



R:\Data\Utility\Utility Spec Drawings\concrete thrust block vertical.dwg

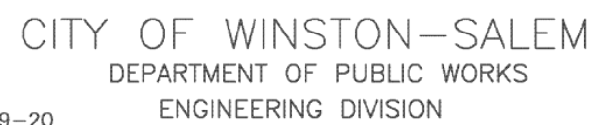
C-44



N.T.S. REVISED 4-17-2020

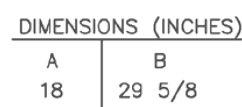
R:\Data\Utility\Utility Spec Drawings\w conn (non single family).dwg

C-48



R:\Data\Utility\Utility Spec Drawings\cast iron meter box.dwg

C-49



CITY OF WINSTON-SALEM
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

R:\Data\Utility\Utility Spec Drawings\concrete meter box.dwg

C-50



R:\Data\Utility\Utility Spec Drawings\air release valve section view.dwg

C-52



R:\Data\Utility\Utility Spec Drawings\air release valve profile view.dwg

C-53



CITY OF WINSTON-SALEM
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

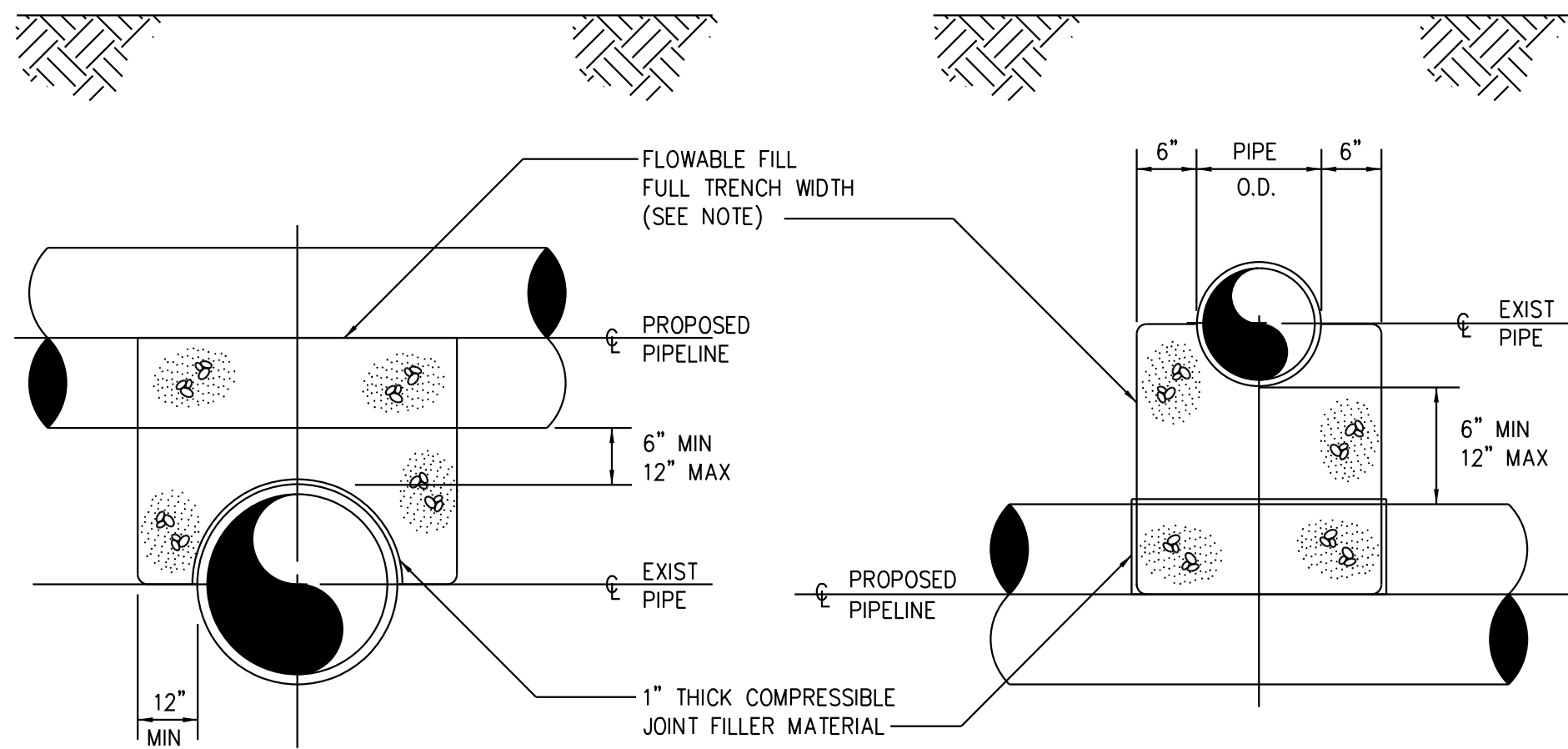
R:\Data\Utility\Utility Spec Drawings\2inch water main tap.dwg

C-54

	DESIGN PRESSURE	
	200 PSI	
PIPE SIZE	ROD DIA	NUMBER REQ'D
4" TO 8"	3/4"	2
10" TO 20"	3/4"	4
24"	3/4"	6
30"	1"	6
36"	1"	8

1. THREADED RODS FOR PIPE DIAMETERS LARGER THAN 12" SHALL BE ASTM A193 (GRADE B7). ALL OTHER THREADED RODS SHALL BE ASTM A36.
2. ALL HARDWARE IN CONTACT WITH SOIL SHALL BE PAINTED WITH TWO COATS HIGH BUILD COAL TAR EPOXY (MIN 26 MIL DRY FILM THICKNESS)
5. RODS SHALL BE EQUALLY SPACED AROUND PIPE.

1	THREADED ROD SCHEDULE
UC-3F	SCALE: N.T.S.

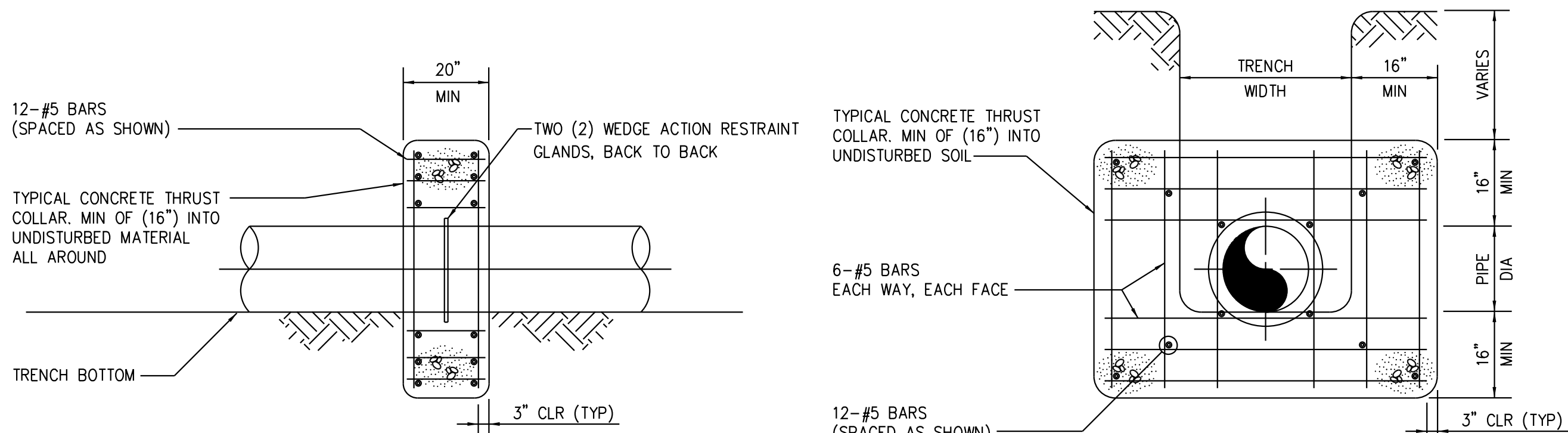


PROPOSED PIPELINE OVER EXIST PIPE

PROPOSED PIPELINE UNDER EXIST PIPE

NOTE: NO ENCASEMENT REQUIRED FOR
SPACE GREATER THAN 12"

3	PROPOSED PIPELINE OVER/UNDER EXIST PIPE
UC-3F	SCALE: N.T.S.

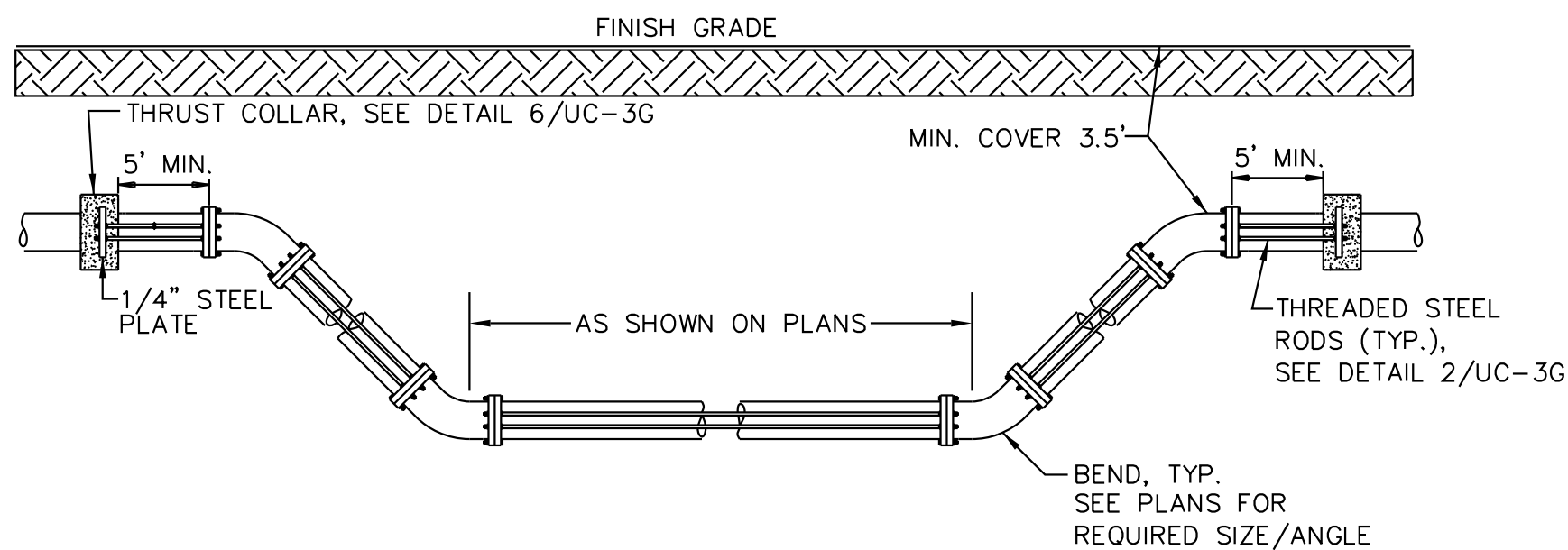


ELEVATION 1

ELEVATION 2

1. THRUST COLLAR DESIGNED FOR USE ON UP TO 12" LINE SIZE WITH TEST PRESSURE OF 200 PSI.

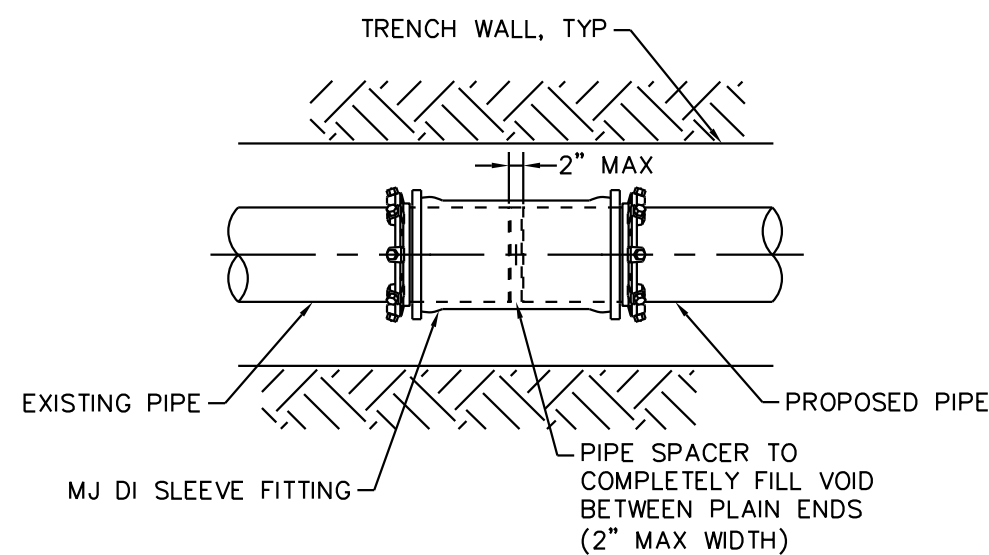
6	THRUST COLLAR
UC-3F	SCALE: N.T.S.



