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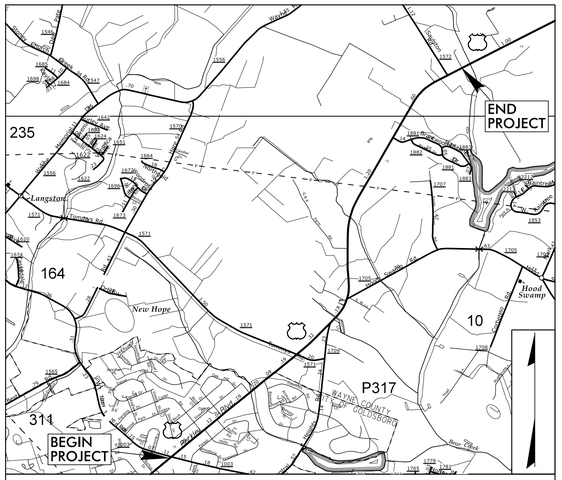
TIP PROJECT: U-3609B

CONTRACT:

See Sheet UC-1 For Index of Sheets
See Sheet UC-2 For Standard Symbology Sheet



VICINITY MAP

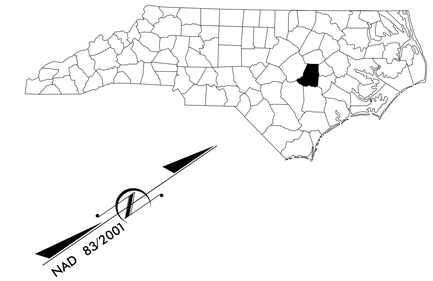
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

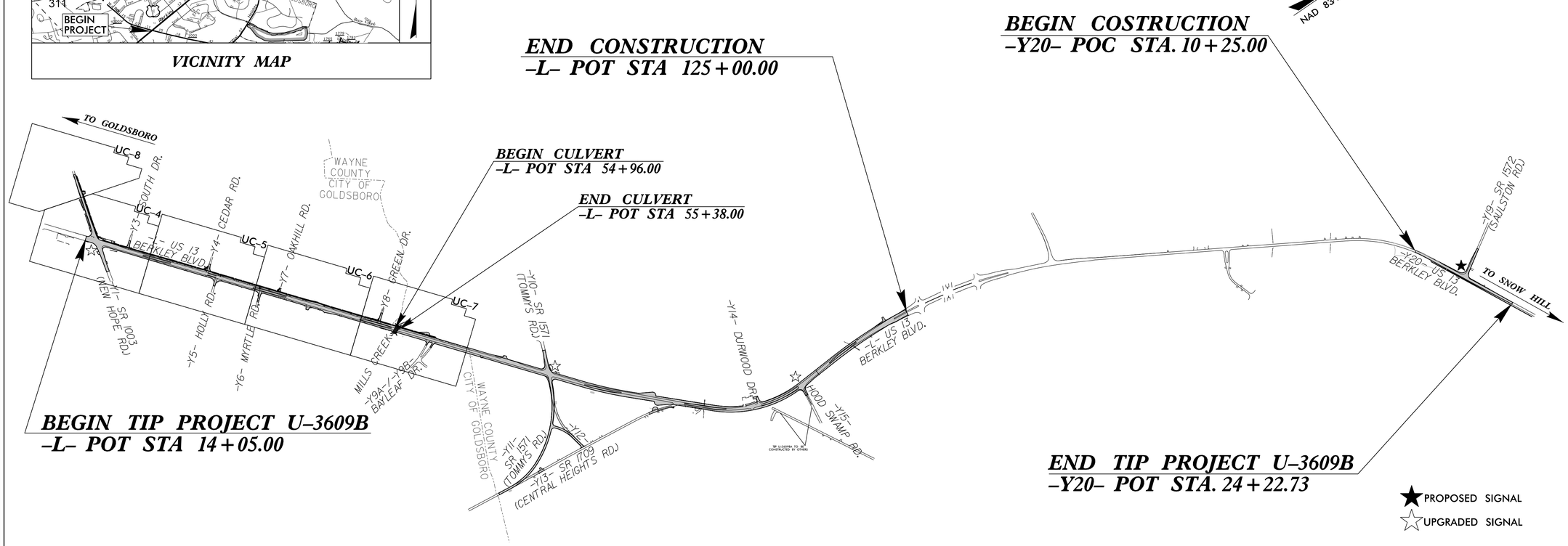
T.I.P. NO.	SHEET NO.
U-3609B	UC-1

UTILITY CONSTRUCTION PLANS
WAYNE COUNTY

LOCATION: U.S. 13 (BERKELEY BLVD) FROM SR 1003 (NEW HOPE RD) TO US 70 BYPASS W/ INTERSECTION IMPROVEMENTS AT AT SR 1572 (SAULSTON RD). WIDEN TO MULTI-LANES

TYPE OF WORK: WATER LINE RELOCATION





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GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A THRU UC-3D	DETAILS
UC-4 THRU UC-8	UTILITY CONSTRUCTION SHEETS
UC-9 THRU UC-11	UTILITY PROFILE SHEETS

WATER AND SEWER OWNERS ON PROJECT

(A) WATER - CITY OF GOLDSBORO

PREPARED IN THE OFFICE OF

STV Engineers, Inc.
2151 Hawkins St., Suite 1400
Charlotte, NC 28203
NC License Number F-0991
(704) 372-1885 FAX: (704) 372-3393

ROBERT KRANTZ, PE	CONSULTANT CONTACT #1
WILLIAM KEATON, PE	CONSULTANT CONTACT #2
-	CONSULTANT CONTACT #3

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057622 ROBERT T. KRANTZ
11/6/2025

DIVISION OF HIGHWAYS
UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

KEITH EASON, PE	DIVISION ENGINEER
ADDISON GAINEY, PE	PROJECT MANAGER
KYLE A. PLEASANT	DIVISION UTILITY ENGINEER
JIMMY G. SHARPE	DIVISION UTILITY COORDINATOR

11/6/2025
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PROJECT REFERENCE NO.	SHEET NO.
U-3609B	UC-2

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Charlotte, NC 28203
NC License Number F-0991

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

- Water Line (Sized as Shown) — 12" WL
- 11¼ Degree Bend
- 22½ Degree Bend
- 45 Degree Bend
- 90 Degree Bend
- Plug
- Tee
- Cross
- Reducer
- Gate Valve — GV
- Butterfly Valve — BV
- Tapping Valve — TGV
- Line Stop — LS
- Line Stop with Bypass — LS/BP
- Blow Off — BO
- Fire Hydrant — PFH
- Relocate Fire Hydrant — RFH
- Remove Fire Hydrant — REM FH
- Water Meter — PWM
- Relocate Water Meter — RWM
- Remove Water Meter — REM WM
- Water Pump Station — PS(W)
- RPZ Backflow Preventer — PRPZ
- DCV Backflow Preventer — PBFP
- Relocate RPZ Backflow Preventer — RRPZ
- Relocate DCV Backflow Preventer — RBFP

PROPOSED SEWER SYMBOLS

- Gravity Sewer Line (Sized as Shown) — 12" SS
- Force Main Sewer Line (Sized as Shown) — 12" FSS
- Manhole (Sized per Note)
- Sewer Pump Station — PS(SS)

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Telephone Pedestal — TEL PED
- Utility Line by Others (Type as Shown) — PROP O/H POW LINES
- Trenchless Installation — 12" TL INSTALL
- Encasement by Open Cut — 24" ENCAS BY OC
- Encasement — 24" ENCASEMENT
- Thrust Block
- Air Release Valve — AR
- Utility Vault — UV
- Concrete Pier — CP
- Steel Pier — SP
- Plan Note — NOTE
- Pay Item Note — PAY ITEM

EXISTING UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Utility Pole
- Utility Pole with Base
- H-Frame Pole
- Power Transmission Line Tower
- Water Manhole
- Power Manhole
- Telephone Manhole
- Sanitary Sewer Manhole
- Hand Hole for Cable
- Power Transformer
- Telephone Pedestal
- CATV Pedestal
- Gas Valve
- Gas Meter
- Located Miscellaneous Utility Object
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.
- *Underground Power Line — P
- *Underground Telephone Cable — T
- *Underground Telephone Conduit — TC
- *Underground Fiber Optics Telephone Cable — T FO
- *Underground TV Cable — TV
- *Underground Fiber Optics TV Cable — TV FO
- *Underground Gas Pipeline — G
- Aboveground Gas Pipeline — A/G Gas
- *Underground Water Line — W
- Aboveground Water Line — A/G Water
- *Underground Gravity Sanitary Sewer Line — SS
- Aboveground Gravity Sanitary Sewer Line — A/G Sanitary Sewer
- *Underground SS Force Main Line — FSS
- Underground Unknown Utility Line — ?UTL
- SUE Test Hole
- Water Meter
- Water Valve
- Fire Hydrant
- Sanitary Sewer Cleanout

*For Existing Utilities

- Utility Line Drawn from Record (Type as Shown)
- Designated Utility Line (Type as Shown)

REV: 2/1/2012

11/6/2025
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REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	11/6/2025 UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057622 ROBERT T. KRANTZ
DocuSigned by: 2686547476...

UTILITY CONSTRUCTION

UTILITY CONSTRUCTION

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024.

2. THE EXISTING UTILITIES BELONG TO THE CITY OF GOLDSBORO AND WAYNE WATER DISTRICT.

3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.

4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.

5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE OF MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.

7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.

8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.

9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

PROJECT SPECIFIC NOTES:

1. ENGINEER SHALL INSPECT ALL MATERIALS ONSITE PRIOR TO INSTALLATION. DAMAGED MATERIALS SHALL BE REPLACED OR REPAIRED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

2. WATER MAINS OR SEWER LINES CROSSING UNDER STORM DRAIN PIPE SHALL HAVE 24" MIN VERTICAL CLEARANCE UNLESS SPECIFIED ON THE PLAN/PROFILE.

3. ALL SEWER MATERIALS, EQUIPMENT, LABOR, AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE WATER AND SEWER AUTHORITY OF GOLDSBORO'S STANDARD SPECIFICATIONS.

4. PROPOSED WATER LINE FROM -WL1- LINE STATION 56+63.98 TO -WL1- LINE STATION 59+59.86 SHALL BE HDPE PIPE. HDPE PIPE SHALL MEET THE REQUIREMENTS, AS DEFINED IN ASTM D-3350, WITH A MINIMUM CELL CLASSIFICATION OF PE 4710. THE MATERIAL SHALL BE TESTED AND APPROVED FOR POTABLE WATER IN ACCORDANCE WITH NSF/ANSI 61. MINIMUM PIPE WALL THICKNESS SHALL BE BASED ON AN SDR OF 9. CONTRACTOR AND PIPE MANUFACTURER SHALL MUTUALLY DETERMINE ACTUAL WALL THICKNESS REQUIRED, BASED ON STATIC AND DYNAMIC LOADS, WITH AN APPLIED FACTOR OF SAFETY OF 2.5.

