NOT TO SCALE

# MERRITT HINTON OAKS BLVD

# OFFSITE IMPROVEMENTS ZMA-3-20

LOCATION: KNIGHTDALE BLVD FROM APPROX 735' WEST OF HINTON OAKS BLVD TO THE INTERSECTION WITH HINTON OAKS BLVD. HINTON OAKS BLVD FROM THE INTERSECTION WITH KINGHTDALE BLVD TO APPROX 605' NORTH OF KNIGHTDALE BLVD.

R2.00



MERRITT HINTON OA BLVD OFFSITE IMPROVEMENTS

DATE  4/4/202  SCALE AS  DESIGNED BY:  DRAWN BY:
--

SHEE

SHEET NUMBER R0.00

# **DEVELOPER**:

MERRITT PROPERTIES, LLC 2066 LORD BALTIMORE DRIVE BALTIMORE, MD, 21244 NATHAN ROBB nrobb@merrittproperties.com

# **ENGINEER**:

KIMLEY-HORN AND ASSOCIATES, INC 300 MORRIS ST. SUITE 200 DURHAM, NC 27701 TYLER WHITE, P.E. tylerwhite@kimley-horn.com

SURVEYOR:

MCKIM & CREED 1730 VARSITY DRIVE, VENTURE IV BUILDING SUITE 500

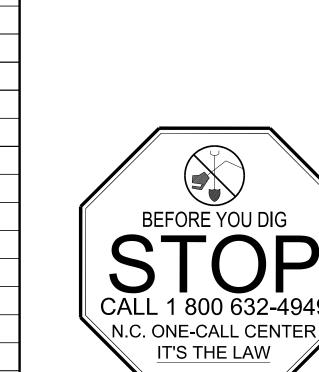
RALEIGH, NC 27606 JEFFREY D. AKER, PLS 919.233.8091 jaker@mckimcreed.com

ITEM	UNIT	QUANTITY
PUBLIC WATER STUB	EA	4

PUBLIC IMPROVEMENTS QUANTITIES

# INDEX OF SHEETS

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	R0.00	TITLE SHEET
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	R1.01	STAMPED ASPHALT CROSSWALK DETAIL
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	R1.04 THRU R1.05	TOWN DETAILS
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-	R1.07	EXISTING CONDITIONS
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`	R6.00 THRU R6.06	ROADWAY CROSS SECTIONS
` '	L100	LANDSCAPE PLAN & DETAILS



This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse or an improper reliance on this document without written authorization and adaptation by Kimley–Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

**END PROJECT** 

-L-KNIGHTDALE BLVD (US-64)

-Y1- Sta. 16+78.00

# **BEGIN PROJECT**

-L- Sta. 11+00.00 GRAPHIC SCALE

**PLANS** PROFILE (HORIZONTAL)

**END PROJECT** 

-L- Sta. 17+55.00

PROFILE (VERTICAL)

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 i accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification t

this approval once issued will invalidate this approval. City of Raleigh Development Approval

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Raleigh Water Review Officer

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

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

Town of Knightdale have been thoroughly checked and found to be

have been previously approved by the Town of Knightdale and said

exceptions are shown on Sheet(s) \_\_\_\_\_\_ of these drawings.

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

applicable to this project. All exceptions to the applicable Town standards

Town Certification. This design has been reviewed by the Pragness 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

, PE, certify that the Standard Specifications of the

North Carolina State Building Code.

Specifications of the Town of Knightdale

# GENERAL NOTES

- WORK IN THIS PROJECT SHALL CONFORM TO THESE PLANS, THE LATEST EDITIONS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) ROAD AND BRIDGE SPECIFICATIONS, THE NCDOT ROAD AND BRIDGE STANDARDS, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL REGULATIONS, TOWN OF KNIGHTDALE SPECIFICATIONS, AND GENERAL DESIGN STANDARDS. IN THE EVENT OF CONFLICT BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS, OR PLANS, THE MOST STRINGENT SHALL GOVERN UNLESS OTHERWISE NOTED IN THESE PLANS.
- 2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL JOBSITE SAFETY, INCLUDING BUT NOT LIMITED TO TRENCH SAFETY, DURING ALL PHASES OF CONSTRUCTION.
- 3. THE LOCATION AND SIZE OF EXISTING UTILITIES AS SHOWN IS APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR HORIZONTALLY AND VERTICALLY LOCATING AND PROTECTING ALL PUBLIC OR PRIVATE UTILITIES (SHOWN OR NOT SHOWN) WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE. AT LEAST 48 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE NORTH CAROLINA ONE-CALL UTILITIES LOCATION SERVICE (ULOCO) AT 1-800-632-4949 FOR PROPER IDENTIFICATION OF EXISTING UTILITIES WITHIN THE SITE.
- 4. THE CONTRACTOR SHALL SALVAGE AND PROTECT ALL EXISTING POWER POLES, SIGNS, MANHOLES, TELEPHONE RISERS, WATER VALVES, ETC. DURING ALL CONSTRUCTION PHASES. THE CONTRACTOR SHALL REPAIR. AT HIS OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
- 5. TRAFFIC MANAGEMENT ON PUBLIC STREETS IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IN CONFORMANCE WITH THE TRAFFIC CONTROL PLAN, THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES." AND AS FURTHER DIRECTED BY THE TOWN AND STATE INSPECTORS.
- 6. ALL MANUFACTURERS' PRODUCTS SPECIFIED IN THESE PLANS OR USED AS APPROVED ALTERNATES SHALL BE INSTALLED PER THE MANUFACTURERS' SPECIFICATIONS.
- 7. ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SPECIFICATIONS AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.
- 8. CONSTRUCTION STAKEOUT FOR THIS PROJECT SHALL BE PROVIDED BY THE CONTRACTOR.
- 9. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL ARRANGE THE MEETING WITH NCDOT AND THE TOWN OF KNIGHTDALE.
- IO. CONTRACTOR IS RESPONSIBLE FOR VERIFYING OR OBTAINING ALL REQUIRED PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION. NCDOT ENCROACHMENTS SHALL BE OBTAINED BY THE ENGINEER.
- II. THE FRAMES AND COVERS OF ALL EXISTING AND PROPOSED DRAINAGE, SANITARY SEWER, WATER MAIN, GAS, AND WIRE UTILITY STRUCTURES SHALL BE ADJUSTED TO MATCH PROPOSED FINISHED ELEVATIONS AND SLOPES.
- 12. ROADWAYS MUST BE CAPABLE OF SUPPORTING FIRE APPARATUS DURING CONSTRUCTION.
- 13. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT NCDOT STANDARDS, SPECIFICATIONS, DETAILS AND ENCROACHMENT AGREEMENTS.
- 14. NO CHANGES TO ANY ASPECT OF THIS ROADWAY PLAN, INCLUDING BUT NOT LIMITED TO, LANDSCAPING, GRADING, BUILDING ELEVATIONS, LIGHTING, OR UTILITIES WILL BE MADE WITHOUT THE APPROVAL OF NCDOT.
- 15. CONTRACTOR TO ENSURE THAT ALL STREETS WITHIN THE LIMITS OF THE PROJECT AND IN FRONT OF THE PROJECT ARE KEPT CLEAN AT ALL TIMES OR A WASH STATION WILL BE REQUIRED.
- 16. ALL STORM DRAIN FRAMES & GRATES SHALL BE STAMPED WITH "DRAINS TO RIVER" PER CITY OF RALEIGH STANDARDS.
- 17. LIMITS OF OFFSITE IMPROVEMENTS NOT WITHIN FLOODPLAIN.

# UTILITY NOTES

- I. WATER VALVE BOXES THAT ARE ENCOUNTERED WITHIN THE PROJECT LIMITS ARE TO BE RAISED OR LOWERED TO MATCH THE ADJACENT FINISHED WORK.
- 2. WATER METER BOXES THAT ARE ENCOUNTERED WITHIN THE PROJECT LIMITS OUTSIDE THE PROPOSED PAVEMENT SECTION ARE TO BE RAISED OR LOWERED TO MATCH THE ADJACENT FINISHED WORK.
- 3. WATER METER BOXES THAT ARE ENCOUNTERED WITHIN THE PROPOSED PAVEMENT SECTION ARE TO BE RELOCATED OUT OF THE PROPOSED PAVEMENT.

# GRADING

- I. THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AND EXISTING PAVEMENT AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.
- 2. REFER TO EROSION CONTROL SHEETS FOR CLEARING LIMITS AND TEMPORARY EROSION CONTROL DEVICES TO BE INSTALLED PRIOR TO COMMENCING CONSTRUCTION.
- 3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY, RELOCATED WHEN AND AS NECESSARY, AND SHALL BE CHECKED AFTER EVERY RAINFALL. SEEDED AREAS SHALL BE CHECKED REGULARLY AND SHALL BE WATERED, FERTILIZED, RESEEDED, AND MULCHED AS NECESSARY TO OBTAIN A DENSE STAND OF GRASS.
- 4. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE, AND AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. IN ADDITION TO THE MEASURES SHOWN IN THESE PLANS, THE CONTRACTOR SHALL USE INTERIM SILT FENCES, DIVERSION DITCHES, BERMS, OR OTHER METHODS AS REQUIRED TO DIRECT DRAINAGE AS SHOWN ON THESE PLANS, TO BEST UTILIZE THE EROSION CONTROL DEVICES IN PLACE, AND TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL EROSION, CONSERVATION, AND SILTATION ORDINANCES. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES AND THE ESTABLISHMENT OF A STAND OF GRASS OR OTHER GROWTH TO PREVENT EROSION.
- 5. GRADING CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES FOR ANY REQUIRED UTILITY ADJUSTMENTS AND/OR RELOCATIONS.
- 6. ALL MATERIALS USED FOR BACKFILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDERS, OR ANY OTHER NON-COMPATIBLE SOIL TYPE MATERIAL. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE.
- 7. ALL GRADING / SOIL COMPACTION OPERATIONS WITHIN THE LIMITS OF STATE RIGHT OF WAYS SHALL ADHERE TO NCDOT REQUIREMENTS, IN ACCORDANCE WITH AASHTO T99 AS MODIFIED BY THE DEPARTMENT. COPIES OF THESE MODIFIED TESTING PROCEDURES ARE AVAILABLE UPON REQUEST FROM THE DEPARTMENT'S MATERIALS AND TESTS UNIT.
- 8. ALL DEMOLITION DEBRIS AND OTHER EXCESS MATERIAL SHALL BE HAULED OFF-SITE AS DIRECTED BY THE OWNER AND PROPERLY DISPOSED OF.
- 9. PROPOSED CONTOURS AND GUTTER GRADIENTS ARE APPROXIMATE. PROPOSED ROADWAY PROFILES/SUPERELEVATIONS ARE TO BE USED IN CASE OF DISCREPANCY.
- IO. REFER TO ROADWAY PLAN FOR HORIZONTAL DIMENSIONS.
- II. WHERE FILL IS TO BE PLACED ON EXISTING SLOPES STEEPER THAN 4:1, CONTRACTOR SHALL EXCAVATE BENCHES WITH A MAXIMUM DEPTH OF 3'.
- 12. THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR BLASTING ROCK IF BLAST ROCK IS ENCOUNTERED. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL BLASTING AND SAFETY REQUIREMENTS.
- 13. TREE PROTECTION FENCING SHALL BE INSTALLED AND INSPECTED BEFORE THE GRADING PERMIT IS
- CROSS SLOPES AND ELEVATIONS SHOWN ON CROSS SECTIONS ARE APPROXIMATE. PROPOSED PAVEMENT CROSS SLOPES ARE TO BE BASED ON EXISTING CROSS SLOPE DETERMINED IN FIELD. IF FIELD CONDITIONS VARY FROM THOSE SHOWN ON PLANS, NOTIFY ENGINEER IMMEDIATELY.

# PAVING/CURBING

- I. WHERE PROPOSED CURB AND GUTTER TIES TO EXISTING CURB OR CURB AND GUTTER, A TRANSITION OF 10' SHALL BE MADE TO CONFORM TO THE EXISTING HEIGHTS AND SHAPES.
- 2. BEFORE ANY EARTHWORK IS DONE, THE CONTRACTOR SHALL STAKE OUT AND MARK THE LIMITS OF PAVEMENT AND OTHER ITEMS ESTABLISHED IN THE PLANS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ENGINEERING AND SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED TO EARTHWORK.
- 3. ALL PAVEMENT SUB GRADES SHALL BE SCARIFIED TO A DEPTH OF 8 INCHES AND COMPACTED TO A MINIMUM DENSITY OF 100 PERCENT OF ASTM D-1557 DENSITY AT OPTIMUM MOISTURE CONTENT UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION PLANS OR AS DIRECTED BY THE GEOTECHICAL ENGINEER. FILL SHALL BE PLACED AND COMPACTED IN MAXIMUM 8" LIFTS. IN AREAS WHERE ROCK IS ENCOUNTERED AT FINAL SUB GRADE ELEVATION, THE EXPOSED ROCK SHALL BE TOPPED WITH A LEVELING COURSE OF SANDY CLAY OR CLAYEY SAND (P.I. BETWEEN 4 AND 15) AS NEEDED TO PROVIDE A SMOOTH SURFACE FOR PAVING.
- 4. THE CONTRACTOR SHALL CLEAR AND GRUB THE SITE AND PLACE, COMPACT, AND MOISTURE CONDITION ALL FILL PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.
- 5. ALL CURB JOINTS SHALL EXTEND THROUGH THE CURB. MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS IS 1.5 FEET. ALL JOINTS SHALL BE SEALED WITH JOINT SEALANT.
- 6. TESTING OF MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE PAVING IMPROVEMENTS SHALL BE PERFORMED BY AN APPROVED AGENCY FOR TESTING MATERIALS. THE NOMINATION OF THE TESTING LABORATORY AND THE PAYMENT OF SUCH TESTING SERVICES SHALL BE MADE BY THE OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SHOW BY STANDARD TESTING PROCEDURES THAT THE WORK CONSTRUCTED DOES MEET THE REQUIREMENTS OF THE NCDOT SPECIFICATIONS.
- 7. ALL REINFORCING STEEL SHALL BE NEW DOMESTIC BILLET STEEL CONFORMING TO ASTM A-615, GRADE 60, AND SHALL BE SUPPORTED BY BAR CHAIRS.
- 8. ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES ON PUBLIC STREETS SHALL CONFORM TO MUTCD, AND NCDOT STANDARDS.
- 9. ALL HANDICAP RAMPING, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO ADA REQUIREMENTS AND THE "NORTH CAROLINA STATE BUILDING CODE, VOL I-C ACCESSIBILITY CODE." ALL RAMPS SHALL COMPLY WITH THE LATEST NCDOT STANDARDS. WHEELCHAIR RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS.
- IO. CONTRACTOR SHALL SAWCUT & REMOVE ANY THE EXISTING PAVEMENT WHEN THE EXISTING PAVEMENT IS BEING WIDENED OR WHERE NEW CURB AND GUTTER IS PROPOSED.
- II. ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. 225.04 & 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

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ATH CAROUNA 21196628**50**354Å 4/5/2022

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

\_\_\_\_\_ Date: \_\_\_\_\_

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

SHEET NUMBER R0.01

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Note: Not to Scale

\*S.U.E. = Subsurface Utility Engineering

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

# CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:						WATER:	
State Line —		RAILROADS:				Water Manhole ————	W
County Line —		Standard Gauge	CSX TRANSPORTATION	EVICTING CTDISCTUDES.		Water Meter	
Township Line —		RR Signal Milepost	( <u>©</u> ) MILEPOST 35	EXISTING STRUCTURES:		Water Valve	$\otimes$
City Line		Switch —	SWITCH	MAJOR:		Water Hydrant ————————————————————————————————————	⊹
Reservation Line —	·	RR Abandoned		Bridge, Tunnel or Box Culvert	CONC	Recorded U/G Water Line	
Property Line ————		RR Dismantled		Bridge Wing Wall, Head Wall and End Wall —	CONC WW	Designated U/G Water Line (S.U.E.*)	
Existing Iron Pin —	EIP	RIGHT OF WAY:		MINOR:		Above Ground Water Line	A/G Water
Property Corner ———————————————————————————————————	×	Baseline Control Point	-	Head and End Wall	CONC HW	TV:	
Property Monument —	FCM	Existing Right of Way Marker		Pipe Culvert			$\bigvee$
Parcel/Sequence Number ————	(123)	Existing Right of Way Line		Footbridge	>	TV Satellite Dish	
Existing Fence Line	_xx_	,	R	Drainage Box: Catch Basin, DI or JB	СВ	TV Pedestal ————————————————————————————————————	
Proposed Woven Wire Fence	<del></del>	Proposed Right of Way Line		Paved Ditch Gutter		TV Tower	
Proposed Chain Link Fence	<del></del>	Proposed Right of Way Line with Iron Pin and Cap Marker		Storm Sewer Manhole —————	\$	U/G TV Cable Hand Hole	ĦН
Proposed Barbed Wire Fence		Proposed Right of Way Line with		Storm Sewer	s	Recorded U/G TV Cable	TV
Existing Wetland Boundary		Concrete or Granite Marker				Designated U/G TV Cable (S.U.E.*)	
Proposed Wetland Boundary		Existing Control of Access	<del>(Ĉ)</del>	UTILITIES:		Recorded U/G Fiber Optic Cable ————	TV F0
Existing Endangered Animal Boundary	FAR	Proposed Control of Access	<del></del>	POWER:		Designated U/G Fiber Optic Cable (S.U.E.*)—	TV FO
,	FPB	Existing Easement Line ————————————————————————————————————	——Е——	Existing Power Pole ————————————————————————————————————	•	GAS:	
Existing Endangered Plant Boundary		Proposed Temporary Construction Easement –	E	Proposed Power Pole —	6	Gas Valve	$\Diamond$
BUILDINGS AND OTHER CULTU	RE:	Proposed Temporary Drainage Easement ——	TDE	Existing Joint Use Pole		Gas Meter ———————————————————————————————————	$\Diamond$
Gas Pump Vent or U/G Tank Cap	0	Proposed Permanent Drainage Easement ——	PDE	Proposed Joint Use Pole ————	<b>-6</b> -	Recorded U/G Gas Line —————	
Sign —	⊙ S	Proposed Permanent Utility Easement ———	PUE	Power Manhole ————————————————————————————————————	P	Designated U/G Gas Line (S.U.E.*)	
Well —	O W	DOADS AND DELATED EFATIU	DEC.	Power Line Tower	$\boxtimes$	Above Ground Gas Line	A/G Gas
Small Mine —	$\Leftrightarrow$	ROADS AND RELATED FEATUR	KES:	Power Transformer ———————————————————————————————————	$\overline{\mathcal{M}}$		
Foundation —		Existing Edge of Pavement		U/G Power Cable Hand Hole	HH	SANITARY SEWER:	
Area Outline —		Existing Curb		H_Frame Pole ——————	•—•	Sanitary Sewer Manhole	<b>(</b>
Cemetery	†	Proposed Slope Stakes Cut	<del>-</del>	Recorded U/G Power Line	P	Sanitary Sewer Cleanout —————	<u>+</u>
Building —		Proposed Slope Stakes Fill ——————————————————————————————————	· <u>-</u>	Designated U/G Power Line (S.U.E.*)	P	U/G Sanitary Sewer Line —————	ss
School ————		Proposed Wheel Chair Ramp	wcr)			Above Ground Sanitary Sewer —	A/G Sanitary Sewer
Church —	<u>_</u>	Curb Cut for Future Wheel Chair Ramp	CCFR	TELEPHONE:		Recorded SS Forced Main Line	
Dam —		Existing Metal Guardrail	- <u> </u>	Existing Telephone Pole	-•-	Designated SS Forced Main Line (S.U.E.*) —	— — — —FSS— — — —
		Proposed Guardrail ————————————————————————————————————	<u> </u>	Proposed Telephone Pole	-0-	, ,	
HYDROLOGY:		Existing Cable Guiderail		Telephone Manhole	<b>①</b>	MISCELLANEOUS:	
Stream or Body of Water ————————————————————————————————————		Proposed Cable Guiderail		Telephone Booth —	3	Utility Pole —————	•
		Equality Symbol	•	Telephone Pedestal ————————————————————————————————————		Utility Pole with Base —————	
	JS	Pavement Removal		Telephone Cell Tower ————————————————————————————————————	<u>,</u>	Utility Located Object —	. 0
	BZ 1 ———	VEGETATION:		U/G Telephone Cable Hand Hole ———	₩	Utility Traffic Signal Box ————	
	BZ 2 ———		<u>~</u>	•	['H]	Utility Unknown U/G Line ————	<u>ا</u>
		Single Tree	``` 	Recorded U/G Telephone Cable ————————————————————————————————————		U/G Tank; Water, Gas, Oil —	1011
		Single Shrub	—	Designated U/G Telephone Cable (S.U.E.*)—			
Spring —		Hedge		Recorded U/G Telephone Conduit		A/G Tank; Water, Gas, Oil ———————————————————————————————————	
Swamp Marsh ————————————————————————————————————		Woods Line		Designated U/G Telephone Conduit (S.U.E.*)		U/G Test Hole (S.U.E.*)	<b>*</b>
Proposed Lateral, Tail, Head Ditch ———	FLOW	Orchard	- & & & & &	Recorded U/G Fiber Optics Cable ————		Abandoned According to Utility Records ——	
False Sump ——————	$\Leftrightarrow$	Vineyard ————————————————————————————————————	— Vineyard	Designated U/G Fiber Optics Cable (S.U.E.*)	— — — T FO— — ·	End of Information ————————————————————————————————————	E.O.I.

a. Town Certification. This design has been reviewed by the Hagineer 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.

