATE TOP = 323.03'
INV = 319.21'
"OVERFLOWING WITH WATER"
"UNABLE TO FIND END OF PIPE"

EX. 18" RCP
INV IN = 323.68'
INV OUT = 322.28'

CB
TOP: 327.59
INV F/L: 324.09

18" RCP

6' VEGETATED SHELF

EX. SSMH
RIM = 317.22'
IO = 306.04'

8" PVC

EX. SSMH
RIM = 310.34'

INV 30" 312.50

CB
TOP: 317.86
INV F/L: 312.86

30" RCP

CB
TOP: 317.86
INV F/L: 313.00

24" RCP

FFE 328.85
FFE 328.95
FFE 328.85
FFE 327.95
FFE 327.85
FFE 328.85
FFE 328.95
FFE 328.85
FFE 327.95
FFE 327.85

CB
TOP: 321.40
INV F/L: 315.10

CB
TOP: 321.40
INV F/L: 315.34

FFE 325.75

CB
TOP: 328.00
INV F/L: 325.00

18" RCP

CB
TOP: 328.40
INV F/L: 324.80

CB
TOP: 324.20
INV F/L: 317.14

24" RCP

18" RCP

CB
TOP: 326.00
INV F/L: 321.25

CB
TOP: 330.40
INV F/L: 321.55

CB
TOP: 330.30
INV F/L: 321.90

18" RCP

CB
TOP: 325.80
INV F/L: 322.80

15" RCP

CB
TOP: 332.40
INV F/L: 322.43

EX. YARD INLET
GRATE TOP = 334.00'
INV = 329.99'

SCALE: 1" = 30'
0 30 60 75 90 105 120

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

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7800 KNIGHTDALE BLVD.
KNIGHTDALE, NC 27545

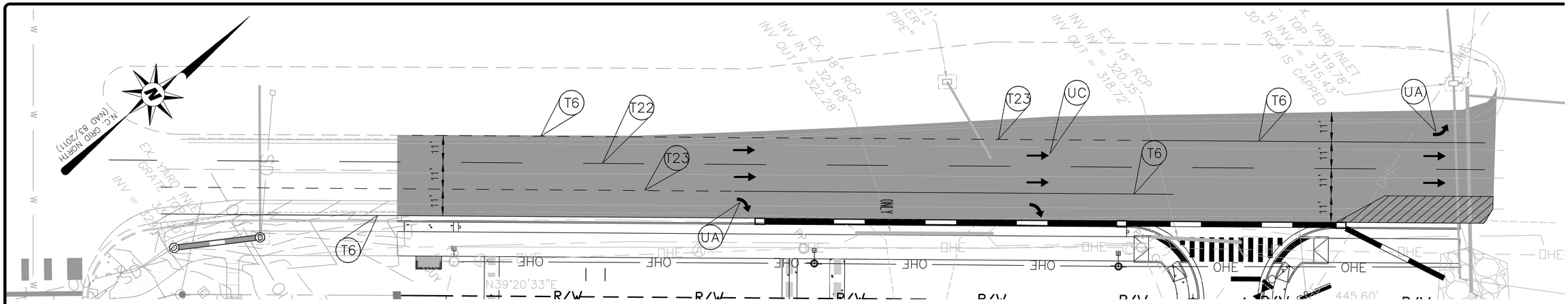
NORTH CAROLINA PROFESSIONAL SEAL 19843 ENGINEER J. MICHAEL STOCKS
11/22/2024

GRADING PLAN

REVISIONS
3/6/26 – TOK 1st Review

FILE NO.	2024-081
HORZ. SCALE:	1"=150'
VERT. SCALE:	NONE

CE-02



NOTES:

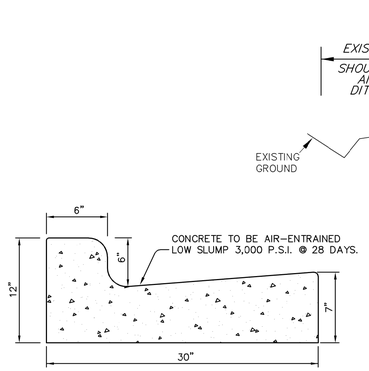
1. CONTRACTOR TO ENSURE POSITIVE DRAINAGE PRIOR TO POURING CONCRETE
2. CONTRACTOR TO INCLUDE IN BASE BID THE BACKFILLING BEHIND CURB, OFFSITE DISPOSAL OF EXCESS MATERIAL, OFF-SITE BORROW, SEED, STRAW & TACK.
3. CONTRACTOR TO INCLUDE IN BASE BID THE SAW-CUTTING, REMOVAL, & REPLACEMENT OF ASPHALT REQUIRED TO INSTALL CURB & GUTTER.
4. ASPHALT SHALL BE SAW-CUT TO PROVIDE SMOOTH EDGE TO PLACE CURB & GUTTER.
5. TWO-WAY TRAFFIC TO BE MAINTAINED AT ALL TIMES.
6. WIDENING, STRIPING AND SIGNAGE TO MATCH NCDOT STANDARDS AND DETAILS LATEST EDITION.
7. ALL STRIPING TO BE THERMOPLASTIC PER NCDOT STANDARDS AND SPECIFICATIONS.
8. CONCRACTOR IS RESPONSIBLE FOR THE LOCATION AND OR RELOCATION OF EXISTING UTILITIES, DRIVEWAY REPAIR, AND TRAFFIC CONTROL PER THE MUTCD, LATEST EDITION.
9. RAISED REFLECTIVE SNOW PLOWABLE PAVEMENT MARKERS SHALL ALSO BE INSTALLED WITHIN TURN LANE CONSTRUCTION LIMITS IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS

LEGEND

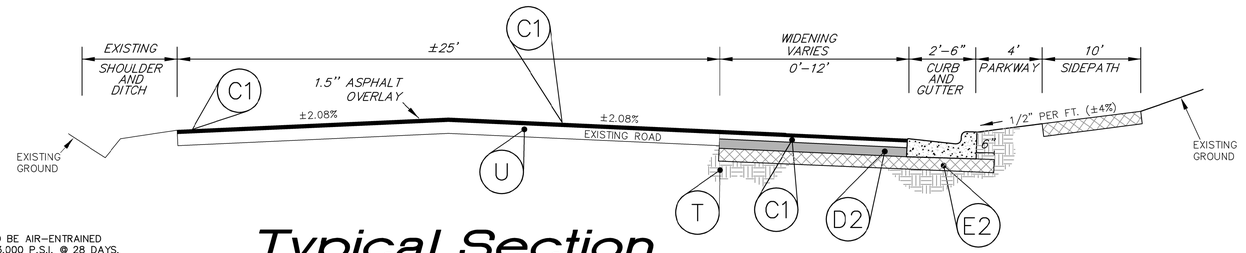
- (D2) 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I-19.0C
- (E2) 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C @ AN AVERAGE RATE OF 684 LBS. PER SQUARE YARD.
- (C1) 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C (OVERLAY)
- (U) EXISTING PAVEMENT
- (T) EXISTING EARTH

PAVEMENT MARKING LEGEND

- (T16) YELLOW DOUBLE CENTER LINE (6" @ 120 MIL)
- (T6) WHITE EDGELINE (6" @ 90 MIL)
- (UA) TURN ARROW (90 MIL)
- (UC) STRAIGHT ARROW (90 MIL)
- (T23) 3 FT.-9 FT./SP WHITE MINI-SKIP (6", 120 MIL)
- (T42) YELLOW DIAGONAL (8", 90 MIL)
- (T22) 10 FT.-30 FT./SP WHITE SKIP line (6", 120 MIL)

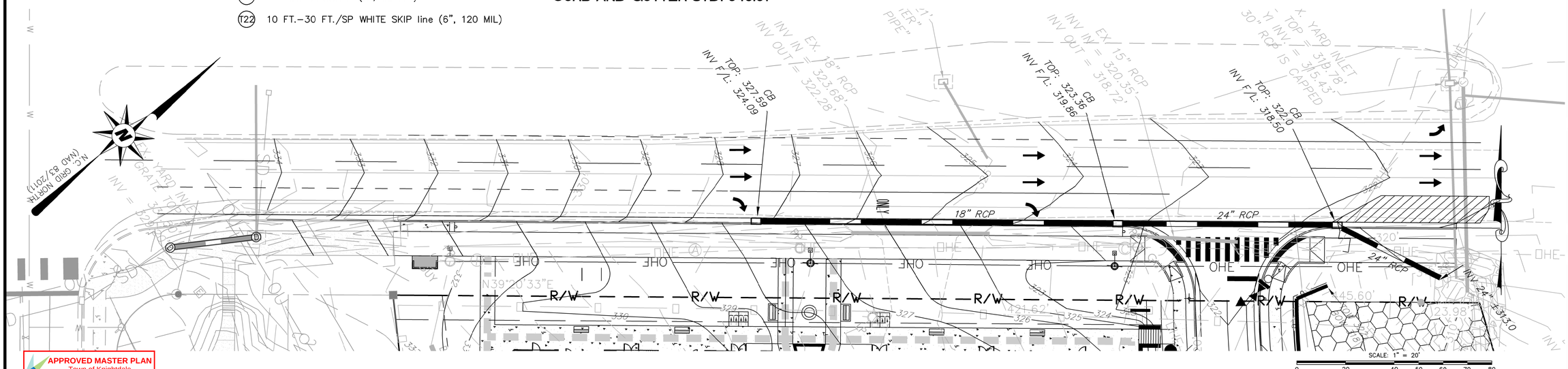


NCDOT STANDARD 30"
CURB AND GUTTER STD. 846.01



Typical Section

NEAR SIDE WIDENING: NOT TO SCALE



APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

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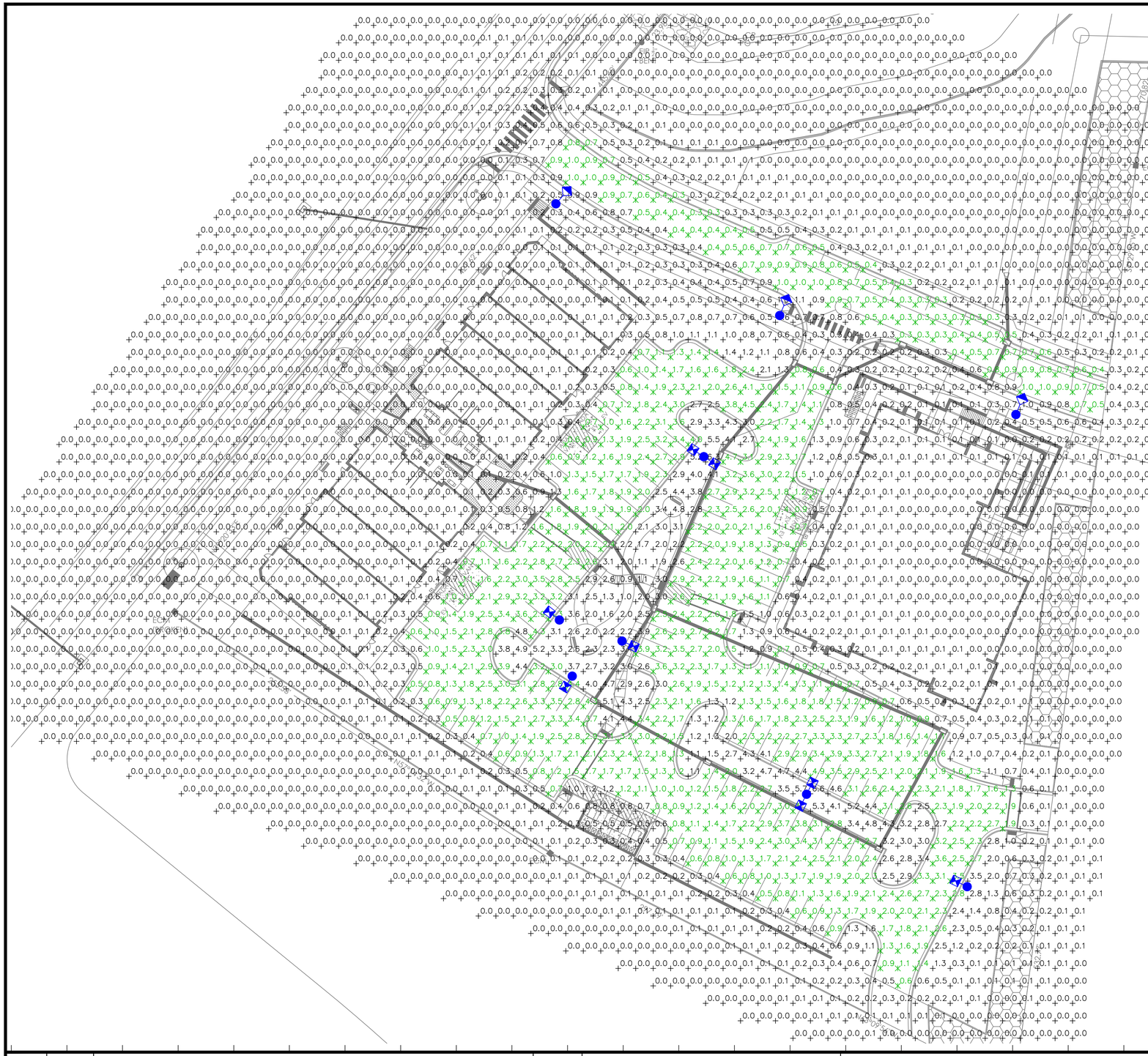
NORTH CAROLINA PROFESSIONAL SEAL 19843 ENGINEER MICHAEL STOCKS
11/22/2024

ROAD WIDENING PLAN

REVISIONS
3/6/26 – TOK 1st REVIEW

FILE NO.	2023-024
HORZ. SCALE:	1"=20'
VERT. SCALE:	NONE

CE-03

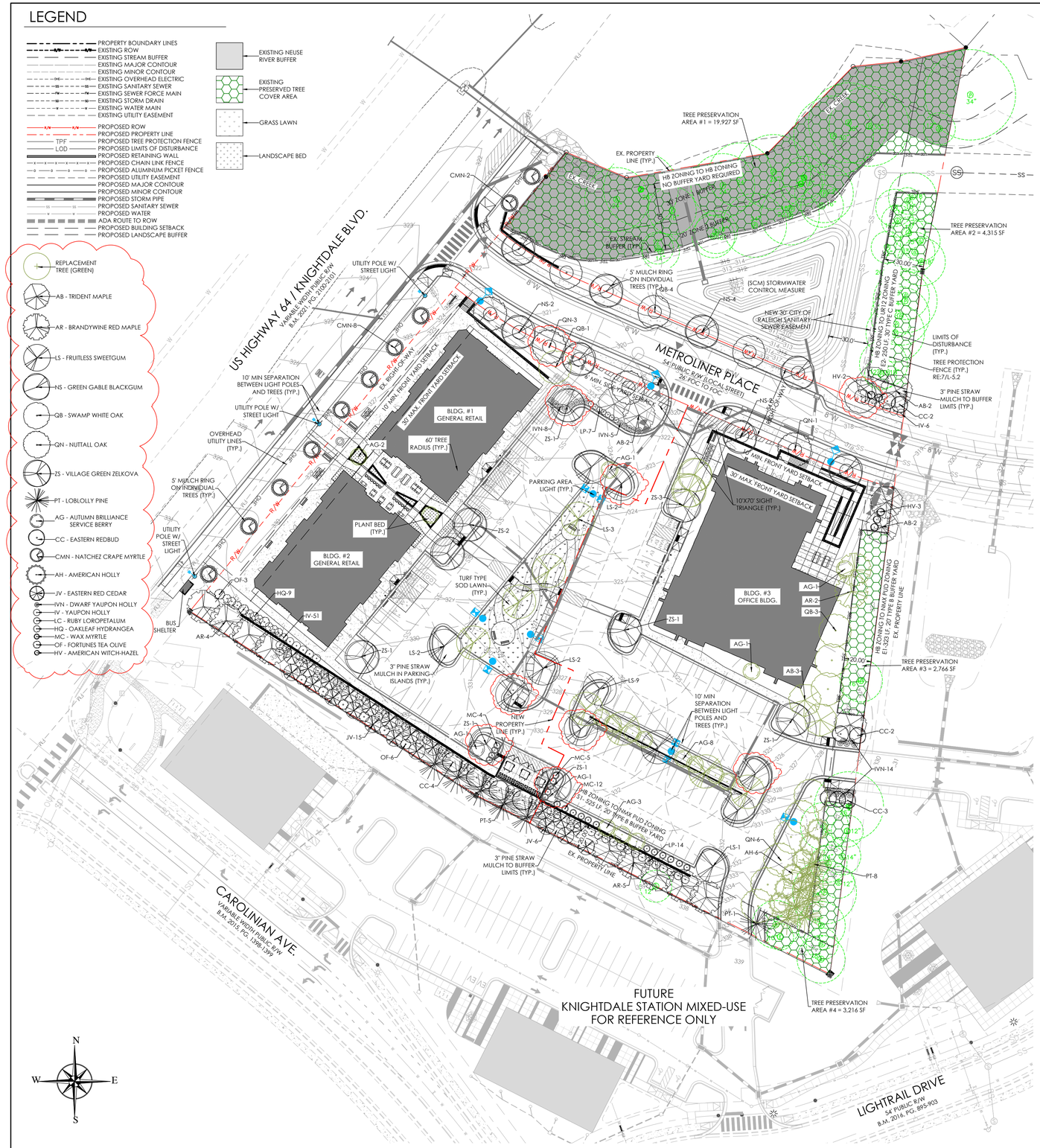

EX. SSMH
RIM = 317.22'
IO = 306.04
8"
SS
ECM
ECM
ECM

LEGEND

- PROPERTY BOUNDARY LINES
- EXISTING ROW
- EXISTING STREAM BUFFER
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING OVERHEAD ELECTRIC
- EXISTING SANITARY SEWER
- EXISTING SEWER FORCE MAIN
- EXISTING STORM DRAIN
- EXISTING WATER MAIN
- EXISTING UTILITY EASEMENT
- PROPOSED ROW
- PROPOSED PROPERTY LINE
- PROPOSED TREE PROTECTION FENCE
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED RETAINING WALL
- PROPOSED CHAIN LINK FENCE
- PROPOSED ALUMINUM PICKET FENCE
- PROPOSED UTILITY EASEMENT
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED STORM PIPE
- PROPOSED SANITARY SEWER
- PROPOSED WATER
- ADA ROUTE TO ROW
- PROPOSED BUILDING SETBACK
- PROPOSED LANDSCAPE BUFFER

- EXISTING NEUSE RIVER BUFFER
- EXISTING PRESERVED TREE COVER AREA
- GRASS LAWN
- LANDSCAPE BED

- REPLACEMENT TREE (GREEN)
- AB - TRIDENT MAPLE
- AR - BRANDYWINE RED MAPLE
- LS - FRUITLESS SWEETGUM
- NS - GREEN GABLE BLACKGUM
- QB - SWAMP WHITE OAK
- QN - NUTTALL OAK
- ZS - VILLAGE GREEN ZELKOVA
- PT - LOBLOLLY PINE
- AG - AUTUMN BRILLIANCE SERVICE BERRY
- CC - EASTERN REDBUD
- CMN - NATCHEZ CRAPE MYRTLE
- AH - AMERICAN HOLLY
- JV - EASTERN RED CEDAR
- IVN - DWARF YAUPON HOLLY
- IV - YAUPON HOLLY
- LC - RUBY LOROPETALUM
- HQ - OAKLEAF HYDRANGEA
- MC - WAX MYRTLE
- OF - FORTUNES TEA OLIVE
- HV - AMERICAN WITCH-HAZEL



LANDSCAPE CALCULATIONS

UDO SEC. 7.4.J. INTERIOR PARKING LOT LANDSCAPING

APPLICABILITY: PARKING LOTS WITH MORE THAN SIXTEEN (16) PARKING SPACES SHALL BE LANDSCAPED.

MINIMUM PLANTINGS: NO PARKING SPACE SHALL BE MORE THAN SIXTY (60) FEET FROM THE BASE OF A DECIDUOUS CANOPY TREE. IN ADDITION, LANDSCAPE AREAS SHALL BE PROVIDED AT THE END OF EACH PARKING ROW AND SHALL CONTAIN A DECIDUOUS CANOPY TREE.

PERFORMANCE STANDARDS: DECIDUOUS CANOPY TREES SHALL BE PLANTED IN A MANNER THAT PROVIDES SHADE FOR THE ENTIRE PARKING LOT AT MATURITY. EACH CANOPY TREE SHALL BE PROVIDED WITH A MINIMUM PERVIOUS GROUND AREA OF THREE-HUNDRED (300) SF FOR ADEQUATE ROOT GROWTH WHICH SHALL BE SEPARATED FROM PARKING SPACES BY AN EIGHTEEN (18) INCH STANDARD CURB AND GUTTER DESIGNED TO MINIMIZE DAMAGE BY VEHICLES TO PLANTS WITHIN THE LANDSCAPED AREA.

UDO SEC. 7.4.L. STREET TREE PLANTINGS

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.

STREET TREES SHALL BE PLACED AT LEAST TEN (10) FEET FROM LIGHT POLES AND TWELVE (12) FEET FROM ELECTRICAL TRANSFORMERS IN ORDER TO ALLOW THESE UTILITIES TO BE SAFELY SERVICED (UNDERSTORY TREES MAY BE PLACED WITHIN FIVE (5) FEET OF SUCH DEVICES).

STREET TREES SHALL BE DECIDUOUS HARDWOODS AND SHALL MEET THE CRITERIA SET FORTH IN SECTION 7.4 (C).

STREET TREE SPECIES MUST ALTERNATE TO MAXIMIZE DIVERSITY PER SECTION 7.4 (G).

KNIGHTDALE BLVD - 392 LF FRONTAGE
392 LF / 40 LF = 9.8 (10) STREET TREES REQUIRED/PROVIDED

METROLINER PL. (NORTH) - 333 LF FRONTAGE
333 LF /40 LF = 8.3 (8) STREET TREES REQUIRED/PROVIDED

METROLINER PL. (SOUTH) - 330 LF FRONTAGE
330 LF /40 LF = 8.2 (8) STREET TREES REQUIRED/PROVIDED

UDO SEC. 7.4.M. OVERALL TREE CANOPY

ALL NEW DEVELOPMENT ON LOTS OR PARCELS OVER TWO (2) ACRES MUST MEET THE FOLLOWING TREE COVER REQUIREMENT DURING THE INITIAL MASTER PLAN PROCESS: A TREE COVER AREA EQUAL TO THE PERIMETER OF THE DEVELOPMENT IN FEET MULTIPLIED BY TWENTY (20) SHALL BE MAINTAINED ON-SITE UP TO A MAXIMUM TREE COVER AREA CONSISTING OF TEN (10) PERCENT OF THE ENTIRE SITE. ANY REQUIRED LANDSCAPE BUFFER YARDS AND NEUSE RIVER BASIN RIPARIAN BUFFERS (NRBS) MAY BE CREDITED TOWARD THIS REQUIREMENT. IN THE EVENT THAT THE REQUIRED TREE COVER AREA CANNOT BE MET WITH THE REQUIRED LANDSCAPE BUFFER YARDS AND NRBS, ADDITIONAL SPACE MUST BE SET ASIDE. IN THIS ADDITIONAL SPACE, PREFERENCE IS GIVEN TO PRESERVING EXISTING TREES RATHER THAN UTILIZING NEW PLANTINGS.

EXISTING PARCEL PERIMETER = 2,037 LF
REQUIRED TREE COVER AREA = 2,037 X 20 = 40,740 SF / 0.94 AC (0.94 AC / 5.0 AC = 18.8%)
EXISTING PARCEL AREA = 217,652 SF
MAX. TREE COVER AREA (10%) = 217,652 SF X 0.1 = 21,765 SF / 0.50 AC

PRESERVED TREE COVER AREA #1 = 19,927 SF
PRESERVED TREE COVER AREA #2 = 4,315 SF
PRESERVED TREE COVER AREA #3 = 2,766 SF
PRESERVED TREE COVER AREA #4 = 3,216 SF
PRESERVED TREE COVER AREA TOTAL = 30,224 SF / 0.69 AC (0.69 AC / 5.0 AC = 13.8%)

UDO SEC. 7.4.I. BUFFERS

80% BUFFER SHRUBS MUST BE EVERGREEN

BUFFER S1-525 LF, 20' TYPE "B" BUFFER YARD
FOR EVERY ONE HUNDRED (100) LINEAR FEET, THERE SHALL BE AT LEAST THREE (3) CANOPY TREES, FIVE (5) UNDERSTORY TREES, AND TWENTY (20) SHRUBS.

525 LF X 20 = 10,500 SF BUFFER AREA
1,122 SF PRESERVED TREE AREA. 1,122 SF / 10,500 SF BUFFER AREA = 0.10, 90% TO BE PLANTED
CANOPY TREES (3/100 LF) 525LF X .03 = 15.7 (16) X .9 (90%) = 15 TREES REQUIRED/PROVIDED
UNDERSTORY TREES (5/100 LF) 525LF X .05 = 26.2 (27) X .9 (90%) = 25 TREES REQUIRED/PROVIDED
SHRUBS (20/100 LF) 525LF X .2 = (105) X .9 (90%) = 95 SHRUBS REQUIRED/PROVIDED (76 EVG)
TOTAL: 135 PLANTS

BUFFER E1-323 LF, 20' TYPE "B" BUFFER YARD
FOR EVERY ONE HUNDRED (100) LINEAR FEET, THERE SHALL BE AT LEAST THREE (3) CANOPY TREES, FIVE (5) UNDERSTORY TREES, AND TWENTY (20) SHRUBS.

323 LF X 20 = 6,460 SF BUFFER AREA
4,860 SF PRESERVED TREE AREA. 4,860 SF / 6,460 SF BUFFER AREA = 0.75, 25% TO BE PLANTED
CANOPY TREES (3/100 LF) 323LF X .03 = 9.6 (10) X .25 (25%) = 3 TREES REQUIRED/PROVIDED
UNDERSTORY TREES (5/100 LF) 323LF X .05 = 16.1 (17) X .25 (25%) = 5 TREES REQUIRED/PROVIDED
SHRUBS (20/100 LF) 323LF X .2 = 64.6 (65) X .25 (25%) = 17 SHRUBS REQUIRED/PROVIDED (14 EVG)
TOTAL: 25 PLANTS

BUFFER E2-250 LF, 30' TYPE "C" BUFFER YARD
FOR EVERY ONE HUNDRED (100) LINEAR FEET, THERE SHALL BE AT LEAST FIVE (5) CANOPY TREES, FIVE (5) UNDERSTORY TREES, AND TWENTY-FIVE (25) SHRUBS.

