N.C. UNDERGROUND UTILITIES

811

3 DAYS BEFORE DIGGING CALL
TOLL FREE 811 or (800)632-4949

A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

File Location: C:\Users\BryanHarris\Quantech Engineering - Documents\Harris Creek Farm - Jonesville\Engineering_DWG\WaterCAD.dwg

GRAPHIC SCALE

300 0 150 300 600 1,200

(IN FEET)
1 inch = 300 ft

Developer

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10030 Green Level Church Rd, Suite 802 #149: Cary, NC 27519

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Est. 1837
Town of Rolesville
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Phone:
919-554-6517
PSP-24-05

Other Consultants

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HARRIS CREEK FARMS

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WaterCAD MAP

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W1.07

GRAPHIC SCALE

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53676
ENGINEER
BRYAN A. HARRIS

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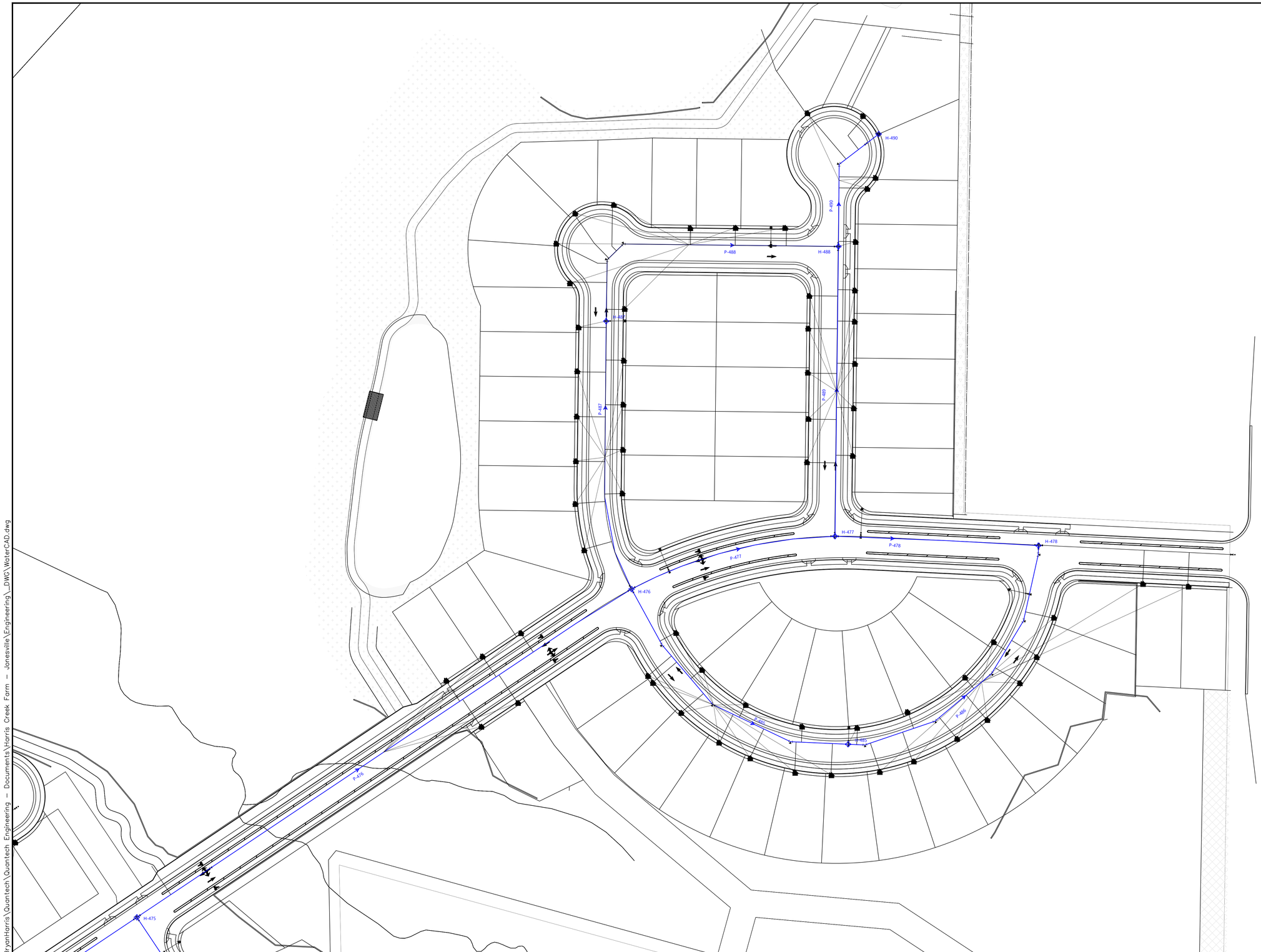
No.	Date	Description

Sheet Title:

WaterCAD MAP

Sheet #:

W1.08



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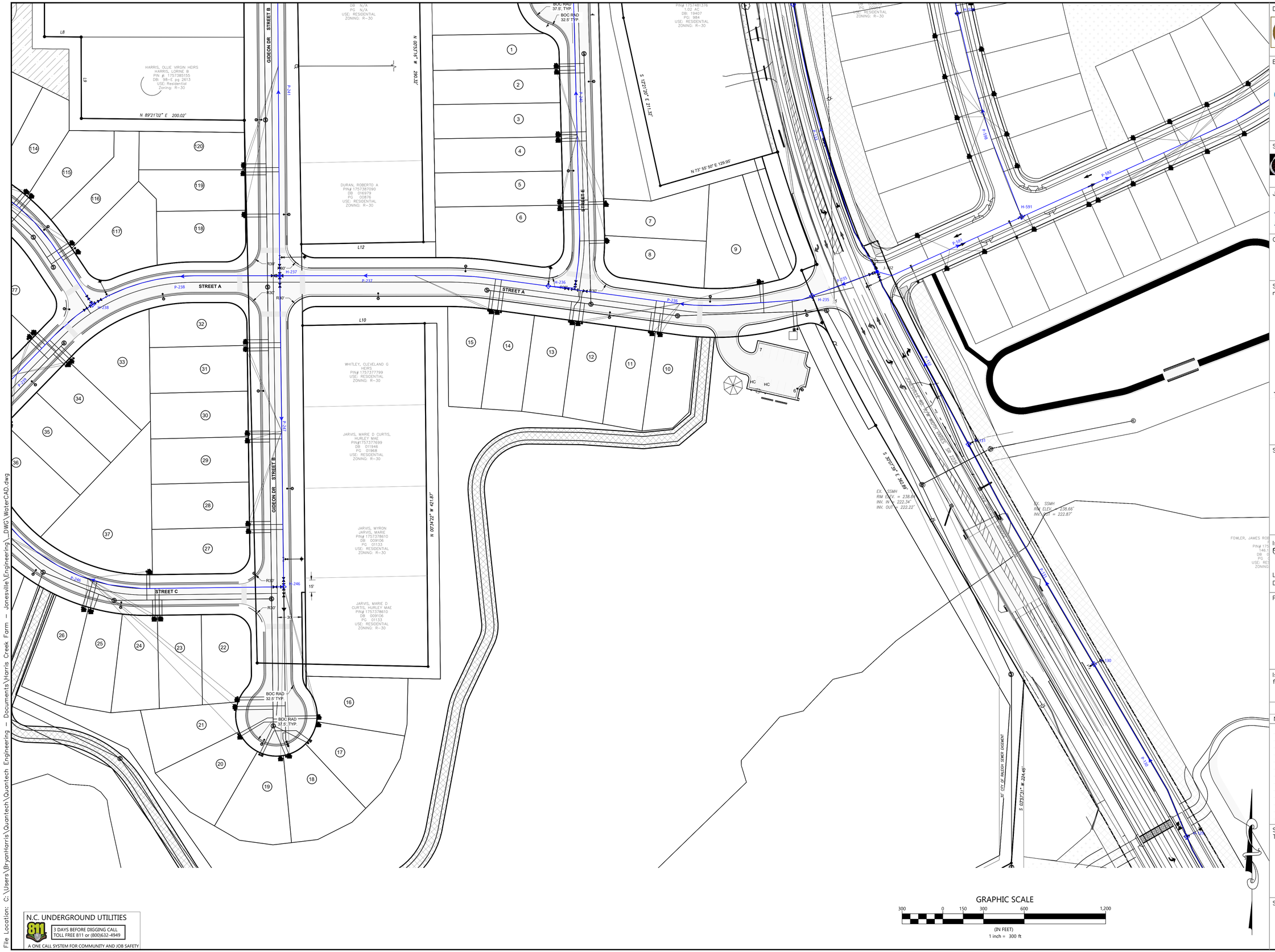
Sheet Title:

WaterCAD MAP

Sheet #:

W1.09



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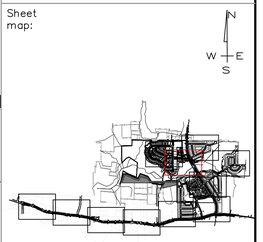

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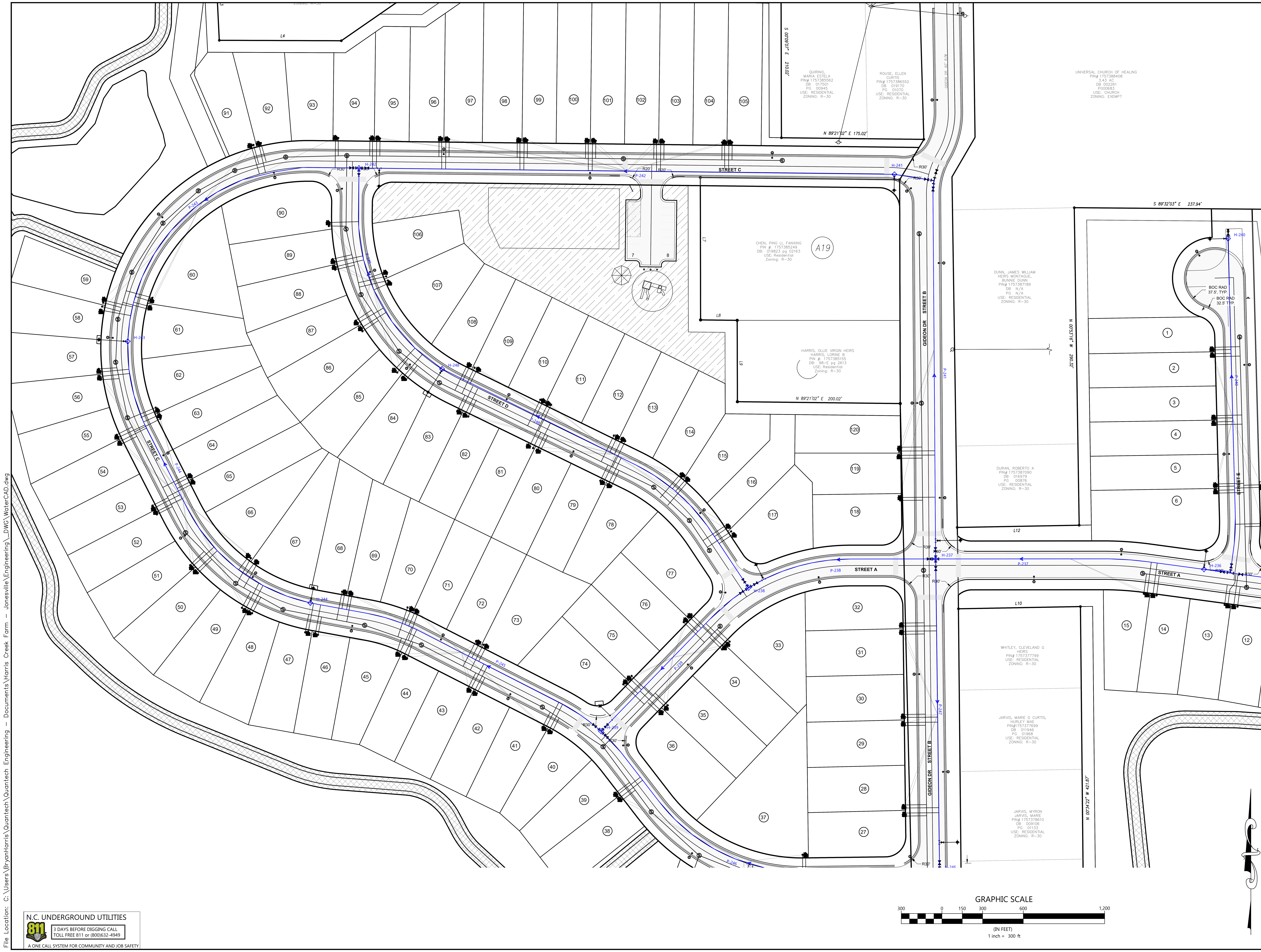
W1.10



