

**TIP PROJECT: U-6020**

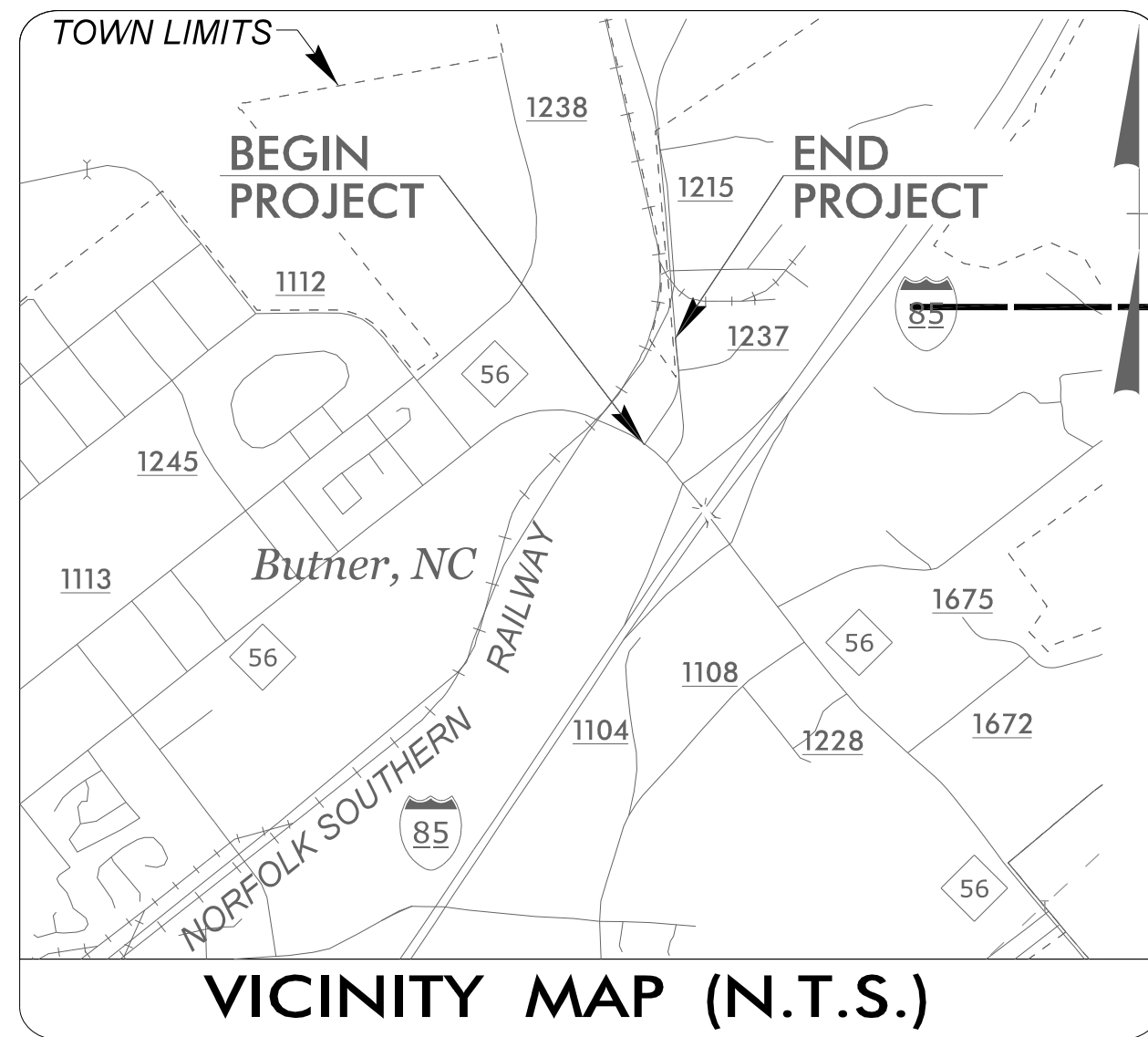
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
U-6020	UC-1

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**UTILITY CONSTRUCTION PLANS**  
**GRANVILLE COUNTY**

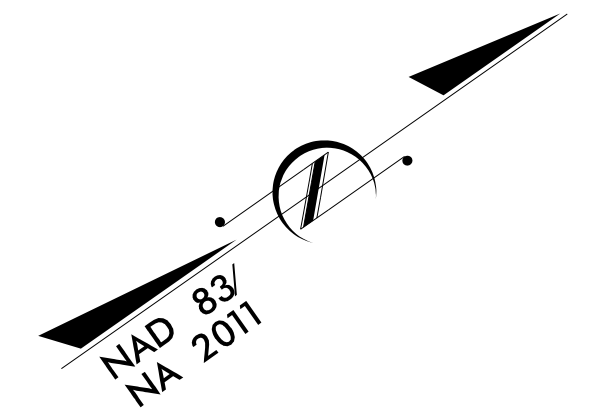
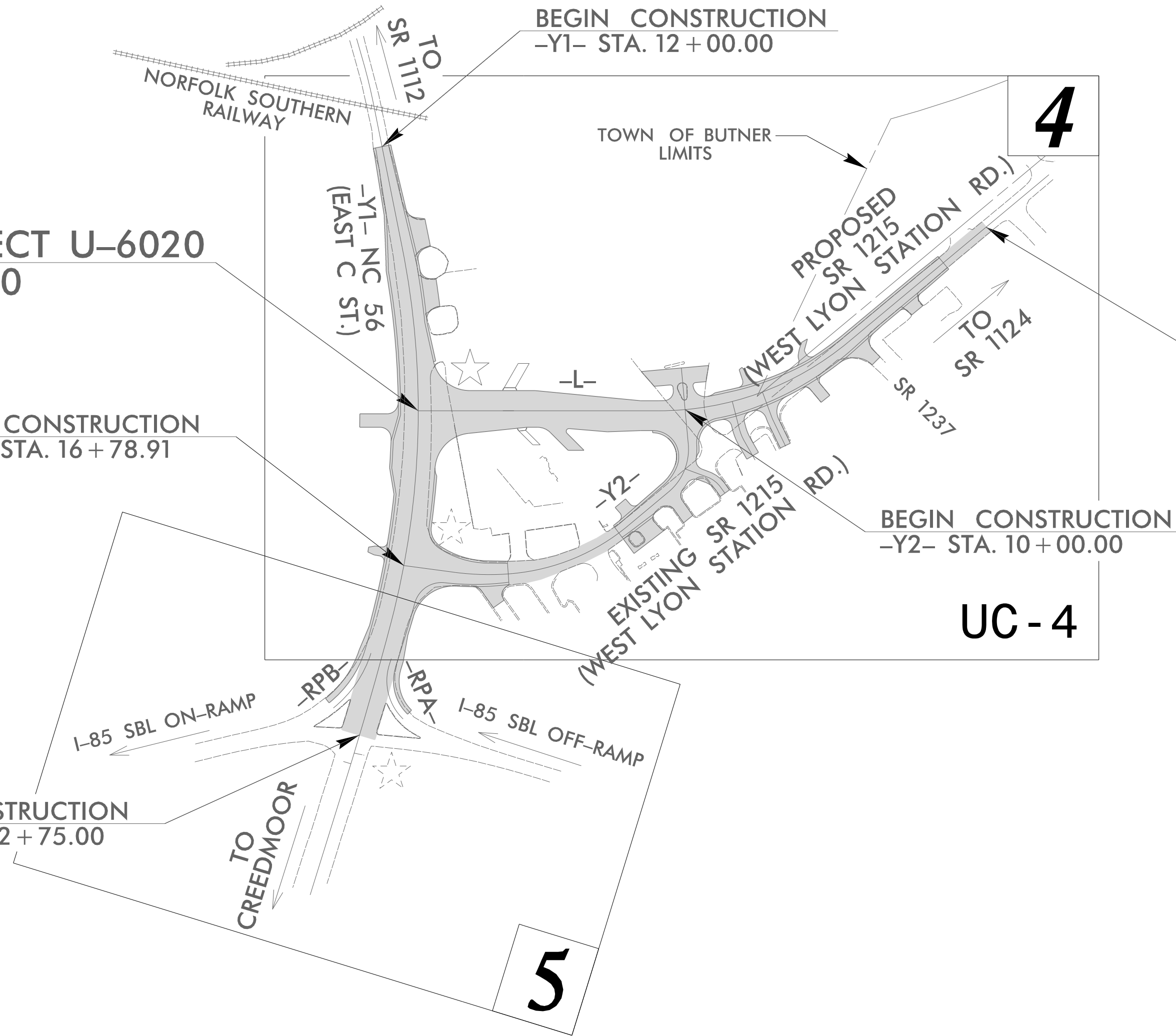
**LOCATION: REALIGNMENT OF SR 1215 (WEST LYON STATION ROAD) AT NC 56 (EAST C STREET) IN BUTNER**  
**TYPE OF WORK: WATER & SEWER RELOCATIONS**