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

By: \_\_\_\_\_ Date: \_\_\_\_\_ Administrator

SHEET NUMBER R0.02

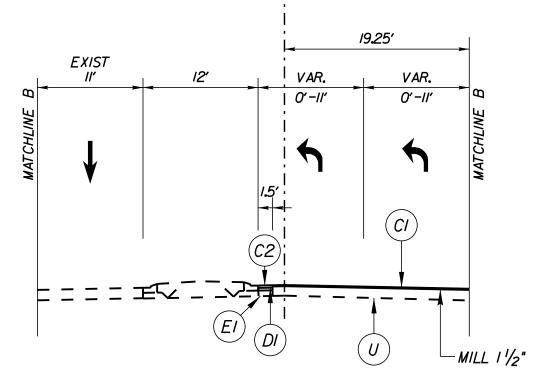
MERRITT HINTON OAKS BLVD OFFSITE IMPROVEMENTS

G-L- KNIGHTDALE BLVD (US-64) 14.75′ 19.25′ **EXIST EXIST** EXIST EXIST TYPICAL SECTION NO. 1

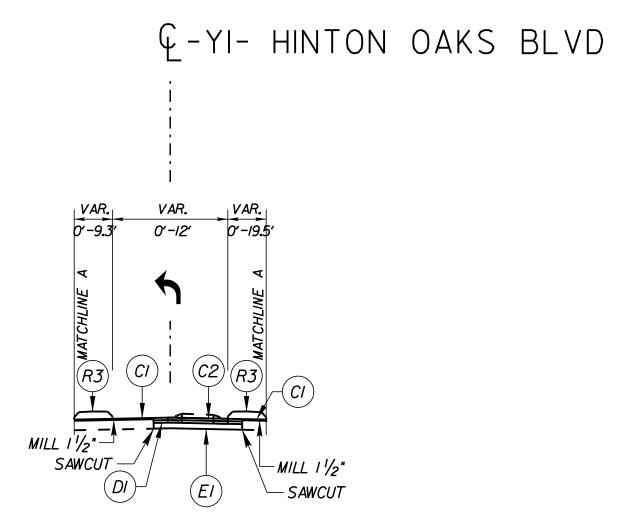
-L- STA 11+00.00 TO STA 17+52.00

7'-30' (C2)

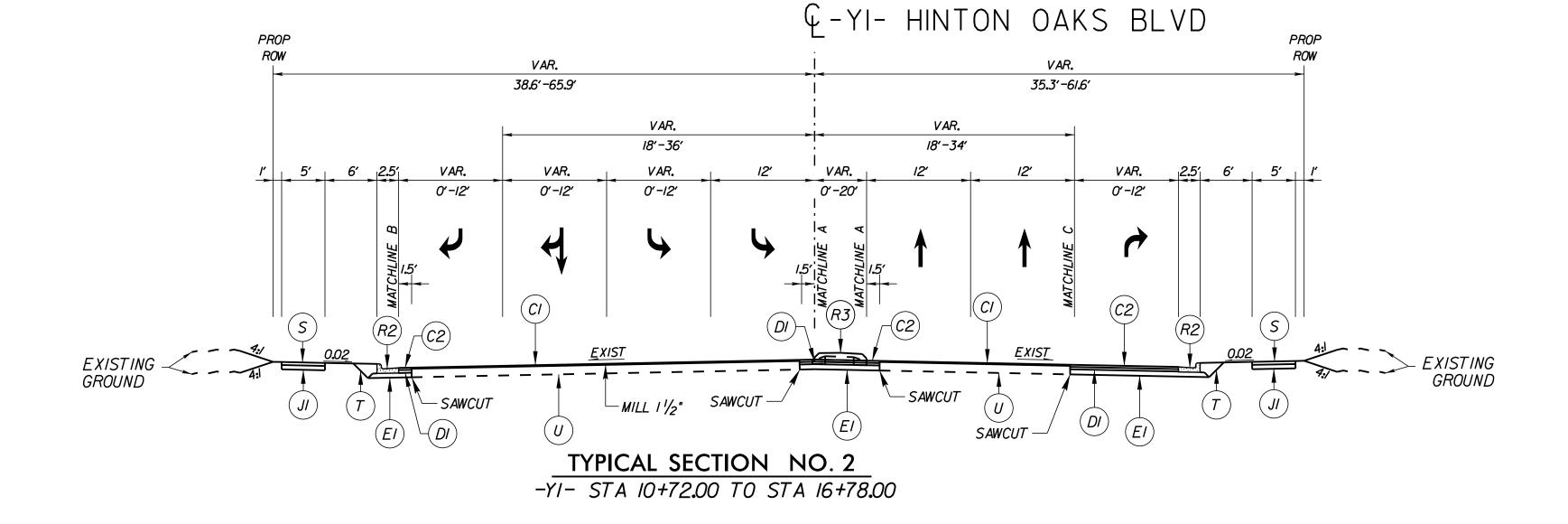
TYPICAL SECTION NO. 1A -L- STA 11+00.00 TO STA 13+52.00

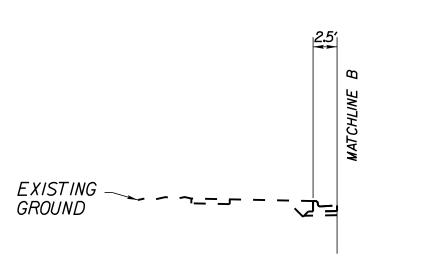


TYPICAL SECTION NO. 1B -L- STA 14+67.00 TO STA 17+52.00

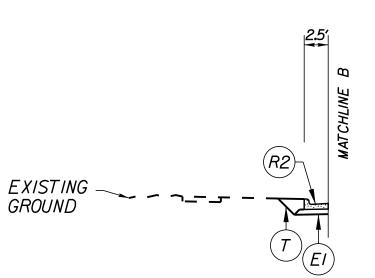


TYPICAL SECTION NO. 2A -YI- STA II+97.00 TO STA I4+44.52

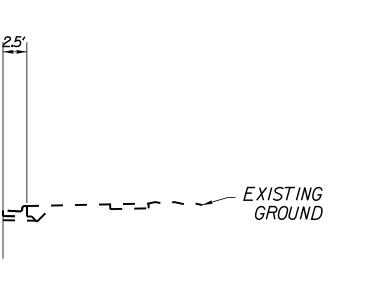




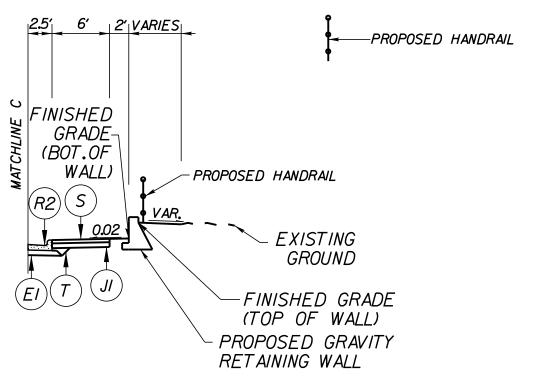
TYPICAL SECTION NO. 2B -YI- STA 10+72.00 TO STA 11+47.00 -YI- STA 15+98.00 TO STA 16+78.00



TYPICAL SECTION NO. 2C -YI- STA 15+78.00 TO STA 15+98.00



TYPICAL SECTION NO. 2D -YI- STA 10+72.00 TO STA 11+25.00



TYPICAL SECTION NO. 2E -YI- STA 13+75.00 TO STA 14+70.00

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

Or

SECTIONS

ERRITT HINTON OA BLVD OFFSITE IMPROVEMENTS

SHEET NUMBER R1.00

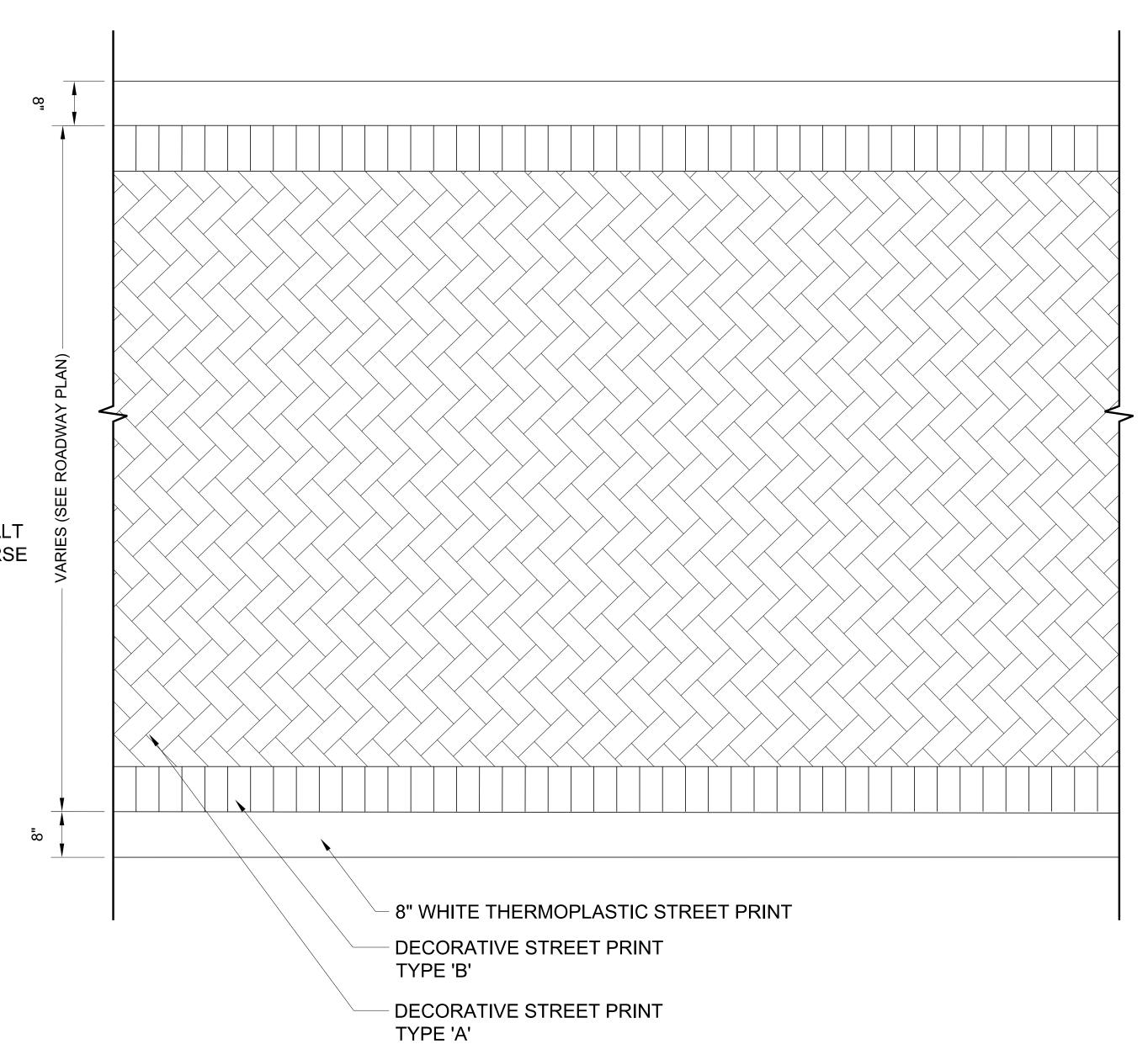
DECORATIVE STREET PRINT TYPE 'A' TRAFFICPATTERNSXD PRODUCT: BY ENNIS-FLINT HERRINGBONE PATTERN: COLOR: **COLONIAL BRICK** DECORATIVE STREET PRINT TYPE 'B' PRODUCT: TRAFFICPATTERNSXD BY ENNIS-FLINT PATTERN: SINGLE SOLDIER COURSE COLOR: COLONIAL BRICK

NOTE: CONTRACTOR SHALL CONSTRUCT 6'X6' MOCK-UP WITH PATTERN AND COLOR REPRESENTING FINAL FINISH FOR REVIEW AND APPROVAL BY PROJECT LANDSCAPE ARCHITECT OF EACH TYPE OF DECORATIVE STREET PRINT.

NOTE: HERRINGBONE PATTERN SHALL BE LAID ON 45° BIAS.

FINISHED POST PRINT DEPTH 10 mm - PATTERN AS SPECIFIED - MILL & OVERLAY 1.5" ASPHALT CONCRETE SURFACE COURSE S9.5C EXIST PAVEMENT

> SECTION NOT TO SCALE



PLAN VIEW NOT TO SCALE

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

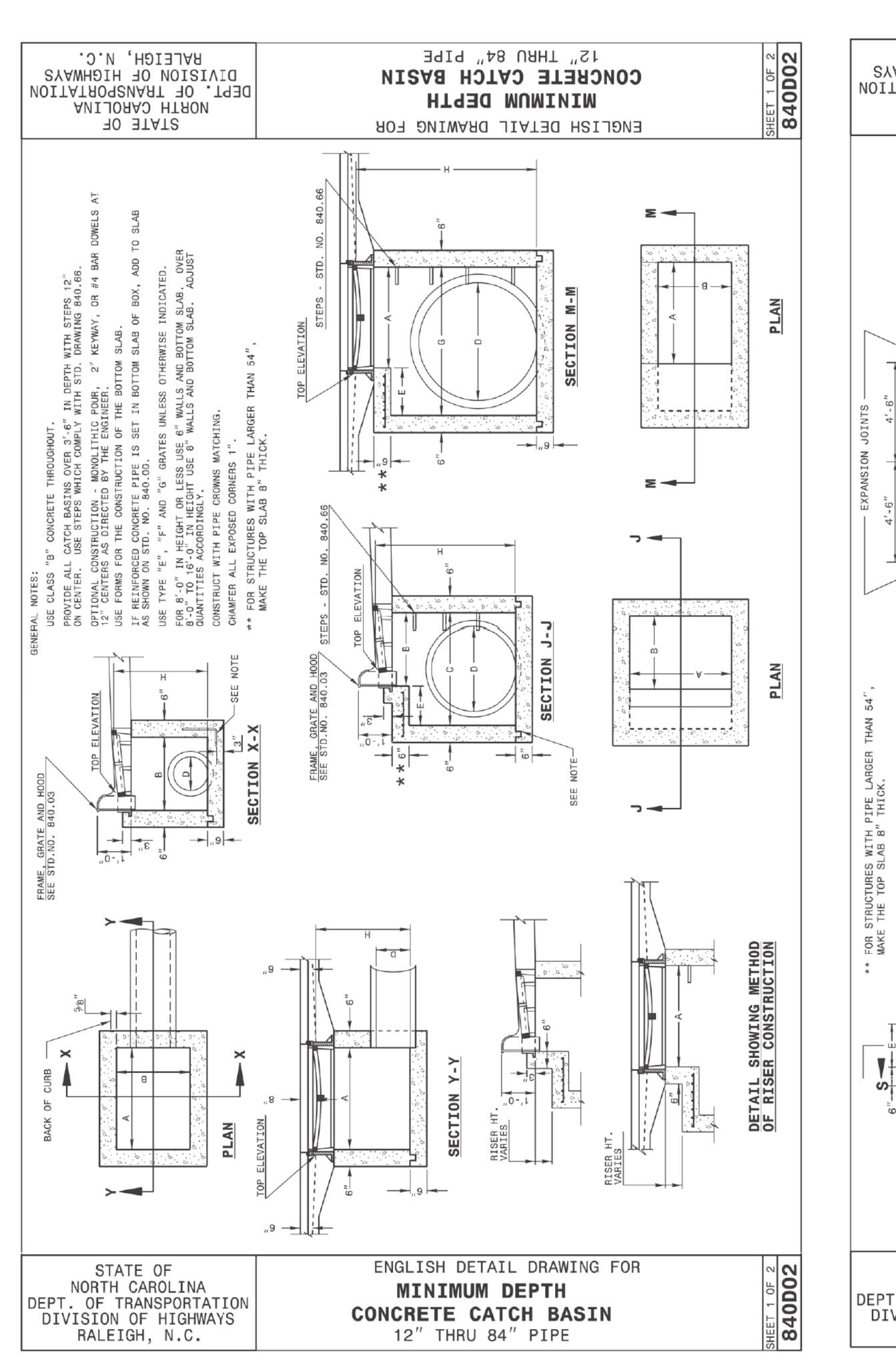
These plans are approved by the Town of Knightdale and serve as construction plans for this project.

SHEET NUMBER R1.01

MERRITT HINTON OAKS BLVD OFFSITE IMPROVEMENTS

STAMPED ASPHALT CROSSWALK DETAIL

O



STATE OF

MORTH CAROLINA

DEPT. OF TRANSPORTATION

DIVISION OF HIGHWAYS

SYAWHOTH OF HIGHWAYS

DIVISION OF HIGHWAYS 12" THRU 84" PIPE CONCRETE CATCH BASIN MINIMUM DEPTH ENGLISH DETAIL DRAWING FOR B EQUAL SPACES DOWEI NOI STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C. ENGLISH DETAIL DRAWING FOR MINIMUM DEPTH CONCRETE CATCH BASIN 12" THRU 84" PIPE

DRAINAGE

ERRITT HINTON OA BLVD OFFSITE IMPROVEMENTS

. Town Certification. This design has been reviewed by the Hagineer 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

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

SHEET NUMBER R1.02

COMPUTED BY:

LCK

12/20/2021

a. Town Certification. This design has been reviewed by the Hagineer for the to the requirements established in the Standard Specifications of the Town of Knightdale.

PROJECT NO.

SHEET NO

O

DRAINAGE SUMMAR SHEET

MERRITT HINTON OAKS BLVD OFFSITE IMPROVEMENTS

SHEET NUMBER

R1.03

construction plans for this project.

By: \_\_\_\_\_ Date: \_\_\_\_\_ Administrator

Town of Knightdale, and to the best of my knowledge and belief, it conforms By: \_\_\_\_\_ Date: \_\_\_\_ Town Engineer These plans are approved by the Town of Knightdale and serve as

INSTALLATION OF STREET NAME SIGN

-1/8" RADIUS (TYPICAL)

