SILVERSTONE SUBDIVISION

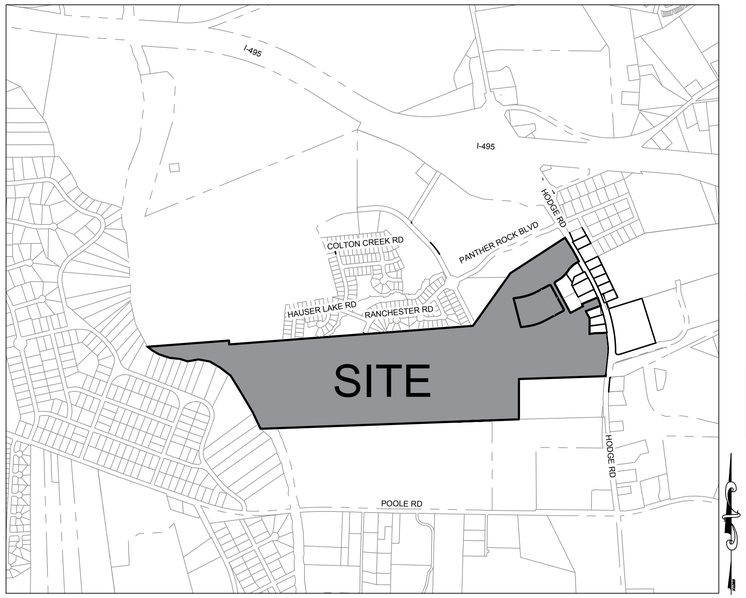
CONSTRUCTION DOCUMENTS

TOWN OF KNIGHTDALE, ST. MATTHEWS TOWNSHIP, WAKE COUNTY, NORTH CAROLINA

APPROVED MASTER PLAN: S-8-16
APPROVED ZONING CONDITIONS: ZMA-2-16

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VICINITY MAP

SCALE 1"=1,000'

0 1,000' 2,000'

CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL MATERIALS ORDERED PRIOR TO FINAL, APPROVED PLANS THAT ARE RELEASED FOR CONSTRUCTION, AND IS RESPONSIBLE FOR MAKING ALL ADJUSTMENTS TO THOSE MATERIALS TO MEET THE FINAL, APPROVED DESIGN, SUCH AS STRUCTURE HEIGHTS, ANGLES, PIPE MATERIALS, ETC., WITHOUT ADDITIONAL COST TO DEVELOPER OR ENGINEER.

PER THE APPROVED ZONING CONDITIONS, ZMA-2-16, UNLESS OTHERWISE APPROVED BY THE DEVELOPMENT SERVICES DEPARTMENT, NO SINGLE PHASE OF DEVELOPMENT WILL EXCEED 50 ACRES OF GRADING ACTIVITIES.

GENERAL NOTES:

1. FIELD TOPOGRAPHIC SURVEY PREFORMED BY WETHERILL ENGINEERING ON MARCH, 2018.
2. THE CONTRACTOR SHALL CONTACT NC ONE CALL CENTER PRIOR TO ANY DIGGING.
3. ALL PUBLIC WATER IMPROVEMENTS SHALL CONFORM TO ALL CITY OF RALEIGH PUBLIC WORKS DEPT. AND NCDEQ PWS STANDARDS AND SPECIFICATION. ALL SANITARY SEWER IMPROVEMENTS SHALL CONFORM TO ALL CITY OF RALEIGH PUBLIC UTILITIES DEPT. AND NCDEQ DWQ STANDARDS AND SPECIFICATION.
4. **THE CONTRACTOR SHALL CHECK PLANS AND FIELD CONDITIONS FOR CONFLICTS AND DISCREPANCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICT BEFORE PERFORMING WORK IN THE AFFECTED AREA.**
5. THE CONTRACTOR IS RESPONSIBILITY FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE AND BELOW GROUND THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED BY THE CONTRACTOR.
6. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATION AGAINST COLLAPSE AND SHALL PROVIDE BRACING,SHEETING, OR SHORING AS NECESSARY. TRENCHES SHALL BE KEPT DRY WHILE PIPES ARE BEING PLACED, DEWATERING SHALL BE USED AS REQUIRED, AND PERMITTED THROUGH LOCAL GOVERNMENT AGENCIES AND WATER MANAGEMENT DISTRICT PER CURRENT REGULATIONS AT THE SOLE COST OF THE CONTRACTOR.
8. WORK BEING PERFORMED UNDER THIS CONTRACT SHALL INTERFACE SMOOTHLY WITH OTHER WORK BEING PERFORMED IN THE AREA BY OTHER CONTRACTORS AND UTILITY COMPANIES. IT WILL BE NECESSARY FOR THE CONTRACTOR TO COORDINATE AND SCHEDULE HIS ACTIVITIES, WHERE NECESSARY, WITH OTHER CONTRACTORS AND UTILITY COMPANIES.
9. PIPE SPECIFICATIONS SHALL CONFORM TO CITY OF RALEIGH PUBLIC UTILITY STANDARDS.
   A.) ***WATER MAINS:***
   8" DUCTILE IRON PIPE, AWWA STND. C-150
   B.) ***WATER SERVICE:***
   SOFT COPPER TYPE 'K' ¾" TO 2" IN PUBLIC RIGHT-OF-WAY
   C.) ***SANITARY SEWER MAINS:***
   SDR 35 PVC, 8" DUCTILE IRON PIPE, AWWA STND. C-150
   D.) ***SANITARY SEWER SERVICE:***
   SCHEDULE 40 PVC
   E.) ***SANITARY SEWER MANHOLES:***
   DEPTHS 0' - 12': 4' DIAMETER
   DEPTHS 12' - 20' : 5' DIAMETER
   DEPTHS 20' OR GREATER: 6' DIAMETER

SITE DATA

OWNERS/SUBDIVIDER/DEVELOPER:
TAYLOR MORRISON
15501 WESTON PARKWAY, STE 100
MARK ALTMAN
CARY, NC 27513
PHONE: 919-868-2147

ENGINEER:
TIMMONS GROUP
MIKE ZACCARDO, PE
5410 TRINITY ROAD, STE. 102
RALEIGH, NC 27607
PHONE: 919-532-3281
EMAIL: MIKE.ZACCARDO@TIMMONS.COM

PIN = 1743-01-5982
DB = 18933 PG = 1356

FIRM MAP# = 3720173300K & 3720174300K, EFFECTIVE 07/19/2022

TOTAL EXISTING TRACT ACREAGE = 164.32 acres
TOTAL PROPOSED RIGHT OF WAY DEDICATION = 1,150,799 SF (26.42 AC)
R.O.W. PREVIOUSLY DEDICATED (HARDIN HILL) = 159,583 SF (3.66 AC)

ZONING = PRD, NMX, UR12
(GENERAL RESIDENTIAL)

OVERALL BUILD-OUT DENSITY:
379 DWELLING UNITS / 158.55 TOTAL DEVELOPMENT ACREAGE = 2.42

TOTAL LENGTH OF PUBLIC STORMWATER LINE
15" RCP = 7,551 LF
18" RCP = 5,792 LF
24" RCP = 5,271 LF
30" RCP = 2,359 LF
36" RCP = 2,429 LF
42" RCP = 204 LF

EROSION AND SEDIMENT CONTROL
Approved Plan
DATE : _____
Permit No. SEC-____-____
Town of Knightdale
Sedimentation & Erosion Control
(919)-217-2250
Town Inspector Signature

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***.

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

b. Professional Design Engineer Certification. These improvements shall be constructed in accordance with the following drawings and with the Standard Specifications of the Town of Knightdale.

I, _____, PE, certify that the Standard Specifications of the Town of Knightdale have been thoroughly checked and found to be applicable to this project. All exceptions to the applicable Town standards have been previously approved by the Town of Knightdale and said exceptions are shown on Sheet(s) _____ of these drawings.

Seal By: _____, PE
Date: _____

TOWN CERTIFICATION

THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

811 Know what's below. Call before you dig.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (if applicable)

The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** S-4945

The City of Raleigh consents to the connection and extension of the City's **Public Water System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** W-3871

The City of Raleigh consents to the connection to its public sewer system and extension of the **private sewer collection** system as shown on this plan. The material and constructions methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh Public Utilities Department Permit # _____

FOR REVIEW ONLY

THIS DRAWING PREPARED AT THE
RALEIGH OFFICE
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE
DELTA 1: PHASE RECONFIG, TEMP ROA,GREENWAY SHIFT,ADD 1 WALL, MAIL KIOSK, REMOVE 1 WALL, SWALE@D1 ALONG ALONG TW, ADD GUARDRAIL & STORM BYPASS	10/11/2024

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE AS SHOWN

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652
SILVERSTONE SUBDIVISION
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA
COVER SHEET

JOB NO. 44872
SHEET NO. C0.0

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S:\331\44872-Stone-Silver\DWG\Sheet\C0\SILVERSTONE_44872-331-SS-C0.0-COVER.dwg | by Sondra Jonssen

Exhibit E

Bonus Points – Water Allocation

Town of Knightdale Water Allocation Policy Bonus Points		
CATEGORY 1: Non-Conformity Abatement and Public Infrastructure Improvements.		
Section 1C- Off-Site Public Greenway Improvements (> 4985 LF)		10
CATEGORY 2: Green Development Standards		
Section 2A – Conservation of Natural Habitat Meeting Active Open Space Requirements as Defined in Chapter 7 of the UDO (> 10 Ac)		10
CATEGORY 3: Outdoor Enhancement and Transit Improvements		
Section 3A – Outdoor Enhancement (Max-10 points)		0
Section 3B – Transit (Max-8 points)		0
CATEGORY 4: Amenities (Only for Projects with Residential Components)		
Section 4A – Private Greenway (> 1000 LF)		1
Section 4B – Pool (Resort Style)		3
Section 4C – Outdoor Deck/Patio (> 3000 SF)		3
Section 4D – Pool Amenities (sauna in men's and women's bathroom)		2
Section 4E – Clubhouse (meeting space, bathrooms and changing rooms included)		10
Section 4F – Additional Active Recreation (IPEMA Certified Playground Equipment)		0
Total Bonus Points		39
Base points awarded by Town		15
Total Points		54

PHASING SUMMARY

PHASE NUMBER	AREA (AC)	TOWNS	40' WIDE (MIN)	60' WIDE (MIN)	PATIO (60' WIDE MIN)	TOTAL
PHASE 1	66.39	36	31	28	0	95
PHASE 2A	10.95	0	15	13	0	28
PHASE 2B	13.21	0	12	18	0	30
PHASE 3A	11.35	0	18	19	0	37
PHASE 3B	10.92	0	15	22	0	37
PHASE 4	10.93	67	0	0	0	67
PHASE 5	10.89	0	0	24	0	24
PHASE 6A	2.69	0	6	0	0	6
PHASE 6B	6.19	0	6	0	0	6
PHASE 6C	15.03	0	0	0	49	49
SUB TOTAL	158.55	103	103	124	49	379
PUBLIC OS DEDICATION (PH1)	(20.47)	12.98 ACRES OUTSIDE OF NEUSE RIVER				

1 1

PHASE 1	
Knightdale Quantities	
15" RCP Storm Drain Main	2,585 LF
18" RCP Storm Drain Main	1,810 LF
24" RCP Storm Drain Main	1,980 LF
30" RCP Storm Drain Main	252 LF
36" RCP Storm Drain Main	574 LF
PHASE 2A	
Knightdale Quantities	
15" RCP Storm Drain Main	676 LF
18" RCP Storm Drain Main	956 LF
24" RCP Storm Drain Main	149 LF
30" RCP Storm Drain Main	218 LF
36" RCP Storm Drain Main	118 LF
PHASE 2B	
Knightdale Quantities	
15" RCP Storm Drain Main	414 LF
18" RCP Storm Drain Main	543 LF
24" RCP Storm Drain Main	660 LF
30" RCP Storm Drain Main	108 LF
PHASE 3A	
Knightdale Quantities	
15" RCP Storm Drain Main	911 LF
18" RCP Storm Drain Main	209 LF
24" RCP Storm Drain Main	352 LF
36" RCP Storm Drain Main	972 LF
42" RCP Storm Drain Main	202 LF
PHASE 3B	
Knightdale Quantities	
15" RCP Storm Drain Main	160 LF
18" RCP Storm Drain Main	277 LF
24" RCP Storm Drain Main	691 LF
30" RCP Storm Drain Main	560 LF
36" RCP Storm Drain Main	226 LF

PHASE 4	
Knightdale Quantities	
15" RCP Storm Drain Main	1,002 LF
18" RCP Storm Drain Main	777 LF
24" RCP Storm Drain Main	522 LF
30" RCP Storm Drain Main	385 LF
36" RCP Storm Drain Main	99 LF
PHASE 5	
Knightdale Quantities	
15" RCP Storm Drain Main	427 LF
18" RCP Storm Drain Main	335 LF
24" RCP Storm Drain Main	378 LF
30" RCP Storm Drain Main	79 LF
PHASE 6A	
Knightdale Quantities	
18" RCP Storm Drain Main	224 LF
24" RCP Storm Drain Main	241 LF
30" RCP Storm Drain Main	357 LF
36" RCP Storm Drain Main	30 LF
PHASE 6B	
Knightdale Quantities	
15" RCP Storm Drain Main	93 LF
18" RCP Storm Drain Main	283 LF
36" RCP Storm Drain Main	410 LF
48" RCP Storm Drain Main	249 LF
PHASE 6C	
Knightdale Quantities	
15" RCP Storm Drain Main	296 LF
18" RCP Storm Drain Main	1,557 LF
24" RCP Storm Drain Main	652 LF
30" RCP Storm Drain Main	547 LF
36" RCP Storm Drain Main	587 LF

ZMA-2-16 REQUIREMENTS

PLANNED RESIDENTIAL DISTRICT STANDARDS

1. A TYPE A BUFFER YARD, TEN (10) FEET IN WIDTH, SHALL BE PROVIDED ALONG THE NORTHERN BOUNDARY OF THE PROPERTY LOCATED AT 137 TOWLER ROAD, CONTINUING EASTWARD ALONG THE NORTHERN PROPERTY LINE AND ENDING AT TOWLER ROAD.
2. THE DEVELOPMENT WILL CONSIST OF RESIDENTIAL LOTS NOT TO EXCEED 4 UNITS PER ACRE OR 596 LOTS.
3. SINGLE FAMILY DETACHED STANDARDS: SPECIFIC PROVISIONS
   - A. SINGLE FAMILY 2 STORY HOMES BUILT ON 60 FT. LOTS OR WIDER WILL HAVE A MINIMUM HEATED SQUARE FOOTAGE OF 2,200 SQUARE FEET.
   - B. SINGLE FAMILY 1 OR 1.5 STORY HOMES BUILT ON 60 FT. LOTS OR WIDER WILL HAVE A MINIMUM HEATED SQUARE FOOTAGE OF 1,800 SQUARE FEET.
   - C. SINGLE FAMILY HOMES BUILT ON LOTS NARROWER THAN 60 FT. WILL HAVE A MINIMUM HEATED SQUARE FOOTAGE OF 1,600 SQUARE FEET.
   - D. ALL SINGLE FAMILY HOMES WITH CRAWL SPACES WILL BE WRAPPED IN BRICK OR NATURAL OR CULTURED STONE ON ALL SIDES.
   - E. ALL SINGLE FAMILY HOMES WITH STEM WALL OR SLAB FOUNDATIONS WILL HAVE A MINIMUM EXPOSURE OF 18" WITH BRICK OR STONE.
   - F. ALL SINGLE FAMILY HOMES BUILT ON 60' LOTS OR SIDER WOULD HAVE A MINIMUM WIDTH OF 40 FT. AT THE FRONT ELEVATION (INCLUDING PORCHES).
   - G. ALL SINGLE FAMILY HOMES WILL HAVE A COMBINATION OF TWO OR MORE OF THE FOLLOWING MATERIALS ON THE FRONT FAÇADE (NOT COUNTING FOUNDATION): STONE, BRICK, LAP SIDING, SHAKES OR BOARD AND BATTEN UNLESS THE HOME IS ONLY STONE OR BRICK. WHEN TWO MATERIALS ARE USED, THE MATERIALS SHALL BE DIFFERENT BUT COMPLEMENTARY COLORS.
   - H. ALL LAP SIDING, SHAKES OR BOARD AND BATTEN ON SINGLE FAMILY HOMES SHALL BE A FIBER-CEMENT.
   - I. ALL SINGLE FAMILY HOMES WOULD HAVE A FRONT PORCH WITH A MINIMUM DEPTH OF 5FT. FRONT PORCH POSTS WILL BE AT LEAST 6"X6".
   - J. MAIN ROOF PITCHES (EXCLUDING PORCHES) FRONTING THE STREET FOR 2 STORY HOMES WILL BE AT LEAST 8:12.
   - K. MAIN ROOF PITCHES (EXCLUDING PORCHES) FRONTING THE STREET FOR 1 AND 1.5 STORY HOMES WILL BE AT LEAST 6:12.
   - L. THERE WILL BE A 12" OVERHANG ON EVERY GABLE END.
   - M. ALL GARAGE DOORS WILL HAVE DECORATIVE LIGHTS.
   - N. GARAGES WILL NOT PROTRUDE MORE THAN 6 FEET FROM THE FRONT PORCH OR STOOP.
   - O. AT LEAST 50% OF THE HOMES SHALL HAVE A REAR PORCH OR DECK AT LEAST 10'X10'. THE REMAINING HOMES SHALL HAVE A PATIO AT LEAST 10'X10'.
   - P. SIDE FAÇADE ARTICULATIONS: FOR EVERY 20 FEET (OR FRACTION) OF CONTINUOUS SIDE ELEVATION (CALCULATED ON A PER FLOOR BASIS), THERE SHALL BE ONE WINDOW OR DOOR ADDED TO THE SIDE ELEVATIONS. FOR EXAMPLE, A 55 FOOT FIRST FLOOR DEPTH SHALL HAVE 3 WINDOWS ON THE FIRST FLOOR. IF THE SECOND FLOOR IS 35 FEET, THERE SHALL BE 2 WINDOWS ON THE SECOND FLOOR. ANY SIDING BREAK ON THE SIDE OF THE HOME SUCH AS FIREPLACE, SIDE PORCH, WALL OFFSETS COULD BE USES AS AN ALTERNATE TO WINDOWS.
4. TOWNHOME STANDARDS DESCRIPTION: THE TOWNHOUSE BUILDING IS A LEAST A 1,250 SQUARE FOOT BUILDING, WITH AT LEAST 50% GREATER THAN 1,500 SQUARE FEET, WITH TWO (2) OR MORE UNITS (UP TO A MAXIMUM OF SIX (6) UNITS) ON INDIVIDUAL LOTS THAT ARE LOCATED SIDE-BY-SIDE AND PREFERABLY ACCESSED FROM A REAR LANE OR ALLEY. AS A RESULT, THE TOWNHOUSE TYPICALLY ONLY HAS ONE (1) YARD IN THE REAR, ALTHOUGH VARIATIONS MAY INCLUDE A SMALL FRONT SETBACK TO PROVIDE FOR LANDSCAPING, WHILE THE BULK, SCALE AND ARCHITECTURAL DESIGN OF THE BUILDING(S) REFLECTS THAT OF THE SURROUNDING NEIGHBORHOOD OR PLANNED DEVELOPMENT, AS MAY APPLY. SPECIFIC REQUIREMENTS:
   - A. ALLEY/REAR LANE ACCESS: A TOWNHOUSE SHOULD BE ACCESSED BY A REAR LANE OR ALLEY TO MINIMIZE PEDESTRIAN AND VEHICLE CONFLICTS, MAXIMIZE ON-STREET SHORT-TERM GUEST PARKING AND PROVIDE MORE LANDSCAPING ALONG THE STREETSCAPE.
   - B. UNIT DIFFERENTIATION: A SINGLE TOWNHOUSE UNIT SHALL BE DIFFERENTIATED FROM ADJACENT UNITS ALONG THE COMMON WALL FROM FOUNDATION TO ROOF RIDGE SO AS TO BE ARCHITECTURALLY DISTINGUISHABLE FROM EACH OTHER. SPECIFICALLY, THE FOLLOWING STANDARDS MUST BE MET:
     - I. ROOF LINE BREAKS MUST BE PROVIDED WHERE EACH UNIT'S ROOF APPEARS TO STAND ALONE;
     - II. GABLES MAY NOT SPAN BETWEEN TWO UNITS; III. EACH UNIT SHALL HAVE AT LEAST TWO MATERIALS (BRICK, STONE, STUCCO, CLAPBOARD, SCALES, SHINGLES, BOARD AND BATTEN, ETC.) ON THE PRIMARY FACED, WITH EACH MATERIAL BEING OF DIFFERENT, BUT COMPLIMENTARY COLOR THAN THE MATERIAL OF THE ADJACENT UNIT; AND
     - IV. REAR YARDS SHALL PROVIDE AT LEAST ONE OF THE FOLLOWING:
       1. ARCHITECTURAL WALL/FENCING MATCHING THE STRUCTURE.
       2. STORAGE ROOM THAT DIVIDES THE UNITS CREATING A COURTYARD LIKE SETTING; OR
       3. SHRUBS EXTENDING OUT DELINEATING EACH YARD.
   - C. UNIT DESIGN DETAILS: ALL TOWNHOUSE BUILDINGS SHALL PROVIDE DETAILED DESIGN ALONG ALL UNIT FACADES VISIBLE FROM A PUBLIC RIGHT-OF-WAY. DETAILED DESIGN SHALL BE PROVIDING BY USING AT LEAST ONE (1) OF THE ARCHITECTURAL FEATURES FROM EACH OF THE FOLLOWING THREE (3) FEATURE CATEGORIES ON ALL FACADES AS APPROPRIATE FOR THE PROPOSED ARCHITECTURAL STYLE (MAY VARY FEATURES ON REAR/SIDE/FRONT ELEVATIONS):
     - A. ENTRANCE (PRIMARY FAÇADE ONLY)
       - I. PORCH PILLARS (6" MIN WIDTH)
       - II. SIDELIGHTS III. DECORATIVE DOOR SURROUND (6"MIN WIDTH) WITH PEDIMENT OR CROWN.
     - B. WINDOW TREATMENT
       - I. DECORATIVE WINDOW SURROUND (4" MIN WIDTH) WITH CROWN
       - II. SHUTTERS WITH FASTENERS III. WINDOW BOX PLANTERS
     - C. ROOF LINE:
       - I. DORMER/GABLE
       - II. BRACKETED EAVES III. DECORATIVE CORNICE OR ROOF LINE (FLAT ROOFS ONLY)
   - D. FOUNDATIONS
     - A. MATERIAL: THE CRAWLSPACE OF BUILDINGS SHALL BE ENCLOSED WITH BRICK, STONE, OR STUCCO. SLAB'S SHALL BE COVERED WITH BRICK OR STONE. AREAS UNDER PORCHES MAY BE ENCLOSED WITH LATTICE.
     - B. LANDSCAPING: AT LEAST 60% OF THE LENGTH OF ANY FOUNDATION WALL VISIBLE FROM THE RIGHT-OF-WAY MUST BE LANDSCAPED WITH FOUNDATION PLANTINGS.
   - E. WALL MATERIALS: TOWNHOUSE BUILDINGS WALLS SHALL BE WOOD CLAPBOARD, CEMENTIOUS FIBER BOARD, WOOD SHINGLE, WOOD DROP SIDING, WOOD BOARD AND BATTEN, BRICK, STONE, OR STUCCO. IF NOT ENTIRELY MASONRY, TOWNHOUSE BUILDING FRONT FACADES SHALL HAVE AT LEAST TWO (2) SIDING TEXTURES WITH THE HEAVIER MATERIAL (I.E. STONE, BRICK) PLACED BELOW THE LIGHTER MATERIAL (I.E. SIDING, SHAKES) TO GIVE THE SENSE OF SUPPORT AND GROUNDING, (BRICK, STONE, STUCCO, CLAPBOARD, SCALES, SHINGLES, BOARD AND BATTEN, ETC.) MUST CHANGE BETWEEN UNITS (APPLICABLE TO EACH FLOORS).
   - F. ROOFS:
     - A. MATERIALS: TOWNHOUSE BUILDING ROOFS SHALL BE CLAD IN WOOD SHINGLES, STANDING SEAM METAL, SLATE, COPPER, OR ASPHALT SHINGLES.
     - B. PITCH: MAIN ROOFS ON RESIDENTIAL BUILDINGS HALL BE SYMMETRICAL GABLES OR HIPS WITH A PITCH BETWEEN 6:12 AND 12:12. MONOPITCH (SHED) ROOFS ARE ALLOWED ONLY IF THEY ARE ATTACHED TO THE WALL OF THE MAIN BUILDING. NO MONOPITCH ROOFS SHALL BE LESS THAN 3:12.
   - G. ADMINISTRATIVE APPROVAL OF MINOR VARIANCES: THE STAFF MAY APPROVE MINOR VARIANCES TO THE SPECIFIC REQUIREMENTS LISTED ABOVE PROVIDED THAT SUCH MINOR VARIANCE MEETS THE OVERALL INTENT OF THESE TOWNHOUSE STANDARDS AND CONFORMS TO THE COMPREHENSIVE PLAN AND OTHER ADOPTED PLANS OF THE TOWN.
5. DESIGN EXCEPTION: GRADING
   - A. BECAUSE OF THE EXTREME TOPOGRAPHICAL CONDITIONS WITH HILLS AND VALLEYS OF OVER 50 FT. IN ELEVATION CHANGE, THE DEVELOPMENT CANNOT BE CONSTRUCTED ACCORDING TO THE GRADING REQUIREMENTS IN THE UDO SECTION 6.2.B. THE DEVELOPER IS RESPECTFULLY REQUESTING AN EXCEPTION FROM THE UDO SECTION 6.2.B WITH THE ABILITY TO GRADE THE SITE OUTSIDE OF THE PROPOSED RIGHT-OF-WAY. A SINGLE PHASE OF DEVELOPMENT SHALL NOT ENCOMPASS MORE THAN 50 ACRES OF GRADING UNLESS APPROVED BY THE TOWN'S DEVELOPMENT SERVICES DEPARTMENT.

PUBLIC INFRASTRUCTURE QUANTITIES TABLE

	PHASE 1	PHASE 2A	PHASE 2B	PHASE 3A	PHASE 3B	PHASE 4
Knightdale Quantities						
Public Streets	3,600 LF	2,357 LF	1,576 LF	2,147 LF	1,292 LF	1,348 LF
Public Curb and Gutter	7,467 LF	3,129 LF	3,008 LF	2,565 LF	2,573 LF	2,897 LF
Public Sidewalks	5,228 LF	3,197 LF	3,057 LF	2,642 LF	2,602 LF	5,193 LF
# of SCMs	4	1	1	0	0	0
COR Public Utility Quantities						
12" DIP Public Water Main	78 LF	0 LF	0 LF	0 LF	0 LF	0 LF
8" DIP Public Water Main	1,075 LF	1,702 LF	1,407 LF	1,330 LF	975 LF	1,055 LF
6" DIP Public Water Main	1,051 LF	0 LF	218 LF	0 LF	289 LF	0 LF
8" PVC Public Sanitary Main	4,375 LF	930 LF	1,002 LF	1,910 LF	1,369 LF	983 LF
8" DIP Public Sanitary Main	0 LF	0 LF	241 LF	391 LF	91 LF	0 LF
10" PVC Public Sanitary Main	0 LF	0 LF	0 LF	0 LF	0 LF	0 LF
10" DIP Public Sanitary Main	0 LF	0 LF	0 LF	0 LF	0 LF	0 LF
12" PVC Public Sanitary Main	0 LF	0 LF	0 LF	0 LF	0 LF	0 LF
12" DIP Public Sanitary Main	0 LF	0 LF	0 LF	0 LF	0 LF	0 LF
15" PVC Public Sanitary Main	0 LF	0 LF	0 LF	0 LF	0 LF	0 LF
15" DIP Public Sanitary Main	0 LF	0 LF	0 LF	0 LF	0 LF	0 LF
Private Water Main	0 LF	0 LF	0 LF	0 LF	0 LF	0 LF
Private Sewer Main	0 LF	0 LF	0 LF	0 LF	0 LF	0 LF
# Water Main Stubs/Blowoffs	5 EA	3 EA	1 EA	2 EA	0 EA	1 EA
# New 3/4" Domestic Water Meters	95 EA	28 EA	30 EA	37 EA	37 EA	67 EA
# Sanitary Sewer Manholes	33 EA	8 EA	9 EA	9 EA	11 EA	7 EA
# New 4" Sewer Cleanouts	95 EA	28 EA	30 EA	37 EA	37 EA	67 EA
# Existing Domestic Water Meters	31 EA	0 EA	0 EA	0 EA	0 EA	0 EA
# Existing Sewer Cleanouts	30 EA	0 EA	0 EA	0 EA	0 EA	0 EA
# New Hydrants	13 EA	3 EA	5 EA	4 EA	4 EA	3 EA
# Service Abandonments	0 EA	0 EA	0 EA	0 EA	0 EA	0 EA
# Ties in to Existing Water Mains	3 EA	0 EA	1 EA	0 EA	0 EA	0 EA
# Ties in to Existing Sewer Mains	3 EA	0 EA	0 EA	0 EA	0 EA	0 EA

	PHASE 5	PHASE 6A	PHASE 6B	PHASE 6C	ALL PHASES (TOTAL)
Knightdale Quantities					
Public Streets	941 LF	828 LF	998 LF	2,585 LF	17,672 LF
Public Curb and Gutter	2,172 LF	766 LF	854 LF	4,849 LF	30,280 LF
Public Sidewalks	1,918 LF	801 LF	878 LF	4,890 LF	30,406 LF
# of SCMs	1	1	0	1	9
COR Public Utility Quantities					
12" DIP Public Water Main	0 LF	418 LF	439 LF	163 LF	1,098 LF
8" DIP Public Water Main	941 LF	0 LF	0 LF	1,600 LF	5,748 LF
6" DIP Public Water Main	0 LF	0 LF	0 LF	819 LF	2,377 LF
8" PVC Public Sanitary Main	1,642 LF	394 LF	476 LF	1,880 LF	9,693 LF
8" DIP Public Sanitary Main	0 LF	0 LF	76 LF	832 LF	1,631 LF
10" PVC Public Sanitary Main	0 LF	0 LF	0 LF	0 LF	0 LF
10" DIP Public Sanitary Main	0 LF	0 LF	0 LF	0 LF	0 LF
12" PVC Public Sanitary Main	0 LF	0 LF	0 LF	0 LF	0 LF
12" DIP Public Sanitary Main	0 LF	0 LF	0 LF	0 LF	0 LF
15" PVC Public Sanitary Main	0 LF	0 LF	0 LF	0 LF	0 LF
15" DIP Public Sanitary Main	0 LF	0 LF	0 LF	0 LF	0 LF
Private Water Main	0 LF	0 LF	0 LF	0 LF	0 LF
Private Sewer Main	0 LF	0 LF	0 LF	0 LF	0 LF
# Water Main Stubs/Blowoffs	1 EA	1 EA	1 EA	2 EA	17 EA
# New 3/4" Domestic Water Meters	24 EA	6 EA	6 EA	49 EA	379 EA
# Sanitary Sewer Manholes	9 EA	4 EA	4 EA	19 EA	113 EA
# New 4" Sewer Cleanouts	24 EA	6 EA	6 EA	49 EA	257 EA
# Existing Domestic Water Meters	0 EA	0 EA	0 EA	0 EA	31 EA
# Existing Sewer Cleanouts	0 EA	0 EA	0 EA	0 EA	30 EA
# New Hydrants	3 EA	1 EA	1 EA	6 EA	43 EA
# Service Abandonments	0 EA	0 EA	0 EA	0 EA	0 EA
# Ties in to Existing Water Mains	1 EA	0 EA	0 EA	0 EA	5 EA
# Ties in to Existing Sewer Mains	0 EA	0 EA	0 EA	0 EA	3 EA

Site Data

	Number of Lots	GPD Usage Water	GPD Usage Sewer	Calculation for GPD Water (per Unit)	Calculation for GPD Sewer (per Unit)
PHASE 1	95	45,600	28,500	480	300
PHASE 2A	28	13,440	8,400	480	300
PHASE 2B	38	18,240	11,400	480	300
PHASE 3A	37	17,760	11,100	480	300
PHASE 3B	37	17,760	11,100	480	300
TOTAL	379	181,920	113,700	480	300
PHASE 4	67	32,160	20,100	480	300
PHASE 5	24	11,520	7,200	480	300
PHASE 6A	6	2,880	1,800	480	300
PHASE 6B	6	2,880	1,800	480	300
PHASE 6C	49	23,520	14,700	480	300

1 1

TOWN CERTIFICATION

THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: ______________________ DATE: ____________

DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: ______________________ DATE: ____________

ADMINISTRATOR

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval ______________________

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (If applicable)

The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** S-4945

The City of Raleigh consents to the connection and extension of the City's **Public Water System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** W-3871

The City of Raleigh consents to the connection to its public sewer system and extension of the **private sewer collection** system as shown on this plan. The material and constructions methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh Public Utilities Department Permit # ____________

FOR REVIEW ONLY

THIS DRAWING PREPARED AT THE **RALEIGH OFFICE** 5410 Trinity Road, Suite 102 | Raleigh, NC 27607 TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
10/11/2024	DELTA 1: PHASE RECONFIG

DATE 04/21/2023

DRAWN BY 331

DESIGNED BY 331

CHECKED BY M. ZACCARDO

SCALE AS SHOWN

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

PROJECT NOTES AND INFRASTRUCTURE TABLE QUANTITIES

JOB NO. 44872

SHEET NO. C0.1

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RETAINING WALL NOTE

1. ALL RETAINING WALLS TO BE DESIGNED, PERMITTED, & RAILING REQUIREMENT ASSESSMENT BY OTHERS. ASSOCIATED DRAINAGE TO BE DESIGNED BY OTHERS.
2. RETAINING WALL DESIGNERS TO PROVIDE FINAL BYPASS SWALES ALONG WALL PERIMETER. GRADES PROVIDE ON THESE DRAWINGS PROVIDED FOR DESIGN INTENT AND REFERENCE.
3. CONTRACTOR TO PROVIDE SHOP DRAWINGS TO ENGINEER OF RECORD FOR COORDINATION PURPOSES, WITH FIELD CONDITIONS, UNSEEN CONFLICTS AND ASSOCIATE DRAINAGE, AS NEEDED.
4. CONTRACTOR SHALL COORDINATE DESIGN AND SUBMIT SEALED PLAN(S) FOR REVIEW AND APPROVAL FROM TOWN.
5. ALL RETAINING WALLS WILL REQUIRE A BUILDING PERMIT FROM THE JURISDICTIONS INSPECTIONS DEPT.
6. TOP OF WALL SPOT GRADES PROVIDE 6" ELEVATION DIFFERENCE ABOVE GRADE SHOWN.

GUARDRAIL NOTE

1. DESIGN OF GUARDRAIL POSTS, FOOTINGS AND POTENTIAL RETAINING WALL GRID PENETRATIONS TO BE DESIGNED BY OTHERS IN ACCORDANCE TO RETAINING WALL DESIGN. RECOMMEND NCDOT STANDARD DETAIL 862.02 (SHEETS 2 & 4-9), TIMBER OR APPROVED EQUAL.
2. CONTRACTOR TO PROVIDE SHOP DRAWINGS TO ENGINEER OF RECORD FOR COORDINATION PURPOSES, WITH FIELD CONDITIONS, UNSEEN CONFLICTS, AS NEEDED.
3. CONTRACTOR SHALL COORDINATE DESIGN AND SUBMIT SEALED PLAN(S) FOR REVIEW AND APPROVAL FROM TOWN.
4. GUARDRAILS MAY REQUIRE A BUILDING PERMIT FROM THE JURISDICTIONS INSPECTIONS DEPT.

RECREATIONAL OPEN SPACE CALCULATIONS:

NOTE:
1. RECREATIONAL OPEN SPACE DEDICATION SHALL BE IN ACCORDANCE WITH TOWN OF KNIGHTDALE U.D.O. CHAPTER 7 REQUIREMENTS.

OVERALL BUILD-OUT DENSITY:
379 DWELLING UNITS / 158.55 TOTAL DEVELOPMENT ACREAGE = 2.42

ALL PHASES
ESTIMATED NUMBER OF BEDROOMS:
276 UNITS x 3.5 BEDROOMS/UNIT = 966 BEDROOMS OUTSIDE 1/2 MILE (HOUSES)
103 UNITS X 2.5 BEDROOMS/UNIT = 258 BEDROOMS OUTSIDE 1/2 MILE (TOWNHOUSES)

1224 BEDROOMS X 520 S.F. = 636,480 S.F.
SUBTOTAL RECREATIONAL SPACE REQUIRED = 636,480 S.F. (14.61 AC.)
TOTAL REC. SPACE REQUIRED AFTER 25% REDUCTION DUE TO AMENITIES = 10.96 AC.
ACTIVE OS REQUIRED = 5.48

TOWN CERTIFICATION

THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

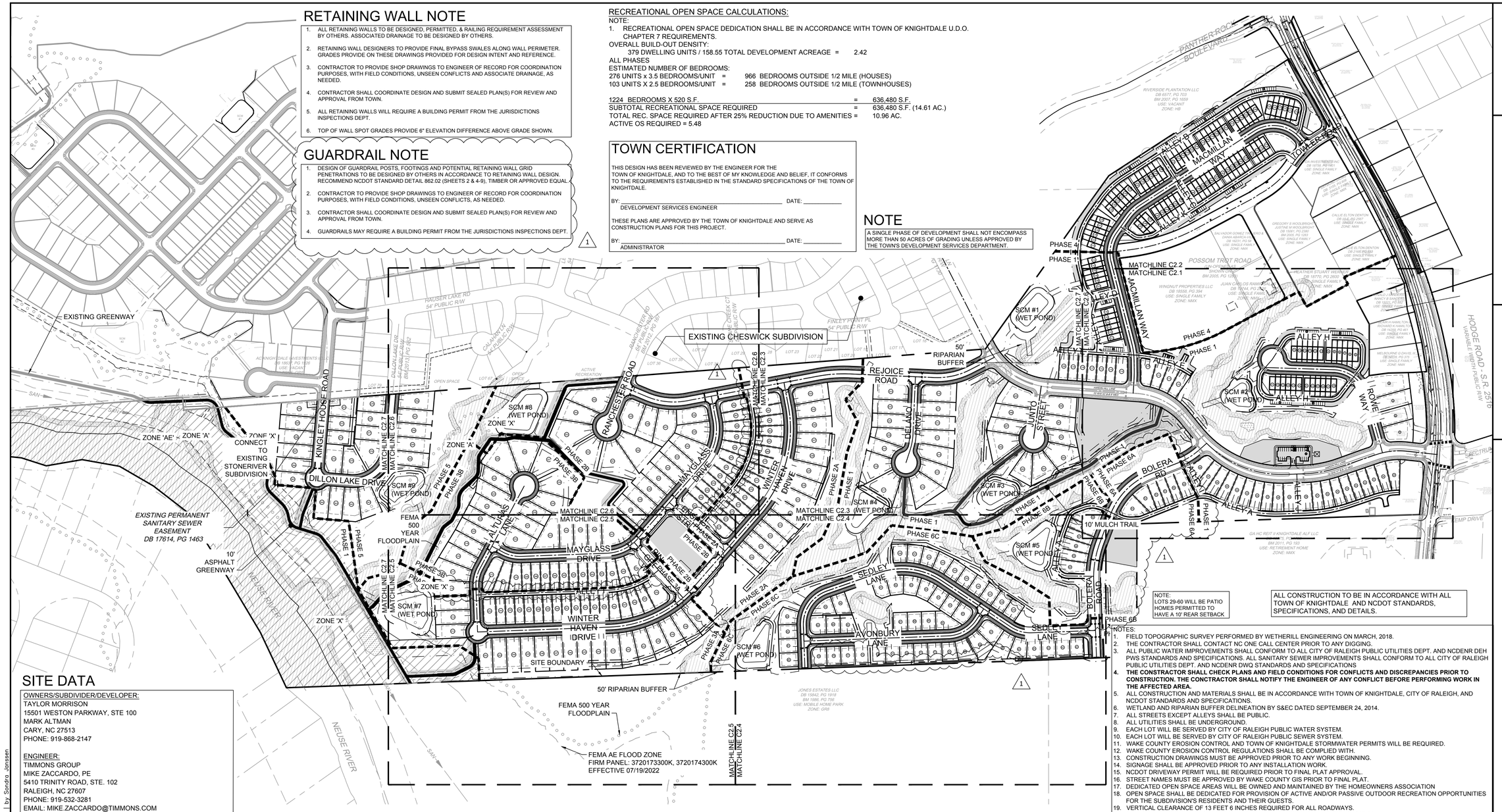
BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

NOTE

A SINGLE PHASE OF DEVELOPMENT SHALL NOT ENCOMPASS MORE THAN 50 ACRES OF GRADING UNLESS APPROVED BY THE TOWN'S DEVELOPMENT SERVICES DEPARTMENT.



NOTE:
LOTS 29-60 WILL BE PATIO HOMES PERMITTED TO HAVE A 10' REAR SETBACK

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF KNIGHTDALE AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS.

NOTES:
1. FIELD TOPOGRAPHIC SURVEY PERFORMED BY WETHERILL ENGINEERING ON MARCH, 2018.
2. THE CONTRACTOR SHALL CONTACT NC ONE CALL CENTER PRIOR TO ANY DIGGING.
3. ALL PUBLIC WATER IMPROVEMENTS SHALL CONFORM TO ALL CITY OF RALEIGH PUBLIC UTILITIES DEPT. AND NCDENR DEH PWS STANDARDS AND SPECIFICATIONS. ALL SANITARY SEWER IMPROVEMENTS SHALL CONFORM TO ALL CITY OF RALEIGH PUBLIC UTILITIES DEPT. AND NCDENR DWQ STANDARDS AND SPECIFICATIONS
4. **THE CONTRACTOR SHALL CHECK PLANS AND FIELD CONDITIONS FOR CONFLICTS AND DISCREPANCIES PRIOR TO CONSTRUCTION. THE CONCTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICT BEFORE PERFORMING WORK IN THE AFFECTED AREA.**
5. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH TOWN OF KNIGHTDALE, CITY OF RALEIGH, AND NCDOT STANDARDS AND SPECIFICATIONS.
6. WETLAND AND RIPARIAN BUFFER DELINEATION BY S&EC DATED SEPTEMBER 24, 2014.
7. ALL STREETS EXCEPT ALLEYS SHALL BE PUBLIC.
8. ALL UTILITIES SHALL BE UNDERGROUND.
9. EACH LOT WILL BE SERVED BY CITY OF RALEIGH PUBLIC WATER SYSTEM.
10. EACH LOT WILL BE SERVED BY CITY OF RALEIGH PUBLIC SEWER SYSTEM.
11. WAKE COUNTY EROSION CONTROL AND TOWN OF KNIGHTDALE STORMWATER PERMITS WILL BE REQUIRED.
12. WAKE COUNTY EROSION CONTROL REGULATIONS SHALL BE COMPLIED WITH.
13. CONSTRUCTION DRAWINGS MUST BE APPROVED PRIOR TO ANY WORK BEGINNING.
14. SIGNAGE SHALL BE APPROVED PRIOR TO ANY INSTALLATION WORK.
15. NCDOT DRIVEWAY PERMIT WILL BE REQUIRED PRIOR TO FINAL PLAT APPROVAL.
16. STREET NAMES MUST BE APPROVED BY WAKE COUNTY GIS PRIOR TO FINAL PLAT.
17. DEDICATED OPEN SPACE AREAS WILL BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION
18. OPEN SPACE SHALL BE DEDICATED FOR PROVISION OF ACTIVE AND/OR PASSIVE OUTDOOR RECREATION OPPORTUNITIES FOR THE SUBDIVISION'S RESIDENTS AND THEIR GUESTS.
19. VERTICAL CLEARANCE OF 13 FEET 6 INCHES REQUIRED FOR ALL ROADWAYS.
20. AREAS OF DISCONNECTED IMPERVIOUS SHALL BE SHOWN ON THE RECORDED PLAT.
21. A FINANCIAL GUARANTEE FOR INCOMPLETE PUBLIC IMPROVEMENTS REQUIRED PRIOR TO FINAL PLAT.