250 LF X 30 = 7,500 SF BUFFER AREA
6,619 SF PRESERVED TREE AREA. 6,619 SF / 7,500 SF BUFFER AREA = 0.88, 12% TO BE PLANTED
CANOPY TREES (5/100 LF) 250LF X .05 = 12.5 (13) X .12 (12%) = 2 TREES REQUIRED/PROVIDED
UNDERSTORY TREES (5/100 LF) 250LF X .05 = 12.5 (13) X .12 (12%) = 2 TREES REQUIRED/PROVIDED
SHRUBS (25/100 LF) 250LF X .25 = 62.5 (63) X .12 (12%) = 8 SHRUBS REQUIRED/PROVIDED (6 EVG)
TOTAL: 12 PLANTS

LUA RESERVES THE RIGHT TO REQUIRE ADDITIONAL PLANTINGS WITHIN ANY REQUIRED BUFFER AREA TO MEET THE PERFORMANCE STANDARDS OF SAID BUFFER.

UDO SEC. 7.5 SCREENING

(B) VEHICLE ACCOMMODATION AREA: FOR EVERY ONE HUNDRED (100) LINEAR FEET, THERE SHALL BE AT LEAST THREE (3) CANOPY TREES, TWO (2) UNDERSTORY TREES, AND TWENTY (20) SHRUBS.

METROLINER PLACE FRONTAGE: 103 LF
2 CANOPY TREES, 2 UNDERSTORY TREES AND 20 SHRUBS REQ/PROVIDED
TOTAL: 24 PLANTS

(E) TRASH RECEPTACLE: FOR EVERY ONE HUNDRED (100) LINEAR FEET THERE SHALL BE AT LEAST THREE (3) CANOPY TREES, FIVE (5) UNDERSTORY TREES, AND TWENTY (20) SHRUBS.

DUMPSTER WALL: 33.2 LF
CANOPY TREES (33.2/100 LF) = 0.3 X 3 = 1 TREES REQUIRED/PROVIDED
UNDERSTORY TREES (33.2/100 LF) = 0.3 X 5 = 1.7 (2) TREES REQUIRED/PROVIDED
SHRUBS (33.2/100 LF) = 0.3 X 20 = 6.6 (7) SHRUBS REQUIRED/PROVIDED
TOTAL: 10 PLANTS

UDO SEC. 7.4.H. TREE PROTECTION

SEE CALCULATION ON SHEET L-1 (54 REPLACEMENT TREES REQUIRED/PROVIDED)

PLANT SCHEDULE

KEY	QTY.	% TOTAL	BOTANICAL NAME	COMMON NAME	CAL.	HEIGHT	ROOT	COMMENTS
Note: 75% minimum salt and drought tolerant species.								
Note: No single species may comprise more than 20%; no single genus more than 25%.								
DECIDUOUS CANOPY TREE								
AB	9	3%	Acer buergerianum	Trident maple	2"	8-10'	B&B	Full, Straight, Single Leader
AR	11	4%	Acer rubrum 'Brandywine'	Brandywine red maple	2"	8-10'	B&B	Full, Straight, Single Leader
LS	19	6%	Liquidambar styraciflua 'Rotundiloba'	Fruitless sweetgum	2"	8-10'	B&B	Full, Straight, Single Leader
NS	8	3%	Nyssa sylvatica 'Green Gable'	Green Gable blackgum	2"	8-10'	B&B	Full, Straight, Single Leader
QB	8	3%	Quercus bicolor	Swamp white oak	2"	8-10'	B&B	Full, Straight, Single Leader
QN	10	3%	Quercus nuttallii	Nuttall oak	2"	8-10'	B&B	Full, Straight, Single Leader
ZS	11	4%	Zelkova serrata 'Village Green'	Village Green zelkova	2.5"	10-12'	B&B	Full, Straight, Single Leader
TOTAL	**76**							
EVERGREEN CANOPY TREE								
PT	14	5%	Pinus taeda	Loblolly pine	-	6' Min.	Cont.	Full, Straight, Single Leader
TOTAL	**14**							
DECIDUOUS UNDERSTORY TREE								
AG	18	6%	Amelanchier X grandiflora 'Autumn Brilliance'	Autumn Brilliance service berry	-	8' Min.	B&B	Multistem, 3 Leaders
CC	11	4%	Cercis canadensis	Eastern redbud	1.5"	8' Min.	B&B	Full, Straight, Single Leader
CMN	10	3%	Lagerstroemia Indica 'Natchez'	Natchez crape myrtle	1.5"	6'	B&B	Full, Straight, Single Leader
TOTAL	**39**							
EVERGREEN UNDERSTORY TREE								
AH	6	4%	Ilex opaca	American holly	-	6' Min.	Cont.	Full, Match, Tree Form
JV	21	7%	Juniperus virginiana	Eastern red cedar	-	6' Min.	Cont.	Full, Match
TOTAL	**27**							
DECIDUOUS & EVERGREEN SHRUBS								
IVN	27	9%	Ilex vomitoria 'Nana'	Dwarf Yaupon holly	-	24" Min.	Cont.	Full, Match
IV	57	19%	Ilex vomitoria	Yaupon holly	-	24" Min.	Cont.	Full, Match
LC	21	7%	Loropetalum chinense 'Rubrum'	Ruby loropetalum	-	18" Min.	Cont.	Full, Match
HQ	9	3%	Hydrangea quercifolia	Oak Leaf Hydrangea	-	18" Min.	Cont.	Full, Match
MC	21	7%	Myrica cerifera	Wax myrtle	-	24" Min.	Cont.	Full, Match
OF	9	3%	Osmanthus X fortunei	Fortune's tea olive	-	24" Min.	Cont.	Full, Match
HV	5	2%	Hamamelis virginiana	American witch-hazel	-	18" Min.	Cont.	Full, Match
TOTAL	**149**							

LANDSCAPE PLAN NOTES

1. ALL PLANT MATERIAL ON THIS SITE MUST MEET MINIMUM TOWN OF KNIGHTDALE UDO REQUIREMENTS FOR SIZE, HEIGHT, AND SPACING. PLANT MATERIAL SHALL BE INSTALLED ACCORDING TO SOUND NURSERY PRACTICES AND IN CONFORMANCE WITH THE GENERAL PLANTING NOTES AND DETAILS WITHIN THIS PLAN SET.
2. PLANTING STOCK SHALL MEET ALL STANDARDS WITHIN THE LATEST EDITION OF "AMERICAN STANDARDS FOR NURSERY STOCK." ALL PLANTS SHALL BE VIGOROUS, HEALTHY MATERIAL FREE FROM PESTS AND DISEASE.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW THE PROJECT SITE AND FAMILIARIZE WITH ACTUAL FIELD CONDITIONS PRIOR TO BIDDING AND COMMENCING WORK. THE CONTRACTOR SHALL ACCEPT ACTUAL CONDITIONS AT THE SITE AND PERFORM THE WORK SPECIFIED INCLUDING THE FINE GRADING AND INCORPORATION OF TOPSOIL INTO PLANTING AREAS, WITHOUT ADDITIONAL COMPENSATION FOR POSSIBLE VARIATIONS FROM GRADES AND CONDITIONS SHOWN WEATHER SURFACE OR SUBSURFACE. IF FIELD CONDITIONS ARE FOUND TO BE SIGNIFICANTLY DIFFERENT THE CONTRACTOR SHALL NOTIFY THE PROJECT LANDSCAPE ARCHITECT OR ENGINEER IMMEDIATELY AND PRIOR TO ORDERING MATERIALS.
4. CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED PERMITS TO PERFORM THE WORK.
5. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES ABOVE AND BELOW GROUND AND SHALL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM THEIR ACTIVITIES. CONTRACTOR SHALL NOTIFY NORTH CAROLINA ONE CALL (1-800-632-4949) AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR TO CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF NORTH CAROLINA ONE CALL. THE CONTRACTOR MAY ALSO NEED TO ENGAGE A PRIVATE UTILITY LOCATING FIRM AT THEIR OWN COST TO EFFICIENTLY HAVE ALL UTILITIES LOCATED.
6. ANY DAMAGE TO EXISTING IMPROVEMENTS OUTSIDE OF THE PROJECT LIMITS, INCLUDING CURB AND GUTTER, SIDEWALKS, PAVED OR TURF AREAS SHALL BE REPAIRED TO ORIGINAL CONDITIONS BY THE CONTRACTOR WITHOUT ADDITIONAL COST TO THE DEVELOPER.
7. PLANT QUANTITIES TO BE VERIFIED BY LANDSCAPE CONTRACTOR. IN THE EVENT OF A DISCREPANCY BETWEEN THE QUANTITY OF PLANTS SHOWN ON THE PLANS AS COMPARED TO THE PLANT LIST THE CONTRACTOR SHALL PROVIDE THE QUANTITY SHOWN ON THE PLANS.
8. CONTRACTOR SHALL OBTAIN WRITTEN AUTHORIZATION FROM THE LANDSCAPE ARCHITECT FOR ANY PLANT SUBSTITUTIONS OR MODIFICATIONS TO THE LANDSCAPE PLANS. THIS MAY REQUIRE A MODIFICATION TO THE APPROVED PLANS. NOTIFY THE LANDSCAPE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES ON THE PLANS.
9. ALL ABOVE GROUND MECHANICAL EQUIPMENT, ELECTRICAL TRANSFORMERS, DUMPSTERS, BACKFLOW PREVENTERS, AND VALVE BOXES SHALL BE SCREENED FROM VIEW OF ADJACENT PROPERTIES AND RIGHT-OF-WAY WHILE MAINTAINING REQUIRED ACCESS TO LOCAL CODE STANDARDS AND REQUIREMENTS.
10. WITHIN THE SIGHT TRIANGLES SHOWN ON THIS PLAN, NO OBSTRUCTIONS BETWEEN TWO FEET AND EIGHT FEET IN HEIGHT ABOVE THE NEAREST VEHICLE SURFACE OR ADJACENT CURB LINE SHALL BE ALLOWED.
11. ALL UNPAVED AREAS SHALL BE TOPSOILED AND SEEDED / SODDED OR MULCHED TO THE LIMITS OF CONSTRUCTION BASED ON ACTUAL FIELD CONDITIONS BEYOND THE APPROVED PLANS.
12. ALL SOD TO BE REBEL FESCUE IV, TURF GEM, LESCO OR EQUAL. ALL SEED TO BE REBEL FESCUE IV, TURF GEM, LESCO OR EQUAL @ 6 LBS. PER 1000 S.F. IN LAWN AREAS 3" TOPSOIL SHALL BE TILLED INTO THE TOP 6" OF GROUND PRIOR TO SEEDING.
13. SLOPES GREATER THAN 3:1 SHALL REQUIRE HYDRO-SEEDING. SLOPES GREATER THAN 2:1 SHALL BE SODDED WITH CENTIPEDE GRASS. ADDITIONAL STABILIZATION MEASURES MAY BE REQUIRED FOR SLOPES GREATER THAN 3:1 TO ENSURE SOIL STABILIZATION AND ESTABLISHMENT OF PERMANENT GROUND COVER.
14. INTERIOR MULCH SHALL BE DOUBLE GROUND PINE BARK TO A DEPTH OF 4". PERIMETER LANDSCAPE BUFFERS SHALL BE MULCHED WITH 4" PINE STRAW TO BED LINES SHOWN OR BUFFER LIMITS, BED LINES SHALL CONFORM TO CONFIGURATION SHOWN ON THE PLANS.
15. PINE STRAW SHALL NOT BE USED AS MULCH OR GROUNDCOVER WITHIN TEN FEET OF ANY STRUCTURES CONSISTING OF EXTERIOR COMBUSTIBLE CONSTRUCTION.
16. CONTRACTOR SHALL LEVEL AND SMOOTH ALL DISTURBED AREAS AND REMOVE ALL ROCKS AND CONSTRUCTION DEBRIS PRIOR TO SEEDING, SOD OR PLANT INSTALLATION.
17. NOTE THAT WITHIN LANDSCAPED AREAS SURROUNDING BUILDING, THE GRADES SHOWN ON THE GRADING SHEET ARE "TOP OF MULCH" OR "TOP OF TOPSOIL." CONTRACTOR SHALL ENSURE POSITIVE FINISHED DRAINAGE (MIN. 2%) AWAY FROM ALL BUILDINGS AND COORDINATE WITH THE LANDSCAPE PLAN TO LEAVE SUBGRADE LOW ENOUGH TO MAINTAIN THESE SPOTS AS FINISHED GRADE.
18. OWNER SHALL MAINTAIN ALL PLANT BEDS AND PLANT MATERIAL IN GOOD HEALTH, AND ANY DEAD, UNHEALTHY OR MISSING PLANTS SHALL BE REPLACED WITH THE SAME PLANT MATERIAL ORIGINALLY SPECIFIED ON THIS PLAN.
19. TREE PLANTING AND SITE LIGHTING SHALL BE SEPARATED BY AT LEAST 10 FEET.

LANDSCAPE SCOPE OF WORK

1. FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED OR INDICATED BY THE DRAWINGS AND SPECIFICATIONS TO COMPLETE THE WORK INCLUDING INSTALLATION OF ALL TREES, SHRUBS, GROUNDCOVER, ANNUALS, SEED, SOD AND MULCH.
2. MATERIALS AND WORK:
   THE SELECTION OF ALL MATERIALS AND THE EXECUTION OF ALL WORK REQUIRED UNDER THE CONTRACT SHALL BE SUBJECT TO APPROVAL BY THE OWNER. THE OWNER SHALL HAVE THE RIGHT TO REJECT ANY AND ALL MATERIALS AND ANY AND ALL WORK, WHICH IN HIS OPINION, DOES NOT MEET THE REQUIREMENTS OF THE CONTRACT.
3. PLANT MATERIALS:
   ALL PLANT MATERIALS SHALL BE NURSERY GROWN, FRESHLY DUG IN THE FIELD, NATURALLY SHAPED, WELL BRANCHED, FULLY FOLIATED WHEN IN LEAF WITH FULLY DEVELOPED ROOT SYSTEMS. TREES MUST BE SELF-SUPPORTING, WITH STRAIGHT TRUNKS AND LEADERS INTACT. ALL PLANTS MUST BE FREE OF DISEASE, INSECT INFESTATION OR THEIR EGGS AND SHALL HAVE BEEN GROWN IN CLIMATIC CONDITIONS SIMILAR TO THOSE OF THE PROJECT SITE
4. PLANT SIZE:
   SPECIFIED SIZES INDICATES THE MINIMUM ALLOWABLE SIZE AT PLANTING. WHERE CONTAINER AND HEIGHT/SPREADS ARE INDICATED FOR A SINGLE SPECIES, BOTH SIZE REQUIREMENTS SHALL BE MET WHEN ONLY PLANT HEIGHT OR SPREAD ARE INDICATED, CONTAINER SIZE SHALL BE BASED ON "AMERICAN STANDARDS FOR NURSERY STOCK" STANDARDS.
5. ORGANIC MATTER:
   AGED MANURE, COMPOST OR PINE BARK FINES, AT THE OPTION OF THE CONTRACTOR, MATERIAL SHALL BE AIR DRIED, FINELY SHREDDED AND SUITABLE FOR HORTICULTURAL PURPOSES AND SHALL CONTAIN NO MORE THAN 35% MOISTURE CONTENT BY WEIGHT.
6. PINE BARK MULCH:
   ALL PINE BARK MULCH SHALL BE CLEAN, DOUBLE GROUND, FINE TEXTURED NUGGET MULCH WITH MINIMAL AMOUNTS OF SAPWOOD CONTENT.
7. TURF AREAS:
   PRIOR TO ANY SEEDING OR SOD APPLICATION, VERIFY THAT ALL TRENCHING AND LAND DISTURBING ACTIVITIES HAVE BEEN COMPLETED. ENSURE ALL AREAS ARE FREE OF STONES, LARGE SOIL CLODS AND ANY OTHER CONSTRUCTION DEBRIS.

N W E S

1 L-4.0 LANDSCAPE PLAN
SCALE: 1"=40'

40' 20' 0 40' 80'
SCALE: 1" = 40'

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

TMTLA ASSOCIATES
LANDSCAPE ARCHITECTURE & LAND PLANNING
5011 SOUTHPARK DRIVE, STE.200-DURHAM, NC 27713
p: (919) 484-8880 e: info@tmtla.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No. C-551 PORTLAND DESIGN PLLC
DBA TMTLA ASSOCIATES

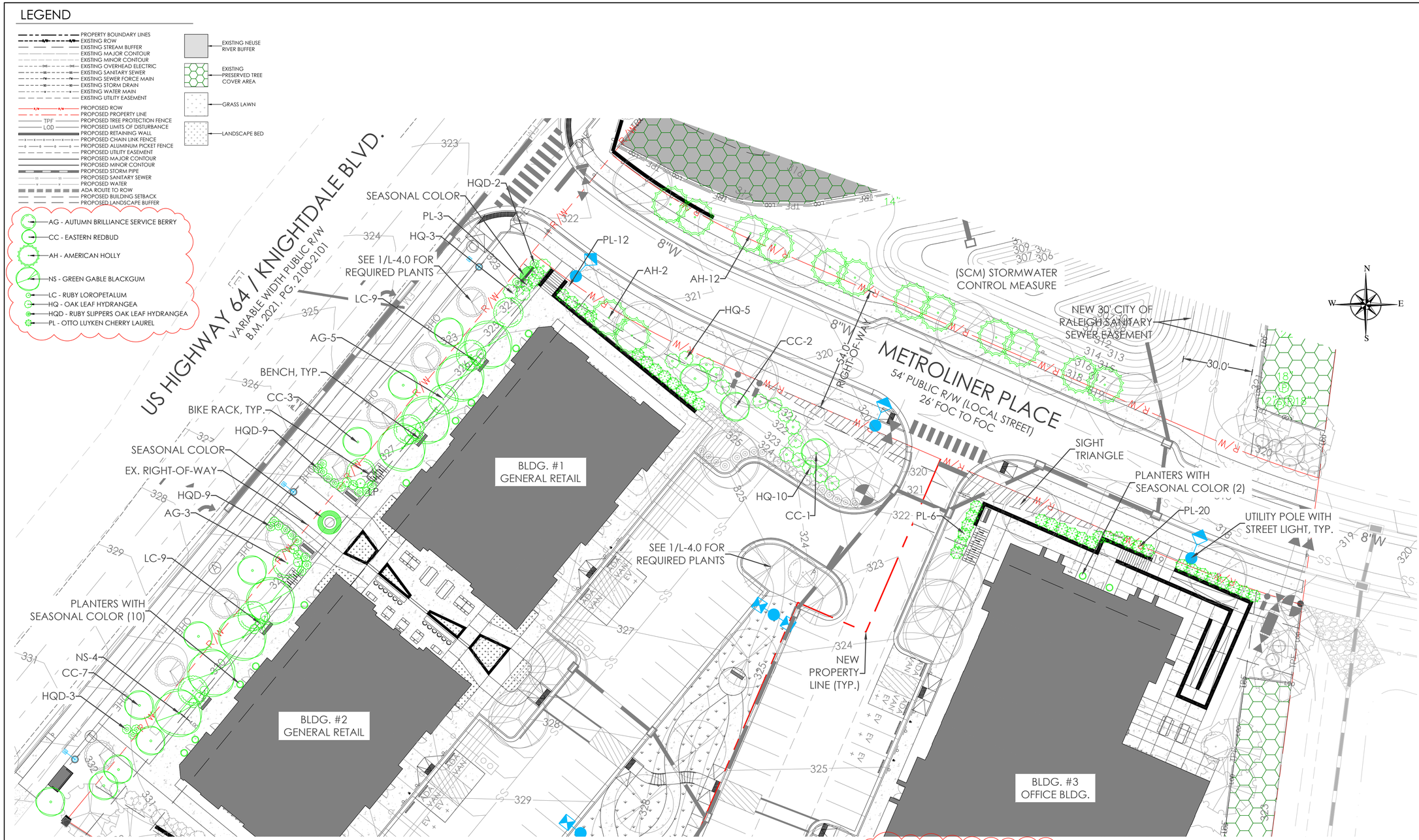
NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1826 ANDREW J. PORTER

3-6-2026
PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS:
1. ToK Sketch Plan 1st review Comments 2024-10-14
2. ToK Sketch Plan 2nd review Comments 2025-11-24
3. ToK Master Plan 1st review Comments 2026-3-6

LANDSCAPE PLAN
7800 KNIGHTDALE BLVD.
7800 KNIGHDALE BLVD
KNIGHTDALE, NC 27545
TOK PROJECT #ZCP-7-24

SCALE: AS NOTED
DRAWN BY: AJP
PROJECT # 24029
DATE: 11/13/2025
SHEET L-4.0
OF



1 L-4.1 ENHANCED ROADSIDE LANDSCAPE
SCALE: 1"=20'

20' 10' 0 20' 40'
SCALE: 1" = 20'

CONCRETE PLANTER, TYP.



OWNER TO SELECT

ENHANCED PLANT SCHEDULE

KEY	QTY.	TYPE	BOTANICAL NAME	COMMON NAME	CAL.	HEIGHT	ROOT	COMMENTS
AG	8	UND. TREE	Amelanchier X grandiflora 'Autumn Brilliance'	Autumn Brilliance service berry	-	8' Min.	B&B	Multistem, 3 Leaders
CC	13	UND. TREE	Cercis canadensis	Eastern redbud	1.5"	8' Min.	B&B	Full, Straight, Single Leader
AH	14	EVG. TREE	Ilex opaca	American holly	-	6' Min.	Cont.	Full, Match, Tree Form
NS	8	CAN. TREE	Nyssa sylvatica 'Green Gable'	Green Gable blackgum	2"	8-10'	B&B	Full, Straight, Single Leader
LC	18	SHRUB	Loropetalum chinense 'Rubrum'	Ruby loropetalum	-	18" Min.	Cont.	Full, Match
HQ	18	SHRUB	Hydrangea quercifolia	Oak Leaf Hydrangea	-	18" Min.	Cont.	Full, Match
HQD	23	SHRUB	Hydrangea quercifolia 'Ruby Slippers'	Ruby Slippers Oak Leaf Hydrangea	-	12" Min.	Cont.	Full, Match, Dwarf form
PL	41	SHRUB	Prunus laurocerasus 'Otto Luyken'	Otto Luyken Cherry laurel	-	18" Min.	Cont.	Full, Match

APPROVED MASTER PLAN
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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No. C-551 TIMOTHY R. TERRELL PORTLAND DESIGN PLLC
DBA TMTLA ASSOCIATES

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1826 ANDREW J. PORTER

3-6-2026
PRELIMINARY NOT FOR CONSTRUCTION

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ENHANCED ROADSIDE LANDSCAPE
7800 KNIGHTDALE BLVD.
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KNIGHTDALE, NC 27545
TOK PROJECT #ZCP-7-24

SCALE: AS NOTED
DRAWN BY: AJP
PROJECT # 24029
DATE: 11/13/2025
SHEET L-4.1
OF

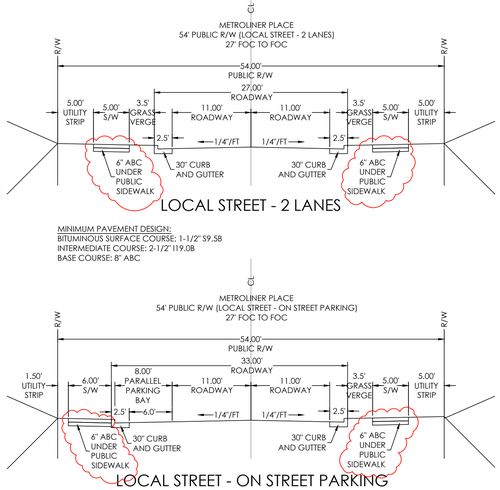
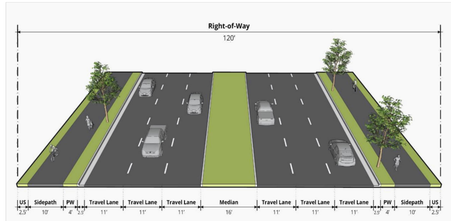
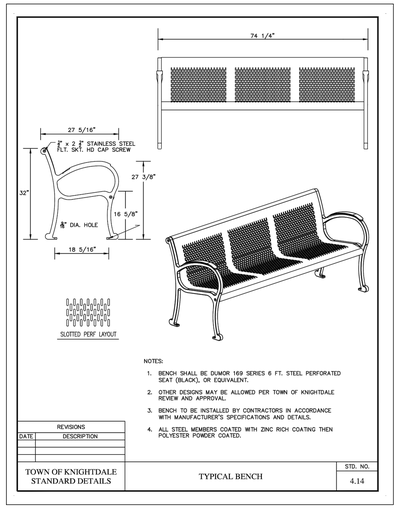
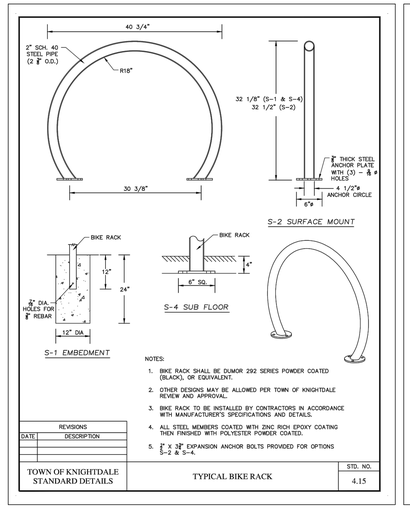
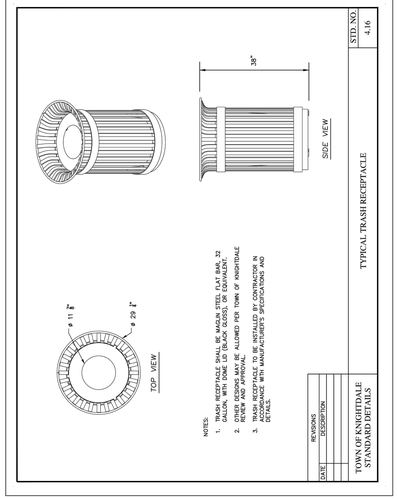


Figure 10.13: 6 Lane Boulevard Cross Section Standards – Sidepath









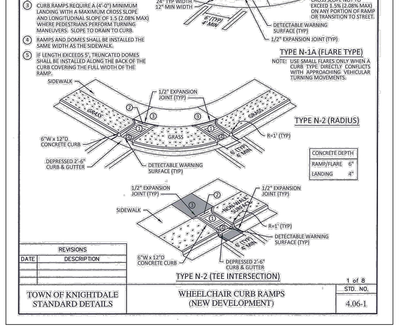
1 L-5.0 LOCAL STREET - SECTIONS
NTS
METROLINER PLACE

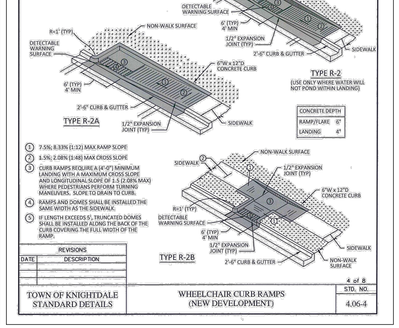
2 L-5.0 6-LANE BOULEVARD - SECTION
NTS
KNIGHTDALE BLVD.