5. IN ADVANCE OF BEGINNING UTILITY WORK, SOFT DIGS SHALL BE PERFORMED BY CONTRACTOR TO VERIFY ACTUAL WATER LINE DEPTH AND LOCATION AT PROPOSED TIE-IN LOCATIONS.

6. JOINTS OF HDPE PIPE SEGMENTS SHALL BE BUTT-WELDED FLUSH TO THE OUTSIDE DIAMETER OF THE PIPE. PRIOR TO PERFORMING THE FINAL HYDROSTATIC TEST, THE ENDS OF PIPE SHALL BE PROVIDED WITH A DUCTILE IRON BLIND FLANGE, WITH A FLANGE CONNECTION TO THE HDPE PIPE. FLANGED JOINTS SHALL MEET THE REQUIREMENTS OF ANSI B16.1, CLASS 250. CONTRACTOR TO CONFIRM THAT BOTH FLANGE AND PIPE ARE RATED TO 250 PSI.

7. THE CONTRACTOR SHALL INSTALL THE HDPE PIPE BY THE HORIZONTALLY-DRILLED, DIRECTIONALLY-CONTROLLED METHOD OF CONSTRUCTION. PIPE SHALL BE FILLED WITH POTABLE WATER AND NOT BE CONNECTED TO ANY OTHER PIPE OR FITTINGS FOR ONE WEEK FROM TIME OF INSTALLATION.

8. THE CONTRACTOR SHALL EMPLOY EXPERIENCED PERSONNEL TO OPERATE THE DIRECTIONAL DRILLING EQUIPMENT AND THE POSITION MONITORING AND STEERING EQUIPMENT. THE CONTRACTOR SHALL USE CERTIFIED FUSING PERSONNEL APPROVED BY THE PIPE MANUFACTURER.

9. WHEN PIPE IS BEING INSTALLED BY HORIZONTAL DIRECTIONAL DRILLING THE CONTRACTOR SHALL AT ALL TIMES, PROVIDE AND MAINTAIN INSTRUMENTATION THAT WILL ACCURATELY LOCATE THE PILOT HOLE POSITION IN THE X, Y, AND Z AXES RELATIVE TO THE GROUND SURFACE. DRILL FLUID FLOW RATE AND PRESSURE SHALL ALSO BE MONITORED. THE CONTRACTOR SHALL MAINTAIN AND PROVIDE THE ENGINEER ACCESS TO THE DATA GENERATED BY THE DOWNHOLE SURVEY TOOLS.

10. PIPE INSTALLED BY HORIZONTAL DIRECTIONAL DRILLING SHALL BE LOCATED AS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PLOT THE ACTUAL HORIZONTAL AND VERTICAL ALIGNMENT OF THE PILOT BORE AT INTERVALS NOT EXCEEDING 30 FEET. THIS "AS-BUILT" PLAN AND PROFILE SHALL BE UPDATED AS THE PILOT BORE IS ADVANCED. AT THE COMPLETION OF THE PILOT HOLE, THE CONTRACTOR SHALL PROVIDE THE COORDINATES OF THE PILOT HOLE AS SPECIFIED.

11. THE CONTRACTOR SHALL HAVE ACCURATE WORKING GAUGES THAT REGISTER TENSILE FORCE BEING USED TO PULL THE PIPELINE BACK THROUGH THE REAMED BOREHOLE.

12. DEVIATIONS FROM, AND CORRECTIONS TO, THE DESIGN CENTERLINE SHALL NOT EXCEED 2% OF THE DEPTH PER 100 FEET AND 2% HORIZONTALLY PER 100 FEET. CONTRACTOR TO ENSURE NEWLY CONSTRUCTED UTILITIES ARE ENTIRELY WITHIN RIGHT-OF-WAY OR UTILITY EASEMENT.

13. THE HORIZONTAL DIRECTIONAL DRILLING OPERATION SHALL BE CONDUCTED IN A MANNER TO ELIMINATE THE DISCHARGE OF WATER, DRILLING MUD, AND CUTTINGS TO AREAS NOT INVOLVED IN THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL IMMEDIATELY CONTAIN AND CLEAN UP ANY INADVERTENT RETURNS. THE CONTRACTOR SHALL ALSO PROVIDE EQUIPMENT AND PROCEDURES TO MAXIMIZE THE RECIRCULATION OR REUSE OF DRILLING MUD TO MINIMIZE WASTE DISPOSAL.

14. AFTER INSTALLING DIRECTIONAL DRILL, CONTRACTOR TO DIG DOWN, CUT PIPE AND INSTALL FITTINGS REQUIRED TO COMPLETE CONNECTION.

15. JONATHAN PERRY, PROFESSIONAL ENGINEER OF CITY OF GOLDSBORO, WILL SERVE AS THE UTILITY OWNER CONTACT ON THIS PROJECT. CONTRACTOR, AS REQUIRED BY STANDARD SPECIFICATION SECTION 1500-2, SHALL CONTACT HIM AT (919)-580-4317.

16. NO INTERRUPTION TO EXISTING SERVICE SHALL TAKE PLACE UNTIL ALL CUSTOMERS HAVE BEEN NOTIFIED A MINIMUM OF 24 HOURS IN ADVANCE. CONTRACTOR TO CONTACT MARTY ANDERSON (919)-333-3355 1 MONTH IN ADVANCE OF ANY WORK TO ALLOW SUFFICIENT TIME TO PREPARE NOTICE OF INTERRUPTION TO AFFECTED CUSTOMERS. DISTRIBUTION TO EACH CUSTOMER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR UNDER THE DIRECTION OF THE CITY OF GOLDSBORO.

11/6/2025
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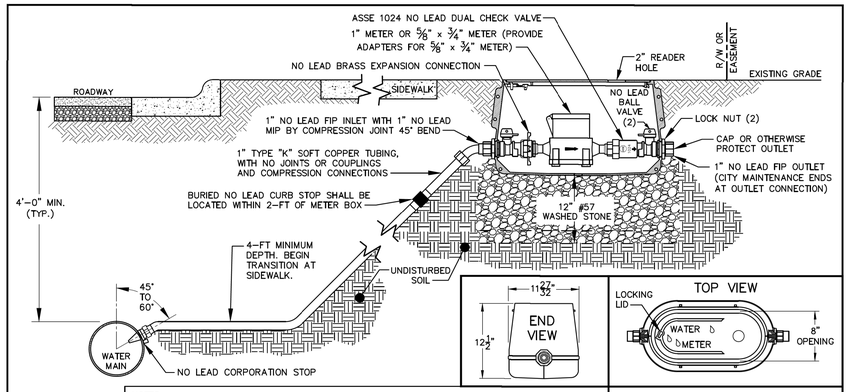
PROJECT TYPICAL DETAILS

UTILITY CONSTRUCTION



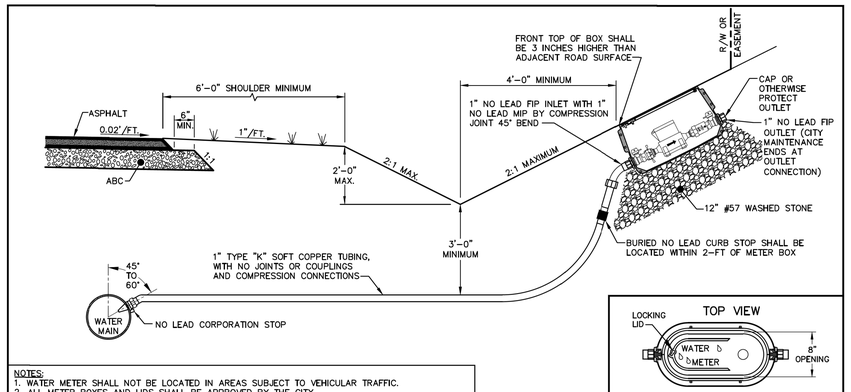
NOTES:
1. WATER METER SHALL NOT BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC.
2. ALL METER BOXES AND LIDS SHALL BE APPROVED BY THE CITY.
3. ALL SERVICE LINES, VALVES AND FITTINGS SHALL COMPLY WITH AWWA C800.
4. FOR NON-RESIDENTIAL APPLICATIONS THAT REQUIRE AN ABOVE-GROUND BACKFLOW PREVENTER, THE DUAL CHECK ASSEMBLY MAY BE OMITTED.
5. BOX AND LID SHALL BE CAST GRAY IRON, ASTM A48, CLASS 25 OR ASTM A126 CLASS B.
6. ALL BRASS COMPONENTS SHALL BE 'NO LEAD' BRASS MEETING UNS C89833 AS PER ASTM B584.
7. ONE 2 OR 6 INCH GRADE ADJUSTER MAY BE UTILIZED WHEN NEEDED TO MEET FINAL GRADE (NO GRADE ADJUSTERS MAY BE USED ON NEW CONSTRUCTION PROJECTS). GRADE ADJUSTER AND BOX SHALL BE BY THE SAME MANUFACTURER.
8. TRACER WIRE SHALL BE INSTALLED FOR ALL SERVICE CONNECTIONS FROM THE MAIN LINE TO THE METER FOR ALL NEW CONSTRUCTION OR RETROFIT INSTALLATIONS USING OPEN TRENCH METHODS.

