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NBU PRESSURE ZONE:
 PROPOSED WATER MAIN IS WITHIN NBU PRESSURE ZONE 4.

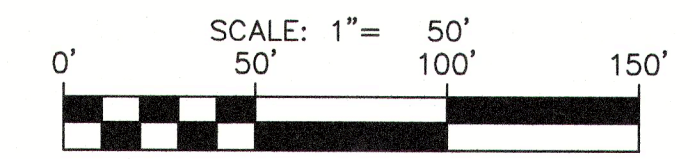
NOTE:
 FOR PAVEMENT DESIGN SECTION SEE GEOTECHNICAL ENGINEERING REPORT.

FOR CHLORINATION INJECTION
 2 - 1" CORPORATION STOP, C.C.V.I.P.
 1 - 1" COPPER TUBING, CUT AS REQUIRED
 2 - 1" COMP. 1 1/4 COUPLING, CORP. STOP
 2 - 1 1/4" THD. SOLID CAPS, THR.

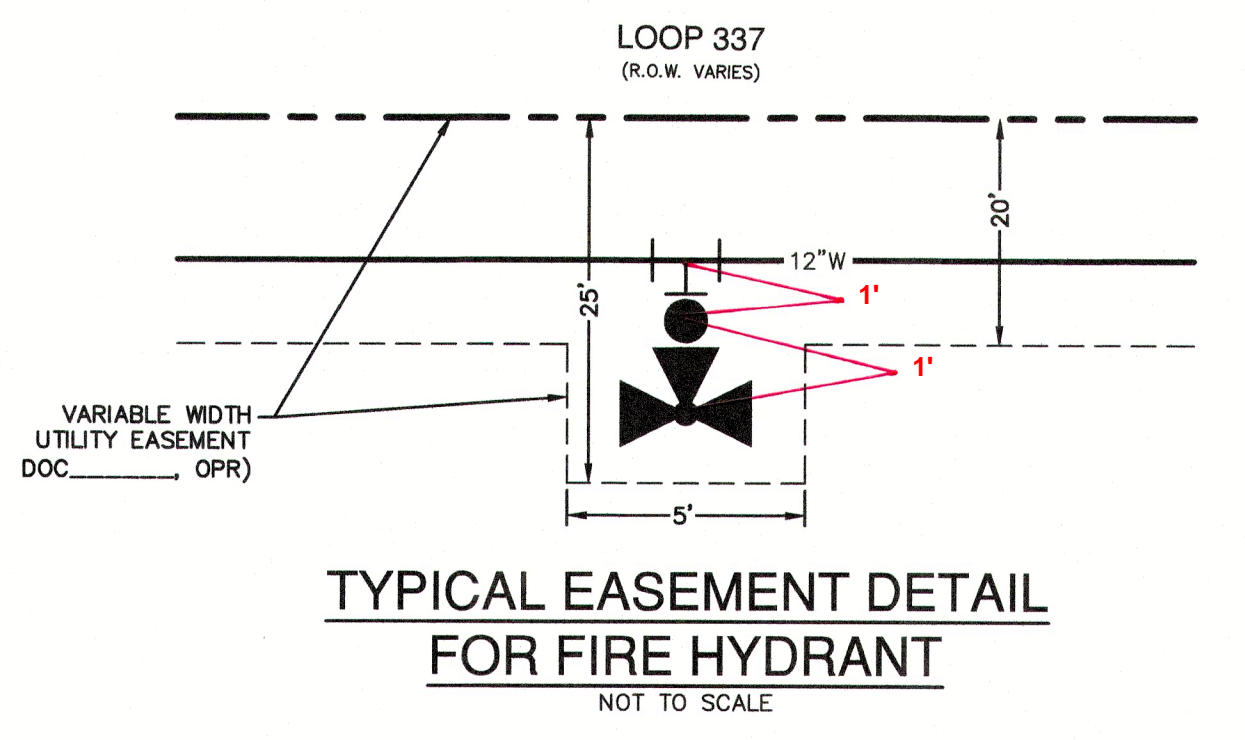
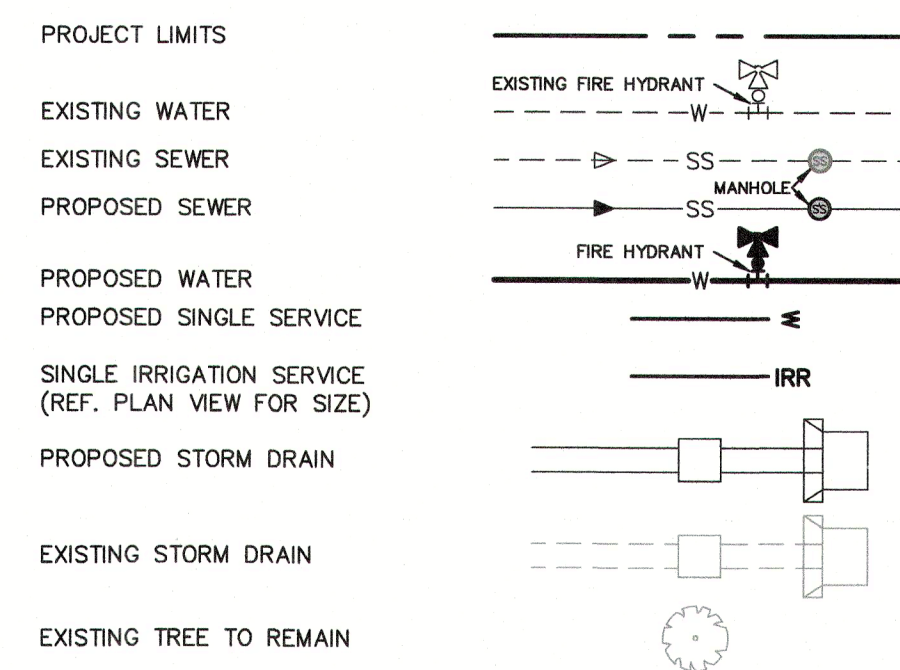
12" VALVE SHALL REMAIN CLOSED UNTIL NEW MAINS HAVE BEEN DISINFECTED BY CONTRACTOR AND ACCEPTED BY NBU

