WATER STUDY FOR

STONE CREEK

IN THE CITY OF SAN DIEGO

June 14, 2006
Revised January 22, 2007
Revised December 4, 2008
Approved June 7, 2010
Amendment #1: January 21, 2016
(Water Exhibits Only)

Prepared By:
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January 14, 2010

City of San Diego
Development Services Department
Water Utilities Section
606 B Street, Suite 800
San Diego, CA 92101

Attention: Barbara A.B. Salvini, Senior Civil Engineer

Subject: Water System Analysis for Stone Creek
In the City of San Diego

INTRODUCTION

The project is located in the City of San Diego in the Mira Mesa Community. The project is generally located west of Black Mountain Road, north of Activity Road, east of Kibler Drive and south of Jade Coast Drive. Access to the project will be from Camino Ruiz and Black Mountain Road. Figure-1 within this report presents a location map of the Stone Creek project.

The development plan for the Stone Creek project includes 62 multi-family residential lots, 21 industrial lots, 4 business park lots, 24 mixed-use lots and 17 open space areas. Total project acreage is 288.52 acres. The proposed developed lots, not including open space lots and streets, encompass 124.93 net acres. Building pads within the project range in elevation from a low of 329 feet to a high of 427 feet.

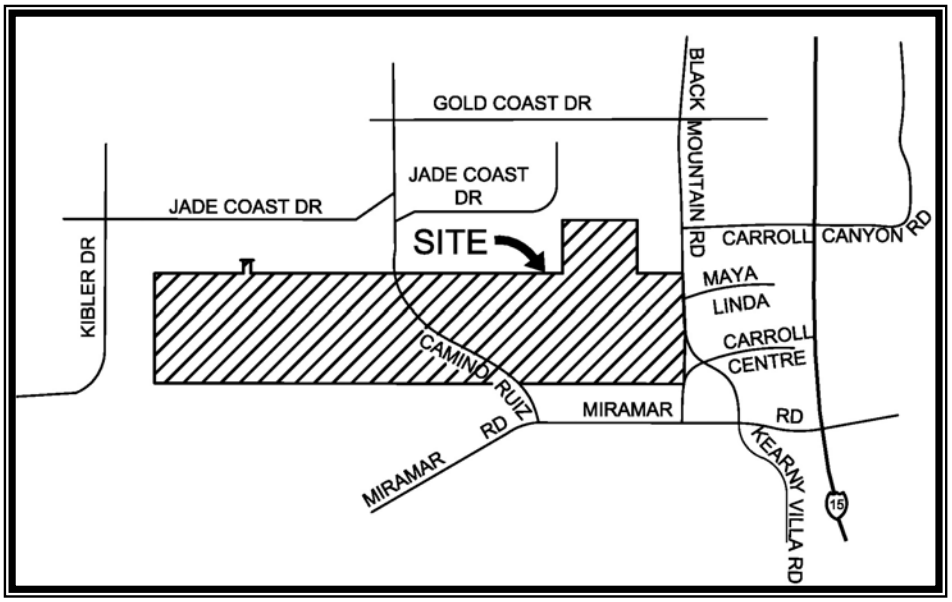

Figure-1: Vicinity Map

PURPOSE OF STUDY

The purpose of this study is to provide a water system analysis based upon the lot layout and street layout of the proposed Stone Creek project. This report is intended to show how to integrate the project's water system infrastructure into the existing City of San Diego water system.

This water system analysis has been performed to determine the water line sizes required to serve the project. A key facet of this water analysis is to evaluate reliability and redundancy of the ultimate water system.

STUDY AREA

The study area for this report is the boundary of the Stone Creek project. A larger study area was not considered pertinent to this study since the project water system is not expected to include regional improvements to serve other projects outside the project boundary. While the Stone Creek project will become part of a larger water service system, this report focuses on the requirements necessary to provide adequate reliability and redundancy to the project. For this reason, only the onsite piping and offsite pertinent piping is included in the computer modeling.

WATER DEMANDS AND SERVICE CRITERIA

The design criteria utilized in the analysis of the Stone Creek water system are in accordance with the current City of San Diego Water Utilities Department Planning and Design Guide for Water Facilities. The pressure design criteria are summarized in Table-1.

DEMAND	PRESSURE CRITERIA
Minimum Static	p ≥ 65 psi
Maximum Day Demand or Peak Hour Demand	Δp ≤ 25 psi
Maximum Day Demand / Peak Hour Demand with One Source or Pipe Out of Service	Δp ≤ 40 psi
Fire: In Vicinity Not in Vicinity	 $p_{residual}$ ≥ 20 psi Δp ≤ 25 psi

Table-1: Pressure Design Criteria

The projected average daily water demands are based on the Land Use Tables provided in the Stone Creek Master Plan and Table 2-1 from the City of San Diego Water Design Guide. These demands are shown in Appendix E. The site will be serviced by reclaimed water, therefore there is no irrigation demand listed in the table.

The Peaking factors were derived from the City of San Diego Water Demands and Service Criteria (Book 2) peaking factor curves for the Inland Central Zone. The factors are summarized in Table-2.

PHASE	AVERAGE DAILY DEMAND (mgd)	PEAK HOUR DEMAND FACTOR	MAXIMUM DAILY DEMAND FACTOR
PHASE 1	0.17	6.0	2.6
PHASE 1 & 2	0.65	5.1	2.2
PHASE 3	1.00	4.8	2.1
PHASE 1,2 &4	0.97	4.8	2.1

Table-2: Peaking Factors

Fire demands were derived from the Fire Demand Table in the City of San Diego Water Demands and Service Criteria (Book 2). The demands used for this project are summarized in Table-3.

DEVELOPMENT TYPE	FIRE DEMAND (gpm)
Condominiums and Apartments	3,000
Commercial	4,000
Industrial	6,000

Table-3: Fire Demands

WATER SYSTEM COMPUTER MODEL

The Haestad WaterCAD computer program was used to model the proposed water system within the study area. This computer program utilizes the Hazen-Williams equation for determining headloss in pipes; because they are all distribution mains, the Hazen-Williams "C" value used for all new pipes is 120.

The computer model for this analysis includes the onsite water system for the project, and offsite piping to the connections with the existing system. The hydraulic modeling in this report is based on the assumption that the available hydraulic gradient in the 625 Zone system is 625 feet and in the 570 Zone system is 570 feet.

EXISTING WATER SYSTEM

The Stone Creek project is within the Mira Mesa 625 Zone and the Miramar 712 Zone for water service. Pressure reducing stations exist in the area to supply water to the 625 Zone from the Miramar 712 Zone (located near the intersection of Camino Ruiz and Miralani Dr).

Existing pipelines in the vicinity of the project consist of a 16-inch 625 Zone pipeline located in Camino Ruiz, a 16-inch 712 Zone pipeline located in Black Mountain Road/Carol Canyon intersection as well as a 12-inch 712 Zone pipeline located in Black Mountain Road/Maya Linda intersection.

WATER SERVICE OVERVIEW

The Stone Creek project proposes to be served by the Mira Mesa 625 Zone system and the Miramar 712 Zone and a new 570 pressure zone. The range of pad elevations on the project, 329 feet to 427 feet, results in static pressures on the project that range between 67 and 122 psi.

Service to the Stone Creek project will be provided by connecting to the existing system at 7 locations and constructing two 712/625 Zone pressure reducing stations and two 625/570 pressure reducing stations. Connections will be made at the following locations (see Figure-2):

- Camino Ruiz and B Street East (16-inch connection)
- Camino Ruiz and A Street East (16-inch connection)
- Camino Ruiz and B Street West (12-inch connection with 625/570 pressure reducing station)
- Camino Ruiz and A Street West (12-inch connection with 625/570 pressure reducing station)
- Camino Ruiz and Carroll Canyon Rd (16-inch connection)

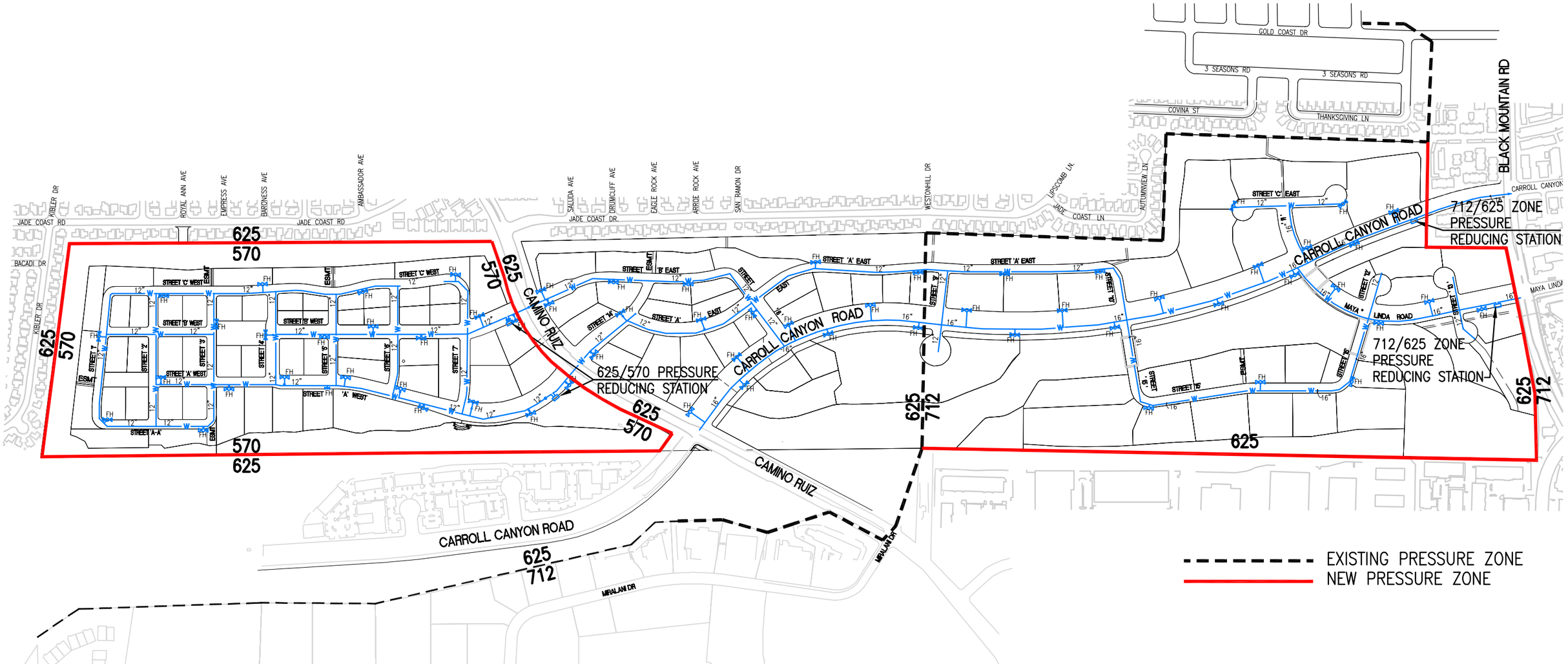

FIGURE-2: HYDRAULIC MAP

DWG. FILE: L:\PROJECTS\0423\Engr\Water Exhibit\HYDRAULIC CONTROL MAP\FIGURE 2.dwg

SCALE 1"=600'

- Black Mountain Rd and Carroll Canyon Rd (16-inch connection with 712/625 pressure reducing station)
- Black Mountain Rd and Maya Linda Rd (16-inch connection with 712/625 pressure reducing station)

The existing and new water facilities are shown on the Water Study Exhibits in the map pockets at the back of this report.

WATER SYSTEM ANALYSIS AND RESULTS

The water system analysis prepared for the Stone Creek project includes the Node and Pipe Diagram, piping configuraton and recommended line sizes shown on the Water Study Exhibit in the map pockets and the computer model printouts provided in Appendix A, B,C and D. Analyses were run on the computer model to evaluate the ability to deliver water to the project under several demand scenarios. The computer modeling scenarios performed to determine the required water line sizes for the Stone Creek Project are shown in Table-4.

PHASE	SCENARIO
PHASE 1:	1. Average Daily Demand 2. Peak Hour Demand 3. Maximum Daily Demand 4. Maximum Daily Demand and Fire at FH-7 5. Maximum Daily Demand and Fire at FH-4 6. Peak Hour Demand with Pipe P-2 Out of Service 7. Maximum Daily Demand, Fire at FH-7 and Pipe P-2 Out of Service 8. Maximum Daily Demand, Fire at FH-4 and Pipe P-2 Out of Service
PHASE 1 &2 COMBINED:	1. Average Daily Demand 2. Peak Hour Demand 3. Maximum Daily Demand 4. Maximum Daily Demand and Fire at FH-32 5. Peak Hour Demand and Pipe P-25 Out of Service 6. Maximum Daily Demand, Fire at FH-32 and P-25 Out of Service
PHASE 3:	1. Average Daily Demand 2. Peak Hour Demand 3. Maximum Daily Demand 4. Maximum Daily Demand and Fire at FH-51 5. Peak Hour Demand and Fire at FH-45 6. Peak Hour Demand and Pipe P-72 Out of Service
PHASE 1, 2 & 4 COMBINED:	1. Average Daily Demand 2. Peak Hour Demand 3. Maximum Daily Demand 4. Maximum Daily Demand and Fire at FH-22 5. Maximum Daily Demand and Fire at FH-22 and FH-11 6. Peak Hour Demand and Pipe P-29 Out of Service 7. Maximum Daily Demand, Pipe P-24 and Pipe P-29 Out of Service and Fire at FH-11

Table-4: Demand Scenarios

COMPUTER MODELING RESULTS

In the course of our analysis, water line sizes within the project were adjusted in order to obtain favorable results with running the various demand scenarios and pipe break/closure scenarios. The results can be seen in the tables presented in Appendix A, B, C and D. A review of the spreadsheets shows that the City of San Diego Design Criteria is being met with respect to the minimum static pressure of 65 psi, a maximum pressure drop of 25 psi under peak hour and maximum daily demands, a minimum 20 psi residual pressure at a fire flow location under maximum day plus fire flow demands, or a 40 psi minimum pressure drop at all points in the system under a pipe break condition.

WATER SYSTEM PHASING

The Stone Creek Project is expected to develop in phases over a period of years. Figure-3 defines the overall phasing for the purpose of this study. In addition, Figure-4 through Figure-7 show the individual phases with connection locations.

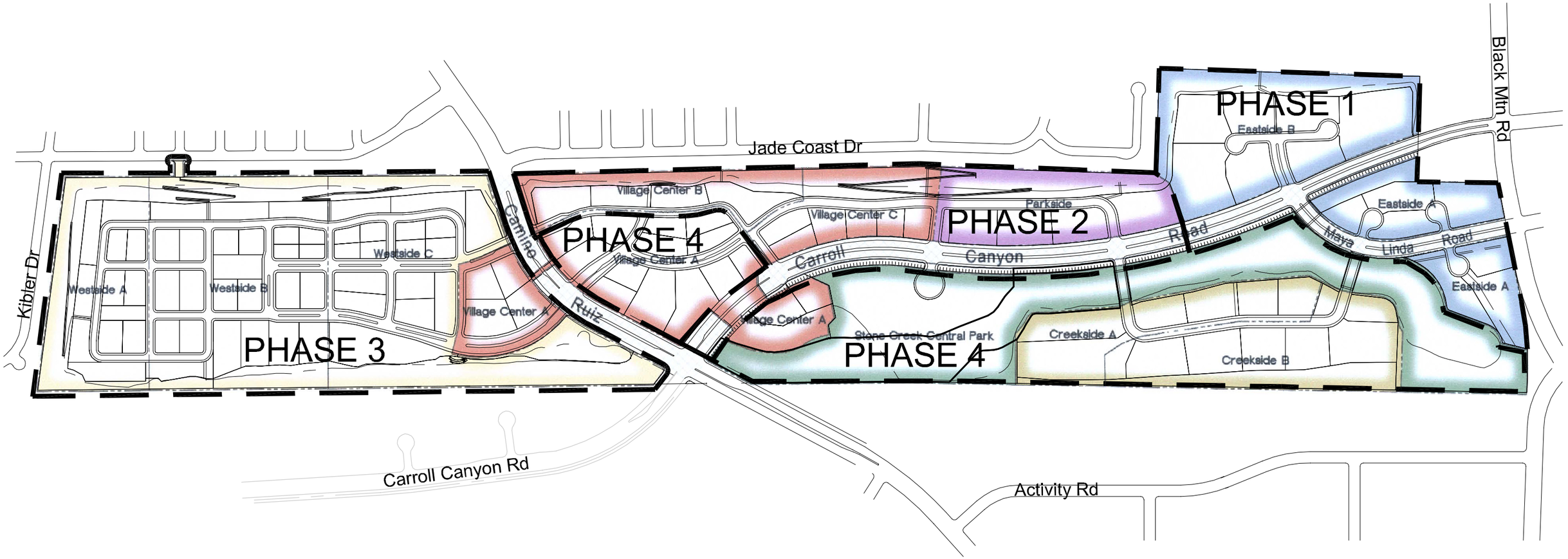

FIGURE-3: WATER PHASING

DWG. FILE: L:\PROJECTS\0423\Engr\Water Exhibit\WATER PHASES\FIGURE 3.dwg

SCALE 1"=600'

NORTH

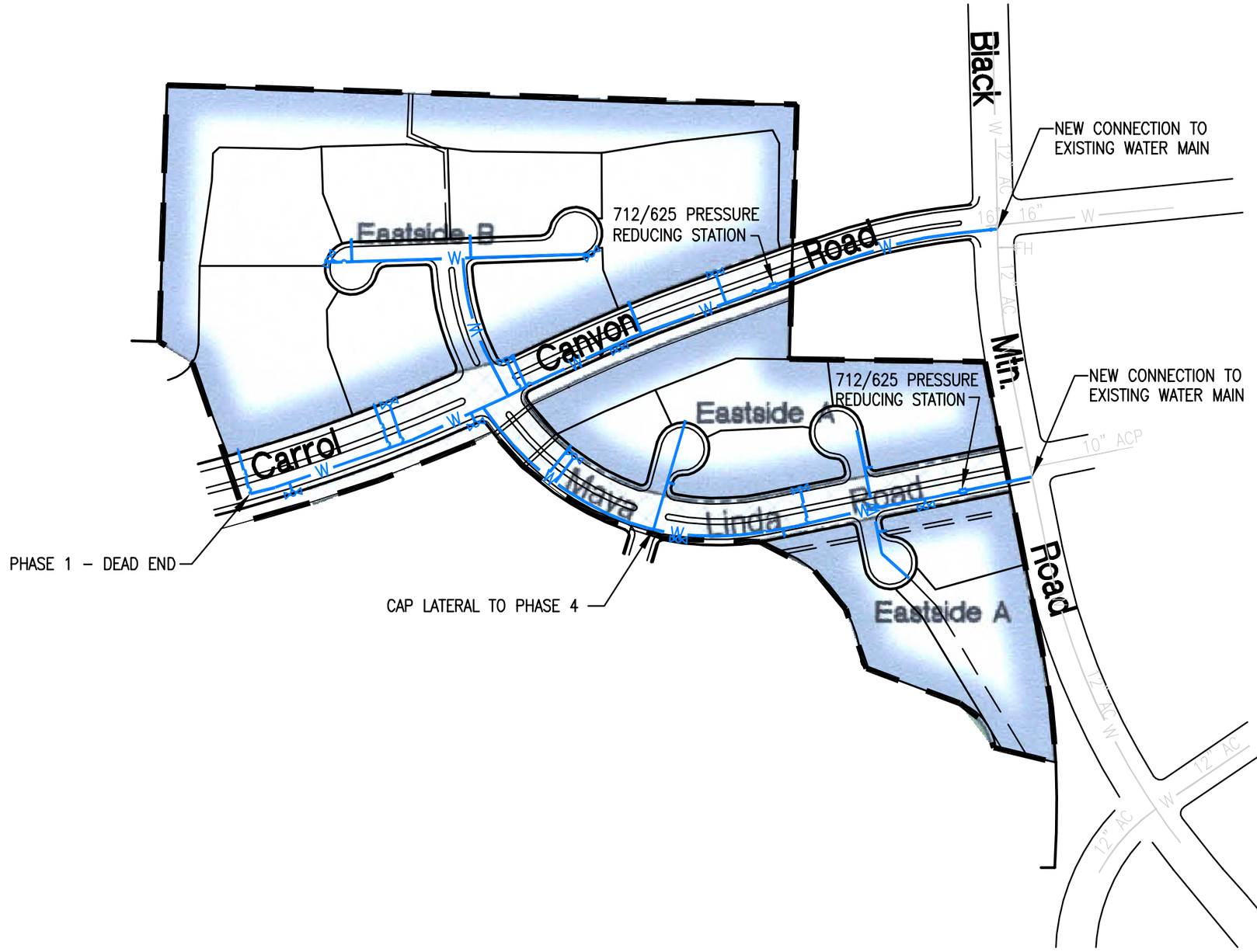

FIGURE-4: PHASE 1

DWG. FILE: L:\PROJECTS\0423\Engr\Water Exhibit\WATER PHASES\FIGURE 4.dwg

SCALE 1"=300'

NORTH

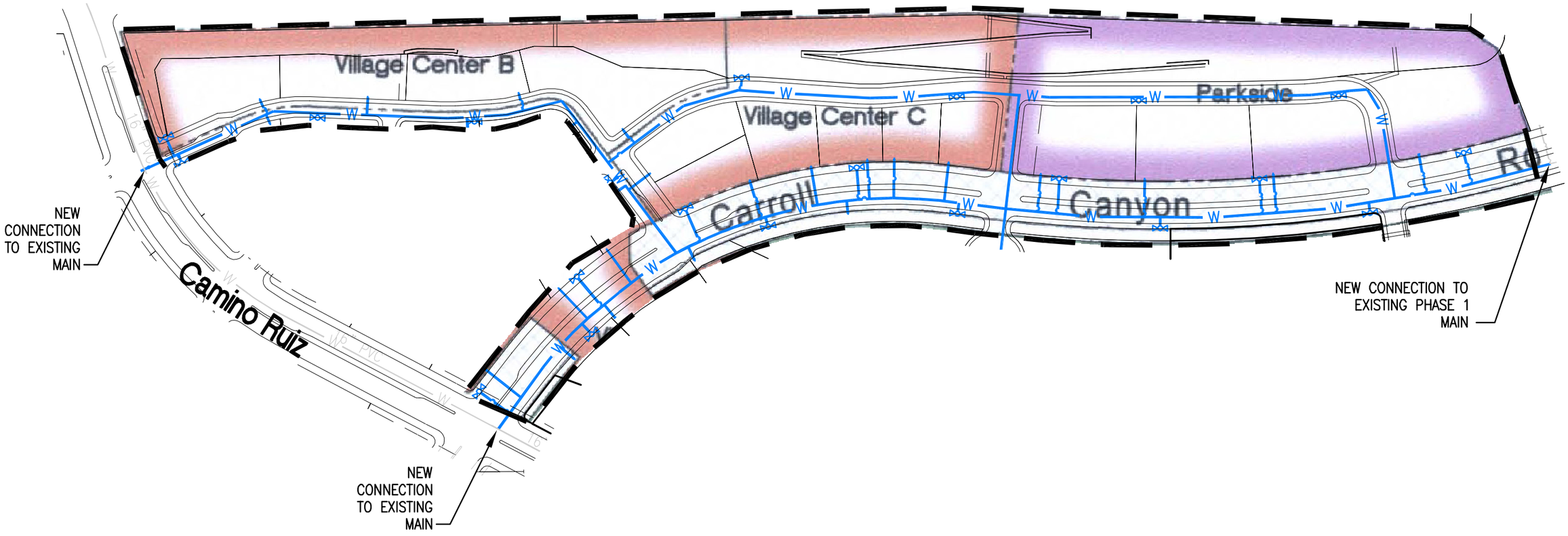

FIGURE-5: PHASE 2

DWG. FILE: L:\PROJECTS\0423\Engr\Water Exhibit\WATER PHASES\FIGURE 5.dwg

SCALE 1"=300'

NORTH

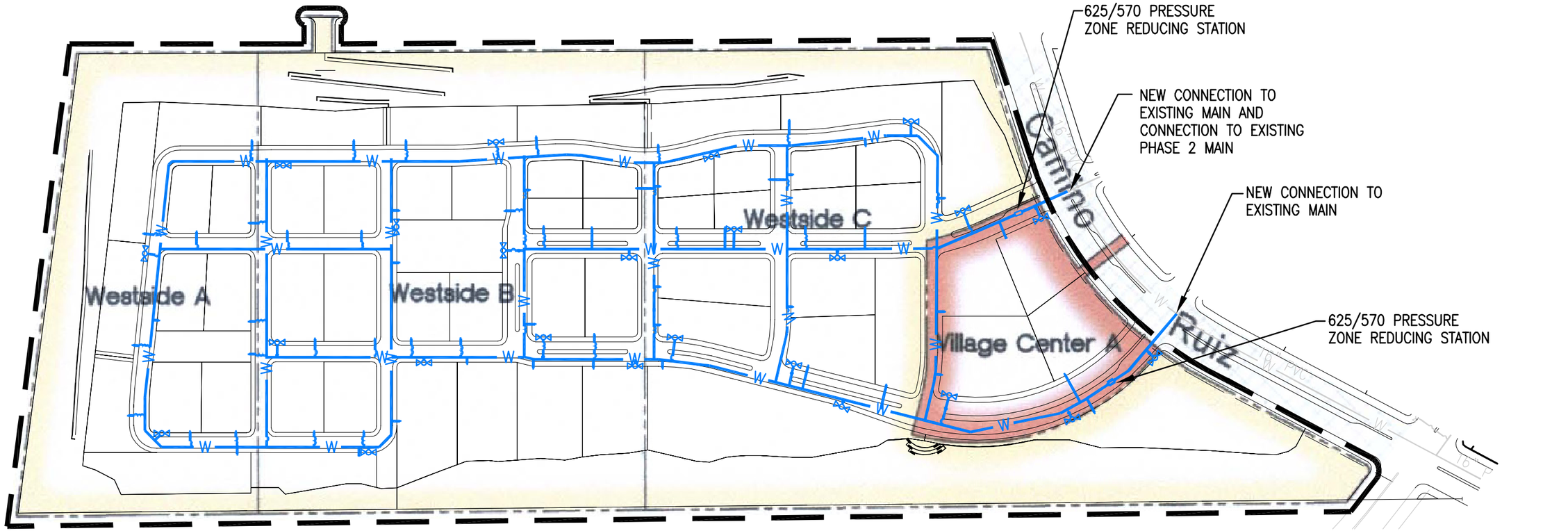

FIGURE-6: PHASE 3

DWG. FILE: L:\PROJECTS\0423\Engr\Water Exhibit\WATER PHASES\FIGURE 6.dwg

SCALE 1"=300'

NORTH

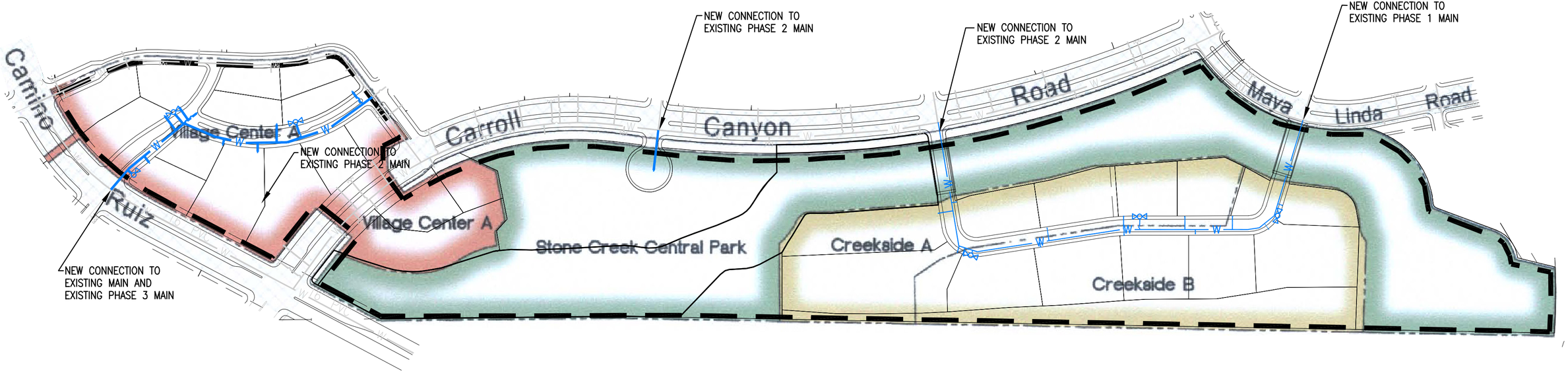

FIGURE-7: PHASE 4

DWG. FILE: L:\PROJECTS\0423\Engr\Water Exhibit\WATER PHASES\FIGURE 7.dwg

SCALE 1"=300'

NORTH

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are summarized based on the water system analysis prepared for the Stone Creek project.

1. The Water Study Exhibit (map pocket) included in this report, provides a Node and Pipe Diagram for the Stone Creek project. This exhibit also indicated the recommended water line sizes for the project.
2. The Stone Creek project will be served by the City of San Diego 625 Zone water system and a new 570 Zone.
3. Onsite piping for the Stone Creek project will consist of 12-inch through 16-inch water lines.
4. The proposed redundant feed to the project will be constructed to allow the developer to meet the City of San Diego guidelines as development progresses on the project.
5. Install pressure regulating valves at all proposed water service connections where the subject projects modeling results indicate pressures in excess of 80 psi.
6. A corrosivity study and cathodic protection design will be included in the improvement plans wherever metallic pipe is used. A California Licensed Corrosion Engineer or a NCE certified cathodic protection specialist will need to develop a unified approach to design a corrosion plan that considers the existing and future pipelines.
7. Approval of final alignment, grade and connection of the proposed water mains will be determined at final engineering plan check. All proposed water main facilities shall be designed to meet the most current edition of the City of San Diego's Water Design Guide requirements.

Please feel free to contact us if you have any questions regarding the information recommendations presented in this report. We would appreciate the opportunity to discuss the findings of this report with you.