CITY OF GOLDSBORO NORTH CAROLINA

EFFECTIVE: 12/01/18

STANDARD 1" WATER SERVICE AND METER BOX INSTALLATION FOR ROADWAY WITH CURB AND GUTTER

DETAIL No. 06000.01
SHEET 1 OF 2



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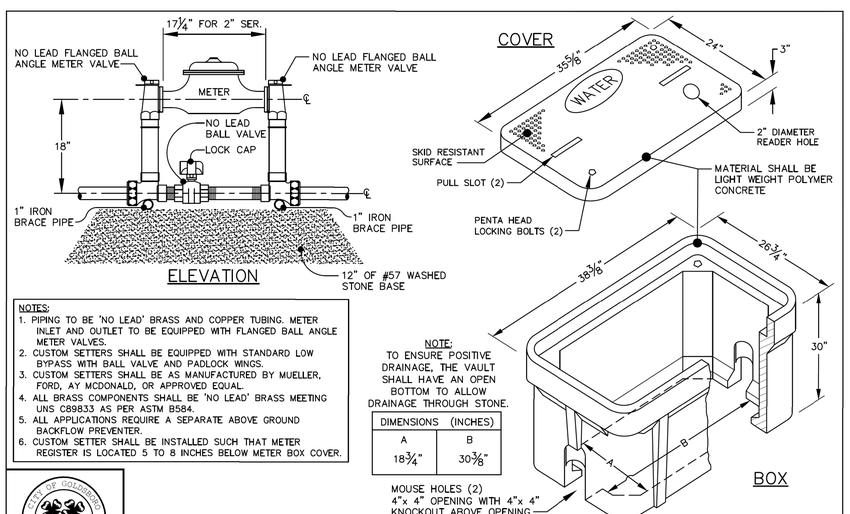
CITY OF GOLDSBORO NORTH CAROLINA

EFFECTIVE: 12/01/18

STANDARD 1" WATER SERVICE AND METER BOX FOR ROADWAY WITHOUT CURB AND GUTTER

DETAIL No. 06000.01
SHEET 2 OF 2



NOTES:
1. PIPING TO BE 'NO LEAD' BRASS AND COPPER TUBING. METER INLET AND OUTLET TO BE EQUIPPED WITH FLANGED BALL ANGLE METER VALVES.
2. CUSTOM SETTERS SHALL BE EQUIPPED WITH STANDARD LOW BYPASS WITH BALL VALVE AND PADLOCK WINGS.
3. CUSTOM SETTERS SHALL BE AS MANUFACTURED BY MUELLER, FORD, AY MCDONALD, OR APPROVED EQUAL.
4. ALL BRASS COMPONENTS SHALL BE 'NO LEAD' BRASS MEETING UNS C89833 AS PER ASTM B584.
5. ALL APPLICATIONS REQUIRE A SEPARATE ABOVE GROUND BACKFLOW PREVENTER.
6. CUSTOM SETTER SHALL BE INSTALLED SUCH THAT METER REGISTER IS LOCATED 5 TO 8 INCHES BELOW METER BOX COVER.

NOTE:
TO ENSURE POSITIVE DRAINAGE, THE VAULT SHALL HAVE AN OPEN BOTTOM TO ALLOW DRAINAGE THROUGH STONE.

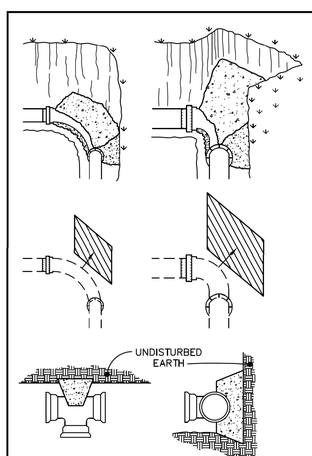
DIMENSIONS (INCHES)	
A	B
18 3/4"	30 3/8"

CITY OF GOLDSBORO NORTH CAROLINA

EFFECTIVE: 12/01/18

STANDARD 2" METER INSTALLATION AND VAULT

DETAIL No. 06000.02
SHEET 1 OF 1



MINIMUM CONCRETE BLOCKING (C.Y.) *

NOMINAL PIPE DIAMETER INCHES	TEES & DEAD ENDS	90° BEND	45° BEND	22½° BEND	11¼° BEND
4	1/3	1/3	1/3	1/3	1/3
6	1/3	1/3	1/3	1/3	1/3
8	1/3	1/2	1/3	1/3	1/3
10	2/3	3/4	1/2	1/3	1/3
12	3/4	1.0	2/3	1/3	1/3

NOTES:
1. FITTING SHALL BE WRAPPED WITH A MINIMUM 4 MIL PLASTIC.
2. NO CONCRETE SHALL COVER BOLTS OR GLANDS.
3. PIPE DIAMETERS BEYOND 12 INCHES SHALL UTILIZE A PROFESSIONAL ENGINEER'S SEALED DESIGN CONSISTING OF RESTRAINED JOINT PIPE OR BLOCKING.

* CONCRETE SHALL BE 3,000 P.S.I. MIX.

CITY OF GOLDSBORO NORTH CAROLINA

EFFECTIVE: 12/01/18

STANDARD THRUST BLOCKING

DETAIL No. 06000.12
SHEET 1 OF 1

11/6/2025
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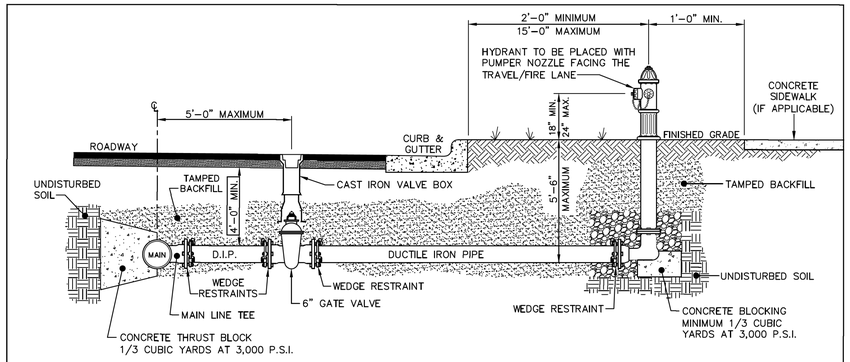
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057622 ROBERT T. KRANTZ
11/6/2025

PROJECT TYPICAL DETAILS

UTILITY CONSTRUCTION



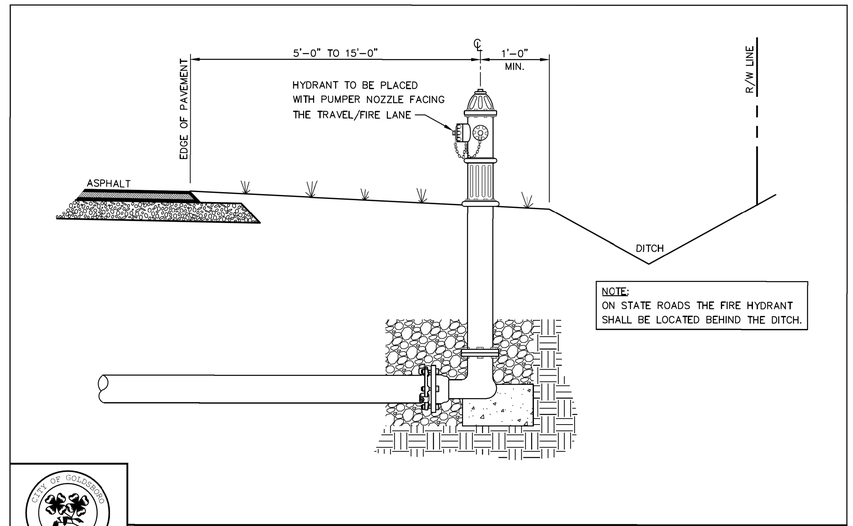
NOTES:
1. TOP OF BLOCKING TO BE 2 INCHES FROM HYDRANT WEEP HOLES.
2. IF HYDRANT IS LOCATED ON A DEPARTMENT OF TRANSPORTATION ROADWAY USE D.O.T. STANDARDS FOR LOCATION OF HYDRANT.
3. HYDRANT SHALL BE LOCATED FROM 2 TO 15 FEET FROM BACK OF CURB.
4. HYDRANT MAY BE LOCATED (AT LEAST 1 FOOT) BEHIND SIDEWALK WHEN IT CANNOT BE LOCATED INSIDE THE UTILITY STRIP.
5. HYDRANT SHALL BE INSTALLED AT LEAST 2 FEET BEYOND TOP SLOPE OF ANY DRAINAGE DITCHES. HYDRANT INSTALLATION WITHIN THE DITCH LINE OR SLOPE SHALL BE PROHIBITED.
6. STANDARD WEDGE ACTION RETAINER GLANDS MAY BE SUBSTITUTED WITH 3/4 INCH STAINLESS STEEL RODDING IN ORDER TO ACHIEVE CONTINUOUS RESTRAINT BETWEEN THE HYDRANT AND THE MAIN.

CITY OF GOLDSBORO NORTH CAROLINA

EFFECTIVE: 12/01/18

STANDARD HYDRANT INSTALLATION FOR ROADS WITH CURB AND GUTTER

DETAIL No. 06000.05 SHEET 1 OF 2



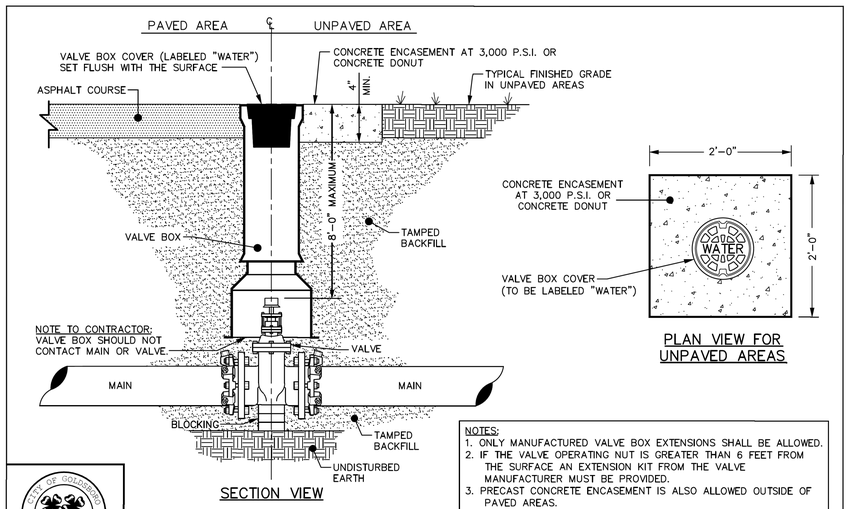
NOTE:
ON STATE ROADS THE FIRE HYDRANT SHALL BE LOCATED BEHIND THE DITCH.