SITE DATA

OWNERS/SUBDIVIDER/DEVELOPER:
TAYLOR MORRISON
15501 WESTON PARKWAY, STE 100
MARK ALTMAN
CARY, NC 27513
PHONE: 919-868-2147

ENGINEER:
TIMMONS GROUP
MIKE ZACCARDO, PE
5410 TRINITY ROAD, STE. 102
RALEIGH, NC 27607
PHONE: 919-532-3281
EMAIL: MIKE.ZACCARDO@TIMMONS.COM

PIN = 1743-01-5982
DB = 18933 PG = 1356

FIRM MAP# = 3720173300K & 3720174300K, EFFECTIVE 07/19/2022

TOTAL EXISTING TRACT ACREAGE = 164.32 acres
TOTAL PROPOSED RIGHT OF WAY DEDICATION = 1,150,799 SF (26.42 AC)
R.O.W. PREVIOUSLY DEDICATED (HARDIN HILL) = 159,583 SF (3.66 AC)
ZONING = PRD, NMX, UR12
(GENERAL RESIDENTIAL)
OVERALL BUILD-OUT DENSITY:
379 DWELLING UNITS / 158.55 TOTAL DEVELOPMENT ACREAGE = 2.42

TOTAL LENGTH OF PUBLIC STORMWATER LINE
15" RCP = 7,551 LF 36" RCP = 2,429 LF
18" RCP = 5,792 LF 42" RCP = 204 LF
24" RCP = 5,271 LF
30" RCP = 2,359 LF

PROVIDED OPEN SPACE CALCULATIONS & DESCRIPTIONS

		LENGTH (LF)	ACTIVE RECREATION AREA (AC)	PASSIVE RECREATION AREA (AC)
1	PUBLIC OPEN SPACE DEDICATION ALONG NEUSE (20.50 AC. TOTAL, 7.52 AC IN RIVER, 1.00 AC IN GREENWAY EASEMENT & 11.98 AC IN PASSIVE OS.			12.95
2	TOWN GREENWAY ALONG NEUSE RIVER (REQUIRED) 10' WIDE LOCATED WITHIN PUBLIC OPEN SPACE DEDICATION (AREA INCLUDED WITH #1 ABOVE)	1440	1.00	
3	TOWN GREENWAY CONNECTORS TO NEUSE GREENWAY (VOLUNTARY) 10' WIDE LOCATED WITHIN 30' PUBLIC GREENWAY EASEMENT	2560		1.76
4	TOWN GREENWAY CONNECTORS TO NEUSE GREENWAY (VOLUNTARY) 10' WIDE LOCATED WITHIN 30' PUBLIC GREENWAY EASEMENT	580		0.40
5	RESORT STYLE AMENITY AREA (ACTIVE) WITH A (MINIMUM) 1000 SF DECK (MIN) & CLUBHOUSE & AN IPEMA CERTIFIED PLAYGROUND EQUIPMENT		2.12	
6	ACTIVE OPEN SPACE AREA ALONG HARDIN HILL LANE FOR DOG PARK.		0.86	
7	ACTIVE OPEN SPACE TO PROVIDE PLAYGROUND EQUIPMENT, OPEN PLAY AREA AND CENTRALLY LOCATED GATHERING SPACE WITH CONVENIENT ON-STREET OVERFLOW PARKING.		1.00	
8	ACTIVE OPEN SPACE AREA TO PROVIDE PLAYGROUND OR VOLLEYBALL COURT		0.50	0.00
	TOTAL	4580	5.48	15.11
	OPEN SPACE PROVIDED TOTAL		20.59 AC (28.11 INCLUDING NEUSE RIVER)	

Building Type *(CH.5)*:	House	Townhouse	Civic & Institutional
Lot Width *(a) (Min)*	30 ft	n/a	100 ft
Front Setback *(g) (Min)*	10 ft	0 ft	10 ft
Front Setback *(g) (Max)*	n/a	25 ft	n/a
Front Yard Encroachment *(b)*	8 ft	*(c)*	10 ft
Minimum Driveway Length	20 ft	*n/a*	n/a
Side Setback *(g) (Min)*	20% of lot width *(d)*	10 ft between buildings	15 ft
Rear Setback *(g) (Min)*	25 ft	n/a	30 ft
Rear Setback from Rear Lane/Alley *(i) (Min)*	20 ft from centerline	15 ft from centerline	n/a
Accessory Structure Side/Rear Setback *(Min)*	5 ft	5 ft	5 ft
Maximum Height *(j)*	3 stories	3 stories	5 stories

Notes:
(a) For lots less than 80 feet wide, alley/rear lane access to all off-street parking areas is required, except when such lot; front onto an approved cul-de-sac, in which case shared driveways shall be required. For in-fill lots less than 80 feet wide where no alley/rear lane access exists, shared driveways shall be required. For lots 80feet wide or greater, access to off-street parking is permitted from the fronting street or rear lane/ alley.
(b) Balconies, stoops, stairs, chimneys, open porches, bay windows, and raised doorways are permitted to encroach into the front setback (Section 4.A).
(c) For lots that provide access to off-street parking from a rear lane/ alley.
*(d) **For lots 60' in width or greater:** Side setbacks are calculated as an aggregate setback. However, a fire (5) foot minimum setback per side shall be maintained;*
***For lots less than 60' in width:** Side setbacks are calculated as an aggregate setback. However, a three (3) foot minimum setback per side shall be maintained. Also, in new developments with zero lot line products, the entire 20% side setback may be allocated to one (1) side provided that the side setback condition is identical for all lots along the same block face. In addition, for zero lot line developments, a minimum of six: (6) feet of total building separation is required.*
(e) Upper story balconies may encroach into the right-of-way (over sidewalk only) with permission from the Administrator.
(f) Refer to Section 4.5 for computation of height.

LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- PERIMETER BUFFER
- PROPOSED RIGHT-OF-WAY
- PROPOSED LOT LINE
- BUILDING SETBACK
- PROPOSED ROAD CENTER
- PHASE LINE
- DRAINAGE EASEMENT
- SANITARY SEWER EASEMENT
- POWER LINE EASEMENT
- NATURAL GAS EASEMENT
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- PROPOSED 4' FENCE
- PROPOSED SIDEWALK
- PROPOSED ASPHALT GREENWAY
- PROPOSED MULCH TRAIL
- LANDSCAPE BUFFER
- 30" STANDARD CURB & GUTTER

811 Know what's below. Call before you dig.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval _____
Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (if applicable)

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TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
10/11/2024	DELTA 1: PHASE RECONFIG, ADD GUARDRAIL, STORM BYPASS

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE 1" = 200'

TIMMONS GROUP

SILVERSTONE SUBDIVISION
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA
OVERALL SITE PLAN

NORTH CAROLINA LICENSE NO. C-1652

JOB NO. 44872
SHEET NO. C2.0

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S:\331\44872-Stone-Silver\DWG\Sheet\CD\SILVERSTONE\44872-331-SS-C2.0-SITE.dwg | by: Sandra Janssen

Building Type *(CH 5)*:	House	Townhouse	Civic & Institutional
Lot Width *(a) (Min)*	30 ft	n/a	100 ft
Front Setback *(g) (Min)*	10 ft	0 ft	10 ft
Front Setback *(g) (Max)*	n/a	25 ft	n/a
Front Yard Encroachment *(h)*	8 ft	*(e)*	10 ft
Minimum Driveway Length	20 ft	n/a	n/a
Side Setback *(g) (Min)*	20% of lot width *(d)*	10 ft between buildings	15 ft
Rear Setback *(g) (Min)*	25 ft	n/a	30 ft
Rear Setback from Rear Lane/Alley *(c) (Min)*	20 ft from centerline	15 ft from centerline	n/a
Accessory Structure Side/Rear Setback *(Min)*	5 ft	5 ft	5 ft
Maximum Height *(f)*	3 stories	3 stories	3 stories

Notes:

(a) Var lots less than 80 feet wide, alley/ rear lane access to all off-street parking areas is required, except when such lot; front onto an approved cul-de-sac, in which case shared driveways shall be required. Var in-fill lots less than 80 feet wide where no alley/ rear lane access exists, shared driveways shall be required. Var lots 80feet wide or greater, access to off-street parking is permitted from the fronting street or rear lane/ alley.

(b) Balconies, stoops, stairs, chimneys, open porches, bay windows, and raised doorways are permitted to encroach into the front setback (Section 4.4).

(c) Var lots that provide access to off-street parking from a rear lane/ alley.

*(d) **For lots 60' in width or greater:** Side setbacks are calculated as an aggregate setback. However, a five (5) foot minimum setback per side shall be maintained;*
__For lots less than 60' in width:__ Side setbacks are calculated as an aggregate setback. However, a three (3) foot minimum setback per side shall be maintained. Also, in near developments with zero lot line products, the entire 20% side setback may be allocated to one (1) side provided that the side setback condition is identical for all lots along the same block face. In addition, for zero lot line developments, a minimum of six (6) feet of total building separation is required.

(e) Upper story balconies may encroach into the right-of-way (over sidewalk only) with permission from the Administrator.

(f) Refer to Section 4.5 for computation of height.

NOTES:
1. FIELD TOPOGRAPHIC SURVEY PERFORMED BY WETHERILL ENGINEERING ON MARCH, 2018.
2. THE CONTRACTOR SHALL CONTACT NC ONE CALL CENTER PRIOR TO ANY DIGGING.
3. ALL PUBLIC WATER IMPROVEMENTS SHALL CONFORM TO ALL CITY OF RALEIGH PUBLIC UTILITIES DEPT. AND NCDENR DEH PWS STANDARDS AND SPECIFICATIONS. ALL SANITARY SEWER IMPROVEMENTS SHALL CONFORM TO ALL CITY OF RALEIGH PUBLIC UTILITIES DEPT. AND NCDENR DWQ STANDARDS AND SPECIFICATIONS
4. **THE CONSTRACTOR SHALL CHECK PLANS AND FIELD CONDITIONS FOR CONFLICTS AND DISCREPANCIES PRIOR TO CONSTRUCTION. THE CONCTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICT BEFORE PERFORMING WORK IN THE AFFECTED AREA.**
5. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH TOWN OF KNIGHTDALE, CITY OF RALEIGH, AND NCDOT STANDARDS AND SPECIFICATIONS.
6. WETLAND AND RIPARIAN BUFFER DELINEATION BY S&EC DATED SEPTEMBER 24, 2014.
7. ALL STREETS EXCEPT ALLEYS SHALL BE PUBLIC.
8. ALL UTILITIES SHALL BE UNDERGROUND.
9. EACH LOT WILL BE SERVED BY CITY OF RALEIGH PUBLIC WATER SYSTEM.
10. EACH LOT WILL BE SERVED BY CITY OF RALEIGH PUBLIC SEWER SYSTEM.
11. WAKE COUNTY EROSION CONTROL AND TOWN OF KNIGHTDALE STORMWATER PERMITS WILL BE REQUIRED.
12. WAKE COUNTY EROSION CONTROL REGULATIONS SHALL BE COMPLIED WITH.
13. CONSTRUCTION DRAWINGS MUST BE APPROVED PRIOR TO ANY WORK BEGINNING.
14. SIGNAGE SHALL BE APPROVED PRIOR TO ANY INSTALLATION WORK.
15. NCDOT DRIVEWAY PERMIT WILL BE REQUIRED PRIOR TO FINAL PLAT APPROVAL.
16. STREET NAMES MUST BE APPROVED BY WAKE COUNTY GIS PRIOR TO FINAL PLAT.
17. DEDICATED OPEN SPACE AREAS WILL BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION
18. OPEN SPACE SHALL BE DEDICATED FOR PROVISION OF ACTIVE AND/OR PASSIVE OUTDOOR RECREATION OPPORTUNITIES FOR THE SUBDIVISION'S RESIDENTS AND THEIR GUESTS.
19. VERTICAL CLEARANCE OF 13 FEET 6 INCHES REQUIRED FOR ALL ROADWAYS.
20. AREAS OF DISCONNECTED IMPERVIOUS SHALL BE SHOWN ON THE RECORDED PLAT.
21. A FINANCIAL GUARANTEE FOR INCOMPLETE PUBLIC IMPROVEMENTS REQUIRED PRIOR TO FINAL PLAT.

SCALE 1"=60'

0 60' 120'

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF KNIGHTDALE AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS.

TOWN CERTIFICATION

THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- PERIMETER BUFFER
- PROPOSED RIGHT-OF-WAY
- PROPOSED LOT LINE
- BUILDING SETBACK
- PROPOSED ROAD CENTER
- PHASE LINE
- DRAINAGE EASEMENT
- SANITARY SEWER EASEMENT
- POWER LINE EASEMENT
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Raleigh Water Review Officer

SITE PERMITTING APPROVAL

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City of Raleigh Public Utilities Department Permit # _____

NAD 83

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REVISION DESCRIPTION	DATE
DELTA 1: PHASE RECONFIG, MAIL KIOSK RECONFIG	10/11/2024

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE 1" = 60'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

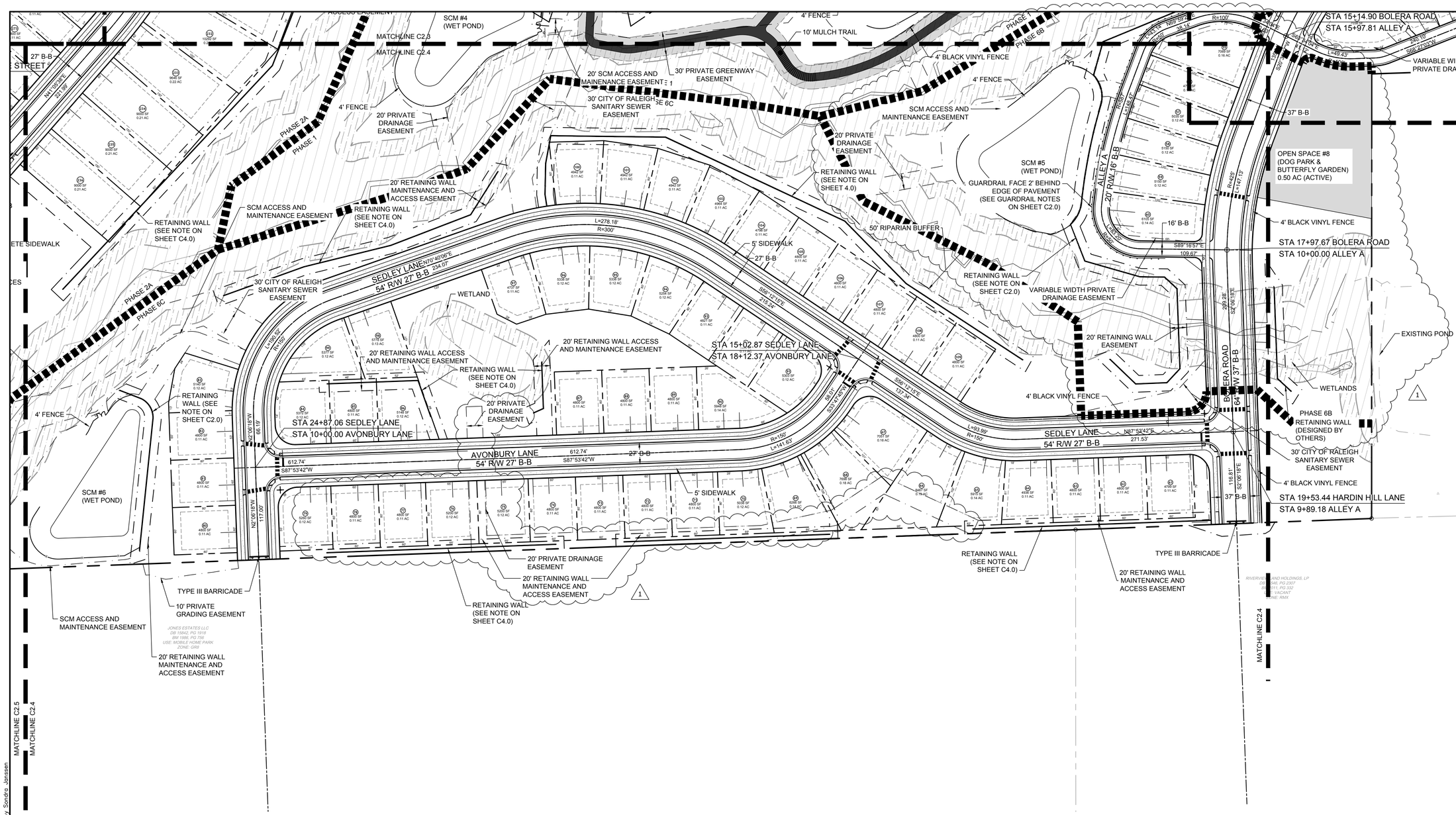
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

DETAILED SITE PLAN - SHEET 1 OF 7

JOB NO. 44872
SHEET NO. C2.1

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S:\33\44872-Stone-Silver\CWG\Sheet\CD\SILVERSTONE\44872_331-SSC-C2.0-SITE.dwg | by Sondra Janssen



NOTE:
LOTS 29-60 WILL BE PATIO HOMES PERMITTED TO HAVE A 10' REAR SETBACK

NOTE: REAR SETBACKS FOR PATIOS ARE REDUCED TO 10', AND A MINIMUM OF 5' SIDE YARD IS REQUIRED IN PHASE 6 PER THE APPROVED UAA.

NOTES:
1. BOUNDARY INFORMATION TAKEN FROM SURVEY BY TIMMONS GROUP.
2. TOPOGRAPHIC INFORMATION TAKEN FROM SURVEY BY TIMMONS GROUP.
3. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM HIS ACTIVITIES. CALL UTILITY LOCATOR SERVICE BEFORE DIGGING.
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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

Building Type *(CH 5)*:	House	Townhouse	Civic & Institutional
Lot Width *(a) (Min)*	30 ft	n/a	100 ft
Front Setback *(g) (Min)*	10 ft	0 ft	10 ft
Front Setback *(g) (Max)*	n/a	25 ft	n/a
Front Yard Encroachment *(b)*	8 ft	*(i)*	10 ft
Minimum Driveway Length	20 ft	*n/a*	n/a
Side Setback *(g) (Min)*	20% of lot width *(d)*	10 ft between buildings	15 ft
Rear Setback *(g) (Min)*	25 ft	n/a	30 ft
Rear Setback from Rear Lane/Alley *(i) (Min)*	20 ft from centerline	15 ft from centerline	n/a
Accessory Structure Side/Rear Setback *(Min)*	5 ft	5 ft	5 ft
Maximum Height *(j)*	3 stories	3 stories	3 stories

Notes:
(a) For lots less than 80 feet wide, alley/ rear lane access to all off-street parking areas is required, except when such lots front onto an approved cul-de-sac, in which case shared driveways shall be required. For in-fill lots less than 80 feet wide where no alley/ rear lane access exists, shared driveways shall be required. For lots 80feet wide or greater, access to off-street parking is permitted from the fronting street or rear lane/ alley.
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(e) Upper story balconies may encroach into the right-of-way (over sidewalk only) with permission from the Administrator.
(f) Refer to Section 4.5 for computation of height.

LEGEND

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SCALE 1"=60'
0 60' 120'
NAD 83

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DATE 04/21/2023
DRAWN BY 331
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CHECKED BY M. ZACCARDO
SCALE 1" = 60'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

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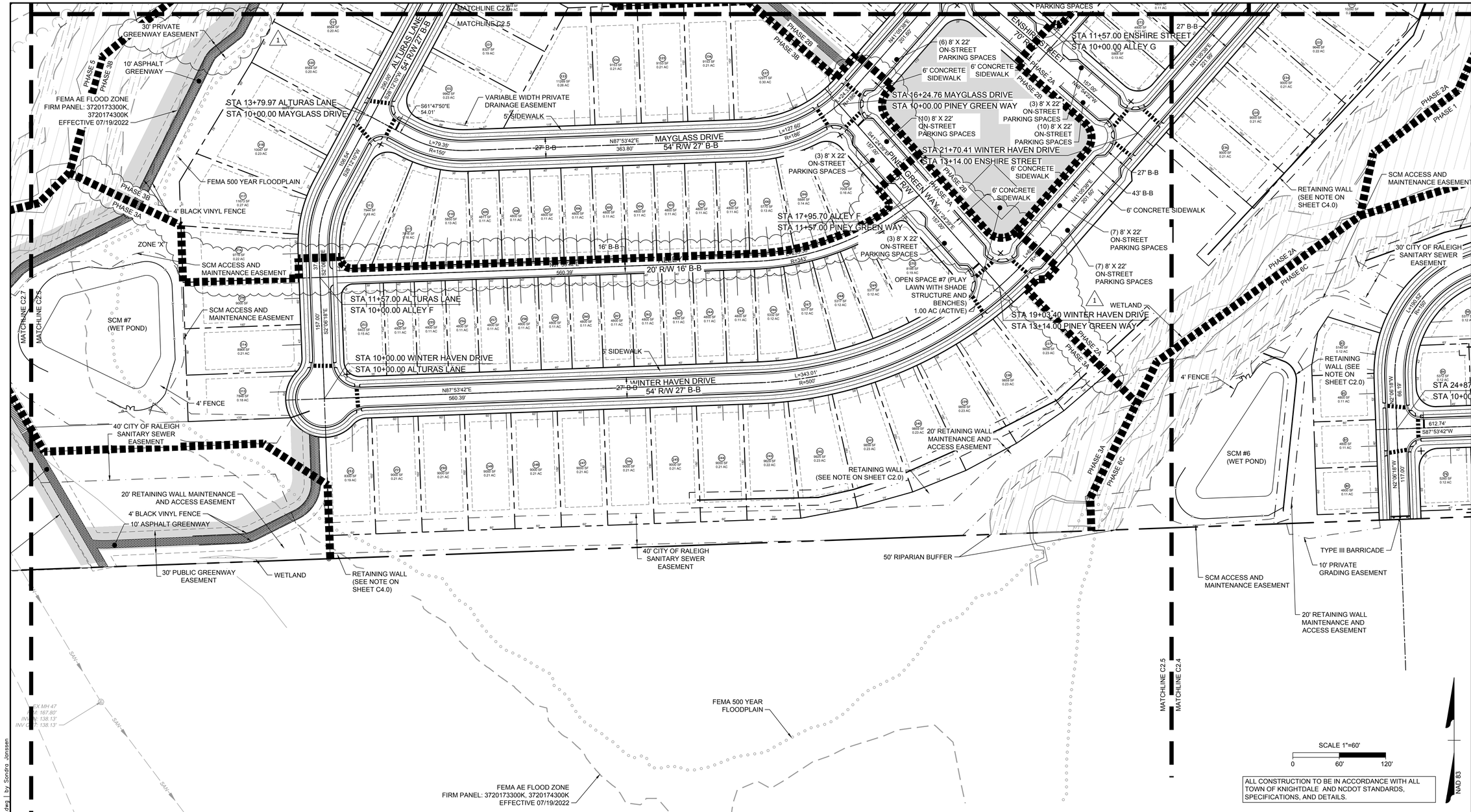
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

DETAILED SITE PLAN - SHEET 4 OF 7

JOB NO. 44872
SHEET NO. C2.4

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Front Setback *(g) (Max)*	n/a	25 ft	n/a
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YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
10/11/2024	DELTA 1: PHASE RECONFIG; GREENWAY SHIFT

DATE: 04/21/2023
DRAWN BY: 331
DESIGNED BY: 331
CHECKED BY: M. ZACCARDO
SCALE: 1" = 60'

JOB NO. 44872
SHEET NO. C2.5

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

DETAILED SITE PLAN - SHEET 5 OF 7

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S:\33\144872-Stone-Silver\DWG\Sheet\C0\SILVERSTONE\44872-331-SS-C2.0-SITE.dwg | by Sandra Janssen

Building Type *(CH 5)*:	House	Townhouse	Civic & Institutional
Lot Width *(a) (Min)*	30 ft	n/a	100 ft
Front Setback *(g) (Min)*	10 ft	0 ft	10 ft
Front Setback *(g) (Max)*	n/a	25 ft	n/a
Front Yard Encroachment *(h)*	8 ft	*(i)*	10 ft
Minimum Driveway Length	20 ft	n/a	n/a
Side Setback *(g) (Min)*	20% of lot width *(d)*	10 ft between buildings	15 ft
Rear Setback *(g) (Min)*	25 ft	n/a	30 ft
Rear Setback from Rear Lane/Alley *(i) (Min)*	20 ft from centerline	15 ft from centerline	n/a
Accessory Structure Side/Rear Setback *(Min)*	5 ft	5 ft	5 ft
Maximum Height *(f)*	3 stories	3 stories	3 stories

Notes:

(a) For lots less than 80 feet wide, alley/ rear lane access to all off-street parking areas is required, except when such lots front onto an approved cul-de-sac, in which case shared driveways shall be required. For in-fill lots less than 80 feet wide where no alley/rear lane access exists, shared driveways shall be required. For lots 80feet wide or greater, access to off-street parking is permitted from the fronting street or rear lane/ alley.

(b) Balconies, stoops, stairs, chimneys, open porches, bay windows, and raised doorways are permitted to encroach into the front setback (Section 4.4).

(c) For lots that provide access to off-street parking from a rear lane/ alley.

*(d) **For lots 60' in width or greater:** Side setbacks are calculated as an aggregate setback. However, a five (5) foot minimum setback per side shall be maintained;*
***For lots less than 60' in width:** Side setbacks are calculated as an aggregate setback, I however, a three (3) foot minimum setback per side shall be maintained. Also, in new developments with zero lot line products, the entire 20% side setback may be allocated to one (1) side provided that the side setback condition is identical for all lots along the same block face. In addition, for zero lot line developments, a minimum of six (6) feet of total building separation is required.*

(e) Upper story balconies may encroach into the right-of-way (over sidewalk only) with permission from the Administrator.

(f) Refer to Section 4.5 for computation of height.

SCALE 1"=60'

0 60' 120'

NAD 83

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF KNIGHTDALE AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS.

LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- PERIMETER BUFFER
- PROPOSED RIGHT-OF-WAY
- PROPOSED LOT LINE
- BUILDING SETBACK
- PROPOSED ROAD CENTER
- PHASE LINE
- DRAINAGE EASEMENT
- SANITARY SEWER EASEMENT
- POWER LINE EASEMENT
- NATURAL GAS EASEMENT
- EXISTING WETLANDS
- NEUSE RIPARIAN BUFFER
- PRIMARY OPEN SPACE
- SECONDARY OPEN SPACE
- PROPOSED 4' FENCE
- PROPOSED SIDEWALK
- PROPOSED ASPHALT GREENWAY
- PROPOSED MULCH TRAIL
- LANDSCAPE BUFFER
- 30" STANDARD CURB & GUTTER

NOTES:

1. BOUNDARY INFORMATION TAKEN FROM SURVEY BY TIMMONS GROUP.
2. TOPOGRAPHIC INFORMATION TAKEN FROM SURVEY BY TIMMONS GROUP.
3. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM HIS ACTIVITIES. CALL UTILITY LOCATOR SERVICE BEFORE DIGGING.
4. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH TOWN OF KNIGHTDALE, CITY OF RALEIGH, AND NCDOT STANDARDS AND SPECIFICATIONS.
5. WETLAND AND RIPARIAN BUFFER DELINEATION BY S&EC DATED SEPTEMBER 24, 2014.
6. ALL STREETS EXCEPT ALLEYS SHALL BE PUBLIC.
7. ALL UTILITIES SHALL BE UNDERGROUND.
8. EACH LOT WILL BE SERVED BY CITY OF RALEIGH PUBLIC WATER SYSTEM.
9. EACH LOT WILL BE SERVED BY CITY OF RALEIGH PUBLIC SEWER SYSTEM.
10. WAKE COUNTY EROSION CONTROL AND TOWN OF KNIGHTDALE STORMWATER PERMITS WILL BE REQUIRED.
11. WAKE COUNTY EROSION CONTROL REGULATIONS SHALL BE COMPLIED WITH.
12. CONSTRUCTION DRAWINGS MUST BE APPROVED PRIOR TO ANY WORK BEGINNING.
13. SIGNAGE SHALL BE APPROVED PRIOR TO ANY INSTALLATION WORK.
14. NCDOT DRIVEWAY PERMIT WILL BE REQUIRED PRIOR TO FINAL PLAT APPROVAL.
15. STREET NAMES MUST BE APPROVED BY WAKE COUNTY GIS PRIOR TO FINAL PLAT.
16. DEDICATED OPEN SPACE AREAS WILL BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION
17. OPEN SPACE SHALL BE DEDICATED FOR PROVISION OF ACTIVE AND/OR PASSIVE OUTDOOR RECREATION OPPORTUNITIES FOR THE SUBDIVISION'S RESIDENTS AND THEIR GUESTS.
18. VERTICAL CLEARANCE OF 13 FEET 6 INCHES REQUIRED FOR ALL ROADWAYS.
19. AREAS OF DISCONNECTED IMPERVIOUS SHALL BE SHOWN ON THE RECORDED PLAT.
20. A FINANCIAL GUARANTEE FOR INCOMPLETE PUBLIC IMPROVEMENTS REQUIRED PRIOR TO FINAL PLAT.

811 Know what's **below.** **Call** before you dig.

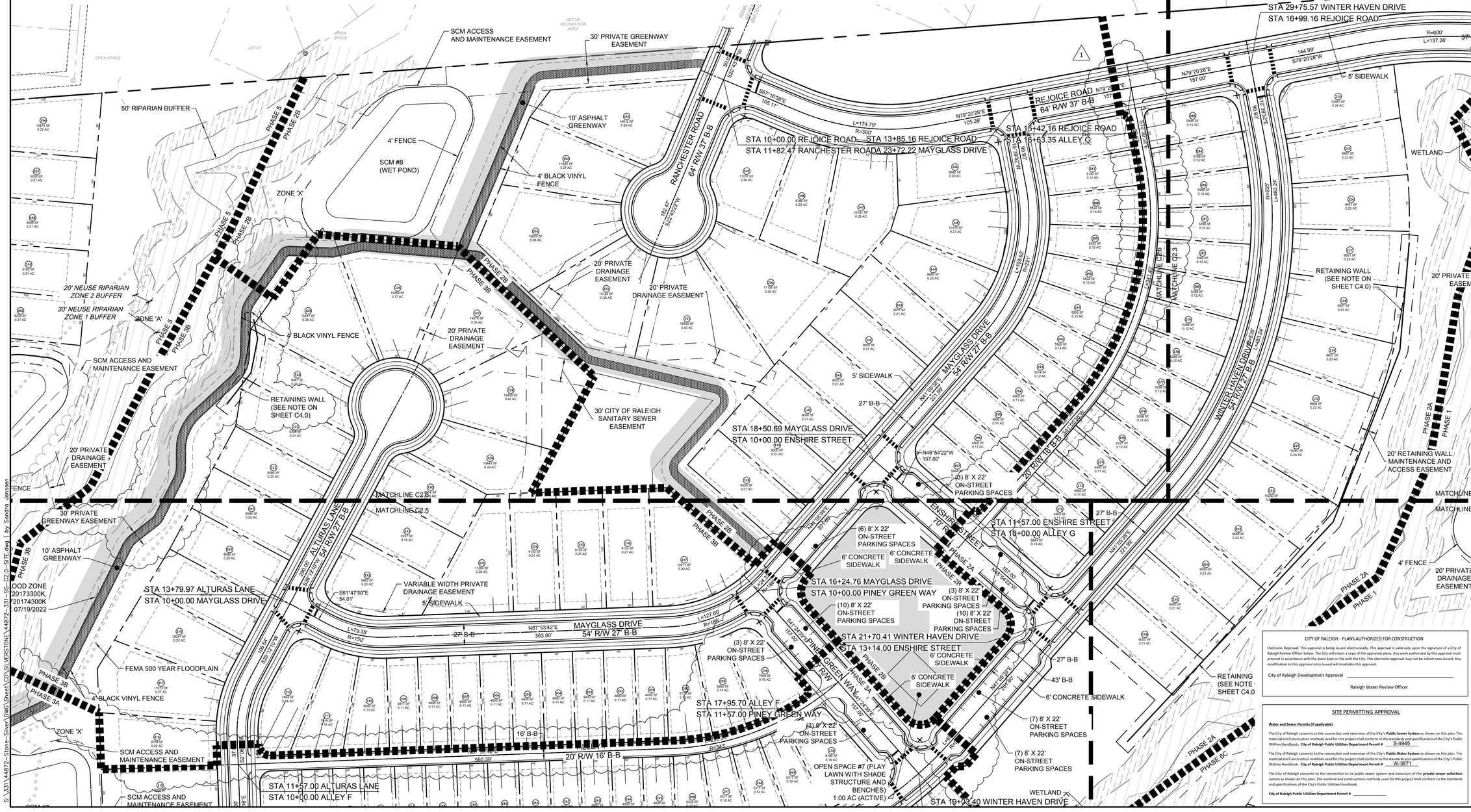
TOWN CERTIFICATION

THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR



CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (if applicable)

The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** S-4945

The City of Raleigh consents to the connection and extension of the City's **Public Water System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** W-3871

The City of Raleigh consents to the connection to its public sewer system and extension of the **private sewer collection** system as shown on this plan. The material and constructions methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh Public Utilities Department Permit # _____

FOR REVIEW ONLY

THIS DRAWING PREPARED AT THE
RALEIGH OFFICE
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
10/11/2024	DELTA 1: GREENWAY SHIFT, ADD WALL, PHASE RECONFIG

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE 1" = 60'

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

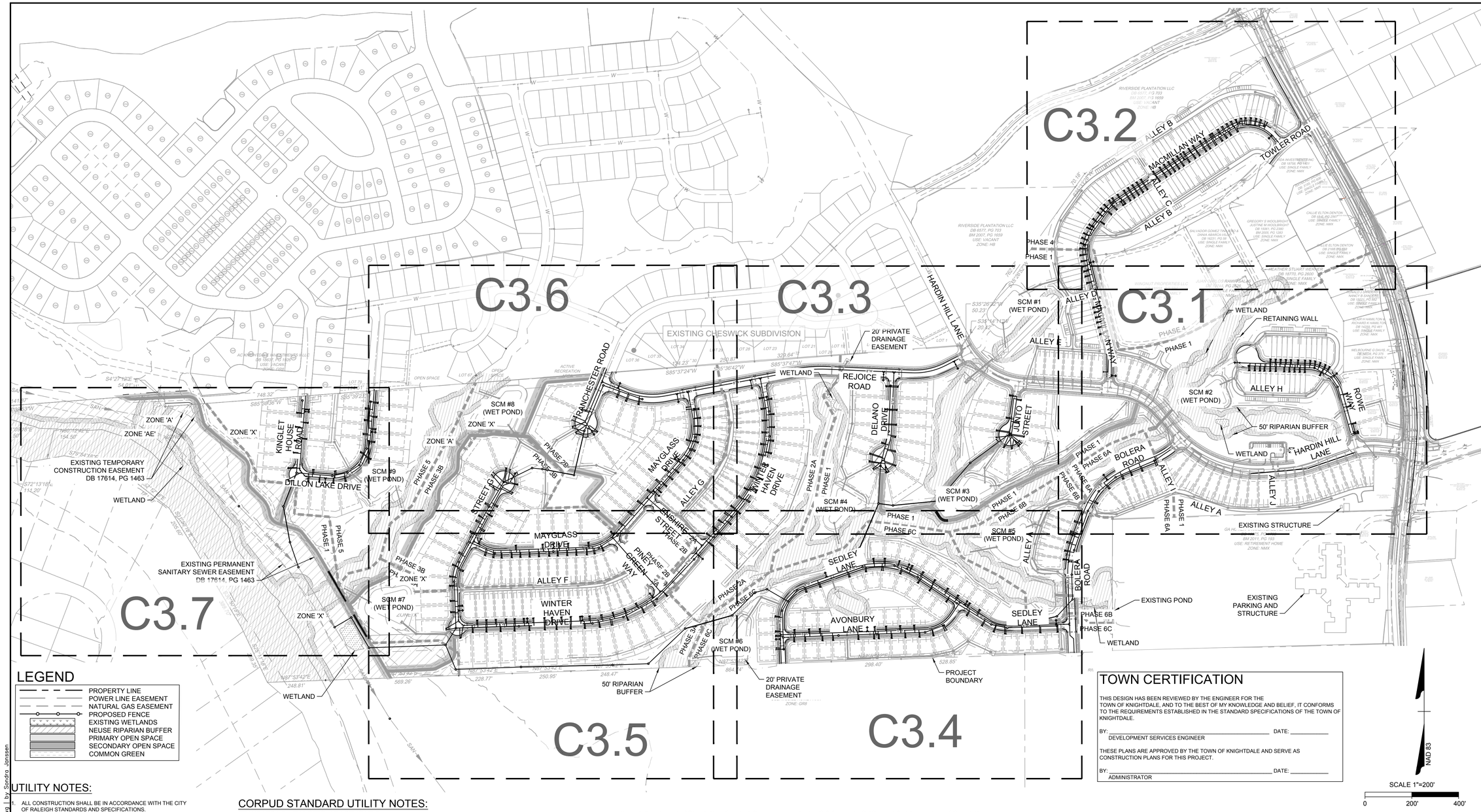
DETAILED SITE PLAN - SHEET 6 OF 7

JOB NO. 44872
SHEET NO. C2.6

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S:\331\44872-Stone-Silver\DWG Sheet\CD\SILVERSTONE\44872_331_SS_C2.0_SITE.dwg | by Sondra Jonssen

FLOOD ZONE 20173300K, 20174300K 07/19/2022



LEGEND

- PROPERTY LINE
- POWER LINE EASEMENT
- NATURAL GAS EASEMENT
- PROPOSED FENCE
- EXISTING WETLANDS
- NEUSE RIPARIAN BUFFER
- PRIMARY OPEN SPACE
- SECONDARY OPEN SPACE
- COMMON GREEN

UTILITY NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.
2. MINIMUM UTILITY HORIZONTAL SEPARATION DISTANCES:
   WATER AND SANITARY SEWER MAINS - 10 FT.
   WATER AND STORM SEWER MAINS - 5 FT.
   SANITARY SEWER AND STORM SEWER MAINS - 5 FT.
   GRAVITY SANITARY SEWER AND FORCE MAINS - 5 FT.
3. MINIMUM UTILITY VERTICAL SEPARATION DISTANCES:
   WATER AND SANITARY SEWER MAINS - 18 IN.
   WATER AND STORM SEWER MAINS - 18 IN.
   SANITARY SEWER AND STORM SEWER MAINS - 24 IN.
4. FOR PHASED CONSTRUCTION, MANHOLES LOCATED IN FUTURE ROADWAYS SHALL BE RAISED A MINIMUM OF 1' ABOVE GRADE WITH A LOCKABLE COVER PER DETAIL S-27 ON SHEET C7.3. ⚠1

LEGEND

SEWER
- SAN — SANITARY SEWER
- (S) SANITARY MANHOLE

WATER
- W — EXISTING WATER LINE
- W — PROPOSED WATER LINE
- WATER VALVE
- FIRE HYDRANT
- BLOWOFF ASSEMBLY

CORPUD STANDARD UTILITY NOTES:

STANDARD UTILITY NOTES (AS APPLICABLE):

1. ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK, CURRENT EDITION)
2. UTILITY SEPARATION REQUIREMENTS:
   a) A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATER MAIN SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL
   b) WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER
   c) WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, PVC MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATER MAIN SPECIFICATIONS
   d) 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS PVC MATERIAL IS SPECIFIED FOR SANITARY SEWER
   e) MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY PVC MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & S-49)
   f) ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED
3. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION
4. DEVELOPER SHALL PROVIDE 30 DAYS ADVANCE WRITTEN NOTICE TO OWNER FOR ANY WORK REQUIRED WITHIN AN EXISTING CITY OF RALEIGH UTILITY EASEMENT TRAVERSING PRIVATE PROPERTY
5. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT
6. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS
7. IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE.
8. INSTALL ¾" COPPER* WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'X2' WATER MAIN EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE
9. INSTALL 4" PVC* SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM
10. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE
11. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION
12. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION
13. GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS & INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE CORPUD FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A BUILDING PERMIT. CONTACT TIM BEASLEY AT (919) 996-2334 OR TIMOTHY.BEASLEY@RALEIGHNC.GOV FOR MORE INFORMATION
14. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT JOANIE HARTLEY AT (919) 996-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION

TOWN CERTIFICATION

THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

NAD 83

SCALE 1"=200'
0 200' 400'

811 Know what's below. Call before you dig.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (if applicable)

The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** S-4945

The City of Raleigh consents to the connection and extension of the City's **Public Water System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** W-3871

The City of Raleigh consents to the connection to its public sewer system and extension of the **private sewer collection** system as shown on this plan. The material and constructions methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh Public Utilities Department Permit # _____

FOR REVIEW ONLY

THIS DRAWING PREPARED AT THE
RALEIGH OFFICE
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
10/11/2024	DELTA 1: ADJUST PHASE LIMIT, ADD NOTE 4

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE 1" = 200'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

OVERALL UTILITY PLAN

JOB NO. 44872
SHEET NO. C3.0

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SHEET C3.2
MATCHLINE

SHEET C3.3
MATCHLINE

ALLEY D

MACMILLAN WAY

HARDIN HILL LANE

BOLERA ROAD

ALLEY H

ALLEY J

ALLEY A

ROWE WAY

HODGE ROAD - S.R. 2516

SPECTRUM DRIVE

PHASE 1
PHASE 4
PHASE 6A
PHASE 6B

MH 198 (4')
MH 197 (4')
MH 196 (4')
MH 195 (4')
MH 194 (5')
MH 193 (5')
MH 192 (5')
MH 191 (4')
MH 190 (4')
MH 189 (4')
MH 188 (4')
MH 186 (4')
MH 185 (5')

8" SDR 35
8" SDR 26
6" SDR 26
8" DIP WATER MAIN
6" DIP WATER MAIN
12" DIP WATER MAIN
8" PVC
6" PVC

FIRE HYDRANT ASSEMBLY (TYP)
VARIABLE WIDTH PRIVATE DRAINAGE EASEMENT
RETAINING WALL (DESIGN BY OTHERS, TYP)
4" SCH 40 PVC SANITARY SERVICE & CLEANOUT (TYP)
¾" TYPE K COPPER WATER SERVICE & ¾" METER (TYP)
8" x 6" REDUCER (TYP)
REMOVE EXISTING 8" BLOW OFF VALVE AND EXTEND WATER MAIN AS SHOWN
20' PRIVATE DRAINAGE EASEMENT
SCM #2 (WET POND)
SCM ACCESS AND MAINTENANCE EASEMENT
12" TEMPORARY BLOW OFF ASSEMBLY
EXISTING 12" DIP WATER MAIN
EXISTING 12"x8" TEE (2) 12" GV (1) 8" GV
EXISTING ¾" TYPE K COPPER WATER SERVICE & ¾" METER (TYP)
EXISTING 4" SCH 40 PVC SANITARY SERVICE & CLEANOUT (TYP)
EXISTING 12"x12" TEE (3) 12" GV
EXISTING FIRE HYDRANT ASSEMBLY
EXISTING 12" DIP WATER MAIN
EXISTING 16" X 12" TS (1) 12" GV
EXISTING 12"x6" TEE (2) 12" GV (1) 6" GV
EXISTING FIRE HYDRANT ASSEMBLY (TYP)
EXISTING 12" DIP WATER MAIN
12" RCP
INV OUT: 274.52'
INV OUT: 274.64'
EX. MH 167
EX. MH 168
EX. MH 169
EX. MH 170
EX. MH 171
EX. MH 172
EX. MH 173
EX. MH 178
EX. MH 179
EX. MH 180
EX. MH 181
EX. MH 182

WINGMUT PROPERTIES LLC
DB 18556, PG 394
USE: SINGLE FAMILY
ZONE: NMX

JUAN CARLOS RAMIN SALAS
DB 13744, PG 2626
USE: SINGLE FAMILY
ZONE: NMX

RONALD J SANDERS & NANCY B SANDERS
USE: SINGLE FAMILY
Ronald J. Sanders & Nancy B. Sanders
PIN: 1743320936
DB 15021 PG 882

BLAIR H HAMILTON & RICHARD K HAMILTON
DB 14256 PG 451
USE: SINGLE FAMILY
ZONE: NMX

Peggy Jin, & Ji Du
PIN: 1743320534
DB 19500 PG 2031

MELBOURNE G DAVIS, III
DB 14728 PG 375
USE: SINGLE FAMILY
Melbourne G. Davis, III
PIN: 1743320441
DB 14728 PG 375

BDPF EASTGATE 325 SPECTRUM LP
PIN: 1743329414
DB 18816 PG 1852
PB 2017 PG 1354

Taylor Morrison of Carolinas, Inc.
PIN: 1743320170
DB 18903 PG 1356
BM 2024 PG 926

VPTM SILVERSTONE LB LLC
PIN: 1743331747
DB 18903 PG 1356
BM 2024 PG 926

VPTM SILVERSTONE LB LLC
PIN: 1743320160
DB 18903 PG 1356

VPTM SILVERSTONE LB LLC
PIN: 1743319727
DB 18903 PG 1356

Rosie W. Myrick
Myrick Construction Company of Raleigh, Inc.
Lena J. Myrick Revocable Trust
PIN: 1743315984
DB 11672 PG 1340
PB 2016 PG 1630

GA HC REIT II KNIGHTDALE ALF LLC
DB 15075, PG 1798
BM 2011, PG 193
USE: RETIREMENT HOME
ZONE: NMX

Hodge Road
Variable width right-of-way

Private Access Driveway

S:\331\44872-Stone-Silver\DWG\Sheet\CD\SILVERSTONE\44872-331-SS-C3.0-UTIL.dwg | by: Sondra Janssen

UTILITY NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.
2. MINIMUM UTILITY HORIZONTAL SEPARATION DISTANCES:
   WATER AND SANITARY SEWER MAINS - 10 FT.
   WATER AND STORM SEWER MAINS - 5 FT.
   SANITARY SEWER AND STORM SEWER MAINS - 5 FT.
   GRAVITY SANITARY SEWER AND FORCE MAINS - 5 FT.
3. MINIMUM UTILITY VERTICAL SEPARATION DISTANCES:
   WATER AND SANITARY SEWER MAINS - 18 IN.
   WATER AND STORM SEWER MAINS - 18 IN.
   SANITARY SEWER AND STORM SEWER MAINS - 24 IN.
4. FOR PHASED CONSTRUCTION, MANHOLES LOCATED IN FUTURE ROADWAYS SHALL BE RAISED A MINIMUM OF 1' ABOVE GRADE WITH A LOCKABLE COVER PER DETAIL S-27 ON SHEET C7.3. ⚠1

SCALE 1"=60'
0 60' 120'
NAD 83

Know what's below. Call before you dig.

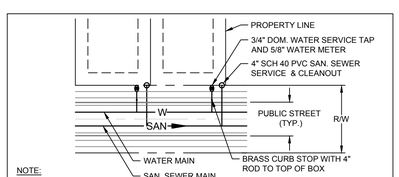
TOWN CERTIFICATION

THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR



NOTE:
1. DOMESTIC WATER AND SAN. SEWER SERVICES SHALL BE INSTALLED PER CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS.
2. DOMESTIC WATER AND SAN. SEWER SERVICES SHALL BE INSTALLED ON THE LOW SIDE OF THE LOT.

TYPICAL UTILITY SERVICE LOCATION
N.T.S.