- NOTES:
1. ONCE INSTALLED AND TIGHT, THE STEEL RODS AND BOLTS SHALL BE COATED WITH 2 COATS OF BITUMINOUS BASE PAINT.
 2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT BENDS.
 3. MEGALUGS OR RESTRAINED JOINT PIPE AND FITTINGS ARE ALLOWED IN LIEU OF RODDING.
 4. THRUST COLLARS SHALL BE IN ACCORDANCE WITH DETAIL 6/JC-3G.
 5. ALL PIPE AND FITTINGS BETWEEN THRUST COLLARS SHALL BE RODDED.

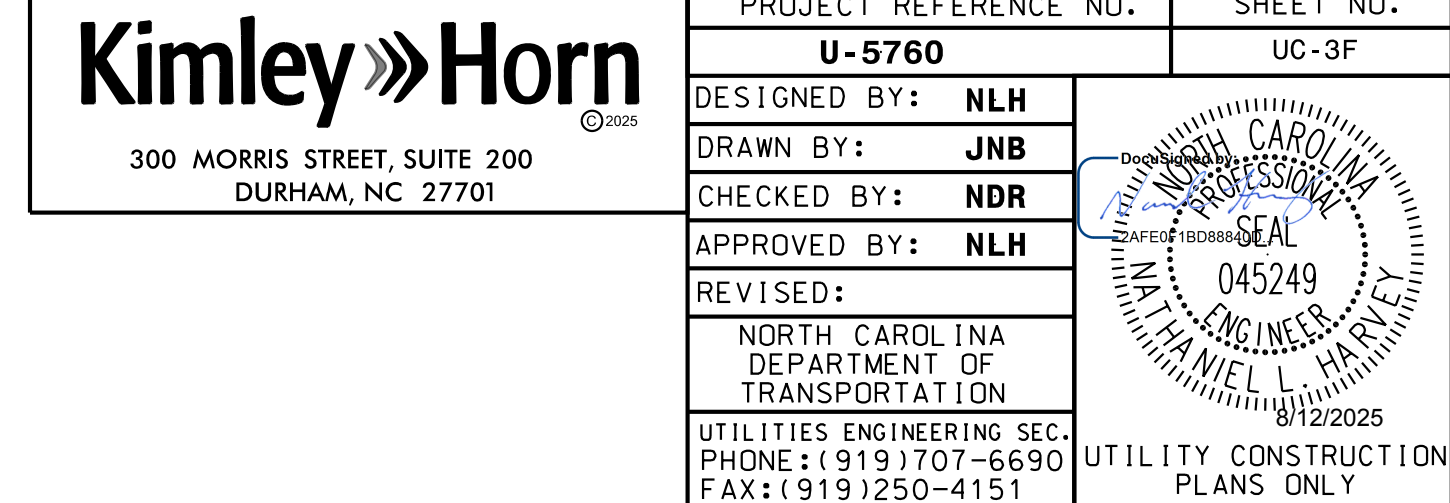
NOT TO SCALE

2	STANDARD VERTICAL BEND
UC-3F	SCALE: N.T.S.

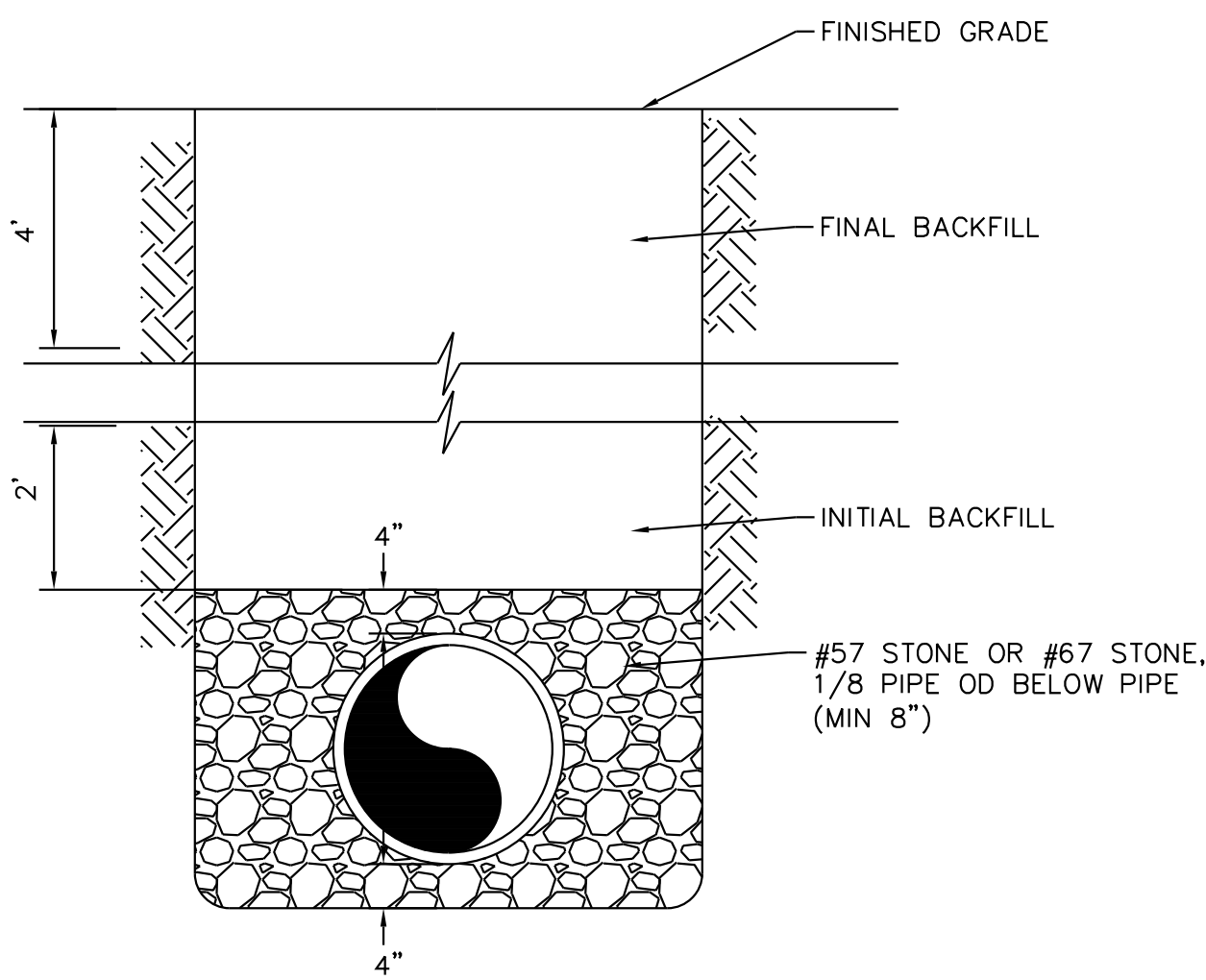


- NOTES:
1. SLEEVES SHALL BE DUCTILE IRON MECHANICAL JOINT (DI MJ) OF THE SAME OR HIGHER PRESSURE RATING AS THE HOST PIPE.
 2. RESTRAINT GLANDS SHALL BE DESIGNED FOR THE INTENDED USE AND SHALL CONSIST OF MULTIPLE GRIPPING WEDGES INCORPORATED INTO A FOLLOWER GLAND AND BOLT-ACTUATED BY TORQUE-LIMITING TWIST OFF NUTS.

4	RESTRAINED MJ SOLID SLEEVE
UC-3F	SCALE: N.T.S.

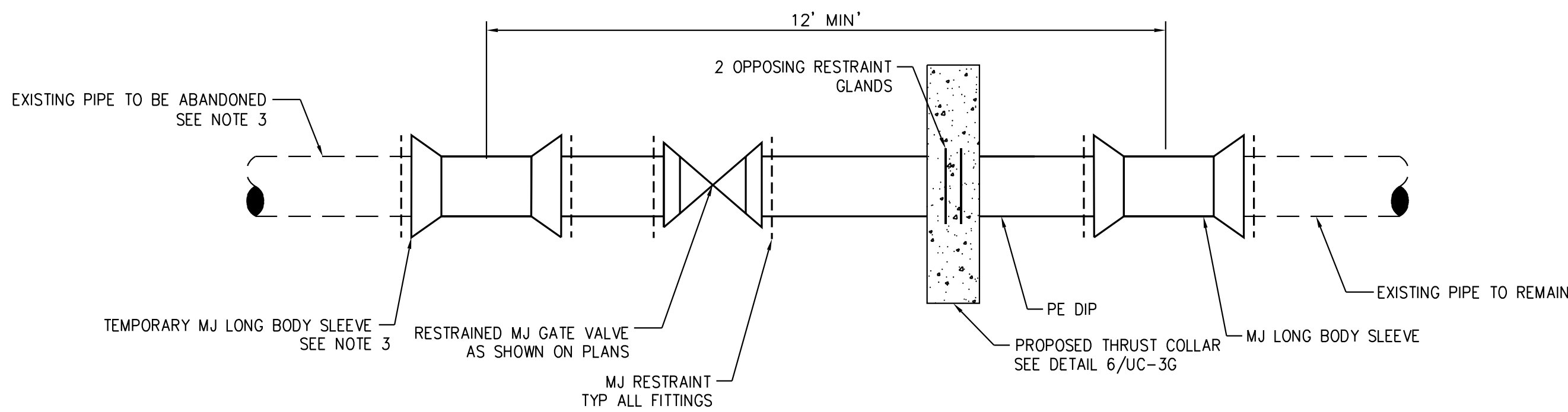


UTILITY CONSTRUCTION



- NOTES:**
1. USE FOR ALL PVC FORCE MAIN AND GRAVITY SEWER PIPE INSTALLATIONS.
 2. INITIAL BACKFILL MATERIAL SHALL BE FREE OF LARGE STONES OR CLODS NO LARGER THAN 1-1/2" INCHES IN DIAMETER AND COMPACTED TO PRODUCE A UNIFORMLY DENSE BACKFILL ON THE PIPE AT A MINIMUM DENSITY OF 95% OF STANDARD PROCTOR DENSITY.
 3. FINAL BACKFILL MATERIAL FREE OF LARGE STONES OR CLODS LARGER THAN 1-1/2" INCHES IN DIAMETER SHALL BE PLACED IN 6" LIFTS AND COMPACTED TO A MINIMUM DENSITY OF 95% OF STANDARD PROCTOR DENSITY.