Very truly yours,
BDS Engineering, Inc.
Civil Engineers

Thomas A. Jones

TAJ:tm
Attachments

APPENDIX A: Phase 1 Computer Modeling

BDS Engineering, Inc.
Civil Engineering
Land Surveying

Thomas Jones, PE, LS, Principal
Gordon Axelson, PE, Principal

WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

DATE: June, 2010

CASE: PHASE 1 - AVERAGE DAILY DEMAND

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	15.90	91.72	0.15
FH-2	401.00	625.00	97.07	6.90	96.91	0.16
FH-3	391.00	625.00	101.40	0.00	101.24	0.16
FH-4	393.00	625.00	100.53	0.60	100.37	0.16
FH-5	399.00	625.00	97.93	0.00	97.78	0.15
FH-6	409.00	625.00	93.60	7.60	93.45	0.15
FH-7	418.00	625.00	89.70	0.00	89.56	0.14
FH-8	405.00	625.00	95.33	7.60	95.18	0.15
FH-9	391.00	625.00	101.40	16.70	101.24	0.16
FH-10	387.00	625.00	103.13	0.00	102.97	0.16
J-1	427.00	625.00	85.80	0.00	85.67	0.13
J-2	425.00	625.00	86.67	0.00	86.53	0.14
J-5	391.00	625.00	101.40	0.00	101.24	0.16
J-6	389.00	625.00	102.27	0.00	102.10	0.17
J-8	396.50	625.00	99.02	0.00	98.86	0.16
J-11	414.00	625.00	91.43	0.00	91.29	0.14
J-13	397.00	625.00	98.80	0.00	98.64	0.16
J-16	402.00	625.00	96.63	11.90	96.48	0.15
J-17	415.50	625.00	90.78	9.30	90.64	0.14
J-18	415.00	625.00	91.00	16.40	90.86	0.14
J-22	381.00	625.00	105.73	23.60	105.57	0.16

∑Q (gpm)	∑Q (gpd)	**∑Q (mgd)**
116.50	167,760	**0.17**

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WATER ANALYSIS

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CASE: PHASE 1 - AVERAGE DAILY DEMAND

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	39.01	0.06
P-2	12.00	112.00	-10.79	0.03
P-3	16.00	120.00	49.80	0.08
P-5	16.00	120.00	27.00	0.04
P-6	16.00	120.00	2.70	0.00
P-7	16.00	120.00	-20.90	0.03
P-8	16.00	120.00	-21.50	0.03
P-9	16.00	120.00	-33.40	0.05
P-10	16.00	120.00	-33.40	0.05
P-11	16.00	120.00	-41.00	0.07
P-12	16.00	120.00	-66.70	0.11
P-13	16.00	120.00	-66.70	0.11
P-14	16.00	120.00	24.30	0.04
P-15	12.00	120.00	7.60	0.02
P-16	12.00	120.00	16.70	0.05
P-17	12.00	120.00	11.90	0.03
P-18	12.00	120.00	-9.30	0.03
P-19	12.00	120.00	-16.40	0.05
P-20	16.00	120.00	33.90	0.05
P-21	16.00	120.00	27.00	0.04
P-22	16.00	120.00	23.60	0.04
P-23	16.00	120.00	23.60	0.04
P-24	12.00	112.00	77.49	0.22

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PTS. NO.: 67643
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DATE: June, 2010

CASE: PHASE 1 - PK HR

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	95.40	91.69	0.18
FH-2	401.00	625.00	97.07	41.40	96.88	0.19
FH-3	391.00	625.00	101.40	0.00	101.20	0.20
FH-4	393.00	625.00	100.53	3.60	100.34	0.19
FH-5	399.00	625.00	97.93	0.00	97.75	0.18
FH-6	409.00	625.00	93.60	45.60	93.42	0.18
FH-7	418.00	625.00	89.70	0.00	89.54	0.16
FH-8	405.00	625.00	95.33	45.60	95.14	0.19
FH-9	391.00	625.00	101.40	100.20	101.19	0.21
FH-10	387.00	625.00	103.13	0.00	102.93	0.20
J-1	427.00	625.00	85.80	0.00	85.66	0.14
J-2	425.00	625.00	86.67	0.00	86.53	0.14
J-5	391.00	625.00	101.40	0.00	101.20	0.20
J-6	389.00	625.00	102.27	0.00	102.07	0.20
J-8	396.50	625.00	99.02	0.00	98.83	0.19
J-11	414.00	625.00	91.43	0.00	91.27	0.16
J-13	397.00	625.00	98.80	0.00	98.60	0.20
J-16	402.00	625.00	96.63	71.40	96.44	0.19
J-17	415.50	625.00	90.78	55.80	90.62	0.16
J-18	415.00	625.00	91.00	98.40	90.83	0.17
J-22	381.00	625.00	105.73	141.60	105.52	0.21

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WATER ANALYSIS

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PTS. NO.: 67643
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CASE: PHASE 1 - PK HR

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	234.07	0.53
P-2	12.00	112.00	-64.76	0.29
P-3	16.00	120.00	298.83	0.46
P-5	16.00	120.00	162.03	0.24
P-6	16.00	120.00	16.23	0.01
P-7	16.00	120.00	-125.37	0.21
P-8	16.00	120.00	-128.97	0.24
P-9	16.00	120.00	-200.37	0.35
P-10	16.00	120.00	-200.37	0.35
P-11	16.00	120.00	-245.97	0.42
P-12	16.00	120.00	-400.17	0.68
P-13	16.00	120.00	-400.17	0.68
P-14	16.00	120.00	145.80	0.23
P-15	12.00	120.00	45.60	0.00
P-16	12.00	120.00	100.20	0.28
P-17	12.00	120.00	71.40	0.21
P-18	12.00	120.00	-55.80	0.16
P-19	12.00	120.00	-98.40	0.30
P-20	16.00	120.00	203.43	0.31
P-21	16.00	120.00	162.03	0.24
P-22	16.00	120.00	141.60	0.40
P-23	16.00	120.00	141.60	0.00
P-24	12.00	112.00	464.93	1.50

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1 - MAX DAY

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	41.34	91.72	0.15
FH-2	401.00	625.00	97.07	17.94	96.91	0.16
FH-3	391.00	625.00	101.40	0.00	101.23	0.17
FH-4	393.00	625.00	100.53	1.56	100.37	0.16
FH-5	399.00	625.00	97.93	0.00	97.77	0.16
FH-6	409.00	625.00	93.60	19.76	93.45	0.15
FH-7	418.00	625.00	89.70	0.00	89.56	0.14
FH-8	405.00	625.00	95.33	19.76	95.17	0.16
FH-9	391.00	625.00	101.40	43.42	101.23	0.17
FH-10	387.00	625.00	103.13	0.00	102.96	0.17
J-1	427.00	625.00	85.80	0.00	85.66	0.14
J-2	425.00	625.00	86.67	0.00	86.53	0.14
J-5	391.00	625.00	101.40	0.00	101.23	0.17
J-6	389.00	625.00	102.27	0.00	102.10	0.17
J-8	396.50	625.00	99.02	0.00	98.85	0.17
J-11	414.00	625.00	91.43	0.00	91.28	0.15
J-13	397.00	625.00	98.80	0.00	98.64	0.16
J-16	402.00	625.00	96.63	30.94	96.47	0.16
J-17	415.50	625.00	90.78	24.18	90.64	0.14
J-18	415.00	625.00	91.00	42.64	90.85	0.15
J-22	381.00	625.00	105.73	61.36	105.56	0.17

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Stone Creek Tentative Map No. 208328

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CASE: PHASE 1 - MAX DAY

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	101.43	0.16
P-2	12.00	112.00	-28.06	0.08
P-3	16.00	120.00	129.49	0.21
P-5	16.00	120.00	70.21	0.11
P-6	16.00	120.00	7.03	0.01
P-7	16.00	120.00	-54.33	0.09
P-8	16.00	120.00	-55.89	0.09
P-9	16.00	120.00	-86.83	0.14
P-10	16.00	120.00	-86.83	0.14
P-11	16.00	120.00	-106.59	0.17
P-12	16.00	120.00	-173.41	0.28
P-13	16.00	120.00	-173.41	0.28
P-14	16.00	120.00	63.18	0.10
P-15	12.00	120.00	19.76	0.06
P-16	12.00	120.00	43.42	0.12
P-17	12.00	120.00	30.94	0.09
P-18	12.00	120.00	-24.18	0.07
P-19	12.00	120.00	-42.64	0.12
P-20	16.00	120.00	88.15	0.14
P-21	16.00	120.00	70.21	0.11
P-22	16.00	120.00	61.36	0.10
P-23	16.00	120.00	61.36	0.10
P-24	12.00	112.00	201.47	0.57

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Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1 - MAX DAY, FIRE AT FH-7

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	41.34	91.12	0.75
FH-2	401.00	625.00	97.07	17.94	96.12	0.95
FH-3	391.00	625.00	101.40	0.00	100.28	1.12
FH-4	393.00	625.00	100.53	1.56	99.21	1.32
FH-5	399.00	625.00	97.93	0.00	96.44	1.49
FH-6	409.00	625.00	93.60	19.76	91.95	1.65
FH-7	418.00	625.00	89.70	6000.00	87.91	1.79
FH-8	405.00	625.00	95.33	19.76	94.20	1.13
FH-9	391.00	625.00	101.40	43.42	100.26	1.14
FH-10	387.00	625.00	103.13	0.00	101.95	1.18
J-1	427.00	625.00	85.80	0.00	85.54	0.26
J-2	425.00	625.00	86.67	0.00	86.50	0.17
J-5	391.00	625.00	101.40	0.00	100.26	1.14
J-6	389.00	625.00	102.27	0.00	101.08	1.19
J-8	396.50	625.00	99.02	0.00	97.55	1.47
J-11	414.00	625.00	91.43	0.00	89.70	1.73
J-13	397.00	625.00	98.80	0.00	97.66	1.14
J-16	402.00	625.00	96.63	30.94	95.17	1.46
J-17	415.50	625.00	90.78	24.18	89.05	1.73
J-18	415.00	625.00	91.00	42.64	89.27	1.73
J-22	381.00	625.00	105.73	61.36	104.54	1.19

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Gordon Axelson, PE, Principal

WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1 - MAX DAY, FIRE AT FH-7

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	1206.18	1.92
P-2	12.00	112.00	-298.15	0.85
P-3	16.00	120.00	1504.33	2.40
P-5	16.00	120.00	1445.05	2.31
P-6	16.00	120.00	1381.87	2.21
P-7	16.00	120.00	1320.51	2.11
P-8	16.00	120.00	1318.95	2.10
P-9	16.00	120.00	1288.01	2.06
P-10	16.00	120.00	1288.01	2.06
P-11	16.00	120.00	1268.25	2.02
P-12	16.00	120.00	1201.43	1.92
P-13	16.00	120.00	-4798.57	7.66
P-14	16.00	120.00	63.18	0.10
P-15	12.00	120.00	19.76	0.06
P-16	12.00	120.00	43.42	0.12
P-17	12.00	120.00	30.94	0.09
P-18	12.00	120.00	-24.18	0.07
P-19	12.00	120.00	-42.64	0.12
P-20	16.00	120.00	1462.99	2.33
P-21	16.00	120.00	1445.05	2.31
P-22	16.00	120.00	61.36	0.10
P-23	16.00	120.00	61.36	0.10
P-24	12.00	112.00	5096.72	14.46

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1 - MAX DAY, FIRE AT FH-4

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	41.34	89.79	2.08
FH-2	401.00	625.00	97.07	17.94	94.36	2.71
FH-3	391.00	625.00	101.40	0.00	98.12	3.28
FH-4	393.00	625.00	100.53	6000.00	96.54	3.99
FH-5	399.00	625.00	97.93	0.00	94.95	2.98
FH-6	409.00	625.00	93.60	19.76	91.62	1.98
FH-7	418.00	625.00	89.70	0.00	88.65	1.05
FH-8	405.00	625.00	95.33	19.76	91.99	3.34
FH-9	391.00	625.00	101.40	43.42	98.04	3.36
FH-10	387.00	625.00	103.13	0.00	99.64	3.49
J-1	427.00	625.00	85.80	0.00	85.28	0.52
J-2	425.00	625.00	86.67	0.00	86.51	0.16
J-5	391.00	625.00	101.40	0.00	98.05	3.35
J-6	389.00	625.00	102.27	0.00	98.77	3.50
J-8	396.50	625.00	99.02	0.00	95.84	3.18
J-11	414.00	625.00	91.43	0.00	89.97	1.46
J-13	397.00	625.00	98.80	0.00	95.45	3.35
J-16	402.00	625.00	96.63	30.94	93.46	3.17
J-17	415.50	625.00	90.78	24.18	89.32	1.46
J-18	415.00	625.00	91.00	42.64	89.53	1.47
J-22	381.00	625.00	105.73	61.36	102.23	3.50

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1 - MAX DAY, FIRE AT FH-4

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	2216.69	3.54
P-2	12.00	112.00	-615.97	1.75
P-3	16.00	120.00	2832.66	4.52
P-5	16.00	120.00	2773.38	4.43
P-6	16.00	120.00	2710.20	4.32
P-7	16.00	120.00	2648.84	4.23
P-8	16.00	120.00	-3351.16	5.35
P-9	16.00	120.00	-3382.10	5.40
P-10	16.00	120.00	-3382.10	5.40
P-11	16.00	120.00	-3401.86	5.43
P-12	16.00	120.00	-3468.68	5.53
P-13	16.00	120.00	-3468.68	5.53
P-14	16.00	120.00	63.18	0.10
P-15	12.00	120.00	19.76	0.06
P-16	12.00	120.00	43.42	0.12
P-17	12.00	120.00	30.94	0.09
P-18	12.00	120.00	-24.18	0.07
P-19	12.00	120.00	-42.64	0.12
P-20	16.00	120.00	2791.32	4.45
P-21	16.00	120.00	2773.38	4.43
P-22	16.00	120.00	61.36	0.10
P-23	16.00	120.00	61.36	0.10
P-24	12.00	112.00	4084.65	11.59

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1 - PK HR, P-2 CLOSED

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	95.40	91.69	0.18
FH-2	401.00	625.00	97.07	41.40	96.88	0.19
FH-3	391.00	625.00	101.40	0.00	101.20	0.20
FH-4	393.00	625.00	100.53	3.60	100.34	0.19
FH-5	399.00	625.00	97.93	0.00	97.74	0.19
FH-6	409.00	625.00	93.60	45.60	93.42	0.18
FH-7	418.00	625.00	89.70	0.00	89.54	0.16
FH-8	405.00	625.00	95.33	45.60	95.14	0.19
FH-9	391.00	625.00	101.40	100.20	101.19	0.21
FH-10	387.00	625.00	103.13	0.00	102.93	0.20
J-1	427.00	625.00	85.80	0.00	85.66	0.14
J-2	425.00	625.00	86.67	0.00	86.53	0.14
J-5	391.00	625.00	101.40	0.00	101.20	0.20
J-6	389.00	625.00	102.27	0.00	102.07	0.20
J-8	396.50	625.00	99.02	0.00	98.83	0.19
J-11	414.00	625.00	91.43	0.00	91.26	0.17
J-13	397.00	625.00	98.80	0.00	98.60	0.20
J-16	402.00	625.00	96.63	71.40	96.44	0.19
J-17	415.50	625.00	90.78	55.80	90.61	0.17
J-18	415.00	625.00	91.00	98.40	90.83	0.17
J-22	381.00	625.00	105.73	141.60	105.52	0.21

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1 - PK HR, P-2 CLOSED

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	292.37	0.47
P-2	12.00	112.00	CLOSED	CLOSED
P-3	16.00	120.00	292.37	0.47
P-5	16.00	120.00	155.57	0.25
P-6	16.00	120.00	9.77	0.02
P-7	16.00	120.00	-131.83	0.21
P-8	16.00	120.00	-135.43	0.22
P-9	16.00	120.00	-206.83	0.33
P-10	16.00	120.00	-206.83	0.33
P-11	16.00	120.00	-252.43	0.40
P-12	16.00	120.00	-406.63	0.65
P-13	16.00	120.00	-406.63	0.65
P-14	16.00	120.00	145.80	0.23
P-15	12.00	120.00	45.60	0.13
P-16	12.00	120.00	100.20	0.28
P-17	12.00	120.00	71.40	0.20
P-18	12.00	120.00	-55.80	0.16
P-19	12.00	120.00	-98.40	0.28
P-20	16.00	120.00	196.97	0.31
P-21	16.00	120.00	155.57	0.25
P-22	16.00	120.00	141.60	0.23
P-23	16.00	120.00	141.60	0.23
P-24	12.00	112.00	406.63	1.15

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1 - MAX DAY, FIRE AT FH-7, P-2 CLOSED

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	41.34	91.07	0.80
FH-2	401.00	625.00	97.07	17.94	96.08	0.99
FH-3	391.00	625.00	101.40	0.00	100.24	1.16
FH-4	393.00	625.00	100.53	1.56	99.18	1.35
FH-5	399.00	625.00	97.93	0.00	96.42	1.51
FH-6	409.00	625.00	93.60	19.76	91.93	1.67
FH-7	418.00	625.00	89.70	6000.00	87.90	1.80
FH-8	405.00	625.00	95.33	19.76	94.17	1.16
FH-9	391.00	625.00	101.40	43.42	100.22	1.18
FH-10	387.00	625.00	103.13	0.00	101.91	1.22
J-1	427.00	625.00	85.80	0.00	85.48	0.32
J-2	425.00	625.00	86.67	0.00	86.50	0.17
J-5	391.00	625.00	101.40	0.00	100.22	1.18
J-6	389.00	625.00	102.27	0.00	101.05	1.22
J-8	396.50	625.00	99.02	0.00	97.53	1.49
J-11	414.00	625.00	91.43	0.00	89.69	1.74
J-13	397.00	625.00	98.80	0.00	97.63	1.17
J-16	402.00	625.00	96.63	30.94	95.15	1.48
J-17	415.50	625.00	90.78	24.18	89.04	1.74
J-18	415.00	625.00	91.00	42.64	89.25	1.75
J-22	381.00	625.00	105.73	61.36	104.51	1.22

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

DATE: June, 2010

CASE: PHASE 1 - MAX DAY, FIRE AT FH-7, P-2 CLOSED

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	1481.24	2.36
P-2	12.00	112.00	CLOSED	CLOSED
P-3	16.00	120.00	1481.24	2.36
P-5	16.00	120.00	1421.96	2.27
P-6	16.00	120.00	1358.78	2.17
P-7	16.00	120.00	1297.42	2.07
P-8	16.00	120.00	1295.86	2.07
P-9	16.00	120.00	1264.92	2.02
P-10	16.00	120.00	1264.92	2.02
P-11	16.00	120.00	1245.16	1.99
P-12	16.00	120.00	1178.34	1.88
P-13	16.00	120.00	-4821.66	7.69
P-14	16.00	120.00	63.18	0.10
P-15	12.00	120.00	19.76	0.06
P-16	12.00	120.00	43.42	0.12
P-17	12.00	120.00	30.94	0.09
P-18	12.00	120.00	-24.18	0.07
P-19	12.00	120.00	-42.64	0.12
P-20	16.00	120.00	1439.90	2.30
P-21	16.00	120.00	1421.96	2.27
P-22	16.00	120.00	61.36	0.10
P-23	16.00	120.00	61.36	0.10
P-24	12.00	112.00	4821.66	13.68

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1 - MAX DAY, FIRE AT FH-4, P-2 CLOSED

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	41.34	89.63	2.24
FH-2	401.00	625.00	97.07	17.94	94.22	2.85
FH-3	391.00	625.00	101.40	0.00	98.00	3.40
FH-4	393.00	625.00	100.53	6000.00	96.44	4.09
FH-5	399.00	625.00	97.93	0.00	94.89	3.04
FH-6	409.00	625.00	93.60	19.76	91.58	2.02
FH-7	418.00	625.00	89.70	0.00	88.63	1.07
FH-8	405.00	625.00	95.33	19.76	91.87	3.46
FH-9	391.00	625.00	101.40	43.42	97.93	3.47
FH-10	387.00	625.00	103.13	0.00	99.52	3.61
J-1	427.00	625.00	85.80	0.00	85.08	0.72
J-2	425.00	625.00	86.67	0.00	86.52	0.15
J-5	391.00	625.00	101.40	0.00	97.93	3.47
J-6	389.00	625.00	102.27	0.00	98.66	3.61
J-8	396.50	625.00	99.02	0.00	95.77	3.25
J-11	414.00	625.00	91.43	0.00	89.94	1.49
J-13	397.00	625.00	98.80	0.00	95.33	3.47
J-16	402.00	625.00	96.63	30.94	93.39	3.24
J-17	415.50	625.00	90.78	24.18	89.29	1.49
J-18	415.00	625.00	91.00	42.64	89.50	1.50
J-22	381.00	625.00	105.73	61.36	102.12	3.61

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WATER ANALYSIS

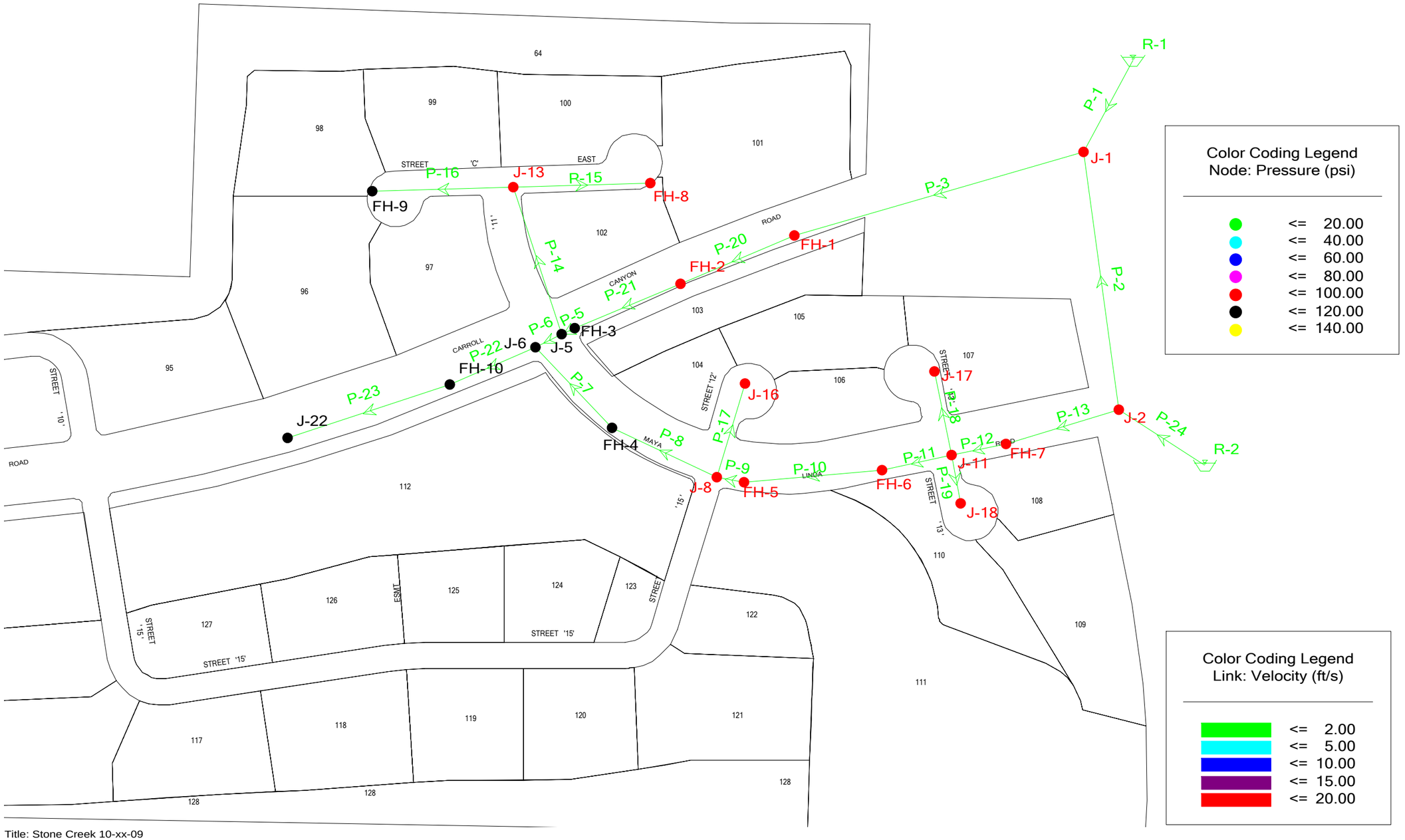
Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1 - MAX DAY, FIRE AT FH-4, P-2 CLOSED

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	2785.09	4.44
P-2	12.00	112.00	CLOSED	CLOSED
P-3	16.00	120.00	2785.09	4.44
P-5	16.00	120.00	2725.81	4.35
P-6	16.00	120.00	2662.63	4.25
P-7	16.00	120.00	2601.27	4.15
P-8	16.00	120.00	-3398.73	5.42
P-9	16.00	120.00	-3429.67	5.47
P-10	16.00	120.00	-3429.67	5.47
P-11	16.00	120.00	-3449.43	5.50
P-12	16.00	120.00	-3516.25	5.61
P-13	16.00	120.00	-3516.25	5.61
P-14	16.00	120.00	63.18	0.10
P-15	12.00	120.00	19.76	0.06
P-16	12.00	120.00	43.42	0.12
P-17	12.00	120.00	30.94	0.09
P-18	12.00	120.00	-24.18	0.07
P-19	12.00	120.00	-42.64	0.12
P-20	16.00	120.00	2743.75	4.38
P-21	16.00	120.00	2725.81	4.35
P-22	16.00	120.00	61.36	0.10
P-23	16.00	120.00	61.36	0.10
P-24	12.00	112.00	3516.25	9.97

Scenario: Base



Color Coding Legend
Node: Pressure (psi)

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<=	40.00
<=	60.00
<=	80.00
<=	100.00
<=	120.00
<=	140.00

Color Coding Legend
Link: Velocity (ft/s)

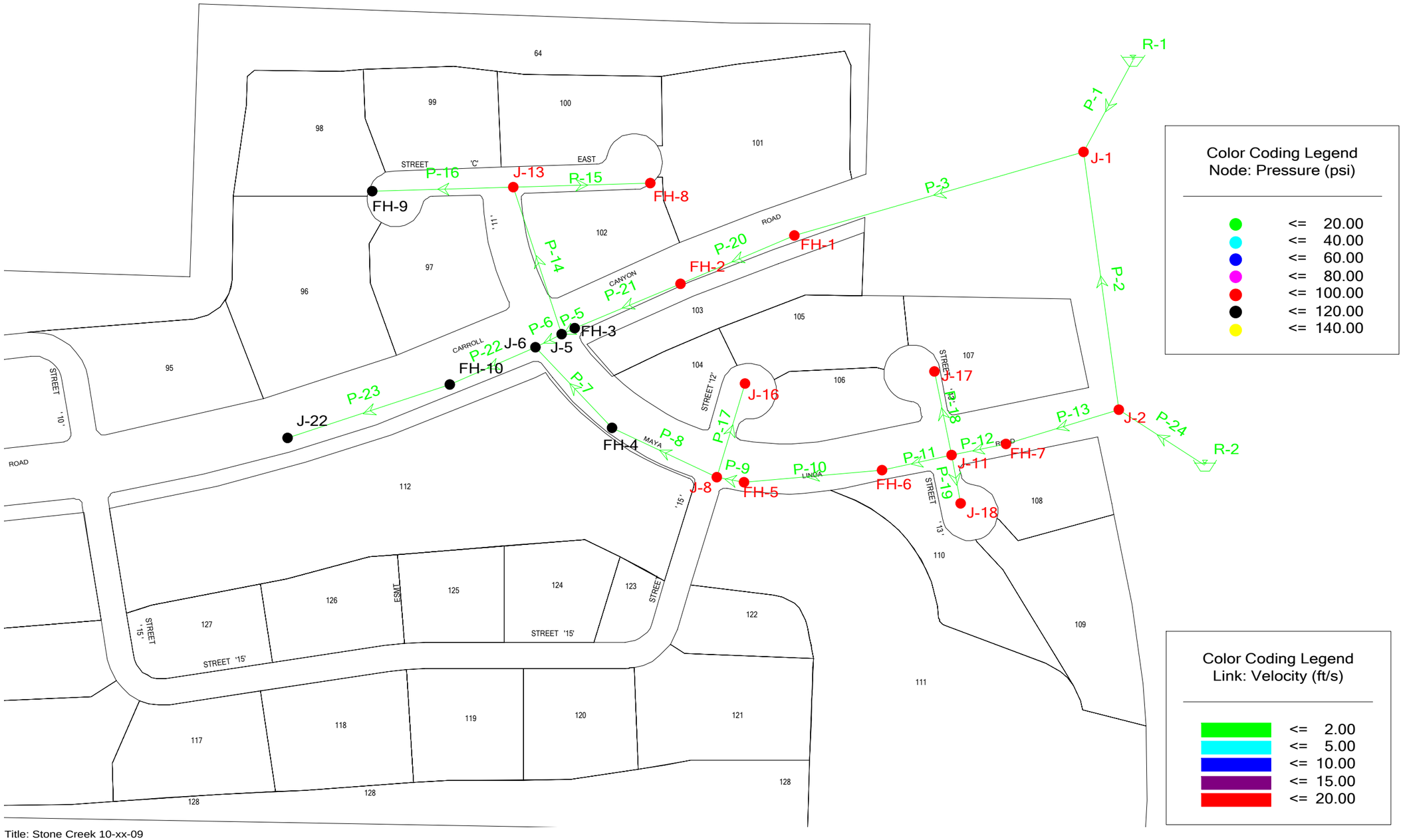
<=	2.00
<=	5.00
<=	10.00
<=	15.00
<=	20.00

Title: Stone Creek 10-xx-09
I:\...\10-xx-09 water analysis ph1.wcd
10/14/09 09:00:24 AM

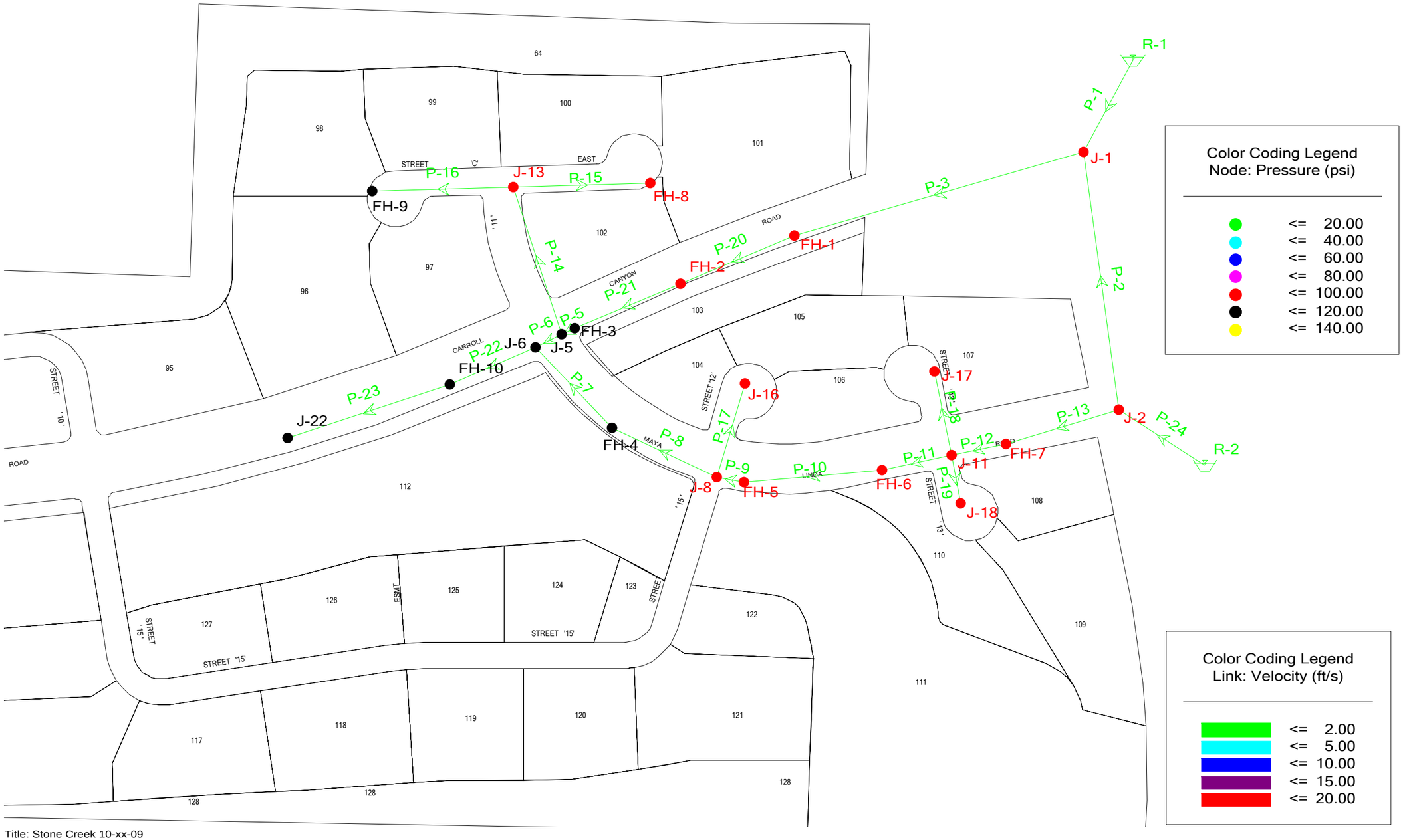
BDS Engineering, Inc.
 Haestad Methods Solution Center Watertown, CT 06795 USA +1-203-755-1666

Project Engineer: Tara Mugane
WaterCAD v7.0 [07.00.049.00]

Scenario: PEAK HR



Scenario: MAX DAY



Color Coding Legend
Node: Pressure (psi)

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<=	40.00
<=	60.00
<=	80.00
<=	100.00
<=	120.00
<=	140.00

Color Coding Legend
Link: Velocity (ft/s)

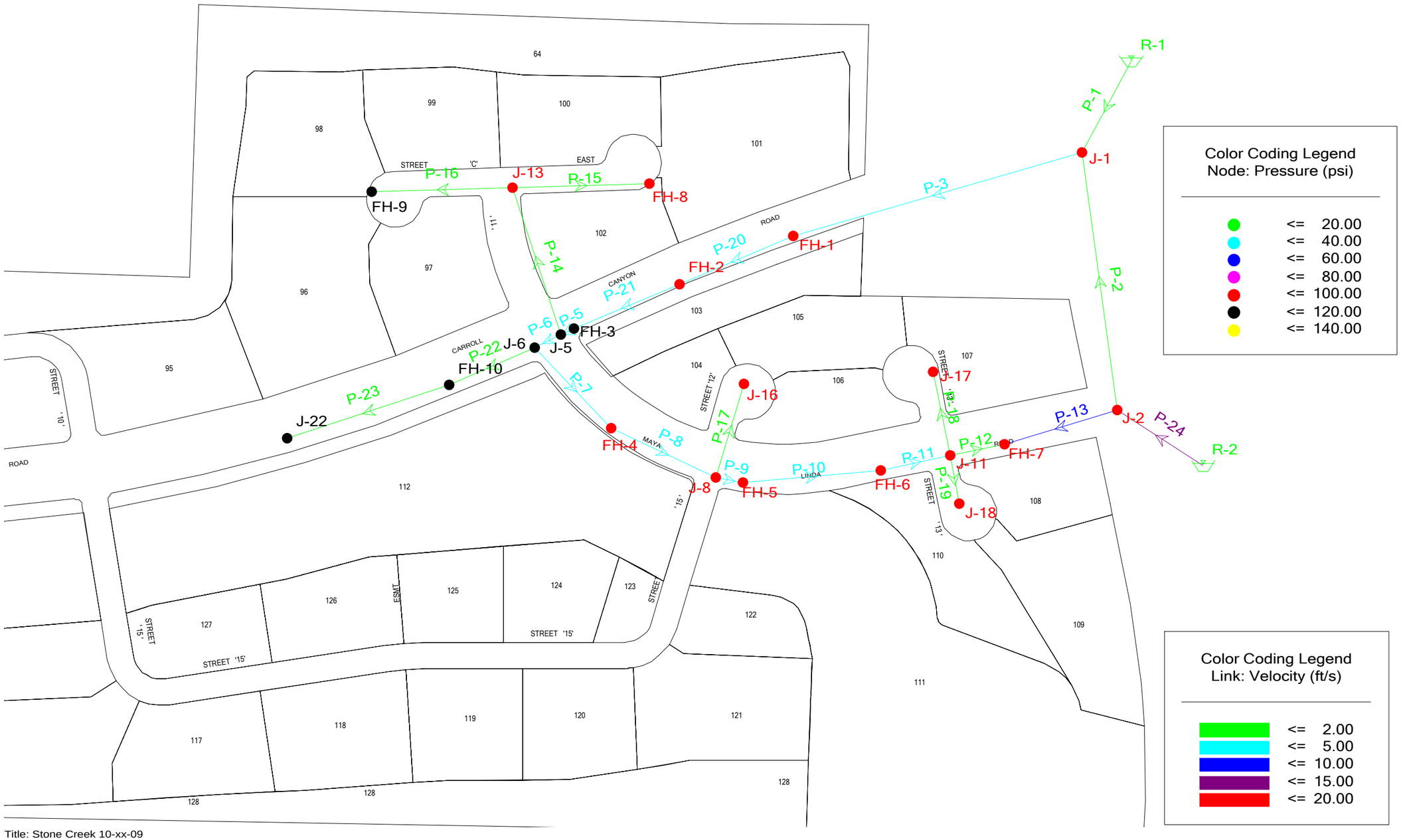
<=	2.00
<=	5.00
<=	10.00
<=	15.00
<=	20.00