BEGIN TIP PROJECT U-6020  
-L- STA. 10 + 00.00

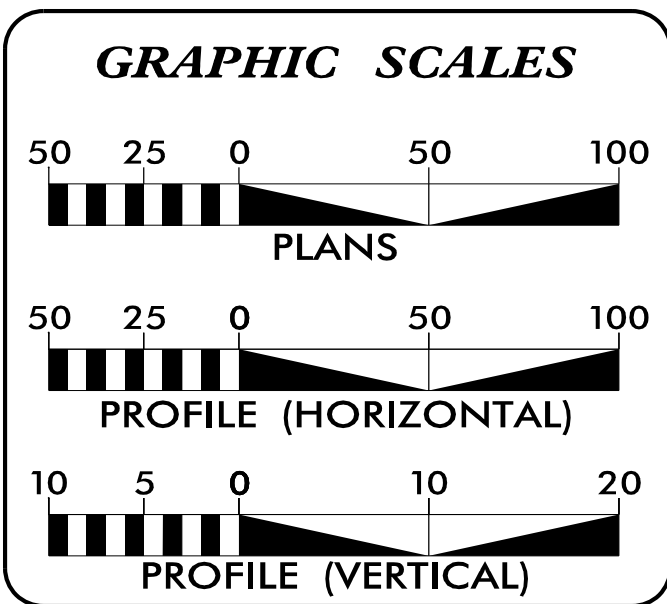
END CONSTRUCTION  
-Y2- STA. 16 + 78.91

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-Y1- STA. 22 + 75.00



END TIP PROJECT U-6020  
-L- STA. 21 + 25.00

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**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A THRU UC-3B	DETAILS
UC-4	UTILITY CONSTRUCTION SHEETS
UC-5 THRU UC-6	PROFILE SHEETS

**WATER AND SEWER OWNERS ON PROJECT**

(A) WATER - SOUTH GRANVILLE WATER & SEWER AUTHORITY (SGWASA)  
(B) SEWER - SOUTH GRANVILLE WATER & SEWER AUTHORITY (SGWASA)

PREPARED IN THE OFFICE OF:

**HINDE ENGINEERING**  
License No. C-2639  
401 Harrison Oaks Blvd., Suite 220 Cary, NC 27513  
Ph. (919) 853-0001

Clint L. Stevens, P.E. UTILITIES PROJECT MANAGER  
Corey D. Bousquet, P.E. UTILITIES PROJECT ENGINEER  
Jordan K. Chapman UTILITIES PROJECT DESIGNER

SEAL

2/13/2024

**DIVISION OF HIGHWAYS**  
DIVISION 5  
PROJECT DELIVERY UNIT  
2612 DUKE STREET  
DURHAM, NC 27704

Ben Upshaw, PE TEAM LEAD  
John Braxton PROJECT MANAGER  
Don Proper DIV. 5 UTILITY ENGINEER  
Monroe Brown DIV. 5 UTILITY COORDINATOR

# UTILITIES PLAN SHEET SYMBOLS

## PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11 1/4 Degree Bend	
22 1/2 Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	REM FH
Water Meter	
Relocate Water Meter	
Remove Water Meter	REM WM
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

## PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	

## PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement by Open Cut	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	

## EXISTING UTILITIES SYMBOLS

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

\*For Existing Utilities  
Utility Line Drawn from Record (Type as Shown)   
Designated Utility Line (Type as Shown)

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PROJECT REFERENCE NO. <b>U-6020</b>	SHEET NO. <b>UC-3</b>
DESIGNED BY: <b>CDB</b>	
DRAWN BY: <b>JKC</b>	
CHECKED BY: <b>CLS</b>	
APPROVED BY: <b>CLS</b>	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

# 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 SOUTH GRANVILLE WATER AND SEWER AUTHORITY (SGWASA). THE CONTACT PERSON IS:

MARK HAMLETT, PE  
 UTILITY ENGINEER/MANAGER  
 919-575-3367 EXT 309

IN THE EVENT OF A CONFLICT BETWEEN THE UTILITY OWNER'S TECHNICAL SPECIFICATIONS AND NCDOT STANDARD SPECIFICATIONS/PROJECT SPECIAL PROVISIONS, THE MOST STRINGENT SHALL GOVERN.

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 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.

10. ALL WATER LINE INSTALLED ON THIS PROJECT SHALL MEET THE REQUIREMENTS OF THE RULES GOVERNING PUBLIC WATER SYSTEMS. VERTICAL SEPARATION BETWEEN PROPOSED WATER MAINS AND STORM DRAINAGE SHALL BE A MINIMUM OF 18-INCHES PER RECOMMENDED STANDARDS OF WATER WORKS. ALL PROPOSED WATER LINE SHALL HAVE A MINIMUM COVER OF 36-INCHES. PROPOSED WATER MAINS SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF 10-FEET FROM SEWER MAINS (REF. RULE .0904, RULE.0906). UTILITIES BEING RELOCATED OR INSTALLED AS SHOWN ON THE UTILITY CONSTRUCTION PLANS MUST BE ADJUSTED ACCORDINGLY TO MEET THESE CRITERIA.

## UTILITY CONSTRUCTION

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# WATER DETAILS

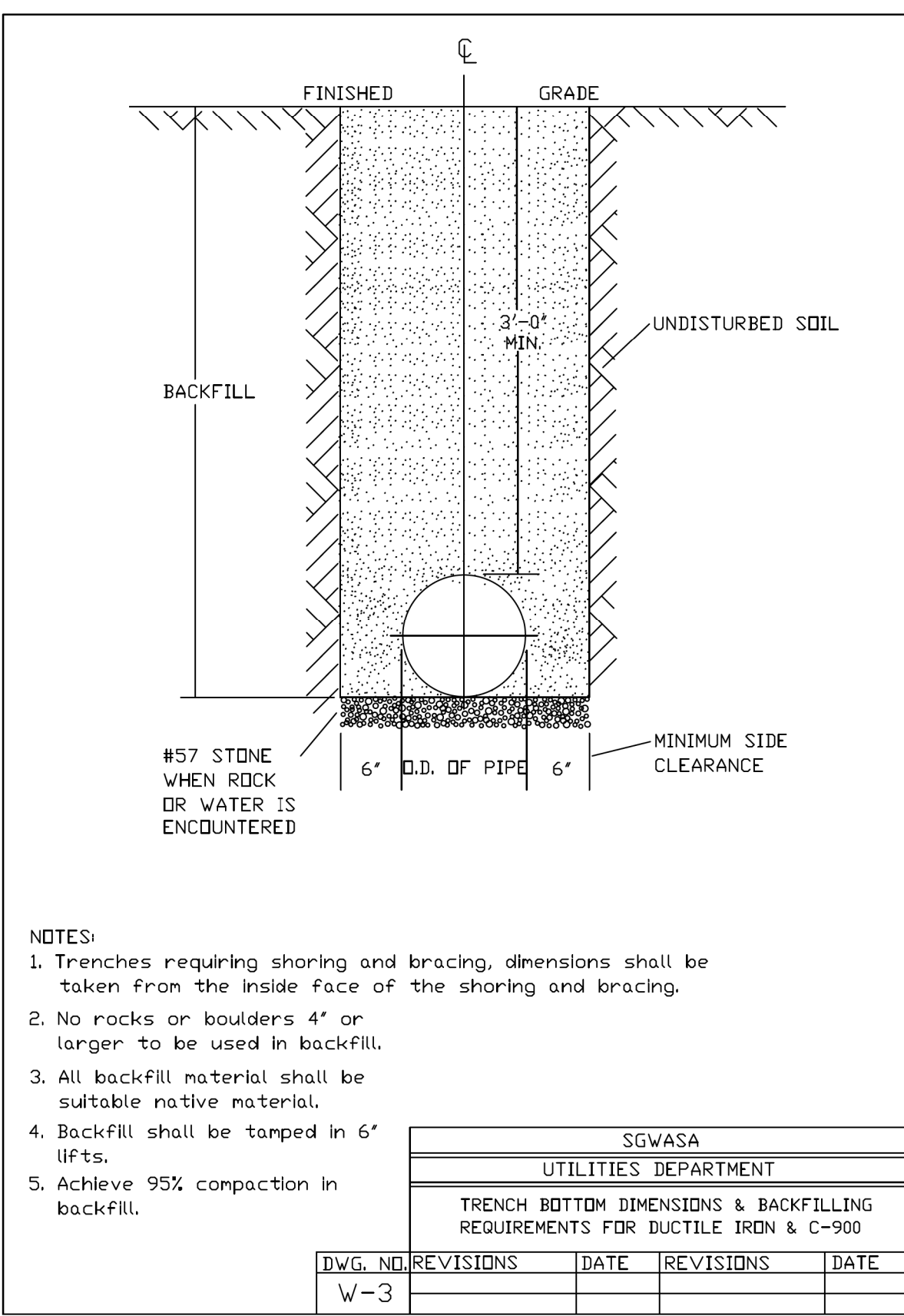
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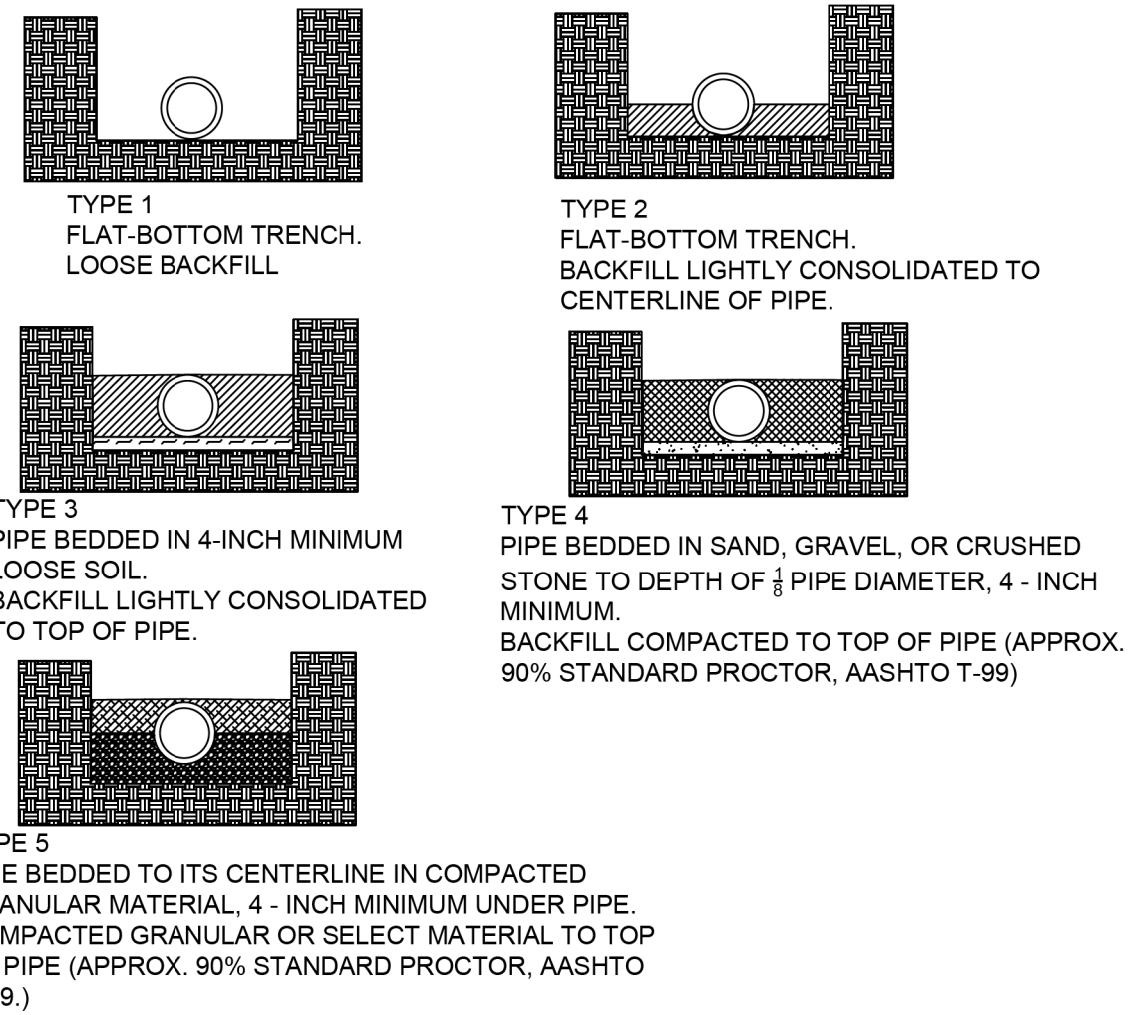
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PROJECT REFERENCE NO. <b>U-6020</b>	SHEET NO. <b>UC-3A</b>
DESIGNED BY: <b>CDB</b>	
DRAWN BY: <b>JKC</b>	
CHECKED BY: <b>CLS</b>	
APPROVED BY: <b>CLS</b>	
REVISED:	06/22/2024 2/13/2024 UTILITY CONSTRUCTION PLANS ONLY
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## UTILITY CONSTRUCTION