5	BEDDING/BACKFILLING FOR PVC GRAVITY SEWER
UC-3F	SCALE: N.T.S.

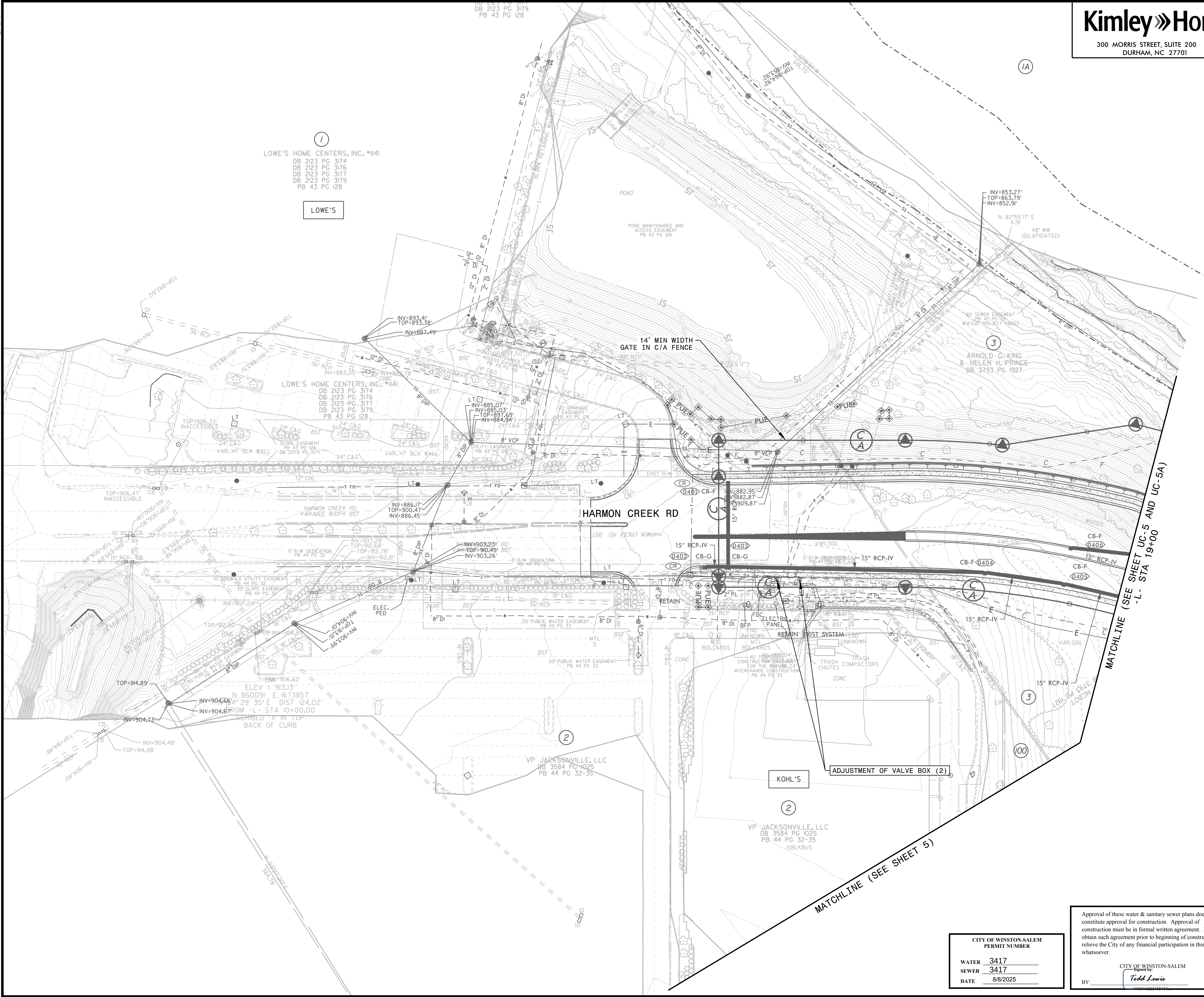


- NOTES:
1. CONTRACTOR SHALL CONSTRUCT THE VALVE AND PIPE ASSEMBLY PRIOR TO DISRUPTING WATER SERVICE AND BEFORE CUTTING THE EXISTING PIPE. SHUT DOWN TIME OF THE EXISTING LINES SHALL BE MINIMIZED.
 2. THE THRUST COLLAR SHALL BE ALLOWED TO CURE A MINIMUM OF 3 DAYS BEFORE GATE VALVE IS CLOSED
 3. AFTER THRUST COLLAR HAS CURED, VALVE MAY BE CLOSED, PIPE TO BE ABANDONED CUT AND REMOVED, AND TEMPORARY SLEEVE REPLACED WITH BEND FITTING SHOWN IN RELOCATION SEGMENT PLAN/PROFILE.

7	THRUST COLLAR CUT-IN
UC-3F	SCALE: N.T.S.

5/14/99

8/6/2025

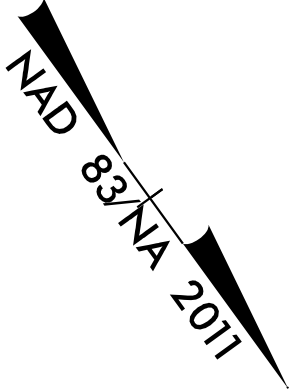


300 MORRIS STREET, SUITE 200
DURHAM, NC 27701

PROJECT REFERENCE NO. U-5760		SHEET NO. UC-4
DESIGNED BY:	NLH	
DRAWN BY:	JNB	
CHECKED BY:	NDR	
APPROVED BY:	NLH	
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

THIS SHEET CORRESPONDS TO RDY-4



CITY OF WINSTON-SALEM
PERMIT NUMBER

WATER

SEWER

DATE

3417

3417

8/8/2025

Approval of these water & sanitary sewer plans does not constitute approval for construction. Approval of construction must be in formal written agreement. Failure to obtain such agreement prior to beginning of construction will relieve the City of any financial participation in this project whatsoever.

CITY OF WINSTON-SALEM
Signed by:
Todd Lewis
BY: _____

UTILITY DESIGN APPROVED

Water & Sewer

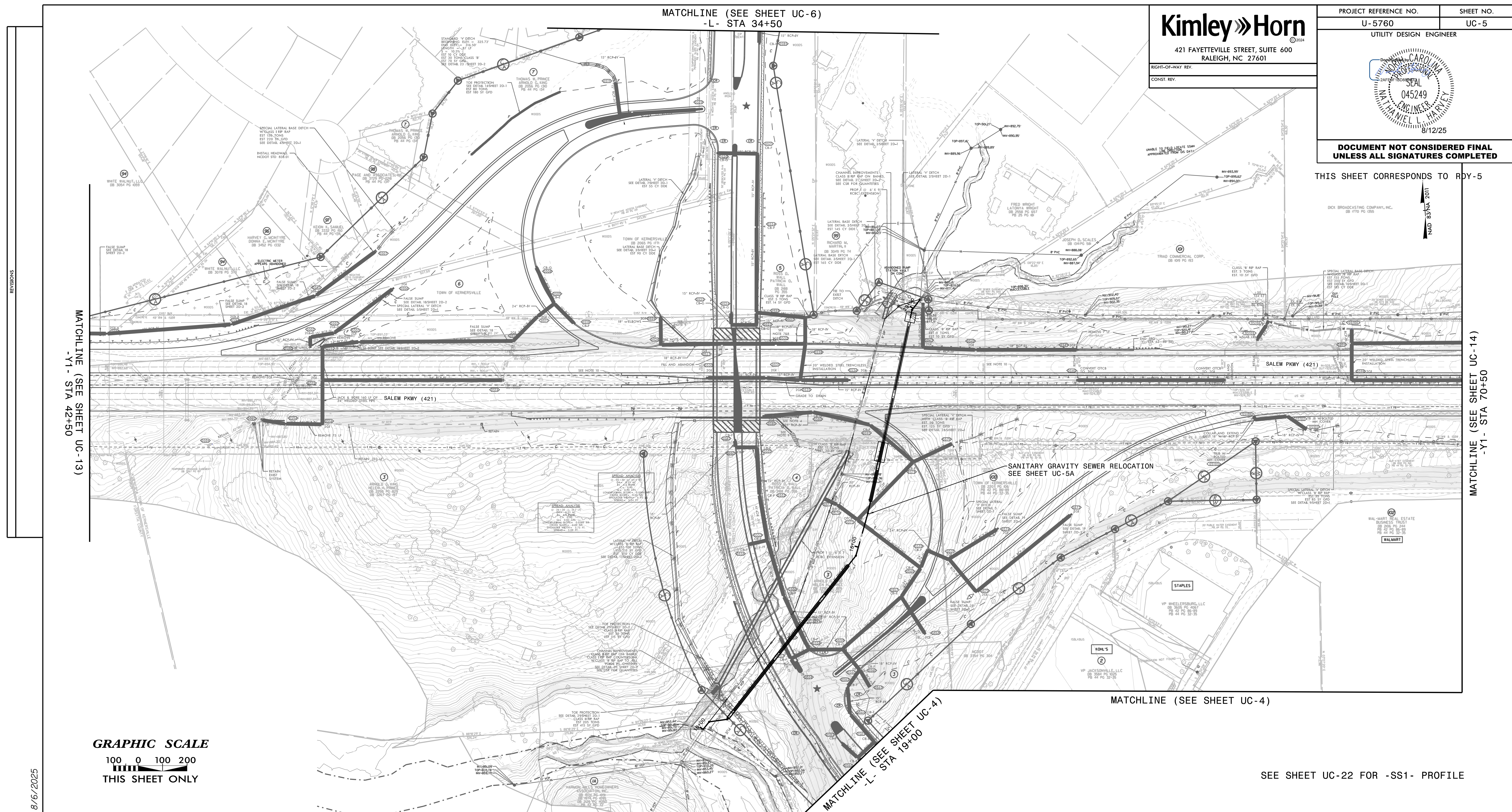
Signed by:

Utilities Director

8/8/2025

Date

Approval by the Utilities Director of the water and sewer infrastructure depicted in these plans does not constitute approval for any other purpose than that set forth in Section 64 of the Water System Policy and Section 36 of the Sewer System Policy of the City/County Utility Commission. To the extent other permits, licenses, permissions or the like must be obtained to complete this project, such are specifically not granted by this approval and must be obtained by the Developer and/or his designee.



5/14/2025

8/6/2025

NOTES:

1. REMOVE EXISTING 8" GRAVITY SANITARY SEWER PIPING AND ANCHORING HARDWARE WITHIN EXISTING BOX CULVERT. REMOVE PIPING OUTSIDE CULVERT TO MIN 2-FEET BELOW PROPOSED GRADE.

(SEE SHEET UC-5)

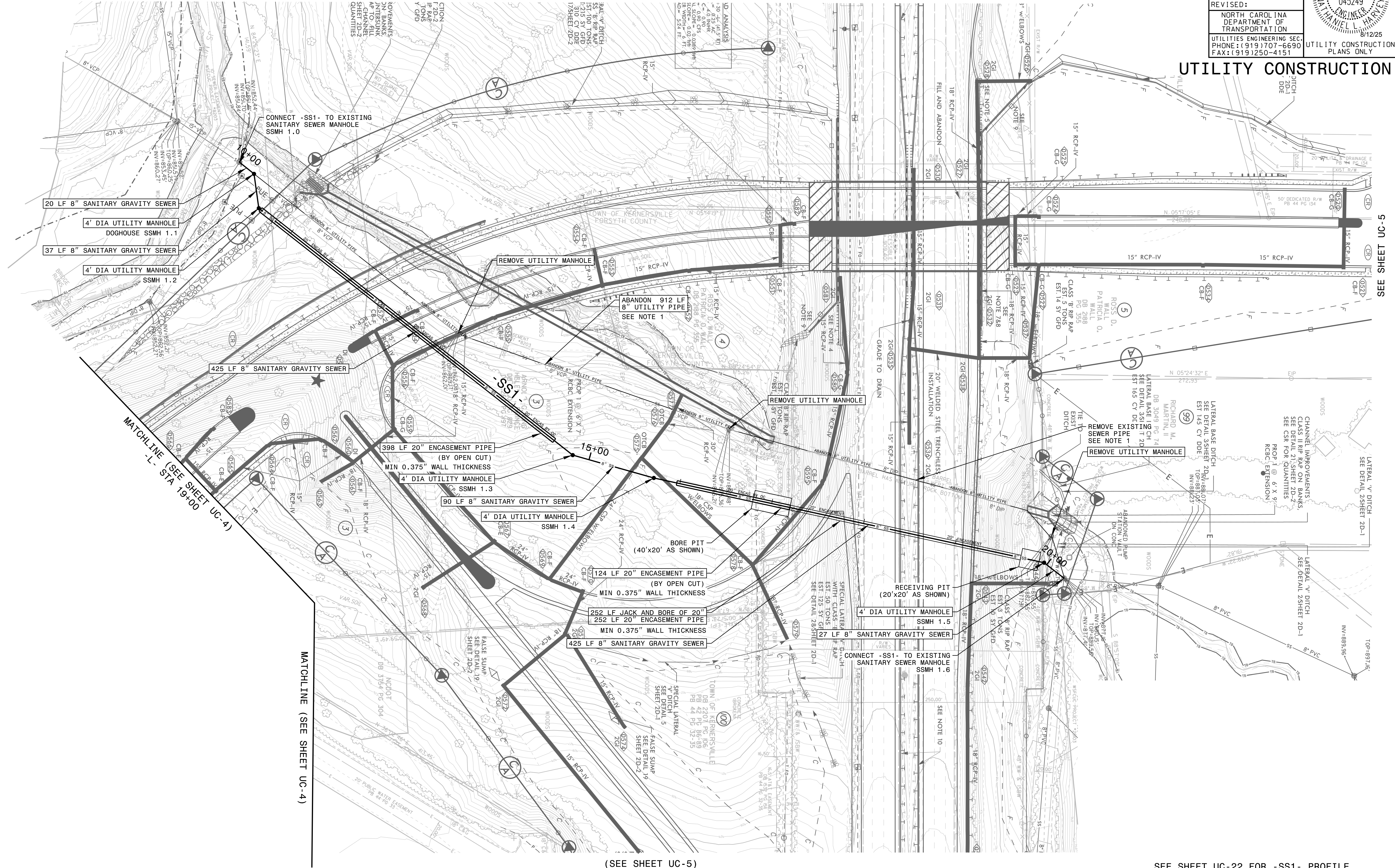
NAD 83/NA 2011

Kimley»Horn

300 MORRIS STREET, SUITE 200
DURHAM, NC 27701

PROJECT REFERENCE NO.		SHEET NO.
U-5760		UC-5A
DESIGNED BY:	NLH	
DRAWN BY:	JNB	
CHECKED BY:	NDR	
APPROVED BY:	NLH	
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		8/12/25 UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