Title: Stone Creek 10-xx-09
I:\...\10-xx-09 water analysis ph1.wcd
10/14/09 09:03:06 AM

BDS Engineering, Inc.
 Haestad Methods Solution Center Watertown, CT 06795 USA +1-203-755-1666

Project Engineer: Tara Mugane
WaterCAD v7.0 [07.00.049.00]

Scenario: FIRE 7 MAX DAY



Color Coding Legend
Node: Pressure (psi)

<=	20.00
<=	40.00
<=	60.00
<=	80.00
<=	100.00
<=	120.00
<=	140.00

Color Coding Legend
Link: Velocity (ft/s)

<=	2.00
<=	5.00
<=	10.00
<=	15.00
<=	20.00

Title: Stone Creek 10-xx-09
l:\...\10-xx-09 water analysis ph1.wcd
10/14/09 09:03:39 AM

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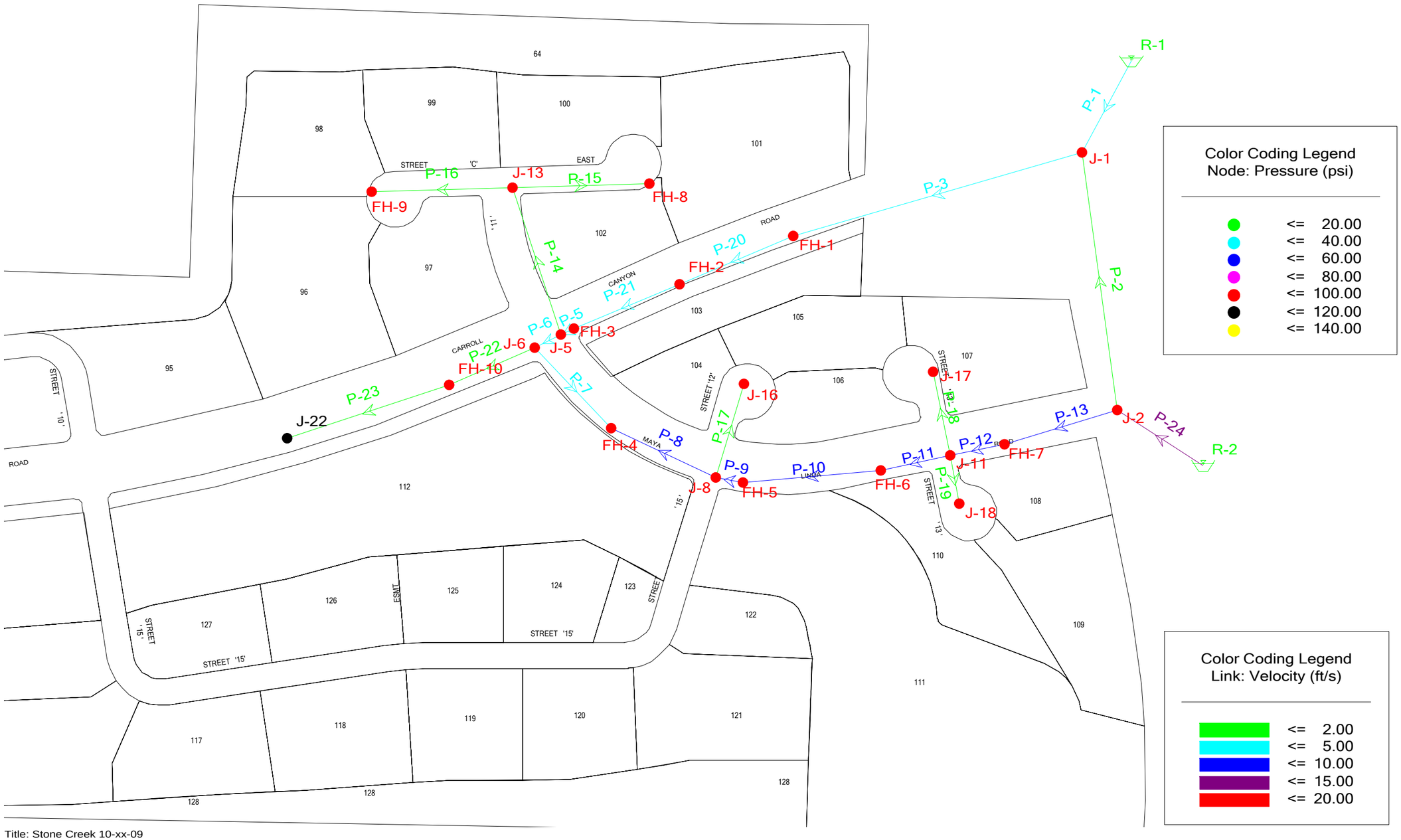
 Haestad Methods Solution Center Watertown, CT 06795 USA +1-203-755-1666

Project Engineer: Tara Mugane
WaterCAD v7.0 [07.00.049.00]

Scenario: FIRE 4, MAX DAY



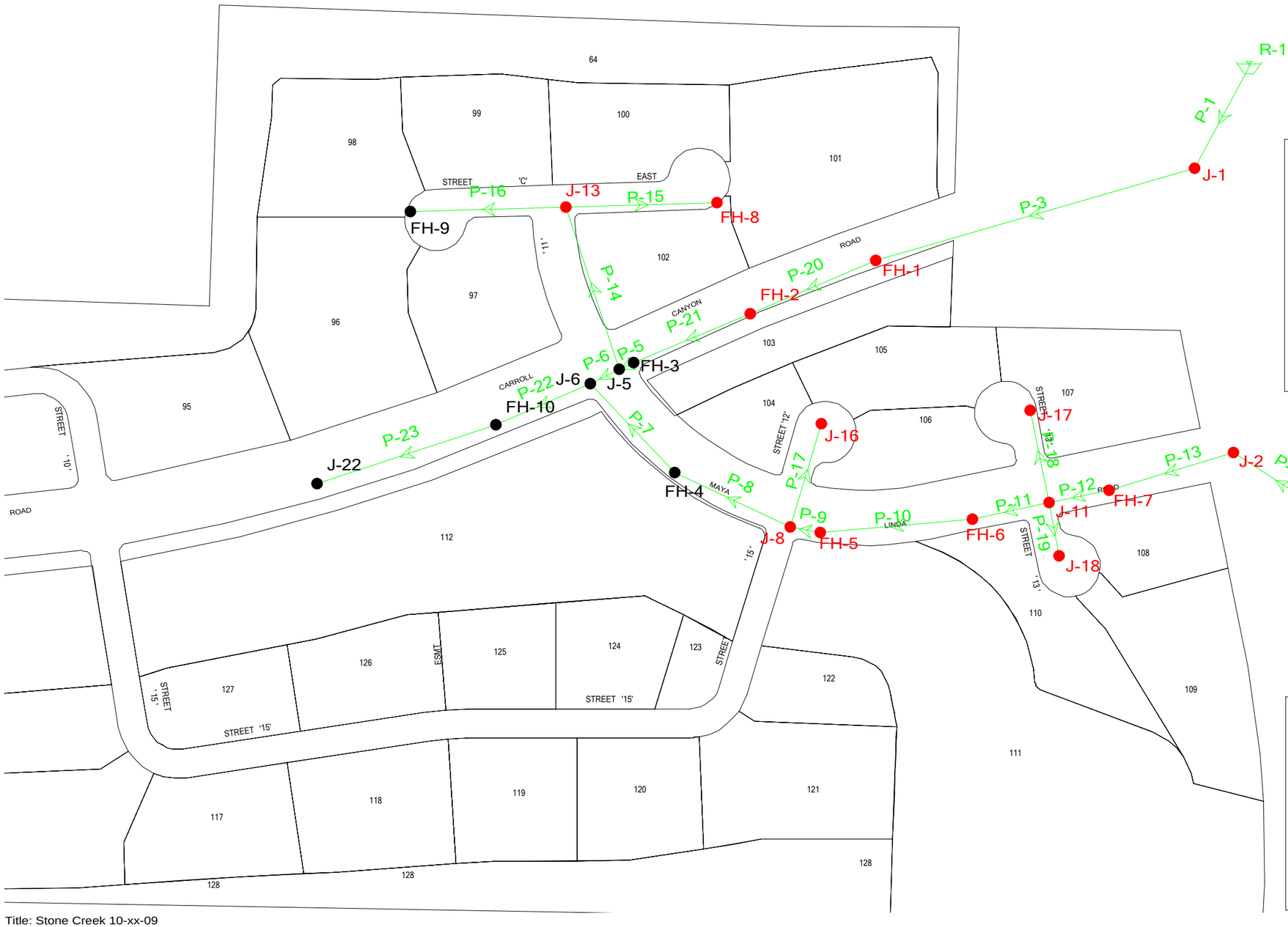
Color Coding Legend
Node: Pressure (psi)

<=	20.00
<=	40.00
<=	60.00
<=	80.00
<=	100.00
<=	120.00
<=	140.00

Color Coding Legend
Link: Velocity (ft/s)

<=	2.00
<=	5.00
<=	10.00
<=	15.00
<=	20.00

Scenario: PEAK HR, P-2 CLOSED



Color Coding Legend
Node: Pressure (psi)

<=	20.00
<=	40.00
<=	60.00
<=	80.00
<=	100.00
<=	120.00
<=	140.00

Color Coding Legend
Link: Velocity (ft/s)

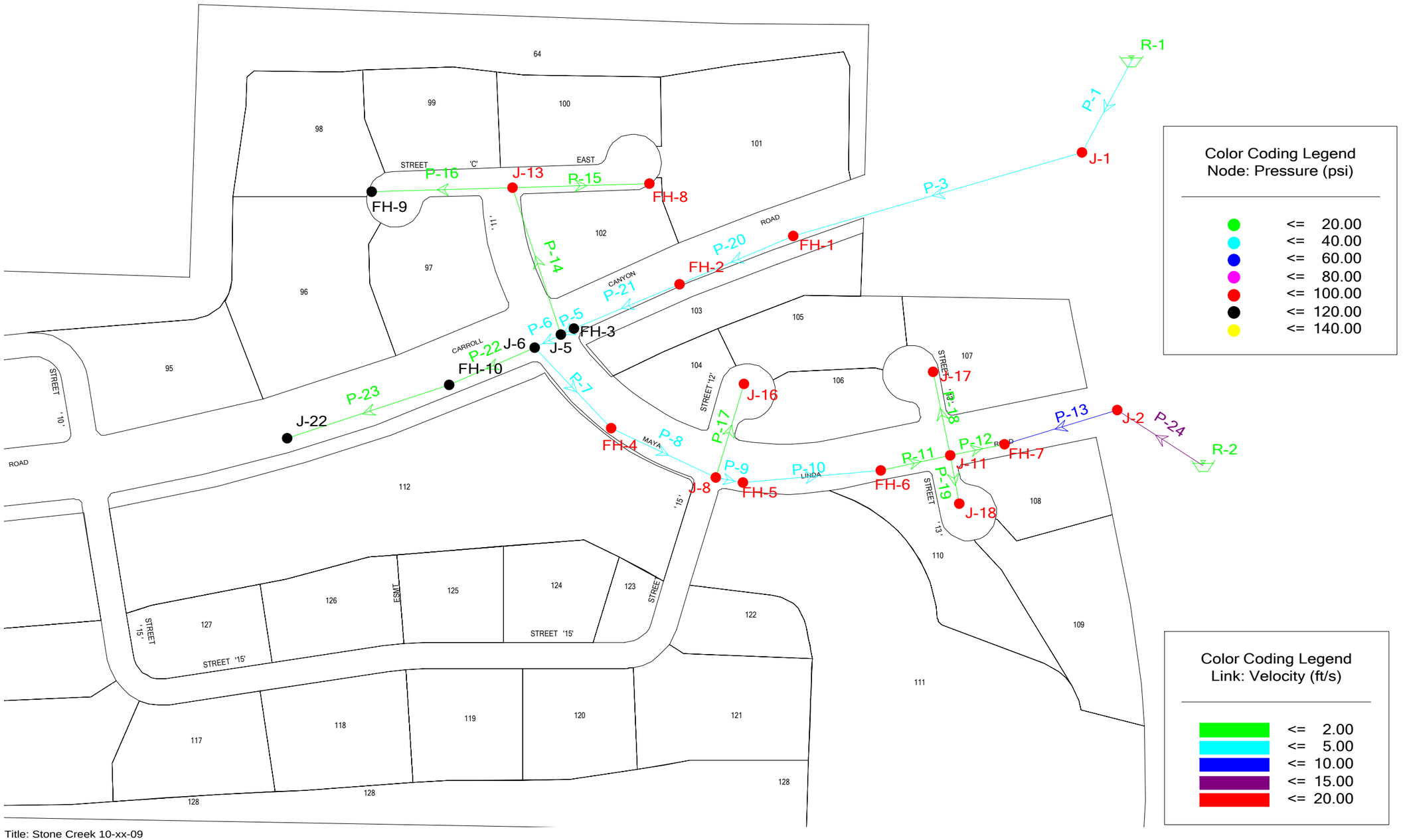
<=	2.00
<=	5.00
<=	10.00
<=	15.00
<=	20.00

Title: Stone Creek 10-xx-09
I:\...\10-xx-09 water analysis ph1.wcd
10/14/09 09:05:14 AM

BDS Engineering, Inc.
 Haestad Methods Solution Center Watertown, CT 06795 USA +1-203-755-1666

Project Engineer: Tara Mugane
WaterCAD v7.0 [07.00.049.00]

Scenario: FIRE 7, MAX DAY, P-2 CLOSED



Color Coding Legend
Node: Pressure (psi)

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<=	40.00
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<=	100.00
<=	120.00
<=	140.00

Color Coding Legend
Link: Velocity (ft/s)

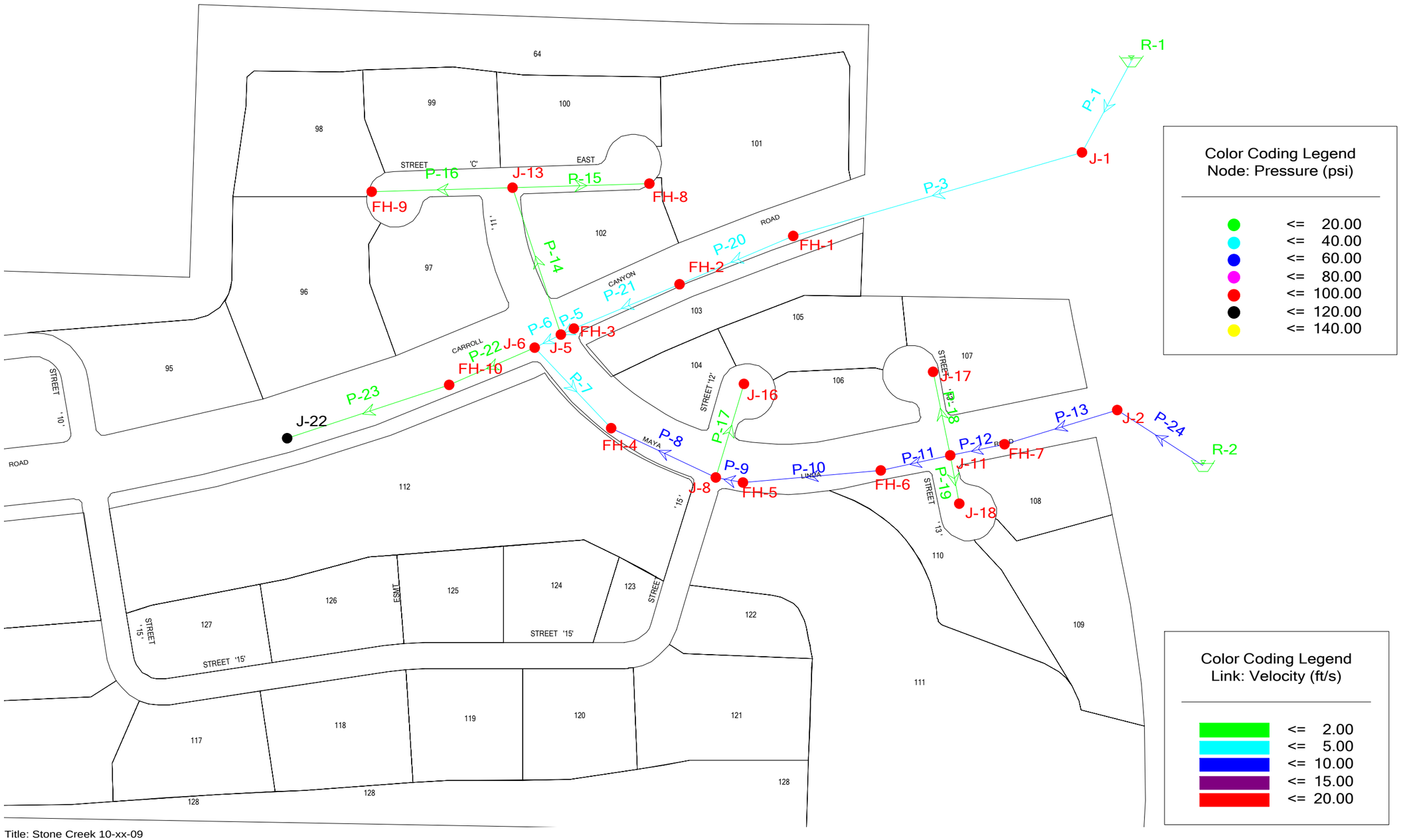
<=	2.00
<=	5.00
<=	10.00
<=	15.00
<=	20.00

Title: Stone Creek 10-xx-09
l:\...\10-xx-09 water analysis ph1.wcd
10/14/09 09:06:09 AM

BDS Engineering, Inc.
Haestad Methods Solution Center Watertown, CT 06795 USA +1-203-755-1666

Project Engineer: Tara Mugane
WaterCAD v7.0 [07.00.049.00]

Scenario: FIRE 4, MAX DAY, P-2 CLOSED



Color Coding Legend
Node: Pressure (psi)

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<=	120.00
<=	140.00

Color Coding Legend
Link: Velocity (ft/s)

<=	2.00
<=	5.00
<=	10.00
<=	15.00
<=	20.00

Title: Stone Creek 10-xx-09
l:\...\10-xx-09 water analysis ph1.wcd
10/14/09 09:07:00 AM

BDS Engineering, Inc.
Haestad Methods Solution Center Watertown, CT 06795 USA +1-203-755-1666

Project Engineer: Tara Mugane
WaterCAD v7.0 [07.00.049.00]

APPENDIX B: Phase 1 & 2 Computer Modeling

BDS Engineering, Inc.
Civil Engineering
Land Surveying
Thomas Jones, PE, LS, Principal
Gordon Axelson, PE, Principal

WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

DATE: June, 2010

CASE: PHASE 1&2 - AVERAGE DAILY DEMAND

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	15.90	91.72	0.15
FH-2	401.00	625.00	97.07	6.90	96.91	0.16
FH-3	391.00	625.00	101.40	0.00	101.24	0.16
FH-4	393.00	625.00	100.53	0.60	100.37	0.16
FH-5	399.00	625.00	97.93	0.00	97.78	0.15
FH-6	409.00	625.00	93.60	7.60	93.45	0.15
FH-7	418.00	625.00	89.70	0.00	89.56	0.14
FH-8	405.00	625.00	95.33	7.60	95.18	0.15
FH-9	391.00	625.00	101.40	16.70	101.24	0.16
FH-10	387.00	625.00	103.13	0.00	102.97	0.16
FH-13	379.00	625.00	106.60	9.50	106.43	0.17
FH-14	375.00	625.00	108.33	0.00	108.16	0.17
FH-15	372.50	625.00	109.42	6.80	109.24	0.18
FH-16	368.00	625.00	111.37	7.30	111.18	0.19
FH-17	366.00	625.00	112.23	7.10	112.05	0.18
FH-18	364.00	625.00	113.10	22.40	112.92	0.18
FH-19	360.00	625.00	114.83	35.30	114.65	0.18
FH-20	355.00	625.00	117.00	12.30	116.81	0.19
FH-21	365.00	625.00	112.67	13.20	112.48	0.19
FH-22	356.00	625.00	116.57	13.20	116.38	0.19
FH-23	354.00	625.00	117.43	45.50	117.24	0.19
FH-24	344.00	625.00	121.77	28.00	121.57	0.20
FH-25	413.00	625.00	91.87	0.00	91.72	0.15
FH-26	405.50	625.00	95.12	15.60	94.96	0.16
FH-27	394.00	625.00	100.10	8.80	99.94	0.16
FH-28	368.00	625.00	111.37	14.80	111.18	0.19
FH-32	376.00	625.00	107.90	0.00	107.72	0.18
FH-33	374.00	625.00	108.77	0.00	108.59	0.18
FH-34	377.50	625.00	107.25	0.00	107.07	0.18
FH-35	379.00	625.00	106.60	0.00	106.43	0.17
J-1	427.00	625.00	85.80	0.00	85.66	0.14

BDS Engineering, Inc.
Civil Engineering
Land Surveying
Thomas Jones, PE, LS, Principal
Gordon Axelson, PE, Principal

WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

DATE: June, 2010

CASE: PHASE 1&2 - AVERAGE DAILY DEMAND

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
J-2	425.00	625.00	86.67	0.00	86.53	0.14
J-5	391.00	625.00	101.40	0.00	101.24	0.16
J-6	389.00	625.00	102.27	0.00	102.10	0.17
J-8	396.50	625.00	99.02	0.00	98.86	0.16
J-11	414.00	625.00	91.43	0.00	91.29	0.14
J-13	397.00	625.00	98.80	0.00	98.64	0.16
J-16	402.00	625.00	96.63	11.90	96.48	0.15
J-17	415.50	625.00	90.78	9.30	90.64	0.14
J-18	415.00	625.00	91.00	16.40	90.86	0.14
J-22	381.00	625.00	105.73	23.60	105.56	0.17
J-24	376.00	625.00	107.90	0.00	107.72	0.18
J-29	365.00	625.00	112.67	0.00	112.48	0.19
J-37	343.00	625.00	122.20	0.00	122.01	0.19
J-38	380.00	625.00	106.17	0.00	106.00	0.17
J-39	413.00	625.00	91.87	0.00	91.72	0.15
J-41	408.00	625.00	94.03	34.10	93.88	0.15
J-44	385.00	625.00	104.00	24.20	103.83	0.17
J-45	369.00	625.00	110.93	32.90	110.75	0.18
J-47	363.00	625.00	113.53	7.30	113.35	0.18
J-52	376.50	625.00	107.68	0.00	107.51	0.17
J-55	373.50	625.00	108.98	0.00	108.81	0.17
J-58	380.00	625.00	106.17	0.00	105.99	0.18

∑Q (gpm)	∑Q (gpd)	**∑Q (mgd)**
454.80	654,912	**0.65**

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

DATE: June, 2010

CASE: PHASE 1&2 - AVERAGE DAILY DEMAND

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	62.43	0.10
P-2	12.00	112.00	-17.35	0.05
P-3	16.00	120.00	79.78	0.13
P-5	16.00	120.00	56.98	0.09
P-6	16.00	120.00	32.68	0.05
P-7	16.00	120.00	-52.05	0.08
P-8	16.00	120.00	-52.65	0.08
P-9	16.00	120.00	-64.55	0.10
P-10	16.00	120.00	-64.55	0.10
P-11	16.00	120.00	-72.15	0.12
P-12	16.00	120.00	-97.85	0.16
P-13	16.00	120.00	-97.85	0.16
P-14	16.00	120.00	24.30	0.04
P-15	12.00	120.00	7.60	0.02
P-16	12.00	120.00	16.70	0.05
P-17	12.00	120.00	11.90	0.03
P-18	12.00	120.00	-9.30	0.03
P-19	12.00	120.00	-16.40	0.05
P-20	16.00	120.00	63.88	0.10
P-21	16.00	120.00	56.98	0.09
P-22	16.00	120.00	84.74	0.14
P-23	16.00	120.00	84.74	0.14
P-24	12.00	112.00	115.20	0.33
P-25	16.00	120.00	61.14	0.10
P-26	16.00	120.00	51.64	0.08
P-27	16.00	120.00	38.50	0.06
P-28	16.00	120.00	38.50	0.06
P-29	16.00	120.00	31.70	0.05
P-30	16.00	120.00	24.40	0.04
P-31	16.00	120.00	17.30	0.03
P-32	16.00	120.00	20.24	0.03

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - AVERAGE DAILY DEMAND

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-33	16.00	120.00	-2.16	0.00
P-34	16.00	120.00	-37.46	0.06
P-35	16.00	120.00	-49.76	0.08
P-37	16.00	120.00	-120.44	0.19
P-38	16.00	120.00	-165.94	0.26
P-39	16.00	120.00	-193.94	0.31
P-40	16.00	120.00	-3.45	0.01
P-41	16.00	120.00	-3.45	0.01
P-42	12.00	120.00	83.23	0.24
P-43	12.00	120.00	83.23	0.24
P-44	12.00	120.00	49.13	0.14
P-45	12.00	120.00	33.53	0.10
P-46	12.00	120.00	24.73	0.07
P-47	12.00	120.00	0.53	0.00
P-48	12.00	120.00	-22.18	0.06
P-49	16.00	120.00	-62.96	0.10
P-50	16.00	120.00	-107.24	0.17
P-51	12.00	120.00	-36.98	0.10
P-57	12.00	120.00	-10.19	0.03
P-58	12.00	120.00	-10.19	0.03
P-59	12.00	120.00	-10.19	0.03
P-60	12.00	120.00	-10.19	0.03
P-61	12.00	120.00	-13.14	0.04
P-62	12.00	120.00	-13.14	0.04
P-63	12.00	120.00	-13.14	0.04
P-64	12.00	120.00	-13.14	0.04
P-65	12.00	120.00	2.95	0.01
P-79	16.00	120.00	86.67	0.14
P-80	16.00	120.00	190.49	0.30

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

DATE: June, 2010

CASE: PHASE 1&2 - PEAK HOUR

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	81.09	91.67	0.20
FH-2	401.00	625.00	97.07	35.19	96.85	0.22
FH-3	391.00	625.00	101.40	0.00	101.17	0.23
FH-4	393.00	625.00	100.53	3.06	100.31	0.22
FH-5	399.00	625.00	97.93	0.00	97.72	0.21
FH-6	409.00	625.00	93.60	38.76	93.41	0.19
FH-7	418.00	625.00	89.70	0.00	89.53	0.17
FH-8	405.00	625.00	95.33	38.76	95.11	0.22
FH-9	391.00	625.00	101.40	85.17	101.16	0.24
FH-10	387.00	625.00	103.13	0.00	102.88	0.25
FH-13	379.00	625.00	106.60	48.96	106.31	0.29
FH-14	375.00	625.00	108.33	0.00	108.03	0.30
FH-15	372.50	625.00	109.42	37.23	109.11	0.31
FH-16	368.00	625.00	111.37	39.27	111.05	0.32
FH-17	366.00	625.00	112.23	38.76	111.91	0.32
FH-18	364.00	625.00	113.10	118.32	112.78	0.32
FH-19	360.00	625.00	114.83	161.16	114.51	0.32
FH-20	355.00	625.00	117.00	62.73	116.68	0.32
FH-21	365.00	625.00	112.67	59.16	112.36	0.31
FH-22	356.00	625.00	116.57	67.32	116.28	0.29
FH-23	354.00	625.00	117.43	232.05	117.15	0.28
FH-24	344.00	625.00	121.77	142.80	121.56	0.21
FH-25	413.00	625.00	91.87	0.00	91.69	0.18
FH-26	405.50	625.00	95.12	79.05	94.85	0.27
FH-27	394.00	625.00	100.10	44.88	99.80	0.30
FH-28	368.00	625.00	111.37	72.42	111.04	0.33
FH-32	376.00	625.00	107.90	0.00	107.58	0.32
FH-33	374.00	625.00	108.77	0.00	108.45	0.32
FH-34	377.50	625.00	107.25	0.00	106.94	0.31
FH-35	379.00	625.00	106.60	0.00	106.30	0.30
J-1	427.00	625.00	85.80	0.00	85.65	0.15

BDS Engineering, Inc.
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Land Surveying

Thomas Jones, PE, LS, Principal
Gordon Axelson, PE, Principal

WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - PEAK HOUR

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
J-2	425.00	625.00	86.67	0.00	86.53	0.14
J-5	391.00	625.00	101.40	0.00	101.17	0.23
J-6	389.00	625.00	102.27	0.00	102.03	0.24
J-8	396.50	625.00	99.02	0.00	98.80	0.22
J-11	414.00	625.00	91.43	0.00	91.25	0.18
J-13	397.00	625.00	98.80	0.00	98.57	0.23
J-16	402.00	625.00	96.63	60.69	96.42	0.21
J-17	415.50	625.00	90.78	47.43	90.60	0.18
J-18	415.00	625.00	91.00	83.64	90.82	0.18
J-22	381.00	625.00	105.73	120.36	105.45	0.28
J-24	376.00	625.00	107.90	0.00	107.60	0.30
J-29	365.00	625.00	112.67	15.81	112.35	0.32
J-37	343.00	625.00	122.20	0.00	122.01	0.19
J-38	380.00	625.00	106.17	0.00	106.00	0.17
J-39	413.00	625.00	91.87	0.00	91.72	0.15
J-41	408.00	625.00	94.03	172.89	93.78	0.25
J-44	385.00	625.00	104.00	122.91	103.69	0.31
J-45	369.00	625.00	110.93	169.83	110.61	0.32
J-47	363.00	625.00	113.53	37.23	113.22	0.31
J-52	376.50	625.00	107.68	0.00	107.37	0.31
J-55	373.50	625.00	108.98	0.00	108.67	0.31
J-58	380.00	625.00	106.17	0.00	105.87	0.30

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - PEAK HOUR

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	318.69	0.51
P-2	12.00	112.00	-88.55	0.25
P-3	16.00	120.00	407.24	0.65
P-5	16.00	120.00	290.96	0.46
P-6	16.00	120.00	167.03	0.27
P-7	16.00	120.00	-265.83	0.42
P-8	16.00	120.00	-268.89	0.43
P-9	16.00	120.00	-329.58	0.53
P-10	16.00	120.00	-329.58	0.53
P-11	16.00	120.00	-368.34	0.59
P-12	16.00	120.00	-499.41	0.80
P-13	16.00	120.00	-499.41	0.80
P-14	16.00	120.00	123.93	0.20
P-15	12.00	120.00	38.76	0.11
P-16	12.00	120.00	85.17	0.24
P-17	12.00	120.00	60.69	0.17
P-18	12.00	120.00	-47.43	0.13
P-19	12.00	120.00	-83.64	0.24
P-20	16.00	120.00	326.15	0.52
P-21	16.00	120.00	290.96	0.46
P-22	16.00	120.00	432.85	0.69
P-23	16.00	120.00	432.85	0.69
P-24	12.00	112.00	587.96	1.67
P-25	16.00	120.00	312.49	0.50
P-26	16.00	120.00	263.53	0.42
P-27	16.00	120.00	197.24	0.31
P-28	16.00	120.00	197.24	0.31
P-29	16.00	120.00	160.01	0.26
P-30	16.00	120.00	120.74	0.19
P-31	16.00	120.00	81.98	0.13
P-32	16.00	120.00	82.89	0.13

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - PEAK HOUR

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-33	16.00	120.00	-35.43	0.06
P-34	16.00	120.00	-196.59	0.31
P-35	16.00	120.00	-259.32	0.41
P-37	16.00	120.00	-612.21	0.98
P-38	16.00	120.00	-844.26	1.35
P-39	16.00	120.00	-987.06	1.58
P-40	16.00	120.00	-17.49	0.03
P-41	16.00	120.00	-17.49	0.03
P-42	12.00	120.00	423.22	1.20
P-43	12.00	120.00	423.22	1.20
P-44	12.00	120.00	250.33	0.71
P-45	12.00	120.00	171.28	0.49
P-46	12.00	120.00	126.40	0.36
P-47	12.00	120.00	3.49	0.01
P-48	12.00	120.00	-116.76	0.33
P-49	16.00	120.00	-318.48	0.51
P-50	16.00	120.00	-544.89	0.87
P-51	12.00	120.00	-189.18	0.54
P-57	12.00	120.00	-49.57	0.14
P-58	12.00	120.00	-49.57	0.14
P-59	12.00	120.00	-49.57	0.14
P-60	12.00	120.00	-49.57	0.14
P-61	12.00	120.00	-66.29	0.19
P-62	12.00	120.00	-66.29	0.19
P-63	12.00	120.00	-66.29	0.19
P-64	12.00	120.00	-66.29	0.19
P-65	12.00	120.00	16.72	0.05
P-79	16.00	120.00	440.71	0.70
P-80	16.00	120.00	969.57	1.55