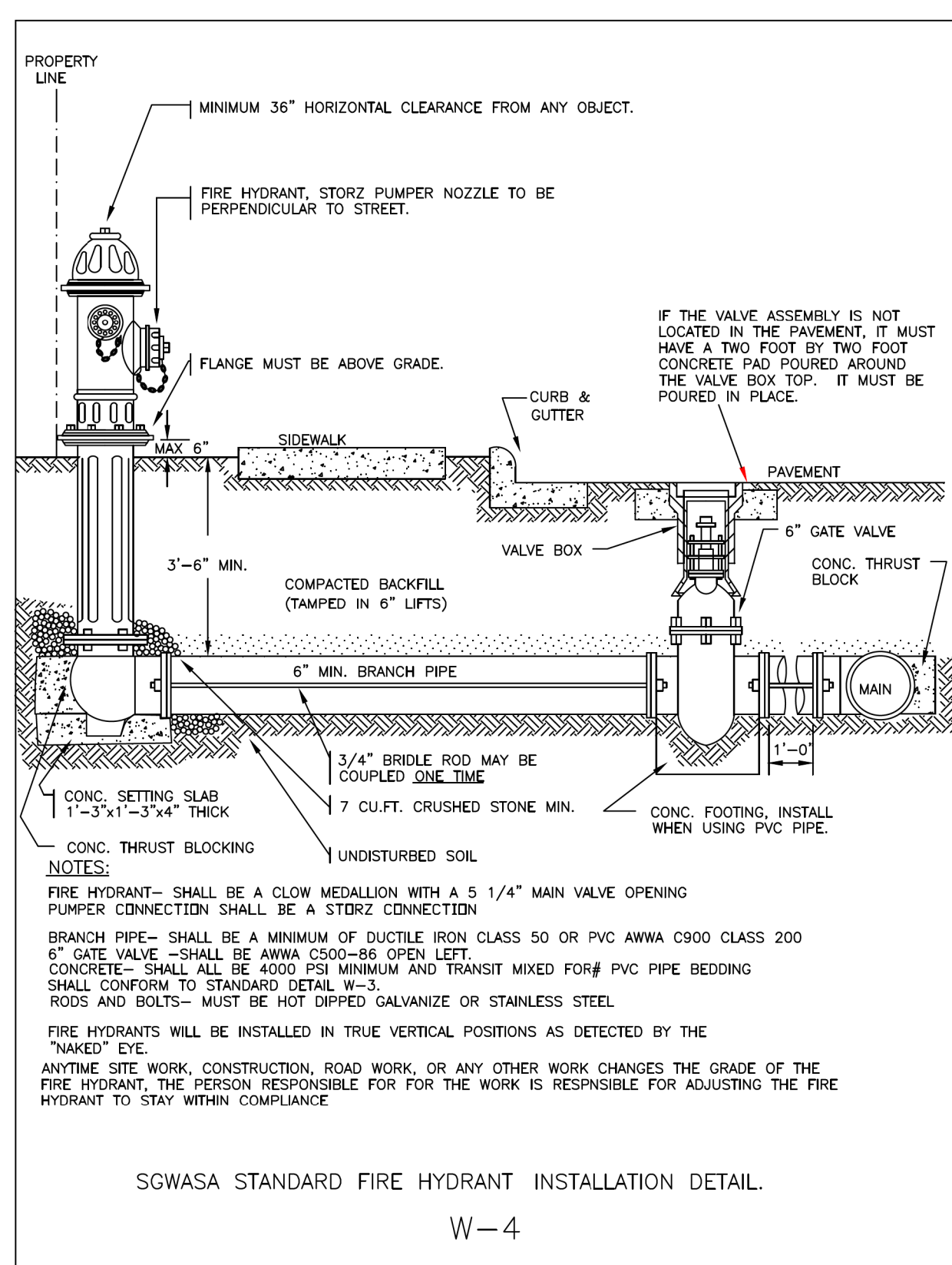


### STANDARD LAYING CONDITIONS FOR DUCTILE IRON AND C900 PIPE

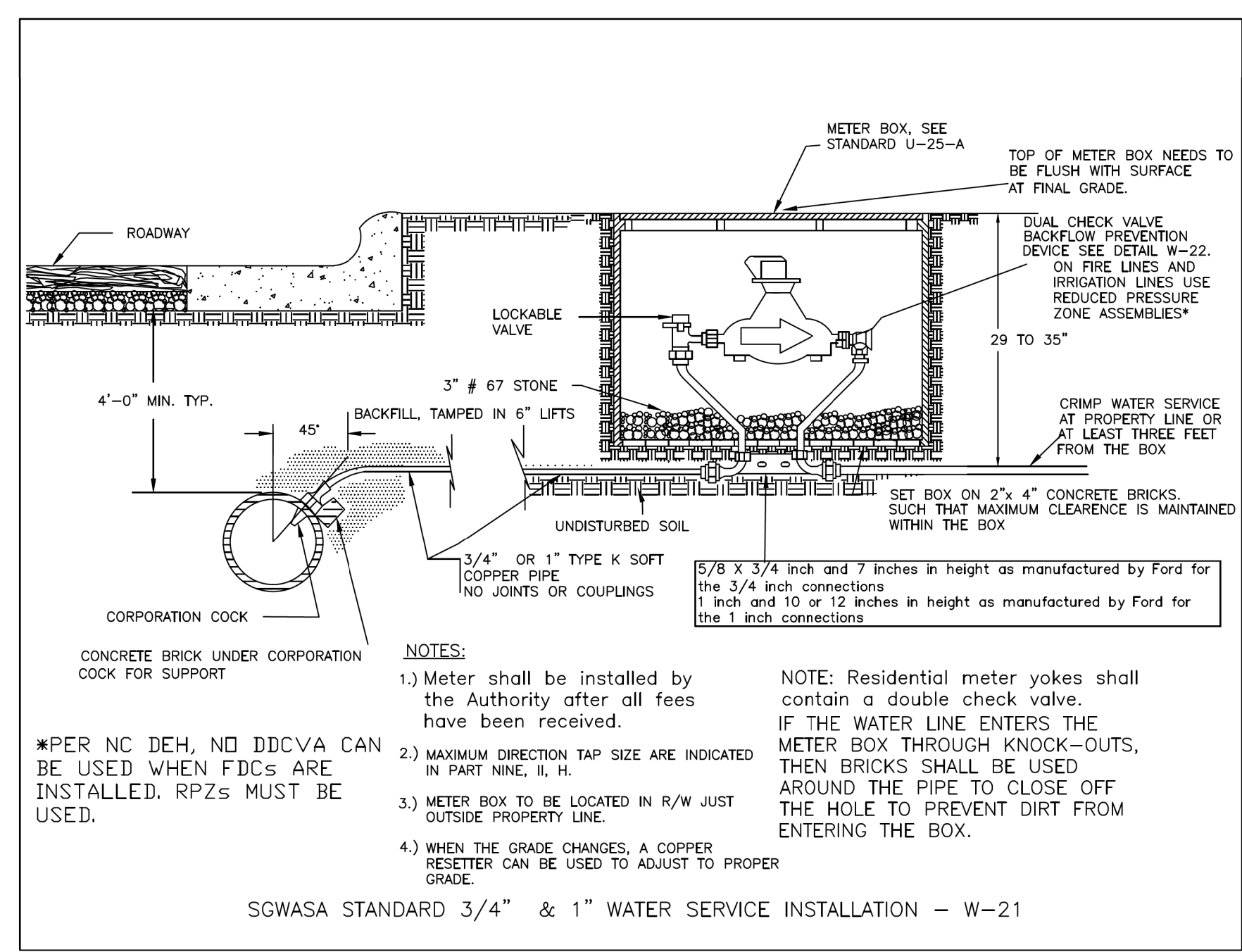


**NOTES:**  
 FOR 14-INCH AND LARGER PIPE, TYPE 1 SHALL NOT BE USED.  
 "FLAT-BOTTOM" IS DEFINED AS "UNDISTURBED EARTH"  
 "LOOSE SOIL" OR "SELECT MATERIAL" IS DEFINED AS "NATIVE SOIL EXCAVATED FROM TRENCH, FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH".