CITY OF GOLDSBORO NORTH CAROLINA

EFFECTIVE: 12/01/18

STANDARD HYDRANT INSTALLATION FOR ROADS WITHOUT CURB AND GUTTER

DETAIL No. 06000.05 SHEET 2 OF 2



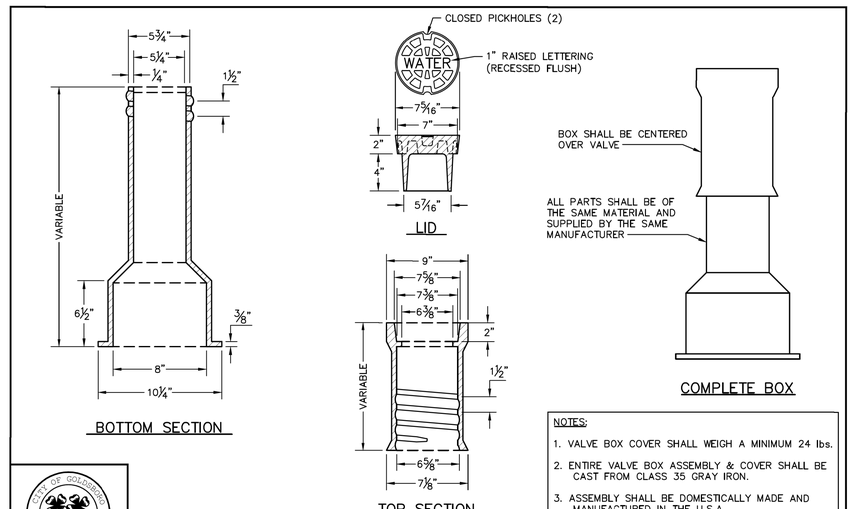
NOTES:
1. ONLY MANUFACTURED VALVE BOX EXTENSIONS SHALL BE ALLOWED.
2. IF THE VALVE OPERATING NUT IS GREATER THAN 6 FEET FROM THE SURFACE AN EXTENSION KIT FROM THE VALVE MANUFACTURER MUST BE PROVIDED.
3. PRECAST CONCRETE ENCASEMENT IS ALSO ALLOWED OUTSIDE OF PAVED AREAS.

CITY OF GOLDSBORO NORTH CAROLINA

EFFECTIVE: 12/01/18

STANDARD WATER VALVE BOX INSTALLATION

DETAIL No. 06000.07 SHEET 1 OF 3



NOTES:
1. VALVE BOX COVER SHALL WEIGH A MINIMUM 24 lbs.
2. ENTIRE VALVE BOX ASSEMBLY & COVER SHALL BE CAST FROM CLASS 35 GRAY IRON.
3. ASSEMBLY SHALL BE DOMESTICALLY MADE AND MANUFACTURED IN THE U.S.A.

CITY OF GOLDSBORO NORTH CAROLINA

EFFECTIVE: 12/01/18

STANDARD WATER VALVE BOX

DETAIL No. 06000.07 SHEET 2 OF 3

11/6/2025
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STV Engineers, Inc.
2151 Hawkins St., Suite 1400
Charlotte, NC 28203
NC License Number F-0991

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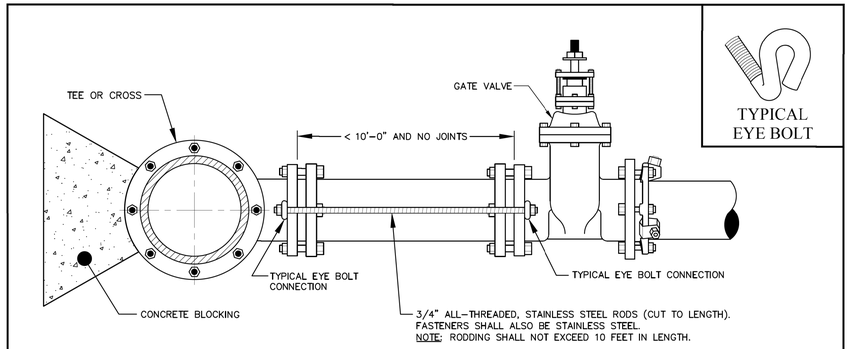
PROJECT REFERENCE NO.	SHEET NO.
U-3609B	UC-3C
DESIGNED BY: TK	
DRAWN BY: TK	
CHECKED BY: RTK	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057622 ROBERT T. KRANTZ
DocuSigned by: 2B6B5471476...
11/6/2025

UTILITY CONSTRUCTION

PROJECT TYPICAL DETAILS



STAINLESS STEEL ROD REQUIREMENTS

BRANCH SIZE	No. OF RODS
4"	2
6"	2
8"	4
12"	6
16"	8

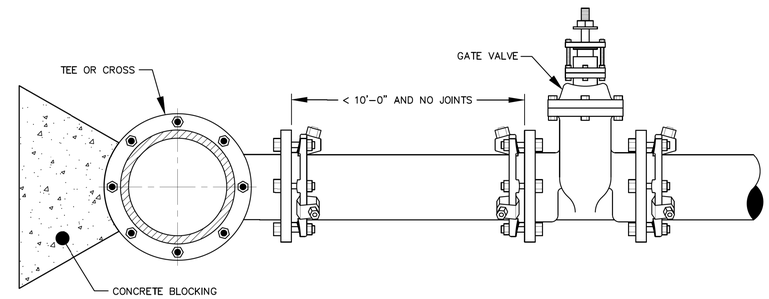
GENERAL NOTES:
1. SEE STANDARD THRUST BLOCK DETAIL.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL FITTINGS.
3. RODS SHALL NOT BE COUPLED.

CITY OF GOLDSBORO NORTH CAROLINA

EFFECTIVE: 12/01/18

STANDARD VALVE RESTRAINT WITH RODDING AT A TEE OR CROSS UP TO 16" IN DIAMETER

DETAIL No. 06000.08 SHEET 1 OF 2



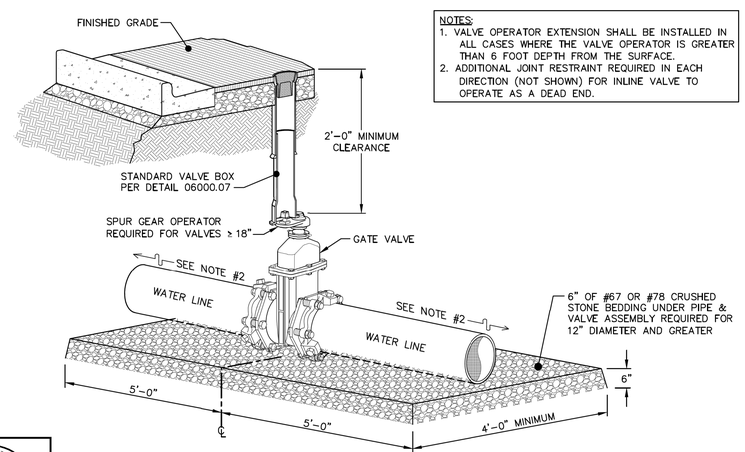
GENERAL NOTES:
1. SEE STANDARD THRUST BLOCK DETAIL.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL FITTINGS.

CITY OF GOLDSBORO NORTH CAROLINA

EFFECTIVE: 12/01/18

ALTERNANTE VALVE RESTRAINT WITH WEDGE ACTION RETAINER GLANDS AT AT TEE OR CROSS

DETAIL No. 06000.08 SHEET 2 OF 2



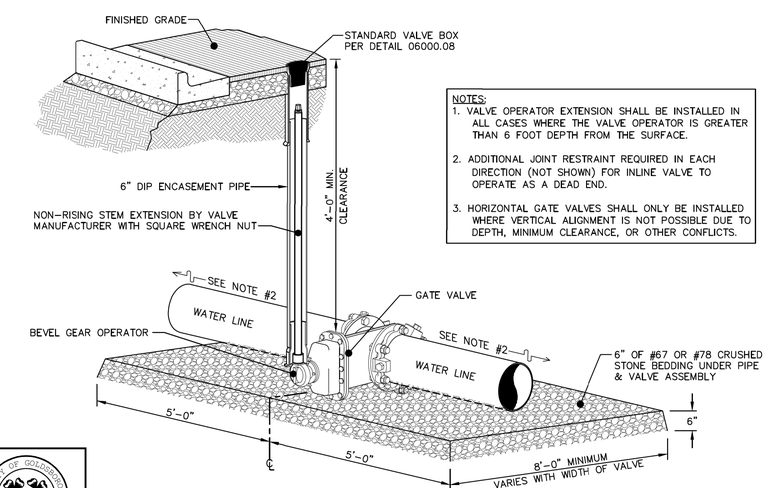
NOTES:
1. VALVE OPERATOR EXTENSION SHALL BE INSTALLED IN ALL CASES WHERE THE VALVE OPERATOR IS GREATER THAN 6 FOOT DEPTH FROM THE SURFACE.
2. ADDITIONAL JOINT RESTRAINT REQUIRED IN EACH DIRECTION (NOT SHOWN) FOR INLINE VALVE TO OPERATE AS A DEAD END.

CITY OF GOLDSBORO NORTH CAROLINA

EFFECTIVE: 12/01/18

RESILIENT WEDGE GATE VALVE ASSEMBLY FOR VERTICAL INSTALLATIONS

DETAIL No. 06000.09 SHEET 1 OF 2



NOTES:
1. VALVE OPERATOR EXTENSION SHALL BE INSTALLED IN ALL CASES WHERE THE VALVE OPERATOR IS GREATER THAN 6 FOOT DEPTH FROM THE SURFACE.
2. ADDITIONAL JOINT RESTRAINT REQUIRED IN EACH DIRECTION (NOT SHOWN) FOR INLINE VALVE TO OPERATE AS A DEAD END.
3. HORIZONTAL GATE VALVES SHALL ONLY BE INSTALLED WHERE VERTICAL ALIGNMENT IS NOT POSSIBLE DUE TO DEPTH, MINIMUM CLEARANCE, OR OTHER CONFLICTS.

CITY OF GOLDSBORO NORTH CAROLINA

EFFECTIVE: 12/01/18

RESILIENT WEDGE GATE VALVE ASSEMBLY FOR HORIZONTAL INSTALLATIONS

DETAIL No. 06000.09 SHEET 2 OF 2

11/6/2025
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Krantz, R.

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NC License Number F-0991

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DESIGNED BY: TK	
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APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	11/6/2025 UTILITY CONSTRUCTION PLANS ONLY

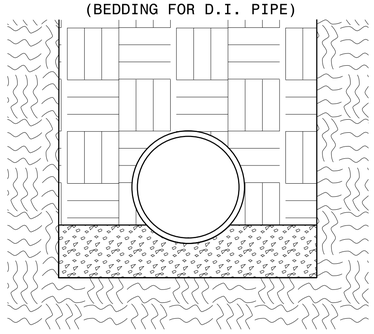
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057622 ROBERT T. KRANTZ
DocuSigned by: 2B6B5471476...