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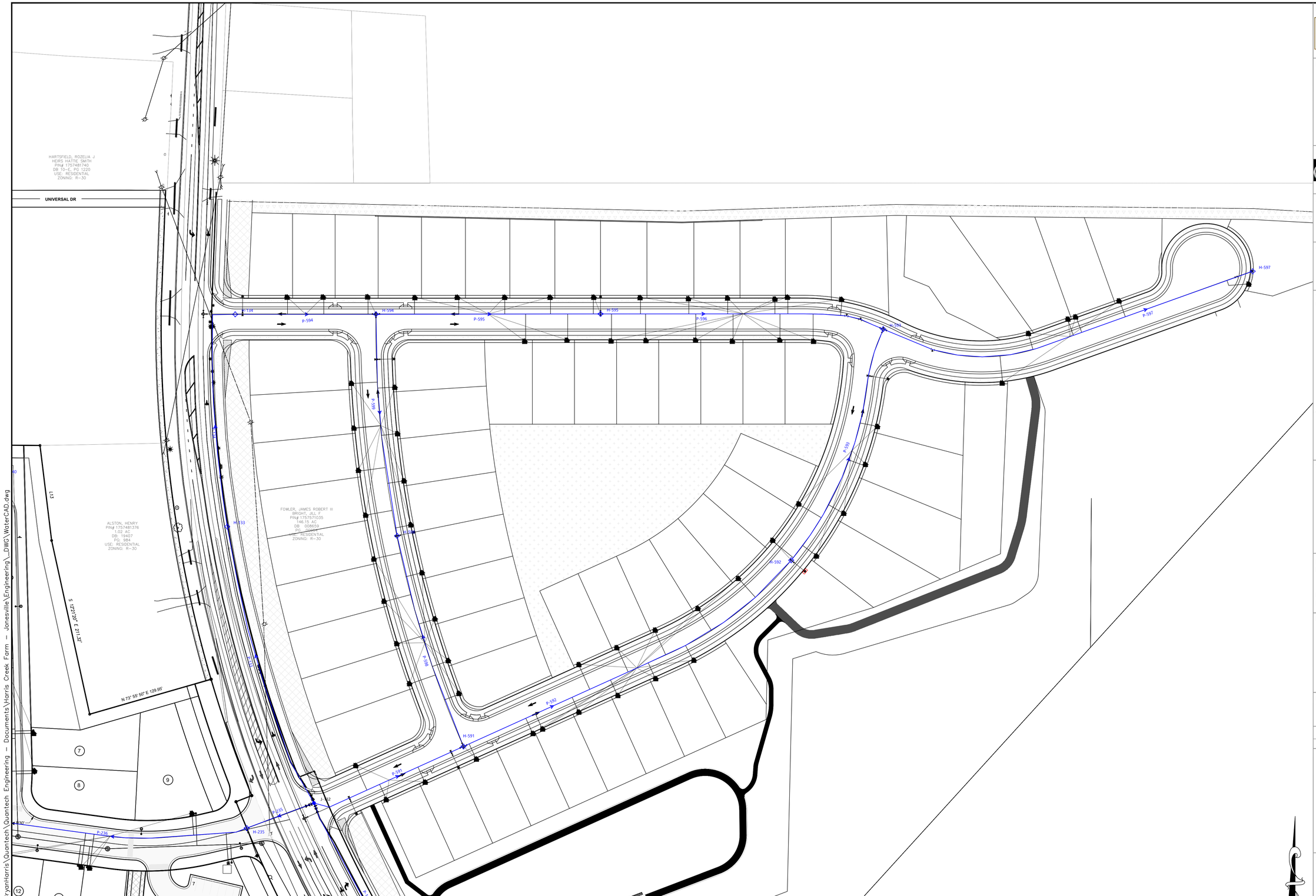
Sheet #:

W1.11



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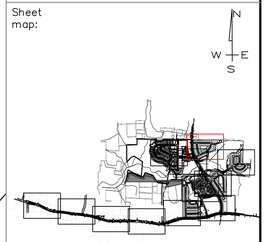

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No.	Date	Description

Sheet Title:
WaterCAD MAP

Sheet #:
W1.12

WATERCAD RESULTS

Scenario Summary Report
Scenario: Base

Scenario Summary	
ID	1
Label	Base
Notes	
Active Topology	Base Active Topology
Physical	Base Physical
Demand	Base Demand
Initial Settings	Base Initial Settings
Operational	Base Operational
Age	Base Age
Constituent	Base Constituent
Trace	Base Trace
Fire Flow	Base Fire Flow
Energy Cost	Base Energy Cost
Transient	Base Transient
Pressure Dependent Demand	Base Pressure Dependent Demand
Failure History	Base Failure History
SCADA	Base SCADA
User Data Extensions	Base User Data Extensions
Steady State/EPS Solver Calculation Options	Base Calculation Options
Transient Solver Calculation Options	Base Calculation Options

Hydraulic Summary			
Time Analysis Type	Steady State	Use simple controls during steady state?	True
Friction Method	Hazen-Williams	Is EPS Snapshot?	False
Accuracy	0.001	Start Time	12:00:00 AM
Trials	40	Calculation Type	Fire Flow

Hydraulic Model Inventory: WaterCAD.wtg

Title	
Engineer	
Company	
Date	5/20/2025
Notes	

Scenario Summary

ID	1
Label	Base
Notes	
Active Topology	Base Active Topology
Physical	Base Physical
Demand	Base Demand
Initial Settings	Base Initial Settings
Operational	Base Operational
Age	Base Age
Constituent	Base Constituent
Trace	Base Trace
Fire Flow	Base Fire Flow
Energy Cost	Base Energy Cost
Transient	Base Transient
Pressure Dependent Demand	Base Pressure Dependent Demand
Failure History	Base Failure History
SCADA	Base SCADA
User Data Extensions	Base User Data Extensions
Steady State/EPS Solver Calculation Options	Base Calculation Options
Transient Solver Calculation Options	Base Calculation Options

Network Inventory

Pipes	100	-Constant Speed - Four-Quadrant Characteristics	1
Laterals	0	-Constant Speed - Pump Definition	0
Junctions	3	-Shut Down After Time Delay	0
Hydrants	81	-Variable Speed/Torque	0
Tanks	0	-Pump Start - Variable Speed/Torque	0
Reservoirs	1	Pump Stations	0
Customer Meters	511	Variable Speed Pump Batteries	0
Taps	0	PRV's	0
SCADA Elements	0	PSV's	0
Pumps	1	PBV's	0
-Constant Power	0	FCV's	0
-Custom Extended	0	TCV's	0
-Design Point (1 Point)	0	GPV's	0
-Multiple Point	0	Isolation Valves	0
-Standard (3 Point)	1	Spot Elevations	0
-Standard Extended	0		

Transient Network Inventory

Turbines	0	Rupture Disks	0

Hydraulic Model Inventory: WaterCAD.wtg

Transient Network Inventory			
Periodic Head-Flows	0	Discharges to Atmosphere	0
Air Valves	0	Orifices Between Pipes	0
Hydropneumatic Tanks	0	Valves With Linear Area Change	0
Surge Valves	0	Surge Tanks	0
Check Valves	0		

Pressure Pipes Inventory			
8.0 (in)	21,152 ft	60.0 (in)	0 ft
12.0 (in)	3,255 ft	All Diameters	32,888 ft
15.0 (in)	8,480 ft		