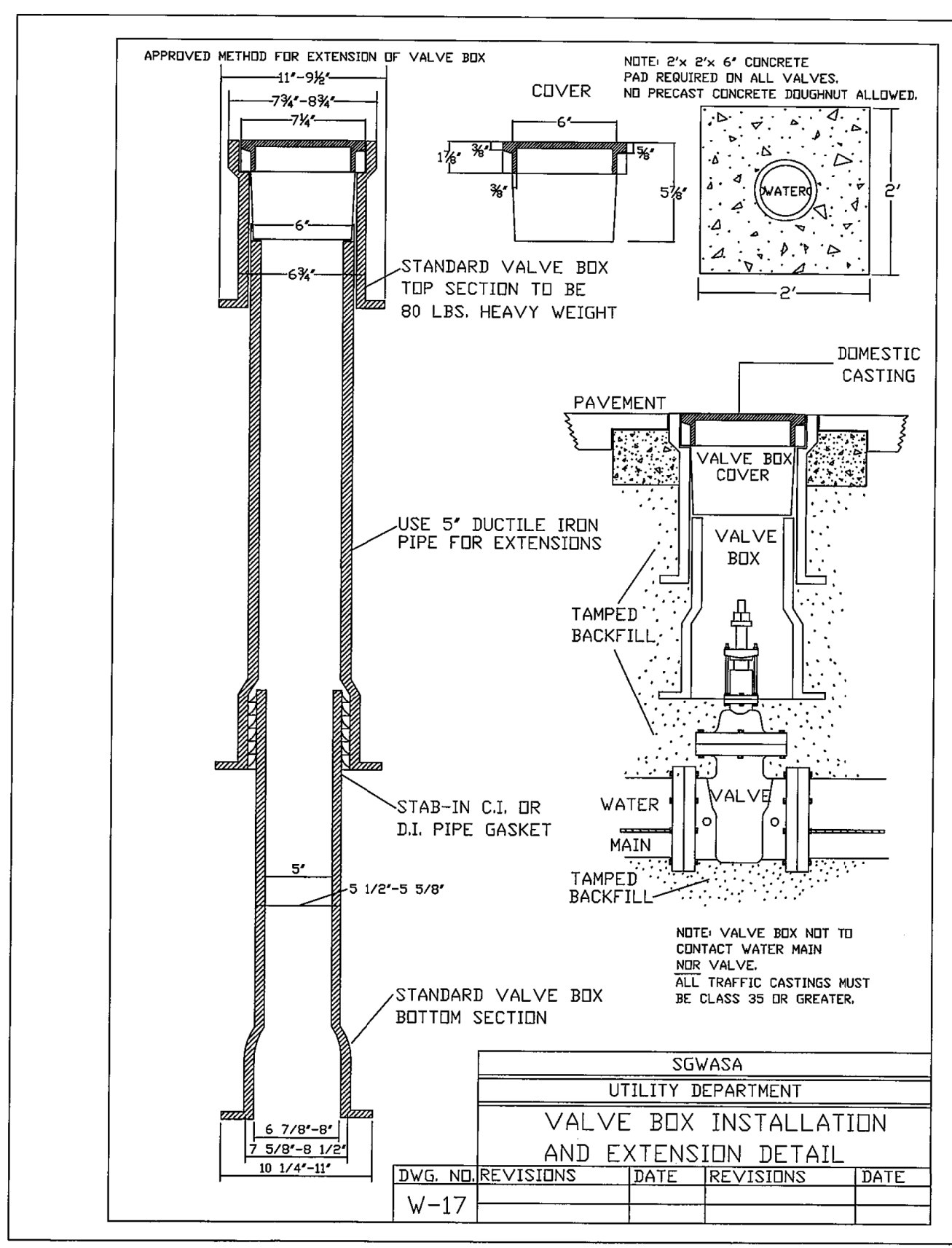
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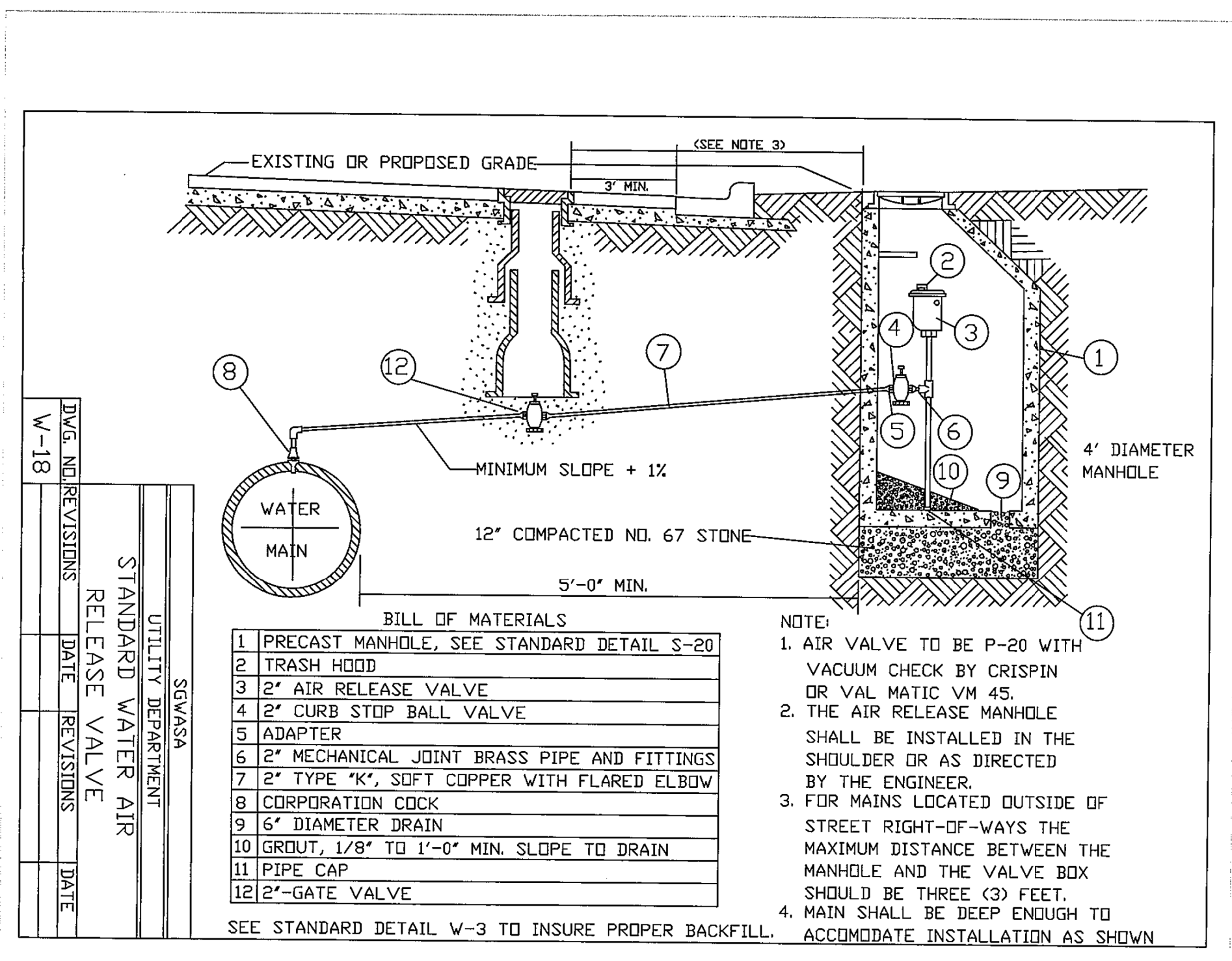
W-4