CONTRACTOR SHALL TIE PROPOSED 12" MAIN TO EXISTING 12" PVC C-900 DR 18 MAIN AND PROVIDE VERTICAL BENDS AS NEEDED AFTER DISINFECTION BY CONTRACTOR AND ACCEPTANCE BY NBU

2" TEMPORARY BLOWOFF ASSEMBLY (SEE NBU STD DWG 253)



WATER LEGEND



Pipe Restraint Length Calculations
 Source: EBAA Iron, Restraint Length Calculator v 7.1.2

Assumptions:

Soil Type	Safety Factor	Trench Type	Depth of Bury	Test Pressure
CH	1.5 to 1.0	5	4 ft	200 psi

Minimum Restraint Lengths in Feet

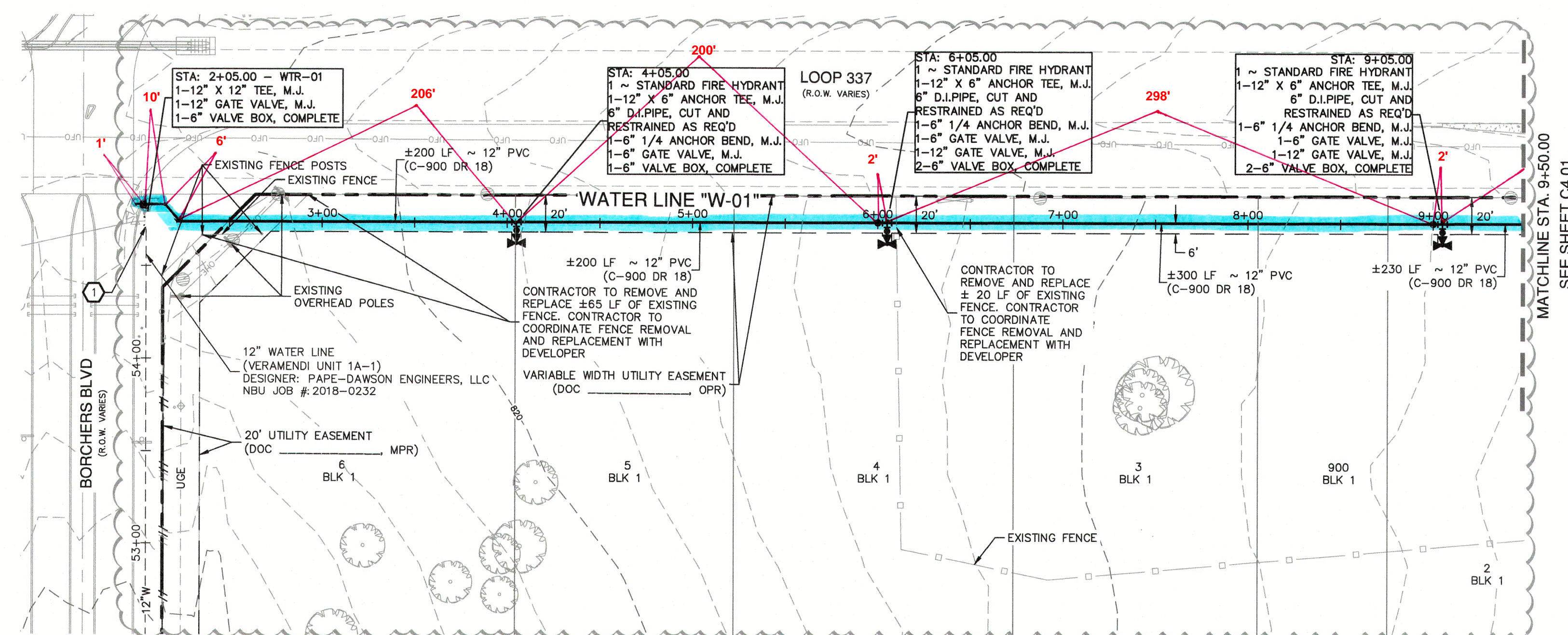
Horizontal Bends	12" Waterline	
	Main	Branch
11.25 Degrees		
22.5 Degrees		
45 Degrees	17	

Misc. Fittings

8"x6" Tee	
8"x8" Tee	
12"x6" Tee	59 (6" Branch)
12"x8" Tee	
Dead End/ Gate Valve	110
16"x12" Cross	
16"x12" Reducer	