3 L-5.0 6' BENCH
NTS

4 L-5.0 BIKE RACK
NTS

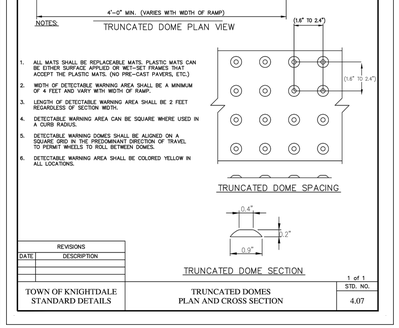
5 L-5.0 TRASH RECEPTACLE
NTS





1. KNIGHTDALE STANDARD CURB RAMPS HAVE BEEN DEVELOPED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) AND PUBLIC RIGHT OF WAY ACCESS GUIDELINES (PROWAG).
2. CURB RAMPS SHALL BE PROVIDED AT LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SIDEWALK ACCESS RAMPS SHALL BE LOCATED AS INDICATED IN THE DETAIL, HOWEVER, THE LOCATION MAY BE ADJUSTED IN COORDINATION WITH THE TOWN OF KNIGHTDALE WHERE EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. AFFECT PLACEMENT.
3. DOUBLE WHEELCHAIR RAMPS ARE TO BE INSTALLED AT ALL PUBLIC STREET INTERSECTIONS WHERE SIDEWALK IS REQUIRED.
4. THE WALKING SURFACE SHALL BE SLIP RESISTANT, THE COLOR FOR THE DETECTABLE WARNING AREA SHALL BE YELLOW FOR CONTRAST.
5. NO SLOPE ON THE SIDEWALK ACCESS RAMP SHALL EXCEED 1"/FT (12:1) IN RELATIONSHIP TO THE GRADE OF THE STREET.
6. ALL RAMPS SHALL BE INSTALLED THE SAME WIDTH AS THE SIDEWALK IN NO CASE SHALL THE WIDTH OF THE SIDEWALK ACCESS RAMP BE LESS THAN 48".
7. USE CLASS A (3000 PSI) CONCRETE WITH A SIDEWALK FINISH IN ORDER TO OBTAIN A ROUGH NONSKID SURFACE.
8. A 1/2" EXPANSION JOINT INSTALLED FULL DEPTH WILL BE REQUIRED WHERE THE CONCRETE SIDEWALK ACCESS RAMP JOINS THE CURB AND ALSO WHERE NEW CONCRETE ABUTS EXISTING CONCRETE.
9. CURB RAMPS SHOULD BE PLACED PARALLEL TO THE DIRECTION OF TRAVEL.

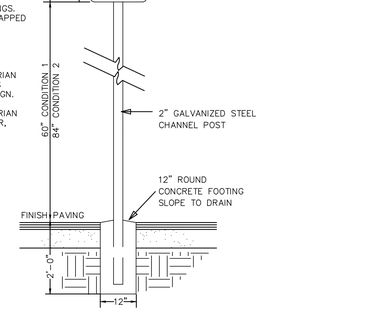
REVISIONS
DATE
DESCRIPTION
TOWN OF KNIGHTDALE STANDARD DETAILS
WHEELCHAIR CURB RAMP NOTES
7 of 8
STD. NO.
4.06-7



NOTES:
1. ALL ACCESSIBLE SPACES SHALL BE IDENTIFED BY ABOVE-GROUND SIGNS.
2. ALL SIGNAGE SHALL CONFORM TO THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
3. NEW SPACES SHALL NOT USE GROUND PAINTED SYMBOLS.
4. INSTALL QUANTITY AND AT LOCATIONS REQUIRED BY CODE AND/OR AS INDICATED ON DRAWINGS. CONFIRM ALL HANDICAPPED SIGNAGE CODES.

CONDITION 1: PEDESTRIAN PATH DOES NOT PASS UNDER OR AROUND SIGN.

CONDITION 2: PEDESTRIAN PATH GOES BY, UNDER, OR AROUND SIGN.



6 L-5.0 WHEELCHAIR CURB RAMPS
NTS

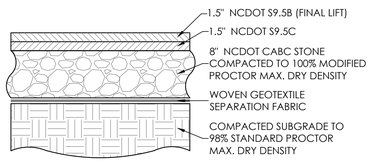
7 L-5.0 WHEELCHAIR CURB RAMP NOTES
NTS

8 L-5.0 TRUNCATED DOMES
NTS

9 L-5.0 ADA PARKING SIGN
NTS

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

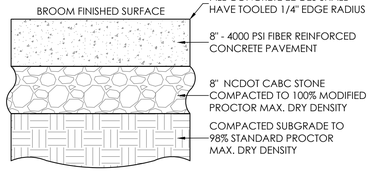
NOTES:
1. PROVIDE 3/4" DEEP TOOLED SCORE /CONTROL JOINT AT 10' O.C.
2. EXPANSION JOINTS & JOINT SEALER TO BE PLACED 30' O.C. LONGITUDINALLY, ADJACENT TO CURBS, AND WHEN ABUTTING STRUCTURES OR PAVEMENTS.



NOTE: GEOTECHNICAL ENGINEER TO REVIEW SITE CONDITIONS AND PROVIDE RECOMMENDATIONS FOR FINAL PAVEMENT SECTION.

10 L-5.0 HEAVY DUTY ASPHALT PAVEMENT
NTS

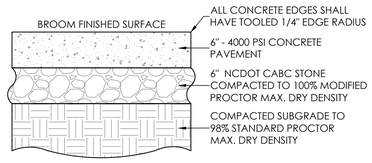
NOTES:
1. PROVIDE 3/4" DEEP TOOLED SCORE /CONTROL JOINT AT 10' O.C.
2. EXPANSION JOINTS & JOINT SEALER TO BE PLACED 30' O.C. LONGITUDINALLY, ADJACENT TO CURBS, AND WHEN ABUTTING STRUCTURES OR PAVEMENTS.



NOTE: GEOTECHNICAL ENGINEER TO REVIEW SITE CONDITIONS AND PROVIDE RECOMMENDATIONS FOR FINAL PAVEMENT SECTION.

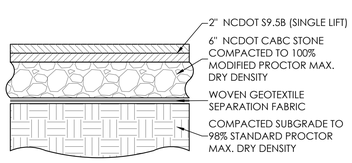
11 L-5.0 HEAVY DUTY CONCRETE PAVEMENT
NTS

NOTES:
1. PROVIDE 3/4" DEEP TOOLED SCORE /CONTROL JOINT AT 10' O.C.
2. EXPANSION JOINTS & JOINT SEALER TO BE PLACED 30' O.C. LONGITUDINALLY, ADJACENT TO CURBS, AND WHEN ABUTTING STRUCTURES OR PAVEMENTS.



NOTE: GEOTECHNICAL ENGINEER TO REVIEW SITE CONDITIONS AND PROVIDE RECOMMENDATIONS FOR FINAL PAVEMENT SECTION.

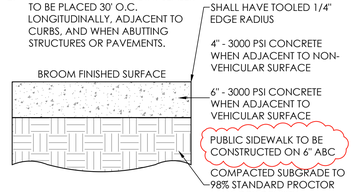
12 L-5.0 STANDARD CONCRETE PAVEMENT
NTS



NOTE: GEOTECHNICAL ENGINEER TO REVIEW SITE CONDITIONS AND PROVIDE RECOMMENDATIONS FOR FINAL PAVEMENT SECTION.

13 L-5.0 STANDARD ASPHALT PAVEMENT
NTS

NOTES:
1. PROVIDE 3/4" DEEP TOOLED SCORE /CONTROL JOINT AT 5' O.C.
2. EXPANSION JOINTS & JOINT SEALER TO BE PLACED 30' O.C. LONGITUDINALLY, ADJACENT TO CURBS, AND WHEN ABUTTING STRUCTURES OR PAVEMENTS.



NOTE: GEOTECHNICAL ENGINEER TO REVIEW SITE CONDITIONS AND PROVIDE RECOMMENDATIONS FOR FINAL PAVEMENT SECTION.

14 L-5.0 CONCRETE SIDEWALK
NTS

TMTLA ASSOCIATES
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5011 SOUTHPARK DRIVE, STE.200-DURHAM, NC 27713
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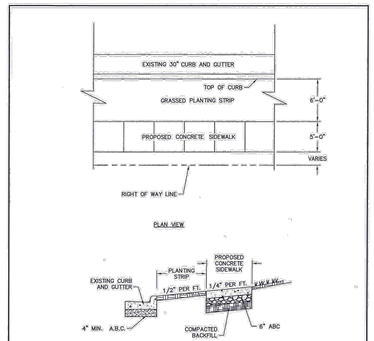
NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No. C-551 PORTLAND DESIGN PLLC
DBA TMTLA ASSOCIATES

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1826 ANDREW J. PORTER
3-6-2026
PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS:
1. ToK Sketch Plan 1st review Comments 2024-10-14
2. ToK Sketch Plan 2nd review Comments 2025-11-24
3. ToK Master Plan 1st review Comments 2026-3-6

SITE DETAILS
7800 KNIGHTDALE BLVD.
7800 KNIGHTDALE BLVD
KNIGHTDALE, NC 27545
TOK PROJECT #ZCP-7-24

SCALE: AS NOTED
DRAWN BY: AJP
PROJECT # 24029
DATE: 11/13/2025
SHEET L-5.0
OF

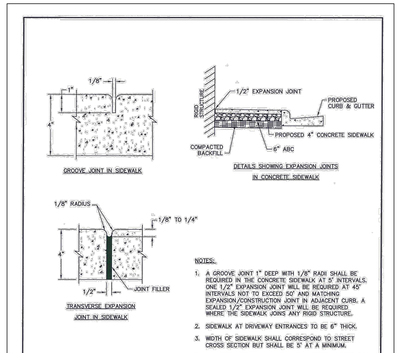


NOTES:
1. TRANSVERSE EXPANSION JOINTS TO BE A MAXIMUM OF 50 FEET APART.
2. CONTROL JOINTS TO BE AT 5 FEET O.C.
3. ALL CONCRETE TO BE FINISHED WITH CURING COMPOUND.

REVISIONS	
DATE	DESCRIPTION

1 of 2

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



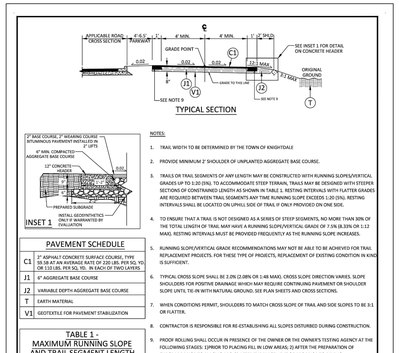
NOTES:
1. A GROOVE JOINT 1" DEEP WITH 1/8" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 45' INTERVALS NOT TO EXCEED 50' AND MATCHING EXPANSION/CONSTRUCTION JOINT IN ADJACENT CURB. A SEALED 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE 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	
DATE	DESCRIPTION

2 of 2

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

1 CONCRETE SIDEWALKS
L-5.1 NTS



PAVEMENT SCHEDULE	
C1	3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, PG 64-22 OR PG 70-22 OR PG 76-22 OR PG 82-16 OR 131.00, 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

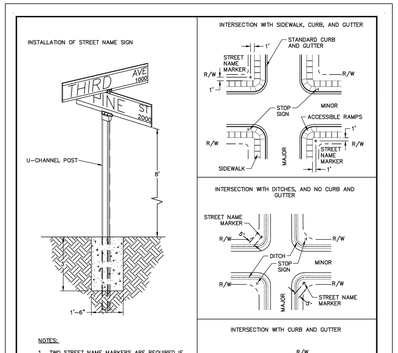
TABLE 1 - MAXIMUM RUNNING SLOPE AND TRAIL SEGMENT LENGTH	
RUNNING SLOPE	MAX LENGTH OF SEGMENT
1:20 (5%)	200 FT
1:12(8.33%)	30 FT

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% (6.33% OR 1:13 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 ON 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 3:1 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 SOIL IS PRESENT.

REVISIONS	
DATE	DESCRIPTION

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

2 ASPHALT SIDEPATH
L-5.1 NTS

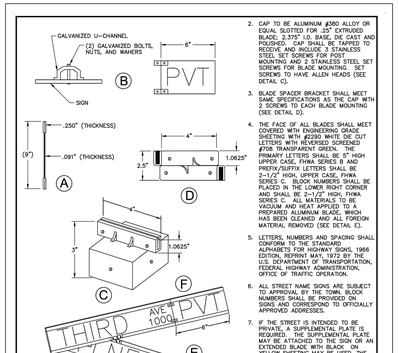


NOTES:
1. TWO STREET NAME MARKERS ARE REQUIRED IF THE MAJOR STREET HAS 3 OR MORE LANES.
2. ANY VARIANCE FROM THIS STANDARD MUST BE APPROVED BY THE TOWN OF KNIGHTDALE.
3. ALL DECORATIVE SIGNS MUST BE REVIEWED AND APPROVED BY THE TOWN.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	STREET NAME SIGN INSTALLATION LOCATIONS	STD. NO. 3.16-1

3 STREET NAME SIGN
L-5.1 NTS



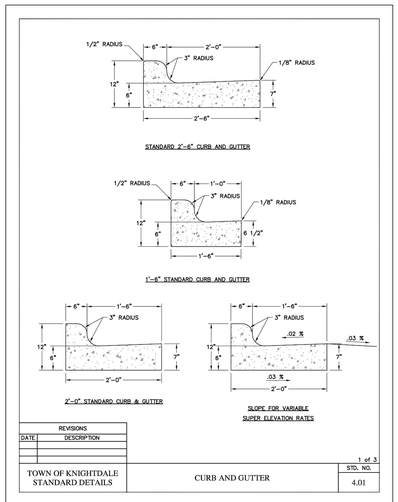
2. CAP TO BE ALUMINUM #380 ALLOY OR EQUAL SLOTTED FOR .25" EXTRUDED BLADE, 2.375" I.D. BASE, DIE CAST AND POLISHED. CAP SHALL BE TAPPED TO RECEIVE AND INCLUDE 3 STAINLESS STEEL SET SCREWS FOR POST MOUNTING AND 2 STAINLESS STEEL SET SCREWS FOR BLADE MOUNTING. SET SCREWS TO HAVE ALLEN HEADS (SEE DETAIL C).
3. BLADE SPACER BRACKET SHALL MEET SAME SPECIFICATIONS AS THE CAP WITH 2 SCREWS TO EACH BLADE MOUNTING (SEE DETAIL D).
4. THE FACE OF ALL BLADES SHALL MEET COMPLIED WITH ENGINEERING GRADE SHEETING WITH #2390 WHITE DIE CUT LETTERS WITH REVERSED SCREENED #708 TRANSPARENT GREEN. THE PRIMARY LETTERS SHALL BE 6" HIGH UPPER CASE, FHWA SERIES B AND PREFIX/SUFFIX LETTERS SHALL BE 2-1/2" HIGH, UPPER CASE, FHWA SERIES C. BLOCK NUMBERS SHALL BE PLACED IN THE LOWER RIGHT CORNER AND SHALL BE 2-1/2" HIGH, FHWA SERIES C. ALL LETTERS SHALL BE VACUUM AND HEAT APPLIED TO A PREPARED ALUMINUM BLADE, WHICH HAS BEEN CLEANED AND ALL FOREIGN MATERIAL REMOVED (SEE DETAIL E).
5. LETTERS, NUMBERS AND SPACING SHALL CONFORM TO THE STANDARD ALPHABETS FOR HIGHWAY SIGNS, 1966 EDITION, REPRINT MAY, 1972 BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, OFFICE OF TRAFFIC OPERATION.
6. ALL STREET NAME SIGNS ARE SUBJECT TO APPROVAL BY THE TOWN. BLOCK NUMBERS SHALL BE PROVIDED ON SIGNS AND CORRESPOND TO OFFICIALLY APPROVED ADDRESSES.
7. IF THE STREET IS INTENDED TO BE PRIVATE, A SUPPLEMENTAL PLATE IS REQUIRED. THE SUPPLEMENTAL PLATE MAY BE ATTACHED TO THE SIGN OR AN ADJACENT POST AND SHALL BE A 6" YELLOW SHEETING MAY BE USED. THE SIGN SHALL HAVE BLACK LETTERS THAT SHOW PVT TO STAND FOR PRIVATE. THE LETTERS SHALL BE 2-1\2" HIGH, UPPER CASE, FHWA SERIES C, ON A BACKGROUND OF YELLOW ENGINEERING GRADE SHEETING. (SEE DETAIL F).
8. ON ALL ROADWAYS EXCEPT STREETS WITH STANDARD CURB AND GUTTER AND SPEED LIMITS EQUAL TO OR LESS THAN 25 MPH, ALL SIGNS WITHIN CLEAR ZONE SHALL BE OF A BREAKAWAY DESIGN THAT COMPLIES WITH THE LATEST EDITION OF AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE. (MASH)AND NCHRP REPORT 350.

NOTES:
1. BLADES SHALL BE EXTRUDED ALUMINUM 606375 OR 606376 ALLOY .080" THICK. POST SHALL BE 10'-0" IN LENGTH, 3 LB. STEEL U-CHANNEL. SUPPORTS PER NCDOT STD. 1094-1(B)

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	STREET NAME SIGN	STD. NO. 3.16-2

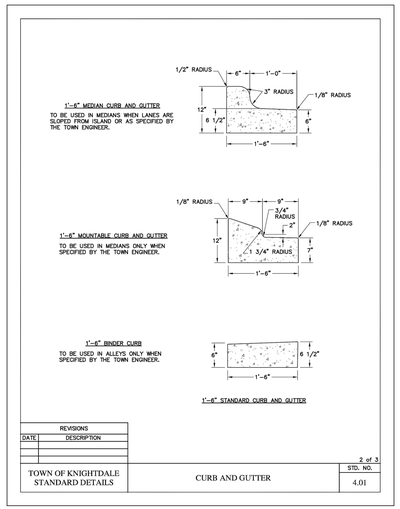
6 ASPHALT PAVEMENT PATCH
L-5.1 NTS



REVISIONS	
DATE	DESCRIPTION

1 of 3

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

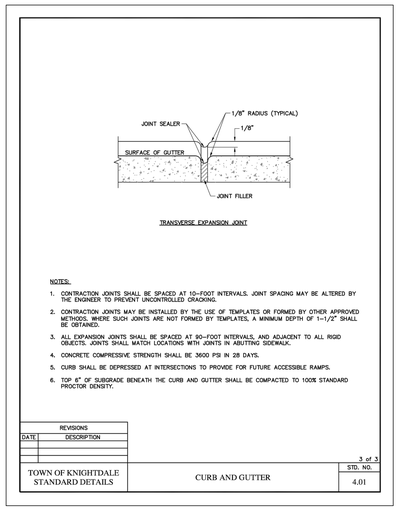


REVISIONS	
DATE	DESCRIPTION

2 of 3

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

4 CURB AND GUTTER
L-5.1 NTS



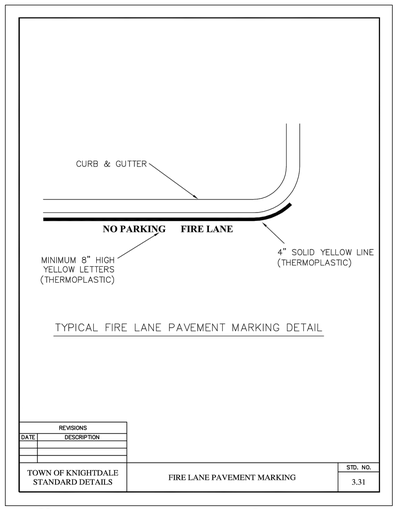
NOTES:
1. CONTRACTION JOINTS SHALL BE SPACED AT 10-FOOT INTERVALS. JOINT SPACING MAY BE ALTERED BY THE ENGINEER TO PREVENT UNCONTROLLED CRACKING.
2. CONTRACTION JOINTS MAY BE INSTALLED BY THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS, WHERE SUCH JOINTS ARE NOT FORMED BY TEMPLATES, A MINIMUM DEPTH OF 1-1/2" SHALL BE OBTAINED.
3. ALL EXPANSION JOINTS SHALL BE SPACED AT 80--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 8" 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

4 CURB AND GUTTER
L-5.1 NTS

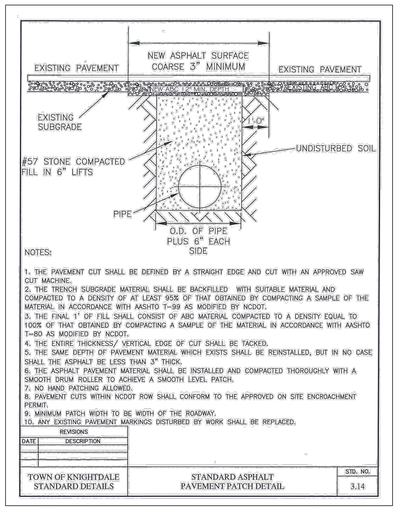


TYPICAL FIRE LANE PAVEMENT MARKING DETAIL

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	FIRE LANE PAVEMENT MARKING	STD. NO. 3.31

5 FIRE LANE MARKING
L-5.1 NTS

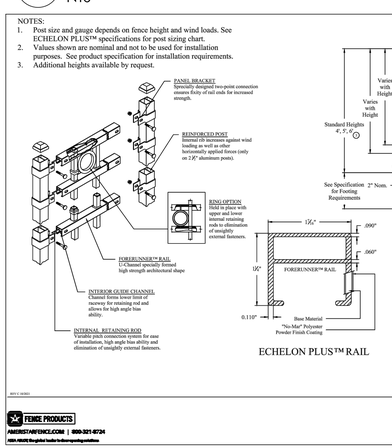


NOTES:
1. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROVED SAW CUT MACHINE.
2. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO 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

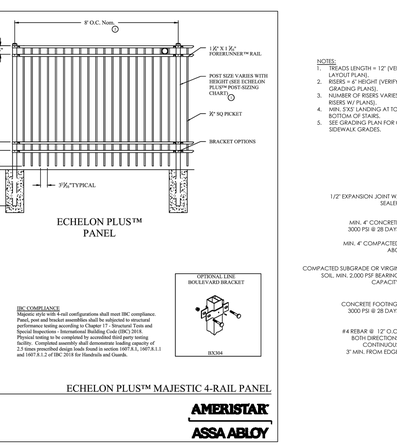
6 ASPHALT PAVEMENT PATCH
L-5.1 NTS



REVISIONS	
DATE	DESCRIPTION

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

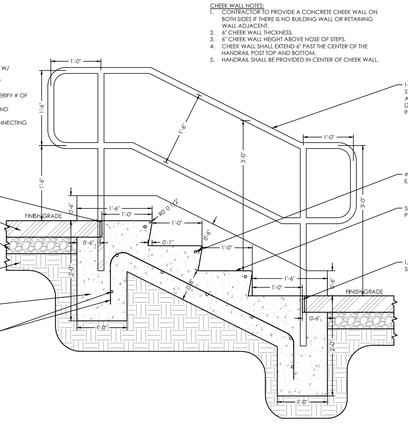
4 CURB AND GUTTER
L-5.1 NTS



REVISIONS	
DATE	DESCRIPTION

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

4 CURB AND GUTTER
L-5.1 NTS

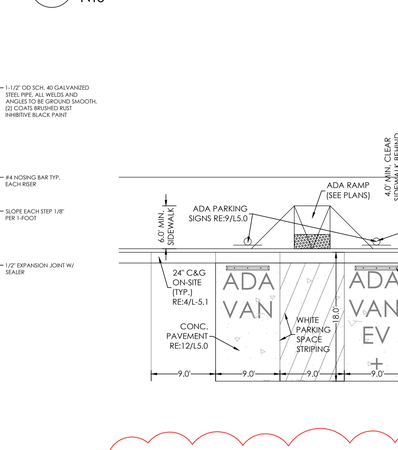


NOTES:
1. CONTRACTION JOINTS SHALL BE SPACED AT 10-FOOT INTERVALS. JOINT SPACING MAY BE ALTERED BY THE ENGINEER TO PREVENT UNCONTROLLED CRACKING.
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4. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3600 PSI IN 28 DAYS.
5. CURB SHALL BE DEPRESSED AT INTERSECTIONS TO PROVIDE FOR FUTURE ACCESSIBLE RAMPS.
6. TOP 8" OF SUBGRADE BENEATH THE CURB AND GUTTER SHALL BE COMPACTED TO 100% STANDARD PROCTOR DENSITY.

REVISIONS	
DATE	DESCRIPTION

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

4 CURB AND GUTTER
L-5.1 NTS

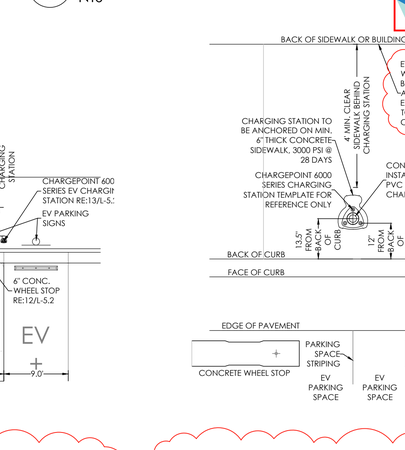


TYPICAL FIRE LANE PAVEMENT MARKING DETAIL

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	FIRE LANE PAVEMENT MARKING	STD. NO. 3.31

5 FIRE LANE MARKING
L-5.1 NTS



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

6 ASPHALT PAVEMENT PATCH
L-5.1 NTS

7 4' ALUMINUM PICKET FENCE
L-5.1 NTS

NOTES:
1. TREADS LENGTH = 12" (VERIFY W/ LAYOUT PLAN).
2. RISERS = 6" HEIGHT (VERIFY W/ GRADING PLANS).
3. NUMBER OF RISERS VARIES (VERIFY # OF RISERS W/ PLANS).
4. MIN. 5'X5' LANDING AT TOP AND BOTTOM OF STAIRS.
5. SEE GRADING PLAN FOR CONNECTING SIDEWALK GRADES.