LEGEND

SEWER
- SAN — SANITARY SEWER
- (S) — SANITARY MANHOLE

WATER
- W — EXISTING WATER LINE
- W — PROPOSED WATER LINE
- WATER VALVE
- FIRE HYDRANT
- BLOWOFF ASSEMBLY

LEGEND

- PROPERTY LINE
- POWER LINE EASEMENT
- NATURAL GAS EASEMENT
- PROPOSED FENCE
- EXISTING WETLANDS
- NEUSE RIPARIAN BUFFER
- PRIMARY OPEN SPACE
- SECONDARY OPEN SPACE
- COMMON GREEN

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (if applicable)

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City of Raleigh Public Utilities Department Permit # _____

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DATE	REVISION DESCRIPTION
10/11/2024	DELTA 1: ADJUST PHASE LIMIT, TEMP BOA, ADD NOTE 4

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE 1" = 60'

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

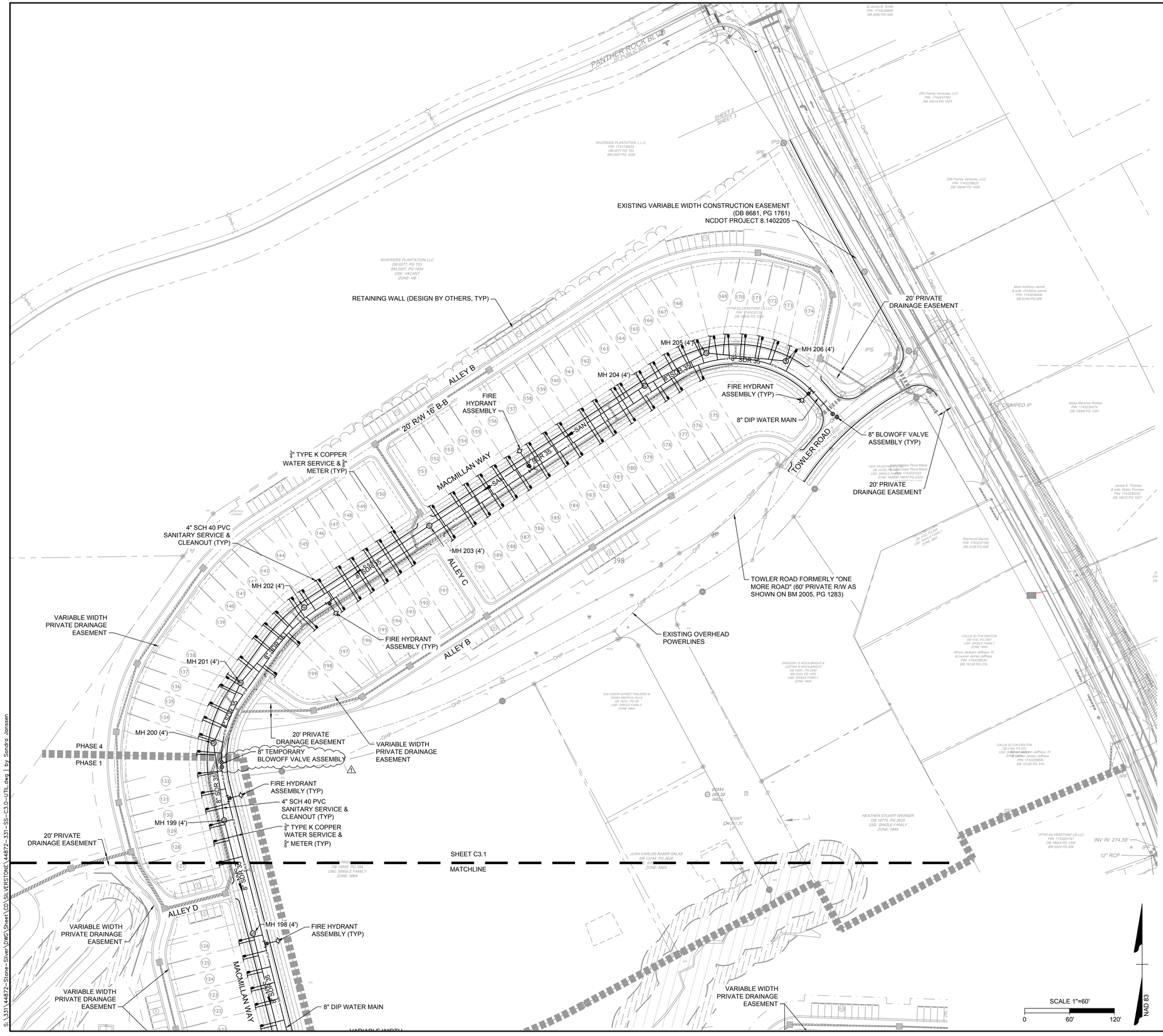
SILVERSTONE SUBDIVISION
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

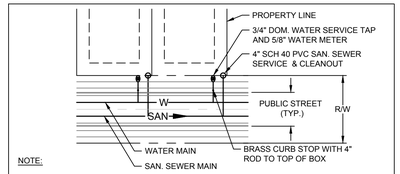
DETAILED UTILITY PLAN - SHEET 1 OF 7

JOB NO. 44872
SHEET NO. C3.1

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NOTE:
1. DOMESTIC WATER AND SAN. SEWER SERVICES SHALL BE INSTALLED PER CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS.
2. DOMESTIC WATER AND SAN. SEWER SERVICES SHALL BE INSTALLED ON THE LOW SIDE OF THE LOT.

TYPICAL UTILITY SERVICE LOCATION
N.T.S.

TOWN CERTIFICATION

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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

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LEGEND

- PROPERTY LINE
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LEGEND

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- SAN — SANITARY SEWER
- Ⓢ — SANITARY MANHOLE

WATER
- W — EXISTING WATER LINE
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CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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SITE PERMITTING APPROVAL

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DATE: 04/21/2023
DRAWN BY: 331
DESIGNED BY: 331
CHECKED BY: M. ZACCARDO
SCALE: 1" = 60'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

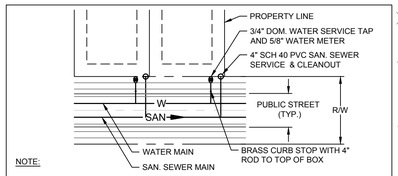
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

DETAILED UTILITY PLAN - SHEET 2 OF 7

JOB NO. 44872
SHEET NO. C3.2

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S:\331\44872-Stone-Silver\DWG Sheet\CD\SILVERSTONE\44872-331-SS-C3.0-UTIL.dwg | by Sondra Jonssen



NOTE:

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TYPICAL UTILITY SERVICE LOCATION

N.T.S.

TOWN CERTIFICATION

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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

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BY: _____ DATE: _____
ADMINISTRATOR

811 Know what's below. Call before you dig.

EXISTING 20' COR SEWER EASEMENT BM 2008, PG 1130
EXISTING 20' COR DRAINAGE EASEMENT BM 2008, PG 1130
REMOVE BLOWOFF VALVE AND CONNECT TO EXISTING WATER
REMOVE EXISTING 8" BLOW OFF VALVE AND EXTEND WATER MAIN AS SHOWN
12"x8" TEE (2) 12" GV (1) 8" GV
8" TEMPORARY BLOW OFF ASSEMBLY
20' PRIVATE DRAINAGE EASEMENT
8" DIP WATER MAIN
FIRE HYDRANT ASSEMBLY (TYP)
8"x6" TEE (2) 8" GV (1) 6" GV
8"x8" TEE (3) 8" GV
REJOICE ROAD
VARIABLE WIDTH PRIVATE DRAINAGE EASEMENT
MH 166 (4')
MH 113 (4')
MH 112 (4')
MH 111 (4')
MH 110 (4')
MH 109 (4')
MH 108 (4')
8" SDR 35
RETAINING WALL (DESIGN BY OTHERS, TYP)
WINTER HAVEN DRIVE
DELANO DRIVE
4" SCH 40 PVC SANITARY SERVICE & CLEANOUT (TYP)
¾" TYPE K COPPER WATER SERVICE & ¾" METER (TYP)
6" DIP WATER MAIN
MH 165 (5')
MH 164 (4')
MH 163 (5')
MH 174 (4')
MH 175 (4')
MH 176 (4')
MH 177 (4')
8" DIP
8" SCH 40
SCM #1 (WET POND)
SCM #3 (WET POND)
SCM #4 (WET POND)
REMOVE EXISTING 8" BLOWOFF VALVE AND EXTEND WATERMAIN AS SHOWN
HARDIN HILL LANE
JUNTO STREET
EX. MH 144
EX. MH 143
EX. MH 182
EX. MH 181
EX. MH 180
EX. MH 179
EX. MH 178
EX. MH 167
8" PVC
EXISTING 12" DIP WATER MAIN
EXISTING 12"x8" TEE (2) 12" GV (1) 8" GV
EXISTING ¾" TYPE K COPPER WATER SERVICE & ¾" METER (TYP)
EXISTING 4" SCH 40 PVC SANITARY SERVICE & CLEANOUT (TYP)
EXISTING FIRE HYDRANT ASSEMBLY
MH 199 (4')
MH 198 (4')
MH 197 (4')
MH 196 (4')
ALLEY D
ALLEY E
ALLEY I
MACMILLAN WAY
VARIABLE WIDTH PRIVATE DRAINAGE EASEMENT
WINGNUT PROPERTIES LLC.. DB 18595, PG 394 USE: SINGLE FAMILY ZONE: MX4
SHEET C3.2 MATCHLINE
SHEET C3.1 MATCHLINE
SHEET C3.4 MATCHLINE
BOLERA ROAD
MH 191 (4')
MH 190 (4')
MH 189 (4')
MH 188 (4')
12" DIP WATER MAIN
12" TEMPORARY BLOW OFF ASSEMBLY
PHASE 1
PHASE 2A
PHASE 4
PHASE 6A
PHASE 6B
PHASE 6C
30' CITY OF RALEIGH SANITARY SEWER EASEMENT
8" PVC FOR PROJECTED 801 DIP
MH 162 (4')
MH 157 (4')
MH 156 (5')
MH 158 (4')
SEDLEY LANE
FIRE HYDRANT ASSEMBLY (TYP)
20' PRIVATE DRAINAGE EASEMENT
VARIABLE WIDTH PRIVATE DRAINAGE EASEMENT

LEGEND

- PROPERTY LINE
- POWER LINE EASEMENT
- NATURAL GAS EASEMENT
- PROPOSED FENCE
- EXISTING WETLANDS
- NEUSE RIPARIAN BUFFER
- PRIMARY OPEN SPACE
- SECONDARY OPEN SPACE
- COMMON GREEN

LEGEND

SEWER
- SAN — SANITARY SEWER
- (S) SANITARY MANHOLE

WATER
- W — EXISTING WATER LINE
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- WATER VALVE
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UTILITY NOTES:

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SCALE 1"=60'
0 60' 120'
NAD 83

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Public Utilities Department Permit # _____

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DATE 04/21/2023
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DESIGNED BY 331
CHECKED BY M. ZACCARDO
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TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

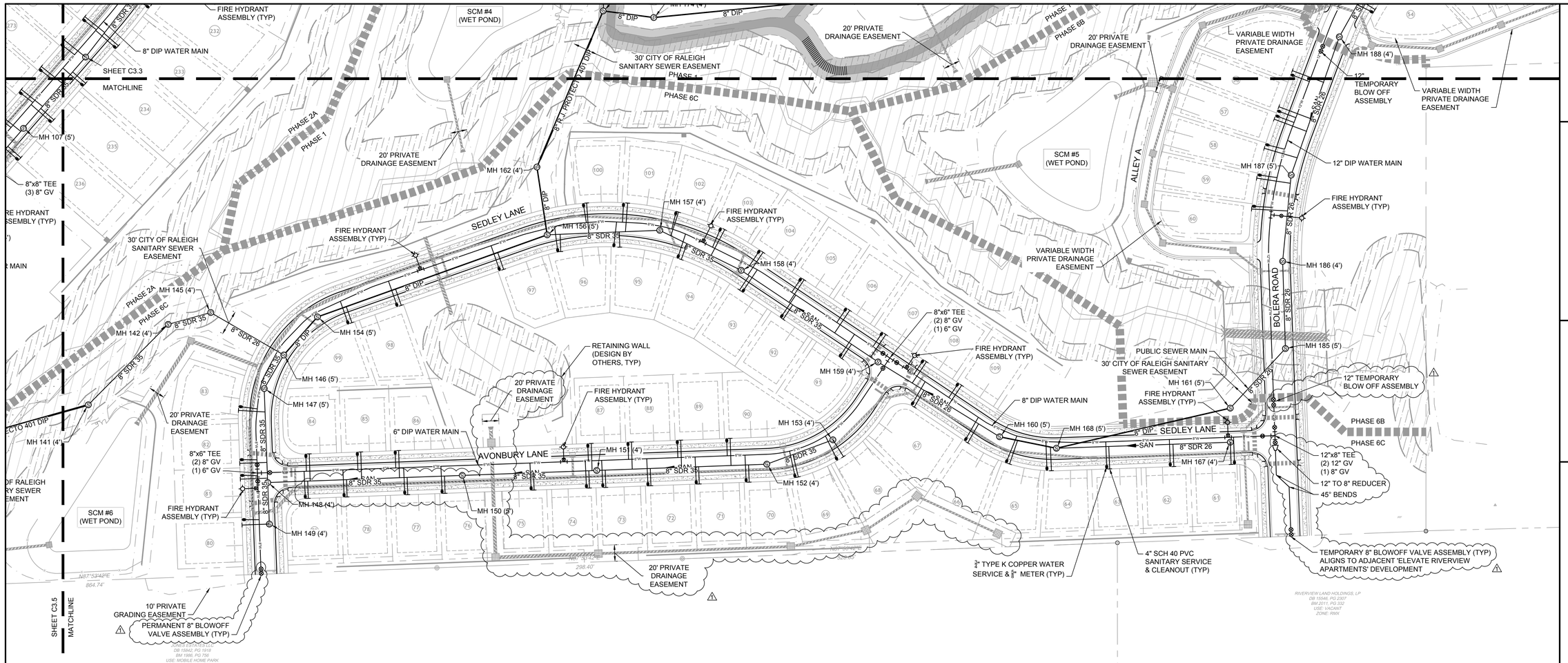
SILVERSTONE SUBDIVISION
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

DETAILED UTILITY PLAN - SHEET 3 OF 7

JOB NO. 44872
SHEET NO. C3.3

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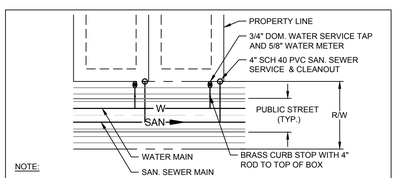
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ADMINISTRATOR



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TYPICAL UTILITY SERVICE LOCATION

N.T.S.

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LEGEND

SEWER
- SAN — SANITARY SEWER
- Ⓢ — SANITARY MANHOLE

WATER
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SCALE 1"=60'
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REVISION DESCRIPTION	DATE
DELTA 1: ADJUST PHASE LIMIT,TEMP BOA,STORM BYPASS,ADD NOTE 4	10/11/2024

DATE 04/21/2023
DRAWN BY 331
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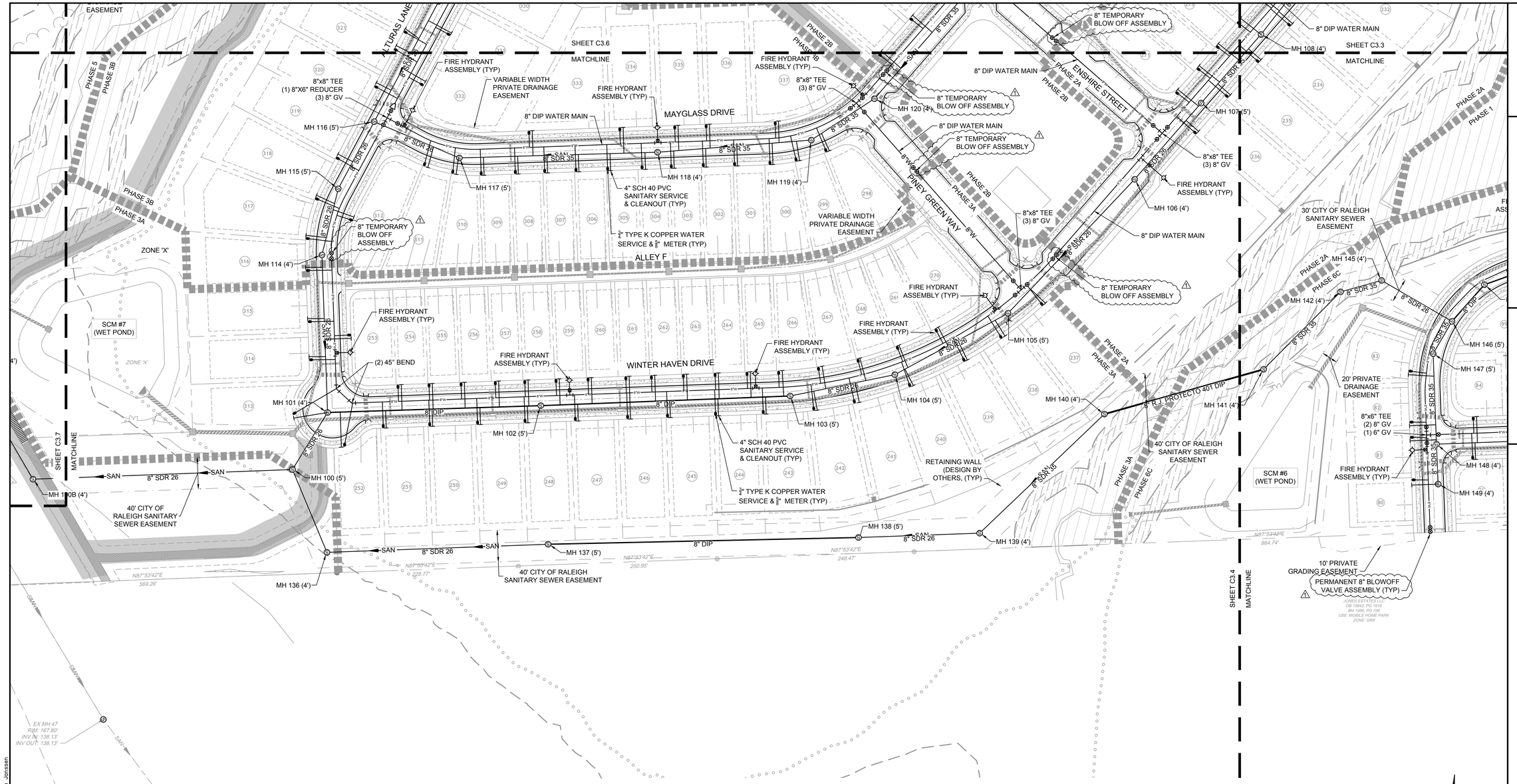
SILVERSTONE SUBDIVISION
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

DETAILED UTILITY PLAN - SHEET 4 OF 7

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SHEET NO. C3.4

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PROPERTY LINE
3/4" DOM. WATER SERVICE TAP AND 5/8" WATER METER
4" SCH 40 PVC SAN. SEWER SERVICE & CLEANOUT
PUBLIC STREET (TYP.)
R/W
W
SAN
WATER MAIN
SAN. SEWER MAIN
BRASS CURB STOP WITH 4" ROD TO TOP OF BOX

NOTE:
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SCALE 1"=60'
0 60' 120'
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SCALE 1" = 60'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

DETAILED UTILITY PLAN - SHEET 5 OF 7

JOB NO. 44872
SHEET NO. C3.5

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S:\331\44872-Stone-Silver\CWO\Sheet\CD\SILVERSTONE\44872-331-SS-C3.0-UTIL.dwg | by Sondra Jonasen

LEGEND

- PROPERTY LINE
- POWER LINE EASEMENT
- NATURAL GAS EASEMENT
- PROPOSED FENCE
- EXISTING WETLANDS
- NEUSE RIPARIAN BUFFER
- PRIMARY OPEN SPACE
- SECONDARY OPEN SPACE
- COMMON GREEN

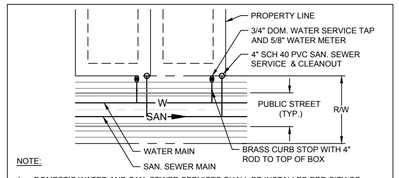
LEGEND

SEWER

- SAN — SANITARY SEWER
- Ⓢ — SANITARY MANHOLE

WATER

- W — EXISTING WATER LINE
- W — PROPOSED WATER LINE
- ⊗ — WATER VALVE
- FIRE HYDRANT
- ⊗⊗ — BLOWOFF ASSEMBLY



NOTE:

1. DOMESTIC WATER AND SAN. SEWER SERVICES SHALL BE INSTALLED PER CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS.
2. DOMESTIC WATER AND SAN. SEWER SERVICES SHALL BE INSTALLED ON THE LOW SIDE OF THE LOT.

TYPICAL UTILITY SERVICE LOCATION

N.T.S.

UTILITY NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.
2. MINIMUM UTILITY HORIZONTAL SEPARATION DISTANCES:
   WATER AND SANITARY SEWER MAINS - 10 FT.
   WATER AND STORM SEWER MAINS - 5 FT.
   SANITARY SEWER AND STORM SEWER MAINS - 5 FT.
   GRAVITY SANITARY SEWER AND FORCE MAINS - 5 FT.
3. MINIMUM UTILITY VERTICAL SEPARATION DISTANCES:
   WATER AND SANITARY SEWER MAINS - 18 IN.
   WATER AND STORM SEWER MAINS - 18 IN.
   SANITARY SEWER AND STORM SEWER MAINS - 24 IN.
4. FOR PHASED CONSTRUCTION, MANHOLES LOCATED IN FUTURE ROADWAYS SHALL BE RAISED A MINIMUM OF 1' ABOVE GRADE WITH A LOCKABLE COVER PER DETAIL S-27 ON SHEET C7.3. ⚠

SCALE 1"=60'

0 60' 120'

NAD 83

TOWN CERTIFICATION

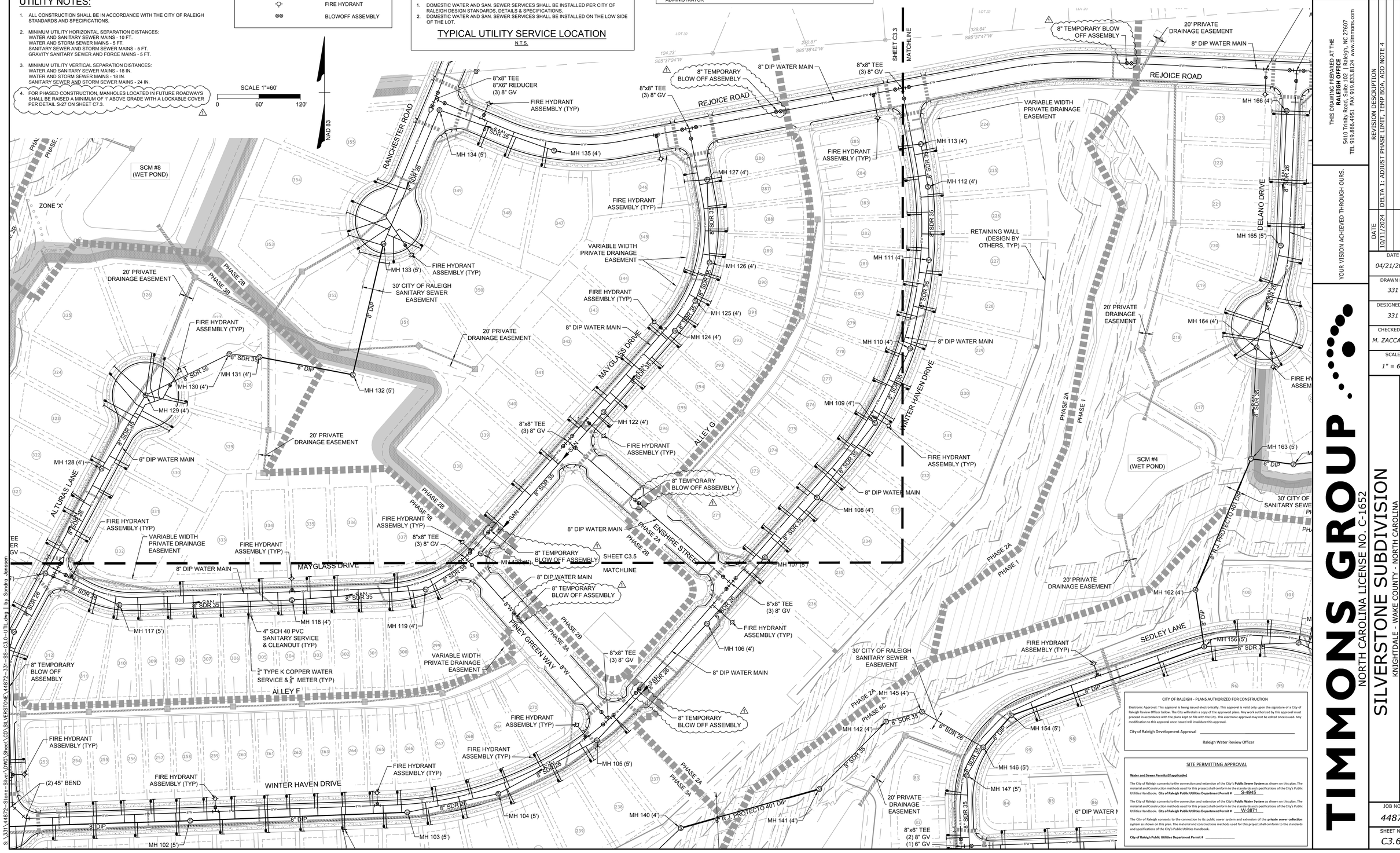
THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

811 Know what's below. Call before you dig.



CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (if applicable)

The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** S-4945

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City of Raleigh Public Utilities Department Permit # _____

FOR REVIEW ONLY

THIS DRAWING PREPARED AT THE
RALEIGH OFFICE
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE
DELTA 1: ADJUST PHASE LIMIT, TEMP BOA, ADD NOTE 4	10/11/2024

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE 1" = 60'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

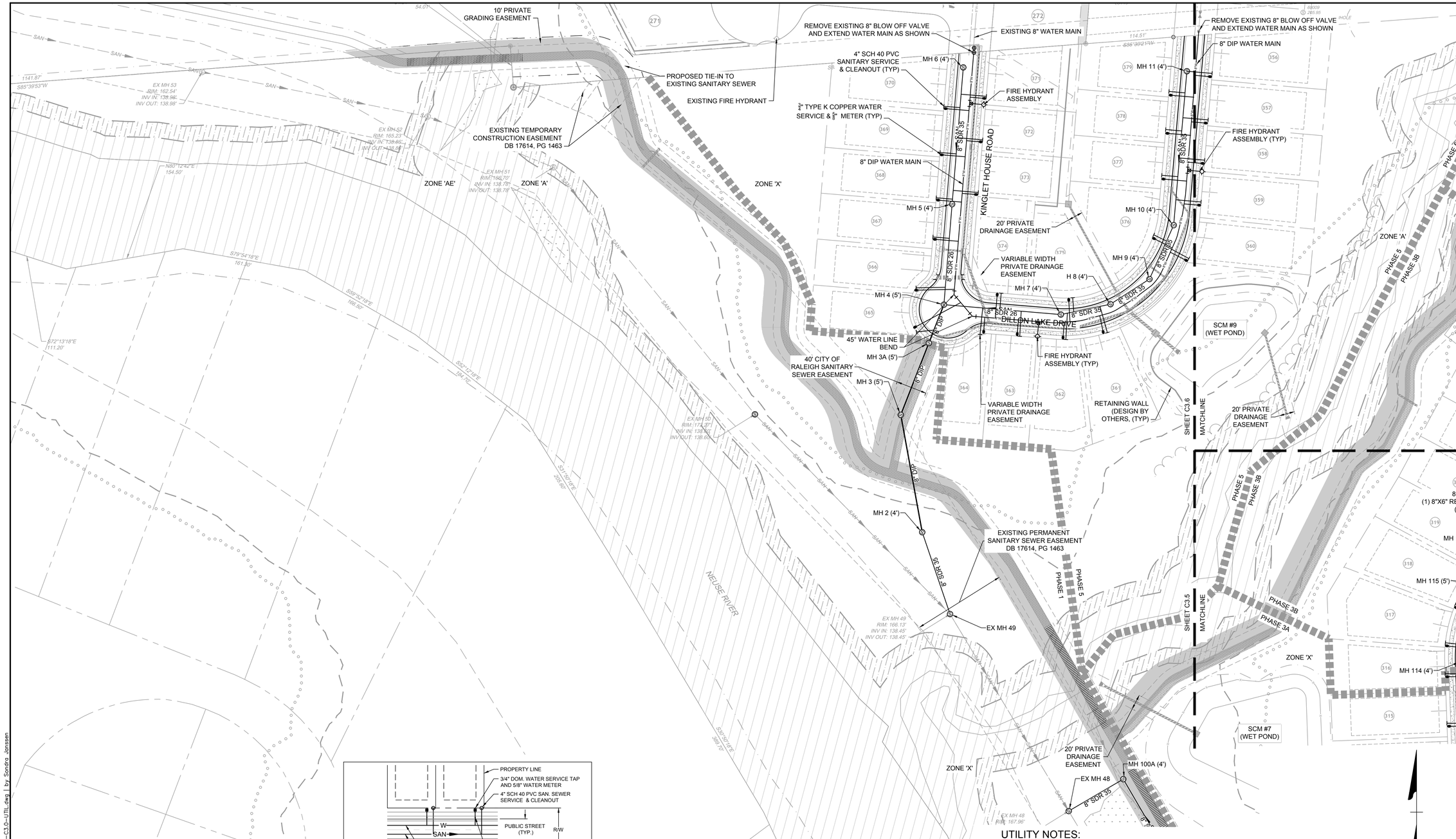
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

DETAILED UTILITY PLAN - SHEET 6 OF 7

JOB NO. 44872
SHEET NO. C3.6

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S:\331\44872-Stone-Sweet\DWG\Sheet\CD\SILVERSTONE\44872-331-SS-C3.0-UTIL.dwg | by: Sondra Jonssen



NOTE:

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2. DOMESTIC WATER AND SAN. SEWER SERVICES SHALL BE INSTALLED ON THE LOW SIDE OF THE LOT.

TYPICAL UTILITY SERVICE LOCATION

N.T.S.

TOWN CERTIFICATION

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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

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BY: _____ DATE: _____
ADMINISTRATOR

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LEGEND

SEWER

- SAN — SANITARY SEWER
- (S) — SANITARY MANHOLE

WATER

- W — EXISTING WATER LINE
- W — PROPOSED WATER LINE
- WATER VALVE
- FIRE HYDRANT
- BLOWOFF ASSEMBLY

UTILITY NOTES:

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- PRIMARY OPEN SPACE
- SECONDARY OPEN SPACE
- COMMON GREEN

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

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City of Raleigh Public Utilities Department Permit # _____

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DELTA 1: ADD NOTE 4	10/11/2024

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE 1" = 60'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

DETAILED UTILITY PLAN - SHEET 7 OF 7

JOB NO. 44872
SHEET NO. C3.7

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S:\331\44872-Stone-Silver\DWG\Sheet\CD\SIL\VERSTONE\44872-331-SS-C3.0-UTIL.dwg | by: Sondra Janssen

GUARDRAIL NOTE

1. DESIGN OF GUARDRAIL POSTS, FOOTINGS AND POTENTIAL RETAINING WALL GRID PENETRATIONS TO BE DESIGNED BY OTHERS IN ACCORDANCE TO RETAINING WALL DESIGN. RECOMMEND NCDOT STANDARD DETAIL 862.02 (SHEETS 2 & 4-9), TIMBER OR APPROVED EQUAL.
2. CONTRACTOR TO PROVIDE SHOP DRAWINGS TO ENGINEER OF RECORD FOR COORDINATION PURPOSES, WITH FIELD CONDITIONS, UNSEEN CONFLICTS, AS NEEDED.
3. CONTRACTOR SHALL COORDINATE DESIGN AND SUBMIT SEALED PLAN(S) FOR REVIEW AND APPROVAL FROM TOWN.
4. GUARDRAILS MAY REQUIRE A BUILDING PERMIT FROM THE JURISDICTIONS INSPECTIONS DEPT.

1

C4.1 C4.2 C4.3 C4.4 C4.5 C4.6 C4.7

EXISTING CHESWICK SUBDIVISION

REJOICE ROAD

RANCHESTER ROAD

KINGLET HOUSE ROAD

DILLON LAKE DRIVE

MAYGLASS DRIVE

WINTER HAVEN DRIVE

PINEY GREEN WAY

ALTURAS LANE

DELANO DRIVE

JUNTO STREET

BOLERA ROAD

SEDLEY LANE

AVONBURY LANE

MACMILLAN WAY

TOWLER ROAD

HONEY ROAD

IRONIE WAY

ALLEY A

ALLEY B

ALLEY C

ALLEY D

ALLEY E

ALLEY F

ALLEY G

ALLEY H

ALLEY J

ALLEY K

SCM #1 (WET POND)

SCM #2 (WET POND)

SCM #3 (WET POND)

SCM #8 (WET POND)

EXISTING POND

EXISTING STRUCTURE

EXISTING PARKING AND STRUCTURE

50' RIPARIAN BUFFER

WETLAND

PROJECT BOUNDARY

20' PRIVATE DRAINAGE EASEMENT

EXISTING TEMPORARY CONSTRUCTION EASEMENT DB 17614, PG1463

EXISTING PERMANENT SANITARY SEWER EASEMENT DB 17614, PG 1463

ZONE 'A'

ZONE 'AE'

ZONE 'X'

NEUSE RIVER

PHASE 1

PHASE 2

PHASE 2A

PHASE 2B

PHASE 3

PHASE 3A

PHASE 3B

PHASE 4

PHASE 5

PHASE 6

PHASE 6A

PHASE 6B

PHASE 6C

TREE PROTECTION

PHASE 1:	9,938 SF
PHASE 2:	2,831 SF
PHASE 3:	1,974 SF
PHASE 4:	152 SF
PHASE 5:	1,787 SF
PHASE 6:	4,980 SF
TOTAL LENGTH:	21,662 SF

LEGEND

- PROPERTY LINE
- PROPOSED RIGHT-OF-WAY
- ADJACENT PROPERTY LINE
- PHASE LINE
- PROPOSED CONTOUR
- EXISTING CONTOUR
- FENCE
- PROPOSED DRAIN EASEMENT
- PROPOSED PERIMETER BUFFER
- TREE PROTECTION FENCE
- 100-YR FLOODPLAIN
- WETLANDS
- NUESE RIPARIAN BUFFER
- LANDSCAPE BUFFER

SCALE 1"=200'

0 200' 400'

NAD 83

GRADING AND STORMWATER PLAN NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF KNIGHTDALE STANDARDS AND SPECIFICATIONS.
2. ALL PERMITS SHALL BE OBTAINED FROM THE TOWN OF KNIGHTDALE, WAKE COUNTY, NCDOT, NCDEQ-DWR, AND USACE AS APPLICABLE PRIOR TO BEGINNING CONSTRUCTION. A COPY OF ALL PERMITS SHALL BE SUBMITTED TO THE TOWN OF KNIGHTDALE FOR THEIR RECORDS.
3. SCMS SHALL BE DESIGNED TO CONTROL AND TREAT THE DIFFERENCE IN STORMWATER RUNOFF VOLUME LEAVING THE PROJECT SITE BETWEEN THE PRE- AND POST- DEVELOPMENT CONDITIONS FOR, AT A MINIMUM, THE 1-YEAR, 24-HOUR STORM.
4. SCMS SHALL BE DESIGNED TO HAVE A MINIMUM OF 85% AVERAGE ANNUAL REMOVAL FOR TOTAL SUSPENDED SOLIDS.
5. ALL SCMS ASSOCIATED WITH THIS PROJECT WILL REQUIRE MAINTENANCE EASEMENTS AND AN OPERATION AND MAINTENANCE AGREEMENT TO BE NOTED ON THE FINAL PLAT. ALL OF THESE ITEMS WILL NEED TO BE RECORDED WITH THE COUNTY REGISTER OF DEEDS.
6. ALL PUBLIC SANITARY SEWER EASEMENTS SHALL HAVE MAX. FINISHED GRADE SLOPE OF 3:1 TO ASSURE SAFE ACCESS FOR MAINTENANCE VEHICLES AND MOWERS.
7. ANY FILL PLACED WITHIN AN HRW EASEMENT SHALL BE FIELD TESTED/APPROVED BY THE OWNERS GEOTECHNICAL ENGINEER.
8. BUILDING PADS SHALL BE A MIN OF 18" ABOVE THE TOP OF CURB. DRIVEWAY SLOPE SHALL NOT EXCEED 8%
9. PAD GRADE DENOTES FINISHED SUBGRADE.
10. SWALES SHALL HAVE A MIN SLOPE OF 2% BUT NO LESS THAN 1% IF MIN CANNOT BE MET. ALL SWALES BETWEEN HOUSES TO BE MORE THAN 1% SLOPE. SWALE HIGH POINTS TO BE 6" BELOW BUILDING PAD. REAR YARD SWALES TO BE MIN. 2% SLOPE.
11. HIGH POINT WITHIN SWALE AS NOTED TO BE 6 IN BELOW FINISHED SUBGRADE.
12. HOUSE SIDE SLOPES TO BE 3:1 FROM PAD TO SIDE SWALE. PAD TO BE .5' (6") HIGHER THAN GRADE AND SWALE TO BE LOCATED 1.5' LENGTH FROM PAD.
13. ALL SCM'S WILL PROVIDE A MINIMUM 20' VEHICULAR ACCESSIBLE ACCESS EASEMENT FOR FUTURE MAINTENANCE AND INSPECTIONS. ACCESS EASEMENTS SHALL PROVIDE DIRECT ACCESS TO THE PRIMARY OUTFALL/BERM AND EASEMENT SLOPE SHALL NOT EXCEED 33.33% MAXIMUM LONGITUDINAL SLOPE.
14. ALL ROOF DRAINS SHALL BE DIRECTED TO THE STORM DRAIN SYSTEM.
15. ALL SEWER ACCESS EASEMENTS WILL NOT EXCEED A 33.33% SLOPE
16. ALL HANDICAP PARKING SPACES AND STRIPED ACCESSIBILTY AISLES ARE TO HAVE NO MORE THAN A 1:50 SLOPE IN ALL DIRECTIONS.
17. ALL SIDEWALKS ARE TO HAVE NO MORE THAN A 1:20 SLOPE FOR THE LENGTH OF THE SIDEWALK AND NO MORE THAN A 1:50 SLOPE FOR THE WIDTH OF THE SIDEWALK.
18. **IF CONTRACTOR NOTICES ANY DISCREPANCIES IN ANY OF THESE SLOPE REQUIREMENTS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNER PRIOR TO POURING ANY CONCRETE SO THAT A SOLUTION CAN BE FOUND.**
19. RETAINING WALL AND ASSOCIATED DRAINAGE TO BE DESIGNED BY OTHERS. CONTRACTOR SHALL COORDINATE DESIGN AND SUBMIT SEALED PLAN FOR REVIEW AND APPROVAL BY THE TOWN INSPECTIONS DEPARTMENT.

RETAINING WALL NOTE

1. ALL RETAINING WALLS TO BE DESIGNED, PERMITTED, & RAILING REQUIREMENT ASSESSMENT BY OTHERS. ASSOCIATED DRAINAGE TO BE DESIGNED BY OTHERS.
2. RETAINING WALL DESIGNERS TO PROVIDE FINAL BYPASS SWALES ALONG WALL PERIMETER. GRADES PROVIDE ON THESE DRAWINGS PROVIDED FOR DESIGN INTENT AND REFERENCE.
3. CONTRACTOR TO PROVIDE SHOP DRAWINGS TO ENGINEER OF RECORD FOR COORDINATION PURPOSES, WITH FIELD CONDITIONS, UNSEEN CONFLICTS AND ASSOCIATE DRAINAGE, AS NEEDED.
4. CONTRACTOR SHALL COORDINATE DESIGN AND SUBMIT SEALED PLAN(S) FOR REVIEW AND APPROVAL FROM TOWN.
5. ALL RETAINING WALLS WILL REQUIRE A BUILDING PERMIT FROM THE JURISDICTIONS INSPECTIONS DEPT.
6. TOP OF WALL SPOT GRADES PROVIDE 6" ELEVATION DIFFERENCE ABOVE GRADE SHOWN.

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF KNIGHTDALE AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS.

NOTE

A SINGLE PHASE OF DEVELOPMENT SHALL NOT ENCOMPASS MORE THAN 50 ACRES OF GRADING UNLESS APPROVED BY THE TOWN'S DEVELOPMENT SERVICES DEPARTMENT.

TOWN CERTIFICATION

THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

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ADMINISTRATOR

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Raleigh Water Review Officer

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REVISION DESCRIPTION	DATE
DELTA 1: GUARDRAIL NOTES	10/11/2024

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE 1" = 200'

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

OVERALL GRADING PLAN

JOB NO. 44872
SHEET NO. C4.0

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SCALE 1"=60'
0 60' 120'

NAD 83

LEGEND

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- PROPOSED RIGHT-OF-WAY
- ADJACENT PROPERTY LINE
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- EXISTING CONTOUR
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City of Raleigh Development Approval _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (if applicable)

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City of Raleigh Public Utilities Department Permit # _____

811 Know what's **below.** **Call** before you dig.

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA
GRADING AND DRAINAGE PLAN - SHEET 1 OF 7

JOB NO. 44872
SHEET NO. C4.1

SCALE 1" = 60'
DESIGNED BY 331
DRAWN BY 331
CHECKED BY M. ZACCARDO
DATE 04/21/2023

DATE	REVISION DESCRIPTION
10/11/2024	DELTA 1: MAIL KIOSK RECONFIG

FOR REVIEW ONLY

THIS DRAWING PREPARED AT THE **RALEIGH OFFICE**
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

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S:\331\44872-Stone-Silver\CWO\Sheet\CO SILVERSTONE (44872-231-SS-04.0-GRAD.dwg by Sondra Jonssen

Know what's below. Call before you dig.