JOINT FILLER

CURB AND GUTTER

INTERSECTION WITH SIDEWALK, CURB, AND GUTTER

INTERSECTION WITH DITCHES, AND NO CURB AND

INTERSECTION WITH CURB AND GUTTER

STREET

MARKER -

-STANDARD CURB

MINOR

ACCESSIBLE RAMPS

STREET

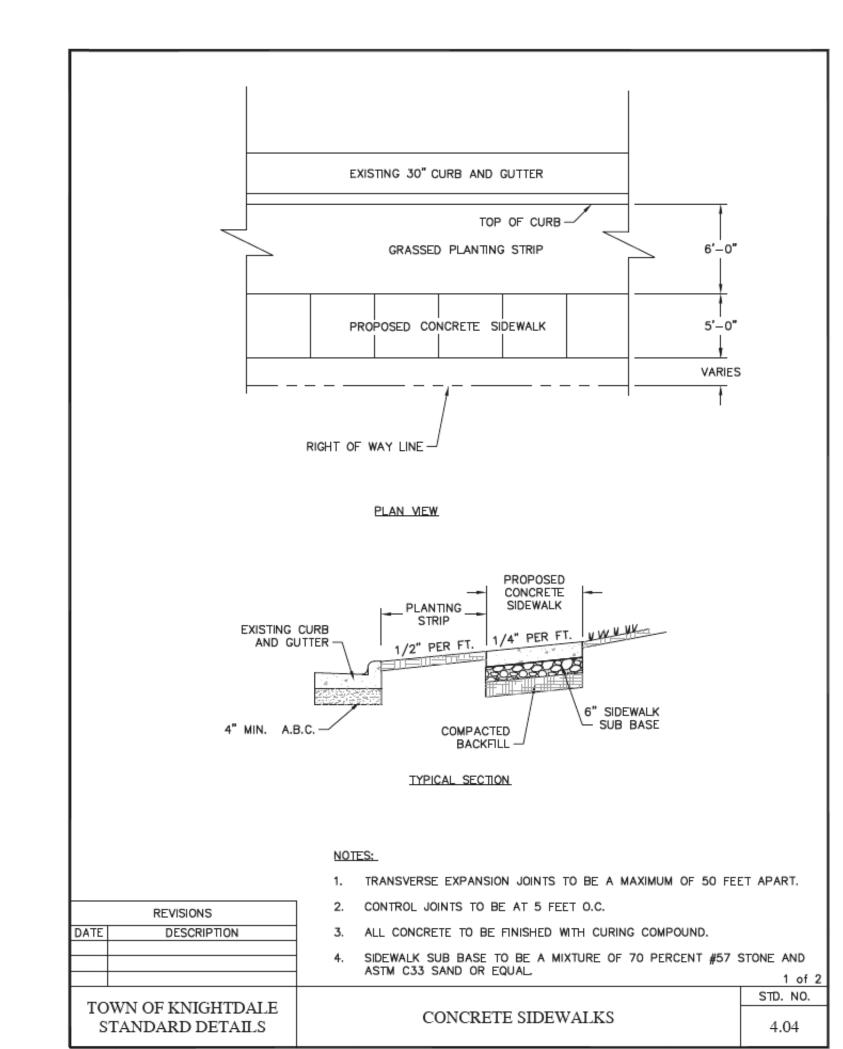
MARKER

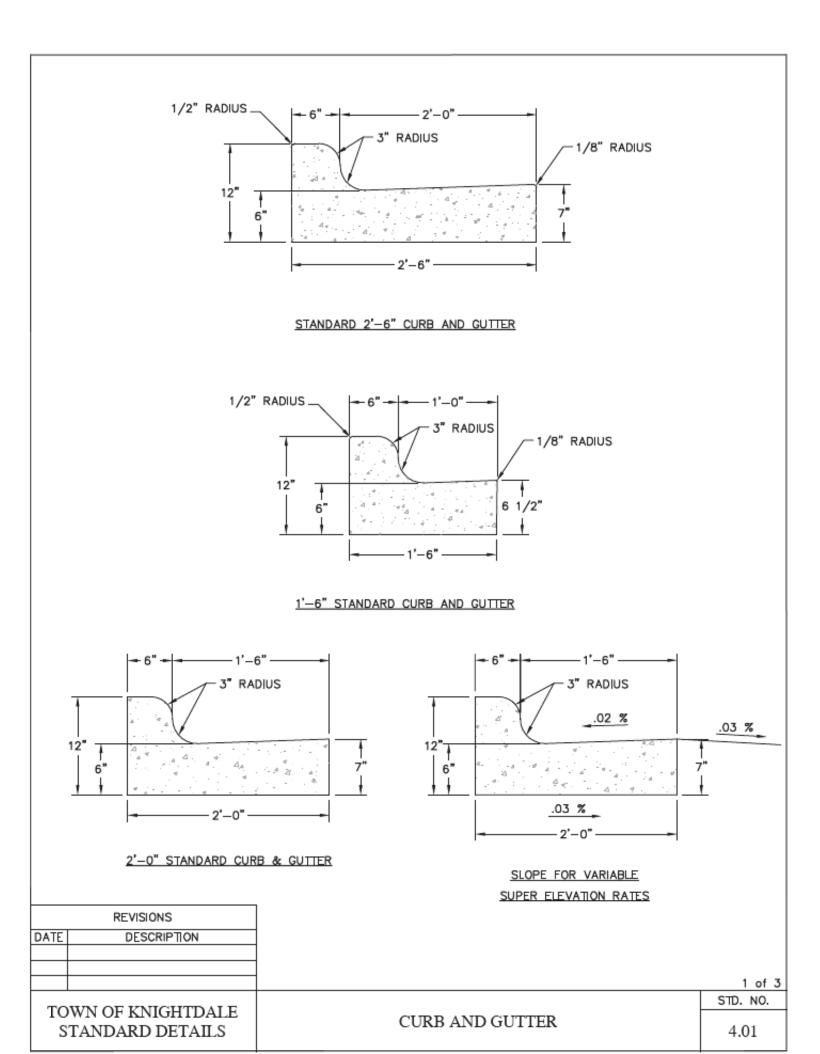
- STREET NAME

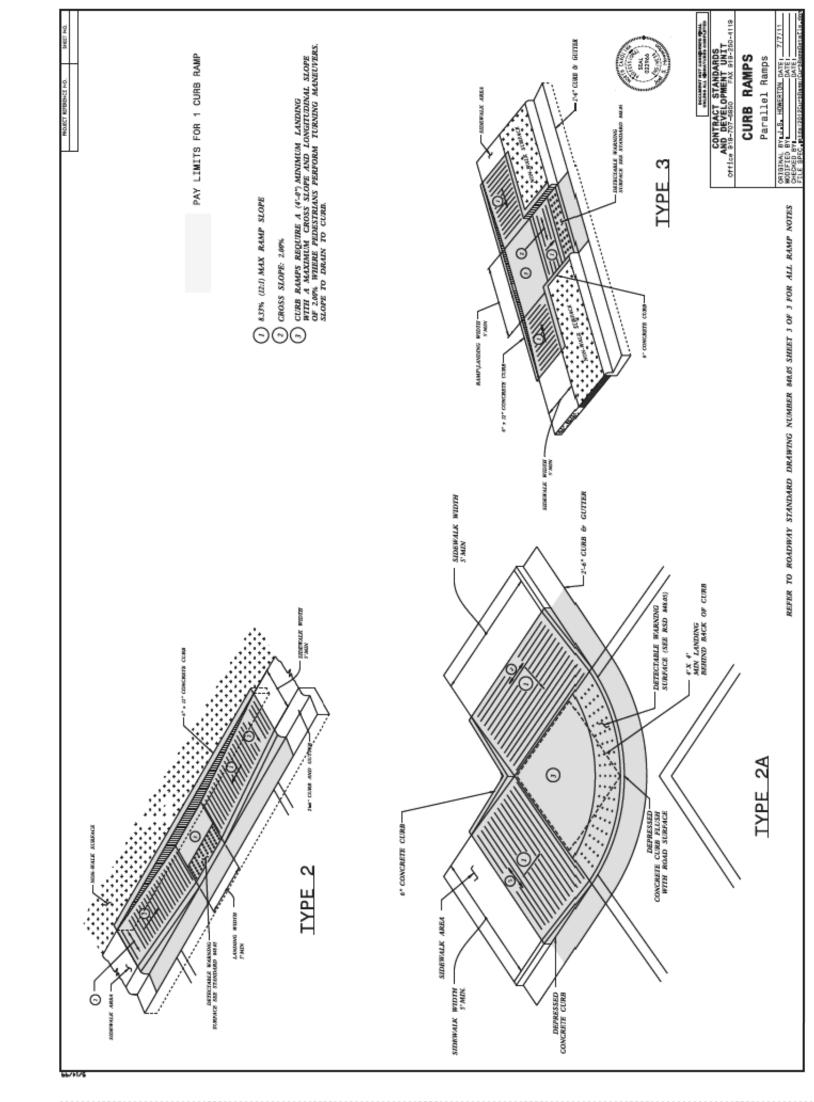
STANDARD CURB

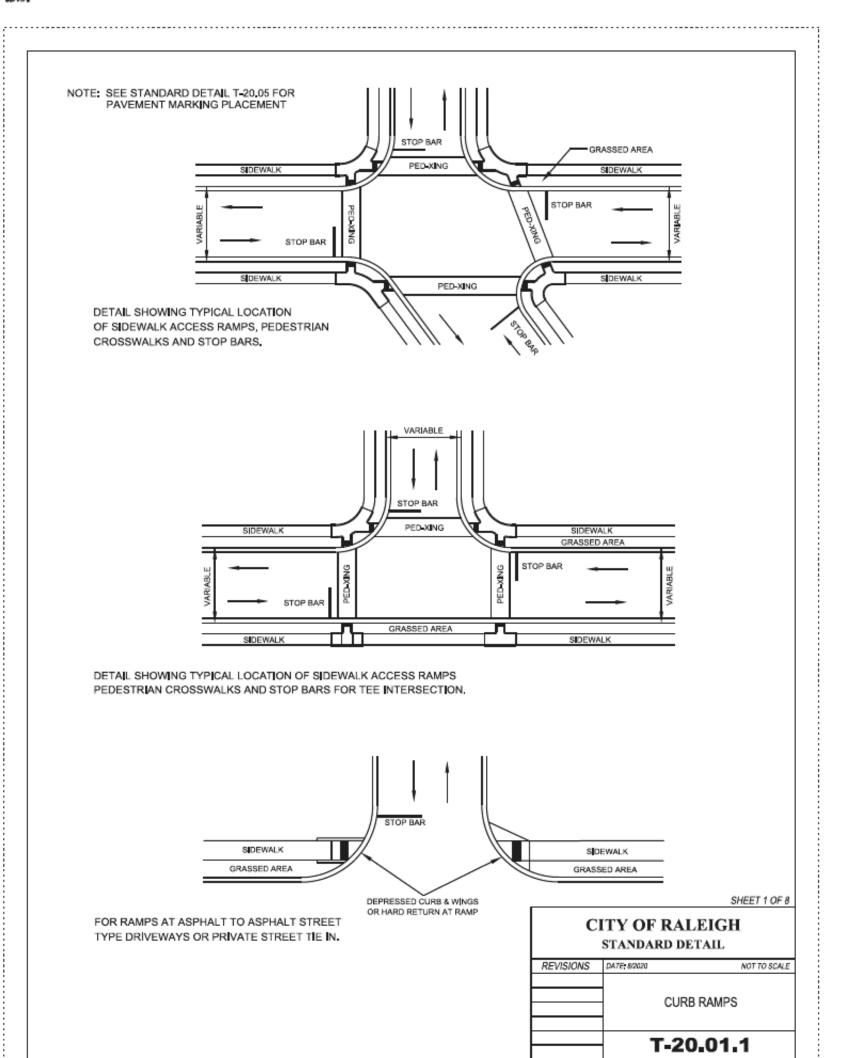
STD. NO.

4.01











BLVD IMPRO

 Town Certification. This design has been reviewed by the Hagineer 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

These plans are approved by the Town of Knightdale and serve as construction plans for this project. By: \_\_\_\_\_ Date: \_\_\_\_\_ Administrator

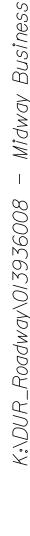
SHEET NUMBER R1.04

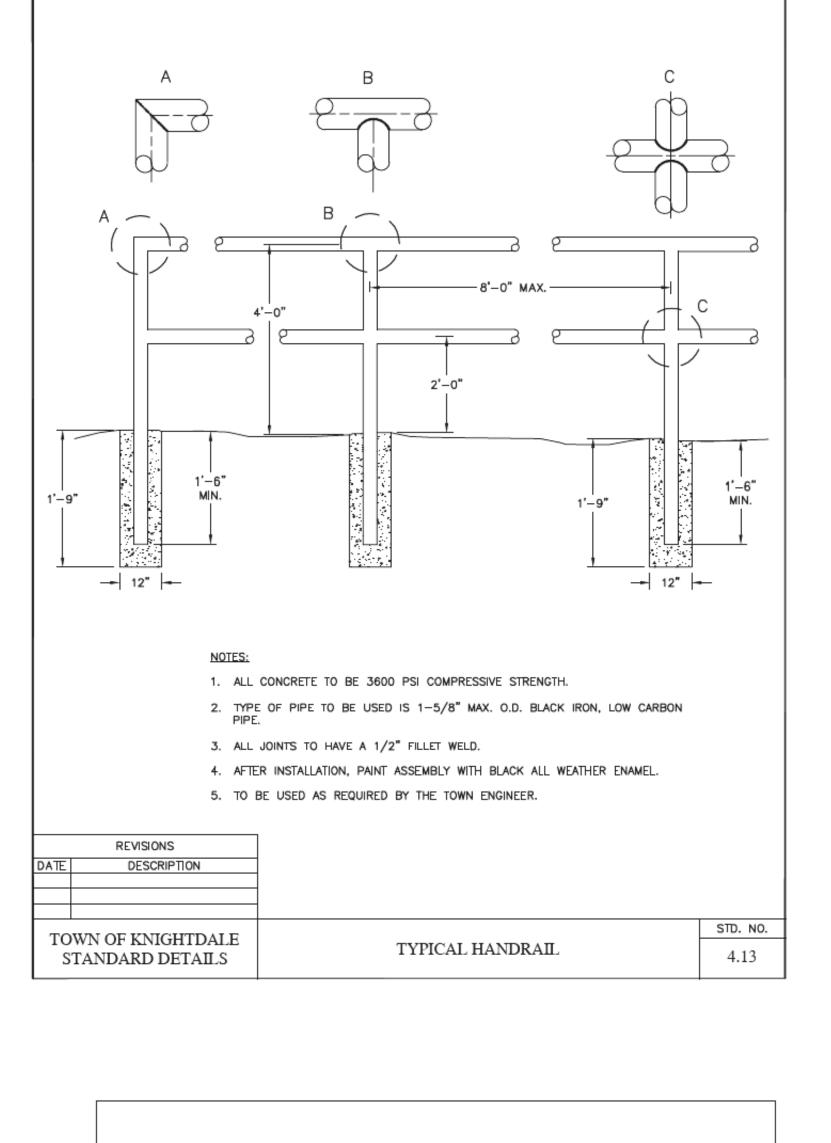
JOINT SEALER -TRANSVERSE EXPANSION JOINT CONTRACTION JOINTS SHALL BE SPACED AT 10-FOOT INTERVALS. JOINT SPACING MAY BE ALTERED BY THE ENGINEER TO PREVENT UNCONTROLLED CRACKING. 2. CONTRACTION JOINTS MAY BE INSTALLED BY THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS, WHERE SUCH JOINTS ARE NOT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

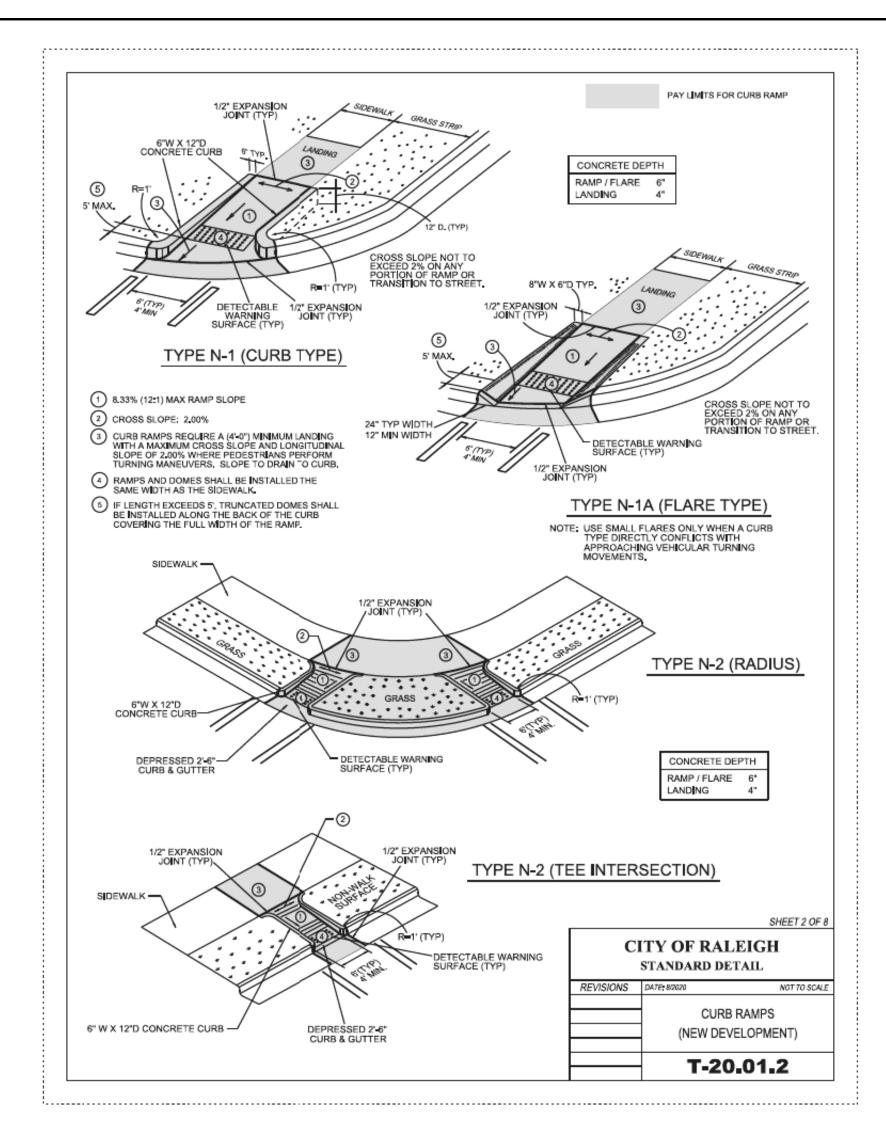
TOWN OF KNIGHTDALE

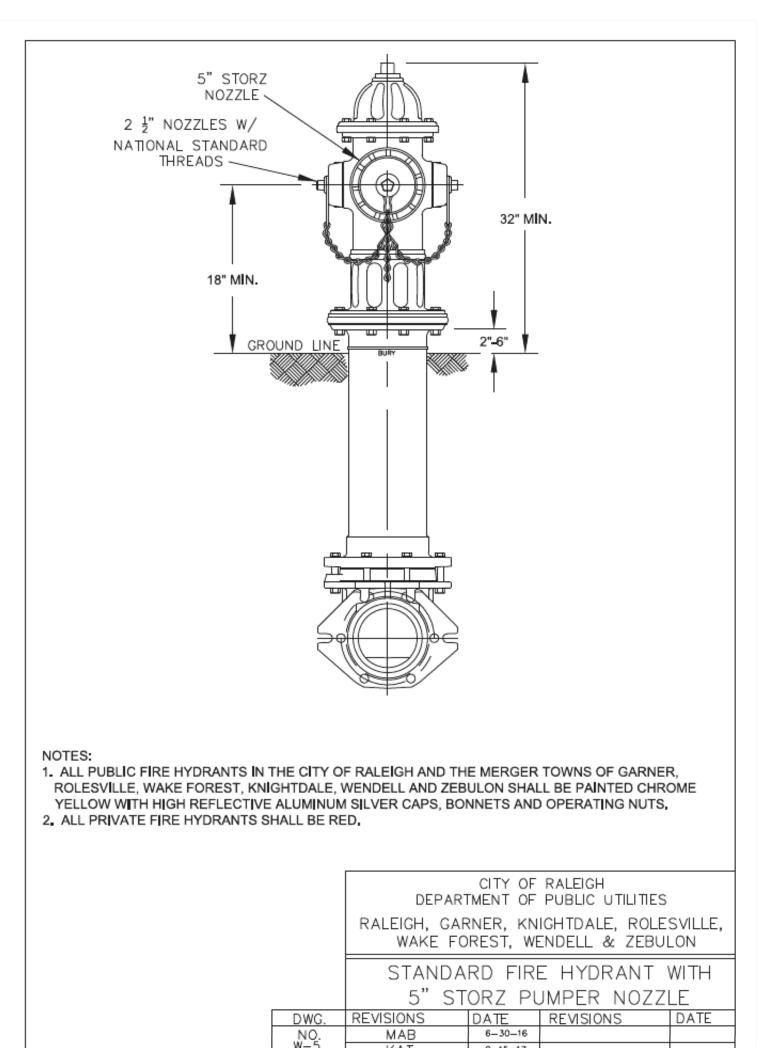
STANDARD DETAILS

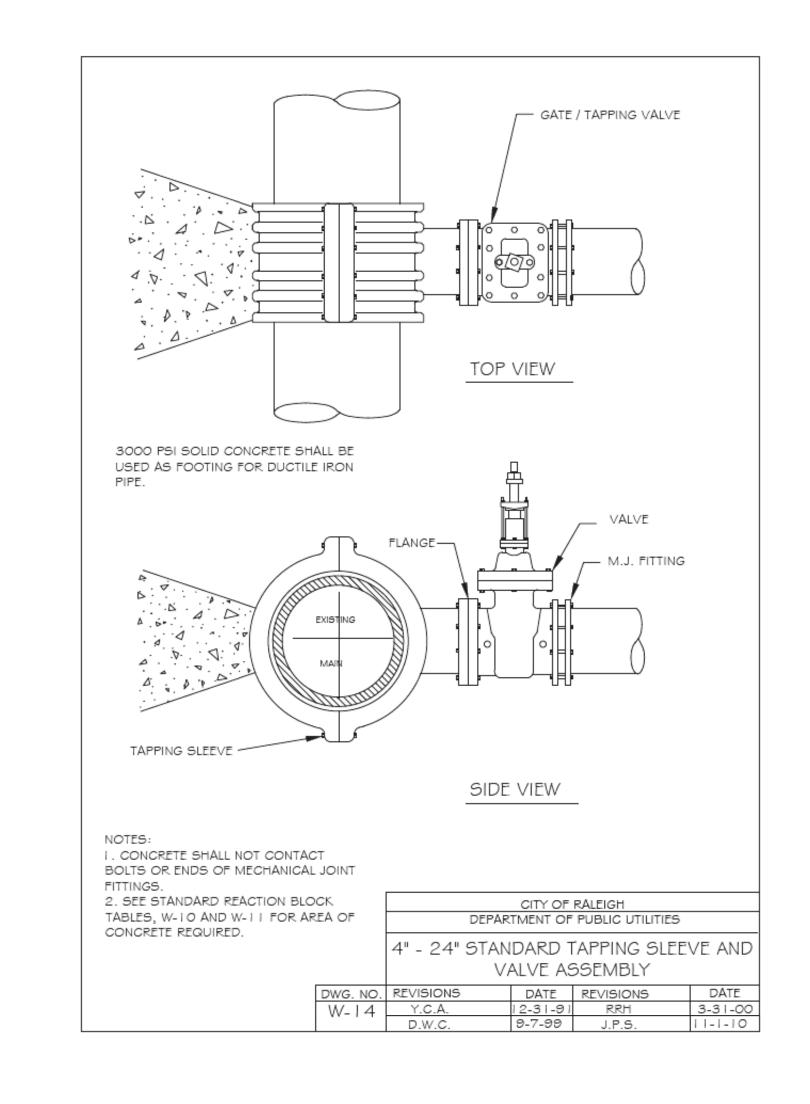
PROPERTY











 Town Certification. This design has been reviewed by the Hagineer 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.

Town Engineer

These plans are approved by the Town of Knightdale and serve as

construction plans for this project.

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

THINTON OD OFFSITE OVEMENTS

ERRITT I BLVD IMPRC

0

SHEET NUMBER R1.05

& SIDEWALK PAVEMENT 6" GATE VALVE CONC. THRUST BLOCK COMPACTED BACKFILL (TAMPED IN 6" LIFTS) - 1'- 0"— 6" MIN. BRANCH PIPE RESTRAINING GLANDS A CONTRACTOR OF THE PROPERTY O RESTRAINING 1'-3"x 1'-3"x 4" THICK GLANDS 7 CU. FT. CRUSHED STONE MIN. -UNDISTURBED EARTH. I. FIRE HYDRANT SHALL BE AS MANUFACTURED: MUELLER, AMERICAN DARLING, KENNEDY, M&H, WATEROUS, CLOW, EAST JORDAN IRON WORKS, OR US PIPE. 2. BRANCH PIPE SHALL BE DUCTILE IRON AWWA C 150-96 3. G" GATE VALVE SHALL BE AWWA C500-8G OPEN LEFT 4. STEEL RODS AND BOLTS SHALL BE ₹ HOT DIPPED GALVANIZED 5. FIRE HYDRANTS WILL BE INSTALLED IN TRUE VERTICAL POSITION RODS SHALL NOT BE COUPLED MORE THAN ONCE. IF THE LENGTH FROM THE VALVE TO THE HYDRANT EXCEEDS 20' THEN A MECHANICAL RESTRAINING GLAND WITH A REBAR CAGE SHALL BE INSTALLED NO MORE THAN 10' FROM HYDRANT AND POURED IN CONCRETE. FIRE HYDRANTS TO BE LOCATED IN ROW OR 2 FOOT EASEMENT ADJACENT TO ROW ANYTIME SITE WORK, CONSTRUCTION, ROAD WORK, OR ANY OTHER WORK CHANGES THE GRADE OF THE FIRE CITY OF RALEIGH HYDRANT, THE PERSON RESPONSIBLE FOR THE WORK IS RESPONSIBLE FOR DEPARTMENT OF PUBLIC UTILITIES ADJUSTING THE FIRE HYDRANT TO STAY

FIRE HYDRANT, PUMPER NOZZLE TO BE POINTED / TOWARDS FIRE TRUCK ACCESS. TRAFFIC FLANGE BETWEEN 2" - 6" ABOVE GRADE CURB AND GUTTER

MINIMUM 36" HORIZONTAL CLEARANCE

FROM ANY OBJECT.

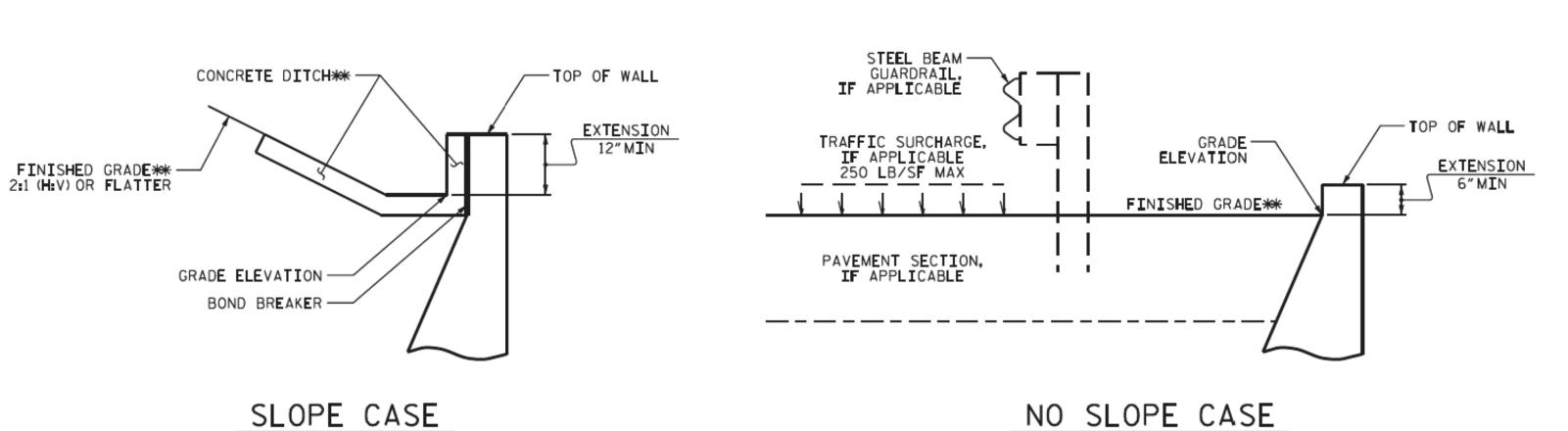
STANDARD FIRE HYDRANT WITHIN COMPLIANCE.