Pump Definition Detailed Report: Test #1

Element Details

ID	840	Notes	
Label	Test #1		

Pump Definition Type

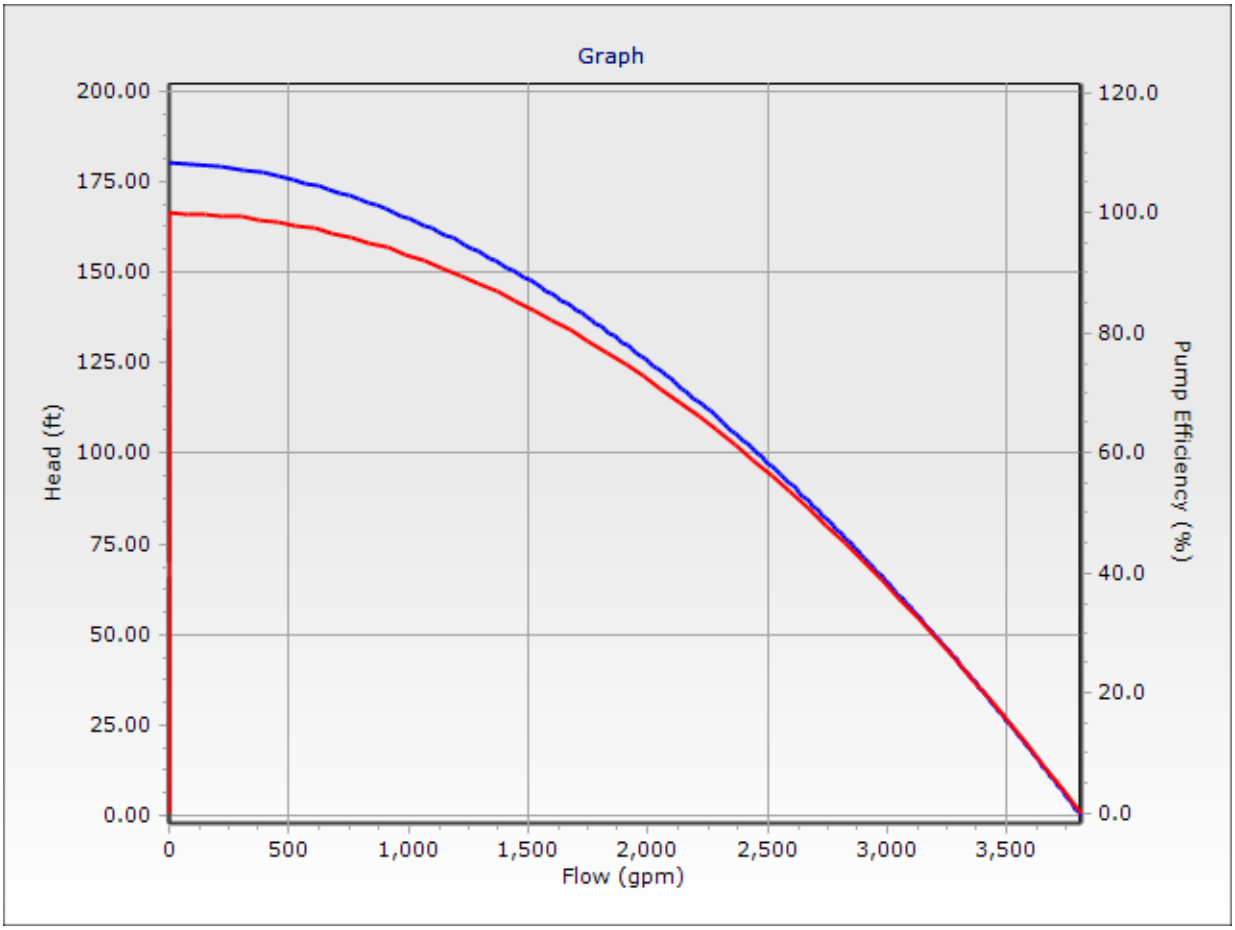
Pump Definition Type	Standard (3 Point)	Design Head	157.08 ft
Shutoff Flow	0 gpm	Maximum Operating Flow	3,247 gpm
Shutoff Head	180.18 ft	Maximum Operating Head	46.20 ft
Design Flow	1,256 gpm		

Pump Efficiency Type

Pump Efficiency Type	Best Efficiency Point	Motor Efficiency	100.0 %
BEP Efficiency	100.0 %	Is Variable Speed Drive?	False
BEP Flow	0 gpm		

Transient (Physical)

Inertia (Pump and Motor)	0.000 lb·ft²	Specific Speed	SI=25, US=1280
Speed (Full)	0 rpm	Reverse Spin Allowed?	True



Fire Flow Node FlexTable: Fire Flow Results Table

Label	Satisfies Fire Flow Constraints?	Fire Flow Status	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Pressure (Calculated Zone Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)	Pressure (Calculated System Lower Limit) (psi)	Junction w/ Minimum Pressure (System)	Is Fire Flow Run Balanced?
H-101	True	Passed	1,500	3,031	1,500	3,031	20	21	0	H-124	0	H-124	True
H-102	True	Passed	1,500	2,992	1,500	2,992	20	23	0	H-124	0	H-124	True
H-103	True	Passed	1,500	2,956	1,500	2,956	20	24	0	H-124	0	H-124	True
H-104	True	Passed	1,500	2,910	1,500	2,910	20	20	1	H-124	1	H-124	True
H-105	True	Passed	1,500	2,896	1,500	2,896	20	22	0	H-124	0	H-124	True
H-106	True	Passed	1,500	2,862	1,500	2,862	20	28	0	H-124	0	H-124	True
H-107	True	Passed	1,500	2,829	1,500	2,829	20	37	0	H-124	0	H-124	True
H-108	True	Passed	1,500	2,796	1,500	2,796	20	45	0	H-124	0	H-124	True
H-109	True	Passed	1,500	2,765	1,500	2,765	20	43	0	H-124	0	H-124	True
H-110	True	Passed	1,500	2,735	1,500	2,735	20	34	0	H-124	0	H-124	True
H-111	True	Passed	1,500	2,706	1,500	2,706	20	26	0	H-124	0	H-124	True
H-112	True	Passed	1,500	2,669	1,500	2,669	20	20	0	H-124	0	H-124	True
H-113	True	Passed	1,500	2,523	1,500	2,523	20	20	5	H-124	5	H-124	True
H-114	True	Passed	1,500	2,546	1,500	2,546	20	20	3	H-124	3	H-124	True
H-115	True	Passed	1,500	2,586	1,500	2,586	20	20	0	H-124	0	H-124	True
H-116	True	Passed	1,500	2,571	1,500	2,571	20	25	0	H-124	0	H-124	True
H-117	True	Passed	1,500	2,465	1,500	2,465	20	20	3	H-124	3	H-124	True
H-118	True	Passed	1,500	2,340	1,500	2,340	20	20	7	H-124	7	H-124	True
H-119	True	Passed	1,500	2,349	1,500	2,349	20	20	6	H-124	6	H-124	True
H-120	True	Passed	1,500	2,380	1,500	2,380	20	20	4	H-124	4	H-124	True
H-122	True	Passed	1,500	2,328	1,500	2,328	20	20	6	H-124	6	H-124	True
H-123	True	Passed	1,500	2,249	1,500	2,249	20	20	9	H-124	9	H-124	True
H-124	True	Passed	1,500	1,926	1,500	1,926	20	20	22	H-125	22	H-125	True
H-125	True	Passed	1,500	1,974	1,500	1,974	20	20	18	H-124	18	H-124	True
H-127	True	Passed	1,500	2,207	1,500	2,207	20	20	10	H-124	10	H-124	True
H-128	True	Passed	1,500	2,397	1,500	2,397	20	20	2	H-124	2	H-124	True
H-129	True	Passed	1,500	2,443	1,500	2,443	20	24	0	H-124	0	H-124	True
H-130	True	Passed	1,500	2,443	1,500	2,443	20	26	0	H-124	0	H-124	True
H-131	True	Passed	1,500	2,443	1,500	2,443	20	26	0	H-124	0	H-124	True
H-133	True	Passed	1,500	2,423	1,500	2,423	20	20	1	H-124	1	H-124	True
H-134	True	Passed	1,500	2,321	1,501	2,322	20	20	5	H-124	5	H-124	True
H-235	True	Passed	1,500	2,443	1,501	2,444	20	21	0	H-124	0	H-124	True
H-236	True	Passed	1,500	2,183	1,508	2,191	20	20	9	H-241	9	H-241	True
H-237	True	Passed	1,500	1,896	1,503	1,900	20	20	17	H-241	17	H-241	True
H-238	True	Passed	1,500	1,924	1,508	1,932	20	20	15	H-241	15	H-241	True
H-239	True	Passed	1,500	2,030	1,508	2,038	20	20	9	H-241	9	H-241	True
H-240	True	Passed	1,500	1,943	1,502	1,945	20	20	20	H-124	20	H-124	True
H-241	True	Passed	1,500	1,786	1,503	1,789	20	20	25	H-124	25	H-124	True
H-242	True	Passed	1,500	2,012	1,511	2,022	20	20	9	H-241	9	H-241	True
H-243	True	Passed	1,500	2,002	1,510	2,012	20	20	10	H-241	10	H-241	True
H-244	True	Passed	1,500	1,978	1,510	1,987	20	20	12	H-241	12	H-241	True
H-246	True	Passed	1,500	1,947	1,511	1,958	20	20	14	H-241	14	H-241	True
H-248	True	Passed	1,500	1,963	1,510	1,973	20	20	12	H-241	12	H-241	True
H-350	True	Passed	1,500	2,353	1,508	2,360	20	20	6	H-124	6	H-124	True
H-351	True	Passed	1,500	2,377	1,509	2,386	20	20	5	H-124	5	H-124	True
H-352	True	Passed	1,500	2,148	1,518	2,166	20	20	14	H-124	14	H-124	True