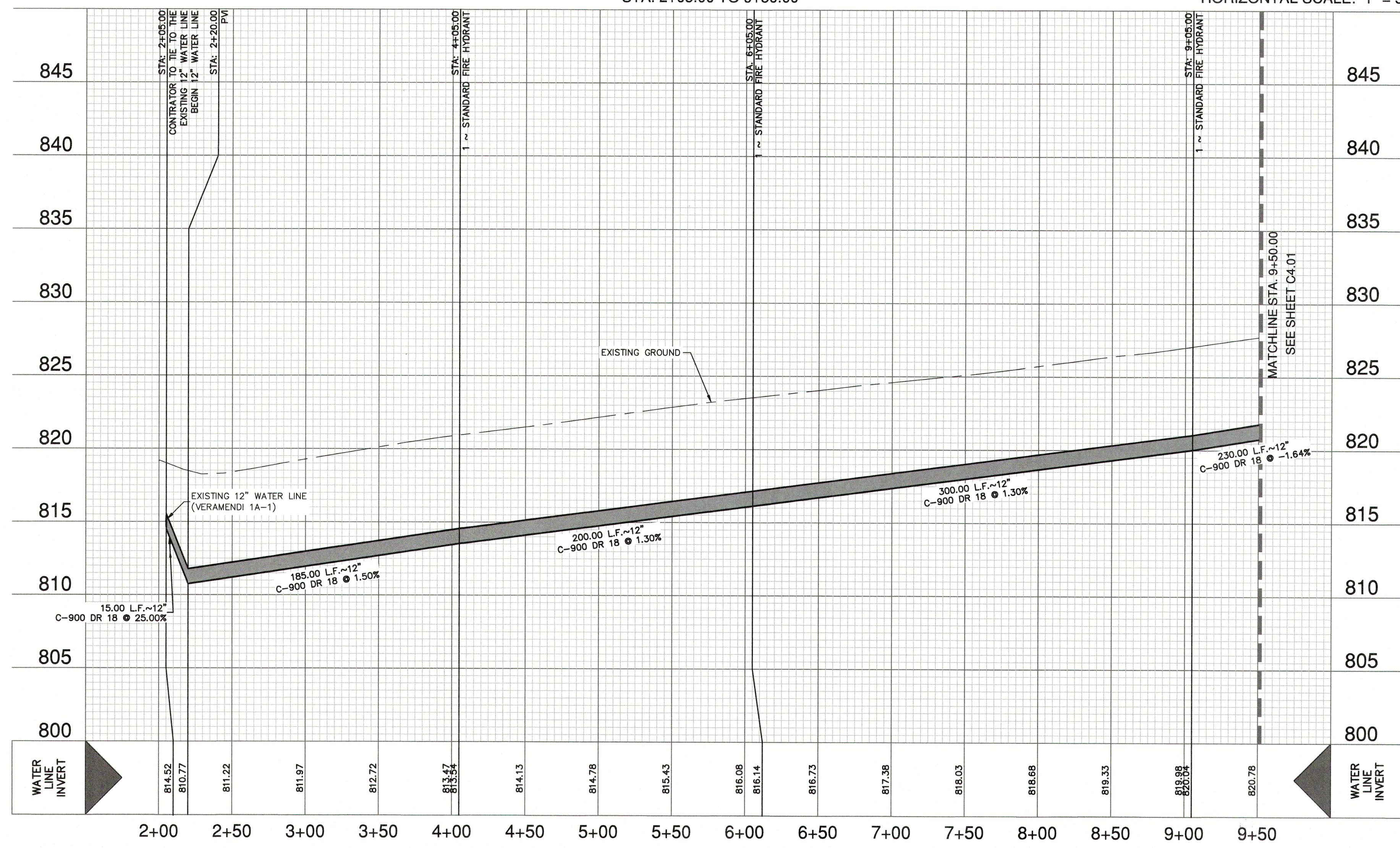
Vertical Bends (assumes low side depth of 10)

	High Side	Low Side
11.25 Degrees	11	2
22.5 Degrees	22	4
45 Degrees	46	7



12 INCH WATER LINE "W-01"
 STA. 2+05.00 TO 9+50.00
 VERTICAL SCALE: 1" = 5'
 HORIZONTAL SCALE: 1" = 50'

ITEM	UNIT	QUANTITY
12" WATER LINE	LF	1480
LUES	EA	48
FIRE HYDRANT	EA	1
6" GATE VALVE	EA	1
12" GATE VALVE	EA	4
2" SERVICE LINE WITH 1.5" METER	EA	2
2" SERVICE LINE WITH 2" METER	EA	1



JOINT RESTRAINT NOTE:
 CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESSES OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING. CONTRACTOR SHALL USE PIPE RESTRAINT LENGTH TABLE PROVIDED ON THIS SHEET. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE JOINT RESTRAINTS WITH THE DEVELOPER'S ENGINEER IF CHANGES OCCUR.

NOTE:
 1. ALL IRRIGATION SERVICES WITHIN RESIDENTIAL AREAS SHALL HAVE A REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY (R/P) INSTALLED PRIOR TO PLACEMENT OF METER. ALL NEW FACILITIES ARE REQUIRED TO COMPLY WITH THE REQUIREMENTS OF THE LATEST NBU BACKFLOW POLICY.
 2. ALL GATE VALVES 16" AND SMALLER SHALL BE RESILIENT SEATED GATE VALVES.