SGWASA STANDARD 3/4" & 1" WATER SERVICE INSTALLATION - W-21



VALVE BOX INSTALLATION AND EXTENSION DETAIL



DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-18				

STANDARD WATER AIR RELEASE VALVE

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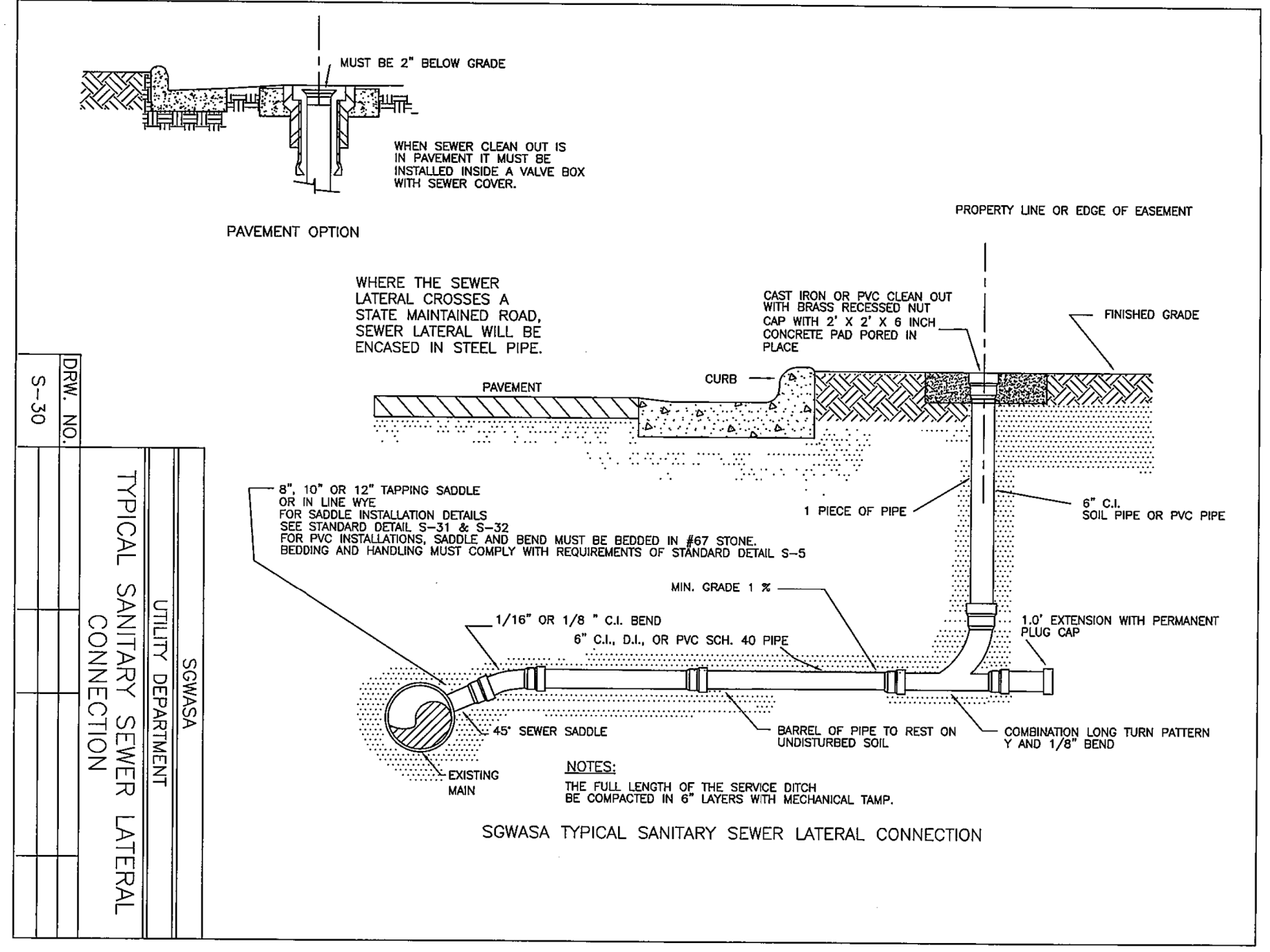
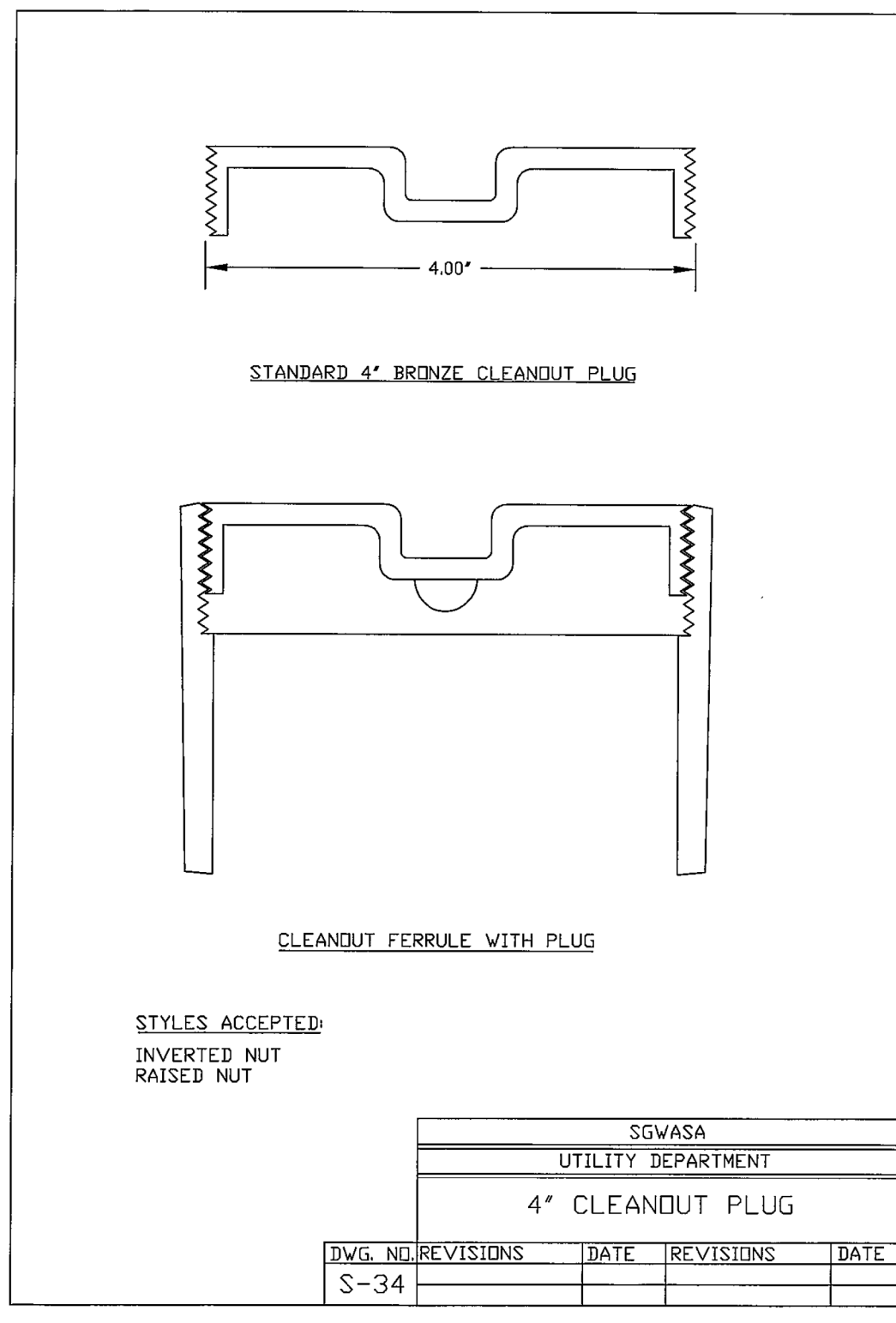