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Gordon Axelson, PE, Principal

WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - MAXIMUM DAILY DEMAND

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	34.98	91.71	0.16
FH-2	401.00	625.00	97.07	15.18	96.90	0.17
FH-3	391.00	625.00	101.40	0.00	101.23	0.17
FH-4	393.00	625.00	100.53	1.32	100.36	0.17
FH-5	399.00	625.00	97.93	0.00	97.77	0.16
FH-6	409.00	625.00	93.60	16.72	93.44	0.16
FH-7	418.00	625.00	89.70	0.00	89.55	0.15
FH-8	405.00	625.00	95.33	16.72	95.17	0.16
FH-9	391.00	625.00	101.40	36.74	101.22	0.18
FH-10	387.00	625.00	103.13	0.00	102.95	0.18
FH-13	379.00	625.00	106.60	21.12	106.41	0.19
FH-14	375.00	625.00	108.33	0.00	108.14	0.19
FH-15	372.50	625.00	109.42	16.06	109.22	0.20
FH-16	368.00	625.00	111.37	16.94	111.16	0.21
FH-17	366.00	625.00	112.23	16.72	112.03	0.20
FH-18	364.00	625.00	113.10	51.04	112.89	0.21
FH-19	360.00	625.00	114.83	69.52	114.62	0.21
FH-20	355.00	625.00	117.00	27.06	116.79	0.21
FH-21	365.00	625.00	112.67	25.52	112.46	0.21
FH-22	356.00	625.00	116.57	29.04	116.36	0.21
FH-23	354.00	625.00	117.43	100.10	117.23	0.20
FH-24	344.00	625.00	121.77	61.60	121.57	0.20
FH-25	413.00	625.00	91.87	0.00	91.72	0.15
FH-26	405.50	625.00	95.12	34.10	94.94	0.18
FH-27	394.00	625.00	100.10	19.36	99.91	0.19
FH-28	368.00	625.00	111.37	31.24	111.16	0.21
FH-32	376.00	625.00	107.90	0.00	107.70	0.20
FH-33	374.00	625.00	108.77	0.00	108.57	0.20
FH-34	377.50	625.00	107.25	0.00	107.05	0.20
FH-35	379.00	625.00	106.60	0.00	106.40	0.20
J-1	427.00	625.00	85.80	0.00	85.66	0.14

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - MAXIMUM DAILY DEMAND

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
J-2	425.00	625.00	86.67	0.00	86.53	0.14
J-5	391.00	625.00	101.40	0.00	101.22	0.18
J-6	389.00	625.00	102.27	0.00	102.09	0.18
J-8	396.50	625.00	99.02	0.00	98.85	0.17
J-11	414.00	625.00	91.43	0.00	91.28	0.15
J-13	397.00	625.00	98.80	0.00	98.63	0.17
J-16	402.00	625.00	96.63	26.18	96.47	0.16
J-17	415.50	625.00	90.78	20.46	90.63	0.15
J-18	415.00	625.00	91.00	36.08	90.85	0.15
J-22	381.00	625.00	105.73	51.92	105.54	0.19
J-24	376.00	625.00	107.90	0.00	107.70	0.20
J-29	365.00	625.00	112.67	6.82	112.46	0.21
J-37	343.00	625.00	122.20	0.00	122.01	0.19
J-38	380.00	625.00	106.17	0.00	106.00	0.17
J-39	413.00	625.00	91.87	0.00	91.72	0.15
J-41	408.00	625.00	94.03	74.58	93.86	0.17
J-44	385.00	625.00	104.00	53.02	103.81	0.19
J-45	369.00	625.00	110.93	73.26	110.73	0.20
J-47	363.00	625.00	113.53	16.06	113.33	0.20
J-52	376.50	625.00	107.68	0.00	107.48	0.20
J-55	373.50	625.00	108.98	0.00	108.78	0.20
J-58	380.00	625.00	106.17	0.00	105.97	0.20

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - MAXIMUM DAILY DEMAND

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	137.47	0.22
P-2	12.00	112.00	-38.20	0.11
P-3	16.00	120.00	175.67	0.28
P-5	16.00	120.00	125.51	0.20
P-6	16.00	120.00	72.05	0.11
P-7	16.00	120.00	-114.67	0.18
P-8	16.00	120.00	-115.99	0.19
P-9	16.00	120.00	-142.17	0.23
P-10	16.00	120.00	-142.17	0.23
P-11	16.00	120.00	-158.89	0.25
P-12	16.00	120.00	-215.43	0.34
P-13	16.00	120.00	-215.43	0.34
P-14	16.00	120.00	53.46	0.09
P-15	12.00	120.00	16.72	0.05
P-16	12.00	120.00	36.74	0.10
P-17	12.00	120.00	26.18	0.07
P-18	12.00	120.00	-20.46	0.06
P-19	12.00	120.00	-36.08	0.10
P-20	16.00	120.00	140.69	0.22
P-21	16.00	120.00	125.51	0.20
P-22	16.00	120.00	186.72	0.30
P-23	16.00	120.00	186.72	0.30
P-24	12.00	112.00	253.63	0.72
P-25	16.00	120.00	134.80	0.22
P-26	16.00	120.00	113.68	0.18
P-27	16.00	120.00	85.08	0.14
P-28	16.00	120.00	85.08	0.14
P-29	16.00	120.00	69.02	0.11
P-30	16.00	120.00	52.08	0.08
P-31	16.00	120.00	35.36	0.06
P-32	16.00	120.00	35.76	0.06

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - MAXIMUM DAILY DEMAND

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-33	16.00	120.00	-15.28	0.02
P-34	16.00	120.00	-84.80	0.14
P-35	16.00	120.00	-111.86	0.18
P-37	16.00	120.00	-264.09	0.42
P-38	16.00	120.00	-364.19	0.58
P-39	16.00	120.00	-425.79	0.68
P-40	16.00	120.00	-7.58	0.01
P-41	16.00	120.00	-7.58	0.01
P-42	12.00	120.00	182.57	0.52
P-43	12.00	120.00	182.57	0.52
P-44	12.00	120.00	107.99	0.31
P-45	12.00	120.00	73.89	0.21
P-46	12.00	120.00	54.53	0.15
P-47	12.00	120.00	1.51	0.00
P-48	12.00	120.00	-50.37	0.14
P-49	16.00	120.00	-137.38	0.22
P-50	16.00	120.00	-235.05	0.38
P-51	12.00	120.00	-81.61	0.23
P-57	12.00	120.00	-21.38	0.06
P-58	12.00	120.00	-21.38	0.06
P-59	12.00	120.00	-21.38	0.06
P-60	12.00	120.00	-21.38	0.06
P-61	12.00	120.00	-28.60	0.08
P-62	12.00	120.00	-28.60	0.08
P-63	12.00	120.00	-28.60	0.08
P-64	12.00	120.00	-28.60	0.08
P-65	12.00	120.00	7.21	0.02
P-79	16.00	120.00	190.15	0.30
P-80	16.00	120.00	418.21	0.67

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - MAX DAY, FIRE FH-32

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	34.98	91.60	0.27
FH-2	401.00	625.00	97.07	15.18	96.76	0.31
FH-3	391.00	625.00	101.40	0.00	101.06	0.34
FH-4	393.00	625.00	100.53	1.32	100.21	0.32
FH-5	399.00	625.00	97.93	0.00	97.65	0.28
FH-6	409.00	625.00	93.60	16.72	93.37	0.23
FH-7	418.00	625.00	89.70	0.00	89.52	0.18
FH-8	405.00	625.00	95.33	16.72	94.99	0.34
FH-9	391.00	625.00	101.40	36.74	101.05	0.35
FH-10	387.00	625.00	103.13	0.00	102.69	0.44
FH-13	379.00	625.00	106.60	21.12	105.92	0.68
FH-14	375.00	625.00	108.33	0.00	107.57	0.76
FH-15	372.50	625.00	109.42	16.06	108.62	0.80
FH-16	368.00	625.00	111.37	16.94	110.54	0.83
FH-17	366.00	625.00	112.23	16.72	111.37	0.86
FH-18	364.00	625.00	113.10	51.04	112.23	0.87
FH-19	360.00	625.00	114.83	69.52	113.98	0.85
FH-20	355.00	625.00	117.00	27.06	116.16	0.84
FH-21	365.00	625.00	112.67	25.52	111.85	0.82
FH-22	356.00	625.00	116.57	29.04	115.96	0.61
FH-23	354.00	625.00	117.43	100.10	116.89	0.54
FH-24	344.00	625.00	121.77	61.60	121.52	0.25
FH-25	413.00	625.00	91.87	0.00	91.62	0.25
FH-26	405.50	625.00	95.12	34.10	94.46	0.66
FH-27	394.00	625.00	100.10	19.36	99.10	1.00
FH-28	368.00	625.00	111.37	31.24	110.10	1.27
FH-32	376.00	625.00	107.90	3000.00	105.04	2.86
FH-33	374.00	625.00	108.77	0.00	107.21	1.56
FH-34	377.50	625.00	107.25	0.00	106.19	1.06
FH-35	379.00	625.00	106.60	0.00	105.72	0.88
J-1	427.00	625.00	85.80	0.00	85.64	0.16

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - MAX DAY, FIRE FH-32

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
J-2	425.00	625.00	86.67	0.00	86.53	0.14
J-5	391.00	625.00	101.40	0.00	101.05	0.35
J-6	389.00	625.00	102.27	0.00	101.91	0.36
J-8	396.50	625.00	99.02	0.00	98.73	0.29
J-11	414.00	625.00	91.43	0.00	91.23	0.20
J-13	397.00	625.00	98.80	0.00	98.46	0.34
J-16	402.00	625.00	96.63	26.18	96.35	0.28
J-17	415.50	625.00	90.78	20.46	90.58	0.20
J-18	415.00	625.00	91.00	36.08	90.79	0.21
J-22	381.00	625.00	105.73	51.92	105.14	0.59
J-24	376.00	625.00	107.90	0.00	107.15	0.75
J-29	365.00	625.00	112.67	6.82	111.79	0.88
J-37	343.00	625.00	122.20	0.00	122.01	0.19
J-38	380.00	625.00	106.17	0.00	106.00	0.17
J-39	413.00	625.00	91.87	0.00	91.72	0.15
J-41	408.00	625.00	94.03	74.58	93.48	0.55
J-44	385.00	625.00	104.00	53.02	102.80	1.20
J-45	369.00	625.00	110.93	73.26	109.59	1.34
J-47	363.00	625.00	113.53	16.06	112.72	0.81
J-52	376.50	625.00	107.68	0.00	105.30	2.38
J-55	373.50	625.00	108.98	0.00	107.81	1.17
J-58	380.00	625.00	106.17	0.00	105.31	0.86

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - MAX DAY, FIRE FH-32

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	489.89	0.78
P-2	12.00	112.00	-136.83	0.39
P-3	16.00	120.00	626.72	1.00
P-5	16.00	120.00	576.56	0.92
P-6	16.00	120.00	523.10	0.83
P-7	16.00	120.00	-573.94	0.92
P-8	16.00	120.00	-575.26	0.92
P-9	16.00	120.00	-601.44	0.96
P-10	16.00	120.00	-601.44	0.96
P-11	16.00	120.00	-618.16	0.99
P-12	16.00	120.00	-674.70	1.08
P-13	16.00	120.00	-674.70	1.08
P-14	16.00	120.00	53.46	0.09
P-15	12.00	120.00	16.72	0.05
P-16	12.00	120.00	36.74	0.10
P-17	12.00	120.00	26.18	0.07
P-18	12.00	120.00	-20.46	0.06
P-19	12.00	120.00	-36.08	0.10
P-20	16.00	120.00	591.74	0.94
P-21	16.00	120.00	576.56	0.92
P-22	16.00	120.00	1097.04	1.75
P-23	16.00	120.00	1097.04	1.75
P-24	12.00	112.00	811.53	2.30
P-25	16.00	120.00	1045.12	1.67
P-26	16.00	120.00	1024.00	1.63
P-27	16.00	120.00	558.40	0.89
P-28	16.00	120.00	558.40	0.89
P-29	16.00	120.00	542.34	0.87
P-30	16.00	120.00	525.40	0.84
P-31	16.00	120.00	508.68	0.81
P-32	16.00	120.00	-330.51	0.53

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - MAX DAY, FIRE FH-32

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-33	16.00	120.00	-381.55	0.61
P-34	16.00	120.00	-451.07	0.72
P-35	16.00	120.00	-478.13	0.76
P-37	16.00	120.00	-1675.90	2.67
P-38	16.00	120.00	-1776.00	2.83
P-39	16.00	120.00	-1837.60	2.93
P-40	16.00	120.00	-31.65	0.05
P-41	16.00	120.00	-31.65	0.05
P-42	12.00	120.00	860.44	2.44
P-43	12.00	120.00	860.44	2.44
P-44	12.00	120.00	785.86	2.23
P-45	12.00	120.00	751.76	2.13
P-46	12.00	120.00	732.40	2.08
P-47	12.00	120.00	679.38	1.93
P-48	12.00	120.00	-1095.91	3.11
P-49	16.00	120.00	-503.65	0.80
P-50	16.00	120.00	-1646.86	2.63
P-51	12.00	120.00	-1127.15	3.20
P-57	12.00	120.00	1702.03	4.83
P-58	12.00	120.00	1702.03	4.83
P-59	12.00	120.00	-1297.97	3.68
P-60	12.00	120.00	-1297.97	3.68
P-61	12.00	120.00	-465.60	1.32
P-62	12.00	120.00	-465.60	1.32
P-63	12.00	120.00	-465.60	1.32
P-64	12.00	120.00	-465.60	1.32
P-65	12.00	120.00	-832.37	2.36
P-79	16.00	120.00	892.10	1.42
P-80	16.00	120.00	1805.95	2.88

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - PK HR, P-25 CLOSED

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	81.09	91.70	0.17
FH-2	401.00	625.00	97.07	35.19	96.89	0.18
FH-3	391.00	625.00	101.40	0.00	101.21	0.19
FH-4	393.00	625.00	100.53	3.06	100.35	0.18
FH-5	399.00	625.00	97.93	0.00	97.75	0.18
FH-6	409.00	625.00	93.60	38.76	93.43	0.17
FH-7	418.00	625.00	89.70	0.00	89.55	0.15
FH-8	405.00	625.00	95.33	38.76	95.15	0.18
FH-9	391.00	625.00	101.40	85.17	101.21	0.19
FH-10	387.00	625.00	103.13	0.00	102.94	0.19
FH-13	379.00	625.00	106.60	48.96	106.17	0.43
FH-14	375.00	625.00	108.33	0.00	107.90	0.43
FH-15	372.50	625.00	109.42	37.23	108.99	0.43
FH-16	368.00	625.00	111.37	39.27	110.93	0.44
FH-17	366.00	625.00	112.23	38.76	111.80	0.43
FH-18	364.00	625.00	113.10	118.32	112.67	0.43
FH-19	360.00	625.00	114.83	161.16	114.40	0.43
FH-20	355.00	625.00	117.00	62.73	116.58	0.42
FH-21	365.00	625.00	112.67	59.16	112.27	0.40
FH-22	356.00	625.00	116.57	67.32	116.22	0.35
FH-23	354.00	625.00	117.43	232.05	117.10	0.33
FH-24	344.00	625.00	121.77	142.80	121.55	0.22
FH-25	413.00	625.00	91.87	0.00	91.68	0.19
FH-26	405.50	625.00	95.12	79.05	94.79	0.33
FH-27	394.00	625.00	100.10	44.88	99.72	0.38
FH-28	368.00	625.00	111.37	72.42	110.95	0.42
FH-32	376.00	625.00	107.90	0.00	107.48	0.42
FH-33	374.00	625.00	108.77	0.00	108.34	0.43
FH-34	377.50	625.00	107.25	0.00	106.83	0.42
FH-35	379.00	625.00	106.60	0.00	106.17	0.43
J-1	427.00	625.00	85.80	0.00	85.66	0.14

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - PK HR, P-25 CLOSED

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
J-2	425.00	625.00	86.67	0.00	86.53	0.14
J-5	391.00	625.00	101.40	0.00	101.21	0.19
J-6	389.00	625.00	102.27	0.00	102.08	0.19
J-8	396.50	625.00	99.02	0.00	98.84	0.18
J-11	414.00	625.00	91.43	0.00	91.27	0.16
J-13	397.00	625.00	98.80	0.00	98.61	0.19
J-16	402.00	625.00	96.63	60.69	96.45	0.18
J-17	415.50	625.00	90.78	47.43	90.62	0.16
J-18	415.00	625.00	91.00	83.64	90.84	0.16
J-22	381.00	625.00	105.73	120.36	105.54	0.19
J-24	376.00	625.00	107.90	0.00	107.47	0.43
J-29	365.00	625.00	112.67	15.81	112.23	0.44
J-37	343.00	625.00	122.20	0.00	122.01	0.19
J-38	380.00	625.00	106.17	0.00	106.00	0.17
J-39	413.00	625.00	91.87	0.00	91.72	0.15
J-41	408.00	625.00	94.03	172.89	93.73	0.30
J-44	385.00	625.00	104.00	122.91	103.60	0.40
J-45	369.00	625.00	110.93	169.83	110.52	0.41
J-47	363.00	625.00	113.53	37.23	113.14	0.39
J-52	376.50	625.00	107.68	0.00	107.27	0.41
J-55	373.50	625.00	108.98	0.00	108.56	0.42
J-58	380.00	625.00	106.17	0.00	105.74	0.43

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Gordon Axelson, PE, Principal

WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - PK HR, P-25 CLOSED

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	198.96	0.32
P-2	12.00	112.00	-55.05	0.16
P-3	16.00	120.00	254.00	0.41
P-5	16.00	120.00	137.72	0.22
P-6	16.00	120.00	13.79	0.02
P-7	16.00	120.00	-106.57	0.17
P-8	16.00	120.00	-109.63	0.17
P-9	16.00	120.00	-170.32	0.27
P-10	16.00	120.00	-170.32	0.27
P-11	16.00	120.00	-209.08	0.33
P-12	16.00	120.00	-340.15	0.54
P-13	16.00	120.00	-340.15	0.54
P-14	16.00	120.00	123.93	0.20
P-15	12.00	120.00	38.76	0.11
P-16	12.00	120.00	85.17	0.24
P-17	12.00	120.00	60.69	0.17
P-18	12.00	120.00	-47.43	0.13
P-19	12.00	120.00	-83.64	0.24
P-20	16.00	120.00	172.91	0.28
P-21	16.00	120.00	137.72	0.22
P-22	16.00	120.00	120.36	0.19
P-23	16.00	120.00	120.36	0.19
P-24	12.00	112.00	395.19	1.12
P-25	16.00	120.00	CLOSED	CLOSED
P-26	16.00	120.00	-48.96	0.08
P-27	16.00	120.00	-12.73	0.02
P-28	16.00	120.00	-12.73	0.02
P-29	16.00	120.00	-49.96	0.08
P-30	16.00	120.00	-89.23	0.14
P-31	16.00	120.00	-127.99	0.20
P-32	16.00	120.00	-102.56	0.16

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - PK HR, P-25 CLOSED

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-33	16.00	120.00	-220.88	0.35
P-34	16.00	120.00	-382.04	0.61
P-35	16.00	120.00	-444.77	0.71
P-37	16.00	120.00	-839.49	1.34
P-38	16.00	120.00	-1071.54	1.71
P-39	16.00	120.00	-1214.34	1.94
P-40	16.00	120.00	-21.65	0.03
P-41	16.00	120.00	-21.65	0.03
P-42	12.00	120.00	508.44	1.44
P-43	12.00	120.00	508.44	1.44
P-44	12.00	120.00	335.55	0.95
P-45	12.00	120.00	256.50	0.73
P-46	12.00	120.00	211.62	0.60
P-47	12.00	120.00	88.71	0.25
P-48	12.00	120.00	-158.59	0.45
P-49	16.00	120.00	-503.93	0.80
P-50	16.00	120.00	-772.17	1.23
P-51	12.00	120.00	-231.01	0.66
P-57	12.00	120.00	77.47	0.22
P-58	12.00	120.00	77.47	0.22
P-59	12.00	120.00	77.47	0.22
P-60	12.00	120.00	77.47	0.22
P-61	12.00	120.00	36.23	0.10
P-62	12.00	120.00	36.23	0.10
P-63	12.00	120.00	36.23	0.10
P-64	12.00	120.00	36.23	0.10
P-65	12.00	120.00	41.24	0.12
P-79	16.00	120.00	530.08	0.85
P-80	16.00	120.00	1192.70	1.90

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - MAX DAY, FIRE FH-32, P-25 CLOSED

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	34.98	91.72	0.15
FH-2	401.00	625.00	97.07	15.18	96.91	0.16
FH-3	391.00	625.00	101.40	0.00	101.23	0.17
FH-4	393.00	625.00	100.53	1.32	100.37	0.16
FH-5	399.00	625.00	97.93	0.00	97.77	0.16
FH-6	409.00	625.00	93.60	16.72	93.45	0.15
FH-7	418.00	625.00	89.70	0.00	89.56	0.14
FH-8	405.00	625.00	95.33	16.72	95.18	0.15
FH-9	391.00	625.00	101.40	36.74	101.23	0.17
FH-10	387.00	625.00	103.13	0.00	102.97	0.16
FH-13	379.00	625.00	106.60	21.12	104.51	2.09
FH-14	375.00	625.00	108.33	0.00	106.25	2.08
FH-15	372.50	625.00	109.42	16.06	107.35	2.07
FH-16	368.00	625.00	111.37	16.94	109.31	2.06
FH-17	366.00	625.00	112.23	16.72	110.19	2.04
FH-18	364.00	625.00	113.10	51.04	111.13	1.97
FH-19	360.00	625.00	114.83	69.52	113.01	1.82
FH-20	355.00	625.00	117.00	27.06	115.33	1.67
FH-21	365.00	625.00	112.67	25.52	111.12	1.55
FH-22	356.00	625.00	116.57	29.04	115.51	1.06
FH-23	354.00	625.00	117.43	100.10	116.51	0.92
FH-24	344.00	625.00	121.77	61.60	121.46	0.31
FH-25	413.00	625.00	91.87	0.00	91.57	0.30
FH-26	405.50	625.00	95.12	34.10	94.21	0.91
FH-27	394.00	625.00	100.10	19.36	98.66	1.44
FH-28	368.00	625.00	111.37	31.24	109.46	1.91
FH-32	376.00	625.00	107.90	3000.00	104.19	3.71
FH-33	374.00	625.00	108.77	0.00	106.13	2.64
FH-34	377.50	625.00	107.25	0.00	104.99	2.26
FH-35	379.00	625.00	106.60	0.00	104.44	2.16
J-1	427.00	625.00	85.80	0.00	85.66	0.14

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - MAX DAY, FIRE FH-32, P-25 CLOSED

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
J-2	425.00	625.00	86.67	0.00	86.53	0.14
J-5	391.00	625.00	101.40	0.00	101.23	0.17
J-6	389.00	625.00	102.27	0.00	102.10	0.17
J-8	396.50	625.00	99.02	0.00	98.86	0.16
J-11	414.00	625.00	91.43	0.00	91.29	0.14
J-13	397.00	625.00	98.80	0.00	98.64	0.16
J-16	402.00	625.00	96.63	26.18	96.48	0.15
J-17	415.50	625.00	90.78	20.46	90.64	0.14
J-18	415.00	625.00	91.00	36.08	90.85	0.15
J-22	381.00	625.00	105.73	51.92	105.56	0.17
J-24	376.00	625.00	107.90	0.00	105.81	2.09
J-29	365.00	625.00	112.67	6.82	110.63	2.04
J-37	343.00	625.00	122.20	0.00	122.01	0.19
J-38	380.00	625.00	106.17	0.00	106.00	0.17
J-39	413.00	625.00	91.87	0.00	91.72	0.15
J-41	408.00	625.00	94.03	74.58	93.29	0.74
J-44	385.00	625.00	104.00	53.02	102.26	1.74
J-45	369.00	625.00	110.93	73.26	108.96	1.97
J-47	363.00	625.00	113.53	16.06	112.03	1.50
J-52	376.50	625.00	107.68	0.00	104.52	3.16
J-55	373.50	625.00	108.98	0.00	106.66	2.32
J-58	380.00	625.00	106.17	0.00	104.02	2.15

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1&2 - MAX DAY, FIRE FH-32, P-25 CLOSED

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	85.82	0.14
P-2	12.00	112.00	-23.75	0.07
P-3	16.00	120.00	109.57	0.17
P-5	16.00	120.00	59.41	0.09
P-6	16.00	120.00	5.95	0.01
P-7	16.00	120.00	-45.97	0.07
P-8	16.00	120.00	-47.29	0.08
P-9	16.00	120.00	-73.47	0.12
P-10	16.00	120.00	-73.47	0.12
P-11	16.00	120.00	-90.19	0.14
P-12	16.00	120.00	-146.73	0.23
P-13	16.00	120.00	-146.73	0.23
P-14	16.00	120.00	53.46	0.09
P-15	12.00	120.00	16.72	0.05
P-16	12.00	120.00	36.74	0.10
P-17	12.00	120.00	26.18	0.07
P-18	12.00	120.00	-20.46	0.06
P-19	12.00	120.00	-36.08	0.10
P-20	16.00	120.00	74.59	0.12
P-21	16.00	120.00	59.41	0.09
P-22	16.00	120.00	51.92	0.08
P-23	16.00	120.00	51.92	0.08
P-24	12.00	112.00	170.48	0.48
P-25	16.00	120.00	CLOSED	CLOSED
P-26	16.00	120.00	-21.12	0.03
P-27	16.00	120.00	-364.44	0.58
P-28	16.00	120.00	-364.44	0.58
P-29	16.00	120.00	-380.50	0.61
P-30	16.00	120.00	-397.44	0.63
P-31	16.00	120.00	-414.16	0.66
P-32	16.00	120.00	-1244.93	1.99

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WATER ANALYSIS

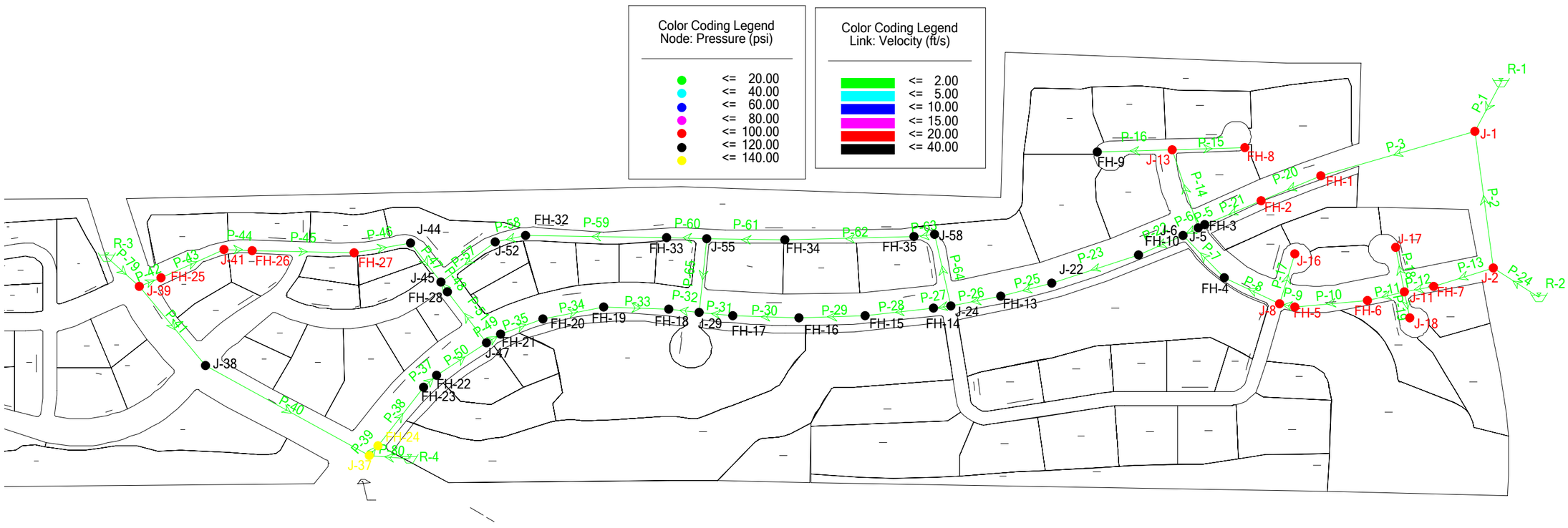
Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

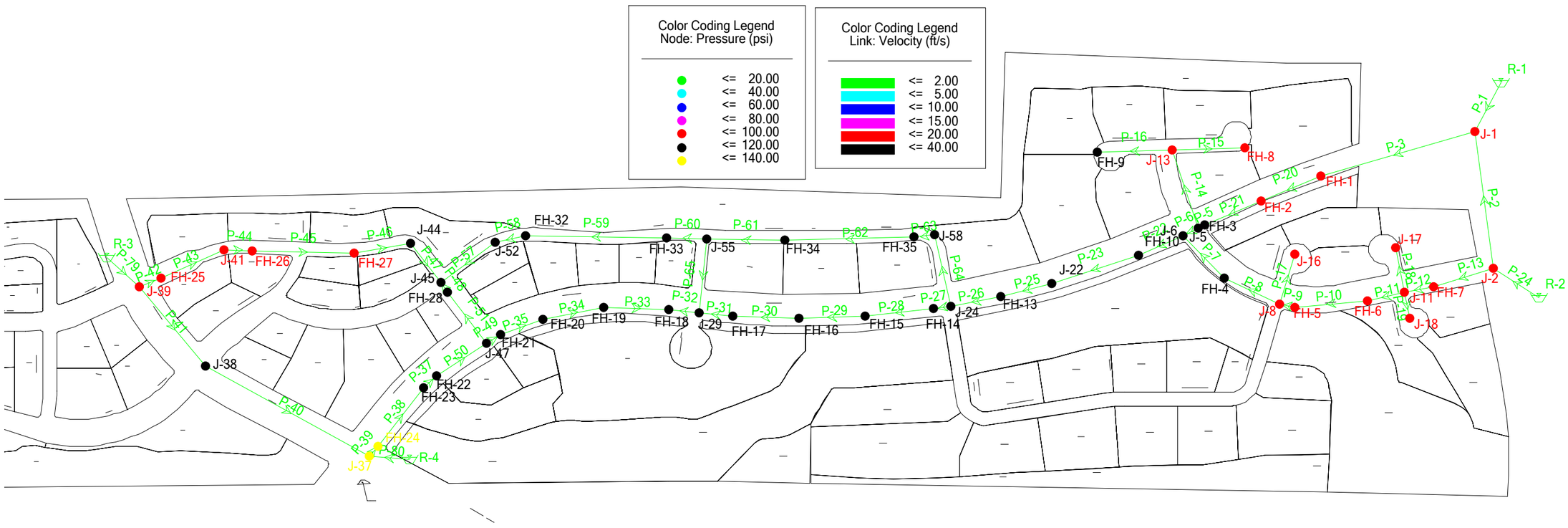
CASE: PHASE 1&2 - MAX DAY, FIRE FH-32, P-25 CLOSED

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-33	16.00	120.00	-1295.97	2.07
P-34	16.00	120.00	-1365.49	2.18
P-35	16.00	120.00	-1392.55	2.22
P-37	16.00	120.00	-2518.74	4.02
P-38	16.00	120.00	-2618.84	4.18
P-39	16.00	120.00	-2680.44	4.28
P-40	16.00	120.00	-48.42	0.08
P-41	16.00	120.00	-48.42	0.08
P-42	12.00	120.00	1062.72	3.01
P-43	12.00	120.00	1062.72	3.01
P-44	12.00	120.00	988.14	2.80
P-45	12.00	120.00	954.04	2.71
P-46	12.00	120.00	934.68	2.65
P-47	12.00	120.00	881.66	2.50
P-48	12.00	120.00	-1024.33	2.91
P-49	16.00	120.00	-1418.07	2.26
P-50	16.00	120.00	-2489.70	3.97
P-51	12.00	120.00	-1055.57	2.99
P-57	12.00	120.00	1832.73	5.20
P-58	12.00	120.00	1832.73	5.20
P-59	12.00	120.00	-1167.27	3.31
P-60	12.00	120.00	-1167.27	3.31
P-61	12.00	120.00	-343.32	0.97
P-62	12.00	120.00	-343.32	0.97
P-63	12.00	120.00	-343.32	0.97
P-64	12.00	120.00	-343.32	0.97
P-65	12.00	120.00	-823.95	2.34
P-79	16.00	120.00	1111.14	1.77
P-80	16.00	120.00	2632.02	4.20