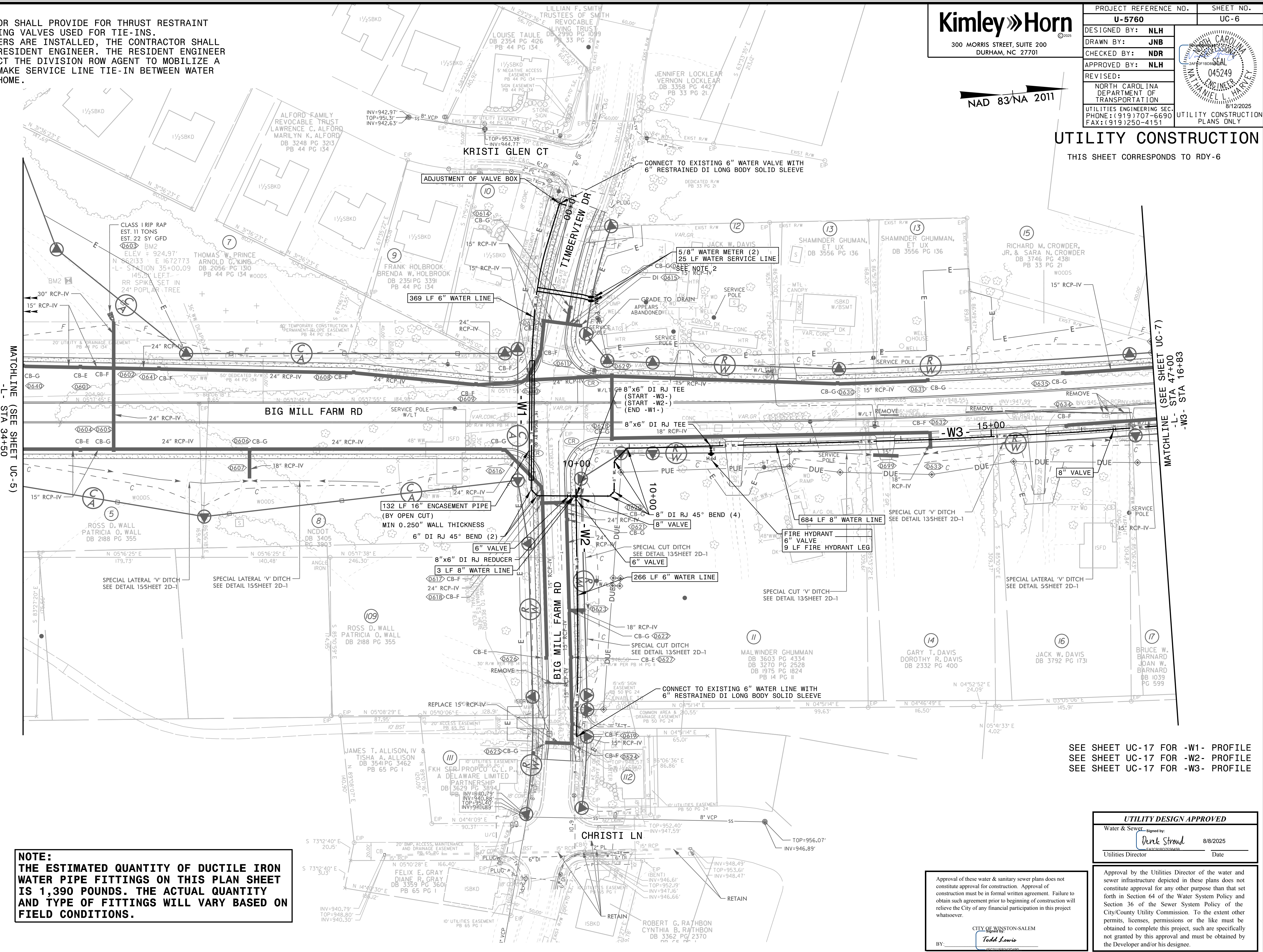


(SEE SHEET UC-5)

SEE SHEET UC-22 FOR -SS1- PROFILE

SEE SHEET UC-5

NOTES:
1. CONTRACTOR SHALL PROVIDE FOR THRUST RESTRAINT OF EXISTING VALVES USED FOR TIE-INS.
2. ONCE METERS ARE INSTALLED, THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER. THE RESIDENT ENGINEER SHALL CONTACT THE DIVISION ROW AGENT TO MOBILIZE A PLUMBER TO MAKE SERVICE LINE TIE-IN BETWEEN WATER METERS AND HOME.

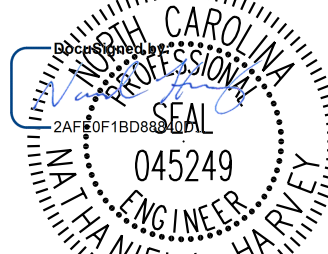


NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1,390 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

Kimley»Horn

300 MORRIS STREET, SUITE 200
DURHAM, NC 27701

NAD 83/NA 2011

PROJECT REFERENCE NO.		SHEET NO.
U-5760		UC-6
DESIGNED BY: NLH		UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JNB		
CHECKED BY: NDR		
APPROVED BY: NLH		
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		8/12/2025
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		

UTILITY CONSTRUCTION

THIS SHEET CORRESPONDS TO RDY-6

SEE SHEET UC-17 FOR -W1- PROFILE
SEE SHEET UC-17 FOR -W2- PROFILE
SEE SHEET UC-17 FOR -W3- PROFILE

UTILITY DESIGN APPROVED

Water & Sewer
Signed by: *Derek Stroud* 8/8/2025
Utilities Director Date

Approval of these water & sanitary sewer plans does not constitute approval for construction. Approval of construction must be in formal written agreement. Failure to obtain such agreement prior to beginning of construction will relieve the City of any financial participation in this project whatsoever.

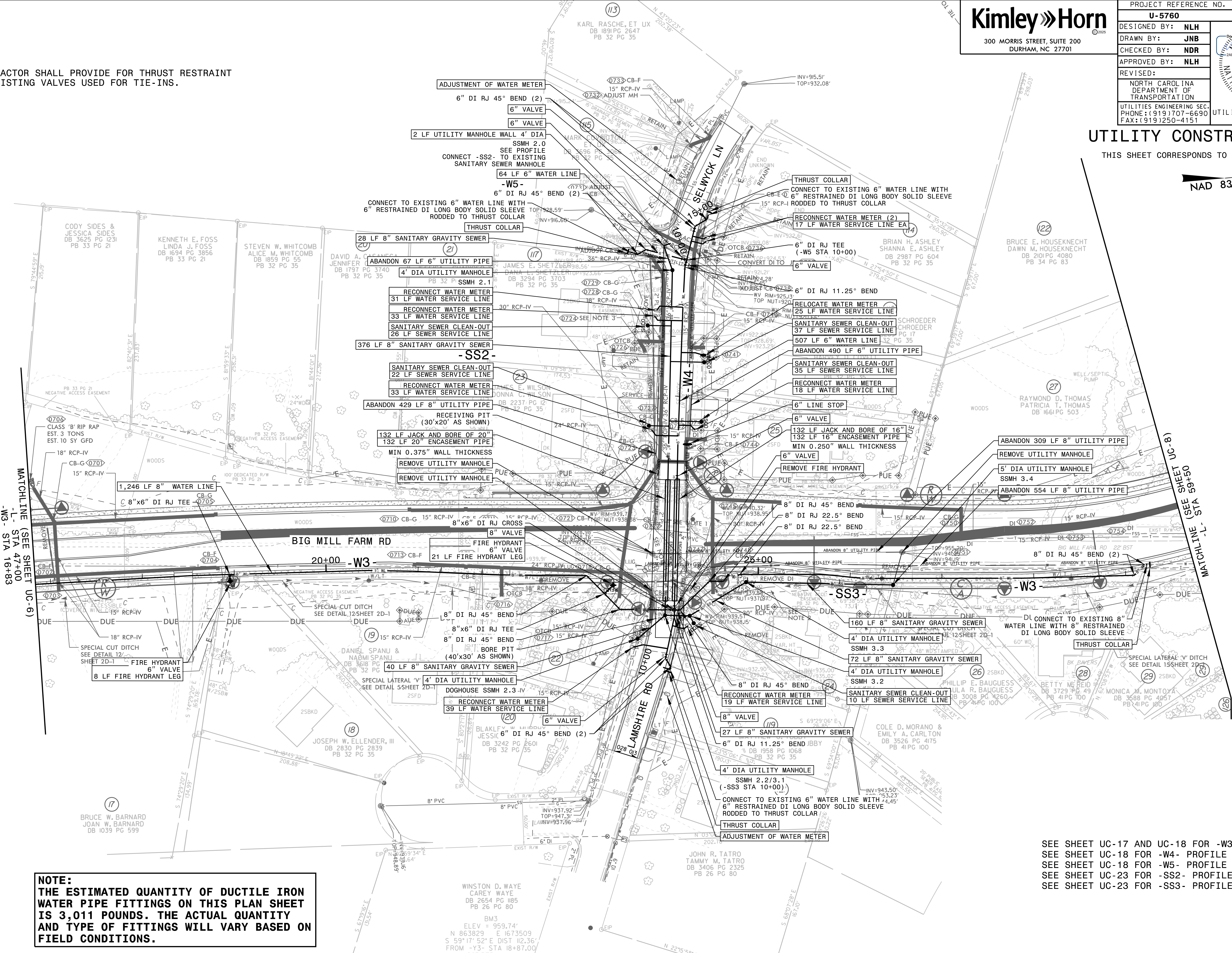
CITY OF WINSTON-SALEM
Signed by: *Todd Lewis*

Approval by the Utilities Director of the water and sewer infrastructure depicted in these plans does not constitute approval for any other purpose than that set forth in Section 64 of the Water System Policy and Section 36 of the Sewer System Policy of the City/County Utility Commission. To the extent other permits, licenses, permissions or the like must be obtained to complete this project, such are specifically not granted by this approval and must be obtained by the Developer and/or his designee.

5/14/99

8/6/2025

NOTES:
1. CONTRACTOR SHALL PROVIDE FOR THRUST RESTRAINT
OF EXISTING VALVES USED FOR TIE-INS.



PROJECT REFERENCE NO.

U-5760

SHEET NO.