INSTALLATION DETAIL DWG. NO, REVISIONS

DATE REVISIONS 4-G-04 PAF 2/14/05

DATE





NO SLOPE CASE \*\*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.

VENEER B + 4"

TOP OF WALL

BRICK VENEER DETAIL

(WHEN APPLICABLE)

TOP OF WALL

(SEE NOTE FOR FENCE

OR HANDRAIL ON TOP

OF WALL, IF APPLICABLE) SEE SLOPE AND NO SLOPE CASES GRADE ELEVATION -SUBDRAIN FINE AGGREGATE —— (SEE NOTE FOR SUBSURFACE DRAINAGE AT WEEP HOLES) - WEEP HOLE (EXTEND THROUGH BARRIER, IF APPLICABLE)

MIN

- SINGLE FACED PRECAST CONCRETE BARRIER, IF APPLICABLE

FINISHED GRADE\*\*

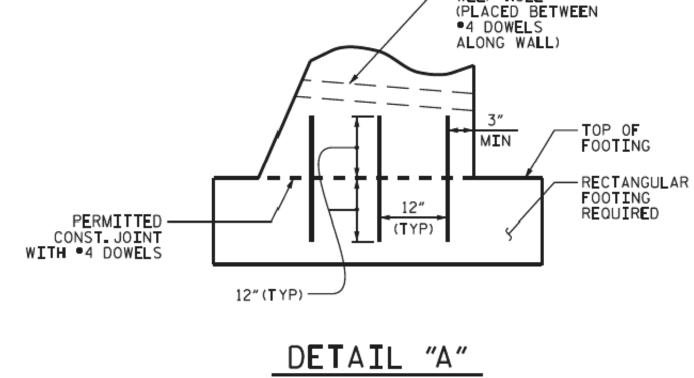
6:1 (H:V) OR FLATTER

15" M**I**N

-BOTTOM OF FOOTING

\*\*SEE ROADWAY PLANS FOR

CONCRETE DITCH AND FINISHED GRADE DETAILS.



-WEEP HOLE

H (FT)	3 - < 6	6 - 9	> 9 - 12
SLOPE CASE	<b>.</b> 66	.70 <del>*</del>	<b>.</b> 75*
NO SLOPE CASE WITH Traffic surcharge	.80	<b>₌</b> 75 <b>*</b>	<b>.</b> 70*
NO SLOPE CASE WITHOUT TRAFFIC SURCHARGE	<b>.</b> 60	<b>.</b> 60	.60

B/H RATIO (B = 2'-6"MIN)

\*\*KEY IS REQUIRED FOR "SLOPE CASE" OR "NO SLOPE CASE WITH TRAFFIC SURCHARGE" WHEN H IS 6' OR GREATER.

NOTES:

FOR STANDARD CAST-IN-PLACE (CIP) GRAVITY RETAINING WALLS, SEE CAST-IN-PLACE GRAVITY RETAINING WALLS PROVISION.

FOR STEEL BEAM GUARDRAIL, SEE ROADWAY PLANS AND SECTION 862 OF THE STANDARD SPECIFICATIONS.

FOR SINGLE FACED PRECAST CONCRETE BARRIER, SEE ROADWAY PLANS AND SECTION 857 OF THE STANDARD SPECIFICATIONS.

FOR FENCES OR HANDRAILS ON TOP OF WALLS, SEE ROADWAY PLANS FOR FENCE OR HANDRAIL ATTACHMENT DETAILS.

FOR SUBSURFACE DRAINAGE AT WEEP HOLES, SEE ARTICLE 414-8 OF

THE STANDARD SPECIFICATIONS.

STANDARD CIP GRAVITY WALLS ARE BASED ON THE FOLLOWING IN-SITU

ASSUMED SOIL PARAMETERS:

UNIT WEIGHT, γ = 120 LB/CF

FRICTION ANGLE, φ = 35 DEGREES

(GROUNDWATER WITHIN 7' OF BOTTOM OF FOOTING)

FRICTION ANGLE, φ = 30 DEGREES

(GROUNDWATER MORE THAN 7' BELOW BOTTOM OF FOOTING)

COHESION, c = 0 LB/SF

DO NOT USE STANDARD CIP GRAVITY WALLS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE BOTTOM OF FOOTING.

DO NOT USE STANDARD CIP GRAVITY WALLS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW WALLS.

BEFORE BEGINNING STANDARD CIP GRAVITY WALL CONSTRUCTION, SURVEY WALL LOCATIONS AND SUBMIT WALL PROFILE VIEWS (WALL ENVELOPES) FOR REVIEW. FOR WALL ENVELOPES, INCLUDE BOTTOM OF WALL, EXISTING GROUND AND GRADE ELEVATIONS AND OTHER ELEVATIONS AS NEEDED AT INTERVALS OF 25'OR LESS ALONG WALLS. DO NOT START WALL CONSTRUCTION UNTIL WALL ENVELOPES ARE

FOR BRICK VENEERS, SUBMIT BRICK SAMPLES FOR APPROVAL BEFORE BEGINNING STANDARD CIP GRAVITY WALL CONSTRUCTION.

DO NOT PLACE CONCRETE FOR FOOTINGS UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

WHEN CONSTRUCTING STANDARD CIP GRAVITY WALLS WITH A CONSTRUCTION JOINT AS SHOWN IN DETAIL "A", PROVIDE A MINIMUM OF 3 EQUALLY SPACED \*4 DOWELS AT INTERVALS OF 1'-6" ALONG

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION **DIVISION OF HIGHWAYS** 

**GEOTECHNICAL** ENGINEERING UNIT STANDARD DETAIL NO. 453.01

**STANDARD** CAST-IN-PLACE (CIP) GRAVITY RETAINING WALL

DATE: 5-16-17

SHEET NO.

 Town Certification. This design has been reviewed by the Hagineer 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

construction plans for this project.

By: Town Engineer These plans are approved by the Town of Knightdale and serve as

SHEET NUMBER R1.06

BLVI IMPR

HINTON OAD OFFSITE

ERRITT

NINE

· Ш S

SEE TABLE - 2'-6" MIN STANDARD CIP GRAVITY WALL \*\*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.

B/3

FOOTING-

B - FOOTING WIDTH

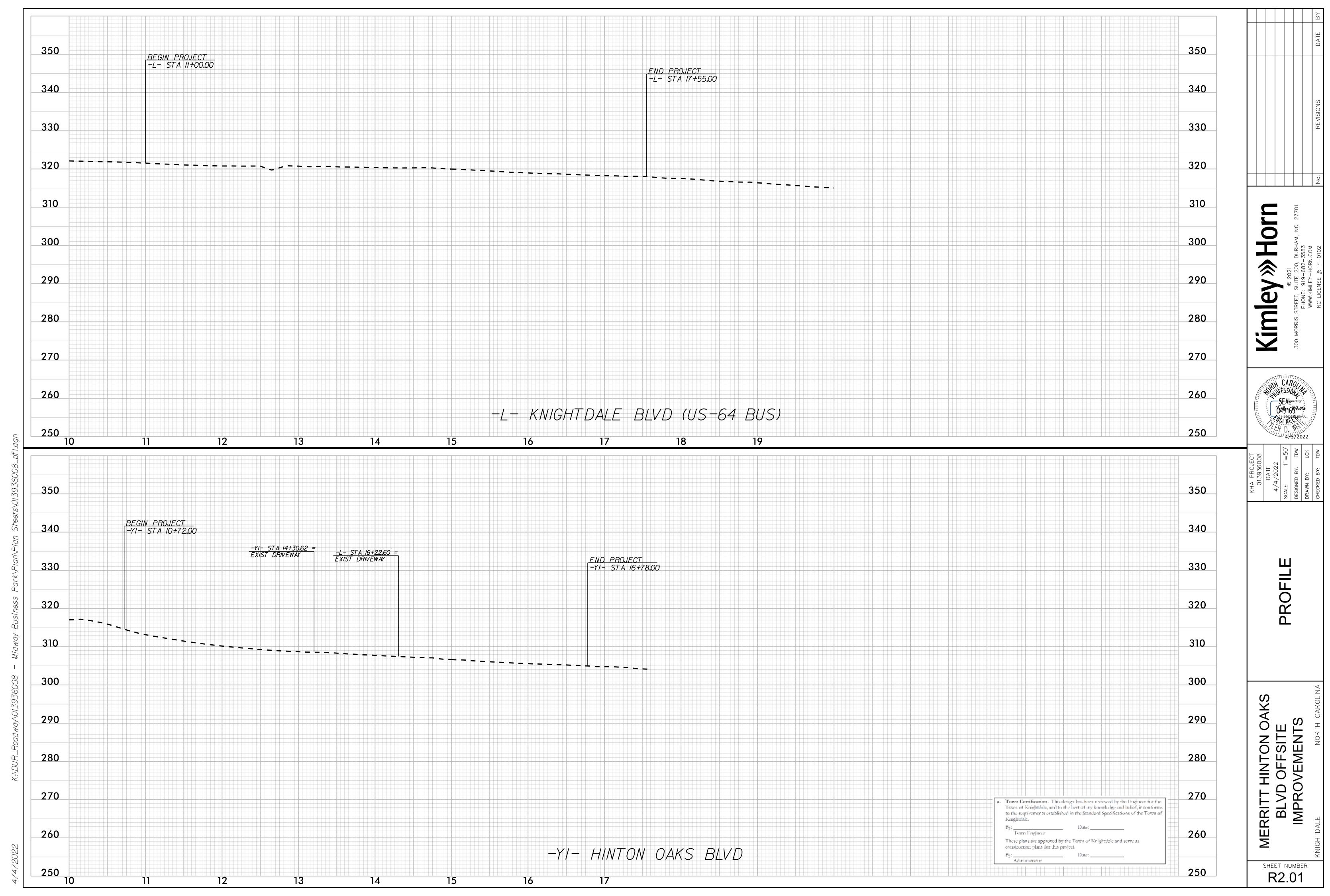
OF WALL

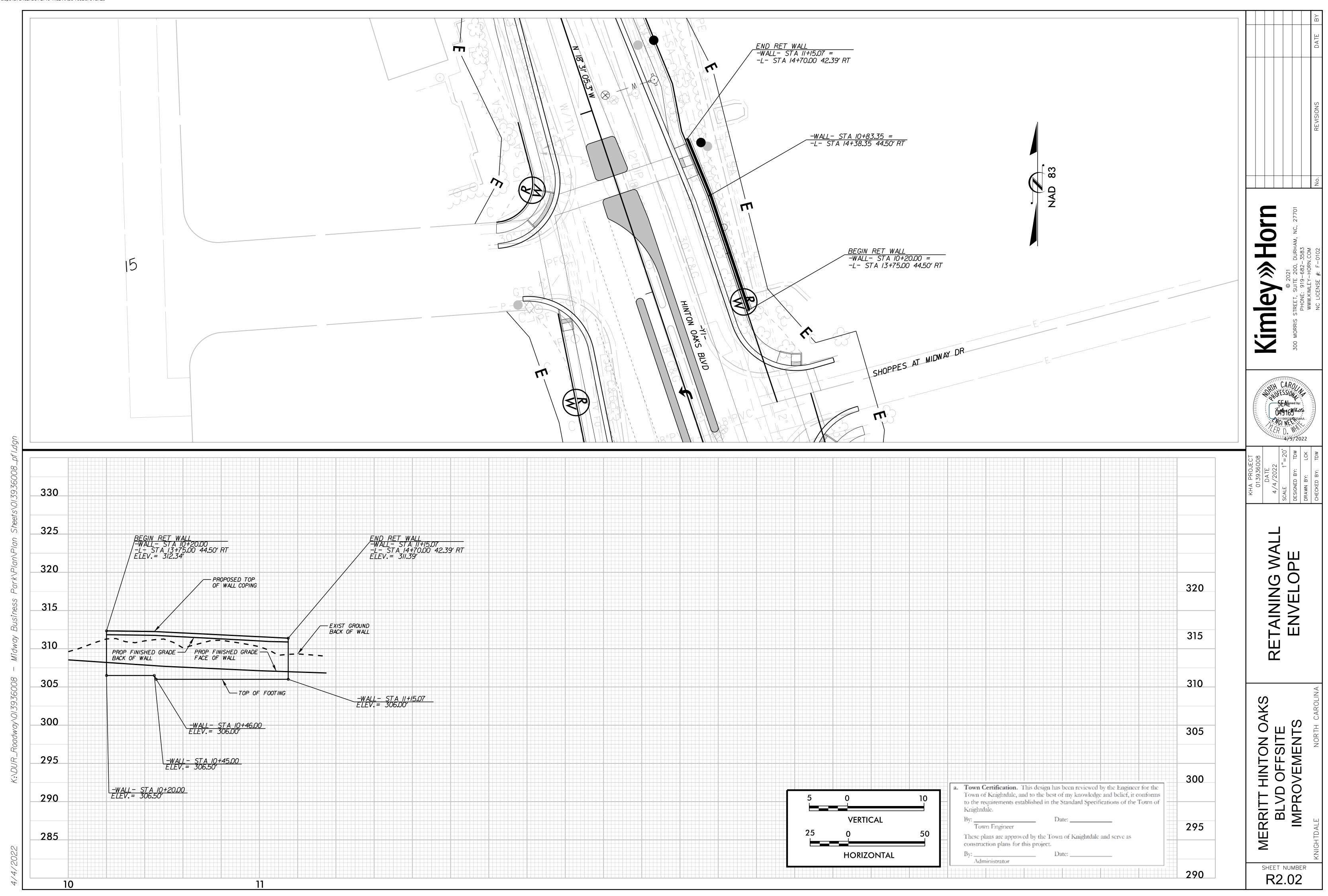
STONE DRAIN
(SEE NOTE FOR
SUBSURFACE DRAINAGE
AT WEEP HOLES)

(SEE DETAIL "A")

KEY WHEN —— REQUIRED (SEE TABLE\*)

		a. Town Certification. This design has been reviewed by the Engineer for the	END MILLING	2
	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.	Town of Knightdale, and to the best of my knowkalge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.  By:  Date:  Town Engineer	DECORATIVE ST AMPED ASHALT CROSSWALK ADD SEE DETAIL SEE DETAIL	
	City of Raleigh Development Approval  Raleigh Water Review Officer	These plans are approved by the Town of Knightdale and serve as construction plans for this project.  By: Date: Administrator	END MILLING  END MILLING  END MILLING	
	LIMITS OF MILL AND OVERLAY	SITE DATA TABLE	75°20′37" E	
	STAMPED ASPHALT CROSSWALK PROPOS	G PAVEMENT AREA 50,227 SF SED PAVEMENT AREA 11,435 SF	RETAIN  RETAIN  COLLAR AND (0416)  EXTEND 24" RCP-IV  15" RCP-IV	
	5" MONOLITHIC CONCRETE	FEET OF PROPOSED:  ND GUTTER 1,377 FT  LK 923 FT	END 2'-6" C&G  END 2'	
	CENEDAL SHEET NOTES.	DRAINAGE 544 FT	TIE TO EXIST  -YI- STA-15+98,00  END 5' SIDEWALK  TIE TO EXIST  -YI- STA 15+78,00   BM 2005 PG II27  APPROXIMATE LOCATION OF RELOCATED DUKE ENERGY LIGHT POLE TO BE RELOCATED BY OTHER  -PROPOSED 12'X6'  TAPPING SLEEVE  TAPPING SLEEVE	
	-	-L-	RELOCATED BY OTHER PROPOSED IZ'SC' TAPPING SLEEVE AND VALVE PROPOSED FIRE HYDRANT AND 28 LF FIRE HYDRANT LEG	7701
	$D = I^{\bullet}$		REMOVE EXIST  STATE OF THE HYDRANT	M. NC, 27
	$ \begin{array}{ccc} L &= & 65 \\ T &= & 3 \\ R &= & 3 \end{array} $	58.41' 3.30.37' 3.200.00'	DE ASSIDE TOUR RETAIN STEW	10, DURHA 12 - 3583 DRN.COM
			RETAIN  END GRAVITY WALL  END HANDRAIL  -YI- STA,14+70,00 42,39' RT  APPROXIMATE LOCATION OF	© 2021 SUITE 200 5: 919-682 KIMLEY-HOR
			LOI MIDWAY COMMONS  TYPE N-2  TYPE 2 RELOCATED DUKE ENERGY LIGHT POLE TO BE RELOCATED BY OTHER  N 85°48′2" E  CB-F (0413)  REMOVE TREE  138.00  TYPE 138.00  TYPE N-2  TYPE N-2  CB-F (0413)  REMOVE TREE  138.00  TYPE N-2  TYPE	S STREET, PHONE:
			END 2'-6" C&G	300 MORRIS
			END MILLING ————————————————————————————————————	Σ
			TIE TO EXIST  LOI MIDWAY COMMONS -YI- STA 14+19.20  DB 14394 PG 502  TYPE 2A  TYPE 1A  TYPE 1A  TYPE 1A  TYPE 2A  TYPE 2A  TYPE 376.29'  TYPE 2A	RIH CAROUNDER CONTROL OF ESSIONAL
~			TIE PROP CB TO EXIST 18"  COLLARIAND  TER FEXTEND 15"-RCP-IV	Genal gned by:  CAS 168 http:  2119662880354AA
h_4.dgr	LO4 MII DB 17 BM 2	DWAY COMMONS 7505 PG 2677 2008 PG 343	REMOVE TREE REMOVE TREE REMOVE TREE REMOVE TREE 18" RCP-IV 18" RCP-IV 18" RCP-IV 18" RCP-IV 18" RCP-IV 18" RCP-IV 19" 10" 10" 10" 10" 10" 10" 10" 10" 10" 10	D. White D.
008_ps			REMOVE TR CB-F REMOVE EXIST CB-F REMOVE EXIST FIRE HYDRANT	PROJECT 936008 AATE '2022 1"=4( BY: TDV
0/5956	Q		APPROXIMATE LOCATION OF RELOCATED DUKE ENERGY LIGHT POLE TO BE RELOCATED BY OTHER  15" RCP-IV	KHA P 0139 04/4/2 SCALE DESIGNED DRAWN BY
Sheets\			C B DB 17505 PG 2670	
NPIan .			APPROXIMATE LOCATION OF  APPROXIMATE LOCATION OF  APPROXIMATE LOCATION OF  APPROXIMATE LOCATION OF	>
rk\Plar			APPROXIMATE LOCATION OF RELOCATED DUKE ENERGY LIGHT POLE TO BE RELOCATED BY OTHER  O42)  CB-G  TRUCCATED DUKE ENERGY LIGHT POLE TO BE RELOCATED BY OTHER  TRUCCATED BY OTHER	
iess Pa	-L- POT Sta. 10+00.00	BEGIN 1'-6" C&G -L- STA 13+52.00	TREES  BEGIN CONSTRUCTION  -YI- POT Sta. 10+72.00  REMOVE TREES  ACCESS EASEMENT  ACCUSIVE ACCESS EASEMENT  ACCUSIVE ACCESS EASEMENT	Z
/ Busir		END 2' P.S. S — BEGIN I'-6" C&G -L- STA 13+52.00	SPULE BOX 12' 12' 12' 12' 12' 12' 12' 12' 12' 12'	<b>D</b>
Midwa	BEGIN GUARDRAIL  TIE TO EXIST	RETAIN EXIST — SYSTEM — END GUARDRAIL — CAT -I	END I'-6" C&G TIE TO EXIST -L- STA 14+67.00 THES  TIE TO EXIST -LT & RT	
- 800	BL -23	REMOVE EXIST 18"	G - MFL & S - P - W - RETAIN -	=
0/3956		AND REPLACE EXIST 2GI — X 4'-10" 2GI-A PER STD. DWG 840.17	ABAND US BUS 64 / KNIGHT DALE BLVD (WEST BOUND) T	S X
\dampo		** RETAIN EXIST 18" RCP	I'-6' C&G  I'   SE SESES SESES   SE SESES SESES SESES   SE SESES SESES   S	N O/NTE
JUR_RC	ABAND-	79.25 T T T T T T T T T T T T T T T T T T T	RETAIN EXIST SYSTEM  ABAND  US BUS 64 / KNIGHT DALE BLVD KNIGHT DALE BLVD KNIGHT DALE BLVD (US-64)  RETAIN EXIST SYSTEM  -L- POC Sta. 18+32.81 =	NTO FFSI
<b>X:</b> X	RETAIN EXIST SYSTEM	RETAIN EXIST SYSTEM	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
	EXISTING R/W  2"HDPE  0300  BEGIN MILLING  -L- STA, II +00.00	EXISTING R/W GOOD POO C&C	AS PER 811 TO SUITE BILL THE ARE INC. PROPERTY DB 12675 PG 1729 BM 2008/PG 1015	RITT BLV MPR
C/1	BEGIN CONSTRUCTION  -L- POT Sta. II+00.00	200' DUAL LEFT TURN TAPER	RISER IPF PE EXISTING RW IPF EXISTING RW IPF IPF PE EXISTING RW IPF	
4/202,	STONE & HIXSON REAL ESTATE LLC DB 17151 PG 2669 BM 1994 PG 840	KNIGHTDALE BUSINESS CONDOMINIUM DB 8364 PG 2723	TRI REX HOSPITAL INC  DB 13269 PG 434  BM 2008 PG 1899	SHEET NUMBER
4	DW 1934 FU 04U		BW ZOOR LC 1833	R2.00





# ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" -N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	<u>TITLE</u>
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES - TYPE III
1150.01	FLAGGING DEVICES
1180.01	SKINNY DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTI-LANE MARKINGS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)

# INDEX OF SHEETS

SHEET NO.	<u>TITLE</u>
R3.00	TRAFFIC CONTROL TITLE SHEET, LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
R3.01	GENERAL NOTES
R3.02	PHASING NOTES
R3.03	PHASE I PLANS AND DETAILS
R3.04	PHASE II PLANS AND DETAILS
R3.05	PHASE III PLANS AND DETAILS

# TEMPORARY PAVEMENT MARKING SCHEDULE

# PAVEMENT MARKING LINES

P1 - PAINT (4" WHITE, 2X) P2 - PAINT (4" WHITE, 2X) P3 - PAINT (4" WHITE, 2X) P4 - PAINT (4" WHITE, 2X) P10 - PAINT (4" YELLOW, 2X) P13 - PAINT (4" YELLOW, 2X)	10 FT. WHITE SKIP 3' X 9'/SP MINISKIP EDGELINE
P13 - PAINT (4" YELLOW, 2X)	DOUBLE CENTERLINE
P42 - PAINT (8" YELLOW, 2X)	DIAGONAL
P61 - PAINT (24" WHITE, 2X)	STOP BARS
P62 - PAINT (8" WHITE, 2X)	CROSSWALK

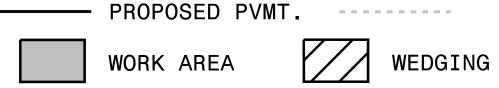
# PAVEMENT MARKING SYMBOLS

P70 - PAINT 2X (LEFT TURN ARROW)	
P71 - PAINT 2X (RIGHT TURN ARROW)	
P72 - PAINT 2X (STRAIGHT ARROW)	
P74 - PAINT 2X (COMBO RIGHT/STRAIGHT ARR	OW)
P100 - PAINT 2X (ALPHANUMERIC CHAR.)	