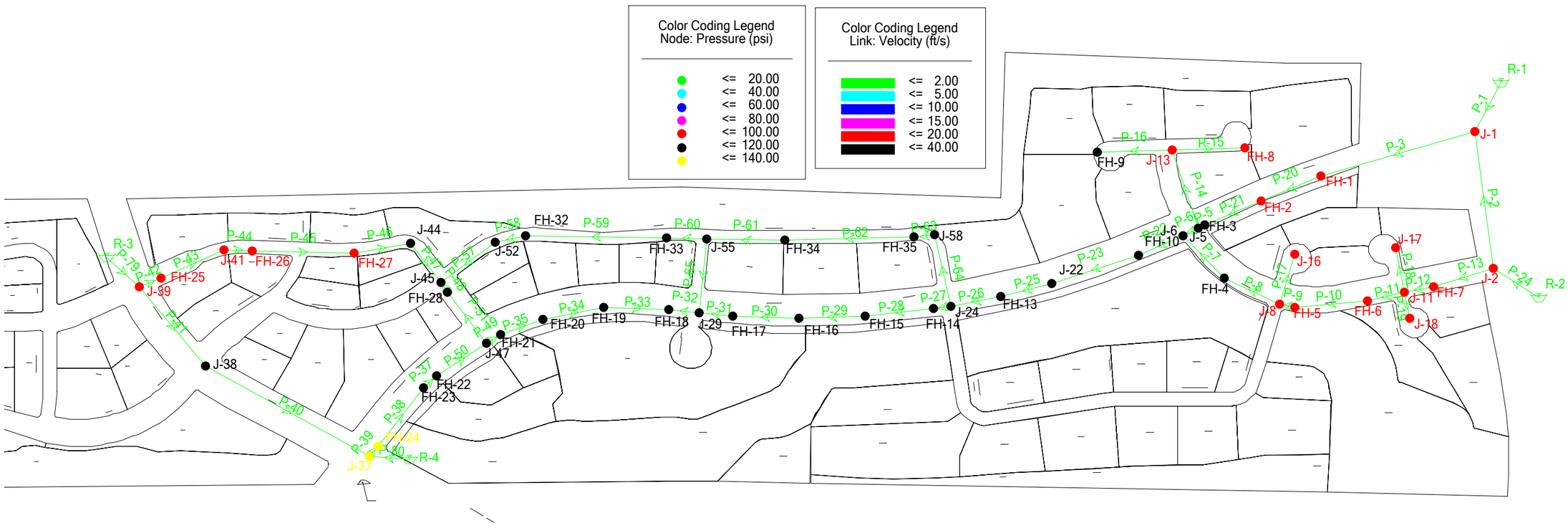
Scenario: Base



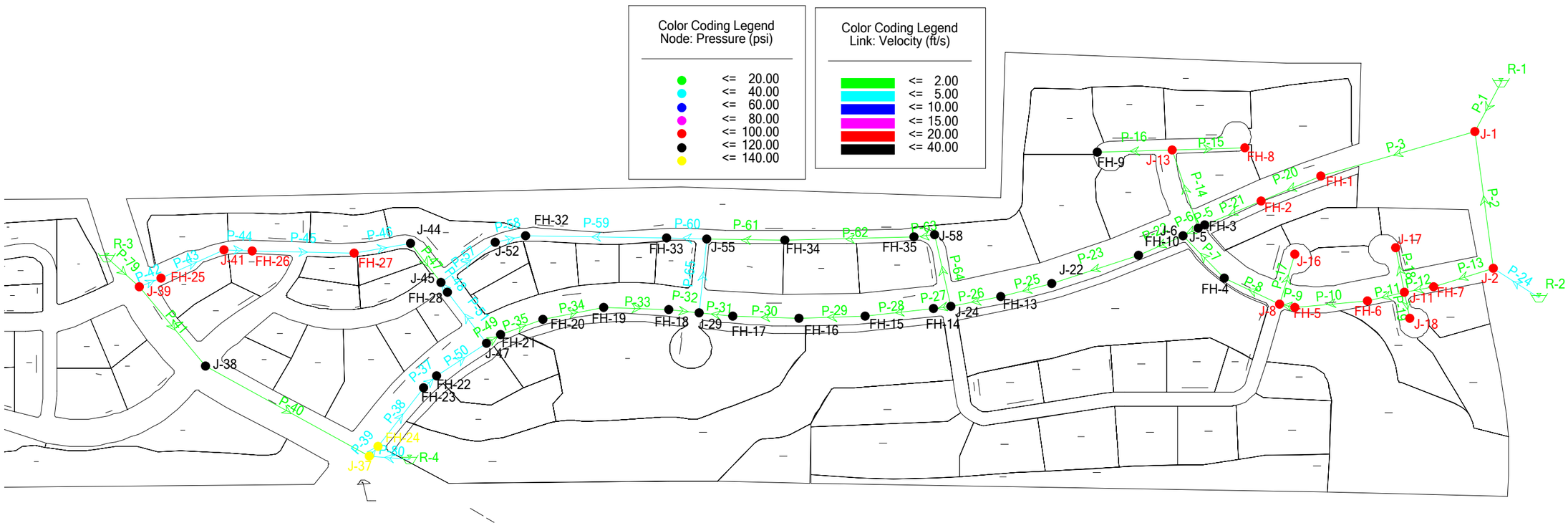
Scenario: PK HR



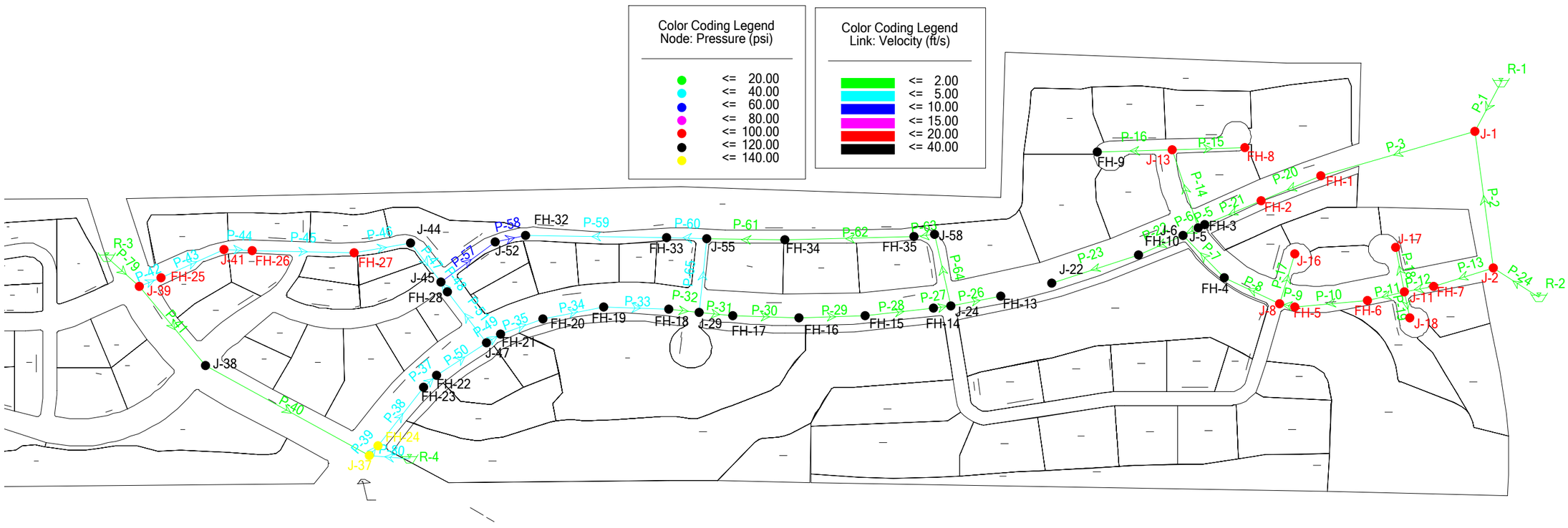
Scenario: MAX DAY



Scenario: MAX DAY, FIRE FH-32



Scenario: MAX DAY, FIRE FH-32, P-25 CLSD



APPENDIX C: Phase 3 Computer Modeling

BDS Engineering, Inc.
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Thomas Jones, PE, LS, Principal
Gordon Axelson, PE, Principal

WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

DATE: June, 2010

CASE: PHASE 3 - Average Daily Demand

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-36	415.00	570.00	67.17	0.00	67.03	0.14
FH-37	402.00	570.00	72.80	25.50	72.61	0.19
FH-38	370.00	570.00	86.67	0.00	86.43	0.24
FH-39	374.00	570.00	84.93	16.90	84.74	0.19
FH-40	383.50	570.00	80.82	0.00	80.66	0.16
FH-41	395.00	570.00	75.83	9.90	75.59	0.24
FH-42	375.00	570.00	84.50	0.00	84.22	0.28
FH-43	364.00	570.00	89.27	0.00	88.96	0.31
FH-44	363.00	570.00	89.70	0.00	89.38	0.32
FH-45	359.00	570.00	91.43	31.60	91.11	0.32
FH-46	349.00	570.00	95.77	27.00	95.44	0.33
FH-47	329.00	570.00	104.43	26.60	104.09	0.34
FH-48	355.00	570.00	93.17	10.70	92.84	0.33
FH-49	346.00	570.00	97.07	13.70	96.74	0.33
FH-50	342.00	570.00	98.80	37.90	98.47	0.33
FH-51	357.50	570.00	92.08	15.00	91.78	0.30
FH-52	350.50	570.00	95.12	0.00	94.81	0.31
FH-53	357.00	570.00	92.30	29.20	92.00	0.30
FH-54	358.50	570.00	91.65	2.10	91.36	0.29
FH-55	365.00	570.00	88.83	4.90	88.54	0.29
FH-56	374.00	570.00	84.93	7.90	84.66	0.27
FH-57	369.00	570.00	87.10	18.70	86.83	0.27
FH-58	369.00	570.00	87.10	0.00	86.84	0.26
FH-59	385.50	570.00	79.95	11.00	79.70	0.25
J-38	380.00	570.00	82.33	0.00	82.19	0.14
J-39	413.00	570.00	68.03	0.00	67.93	0.10
J-65	396.00	570.00	75.40	12.00	75.18	0.22
J-66	371.50	570.00	86.02	20.40	85.78	0.24
J-68	369.50	570.00	86.88	0.00	86.61	0.27
J-69	357.50	570.00	92.08	17.90	91.79	0.29
J-70	349.00	570.00	95.77	32.50	95.45	0.32

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - Average Daily Demand

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
J-71	340.00	570.00	99.67	13.70	99.33	0.34
J-72	329.00	570.00	104.43	20.40	104.09	0.34
J-73	339.00	570.00	100.10	33.70	99.76	0.34
J-74	365.00	570.00	88.83	0.00	88.52	0.31
J-75	363.00	570.00	89.70	6.90	89.38	0.32
J-76	362.00	570.00	90.13	28.30	89.82	0.31
J-77	364.00	570.00	89.27	20.90	88.96	0.31
J-78	369.50	570.00	86.88	31.20	86.60	0.28
J-79	380.00	570.00	82.33	0.00	82.06	0.27
J-80	382.00	570.00	81.47	41.70	81.20	0.27
J-81	398.00	570.00	74.53	28.20	74.30	0.23
J-82	347.00	570.00	96.63	13.60	96.30	0.33
J-83	379.50	570.00	82.55	28.40	82.28	0.27
J-84	367.00	570.00	87.97	25.60	87.68	0.29
J-85	354.00	570.00	93.60	11.20	93.28	0.32
J-86	356.00	570.00	92.73	20.80	92.41	0.32

∑Q (gpm)	∑Q (gpd)	**∑Q (mgd)**
696.00	1,002,240	**1.00**

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

DATE: June, 2010

CASE: PHASE 3 - Average Daily Demand

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-40	16.00	120.00	119.46	0.19
P-41	16.00	120.00	-163.10	0.26
P-71	12.00	120.00	413.45	1.17
P-72	12.00	120.00	413.45	1.17
P-73	12.00	120.00	387.95	1.10
P-74	12.00	120.00	-30.27	0.09
P-75	12.00	120.00	-265.65	0.75
P-76	12.00	120.00	-265.65	0.75
P-77	12.00	120.00	-282.55	0.80
P-78	12.00	120.00	-282.55	0.80
P-79	16.00	120.00	576.54	0.92
P-80	16.00	120.00	119.46	0.19
P-81	12.00	120.00	-214.99	0.61
P-82	12.00	120.00	-214.99	0.61
P-83	12.00	120.00	-169.55	0.48
P-84	12.00	120.00	-167.45	0.48
P-85	12.00	120.00	-155.46	0.44
P-86	12.00	120.00	-126.26	0.36
P-87	12.00	120.00	-126.26	0.36
P-88	12.00	120.00	-153.10	0.43
P-89	12.00	120.00	-115.20	0.33
P-91	12.00	120.00	-37.93	0.11
P-92	12.00	120.00	-11.33	0.03
P-93	12.00	120.00	-9.02	0.03
P-94	12.00	120.00	17.98	0.05
P-95	12.00	120.00	25.19	0.07
P-96	12.00	120.00	25.19	0.07
P-97	12.00	120.00	56.83	0.16
P-98	12.00	120.00	56.83	0.16
P-99	12.00	120.00	143.00	0.41
P-100	12.00	120.00	143.00	0.41

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Gordon Axelson, PE, Principal

WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - Average Daily Demand

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-101	12.00	120.00	122.95	0.35
P-102	12.00	120.00	150.20	0.43
P-103	12.00	120.00	150.20	0.43
P-104	12.00	120.00	150.20	0.43
P-105	12.00	120.00	148.85	0.42
P-106	12.00	120.00	158.75	0.45
P-107	12.00	120.00	186.95	0.53
P-108	12.00	120.00	41.95	0.12
P-109	12.00	120.00	28.25	0.08
P-110	12.00	120.00	-24.39	0.07
P-111	12.00	120.00	-37.20	0.11
P-112	12.00	120.00	115.29	0.33
P-113	12.00	120.00	120.19	0.34
P-114	12.00	120.00	155.65	0.44
P-115	12.00	120.00	163.55	0.46
P-116	12.00	120.00	208.26	0.59
P-117	12.00	120.00	219.26	0.62
P-118	12.00	120.00	31.39	0.09
P-119	12.00	120.00	-16.74	0.05
P-120	12.00	120.00	-24.73	0.07
P-121	12.00	120.00	-57.88	0.16
P-122	12.00	120.00	-1.22	0.00
P-123	12.00	120.00	-58.33	0.17
P-124	12.00	120.00	59.34	0.17
P-125	12.00	120.00	-40.96	0.12
P-126	12.00	120.00	-3.95	0.01
P-127	12.00	120.00	5.91	0.02
P-128	12.00	120.00	-26.74	0.08
P-129	12.00	120.00	-43.05	0.12
P-130	12.00	120.00	-196.29	0.56
P-131	12.00	120.00	-47.18	0.13

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

DATE: June, 2010

CASE: PHASE 3 -PK HR

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-36	415.00	570.00	67.17	0.00	66.51	0.66
FH-37	402.00	570.00	72.80	122.40	71.23	1.57
FH-38	370.00	570.00	86.67	0.00	84.74	1.93
FH-39	374.00	570.00	84.93	81.12	83.71	1.22
FH-40	383.50	570.00	80.82	0.00	80.21	0.61
FH-41	395.00	570.00	75.83	47.52	73.45	2.38
FH-42	375.00	570.00	84.50	0.00	81.71	2.79
FH-43	364.00	570.00	89.27	0.00	86.13	3.14
FH-44	363.00	570.00	89.70	0.00	86.33	3.37
FH-45	359.00	570.00	91.43	151.68	88.05	3.38
FH-46	349.00	570.00	95.77	129.60	92.37	3.40
FH-47	329.00	570.00	104.43	127.68	101.02	3.41
FH-48	355.00	570.00	93.17	51.36	89.81	3.36
FH-49	346.00	570.00	97.07	65.76	93.68	3.39
FH-50	342.00	570.00	98.80	181.92	95.47	3.33
FH-51	357.50	570.00	92.08	72.00	89.01	3.07
FH-52	350.50	570.00	95.12	0.00	92.02	3.10
FH-53	357.00	570.00	92.30	140.16	89.34	2.96
FH-54	358.50	570.00	91.65	10.08	88.78	2.87
FH-55	365.00	570.00	88.83	23.52	85.89	2.94
FH-56	374.00	570.00	84.93	37.92	82.19	2.74
FH-57	369.00	570.00	87.10	89.76	84.54	2.56
FH-58	369.00	570.00	87.10	0.00	84.76	2.34
FH-59	385.50	570.00	79.95	52.80	77.53	2.42
J-38	380.00	570.00	82.33	0.00	82.02	0.31
J-39	413.00	570.00	68.03	0.00	67.93	0.10
J-65	396.00	570.00	75.40	57.60	73.38	2.02
J-66	371.50	570.00	86.02	97.92	83.99	2.03
J-68	369.50	570.00	86.88	0.00	84.27	2.61
J-69	357.50	570.00	92.08	85.92	89.17	2.91
J-70	349.00	570.00	95.77	156.00	92.64	3.13

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 -PK HR

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
J-71	340.00	570.00	99.67	65.76	96.29	3.38
J-72	329.00	570.00	104.43	97.92	101.03	3.40
J-73	339.00	570.00	100.10	161.76	96.69	3.41
J-74	365.00	570.00	88.83	0.00	85.46	3.37
J-75	363.00	570.00	89.70	33.12	86.33	3.37
J-76	362.00	570.00	90.13	135.84	86.80	3.33
J-77	364.00	570.00	89.27	100.32	86.18	3.09
J-78	369.50	570.00	86.88	149.76	83.97	2.91
J-79	380.00	570.00	82.33	0.00	79.63	2.70
J-80	382.00	570.00	81.47	200.16	78.83	2.64
J-81	398.00	570.00	74.53	135.36	72.23	2.30
J-82	347.00	570.00	96.63	65.28	93.24	3.39
J-83	379.50	570.00	82.55	136.32	79.94	2.61
J-84	367.00	570.00	87.97	122.88	85.06	2.91
J-85	354.00	570.00	93.60	53.76	90.24	3.36
J-86	356.00	570.00	92.73	99.84	89.35	3.38

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 -PK HR

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-71	12.00	120.00	2006.04	5.69
P-72	12.00	120.00	2006.04	5.69
P-73	12.00	120.00	1883.64	5.34
P-74	12.00	120.00	-126.00	0.36
P-75	12.00	120.00	-1253.64	3.56
P-76	12.00	120.00	-1253.64	3.56
P-77	12.00	120.00	-1334.76	3.79
P-78	12.00	120.00	-1334.76	3.79
P-81	12.00	120.00	-1029.71	2.92
P-82	12.00	120.00	-1029.71	2.92
P-83	12.00	120.00	-813.50	2.31
P-84	12.00	120.00	-803.42	2.28
P-85	12.00	120.00	-746.19	2.12
P-86	12.00	120.00	-606.03	1.72
P-87	12.00	120.00	-606.03	1.72
P-88	12.00	120.00	-734.86	2.08
P-89	12.00	120.00	-552.94	1.57
P-91	12.00	120.00	-182.05	0.52
P-92	12.00	120.00	-54.37	0.15
P-93	12.00	120.00	-43.30	0.12
P-94	12.00	120.00	86.30	0.24
P-95	12.00	120.00	120.93	0.34
P-96	12.00	120.00	120.93	0.34
P-97	12.00	120.00	272.76	0.77
P-98	12.00	120.00	272.76	0.77
P-99	12.00	120.00	686.42	1.95
P-100	12.00	120.00	686.42	1.95
P-101	12.00	120.00	590.15	1.67
P-102	12.00	120.00	721.22	2.05
P-103	12.00	120.00	721.22	2.05
P-104	12.00	120.00	721.22	2.05

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

DATE: June, 2010

CASE: PHASE 3 -PK HR

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-105	12.00	120.00	715.39	2.03
P-106	12.00	120.00	762.91	2.16
P-107	12.00	120.00	898.27	2.55
P-108	12.00	120.00	201.36	0.57
P-109	12.00	120.00	135.60	0.38
P-110	12.00	120.00	-117.06	0.33
P-111	12.00	120.00	-178.54	0.51
P-112	12.00	120.00	553.42	1.57
P-113	12.00	120.00	576.94	1.64
P-114	12.00	120.00	747.21	2.12
P-115	12.00	120.00	785.13	2.23
P-116	12.00	120.00	1000.98	2.84
P-117	12.00	120.00	1053.78	2.99
P-118	12.00	120.00	150.68	0.43
P-119	12.00	120.00	-80.36	0.23
P-120	12.00	120.00	-118.71	0.34
P-121	12.00	120.00	-277.82	0.79
P-122	12.00	120.00	-5.84	0.02
P-123	12.00	120.00	-279.97	0.79
P-124	12.00	120.00	284.83	0.81
P-125	12.00	120.00	-196.59	0.56
P-126	12.00	120.00	-18.69	0.05
P-127	12.00	120.00	28.70	0.08
P-128	12.00	120.00	-126.46	0.36
P-129	12.00	120.00	-205.99	0.58
P-130	12.00	120.00	-939.95	2.67
P-131	12.00	120.00	-226.46	0.64
P-132	16.00	120.00	1334.76	2.13
P-133	16.00	120.00	2006.04	3.20

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - MAX DAY

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-36	415.00	570.00	67.17	0.00	66.94	0.23
FH-37	402.00	570.00	72.80	53.55	72.37	0.43
FH-38	370.00	570.00	86.67	0.00	86.14	0.53
FH-39	374.00	570.00	84.93	35.49	84.56	0.37
FH-40	383.50	570.00	80.82	0.00	80.59	0.23
FH-41	395.00	570.00	75.83	20.79	75.22	0.61
FH-42	375.00	570.00	84.50	0.00	83.79	0.71
FH-43	364.00	570.00	89.27	0.00	88.48	0.79
FH-44	363.00	570.00	89.70	0.00	88.86	0.84
FH-45	359.00	570.00	91.43	66.36	90.59	0.84
FH-46	349.00	570.00	95.77	56.70	94.91	0.86
FH-47	329.00	570.00	104.43	55.86	103.57	0.86
FH-48	355.00	570.00	93.17	22.47	92.33	0.84
FH-49	346.00	570.00	97.07	28.77	96.21	0.86
FH-50	342.00	570.00	98.80	79.59	97.96	0.84
FH-51	357.50	570.00	92.08	31.50	91.30	0.78
FH-52	350.50	570.00	95.12	0.00	94.33	0.79
FH-53	357.00	570.00	92.30	61.32	91.55	0.75
FH-54	358.50	570.00	91.65	4.41	90.92	0.73
FH-55	365.00	570.00	88.83	10.29	88.09	0.74
FH-56	374.00	570.00	84.93	16.59	84.24	0.69
FH-57	369.00	570.00	87.10	39.27	86.44	0.66
FH-58	369.00	570.00	87.10	0.00	86.49	0.61
FH-59	385.50	570.00	79.95	23.10	79.33	0.62
J-38	380.00	570.00	82.33	0.00	82.16	0.17
J-39	413.00	570.00	68.03	0.00	67.93	0.10
J-65	396.00	570.00	75.40	25.20	74.87	0.53
J-66	371.50	570.00	86.02	42.84	85.47	0.55
J-68	369.50	570.00	86.88	0.00	86.21	0.67
J-69	357.50	570.00	92.08	37.59	91.34	0.74
J-70	349.00	570.00	95.77	68.25	94.97	0.80

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - MAX DAY

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
J-71	340.00	570.00	99.67	28.77	98.81	0.86
J-72	329.00	570.00	104.43	42.84	103.57	0.86
J-73	339.00	570.00	100.10	70.77	99.24	0.86
J-74	365.00	570.00	88.83	0.00	87.99	0.84
J-75	363.00	570.00	89.70	14.49	88.86	0.84
J-76	362.00	570.00	90.13	59.43	89.30	0.83
J-77	364.00	570.00	89.27	43.89	88.49	0.78
J-78	369.50	570.00	86.88	65.52	86.15	0.73
J-79	380.00	570.00	82.33	0.00	81.65	0.68
J-80	382.00	570.00	81.47	87.57	80.80	0.67
J-81	398.00	570.00	74.53	59.22	73.94	0.59
J-82	347.00	570.00	96.63	28.56	95.78	0.85
J-83	379.50	570.00	82.55	59.64	81.88	0.67
J-84	367.00	570.00	87.97	53.76	87.23	0.74
J-85	354.00	570.00	93.60	23.52	92.76	0.84
J-86	356.00	570.00	92.73	43.68	91.89	0.84

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - MAX DAY

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-71	12.00	120.00	877.64	2.49
P-72	12.00	120.00	877.64	2.49
P-73	12.00	120.00	824.09	2.34
P-74	12.00	120.00	-55.13	0.16
P-75	12.00	120.00	-548.47	1.56
P-76	12.00	120.00	-548.47	1.56
P-77	12.00	120.00	-583.96	1.66
P-78	12.00	120.00	-583.96	1.66
P-81	12.00	120.00	-450.50	1.28
P-82	12.00	120.00	-450.50	1.28
P-83	12.00	120.00	-355.90	1.01
P-84	12.00	120.00	-351.49	1.00
P-85	12.00	120.00	-326.46	0.93
P-86	12.00	120.00	-265.14	0.75
P-87	12.00	120.00	-265.14	0.75
P-88	12.00	120.00	-321.50	0.91
P-89	12.00	120.00	-241.91	0.69
P-91	12.00	120.00	-79.65	0.23
P-92	12.00	120.00	-23.79	0.07
P-93	12.00	120.00	-18.94	0.05
P-94	12.00	120.00	37.76	0.11
P-95	12.00	120.00	52.91	0.15
P-96	12.00	120.00	52.91	0.15
P-97	12.00	120.00	119.33	0.34
P-98	12.00	120.00	119.33	0.34
P-99	12.00	120.00	300.31	0.85
P-100	12.00	120.00	300.31	0.85
P-101	12.00	120.00	258.19	0.73
P-102	12.00	120.00	315.53	0.90
P-103	12.00	120.00	315.53	0.90
P-104	12.00	120.00	315.53	0.90

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - MAX DAY

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-105	12.00	120.00	312.98	0.89
P-106	12.00	120.00	333.77	0.95
P-107	12.00	120.00	392.99	1.11
P-108	12.00	120.00	88.10	0.25
P-109	12.00	120.00	59.33	0.17
P-110	12.00	120.00	-51.21	0.15
P-111	12.00	120.00	-78.11	0.22
P-112	12.00	120.00	242.12	0.69
P-113	12.00	120.00	252.41	0.72
P-114	12.00	120.00	326.90	0.93
P-115	12.00	120.00	343.49	0.97
P-116	12.00	120.00	437.93	1.24
P-117	12.00	120.00	461.03	1.31
P-118	12.00	120.00	65.92	0.19
P-119	12.00	120.00	-35.15	0.10
P-120	12.00	120.00	-51.94	0.15
P-121	12.00	120.00	-121.55	0.34
P-122	12.00	120.00	-2.55	0.01
P-123	12.00	120.00	-122.49	0.35
P-124	12.00	120.00	124.61	0.35
P-125	12.00	120.00	-86.01	0.24
P-126	12.00	120.00	-8.18	0.02
P-127	12.00	120.00	12.55	0.04
P-128	12.00	120.00	-55.33	0.16
P-129	12.00	120.00	-90.12	0.26
P-130	12.00	120.00	-411.23	1.17
P-131	12.00	120.00	-99.08	0.28
P-132	16.00	120.00	583.96	0.93
P-133	16.00	120.00	877.64	1.40

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - MAX DAY, FIRE FH-51

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-36	415.00	570.00	67.17	0.00	65.69	1.48
FH-37	402.00	570.00	72.80	53.55	69.04	3.76
FH-38	370.00	570.00	86.67	0.00	81.97	4.70
FH-39	374.00	570.00	84.93	35.49	82.11	2.82
FH-40	383.50	570.00	80.82	0.00	79.50	1.32
FH-41	395.00	570.00	75.83	20.79	69.88	5.95
FH-42	375.00	570.00	84.50	0.00	76.99	7.51
FH-43	364.00	570.00	89.27	0.00	80.26	9.01
FH-44	363.00	570.00	89.70	0.00	80.65	9.05
FH-45	359.00	570.00	91.43	66.36	82.38	9.05
FH-46	349.00	570.00	95.77	56.70	86.70	9.07
FH-47	329.00	570.00	104.43	55.86	95.35	9.08
FH-48	355.00	570.00	93.17	22.47	84.11	9.06
FH-49	346.00	570.00	97.07	28.77	88.00	9.07
FH-50	342.00	570.00	98.80	79.59	89.75	9.05
FH-51	357.50	570.00	92.08	4031.50	82.64	9.44
FH-52	350.50	570.00	95.12	0.00	86.25	8.87
FH-53	357.00	570.00	92.30	61.32	84.13	8.17
FH-54	358.50	570.00	91.65	4.41	83.81	7.84
FH-55	365.00	570.00	88.83	10.29	80.53	8.30
FH-56	374.00	570.00	84.93	16.59	77.65	7.28
FH-57	369.00	570.00	87.10	39.27	80.49	6.61
FH-58	369.00	570.00	87.10	0.00	81.16	5.94
FH-59	385.50	570.00	79.95	23.10	73.77	6.18
J-38	380.00	570.00	82.33	0.00	81.74	0.59
J-39	413.00	570.00	68.03	0.00	67.92	0.11
J-65	396.00	570.00	75.40	25.20	70.43	4.97
J-66	371.50	570.00	86.02	42.84	81.06	4.96
J-68	369.50	570.00	86.88	0.00	80.10	6.78
J-69	357.50	570.00	92.08	37.59	84.07	8.01
J-70	349.00	570.00	95.77	68.25	86.77	9.00

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - MAX DAY, FIRE FH-51

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
J-71	340.00	570.00	99.67	28.77	90.60	9.07
J-72	329.00	570.00	104.43	42.84	95.36	9.07
J-73	339.00	570.00	100.10	70.77	91.03	9.07
J-74	365.00	570.00	88.83	0.00	79.78	9.05
J-75	363.00	570.00	89.70	14.49	80.65	9.05
J-76	362.00	570.00	90.13	59.43	81.09	9.04
J-77	364.00	570.00	89.27	43.89	80.27	9.00
J-78	369.50	570.00	86.88	65.52	78.87	8.01
J-79	380.00	570.00	82.33	0.00	75.20	7.13
J-80	382.00	570.00	81.47	87.57	74.64	6.83
J-81	398.00	570.00	74.53	59.22	68.82	5.71
J-82	347.00	570.00	96.63	28.56	87.57	9.06
J-83	379.50	570.00	82.55	59.64	75.76	6.79
J-84	367.00	570.00	87.97	53.76	79.95	8.02
J-85	354.00	570.00	93.60	23.52	84.54	9.06
J-86	356.00	570.00	92.73	43.68	83.68	9.05

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - MAX DAY, FIRE FH-51

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-71	12.00	120.00	3290.55	9.33
P-72	12.00	120.00	3290.55	9.33
P-73	12.00	120.00	3237.00	9.18
P-74	12.00	120.00	-201.45	0.57
P-75	12.00	120.00	-2135.56	6.06
P-76	12.00	120.00	-2135.56	6.06
P-77	12.00	120.00	-2171.05	6.16
P-78	12.00	120.00	-2171.05	6.16
P-81	12.00	120.00	-1891.27	5.37
P-82	12.00	120.00	-1891.27	5.37
P-83	12.00	120.00	-1733.22	4.92
P-84	12.00	120.00	-1728.81	4.90
P-85	12.00	120.00	-1539.42	4.37
P-86	12.00	120.00	-1478.10	4.19
P-87	12.00	120.00	-1478.10	4.19
P-88	12.00	120.00	-336.88	0.96
P-89	12.00	120.00	-257.29	0.73
P-91	12.00	120.00	-81.06	0.23
P-92	12.00	120.00	-25.20	0.07
P-93	12.00	120.00	-20.12	0.06
P-94	12.00	120.00	36.58	0.10
P-95	12.00	120.00	51.44	0.15
P-96	12.00	120.00	51.44	0.15
P-97	12.00	120.00	114.37	0.32
P-98	12.00	120.00	114.37	0.32
P-99	12.00	120.00	284.93	0.81
P-100	12.00	120.00	284.93	0.81
P-101	12.00	120.00	1481.90	4.20
P-102	12.00	120.00	1609.39	4.57
P-103	12.00	120.00	1609.39	4.57
P-104	12.00	120.00	1609.39	4.57

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - MAX DAY, FIRE FH-51

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-105	12.00	120.00	1417.91	4.02
P-106	12.00	120.00	1438.70	4.08
P-107	12.00	120.00	1497.92	4.25
P-108	12.00	120.00	90.09	0.26
P-109	12.00	120.00	61.32	0.17
P-110	12.00	120.00	-51.51	0.15
P-111	12.00	120.00	-79.67	0.23
P-112	12.00	120.00	1805.46	5.12
P-113	12.00	120.00	1815.75	5.15
P-114	12.00	120.00	1655.74	4.70
P-115	12.00	120.00	1672.33	4.74
P-116	12.00	120.00	1892.23	5.37
P-117	12.00	120.00	1915.33	5.43
P-118	12.00	120.00	65.68	0.19
P-119	12.00	120.00	-32.93	0.09
P-120	12.00	120.00	-48.44	0.14
P-121	12.00	120.00	-111.13	0.32
P-122	12.00	120.00	-14.53	0.04
P-123	12.00	120.00	-123.90	0.35
P-124	12.00	120.00	-1072.96	3.04
P-125	12.00	120.00	1153.08	3.27
P-126	12.00	120.00	61.97	0.18
P-127	12.00	120.00	-151.80	0.43
P-128	12.00	120.00	-118.79	0.34
P-129	12.00	120.00	-279.05	0.79
P-130	12.00	120.00	-1852.00	5.25
P-131	12.00	120.00	-88.66	0.25
P-132	16.00	120.00	2171.05	3.46
P-133	16.00	120.00	3290.55	5.25