8 STEPS W/ HANDRAILS
L-5.1 NTS

9 ADA & EV PARKING SPACE LAYOUT
L-5.1 NTS

10 EV CHARGING STATION LOCATION
L-5.1 NTS

TMTLA ASSOCIATES
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5011 SOUTHPARK DRIVE, STE.200-DURHAM, NC 27713
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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No. C-551 PORTLAND DESIGN PLLC
DBA TMTLA ASSOCIATES

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1826 ANDREW J. PORTER

3-6-2026

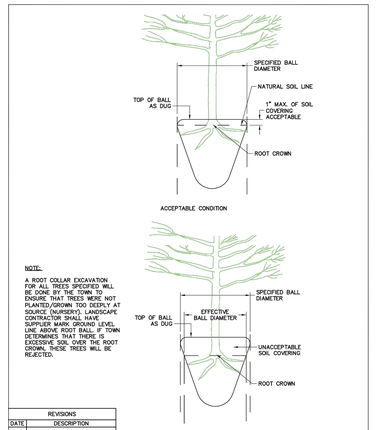
PRELIMINARY NOT FOR CONSTRUCTION

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1. ToK Sketch Plan 1st review Comments 2024-10-14
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3. ToK Master Plan 1st review Comments 2026-3-6

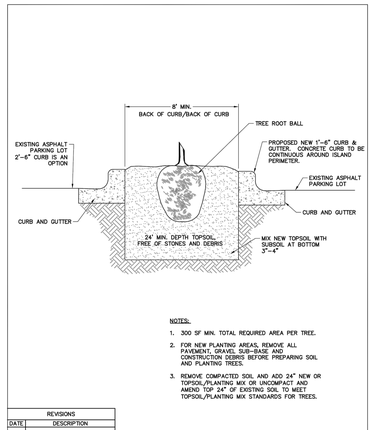
APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

SITE DETAILS
7800 KNIGHTDALE BLVD.
7800 KNIGHTDALE BLVD
KNIGHTDALE, NC 27545
TOK PROJECT #ZCP-7-24

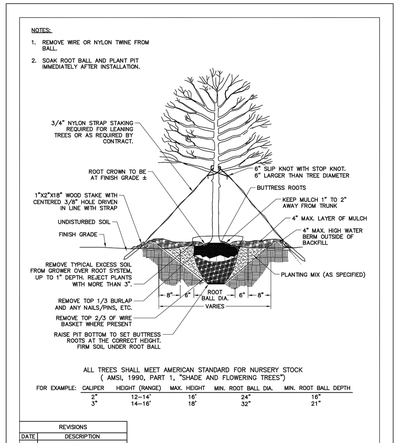
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DRAWN BY: AJP
PROJECT # 24029
DATE: 11/13/2025
SHEET L-5.1
OF



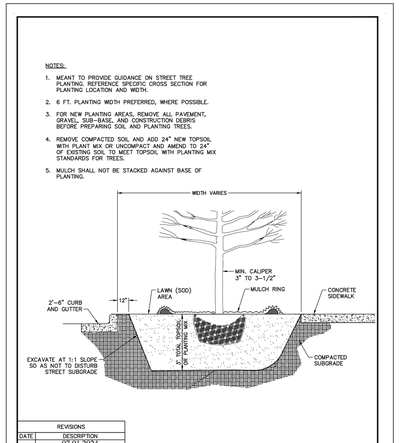
1 ROOT CROWN DEPTHS
L-5.2 NTS



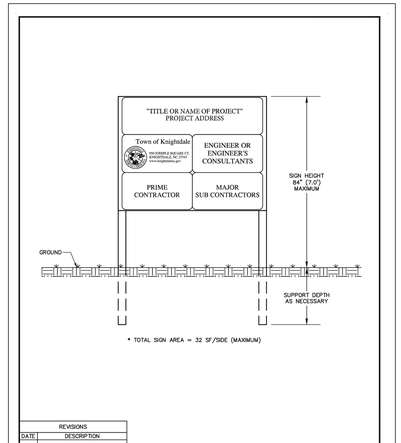
2 TREE PLANTING ISLAND
L-5.2 NTS



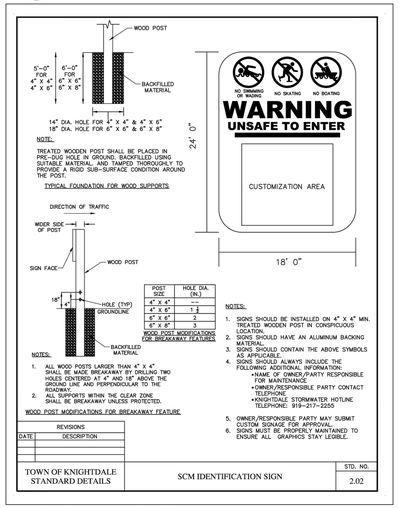
3 TREE PLANTING
L-5.2 NTS



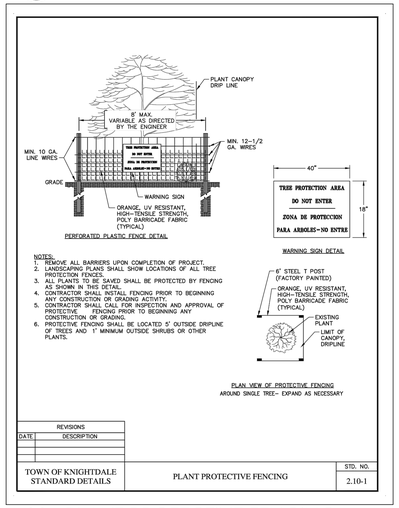
4 STREET TREE PLANTING
L-5.2 NTS



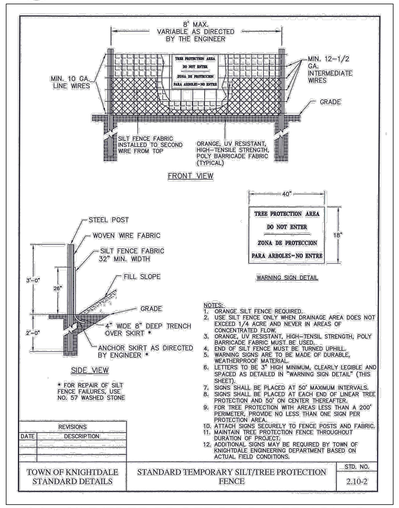
5 PROJECT IDENTIFICATION SIGN
L-5.2 NTS



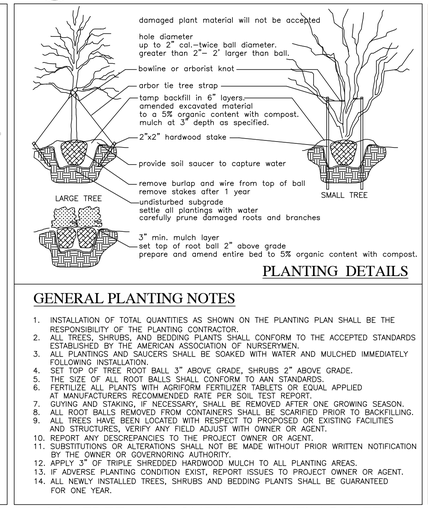
6 SCM IDENTIFICATION SIGN
L-5.2 NTS



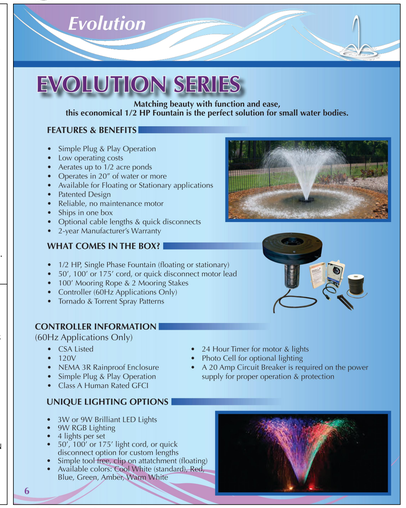
7 PLANT PROTECTIVE FENCING
L-5.2 NTS



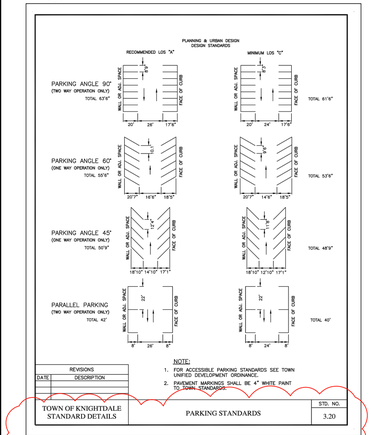
8 SILT/TREE PROTECTION FENCING
L-5.2 NTS



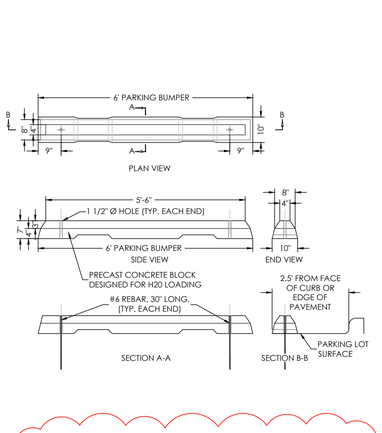
9 TREE AND SHRUB PLANTING DETAIL
L-5.2 NTS



10 AQUA CONTROL EVOLUTION SERIES 1/2 HP FOUNTAIN
L-5.2 NTS



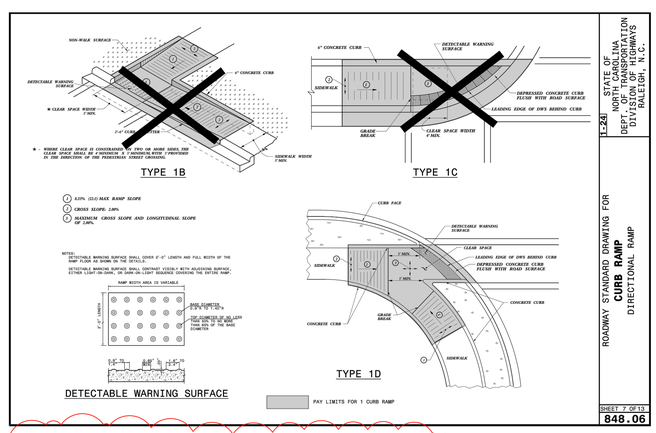
11 PARKING STANDARDS
L-5.2 NTS



12 6" CONCRETE WHEEL STOP
L-5.2 NTS



13 CHARGEPOINT 6000 SERIES
L-5.2 NTS



14 TYPE 1D DIRECTIONAL CURB RAMP
L-5.2 NTS

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5011 SOUTHPARK DRIVE, STE.200-DURHAM, NC 27713
p: (919) 484-8880 e: info@tmtla.com
NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECTURAL CORPORATION No. C-551
DBA TMTLA ASSOCIATES
NORTH CAROLINA 1826 REGISTERED LANDSCAPE ARCHITECT ANDREW J. PORTER

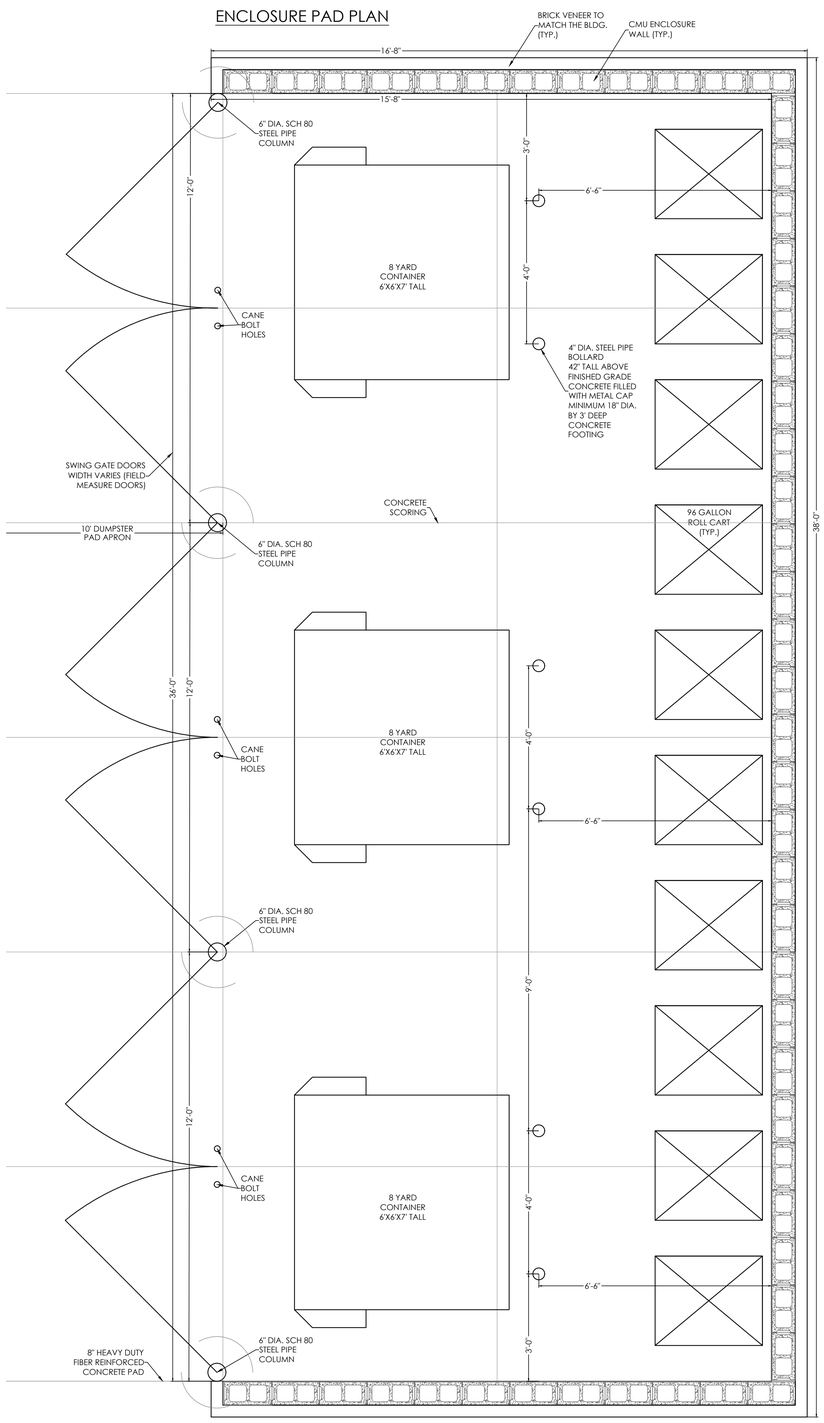
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TOK PROJECT #ZCP-7-24

SCALE: AS NOTED
DRAWN BY: AJP
PROJECT # 24029
DATE: 11/13/2025
SHEET L-5.2
OF

ENCLOSURE PAD PLAN

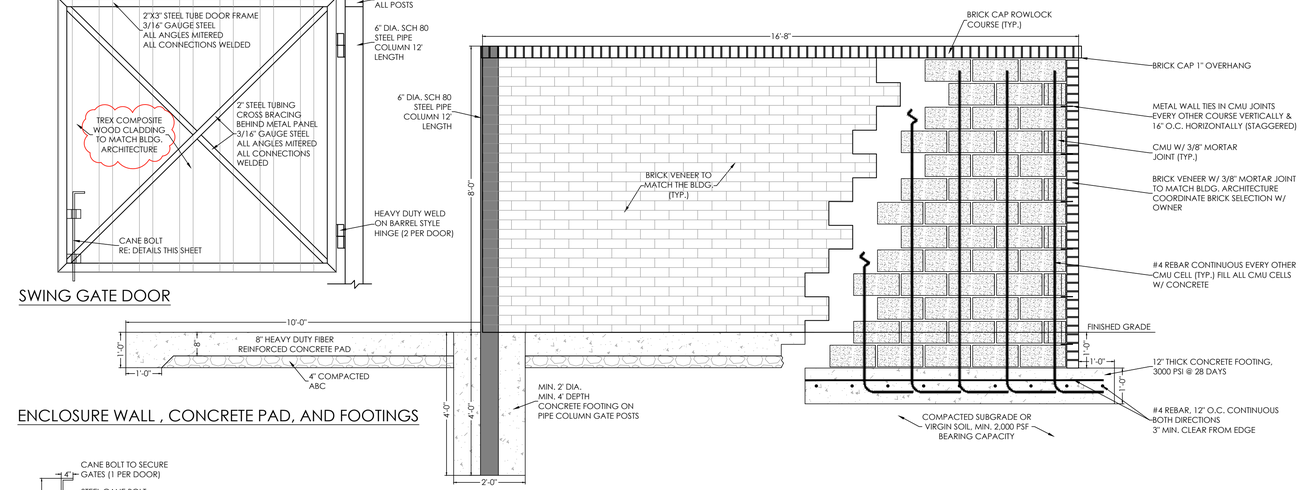


1 L-5.3 DUMPSTER ENCLOSURE
NTS

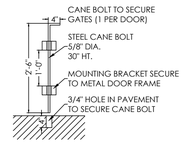
FINAL BRICK/CMU WALL SECTIONS TO BE PROVIDED BY STRUCTURAL ENGINEER.

BRICK VENEER TO MATCH BUILDING ARCHITECTURE.

SWING GATE DOOR



ENCLOSURE WALL , CONCRETE PAD, AND FOOTINGS



CANE BOLT

NOTES:

1. ALL REINFORCED MASONRY WORK SHALL COMPLY WITH BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES (TMS 402-13/ACI 530-13/ASCE 5-13 & TMS 602-13/ACI 530.1-13/ASCE 6-13A OR LATEST EDITION).
2. ALL CONCRETE WORK SHALL COMPLY WITH THE SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS, ACI-301 AND THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI-318 (EDITIONS IN FORCE).
3. ALL WORK AND MATERIALS SHALL COMPLY WITH APPLICABLE STATE, LOCAL, NATIONAL CODES (INCLUDING OSHA) AND COMPLIANT WITH THE LATEST EDITION OF THE CODE.
4. MASONRY GROUT SHALL REACH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.
5. TYPE OF MORTAR SHALL BE 'S' AND MORTAR SHALL REACH A MINIMUM COMPRESSIVE STRENGTH OF 1,800 PSI AT 28 DAYS.
6. YIELD STRENGTH OF REINFORCEMENT STEEL, FY=60KSI.
7. CMU ARRANGEMENT TO ACHIEVE DIMENSIONS IS THE RESPONSIBILITY OF THE CONTRACTOR.
8. FOUNDATION SOIL BEARING CAPACITY SHALL BE A MINIMUM 2000 PSF BEARING CAPACITY AND SHALL BE VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER.
9. EXCAVATION FOR FOOTING WILL HAVE ALL LOOSE MATERIAL REMOVED. CONCRETE TO BE POURED TO EXTENTS OF THE EXCAVATION UP TO VIRGIN SOIL TO ACHIEVE HORIZONTAL BEARING PRESSURES.
10. DUMPSTER PAD CONCRETE 4000 PSI MIN. AT 28 DAYS.
11. ALL HARDWARE SHALL BE HOT DIPPED GALVANIZED OR ELECTROPLATED ZINC.
12. ALL METAL POSTS, HINGES AND HARDWARE SHALL BE PAINTED BLACK.
13. GATE WIDTH TO BE FIELD VERIFIED AFTER SETTING GATE POSTS AND PRIOR TO CONSTRUCTION OF GATE DOOR FRAMES.
14. HEIGHT OF SCREEN FENCE MUST BE 6" GREATER THAT THE HEIGHT OF THE EQUIPMENT THEREIN. CONTRACTOR TO VERIFY HEIGHT OF EQUIPMENT PRIOR TO CONSTRUCTION OF THE SCREEN FENCE.
15. CONTRACTOR TO PROVIDE MIN. 4" HT. DRAINAGE VOIDS IN MASONRY SCREEN WALL TO ALLOW FOR ADEQUATE ENCLOSURE DRAINAGE.
16. CONTRACTOR TO COORDINATE BRICK SELECTION W/ OWNER PRIOR TO ORDERING MATERIALS.
17. DO NOT CHANGE THE DESIGN WITHOUT APPROVAL FROM THE LANDSCAPE ARCHITECT OR THE OWNER.

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p: (919) 484-8880 e: info@tmtla.com

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DBA TMTLA ASSOCIATES

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1826 ANDREW J. PORTER

3-6-2026

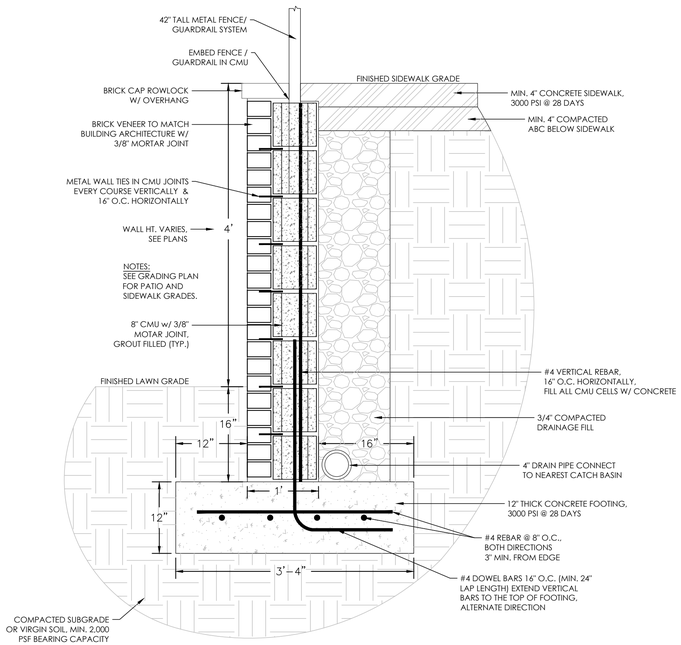
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PROJECT # 24029
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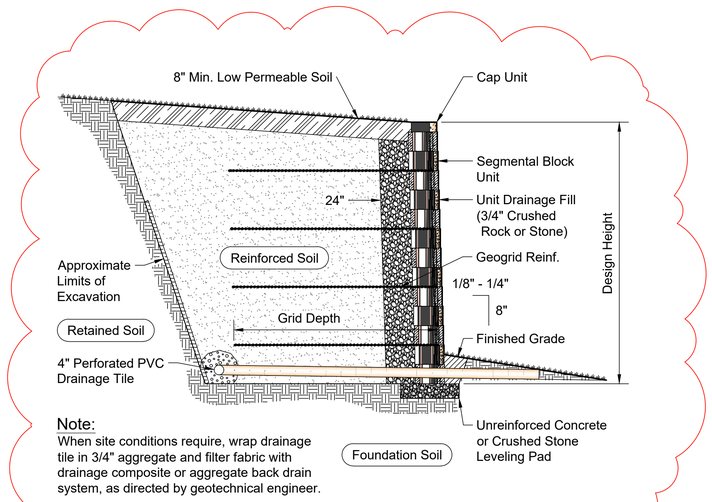


1 L-5.4 GENERIC BRICK/CMU WALL SECTION

NTS

FINAL BRICK/CMU WALL SECTIONS TO BE PROVIDED BY STRUCTURAL ENGINEER.

BRICK VENEER TO MATCH BUILDING ARCHITECTURE.



Note:
When site conditions require, wrap drainage tile in 3/4" aggregate and filter fabric with drainage composite or aggregate back drain system, as directed by geotechnical engineer.

2 L-5.4 GENERIC SEGMENTAL BLOCK WALL SECTION

NTS

FINAL SEGMENTAL BLOCK WALL SECTION TO BE PROVIDED BY STRUCTURAL ENGINEER.

SEGMENTAL BLOCK WALL FINISH TO MATCH BUILDING ARCHITECTURE.

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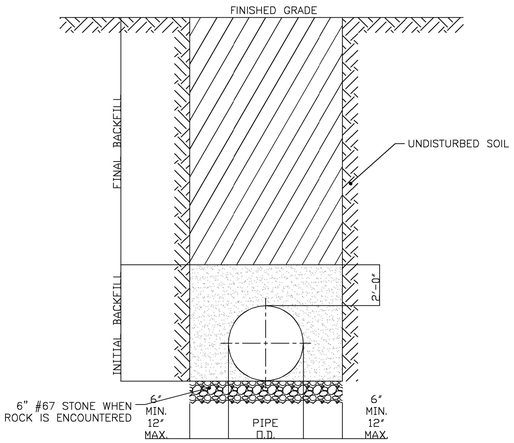
7800 KNIGHTDALE BLVD.

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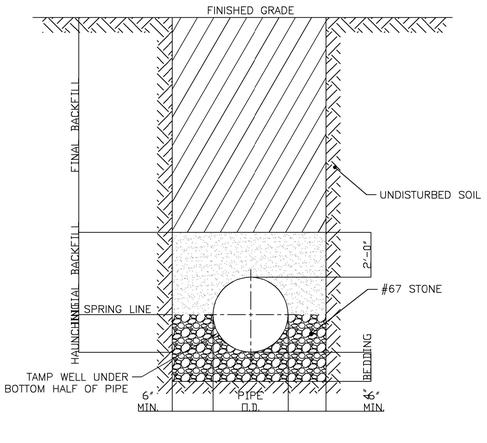
SHEET
L-5.4
OF



NOTES:
1. FOR TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
2. NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.
5. ACHIEVE 80% COMPACTION IN NON-TRAFFIC AREAS, AND 95% COMPACTION IN TRAFFIC AREAS.
6. IF IN EASEMENT, 4" TOPSOIL AND 12" CLEAN SELECT FILL MAY BE REQUIRED.
7. NO BOULDERS 8" IN DIAMETER OR GREATER ALLOWED IN FINAL BACKFILL.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	TRENCH BOTTOM DIMENSIONS & BACKFILLING REQUIREMENTS FOR DUCTILE IRON	
	S-4	

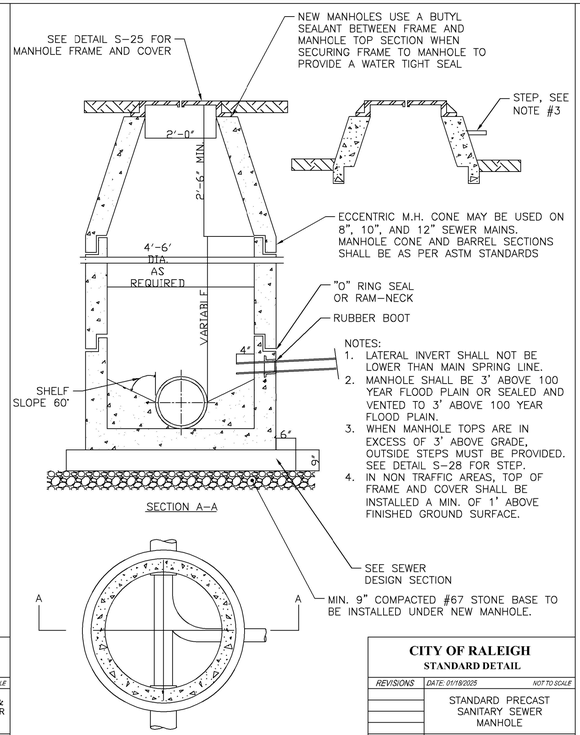


TYPICAL TRENCH BOTTOM DIMENSIONS FOR SDR 35 PVC GRAVITY PIPE

NOTES:
1. FOR TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
2. NO ROCKS OR BOULDERS, 4" OR LARGER, TO BE USED IN INITIAL BACKFILL.
3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.