Fire Flow Node FlexTable: Fire Flow Results Table

	Label	Satisfies Fire Flow Constraints?	Fire Flow Status	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Pressure (Calculated Zone Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)	Pressure (Calculated System Lower Limit) (psi)	Junction w/ Minimum Pressure (System)	Is Fire Flow Run Balanced?
	H-353	True	Passed	1,500	2,182	1,510	2,192	20	20	13	H-124	13	H-124	True
	H-354	True	Passed	1,500	2,068	1,503	2,072	20	20	17	H-124	17	H-124	True
	H-355	True	Passed	1,500	2,343	1,511	2,353	20	20	6	H-124	6	H-124	True
	H-356	True	Passed	1,500	2,401	1,500	2,401	20	20	3	H-124	3	H-124	True
Town Homes	H-357	True	Passed	2,000	2,424	2,000	2,424	20	20	1	H-124	1	H-124	True
Town Homes	H-358	True	Passed	2,000	2,450	2,009	2,459	20	20	0	H-124	0	H-124	True
Town Homes	H-359	True	Passed	2,000	2,448	2,008	2,457	20	23	0	H-124	0	H-124	True
Town Homes	H-360	True	Passed	2,000	2,447	2,006	2,453	20	24	0	H-124	0	H-124	True
Town Homes	H-361	True	Passed	2,000	2,447	2,011	2,458	20	23	0	H-124	0	H-124	True
Town Homes	H-362	True	Passed	2,000	2,139	2,000	2,139	20	20	13	H-124	13	H-124	True
Town Homes	H-364	True	Passed	2,000	2,401	2,003	2,403	20	20	2	H-124	2	H-124	True
Town Homes	H-366	True	Passed	2,000	2,240	2,016	2,256	20	20	9	H-124	9	H-124	True
Town Homes	H-367	True	Passed	2,000	2,353	2,017	2,370	20	20	4	H-124	4	H-124	True
Town Homes	H-369	True	Passed	2,000	2,447	2,013	2,460	20	21	0	H-124	0	H-124	True
	H-474	True	Passed	1,500	2,310	1,511	2,320	20	20	2	H-481	2	H-481	True
	H-475	True	Passed	1,500	2,289	1,503	2,293	20	22	0	H-481	0	H-481	True
	H-476	True	Passed	1,500	2,003	1,510	2,013	20	20	8	H-478	8	H-478	True
	H-477	True	Passed	1,500	1,883	1,503	1,886	20	20	14	H-478	14	H-478	True
	H-478	True	Passed	1,500	1,761	1,504	1,766	20	20	24	H-481	24	H-481	True
	H-479	True	Passed	1,500	2,253	1,507	2,260	20	20	4	H-481	4	H-481	True
	H-480	True	Passed	1,500	1,916	1,512	1,928	20	20	14	H-481	14	H-481	True
	H-481	True	Passed	1,500	1,675	1,503	1,678	20	20	29	H-124	29	H-124	True
	H-482	True	Passed	1,500	2,188	1,505	2,193	20	20	3	H-481	3	H-481	True
	H-483	True	Passed	1,500	2,040	1,503	2,044	20	20	9	H-481	9	H-481	True
	H-485	True	Passed	1,500	1,895	1,509	1,904	20	20	13	H-478	13	H-478	True
	H-487	True	Passed	1,500	1,921	1,508	1,929	20	20	13	H-478	13	H-478	True
	H-488	True	Passed	1,500	1,890	1,508	1,898	20	20	14	H-478	14	H-478	True
	H-490	True	Passed	1,500	1,853	1,502	1,855	20	20	17	H-478	17	H-478	True
	H-591	True	Passed	1,500	2,427	1,508	2,435	20	20	1	H-124	1	H-124	True
	H-592	True	Passed	1,500	2,320	1,507	2,327	20	20	5	H-124	5	H-124	True
	H-593	True	Passed	1,500	2,273	1,506	2,279	20	20	7	H-124	7	H-124	True
	H-594	True	Passed	1,500	2,292	1,504	2,297	20	20	6	H-124	6	H-124	True
	H-595	True	Passed	1,500	2,205	1,508	2,214	20	20	10	H-124	10	H-124	True
	H-597	True	Passed	1,500	2,064	1,503	2,067	20	20	15	H-124	15	H-124	True
	H-598	True	Passed	1,500	2,369	1,508	2,376	20	20	3	H-124	3	H-124	True
	J-121	True	Passed	1,500	2,382	1,500	2,382	20	20	4	H-124	4	H-124	True
	J-126	True	Passed	1,500	2,002	1,500	2,002	20	20	17	H-124	17	H-124	True
	J-132	True	Passed	1,500	2,443	1,501	2,444	20	24	0	H-124	0	H-124	True