UTILITY CONSTRUCTION

PROJECT TYPICAL DETAILS

TYPE "4"

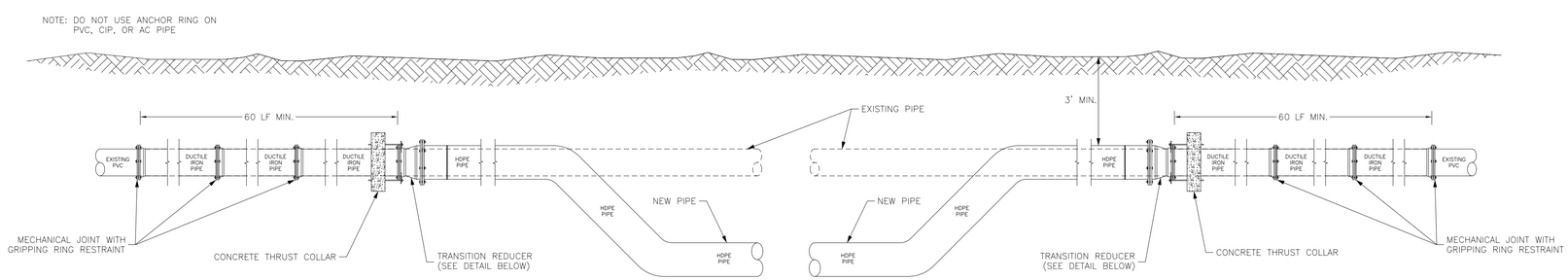
(BEDDING FOR D.I. PIPE)



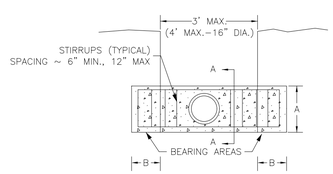
PIPE BEDDED IN SAND, GRAVEL OR CRUSHED STONE TO A DEPTH OF ⅛ PIPE DIAMETER, 4" MINIMUM UNDER PIPE. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL, IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROX. 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

MAXIMUM TRENCH WIDTH AT TOP OF PIPE

NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)	NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		

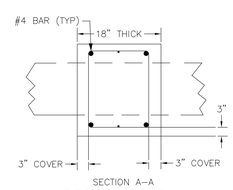


PROFILE VIEW
NOT TO SCALE

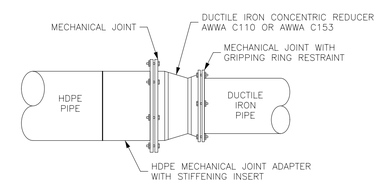


CONCRETE THRUST COLLAR (TYPICAL)
NOT TO SCALE

SIZE	"A"	"B"
4"	36"	24"
6"	36"	24"
8"	36"	30"
10"	36"	48"
12"	48"	48"
16"	36"	60"



SECTION A–A
NOT TO SCALE



TRANSITION REDUCER
NOT TO SCALE

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SCALE 1" = 50'
0 50 100 150 200

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Charlotte, NC 28203
NC License Number F-0991

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PROJECT REFERENCE NO.	SHEET NO.
U-3609B	UC-4

DESIGNED BY: TK
DRAWN BY: TK
CHECKED BY: RTK
APPROVED BY:
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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PHONE:(919)707-6690
FAX:(919)250-4151

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057622 ROBERT T. KRANTZ
11/6/2025

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

MATCHLINE -Y1- STA. 13+50.00, SEE SHEET UC-8

2-RECONNECT WATER METER

ABANDON 1244.0 LF 16" UTILITY PIPE W/FLOWABLE FILL OR GROUT AND CAP

2-RECONNECT WATER METER

-WL1- DEFLECTION
BEGIN STA. 16+12.02
END STA. 16+23.89
BEND RADIUS: 764'

RELOCATE WATER METER 65.2 LF WATER SERVICE LINE

ADJUST MANHOLE TO GRADE

-WL1- DEFLECTION
BEGIN STA. 13+51.92
END STA. 13+67.73
BEND RADIUS: 764'

-WL1- DEFLECTION
BEGIN STA. 14+03.21
END STA. 14+22.76
BEND RADIUS: 764'

ADJUST MANHOLE TO GRADE

RECONNECT WATER METER

ADJUST MANHOLE TO GRADE

FIRE HYDRANT
6" VALVE
10 LF FIRE HYDRANT LEG

16"X16"X6" FH TEE
-WL1- STA. 16+77.56

REMOVE FIRE HYDRANT

16" PLUG

16.1 LF 16" WATER LINE
RJ DIP PC350

45°BEND & 11.25°BEND
TIE-IN TO EXIST. 16" DIP WATER LINE
W/ LONG PATTERN SLEEVE
& CONCRETE THRUST WALL COLLAR
(SEE DETAIL B)

16" VALVE

COORDINATE LOCATION OF
16" VALVE LOCATION WITH
PROPOSED 24" STORM DRAIN

16" PLUG

22.5° BEND
EQUALIZATION STATION
-WL1- STA. 19+36.63 LB
-WL1- STA. 19+42.34 LA

BEGIN TIP PROJECT U-3609B
-L- POT STA. 14+05.00

RECONNECT WATER METER

90° BEND

1249.2 LF 16" WATER LINE
-WL1- RJ DIP PC350, 5047 LF TOTAL

2-22.5° BENDS
-WL1- STA. 18+16.89
-WL1- STA. 18+26.64

16"X16"X16" TEE (VERT.)
90° BEND (VERT.)
-WL1- STA. 18+36.64

16" VALVE
-WL1- STA. 18+41.64

11.25° BEND
-WL1- STA. 18+76.64

2-11.25° BENDS
-WL1- STA. 20+47.71
-WL1- STA. 20+58.00

2-RELOCATE WATER METER
5.0 LF WATER SERVICE LINE

FIRE HYDRANT
6" VALVE
8.0 LF FIRE HYDRANT LEG

16"X16"X6" FH TEE
-WL1- STA. 22+08.81

RELOCATE WATER METER
18 LF WATER SERVICE LINE

16" VALVE
-WL1- STA. 20+16.08

ADJUST MANHOLE TO GRADE

ADJUST MANHOLE TO GRADE

BEGIN CONSTRUCTION
-L- POT STA. 11+70.00

NAD 83/NSRS 2007

2-11.25° BENDS
-WL1- STA. 22+18.17
-WL1- STA. 22+28.60

8" VALVE

10.0 LF 8" WATER LINE
PVC, SDR 21

16" VALVE
-WL1- STA. 22+91.02

2-RELOCATE WATER METER
5.5 LF WATER SERVICE LINE

ADJUST MANHOLE TO GRADE

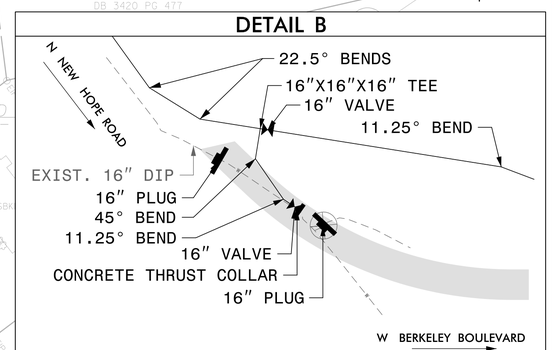
REMOVE FIRE HYDRANT

-WL1- DEFLECTION
BEGIN STA. 22+82.36
END STA. 22+89.23
BEND RADIUS: 764'

16"X16"X8" TEE
-WL1- STA. 22+83.65
8" PLUG

MATCHLINE -L- STA. 22+50.00, SEE SHEET UC-5

DETAIL B



NOT TO SCALE

SEE SHEET UC-9 FOR -WL1- PROFILE

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 6810 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

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NOTES:
1. CONTRACTOR TO FIELD LOCATE 6" WATER LINE. SEVER EXIST. 6" WATER LINE BETWEEN CASING & 16"X16"X6" TEE. INSTALL NEW 6" WATER LINE TO PROPOSED 16" WATER LINE USING VERTICAL 6" 90° BENDS. PROVIDE THRUST RESTRAINT BY RODDING VALVE TO CASING.

SCALE 1" = 50'
0 50 100 150 200

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Charlotte, NC 28203
NC License Number F-0991

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REVISED:	
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UTILITY CONSTRUCTION

NAD 83/NSRS 2007

MATCHLINE -L- STA. 22+50.00, SEE SHEET UC-4

MATCHLINE -L- STA. 36+50.00, SEE SHEET UC-6

FIRE HYDRANT
6" VALVE
4.6 LF FIRE HYDRANT LEG
16"X16"X6" FH TEE
-WL1- STA. 27+71.97
-WL1- DEFLECTION
BEGIN STA. 27+52.60
END STA. 27+78.96
BEND RADIUS: 764'

3-RELOCATE WATER METER
10.0 LF WATER SERVICE LINE

RELOCATE WATER METER
2.5 LF WATER SERVICE LINE

1400.1 LF 16" WATER LINE
-WL1- DIP PC350, 5047 LF TOTAL

-WL1- DEFLECTION
BEGIN STA. 27+93.33
END STA. 28+30.80
BEND RADIUS: 764'

3-RELOCATE WATER METER
7.5 LF WATER SERVICE LINE

68.8 LF 8" WATER LINE
PVC, SDR 21

45° BEND
8" VALVE

FIRE HYDRANT
6" VALVE
8.0 LF FIRE HYDRANT LEG
8"X8"X6" FH TEE
16" VALVE
-WL1- STA. 32+33.33

8" LINE STOP

45° BEND
TIE-IN TO EXIST. 8" PVC WATER LINE
W/ LONG PATTERN SLEEVE
& CONCRETE THRUST COLLAR
(SEE DETAIL C)

ABANDON 53.4 LF
8" UTILITY PIPE
W/ FLOWABLE FILL
OR GROUT AND CAP

REMOVE FIRE HYDRANT

8" PLUG

ADJUST
MANHOLE
TO GRADE

6" VALVE
16"X16"X6" TEE
2-6" 90° BENDS, 6" PLUG,
6" LONG PATTERN SLEEVE
-WL1- STA. 34+77.08
(SEE NOTE 1)

RELOCATE WATER METER
2.5 LF WATER SERVICE LINE

-WL1- DEFLECTION
BEGIN STA. 35+73.35
END STA. 35+79.00
BEND RADIUS: 764'

RELOCATE WATER METER
2.5 LF WATER SERVICE LINE

FIRE HYDRANT
6" VALVE
4.9 LF FIRE HYDRANT LEG
16"X16"X6" FH TEE
-WL1- STA. 36+84.39

REMOVE FIRE HYDRANT

RELOCATE WATER METER
2.5 LF WATER SERVICE LINE

2-RELOCATE
WATER METER
168.2 LF WATER
SERVICE LINE

REMOVE FIRE HYDRANT

2-RELOCATE
WATER METER
174.1 LF WATER
SERVICE LINE

ADJUST MANHOLE TO GRADE

2-RELOCATE
WATER METER
172.0 LF WATER
SERVICE LINE

-WL1- DEFLECTION
BEGIN STA. 30+74.69
END STA. 30+79.62
BEND RADIUS: 764'