CITY OF RALEIGH
STANDARD DETAIL

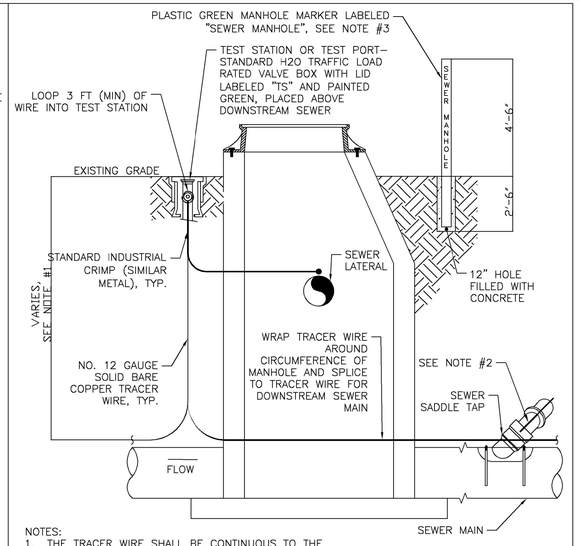
REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	TRENCH BOTTOM DIMENSIONS & BACKFILLING REQUIREMENTS FOR PVC GRAVITY SEWER MAIN	
	S-5	



NOTES:
1. LATERAL INVERT SHALL NOT BE LOWER THAN MAIN SPRING LINE.
2. MANHOLE SHALL BE 3' ABOVE 100 YEAR FLOOD PLAIN OR SEALED AND VENTED TO 3' ABOVE 100 YEAR FLOOD PLAIN.
3. WHEN MANHOLE TOPS ARE IN EXCESS OF 3' ABOVE GRADE, OUTSIDE STEPS MUST BE PROVIDED. SEE DETAIL S-28 FOR STEP.
4. IN NON TRAFFIC AREAS, TOP OF FRAME AND COVER SHALL BE INSTALLED A MIN. OF 1' ABOVE FINISHED GROUND SURFACE.

CITY OF RALEIGH
STANDARD DETAIL

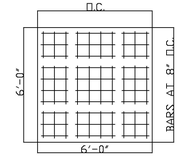
REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	STANDARD PRECAST SANITARY SEWER MANHOLE	
	S-20	



NOTES:
1. THE TRACER WIRE SHALL BE CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. FOR GRAVITY MAIN AND OR LATERAL INSTALLATIONS LESS THAN 8 FT, THE TRACING WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRE SHALL BE LAID FLAT AND SECURELY AFFIXED TO THE PIPE AT 10 FOOT INTERVALS. FOR GRAVITY MAIN AND OR LATERAL INSTALLATION DEEPER THAN 8 FT, THE TRACING WIRE SHALL BE INSTALLED AT A DEPTH OF 7-8 FT. THE WIRE SHALL BE PROTECTED FROM DAMAGE DURING THE EXECUTION OF THE WORK. NO BREAKS OF CUTS IN THE TRACER WIRE SHALL BE PERMITTED.
2. WHERE LATERAL TAPS ARE MADE BY SERVICE SADDLES, THE TRACER WIRE SHALL NOT BE ALLOWED TO TO BE PLACED BETWEEN THE SADDLE AND MAIN.
3. MANHOLE MARKERS SHALL BE PLACED ADJACENT TO MANHOLES AT THE DISCRETION OF OWNER OR OWNER'S REPRESENTATIVE.

CITY OF RALEIGH
STANDARD DETAIL

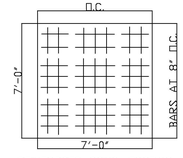
REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	GRAVITY SEWER MAIN TRACER WIRE AND MANHOLE MARKER	
	S-20A	



REINFORCED CONC. FOOTING FOR 4' PRECAST MANHOLE

BILL OF MATERIAL FOR 4' MANHOLE BASE

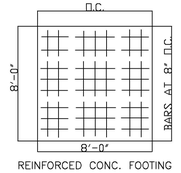
BAR SIZE	BAR LENGTH	NO. OF BARS	BAR WT. (LBS.)
#5	5'-6"	18	103
CL. "A" CONCRETE TOTAL CU. YDS.			1.0



REINFORCED CONC. FOOTING FOR 5' PRECAST MANHOLE

BILL OF MATERIAL FOR 5' MANHOLE BASE

BAR SIZE	BAR LENGTH	NO. OF BARS	BAR WT. (LBS.)
#5	6'-6"	20	136
CL. "A" CONCRETE TOTAL CU. YDS.			1.4



REINFORCED CONC. FOOTING FOR 6' PRECAST MANHOLE

BILL OF MATERIAL FOR 6' MANHOLE BASE

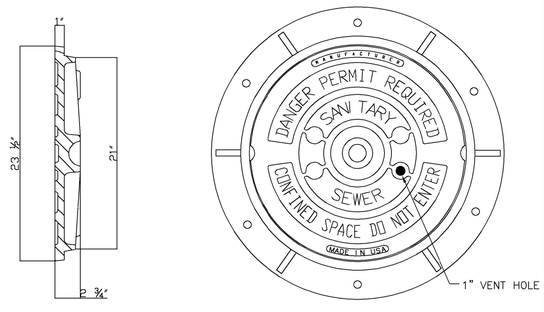
BAR SIZE	BAR LENGTH	NO. OF BARS	BAR WT. (LBS.)
#5	7'-6"	24	165
CL. "A" CONCRETE TOTAL CU. YDS.			1.8

* ALL BASES ARE MINIMUM 9" THICK

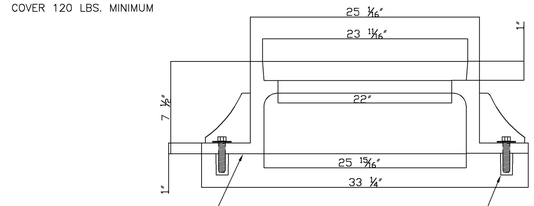
CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	EXTENDED BASE OR CAST-IN-PLACE REINFORCED CONCRETE BASE	
	S-21	

MANHOLE FRAME AND COVER



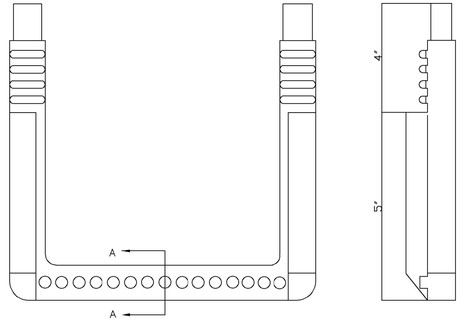
COVER 120 LBS. MINIMUM



NOTES:
1. ALL MANHOLE FRAMES SHALL BE DOMESTICALLY CAST.
2. FRAME SHALL BE A MINIMUM WEIGHT OF 182 LBS. WITHIN PUBLIC ROW AND 160 LBS. WITHIN EASEMENTS.
3. COVER SHALL WEIGH A MIN. OF 120 LBS.
4. ALL MANHOLE FRAMES OUTSIDE OF PAVED SURFACES SHALL BE BOLTED TO THE CONE SECTION OR RING WITH A MINIMUM OF 4 BOLTS PER FRAME.

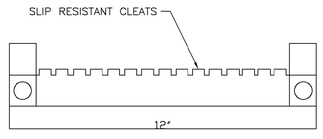
CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	STANDARD MANHOLE COVER	
	S-25	

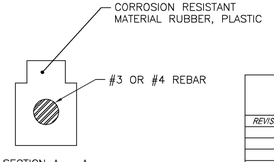


PLAN

SIDE ELEVATION



ELEVATION



SECTION A - A

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	STANDARD SLIP RESISTANT MANHOLE STEP DETAIL	
	S-28	

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

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P.O. BOX 1108
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7800 KNIGHTDALE BLVD.
KNIGHTDALE, NC 27545

NORTH CAROLINA PROFESSIONAL SEAL 19843 ENGINEER J. MICHAEL STOCKS
J. Michael Stocks 11/21/25

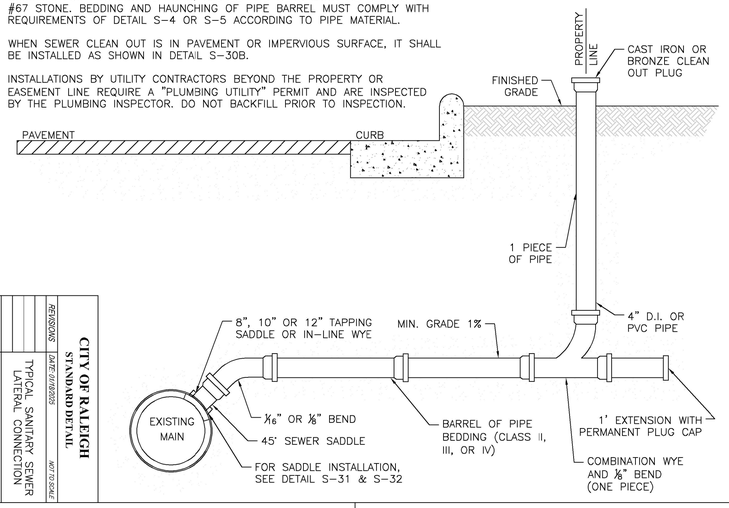
SEWER NOTES + DETAIL 1

REVISIONS
FILE NO. 2023-024
HORZ. SCALE: 1"=20'
VERT. SCALE: NONE

D-01

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.

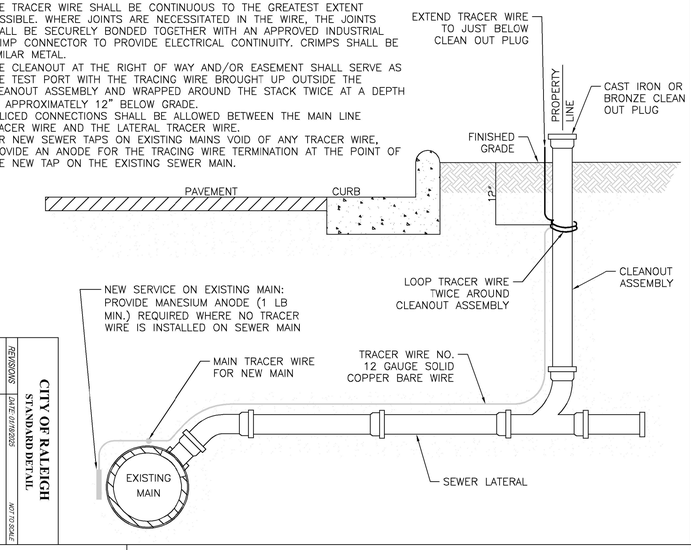


CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/16/2025	NOT TO SCALE
	TYPICAL SANITARY SEWER LATERAL CONNECTION	
	S-30	

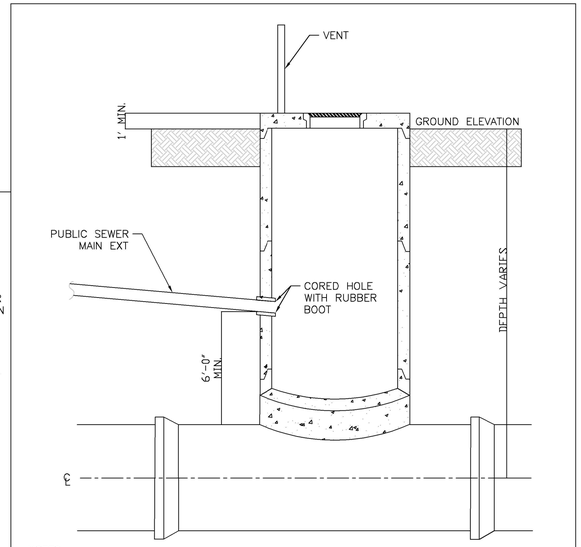
NOTES:

1. THE TRACER WIRE SHALL BE CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. WHERE JOINTS ARE NECESSITATED IN THE WIRE, THE JOINTS SHALL BE SECURELY BONDED TOGETHER WITH AN APPROVED INDUSTRIAL CRIMP CONNECTOR TO PROVIDE ELECTRICAL CONTINUITY. CRIMPS SHALL BE SIMILAR METAL.
2. THE CLEANOUT AT THE RIGHT OF WAY AND/OR EASEMENT SHALL SERVE AS THE TEST PORT WITH THE TRACING WIRE BROUGHT UP OUTSIDE THE CLEANOUT ASSEMBLY AND WRAPPED AROUND THE STACK TWICE AT A DEPTH OF APPROXIMATELY 12" BELOW GRADE.
3. SPLICED CONNECTIONS SHALL BE ALLOWED BETWEEN THE MAIN LINE TRACER WIRE AND THE LATERAL TRACER WIRE.
4. FOR NEW SEWER TAPS ON EXISTING MAINS VOID OF ANY TRACER WIRE, PROVIDE AN ANODE FOR THE TRACING WIRE TERMINATION AT THE POINT OF THE NEW TAP ON THE EXISTING SEWER MAIN.



CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/16/2025	NOT TO SCALE
	TYPICAL SANITARY SEWER LATERAL TRACER WIRE	
	S-30A	

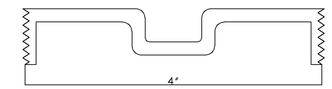


NOTES:

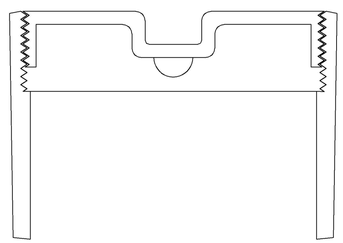
1. HOLE SHALL BE CORED IN RISER SECTION FOR PUBLIC SERVICE MAIN EXTENSION.
2. RUBBER BOOT SHALL BE UTILIZED ON ALL CORES.
3. CORES SHALL BE IN CENTER OF RISER SECTION.
4. CONNECTION TO TEE MANHOLE MUST BE MADE BY CONTRACTOR APPROVED BY CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/16/2025	NOT TO SCALE
	MAIN EXTENSION TO TIE INTO TEE MANHOLE	
	S-33	



STANDARD 4" BRONZE CLEANOUT PLUG

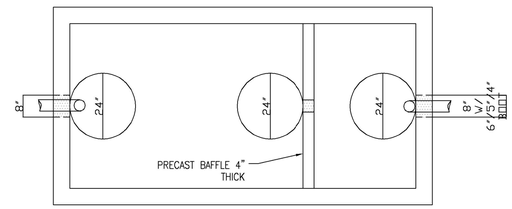


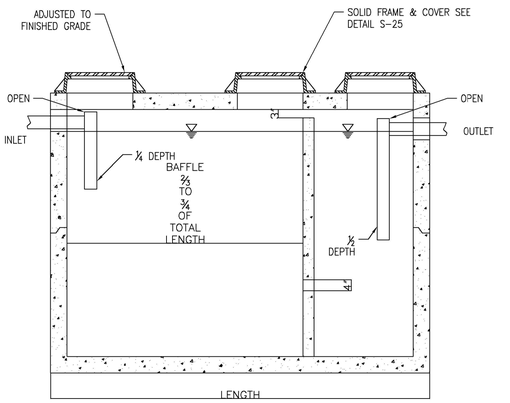
CLEANOUT FERRULE WITH PLUG

STYLES ACCEPTED:
INVERTED NUT
RAISED NUT

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/16/2025	NOT TO SCALE
	4" CLEANOUT PLUG	
	S-34	





NOTES:

1. REINFORCEMENT: H-20 BRIDGE LOADING (TRAFFIC RATED).
2. CONCRETE: 4,000 PSI @ 28 DAYS.
3. EARTHCOVER: 0' TO 5' MAX.
4. HDPE ALLOWED IN LIEU OF CONCRETE. MEET SAME LOADING REQUIREMENTS.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/16/2025	NOT TO SCALE
	1,000 GALLON GREASE INTERCEPTOR	
	S-40	

LOCALLY AVAILABLE SIZES	
INTERCEPTORS CAPACITY (GAL.)	SEPARATORS CAPACITY (GAL.)
300	1,000
550	1,200
750	1,600
1,000	
1,200	
1,500	
2,000	
2,500	
3,000	
4,000	
5,000	
6,000	
8,000	

NOTES:

1. BAFFLE WALLS LOCATED AT A DISTANCE FROM INLET WALL ⅔ TO ¾ OF THE TOTAL LENGTH OF THE INTERCEPTOR OR SEPARATOR AS SHOWN ON DETAIL S-40. BAFFLE WALLS LOCATED AT A DISTANCE APPROXIMATELY OF ½ OF THE TOTAL LENGTH OF THE SEPARATOR AS SHOWN ON DETAIL S-40A.
2. EACH INTERCEPTOR OR SEPARATOR SHALL HAVE INLET AND OUTLET TEES. THE OUTLET TEE SHALL EXTEND 50% INTO THE LIQUID DEPTH. THE INLET TEE SHALL EXTEND 25% INTO THE LIQUID DEPTH. INLET AND OUTLET TEES MUST BE OPEN TO ALLOW THE COLLECTION OF F.O.G. SAMPLE.
3. ACCESS OPENINGS OVER EACH COMPARTMENT WITHIN THE INTERCEPTOR OR SEPARATOR SHALL BE 24 INCHES IN DIAMETER AND CONTAIN PICK HOLES. ALL COVERS SHALL BE CONSTRUCTED OF CAST IRON OR EQUIVALENT TRAFFIC BEARING MATERIAL. MANHOLE COVERS MUST EXTEND TO FINISH GRADE AND BE INSTALLED TO EXCLUDE THE ENTRANCE OF STORMWATER INTO THE INTERCEPTOR OR SEPARATOR.
4. FULL SIZE DUAL SWEEP CLEANOUTS SHALL BE INSTALLED ON THE INLET AND OUTLET SIDES OF THE INTERCEPTOR OR SEPARATOR.
5. INTERCEPTORS AND SEPARATORS MUST BE VENTED IN ACCORDANCE WITH THE NC STATE PLUMBING CODE.
6. CONCRETE: 4,000 PSI @ 28 DAYS.
7. DESIGN: ACI 318 BUILDING CODE
   ASTM C1613-06 FOR GREASE INTERCEPTORS
   ASTM C913-02 FOR WATER AND WASTEWATER STRUCTURES
   ASTM C890-06 FOR MINIMAL STRUCTURAL DESIGN LOADING
8. INTERCEPTORS AND SEPARATORS SHALL BE DESIGNED TO WITHSTAND AN H-20 WHEEL LOAD.
9. INTERCEPTORS OR SEPARATORS MADE OF POLYETHYLENE OR FIBERGLASS SHALL INCLUDE A MINIMUM 12,000 PSI TENSILE STRENGTH, 19,000 PSI FLEXURAL STRENGTH, AND 800,000 PSI FLEXURAL MODULUS.
10. ALL INTERCEPTORS AND SEPARATORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/16/2025	NOT TO SCALE
	DIMENSIONS: GREASE INTERCEPTORS & OIL-WATER SAND SEPARATORS	
	S-41	

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

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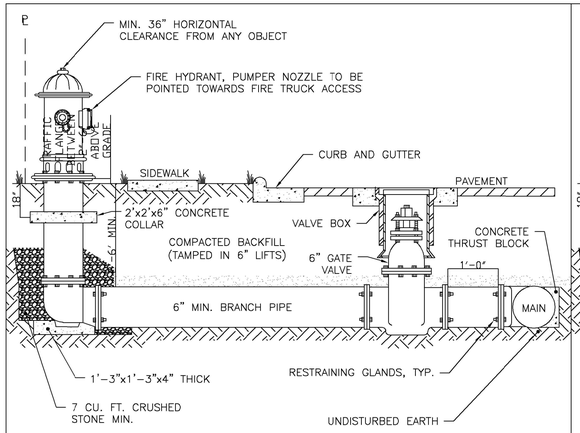
NORTH CAROLINA PROFESSIONAL SEAL 19843 ENGINEER J. MICHAEL STOCKS
11/21/25

SEWER NOTES + DETAIL 2

REVISIONS

FILE NO. 2023-024
HORZ. SCALE: 1"=20'
VERT. SCALE: NONE

D-02

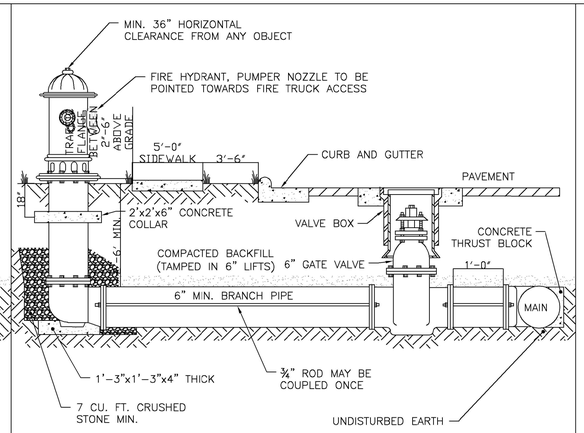


NOTES:
1. FIRE HYDRANT SHALL BE AS MANUFACTURED: MUELLER, AMERICAN DARLING, KENNEDY OR CLOW.
2. BRANCH PIPE SHALL BE DUCTILE IRON AWWA C150.
3. 6" GATE VALVE SHALL BE AWWA C500 OPEN LEFT.
4. RODS AND BOLTS SHALL BE ¾" 316 STAINLESS STEEL.
5. FIRE HYDRANTS WILL BE INSTALLED IN TRUE VERTICAL POSITION.
6. RODS SHALL NOT BE COUPLED MORE THAN ONCE. IF THE LENGTH FROM THE VALVE TO THE HYDRANT EXCEEDS 20' THEN A MECHANICAL RESTRAINING GLAND WITH A REBAR CAGE SHALL BE INSTALLED NO MORE THAN 10' FROM HYDRANT AND POURED IN CONCRETE.
7. FIRE HYDRANTS TO BE LOCATED IN ROW OR 2.5 FOOT EASEMENT (ON ALL SIDES OF HYDRANT) FOOT EASEMENT ADJACENT TO ROW.
8. ANYTIME SITE WORK, CONSTRUCTION, ROAD WORK, OR ANY OTHER WORK CHANGES THE GRADE OF THE FIRE HYDRANT, THE PERSON RESPONSIBLE FOR THE WORK IS RESPONSIBLE FOR ADJUSTING THE FIRE HYDRANT TO STAY WITHIN COMPLIANCE.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	STANDARD FIRE HYDRANT INSTALLATION (RESTRAINT GLANDS)	

W-4

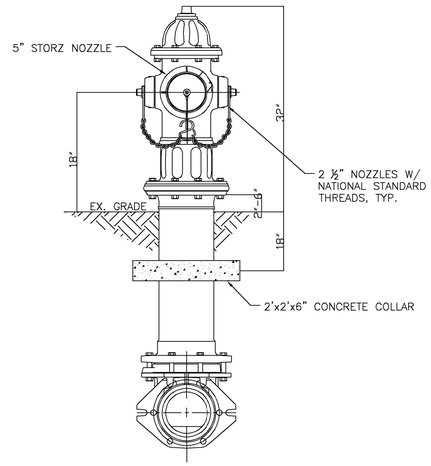


NOTES:
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2. BRANCH PIPE SHALL BE DUCTILE IRON AWWA C150.
3. 6" GATE VALVE SHALL BE AWWA C500 OPEN LEFT.
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5. FIRE HYDRANTS WILL BE INSTALLED IN TRUE VERTICAL POSITION.
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8. ANYTIME SITE WORK, CONSTRUCTION, ROAD WORK, OR ANY OTHER WORK CHANGES THE GRADE OF THE FIRE HYDRANT, THE PERSON RESPONSIBLE FOR THE WORK IS RESPONSIBLE FOR ADJUSTING THE FIRE HYDRANT TO STAY WITHIN COMPLIANCE.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	STANDARD FIRE HYDRANT INSTALLATION (RESTRAINT RODS)	

W-4A

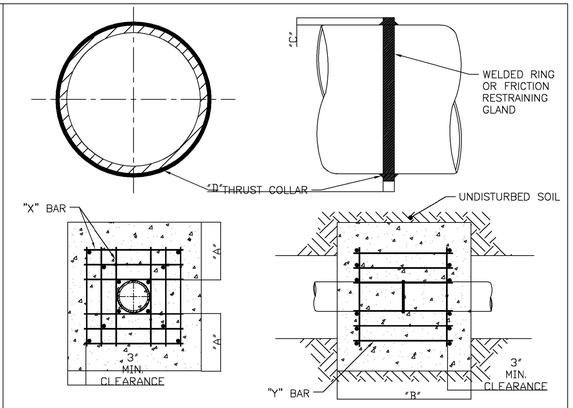


NOTES:
1. ALL PUBLIC FIRE HYDRANTS IN THE CITY OF RALEIGH AND THE MERGER TOWNS OF GARNER, ROLESVILLE, WAKE FOREST, KNIGHTDALE, WENDELL AND ZEBULON SHALL BE PAINTED CHROME YELLOW WITH HIGH REFLECTIVE ALUMINUM SILVER CAPS, BONNETS AND OPERATING NUTS.
2. ALL PRIVATE FIRE HYDRANTS SHALL BE RED.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	STANDARD FIRE HYDRANT WITH 5" STORZ PUMPER NOZZLE	