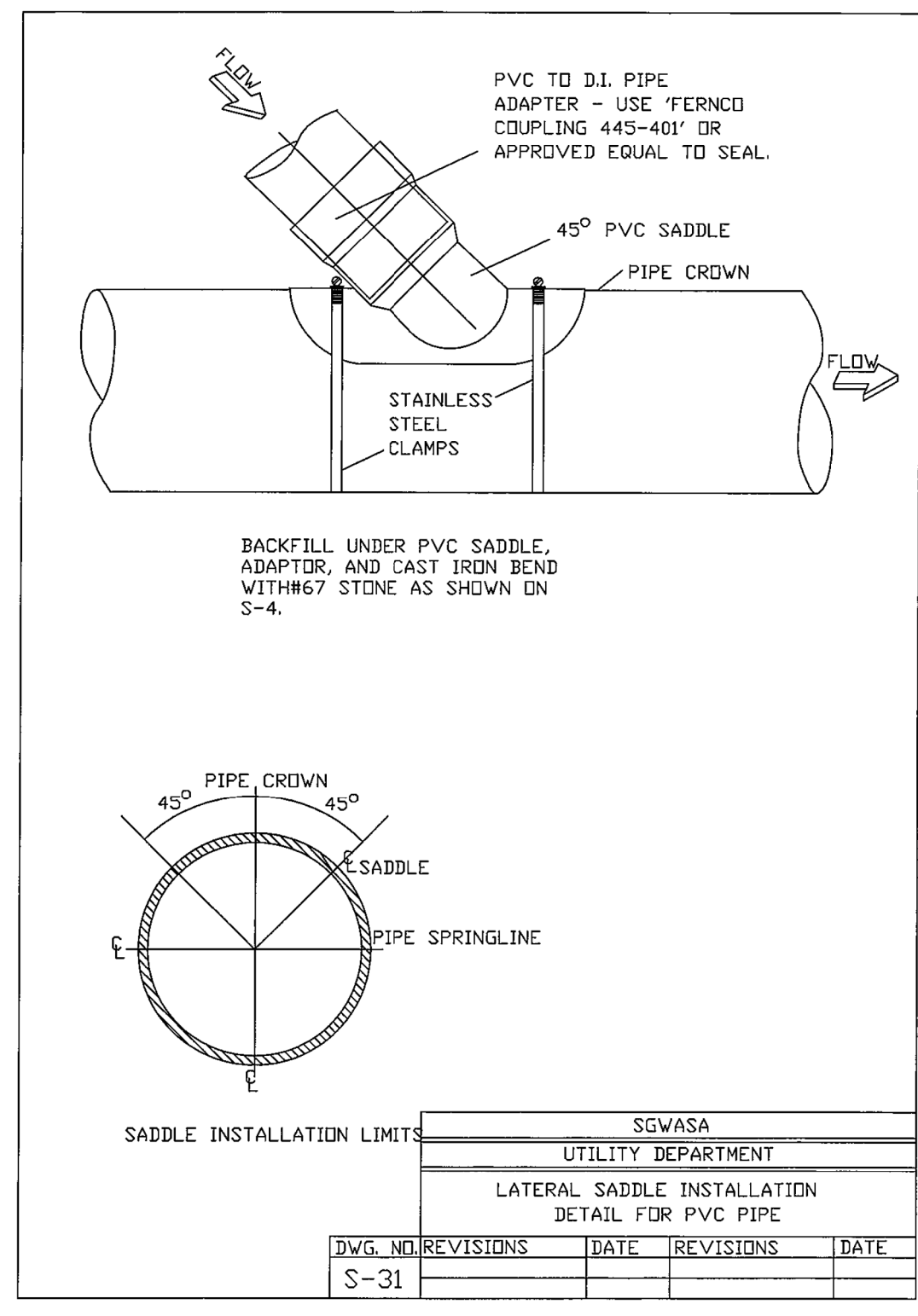
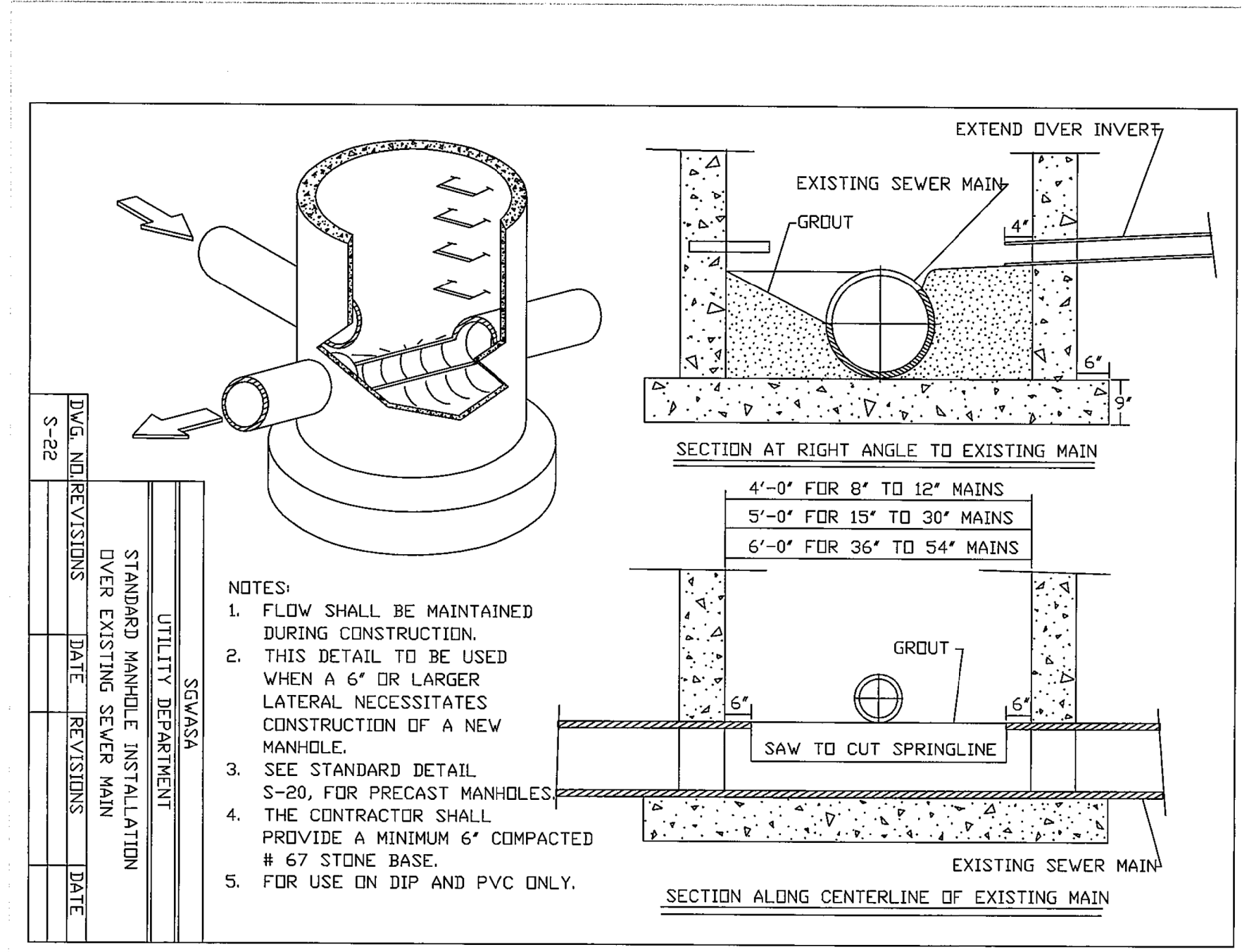
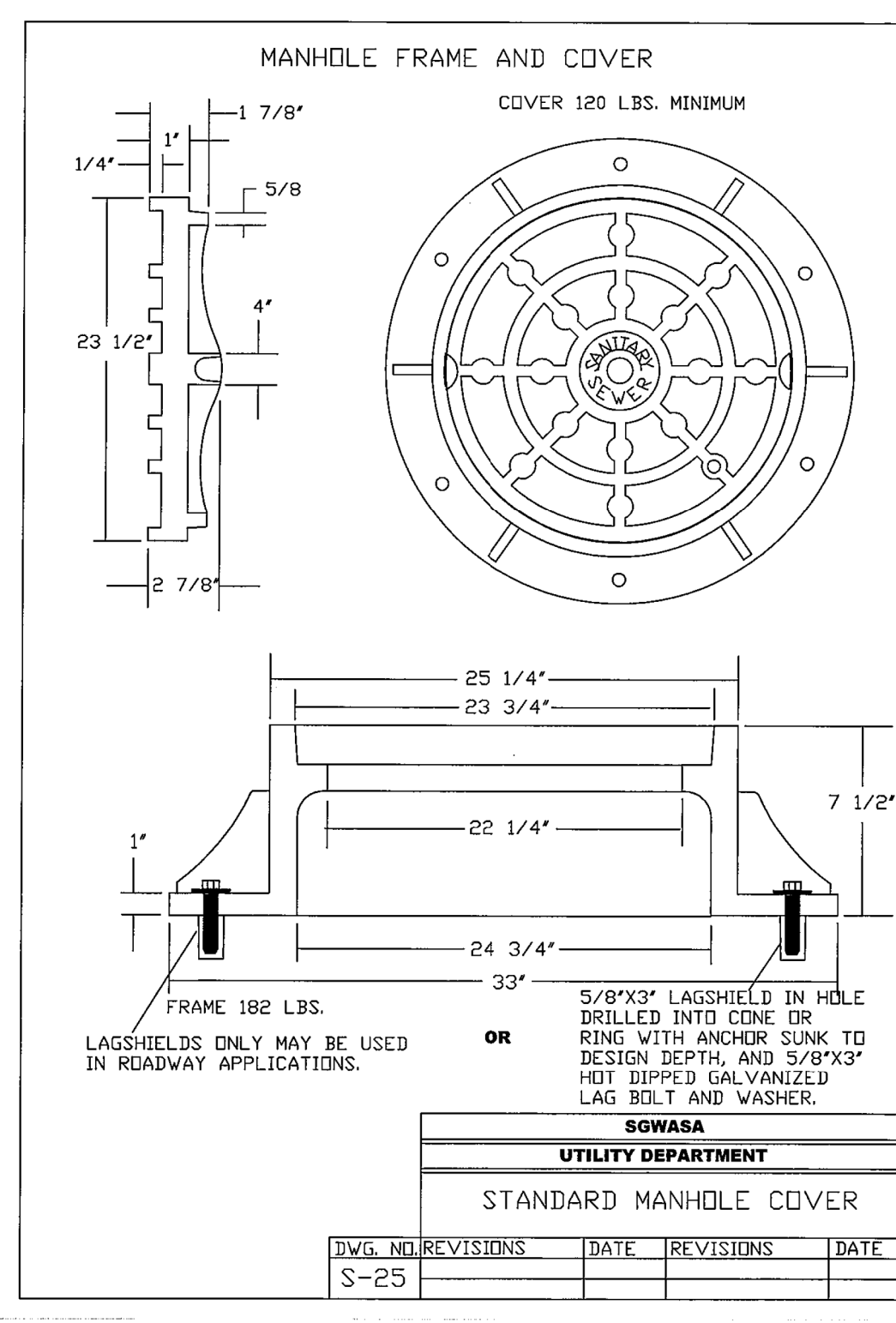
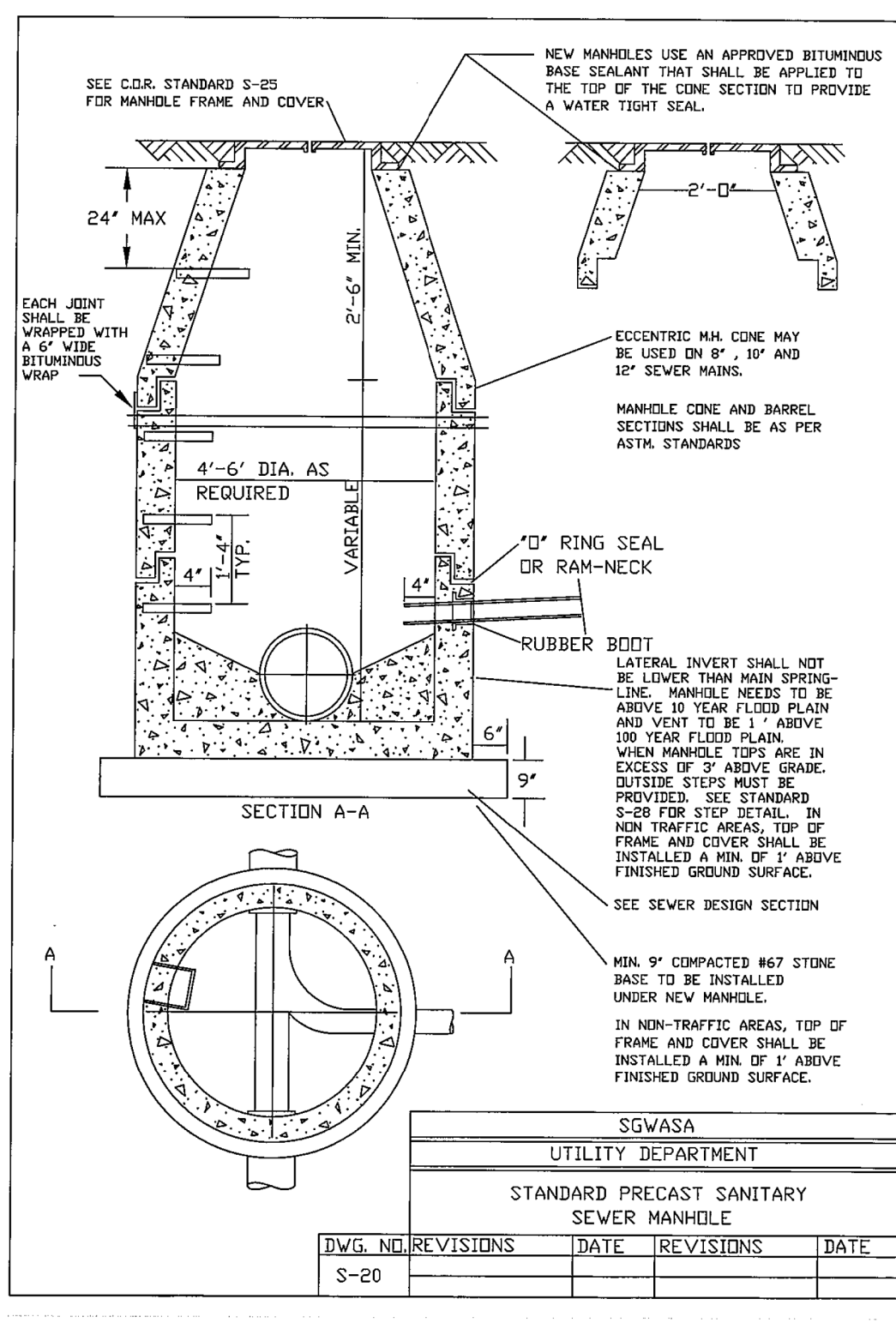
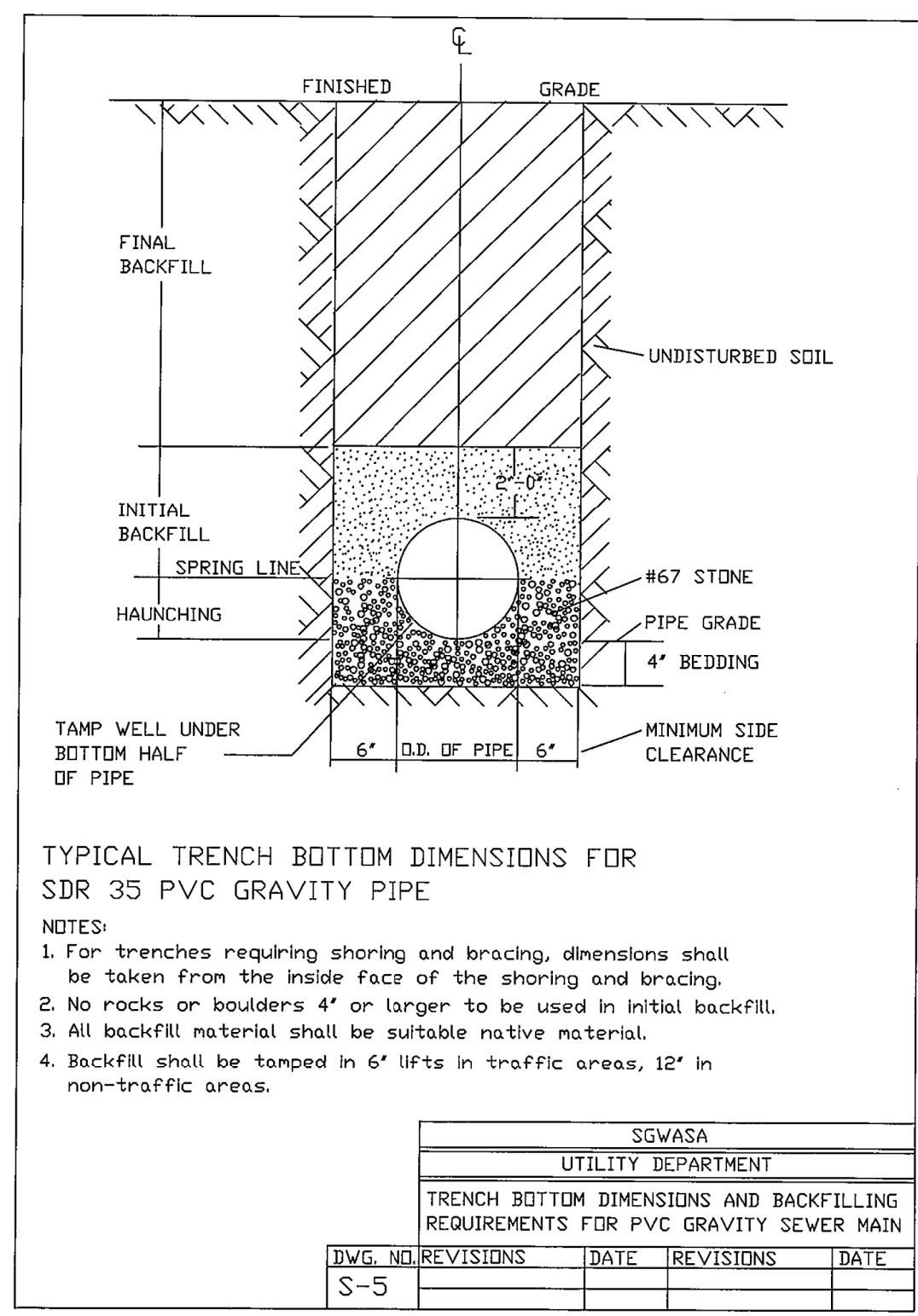
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APPROVED BY:	CLS		
REVISIED:		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