ABANDON 1400.1 LF 16" UTILITY PIPE
W/FLOWABLE FILL OR GROUT AND CAP

ADJUST
MANHOLE
TO GRADE

16"X16"X8" TEE
-WL1- STA. 32+51.07

2-RELOCATE
WATER METER
171.7 LF WATER
SERVICE LINE

4-RELOCATE
WATER METER
388.4 LF
WATER SERVICE
LINE

-WL1- DEFLECTION
BEGIN STA. 36+76.42
END STA. 36+83.82
BEND RADIUS: 764'

4-RELOCATE
WATER METER
340.1 LF WATER
SERVICE LINE

RELOCATE WATER METER
85.4 LF WATER SERVICE LINE

ADJUST MANHOLE TO GRADE

BEGIN CONSTRUCTION
-Y4- POT STA.11+70.00

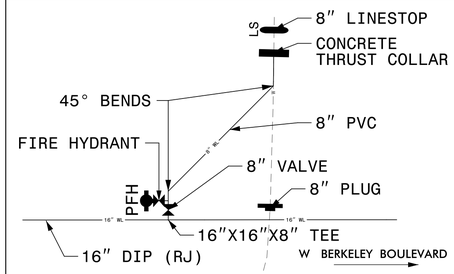
END CONSTRUCTION
-Y5- POT STA.11+20.00

BERKELEY BOULEVARD

HOLLY ROAD

CEDAR ROAD

DETAIL C



NOT TO SCALE

SEE SHEETS UC-9 & UC-10 FOR -WL1- PROFILE

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 2955 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

11/6/2025
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NOTES:
1. CONTRACTOR TO TAKE CARE WHEN INSTALLING PROPOSED 16″ WATER LINE AND PROPOSED 36″ RCP DUE TO CLOSE PROXIMITY (APPROX. 1.3′ SEPARATION)

SCALE 1" = 50'
0 50 100 150 200

STV Engineers, Inc.
2151 Hawkins St., Suite 1400
Charlotte, NC 28203
NC License Number F-0991

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UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	11/6/2025 UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057622 ROBERT T. KRATZ

UTILITY CONSTRUCTION

NAD 83/NSRS 2007

MATCHLINE –L– STA. 36+50.00, SEE SHEET UC-5

MATCHLINE –L– STA. 50+50.00, SEE SHEET UC-7

45.8 LF 8″ WATER LINE
PVC, SDR 21
45° BEND
REMOVE FIRE HYDRANT
FIRE HYDRANT
6″ VALVE
7.5 LF FIRE HYDRANT LEG
8″X8″X6″ FH TEE
RECONNECT HOT BOX
RELOCATE WATER METER
5.0 LF WATER SERVICE LINE
16″X16″X8″ TEE
-WL1- STA. 39+94.49
8″ VALVE
45° BEND
37.4 LF 8″ WATER LINE
DIP PC350

ADJUST MANHOLE TO GRADE
RELOCATE WATER METER
5.0 LF WATER SERVICE LINE
45° BEND
TIE-IN TO EXIST. 8″ PVC WATER LINE
W/ LONG PATTERN SLEEVE & CONCRETE THRUST COLLAR
REMOVE FIRE HYDRANT
15.0 LF 8″ WATER LINE
DIP PC350
8″ VALVE
90° BEND
TIE-IN TO EXIST. 8″ PVC WATER LINE
W/ LONG PATTERN SLEEVE & CONCRETE
THRUST WALL BLOCK.

FIRE HYDRANT
6″ VALVE
7.5 LF FIRE HYDRANT LEG
8″X8″X6″ FH TEE

8″ LINE STOP
45° BEND
TIE-IN TO EXIST. 8″ PVC WATER LINE
W/ LONG PATTERN SLEEVE & CONCRETE THRUST COLLAR
(SEE DETAIL D)
8″ VALVE
16″X16″X8″ TEE
STA. 42+24.73
ABANDON 58.8 LF 8″ UTILITY PIPE
W/FLOWABLE FILL OR GROUT AND CAP
8″ PLUG

RELOCATE WATER METER
2.5 LF WATER SERVICE LINE
ADJUST MANHOLE TO GRADE
2-RELOCATE WATER METER
170.5 LF WATER SERVICE LINE

-WL1- DEFLECTION
BEGIN STA. 46+17.66
END STA. 46+67.92
BEND RADIUS: 764′
FIRE HYDRANT
6″ VALVE
4.7 LF FIRE HYDRANT LEG
16″X16″X6″ FH TEE
-WL1- STA. 46+45.21
3-RELOCATE WATER METER
7.5 LF WATER SERVICE LINE
2-RELOCATE WATER METER
171.1 LF WATER SERVICE LINE
ADJUST MANHOLE TO GRADE
6-RELOCATE WATER METER
94.3 LF 2″ WATER SERVICE LINE
8-RELOCATE WATER METER
103.0 LF 2″ WATER SERVICE LINE

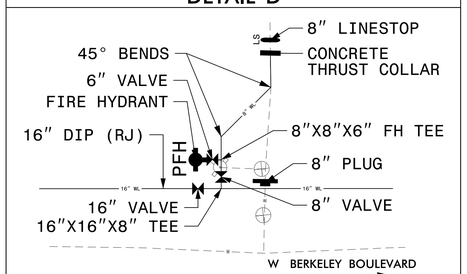
REMOVE FIRE HYDRANT
-WL1- DEFLECTION
BEGIN STA. 46+88.94
END STA. 47+02.58
BEND RADIUS: 764′
22.5° BEND
-WL1- STA. 47+33.55
RELOCATE WATER METER
2.5 LF WATER SERVICE LINE
1400.5 LF 16″ WATER LINE
-WL1- RJ DIP PC350,
5047 LF TOTAL
SEE NOTE 1
-WL1- DEFLECTION
BEGIN STA. 47+92.90
END STA. 48+47.08
BEND RADIUS: 764′
EQUALIZATION STATION
-WL1- STA. 48+47.08 LB
-WL1- STA. 48+49.25 LA
3-RELOCATE WATER METER
9.1 LF WATER SERVICE LINE
ADJUST MANHOLE TO GRADE
RELOCATE WATER METER
102 LF WATER SERVICE LINE
ABANDON 1400.2 LF 16″ UTILITY PIPE
W/FLOWABLE FILL OR GROUT AND CAP

FIRE HYDRANT
6″ VALVE
4.8 LF FIRE HYDRANT LEG
16″X16″X6″ FH TEE
-WL1- STA. 51+26.23
REMOVE FIRE HYDRANT
ADJUST MANHOLE TO GRADE
2-RELOCATE WATER METER
5.0 LF WATER SERVICE LINE
3-RELOCATE WATER METER
255.9 LF WATER SERVICE LINE

BEGIN CONSTRUCTION
-Y1- POT STA.12+10.00
END CONSTRUCTION
-Y6- POT STA.11+60.00
END CONSTRUCTION
-DWY1- POT STA.10+77.00

BERKELEY BOULEVARD
W BERKELEY BOULEVARD

DETAIL D



NOT TO SCALE

SEE SHEET UC-10 FOR -WL1- PROFILE

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 3740 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

11/6/2025
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SCALE 1" = 50'
0 50 100 150 200

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NC License Number F-0991

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REVISED:	
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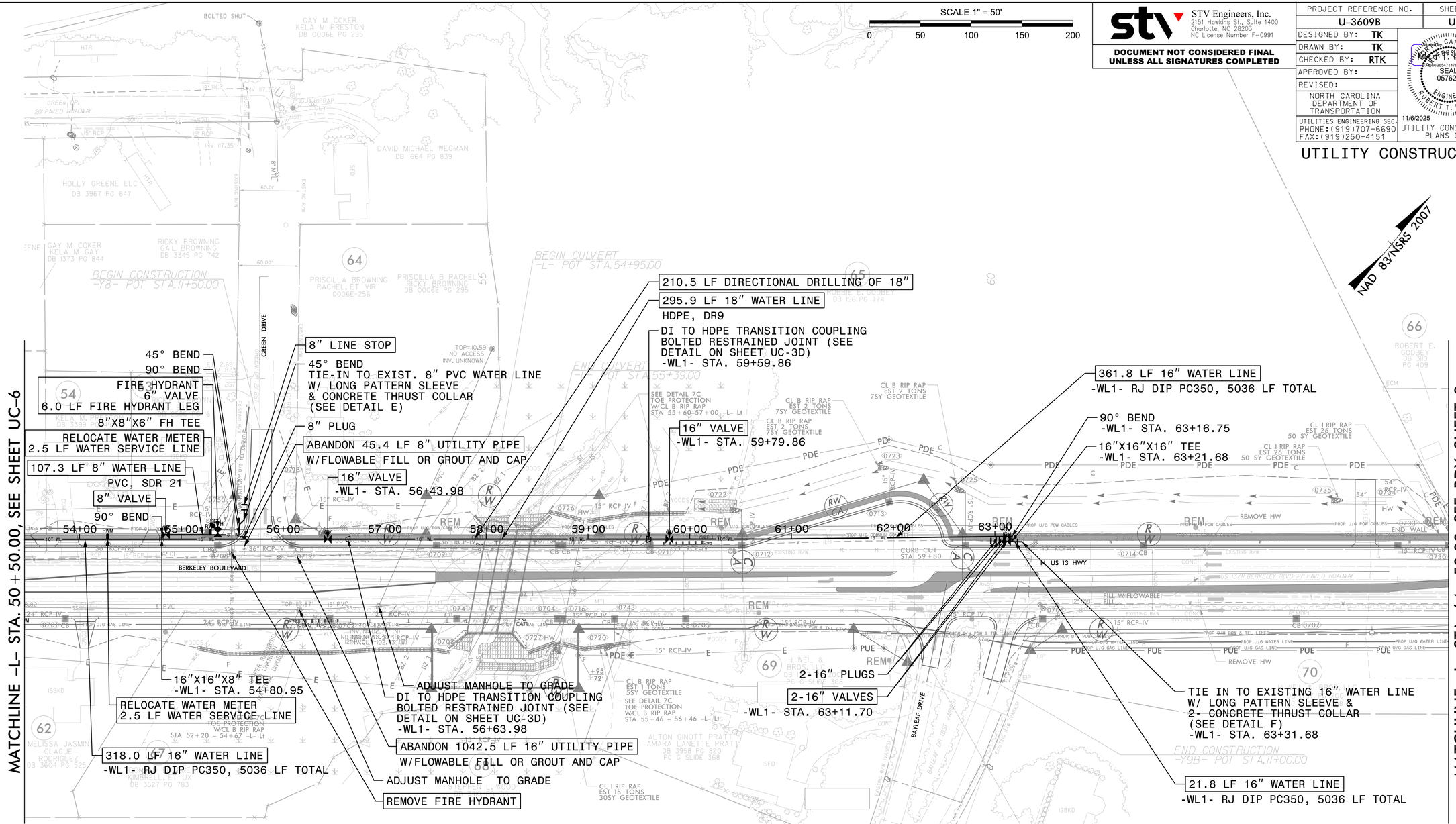
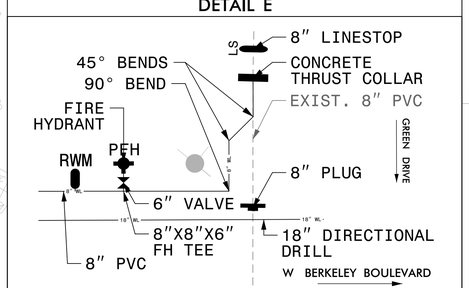
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057622 ROBERT T. KRANTZ