UC-7

DESIGNED BY:

NLH

DRAWN BY:

JNB

CHECKED BY:

NDR

APPROVED BY:

NLH

REVISED:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE: (919) 707-6690
FAX: (919) 250-4151

UTILITY CONSTRUCTION
PLANS ONLY

Kimley»Horn

300 MORRIS STREET, SUITE 200
DURHAM, NC 27701

045249

8/12/25

SEAL

045249

8/12/25

UTILITY CONSTRUCTION

THIS SHEET CORRESPONDS TO RDY-7

NAD 83/NA 2011

NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON
WATER PIPE FITTINGS ON THIS PLAN SHEET
IS 3,011 POUNDS. THE ACTUAL QUANTITY
AND TYPE OF FITTINGS WILL VARY BASED ON
FIELD CONDITIONS.

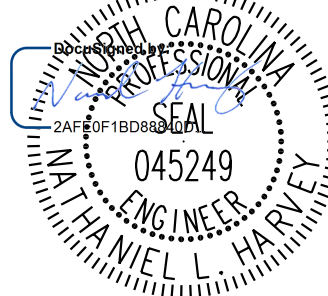
SEE SHEET UC-17 AND UC-18 FOR -W3- PROFILE
SEE SHEET UC-18 FOR -W4- PROFILE
SEE SHEET UC-18 FOR -W5- PROFILE
SEE SHEET UC-23 FOR -SS2- PROFILE
SEE SHEET UC-23 FOR -SS3- PROFILE

5/14/19

NOTES:

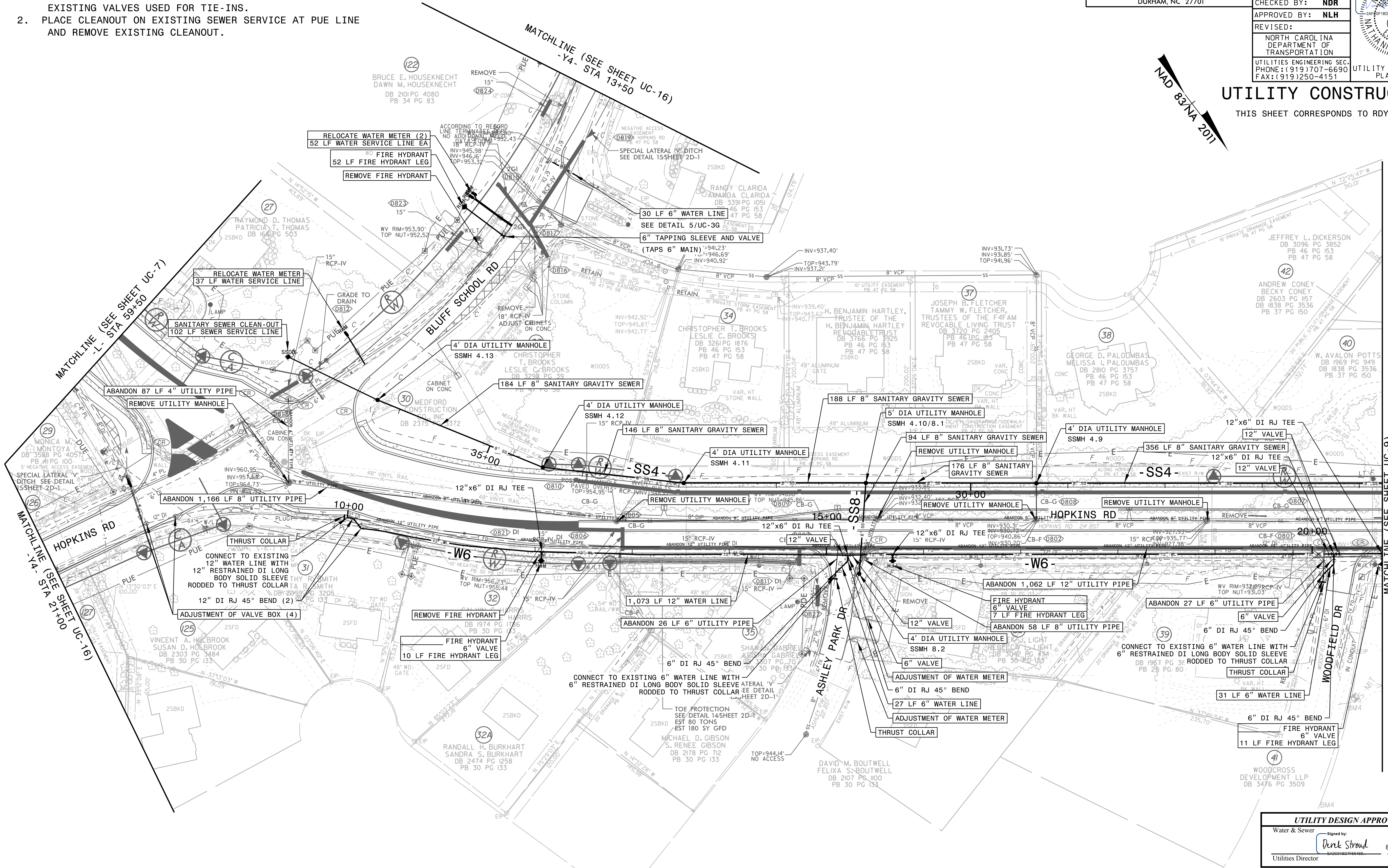
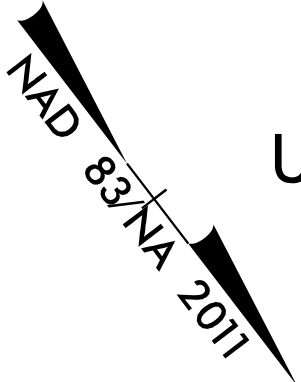
1. CONTRACTOR SHALL PROVIDE FOR THRUST RESTRAINT OF EXISTING VALVES USED FOR TIE-INS.
2. PLACE CLEANOUT ON EXISTING SEWER SERVICE AT PUE LINE AND REMOVE EXISTING CLEANOUT.

Kimley»Horn
300 MORRIS STREET, SUITE 200
DURHAM, NC 27701

PROJECT REFERENCE NO.		SHEET NO.
U-5760		UC-8
DESIGNED BY:	NLH	
DRAWN BY:	JNB	
CHECKED BY:	NDR	
APPROVED BY:	NLH	
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		8/12/2025 UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

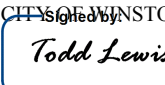
THIS SHEET CORRESPONDS TO RDY-8



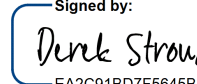
NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 3,060 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

SEE SHEET UC-18 AND UC-19 FOR -W6- PROFILE
SEE SHEET UC-23 AND UC-24 FOR -SS4- PROFILE
SEE SHEET UC-24 FOR -SS8- PROFILE

Approval of these water & sanitary sewer plans does not constitute approval for construction. Approval of construction must be in formal written agreement. Failure to obtain such agreement prior to beginning of construction will relieve the City of any financial participation in this project whatsoever.

BY:  T. Lewis
4P011ERS3430590

UTILITY DESIGN APPROVED

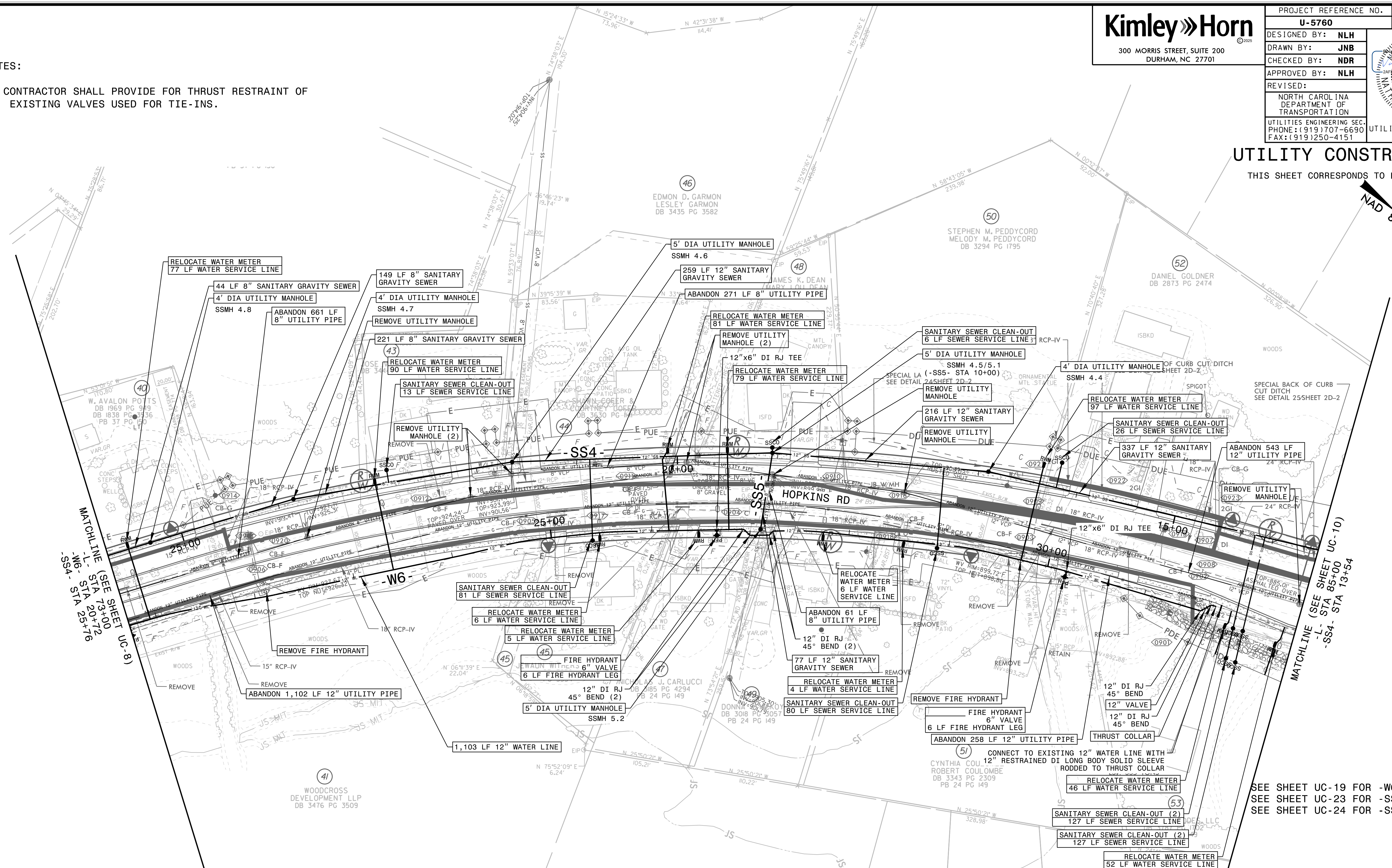
Water & Sewer - Signed by:  D. Stroud 8/8/2025
Utilities Director Date

Approval by the Utilities Director of the water and sewer infrastructure depicted in these plans does not constitute approval for any other purpose than that set forth in Section 64 of the Water System Policy and Section 36 of the Sewer System Policy of the City/County Utility Commission. To the extent other permits, licenses, permissions or the like must be obtained to complete this project, such are specifically not granted by this approval and must be obtained by the Developer and/or his designee.

8/6/2025

1. CONTRACTOR SHALL PROVIDE FOR THRUST RESTRAINT OF EXISTING VALVES USED FOR TIE-INS.

Approval by the Utilities Director of the water and sewer infrastructure depicted in these plans does not constitute approval for any other purpose than that set forth in Section 64 of the Water System Policy and Section 36 of the Sewer System Policy of the City/County Utility Commission. To the extent other permits, licenses, permissions or the like must be obtained to complete this project, such are specifically not granted by this approval and must be obtained by the Developer and/or his designee.