W-5



SECTION PLAN VIEW

REINFORCING REQUIREMENTS

I.D. PIPE	REBAR SIZE	"X" BAR LENGTH	"X" BAR WEIGHT	"Y" BAR LENGTH	"Y" BAR WEIGHT	NO. REQUIRED
6"–36"	#5	2'–2"+ O.D. PIPE	1.043 LBS/FT	1'–1"	1.1 LBS. EACH	X–24 Y–12
≥48"	#6	3'–0"+ O.D. PIPE	1.502 LBS/FT	1'–3"	1.9 LBS. EACH	X–24 Y–12

THRUST COLLAR AND THRUST SCHEDULE

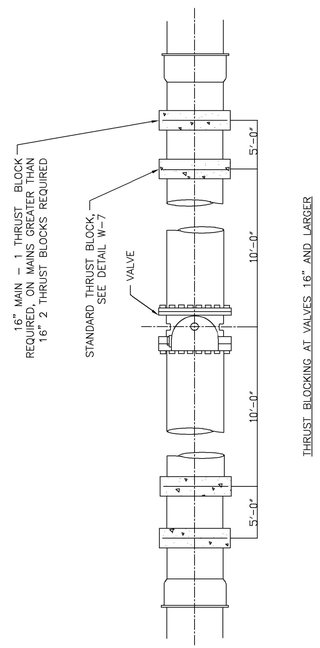
I.D. PIPE	"A"	"B"	"C"	"D"
6"–16"	1'–4"	1'–7"	2"	⅜"
20"–24"	1'–4"	1'–7"	3"	½"
30"–36"	1'–4"	1'–7"	4"	⅝"
≥48"	1'–8"	1'–9"	6"	⅞"

NOTES:
1. SEE DETAIL W–9 FOR THRUST BLOCK LOCATIONS.
2. CONCRETE SHALL BE 3,000 PSI AND TRANSIT MIXED.
3. REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
4. TRENCH BOTTOM WIDTH IN VICINITY OF THRUST BLOCK INSTALLATION SHALL BE THE MINIMUM WIDTH AS SHOWN ON DETAIL W–3.
5. BACKFILL TAMPED IN 6" LIFTS, SEE DETAIL W–3.
6. THRUST COLLAR MUST BE FACTORY WELDED ON BOTH SIDES ALONG BOTH EDGES OF COLLAR AROUND CIRCUMFERENCE.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	THRUST BLOCKING DESIGN DATA FOR WATER MAINS	

W-7

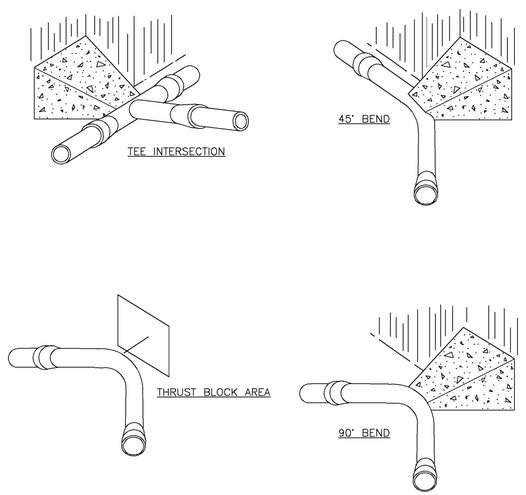


CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	STANDARD THRUST BLOCKING INSTALLATION FOR 16" AND LARGER VALVES AND DEAD END MAINS	

W-8

THRUST BLOCKING



NOTES:
1. CONCRETE SHALL BE 3,000 PSI.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
3. TRENCHES SHALL CONFORM TO DETAIL W–3.
4. SEE DETAIL W–10 & W–11 (THRUST BLOCK TABLES) FOR AREA OF CONCRETE REQUIRED.
5. ALL BENDS AND INTERSECTIONS SHALL HAVE CONCRETE THRUST BLOCKING.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	THRUST BLOCKING VIEWS	

W-9

REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS BASED ON TEST PRESSURE OF 200 PSI
ALL AREAS GIVEN IN SQUARE FEET

SIZE OF BEND	DEGREE OF BEND	STATIC THRUST IN POUNDS	MODERATELY DRY CLAY 4,000 LBS/FT²	SOFT CLAY 2,000 LBS/FT²	1,600 LBS/FT² GRAVEL/ COARSE SAND	8,000 LBS/FT² DRY CLAY (ALWAYS DRY)	SAND, COMPACT FIRM 8,000 LBS/FT²	SAND–CLEAN DRY 4,000 LBS/FT²	SOIL 1,000 LBS/FT² QUICKSAND (VERY POOR)	ROCK–POOR 10,000 LBS/FT²
6"	11 ¼°	1,108	1	1	1	1	1	1	2	1
	22 ½°	2,207	1	2	2	1	1	1	3	1
	45°	4,328	2	3	3	1	1	2	5	1
	90°	7,996	2	4	5	1	1	2	8	1
	PLUG	5,655	2	3	4	1	1	2	6	1
8"	11 ¼°	1,970	1	1	2	1	1	1	2	1
	22 ½°	3,922	1	2	3	1	1	1	4	1
	45°	7,694	2	4	5	1	1	2	8	1
	90°	14,215	4	8	9	2	2	4	15	2
	PLUG	10,053	3	5	6	2	2	3	10	1
12"	11 ¼°	4,433	2	3	3	1	1	2	5	1
	22 ½°	8,826	3	5	6	2	2	3	9	1
	45°	17,312	5	9	11	3	3	5	18	2
	90°	31,983	8	16	19	4	4	8	32	4
	PLUG	22,619	6	12	14	3	3	6	23	3
16"	11 ¼°	7,881	2	4	5	1	1	2	8	1
	22 ½°	15,691	4	8	10	2	2	4	16	2
	45°	30,779	8	16	19	4	4	8	31	4
	90°	56,861	15	29	35	8	8	15	57	6
	PLUG	40,213	10	21	25	5	5	10	41	5

NOTES:
1. REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.
2. USE 6" 90° BEND VALUE FOR HYDRANTS FOR ADDITIONAL SAFETY FACTOR.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	THRUST BLOCKING DESIGN QUANTITY TABLE	

W-10

REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS BASED ON TEST PRESSURE OF 200 PSI
ALL AREAS GIVEN IN SQUARE FEET

SIZE OF BEND	DEGREE OF BEND	STATIC THRUST IN POUNDS	MODERATELY DRY CLAY 4,000 LBS/FT²	SOFT CLAY 2,000 LBS/FT²	1,600 LBS/FT² GRAVE/ COARSE SAND	8,000 LBS/FT² DRY CLAY (ALWAYS DRY)	SAND, COMPACT FIRM 8,000 LBS/FT²	SAND–CLEAN DRY 4,000 LBS/FT²	SOIL 1,000 LBS/FT² QUICKSAND (VERY POOR)	ROCK–POOR 10,000 LBS/FT²
24"	11 ¼°	17,734	5	9	11	3	3	5	18	2
	22 ½°	35,305	9	18	22	5	5	9	36	4
	45°	59,252	18	35	42	9	9	18	70	7
	90°	127,936	32	64	77	16	16	32	128	113
	PLUG	90,478	23	46	55	12	12	23	91	10
30"	11 ¼°	27,709	7	14	17	4	4	7	2	3
	22 ½°	55,163	14	28	34	7	7	14	56	6
	45°	108,206	28	55	65	14	14	28	109	11
	90°	199,900	50	100	120	25	25	50	200	20
	PLUG	141,372	36	71	85	18	18	36	142	15
36"	11 ¼°	39,901	10	20	24	5	5	10	40	4
	22 ½°	79,439	20	40	48	10	10	20	30	8
	45°	155,816	39	78	94	20	20	39	156	16
	90°	287,855	72	144	172	36	36	72	288	29
	PLUG	203,575	51	102	122	26	26	51	204	21
48"	11 ¼°	70,935	18	36	43	9	9	18	71	8
	22 ½°	141,218	36	71	85	18	18	36	142	15
	45°	277,007	70	139	166	35	35	70	277	28
	90°	511,742	128	256	320	64	64	128	512	52
	PLUG	361,911	91	181	217	46	46	91	362	37

NOTES:
1. REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.
2. USE 6" 90° BEND VALUE FOR HYDRANTS FOR ADDITIONAL SAFETY FACTOR.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025	NOT TO SCALE
	THRUST BLOCKING DESIGN QUANTITY TABLE	

W-11

STOCKS ENGINEERING
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801 EAST WASHINGTON STREET
NASHVILLE, N.C. 27856
WWW.STOCKSENGINEERING.COM

BLN=C–1874

7800 KNIGHTDALE BLVD.
KNIGHTDALE, NC 27545

NORTH CAROLINA PROFESSIONAL SEAL 19843 ENGINEER J. MICHAEL STOCKS
J. Michael Stocks 11/21/25

WATER NOTES + DETAIL 1

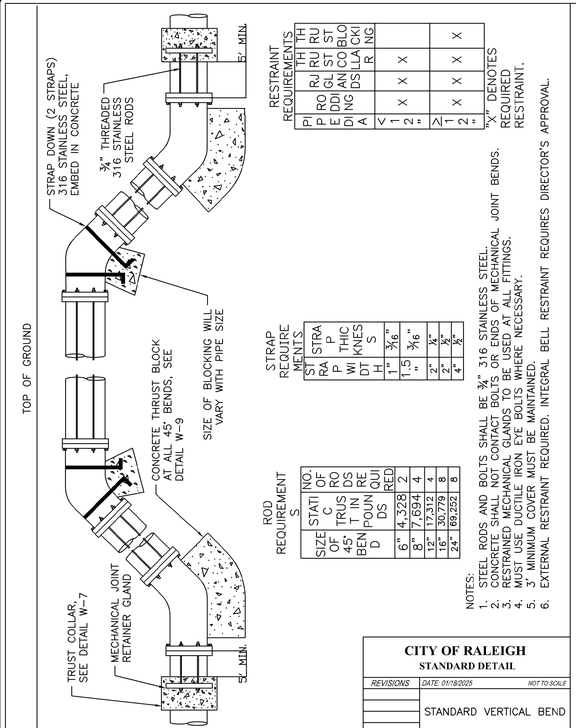
REVISIONS

FILE NO. 2023–024
HORZ. SCALE: 1"=20'
VERT. SCALE: NONE

D–03

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

LET ME GET YOU SOMETHING TO EAT, SO YOU CAN BE REFRESHED AND THEN GO ON YOUR WAY..... GENESIS 18:5



RESTRAINT REQUIREMENTS

PIPE	RODDED GLAND	DUCTILE CAN	BLOCKING	THRUST TIE RODS
1 2"	X	X		X
3"	X	X		X
4"	X	X		X
6"	X	X		X
8"	X	X		X
10"	X	X		X
12"	X	X		X

"X" DENOTES REQUIRED RESTRAINT.

STRAP REQUIREMENTS

PIPE SIZE	STRAP WIDTH	THICKNESS
1"	¾"	3/16"
1.5"	¾"	3/16"
2"	1"	¼"
2"	2"	½"
4"	2"	½"

ROD REQUIREMENTS

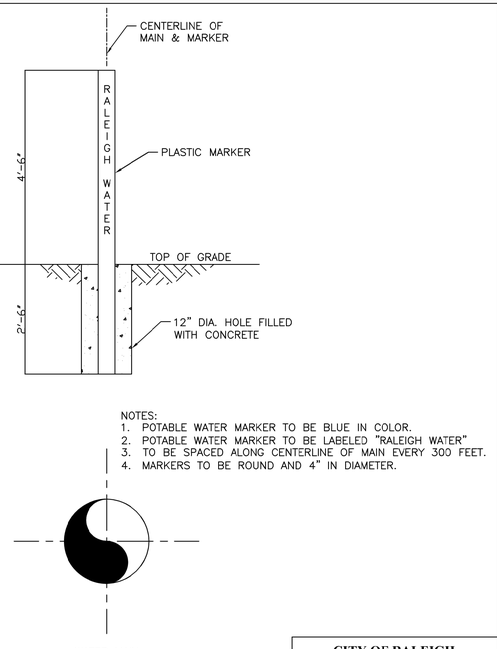
SIZE OF 45° BENDS	STATIC TRUST IN POUNDS	NO. OF RODS REQUIRED
6"	4,328	2
8"	7,694	4
12"	17,317	4
16"	30,779	8
24"	69,252	8

NOTES:
1. STEEL RODS AND BOLTS SHALL BE ¾" 316 STAINLESS STEEL.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT BENDS.
3. RESTRAINED MECHANICAL GLANDS TO BE USED AT ALL FITTINGS.
4. MUST USE DUCTILE IRON EYE BOLTS WHERE NECESSARY.
5. 3' MINIMUM COVER MUST BE MAINTAINED.
6. EXTERNAL RESTRAINT REQUIRED. INTEGRAL BELL RESTRAINT REQUIRES DIRECTOR'S APPROVAL.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	STANDARD VERTICAL BEND	

W-12

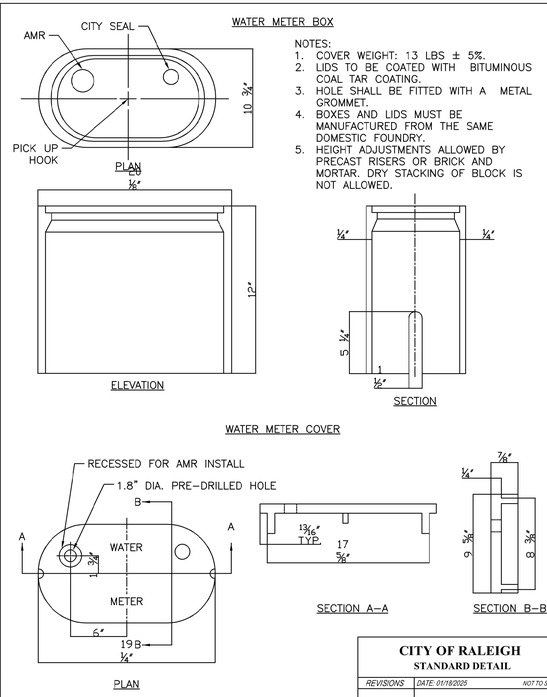


NOTES:
1. POTABLE WATER MARKER TO BE BLUE IN COLOR.
2. POTABLE WATER MARKER TO BE LABELED "RALEIGH WATER"
3. TO BE SPACED ALONG CENTERLINE OF MAIN EVERY 300 FEET.
4. MARKERS TO BE ROUND AND 4" IN DIAMETER.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	MAIN & VALVE MARKER FOR POTABLE WATER IN EASEMENTS	

W-13

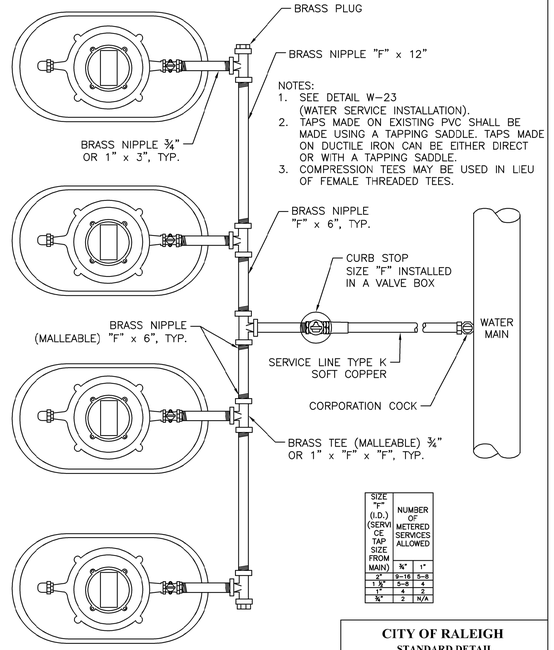


NOTES:
1. COVER WEIGHT: 13 LBS ± 5%.
2. LIDS TO BE COATED WITH BITUMINOUS COAL TAR COATING.
3. HOLE SHALL BE FITTED WITH A METAL GROMMET.
4. BOXES AND LIDS MUST BE MANUFACTURED FROM THE SAME DOMESTIC FOUNDRY.
5. HEIGHT ADJUSTMENTS ALLOWED BY PRECAST RISERS OR BRICK AND MORTAR. DRY STACKING OF BLOCK IS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

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	WATER METER BOX	

W-25



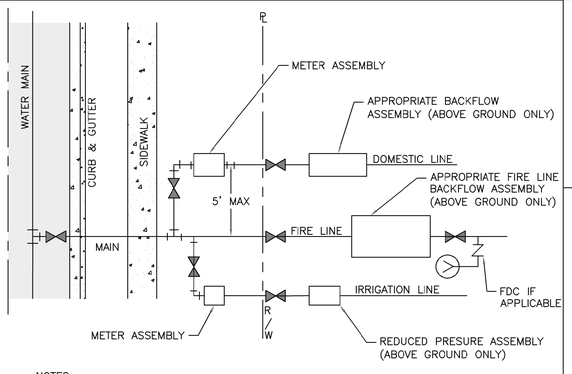
NOTES:
1. SEE DETAIL W-23 (WATER SERVICE INSTALLATION).
2. TAPS MADE ON EXISTING PVC SHALL BE MADE USING A TAPPING SADDLE. TAPS MADE ON DUCTILE IRON CAN BE EITHER DIRECT OR WITH A TAPPING SADDLE.
3. COMPRESSION TEES MAY BE USED IN LIEU OF FEMALE THREADED TEES.

SIZE "F" (I.D.) (SERVICE TAP SIZE FROM MAIN)	NUMBER OF METERED SERVICES ALLOWED	
	¾"	1"
2"	9-16	5-8
1.5"	5-8	4
1"	4	2
¾"	2	N/A

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	STANDARD GANG METER ASSEMBLY	

W-26

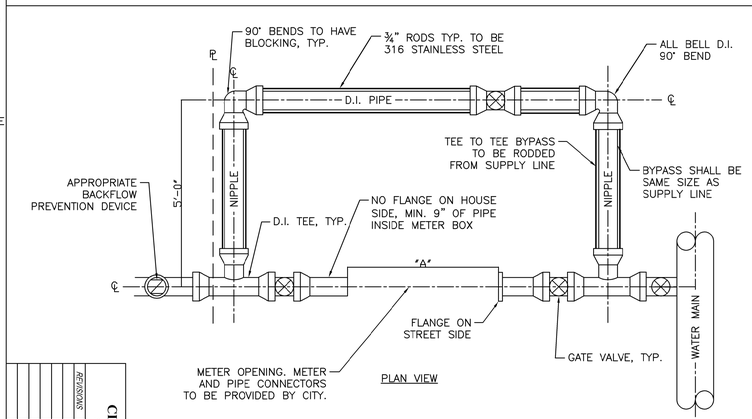


NOTES:
1. SERVICE TAPS FOR 2" AND SMALLER DOMESTIC SERVICES MAY BE BY CORPORATION COCKS. LARGER SERVICES WILL REQUIRE A TEE AND GATE VALVE OR TAPPING SLEEVE AND VALVE ASSEMBLY AND 90° BEND.
2. DOMESTIC SERVICE TAPS SHALL BE ALLOWED ON 4" AND LARGER FIRE LINE BEFORE THE BACKFLOW ASSEMBLY, PROVIDED THAT THE FIRE PROTECTION AND SPRINKLER PLANS AND SITE PLANS ARE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER.
3. ONE DOMESTIC TAP PER FIRE LINE ON STREET SIDE OF BACKFLOW.
4. FIRE LINE SHALL HAVE A FIRE HYDRANT OR BLOW OFF ASSEMBLY AT ITS END TO FACILITATE FLUSHING WHEN NEEDED.
5. IRRIGATION METER SHALL BE LOCATED ON THE SIDE OF DOMESTIC METER WITH INCREASING ADDRESSES.
6. THE CONTAINMENT BACKFLOW ASSEMBLY SHALL BE INSTALLED WITHIN 50 LINEAR PIPING FEET OF THE METER OR RIGHT-OF-WAY FOR FIRE SERVICE LINES.
7. DOMESTIC/IRRIGATION BACKFLOW RISER/STANDPIPE SHALL BE OF APPROVED MATERIALS AS LISTED IN NC PLUMBING CODE.
8. THE RP RELIEF VALVE SHALL BE A MINIMUM OF 12" ABOVE ANY MATERIAL (MULCH INCLUDED) OR GRADE.
9. A SERVICE VALVE IS REQUIRED AFTER THE METER BUT BEFORE THE BACKFLOW ASSEMBLY FOR MAINTENANCE AND REPLACEMENT PURPOSES.
10. THE INSTALLATION MUST ALSO MEET ALL CODE REQUIREMENTS PER THE NC PLUMBING CODE.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	FIRE, DOMESTIC & IRRIGATION OPTIONS SCHEMATIC	

W-34



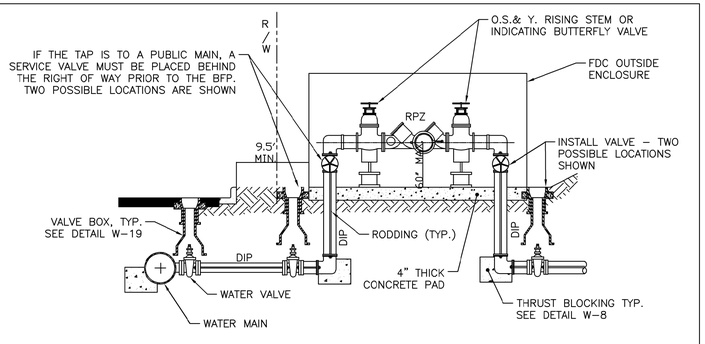
NOTES:
1. METER TO BE PROVIDED BY RALEIGH WATER.
2. ALL FITTINGS ARE TO BE MECHANICAL JOINT.
3. SERVICE LINE FOR 10" METER SHALL BE 12".
4. BYPASS CAN BE ON LEFT OR RIGHT OF SERVICE.
5. BYPASS WIDTH CAN VARY TO ACCOMMODATE OTHER UTILITIES.

"A" METER SIZE	METER OPENING
6" METER	46"
8" METER	54"
10" METER	69"

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	TYPICAL 6"-10" FIRE SERVICE AND DOMESTIC METER W/ BYPASS	

W-30



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: 01/19/2025	NOT TO SCALE
	REDUCED PRESSURE ZONE AND DOUBLE CHECK DETECTOR ASSEMBLY	

W-36

STOCKS ENGINEERING
P.O. BOX 1108
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NORTH CAROLINA PROFESSIONAL SEAL 19843 ENGINEER J. MICHAEL STOCKS
J. Michael Stocks 11/21/25

WATER NOTES + DETAIL 2

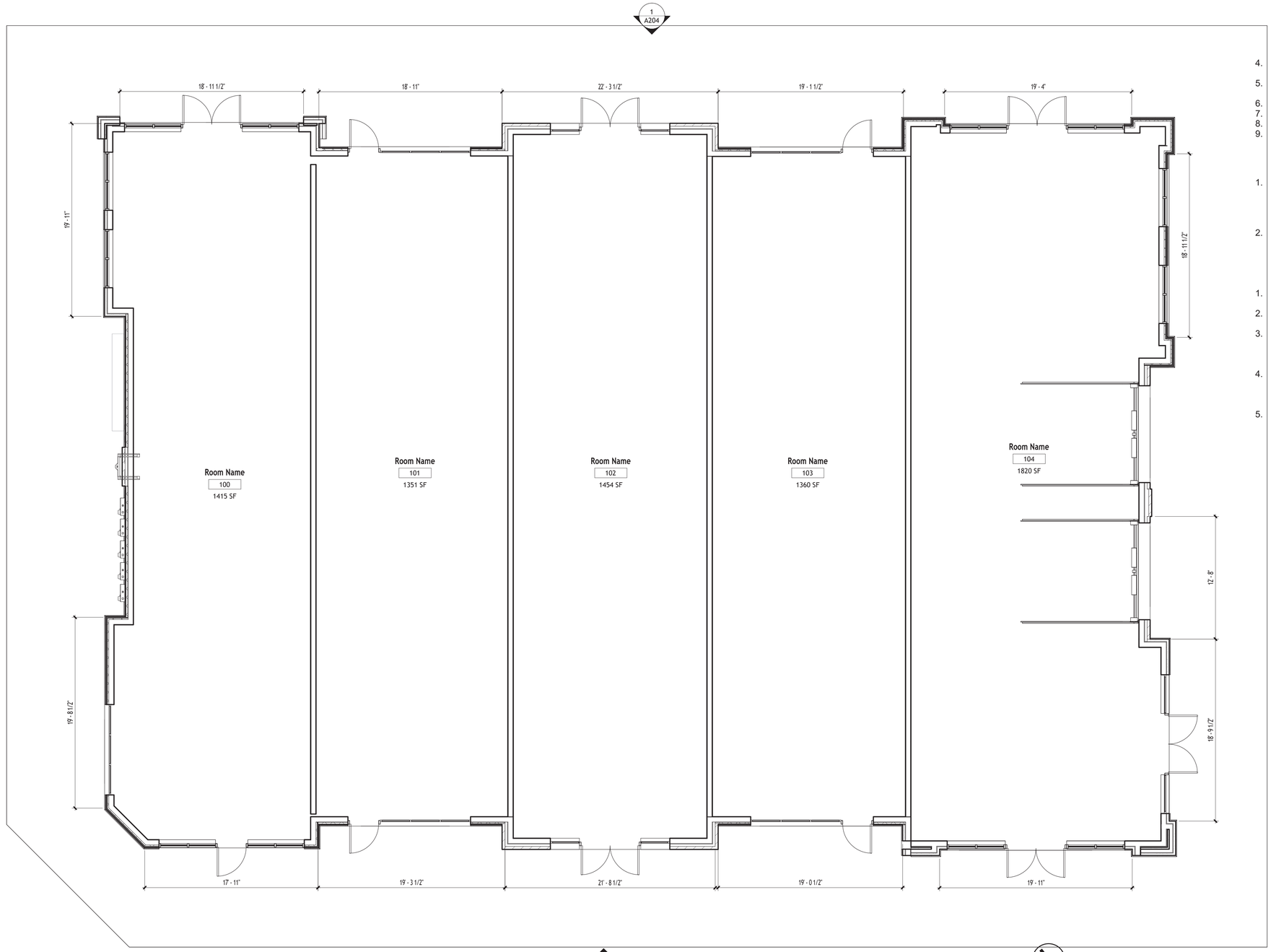
REVISIONS

FILE NO.	2023-024
HORZ. SCALE:	NTS
VERT. SCALE:	NONE

D-04

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

Exterior Materials for Building One
Lap siding 23%
Brick 7%
Stone 8%
EIFS 21%
Sandstone 20%



1 Floor Plan Building One
3/16" = 1'-0"

GENERAL PROJECT NOTES

Do not scale drawings. If dimensions are in question, obtain clarification from designer. Contractor is to verify all existing conditions before beginning construction.
General Contractor shall install all work according to local, state, and federal codes. General Contractor shall verify all utility locations before beginning construction.