CITY OF NEW BRAUNFELS NOTES

- NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
- ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
- THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5- FEET IN DEPTH. DEEP TRENCHES POSE COMPACTION TESTING AND CONSTRUCTION CHALLENGES AND CITY METHODS FOR TESTING AND COMPACTION MAY NOT BE ACHIEVABLE. A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.
- UTILITY TRENCH COMPACTION - ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTING OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.

CAUTION!!
 CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT "TEXAS 811" A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

TRENCH EXCAVATION SAFETY PROTECTION:
 CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

DATE: 06/25/25
 NO. REVISION: 1 LOT LINES CHANGED
 6-25-2025
 JOCELYN PEREZ
 LICENSED PROFESSIONAL ENGINEER
 STATE OF TEXAS
 98367
 PAPER ENGINEERS
 1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 832.632.6633
 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1002800
 VERAMENDI PRECINCT 11A
 NEW BRAUNFELS, TEXAS
 12 INCH WATER LINE W-01 - PLAN & PROFILE
 STA. 2+05.00 TO 9+50.00
 PLAT NO. _____
 JOB NO. 30001-81
 DATE: JUNE 2025
 DESIGNER: CP
 CHECKED: JMM DRAWN: CP
 SHEET: C4.00

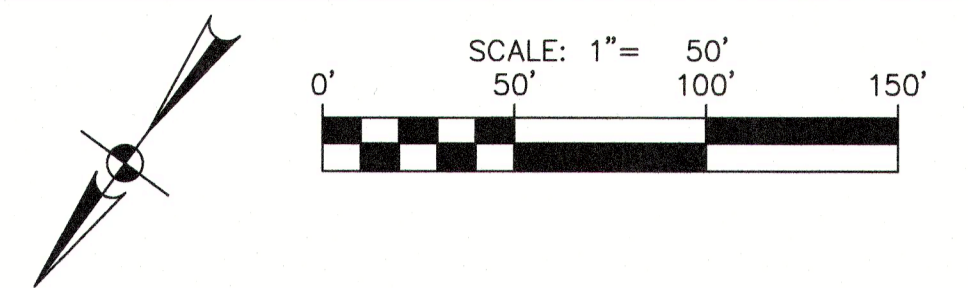
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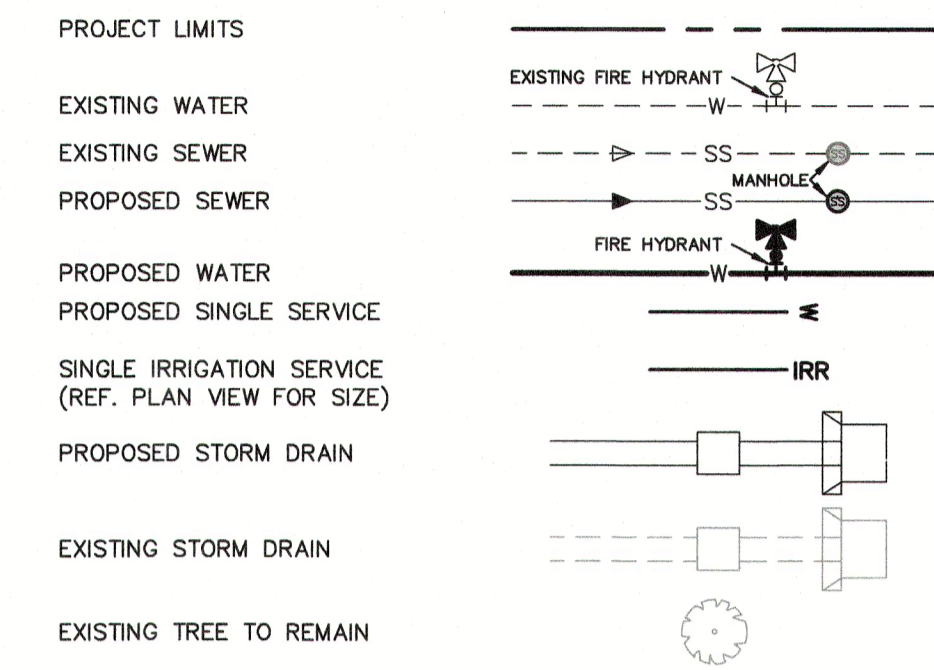
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WATER LEGEND