NOTE

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SCALE 1"=60'

0 60' 120'

NAD 83

LEGEND

- PROPERTY LINE
- PROPOSED RIGHT-OF-WAY
- ADJACENT PROPERTY LINE
- PHASE LINE
- PROPOSED CONTOUR
- EXISTING CONTOUR
- FENCE
- PROPOSED DRAIN EASEMENT
- PROPOSED PERIMETER BUFFER
- WETLANDS
- NUESE RIPARIAN BUFFER
- LANDSCAPE BUFFER
- TREE PROTECTION FENCE
- 100-YR FLOODPLAIN

GRADING AND STORMWATER PLAN NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF KNIGHTDALE STANDARDS AND SPECIFICATIONS.
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TOWN CERTIFICATION

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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

REJOICE ROAD
DELANO DRIVE
WINTER HAVEN DRIVE
SEDLEY LANE
JUNTO STREET
MACMILLAN WAY
BOLERA ROAD
EX. HARDIN HILL LANE
ALLEY A
ALLEY D
ALLEY E

20' EXISTING COR SANITARY SEWER EASEMENT BM 2008, PG1130
20' EXISTING COR DRAINAGE EASEMENT BM 2008, PG1130
EXISTING WOODEN FENCE
RETAINING WALL DESIGNED BY OTHERS (SEE NOTE ON SHEET C4.0)
SCM #1 (WET POND)
SCM #1 RISER
SCM #1 FES
50' RIPARIAN BUFFER
EMERGENCY SPILLWAY REINFORCE WITH CLASS B RIP RAP
VARIABLE WIDTH PRIVATE DRAINAGE EASEMENT
EXISTING RETAINING WALL
WETLAND
20' PRIVATE DRAINAGE EASEMENT
EXISTING FIRE HYDRANT
TEMPORARY GRADING EASEMENT
REMOVE EXISTING TEMP OUTLET PIPE AND FES. PLUG CATCH BASIN
EXTEND EXISTING RETAINING WALL. REFERENCE HARDIN HILL APPROVED PLANS (S-8-16)
RETAINING WALL (DESIGNED BY OTHERS)
TREE PROTECTION FENCE (TYP)
20' ACCESS AND MAINTENANCE EASEMENT
4' BLACK VINYL FENCE
30' CITY OF RALEIGH SANITARY SEWER EASEMENT
10' RETAINING WALL ACCESS AND MAINTENANCE EASEMENT
SCM #3 (WET POND)
4'X4' SCM #3 RISER
SCM #3 FES
SCM ACCESS & MAINTENANCE EASEMENT
SCM #4 (WET POND)
SCM #4 RISER
SCM #4 FES
9'x18' NCDOT CLASS B RIPRAP DISSIPATOR PAD
RETAINING WALL DESIGNED BY OTHERS WITH 10' MAINTENANCE & ACCESS EASEMENT (SEE NOTE ON SHEET C4.0)
EMERGENCY SPILLWAY REINFORCE WITH CLASS B RIP RAP
20' RETAINING WALL MAINTENANCE AND ACCESS EASEMENT
10' RETAINING WALL MAINTENANCE AND ACCESS EASEMENT
RETAINING WALL DESIGNED BY OTHERS (SEE NOTE ON SHEET C4.0)
SCM #5 (WET POND)
SCM #5 RISER
SCM #5 FES
GUARDRAIL FACE 2' BEHIND EDGE OF PAVEMENT (SEE GUARDRAIL NOTES ON SHEET C2.0)
CULVERT #5 161 LF CULVERT INV UP: 222.85' INV DOWN: 222.00'
CULVERT #4 99 LF CULVERT INV UP: 195.00' INV DOWN: 190.85'
TREE PROTECTION FENCE (TYP)
PHASE 1
PHASE 2A
PHASE 6A
PHASE 6B
PHASE 6C
SHEET C4.2 MATCHLINE
SHEET C4.4 MATCHLINE
SHEET C4.1 MATCHLINE

CITY OF RALEIGH – PLANS AUTHORIZED FOR CONSTRUCTION

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Raleigh Water Review Officer

SITE PERMITTING APPROVAL

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City of Raleigh Public Utilities Department Permit # _____

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YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
10/11/2024	DELTA 1: SLOPED PAD (LOTS249-252, 313, 316-326), SWALE/DI ALONG TW & GUARDRAIL

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE 1" = 60'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

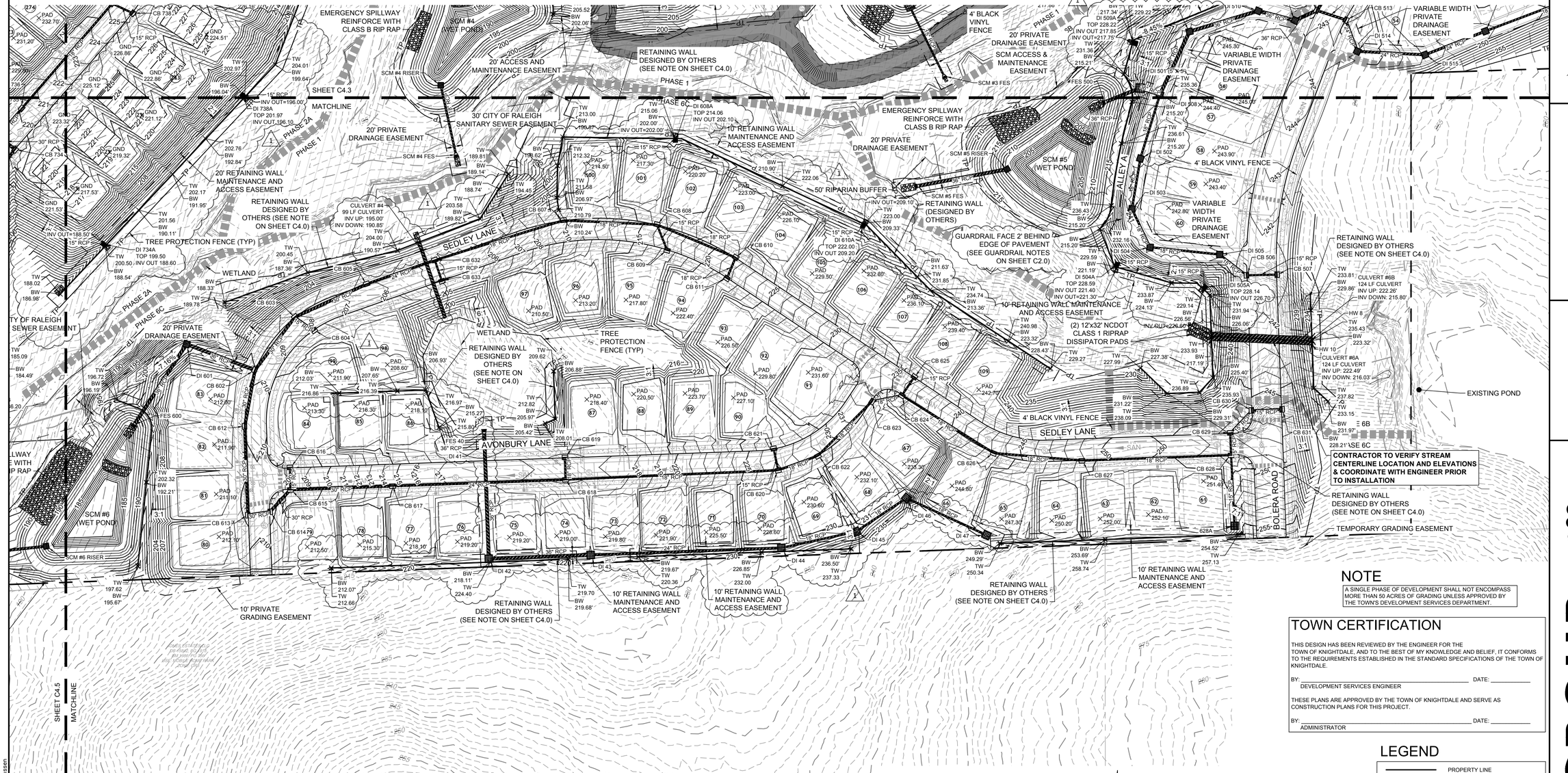
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

GRADING AND DRAINAGE PLAN - SHEET 3 OF 7

JOB NO. 44872
SHEET NO. C4.3

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S:\331\44872-Stone Siren\DWG\Sheet\CD\SILVERSTONE_44872-331-SS-C4.0-GRAD.dwg | by Sandra Jonssen



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BY: _____ DATE: _____
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ADMINISTRATOR

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NAD 83

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0 60' 120'

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13. ALL SCM'S WILL PROVIDE A MINIMUM 20' VEHICULAR ACCESSIBLE ACCESS EASEMENT FOR FUTURE MAINTENANCE AND INSPECTIONS. ACCESS EASEMENTS SHALL PROVIDE DIRECT ACCESS TO THE PRIMARY OUTFALL/BERM AND EASEMENT SLOPE SHALL NOT EXCEED 33.33% MAXIMUM LONGITUDINAL SLOPE.
14. ALL ROOF DRAINS SHALL BE DIRECTED TO THE STORM DRAIN SYSTEM.
15. ALL SEWER ACCESS EASEMENTS WILL NOT EXCEED A 33.33% SLOPE
16. ALL HANDICAP PARKING SPACES AND STRIPED ACCESSIBILTY AISLES ARE TO HAVE NO MORE THAN A 1:50 SLOPE IN ALL DIRECTIONS.
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18. **IF CONTRACTOR NOTICES ANY DISCREPANCIES IN ANY OF THESE SLOPE REQUIREMENTS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNER PRIOR TO POURING ANY CONCRETE SO THAT A SOLUTION CAN BE FOUND.**
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CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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Raleigh Water Review Officer

SITE PERMITTING APPROVAL

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City of Raleigh Public Utilities Department Permit # _____

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TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

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DATE	REVISION DESCRIPTION
10/11/2024	DELTA 1: PHASE RECONFIG, SWALE/DI ALONG TW, ADD GUARDRAIL & STORM BYPASS

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE 1" = 60'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

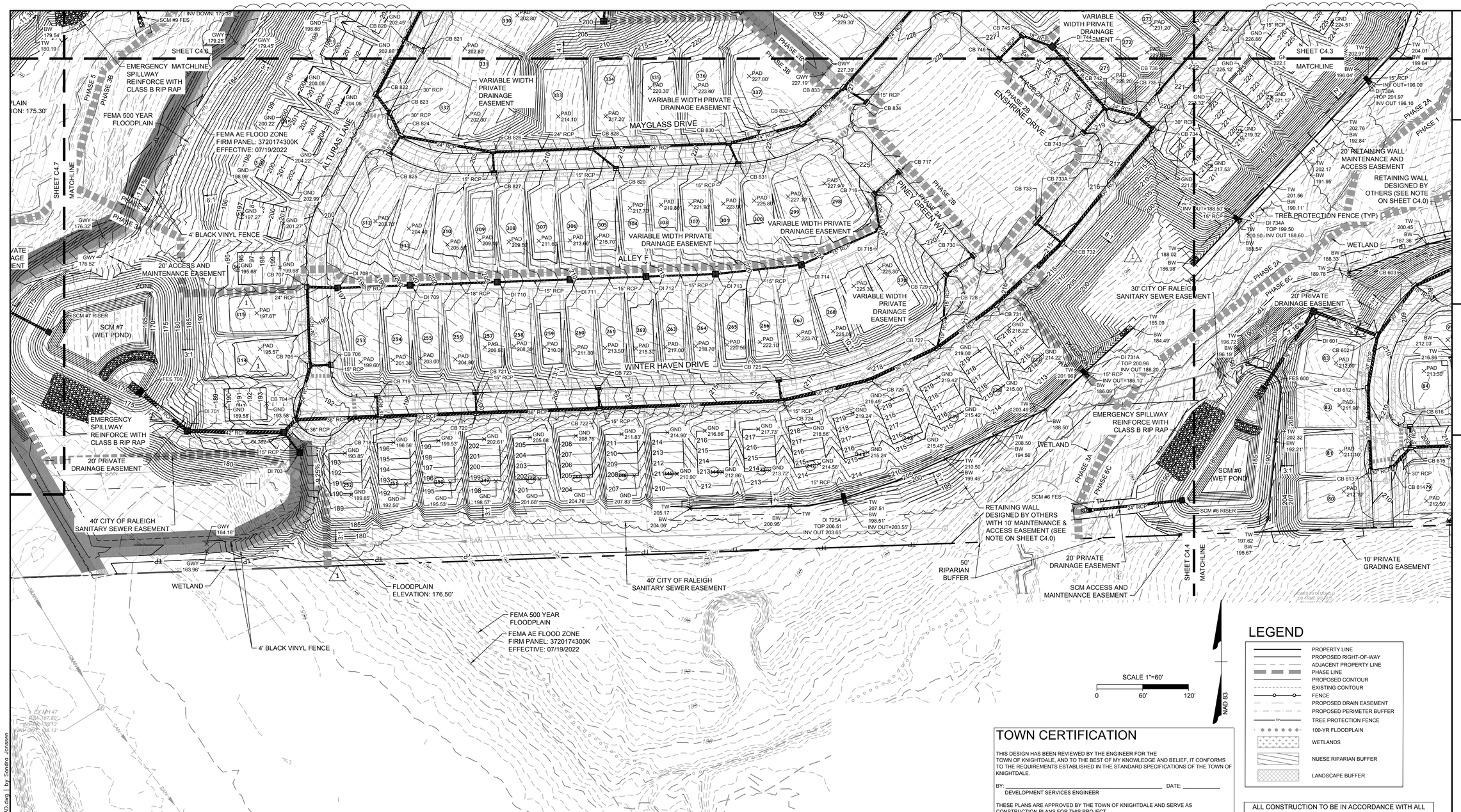
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

GRADING AND DRAINAGE PLAN - SHEET 4 OF 7

JOB NO. 44872
SHEET NO. C4.4

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S:\331\44872-Store-Silver\DWG\Sheet\03\SILVERSTONE\44872-331-SS-C4.0-GRAD.dwg | by Sandra Jonssen



LEGEND

- PROPERTY LINE
- PROPOSED RIGHT-OF-WAY
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BY: _____ DATE: _____
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ADMINISTRATOR

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CITY OF RALEIGH – PLANS AUTHORIZED FOR CONSTRUCTION

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TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
10/11/2024	DELTA 1: SLOPED PAD LOTS 249-252, 313, 316-326), LOT252 REMOVE WALL, SWALE/DI ALONG TW, GUARDRAIL & GRNWAT SHIFT

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE 1" = 60'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

GRADING AND DRAINAGE PLAN - SHEET 5 OF 7

JOB NO. 44872
SHEET NO. C4.5

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- WETLANDS
- NUESE RIPARIAN BUFFER
- LANDSCAPE BUFFER
- TREE PROTECTION FENCE
- 100-YR FLOODPLAIN

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF KNIGHTDALE AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS.

NOTE

A SINGLE PHASE OF DEVELOPMENT SHALL NOT ENCOMPASS MORE THAN 50 ACRES OF GRADING UNLESS APPROVED BY THE TOWN'S DEVELOPMENT SERVICES DEPARTMENT.

SCALE 1"=60'
0 60' 120'
NAD 83



CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (if applicable)

The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** S-4945

The City of Raleigh consents to the connection and extension of the City's **Public Water System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** W-3871

The City of Raleigh consents to the connection to its public sewer system and extension of the **private sewer collection** system as shown on this plan. The material and constructions methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh Public Utilities Department Permit # _____

FOR REVIEW ONLY

THIS DRAWING PREPARED AT THE **RALEIGH OFFICE**
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
10/11/2024	DELTA 1:SLOPED PAD (LOTS 249-252, 313,316-326), GRNWY SHIFT, ADD WALL, SWALE//DI ALONG TW & GUARDRAIL

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE 1" = 60'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

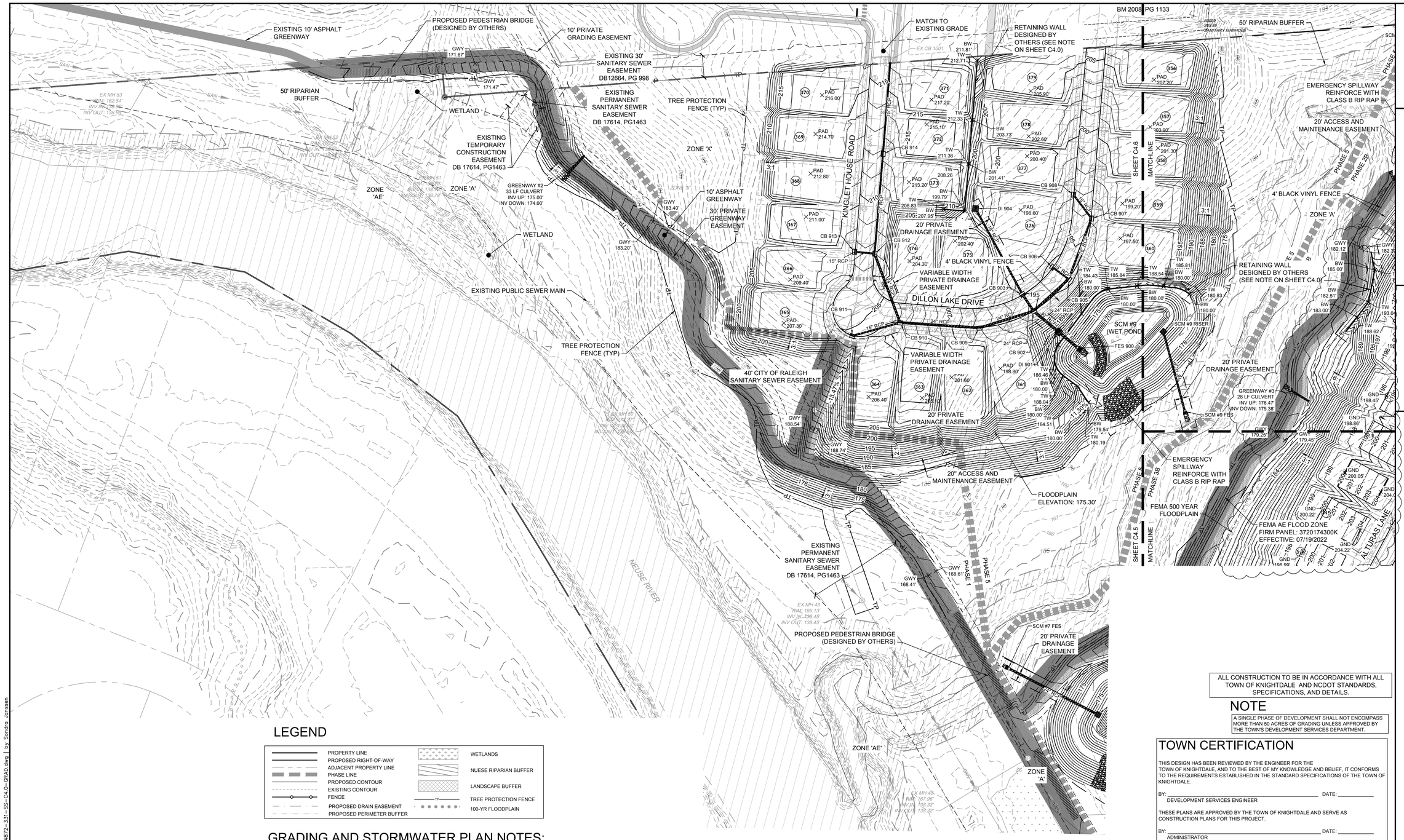
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

GRADING AND DRAINAGE PLAN - SHEET 6 OF 7

JOB NO. 44872
SHEET NO. C4.6

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LEGEND

- PROPERTY LINE
- PROPOSED RIGHT-OF-WAY
- ADJACENT PROPERTY LINE
- PHASE LINE
- PROPOSED CONTOUR
- EXISTING CONTOUR
- FENCE
- PROPOSED DRAIN EASEMENT
- PROPOSED PERIMETER BUFFER
- WETLANDS
- NUESE RIPARIAN BUFFER
- LANDSCAPE BUFFER
- TREE PROTECTION FENCE
- 100-YR FLOODPLAIN

GRADING AND STORMWATER PLAN NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF KNIGHTDALE STANDARDS AND SPECIFICATIONS.
2. ALL PERMITS SHALL BE OBTAINED FROM THE TOWN OF KNIGHTDALE, WAKE COUNTY, NCDOT, NCDEQ-DWR, AND USACE AS APPLICABLE PRIOR TO BEGINNING CONSTRUCTION. A COPY OF ALL PERMITS SHALL BE SUBMITTED TO THE TOWN OF KNIGHTDALE FOR THEIR RECORDS.
3. SCMS SHALL BE DESIGNED TO CONTROL AND TREAT THE DIFFERENCE IN STORMWATER RUNOFF VOLUME LEAVING THE PROJECT SITE BETWEEN THE PRE- AND POST- DEVELOPMENT CONDITIONS FOR, AT A MINIMUM, THE 1-YEAR, 24-HOUR STORM.
4. SCMS SHALL BE DESIGNED TO HAVE A MINIMUM OF 85% AVERAGE ANNUAL REMOVAL FOR TOTAL SUSPENDED SOLIDS.
5. ALL SCMS ASSOCIATED WITH THIS PROJECT WILL REQUIRE MAINTENANCE EASEMENTS AND AN OPERATION AND MAINTENANCE AGREEMENT TO BE NOTED ON THE FINAL PLAT. ALL OF THESE ITEMS WILL NEED TO BE RECORDED WITH THE COUNTY REGISTER OF DEEDS.
6. ALL PUBLIC SANITARY SEWER EASEMENTS SHALL HAVE MAX. FINISHED GRADE SLOPE OF 3:1 TO ASSURE SAFE ACCESS FOR MAINTENANCE VEHICLES AND MOWERS.
7. ANY FILL PLACED WITHIN AN HRW EASEMENT SHALL BE FIELD TESTED/APPROVED BY THE OWNERS GEOTECHNICAL ENGINEER.
8. BUILDING PADS SHALL BE A MIN OF 18" ABOVE THE TOP OF CURB. DRIVEWAY SLOPE SHALL NOT EXCEED 8%
9. PAD GRADE DENOTES FINISHED SUBGRADE.
10. SWALES SHALL HAVE A MIN SLOPE OF 2% BUT NO LESS THAN 1% IF MIN CANNOT BE MET. ALL SWALES BETWEEN HOUSES TO BE MORE THAN 1% SLOPE. SWALE HIGH POINTS TO BE 6" BELOW BUILDING PAD. REAR YARD SWALES TO BE MIN. 2% SLOPE.
11. HIGH POINT WITHIN SWALE AS NOTED TO BE 6 IN BELOW FINISHED SUBGRADE.
12. HOUSE SIDE SLOPES TO BE 3:1 FROM PAD TO SIDE SWALE. PAD TO BE .5' (6") HIGHER THAN GRADE AND SWALE TO BE LOCATED 1.5' LENGTH FROM PAD.
13. ALL SCM'S WILL PROVIDE A MINIMUM 20' VEHICULAR ACCESSIBLE ACCESS EASEMENT FOR FUTURE MAINTENANCE AND INSPECTIONS. ACCESS EASEMENTS SHALL PROVIDE DIRECT ACCESS TO THE PRIMARY OUTFALL/BERM AND EASEMENT SLOPE SHALL NOT EXCEED 33.33% MAXIMUM LONGITUDINAL SLOPE.
14. ALL ROOF DRAINS SHALL BE DIRECTED TO THE STORM DRAIN SYSTEM.
15. ALL SEWER ACCESS EASEMENTS WILL NOT EXCEED A 33.33% SLOPE
16. ALL HANDICAP PARKING SPACES AND STRIPED ACCESSIBILTY AISLES ARE TO HAVE NO MORE THAN A 1:50 SLOPE IN ALL DIRECTIONS.
17. ALL SIDEWALKS ARE TO HAVE NO MORE THAN A 1:20 SLOPE FOR THE LENGTH OF THE SIDEWALK AND NO MORE THAN A 1:50 SLOPE FOR THE WIDTH OF THE SIDEWALK.
18. **IF CONTRACTOR NOTICES ANY DISCREPANCIES IN ANY OF THESE SLOPE REQUIREMENTS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNER PRIOR TO POURING ANY CONCRETE SO THAT A SOLUTION CAN BE FOUND.**
19. RETAINING WALL AND ASSOCIATED DRAINAGE TO BE DESIGNED BY OTHERS. CONTRACTOR SHALL COORDINATE DESIGN AND SUBMIT SEALED PLAN FOR REVIEW AND APPROVAL BY THE TOWN INSPECTIONS DEPARTMENT.

NAD 83

SCALE 1"=60'
0 60' 120'

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF KNIGHTDALE AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS.

NOTE

A SINGLE PHASE OF DEVELOPMENT SHALL NOT ENCOMPASS MORE THAN 50 ACRES OF GRADING UNLESS APPROVED BY THE TOWN'S DEVELOPMENT SERVICES DEPARTMENT.

TOWN CERTIFICATION

THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (if applicable)

The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** S-4945

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City of Raleigh Public Utilities Department Permit # _____

811 Know what's below. Call before you dig.

FOR REVIEW ONLY

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YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE
1:SLOPED PAD(LOTS 249-252,313,316-326), GRNWY SHIFT&ADD WALL	10/11/2024

DATE: 04/21/2023
DRAWN BY: 331
DESIGNED BY: 331
CHECKED BY: M. ZACCARDO
SCALE: 1" = 60'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

GRADING AND DRAINAGE PLAN - SHEET 7 OF 7

JOB NO. 44872
SHEET NO. C4.7

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S:\331\44872-Stone-Silver\DWG\Sheet\CD\SILVERSTONE\44872-331-SS-C4.0-GRAD.dwg | by Sondra Jonssen

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
628A	8.76'	252.26		243.49' (15" RCP)	87' @ 2.07%	CB 628
CB 602	15.84'	210.04	199.90' (30" RCP) CB 612 194.70' (30" RCP) CB 603	194.20' (36" RCP)	90' @ 0.56%	DI 601
CB 603	13.32'	208.52	195.20' (30" RCP) CB 605 196.45' (15" RCP) CB 604	195.20' (30" RCP)	81' @ 0.61%	CB 602
CB 604	11.69'	208.34		196.65' (15" RCP)	28' @ 0.70%	CB 603
CB 605	10.37'	206.67	196.80' (24" RCP) CB 632	196.30' (30" RCP)	97' @ 1.14%	CB 603
CB 607	7.10'	210.20	203.10' (18" RCP) CB 608	203.10' (18" RCP)	165' @ 3.21%	CB 632
CB 608	7.55'	216.30	208.75' (18" RCP) CB 610 209.00' (15" RCP) CB 609	208.75' (18" RCP)	115' @ 4.93%	CB 607
CB 609	8.41'	217.42		209.20' (15" RCP)	34' @ 0.59%	CB 608
CB 610	4.01'	221.86	217.85' (18" RCP) CB 611	217.85' (18" RCP)	105' @ 8.71%	CB 608
CB 611	4.08'	222.13		218.05' (18" RCP)	27' @ 0.73%	CB 610
CB 612	9.44'	210.64	201.20' (30" RCP) CB 613	201.20' (30" RCP)	70' @ 1.86%	CB 602
CB 613	8.08'	209.88	201.80' (30" RCP) CB 614	201.80' (30" RCP)	109' @ 0.55%	CB 612
CB 614	7.87'	209.87	202.00' (30" RCP) CB 615	202.00' (30" RCP)	27' @ 0.74%	CB 613
CB 615	6.29'	209.19	202.90' (30" RCP) CB 617 204.15' (15" RCP) CB 616	202.90' (30" RCP)	37' @ 2.43%	CB 614
CB 616	4.83'	209.18		204.35' (15" RCP)	27' @ 0.74%	CB 615
CB 617	10.23'	214.93	205.20' (24" RCP) CB 618	204.70' (30" RCP)	125' @ 1.44%	CB 615
CB 618	8.61'	216.91	209.00' (18" RCP) CB 620 209.00' (18" RCP) CB 619	208.30' (24" RCP)	212' @ 1.46%	CB 617
CB 619	7.76'	216.91		209.15' (18" RCP)	27' @ 0.56%	CB 618
CB 620	6.36'	227.26	220.90' (18" RCP) CB 622 221.15' (15" RCP) CB 621	220.90' (18" RCP)	261' @ 4.56%	CB 618
CB 621	5.88'	227.23		221.35' (15" RCP)	27' @ 0.74%	CB 620
CB 622	6.17'	229.27	223.10' (18" RCP) CB 623	223.10' (18" RCP)	52' @ 4.25%	CB 620
CB 623	5.07'	232.77	227.70' (18" RCP) CB 624	227.70' (18" RCP)	94' @ 4.90%	CB 622
CB 624	5.82'	236.42	230.60' (18" RCP) CB 626 230.85' (15" RCP) CB 625	230.60' (18" RCP)	38' @ 7.70%	CB 623
CB 625	5.37'	236.42		231.05' (15" RCP)	27' @ 0.74%	CB 624
CB 626	9.67'	243.63	233.96' (18" RCP) CB 627	233.96' (18" RCP)	133' @ 2.53%	CB 624
CB 627	8.80'	249.30	240.50' (18" RCP) CB 628	240.50' (18" RCP)	108' @ 6.03%	CB 626
CB 628	7.25'	248.75	241.75' (15" RCP) CB 629 241.70' (15" RCP) 628A	241.50' (18" RCP)	183' @ 0.55%	CB 627
CB 629	6.80'	248.75	241.95' (15" RCP) CB 630	241.95' (15" RCP)	27' @ 0.74%	CB 628
CB 630	4.15'	246.30	242.15' (15" RCP) CB 631	242.15' (15" RCP)	38' @ 0.52%	CB 629
CB 631	3.90'	246.30		242.40' (15" RCP)	37' @ 0.68%	CB 630
CB 632	8.16'	205.46	197.80' (18" RCP) CB 607 198.05' (15" RCP) CB 633	197.30' (24" RCP)	89' @ 0.56%	CB 605
CB 633	7.14'	205.46		198.32' (15" RCP)	27' @ 1.00%	CB 632
DI 601	16.54'	204.28	193.70' (36" RCP) CB 602	187.74' (36" RCP)	118' @ 1.48%	FES 600
DI 608A	11.96'	214.06		202.10' (15" RCP)	3' @ 3.30%	
DI 610A	12.80'	222.00		209.20' (15" RCP)	3' @ 3.33%	
FES 600	???'	189.33	186.00' (36" RCP) DI 601			

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
CB 204	5.17'	270.77	265.60' (15" RCP) CB 206 265.60' (15" RCP) CB 205	265.60' (15" RCP)	122' @ 3.55%	DI 203
CB 205	5.04'	270.79		265.75' (15" RCP)	27' @ 0.56%	CB 204
CB 206	5.23'	272.98	267.75' (15" RCP) CB 207	267.75' (15" RCP)	110' @ 1.95%	CB 204
CB 207	5.11'	273.06		267.95' (15" RCP)	27' @ 0.73%	CB 206
CB 208	3.61'	265.76	262.15' (15" RCP) DI 209	262.15' (15" RCP)	57' @ 1.58%	DI 203
CB 218	16.29'	274.59	258.30' (24" RCP) EX CB 219	258.30' (24" RCP)	35' @ 0.57%	DI 217
CB 220	5.22'	271.47		266.25' (15" RCP)	27' @ 0.74%	EX CB 219
DI 201	21.09'	263.69	248.06' (30" RCP) DI 202	242.60' (30" RCP)	36' @ 1.67%	FES 200
DI 202	17.75'	268.89	256.45' (15" RCP) DI 203 255.70' (24" RCP) DI 213	251.14' (30" RCP)	26' @ 11.94%	DI 201
DI 203	6.97'	268.22	261.25' (15" RCP) CB 204 261.25' (15" RCP) CB 208	261.25' (15" RCP)	48' @ 9.90%	DI 202
DI 209	4.37'	267.02	262.65' (15" RCP) DI 210	262.65' (15" RCP)	94' @ 0.53%	CB 208
DI 210	5.30'	268.35	263.05' (15" RCP) DI 211	263.05' (15" RCP)	61' @ 0.66%	DI 209
DI 211	5.32'	271.47	266.15' (15" RCP) DI 212	266.15' (15" RCP)	147' @ 2.11%	DI 210
DI 212	5.34'	273.89		268.55' (15" RCP)	113' @ 2.12%	DI 211
DI 213	14.03'	270.13	256.10' (24" RCP) DI 214	256.10' (24" RCP)	81' @ 0.49%	DI 202
DI 214	15.06'	271.76	256.70' (24" RCP) DI 215	256.70' (24" RCP)	120' @ 0.50%	DI 213
DI 215	16.18'	273.68	257.50' (24" RCP) DI 216	257.50' (24" RCP)	141' @ 0.57%	DI 214
DI 216	16.56'	274.36	257.80' (24" RCP) DI 217	257.80' (24" RCP)	48' @ 0.62%	DI 215
DI 217	17.02'	275.12	258.10' (24" RCP) CB 218	258.10' (24" RCP)	56' @ 0.53%	DI 216
EX CB 219	12.67'	271.52	266.05' (15" RCP) CB 220 259.35' (24" RCP) EX CB 221	258.85' (24" RCP)	109' @ 0.51%	CB 218
EX CB 221	7.01'	267.07	263.32' (15" RCP) EX CB 224 260.31' (15" RCP) EX CB 222	260.06' (24" RCP)	142' @ 0.50%	EX CB 219
EX CB 222	5.57'	268.04	262.57' (15" RCP) EX CB 223	262.47' (15" RCP)	42' @ 5.15%	EX CB 221
EX CB 223	4.75'	267.58	262.83' (15" RCP) EX CB 226	262.83' (15" RCP)	53' @ 0.49%	EX CB 222
EX CB 224	3.60'	267.06	263.56' (15" RCP) EX CB 225	263.46' (15" RCP)	27' @ 0.52%	EX CB 221
EX CB 225	4.54'	268.31	263.87' (15" RCP) EX DI 227	263.77' (15" RCP)	42' @ 0.50%	EX CB 224
EX CB 226	4.75'	267.58		262.83' (15" RCP)	7' @ 0.00%	EX CB 223
EX DI 227	2.94'	268.43		265.49' (15" RCP)	83' @ 1.96%	EX CB 225
FES 200	???'	244.79	242.00' (30" RCP) DI 201			

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
5 (79)	???'	-3.93				
CB 506	5.59'	241.74	236.15' (15" RCP) CB 507	236.15' (15" RCP)	42' @ 0.72%	DI 505
CB 507	5.39'	241.74		236.35' (15" RCP)	37' @ 0.54%	CB 506
CB 512	9.09'	242.99	234.90' (24" RCP) CB 513 234.40' (30" RCP) CB 535	233.90' (36" RCP)	29' @ 0.68%	DI 511
CB 513	7.80'	242.90	235.20' (24" RCP) DI 514	235.10' (24" RCP)	37' @ 0.53%	CB 512
CB 526A	8.61'	267.62	259.00' (15" RCP) CB 526B	259.00' (15" RCP)	87' @ 4.45%	
CB 526B	4.07'	269.07		265.00' (15" RCP)	93' @ 6.46%	CB 526A
CB 535	6.92'	241.92	235.10' (30" RCP) CB 537 236.00' (18" RCP) CB 536	235.00' (30" RCP)	95' @ 0.63%	CB 512
CB 536	5.72'	241.92		236.20' (18" RCP)	37' @ 0.54%	CB 535
CB 537	7.45'	243.77	236.42' (30" RCP) CB 538	236.32' (30" RCP)	122' @ 1.00%	CB 535
CB 538	9.43'	246.73	237.30' (30" RCP) EX CB 520	237.30' (30" RCP)	140' @ 0.63%	CB 537
CB 548	5.03'	260.69	255.66' (15" RCP) CB 549	255.66' (15" RCP)	34' @ 0.61%	DI 547
CB 549	5.03'	260.88		255.85' (15" RCP)	28' @ 0.69%	CB 548
DI 501 (5' X 5')	26.74'	235.14	227.80' (36" RCP) DI 508	208.40' (36" RCP)	46' @ 0.87%	FES 500
DI 502	6.27'	240.57	234.30' (18" RCP) DI 503	234.30' (18" RCP)	82' @ 5.36%	DI 508
DI 503	6.09'	240.89	234.80' (18" RCP) DI 504	234.80' (18" RCP)	63' @ 0.80%	DI 502
DI 504	6.20'	241.30	235.10' (18" RCP) DI 505	235.10' (18" RCP)	52' @ 0.58%	DI 503
DI 504A	7.19'	228.59		221.40' (15" RCP)	5' @ 1.96%	
DI 505	6.33'	241.93	235.85' (15" RCP) CB 506	235.60' (18" RCP)	86' @ 0.58%	DI 504
DI 505A	1.44'	228.14		226.70' (15" RCP)	4' @ 2.56%	
DI 508	12.79'	241.19	228.40' (36" RCP) DI 509 229.90' (18" RCP) DI 502	228.40' (36" RCP)	26' @ 2.33%	DI 501 (5' X 5')
DI 509	12.00'	242.10	230.10' (36" RCP) DI 510	230.10' (36" RCP)	85' @ 2.00%	DI 508
DI 509A	10.37'	228.22		217.85' (15" RCP)	5' @ 2.17%	
DI 510	11.25'	243.05	231.80' (36" RCP) DI 511	231.80' (36" RCP)	88' @ 1.94%	DI 509
DI 511	9.85'	243.55	233.70' (36" RCP) CB 512	233.70' (36" RCP)	47' @ 4.07%	DI 510
DI 514	6.03'	243.93	237.90' (24" RCP) DI 515	237.90' (24" RCP)	41' @ 6.59%	CB 513
DI 515	6.09'	247.09	241.00' (24" RCP) DI 516	241.00' (24" RCP)	83' @ 3.74%	DI 514
DI 516	6.00'	248.80	243.30' (18" RCP) DI 517	242.80' (24" RCP)	80' @ 2.26%	DI 515
DI 517	5.41'	251.71	246.55' (15" RCP) DI 518	246.30' (18" RCP)	187' @ 1.60%	DI 516
DI 518	4.93'	255.68	250.75' (15" RCP) DI 519	250.75' (15" RCP)	84' @ 4.99%	DI 517
DI 519	4.71'	263.16	258.45' (15" RCP) DI 532	258.45' (15" RCP)	153' @ 5.03%	DI 518
DI 532	4.56'	269.61	265.05' (15" RCP) DI 533	265.05' (15" RCP)	132' @ 5.00%	DI 519
DI 533	5.76'	278.11	272.35' (15" RCP) DI 534	272.35' (15" RCP)	174' @ 4.19%	DI 532
DI 534	4.33'	277.48		273.15' (15" RCP)	142' @ 0.57%	DI 533
DI 544	5.16'	249.03	244.31' (18" RCP) DI 546	243.87' (24" RCP)	92' @ 2.24%	EX DI 531
DI 546	4.83'	255.00	250.42' (15" RCP) DI 547	250.17' (18" RCP)	120' @ 4.86%	DI 544
DI 547	4.60'	260.05	255.45' (15" RCP) CB 548	255.45' (15" RCP)	106' @ 4.77%	DI 546
EX CB 520	7.20'	246.81	240.11' (24" RCP) EX CB 527 240.11' (24" RCP) EX CB 521	239.61' (30" RCP)	91' @ 2.54%	CB 538
EX CB 521	5.28'	246.65	241.87' (18" RCP) EX CB 522	241.37' (24" RCP)	37' @ 3.41%	EX CB 520
EX CB 522	4.91'	249.18	244.52' (15" RCP) EX CB 524 244.52' (15" RCP) EX CB 523	244.27' (18" RCP)	44' @ 5.51%	EX CB 521
EX CB 523	3.99'	248.70		244.71' (15" RCP)	37' @ 0.51%	EX CB 522
EX CB 524	4.10'	253.21	249.21' (15" RCP) EX CB 525	249.11' (15" RCP)	105' @ 4.38%	EX CB 522
EX CB 525	4.31'	259.11	254.90' (15" RCP) EX CB 526	254.80' (15" RCP)	116' @ 4.82%	EX CB 524
EX CB 526	4.00'	259.13		255.13' (15" RCP)	46' @ 0.50%	EX CB 525
EX CB 527	6.37'	246.83	240.56' (24" RCP) EX CB 529 241.31' (15" RCP) EX CB 528	240.46' (24" RCP)	70' @ 0.50%	EX CB 520
EX CB 528	4.00'	246.83		242.83' (15" RCP)	31' @ 4.89%	EX CB 527
EX CB 529	7.76'	248.94	241.18' (24" RCP) EX CB 530 241.68' (18" RCP) EX CB 538	241.18' (24" RCP)	123' @ 0.50%	EX CB 527
EX CB 530	7.43'	248.79	241.46' (24" RCP) EX DI 531	241.36' (24" RCP)	35' @ 0.51%	EX CB 529
EX CB 538	4.85'	252.20	247.45' (18" RCP) EX CB 539	247.35' (18" RCP)	72' @ 7.84%	EX CB 529
EX CB 539	4.36'	255.57	251.47' (15" RCP) EX CB 540	251.21' (18" RCP)	66' @ 5.66%	EX CB 538
EX CB 540	4.47'	256.15	251.78' (15" RCP) EX CB 541	251.68' (15" RCP)	43' @ 0.49%	EX CB 539
EX CB 541	4.23'	256.98	252.85' (15" RCP) EX CB 542	252.75' (15" RCP)	38' @ 2.54%	EX CB 540
EX CB 542	4.05'	257.18		253.13' (15" RCP)	27' @ 1.04%	EX CB 541
EX DI 531	5.89'	247.60	241.81' (24" RCP) DI 544	241.71' (24" RCP)	51' @ 0.49%	EX CB 530
FES 500	1.71'	211.33	208.00' (36" RCP) DI 501 (5' X 5')			

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
DI 1 (OPEN THROAT)	9.94'	232.79		222.85' (30" RCP)	161' @ 0.52%	FES 1
FES 1	8.91'	224.80	222.00' (30" RCP) DI 1 (OPEN THROAT)			
HW 7	14.93'	230.74	215.80' (48" RCP) HW 8			
HW 8	10.16'	232.43		222.26' (48" RCP)	124' @ 5.19%	HW 7
HW 9	19.30'	235.33	216.03' (48" RCP) HW 10			
HW 10	13.47'	235.96		222.49' (48" RCP)	124' @ 5.19%	HW 9

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
DI 41	5.66'	216.41	210.75' (36" RCP) DI 42	210.75' (36" RCP)	16' @ 1.25%	FES 40
DI 42	6.70'	218.30	211.60' (36" RCP) DI 43	211.60' (36" RCP)	139' @ 0.61%	DI 41
DI 43	5.23'	217.50	213.37' (24" RCP) DI 44	212.27' (36" RCP)	125' @ 0.54%	DI 42
DI 44	11.24'	225.91	217.27' (18" RCP) DI 45	214.67' (24" RCP)	234' @ 0.56%	DI 43
DI 45	7.60'	228.60	222.00' (18" RCP) DI 46	221.00' (18" RCP)	94' @ 3.98%	DI 44
DI 46	4.56'	230.06	228.50' (18" RCP) DI 47	225.50' (18" RCP)	74' @ 4.71%	DI 45
DI 47	11.83'	246.83		235.00' (18" RCP)	108' @ 6.02%	DI 46
FES 40	212.80'	213.88	210.55' (36" RCP) DI 41			

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
CB 302A	9.23'	240.68	234.60' (24" RCP) CB 303 235.35' (15" RCP) CB 302B	231.45' (24" RCP)	131' @ 10.78%	DI 301
CB 302B	5.31'	240.66		235.35' (15" RCP)	7' @ 0.00%	CB 302A
CB 303	5.26'	242.81	238.05' (18" RCP) EX CB 306 238.30' (15" RCP) CB 304	237.55' (24" RCP)	115' @ 2.56%	CB 302A
CB 304	4.63'	243.08		238.45' (15" RCP)	30' @ 0.51%	CB 303
DI 301	21.69'	235.39	217.37' (24" RCP) CB 302A	213.70' (24" RCP)	61' @ 1.14%	FES 300
DI 310	7.55'	262.20	254.65' (15" RCP) DI 312 254.65' (15" RCP) DI 311	254.65' (15" RCP)	150' @ 2.96%	EX DI 309
DI 311	5.26'	260.51		255.25' (15" RCP)	116' @ 0.52%	DI 310
DI 312	5.66'	264.25	258.59' (15" RCP) DI 313	258.59' (15" RCP)	61' @ 6.46%	DI 310
DI 313	5.31'	267.26		261.95' (15" RCP)	92' @ 3.64%	DI 312
EX CB 306	4.04'	244.65	240.71' (18" RCP) EX CB 307	240.61' (18" RCP)	107' @ 2.38%	CB 303
EX CB 307	5.79'	248.14	242.35' (18" RCP) EX CB 308	242.35' (18" RCP)	38' @ 4.28%	EX CB 306
EX CB 308	4.47'	248.27	243.90' (18" RCP) EX DI 309	243.80' (18" RCP)	43' @ 3.36%	EX CB 307
EX DI 309	4.46'	254.42	250.21' (15" RCP) DI 310	249.96' (18" RCP)	145' @ 4.19%	EX CB 308
FES 300	3.21'	215.25	213.00' (24" RCP) DI 301			

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
CB 404	7.45'	235.35	227.90' (24" RCP) CB 405	227.90' (24" RCP)	204' @ 6.43%	DI 403
CB 405	6.22'	234.62	228.90' (18" RCP) CB 407 228.90' (18" RCP) CB 406A	228.40' (24" RCP)	91' @ 0.55%	CB 404
CB 406A	5.52'	234.62	229.35' (15" RCP) CB 406B	229.10' (18" RCP)	37' @ 0.54%	CB 405
CB 406B	5.28'	234.63		229.35' (15" RCP)	7' @ 0.00%	CB 406A
CB 407	5.52'	235.32	229.80' (18" RCP) CB 408	229.80' (18" RCP)	84' @ 1.07%	CB 405
CB 408	7.99'	240.24	232.50' (15" RCP) CB 411 232.50' (15" RCP) CB 409	232.25' (18" RCP)	168' @ 1.46%	CB 407
CB 409	7.27'	240.51	233.25' (15" RCP) CB 410	233.25' (15" RCP)	49' @ 1.52%	CB 408
CB 410	7.07'	240.47		233.40' (15" RCP)	27' @ 0.57%	CB 409
CB 411	8.83'	243.23	234.40' (15" RCP) CB 412	234.40' (15" RCP)	86' @ 2.21%	CB 408
CB 412	8.72'	243.23		234.70' (15" RCP)	37' @ 0.80%	CB 411
CB 413A	6.73'	215.52	208.79' (24" RCP) CB 414 210.25' (15" RCP) CB 413B	208.79' (24" RCP)	129' @ 3.55%	DI 401
CB 413B	5.23'	215.48		210.25' (15" RCP)	8' @ 0.00%	CB 413A
CB 414	8.66'	221.56	213.40' (18" RCP) CB 415	212.90' (24" RCP)	139' @ 2.95%	CB 413A
CB 415	8.22'	229.50	221.28' (18" RCP) CB 417 221.28' (18" RCP) CB 416	221.28' (18" RCP)	116' @ 6.80%	CB 414
CB 416	7.95'	229.50		221.55' (18" RCP)	27' @ 1.00%	CB 415
CB 417	5.54'	237.24	231.70' (18" RCP) CB 418	231.70' (18" RCP)	115' @ 9.07%	CB 415
CB 418	5.74'	238.64	232.90' (18" RCP) CB 420 233.15' (15" RCP) CB 419	232.90' (18" RCP)	36' @ 3.30%	CB 417
CB 419	5.29'	238.64		233.35' (15" RCP)	37' @ 0.54%	CB 418
CB 420	5.54'	240.74	235.20' (18" RCP) EX CB 422	235.20' (18" RCP)	137' @ 1.67%	CB 418
DI 401	16.63'	211.73	204.22' (24" RCP) DI 402 204.20' (24" RCP) CB 413A	195.10' (24" RCP)	51' @ 2.14%	FES 400
DI 402	9.58'	214.24	204.67' (24" RCP) DI 403	204.67' (24" RCP)	53' @ 0.83%	DI 401
DI 403	8.45'	223.25	214.80' (24" RCP) CB 404	214.80' (24" RCP)	189' @ 5.37%	DI 402
EX CB 422	6.36'	242.83	236.57' (15" RCP) EX CB 423 236.57' (15" RCP) EX CB 425	236.47' (18" RCP)	136' @ 0.94%	CB 420
EX CB 423	5.31'	242.37	237.16' (15" RCP) EX CB 424	237.06' (15" RCP)	99' @ 0.50%	EX CB 422
EX CB 424	5.03'	242.37		237.34' (15" RCP)	37' @ 0.49%	EX CB 423
EX CB 425	5.26'	245.83		240.57' (15" RCP)	73' @ 5.45%	EX CB 422
FES 400	???'	196.25	194.00' (24" RCP) DI 401			

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
EX CB 2	3.65'	279.38		275.73' (15" RCP)	74' @ 0.53%	EX. CB 1
EX CB 154	5.74'	273.53	268.14' (15" RCP) EX CB 155 267.89' (18" RCP) EX CB 157	267.79' (18" RCP)	75' @ 3.24%	EX DI 153
EX CB 155	5.10'	273.97	268.97' (15" RCP) EX CB 156	268.87' (15" RCP)	145' @ 0.50%	EX CB 154
EX CB 156	5.10'	275.07	270.07' (15" RCP) EX. CB 1	269.97' (15" RCP)	92' @ 1.08%	EX CB 155
EX CB 157	4.09'	273.74	270.00' (15" RCP) EX FES 158 269.75' (18" RCP) EX. CB 3	269.65' (18" RCP)	53' @ 3.31%	EX CB 154
EX DI 152	5.63'	269.48	264.35' (24" RCP) EX DI 153	263.85' (30" RCP)	180' @ 0.50%	EX. MH 151
EX DI 153	3.75'	268.60	265.35' (18" RCP) EX CB 154	264.85' (24" RCP)	99' @ 0.50%	EX DI 152
EX FES 158	???'	272.69		271.25' (15" RCP)	184' @ 0.68%	EX CB 157
EX. CB 1	2.80'	278.09	275.34' (15" RCP) EX CB 2	275.29' (15" RCP)	122' @ 4.28%	EX CB 156
EX. CB 3	4.86'	275.12		270.26' (18" RCP)	17' @ 3.02%	EX CB 157
EX. FES 150	???'	263.54	262.00' (30" RCP) EX. MH 151			
EX. MH 151	7.98'	270.83	262.95' (30" RCP) EX DI 152	262.85' (30" RCP)	32' @ 2.69%	EX. FES 150

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
CB 109	8.94'	271.34	262.40' (36" RCP) CB 111 264.15' (15" RCP) CB 110	262.40' (36" RCP)	27' @ 0.73%	DI 108
CB 110	6.99'	271.34		264.35' (15" RCP)	27' @ 0.74%	CB 109
CB 111	6.80'	277.50	270.70' (36" RCP) CB 112	270.70' (36" RCP)	131' @ 6.34%	CB 109
CB 112	6.73'	282.13	275.90' (30" RCP) CB 120 276.40' (24" RCP) DI 114 276.90' (18" RCP) CB 113	275.40' (36" RCP)	99' @ 4.75%	CB 111
CB 113	5.50'	282.60		277.10' (18" RCP)	29' @ 0.70%	CB 112
CB 120	6.58'	286.68	280.10' (30" RCP) CB 121	280.10' (30" RCP)	94' @ 4.46%	CB 112
CB 121	7.40'	289.20	281.80' (30" RCP) CB 123 283.05' (15" RCP) CB 122	281.80' (30" RCP)	50' @ 3.43%	CB 120
CB 122	5.97'	289.22		283.25' (15" RCP)	27' @ 0.74%	CB 121
CB 123	10.73'	293.53	283.30' (24" RCP) CB 124 282.80' (30" RCP) CB 130	282.80' (30" RCP)	183' @ 0.55%	CB 121
CB 124	7.45'	293.45	286.00' (24" RCP) DI 125	286.00' (24" RCP)	28' @ 9.73%	CB 123
CB 130	9.28'	292.48	284.20' (18" RCP) CB 131	283.20' (30" RCP)	58' @ 0.69%	CB 123
CB 131	5.79'	290.69	284.90' (18" RCP) CB 133 285.15' (15" RCP) CB 132	284.90' (18" RCP)	135' @ 0.52%	CB 130
CB 132	5.34'	290.69		285.35' (15" RCP)	27' @ 0.74%	CB 131
CB 133	6.53'	292.13	285.85' (15" RCP) CB 135 285.60' (18" RCP) CB 134	285.60' (18" RCP)	127' @ 0.55%	CB 131
CB 134	6.33'	292.13		285.80' (18" RCP)	27' @ 0.74%	CB 133
CB 135	6.57'	293.02	286.45' (15" RCP) CB 136	286.45' (15" RCP)	118' @ 0.51%	CB 133
CB 136	5.51'	292.26	286.75' (15" RCP) CB 137	286.75' (15" RCP)	59' @ 0.51%	CB 135
CB 137	5.30'	292.25		286.95' (15" RCP)	27' @ 0.74%	CB 136
DI 101	7.95'	261.45	253.50' (36" RCP) DI 102	253.50' (36" RCP)	98' @ 0.51%	FES 100
DI 102	17.39'	272.59	259.70' (36" RCP) DI 107 265.06' (18" RCP) DI 103	255.20' (36" RCP)	83' @ 2.04%	DI 101
DI 103	6.91'	274.81	268.15' (15" RCP) DI 104	267.90' (18" RCP)	68' @ 4.18%	DI 102
DI 104	5.25'	277.90	272.65' (15" RCP) DI 105	272.65' (15" RCP)	94' @ 4.76%	DI 103
DI 105	5.29'	281.04	275.75' (15" RCP) DI 106	275.75' (15" RCP)	96' @ 3.24%	DI 104
DI 106	5.26'	286.11		280.85' (15" RCP)	155' @ 3.29%	DI 105
DI 107	9.13'	269.63	260.50' (36" RCP) DI 108	260.50' (36" RCP)	89' @ 0.90%	DI 102
DI 108	8.32'	270.52	262.20' (36" RCP) CB 109	262.20' (36" RCP)	84' @ 2.03%	DI 107
DI 114	5.93'	284.43	278.50' (24" RCP) DI 115	278.50' (24" RCP)	100' @ 2.11%	CB 112
DI 115	5.87'	286.77	281.40' (18" RCP) DI 116	280.90' (24" RCP)	68' @ 3.55%	DI 114
DI 116	9.23'	291.03	281.80' (18" RCP) DI 117	281.80' (18" RCP)	76' @ 0.53%	DI 115
DI 117	9.28'	291.78	282.50' (18" RCP) DI 118	282.50' (18" RCP)	123' @ 0.57%	DI 116
DI 118	5.76'	289.36	283.85' (15" RCP) DI 119	283.60' (18" RCP)	169' @ 0.65%	DI 117
DI 119	5.28'	291.13		285.85' (15" RCP)	126' @ 1.59%	DI 118
DI 125	7.03'	293.33	286.30' (24" RCP) DI 126	286.30' (24" RCP)	27' @ 1.11%	CB 124
DI 126	7.89'	294.79	286.90' (24" RCP) DI 127	286.90' (24" RCP)	110' @ 0.55%	DI 125
DI 127	6.98'	294.38	287.90' (18" RCP) DI 128	287.40' (24" RCP)	90' @ 0.56%	DI 126
DI 128	5.53'	293.93		288.40' (18" RCP)	92' @ 0.54%	DI 127
FES 100	???'	256.33	253.00' (36" RCP) DI 101			