UTILITY CONSTRUCTION

NAD 83/NSRS 2007

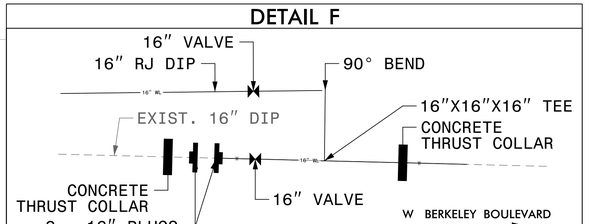


DETAIL E



NOT TO SCALE

DETAIL F



NOT TO SCALE

SEE SHEETS UC-10 & UC-11 FOR -WL1- PROFILE

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 3760 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

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SCALE 1" = 50'

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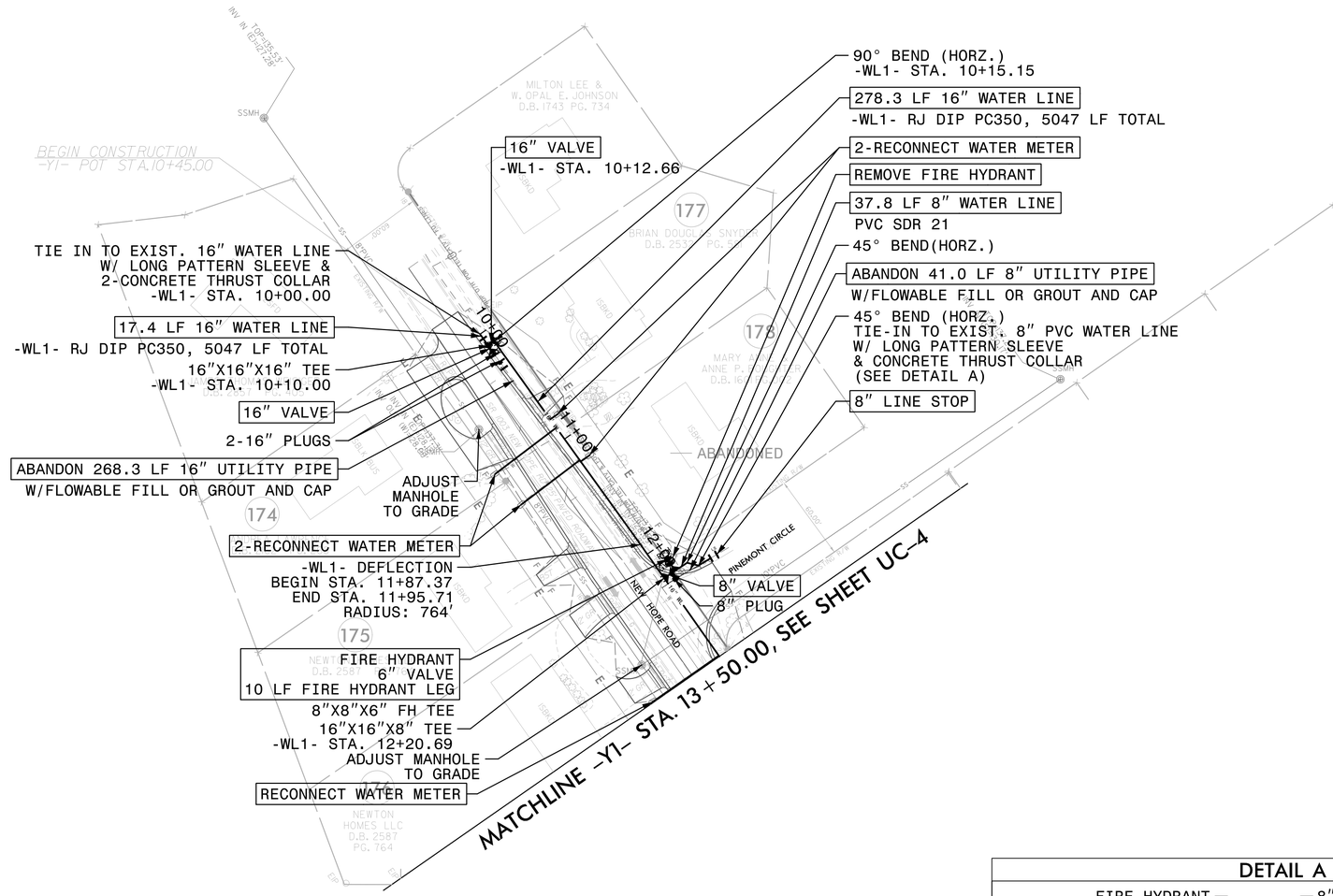
NAD 83/NSRS 2007

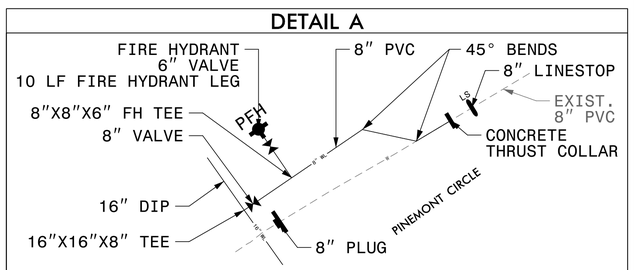


UC-8 CORRESPONDS TO RDY SHT 15

SEE SHEET UC-9 FOR -WL1- PROFILE

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 2680 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

DETAIL A



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SCALE: 1" = 50' HORIZONTAL
1" = 10' VERTICAL

NOTES:
1. LOCATION AND DEPTHS OF EXISTING UTILITIES ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY LOCATIONS AND DEPTHS PRIOR TO WATER LINE CONSTRUCTION.

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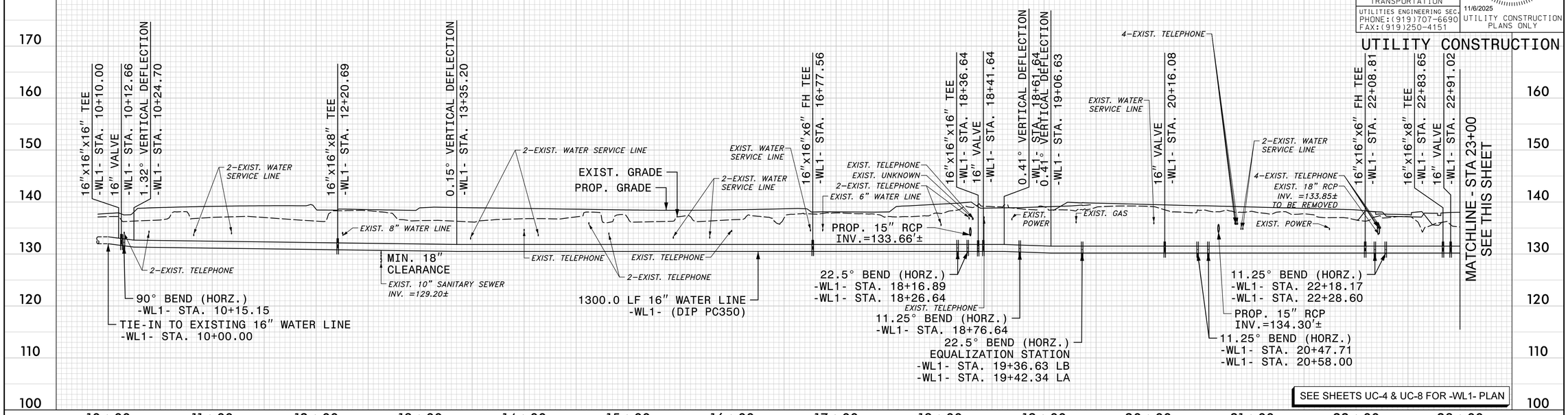
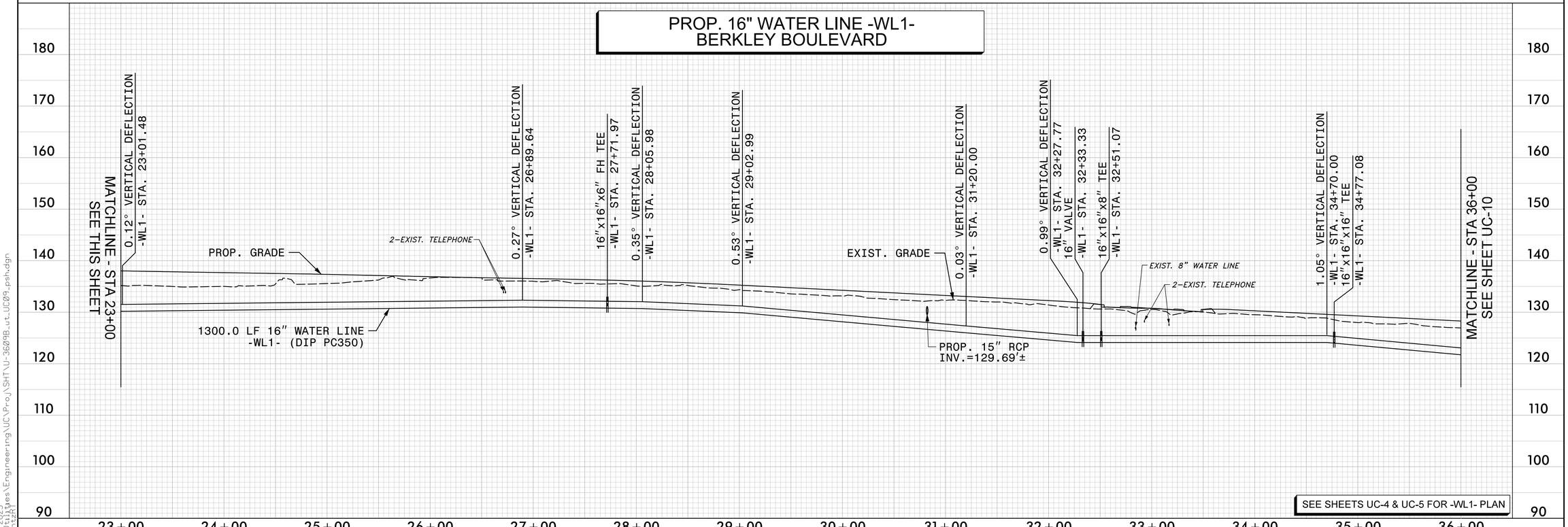
UTILITY CONSTRUCTION

PROP. 16" WATER LINE -WL1- NEW HOPE ROAD TO BERKLEY BOULEVARD



PROP. 16" WATER LINE -WL1- BERKLEY BOULEVARD



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KRATZ, ROBERT T.