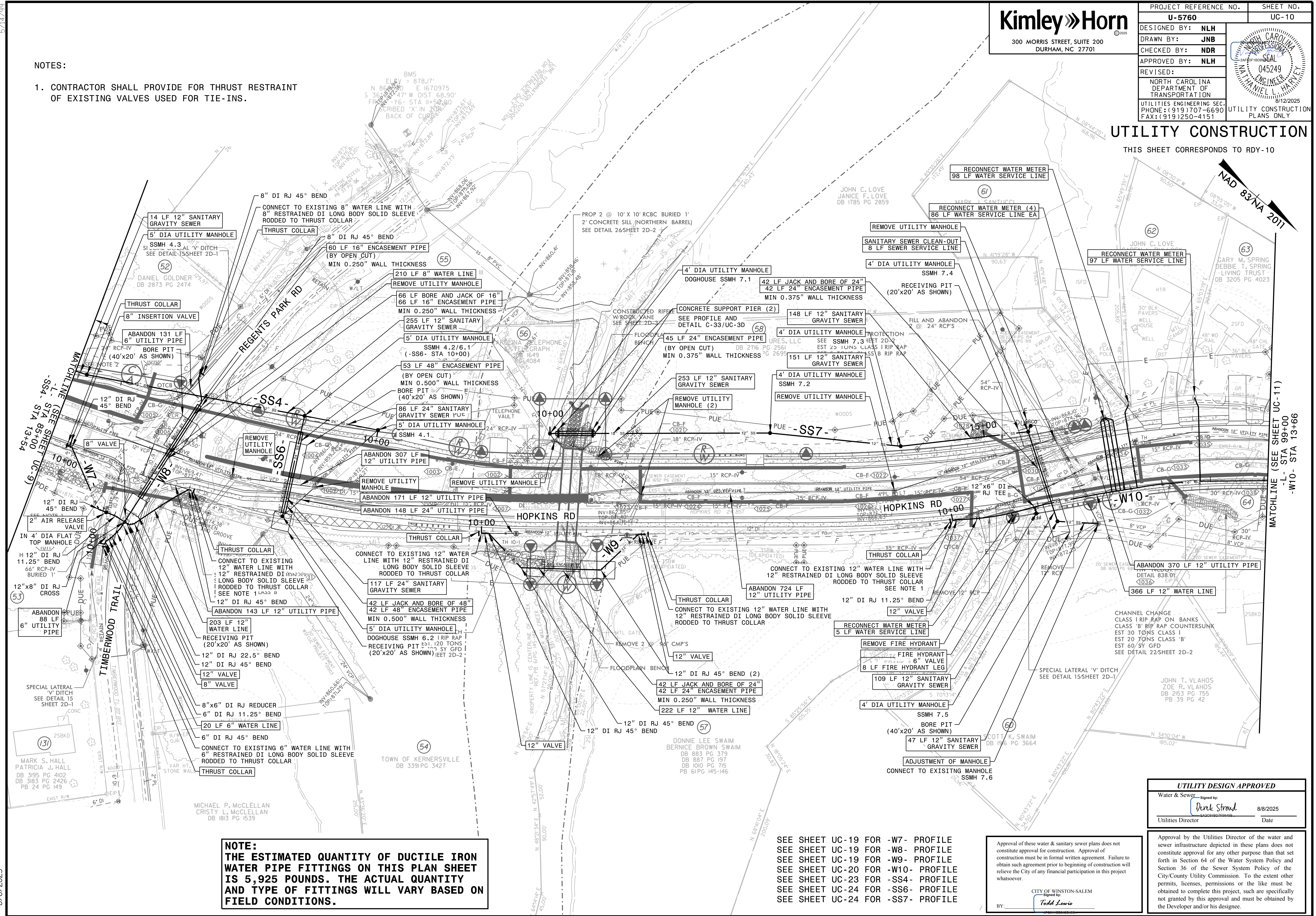


NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON
WATER PIPE FITTINGS ON THIS PLAN SHEET
IS 5,925 POUNDS. THE ACTUAL QUANTITY
AND TYPE OF FITTINGS WILL VARY BASED ON
FIELD CONDITIONS.

BY:  CITY OF WINSTON-SALEM
Signed by: *Todd Lewis*

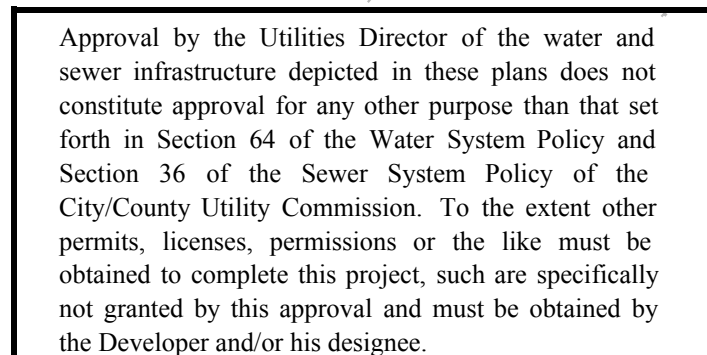
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NAD 83/NA 2011

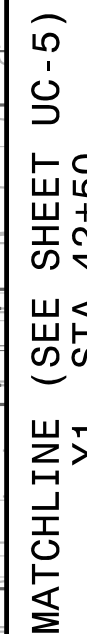




NAD 83/NA 2011



THIS SHEET CORRESPONDS TO RDY-13



Approval by the Utilities Director of the water and sewer infrastructure depicted in these plans does not constitute approval for any other purpose than that set forth in Section 64 of the Water System Policy and Section 36 of the Sewer System Policy of the City/County Utility Commission. To the extent other permits, licenses, permissions or the like must be obtained to complete this project, such are specifically not granted by this approval and must be obtained by the Developer and/or his designee.

5/14/99

NOTE:
NO UTILITY CONSTRUCTION ON THIS SHEET

Kimley»Horn

300 MORRIS STREET, SUITE 200
DURHAM, NC 27701

PROJECT REFERENCE NO.

U-5760

SHEET NO.

UC-14

DESIGNED BY: NLH

DRAWN BY: JNB

CHECKED BY: NDR

APPROVED BY: NLH

REVISED:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE: (919) 707-6690
FAX: (919) 250-4151

UTILITY CONSTRUCTION
PLANS ONLY

8/12/2025

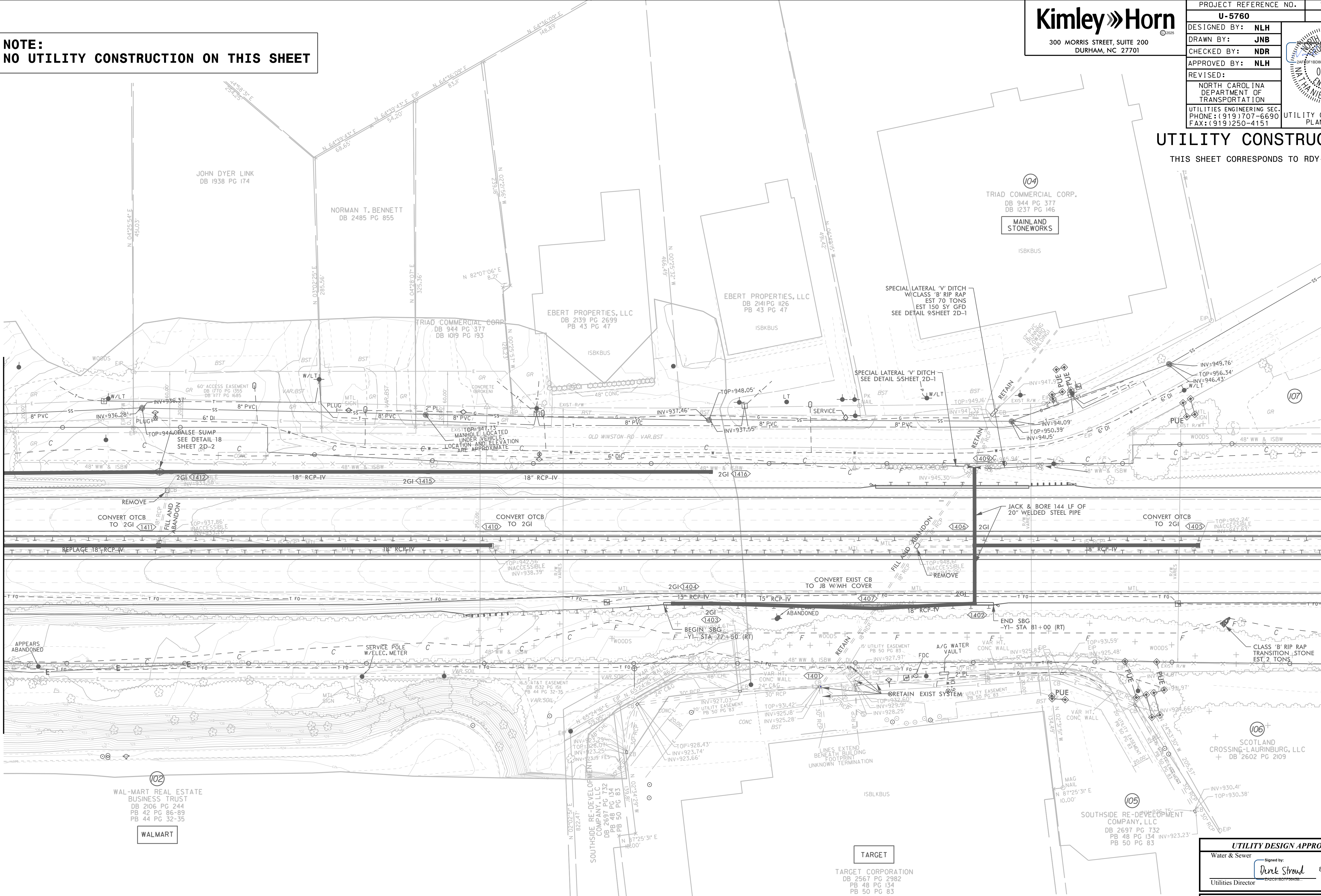
UTILITY CONSTRUCTION

THIS SHEET CORRESPONDS TO RDY-14

NAD 83/NA 2011

MATCHLINE (SEE SHEET UC-5)
-Y1 - STA 70+50

MATCHLINE (SEE SHEET UC-15)
-Y1 - STA 84+50



UTILITY DESIGN APPROVED

Water & Sewer

Signed by:

Derek Stroud

8/8/2025

Utilities Director

Date

Approval of these water & sanitary sewer plans does not constitute approval for construction. Approval of construction must be in formal written agreement. Failure to obtain such agreement prior to beginning of construction will relieve the City of any financial participation in this project whatsoever.

CITY OF WILMINGTON-SALEM

Todd Lewis

BY:

Approval by the Utilities Director of the water and sewer infrastructure depicted in these plans does not constitute approval for any other purpose than that set forth in Section 64 of the Water System Policy and Section 36 of the Sewer System Policy of the City/County Utility Commission. To the extent other permits, licenses, permissions or the like must be obtained to complete this project, such are specifically not granted by this approval and must be obtained by the Developer and/or his designee.

8/6/2025

5/14/99

MATCHLINE (SEE SHEET UC-14)
-Y1- STA 84+50

8/6/2025

NOTE:
NO UTILITY CONSTRUCTION ON THIS SHEET

Kimley»Horn

300 MORRIS STREET, SUITE 200
DURHAM, NC 27701

PROJECT REFERENCE NO.

U-5760

SHEET NO.