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
4'X4' SCM #3 RISER	13.04'	216.00	213.00' (3" RCP) 207.00' (6" RCP)	202.96' (15" RCP) 214.60' (12" RCP)	96' @ 1.00% 7' @ 0.00%	SCM #3 FES
SCM #1 FES	2.75'	243.25	241.00' (24" RCP) SCM #1 RISER			
SCM #1 RISER	14.88'	256.90	253.00' (3" RCP) 247.00' (6" RCP)	242.02' (24" RCP)	101' @ 1.01%	SCM #1 FES
SCM #2 FES	8.25'	236.71	235.00' (18" RCP) SCM #2 RISER			
SCM #2 RISER	10.85'	245.35	242.00' (3" RCP) 235.95' (6" RCP)	235.95' (18" RCP)	95' @ 1.00%	SCM #2 FES
SCM #3 FES	1.94'	203.44	202.00' (15" RCP) 4'X4' SCM #3 RISER			
SCM #4 FES	5.75'	191.71	190.00' (18" RCP) SCM #4 RISER			
SCM #4 RISER	11.60'	198.10	194.00' (3" RCP) 190.87' (6" RCP)	190.87' (18" RCP)	87' @ 1.00%	SCM #4 FES
SCM #5 FES	7.83'	206.33	203.00' (36" RCP) SCM #5 RISER			
SCM #5 RISER	13.80'	213.30	208.00' (3" RCP) 204.12' (6" RCP)	204.12' (36" RCP)	112' @ 1.00%	SCM #5 FES
SCM #6 FES	2.75'	181.25	179.00' (24" RCP) SCM #6 RISER			
SCM #6 RISER	10.21'	190.40	186.00' (3" RCP) 181.00' (6" RCP)	180.19' (24" RCP)	119' @ 1.00%	SCM #6 FES
SCM #7 FES	2.75'	165.25	163.00' (24" RCP) SCM #7 RISER			
SCM #7 RISER	11.62'	176.00	171.00' (3" RCP) 165.00' (6" RCP)	164.38' (24" RCP)	138' @ 1.00%	SCM #7 FES
SCM #8 FES	5.83'	183.25	181.00' (24" RCP) SCM #8 RISER			
SCM #8 RISER	14.10'	188.10	182.00' (3" RCP) 175.00' (6" RCP)	182.00' (24" RCP)	87' @ 1.15%	SCM #8 FES
SCM #9 FES	2.75'	170.21	168.50' (18" RCP) SCM #9 RISER			
SCM #9 RISER	9.50'	177.00	172.00' (3" RCP) 169.75' (6" RCP)	169.76' (18" RCP)	113' @ 1.12%	SCM #9 FES

TOWN CERTIFICATION

THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: ______________________ DATE: ____________
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: ______________________ DATE: ____________
ADMINISTRATOR

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval ______________________

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (If applicable)

The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** S-4945

The City of Raleigh consents to the connection and extension of the City's **Public Water System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** W-3871

The City of Raleigh consents to the connection to its public sewer system and extension of the **private sewer collection** system as shown on this plan. The material and constructions methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh Public Utilities Department Permit # ____________

FOR REVIEW ONLY

THIS DRAWING PREPARED AT THE
RALEIGH OFFICE
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YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
10/11/2024	DELTA 1:SWALE/DI ALONG TW, STORM BYPASS

DATE: 04/21/2023
DRAWN BY: 331
DESIGNED BY: 331
CHECKED BY: M. ZACCARDO
SCALE: 1" = 60'

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA
STORM DRAINAGE SCHEDULE

JOB NO. 44872
SHEET NO. C4.8

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S:\331\44872-Stone-Silver\DWG\Sheet\CD\SILVERSTONE\44872-331-SS-C4.0-GRAD.dwg | by: Sandra Jonssen

TOWN CERTIFICATION

THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE
TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
CB 902	11.30'	195.80	185.00' (24" RCP) CB 909 185.00' (24" RCP) CB 905 185.00' (24" RCP) CB 903	184.50' (30" RCP)	45' @ 6.71%	DI 901
CB 903	10.40'	195.55	185.65' (18" RCP) DI 904	185.15' (24" RCP)	27' @ 0.55%	CB 902
CB 905	9.47'	194.87	185.90' (18" RCP) CB 907 186.15' (15" RCP) CB 906	185.40' (24" RCP)	65' @ 0.62%	CB 902
CB 906	8.57'	194.87		186.30' (15" RCP)	27' @ 0.56%	CB 905
CB 907	9.80'	196.15	186.60' (15" RCP) CB 908	186.35' (18" RCP)	88' @ 0.51%	CB 905
CB 908	10.08'	197.18		187.10' (15" RCP)	40' @ 1.24%	CB 907
CB 909	6.83'	198.03	191.20' (24" RCP) CB 910	191.20' (24" RCP)	77' @ 8.03%	CB 902
CB 910	9.65'	204.25	194.60' (24" RCP) CB 912 195.35' (15" RCP) CB 911	194.60' (24" RCP)	108' @ 3.14%	CB 909
CB 911	9.26'	205.26		196.00' (15" RCP)	67' @ 0.96%	CB 910
CB 912	8.87'	207.99	199.87' (15" RCP) CB 914 199.87' (15" RCP) CB 913	199.12' (24" RCP)	100' @ 4.51%	CB 910
CB 913	7.53'	208.00		200.47' (15" RCP)	27' @ 2.22%	CB 912
CB 914	7.02'	212.28	205.27' (15" RCP) EX CB 1001	205.27' (15" RCP)	136' @ 3.95%	CB 912
DI 901	13.46'	185.98	181.50' (30" RCP) CB 902	172.52' (30" RCP)	35' @ 1.50%	FES 900
DI 904	2.73'	194.93		192.20' (18" RCP)	134' @ 4.90%	CB 903
EX CB 1001	4.10'	216.36		212.26' (15" RCP)	129' @ 5.42%	CB 914
FES 900	4.29'	174.79	172.00' (30" RCP) DI 901			

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
DI 1 (OPEN THROAT)	9.94'	232.79		222.85' (30" RCP)	161' @ 0.52%	FES 1
FES 1	8.91'	224.80	222.00' (30" RCP) DI 1 (OPEN THROAT)			
HW 7	14.93'	230.74	215.80' (48" RCP) HW 8			
HW 8	10.16'	232.43		222.26' (48" RCP)	124' @ 5.19%	HW 7
HW 9	19.30'	235.33	216.03' (48" RCP) HW 10			
HW 10	13.47'	235.96		222.49' (48" RCP)	124' @ 5.19%	HW 9

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
CB BP 102	4.20'	288.70	284.50' (24" RCP) CB BP 103	284.60' (24" RCP)	30' @ 1.00%	DI BP 101
CB BP 103	3.83'	288.48	284.80' (15" RCP) CB BP 104 285.40' (15" RCP) CB BP 105	284.65' (24" RCP)	25' @ 0.61%	CB BP 102
CB BP 104	3.49'	288.64	285.15' (15" RCP) DI BP 106	285.15' (15" RCP)	37' @ 0.95%	CB BP 103
CB BP 105	4.53'	290.68		286.15' (15" RCP)	46' @ 1.62%	CB BP 103
DI BP 101	2.64'	286.84	284.30' (24" RCP) CB BP 102	284.20' (24" RCP)	24' @ 0.85%	FES BP 100
DI BP 106	4.65'	290.50	285.85' (15" RCP) DI BP 107	285.85' (15" RCP)	76' @ 0.93%	CB BP 104
DI BP 107	4.94'	292.59	287.65' (15" RCP) DI BP 108	287.65' (15" RCP)	87' @ 2.07%	DI BP 106
DI BP 108	5.16'	293.61	288.45' (15" RCP) DI BP 109	288.45' (15" RCP)	40' @ 1.99%	DI BP 107
DI BP 109	5.26'	294.81		289.55' (15" RCP)	82' @ 1.34%	DI BP 108
FES BP 100	2.94'	286.25	284.00' (24" RCP) DI BP 101			

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
DI 351	8.80'	222.00	218.70' (18" RCP) DI 352	213.20' (18" RCP)	36' @ 0.56%	FES 350
DI 352	4.46'	240.61	236.15' (18" RCP) DI 354 236.15' (18" RCP) DI 353	236.15' (18" RCP)	219' @ 7.96%	DI 351
DI 353	3.16'	239.71		236.55' (18" RCP)	76' @ 0.53%	DI 352
DI 354	5.44'	249.99	244.55' (18" RCP) DI 355	244.55' (18" RCP)	111' @ 7.54%	DI 352
DI 355	6.07'	252.72	246.65' (18" RCP) DI 356	246.65' (18" RCP)	122' @ 1.73%	DI 354
DI 356	7.57'	254.82	249.25' (18" RCP) CB 359 252.00' (18" RCP) CB 358 247.25' (18" RCP) DI 357	247.25' (18" RCP)	106' @ 0.57%	DI 355
DI 357	5.57'	253.32		247.75' (18" RCP)	95' @ 0.52%	DI 356
FES 350	220.30'	214.71	213.00' (18" RCP) DI 351			

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
CB 810A	6.01'	227.51	222.00' (18" RCP) CB 811	221.50' (24" RCP)	97' @ 9.99%	DI 809
CB 811	6.15'	231.65	225.50' (18" RCP) CB 813 225.75' (15" RCP) CB 812	225.50' (18" RCP)	114' @ 3.08%	CB 810A
CB 812	5.70'	231.65		225.95' (15" RCP)	37' @ 0.54%	CB 811
CB 813	5.89'	236.33	230.54' (18" RCP) CB 814	230.44' (18" RCP)	65' @ 7.62%	CB 811
CB 814	5.49'	239.13	233.89' (15" RCP) CB 815	233.64' (18" RCP)	49' @ 6.26%	CB 813
CB 815	5.06'	239.14	234.18' (15" RCP) CB 816	234.08' (15" RCP)	37' @ 0.51%	CB 814
CB 816	4.76'	242.41	237.65' (15" RCP) CB 817	237.65' (15" RCP)	41' @ 8.48%	CB 815
CB 817	4.56'	242.41		237.85' (15" RCP)	37' @ 0.54%	CB 816
CB 818A	7.79'	199.09	191.80' (30" RCP) CB 819	191.30' (36" RCP)	137' @ 2.00%	DI 801
CB 819	9.59'	201.99	192.40' (30" RCP) CB 820	192.40' (30" RCP)	107' @ 0.56%	CB 818A
CB 820	7.98'	200.98	193.00' (30" RCP) CB 822 194.00' (18" RCP) CB 821	193.00' (30" RCP)	105' @ 0.57%	CB 819
CB 821	6.78'	200.98		194.20' (18" RCP)	27' @ 0.74%	CB 820
CB 822	8.53'	201.93	193.40' (30" RCP) CB 823	193.40' (30" RCP)	80' @ 0.50%	CB 820
CB 823	8.58'	202.18	193.60' (30" RCP) CB 824	193.60' (30" RCP)	30' @ 0.67%	CB 822
CB 824	8.63'	202.43	194.30' (24" RCP) CB 826 195.05' (15" RCP) CB 825	193.80' (30" RCP)	34' @ 0.60%	CB 823
CB 825	7.42'	202.43		195.20' (15" RCP)	27' @ 0.55%	CB 824
CB 826	8.36'	206.66	198.30' (24" RCP) CB 828 199.05' (15" RCP) CB 827	198.30' (24" RCP)	123' @ 3.26%	CB 824
CB 827	7.67'	206.68		199.20' (15" RCP)	27' @ 0.56%	CB 826
CB 828	8.30'	213.30	205.00' (24" RCP) CB 830 205.75' (15" RCP) CB 829	205.00' (24" RCP)	129' @ 5.20%	CB 826
CB 829	9.11'	214.92		206.00' (15" RCP)	41' @ 0.60%	CB 828
CB 830	8.59'	222.59	214.00' (24" RCP) CB 832 214.75' (15" RCP) CB 831	214.00' (24" RCP)	180' @ 4.99%	CB 828
CB 831	8.36'	223.18		215.00' (15" RCP)	29' @ 0.85%	CB 830
CB 832	8.01'	226.51	218.50' (24" RCP) CB 833	218.50' (24" RCP)	101' @ 4.48%	CB 830
CB 833	8.37'	227.27	218.90' (24" RCP) CB 835 219.65' (15" RCP) CB 834	218.90' (24" RCP)	72' @ 0.56%	CB 832
CB 834	7.45'	227.16		219.90' (15" RCP)	35' @ 0.71%	CB 833
CB 835	9.31'	229.31	220.00' (24" RCP) CB 835A 220.75' (15" RCP) CB 836	220.00' (24" RCP)	204' @ 0.54%	CB 833
CB 835A	6.41'	233.41	227.00' (24" RCP) CB 837	227.00' (24" RCP)	201' @ 3.48%	CB 835
CB 836	8.78'	229.59		221.00' (15" RCP)	39' @ 0.64%	CB 835
CB 837	8.34'	237.34	229.50' (18" RCP) CB 839 229.75' (15" RCP) CB 838	229.00' (24" RCP)	73' @ 2.74%	CB 835A
CB 838	7.88'	237.69		230.00' (15" RCP)	28' @ 0.89%	CB 837
CB 839	6.65'	241.65	235.00' (18" RCP) CB 840	235.00' (18" RCP)	90' @ 6.14%	CB 837
CB 840	7.73'	245.03	237.55' (15" RCP) CB 842 237.55' (15" RCP) CB 841	237.30' (18" RCP)	74' @ 3.12%	CB 839
CB 841	7.52'	245.03		237.70' (15" RCP)	27' @ 0.56%	CB 840
CB 842	5.78'	245.28	239.50' (15" RCP) CB 843	239.50' (15" RCP)	42' @ 4.65%	CB 840
CB 843	5.13'	245.28		240.15' (15" RCP)	37' @ 1.76%	CB 842
DI 801	13.58'	196.57	188.56' (36" RCP) CB 818A 189.06' (30" RCP) DI 802	183.33' (36" RCP)	89' @ 1.50%	FES 800
DI 802	18.53'	213.23	203.30' (24" RCP) DI 809 194.70' (30" RCP) DI 806 195.70' (18" RCP) DI 804	194.70' (30" RCP)	124' @ 4.56%	DI 801
DI 804	2.87'	199.37	196.50' (18" RCP) DI 805	196.50' (18" RCP)	160' @ 0.50%	DI 802
DI 805	2.81'	199.66		196.85' (18" RCP)	62' @ 0.56%	DI 804
DI 806	13.80'	219.20	206.40' (18" RCP) DI 807	205.40' (30" RCP)	108' @ 9.92%	DI 802
DI 807	6.66'	224.96	218.55' (15" RCP) DI 808	218.30' (18" RCP)	119' @ 9.96%	DI 806
DI 808	3.07'	225.82		222.75' (15" RCP)	88' @ 4.76%	DI 807
DI 809	14.34'	226.14	211.80' (24" RCP) CB 810A	211.80' (24" RCP)	85' @ 9.98%	DI 802
FES 800	N/A	185.33	182.00' (36" RCP) DI 801			

STORM DRAINAGE SCHEDULE

STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
CB 704	9.98'	191.18	181.20' (36" RCP) CB 718 182.20' (24" RCP) CB 705	181.20' (36" RCP)	23' @ 4.52%	DI 702
CB 705	9.63'	193.30	183.67' (24" RCP) CB 707 184.42' (15" RCP) CB 706	183.67' (24" RCP)	73' @ 2.00%	CB 704
CB 706	7.53'	193.30		185.77' (15" RCP)	27' @ 5.00%	CB 705
CB 707	8.37'	196.91	188.54' (24" RCP) DI 708	188.54' (24" RCP)	103' @ 4.72%	CB 705
CB 716	5.56'	224.41	218.85' (15" RCP) CB 717	218.85' (15" RCP)	48' @ 0.63%	DI 715
CB 717	5.27'	224.42		219.15' (15" RCP)	43' @ 0.70%	CB 716
CB 718	10.33'	193.53	183.20' (36" RCP) CB 720 184.95' (15" RCP) CB 719	183.20' (36" RCP)	108' @ 1.85%	CB 704
CB 719	8.51'	193.53		185.20' (15" RCP)	27' @ 0.93%	CB 718
CB 720	9.45'	199.95	190.50' (36" RCP) CB 722 192.25' (15" RCP) CB 721	190.50' (36" RCP)	129' @ 5.66%	CB 718
CB 721	7.63'	199.94		192.50' (15" RCP)	27' @ 0.93%	CB 720
CB 722	9.39'	208.19	198.80' (36" RCP) CB 724 200.55' (15" RCP) CB 723	198.80' (36" RCP)	161' @ 5.16%	CB 720
CB 723	7.58'	208.19		200.80' (15" RCP)	27' @ 0.93%	CB 722
CB 724	13.33'	216.73	203.40' (36" RCP) CB 726 205.15' (15" RCP) CB 725	203.40' (36" RCP)	239' @ 1.93%	CB 722
CB 725	11.52'	216.73		205.40' (15" RCP)	27' @ 0.93%	CB 724
CB 726	14.09'	218.19	204.10' (36" RCP) CB 727	204.10' (36" RCP)	119' @ 0.59%	CB 724
CB 727	13.27'	217.97	204.70' (36" RCP) CB 731 206.45' (15" RCP) CB 728	204.70' (36" RCP)	98' @ 0.61%	CB 726
CB 728	8.43'	217.63	209.20' (15" RCP) CB 729	209.20' (15" RCP)	38' @ 7.18%	CB 727
CB 729	5.93'	218.08	212.15' (15" RCP) CB 730	212.15' (15" RCP)	58' @ 5.09%	CB 728
CB 730	5.47'	217.92		212.45' (15" RCP)	43' @ 0.69%	CB 729
CB 731	11.45'	216.65	205.20' (36" RCP) CB 732	205.20' (36" RCP)	95' @ 0.52%	CB 727
CB 732	9.47'	215.27	206.30' (30" RCP) CB 734 207.30' (18" RCP) CB 733	205.80' (36" RCP)	118' @ 0.51%	CB 731
CB 733	7.90'	215.26	207.80' (15" RCP) CB 733A	207.55' (18" RCP)	43' @ 0.58%	CB 732
CB 733A	7.47'	215.27		207.80' (15" RCP)	7' @ 0.00%	CB 733
CB 734	9.81'	219.31	209.50' (30" RCP) CB 735	209.50' (30" RCP)	191' @ 1.68%	CB 732
CB 735	9.61'	219.31	210.20' (24" RCP) CB 742 210.70' (18" RCP) CB 736	209.70' (30" RCP)	27' @ 0.74%	CB 734
CB 736	6.61'	220.61	214.00' (18" RCP) CB 737	214.00' (18" RCP)	43' @ 7.59%	CB 735
CB 737	7.72'	225.72	218.25' (15" RCP) CB 739 218.25' (15" RCP) CB 738	218.00' (18" RCP)	170' @ 2.36%	CB 736
CB 738	7.59'	225.90		218.50' (15" RCP)	28' @ 0.90%	CB 737
CB 739	5.87'	228.87	223.00' (15" RCP) CB 740	223.00' (15" RCP)	103' @ 4.63%	CB 737
CB 740	7.51'	232.01	224.50' (15" RCP) CB 741	224.50' (15" RCP)	102' @ 1.47%	CB 739
CB 741	7.80'	232.50		224.70' (15" RCP)	31' @ 0.64%	CB 740
CB 742	6.66'	219.46	212.80' (24" RCP) DI 744 213.50' (15" RCP) CB 743	212.80' (24" RCP)	44' @ 5.96%	CB 735
CB 743	5.56'	219.46		213.90' (15" RCP)	43' @ 0.93%	CB 742
CB 745	5.80'	226.60	220.80' (18" RCP) CB 746	220.80' (18" RCP)	42' @ 0.48%	DI 744
CB 746	5.54'	226.64		221.10' (18" RCP)	43' @ 0.70%	CB 745
DI 701	9.66'	181.82	172.26' (42" RCP) DI 702	172.16' (42" RCP)	77' @ 1.50%	FES 700
DI 702	9.83'	189.50	180.17' (36" RCP) CB 704 181.92' (15" RCP) DI 703	179.67' (42" RCP)	126' @ 5.88%	DI 701
DI 703	4.24'	188.24		184.00' (15" RCP)	34' @ 6.13%	DI 702
DI 708	7.33'	197.08	190.24' (18" RCP) DI 709	189.74' (24" RCP)	40' @ 2.98%	CB 707
DI 709	5.52'	200.52	195.00' (18" RCP) DI 710	195.00' (18" RCP)	95' @ 5.02%	DI 708
DI 710	5.50'	205.50	200.25' (15" RCP) DI 711	200.00' (18" RCP)	114' @ 4.38%	DI 709
DI 711	5.32'	209.67	204.35' (15" RCP) DI 712	204.35' (15" RCP)	95' @ 4.30%	DI 710
DI 712	5.26'	214.01	208.75' (15" RCP) DI 713	208.75' (15" RCP)	100' @ 4.42%	DI 711
DI 713	5.34'	217.99	212.65' (15" RCP) DI 714	212.65' (15" RCP)	91' @ 4.28%	DI 712
DI 714	4.99'	222.94	217.95' (15" RCP) DI 715	217.95' (15" RCP)	113' @ 4.69%	DI 713
DI 715	5.39'	223.94	218.55' (15" RCP) CB 716	218.55' (15" RCP)	112' @ 0.54%	DI 714
DI 725A	2.86'	206.51		203.65' (15" RCP)	4' @ 2.47%	
DI 731A	14.76'	200.96		186.20' (15" RCP)	4' @ 2.36%	
DI 734A	10.90'	199.50		188.60' (15" RCP)	4' @ 2.49%	
DI 738A	5.87'	201.97		196.10' (15" RCP)	4' @ 2.37%	
DI 741A	3.62'	211.12		207.50' (15" RCP)	4' @ 2.40%	
DI 744	5.79'	225.89	220.60' (18" RCP) DI 747 220.60' (18" RCP) CB 745	220.10' (24" RCP)	106' @ 6.91%	CB 742
DI 747	4.54'	231.54	227.00' (18" RCP) DI 748	227.00' (18" RCP)	159' @ 4.02%	DI 744
DI 748	4.44'	237.64	233.45' (15" RCP) DI 749	233.20' (18" RCP)	166' @ 3.73%	DI 747
DI 749	4.20'	242.85		238.65' (15" RCP)	142' @ 3.67%	DI 748
FES 700	N/A	174.88	171.00' (42" RCP) DI 701			

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STORM PIPE TABLE

	PIPE #	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION
1	CULVERT #4	36"	-	195.00	190.85	4.18%	99.40 LF	36 inch RCP
	CULVERT #5	30"	DI 1 (OPEN THROAT) - FES 1	222.85	222.00	0.52%	161.34 LF	30 inch RCP
	CULVERT #6A	48"	HW 10 - HW 9	222.49	216.03	5.19%	124.42 LF	48 inch RCP
	CULVERT #6B	48"	HW 8 - HW 7	222.26	215.80	5.19%	124.42 LF	48 inch RCP
	EX. CULVERT #1	48"	-	230.49	228.25	2.10%	106.62 LF	48 inch RCP
	EX. CULVERT #2	42"	-	230.99	228.75	2.10%	106.65 LF	42 inch RCP
1	EX. CULVERT #3	48"	-	231.14	219.87	8.99%	125.33 LF	48 inch RCP
1	GREENWAY #1	18"	-	180.80	180.55	0.79%	31.62 LF	18 inch RCP
1	GREENWAY #2	24"	-	175.00	174.00	3.02%	33.15 LF	24 inch RCP
	GREENWAY #3	18"	-	176.47	175.38	3.82%	28.47 LF	18 inch RCP

VELOCITY DISSIPATION PAD (VDP) DESIGN

OUTLET NAME	PIPE DIA.	PIPE SLOPE	Q10	V10	ZONE	PAD DIMENSIONS LENGTH	PAD DIMENSIONS WIDTH	PAD DIMENSIONS DEPTH	STONE SIZING D50	STONE SIZING Dmax	STONE SIZING CLASS
	(in)	(ft/ft)	(cfs)	(fps)		(ft)	(ft)	(in)	(in)	(in)	(NCDOT)
CULVERT #1	48	0.021	156.3	18.21	6	40	12	36	14	23	2
CULVERT #2	42	0.021	156.3	17.20	5	35	11	36	14	23	2
CULVERT #3	48	0.0899	76.7	25.81	6	40	12	36	14	23	2
CULVERT #4	18	0.0418	10.17	11.85	2	9	5	18	8	12	B
CULVERT #5	30	0.0052	31.2	6.84	2	15	8	18	8	12	B
CULVERT #6A	48	0.0519	108.5	23.29	6	40	12	36	14	23	2
CULVERT #6B	48	0.0519	108.5	23.29	6	40	12	36	14	23	2
GREENWAY #1	18	0.0153	13	8.39	2	9	5	18	8	12	B
GREENWAY #2	24	0.0302	8.08	9.79	2	12	6	18	8	12	B
GREENWAY #3	18	0.0881	10	15.44	3	12	5	26	10	17	1

VELOCITY DISSIPATION PAD (VDP) DESIGN

OUTLET NAME	PIPE DIA.	PIPE SLOPE	Q10	V10	ZONE	PAD DIMENSIONS LENGTH	PAD DIMENSIONS WIDTH	PAD DIMENSIONS DEPTH	STONE SIZING D50	STONE SIZING Dmax	STONE SIZING CLASS
	(in)	(ft/ft)	(cfs)	(fps)		(ft)	(ft)	(in)	(in)	(in)	(NCDOT)
FES BP 100	24	0.005	8	5.10	1	8	6	12	4	6	A
FES 100	36	0.0051	19.05	6.37	2	18	9	18	8	12	B
FES 200	30	0.02	16.24	10.11	2	15	8	18	8	12	B
FES 300	24	0.0588	19.42	8.83	2	12	6	18	8	12	B
FES 350	18	0.08	29.8	19.20	6	15	5	36	14	23	2
FES 400	24	0.0215	18	10.70	2	12	6	18	8	12	B
FES 500	36	0.0087	36	9.12	2	18	9	18	8	12	B
FES 600	36	0.015	26	10.12	3	24	9	26	10	17	1
FES 700	42	0.0286	40	14.29	3	28	11	26	10	17	1
FES 800	36	0.026	45	14.38	3	24	9	26	10	17	1
FES 900	30	0.03	19	12.05	3	20	8	26	10	17	1
SCM #1 FES	24	0.01	22.7	8.22	2	12	6	18	8	12	B

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

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City of Raleigh Public Utilities Department Permit # _____

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REVISION DESCRIPTION	DATE
DELTA 1:SWALE/DI ALONG TW	10/11/2024

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE 1" = 60'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

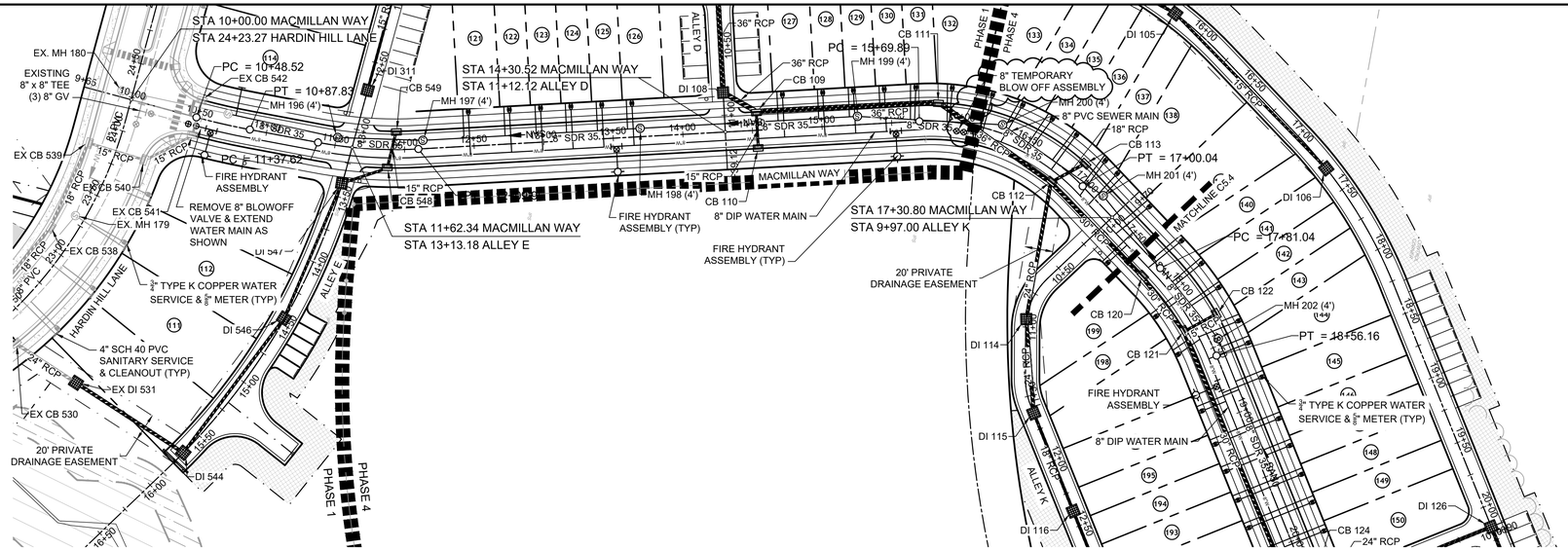
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

STORM DRAINAGE SCHEDULE

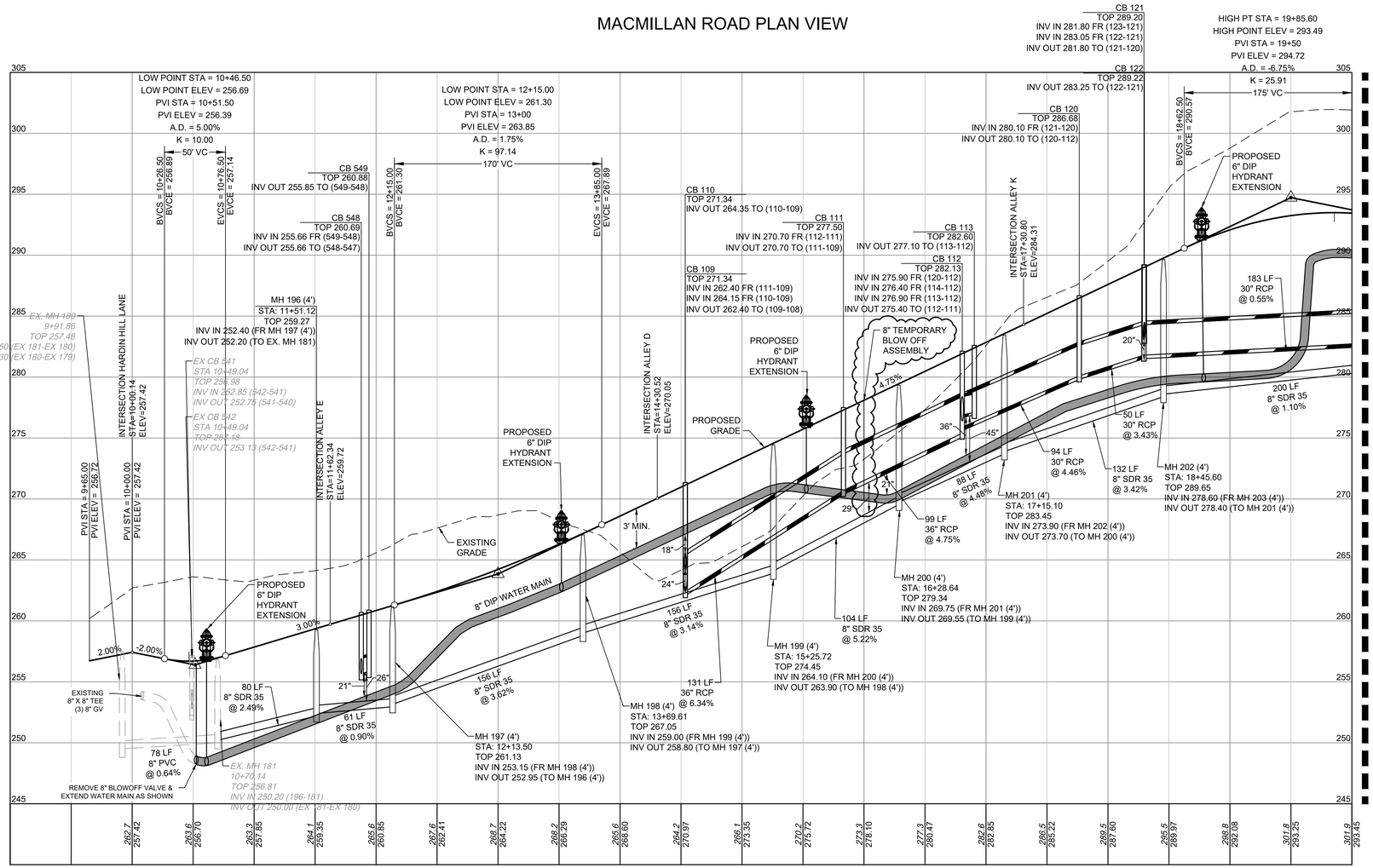
JOB NO. 44872
SHEET NO. C4.9

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MACMILLAN ROAD PLAN VIEW



MACMILLAN WAY PROFILE (STA 9+50 TO 20+00)

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5

UTILITY NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.
2. MINIMUM UTILITY HORIZONTAL SEPARATION DISTANCES:
   WATER AND SANITARY SEWER MAINS - 10 FT.
   WATER AND STORM SEWER MAINS - 5 FT.
   SANITARY SEWER AND STORM SEWER MAINS - 5 FT.
   GRAVITY SANITARY SEWER AND FORCE MAINS - 5 FT.
3. MINIMUM UTILITY VERTICAL SEPARATION DISTANCES:
   WATER AND SANITARY SEWER MAINS - 18 IN.
   WATER AND STORM SEWER MAINS - 18 IN.
   SANITARY SEWER AND STORM SEWER MAINS - 24 IN.
4. CLASS 1 STRUCTURAL MATERIAL REQUIRED FROM EXISTING GROUND TO SPRING LINE OF PROPOSED PIPE IN FILL CONDITIONS (TYP).

811 Know what's below. Call before you dig.

UTILITY LEGEND

- SAN — PROPOSED SEWER LINE
- 8"W — PROPOSED WATER LINE
- WATER LINE TEE
- FIRE HYDRANT
- WATER METER
- REDUCER
- GATE VALVE
- BLOWOFF ASSEMBLY

SCALE 1"=50'
0 50' 100'

TOWN CERTIFICATION

THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

NAD 83
5
0
0 50
PROFILE SCALE

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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SITE PERMITTING APPROVAL

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City of Raleigh Public Utilities Department Permit # _____

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DATE	REVISION DESCRIPTION
10/11/2024	DELTA 1: TEMP BOA @ PHASE LIMIT

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE H: 1" = 50' V: 1" = 5'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

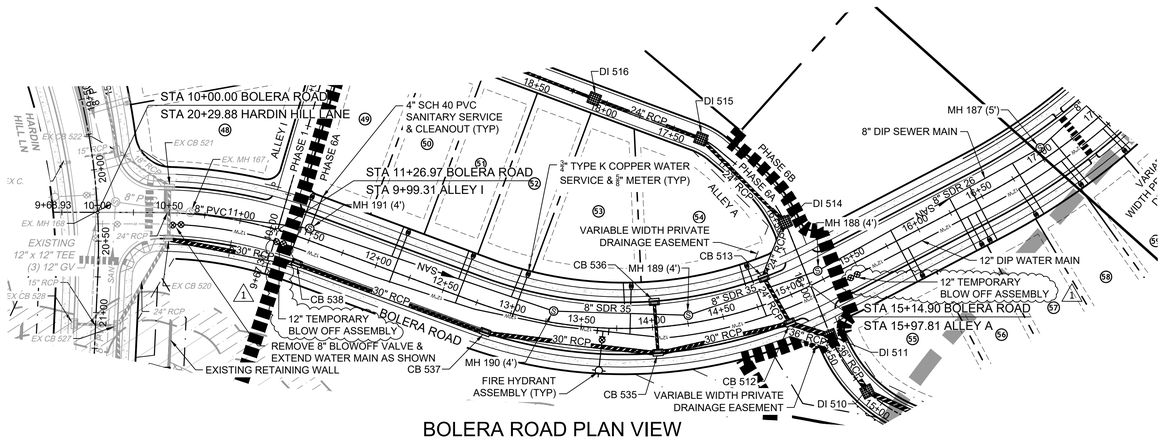
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

MACMILLAN WAY PLAN & PROFILE (1 OF 2)

JOB NO. 44872
SHEET NO. C5.3

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BOLERA ROAD PLAN VIEW

PROFILE SCALE
0 50
5 0

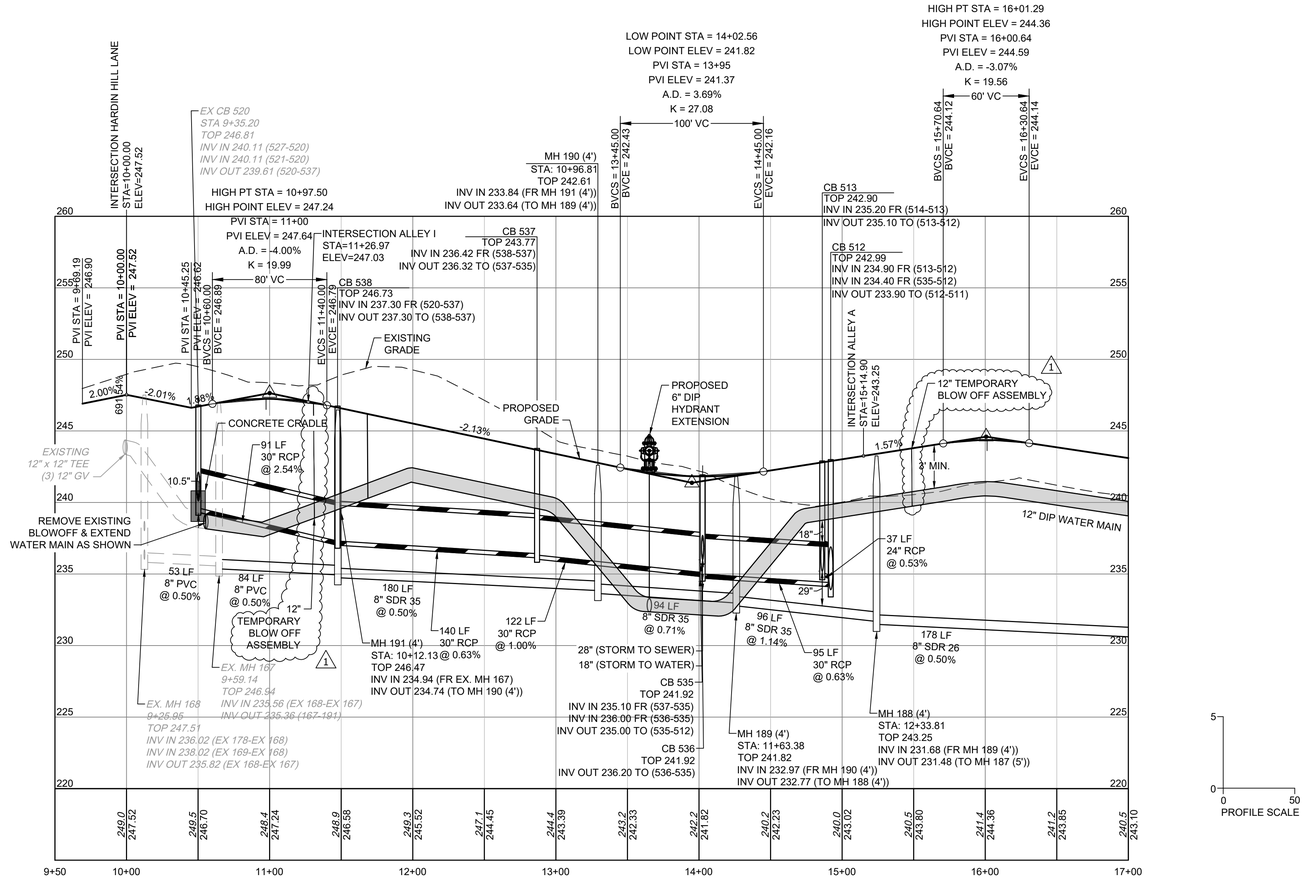
UTILITY LEGEND

SAN	PROPOSED SEWER MAIN
8"W	PROPOSED WATER MAIN
	WATER MAIN TEE
	FIRE HYDRANT
	WATER METER
	REDUCER
	GATE VALVE
	BLOWOFF ASSEMBLY

SCALE 1"=50'
0 50' 100'

UTILITY NOTES:

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BOLERA ROAD PROFILE (STA 9+50 TO 17+00)
HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5'

PROFILE SCALE
0 50
5 0

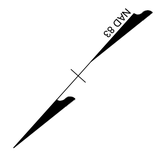
TOWN CERTIFICATION

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BY: _____ DATE: _____
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ADMINISTRATOR



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City of Raleigh Public Utilities Department Permit # _____

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REVISION DESCRIPTION	DATE
DELTA 1: TEMP BOA @ PHASE LIMIT	10/11/2024

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE H: 1" = 50' V: 1" = 5'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

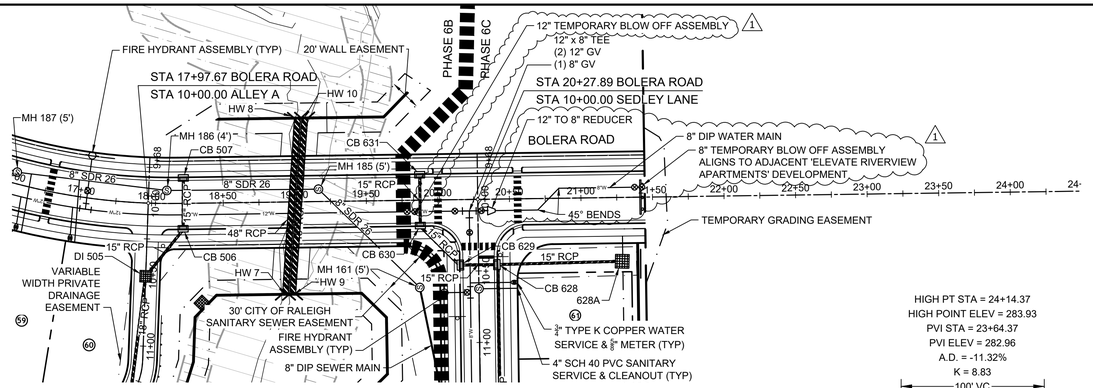
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