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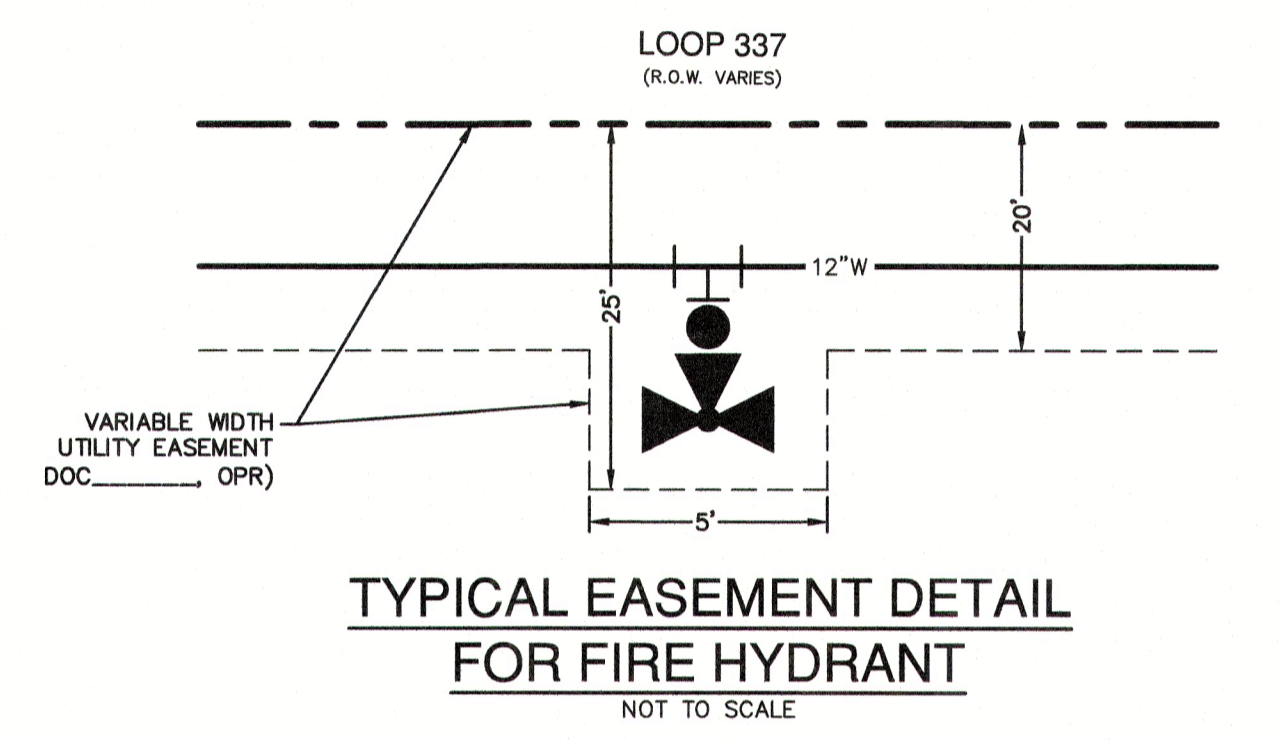
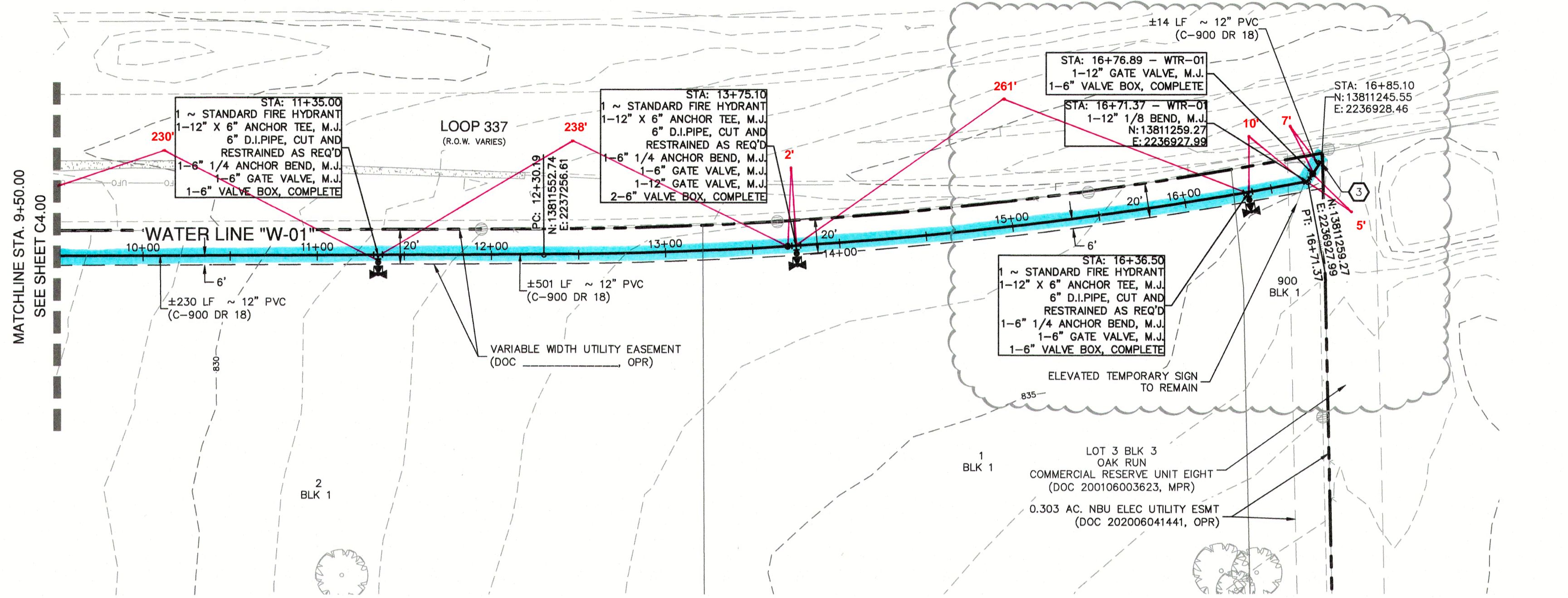