UC-15

DESIGNED BY: **NLH**

DRAWN BY: **JNB**

CHECKED BY: **NDR**

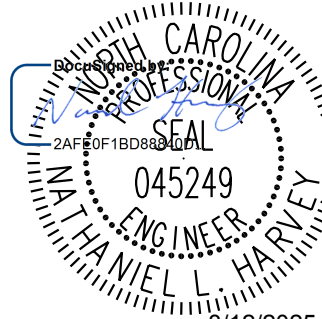
APPROVED BY: **NLH**

REVISED:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

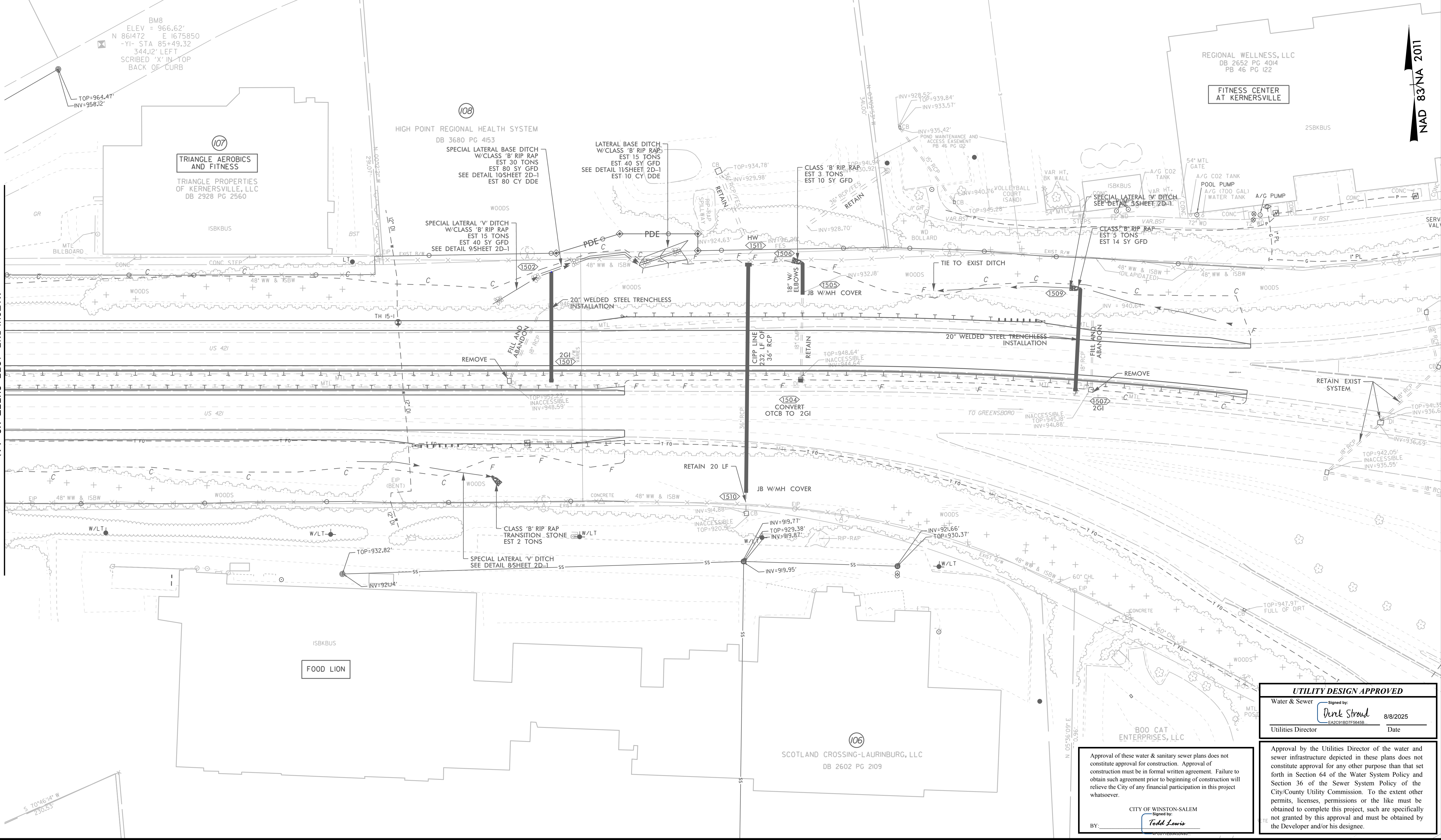
UTILITIES ENGINEERING SEC.
PHONE: (919) 707-6690
FAX: (919) 250-4151

UTILITY CONSTRUCTION
PLANS ONLY



UTILITY CONSTRUCTION

THIS SHEET CORRESPONDS TO RDY-15



UTILITY DESIGN APPROVED

Water & Sewer

Signed by:

Dunk Stroud

8/8/2025

Utilities Director

Date

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CITY OF WINSTON-SALEM

Signed by:

Todd Lewis

BY:

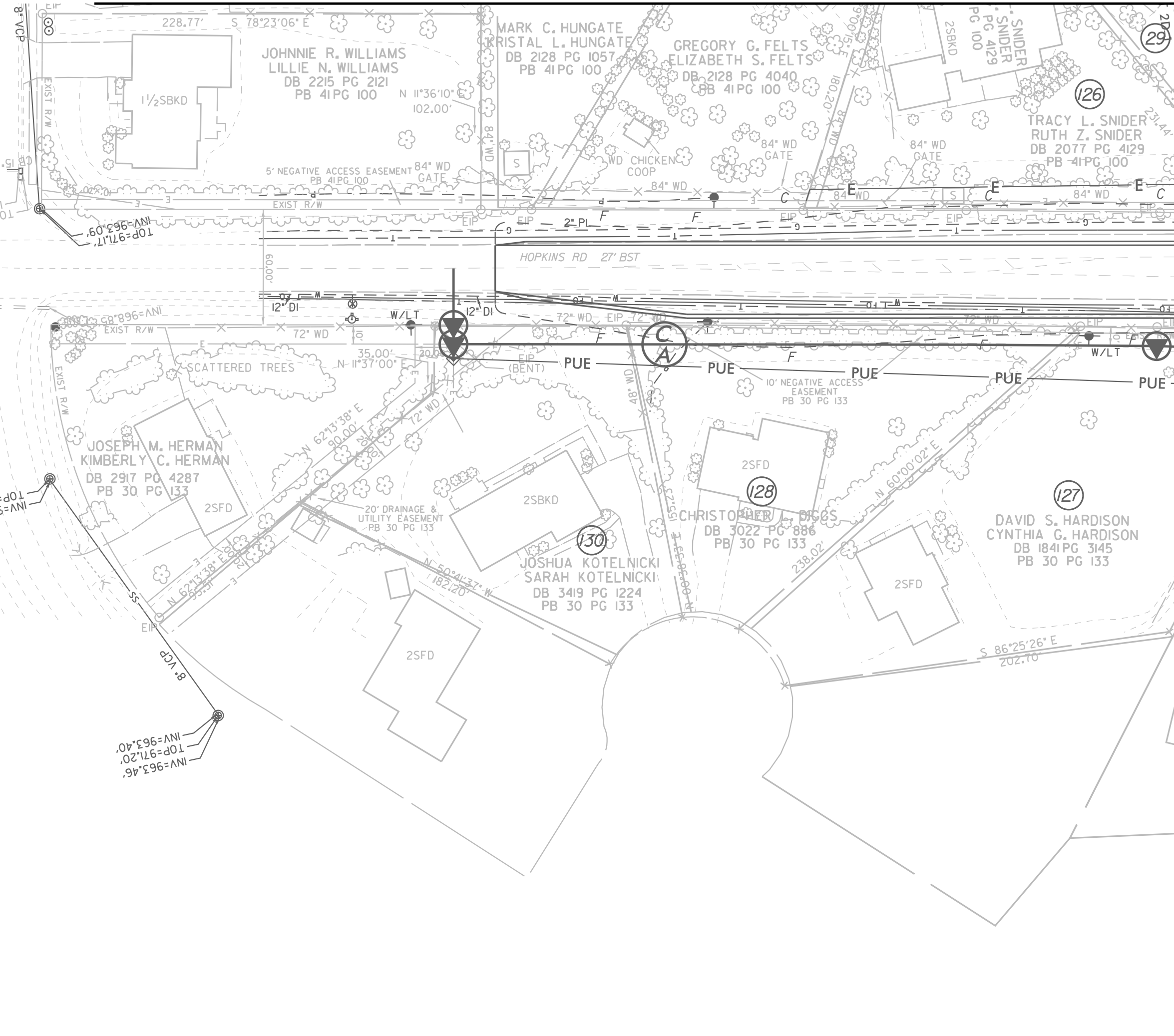
Approval by the Utilities Director of the water and sewer infrastructure depicted in these plans does not constitute approval for any other purpose than that set forth in Section 64 of the Water System Policy and Section 36 of the Sewer System Policy of the City/County Utility Commission. To the extent other permits, licenses, permissions or the like must be obtained to complete this project, such are specifically not granted by this approval and must be obtained by the Developer and/or his designee.

5/14/99

NOTE:
NO UTILITY CONSTRUCTION ON THIS SHEET

NAD 83/NA 2011

8/6/2025



MATCHLINE (SEE SHEET UC-8)
-Y4- STA 21+00

Kimley»Horn

300 MORRIS STREET, SUITE 200
DURHAM, NC 27701

PROJECT REFERENCE NO.

U-5760

SHEET NO.

UC-16

DESIGNED BY: NLH

DRAWN BY: JNB

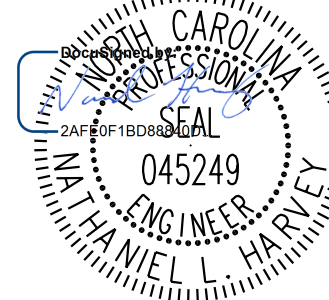
CHECKED BY: NDR

APPROVED BY: NLH

REVISED:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE: (919) 707-6690
FAX: (919) 250-4151

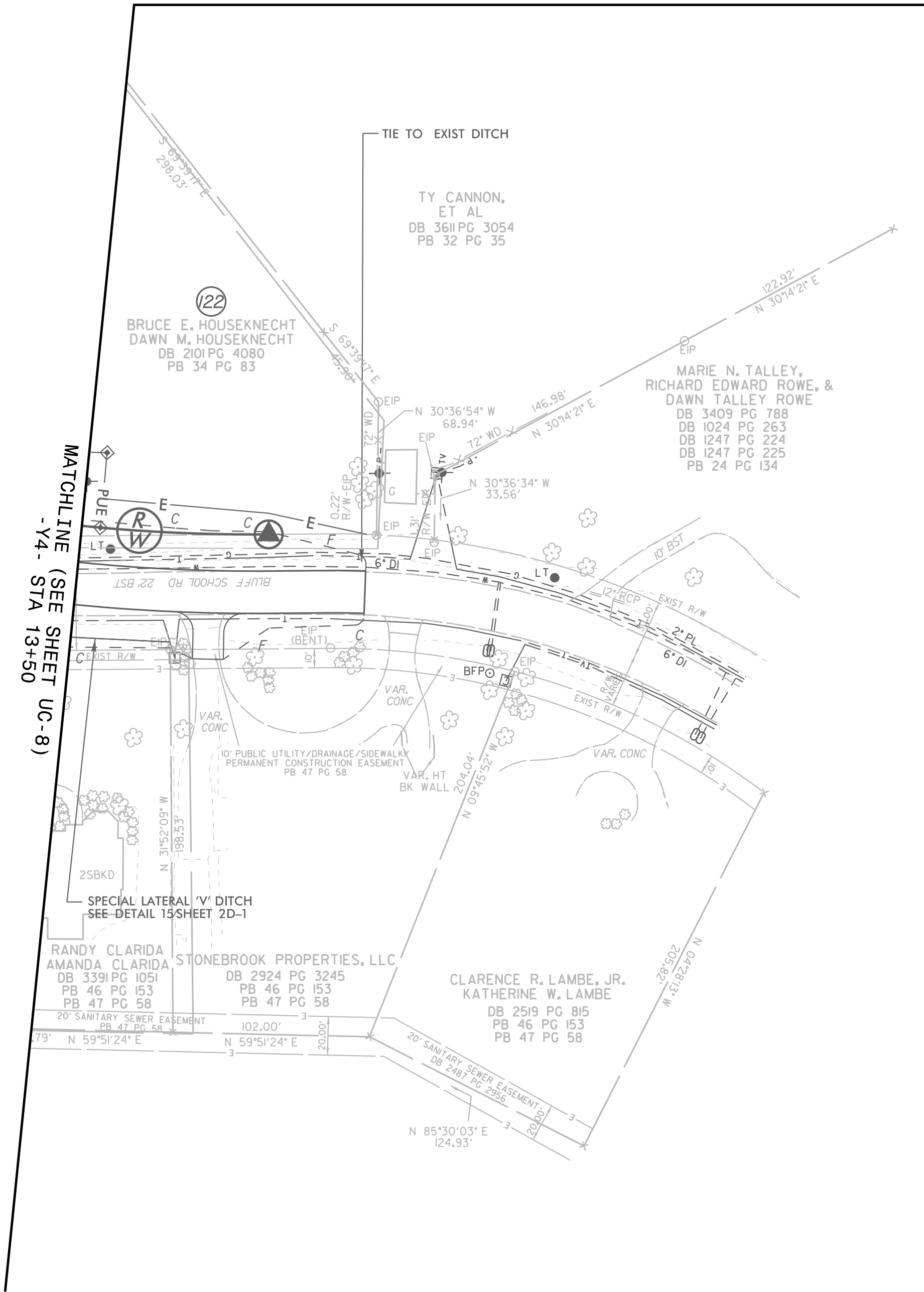


UTILITY CONSTRUCTION
PLANS ONLY

UTILITY CONSTRUCTION

THIS SHEET CORRESPONDS TO RDY-16

NAD 83/NA 2011



MATCHLINE (SEE SHEET UC-8)
-Y4- STA 13+50

Approval of these water & sanitary sewer plans does not constitute approval for construction. Approval of construction must be in formal written agreement. Failure to obtain such agreement prior to beginning of construction will relieve the City of any financial participation in this project whatsoever.