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - PK HR, FIRE FH-45

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-36	415.00	570.00	67.17	0.00	65.26	1.91
FH-37	402.00	570.00	72.80	122.40	67.89	4.91
FH-38	370.00	570.00	86.67	0.00	80.57	6.10
FH-39	374.00	570.00	84.93	81.12	81.24	3.69
FH-40	383.50	570.00	80.82	0.00	79.12	1.70
FH-41	395.00	570.00	75.83	47.52	68.12	7.71
FH-42	375.00	570.00	84.50	0.00	75.01	9.49
FH-43	364.00	570.00	89.27	0.00	77.68	11.59
FH-44	363.00	570.00	89.70	0.00	75.97	13.73
FH-45	359.00	570.00	91.43	3151.68	76.91	14.52
FH-46	349.00	570.00	95.77	129.60	81.63	14.14
FH-47	329.00	570.00	104.43	127.68	90.76	13.67
FH-48	355.00	570.00	93.17	51.36	79.81	13.36
FH-49	346.00	570.00	97.07	65.76	83.33	13.74
FH-50	342.00	570.00	98.80	181.92	85.87	12.93
FH-51	357.50	570.00	92.08	72.00	81.05	11.03
FH-52	350.50	570.00	95.12	0.00	84.01	11.11
FH-53	357.00	570.00	92.30	140.16	82.05	10.25
FH-54	358.50	570.00	91.65	10.08	81.81	9.84
FH-55	365.00	570.00	88.83	23.52	78.59	10.24
FH-56	374.00	570.00	84.93	37.92	75.70	9.23
FH-57	369.00	570.00	87.10	89.76	78.65	8.45
FH-58	369.00	570.00	87.10	0.00	79.47	7.63
FH-59	385.50	570.00	79.95	52.80	72.01	7.94
J-38	380.00	570.00	82.33	0.00	81.59	0.74
J-39	413.00	570.00	68.03	0.00	67.92	0.11
J-65	396.00	570.00	75.40	57.60	68.94	6.46
J-66	371.50	570.00	86.02	97.92	79.58	6.44
J-68	369.50	570.00	86.88	0.00	78.22	8.66
J-69	357.50	570.00	92.08	85.92	82.04	10.04
J-70	349.00	570.00	95.77	156.00	84.49	11.28

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - PK HR, FIRE FH-45

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
J-71	340.00	570.00	99.67	65.76	86.27	13.40
J-72	329.00	570.00	104.43	97.92	90.82	13.61
J-73	339.00	570.00	100.10	161.76	86.27	13.83
J-74	365.00	570.00	88.83	0.00	74.66	14.17
J-75	363.00	570.00	89.70	33.12	75.89	13.81
J-76	362.00	570.00	90.13	135.84	76.96	13.17
J-77	364.00	570.00	89.27	100.32	78.09	11.18
J-78	369.50	570.00	86.88	149.76	76.84	10.04
J-79	380.00	570.00	82.33	0.00	73.26	9.07
J-80	382.00	570.00	81.47	200.16	72.74	8.73
J-81	398.00	570.00	74.53	135.36	67.11	7.42
J-82	347.00	570.00	96.63	65.28	82.87	13.76
J-83	379.50	570.00	82.55	136.32	73.88	8.67
J-84	367.00	570.00	87.97	122.88	77.93	10.04
J-85	354.00	570.00	93.60	53.76	80.19	13.41
J-86	356.00	570.00	92.73	99.84	78.91	13.82

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - PK HR, FIRE FH-45

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-71	12.00	120.00	3815.69	10.82
P-72	12.00	120.00	3815.69	10.82
P-73	12.00	120.00	3693.29	10.48
P-74	12.00	120.00	-235.42	0.67
P-75	12.00	120.00	-2443.99	6.93
P-76	12.00	120.00	-2443.99	6.93
P-77	12.00	120.00	-2525.11	7.16
P-78	12.00	120.00	-2525.11	7.16
P-81	12.00	120.00	-2110.66	5.99
P-82	12.00	120.00	-2110.66	5.99
P-83	12.00	120.00	-1848.45	5.24
P-84	12.00	120.00	-1838.37	5.22
P-85	12.00	120.00	-1796.18	5.10
P-86	12.00	120.00	-1656.02	4.70
P-87	12.00	120.00	-1656.02	4.70
P-88	12.00	120.00	-2260.81	6.41
P-89	12.00	120.00	-2078.89	5.90
P-91	12.00	120.00	-768.00	2.18
P-92	12.00	120.00	-640.32	1.82
P-93	12.00	120.00	-870.80	2.47
P-94	12.00	120.00	-741.20	2.10
P-95	12.00	120.00	1025.81	2.91
P-96	12.00	120.00	1025.81	2.91
P-97	12.00	120.00	1199.62	3.40
P-98	12.00	120.00	1199.62	3.40
P-99	12.00	120.00	2160.47	6.13
P-100	12.00	120.00	2160.47	6.13
P-101	12.00	120.00	1610.89	4.57
P-102	12.00	120.00	1692.56	4.80
P-103	12.00	120.00	1692.56	4.80
P-104	12.00	120.00	1692.56	4.80

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - PK HR, FIRE FH-45

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-105	12.00	120.00	1544.31	4.38
P-106	12.00	120.00	1591.83	4.52
P-107	12.00	120.00	1727.19	4.90
P-108	12.00	120.00	909.68	2.58
P-109	12.00	120.00	843.92	2.39
P-110	12.00	120.00	-1384.67	3.93
P-111	12.00	120.00	-957.42	2.72
P-112	12.00	120.00	1482.69	4.21
P-113	12.00	120.00	1506.21	4.27
P-114	12.00	120.00	1740.91	4.94
P-115	12.00	120.00	1778.83	5.05
P-116	12.00	120.00	2091.11	5.93
P-117	12.00	120.00	2143.91	6.08
P-118	12.00	120.00	392.24	1.11
P-119	12.00	120.00	386.40	1.10
P-120	12.00	120.00	-140.69	0.40
P-121	12.00	120.00	-825.01	2.34
P-122	12.00	120.00	-237.53	0.67
P-123	12.00	120.00	-865.92	2.46
P-124	12.00	120.00	760.79	2.16
P-125	12.00	120.00	-649.90	1.84
P-126	12.00	120.00	-68.09	0.19
P-127	12.00	120.00	43.73	0.12
P-128	12.00	120.00	-172.45	0.49
P-129	12.00	120.00	-348.41	0.99
P-130	12.00	120.00	-2020.90	5.73
P-131	12.00	120.00	-773.65	2.19
P-132	16.00	120.00	2525.11	4.03
P-133	16.00	120.00	3815.69	6.09

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - PK HR, P-72 CLSD

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-36	415.00	570.00	67.17	0.00	67.06	0.11
FH-37	402.00	570.00	72.80	122.40	60.70	12.10
FH-38	370.00	570.00	86.67	0.00	76.46	10.21
FH-39	374.00	570.00	84.93	81.12	78.81	6.12
FH-40	383.50	570.00	80.82	0.00	78.05	2.77
FH-41	395.00	570.00	75.83	47.52	63.54	12.29
FH-42	375.00	570.00	84.50	0.00	71.96	12.54
FH-43	364.00	570.00	89.27	0.00	76.42	12.85
FH-44	363.00	570.00	89.70	0.00	76.63	13.07
FH-45	359.00	570.00	91.43	151.68	78.34	13.09
FH-46	349.00	570.00	95.77	129.60	82.66	13.11
FH-47	329.00	570.00	104.43	127.68	91.31	13.12
FH-48	355.00	570.00	93.17	51.36	80.10	13.07
FH-49	346.00	570.00	97.07	65.76	83.97	13.10
FH-50	342.00	570.00	98.80	181.92	85.76	13.04
FH-51	357.50	570.00	92.08	72.00	79.30	12.78
FH-52	350.50	570.00	95.12	0.00	82.31	12.81
FH-53	357.00	570.00	92.30	140.16	79.64	12.66
FH-54	358.50	570.00	91.65	10.08	79.09	12.56
FH-55	365.00	570.00	88.83	23.52	76.18	12.65
FH-56	374.00	570.00	84.93	37.92	72.46	12.47
FH-57	369.00	570.00	87.10	89.76	75.04	12.06
FH-58	369.00	570.00	87.10	0.00	75.56	11.54
FH-59	385.50	570.00	79.95	52.80	67.67	12.28
J-38	380.00	570.00	82.33	0.00	81.17	1.16
J-39	413.00	570.00	68.03	0.00	67.93	0.10
J-65	396.00	570.00	75.40	57.60	63.30	12.10
J-66	371.50	570.00	86.02	97.92	75.24	10.78
J-68	369.50	570.00	86.88	0.00	74.69	12.19
J-69	357.50	570.00	92.08	85.92	79.46	12.62
J-70	349.00	570.00	95.77	156.00	82.94	12.83

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - PK HR, P-72 CLSD

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
J-71	340.00	570.00	99.67	65.76	86.58	13.09
J-72	329.00	570.00	104.43	97.92	91.32	13.11
J-73	339.00	570.00	100.10	161.76	86.98	13.12
J-74	365.00	570.00	88.83	0.00	75.75	13.08
J-75	363.00	570.00	89.70	33.12	76.62	13.08
J-76	362.00	570.00	90.13	135.84	77.09	13.04
J-77	364.00	570.00	89.27	100.32	76.47	12.80
J-78	369.50	570.00	86.88	149.76	74.26	12.62
J-79	380.00	570.00	82.33	0.00	69.86	12.47
J-80	382.00	570.00	81.47	200.16	69.05	12.42
J-81	398.00	570.00	74.53	135.36	62.28	12.25
J-82	347.00	570.00	96.63	65.28	83.53	13.10
J-83	379.50	570.00	82.55	136.32	70.19	12.36
J-84	367.00	570.00	87.97	122.88	75.34	12.63
J-85	354.00	570.00	93.60	53.76	80.53	13.07
J-86	356.00	570.00	92.73	99.84	79.64	13.09

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 3 - PK HR, P-72 CLSD

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-71	12.00	120.00	0.00	0.00
P-72	12.00	120.00	CLOSED	CLOSED
P-73	12.00	120.00	-122.40	0.35
P-74	12.00	120.00	-1511.10	4.29
P-75	12.00	120.00	-3259.68	9.25
P-76	12.00	120.00	-3259.68	9.25
P-77	12.00	120.00	-3340.80	9.48
P-78	12.00	120.00	-3340.80	9.48
P-81	12.00	120.00	-1650.66	4.68
P-82	12.00	120.00	-1650.66	4.68
P-83	12.00	120.00	-976.33	2.77
P-84	12.00	120.00	-966.25	2.74
P-85	12.00	120.00	-756.62	2.15
P-86	12.00	120.00	-616.46	1.75
P-87	12.00	120.00	-616.46	1.75
P-88	12.00	120.00	-737.04	2.09
P-89	12.00	120.00	-555.12	1.57
P-91	12.00	120.00	-182.23	0.52
P-92	12.00	120.00	-54.55	0.15
P-93	12.00	120.00	-43.45	0.12
P-94	12.00	120.00	86.15	0.24
P-95	12.00	120.00	120.72	0.34
P-96	12.00	120.00	120.72	0.34
P-97	12.00	120.00	272.07	0.77
P-98	12.00	120.00	272.07	0.77
P-99	12.00	120.00	684.24	1.94
P-100	12.00	120.00	684.24	1.94
P-101	12.00	120.00	581.02	1.65
P-102	12.00	120.00	616.15	1.75
P-103	12.00	120.00	616.15	1.75
P-104	12.00	120.00	616.15	1.75

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

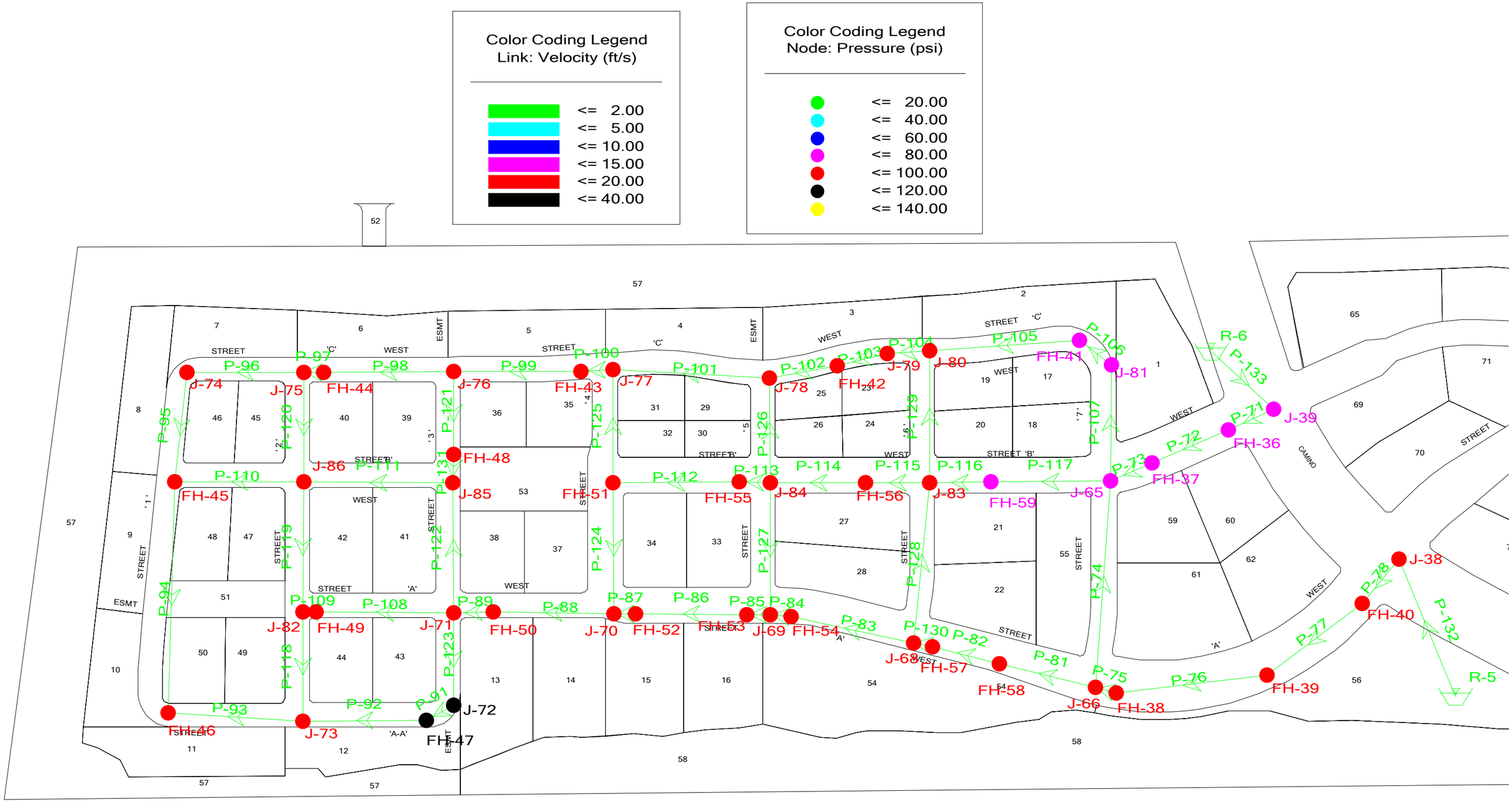
PTS. NO.: 67643
WORK ORDER NO.: 42-2637

DATE: June, 2010

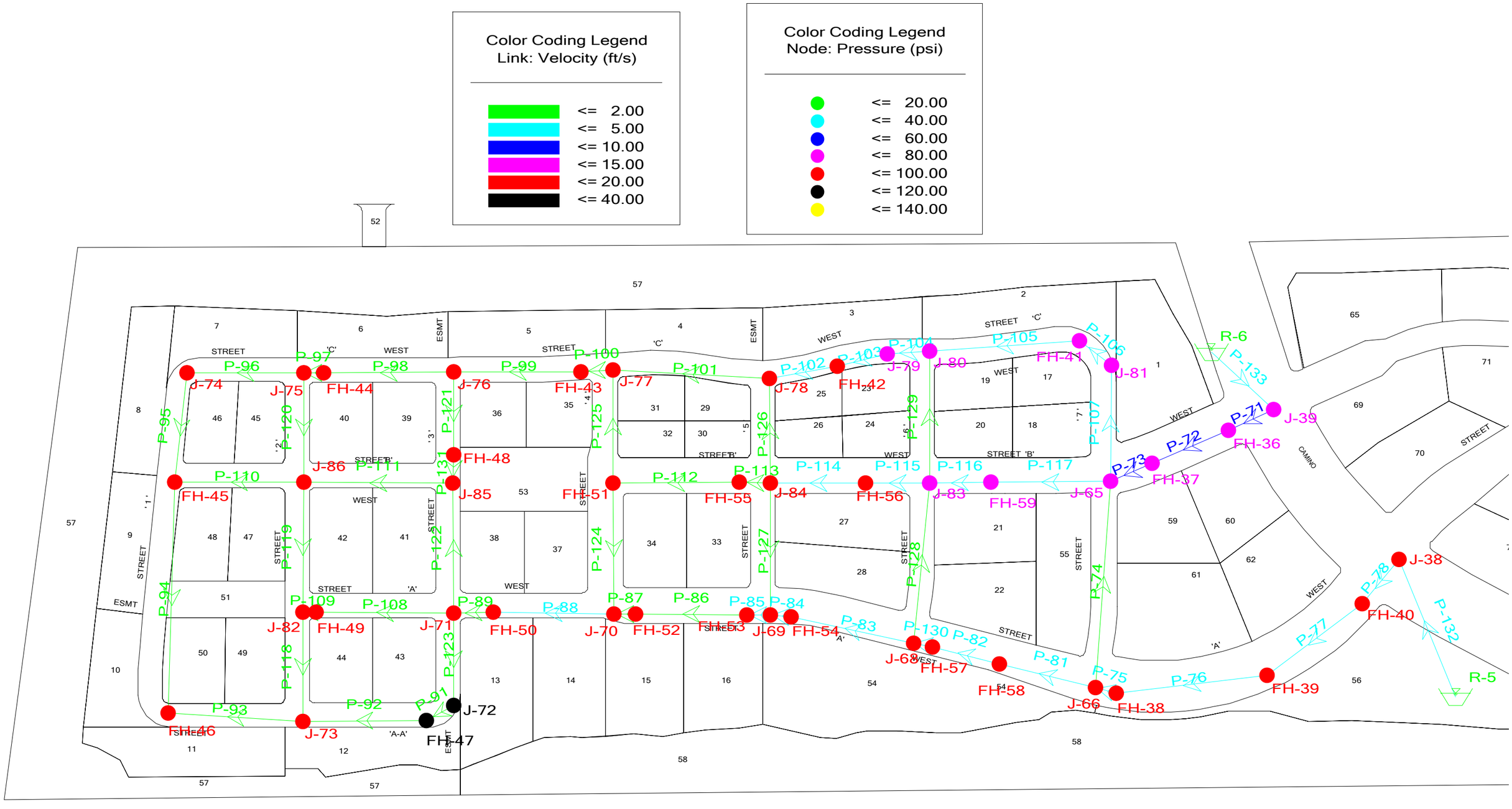
CASE: PHASE 3 - PK HR, P-72 CLSD

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-105	12.00	120.00	471.15	1.34
P-106	12.00	120.00	518.67	1.47
P-107	12.00	120.00	654.03	1.86
P-108	12.00	120.00	201.60	0.57
P-109	12.00	120.00	135.84	0.39
P-110	12.00	120.00	-117.11	0.33
P-111	12.00	120.00	-178.82	0.51
P-112	12.00	120.00	552.12	1.57
P-113	12.00	120.00	575.64	1.63
P-114	12.00	120.00	689.44	1.96
P-115	12.00	120.00	727.36	2.06
P-116	12.00	120.00	624.27	1.77
P-117	12.00	120.00	677.07	1.92
P-118	12.00	120.00	150.66	0.43
P-119	12.00	120.00	-80.10	0.23
P-120	12.00	120.00	-118.22	0.34
P-121	12.00	120.00	-276.33	0.78
P-122	12.00	120.00	-7.62	0.02
P-123	12.00	120.00	-280.15	0.79
P-124	12.00	120.00	276.59	0.78
P-125	12.00	120.00	-203.54	0.58
P-126	12.00	120.00	-114.63	0.33
P-127	12.00	120.00	-123.71	0.35
P-128	12.00	120.00	-584.57	1.66
P-129	12.00	120.00	-345.16	0.98
P-130	12.00	120.00	-1560.90	4.43
P-131	12.00	120.00	-224.97	0.64
P-132	16.00	120.00	3340.80	5.33
P-133	16.00	120.00	0.00	0.00

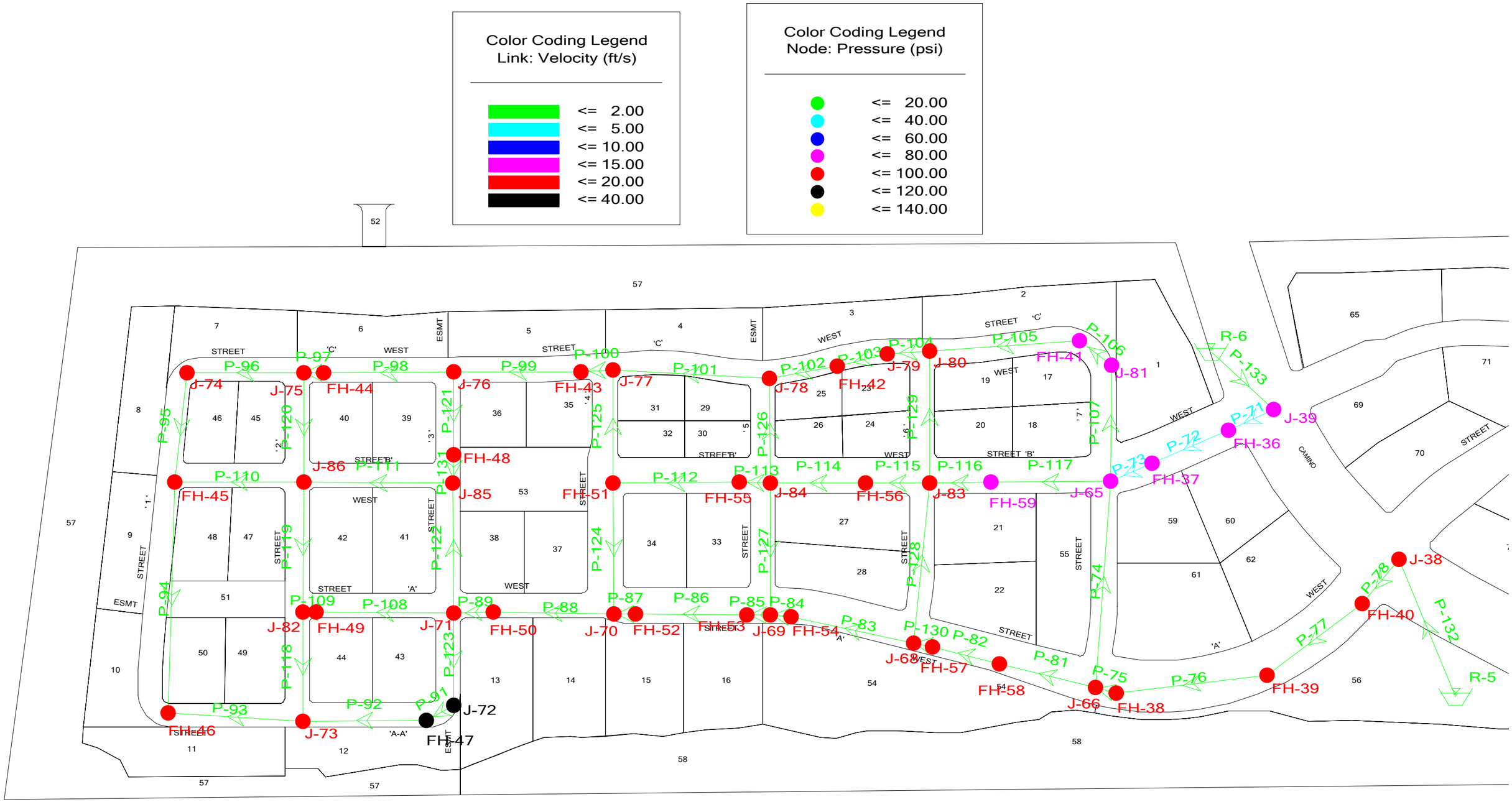
Scenario: Base



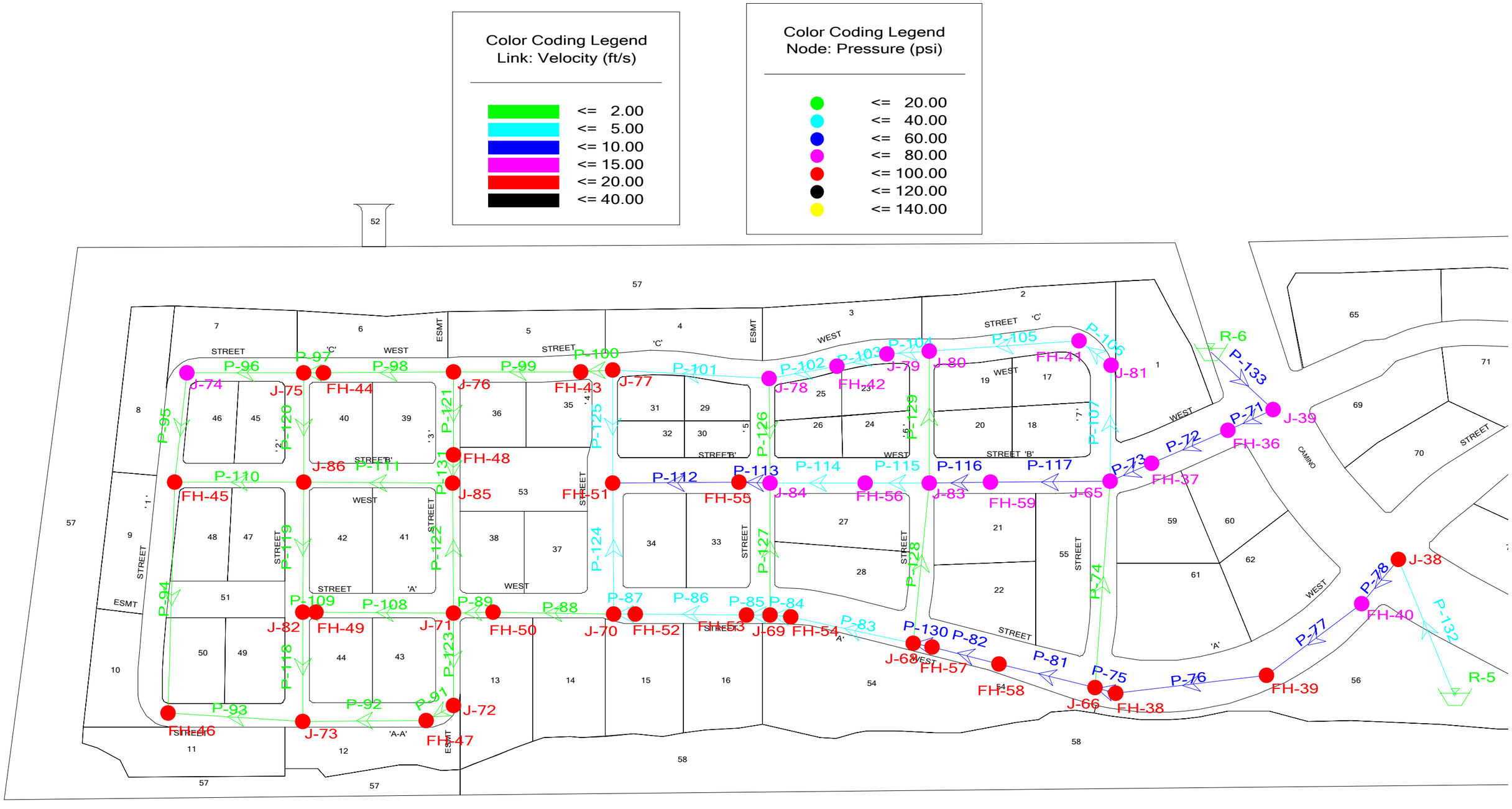
Scenario: PK HR



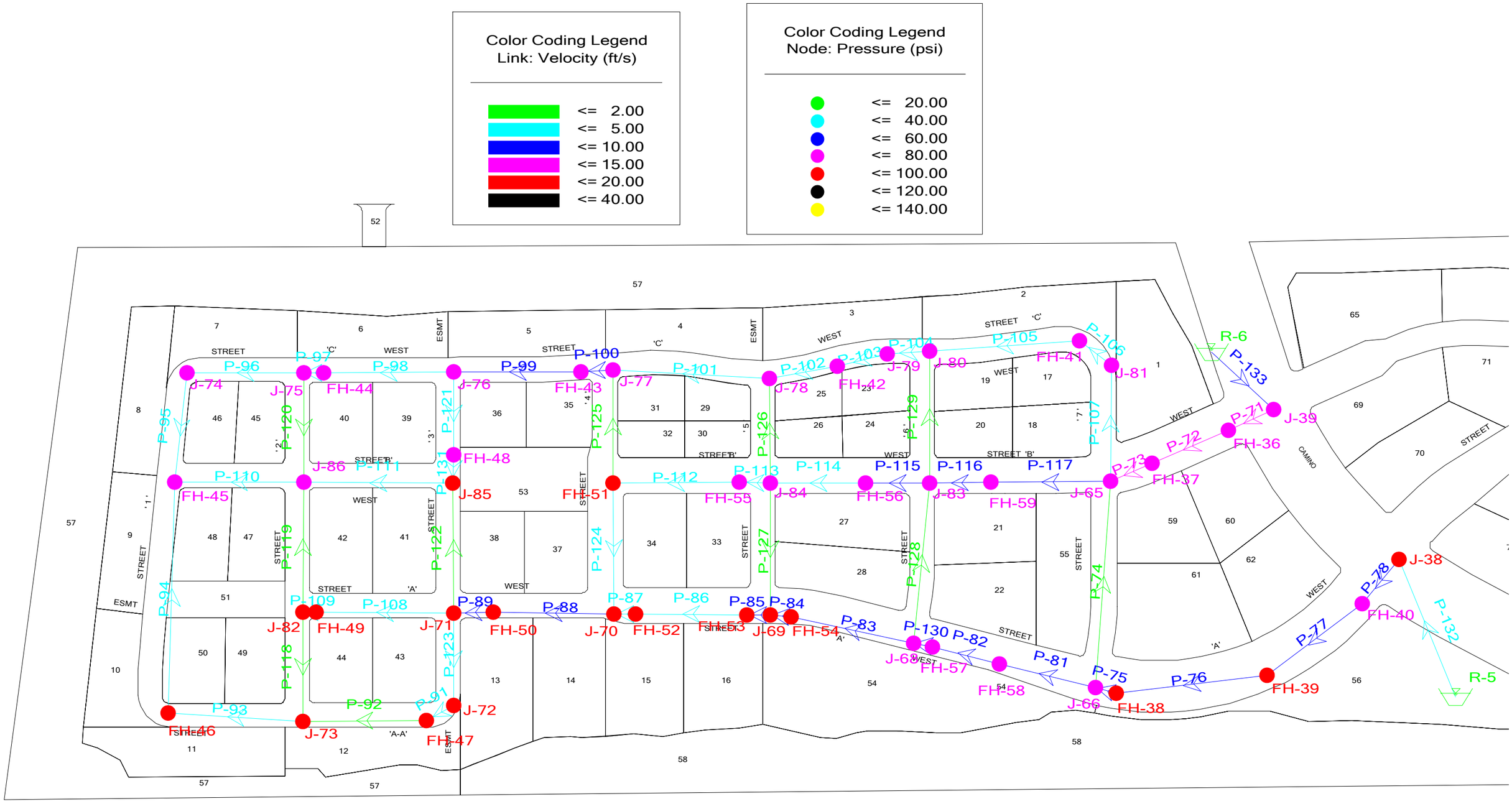
Scenario: MAX DAY



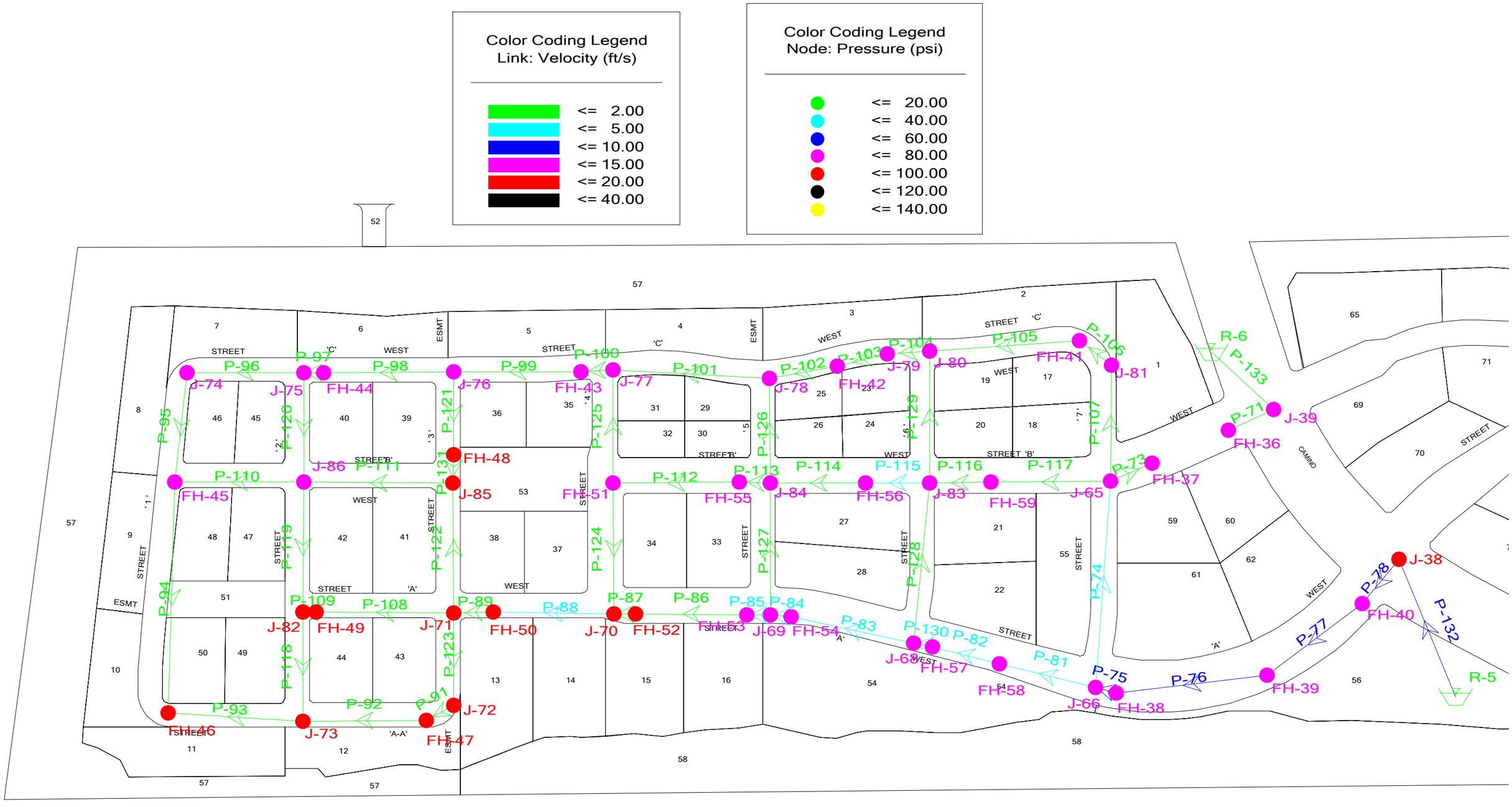
Scenario: MAX DAY, FIRE FH-51



Scenario: PK HR, FIRE FH-45



Scenario: PK HR, P-72 CLSD



APPENDIX D: Phase 1, 2 & 4 Computer Modeling

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Gordon Axelson, PE, Principal

WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - AVERAGE DAILY DEMAND

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	15.90	91.72	0.15
FH-2	401.00	625.00	97.07	6.90	96.91	0.16
FH-3	391.00	625.00	101.40	0.00	101.23	0.17
FH-4	393.00	625.00	100.53	0.60	100.37	0.16
FH-5	399.00	625.00	97.93	0.00	97.77	0.16
FH-6	409.00	625.00	93.60	7.60	93.45	0.15
FH-7	418.00	625.00	89.70	0.00	89.56	0.14
FH-8	405.00	625.00	95.33	7.60	95.18	0.15
FH-9	391.00	625.00	101.40	16.70	101.23	0.17
FH-10	387.00	625.00	103.13	0.00	102.96	0.17
FH-11	397.00	625.00	98.80	14.90	98.64	0.16
FH-12	379.50	625.00	106.38	66.80	106.21	0.17
FH-13	379.00	625.00	106.60	9.50	106.42	0.18
FH-14	375.00	625.00	108.33	0.00	108.15	0.18
FH-15	372.50	625.00	109.42	6.80	109.23	0.19
FH-16	368.00	625.00	111.37	7.30	111.18	0.19
FH-17	366.00	625.00	112.23	7.10	112.05	0.18
FH-18	364.00	625.00	113.10	22.40	112.91	0.19
FH-19	360.00	625.00	114.83	35.30	114.64	0.19
FH-20	355.00	625.00	117.00	12.30	116.81	0.19
FH-21	365.00	625.00	112.67	13.20	112.48	0.19
FH-22	356.00	625.00	116.57	13.20	116.38	0.19
FH-23	354.00	625.00	117.43	45.50	117.24	0.19
FH-24	344.00	625.00	121.77	28.00	121.57	0.20
FH-25	413.00	625.00	91.87	0.00	91.72	0.15
FH-26	405.50	625.00	95.12	15.60	94.96	0.16
FH-27	394.00	625.00	100.10	8.80	99.93	0.17
FH-28	368.00	625.00	111.37	14.80	111.18	0.19
FH-29	388.00	625.00	102.70	12.30	102.54	0.16
FH-30	390.00	625.00	101.83	25.60	101.67	0.16
FH-31	377.50	625.00	107.25	11.20	107.07	0.18

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - AVERAGE DAILY DEMAND

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-32	376.00	625.00	107.90	0.00	107.72	0.18
FH-33	374.00	625.00	108.77	0.00	108.59	0.18
FH-34	377.50	625.00	107.25	0.00	107.07	0.18
FH-35	379.00	625.00	106.60	0.00	106.42	0.18
J-1	427.00	625.00	85.80	0.00	85.66	0.14
J-2	425.00	625.00	86.67	0.00	86.53	0.14
J-5	391.00	625.00	101.40	0.00	101.23	0.17
J-6	389.00	625.00	102.27	0.00	102.10	0.17
J-8	396.50	625.00	99.02	0.00	98.85	0.17
J-11	414.00	625.00	91.43	0.00	91.29	0.14
J-13	397.00	625.00	98.80	0.00	98.64	0.16
J-16	402.00	625.00	96.63	11.90	96.47	0.16
J-17	415.50	625.00	90.78	9.30	90.64	0.14
J-18	415.00	625.00	91.00	16.40	90.85	0.15
J-22	381.00	625.00	105.73	23.50	105.56	0.17
J-24	376.00	625.00	107.90	0.00	107.72	0.18
J-29	365.00	625.00	112.67	0.00	112.48	0.19
J-37	343.00	625.00	122.20	0.00	122.01	0.19
J-38	380.00	625.00	106.17	0.00	106.00	0.17
J-39	413.00	625.00	91.87	0.00	91.72	0.15
J-41	408.00	625.00	94.03	34.10	93.88	0.15
J-44	385.00	625.00	104.00	24.20	103.83	0.17
J-45	369.00	625.00	110.93	32.90	110.75	0.18
J-47	363.00	625.00	113.53	7.30	113.35	0.18
J-50	382.00	625.00	105.30	35.90	105.13	0.17
J-52	376.50	625.00	107.68	0.00	107.50	0.18
J-55	373.50	625.00	108.98	0.00	108.80	0.18
J-58	380.00	625.00	106.17	0.00	105.99	0.18
J-60	395.00	625.00	99.67	19.00	99.50	0.17
J-61	387.00	625.00	103.13	36.50	102.96	0.17

BDS Engineering, Inc.
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Gordon Axelson, PE, Principal

WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - AVERAGE DAILY DEMAND

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)

∑Q (gpm)	∑Q (gpd)	**∑Q (mgd)**
676.90	974,736	**0.97**

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - AVERAGE DAILY DEMAND

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	89.50	0.14
P-2	12.00	112.00	-24.77	0.07
P-3	16.00	120.00	114.28	0.18
P-5	16.00	120.00	91.48	0.15
P-6	16.00	120.00	67.18	0.11
P-7	16.00	120.00	-11.72	0.02
P-8	16.00	120.00	-12.32	0.02
P-9	16.00	120.00	-118.72	0.19
P-10	16.00	120.00	-118.72	0.19
P-11	16.00	120.00	-126.32	0.20
P-12	16.00	120.00	-152.02	0.24
P-13	16.00	120.00	-152.02	0.24
P-14	16.00	120.00	24.30	0.04
P-15	12.00	120.00	7.60	0.02
P-16	12.00	120.00	16.70	0.05
P-17	12.00	120.00	11.90	0.03
P-18	12.00	120.00	-9.30	0.03
P-19	12.00	120.00	-16.40	0.05
P-20	16.00	120.00	98.38	0.16
P-21	16.00	120.00	91.48	0.15
P-22	16.00	120.00	78.90	0.13
P-23	16.00	120.00	78.90	0.13
P-24	12.00	112.00	176.79	0.50
P-25	16.00	120.00	55.40	0.09
P-26	16.00	120.00	45.90	0.07
P-27	16.00	120.00	7.62	0.01
P-28	16.00	120.00	7.62	0.01
P-29	16.00	120.00	0.82	0.00
P-30	16.00	120.00	-6.48	0.01
P-31	16.00	120.00	-13.58	0.02
P-32	16.00	120.00	-4.90	0.01

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

DATE: June, 2010

CASE: PHASE 1,2&4 - AVERAGE DAILY DEMAND

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-33	16.00	120.00	-27.30	0.04
P-34	16.00	120.00	-62.60	0.10
P-35	16.00	120.00	-74.90	0.12
P-37	16.00	120.00	-144.65	0.23
P-38	16.00	120.00	-190.15	0.30
P-39	16.00	120.00	-218.15	0.35
P-40	16.00	120.00	42.12	0.07
P-41	16.00	120.00	-58.81	0.09
P-42	12.00	120.00	91.52	0.26
P-43	12.00	120.00	91.52	0.26
P-44	12.00	120.00	57.42	0.16
P-45	12.00	120.00	41.82	0.12
P-46	12.00	120.00	33.02	0.09
P-47	12.00	120.00	8.82	0.03
P-48	12.00	120.00	-21.25	0.06
P-49	16.00	120.00	-88.10	0.14
P-50	16.00	120.00	-131.45	0.21
P-51	12.00	120.00	-36.05	0.10
P-52	12.00	120.00	100.93	0.29
P-53	12.00	120.00	88.63	0.25
P-54	12.00	120.00	63.03	0.18
P-55	12.00	120.00	27.13	0.08
P-56	12.00	120.00	15.93	0.05
P-57	12.00	120.00	13.11	0.04
P-58	12.00	120.00	13.11	0.04
P-59	12.00	120.00	13.11	0.04
P-60	12.00	120.00	13.11	0.04
P-61	12.00	120.00	4.42	0.01
P-62	12.00	120.00	4.42	0.01
P-63	12.00	120.00	4.42	0.01
P-64	12.00	120.00	4.42	0.01

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - AVERAGE DAILY DEMAND

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-65	12.00	120.00	8.68	0.02
P-66	16.00	120.00	94.49	0.15
P-67	16.00	120.00	79.59	0.13
P-68	16.00	120.00	60.59	0.10
P-69	16.00	120.00	24.09	0.04
P-70	16.00	120.00	-42.71	0.07
P-79	16.00	120.00	150.34	0.24
P-80	16.00	120.00	260.27	0.42

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - PEAK HOUR

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	76.32	91.63	0.24
FH-2	401.00	625.00	97.07	33.12	96.80	0.27
FH-3	391.00	625.00	101.40	0.00	101.11	0.29
FH-4	393.00	625.00	100.53	2.88	100.23	0.30
FH-5	399.00	625.00	97.93	0.00	97.65	0.28
FH-6	409.00	625.00	93.60	36.48	93.36	0.24
FH-7	418.00	625.00	89.70	0.00	89.51	0.19
FH-8	405.00	625.00	95.33	36.48	95.04	0.29
FH-9	391.00	625.00	101.40	80.16	101.10	0.30
FH-10	387.00	625.00	103.13	0.00	102.82	0.31
FH-11	397.00	625.00	98.80	74.88	98.48	0.32
FH-12	379.50	625.00	106.38	320.16	106.02	0.36
FH-13	379.00	625.00	106.60	46.08	106.25	0.35
FH-14	375.00	625.00	108.33	0.00	107.98	0.35
FH-15	372.50	625.00	109.42	35.04	109.06	0.36
FH-16	368.00	625.00	111.37	36.96	111.01	0.36
FH-17	366.00	625.00	112.23	36.48	111.87	0.36
FH-18	364.00	625.00	113.10	111.36	112.74	0.36
FH-19	360.00	625.00	114.83	151.68	114.47	0.36
FH-20	355.00	625.00	117.00	59.04	116.64	0.36
FH-21	365.00	625.00	112.67	55.68	112.33	0.34
FH-22	356.00	625.00	116.57	63.36	116.26	0.31
FH-23	354.00	625.00	117.43	218.40	117.14	0.29
FH-24	344.00	625.00	121.77	134.40	121.56	0.21
FH-25	413.00	625.00	91.87	0.00	91.69	0.18
FH-26	405.50	625.00	95.12	74.40	94.84	0.28
FH-27	394.00	625.00	100.10	42.24	99.78	0.32
FH-28	368.00	625.00	111.37	68.16	111.02	0.35
FH-29	388.00	625.00	102.70	59.04	102.49	0.21
FH-30	390.00	625.00	101.83	122.88	101.55	0.28
FH-31	377.50	625.00	107.25	53.76	106.91	0.34

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - PEAK HOUR

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-32	376.00	625.00	107.90	0.00	107.55	0.35
FH-33	374.00	625.00	108.77	0.00	108.41	0.36
FH-34	377.50	625.00	107.25	0.00	106.90	0.35
FH-35	379.00	625.00	106.60	0.00	106.25	0.35
J-1	427.00	625.00	85.80	0.00	85.65	0.15
J-2	425.00	625.00	86.67	0.00	86.53	0.14
J-5	391.00	625.00	101.40	0.00	101.10	0.30
J-6	389.00	625.00	102.27	0.00	101.97	0.30
J-8	396.50	625.00	99.02	0.00	98.72	0.30
J-11	414.00	625.00	91.43	0.00	91.22	0.21
J-13	397.00	625.00	98.80	0.00	98.50	0.30
J-16	402.00	625.00	96.63	57.12	96.34	0.29
J-17	415.50	625.00	90.78	44.64	90.57	0.21
J-18	415.00	625.00	91.00	78.72	90.78	0.22
J-22	381.00	625.00	105.73	113.28	105.39	0.34
J-24	376.00	625.00	107.90	0.00	107.55	0.35
J-29	365.00	625.00	112.67	14.88	112.31	0.36
J-37	343.00	625.00	122.20	0.00	122.01	0.19
J-38	380.00	625.00	106.17	0.00	105.99	0.18
J-39	413.00	625.00	91.87	0.00	91.72	0.15
J-41	408.00	625.00	94.03	162.72	93.77	0.26
J-44	385.00	625.00	104.00	115.68	103.67	0.33
J-45	369.00	625.00	110.93	159.84	110.59	0.34
J-47	363.00	625.00	113.53	35.04	113.20	0.33
J-50	382.00	625.00	105.30	172.32	104.97	0.33
J-52	376.50	625.00	107.68	0.00	107.34	0.34
J-55	373.50	625.00	108.98	0.00	108.63	0.35
J-58	380.00	625.00	106.17	0.00	105.82	0.35
J-60	395.00	625.00	99.67	92.64	99.33	0.34
J-61	387.00	625.00	103.13	179.04	102.78	0.35

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - PEAK HOUR

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	431.78	0.69
P-2	12.00	112.00	-119.51	0.34
P-3	16.00	120.00	551.29	0.88
P-5	16.00	120.00	441.85	0.71
P-6	16.00	120.00	325.21	0.52
P-7	16.00	120.00	-54.82	0.09
P-8	16.00	120.00	-57.70	0.09
P-9	16.00	120.00	-573.49	0.92
P-10	16.00	120.00	-573.49	0.92
P-11	16.00	120.00	-609.97	0.97
P-12	16.00	120.00	-733.33	1.17
P-13	16.00	120.00	-733.33	1.17
P-14	16.00	120.00	116.64	0.19
P-15	12.00	120.00	36.48	0.10
P-16	12.00	120.00	80.16	0.23
P-17	12.00	120.00	57.12	0.16
P-18	12.00	120.00	-44.64	0.13
P-19	12.00	120.00	-78.72	0.22
P-20	16.00	120.00	474.97	0.76
P-21	16.00	120.00	441.85	0.71
P-22	16.00	120.00	380.03	0.61
P-23	16.00	120.00	380.03	0.61
P-24	12.00	112.00	852.84	2.42
P-25	16.00	120.00	266.75	0.43
P-26	16.00	120.00	220.67	0.35
P-27	16.00	120.00	35.79	0.06
P-28	16.00	120.00	35.79	0.06
P-29	16.00	120.00	0.75	0.00
P-30	16.00	120.00	-36.21	0.06
P-31	16.00	120.00	-72.69	0.12
P-32	16.00	120.00	-43.85	0.07

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - PEAK HOUR

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-33	16.00	120.00	-155.21	0.25
P-34	16.00	120.00	-306.89	0.49
P-35	16.00	120.00	-365.93	0.58
P-37	16.00	120.00	-694.32	1.11
P-38	16.00	120.00	-912.72	1.46
P-39	16.00	120.00	-1047.12	1.67
P-40	16.00	120.00	202.30	0.32
P-41	16.00	120.00	-282.47	0.45
P-42	12.00	120.00	438.85	1.24
P-43	12.00	120.00	438.85	1.24
P-44	12.00	120.00	276.13	0.78
P-45	12.00	120.00	201.73	0.57
P-46	12.00	120.00	159.49	0.45
P-47	12.00	120.00	43.81	0.12
P-48	12.00	120.00	-106.16	0.30
P-49	16.00	120.00	-421.61	0.67
P-50	16.00	120.00	-630.96	1.01
P-51	12.00	120.00	-174.32	0.49
P-52	12.00	120.00	484.77	1.38
P-53	12.00	120.00	425.73	1.21
P-54	12.00	120.00	302.85	0.86
P-55	12.00	120.00	130.53	0.37
P-56	12.00	120.00	76.77	0.22
P-57	12.00	120.00	66.89	0.19
P-58	12.00	120.00	66.89	0.19
P-59	12.00	120.00	66.89	0.19
P-60	12.00	120.00	66.89	0.19
P-61	12.00	120.00	23.17	0.07
P-62	12.00	120.00	23.17	0.07
P-63	12.00	120.00	23.17	0.07
P-64	12.00	120.00	23.17	0.07

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - PEAK HOUR

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-65	12.00	120.00	43.72	0.12
P-66	16.00	120.00	458.67	0.73
P-67	16.00	120.00	383.79	0.61
P-68	16.00	120.00	291.15	0.46
P-69	16.00	120.00	112.11	0.18
P-70	16.00	120.00	-208.05	0.33
P-79	16.00	120.00	721.32	1.15
P-80	16.00	120.00	1249.42	1.99

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAXIMUM DAILY DEMAND

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	33.39	91.70	0.17
FH-2	401.00	625.00	97.07	14.49	96.89	0.18
FH-3	391.00	625.00	101.40	0.00	101.21	0.19
FH-4	393.00	625.00	100.53	1.26	100.35	0.18
FH-5	399.00	625.00	97.93	0.00	97.75	0.18
FH-6	409.00	625.00	93.60	15.96	93.43	0.17
FH-7	418.00	625.00	89.70	0.00	89.55	0.15
FH-8	405.00	625.00	95.33	15.96	95.15	0.18
FH-9	391.00	625.00	101.40	35.07	101.21	0.19
FH-10	387.00	625.00	103.13	0.00	102.94	0.19
FH-11	397.00	625.00	98.80	32.76	98.61	0.19
FH-12	379.50	625.00	106.38	140.07	106.17	0.21
FH-13	379.00	625.00	106.60	20.16	106.39	0.21
FH-14	375.00	625.00	108.33	0.00	108.12	0.21
FH-15	372.50	625.00	109.42	15.33	109.20	0.22
FH-16	368.00	625.00	111.37	16.17	111.15	0.22
FH-17	366.00	625.00	112.23	15.96	112.02	0.21
FH-18	364.00	625.00	113.10	48.72	112.88	0.22
FH-19	360.00	625.00	114.83	66.36	114.61	0.22
FH-20	355.00	625.00	117.00	25.83	116.78	0.22
FH-21	365.00	625.00	112.67	24.36	112.45	0.22
FH-22	356.00	625.00	116.57	27.72	116.36	0.21
FH-23	354.00	625.00	117.43	95.55	117.23	0.20
FH-24	344.00	625.00	121.77	58.80	121.57	0.20
FH-25	413.00	625.00	91.87	0.00	91.72	0.15
FH-26	405.50	625.00	95.12	32.55	94.94	0.18
FH-27	394.00	625.00	100.10	18.48	99.91	0.19
FH-28	368.00	625.00	111.37	29.82	111.15	0.22
FH-29	388.00	625.00	102.70	25.83	102.53	0.17
FH-30	390.00	625.00	101.83	53.76	101.65	0.18
FH-31	377.50	625.00	107.25	23.52	107.05	0.20

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAXIMUM DAILY DEMAND

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-32	376.00	625.00	107.90	0.00	107.69	0.21
FH-33	374.00	625.00	108.77	0.00	108.56	0.21
FH-34	377.50	625.00	107.25	0.00	107.04	0.21
FH-35	379.00	625.00	106.60	0.00	106.39	0.21
J-1	427.00	625.00	85.80	0.00	85.66	0.14
J-2	425.00	625.00	86.67	0.00	86.53	0.14
J-5	391.00	625.00	101.40	0.00	101.21	0.19
J-6	389.00	625.00	102.27	0.00	102.08	0.19
J-8	396.50	625.00	99.02	0.00	98.83	0.19
J-11	414.00	625.00	91.43	0.00	91.27	0.16
J-13	397.00	625.00	98.80	0.00	98.61	0.19
J-16	402.00	625.00	96.63	24.99	96.45	0.18
J-17	415.50	625.00	90.78	19.53	90.62	0.16
J-18	415.00	625.00	91.00	34.44	90.84	0.16
J-22	381.00	625.00	105.73	49.56	105.53	0.20
J-24	376.00	625.00	107.90	0.00	107.69	0.21
J-29	365.00	625.00	112.67	6.51	112.45	0.22
J-37	343.00	625.00	122.20	0.00	122.01	0.19
J-38	380.00	625.00	106.17	0.00	106.00	0.17
J-39	413.00	625.00	91.87	0.00	91.72	0.15
J-41	408.00	625.00	94.03	71.19	93.86	0.17
J-44	385.00	625.00	104.00	50.61	103.80	0.20
J-45	369.00	625.00	110.93	69.93	110.72	0.21
J-47	363.00	625.00	113.53	15.33	113.32	0.21
J-50	382.00	625.00	105.30	75.39	105.10	0.20
J-52	376.50	625.00	107.68	0.00	107.48	0.20
J-55	373.50	625.00	108.98	0.00	108.77	0.21
J-58	380.00	625.00	106.17	0.00	105.96	0.21
J-60	395.00	625.00	99.67	40.53	99.47	0.20
J-61	387.00	625.00	103.13	78.33	102.93	0.20

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAXIMUM DAILY DEMAND

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	188.90	0.30
P-2	12.00	112.00	-52.28	0.15
P-3	16.00	120.00	241.19	0.38
P-5	16.00	120.00	193.31	0.31
P-6	16.00	120.00	142.28	0.23
P-7	16.00	120.00	-23.99	0.04
P-8	16.00	120.00	-25.25	0.04
P-9	16.00	120.00	-250.90	0.40
P-10	16.00	120.00	-250.90	0.40
P-11	16.00	120.00	-266.86	0.43
P-12	16.00	120.00	-320.83	0.51
P-13	16.00	120.00	-320.83	0.51
P-14	16.00	120.00	51.03	0.08
P-15	12.00	120.00	15.96	0.05
P-16	12.00	120.00	35.07	0.10
P-17	12.00	120.00	24.99	0.07
P-18	12.00	120.00	-19.53	0.06
P-19	12.00	120.00	-34.44	0.10
P-20	16.00	120.00	207.80	0.33
P-21	16.00	120.00	193.31	0.31
P-22	16.00	120.00	166.26	0.27
P-23	16.00	120.00	166.26	0.27
P-24	12.00	112.00	373.12	1.06
P-25	16.00	120.00	116.70	0.19
P-26	16.00	120.00	96.54	0.15
P-27	16.00	120.00	15.66	0.02
P-28	16.00	120.00	15.66	0.02
P-29	16.00	120.00	0.33	0.00
P-30	16.00	120.00	-15.84	0.03
P-31	16.00	120.00	-31.80	0.05
P-32	16.00	120.00	-19.18	0.03

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAXIMUM DAILY DEMAND

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-33	16.00	120.00	-67.90	0.11
P-34	16.00	120.00	-134.26	0.21
P-35	16.00	120.00	-160.09	0.26
P-37	16.00	120.00	-303.77	0.48
P-38	16.00	120.00	-399.32	0.64
P-39	16.00	120.00	-458.12	0.73
P-40	16.00	120.00	88.51	0.14
P-41	16.00	120.00	-123.58	0.20
P-42	12.00	120.00	192.00	0.54
P-43	12.00	120.00	192.00	0.54
P-44	12.00	120.00	120.81	0.34
P-45	12.00	120.00	88.26	0.25
P-46	12.00	120.00	69.78	0.20
P-47	12.00	120.00	19.17	0.05
P-48	12.00	120.00	-46.44	0.13
P-49	16.00	120.00	-184.45	0.29
P-50	16.00	120.00	-276.05	0.44
P-51	12.00	120.00	-76.26	0.22
P-52	12.00	120.00	212.09	0.60
P-53	12.00	120.00	186.26	0.53
P-54	12.00	120.00	132.50	0.38
P-55	12.00	120.00	57.11	0.16
P-56	12.00	120.00	33.59	0.10
P-57	12.00	120.00	29.27	0.08
P-58	12.00	120.00	29.27	0.08
P-59	12.00	120.00	29.27	0.08
P-60	12.00	120.00	29.27	0.08
P-61	12.00	120.00	10.14	0.03
P-62	12.00	120.00	10.14	0.03
P-63	12.00	120.00	10.14	0.03
P-64	12.00	120.00	10.14	0.03

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAXIMUM DAILY DEMAND

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-65	12.00	120.00	19.13	0.05
P-66	16.00	120.00	200.67	0.32
P-67	16.00	120.00	167.91	0.27
P-68	16.00	120.00	127.38	0.20
P-69	16.00	120.00	49.05	0.08
P-70	16.00	120.00	-91.02	0.15
P-79	16.00	120.00	315.58	0.50
P-80	16.00	120.00	546.62	0.87

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAX DAY, FIRE FH-22

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	33.39	91.60	0.27
FH-2	401.00	625.00	97.07	14.49	96.75	0.32
FH-3	391.00	625.00	101.40	0.00	101.04	0.36
FH-4	393.00	625.00	100.53	1.26	100.17	0.36
FH-5	399.00	625.00	97.93	0.00	97.59	0.34
FH-6	409.00	625.00	93.60	15.96	93.32	0.28
FH-7	418.00	625.00	89.70	0.00	89.49	0.21
FH-8	405.00	625.00	95.33	15.96	94.98	0.35
FH-9	391.00	625.00	101.40	35.07	101.04	0.36
FH-10	387.00	625.00	103.13	0.00	102.73	0.40
FH-11	397.00	625.00	98.80	32.76	98.39	0.41
FH-12	379.50	625.00	106.38	140.07	105.86	0.52
FH-13	379.00	625.00	106.60	20.16	106.09	0.51
FH-14	375.00	625.00	108.33	0.00	107.78	0.55
FH-15	372.50	625.00	109.42	15.33	108.81	0.61
FH-16	368.00	625.00	111.37	16.17	110.71	0.66
FH-17	366.00	625.00	112.23	15.96	111.54	0.69
FH-18	364.00	625.00	113.10	48.72	112.35	0.75
FH-19	360.00	625.00	114.83	66.36	114.01	0.82
FH-20	355.00	625.00	117.00	25.83	116.12	0.88
FH-21	365.00	625.00	112.67	24.36	111.75	0.92
FH-22	356.00	625.00	116.57	4026.40	115.47	1.10
FH-23	354.00	625.00	117.43	95.55	116.48	0.95
FH-24	344.00	625.00	121.77	58.80	121.46	0.31
FH-25	413.00	625.00	91.87	0.00	91.67	0.20
FH-26	405.50	625.00	95.12	32.55	94.73	0.39
FH-27	394.00	625.00	100.10	18.48	99.57	0.53
FH-28	368.00	625.00	111.37	29.82	110.65	0.72
FH-29	388.00	625.00	102.70	25.83	102.46	0.24
FH-30	390.00	625.00	101.83	53.76	101.45	0.38
FH-31	377.50	625.00	107.25	23.52	106.67	0.58

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAX DAY, FIRE FH-22

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-32	376.00	625.00	107.90	0.00	107.23	0.67
FH-33	374.00	625.00	108.77	0.00	108.09	0.68
FH-34	377.50	625.00	107.25	0.00	106.61	0.64
FH-35	379.00	625.00	106.60	0.00	106.02	0.58
J-1	427.00	625.00	85.80	0.00	85.64	0.16
J-2	425.00	625.00	86.67	0.00	86.53	0.14
J-5	391.00	625.00	101.40	0.00	101.04	0.36
J-6	389.00	625.00	102.27	0.00	101.90	0.37
J-8	396.50	625.00	99.02	0.00	98.66	0.36
J-11	414.00	625.00	91.43	0.00	91.19	0.24
J-13	397.00	625.00	98.80	0.00	98.44	0.36
J-16	402.00	625.00	96.63	24.99	96.28	0.35
J-17	415.50	625.00	90.78	19.53	90.55	0.23
J-18	415.00	625.00	91.00	34.44	90.76	0.24
J-22	381.00	625.00	105.73	49.56	105.26	0.47
J-24	376.00	625.00	107.90	0.00	107.36	0.54
J-29	365.00	625.00	112.67	6.51	111.95	0.72
J-37	343.00	625.00	122.20	0.00	122.01	0.19
J-38	380.00	625.00	106.17	0.00	105.98	0.19
J-39	413.00	625.00	91.87	0.00	91.72	0.15
J-41	408.00	625.00	94.03	71.19	93.70	0.33
J-44	385.00	625.00	104.00	50.61	103.39	0.61
J-45	369.00	625.00	110.93	69.93	110.26	0.67
J-47	363.00	625.00	113.53	15.33	112.61	0.92
J-50	382.00	625.00	105.30	75.39	104.80	0.50
J-52	376.50	625.00	107.68	0.00	107.01	0.67
J-55	373.50	625.00	108.98	0.00	108.31	0.67
J-58	380.00	625.00	106.17	0.00	105.59	0.58
J-60	395.00	625.00	99.67	40.53	99.24	0.43
J-61	387.00	625.00	103.13	78.33	102.66	0.47

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAX DAY, FIRE FH-22

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	508.78	0.81
P-2	12.00	112.00	-141.05	0.40
P-3	16.00	120.00	649.83	1.04
P-5	16.00	120.00	601.95	0.96
P-6	16.00	120.00	550.92	0.88
P-7	16.00	120.00	-144.98	0.23
P-8	16.00	120.00	-146.24	0.23
P-9	16.00	120.00	-767.05	1.22
P-10	16.00	120.00	-767.05	1.22
P-11	16.00	120.00	-783.01	1.25
P-12	16.00	120.00	-836.98	1.34
P-13	16.00	120.00	-836.98	1.34
P-14	16.00	120.00	51.03	0.08
P-15	12.00	120.00	15.96	0.05
P-16	12.00	120.00	35.07	0.10
P-17	12.00	120.00	24.99	0.07
P-18	12.00	120.00	-19.53	0.06
P-19	12.00	120.00	-34.44	0.10
P-20	16.00	120.00	616.44	0.98
P-21	16.00	120.00	601.95	0.96
P-22	16.00	120.00	695.90	1.11
P-23	16.00	120.00	695.90	1.11
P-24	12.00	112.00	978.03	2.77
P-25	16.00	120.00	646.34	1.03
P-26	16.00	120.00	626.18	1.00
P-27	16.00	120.00	682.06	1.09
P-28	16.00	120.00	682.06	1.09
P-29	16.00	120.00	666.73	1.06
P-30	16.00	120.00	650.56	1.04
P-31	16.00	120.00	634.60	1.01
P-32	16.00	120.00	893.97	1.43

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAX DAY, FIRE FH-22

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-33	16.00	120.00	845.25	1.35
P-34	16.00	120.00	778.89	1.24
P-35	16.00	120.00	753.06	1.20
P-37	16.00	120.00	-2582.32	4.12
P-38	16.00	120.00	-2677.87	4.27
P-39	16.00	120.00	-2736.67	4.37
P-40	16.00	120.00	255.89	0.41
P-41	16.00	120.00	-371.69	0.59
P-42	12.00	120.00	571.84	1.62
P-43	12.00	120.00	571.84	1.62
P-44	12.00	120.00	500.65	1.42
P-45	12.00	120.00	468.10	1.33
P-46	12.00	120.00	449.62	1.28
P-47	12.00	120.00	399.01	1.13
P-48	12.00	120.00	760.54	2.16
P-49	16.00	120.00	728.70	1.16
P-50	16.00	120.00	1444.08	2.30
P-51	12.00	120.00	730.72	2.07
P-52	12.00	120.00	627.58	1.78
P-53	12.00	120.00	601.75	1.71
P-54	12.00	120.00	547.99	1.55
P-55	12.00	120.00	472.60	1.34
P-56	12.00	120.00	449.08	1.27
P-57	12.00	120.00	17.62	0.05
P-58	12.00	120.00	17.62	0.05
P-59	12.00	120.00	17.62	0.05
P-60	12.00	120.00	17.62	0.05
P-61	12.00	120.00	-248.26	0.70
P-62	12.00	120.00	-248.26	0.70
P-63	12.00	120.00	-248.26	0.70
P-64	12.00	120.00	-248.26	0.70