BOLERA ROAD PLAN & PROFILE - SHEET 1 OF 2

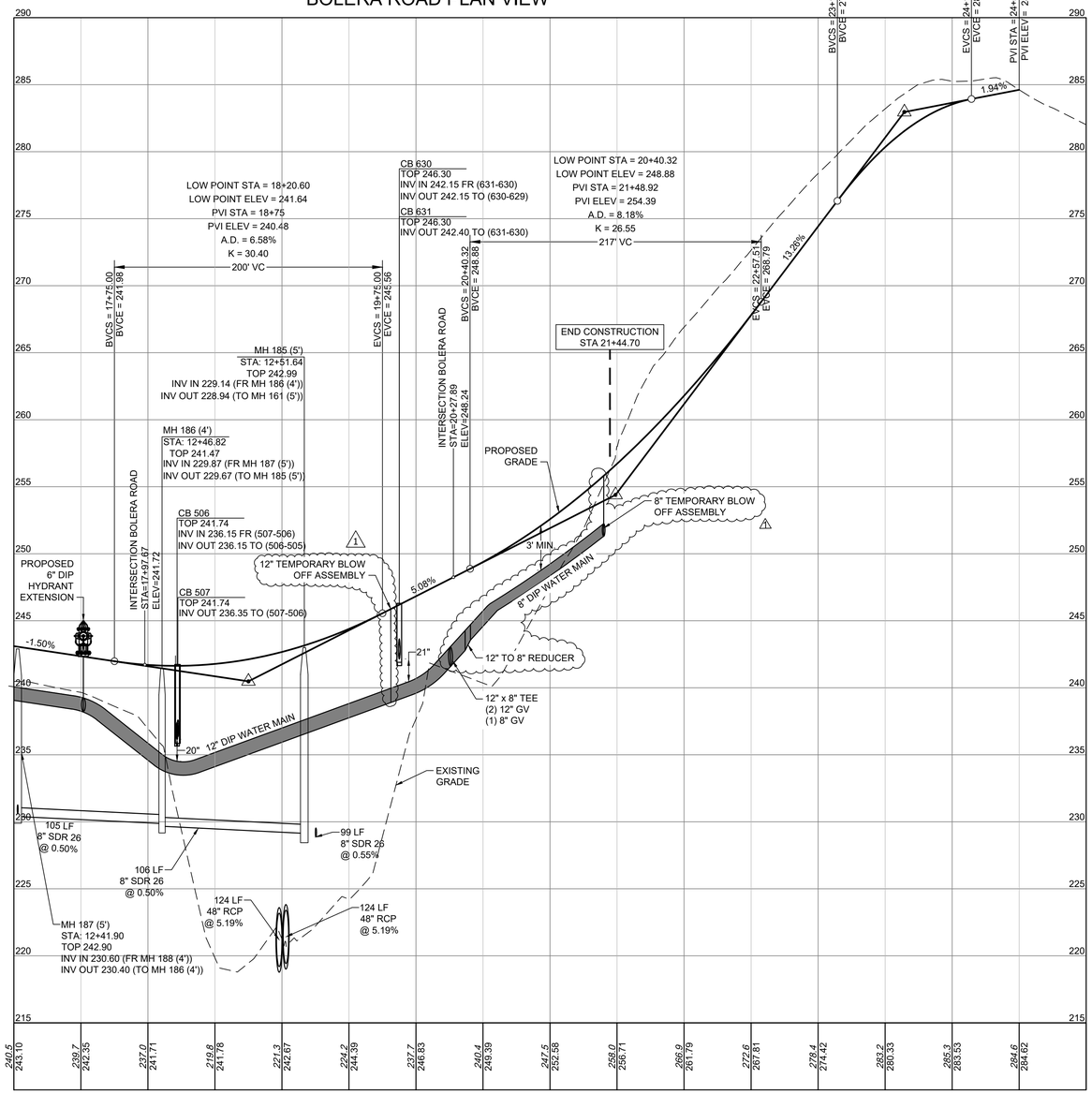
JOB NO. 44872
SHEET NO. C5.6

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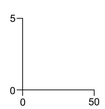


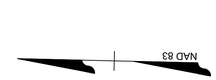
BOLERA ROAD PLAN VIEW



BOLERA ROAD PROFILE (STA 17+00 TO 24+00)

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5





UTILITY LEGEND

SAN	PROPOSED SEWER MAIN
8"W	PROPOSED WATER MAIN
	WATER MAIN TEE
	FIRE HYDRANT
	WATER METER
	REDUCER
	GATE VALVE
	BLOWOFF ASSEMBLY

SCALE 1"=50'
0 50' 100'

UTILITY NOTES:

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BY: _____ DATE: _____
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ADMINISTRATOR

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REVISION DESCRIPTION	DATE
DELTA 1: TEMP BOA @ PHASE LIMIT	10/11/2024

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE H: 1" = 50' V: 1" = 5'

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

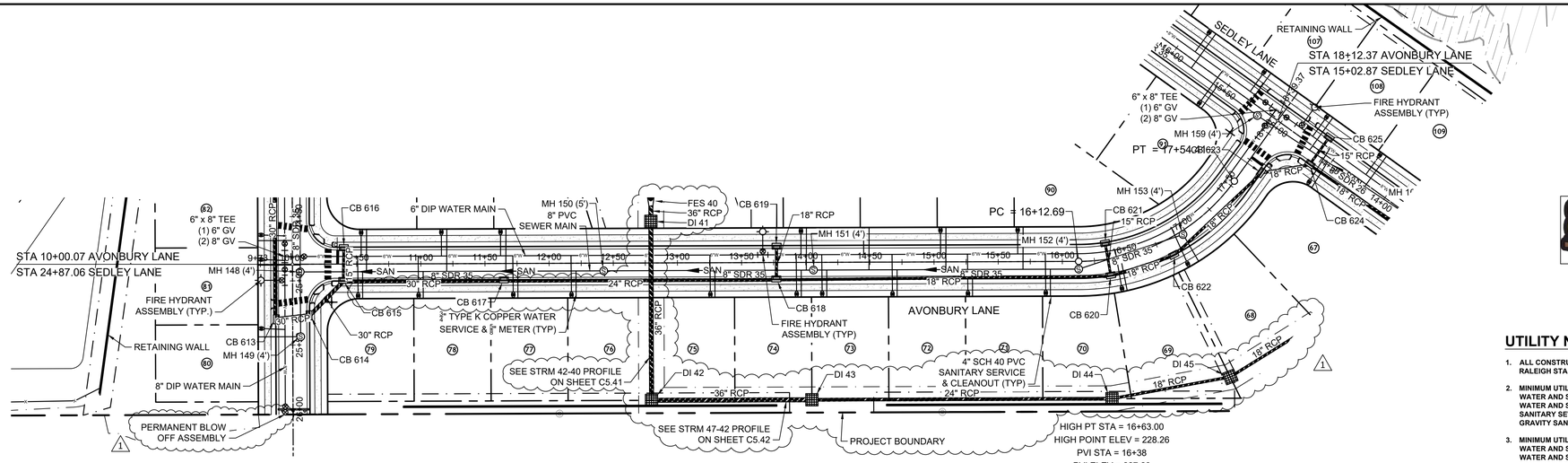
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

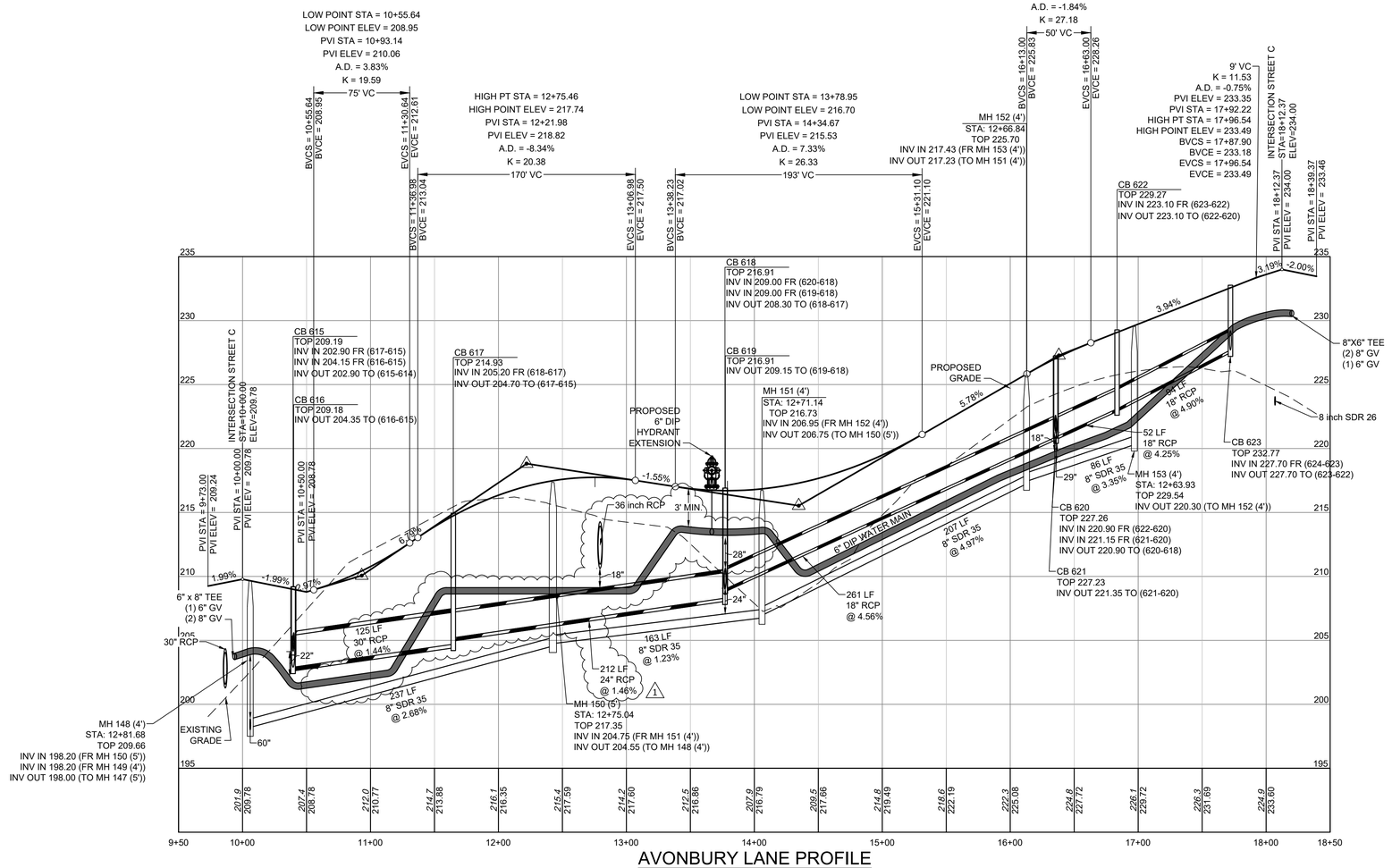
BOLERA ROAD PLAN & PROFILE - SHEET 2 OF 2

JOB NO. 44872
SHEET NO. C5.7

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AVONBURY LANE PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5



UTILITY NOTES:

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UTILITY LEGEND

SAN ——▶	PROPOSED SEWER MAIN
8"W	PROPOSED WATER MAIN
	WATER MAIN TEE
	FIRE HYDRANT
@	WATER METER
	REDUCER
⊗	GATE VALVE
⊗⊗	BLOWOFF ASSEMBLY

SCALE 1"=50'
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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

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BY: _____ DATE: _____
ADMINISTRATOR

NAD 83
5
0
0 50
PROFILE SCALE

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City of Raleigh Public Utilities Department Permit # _____

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REVISION DESCRIPTION	DATE
DELTA 1: TEMP BOA @ PHASE LIMIT; STORM BYPASS	10/11/2024

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE H: 1" = 50' V: 1" = 5'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

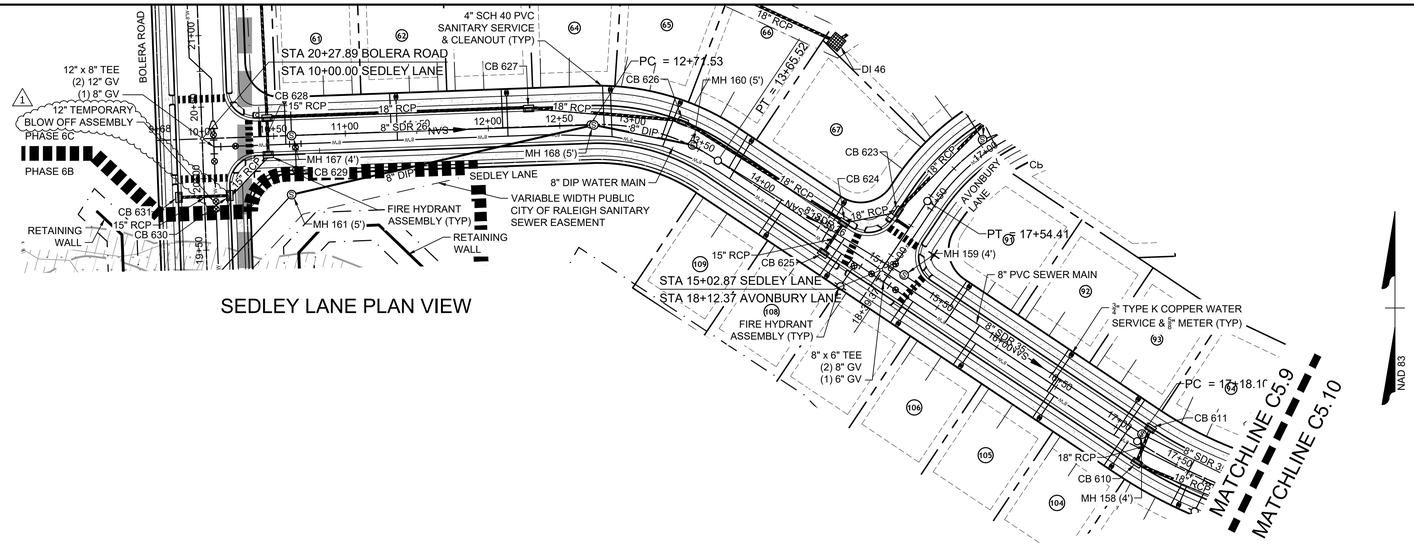
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

AVONBURY LANE PLAN & PROFILE

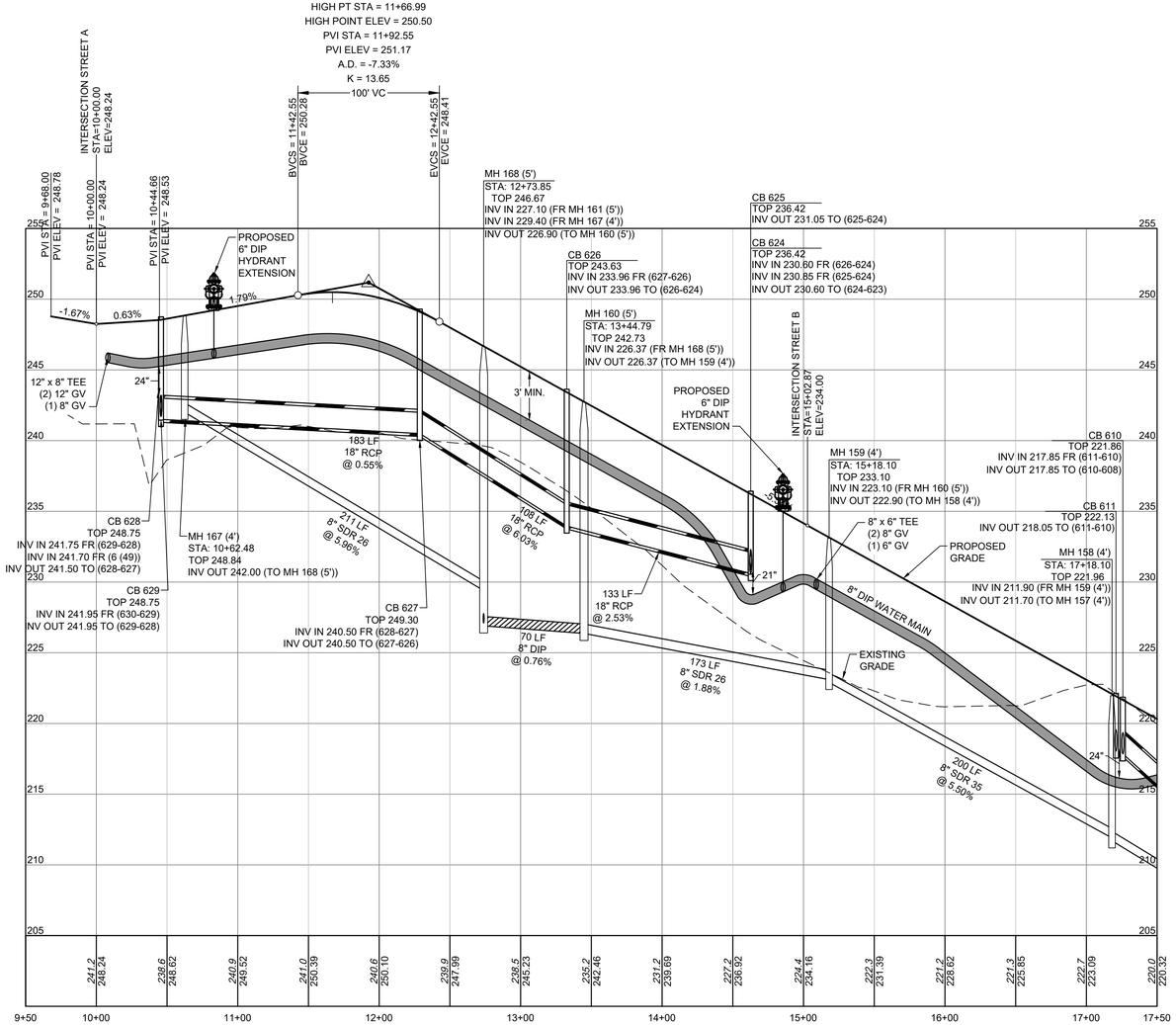
JOB NO. 44872
SHEET NO. C5.8

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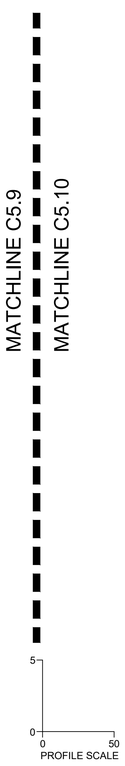


SEDLEY LANE PLAN VIEW



SEDLEY LANE PROFILE (STA 9+50 TO 22+00)

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5'



UTILITY NOTES:

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   GRAVITY SANITARY SEWER AND FORCE MAINS - 5 FT.
3. MINIMUM UTILITY VERTICAL SEPARATION DISTANCES:
   WATER AND SANITARY SEWER MAINS - 18 IN.
   WATER AND STORM SEWER MAINS - 18 IN.
   SANITARY SEWER AND STORM SEWER MAINS - 24 IN.
4. CLASS 1 STRUCTURAL MATERIAL REQUIRED FROM EXISTING GROUND TO SPRING LINE OF PROPOSED PIPE IN FILL CONDITIONS (TYP).

UTILITY LEGEND

SAN	PROPOSED SEWER MAIN
8"W	PROPOSED WATER MAIN
	WATER MAIN TEE
	FIRE HYDRANT
	WATER METER
	REDUCER
	GATE VALVE
	BLOWOFF ASSEMBLY

SCALE 1"=50'
0 50' 100'

TOWN CERTIFICATION

THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

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CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (If applicable)

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City of Raleigh Public Utilities Department Permit # _____

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YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE
DELTA 1: TEMP BOA @ PHASE LIMIT	10/11/2024

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE H: 1" = 50' V: 1" = 5'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

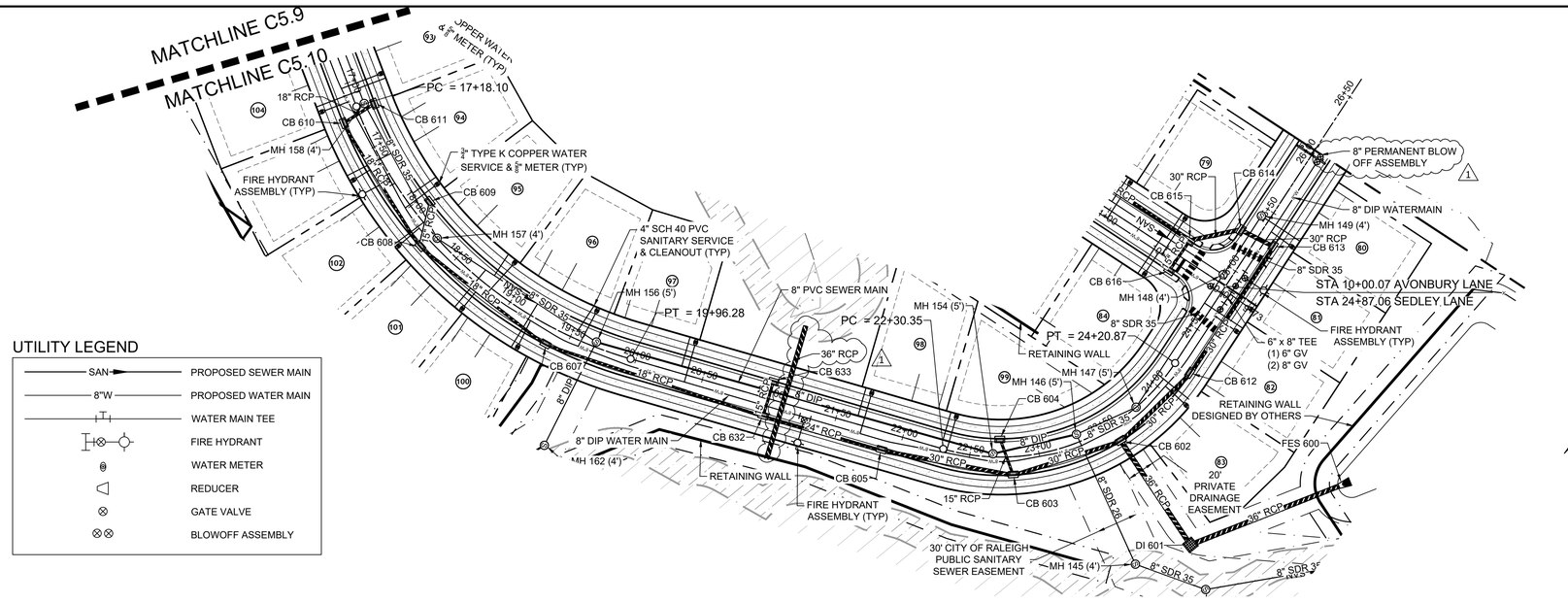
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

SEDLEY LANE PLAN & PROFILE - SHEET 1 OF 2

JOB NO. 44872
SHEET NO. C5.9

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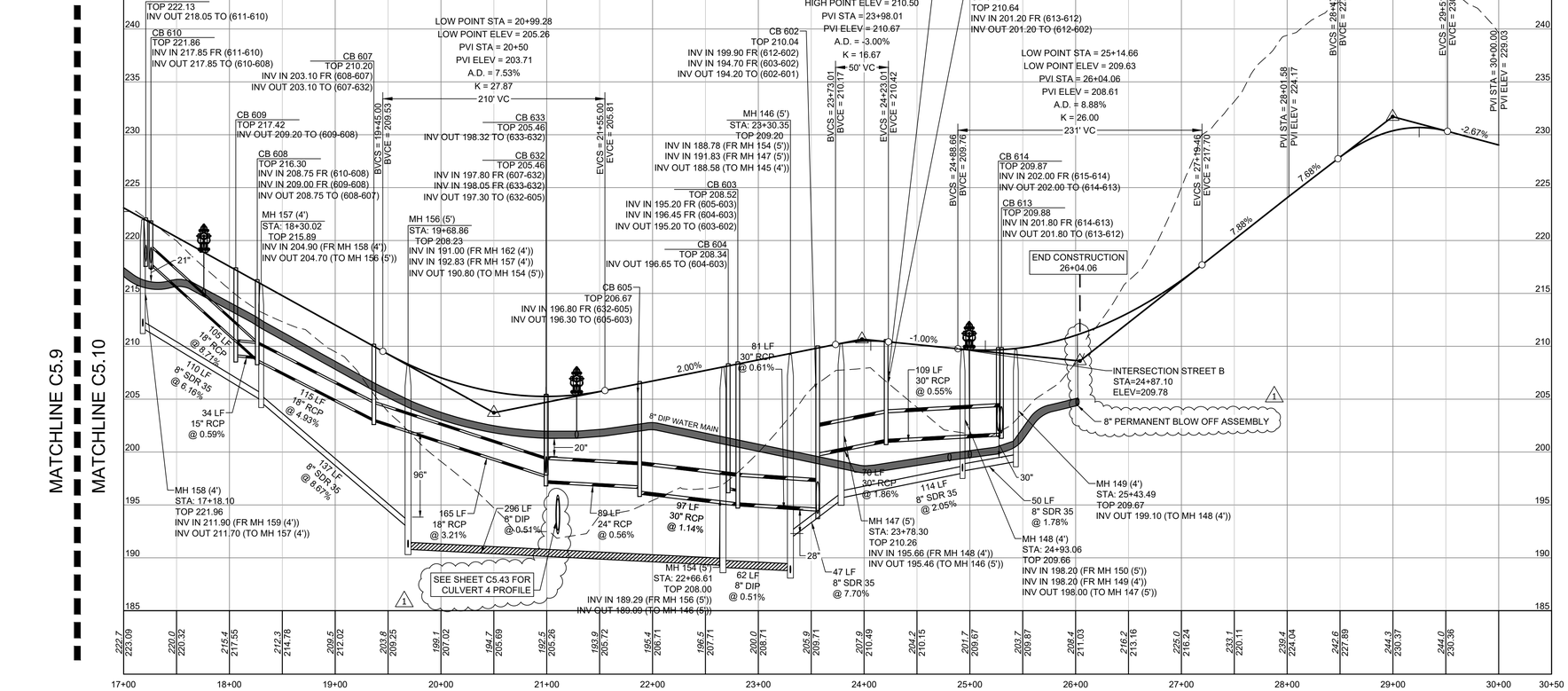
SEDLEY LANE PLAN VIEW

UTILITY LEGEND

SAN	PROPOSED SEWER MAIN
8"W	PROPOSED WATER MAIN
	WATER MAIN TEE
	FIRE HYDRANT
	WATER METER
	REDUCER
	GATE VALVE
	BLOWOFF ASSEMBLY

UTILITY NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.
2. MINIMUM UTILITY HORIZONTAL SEPARATION DISTANCES:
   WATER AND SANITARY SEWER MAINS - 10 FT.
   WATER AND STORM SEWER MAINS - 5 FT.
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   WATER AND SANITARY SEWER MAINS - 18 IN.
   WATER AND STORM SEWER MAINS - 18 IN.
   SANITARY SEWER AND STORM SEWER MAINS - 24 IN.
4. CLASS 1 STRUCTURAL MATERIAL REQUIRED FROM EXISTING GROUND TO SPRING LINE OF PROPOSED PIPE IN FILL CONDITIONS (TYP).



SEDLEY LANE PROFILE (22+00 TO 28+50)

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5

TOWN CERTIFICATION

THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

811 Know what's below. Call before you dig.

SCALE 1"=50'
0 50' 100'
0 0 50
PROFILE SCALE

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval: _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (If applicable)

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City of Raleigh Public Utilities Department Permit # _____

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YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
10/11/2024	DELTA 1: TEMP BOA @ PHASE LIMIT, STORM BYPASS

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE H: 1" = 50' V: 1" = 5'

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA
SEDLEY LANE PLAN & PROFILE - SHEET 2 OF 2

JOB NO. 44872
SHEET NO. C5.10

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UTILITY LEGEND

SAN	PROPOSED SEWER MAIN
8"W	PROPOSED WATER MAIN
	WATER MAIN TEE
	FIRE HYDRANT
	WATER METER
	REDUCER
	GATE VALVE
	BLOWOFF ASSEMBLY

TOWN CERTIFICATION

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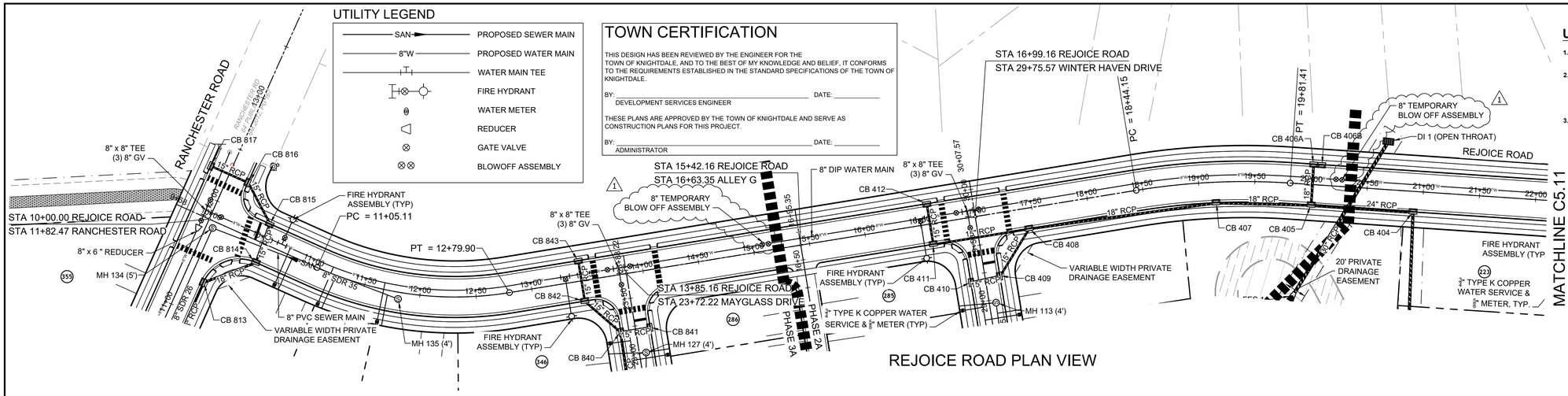
BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

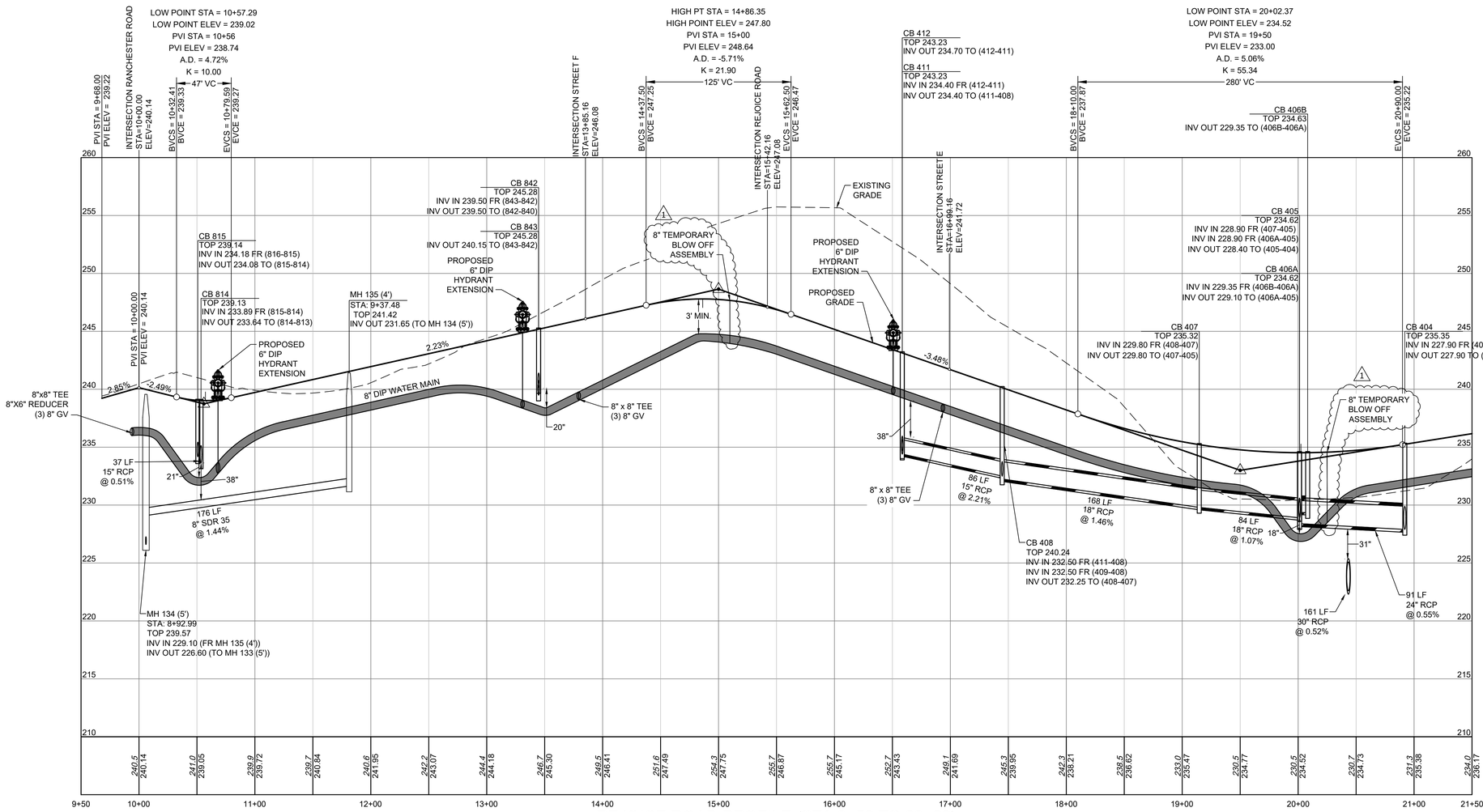
BY: _____ DATE: _____
ADMINISTRATOR

UTILITY NOTES:

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   WATER AND STORM SEWER MAINS - 18 IN.
   SANITARY SEWER AND STORM SEWER MAINS - 24 IN.



REJOICE ROAD PLAN VIEW



REJOICE ROAD PROFILE (STA 9+50 TO 23+00)
HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5

MATCHLINE C5.11
MATCHLINE C5.12

PROFILE SCALE
5
0
0
50

NAD 83

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (if applicable)

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City of Raleigh Public Utilities Department Permit # _____

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REVISION DESCRIPTION	DATE
DELTA 1: TEMP BOA @ PHASE LIMIT	10/11/2024

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE H: 1" = 50' V: 1" = 5'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

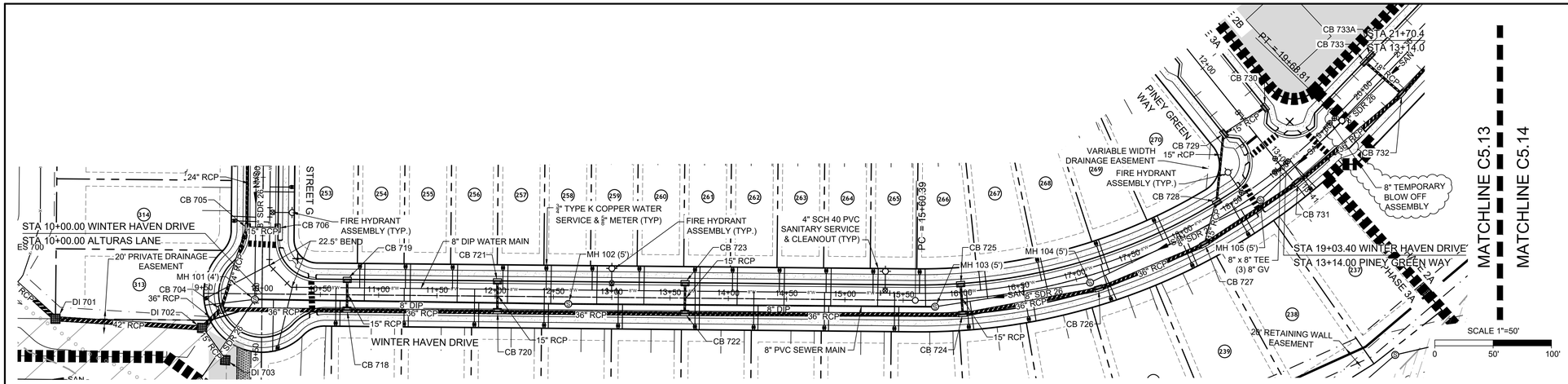
REJOICE ROAD PLAN & PROFILE - SHEET 1 OF 2

JOB NO. 44872
SHEET NO. C5.11

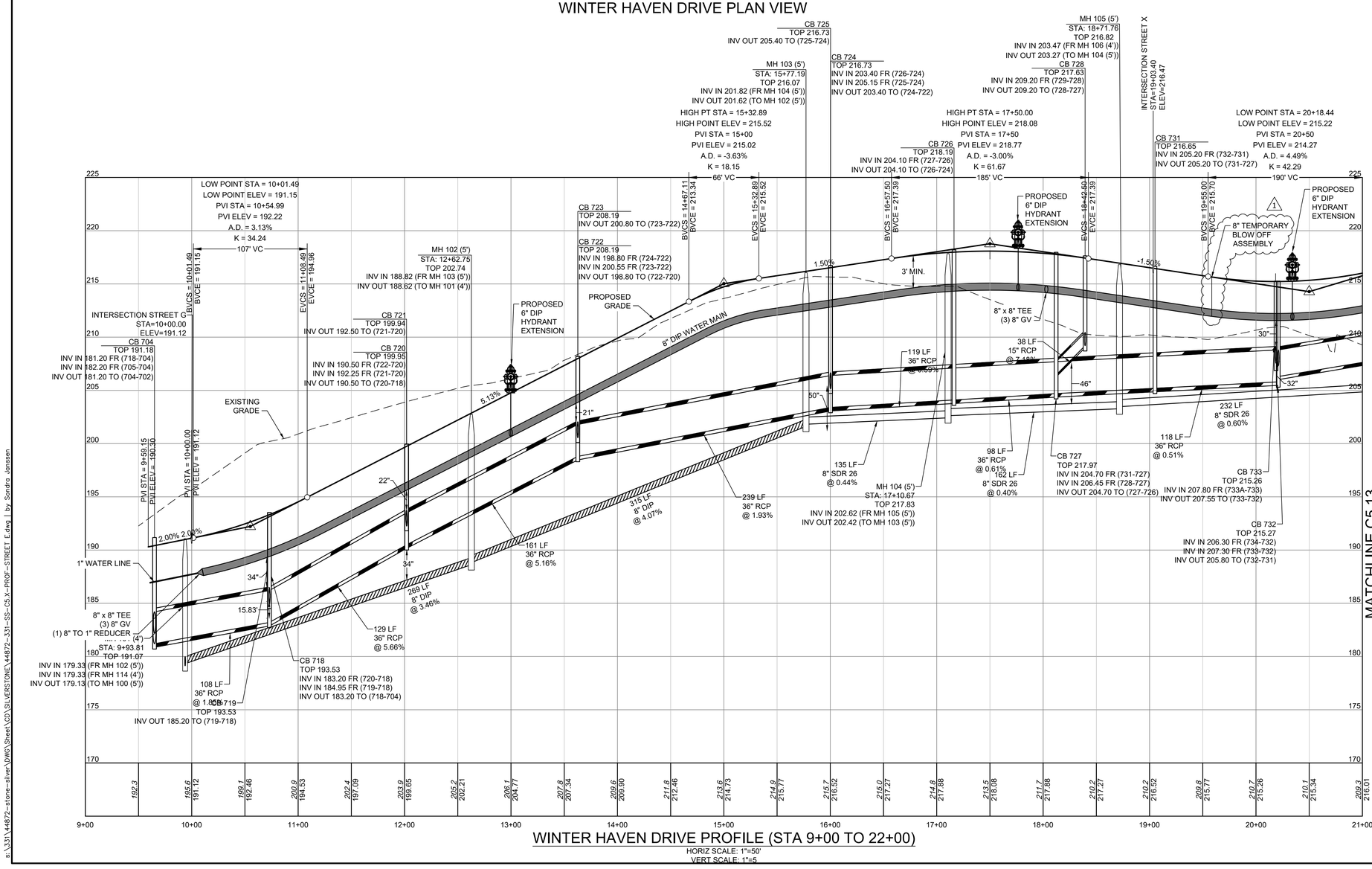
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WINTER HAVEN DRIVE PLAN VIEW



UTILITY NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.
2. MINIMUM UTILITY HORIZONTAL SEPARATION DISTANCES:
   WATER AND SANITARY SEWER MAINS - 10 FT.
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   SANITARY SEWER AND STORM SEWER MAINS - 5 FT.
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   WATER AND STORM SEWER MAINS - 18 IN.
   SANITARY SEWER AND STORM SEWER MAINS - 24 IN.
4. CLASS 1 STRUCTURAL MATERIAL REQUIRED FROM EXISTING GROUND TO SPRING LINE OF PROPOSED PIPE IN FILL CONDITIONS (TYP).

TOWN CERTIFICATION

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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

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BY: _____ DATE: _____
ADMINISTRATOR

UTILITY LEGEND

- SAN — PROPOSED SEWER LINE
- 8"W — PROPOSED WATER LINE
- WATER LINE TEE
- FIRE HYDRANT
- WATER METER
- REDUCER
- GATE VALVE
- BLOWOFF ASSEMBLY

NAD 83

5
0
0 50
PROFILE SCALE

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

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City of Raleigh Public Utilities Department Permit # _____

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REVISION DESCRIPTION	DATE
DELTA 1: TEMP BOA @ PHASE LIMIT	10/11/2024

DATE: 04/21/2023
DRAWN BY: 331
DESIGNED BY: 331
CHECKED BY: M. ZACCARDO
SCALE: H: 1" = 50' V: 1" = 5'

TIMMONS GROUP

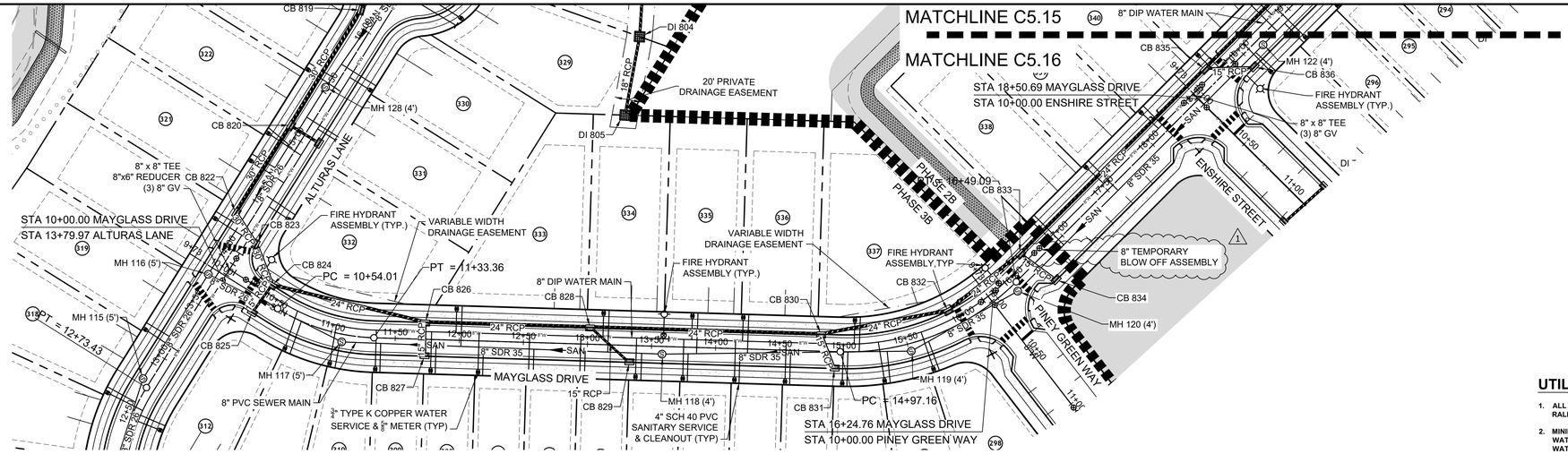
SILVERSTONE SUBDIVISION
NORTH CAROLINA LICENSE NO. C-1652
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA
WINTER HAVEN DRIVE PLAN & PROFILE - SHEET 1 OF 2

JOB NO. 44872
SHEET NO. C5.13

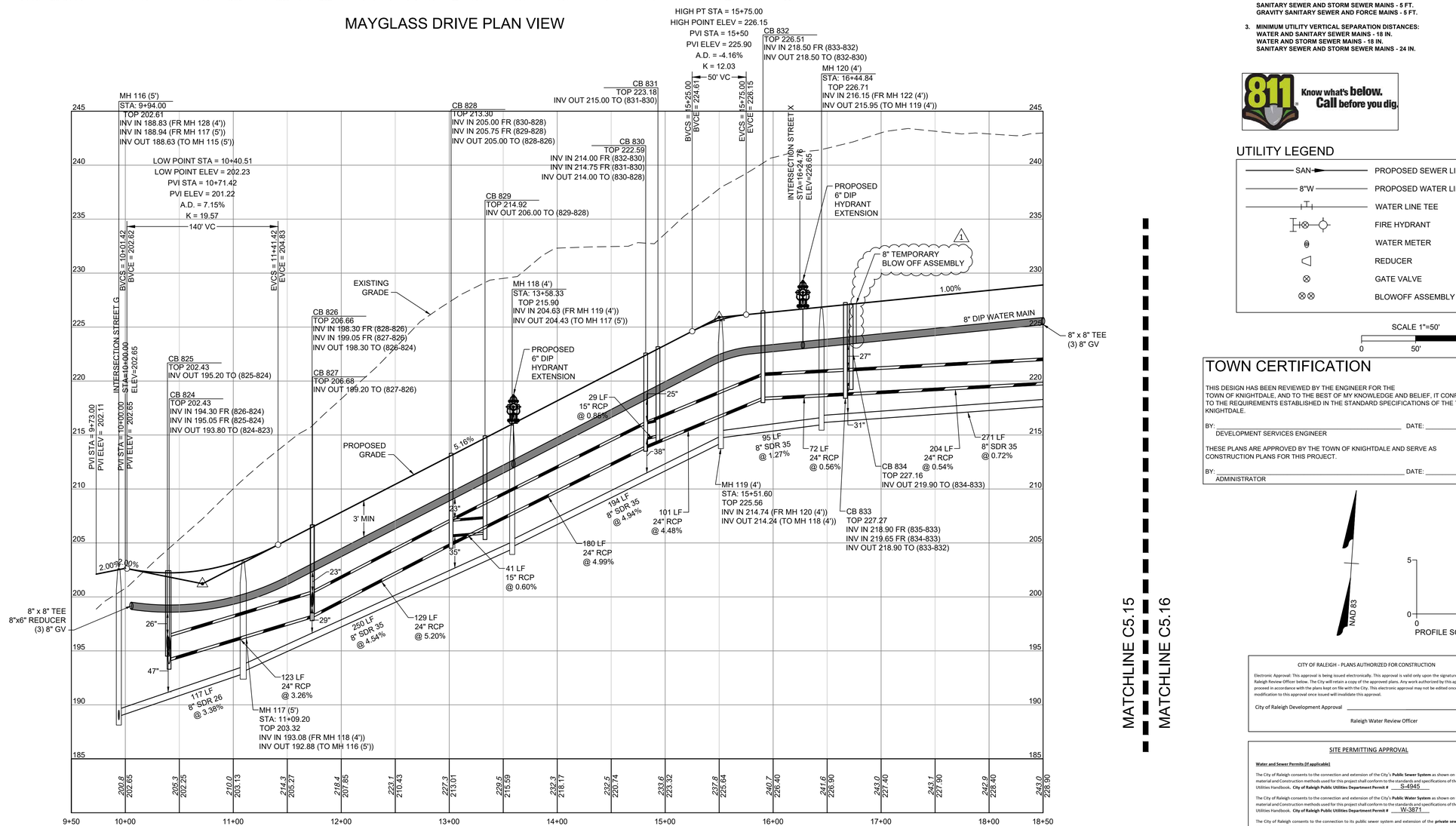
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919-868-2147



MAYGLASS DRIVE PLAN VIEW



MAYGLASS DRIVE PROFILE (STA 9+50 TO 18+50)

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5

MATCHLINE C5.15
MATCHLINE C5.16

UTILITY NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.
2. MINIMUM UTILITY HORIZONTAL SEPARATION DISTANCES:
   WATER AND SANITARY SEWER MAINS - 10 FT.
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   SANITARY SEWER AND STORM SEWER MAINS - 24 IN.