CITY OF WINSTON-SALEM

Signed by:

BY: Todd Lewis

UTILITY DESIGN APPROVED

Water & Sewer

Signed by:

Dunk Stroud

8/8/2025

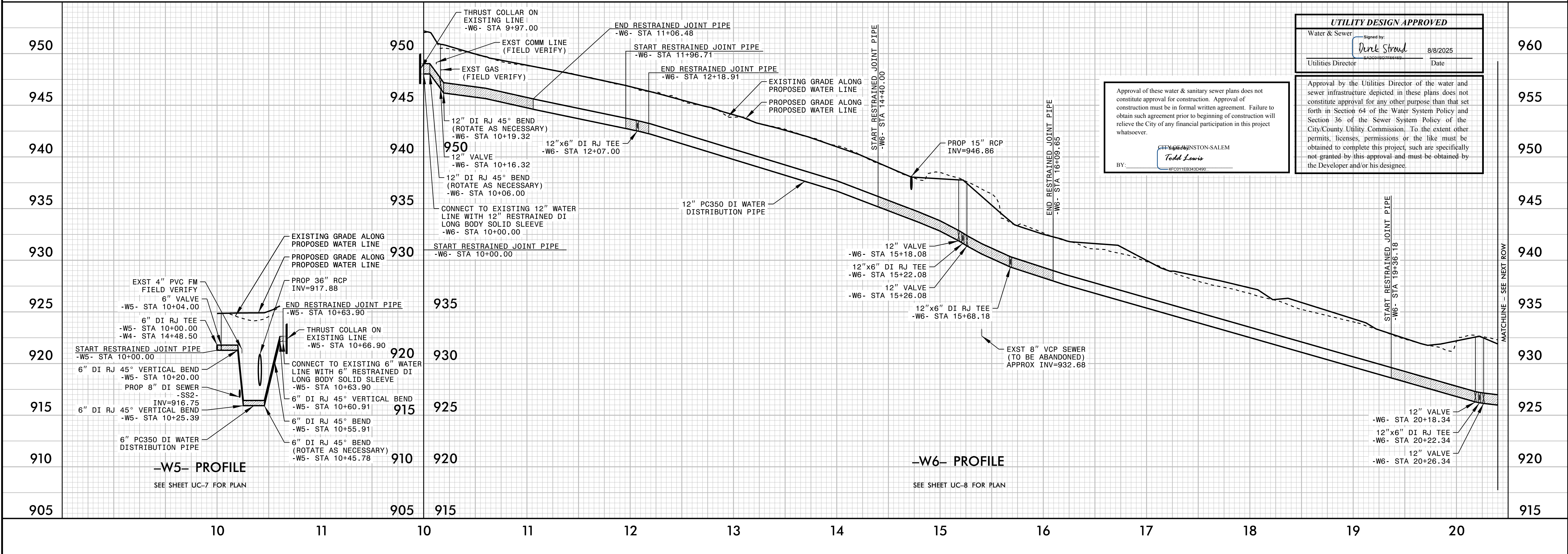
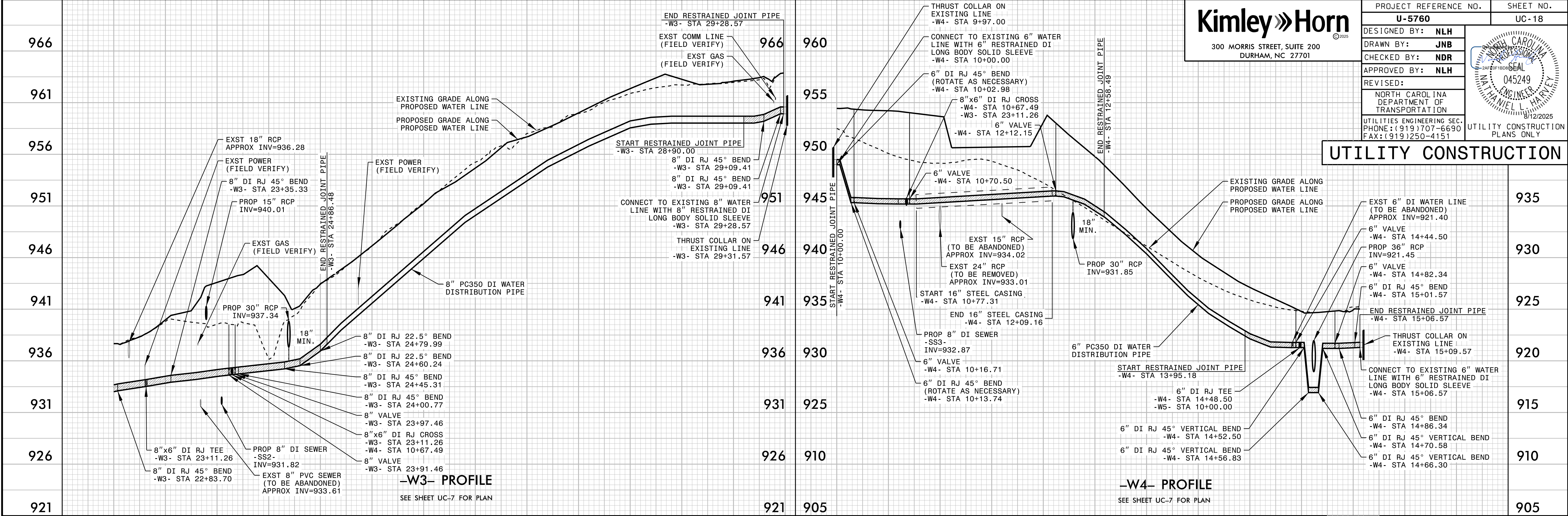
Utilities Director

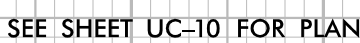
Date

Approval by the Utilities Director of the water and sewer infrastructure depicted in these plans does not constitute approval for any other purpose than that set forth in Section 64 of the Water System Policy and Section 36 of the Sewer System Policy of the City/County Utility Commission. To the extent other permits, licenses, permissions or the like must be obtained to complete this project, such are specifically not granted by this approval and must be obtained by the Developer and/or his designee.

5/14/24

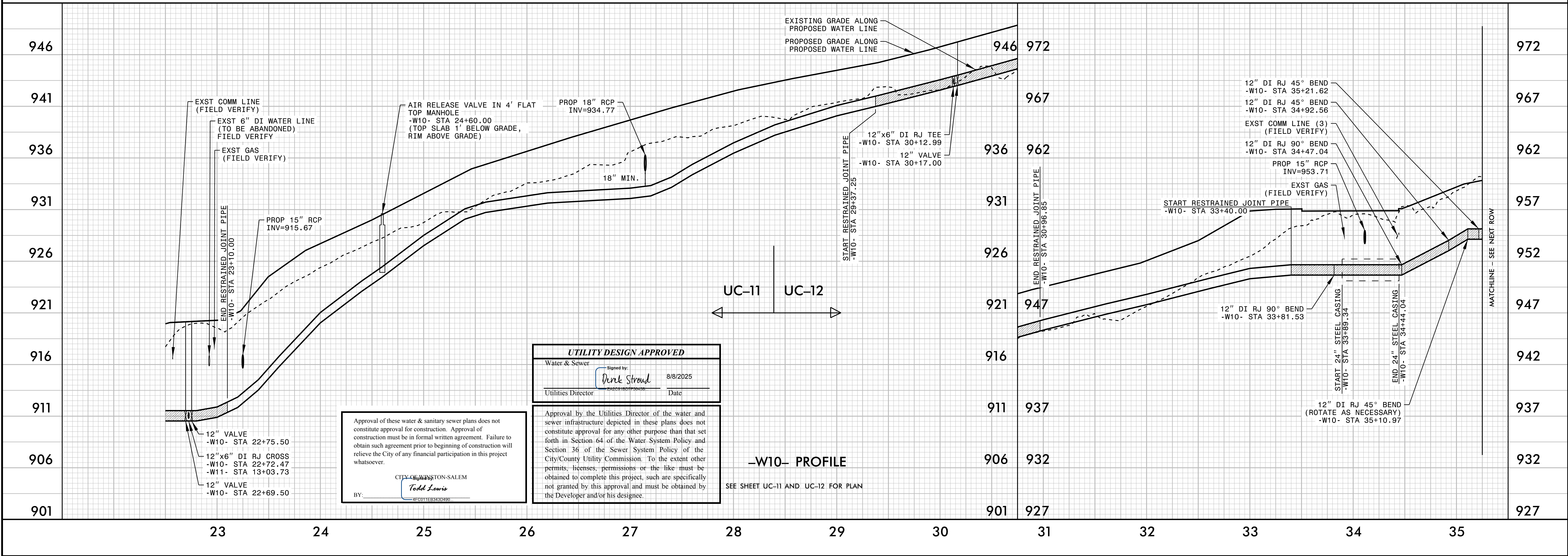
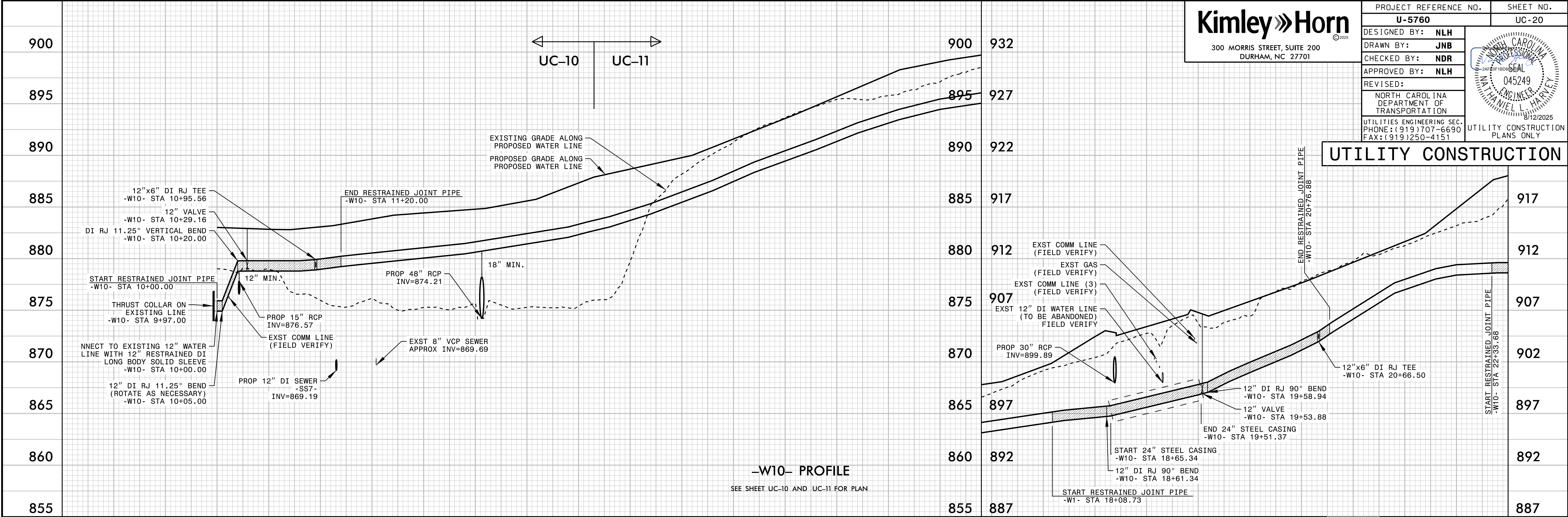
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