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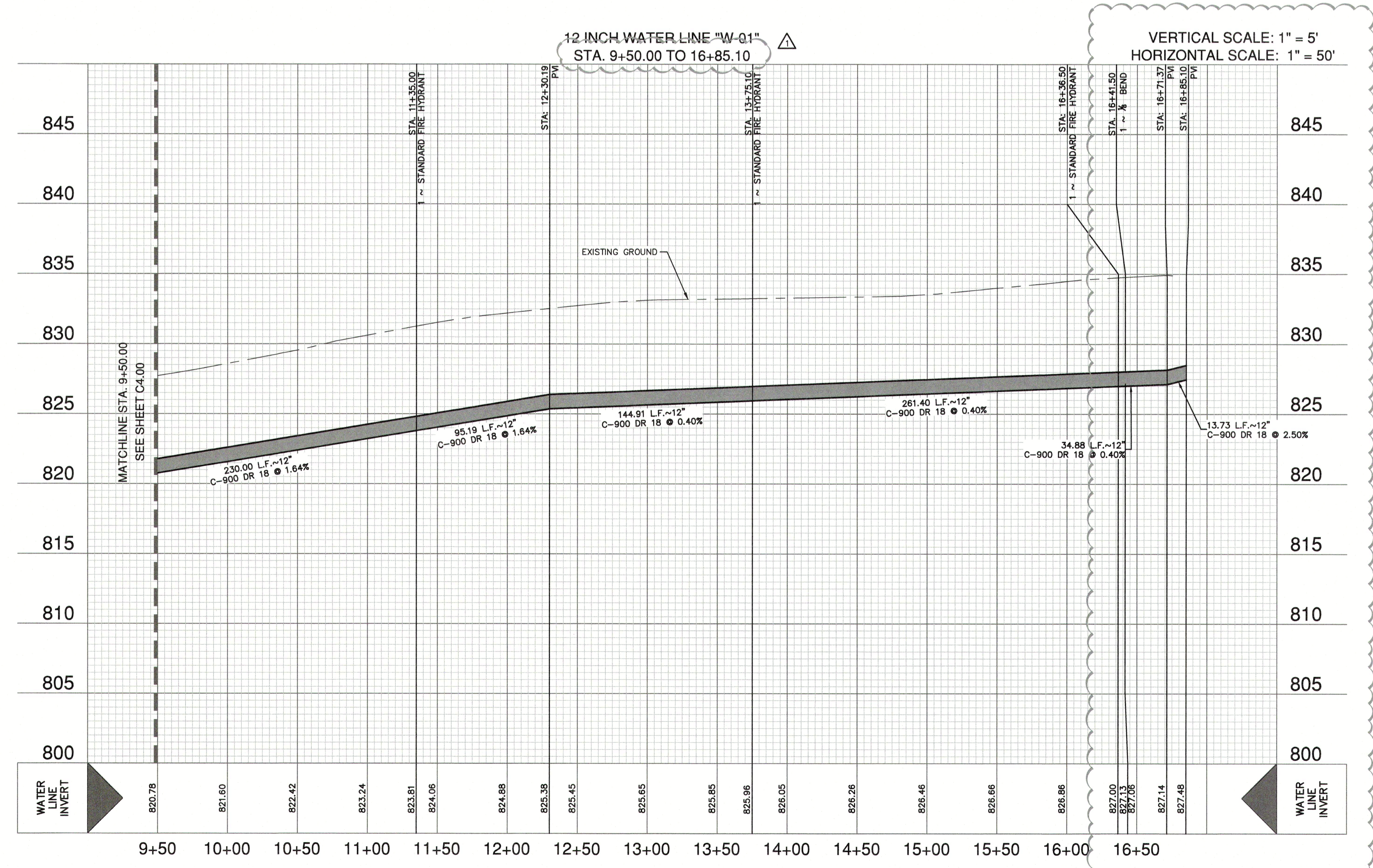
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WATER (NBU JOB NO. W-245133)