1. Smoke detectors to comply with Section R314 of the 2018 NCBC Residential Code.
2. Carbon Monoxide Alarms to comply with Section R315 of the 2018 NCBC Residential Code.
3. PER SECTION R310 2018 RESIDENTIAL NCBC: All emergency and escape rescue openings shall have a minimum net clear openable area of 4 s.f.. The minimum net clear opening height shall be 22 inches. The minimum net clear opening width shall be 20 inches. Emergency escape and rescue openings must have a minimum total glazing area of not less than 5 s.f. in the case of a ground floor level window and not less than 5.7 s.f. in the case of an upper story window.
4. PER R308 GLAZING HAZARDOUS LOCATIONS as defined by R308.4 shall provide safety glazing as noted.
5. G.C. TO COORDINATE W/ LOCAL UTILITIES FOR LOCATION OF POWER, GAS, & HVAC EQUIPMENT.
6. DRAFTSTOP HVAC CHASES AND CONCEALED SPACES.
7. G.C. TO COORDINATE FLOOR FINISHES WITH OWNER.
8. ALL DIMENSIONS ARE TO OUTSIDE OF FRAME.
9. DOORS ARE EITHER LOCATED 4" OFF WALL OR CENTERED IN SPACE, U.N.O.

JOB SPECIFIC NOTES

1. THESE DRAWINGS DO NOT CONTAIN COMPLETE SPECIFICATIONS, DETAILS AND INFORMATION REQUIRED FOR THE INTERIOR FINISHES OF THE PROJECT. ADDITIONAL INFORMATION SHALL BE OBTAINED FROM THE OWNER.

2. G.C. TO SUBMIT SAMPLES OF ALL INTERIOR FINISHES FOR OWNER APPROVAL.

FLOOR PLAN NOTES

1. ALL DIMENSIONS TO BE VERIFIED IN FIELD.

2. ALL ANGLES ARE 45°, UNLESS NOTED OTHERWISE.

3. ALL DOORS TO BE INSTALLED 4" OFF WALL ON HINGE SIDE UNLESS NOTED OTHERWISE. SEE SHEET A0.1 FOR TYPICAL DOOR CLEARANCE DETAIL.

4. G.C. TO PROVIDE BLOCKING AS REQUIRED FOR TELEVISIONS & WALL MOUNTED MONITORS. COORDINATE EXACT LOCATION & HEIGHT W/ OWNER PRIOR TO INSTALLATION.

5. G.C. TO PROVIDE BLOCKING FOR CABINETRY &/OR EQUIPMENT.

2
A203

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

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PROFESSIONAL SEAL

No.	Description	Date

PROJECT NAME
Knightdale Concept Design

PROJECT TEAM
Evolution Design & Development

Drawn by BKF
Checked by BKF

ISSUE FOR
CONCEPT ELEVATIONS

ISSUE DATE
3-2-26

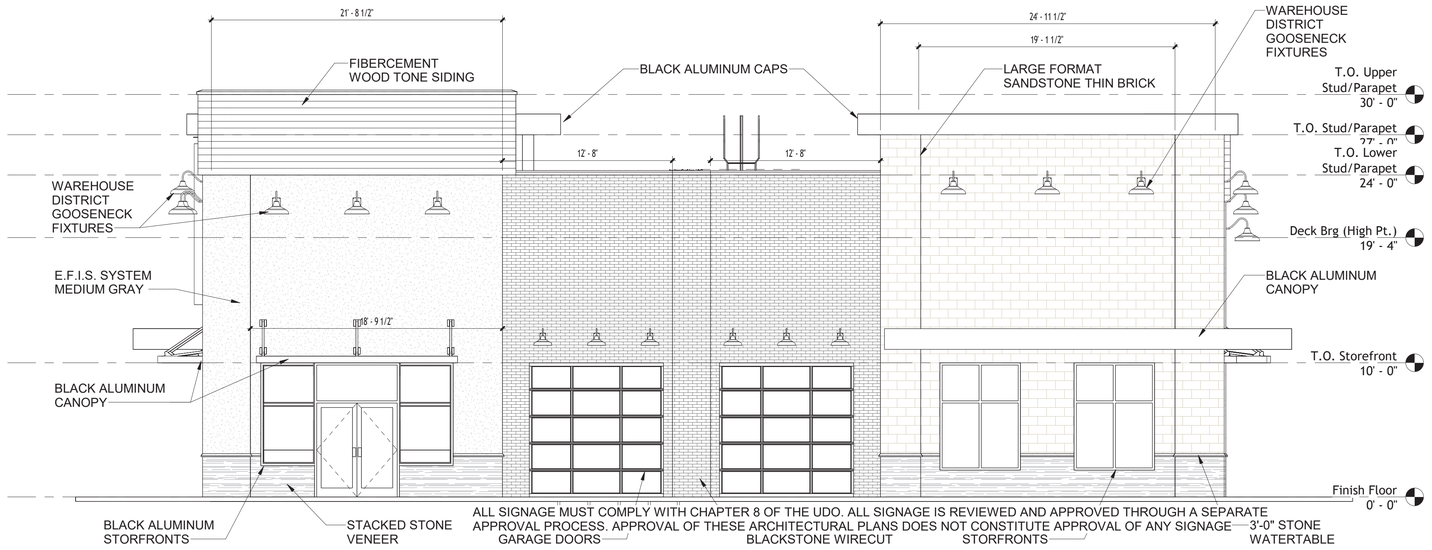
PROJECT NUMBER
2024-10

Floor Plan Building One

A101

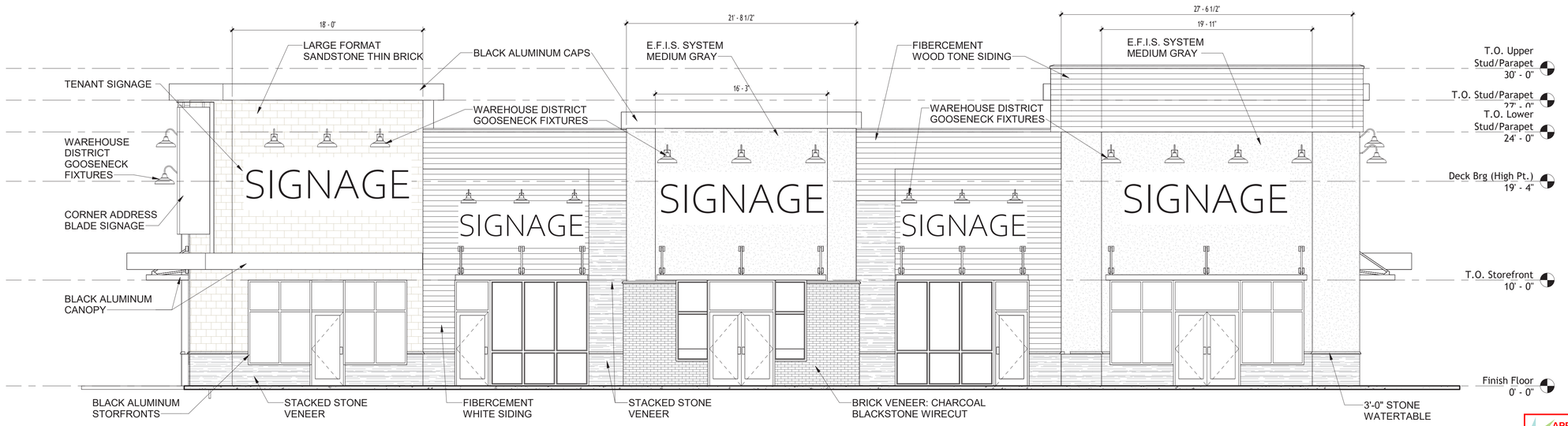
Scale 3/16" = 1'-0"

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2 Right Side Elevation (Courtyard)
3/16" = 1'-0"

Exterior Materials for Building One
Lap siding 23%
Brick 7%
Stone 8%
EIFS 21%
Sandstone 20%



1 Front Elevation (Knightdale Blvd)
3/16" = 1'-0"

ALL SIGNAGE MUST COMPLY WITH CHAPTER 8 OF THE UDO. ALL SIGNAGE IS REVIEWED AND APPROVED THROUGH A SEPARATE
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APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

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No.	Description	Date

PROJECT NAME
Knightdale Concept Design

PROJECT TEAM
Evolution Design & Development

Drawn by BKF
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ISSUE FOR
CONCEPT ELEVATIONS

ISSUE DATE
3-2-26

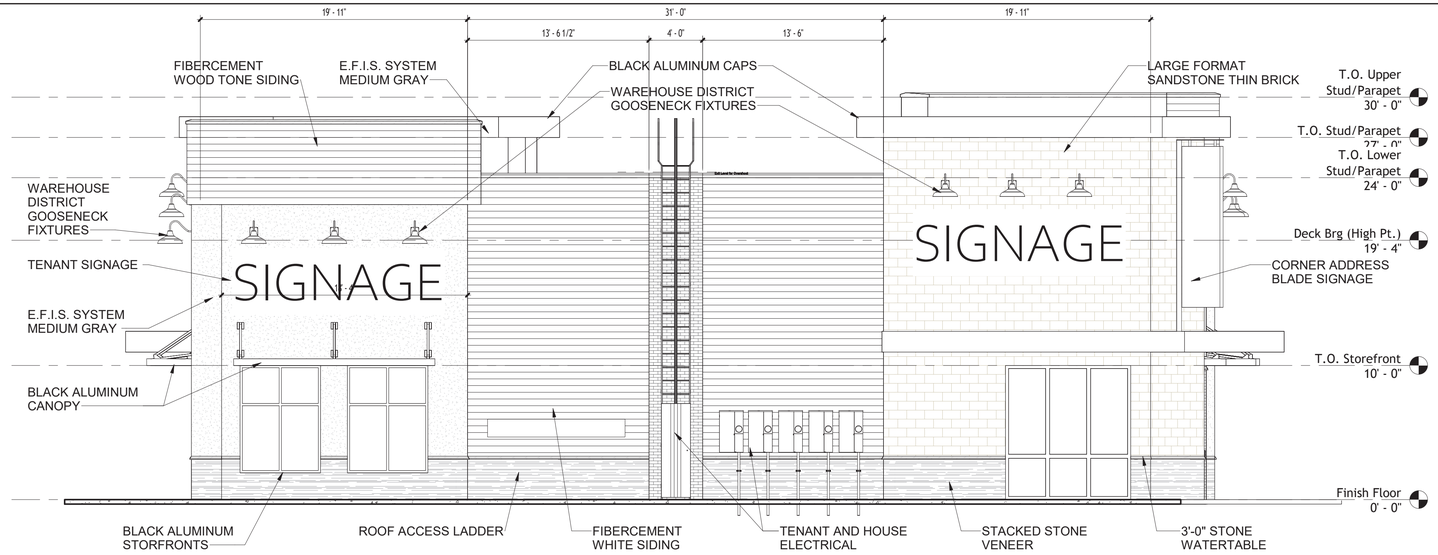
PROJECT NUMBER
2024-10

Building One Exterior Elevations

A201

Scale 3/16" = 1'-0"

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ALL EXTERIOR UTILITIES TO BE PAINTED TO MATCH EXTERIOR COLORS UNLESS STATED BY FIRE MARSHAL.

ALL SIGNAGE MUST COMPLY WITH CHAPTER 8 OF THE UDO. ALL SIGNAGE IS REVIEWED AND APPROVED THROUGH A SEPARATE APPROVAL PROCESS. APPROVAL OF THESE ARCHITECTURAL PLANS DOES NOT CONSTITUTE APPROVAL OF ANY SIGNAGE

② Left Side Elevation (Metroliner Place)
3/16" = 1'-0"

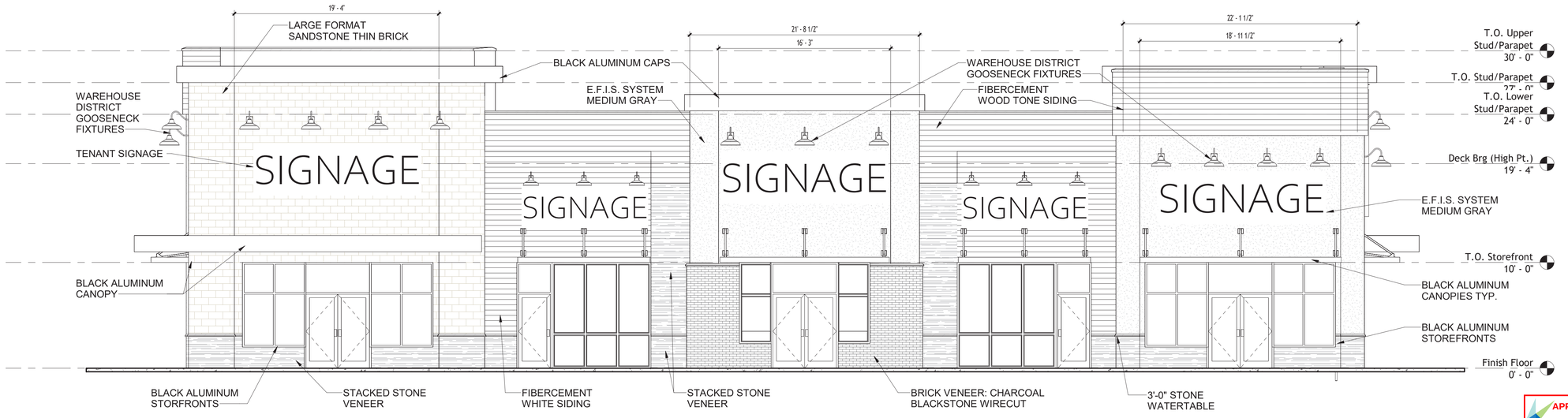
Exterior Materials for Building One
Lap siding 23%
Brick 7%
Stone 8%
EIFS 21%
Sandstone 20%



Building One Corner of Knightdale & Metroliner



Building One Corner at Parking Lot



ALL SIGNAGE MUST COMPLY WITH CHAPTER 8 OF THE UDO. ALL SIGNAGE IS REVIEWED AND APPROVED THROUGH A SEPARATE APPROVAL PROCESS. APPROVAL OF THESE ARCHITECTURAL PLANS DOES NOT CONSTITUTE APPROVAL OF ANY SIGNAGE

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Town of Knightdale
Development Services
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① Rear Elevation (Parking Lot Side)
3/16" = 1'-0"

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CONCEPT ELEVATIONS

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3-2-26

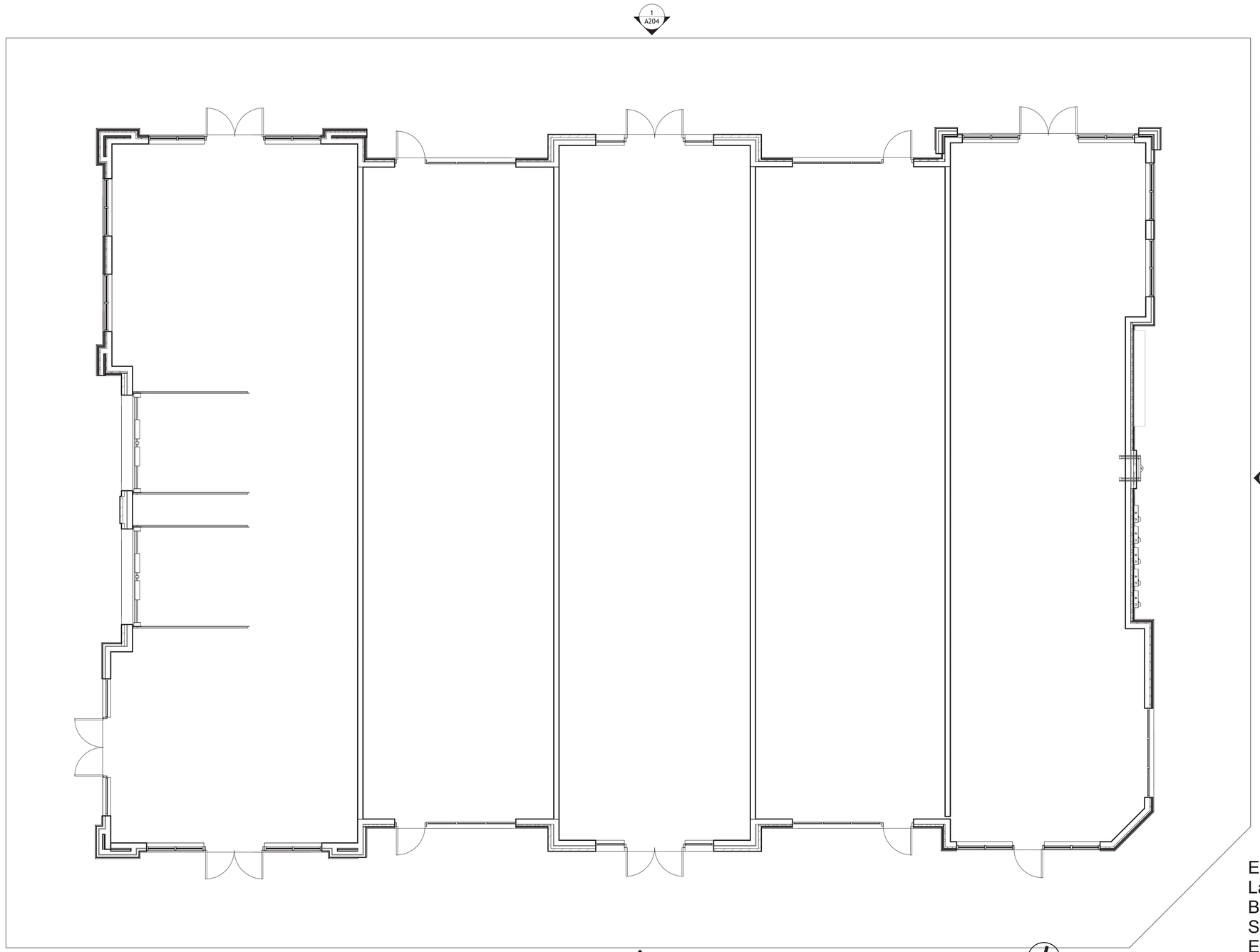
PROJECT NUMBER
2024-10

Building One Exterior Elevations

A202

Scale 3/16" = 1'-0"

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1 Building Two Floor Plan
3/16" = 1'-0"

GENERAL PROJECT NOTES

Do not scale drawings. If dimensions are in question, obtain clarification from designer. Contractor is to verify all existing conditions before beginning construction.
General Contractor shall install all work according to local, state, and federal codes. General Contractor shall verify all utility locations before beginning construction.

1. Smoke detectors to comply with Section R314 of the 2018 NCBC Residential Code.
2. Carbon Monoxide Alarms to comply with Section R315 of the 2018 NCBC Residential Code.
3. PER SECTION R310 2018 RESIDENTIAL NCBC: All emergency and escape rescue openings shall have a minimum net clear openable area of 4 s.f.. The minimum net clear opening height shall be 22 inches. The minimum net clear opening width shall be 20 inches. Emergency escape and rescue openings must have a minimum total glazing area of not less than 5 s.f. in the case of a ground floor level window and not less than 5.7 s.f. in the case of an upper story window.
4. PER R308 GLAZING HAZARDOUS LOCATIONS as defined by R308.4 shall provide safety glazing as noted.
5. G.C. TO COORDINATE W/ LOCAL UTILITIES FOR LOCATION OF POWER, GAS, & HVAC EQUIPMENT.
6. DRAFTSTOP HVAC CHASES AND CONCEALED SPACES.
7. G.C. TO COORDINATE FLOOR FINISHES WITH OWNER.
8. ALL DIMENSIONS ARE TO OUTSIDE OF FRAME.
9. DOORS ARE EITHER LOCATED 4" OFF WALL OR CENTERED IN SPACE, U.N.O.

JOB SPECIFIC NOTES

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2. G.C. TO SUBMIT SAMPLES OF ALL INTERIOR FINISHES FOR OWNER APPROVAL.

FLOOR PLAN NOTES

1. ALL DIMENSIONS TO BE VERIFIED IN FIELD.

2. ALL ANGLES ARE 45°, UNLESS NOTED OTHERWISE.

3. ALL DOORS TO BE INSTALLED 4" OFF WALL ON HINGE SIDE UNLESS NOTED OTHERWISE. SEE SHEET A0.1 FOR TYPICAL DOOR CLEARANCE DETAIL.

4. G.C. TO PROVIDE BLOCKING AS REQUIRED FOR TELEVISIONS & WALL MOUNTED MONITORS. COORDINATE EXACT LOCATION & HEIGHT W/ OWNER PRIOR TO INSTALLATION.

5. G.C. TO PROVIDE BLOCKING FOR CABINETRY &/OR EQUIPMENT.

2
A203

Exterior Materials for Building Two
Lap siding 23%
Brick 7%
Stone 8%
EIFS 21%
Sandstone 20%

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

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PROFESSIONAL SEAL

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PROJECT NAME
Knightdale Concept Design

PROJECT TEAM
Evolution Design & Development

Drawn by BKF
Checked by BKF

ISSUE FOR
CONCEPT ELEVATIONS

ISSUE DATE
3-2-26

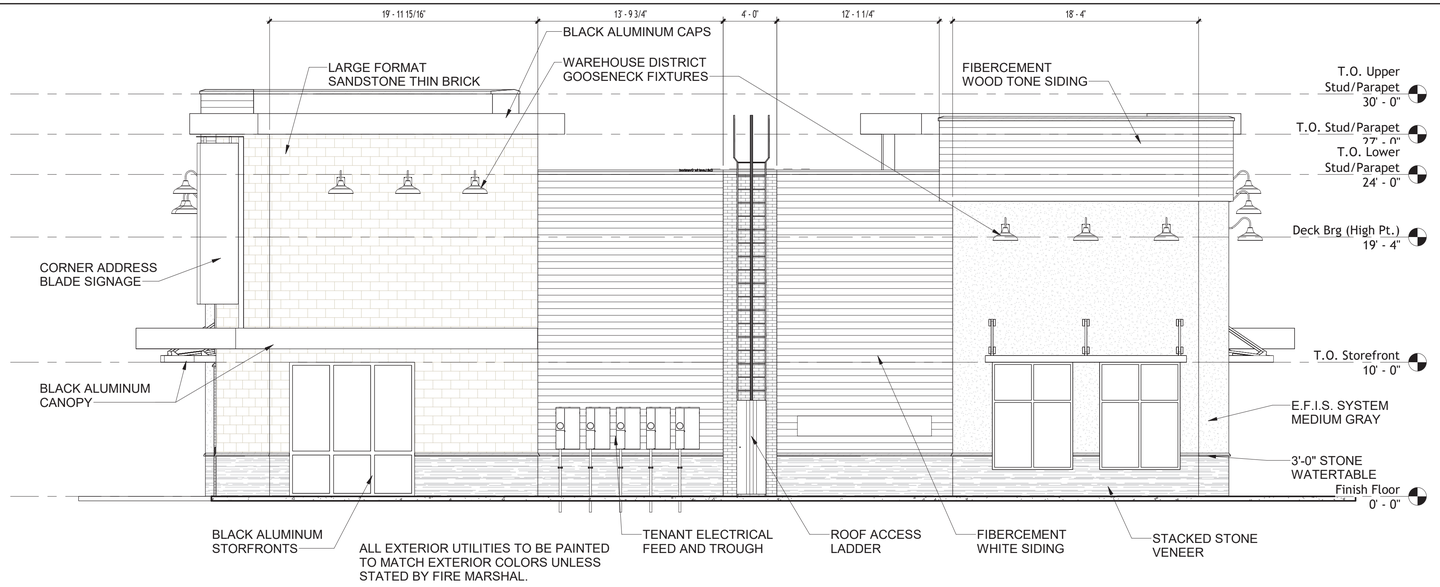
PROJECT NUMBER
2024-10

Building Two Floor Plans

A101

Scale 3/16" = 1'-0"

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2 Right Side Elevation (Carolina Place)
3/16" = 1'-0"

ALL SIGNAGE MUST COMPLY WITH CHAPTER 8 OF THE UDO. ALL SIGNAGE IS REVIEWED AND APPROVED THROUGH A SEPARATE APPROVAL PROCESS. APPROVAL OF THESE ARCHITECTURAL PLANS DOES NOT CONSTITUTE APPROVAL OF ANY SIGNAGE

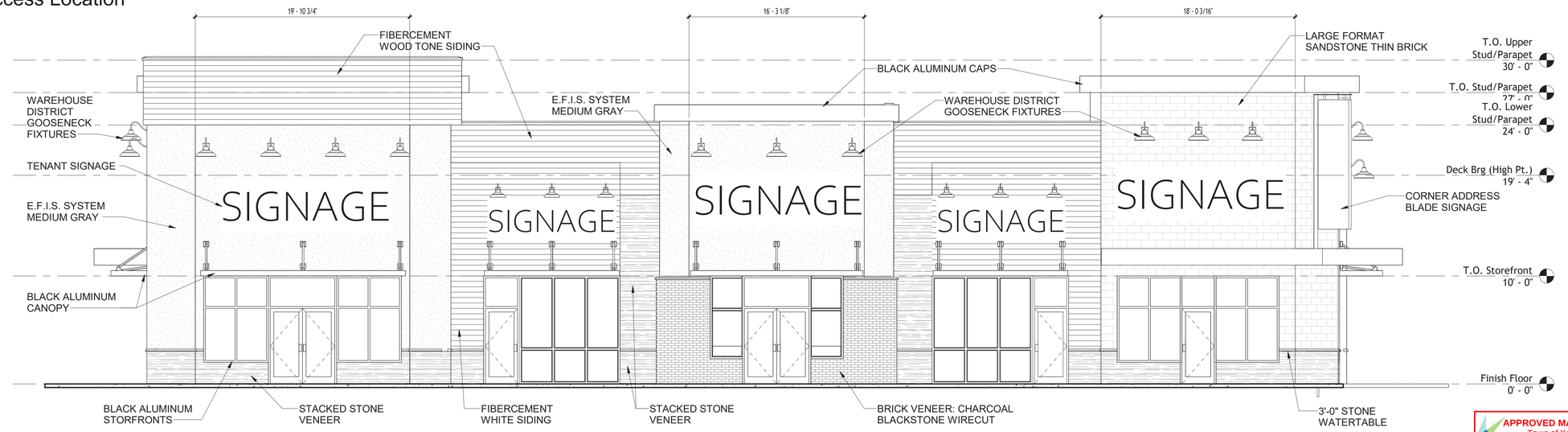
Exterior Materials for Building Two
Lap siding 23%
Brick 7%
Stone 8%
EIFS 21%
Sandstone 20%