# SEWER DETAILS

## UTILITY CONSTRUCTION

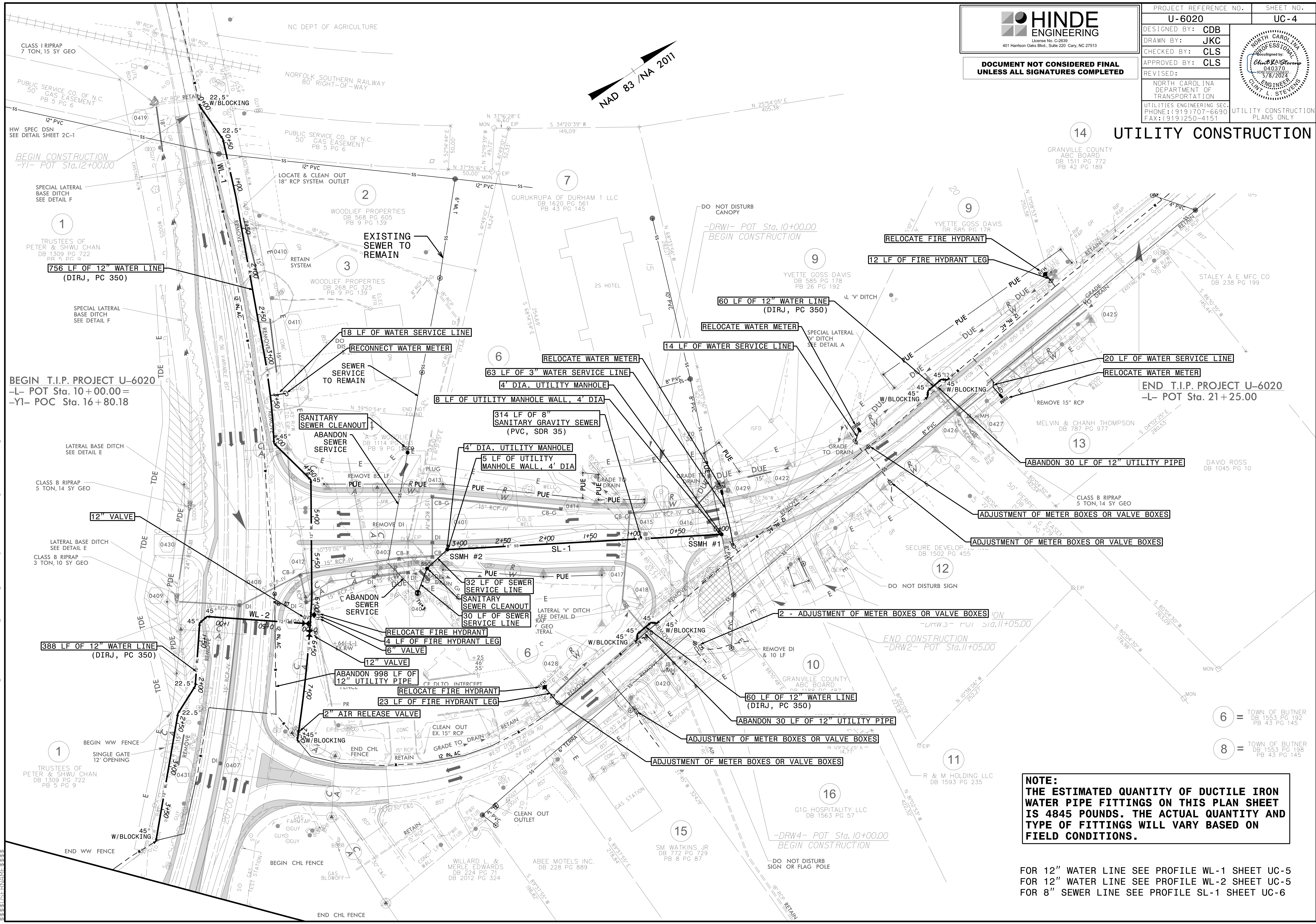


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PROJECT REFERENCE NO. <b>U-6020</b>	SHEET NO. <b>UC-4</b>
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# UTILITY CONSTRUCTION