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SCALE: 1" = 50' HORIZONTAL
1" = 10' VERTICAL

NOTES:
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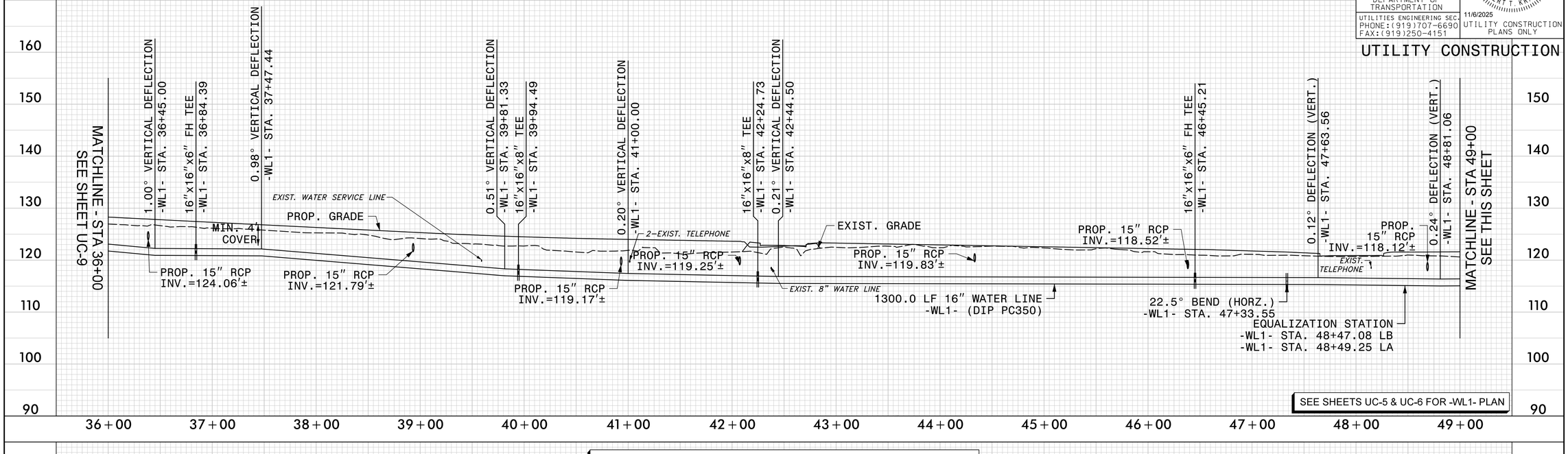
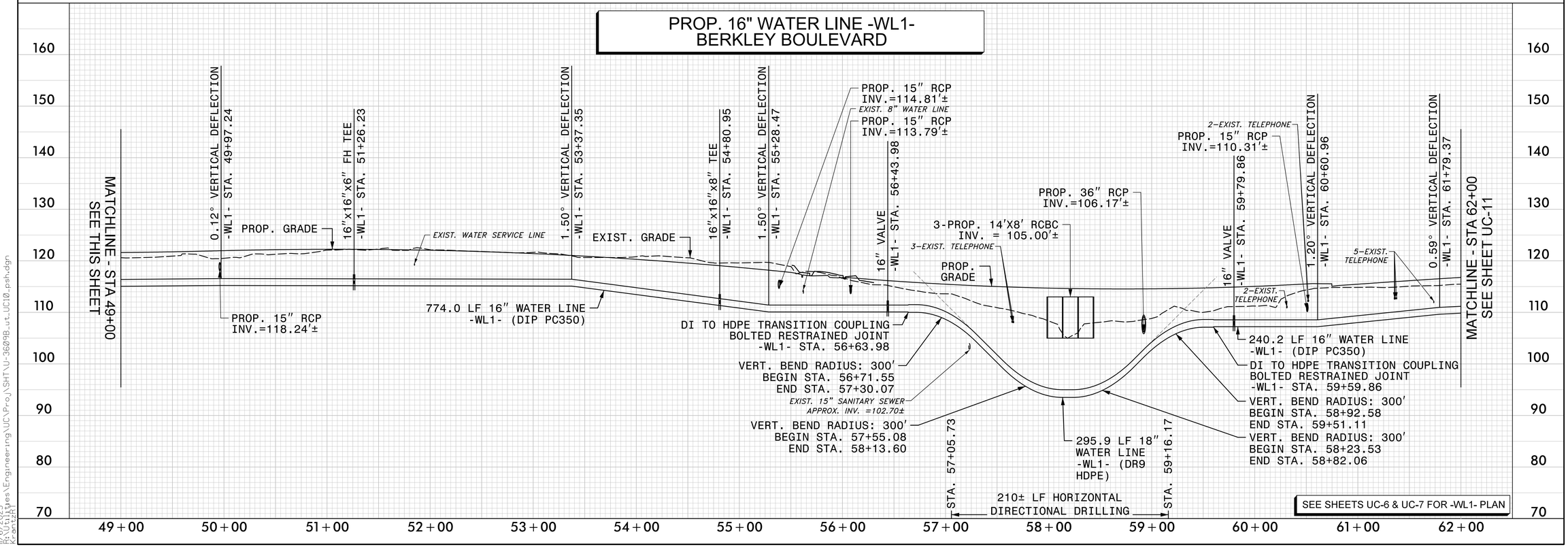
PROP. 16" WATER LINE -WL1- BERKLEY BOULEVARD



PROP. 16" WATER LINE -WL1- BERKLEY BOULEVARD



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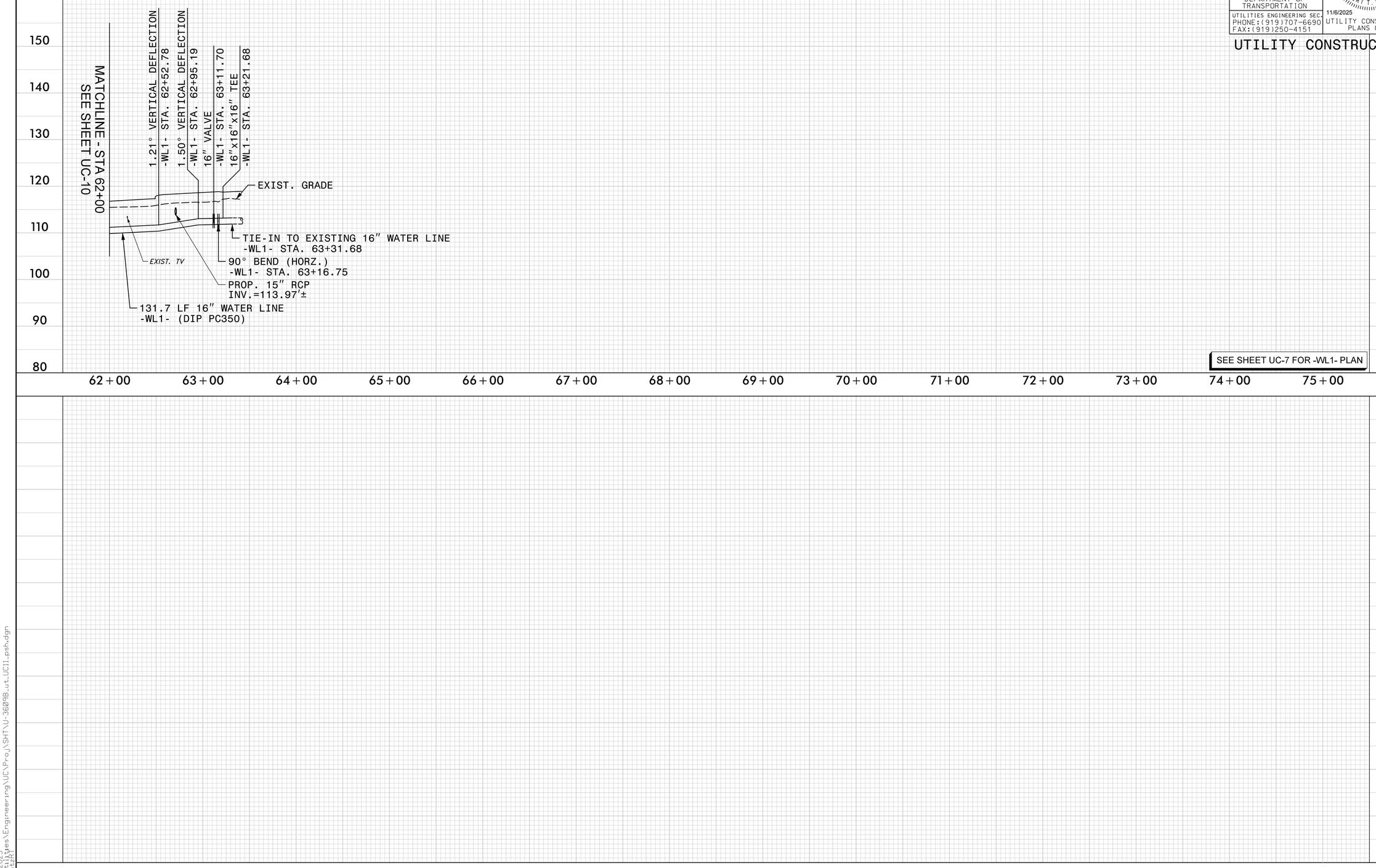
PROP. 16" WATER LINE -WL1- BERKLEY BOULEVARD



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REVISED:

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

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057622 ROBERT T. KRATZ
DocuSigned by: 2686547476
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