# **LEGEND**

# GENERAL

DIRECTION OF TRAFFIC FLOW NORTH ARROW







# TRAFFIC CONTROL DEVICES

T TYPE I BARRICADE

TYPE III BARRICADE

CONE

SKINNY DRUM



— STATIONARY SIGN

PORTABLE SIGN

STATIONARY OR PORTABLE SIGN

-~ CRASH CUSHION

CHANGEABLE MESSAGE SIGN

TRUCK MOUNTED ATTENUATOR (TMA)

POLICE

**FLAGGER** 

# PAVEMENT MARKINGS

CRYSTAL/CRYSTAL PAVEMENT MARKER

YELLOW/YELLOW PAVEMENT MARKER

CRYSTAL/RED PAVEMENT MARKER

PAVEMENT MARKING SYMBOLS

 Town Certification. This design has been reviewed by the Hagineer 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

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

SHEET NUMBER R3.00

MERRITT HINTON OAKS BLVD OFFSITE IMPROVEMENTS

TRAFFIC & PEDESTRIAN MANAGEMENT TITLE SHEET, INDEX OF SHEETS & LEGEND

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

# TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME

DAY AND TIME RESTRICTIONS

**ALL ROADS** 

6:00 AM TO 9:00 AM AND 4:00 PM TO 7:00 PM MON THRU FRI

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL **EVENTS AS FOLLOWS:** 

ROAD NAME

HINTON OAKS BLVD KNIGHTDALE BLVD

HOLIDAY

- 1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC **VOLUMES, AS DIRECTED BY THE ENGINEER.**
- 2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 9:00 P.M. DECEMBER 31st TO 6:00 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6:00 A.M. THE FOLLOWING TUESDAY.
- 3. FOR EASTER, BETWEEN THE HOURS OF 9:00 P.M. THURSDAY AND 6:00 A.M. MONDAY.
- 4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 9:00 P.M. FRIDAY TO 6:00 A.M. TUESDAY.
- 5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 9:00 P.M. THE DAY BEFORE INDEPENDENCE DAY AND 6:00 A.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 9:00 P.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 6:00 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.

- 6. FOR LABOR DAY, BETWEEN THE HOURS OF 9:00 P.M. FRIDAY AND 6:00 A.M. TUESDAY.
- 7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 9:00 P.M. TUESDAY TO 6:00 A.M. MONDAY.
- 8. FOR CHRISTMAS, BETWEEN THE HOURS OF 9:00 P.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
- C) DO NOT STOP TRAFFIC AS FOLLOWS:

**ROAD NAME** 

DAY AND TIME **RESTRICTIONS** 

**DURATION AND OPERATION** 

HINTON OAKS BLVD 6:00 AM TO 9:00 AM AND 4:00 PM TO 7:00 PM MON THRU FRI TRAFFIC SHIFTS KNIGHTDALE BLVD 6:00 AM TO 9:00 AM AND 4:00 PM TO 7:00 PM MON THRU FRI TRAFFIC SHIFTS

D) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

# LANE AND SHOULDER CLOSURE REQUIREMENTS

- E) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

- H) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- I) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

# PAVEMENT EDGE DROP OFF REQUIREMENTS

J) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN **EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:** 

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

# TRAFFIC PATTERN ALTERATIONS

K) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

# **SIGNING**

- L) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- M) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- N) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 150 IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

# TRAFFIC CONTROL DEVICES

- P) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.
- Q) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES DRUMS PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

# PAVEMENT MARKINGS AND MARKERS

R) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

**MARKER** ROAD NAME **MARKING** 

NONE HINTON OAKS BLVD **PAINT** KNIGHTDALE BLVD PAINT RAISED MARKERS

- S) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.
- T) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- U) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

# MISCELLANEOUS

- V) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.
- W) ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.
- X) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

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

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

SHEET NUMBER R3.01

# PHASE 1

WHILE MAINTAINING TRAFFIC USING RSD 1101.04 FOR SHOULDER CLOSURES AND RSD 1101.02 FOR LANE CLOSURES AS NECESSARY, PERFORM THE FOLLOWING:

# STEP 1:

INSTALL ADVANCE WARNING SIGNS IN ACCORDANCE WITH RSD 1101.01.

# STEP 2:

INSTALL TRAFFIC CONTROL DEVICES AS **SHOWN ON SHEET R3.03.** 

# STEP 3:

AWAY FROM TRAFFIC CONSTRUCT PROPOSED IMPROVEMENTS ALONG -L-KNIGHTDALE BLVD AND -Y1- HINTON OAKS **BLVD INCLUDING BUT NOT LIMITED TO** CURB AND GUTTER, SIDEWALK, ALL ASSOCIATED DRAINAGE, AND PAVING UP TO BUT NOT INLCUDING THE FINAL SURFACE COURSE. DO NOT PERFORM WORK ON BOTH SIDES OF MEDIAN OF -L-KNIGHTDALE BLVD SIMULTANEOUSLY.

NOTE: PROVIDE WEDGING AS REQUIRED TO ENSURE SMOOTH TRANSITIONS AND POSITIVE DRAINAGE.

# PHASE 2

WHILE MAINTAINING TRAFFIC USING RSD 1101.04 FOR SHOULDER CLOSURES AND RSD 1101.02 FOR LANE CLOSURES AS NECESSARY, PERFORM THE FOLLOWING:

# STEP 1:

REMOVE EXISTING CONCRETE MEDIAN ISLAND. UTILIZE TEMPORARY PAVEMENT AS NECESSARY.

# STEP 2:

INSTALL TRAFFIC CONTROL DEVICES AS SHOWN SHEET R3.04.

# STEP 3:

AWAY FROM TRAFFIC CONSTRUCT PROPOSED IMPROVEMENTS ALONG -Y1-HINTON OAKS BLVD INCLUDING BUT NOT LIMITED TO CURB AND GUTTER, SIDEWALK, TEMPORARY PAVEMENT, ALL ASSOCIATED DRAINAGE, AND PAVING UP TO BUT NOT INLCUDING THE FINAL SURFACE COURSE.

NOTE: PROVIDE WEDGING AS REQUIRED TO ENSURE SMOOTH TRANSITIONS AND POSITIVE DRAINAGE.

# PHASE 3

WHILE MAINTAINING TRAFFIC USING RSD 1101.04 FOR SHOULDER CLOSURES AND RSD 1101.02 FOR LANE CLOSURES AS NECESSARY, PERFORM THE FOLLOWING:

# STEP 1:

INSTALL TRAFFIC CONTROL DEVICES AS SHOWN ON SHEET R3.05. MAINTAIN TEMPORARY PAVEMENT MARKINGS FOR SOUTHBOUND TRAFFIC ALONG -Y1-HINTON OAKS BLVD

# STEP 2:

CONSTRUCT PROPOSED MONOLITHIC ISLANDS AND ALL ASSOCIATED DRAINAGE AS SHOWN ON SHEET R3.05.

# STEP 2:

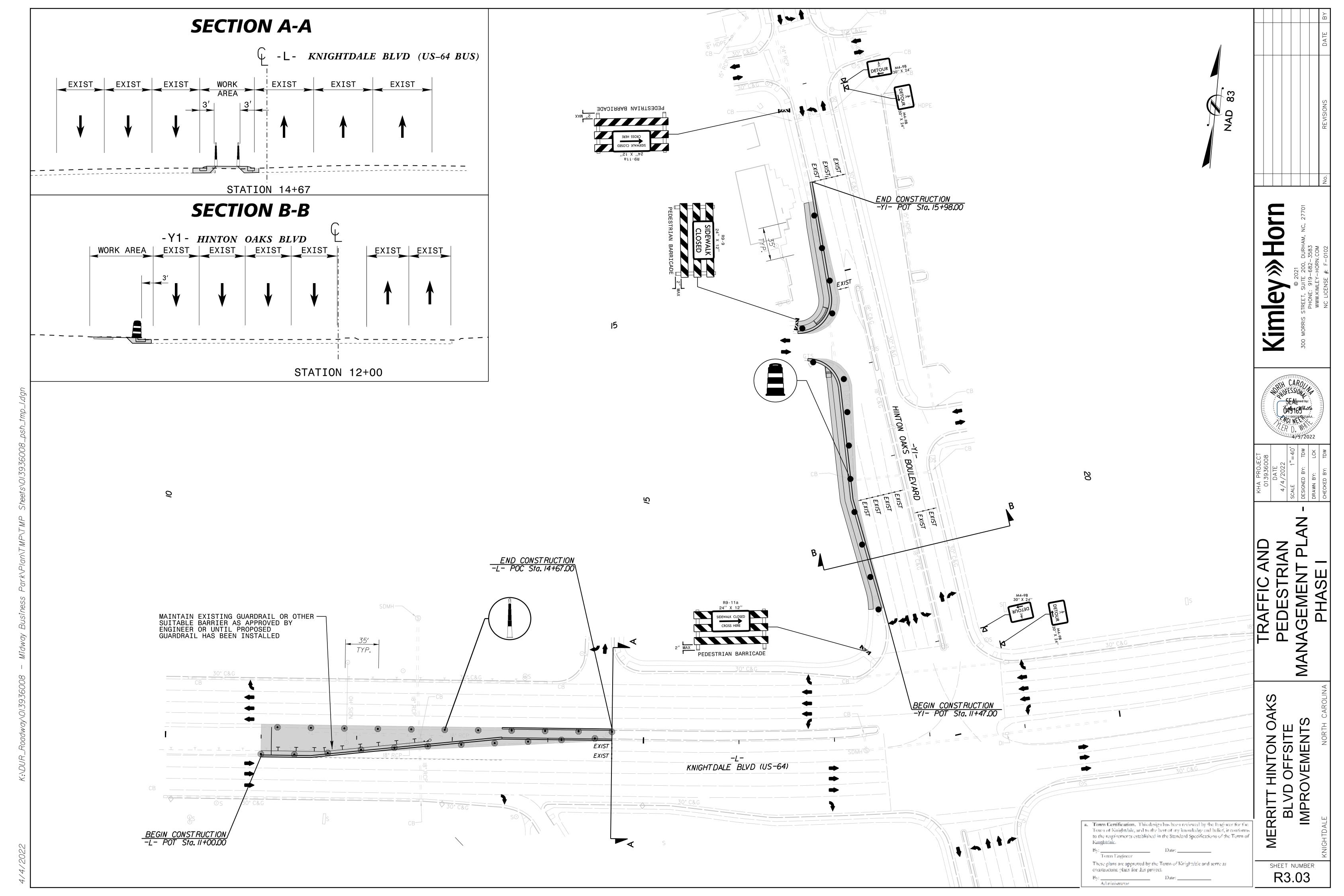
INSTALL FINAL ASPHALT SURFACE COURSE AND FINAL PAVEMENT MARKINGS, REMOVE ALL TRAFFIC CONTROL DEVICES AND OPEN ALL LANES TO TRAFFIC.

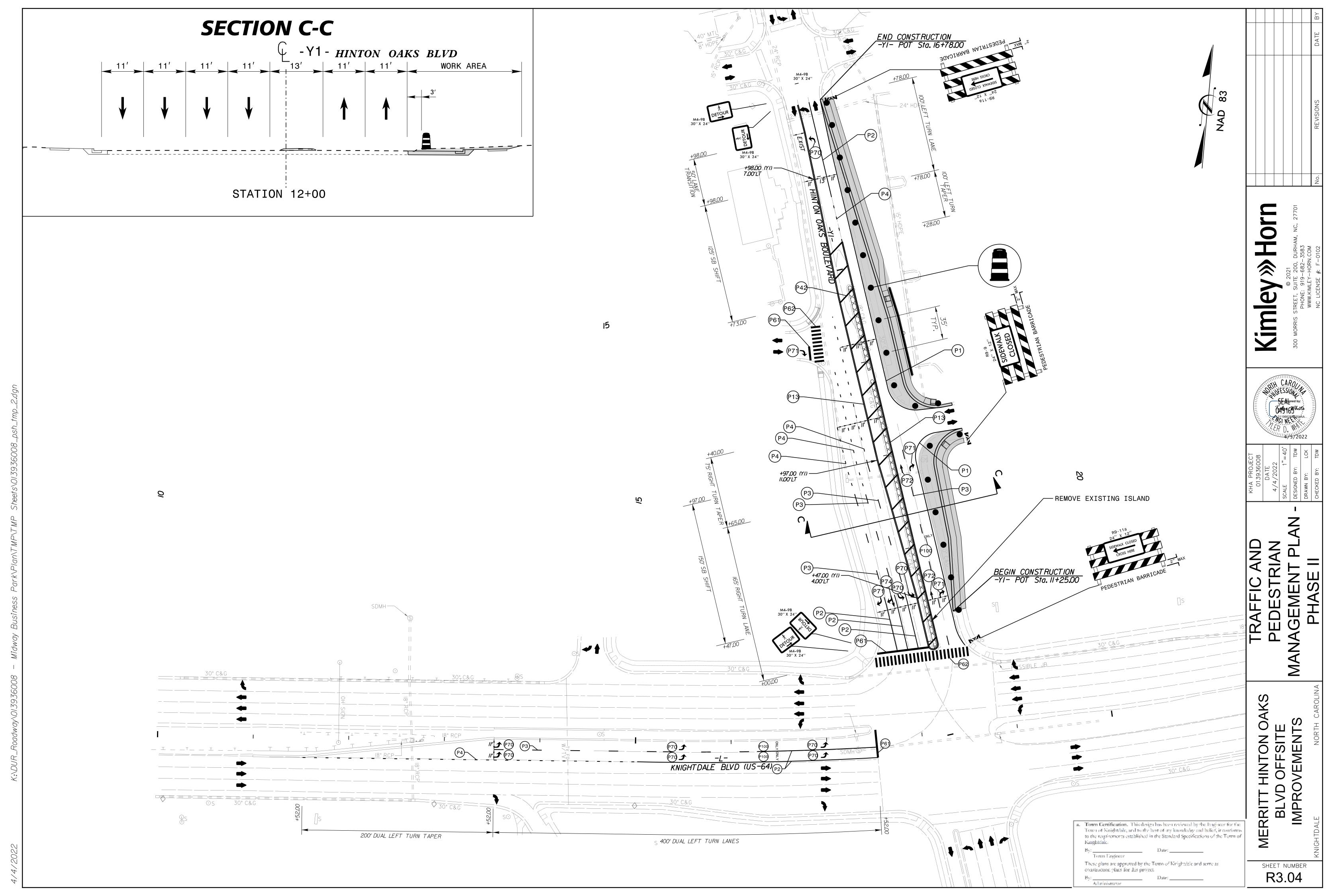
R3.02

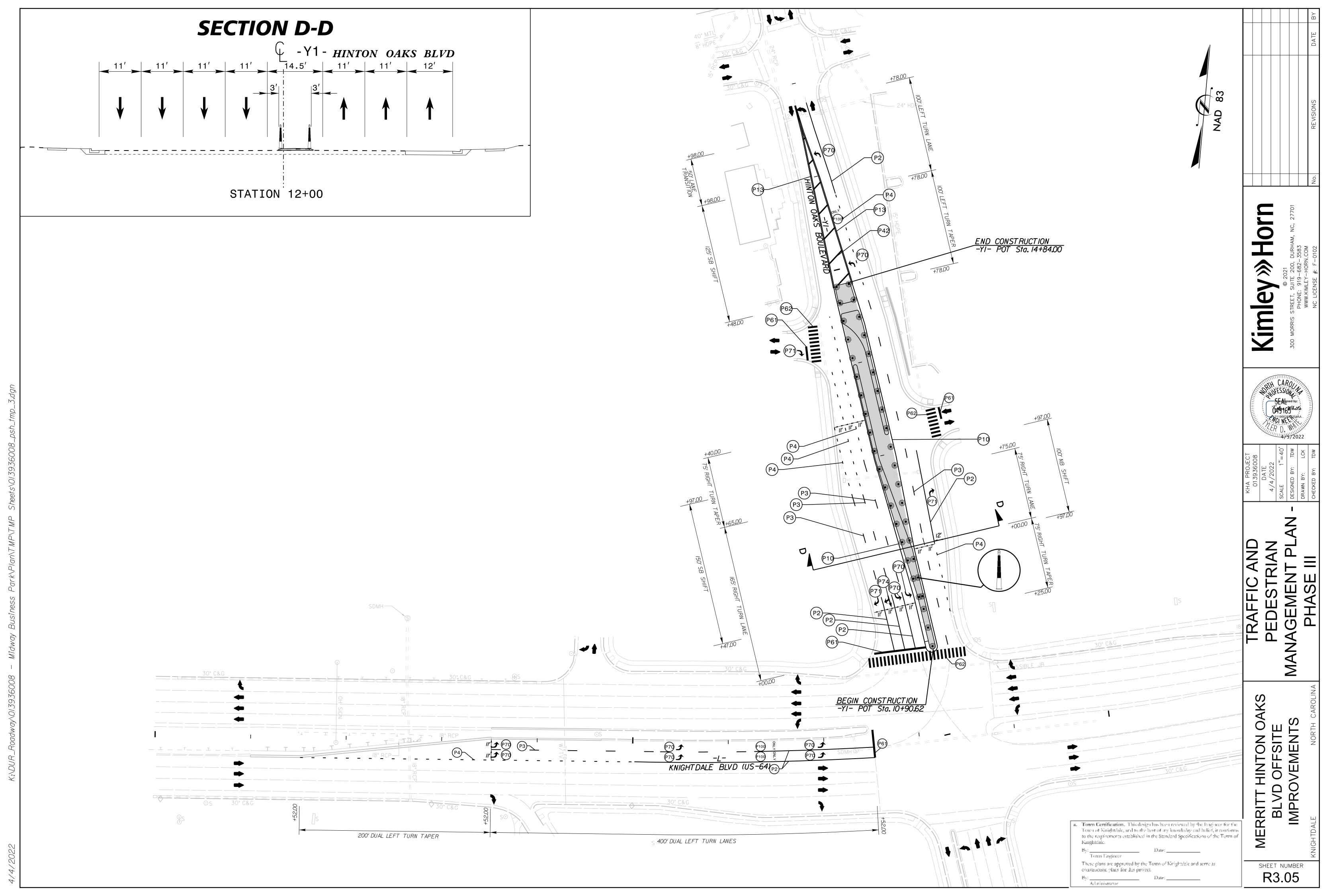
Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of

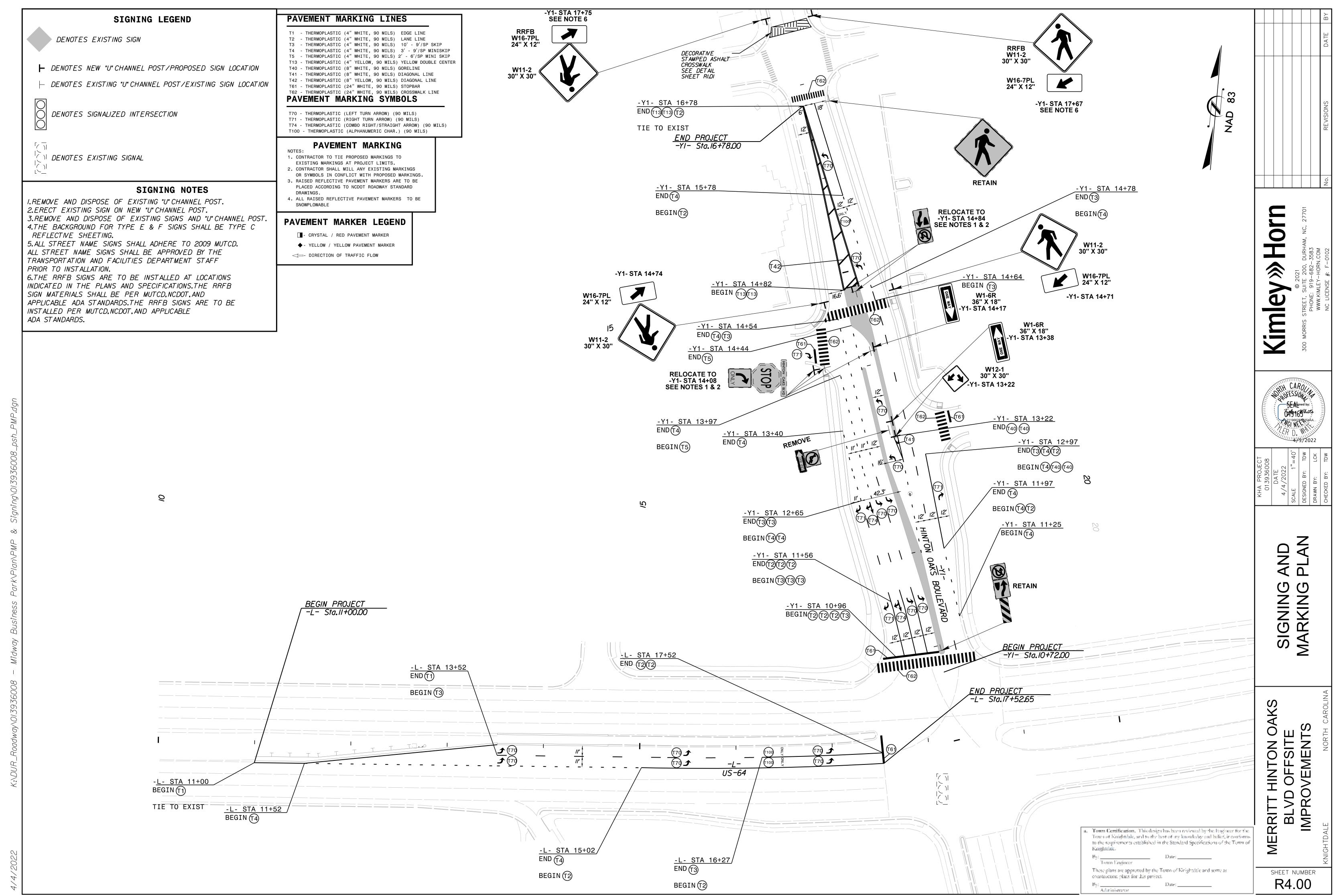
These plans are approved by the Town of Knightdale and serve as