**NOTE:**  
 THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 4845 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

FOR 12" WATER LINE SEE PROFILE WL-1 SHEET UC-5  
 FOR 12" WATER LINE SEE PROFILE WL-2 SHEET UC-5  
 FOR 8" SEWER LINE SEE PROFILE SL-1 SHEET UC-6

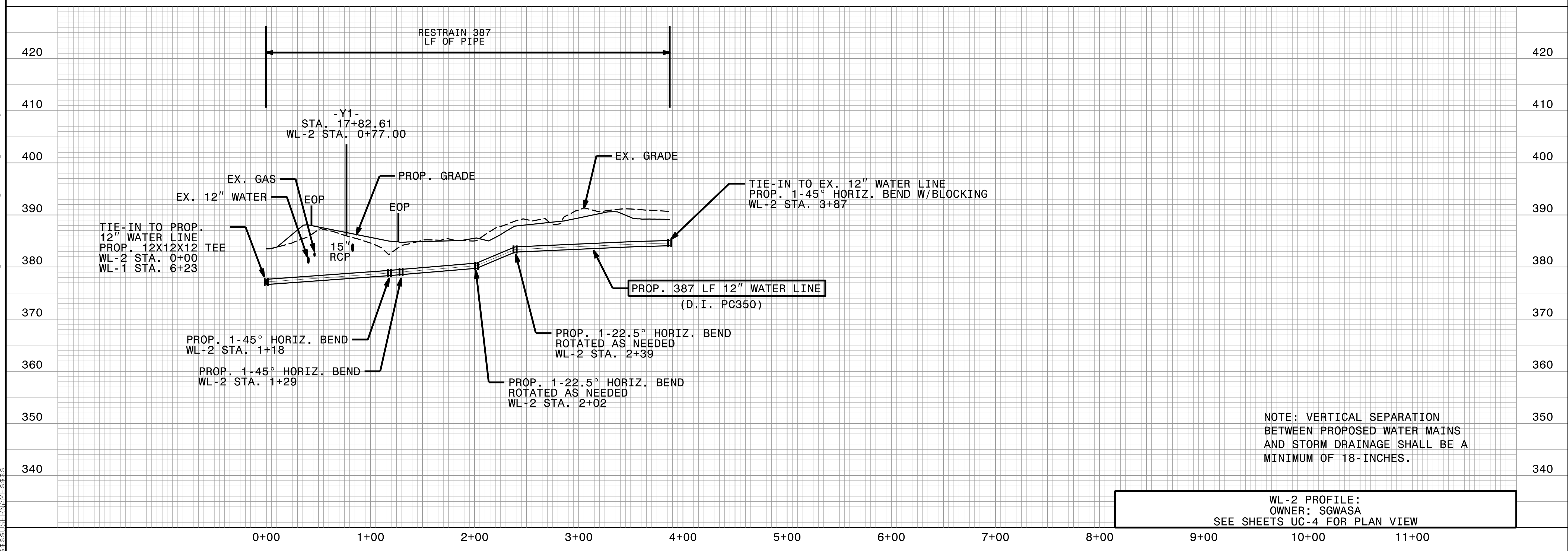
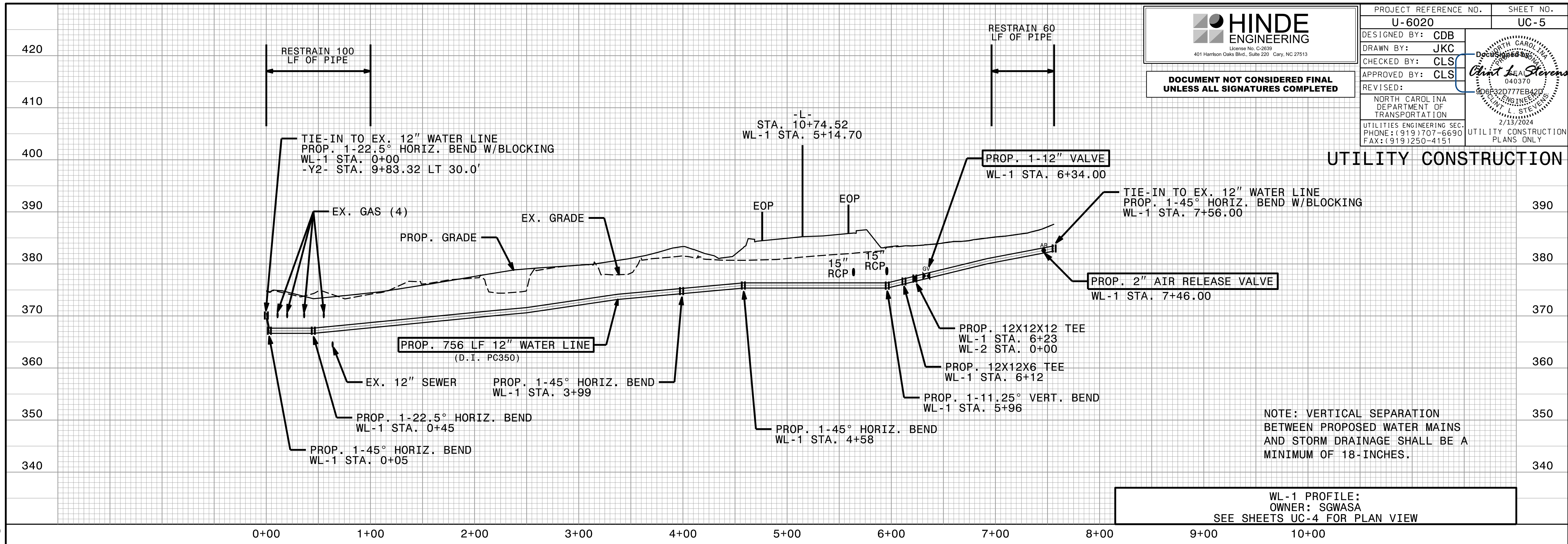
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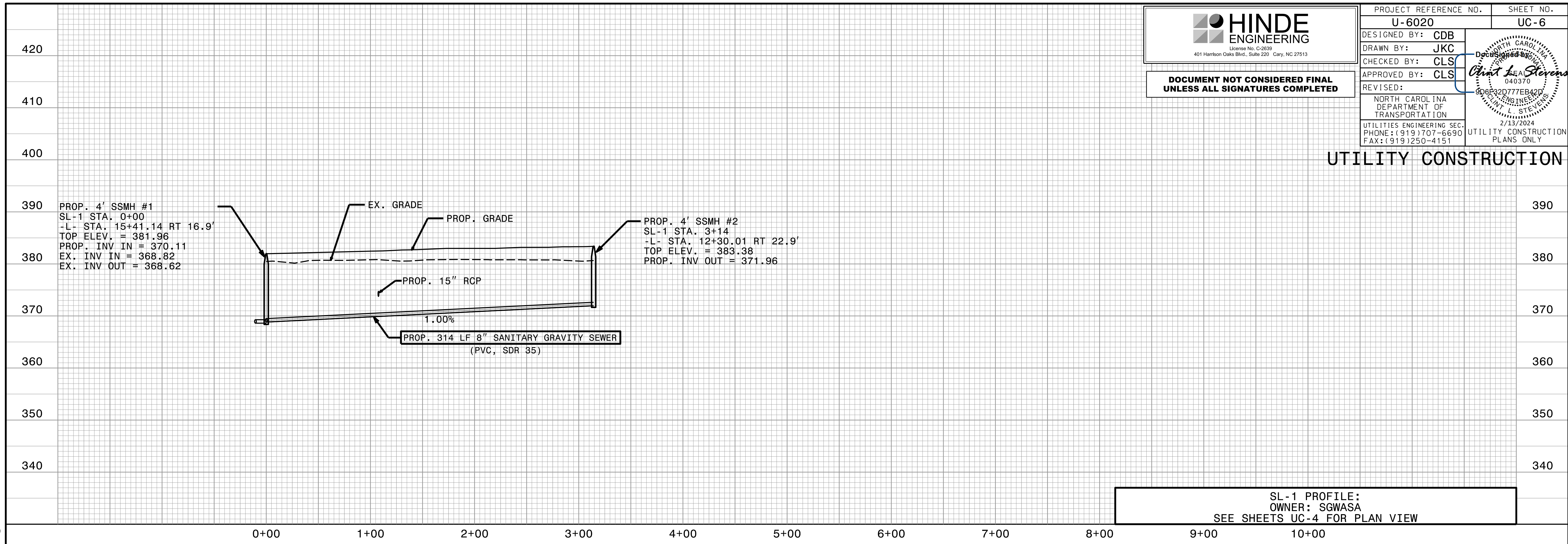
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PROJECT REFERENCE NO. U-6020	SHEET NO. UC-6
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DRAWN BY: JKC	
CHECKED BY: CLS	
APPROVED BY: CLS	
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### UTILITY CONSTRUCTION



SL-1 PROFILE:  
 OWNER: SGWASA  
 SEE SHEETS UC-4 FOR PLAN VIEW

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