811 Know what's below. Call before you dig.

UTILITY LEGEND

- SAN — PROPOSED SEWER LINE
- 8"W — PROPOSED WATER LINE
- WATER LINE TEE
- FIRE HYDRANT
- WATER METER
- REDUCER
- GATE VALVE
- BLOWOFF ASSEMBLY

SCALE 1"=50'
0 50' 100'

TOWN CERTIFICATION

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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

NAD 83

5
0
0 50
PROFILE SCALE

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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Raleigh Water Review Officer

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City of Raleigh Public Utilities Department Permit # _____

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REVISION DESCRIPTION	DATE
DELTA 1: TEMP BOA @ PHASE LIMIT	10/11/2024

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE H: 1" = 50' V: 1" = 5'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

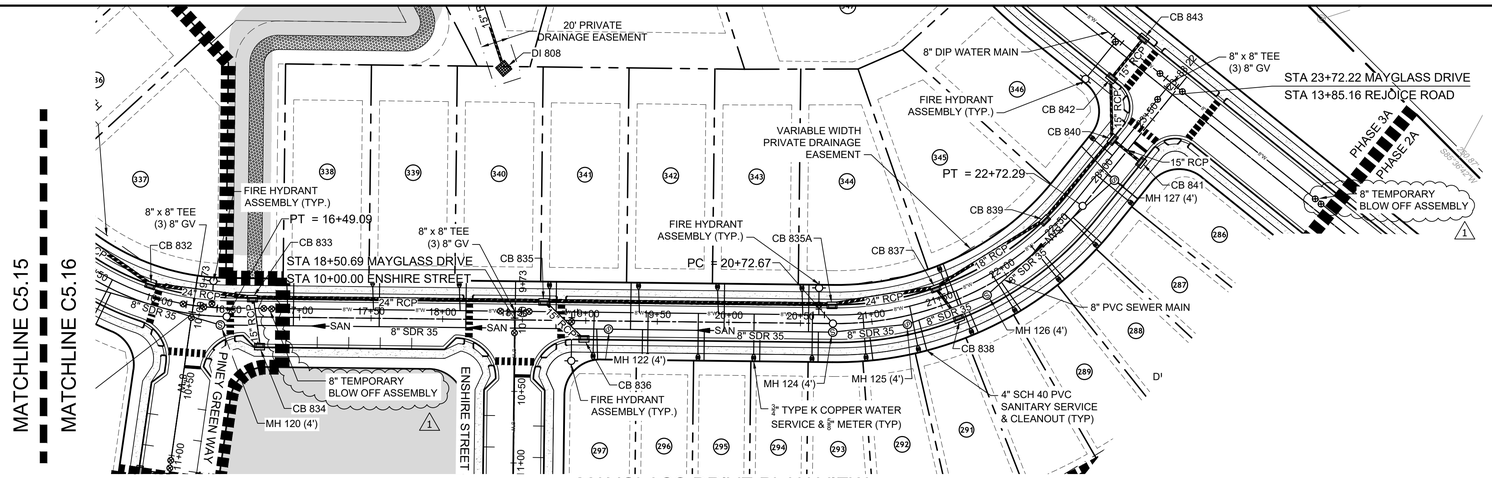
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

MAYGLASS DRIVE PLAN & PROFILE - SHEET 1 OF 2

JOB NO. 44872
SHEET NO. C5.15

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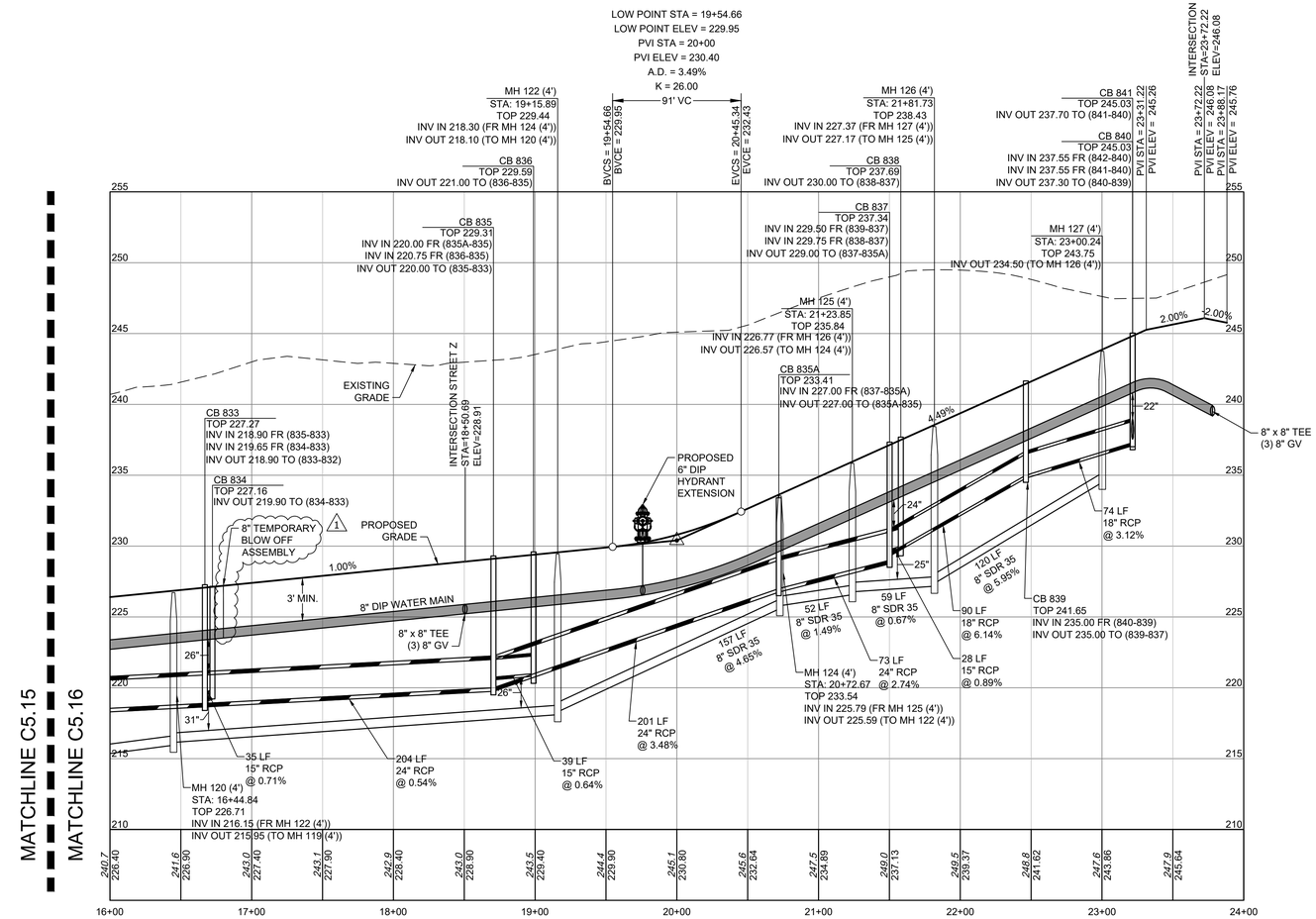
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MAYGLASS DRIVE PLAN VIEW

UTILITY NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.
2. MINIMUM UTILITY HORIZONTAL SEPARATION DISTANCES:
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MAYGLASS DRIVE PROFILE (STA 17+00 TO 24+00)

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5'

UTILITY LEGEND

SAN	PROPOSED SEWER LINE
8"W	PROPOSED WATER LINE
	WATER LINE TEE
	FIRE HYDRANT
	WATER METER
	REDUCER
	GATE VALVE
	BLOWOFF ASSEMBLY

SCALE 1"=50'
0 50' 100'

NAD 83

5
0
0 50
PROFILE SCALE

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TOWN CERTIFICATION

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ADMINISTRATOR

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

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City of Raleigh Public Utilities Department Permit # _____

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YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE
DELTA 1: TEMP BOA @ PHASE LIMIT	10/11/2024

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE H: 1" = 50' V: 1" = 5'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

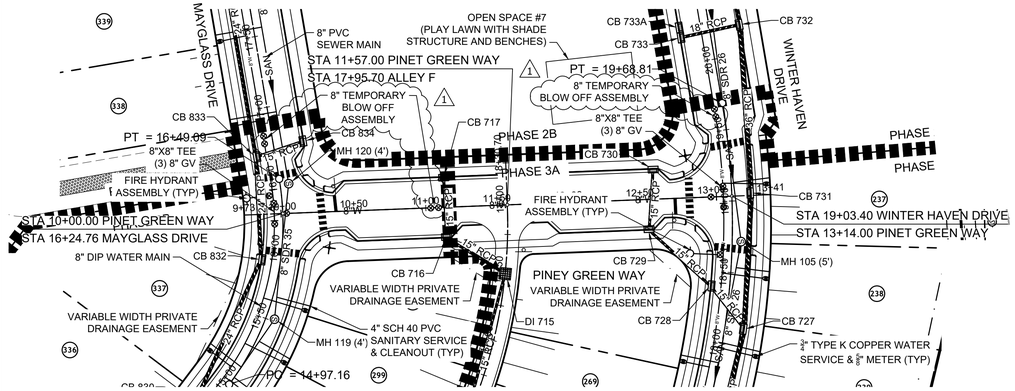
MAYGLASS DRIVE PLAN & PROFILE - SHEET 2 OF 2

JOB NO. 44872

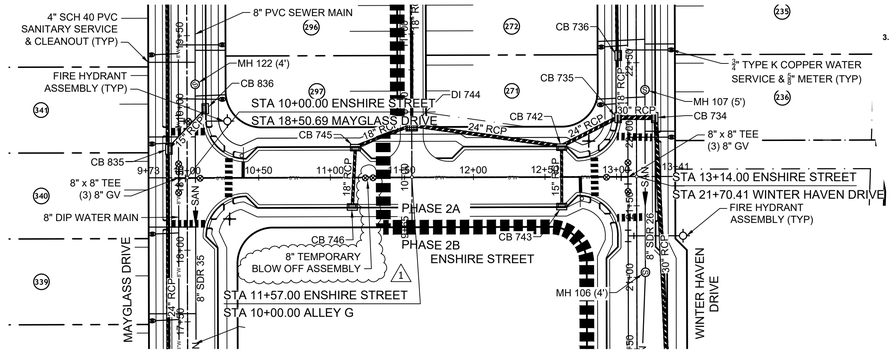
SHEET NO. C5.16

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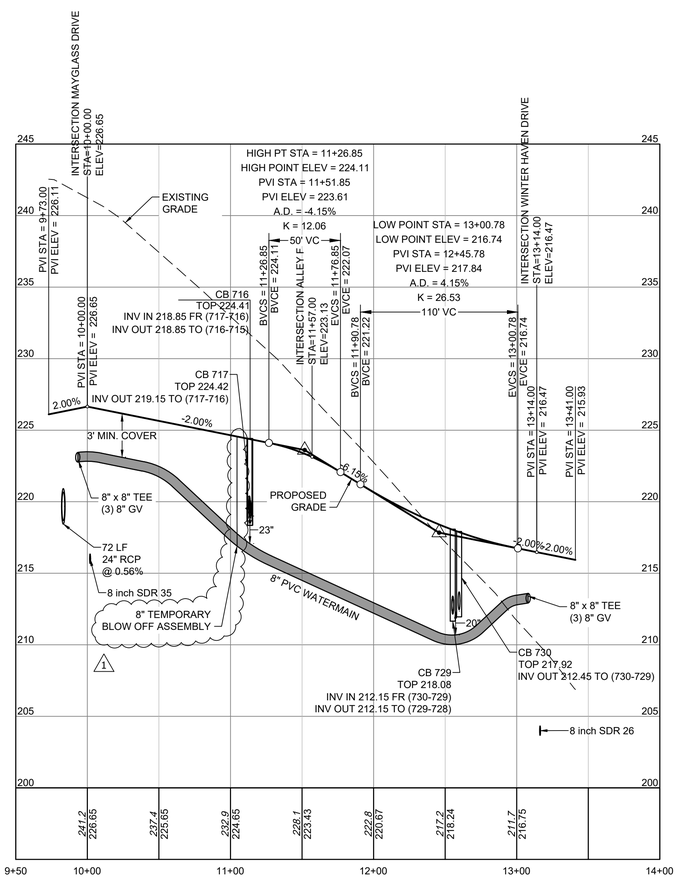
PINEY GREEN WAY PLAN VIEW



ENSHIRE STREET PLAN VIEW

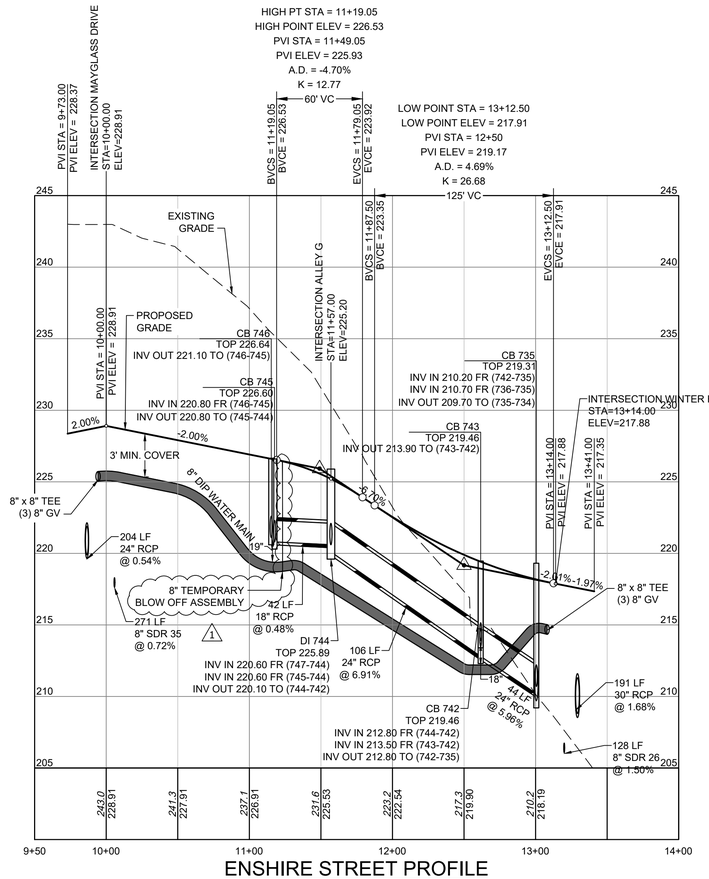
UTILITY NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.
2. MINIMUM UTILITY HORIZONTAL SEPARATION DISTANCES:
   WATER AND SANITARY SEWER MAINS - 10 FT.
   WATER AND STORM SEWER MAINS - 5 FT.
   SANITARY SEWER AND STORM SEWER MAINS - 5 FT.
   GRAVITY SANITARY SEWER AND FORCE MAINS - 5 FT.
3. MINIMUM UTILITY VERTICAL SEPARATION DISTANCES:
   WATER AND SANITARY SEWER MAINS - 18 IN.
   WATER AND STORM SEWER MAINS - 18 IN.
   SANITARY SEWER AND STORM SEWER MAINS - 24 IN.



PINEY GREEN WAY PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5



ENSHIRE STREET PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5

UTILITY LEGEND

SAN	PROPOSED SEWER MAIN
8"W	PROPOSED WATER MAIN
	WATER MAIN TEE
	FIRE HYDRANT
	WATER METER
	REDUCER
	GATE VALVE
	BLOWOFF ASSEMBLY

SCALE 1"=50'
0 50' 100'

NAD 83

5
0
0 50
PROFILE SCALE

811 Know what's below. Call before you dig.

TOWN CERTIFICATION

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TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

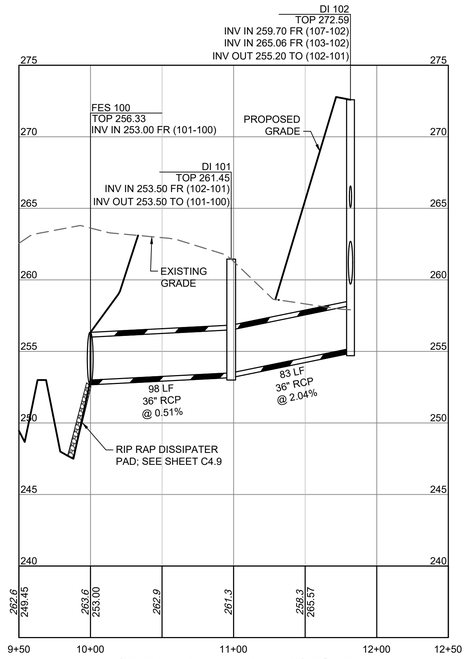
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

PINEY GREEN WAY & ENSHIRE STREET PLAN & PROFILE

JOB NO. 44872
SHEET NO. C5.21

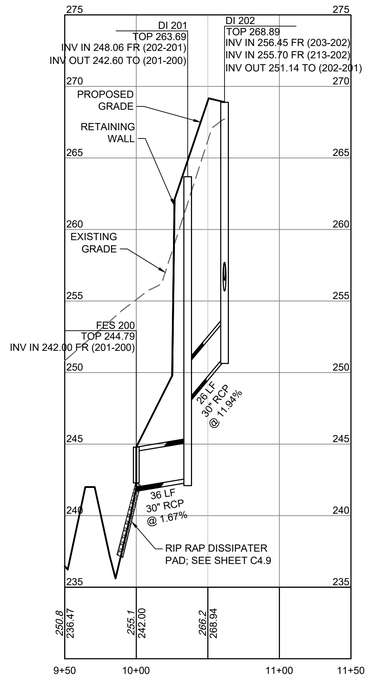
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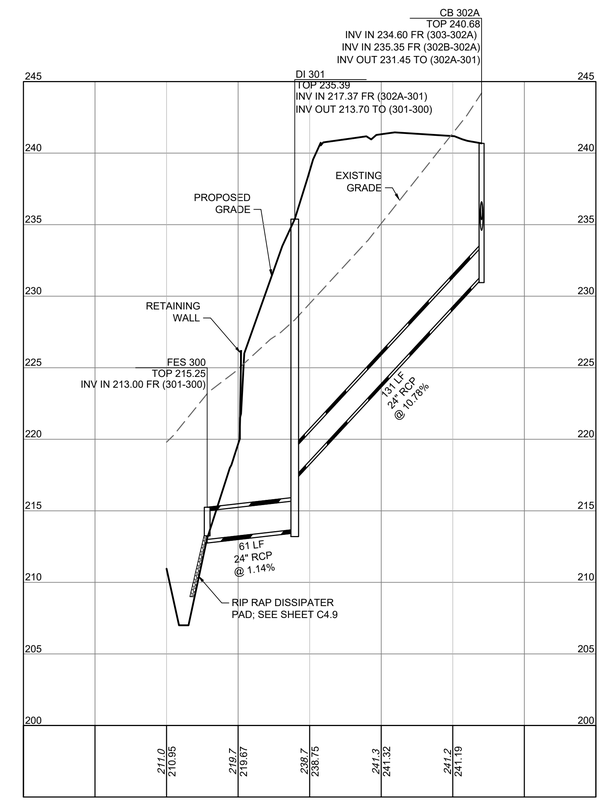
STRM 100 - 102 PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5



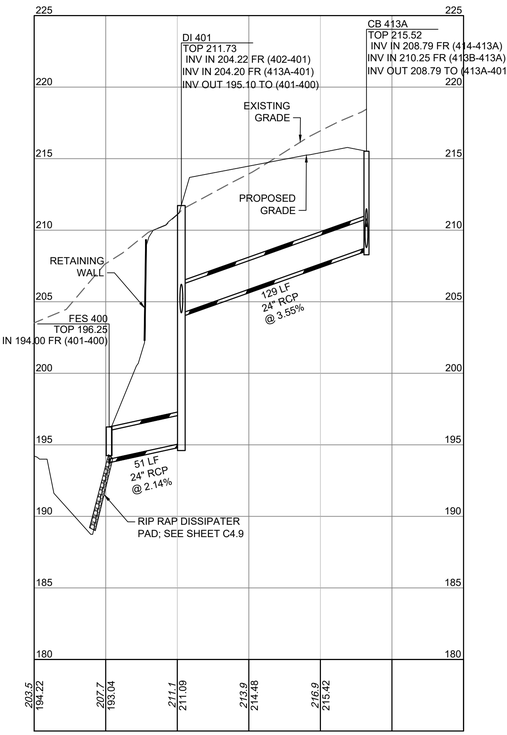
STRM 200 - 202 PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5



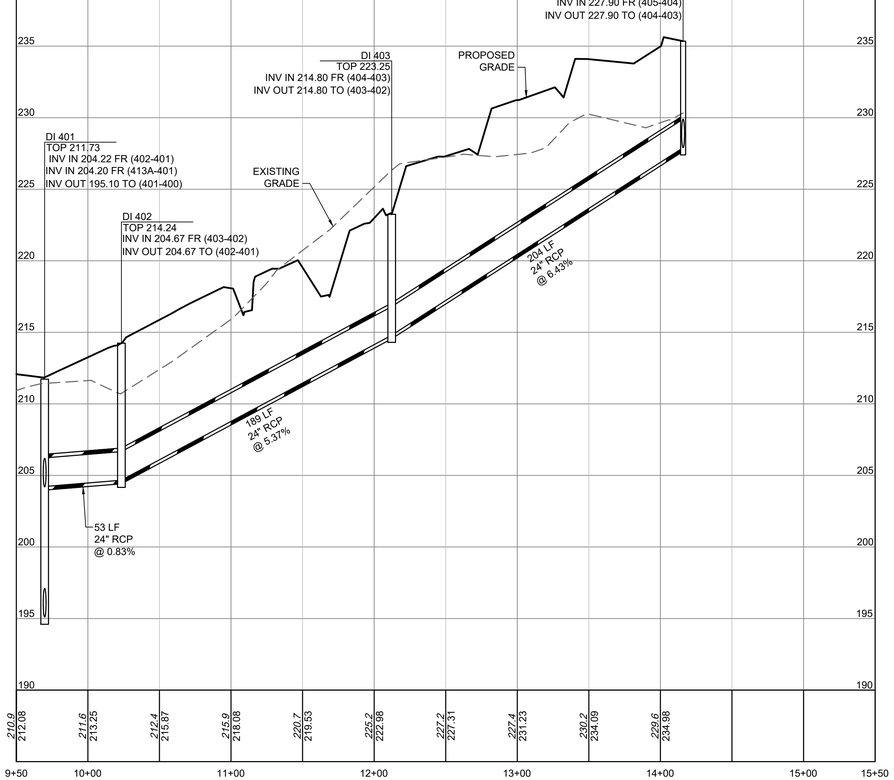
300-302 PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5



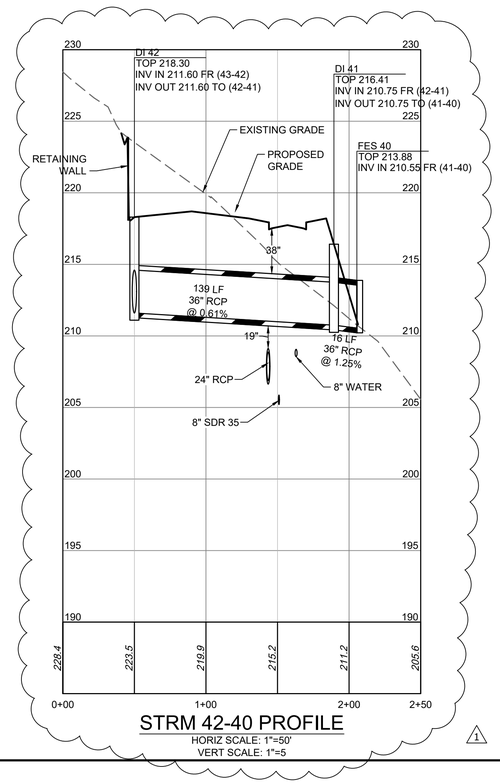
STRM 400-413A PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5



STRM 401-404 PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5



STRM 42-40 PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5

1

5
0
0 50
PROFILE SCALE

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DELTA 1: STORM BYPASS	10/11/2024

DATE 04/21/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY M. ZACCARDO
SCALE H: 1" = 50' V: 1" = 5

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

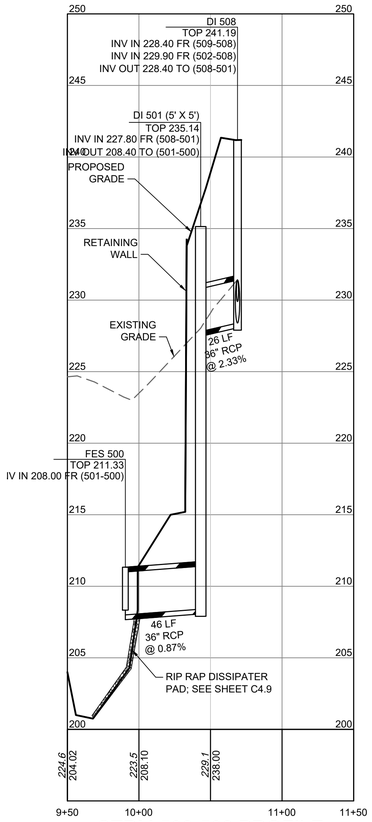
SILVERSTONE SUBDIVISION
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

STORM OUTFALL PLAN & PROFILE

JOB NO. 44872
SHEET NO. C5.41

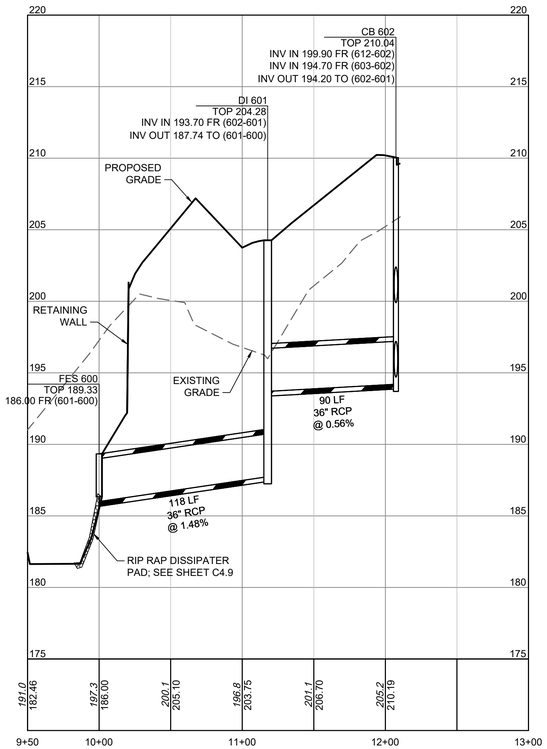
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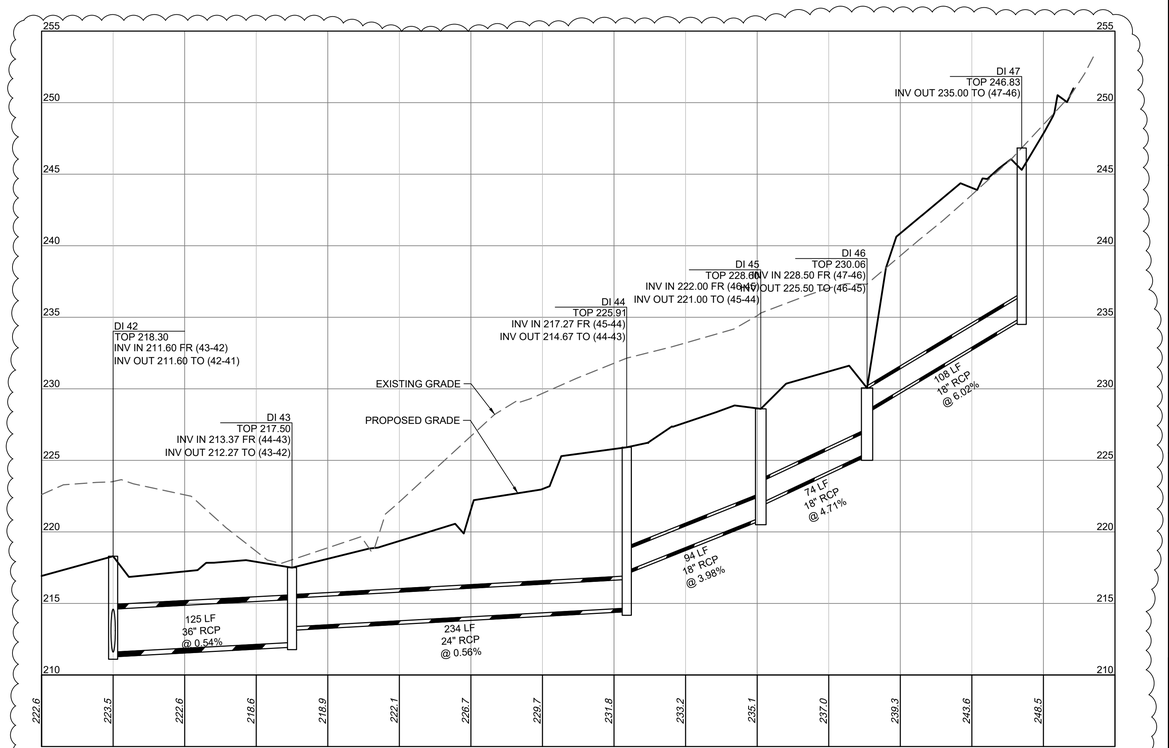
STRM 500-508 PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5



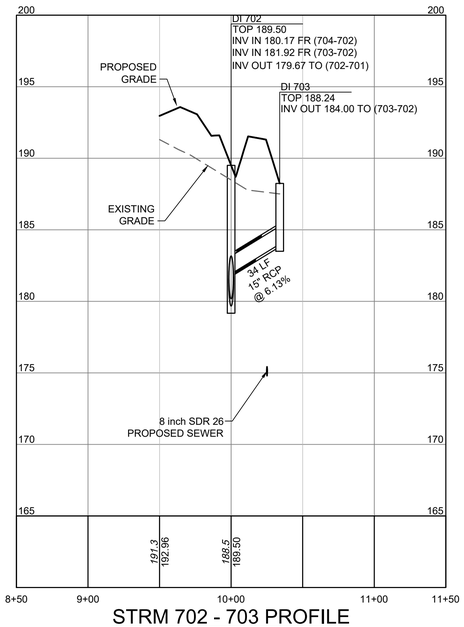
STRM 600-602 PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5



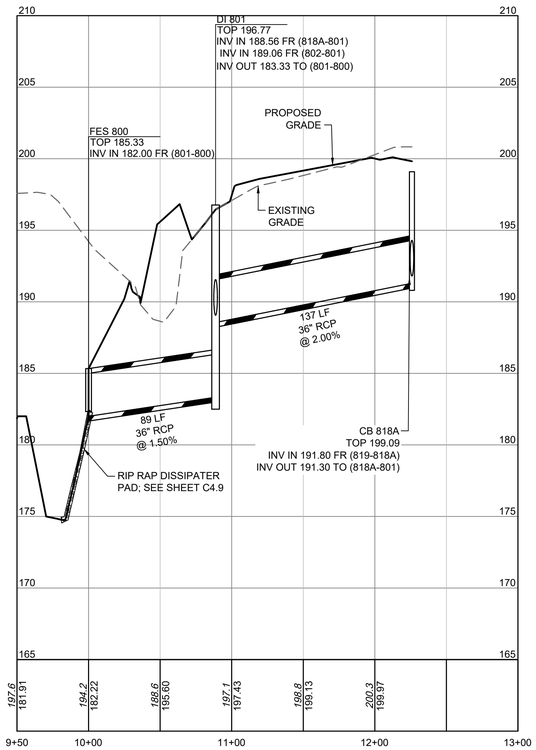
STRM 47-42 PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5



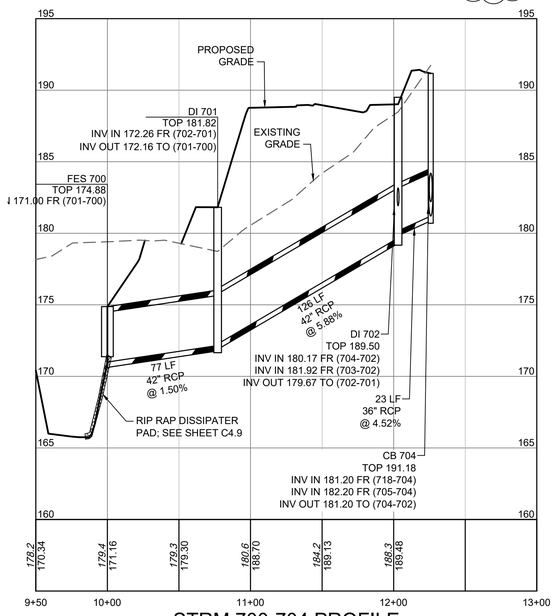
STRM 702 - 703 PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5



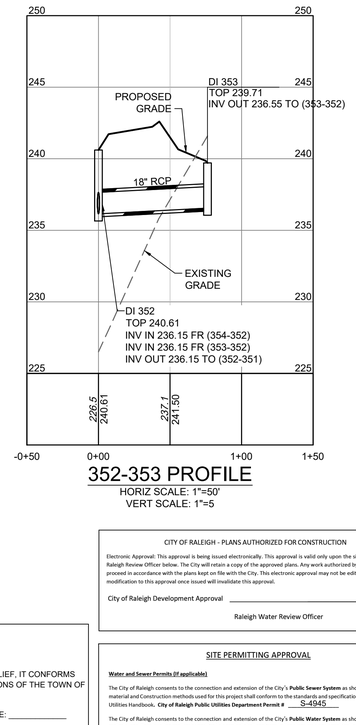
STRM 800-818A PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5



STRM 700-704 PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5



352-353 PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5

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TIMMONS GROUP

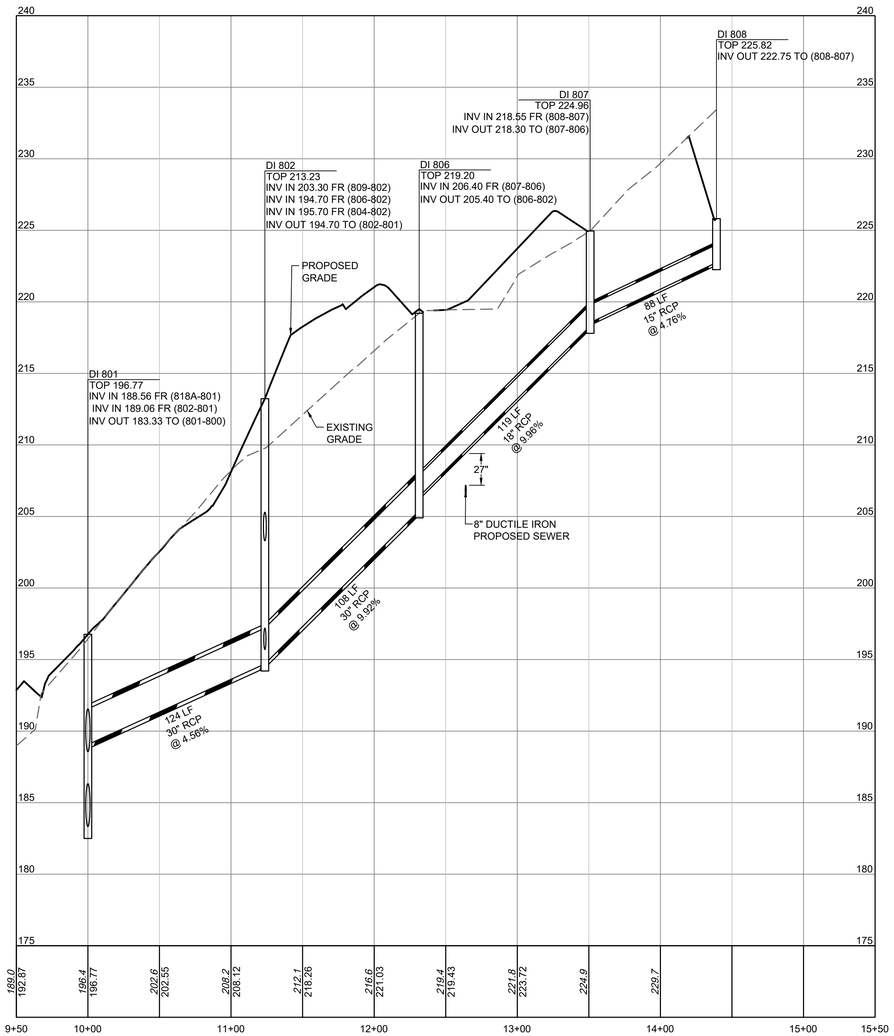
SILVERSTONE SUBDIVISION
NORTH CAROLINA LICENSE NO. C-1652
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

STORM OUTFALL PLAN & PROFILE

JOB NO. 44872
SHEET NO. C5.42

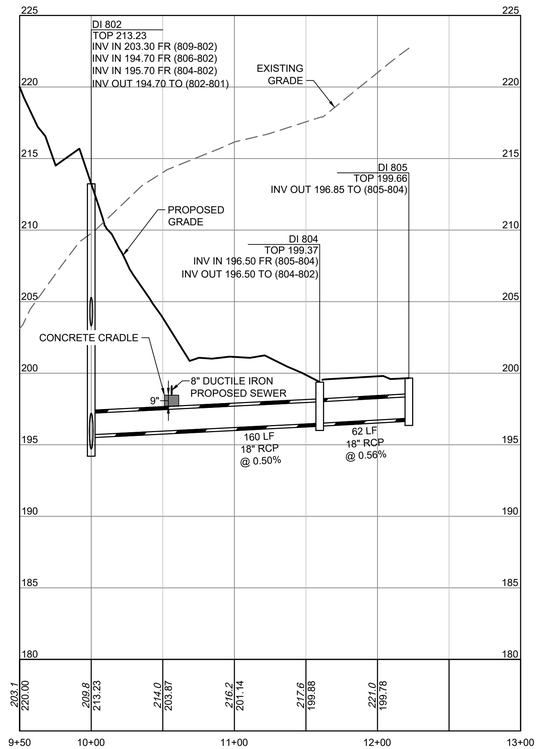
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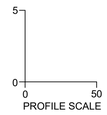
STRM 801-808 PROFILE

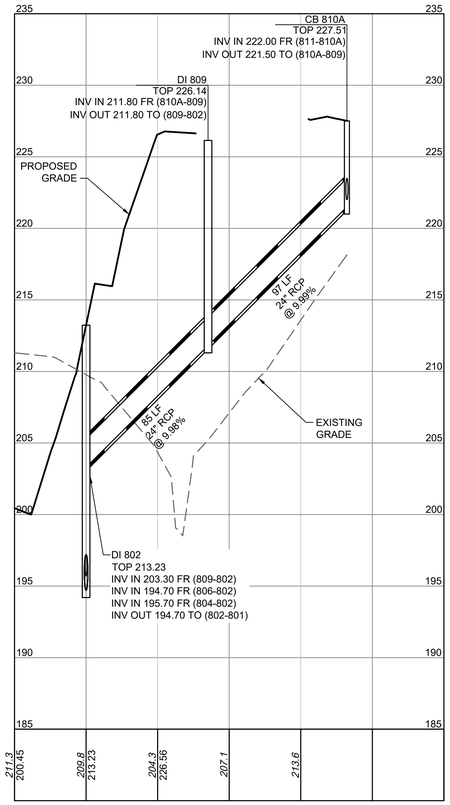
HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5



STRM 802 - 805 PROFILE

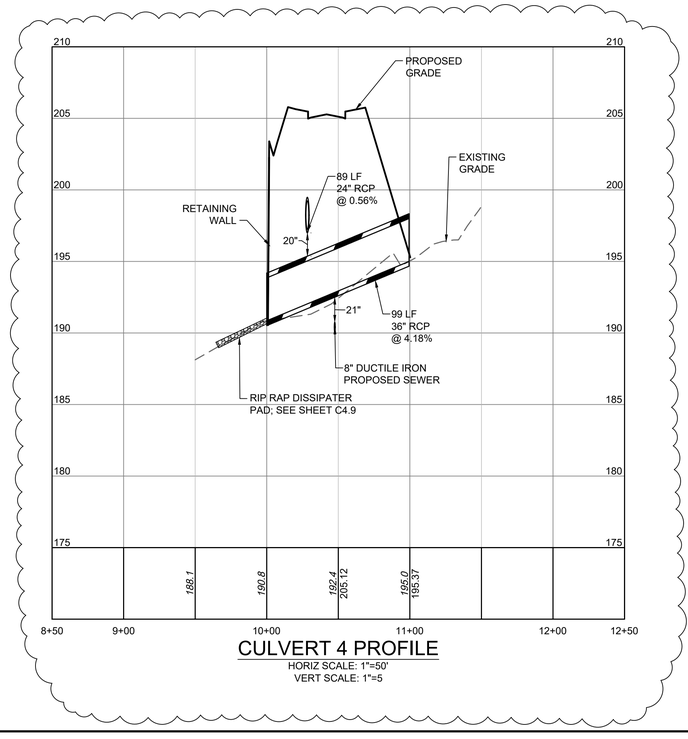
HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5





STRM 802-810A PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5



CULVERT 4 PROFILE

HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5

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CHECKED BY: M. ZACCARDO
SCALE: H: 1" = 50' V: 1" = 5'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION

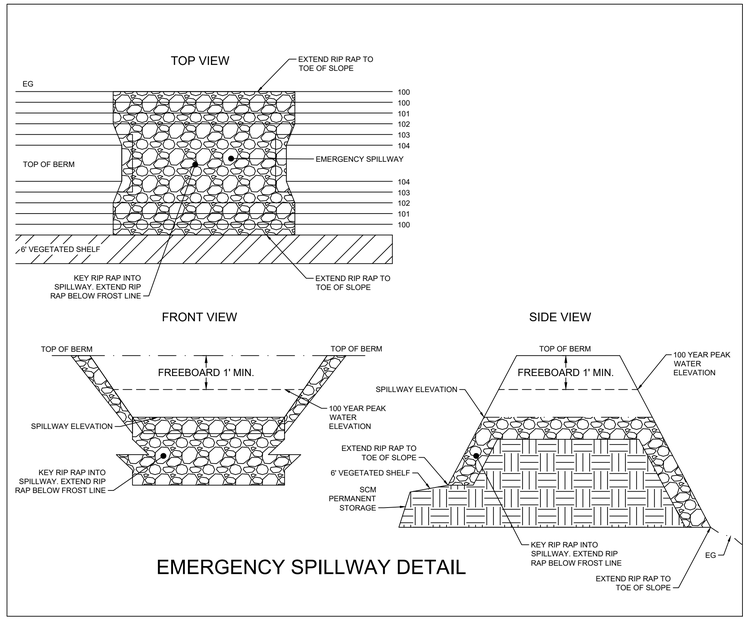
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA

STORM OUTFALL PLAN & PROFILE

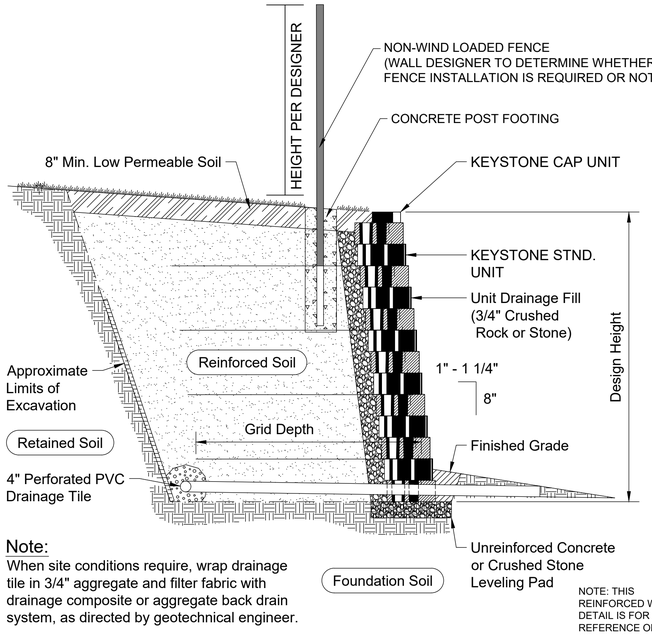
JOB NO. 44872
SHEET NO. C5.43

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s:\331\44872-stone-silver\DWG\Sheet\CD\SILVERSTONE\44872-331-SS-C5X-STM OUTFALLS.dwg | by Sondra Jonssen



EMERGENCY SPILLWAY DETAIL



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.