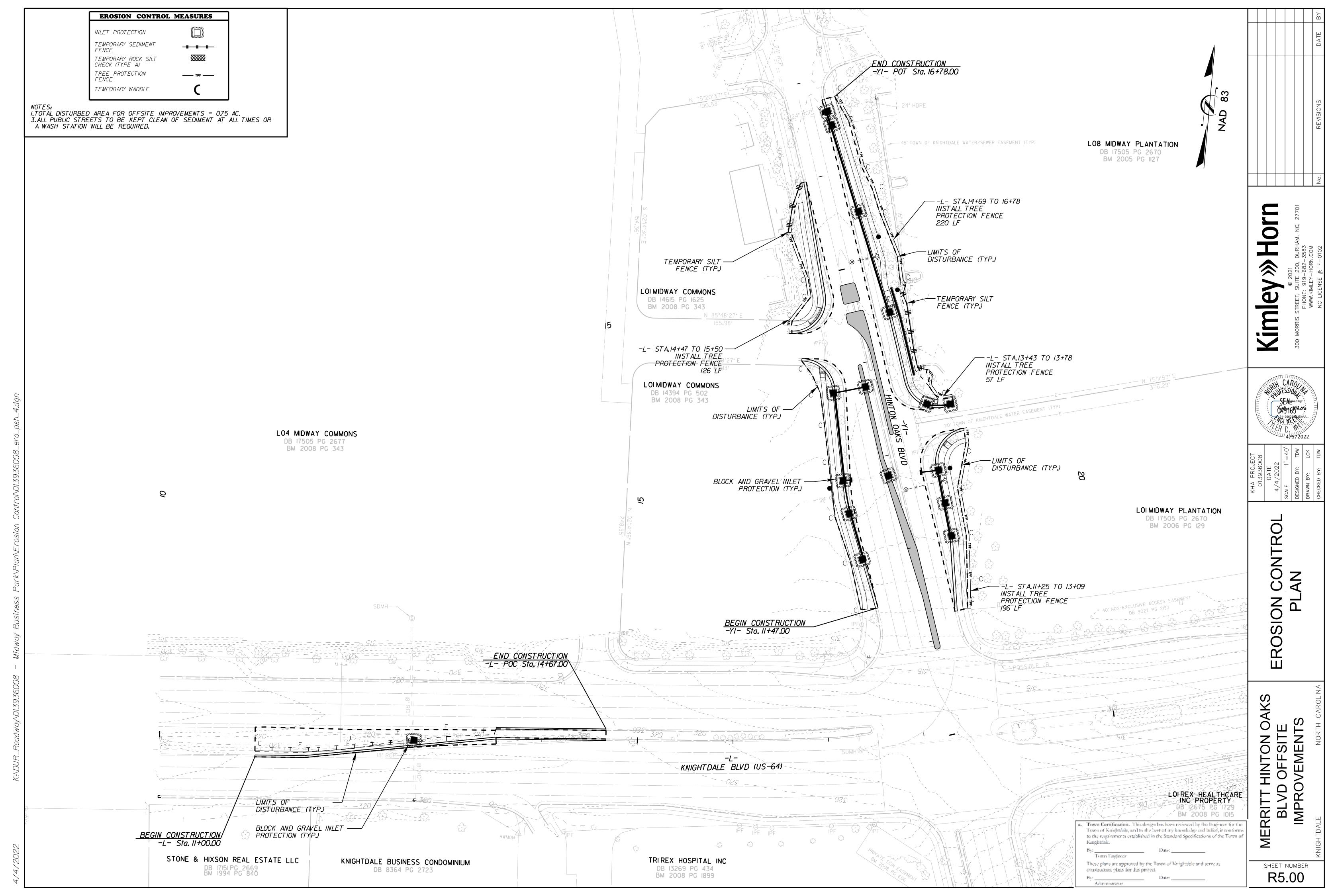
SHEET NUMBER











3. Install all erosion control measures as shown;

4. Obtain certificate of compliance through on-site inspection by Erosion Control Officer:

5. Proceed with grading;

6. Clean sediment basins when one-half full;

7. Seed and mulch denuded area within 15 days or duration shown on ground stabilization requirements, whichever is shorter, after any phase of grading;

8. Maintain soil erosion control measures until permanent ground cover is established:

9. Request final approval by Erosion Control Officer;

10. Remove soil erosion control measures and stabilize these areas. MAINTENANCE

Follow the construction sequence throughout project development. When changes in construction activities are needed, amend the sequence schedule in advance to maintain management control.

Notification of Land Resources Sediment and Erosion Control Self-Inspection Program:

The Sedimentation Pollution Control Act was amended in 2006 to require that persons responsible for land-disturbing activities inspect a project after each phase of the project to make sure that the approved erosion and sedimentation control plan is being followed. Rules detailing the documentation of these inspections took effect October 1,2010. The self—inspection program is separate from the weekly self—monitoring program of the NPDES Stormwater Permit for Construction Activities. The focus of the self-inspection report is the installation and maintenance of erosion and sedimentation control measures according to the approved plan. The inspections must be conducted after each phase of the project, and continue until permanent ground cover is established in accordance with NCGS 113A-54.1 and 15A NCAC 4B.0131. The Self-Inspection Report form is available as an Excel spreadsheet from http://portal.ncdenr.org/web/Ir/erosion.lf you have questions or cannot access the form, please contact NCDENR Division of Land Resources at (919) 791-4200.

# MAINTENANCE PLAN

I. The Contractor shall inspect all erosion and sediment control practices for stability and operation within 24 hours following every runoff producing 0.5" rainfall (in a 24 hour period) but in 'no case less than once every week. Any 'needed repairs will be made immediately by the Contractor to maintain all practices as designed. Also per National Pollutant Discharge Elimination System (NPDES) general stormwater permit, a rain gauge must be installed on site. The rain gauge must be kept onsite and inspections by the Contractor must be made and logged after every half inch of rainfall and once a week.

2. The Contractor shall remove sediment from sediment basin when storage capacity has been approximately 50% filled. Gravel will be cleaned or replaced when the sediment pool no longer drains properly.

3. The Contractor shall remove sediment from behind silt fence when it becomes 0.5 feet deep at the fence. Silt fence will be repaired as necessary to maintain a barrier.

4. The Contractor shall fertilize, reseed as necessary, and mulch all seeded areas according to specifications in the vegetative plan to maintain a vigorous, dense vegetative

5. The Contractor must inspect all outlets where stormwater runoff leaves the site and evaluate the effect on nearby streams or wetlands. Corrective action must be taken if sediment is deposited of f site or into stream or wetland, or causes a visible increase in turbidity of any waterbody.

6.The Contractor shall provide ground cover on exposed slopes or other areas within the timeframe speficied in the stabilization table or sooner of completion of any phase of grading.

# GROUND STABILIZATION REQUIREMENTS

Contractor shall stabilize (temporary or permanent) all disturbed areas within 7 or 14 days of termination of grading operations per the following guidlines.

Perimeter dikes, swales, ditches and slopes - 7 days High Quality Water Zones - 7 days

Slopes 2:1 or steeper - 7 days Slopes between 2:1 and 3:1 greater than 10' in length— 7 days Slopes between 2:1 and 3:1 less than 10' in length- 14 days Slopes between 3:1 and 4:1 less than 50' in length-14 day's Slopes between 3:1 and 4:1 greater than 50' in Tength— 7 days Slopers flatter than 4:1- 14 days

# VEGETATIVE PLAN (NCDENR 6.11)

### SEEDING AND MULCHING

The kinds of seed and fertilizer, and the rates of application of seed. fertilizer, and limestone shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined by the Engineer.

<u>Date</u>	Туре	Planting Rate
Mar.I-Aug.3I  Sep.I-Feb.28	Tall Fescue Centipede Hulled Common Bermudagrass Fertilizer Limestone Tall Fescue Centipede Unhulled Common Bermudagrass Fertilizer Limestone	50 lbs./acre 5 lbs./acre 25 lbs./acre 500 lbs./acre 4000 lbs./acre 5 lbs./acre 35 lbs./acre 500 lbs./acre

Slopes (2:1 and steeper) and Waste & Borrow Locations

Jan.1-Dec.31	Tall Fescue Unhulled Commo Fertilizer Limestone	75 Ibs./acre 35 Ibs./acre 500 Ibs./acre 4000 Ibs./acre	
`. :	<u>Approved Tall Fe</u>	scue Cultivars	
Adventure Apache Brookstone Chesapeake Debutante Finelawn Petite Grande Jaguar Monarch Pacer Rebel Safari Tomahawk Wolf pack	Adventure II Apache II Bonanza Chieftain Duster Finelawn Guardian Jaguar III Montauk Phoenix Rebel Jr. Shenandoah Trailblazer Wrangle	Amigo Arid Bonanza II Coronado Falcon Finelawn I Hawk Kentucky 3I Mustang Pixie Rebel II Tempo Tribute	Anthem Austin Chapel Hill Crossfire II Falcon II Genesis Houndog Kitty Olympic Pyramid Renegade Titan Vegas

### SEEDING AND MULCHING

On cut and fill slopes 2:1 or steeper, add 30# (23kg) Sericea Lespefeza January I-December 31.

Fertilizer shall be 10-20-20 analysis. Upon written approval of the Engineer, a different analysis of fertilizer may be used provided the I-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant flood as a 10-20-20 analysis.

### SEEDBED PREPARATION

The Contractor shall cut and satisfactorily dispose of weeds or other unacceptable growth on the areas to be seeded. Uneven and rough areas outside of the graded section, such as crop rows, farm contours, ditches, and ditch spoil banks, fence line and hedgerow soil accumulations, and other minor irregularities which cannot be obliterated by normal seedbed preparation operations, shall be shaped and smoothed as directed by the Engineer to provide for more effective seeding and for ease of subsequent mowing operations.

The soil shall then be scarified or otherwise loosened to a depth of not less than 5 inches except as otherwise provided below or otherwise directed by the Engineer. Clods shall be broken and the top 2 to 3 inches of soil shall be worked into an acceptable seedbed by the use of soil pulverizers, drags, or harrows; or by other methods approved by the Engineer. All rock and debris 3 inches or larger shall be removed on median, shoulder, and ditch cut or fill slopes which are 3:1 or flatter, prior to the application of seed and fertilizer.

On cut slopes that are 2:1 and steeper, both the depth of preparation and the degree of smoothness of the seedbed may be reduced as permitted by the Engineer, but in all cases the slope surface shall be scarified, grooved, trenched, or punctured so as to provide pockets, ridges,or trenches in which the seeding materials can lodge.Contractor shall be responsible for providing the required seed bed. It may be necessary to seed these sections with a hydro-seeded.

On cut slopes that are either 2:1 or steeper, the Engineer may permit the preparation of a partial or complete seedbed during the grading of the slope. If at the time of seeding and mulching operations such preparation is still in a condition acceptable to the Engineer, additional seedbed preparation may be reduced or eliminated.

Seedbed preparation within 2 feet of the edge of any pavement shall be limited to a depth of 2 to 3 inches.

The preparation of seedbeds shall not be done when the soil is frozen, extremely wet, or when the Engineer determines that it is an otherwise unfavorable working condition.

# APPLYING AND COVERING LIMESTONE, FERTILIZER, AND SEED

# A) GENERAL:

Seasonal limitation for seeding operations; the kinds of grades of fertilizers; the kinds of seed; and the rates of application of limestone, fertilizer, and seed shall be as stated in the special provisions.

Equipment to be used for the application, covering, or compaction of limestone, fertilizer, and seed shall have been approved by the Engineer before being used on the project. Approval may be revoked at any time if equipment is not maintained in satisfactory working condition, or if the equipment operation damages the seed.

Limestone, fertilizer, and seed shall be applied within 24 hours after completion of seedbed preparation unless otherwise permitted by the Engineer, but no limestone or ferilizer shall be distributed and no seed shall be sown when the Engineer determines the weather and soil conditions are unfavorable for such operations.

During the application of fertilizer, adequate precautions shall be taken to prevent damage to traffic, structures, quardrails, traffic control devices, or any other appurtenances. The Contractor shall either provide adequate drainage covering or change methods of application as required to avoid such damage. When such damage occurs the Contractor shall repair it. including any cleaning that may be necessary.

# APPLYING AND COVERING LIMESTONE, FERTILIZER, AND SEED

B) LIMESTONE AND FERTILIZER:

worked or mixed into the seedbed.

Limestone may be applied as a part of the seedbed preparation, provided it is immediately worked into the soil. If not so applied, limestone and fertilizer shall be distributed uniformly over the prepared seedbed at the specified rate of application and then harrowed, raked, or otherwise thoroughly

If liquid fertilizer is used, storage containers for the liquid fertilizer shall be located on the project and shall be equipped for agitation of the liquid prior to its use. The storage containers shall be equipped with approved measuring or metering devices which will enable the Engineer to record at any time the amount of liquid that has been removed from the container. Application equipment for liquid fertilizer, other than a hydraulic seeder, shall be calibrated to ensure that the required rate of fertilizer is applied uniformly.

## C) SEED:

Seed shall be distributed uniformly over the seedbed at the required rate of application, and immediately harrowed. dragged, raked, or otherwise worked so as to over the seed with a layer of soil. The depth of covering shall be as directed by the Engineer. If 2 kinds of seed are to be used which require different depths of covering, they shall be sown separately.

When a combination seed and fertilizer drill is used. fertilizer may be drilled in with the seed after limestone has been applied and worked into the soil.If 2 kinds of seed are being used which require different depth of covering, the seeding requiring the lighter covering may be sown broadcast or with a special attachment to the drill, or drilled lightly following the initial drilling operation.

When a hydraulic seeder is used for application of seed and fertilizer, the seed shall not remain in water containing fertilizer for more than 30 minutes prior to application unless otherwise permitted by the Engineer.

Immediately after seed has been properly covered the seedbed shall be compacted in the manner and degree approved by the Engineer.

### MULCHING

# GENERAL:

All seeded areas shall be mulched unles otherwise indicated in the special provisions or directed by the Engineer.

Grain straw may be used as mulch at any time of year.If permissions to use material other than grain straw is requested by the Contractor and the use of such material is approved by the Engineer, the seasonal limitations, the methods and rates of application, the type of binding material, or other conditions governing the use of such material will be established by the Engineer at the time of approval.

# B) APPLYING MULCH:

Mulch shall be applied within 24 hours after completion of seeding unless otherwise permitted by the Engineer.Care shall be exercised to prevent displacement of soil or seed or other damage to the seeded area during the mulching operations. Mulch shall be uniformly spread by hand or by approved mechanical spreaders or blowers that will provide an acceptable application. An acceptable application will be that which will allow some sunlight to penetrate and air to circulate but will also partially shade the ground, reduce erosion, and conserve soil moisture.

# C) HOLDING MULCH:

Mulch shall be held in place by applying a sufficient amount of asphalt or other approved binding material to assure that the mulch is properly held in place. The rate and method of application of binding material shall meet the approval of the Engineer.Where the binding material is not applied directly with the mulch it shall be applied immediately following the mulch application.

During the application of asphalt binding material, or other approved binding materials which may cause damage, adequate precautions shall be taken to prevent damage to traffic, structures, guardails, traffic control devices, or any other appurtenances. The Contractor shall either provide adequate covering or change methods of application as required to avoid such damage. When such damage occurs the Contractor shall repair it, including any cleaning that may be necessary.

The Contractor shall take sufficient precautions to prevent mulch from entering drainage structures through displacemen by wind, water, or other causes and shall promptly remove any blockage to drainage facilities that may occur.

# TOPSOILING (6.04)

# MATERIALS

CONSTRUCTION SPECIFICATIONS

Determine whether the quality and quantity of available topsoil justifies selective handling. Quality topsoil has the following characteristics:

Texture — loam, sandy loam, and silt loam are best; sandy clay loam, silty clay loam, clay loam, and loamy sand are fair. Do not use heavy clay and organic soils such as peat or muck as topsoil.

Organic matter content - (sometimes referred to as "humic matter") should be greater than 1.5% by weight.

Acidity - pH should be greater than 3.6 before liming, and liming is required if it is less than 6.0.

Soluble salts - should be less than 500 ppm.

Sodium - sodium adsorption ratio should be less than 12.

The depth of material meeting the above qualifications should be at least 2 inches. Soil factors such as rock fragments, slope, depth to water table, and layer thickness affect the ease of excavation and spreading of topsoil.

Generally, the upper part of the soil, which is richest in organic matter, is most desirable; however, material excavated from deeper layers may be worth storing if it meets the other criteria listed above.

Organic soils such as mucks and peats do not make good topsoil. They can be identified by their extremely light weight when dry.

Strip topsoil only from those areas that will be disturbed by excavation, filling, roadbuilding,or compaction by equipment. A 4 to 6-inch stripping depth is common, but depth varies depending on the site. Determine depth of stripping by taking soil cores at several locations within each area to be stripped. Topsoil depth generally varies along a gradient from hilltop to toe of the slope. Put sediment Ďasins, diversions, and other controls into place before strippina.

### STOCKPILING

CONSTRUCTION SPECIFICATIONS

layers with minimal mixing.

riprap should be apparent.

MAINTENANCE

Select stockpile location to avoid slopes and natural drainageways, avoiding traffic routes. On large sites, respreading is easier and more economical when topsoil is stockpiled in small piles located near areas where they will be used. All stockpile areas used shall be stabilized with silt fence and seeded.

Sediment barriers — Use sediment fences or other barriers where necessary to retain sediment.

RIP RAP (6.15)

Subgrade Preparation - Prepare the subgrade for riprap and filter to the required

to a density approximating that of the surrounding undisturbed material or overfill

lines and grades shown on the plans. Compact any fill required in the subgrade

material. Cut the subgrade sufficiently deep that the finished grade of the riprap

sufficiently to allow placement of the riprap in a manner such that the finished

Sand and gravelfilter blanket — Place the filter blanketimmediately after the ground

foundation is prepared. For gravel, spread filter stone in a uniform layer to the

Synthetic filter fabric — Place the cloth filter directly on the prepared foundation.

specified depth. Where more than one layer of filter material is used, spread the

Overlap the edges by at least 12 inches, and space anchor pins every 3 ft along

ground and where necessary, bury the lower end of the cloth or overlap with the

next section as required. Take care not to damage the cloth when placing riprap.

If damage occurs remove the riprap and repair the sheet by adding another layer

of filter material with a minimum overlap of 12 inches around the damaged area.

Where large stones are used or machine placement is difficult, a 4-inch layer of

Stone Placement - Placement of riprap should follow immediately after placement

be obtained by selective loading at the quarry and controlled dumping during final placement. Place riprap to its full thickness in one operation. Do not place

stone sizes. Take care not to dislodae the underlying base or filter when placing

The finished slope should be free of pockets of small stone or clusters of large

stone sizes to produce a relatively smooth, uniform surface. The finished grade

of the riprap should blend with the surrounding area. No overfall or protrusion of

Inspect channels at regular intervals as well as after major rains, and make repairs

vigorous condition to protect the area from erosion and scour during out—of—bank

promptly. Give special attention to the outlet and inlet sections and other points

look for indications of piping, scour hole's, or bank failu'res. Make repairs

flow. Control of weed and brush growth may be needed in some locations.

immediately. Maintain all vegetation adjacent to the channel in a healthy,

where concentrated flow enters. Carefully check stability at road crossings and

riprap by dumping through chutes or other methods that cause segregation of

stones. Hand placing may be necessary to achieve the proper distribution of

of the filter. Place riprap so that if forms a dense, well-graded mass of stone with a minimum of voids. The desired disbribution of stones throughout the mass may

the overlap. Bury the upstream end of the cloth a minimum of 12 inches below

will be at the elevation of the surrounding area. Channels should be excavated

depression's with riprap. Remove brush, trees, stumps and other objectional

inside dimensions and grade of the riprap meet design specifications.

If extensive damage is suspected, remove and replace the entire sheet.

fine gravel or sand may be needed to protect the filter cloth.

Temporary seeding - Protect topsoil stockpiles by temporarily seeding as soon as possible, no more than 30 working days or 120 calendar days after the formation of the stockpile.

Permanent vegetation - If stockpiles will not be used within 12 months they must be stabilized with permanent vegetation to control erosion and weed

### SITE PREPARATION

Before spreading topsoil, establish erosion and sedimentation control practices such as diversions, berms, dikes, waterways, and sediment basins.

Grading - Maintain grades on the areas to be topsoiled according to the approved plan and do not alter them by adding topsoil.

Liming of subsoil - Where the pH of the existing subsoil is 6.0 or less, or the soil is composed of heavy clays, incorporate agricultural limestone in amounts recommended by soil tests or specified for the seeding mixture to be used. Incorporate lime to a depth of at least 2 inches by disking.

Roughening — Immediately prior to spreading the topsoil.loosen the subgrade by disking or scarifying to a depth of at least 4 inches, to ensure bonding of the topsoil and subsoil. If no amendments have been incorporated, loosen the soil to a depth of at least 6 inches before spreading topsoil.

### SPREADING TOPSOIL

Do not spread topsoil while it is frozen or muddy or when subgrade is wet or frozen. Correct any irregularities in the surface that result from topsoiling or other operations to prevent the formation of depressions or water pockets.

Compact the topsoil enough to ensure good contact with the underlying soil, but avoid excessive compaction, as it increases runoff and inhibits seed germination. Light packing with a roller is recommended where high-maintenance turf is to be established.

On slopes and areas that will not be mowed, the surface may be left rough after spreading topsoil. A disk may be used to promote bonding at the interface between topsoil and subsoil.

After topsoil application, follow procedure for seedbed preparation, taking care to avoid excessive mixing of topsoil into the subsoil.

# LAND GRADING (6.02)

## CONSTRUCTION SPECIFICATIONS

I. Construct and maintain all erosion and sedimentation control practices and measures in accordance with the approved sedimentation control plan and construction schedule.

2. Remove good topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas.

placing topsoil. 4. Clear and grub areas to be filled to remove trees, vegetation, roots, or

3. Scarify areas to be topsoiled to a minimum depth of 2 inches before

other objectionable material that would affect the planned stability of the fill. 5. Ensure that fill material is free of brush.rubbish.rocks.loas.stumps. building debris, and other materials inappropriate for constructing stable fills.

6. Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other relatéd problems.