ITEM	UNIT	QUANTITY
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TEES	EA	48
FIRE HYDRANT	EA	1
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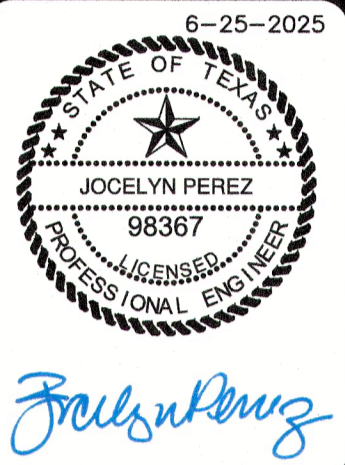
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NO.	REVISION	DATE
1	WATER LINE EXTENDED	06/25/25



PAPE-DAWSON ENGINEERS
1672 INDEPENDENCE DR. STE 102 | NEW BRAUNFELS, TX 78102 | 800.652.5683
TEXAS ENGINEERING FIRM #479 | TEXAS SURVEYING FIRM #10028800

VERAMENDI PRECINCT 11A
NEW BRAUNFELS, TEXAS
12 INCH WATER LINE W-01 - PLAN & PROFILE
STA. 9+50.00 TO 16+85.10

PLAT NO.	
JOB NO.	30001-81
DATE	JUNE 2025
DESIGNER	CP
CHECKED	IMM
DRAWN	CP
SHEET	C4.01