FlexTable: Hydrant Table

Label	Hydrant Status	Fire Flow (Needed) (gpm)	Pressure (Residual Lower Limit) (psi)	Fire Flow (Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Length (Hydrant Lateral) (ft)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
H-101	Closed	1,500	20	3,031	65	20	272.67	468.36	85
H-102	Closed	1,500	20	2,992	66	20	268.69	468.30	86
H-103	Closed	1,500	20	2,956	66	20	266.52	468.26	87
H-104	Closed	1,500	20	2,910	61	20	277.08	468.21	83
H-105	Closed	1,500	20	2,896	64	20	270.62	468.17	85
H-106	Closed	1,500	20	2,862	69	20	257.14	468.12	91
H-107	Closed	1,500	20	2,829	78	20	235.63	468.07	101
H-108	Closed	1,500	20	2,796	85	20	217.47	468.02	108
H-109	Closed	1,500	20	2,765	82	20	223.48	467.97	106
H-110	Closed	1,500	20	2,735	73	20	243.35	467.92	97
H-111	Closed	1,500	20	2,706	65	20	261.21	467.87	89
H-112	Closed	1,500	20	2,669	58	20	276.08	467.82	83
H-113	Closed	1,500	20	2,523	53	20	286.73	467.77	78
H-114	Closed	1,500	20	2,546	55	20	282.26	467.72	80
H-115	Closed	1,500	20	2,586	57	20	276.22	467.67	83
H-116	Closed	1,500	20	2,571	62	20	263.94	467.62	88
H-117	Closed	1,500	20	2,465	53	20	282.44	467.57	80
H-118	Closed	1,500	20	2,340	49	20	292.09	467.52	76
H-119	Closed	1,500	20	2,349	49	20	289.60	467.50	77
H-120	Closed	1,500	20	2,380	51	20	285.20	467.47	79
H-122	Closed	1,500	20	2,328	49	20	288.83	467.45	77
H-123	Closed	1,500	20	2,249	46	20	294.95	467.44	75
H-124	Closed	1,500	20	1,926	34	20	321.19	467.39	63
H-125	Closed	1,500	20	1,974	36	20	315.62	467.34	66
H-127	Closed	1,500	20	2,207	46	20	292.64	467.31	76
H-128	Closed	1,500	20	2,397	54	20	272.12	467.28	84
H-129	Closed	1,500	20	2,443	62	20	251.78	467.26	93
H-130	Closed	1,500	20	2,443	65	20	243.81	467.25	97
H-131	Closed	1,500	20	2,443	66	20	239.47	467.23	99
H-133	Closed	1,500	20	2,423	60	20	249.60	467.22	94
H-134	Closed	1,500	20	2,321	55	20	260.08	467.22	90
H-235	Closed	1,500	20	2,443	63	20	241.12	467.20	98
H-236	Closed	1,500	20	2,183	53	20	252.95	467.16	93
H-237	Closed	1,500	20	1,896	41	20	271.73	467.12	85
H-238	Closed	1,500	20	1,924	43	20	263.96	467.12	88
H-239	Closed	1,500	20	2,030	50	20	247.41	467.12	95
H-240	Closed	1,500	20	1,943	44	20	261.26	467.16	89

FlexTable: Hydrant Table

Label	Hydrant Status	Fire Flow (Needed) (gpm)	Pressure (Residual Lower Limit) (psi)	Fire Flow (Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Length (Hydrant Lateral) (ft)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
H-241	Closed	1,500	20	1,786	36	20	277.61	467.12	82
H-242	Closed	1,500	20	2,012	49	20	247.35	467.11	95
H-243	Closed	1,500	20	2,002	49	20	244.48	467.11	96
H-244	Closed	1,500	20	1,978	47	20	248.78	467.11	94
H-246	Closed	1,500	20	1,947	45	20	257.96	467.12	90
H-248	Closed	1,500	20	1,963	46	20	252.98	467.11	93
H-350	Closed	1,500	20	2,353	51	20	282.95	467.48	80
H-351	Closed	1,500	20	2,377	53	20	275.49	467.45	83
H-352	Closed	1,500	20	2,148	49	20	269.11	467.45	86
H-353	Closed	1,500	20	2,182	49	20	276.89	467.48	82
H-354	Closed	1,500	20	2,068	47	20	273.00	467.48	84
H-355	Closed	1,500	20	2,343	52	20	277.41	467.43	82
H-356	Closed	1,500	20	2,401	53	20	276.99	467.41	82
H-357	Closed	2,000	20	2,424	37	20	271.70	467.34	85
H-358	Closed	2,000	20	2,450	39	20	267.12	467.33	87
H-359	Closed	2,000	20	2,448	42	20	258.01	467.31	91
H-360	Closed	2,000	20	2,447	44	20	253.67	467.30	92
H-361	Closed	2,000	20	2,447	43	20	252.41	467.30	93
H-362	Closed	2,000	20	2,139	25	20	298.78	467.33	73
H-364	Closed	2,000	20	2,401	37	20	271.02	467.30	85
H-366	Closed	2,000	20	2,240	30	20	288.19	467.32	78
H-367	Closed	2,000	20	2,353	35	20	275.63	467.31	83
H-369	Closed	2,000	20	2,447	41	20	256.96	467.30	91
H-474	Closed	1,500	20	2,310	54	20	266.07	467.25	87
H-475	Closed	1,500	20	2,289	58	20	251.28	467.24	93
H-476	Closed	1,500	20	2,003	48	20	253.27	467.21	93
H-477	Closed	1,500	20	1,883	41	20	266.53	467.21	87
H-478	Closed	1,500	20	1,761	34	20	280.53	467.21	81
H-479	Closed	1,500	20	2,253	56	20	251.91	467.25	93
H-480	Closed	1,500	20	1,916	38	20	295.19	467.24	74
H-481	Closed	1,500	20	1,675	28	20	308.72	467.24	69
H-482	Closed	1,500	20	2,188	51	20	263.70	467.24	88
H-483	Closed	1,500	20	2,040	44	20	280.46	467.24	81
H-485	Closed	1,500	20	1,895	42	20	262.38	467.21	89
H-487	Closed	1,500	20	1,921	44	20	258.53	467.21	90
H-488	Closed	1,500	20	1,890	42	20	262.02	467.21	89
H-490	Closed	1,500	20	1,853	41	20	260.80	467.21	89

FlexTable: Hydrant Table

Label	Hydrant Status	Fire Flow (Needed) (gpm)	Pressure (Residual Lower Limit) (psi)	Fire Flow (Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Length (Hydrant Lateral) (ft)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
H-591	Closed	1,500	20	2,427	61	20	245.97	467.21	96
H-592	Closed	1,500	20	2,320	58	20	248.21	467.21	95
H-593	Closed	1,500	20	2,273	56	20	253.11	467.21	93
H-594	Closed	1,500	20	2,292	55	20	261.07	467.21	89
H-595	Closed	1,500	20	2,205	52	20	264.47	467.21	88
H-597	Closed	1,500	20	2,064	50	20	253.19	467.21	93
H-598	Closed	1,500	20	2,369	59	20	249.08	467.21	94