7. Do not incorporate frozen material or soft or highly compressible materials into fill slopes.

8. Do not place fill on a frozen foundation, due to possible subsidence and

during all phases of development. 10. Handle seeps or springs encountered during construction in accordance

9. Keep diversions and other water conveyance measures free of sediment

II. Permanently stabilize all graded areas immediately after final grading is completed on each area in the grading plan. Apply temporary stabilization measures on all graded areas when work is to be interrupted or delayed for 15 working days or longer.

12. Show topsoil stockpiles, borrow areas, and spoil areas on the plans, and make sure they are adequately protected from erosion. Include final stabilization of these areas in the plan.

# MAINTENANCE

with approved methods.

Periodically check all graded areas and the supporting erosion and sedimentation control practices, especially after heavy rainfalls. Promptly remove all sediment from diversion and other water-disposal practices. If washouts or breaks occur, repair them immediately. Prompt maintenance of small eroded areas before they become significant gullies is an essential part of an effective erosion and sedimentation control plan.

# GRASS-LINED CHANNELS (6.30)

# CONSTRUCTION SPECIFICATIONS

. Remove all trees, brush, stumps, and other objectionable material from the foundation area and dispose of properly.

2. Excavate the channel and shape it to neat lines and dimensions shown on the plans plus a 0.2-ft overcut around the channel perimeter to allow for bulking during seedbed preparations and sod buildup.

3. Remove and properly dispose of all excess soil so that surface water may enter the channel freely.

4. The procedure used to establish grass in the channel will depend upon the severity of the conditions and selection of species. Protect the channel with mulch or a temporary liner sufficient to withstand anticipated velocities during the establishment period.

# MAINTENANCE

During the establishment period, check grass—lined channels after every rainfall After grass is established, periodically check the channel; check it after every heavy rainfall event. Immediately make repairs. It is particularly important to check the channel outlet and all road crossings for bank stability and evidence of piping or scour holes. Remove all significant sediment accumulations to maintain the designed carrying capacity. Keep the grass in a healthy, vigorous condition at all times, since it is the primary erosion protection for the channel.

> Town Certification. This design has been reviewed by the Hagineer 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

By: Administrator

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

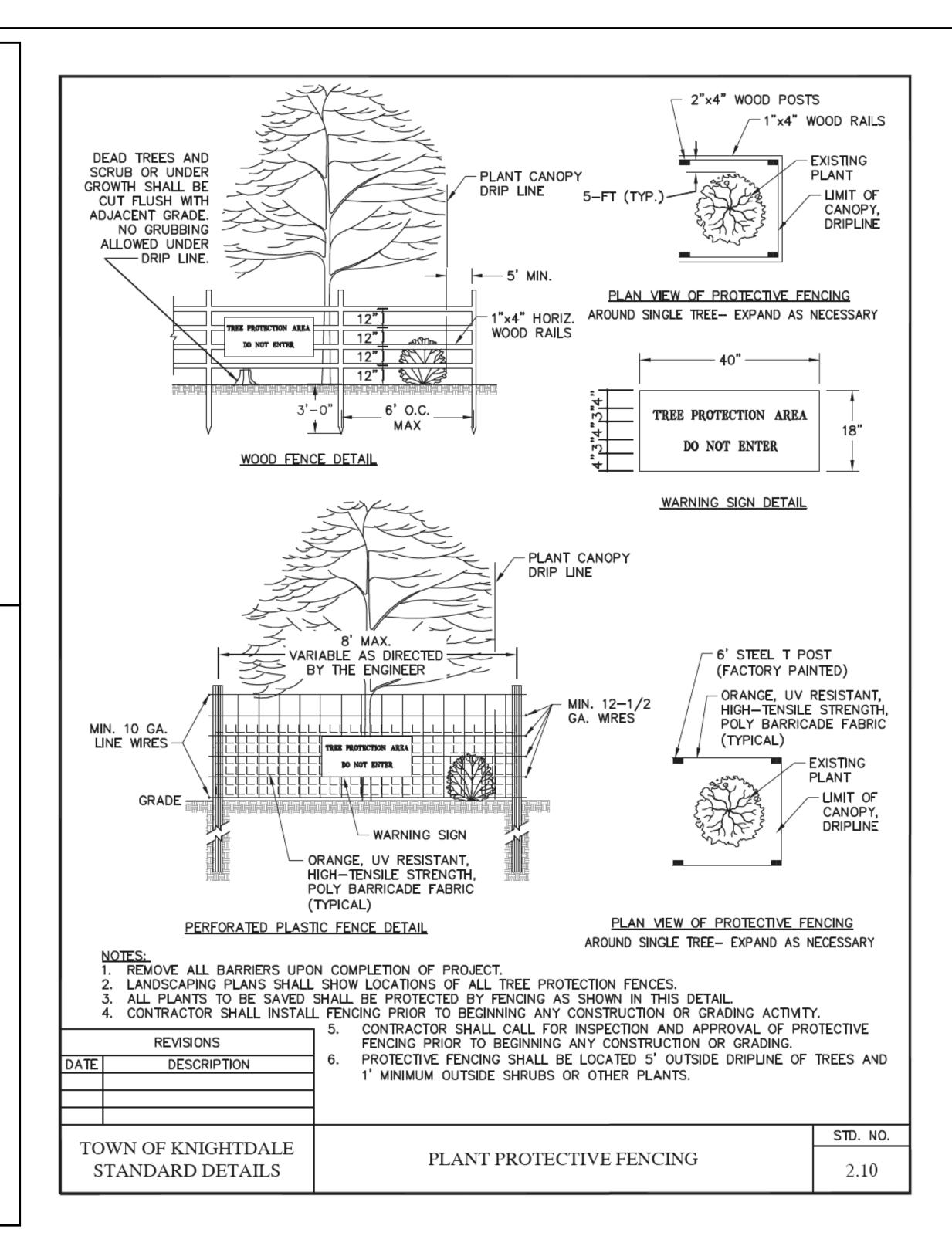
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ERRITT HINTON OA BLVD OFFSITE IMPROVEMENTS

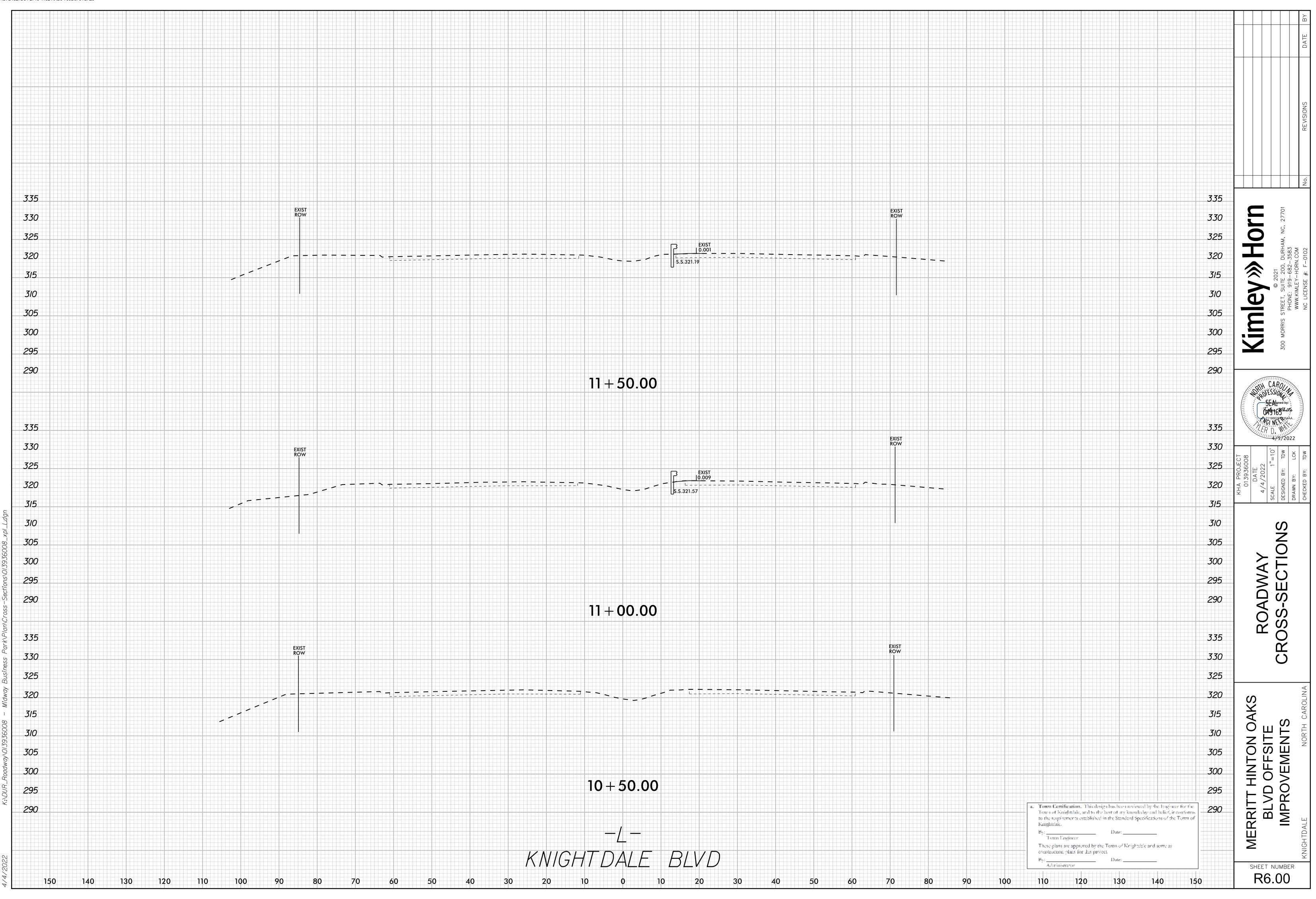
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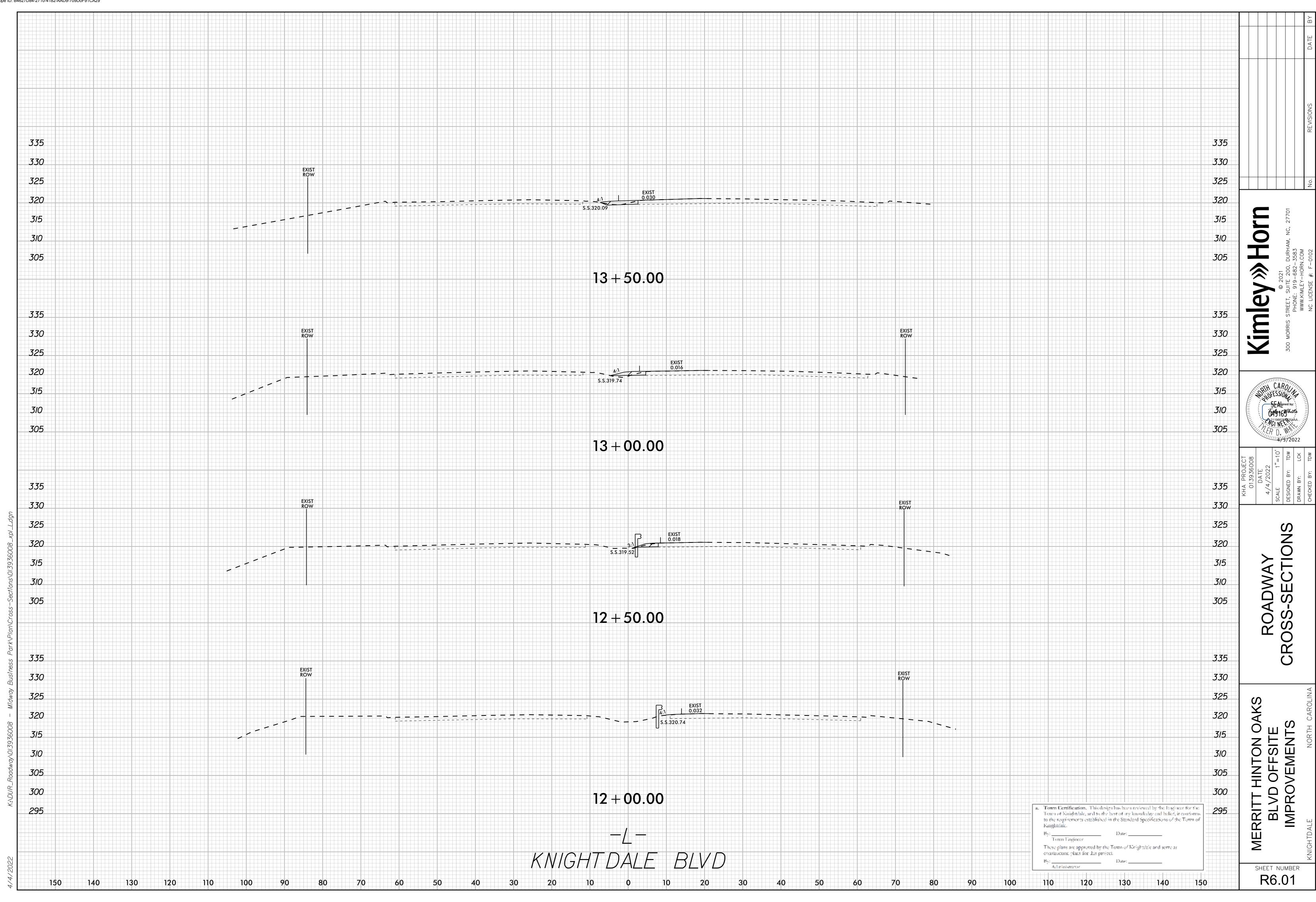
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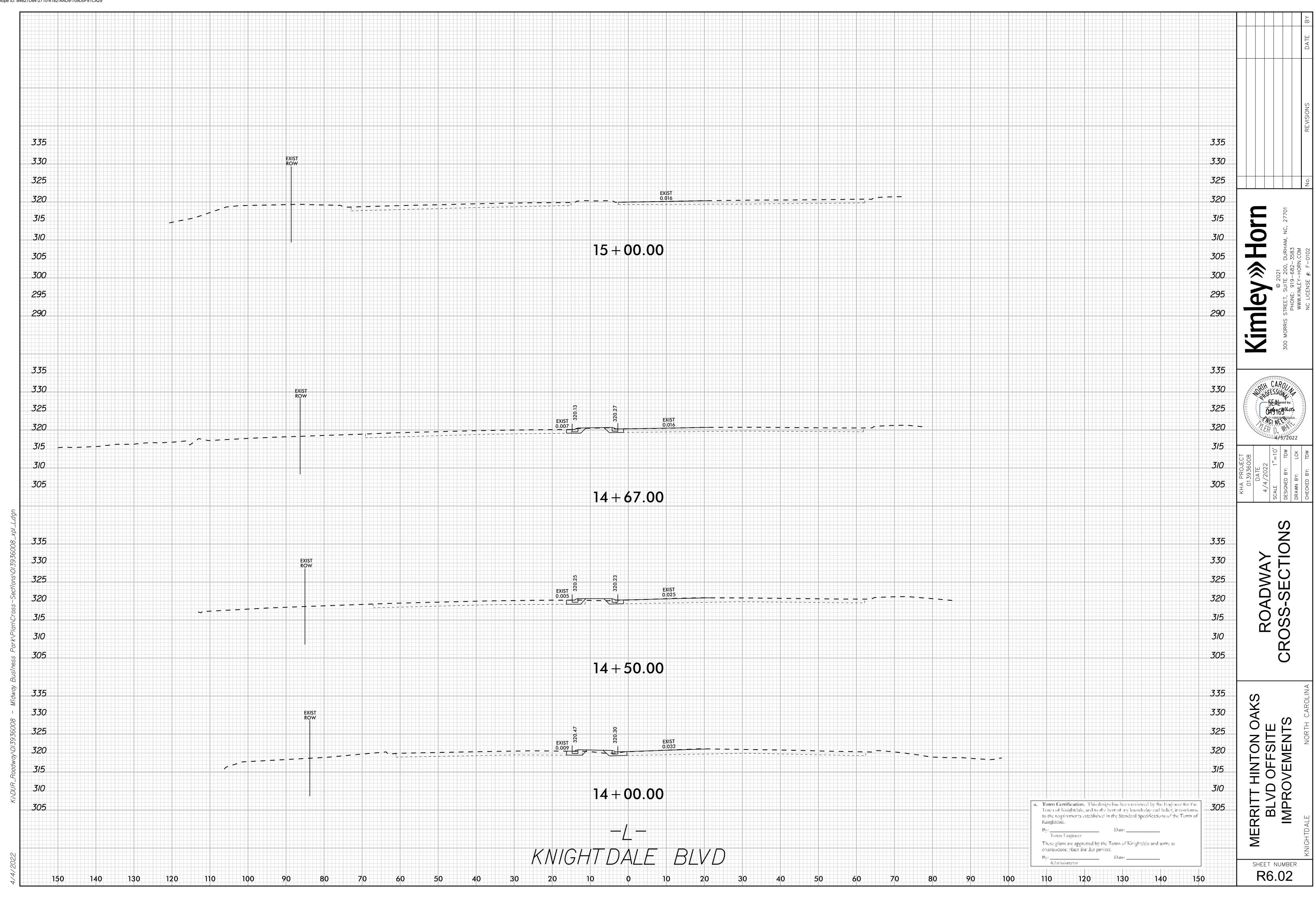
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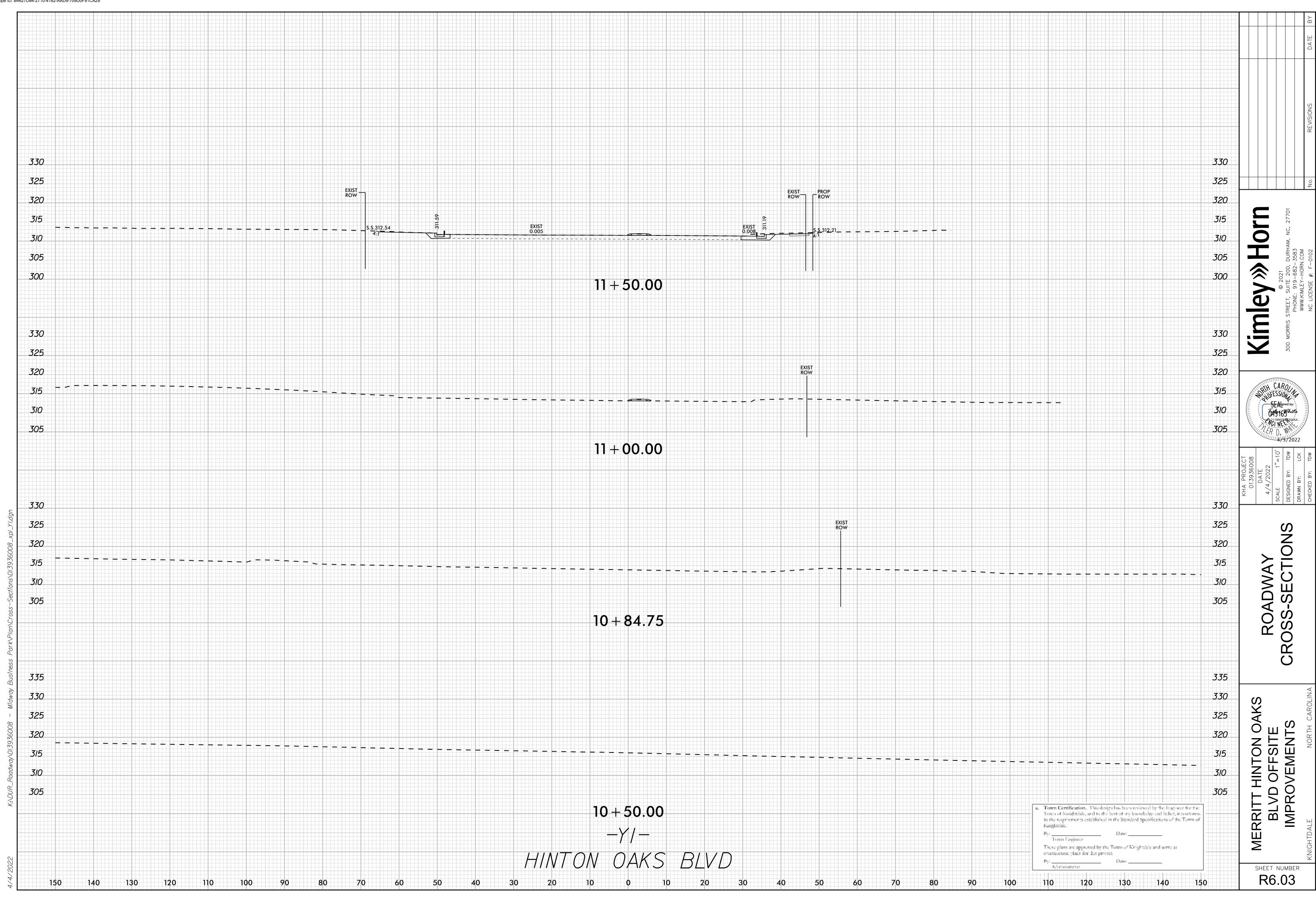
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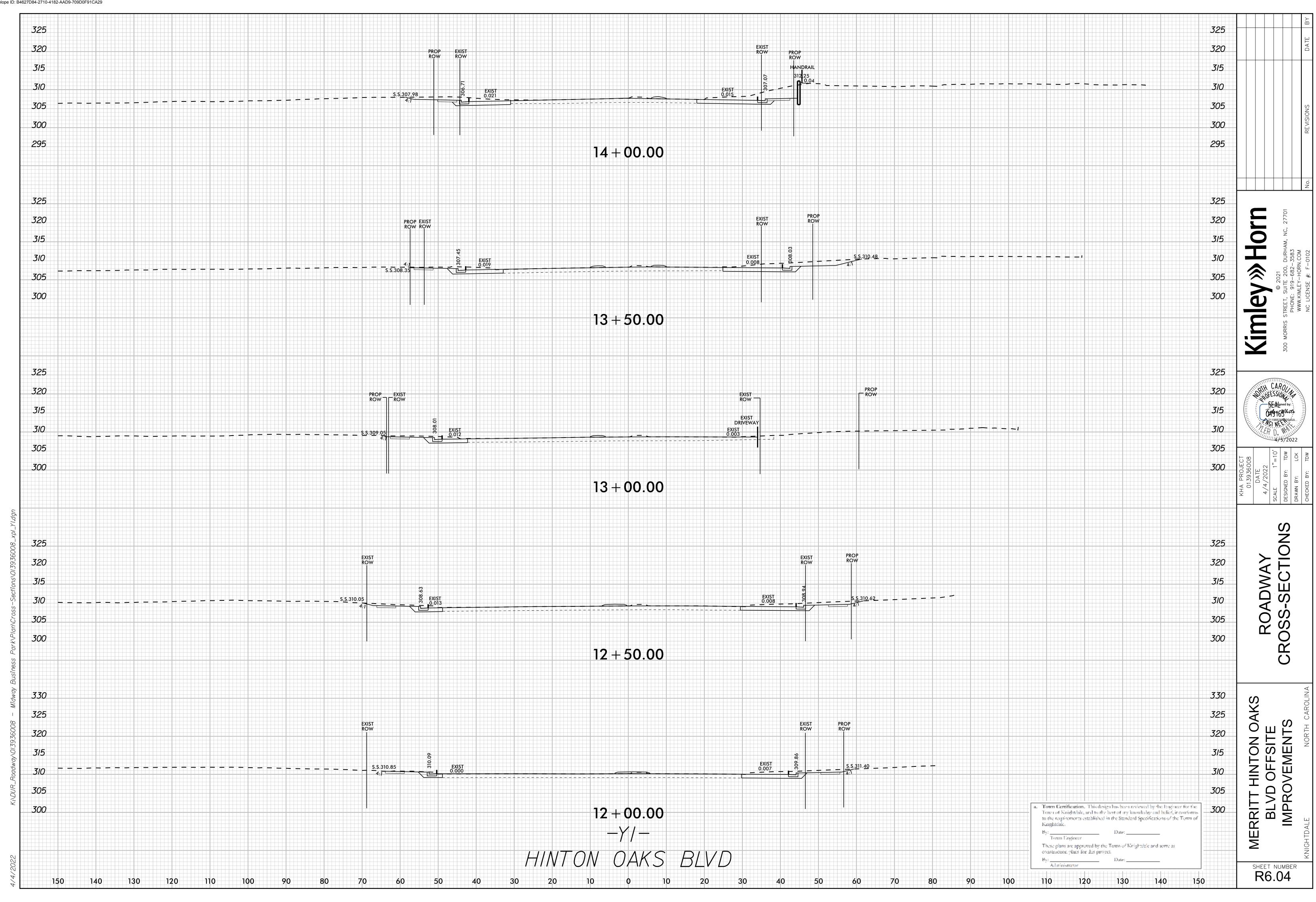
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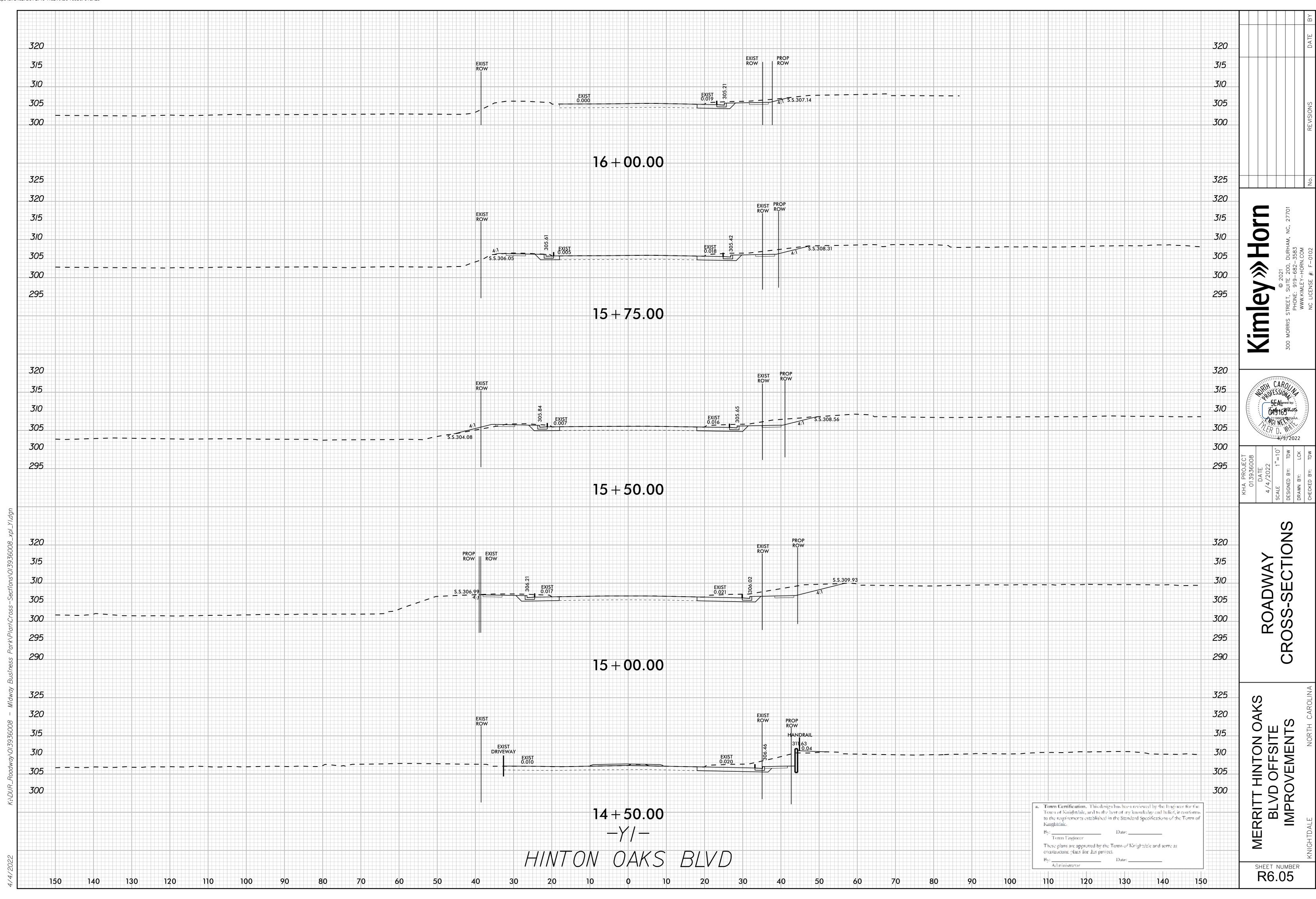