NOTE: THIS REINFORCED WALL DETAIL IS FOR REFERENCE ONLY. CONTRACTOR TO BUILD RETAINING WALLS FROM SPECIFIC DETAILED DESIGN PLANS BY OTHERS FOR THIS PROJECT

Typical Reinforced Wall Section (Designed By Others)

TOWN CERTIFICATION

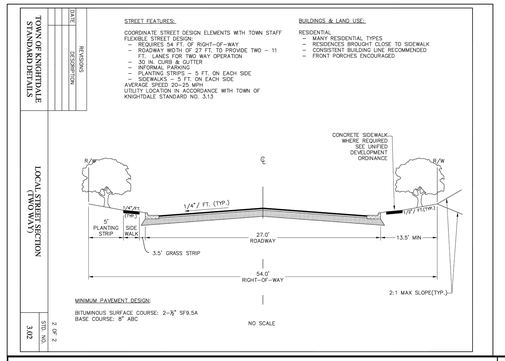
THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

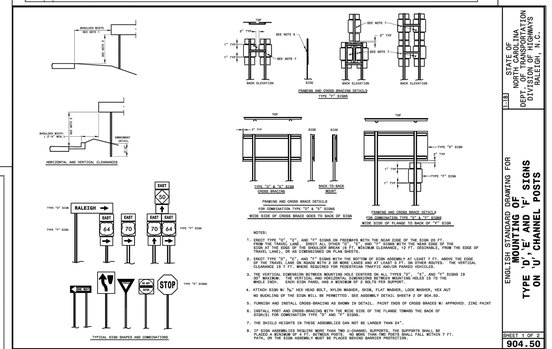
BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

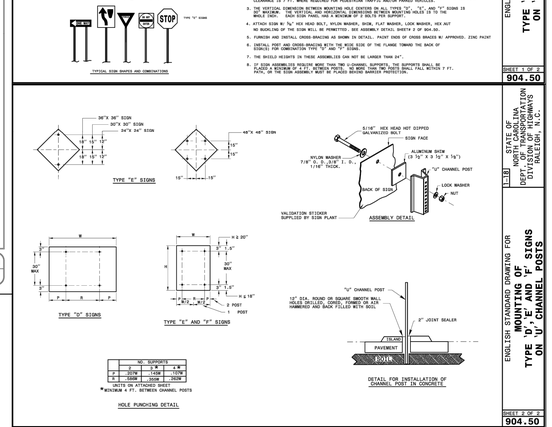
FOR REVIEW ONLY



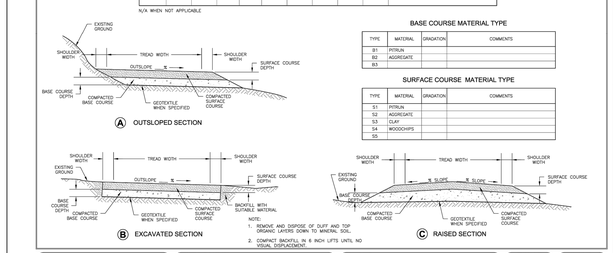


NOTES:
1. FOR TYPE "D", "E", AND "F" SIGNS ON FREEWAYS WITH THE REAR EDGE OF THE SIGN 20 FT. OR MORE FROM THE TRAVEL LANE, SHALL MEET ALL SIGNS "D", "E", AND "F" SIGNS WITH TOP REAR EDGE OF THE SIGN AT THE EDGE OF THE SHOULDER BREAK (0 FT. MINIMUM CLEARANCE, 12 FT. DESIRABLE, FROM THE EDGE OF THE TRAVEL LANE OR BEHIND BETA 3 OR MORE LANES).
2. FOR TYPE "D", "E", AND "F" SIGNS WITH THE REAR EDGE OF THE SIGN 20 FT. OR MORE FROM THE TRAVEL LANE OR BEHIND BETA 3 OR MORE LANES AND AT LEAST 6 FT. AS STATED IN NOTE 1. THE VERTICAL CLEARANCE IS 7 FT. WHERE EXISTING FOR PEDESTRIAN TRAFFIC AND/OR PARKED VEHICLES.
3. THE VERTICAL DIMENSION BETWEEN MOUNTING HOLE CENTERS ON ALL TYPES "D", "E", AND "F" SIGNS IS SHOWN ON THE STANDARD. THE VERTICAL AND HORIZONTAL DIMENSIONS BETWEEN MOUNTING HOLES IS TO THE WHOLE INCH. EACH SIGN PANEL HAS A MINIMUM OF 2 BOLTS PER SUPPORT.
4. ATTACH SIGN W/ 5/16" HEX HEAD BOLT, NYLON WASHER, DISH, FLAT WASHER, LOCK WASHER, HEX NUT NO BUCKLING OF THE SIGN WILL BE PERMITTED. SEE ASSEMBLY DETAIL SHEETS # OF 904.30.
5. PUNCHED AND INSTALL CROSS BRACING AS SHOWN IN DETAIL. PAINT SIDE OF CROSS BRACES AS APPROVED. ZINC PAINT
6. INSTALL POST AND CROSS BRACING WITH THE WIDE SIDE OF THE FLANGE TOWARD THE BACK OF SIGN(S) FOR COMBINATION TYPE "D" AND "E" SIGNS.
7. THE SHIELD HEIGHTS IN THESE ASSEMBLIES CAN NOT BE LARGER THAN 24".
8. IF SIGN ASSEMBLY PLACED WITHIN THE CLEAR ZONE, ALL SUPPORTS SHALL BE BREAKAWAY OR YIELDING. NOTE: THE TOP OF THE SIGN MOUNTING PLATE SHALL FALL WITHIN 7 FT. PATH, OR THE SIGN ASSEMBLY MUST BE PLACED BEHIND BARRIER PROTECTION.

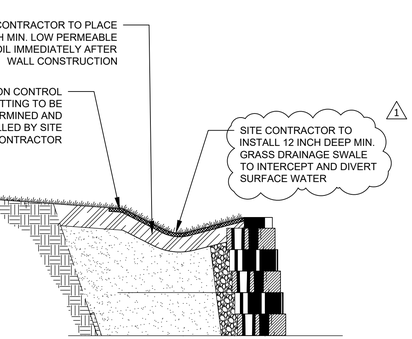
ENGLISH STANDARD DRAWING FOR **MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON U CHANNEL POSTS**
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
SHEET # OF # **904.50**



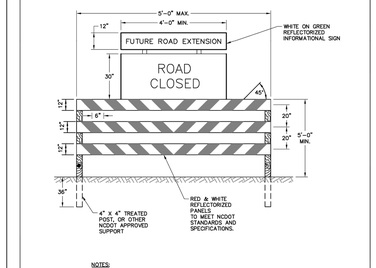
ENGLISH STANDARD DRAWING FOR **MOUNTING OF TYPE 'D','E' AND 'F' SIGNS ON 'U' CHANNEL POSTS**
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
SHEET # OF # **904.50**



U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE
STANDARD TRAIL PLAN
PROJECT NAME & LOCATION
TYPICAL SURFACING SECTIONS
SECTION: 913 - SURFACING
TYPICAL ID: TSS
APPROVED: XX/XX/XX
NO SCALE
STD. NO.: STD_913-01
SHEET: OF



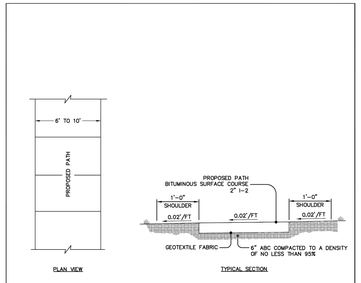
DRAINAGE SWALE DETAIL
N.T.S.



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

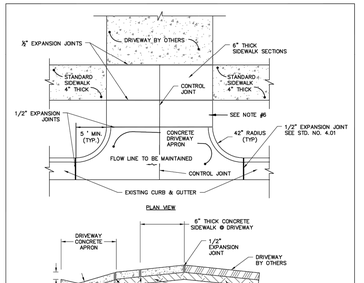
TOWN OF KNIGHTDALE STANDARD DETAILS | TEMPORARY BARRICADE FOR DEAD END ROADS | STD. NO. 3.18



NOTES:
1. CROSS SLOPE DIRECTION VARIES. SEE LAYOUT PLANS FOR DIRECTION OF SLOPE.
2. CONTRACTOR IS RESPONSIBLE FOR REESTABLISHING ALL SLOPES DISTURBED BY CONSTRUCTION.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS | STANDARD MULTI-USE PATH GREENWAY | STD. NO. 4.09



NOTES:
1. RESIDENTIAL DRIVEWAYS TO BE 12' TO 18'.
2. COMMERCIAL DRIVEWAYS TO BE A MAXIMUM OF 36' WIDE.
3. CONCRETE SHALL BE 3000 P.S.I.
4. CONTROL JOINTS NOT TO EXCEED 10' ON CENTER.
5. CURB RADIUS SHALL NOT RISE MORE THAN 1 (ONE) INCH.
6. IF THE DRIVEWAY SECTION BETWEEN THE SIDEWALK AND THE DRIVEWAY APRON IS 18" OR LESS THE SIDEWALK WILL BE WIDENED TO THE APRON AND AN EXPANSION JOINT ELIMINATED.
7. DRIVEWAY SHALL BE A MINIMUM OF 3.5 FEET FROM PROPERTY LINE.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS | STANDARD DRIVEWAY APRON | STD. NO. 4.03

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (if applicable)

The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** S-4945

The City of Raleigh consents to the connection and extension of the City's **Public Water System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** W-3871

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City of Raleigh Public Utilities Department Permit # _____

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652
SILVERSTONE SUBDIVISION
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA
SITE DETAILS

THIS DRAWING PREPARED AT THE **RALEIGH OFFICE**
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION
DELTA 1: SWALE DEPTH

DATE
10/11/2024

DATE
04/21/2023

DRAWN BY
331

DESIGNED BY
331

CHECKED BY
M. ZACCARDO

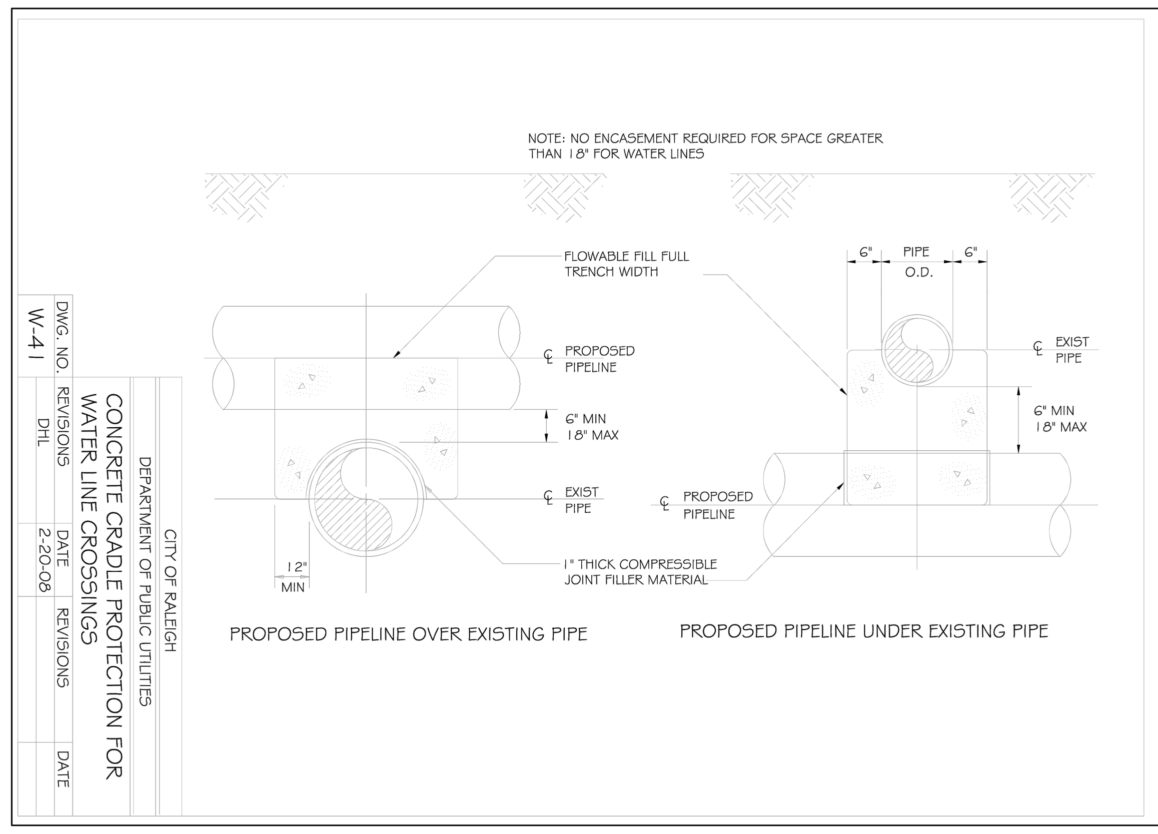
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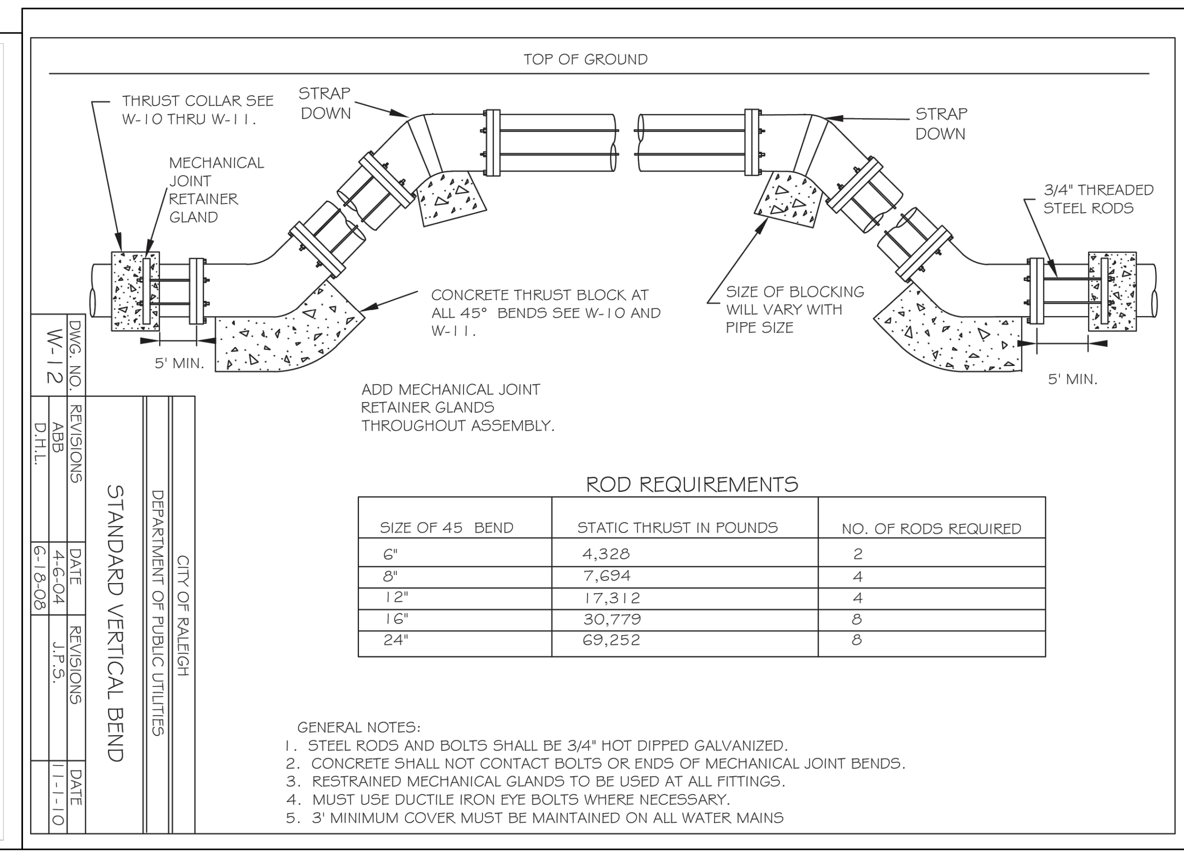
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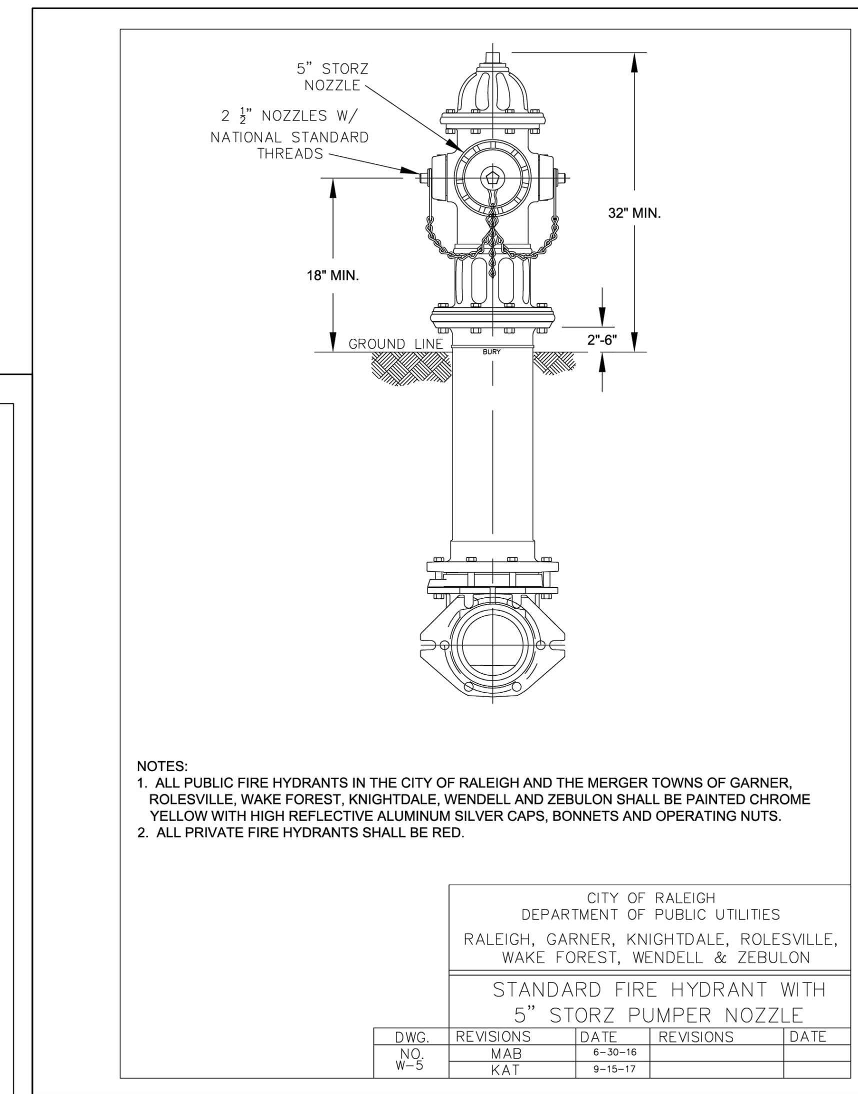
SHEET NO.
C7.2

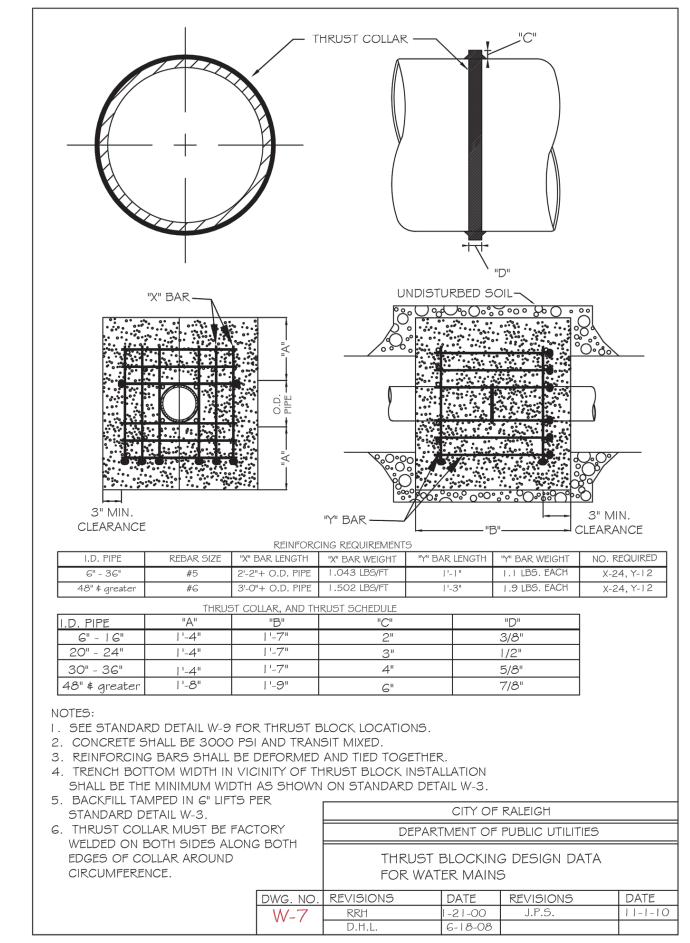
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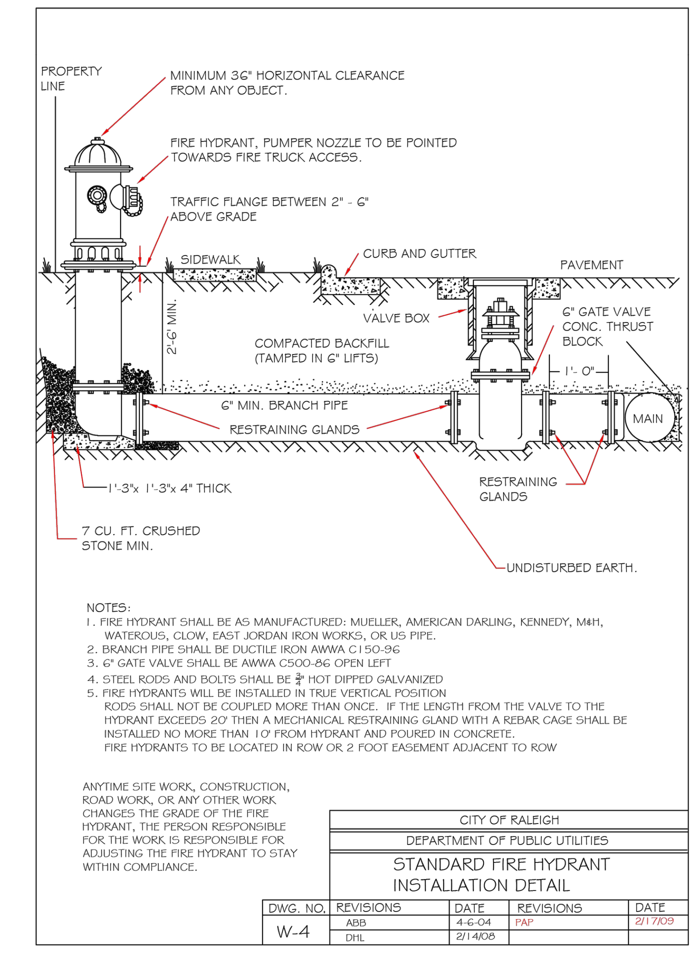
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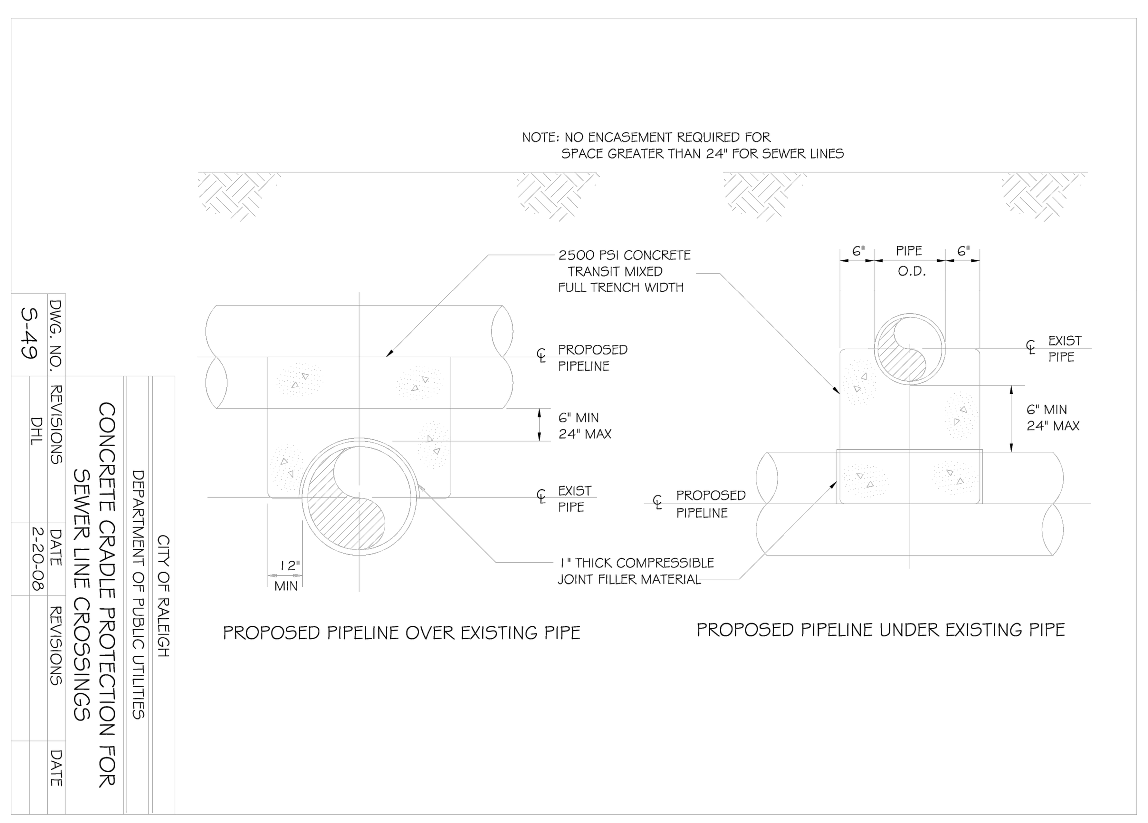


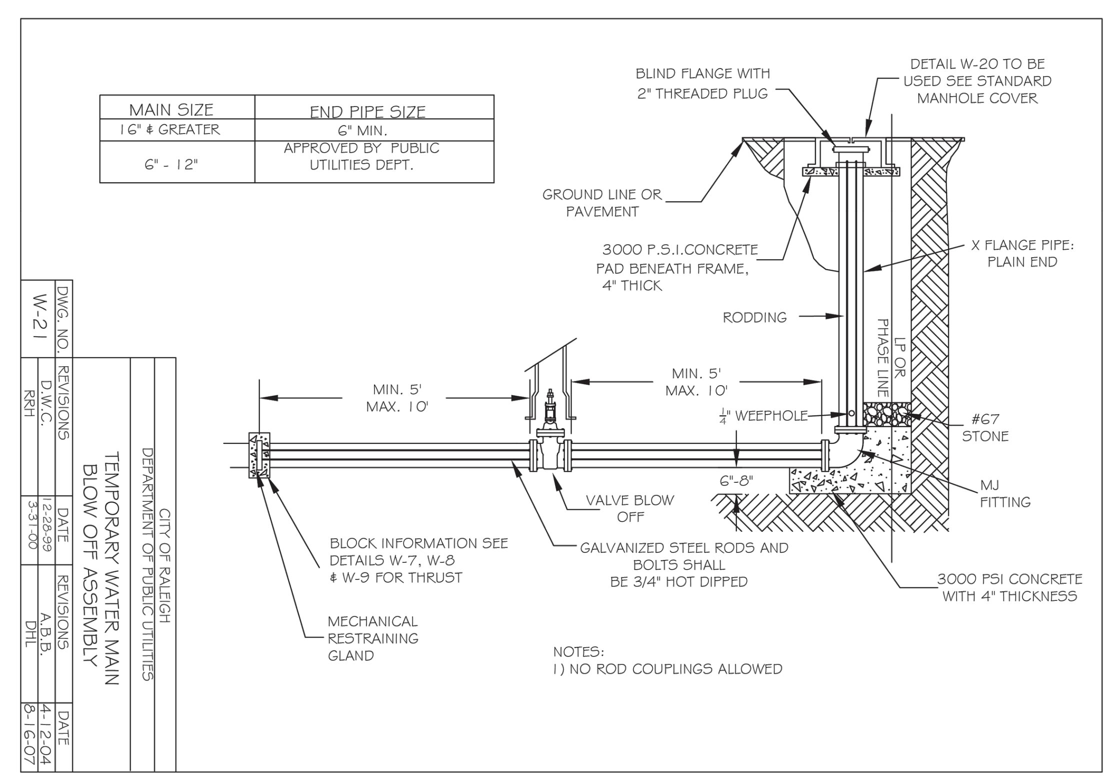


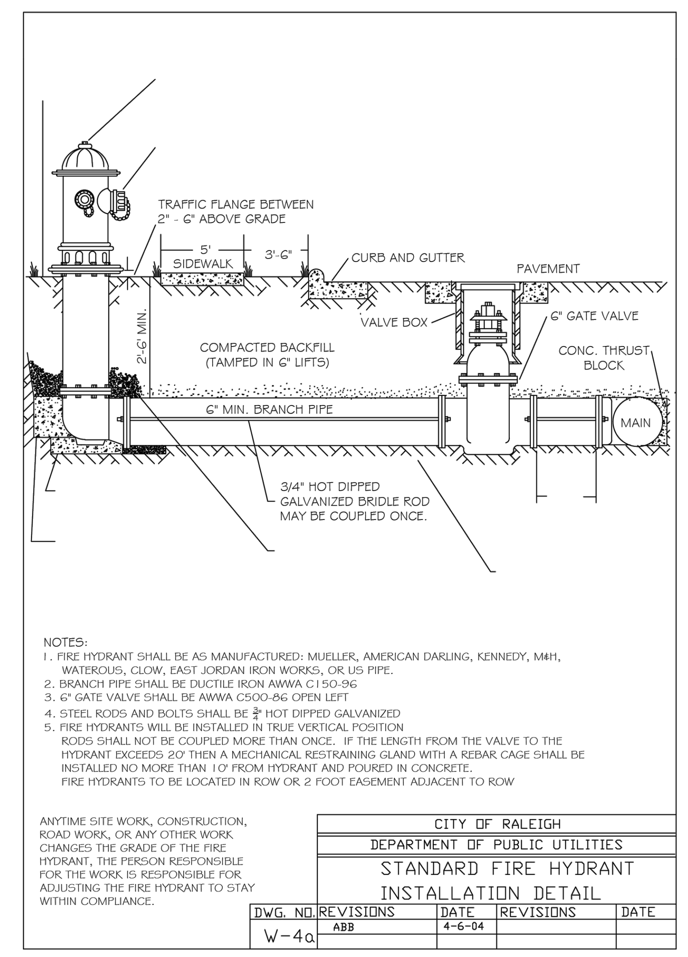


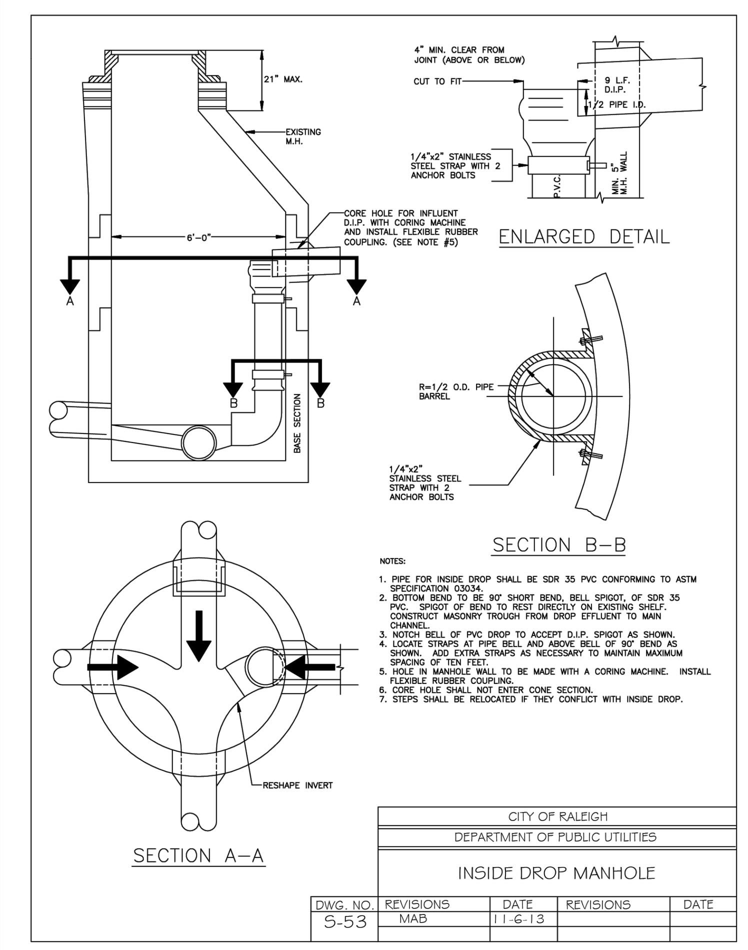


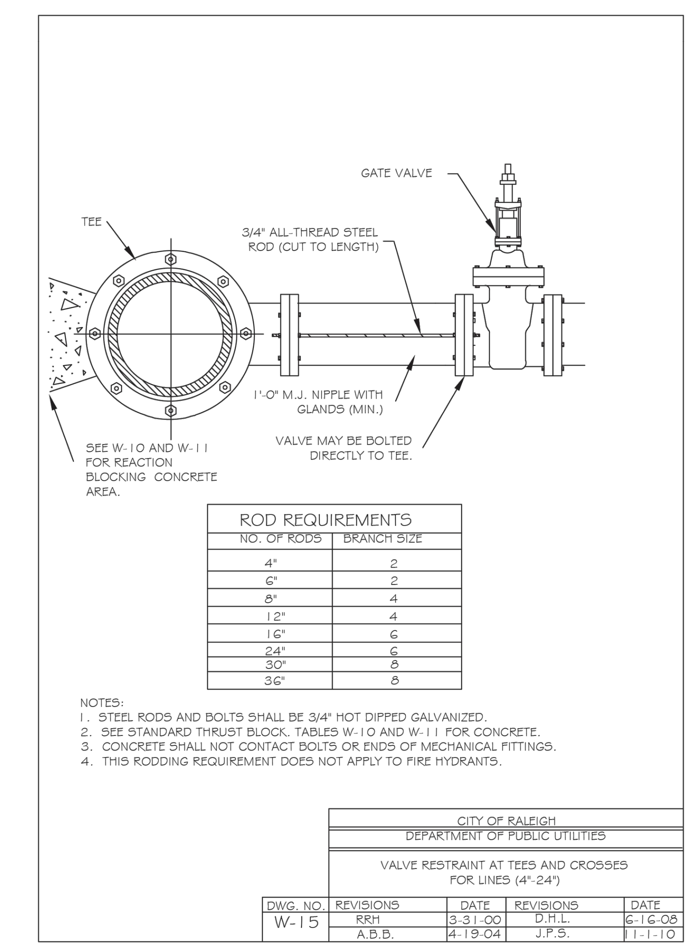


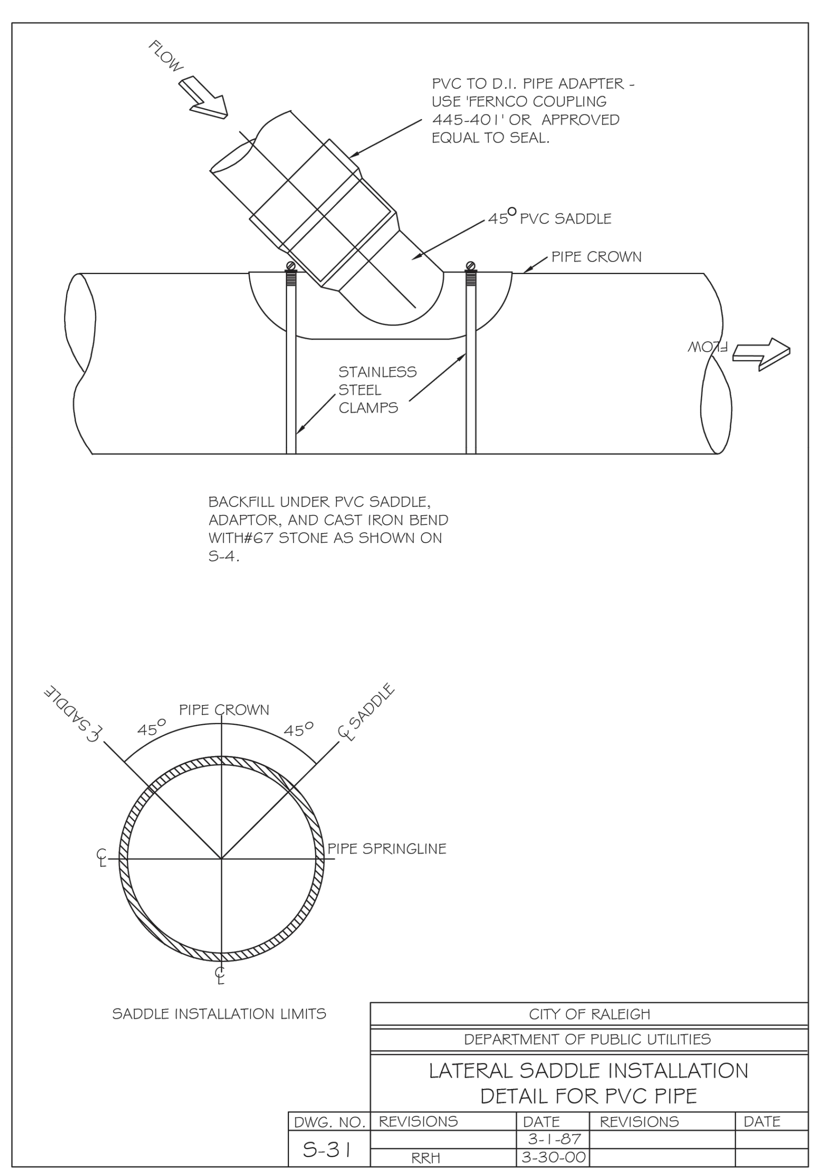


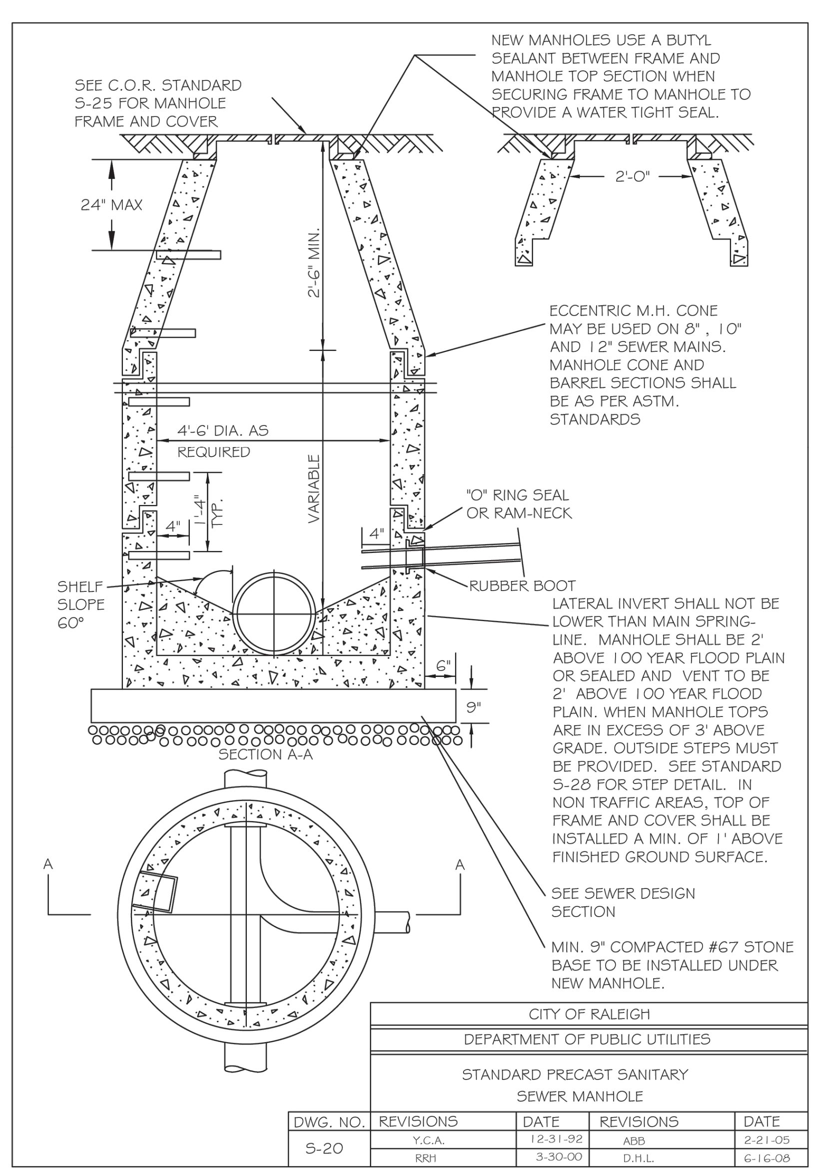


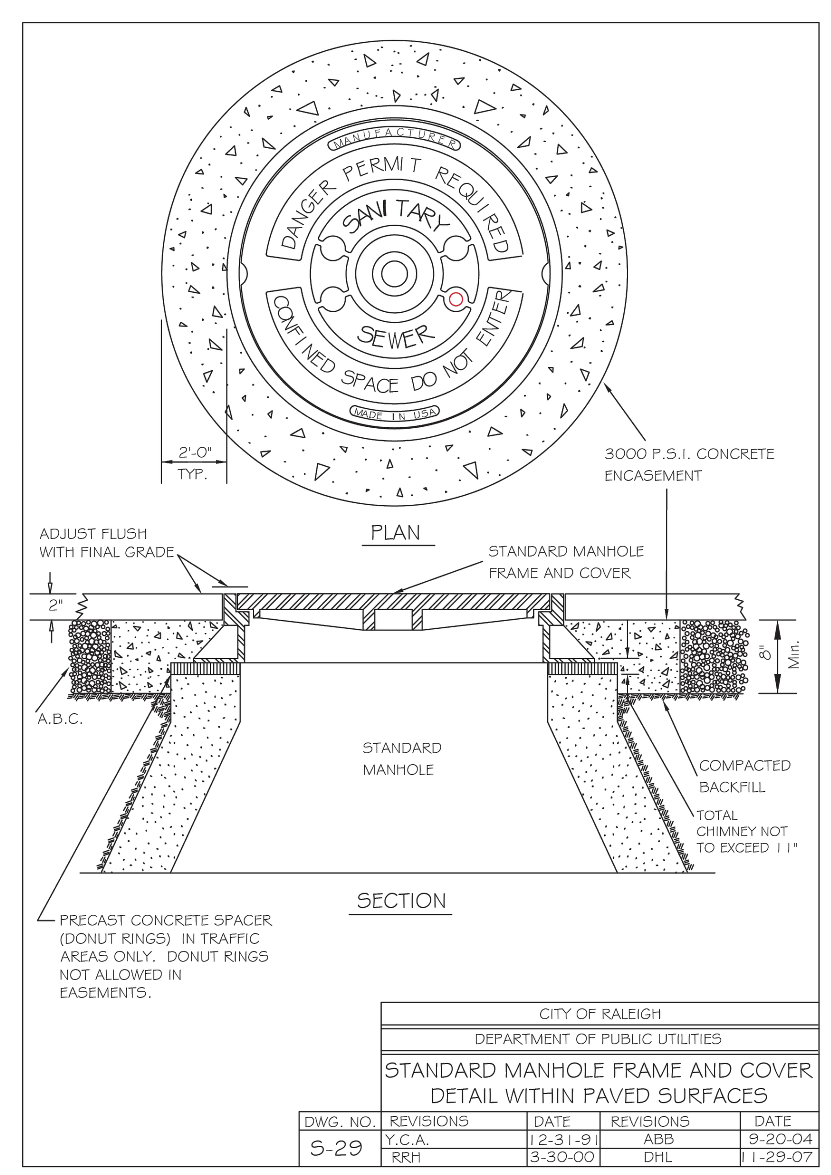


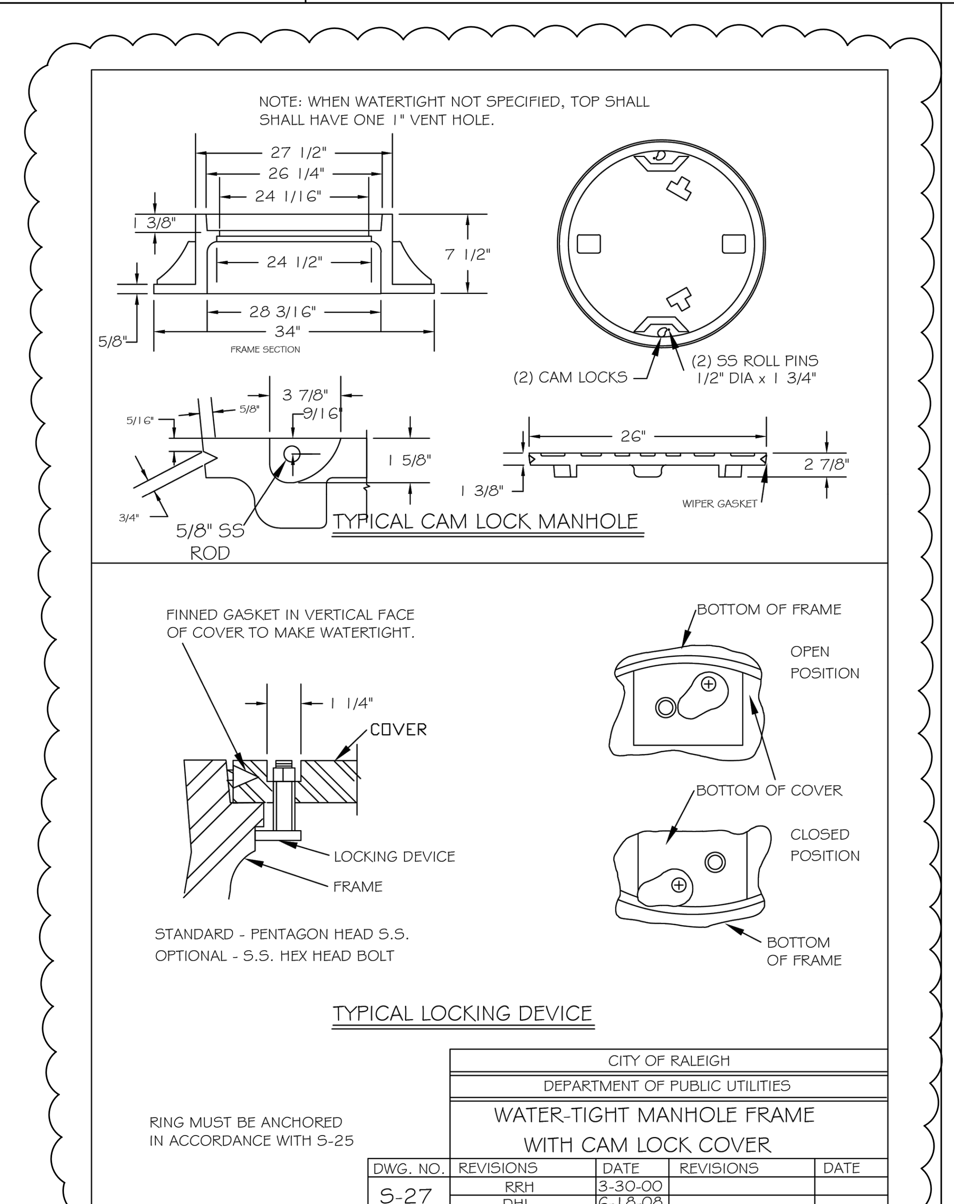












TOWN CERTIFICATION

THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: ______________________________ DATE: __________
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: ______________________________ DATE: __________
ADMINISTRATOR

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval ______________________________

Raleigh Water Review Officer

SITE PERMITTING APPROVAL

Water and Sewer Permits (If applicable)

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City of Raleigh Public Utilities Department Permit # __________

1

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DATE	REVISION DESCRIPTION
10/11/2024	DELTA 1: ADD S-27 DETAIL

DATE	04/21/2023
DRAWN BY	331
DESIGNED BY	331
CHECKED BY	M. ZACCARDO
SCALE	N/A

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

SILVERSTONE SUBDIVISION
KNIGHTDALE - WAKE COUNTY - NORTH CAROLINA
WATER AND SEWER DETAILS

JOB NO. 44872
SHEET NO. C7.3

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