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Manning's n	Headloss (Friction) (ft)	Headloss (ft)	Minor Losses	Minor Loss Coefficient (Derived)	Specify Local Minor Loss?
P-100	17	R-1	PMP-1	60.0	Ductile Iron	130.0	358	0.04	0.012	0.00	0.00	<Collection: 0 items>	0.000	True
P-101	422	PMP-1	H-101	15.0	Ductile Iron	130.0	358	0.65	0.012	0.05	0.05	<Collection: 3 items>	0.670	True
P-102	398	H-101	H-102	15.0	Ductile Iron	130.0	358	0.65	0.012	0.05	0.05	<Collection: 0 items>	0.000	True
P-103	381	H-102	H-103	15.0	Ductile Iron	130.0	358	0.65	0.012	0.05	0.05	<Collection: 1 items>	0.170	True
P-104	337	H-103	H-104	15.0	Ductile Iron	130.0	358	0.65	0.012	0.04	0.04	<Collection: 1 items>	0.700	True
P-105	323	H-104	H-105	15.0	Ductile Iron	130.0	358	0.65	0.012	0.04	0.04	<Collection: 0 items>	0.000	True
P-106	395	H-105	H-106	15.0	Ductile Iron	130.0	358	0.65	0.012	0.05	0.05	<Collection: 1 items>	0.170	True
P-107	382	H-106	H-107	15.0	Ductile Iron	130.0	358	0.65	0.012	0.05	0.05	<Collection: 0 items>	0.000	True
P-108	405	H-107	H-108	15.0	Ductile Iron	130.0	358	0.65	0.012	0.05	0.05	<Collection: 1 items>	0.170	True
P-109	390	H-108	H-109	15.0	Ductile Iron	130.0	358	0.65	0.012	0.05	0.05	<Collection: 1 items>	1.400	True
P-110	389	H-109	H-110	15.0	Ductile Iron	130.0	358	0.65	0.012	0.05	0.05	<Collection: 1 items>	0.170	True
P-111	392	H-110	H-111	15.0	Ductile Iron	130.0	358	0.65	0.012	0.05	0.05	<Collection: 0 items>	0.000	True
P-112	395	H-111	H-112	15.0	Ductile Iron	130.0	358	0.65	0.012	0.05	0.05	<Collection: 1 items>	0.170	True
P-113	390	H-112	H-113	15.0	Ductile Iron	130.0	358	0.65	0.012	0.05	0.05	<Collection: 0 items>	0.000	True
P-114	389	H-113	H-114	15.0	Ductile Iron	130.0	358	0.65	0.012	0.05	0.05	<Collection: 1 items>	0.170	True
P-115	377	H-114	H-115	15.0	Ductile Iron	130.0	358	0.65	0.012	0.05	0.05	<Collection: 0 items>	0.000	True
P-116	394	H-115	H-116	15.0	Ductile Iron	130.0	358	0.65	0.012	0.05	0.05	<Collection: 1 items>	0.170	True
P-117	435	H-116	H-117	15.0	Ductile Iron	130.0	358	0.65	0.012	0.06	0.06	<Collection: 1 items>	1.500	True
P-118	335	H-117	H-118	15.0	Ductile Iron	130.0	358	0.65	0.012	0.04	0.04	<Collection: 2 items>	0.740	True
P-119	394	H-118	H-119	15.0	Ductile Iron	130.0	257	0.47	0.012	0.03	0.03	<Collection: 0 items>	0.000	True
P-120	396	H-119	H-120	15.0	Ductile Iron	130.0	257	0.47	0.012	0.03	0.03	<Collection: 1 items>	0.170	True
P-121	80	H-120	J-121	15.0	Ductile Iron	130.0	257	0.47	0.012	0.01	0.01	<Collection: 2 items>	0.570	True
P-122	283	J-121	H-122	15.0	Ductile Iron	130.0	189	0.34	0.012	0.01	0.01	<Collection: 1 items>	0.170	True
P-123	397	H-122	H-123	15.0	Ductile Iron	130.0	189	0.34	0.012	0.02	0.02	<Collection: 3 items>	2.040	True
P-124	407	H-123	H-124	12.0	Ductile Iron	130.0	189	0.54	0.012	0.05	0.05	<Collection: 1 items>	0.100	True

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Manning's n	Headloss (Friction) (ft)	Headloss (ft)	Minor Losses	Minor Loss Coefficient (Derived)	Specify Local Minor Loss?
P-125	398	H-124	H-125	12.0	Ductile Iron	130.0	189	0.54	0.012	0.05	0.05	<Collection: 0 items>	0.000	True
P-126	44	H-125	J-126	12.0	Ductile Iron	130.0	189	0.54	0.012	0.01	0.01	<Collection: 2 items>	0.570	True
P-127	269	J-126	H-127	12.0	Ductile Iron	130.0	165	0.47	0.012	0.02	0.02	<Collection: 1 items>	0.170	True
P-128	333	H-127	H-128	12.0	Ductile Iron	130.0	165	0.47	0.012	0.03	0.03	<Collection: 2 items>	0.990	True
P-129	386	H-128	H-129	12.0	Ductile Iron	130.0	130	0.37	0.012	0.02	0.02	<Collection: 0 items>	0.000	True
P-130	241	H-129	H-130	12.0	Ductile Iron	130.0	130	0.37	0.012	0.01	0.01	<Collection: 1 items>	0.170	True
P-131	312	H-130	H-131	12.0	Ductile Iron	130.0	130	0.37	0.012	0.02	0.02	<Collection: 1 items>	1.400	True
P-132	240	H-131	J-132	12.0	Ductile Iron	130.0	130	0.37	0.012	0.01	0.01	<Collection: 2 items>	0.570	True
P-133	346	J-132	H-133	12.0	Ductile Iron	130.0	20	0.06	0.012	0.00	0.00	<Collection: 1 items>	0.170	True
P-134	280	H-133	H-134	12.0	Ductile Iron	130.0	20	0.06	0.012	0.00	0.00	<Collection: 2 items>	1.340	True
P-235	85	J-132	H-235	8.0	PVC	150.0	84	0.54	0.012	0.01	0.01	<Collection: 0 items>	0.000	True
P-236	327	H-235	H-236	8.0	PVC	150.0	83	0.53	0.012	0.05	0.05	<Collection: 2 items>	0.740	True
P-237	331	H-236	H-237	8.0	PVC	150.0	74	0.47	0.012	0.04	0.04	<Collection: 1 items>	0.650	True
P-238	236	H-237	H-238	8.0	PVC	150.0	31	0.20	0.012	0.01	0.01	<Collection: 1 items>	0.340	True
P-239	253	H-238	H-239	8.0	PVC	150.0	11	0.07	0.012	0.00	0.00	<Collection: 3 items>	1.740	True
P-240	442	H-236	H-240	8.0	PVC	150.0	2	0.01	0.012	0.00	0.00	<Collection: 1 items>	0.170	True
P-241	514	H-241	H-237	8.0	PVC	150.0	-17	0.11	0.012	0.00	0.00	<Collection: 2 items>	1.510	True
P-242	658	H-241	H-242	8.0	PVC	150.0	14	0.09	0.012	0.00	0.00	<Collection: 1 items>	0.170	True
P-243	402	H-242	H-243	8.0	PVC	150.0	7	0.04	0.012	0.00	0.00	<Collection: 2 items>	0.570	True
P-244	418	H-243	H-244	8.0	PVC	150.0	-3	0.02	0.012	0.00	0.00	<Collection: 0 items>	0.000	True
P-245	395	H-244	H-239	8.0	PVC	150.0	-13	0.08	0.012	0.00	0.00	<Collection: 1 items>	0.170	True
P-246	484	H-239	H-246	8.0	PVC	150.0	-11	0.07	0.012	0.00	0.00	<Collection: 1 items>	0.340	True
P-247	382	H-237	H-246	8.0	PVC	150.0	22	0.14	0.012	0.00	0.00	<Collection: 1 items>	0.340	True
P-248	474	H-238	H-248	8.0	PVC	150.0	13	0.08	0.012	0.00	0.00	<Collection: 1 items>	0.170	True
P-249	282	H-242	H-248	8.0	PVC	150.0	-3	0.02	0.012	0.00	0.00	<Collection: 1 items>	0.170	True