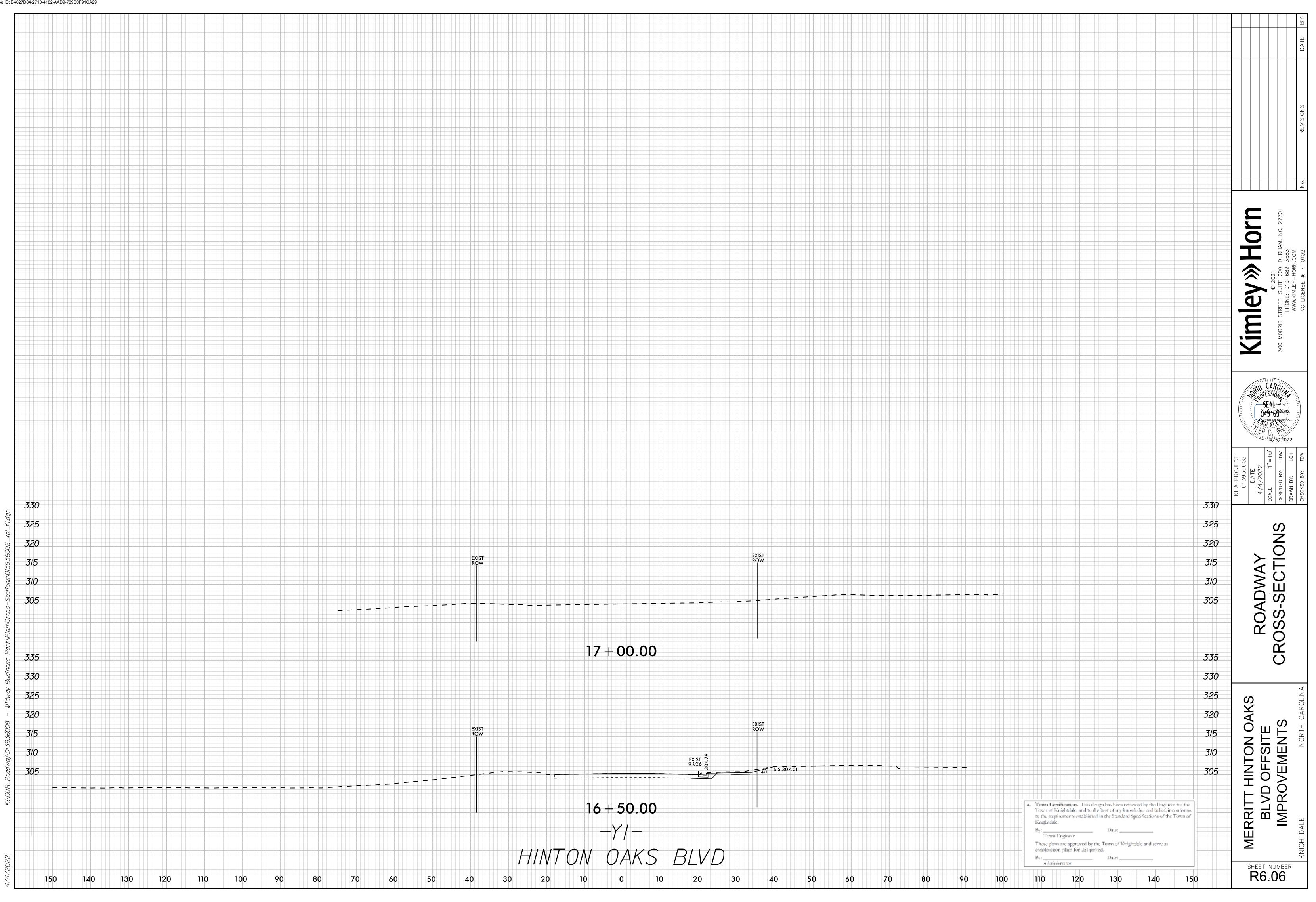












Quercus palustris / Pin Oak

12`-14` HT.

<u>QTY</u>

3,761 sf

CONTAINER SPACING **BOTANICAL / COMMON NAME** 

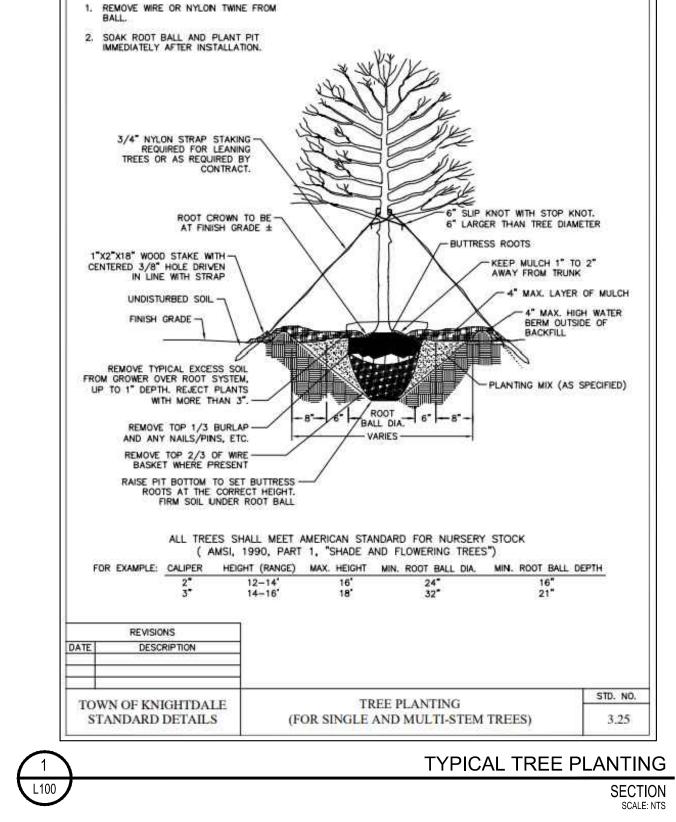
Cynodon dactylon / Bermuda Grass Sod

# TREE MITIGATION:

Ex. Trees to Remain		Ex. Trees to Demo w/ Mitigation		Ex. Trees to Demo w/o Mitigation	
<u>Inches</u>	Tree Type	<u>Inches</u>	Tree Type	<u>Inches</u>	Tree Type
13	Pine	13	Pine	10	Oak
9	Oak	12	Oak	4	Cedar
4	Cedar	12	Oak	5	Cedar
7	Crepe Myrtle	12	Oak	7	Oak
3	Maple	12	Crepe Myrtle	10	Oak
8	Crepe Myrtle	15	Crepe Myrtle	7	Oak
9	Oak	17	Crepe Myrtle	8	Oak
3	Cedar	19	Crepe Myrtle	9	Oak
15	Pine	17	Crepe Myrtle	11	Oak
12	Oak	13	Oak	9	Oak
14	Crepe Myrtle	14	Oak	10	Crepe Myrtle
7	Oak	15	Oak	11	Oak
3	Maple	12	Birch	3	Birch
6	Birch	12	Crepe Myrtle	5	Oak
7	Oak	12	Crepe Myrtle	6	Birch
6	Maple	12	Crepe Myrtle	11	Crepe Myrtle
5	Maple	12	Oak	8	Crepe Myrtle
7	Birch	13	Crepe Myrtle	10	Crepe Myrtle
5	Birch	12	Crepe Myrtle	7	Birch
5	Birch			9	Crepe Myrtle
6	Birch			8	Crepe Myrtle
7	Birch			11	Birch
14	Crepe Myrtle			10	Birch
6	Birch			10	Crepe Myrtle
11	Oak			9	Oak
15	Crepe Myrtle			6	Birch
11	Crepe Myrtle			6	Birch
13	Crepe Myrtle			10	Crepe Myrtle
				10	Oak
				10	Oak
				11	Crepe Myrtle
2:	31 Total Inches	256	Total Inches	26:	Total Inches
	28 Total Trees		Total Trees		Total Trees

\*\*Existing tree to remain / to be preserved to be counted towards tree mitigation needed

Tree mitigation needed: 256 / 12 = 21 trees



PLANTING BED TRENCH EDGING NOTE:

TRENCH EDGE SHALL BE LOCATED BETWEEN PLANTING BED AND ALL TURF OR NATIVE GRASS

- 2. TRENCH EDGE SHALL BE CONSTRUCTED ALONG ALL HARDSCAPE AREAS FOR SIMILAR CONDITION.
- 3. MAINTAIN POSITIVE DRAINAGE IN ALL PLANTING BEDS.
- 4. SEE LANDSCAPE NOTES FOR TYPE OF MULCH.

PLANTING BED TRENCH EDGING

# GENERAL LANDSCAPE NOTES:

MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS.

- 1. ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL, FREE OF PESTS AND DISEASE.
- 2. ALL PLANTS MUST BE CONTAINER GROWN OR BALLED AND BURLAPPED AS INDICATED IN THE PLANT SCHEDULE.
- 3. CONTRACTOR SHALL PROCURE ALL TREES OF LIKE SPECIES FROM THE SAME NURSERY. ALL TREES SHALL BE TAGGED AT THE NURSERY BY THE LANDSCAPE ARCHITECT PRIOR TO PURCHASE AND DELIVERY TO THE PROJECT
- 4. ALL TREES MUST HAVE A STRAIGHT TRUNK AND FULL HEADED AND MEET ALL REQUIREMENTS SPECIFIED.
- 5. ALL PLANT MATERIAL STORED ON SITE SHALL BE LOCATED OUT OF DIRECT SUNLIGHT.
- 6. ALL SHADE TREES ADJACENT TO PEDESTRIAN WALKWAYS SHALL BE BRANCHED 6'-7' PER ANSI Z60.1 STANDARDS FOR HEIGHT OF BRANCHING - STREET TREES. ALL SHADE TREES LOCATED WITHIN VEHICLE SIGHT TRIANGLES SHALL BE BRANCHED MIN. 8' (MEASURED FROM ADJACENT PROJECTED CURB LINE ELEVATION) PER ANSI Z60.1 STANDARDS FOR HEIGHT OF BRANCHING - STREET TREES.
- 7. ALL PLANTING BEDS AND TREE RINGS MUST BE COMPLETELY MULCHED AS SPECIFIED.
- ANY PLANT MATERIAL WHICH DIES, TURNS BROWN, OR DEFOLIATES (PRIOR TO SUBSTANTIAL COMPLETION OF THE WORK) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE AND MEETING ALL PLANT LIST SPECIFICATIONS.
- 9. STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NURSERY STOCK" REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.
- 10. ALL LANDSCAPE BEDS ARE TO BE COMPLETELY COVERED WITH NON-DYED TRIPLE GROUND HARDWOOD MULCH TO A MINIMUM DEPTH OF THREE (3) INCHES.
- INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF UTILITY LINES AND ADJACENT TO THE WORK AREA. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITY LINES DURING THE CONSTRUCTION PERIOD. 12. SAFE, CLEARLY MARKED PEDESTRIAN AND VEHICULAR ACCESS TO ALL ADJACENT PROPERTIES MUST BE
- 13. ALL PLANT MATERIAL QUANTITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE COVERAGE OF ALL PLANTING BEDS AT SPACING SHOWN.

- 14. THE TOP OF ALL ROOT BALLS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE, AS BORN TO PREVIOUS GRADE AND GROWING CONDITIONS.
- 15. ALL ROOT BALLS REMOVED FROM CONTAINERS SHALL BE SCARIFIED PRIOR TO BACKFILLING.
- 16. ALL STRAPPING AND TOP 2/3 OF WIRE BASKET MUST BE CUT AWAY AND REMOVED FROM ROOT BALL PRIOR TO BACKFILLING PLANTING PIT. REMOVE TOP 1/3 OF THE BURLAP FROM ROOT BALL.
- 17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING TREES AND SHRUBS THAT WILL MEET BOTH MINIMUM SIZE AND SPACING FOR TREE AND UNIFIED DEVELOPMENT ORDINANCE COMPLIANCE. FAILURE TO INSTALL PLANT MATERIAL PER THIS PLAN WILL JEOPARDIZE ISSUANCE OF FINAL CERTIFICATE OF OCCUPANCY. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING INSPECTIONS OF PLANT MATERIAL.
- 18. CONTRACTOR SHALL MAINTAIN LANDSCAPING FOR AT LEAST 30 DAYS AFTER SODDING AND PLANTING SHRUBS, AND 60 DAYS AFTER SEEDING, OR AS LONG AS IS NECESSARY TO ESTABLISH UNIFORM STAND OF THE SPECIFIED GRASSES, OR UNTIL SUBSTANTIAL COMPLETION OF THE PROJECT, OR UNTIL ACCEPTANCE OF THE LAWNS AND SHRUBS, WHICHEVER IS LATER.
- 19. THE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE (1) YEAR BEGINNING ON THE DATE OF SUBSTANTIAL COMPLETION. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE OR AT THE END OF THE GUARANTEE PERIOD.
- 20. ALL SHRUBS INSTALLED AS VEHICULAR USE SCREENING WILL BE MAINTAINED AS A CONTINUOUS HEDGE UPON MATURE GROWTH AT A MINIMUM HEIGHT OF 60 INCHES.
- 21. ALL MECHANICAL EQUIPMENT, AND VEHICULAR USE AREAS (DRIVES AND PARKING) SHALL BE SCREENED FROM PUBLIC VIEW.
- 22. WHERE EXISTING OR PROPOSED VEGETATION FAILS TO FUNCTION ADEQUATELY AS REQUIRED, THE TOWN OF KNIGHTDALE SITE INSPECTOR RESERVES THE RIGHT TO REQUIRE SUPPLEMENTAL PLANTINGS IN ADDITION TO

THOSE SHOWN ON THE LANDSCAPE PLAN BASED ON ACTUAL FIELD CONDITIONS.

- 23. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES & ORDINANCES REGARDING LANDSCAPING. GENERAL CONTRACTOR IS TO CLEAN THE ENTIRE SITE OF ALL CONSTRUCTION DEBRIS PRIOR TO FINAL INSPECTION.
- 24. THE CONTRACTOR SHALL INSTALL NON-WOVEN GEOTEXTILE UNDER PLANTING BED MULCH IN ALL LANDSCAPE BEDS
- 25. THE CONTRACTOR SHALL BE REQUIRED TO IDENTIFY AND SUBMIT PROPOSED SOD SPECIES IN ALL AREAS NOTED TO MATCH AND / OR TIE INTO EXISTING ADJACENT SOD. THIS SHALL BE SUBMITTED FOR REVIEW TO THE PROJECT LANDSCAPE ARCHITECT A MINIMUM OF TWO (2) WEEKS IN ADVANCE OF ALL SOD INSTALLATION ACTIVITIES.

# **SOIL AMENDMENT NOTES:**

- SOIL INSTRUCTIONS FOR ALL NEW PLANTING AREAS (INCLUDING SEED AREAS)
  AT PREVIOUSLY PAVED LOCATIONS: REMOVE ALL PAVEMENT, GRAVEL SUB-BASE, AND CONSTRUCTION DEBRIS. FOR ALL AREAS TO RECEIVE TREES, SHRUBS, GROUNDCOVERS, AND / OR ORNAMENTAL GRASSES; THE CONTRACTOR SHALL REMOVE EXISTING SOIL AND ADD 24" OF NEW TOPSOIL TO MEET THE PLANTING MIX STANDARDS. TOPSOIL SHALL BE TESTED BY A CERTIFIED SOIL TESTING AGENCY AND SHALL BE AMENDED PER THE RECOMMENDATIONS FOUND WITHIN THE SOILS ANALYSIS. FOR ALL AREAS TO RECEIVE SOD AND / OR SEED; THE CONTRACTOR SHALL REMOVE EXISTING SOIL AND ADD 6" OF NEW TOPSOIL TO MEET THE PLANTING MIX STANDARDS. TOPSOIL SHALL BE TESTED BY A CERTIFIED SOIL TESTING AGENCY AND SHALL BE AMENDED PER THE RECOMMENDATIONS FOUND WITHIN THE SOILS ANALYSIS.
- PAVED LOCATIONS): THE CONTRACTOR SHALL TAKE A MINIMUM OF FOUR (4) SAMPLES THROUGHOUT THE PROJECT CORRIDOR AND SHALL SUBMIT THEM TO BE TESTED TO A CERTIFIED SOIL TESTING AGENCY. THE CONTRACTOR SHALL AMEND ALL EXISTING SOIL WITHIN EXISTING DISTURBED PLANTING AREAS PER THE RECOMMENDATIONS FOUND WITHIN THE SOILS ANALYSIS. AREAS TO RECEIVE TREES, SHRUBS, GROUNDCOVERS, AND / OR ORNAMENTAL GRASSES SHALL BE AMENDED TO A DEPTH OF 6". AREAS TO RECEIVE SOD SHALL BE AMENDED TO A DEPTH OF 3".

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

Town Engineer These plans are approved by the Town of Knightdale and serve as

construction plans for this project. Administrator

SHEET NUMBER