Building Two Facing Carolina Ave
Utilities & Roof Access Location



Building Two Facing
Carolina Place & Knightdale Blvd



1 Front Elevation (Knightdale Blvd)
3/16" = 1'-0"

ALL SIGNAGE MUST COMPLY WITH CHAPTER 8 OF THE UDO. ALL SIGNAGE IS REVIEWED AND APPROVED THROUGH A SEPARATE APPROVAL PROCESS. APPROVAL OF THESE ARCHITECTURAL PLANS DOES NOT CONSTITUTE APPROVAL OF ANY SIGNAGE

APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

EVOLUTION DESIGN & DEVELOPMENT
INNOVATIVE DESIGN NEXT LEVEL LIVING

EVOLUTION DESIGN & DEVELOPMENT
409 Sadie Drive, Matthews NC 28105
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PROFESSIONAL SEAL

Not For Construction

No.	Description	Date

PROJECT NAME
Knightdale Concept Design

PROJECT TEAM
Evolution Design & Development

Drawn by BKF
Checked by BKF

ISSUE FOR
CONCEPT ELEVATIONS

ISSUE DATE
3-2-26

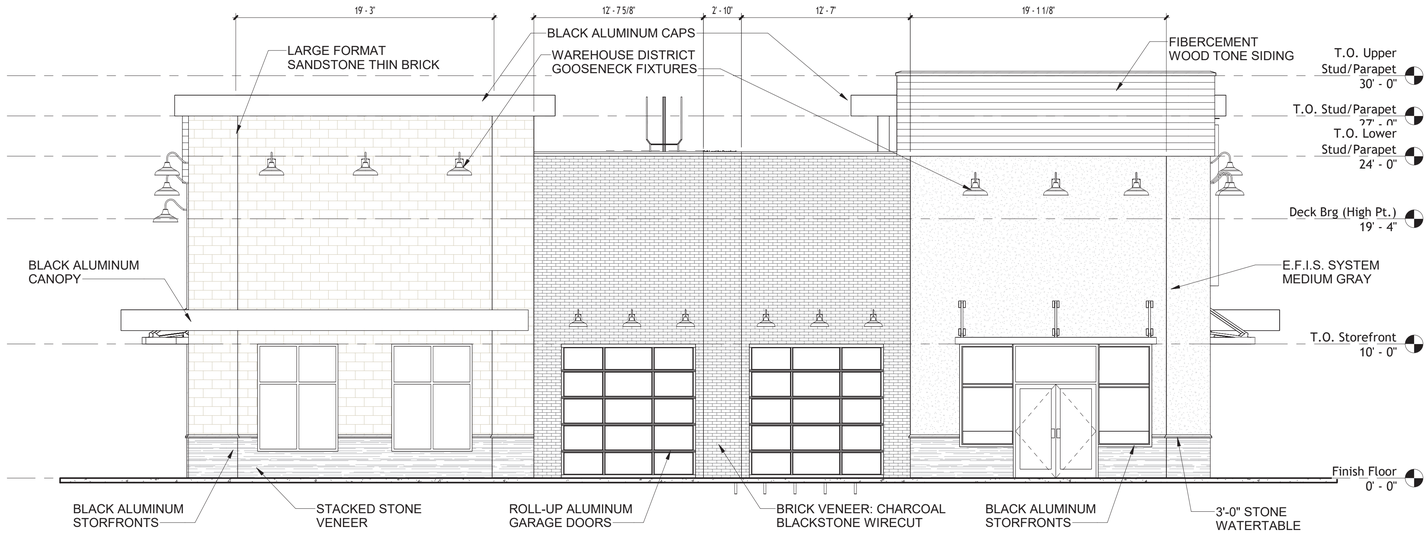
PROJECT NUMBER
2024-10

Building Two Exterior Elevations

A201

Scale 3/16" = 1'-0"

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2 Left Side Elevation (Courtyard)
3/16" = 1'-0"

Exterior Materials for Building Two
Lap siding 23%
Brick 7%
Stone 8%
EIFS 21%
Sandstone 20%

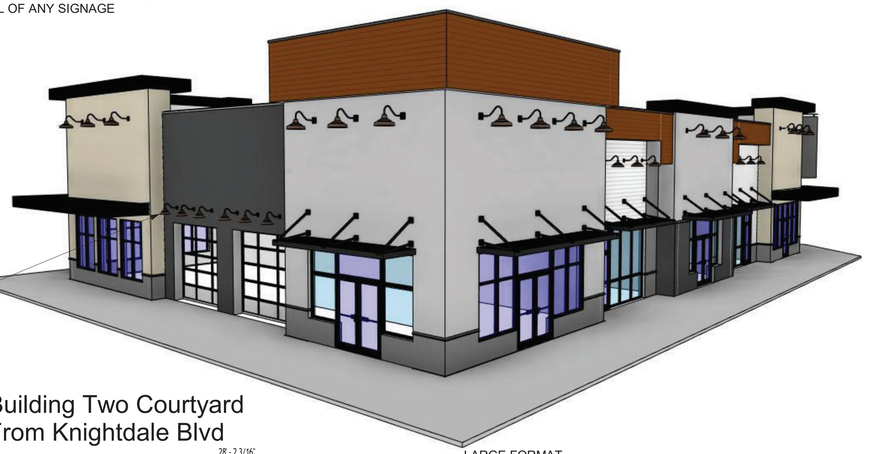
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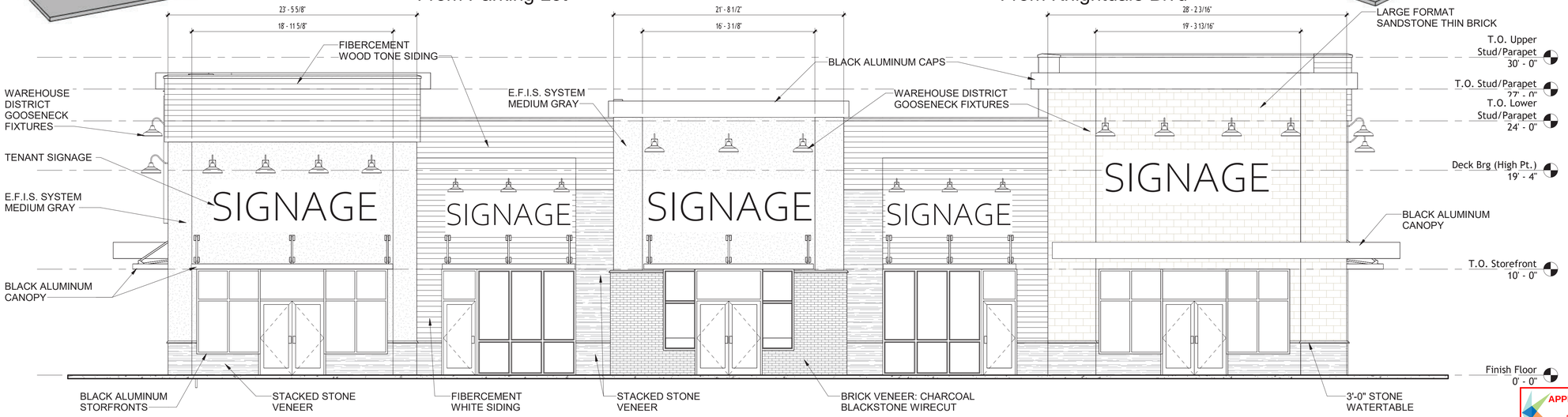
Building Two Courtyard
From Parking Lot



Brass & Black Gooseneck
In Courtyard Area



Building Two Courtyard
From Knightdale Blvd



1 Rear Elevation (Parking Lot Side)
3/16" = 1'-0"

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APPROVED MASTER PLAN
Town of Knightdale
Development Services
Gideon Smith 03/24/2026

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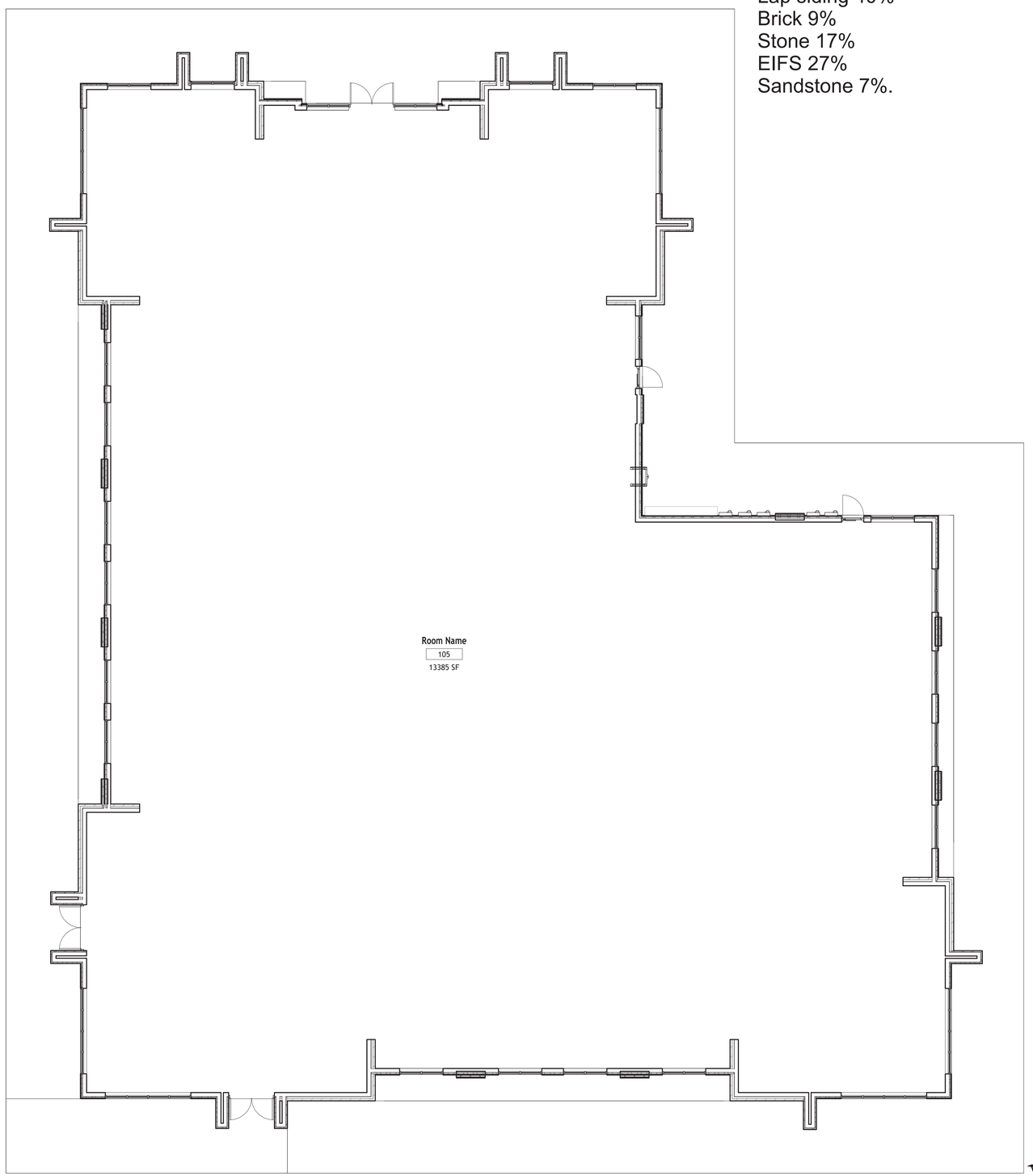
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2024-10

Building Two Exterior Elevations

A202

Scale 3/16" = 1'-0"

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1 Building Three Office Floor Plan
1/8" = 1'-0"

GENERAL PROJECT NOTES

Do not scale drawings. If dimensions are in question, obtain clarification from designer. Contractor is to verify all existing conditions before beginning construction.
General Contractor shall install all work according to local, state, and federal codes. General Contractor shall verify all utility locations before beginning construction.

1. Smoke detectors to comply with Section R314 of the 2018 NCBC Residential Code.
2. Carbon Monoxide Alarms to comply with Section R315 of the 2018 NCBC Residential Code.
3. PER SECTION R310 2018 RESIDENTIAL NCBC: All emergency and escape rescue openings shall have a minimum net clear openable area of 4 s.f.. The minimum net clear opening height shall be 22 inches. The minimum net clear opening width shall be 20 inches. Emergency escape and rescue openings must have a minimum total glazing area of not less than 5 s.f. in the case of a ground floor level window and not less than 5.7 s.f. in the case of an upper story window.
4. PER R308 GLAZING HAZARDOUS LOCATIONS as defined by R308.4 shall provide safety glazing as noted.
5. G.C. TO COORDINATE W/ LOCAL UTILITIES FOR LOCATION OF POWER, GAS, & HVAC EQUIPMENT.
6. DRAFTSTOP HVAC CHASES AND CONCEALED SPACES.
7. G.C. TO COORDINATE FLOOR FINISHES WITH OWNER.
8. ALL DIMENSIONS ARE TO OUTSIDE OF FRAME.
9. DOORS ARE EITHER LOCATED 4" OFF WALL OR CENTERED IN SPACE, U.N.O.

JOB SPECIFIC NOTES

1. THESE DRAWINGS DO NOT CONTAIN COMPLETE SPECIFICATIONS, DETAILS AND INFORMATION REQUIRED FOR THE INTERIOR FINISHES OF THE PROJECT. ADDITIONAL INFORMATION SHALL BE OBTAINED FROM THE OWNER.

2. G.C. TO SUBMIT SAMPLES OF ALL INTERIOR FINISHES FOR OWNER APPROVAL.

FLOOR PLAN NOTES

1. ALL DIMENSIONS TO BE VERIFIED IN FIELD.

2. ALL ANGLES ARE 45°, UNLESS NOTED OTHERWISE.

3. ALL DOORS TO BE INSTALLED 4" OFF WALL ON HINGE SIDE UNLESS NOTED OTHERWISE. SEE SHEET A0.1 FOR TYPICAL DOOR CLEARANCE DETAIL.

4. G.C. TO PROVIDE BLOCKING AS REQUIRED FOR TELEVISIONS & WALL MOUNTED MONITORS. COORDINATE EXACT LOCATION & HEIGHT W/ OWNER PRIOR TO INSTALLATION.

5. G.C. TO PROVIDE BLOCKING FOR CABINETRY &/OR EQUIPMENT.

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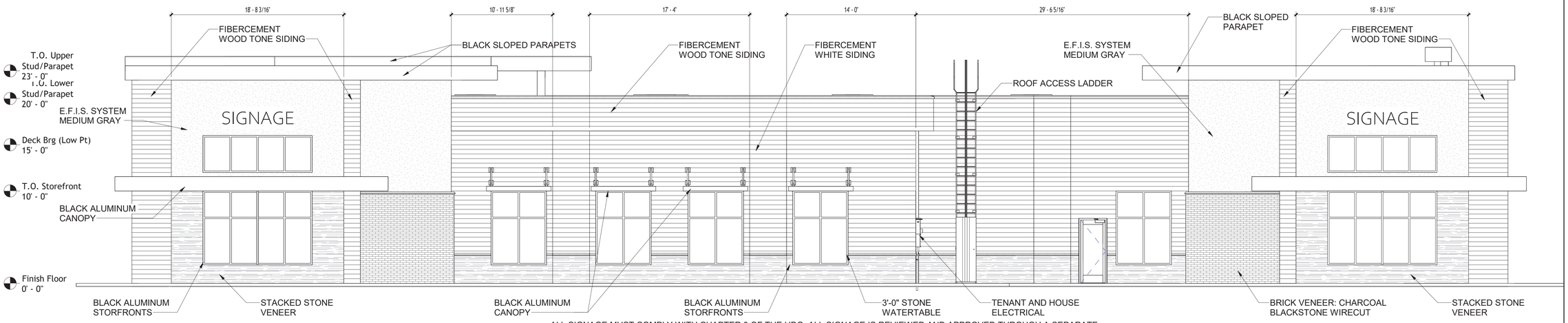
PROJECT NUMBER
2024-10

Floor Plan Building Three

A101

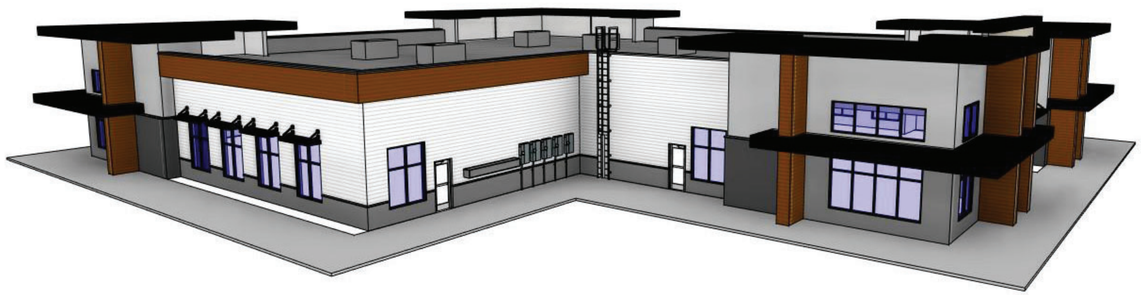
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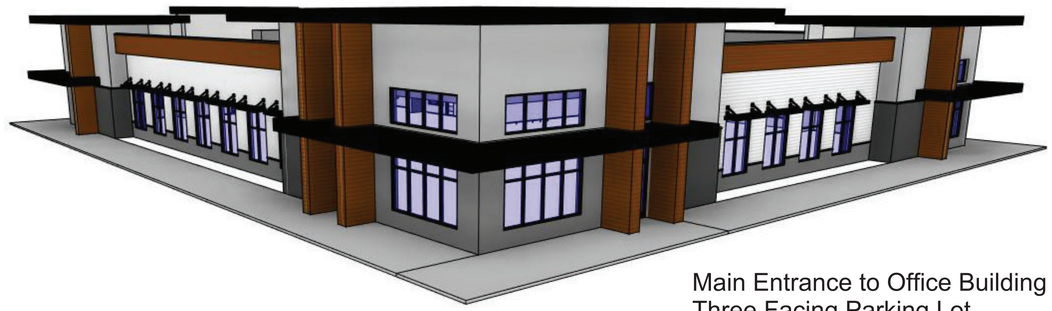
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2 Right Side Elevation (From Property Line)
3/16" = 1'-0"

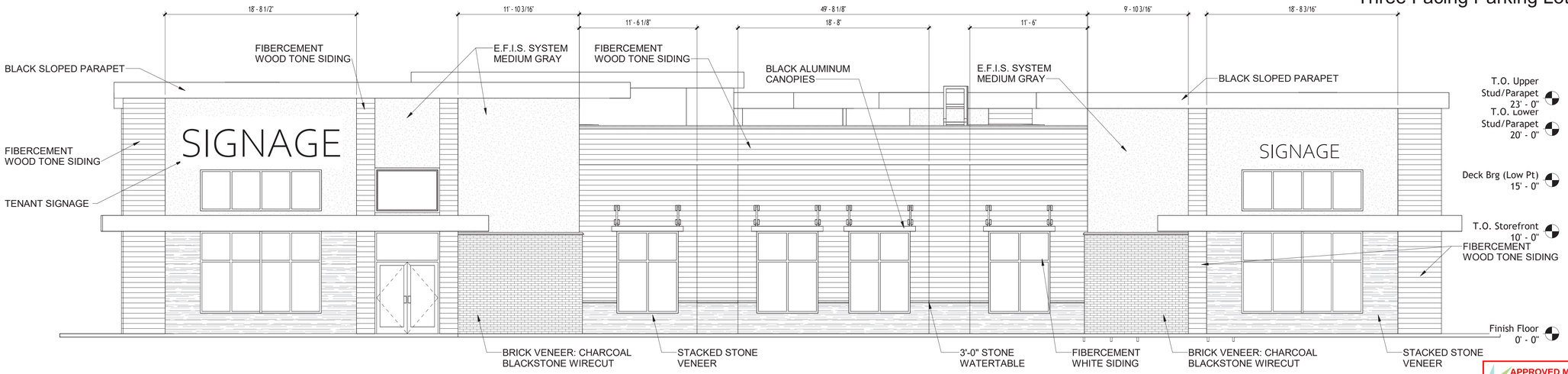


Building Three Facing Property Line

Exterior Materials for Building Three
Lap siding 40%
Brick 9%
Stone 17%
EIFS 27%
Sandstone 7%.



Main Entrance to Office Building Three Facing Parking Lot



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1 Front Elevation (From Parking Lot)
3/16" = 1'-0"

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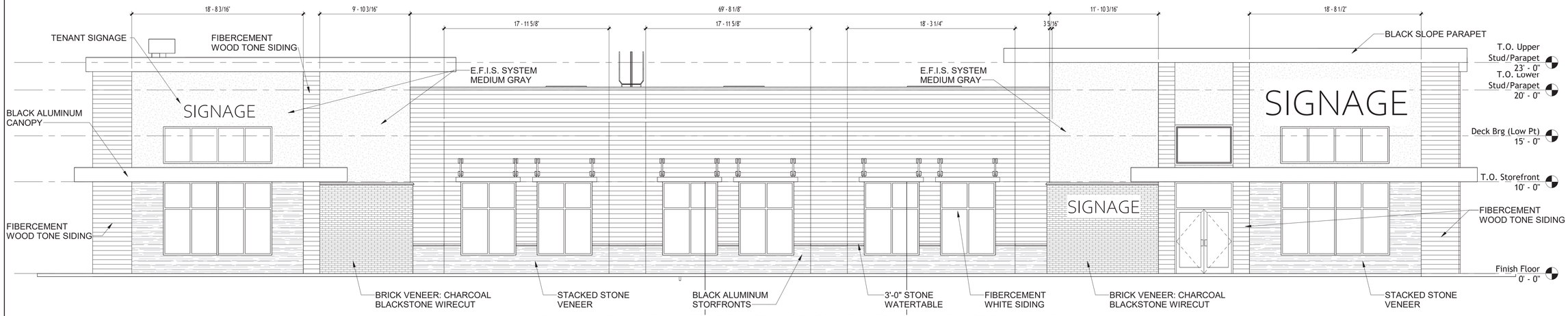
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Building Three Exterior Elevations

A201

Scale 3/16" = 1'-0"

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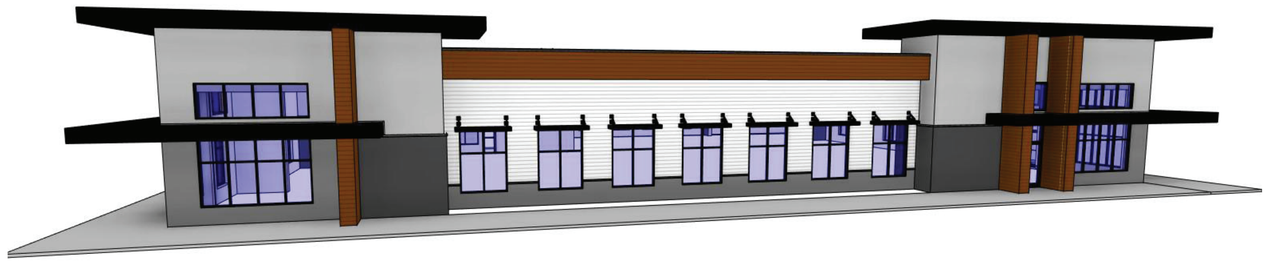


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② Left Side Elevation (Facing Retail Buildings)
3/16" = 1'-0"

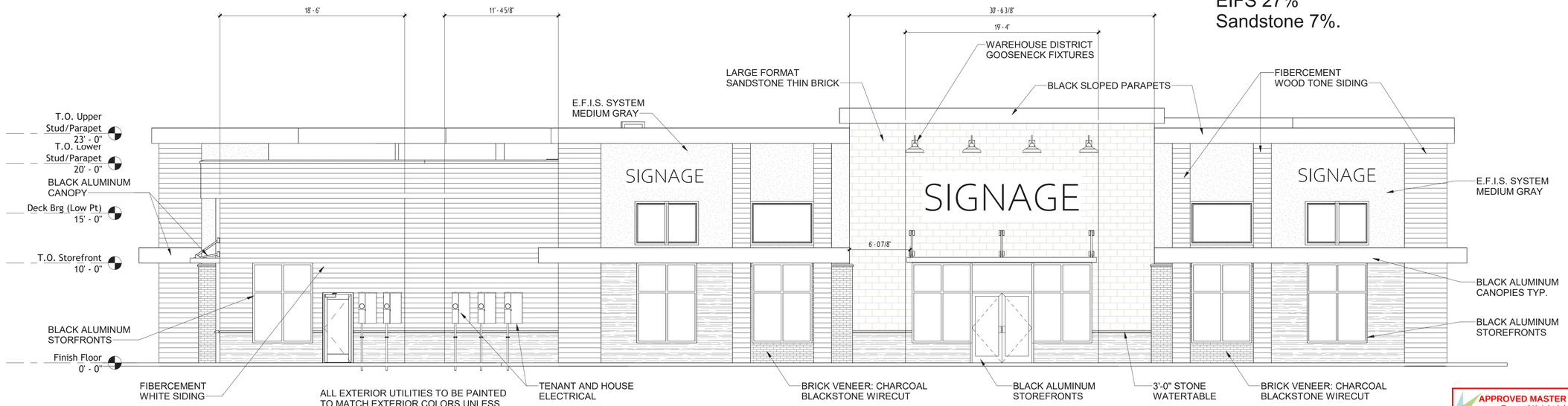


Building Three Facing Metroliner Place @ Entrance



Building Three Facing Retail Buildings One & Two

Exterior Materials for Building Three
Lap siding 40%
Brick 9%
Stone 17%
EIFS 27%
Sandstone 7%.



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① Rear Elevation (Facing Metroliner Place)
3/16" = 1'-0"

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Building Three
Exterior Elevations

A202

Scale 3/16" = 1'-0"

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