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FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Manning's n	Headloss (Friction) (ft)	Headloss (ft)	Minor Losses	Minor Loss Coefficient (Derived)	Specify Local Minor Loss?
P-350	196	H-118	H-350	8.0	PVC	150.0	101	0.65	0.012	0.04	0.04	<Collection: 2 items>	0.740	True
P-351	259	H-350	H-351	8.0	PVC	150.0	80	0.51	0.012	0.03	0.03	<Collection: 2 items>	0.740	True
P-352	492	H-351	H-352	8.0	PVC	150.0	18	0.12	0.012	0.00	0.00	<Collection: 1 items>	0.170	True
P-353	370	H-350	H-353	8.0	PVC	150.0	13	0.08	0.012	0.00	0.00	<Collection: 1 items>	0.170	True
P-354	300	H-353	H-354	8.0	PVC	150.0	4	0.02	0.012	0.00	0.00	<Collection: 1 items>	0.200	True
P-355	274	H-351	H-355	8.0	PVC	150.0	53	0.34	0.012	0.02	0.02	<Collection: 1 items>	0.170	True
P-356	510	J-121	H-356	8.0	PVC	150.0	68	0.44	0.012	0.05	0.05	<Collection: 2 items>	0.740	True
P-357	294	H-356	H-357	8.0	PVC	150.0	111	0.71	0.012	0.07	0.07	<Collection: 2 items>	0.740	True
P-358	129	H-357	H-358	8.0	PVC	150.0	80	0.51	0.012	0.02	0.02	<Collection: 2 items>	0.740	True
P-359	261	H-358	H-359	8.0	PVC	150.0	56	0.36	0.012	0.02	0.02	<Collection: 2 items>	0.740	True
P-360	171	H-359	H-360	8.0	PVC	150.0	39	0.25	0.012	0.01	0.01	<Collection: 2 items>	0.990	True
P-361	148	H-360	H-361	8.0	PVC	150.0	20	0.12	0.012	0.00	0.00	<Collection: 2 items>	0.990	True
P-362	289	J-126	H-362	8.0	PVC	150.0	24	0.15	0.012	0.00	0.00	<Collection: 3 items>	0.840	True
P-363	389	H-362	H-357	8.0	PVC	150.0	-31	0.20	0.012	0.01	0.01	<Collection: 1 items>	0.340	True
P-364	282	H-128	H-364	8.0	PVC	150.0	-52	0.33	0.012	0.02	0.02	<Collection: 2 items>	0.990	True
P-365	364	H-364	H-360	8.0	PVC	150.0	-14	0.09	0.012	0.00	0.00	<Collection: 1 items>	0.340	True
P-366	156	H-362	H-366	8.0	PVC	150.0	55	0.35	0.012	0.01	0.01	<Collection: 3 items>	1.090	True
P-367	257	H-366	H-367	8.0	PVC	150.0	54	0.34	0.012	0.02	0.02	<Collection: 1 items>	0.340	True
P-368	155	H-367	H-364	8.0	PVC	150.0	45	0.29	0.012	0.01	0.01	<Collection: 2 items>	0.540	True
P-369	284	H-364	H-369	8.0	PVC	150.0	4	0.03	0.012	0.00	0.00	<Collection: 3 items>	1.540	True
P-370	275	H-369	H-361	8.0	PVC	150.0	-9	0.06	0.012	0.00	0.00	<Collection: 2 items>	0.540	True
P-371	381	H-358	H-366	8.0	PVC	150.0	15	0.09	0.012	0.00	0.00	<Collection: 3 items>	0.940	True
P-372	380	H-359	H-367	8.0	PVC	150.0	8	0.05	0.012	0.00	0.00	<Collection: 3 items>	0.840	True
P-373	496	H-355	H-356	8.0	PVC	150.0	42	0.27	0.012	0.02	0.02	<Collection: 1 items>	0.170	True
P-474	210	H-128	H-474	8.0	PVC	150.0	88	0.56	0.012	0.03	0.03	<Collection: 2 items>	0.990	True

FlexTable: Pipe Table

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Manning's n	Headloss (Friction) (ft)	Headloss (ft)	Minor Losses	Minor Loss Coefficient (Derived)	Specify Local Minor Loss?
P-475	397	H-475	H-474	8.0	PVC	150.0	-41	0.26	0.012	0.02	0.02	<Collection: 2 items>	0.740	True
P-476	664	H-475	H-476	8.0	PVC	150.0	43	0.28	0.012	0.03	0.03	<Collection: 2 items>	0.990	True
P-477	237	H-477	H-476	8.0	PVC	150.0	-12	0.08	0.012	0.00	0.00	<Collection: 2 items>	0.740	True
P-478	228	H-478	H-477	8.0	PVC	150.0	-3	0.02	0.012	0.00	0.00	<Collection: 2 items>	0.740	True
P-479	321	H-479	H-474	8.0	PVC	150.0	-7	0.04	0.012	0.00	0.00	<Collection: 2 items>	0.870	True
P-480	664	H-480	H-474	8.0	PVC	150.0	-29	0.18	0.012	0.01	0.01	<Collection: 2 items>	0.740	True
P-481	310	H-480	H-481	8.0	PVC	150.0	3	0.02	0.012	0.00	0.00	<Collection: 1 items>	0.170	True
P-482	333	H-482	H-475	8.0	PVC	150.0	6	0.04	0.012	0.00	0.00	<Collection: 1 items>	0.170	True
P-483	255	H-482	H-483	8.0	PVC	150.0	-10	0.07	0.012	0.00	0.00	<Collection: 0 items>	0.000	True
P-484	258	H-483	H-480	8.0	PVC	150.0	-14	0.09	0.012	0.00	0.00	<Collection: 3 items>	1.540	True
P-485	320	H-485	H-476	8.0	PVC	150.0	-10	0.07	0.012	0.00	0.00	<Collection: 2 items>	0.570	True
P-486	339	H-478	H-485	8.0	PVC	150.0	-1	0.01	0.012	0.00	0.00	<Collection: 3 items>	0.970	True
P-487	305	H-476	H-487	8.0	PVC	150.0	11	0.07	0.012	0.00	0.00	<Collection: 1 items>	0.170	True
P-488	335	H-488	H-487	8.0	PVC	150.0	-4	0.02	0.012	0.00	0.00	<Collection: 2 items>	0.870	True
P-489	324	H-488	H-477	8.0	PVC	150.0	-6	0.04	0.012	0.00	0.00	<Collection: 1 items>	0.340	True
P-490	148	H-488	H-490	8.0	PVC	150.0	2	0.01	0.012	0.00	0.00	<Collection: 2 items>	0.520	True
P-591	194	J-132	H-591	8.0	PVC	150.0	24	0.15	0.012	0.00	0.00	<Collection: 2 items>	0.740	True
P-592	452	H-592	H-591	8.0	PVC	150.0	-11	0.07	0.012	0.00	0.00	<Collection: 1 items>	0.170	True
P-593	299	H-593	H-592	8.0	PVC	150.0	-4	0.02	0.012	0.00	0.00	<Collection: 1 items>	0.170	True
P-594	167	H-594	H-134	8.0	PVC	150.0	-20	0.13	0.012	0.00	0.00	<Collection: 2 items>	0.740	True
P-595	267	H-594	H-595	8.0	PVC	150.0	13	0.08	0.012	0.00	0.00	<Collection: 1 items>	0.170	True
P-596	339	H-595	H-593	8.0	PVC	150.0	5	0.03	0.012	0.00	0.00	<Collection: 2 items>	0.370	True
P-597	461	H-593	H-597	8.0	PVC	150.0	3	0.02	0.012	0.00	0.00	<Collection: 2 items>	0.440	True
P-598	263	H-598	H-591	8.0	PVC	150.0	-5	0.03	0.012	0.00	0.00	<Collection: 1 items>	0.170	True
P-599	265	H-598	H-594	8.0	PVC	150.0	-3	0.02	0.012	0.00	0.00	<Collection: 1 items>	0.170	True