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAX DAY, FIRE FH-22

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-65	12.00	120.00	265.88	0.75
P-66	16.00	120.00	595.82	0.95
P-67	16.00	120.00	563.06	0.90
P-68	16.00	120.00	522.53	0.83
P-69	16.00	120.00	444.20	0.71
P-70	16.00	120.00	304.13	0.49
P-79	16.00	120.00	943.52	1.51
P-80	16.00	120.00	2992.56	4.78

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAX DAY, FIRE FH-22, FIRE FH-11

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	33.39	90.47	1.40
FH-2	401.00	625.00	97.07	14.49	95.27	1.80
FH-3	391.00	625.00	101.40	0.00	99.23	2.17
FH-4	393.00	625.00	100.53	1.26	98.09	2.44
FH-5	399.00	625.00	97.93	0.00	95.52	2.41
FH-6	409.00	625.00	93.60	15.96	91.99	1.61
FH-7	418.00	625.00	89.70	0.00	88.84	0.86
FH-8	405.00	625.00	95.33	15.96	93.12	2.21
FH-9	391.00	625.00	101.40	35.07	99.18	2.22
FH-10	387.00	625.00	103.13	0.00	100.77	2.36
FH-11	397.00	625.00	98.80	6013.94	94.41	4.39
FH-12	379.50	625.00	106.38	140.07	103.20	3.18
FH-13	379.00	625.00	106.60	20.16	104.08	2.52
FH-14	375.00	625.00	108.33	0.00	105.78	2.55
FH-15	372.50	625.00	109.42	15.33	106.93	2.49
FH-16	368.00	625.00	111.37	16.17	108.95	2.42
FH-17	366.00	625.00	112.23	15.96	109.89	2.34
FH-18	364.00	625.00	113.10	48.72	110.82	2.28
FH-19	360.00	625.00	114.83	66.36	112.60	2.23
FH-20	355.00	625.00	117.00	25.83	114.82	2.18
FH-21	365.00	625.00	112.67	24.36	110.54	2.13
FH-22	356.00	625.00	116.57	4026.40	114.45	2.12
FH-23	354.00	625.00	117.43	95.55	115.63	1.80
FH-24	344.00	625.00	121.77	58.80	121.33	0.44
FH-25	413.00	625.00	91.87	0.00	91.59	0.28
FH-26	405.50	625.00	95.12	32.55	94.33	0.79
FH-27	394.00	625.00	100.10	18.48	98.87	1.23
FH-28	368.00	625.00	111.37	29.82	109.62	1.75
FH-29	388.00	625.00	102.70	25.83	102.33	0.37
FH-30	390.00	625.00	101.83	53.76	101.06	0.77
FH-31	377.50	625.00	107.25	23.52	105.91	1.34

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAX DAY, FIRE FH-22, FIRE FH-11

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-32	376.00	625.00	107.90	0.00	106.01	1.89
FH-33	374.00	625.00	108.77	0.00	106.58	2.19
FH-34	377.50	625.00	107.25	0.00	104.90	2.35
FH-35	379.00	625.00	106.60	0.00	104.12	2.48
J-1	427.00	625.00	85.80	0.00	85.42	0.38
J-2	425.00	625.00	86.67	0.00	86.52	0.15
J-5	391.00	625.00	101.40	0.00	99.18	2.22
J-6	389.00	625.00	102.27	0.00	99.95	2.32
J-8	396.50	625.00	99.02	0.00	96.44	2.58
J-11	414.00	625.00	91.43	0.00	90.23	1.20
J-13	397.00	625.00	98.80	0.00	96.58	2.22
J-16	402.00	625.00	96.63	24.99	94.06	2.57
J-17	415.50	625.00	90.78	19.53	89.58	1.20
J-18	415.00	625.00	91.00	34.44	89.80	1.20
J-22	381.00	625.00	105.73	49.56	103.26	2.47
J-24	376.00	625.00	107.90	0.00	105.33	2.57
J-29	365.00	625.00	112.67	6.51	110.36	2.31
J-37	343.00	625.00	122.20	0.00	122.00	0.20
J-38	380.00	625.00	106.17	0.00	105.94	0.23
J-39	413.00	625.00	91.87	0.00	91.72	0.15
J-41	408.00	625.00	94.03	71.19	93.39	0.64
J-44	385.00	625.00	104.00	50.61	102.52	1.48
J-45	369.00	625.00	110.93	69.93	109.26	1.67
J-47	363.00	625.00	113.53	15.33	111.42	2.11
J-50	382.00	625.00	105.30	75.39	104.22	1.08
J-52	376.50	625.00	107.68	0.00	105.86	1.82
J-55	373.50	625.00	108.98	0.00	106.71	2.27
J-58	380.00	625.00	106.17	0.00	103.67	2.50
J-60	395.00	625.00	99.67	40.53	95.38	4.29
J-61	387.00	625.00	103.13	78.33	99.26	3.87

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAX DAY, FIRE FH-22, FIRE FH-11

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	1751.99	2.80
P-2	12.00	112.00	-484.08	1.37
P-3	16.00	120.00	2236.08	3.57
P-5	16.00	120.00	2188.20	3.49
P-6	16.00	120.00	2137.17	3.41
P-7	16.00	120.00	1273.45	2.03
P-8	16.00	120.00	1272.19	2.03
P-9	16.00	120.00	-3002.03	4.79
P-10	16.00	120.00	-3002.03	4.79
P-11	16.00	120.00	-3017.99	4.82
P-12	16.00	120.00	-3071.96	4.90
P-13	16.00	120.00	-3071.96	4.90
P-14	16.00	120.00	51.03	0.08
P-15	12.00	120.00	15.96	0.05
P-16	12.00	120.00	35.07	0.10
P-17	12.00	120.00	24.99	0.07
P-18	12.00	120.00	-19.53	0.06
P-19	12.00	120.00	-34.44	0.10
P-20	16.00	120.00	2202.69	3.51
P-21	16.00	120.00	2188.20	3.49
P-22	16.00	120.00	863.71	1.38
P-23	16.00	120.00	863.71	1.38
P-24	12.00	112.00	3556.04	10.09
P-25	16.00	120.00	814.15	1.30
P-26	16.00	120.00	793.99	1.27
P-27	16.00	120.00	-844.33	1.35
P-28	16.00	120.00	-844.33	1.35
P-29	16.00	120.00	-859.66	1.37
P-30	16.00	120.00	-875.83	1.40
P-31	16.00	120.00	-891.79	1.42
P-32	16.00	120.00	-694.64	1.11

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAX DAY, FIRE FH-22, FIRE FH-11

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-33	16.00	120.00	-743.36	1.19
P-34	16.00	120.00	-809.72	1.29
P-35	16.00	120.00	-835.55	1.33
P-37	16.00	120.00	-3914.43	6.25
P-38	16.00	120.00	-4009.98	6.40
P-39	16.00	120.00	-4068.78	6.49
P-40	16.00	120.00	434.90	0.69
P-41	16.00	120.00	-624.66	1.00
P-42	12.00	120.00	967.71	2.75
P-43	12.00	120.00	967.71	2.75
P-44	12.00	120.00	896.52	2.54
P-45	12.00	120.00	863.97	2.45
P-46	12.00	120.00	845.49	2.40
P-47	12.00	120.00	794.88	2.25
P-48	12.00	120.00	1017.04	2.89
P-49	16.00	120.00	-859.91	1.37
P-50	16.00	120.00	111.97	0.18
P-51	12.00	120.00	987.22	2.80
P-52	12.00	120.00	1059.57	3.01
P-53	12.00	120.00	1033.74	2.93
P-54	12.00	120.00	979.98	2.78
P-55	12.00	120.00	904.59	2.57
P-56	12.00	120.00	881.07	2.50
P-57	12.00	120.00	588.98	1.67
P-58	12.00	120.00	588.98	1.67
P-59	12.00	120.00	588.98	1.67
P-60	12.00	120.00	588.98	1.67
P-61	12.00	120.00	385.32	1.09
P-62	12.00	120.00	385.32	1.09
P-63	12.00	120.00	385.32	1.09
P-64	12.00	120.00	385.32	1.09

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAX DAY, FIRE FH-22, FIRE FH-11

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-65	12.00	120.00	203.66	0.58
P-66	16.00	120.00	4249.23	6.78
P-67	16.00	120.00	-1764.71	2.82
P-68	16.00	120.00	-1805.24	2.88
P-69	16.00	120.00	-1883.57	3.01
P-70	16.00	120.00	-2023.64	3.23
P-79	16.00	120.00	1592.37	2.54
P-80	16.00	120.00	4503.68	7.19

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - PK HR, P-29 CLOSED

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	76.32	91.63	0.24
FH-2	401.00	625.00	97.07	33.12	96.80	0.27
FH-3	391.00	625.00	101.40	0.00	101.11	0.29
FH-4	393.00	625.00	100.53	2.88	100.23	0.30
FH-5	399.00	625.00	97.93	0.00	97.65	0.28
FH-6	409.00	625.00	93.60	36.48	93.36	0.24
FH-7	418.00	625.00	89.70	0.00	89.51	0.19
FH-8	405.00	625.00	95.33	36.48	95.04	0.29
FH-9	391.00	625.00	101.40	80.16	101.10	0.30
FH-10	387.00	625.00	103.13	0.00	102.82	0.31
FH-11	397.00	625.00	98.80	74.88	98.48	0.32
FH-12	379.50	625.00	106.38	320.16	106.02	0.36
FH-13	379.00	625.00	106.60	46.08	106.25	0.35
FH-14	375.00	625.00	108.33	0.00	107.98	0.35
FH-15	372.50	625.00	109.42	35.04	109.06	0.36
FH-16	368.00	625.00	111.37	36.96	111.01	0.36
FH-17	366.00	625.00	112.23	36.48	111.87	0.36
FH-18	364.00	625.00	113.10	111.36	112.74	0.36
FH-19	360.00	625.00	114.83	151.68	114.47	0.36
FH-20	355.00	625.00	117.00	59.04	116.64	0.36
FH-21	365.00	625.00	112.67	55.68	112.33	0.34
FH-22	356.00	625.00	116.57	63.36	116.26	0.31
FH-23	354.00	625.00	117.43	218.40	117.14	0.29
FH-24	344.00	625.00	121.77	134.40	121.56	0.21
FH-25	413.00	625.00	91.87	0.00	91.69	0.18
FH-26	405.50	625.00	95.12	74.40	94.84	0.28
FH-27	394.00	625.00	100.10	42.24	99.78	0.32
FH-28	368.00	625.00	111.37	68.16	111.02	0.35
FH-29	388.00	625.00	102.70	59.04	102.49	0.21
FH-30	390.00	625.00	101.83	122.88	101.55	0.28
FH-31	377.50	625.00	107.25	53.76	106.91	0.34

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - PK HR, P-29 CLOSED

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-32	376.00	625.00	107.90	0.00	107.55	0.35
FH-33	374.00	625.00	108.77	0.00	108.41	0.36
FH-34	377.50	625.00	107.25	0.00	106.90	0.35
FH-35	379.00	625.00	106.60	0.00	106.25	0.35
J-1	427.00	625.00	85.80	0.00	85.65	0.15
J-2	425.00	625.00	86.67	0.00	86.53	0.14
J-5	391.00	625.00	101.40	0.00	101.10	0.30
J-6	389.00	625.00	102.27	0.00	101.97	0.30
J-8	396.50	625.00	99.02	0.00	98.72	0.30
J-11	414.00	625.00	91.43	0.00	91.22	0.21
J-13	397.00	625.00	98.80	0.00	98.50	0.30
J-16	402.00	625.00	96.63	57.12	96.34	0.29
J-17	415.50	625.00	90.78	44.64	90.57	0.21
J-18	415.00	625.00	91.00	78.72	90.78	0.22
J-22	381.00	625.00	105.73	113.28	105.39	0.34
J-24	376.00	625.00	107.90	0.00	107.55	0.35
J-29	365.00	625.00	112.67	14.88	112.31	0.36
J-37	343.00	625.00	122.20	0.00	122.01	0.19
J-38	380.00	625.00	106.17	0.00	105.99	0.18
J-39	413.00	625.00	91.87	0.00	91.72	0.15
J-41	408.00	625.00	94.03	162.72	93.77	0.26
J-44	385.00	625.00	104.00	115.68	103.67	0.33
J-45	369.00	625.00	110.93	159.84	110.59	0.34
J-47	363.00	625.00	113.53	35.04	113.20	0.33
J-50	382.00	625.00	105.30	172.32	104.97	0.33
J-52	376.50	625.00	107.68	0.00	107.34	0.34
J-55	373.50	625.00	108.98	0.00	108.63	0.35
J-58	380.00	625.00	106.17	0.00	105.82	0.35
J-60	395.00	625.00	99.67	92.64	99.33	0.34
J-61	387.00	625.00	103.13	179.04	102.78	0.35

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - PK HR, P-29 CLOSED

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	431.73	0.69
P-2	12.00	112.00	-119.49	0.34
P-3	16.00	120.00	551.23	0.88
P-5	16.00	120.00	441.79	0.70
P-6	16.00	120.00	325.15	0.52
P-7	16.00	120.00	-54.80	0.09
P-8	16.00	120.00	-57.68	0.09
P-9	16.00	120.00	-573.41	0.91
P-10	16.00	120.00	-573.41	0.91
P-11	16.00	120.00	-609.89	0.97
P-12	16.00	120.00	-733.25	1.17
P-13	16.00	120.00	-733.25	1.17
P-14	16.00	120.00	116.64	0.19
P-15	12.00	120.00	36.48	0.10
P-16	12.00	120.00	80.16	0.23
P-17	12.00	120.00	57.12	0.16
P-18	12.00	120.00	-44.64	0.13
P-19	12.00	120.00	-78.72	0.22
P-20	16.00	120.00	474.91	0.76
P-21	16.00	120.00	441.79	0.70
P-22	16.00	120.00	379.95	0.61
P-23	16.00	120.00	379.95	0.61
P-24	12.00	112.00	852.75	2.42
P-25	16.00	120.00	266.67	0.43
P-26	16.00	120.00	220.59	0.35
P-27	16.00	120.00	35.04	0.06
P-28	16.00	120.00	35.04	0.06
P-29	16.00	120.00	CLOSED	CLOSED
P-30	16.00	120.00	-36.96	0.06
P-31	16.00	120.00	-73.44	0.12
P-32	16.00	120.00	-43.99	0.07

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Gordon Axelson, PE, Principal

WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - PK HR, P-29 CLOSED

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-33	16.00	120.00	-155.35	0.25
P-34	16.00	120.00	-307.03	0.49
P-35	16.00	120.00	-366.07	0.58
P-37	16.00	120.00	-694.42	1.11
P-38	16.00	120.00	-912.82	1.46
P-39	16.00	120.00	-1047.22	1.67
P-40	16.00	120.00	202.31	0.32
P-41	16.00	120.00	-282.49	0.45
P-42	12.00	120.00	438.87	1.24
P-43	12.00	120.00	438.87	1.24
P-44	12.00	120.00	276.15	0.78
P-45	12.00	120.00	201.75	0.57
P-46	12.00	120.00	159.51	0.45
P-47	12.00	120.00	43.83	0.12
P-48	12.00	120.00	-106.10	0.30
P-49	16.00	120.00	-421.75	0.67
P-50	16.00	120.00	-631.06	1.01
P-51	12.00	120.00	-174.26	0.49
P-52	12.00	120.00	484.80	1.38
P-53	12.00	120.00	425.76	1.21
P-54	12.00	120.00	302.88	0.86
P-55	12.00	120.00	130.56	0.37
P-56	12.00	120.00	76.80	0.22
P-57	12.00	120.00	66.89	0.19
P-58	12.00	120.00	66.89	0.19
P-59	12.00	120.00	66.89	0.19
P-60	12.00	120.00	66.89	0.19
P-61	12.00	120.00	22.56	0.06
P-62	12.00	120.00	22.56	0.06
P-63	12.00	120.00	22.56	0.06
P-64	12.00	120.00	22.56	0.06

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - PK HR, P-29 CLOSED

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-65	12.00	120.00	44.33	0.13
P-66	16.00	120.00	458.61	0.73
P-67	16.00	120.00	383.73	0.61
P-68	16.00	120.00	291.09	0.46
P-69	16.00	120.00	112.05	0.18
P-70	16.00	120.00	-208.11	0.33
P-79	16.00	120.00	721.36	1.15
P-80	16.00	120.00	1249.53	1.99

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAX DAY, P-24 CLOSED, P-29 CLOSED, FIRE FH-11

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-1	413.00	625.00	91.87	33.39	88.27	3.60
FH-2	401.00	625.00	97.07	14.49	92.76	4.31
FH-3	391.00	625.00	101.40	0.00	96.44	4.96
FH-4	393.00	625.00	100.53	1.26	94.97	5.56
FH-5	399.00	625.00	97.93	0.00	92.07	5.86
FH-6	409.00	625.00	93.60	15.96	88.07	5.53
FH-7	418.00	625.00	89.70	0.00	84.49	5.21
FH-8	405.00	625.00	95.33	15.96	90.30	5.03
FH-9	391.00	625.00	101.40	35.07	96.36	5.04
FH-10	387.00	625.00	103.13	0.00	97.89	5.24
FH-11	397.00	625.00	98.80	6013.94	91.21	7.59
FH-12	379.50	625.00	106.38	140.07	100.26	6.12
FH-13	379.00	625.00	106.60	20.16	101.25	5.35
FH-14	375.00	625.00	108.33	0.00	102.95	5.38
FH-15	372.50	625.00	109.42	15.33	104.03	5.39
FH-16	368.00	625.00	111.37	16.17	110.47	0.90
FH-17	366.00	625.00	112.23	15.96	111.33	0.90
FH-18	364.00	625.00	113.10	48.72	112.24	0.86
FH-19	360.00	625.00	114.83	66.36	114.06	0.77
FH-20	355.00	625.00	117.00	25.83	116.33	0.67
FH-21	365.00	625.00	112.67	24.36	112.09	0.58
FH-22	356.00	625.00	116.57	27.72	116.13	0.44
FH-23	354.00	625.00	117.43	95.55	117.03	0.40
FH-24	344.00	625.00	121.77	58.80	121.54	0.23
FH-25	413.00	625.00	91.87	0.00	91.68	0.19
FH-26	405.50	625.00	95.12	32.55	94.79	0.33
FH-27	394.00	625.00	100.10	18.48	99.66	0.44
FH-28	368.00	625.00	111.37	29.82	110.82	0.55
FH-29	388.00	625.00	102.70	25.83	102.48	0.22
FH-30	390.00	625.00	101.83	53.76	101.50	0.33
FH-31	377.50	625.00	107.25	23.52	106.77	0.48

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAX DAY, P-24 CLOSED, P-29 CLOSED, FIRE FH-11

Label	Elevation (ft)	HGL Zone (ft)	Static Pressure (psi)	Model Run Demand (gpm)	Model Run Pressure (psi)	Delta P from Static (psi)
FH-32	376.00	625.00	107.90	0.00	107.10	0.80
FH-33	374.00	625.00	108.77	0.00	107.59	1.18
FH-34	377.50	625.00	107.25	0.00	104.91	2.34
FH-35	379.00	625.00	106.60	0.00	102.49	4.11
J-1	427.00	625.00	85.80	0.00	83.95	1.85
J-2	425.00	625.00	86.67	0.00	81.76	4.91
J-5	391.00	625.00	101.40	0.00	96.36	5.04
J-6	389.00	625.00	102.27	0.00	97.06	5.21
J-8	396.50	625.00	99.02	0.00	93.08	5.94
J-11	414.00	625.00	91.43	0.00	86.08	5.35
J-13	397.00	625.00	98.80	0.00	93.76	5.04
J-16	402.00	625.00	96.63	24.99	90.70	5.93
J-17	415.50	625.00	90.78	19.53	85.43	5.35
J-18	415.00	625.00	91.00	34.44	85.64	5.36
J-22	381.00	625.00	105.73	49.56	100.42	5.31
J-24	376.00	625.00	107.90	0.00	102.51	5.39
J-29	365.00	625.00	112.67	6.51	111.76	0.91
J-37	343.00	625.00	122.20	0.00	122.01	0.19
J-38	380.00	625.00	106.17	0.00	105.98	0.19
J-39	413.00	625.00	91.87	0.00	91.72	0.15
J-41	408.00	625.00	94.03	71.19	93.74	0.29
J-44	385.00	625.00	104.00	50.61	103.50	0.50
J-45	369.00	625.00	110.93	69.93	110.38	0.55
J-47	363.00	625.00	113.53	15.33	112.98	0.55
J-50	382.00	625.00	105.30	75.39	104.88	0.42
J-52	376.50	625.00	107.68	0.00	106.96	0.72
J-55	373.50	625.00	108.98	0.00	107.70	1.28
J-58	380.00	625.00	106.17	0.00	101.78	4.39
J-60	395.00	625.00	99.67	40.53	92.20	7.47
J-61	387.00	625.00	103.13	78.33	96.17	6.96

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAX DAY, P-24 CLOSED, P-29 CLOSED, FIRE FH-11

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-1	16.00	112.00	4953.23	7.90
P-2	12.00	112.00	1935.75	5.49
P-3	16.00	120.00	3017.48	4.81
P-5	16.00	120.00	2969.60	4.74
P-6	16.00	120.00	2918.57	4.66
P-7	16.00	120.00	2204.11	3.52
P-8	16.00	120.00	2202.85	3.52
P-9	16.00	120.00	-1865.82	2.98
P-10	16.00	120.00	-1865.82	2.98
P-11	16.00	120.00	-1881.78	3.00
P-12	16.00	120.00	-1935.75	3.09
P-13	16.00	120.00	-1935.75	3.09
P-14	16.00	120.00	51.03	0.08
P-15	12.00	120.00	15.96	0.05
P-16	12.00	120.00	35.07	0.10
P-17	12.00	120.00	24.99	0.07
P-18	12.00	120.00	-19.53	0.06
P-19	12.00	120.00	-34.44	0.10
P-20	16.00	120.00	2984.09	4.76
P-21	16.00	120.00	2969.60	4.74
P-22	16.00	120.00	714.46	1.14
P-23	16.00	120.00	714.46	1.14
P-24	12.00	112.00	CLOSED	CLOSED
P-25	16.00	120.00	664.90	1.06
P-26	16.00	120.00	644.74	1.03
P-27	16.00	120.00	15.33	0.02
P-28	16.00	120.00	15.33	0.02
P-29	16.00	120.00	CLOSED	CLOSED
P-30	16.00	120.00	-16.17	0.03
P-31	16.00	120.00	-32.13	0.05
P-32	16.00	120.00	-983.16	1.57

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WATER ANALYSIS

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAX DAY, P-24 CLOSED, P-29 CLOSED, FIRE FH-11

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-33	16.00	120.00	-1031.88	1.65
P-34	16.00	120.00	-1098.24	1.75
P-35	16.00	120.00	-1124.07	1.79
P-37	16.00	120.00	-1248.55	1.99
P-38	16.00	120.00	-1344.10	2.14
P-39	16.00	120.00	-1402.90	2.24
P-40	16.00	120.00	228.53	0.36
P-41	16.00	120.00	-320.85	0.51
P-42	12.00	120.00	499.90	1.42
P-43	12.00	120.00	499.90	1.42
P-44	12.00	120.00	428.71	1.22
P-45	12.00	120.00	396.16	1.12
P-46	12.00	120.00	377.68	1.07
P-47	12.00	120.00	327.07	0.93
P-48	12.00	120.00	-27.25	0.08
P-49	16.00	120.00	-1148.43	1.83
P-50	16.00	120.00	-1220.83	1.95
P-51	12.00	120.00	-57.07	0.16
P-52	12.00	120.00	549.38	1.56
P-53	12.00	120.00	523.55	1.49
P-54	12.00	120.00	469.79	1.33
P-55	12.00	120.00	394.40	1.12
P-56	12.00	120.00	370.88	1.05
P-57	12.00	120.00	655.26	1.86
P-58	12.00	120.00	655.26	1.86
P-59	12.00	120.00	655.26	1.86
P-60	12.00	120.00	655.26	1.86
P-61	12.00	120.00	1599.78	4.54
P-62	12.00	120.00	1599.78	4.54
P-63	12.00	120.00	1599.78	4.54
P-64	12.00	120.00	1599.78	4.54

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WATER ANALYSIS

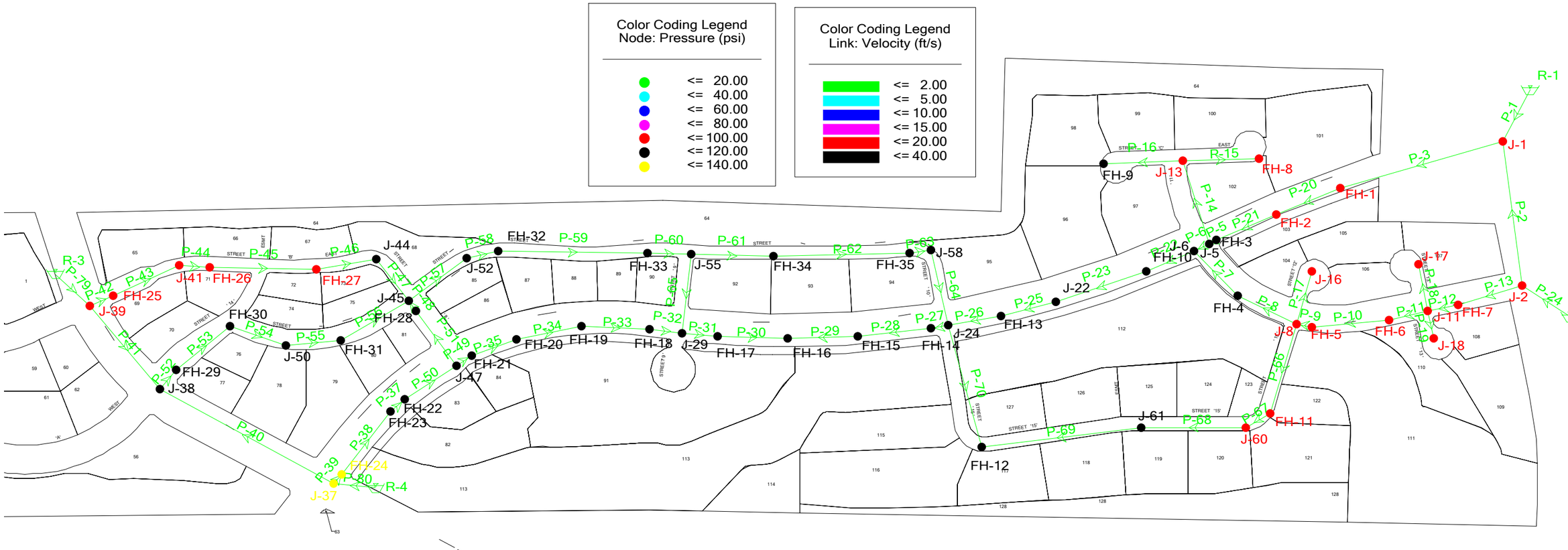
Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

CASE: PHASE 1,2&4 - MAX DAY, P-24 CLOSED, P-29 CLOSED, FIRE FH-11

Label	Diameter (in)	Hazen- Williams C	Model Run Flow (gpm)	Model Run Velocity (ft/s)
P-65	12.00	120.00	-944.52	2.68
P-66	16.00	120.00	4043.68	6.45
P-67	16.00	120.00	-1970.26	3.14
P-68	16.00	120.00	-2010.79	3.21
P-69	16.00	120.00	-2089.12	3.33
P-70	16.00	120.00	-2229.19	3.56
P-79	16.00	120.00	820.75	1.31
P-80	16.00	120.00	1631.42	2.60

Scenario: Base



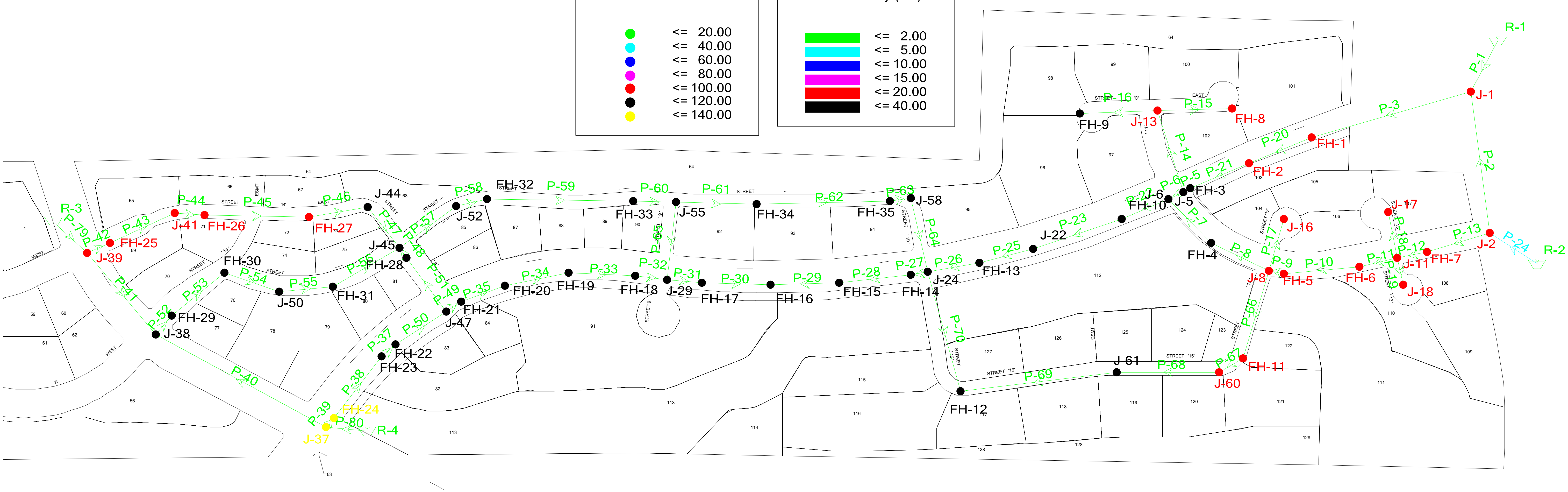
Scenario: PK HR

Color Coding Legend
Node: Pressure (psi)

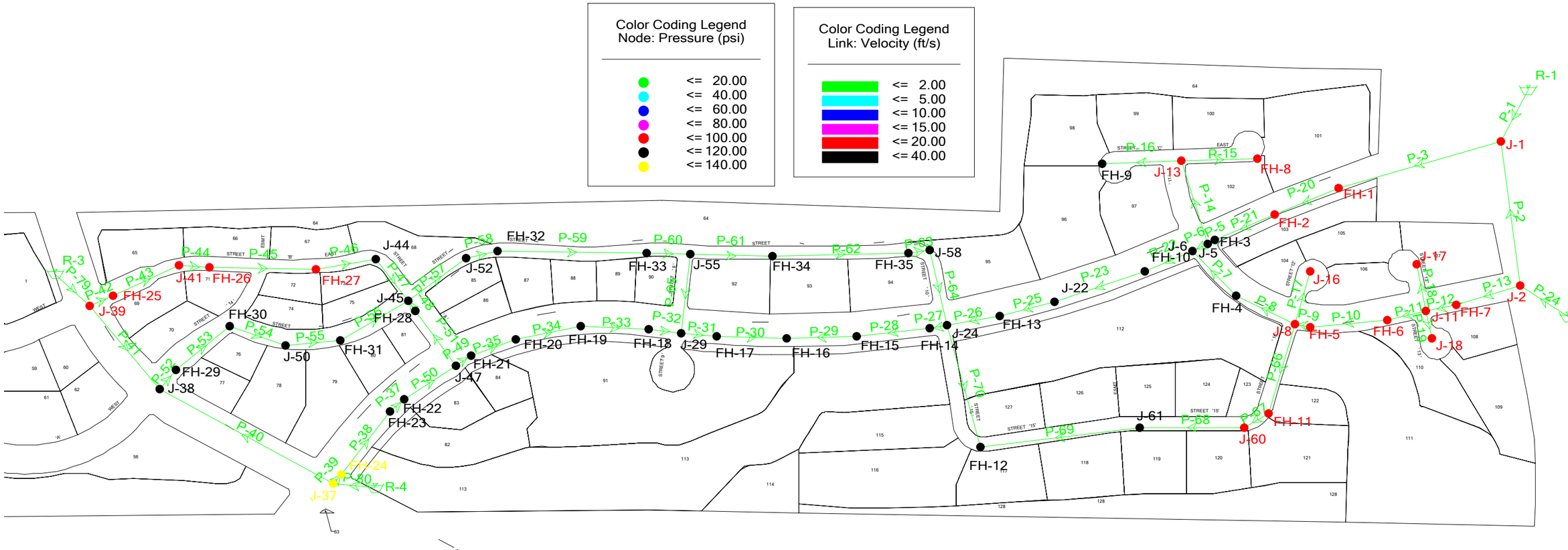
Green	<= 20.00
Cyan	<= 40.00
Blue	<= 60.00
Magenta	<= 80.00
Red	<= 100.00
Black	<= 120.00
Yellow	<= 140.00

Color Coding Legend
Link: Velocity (ft/s)

Green	<= 2.00
Cyan	<= 5.00
Blue	<= 10.00
Magenta	<= 15.00
Red	<= 20.00
Black	<= 40.00



Scenario: MAX DAY

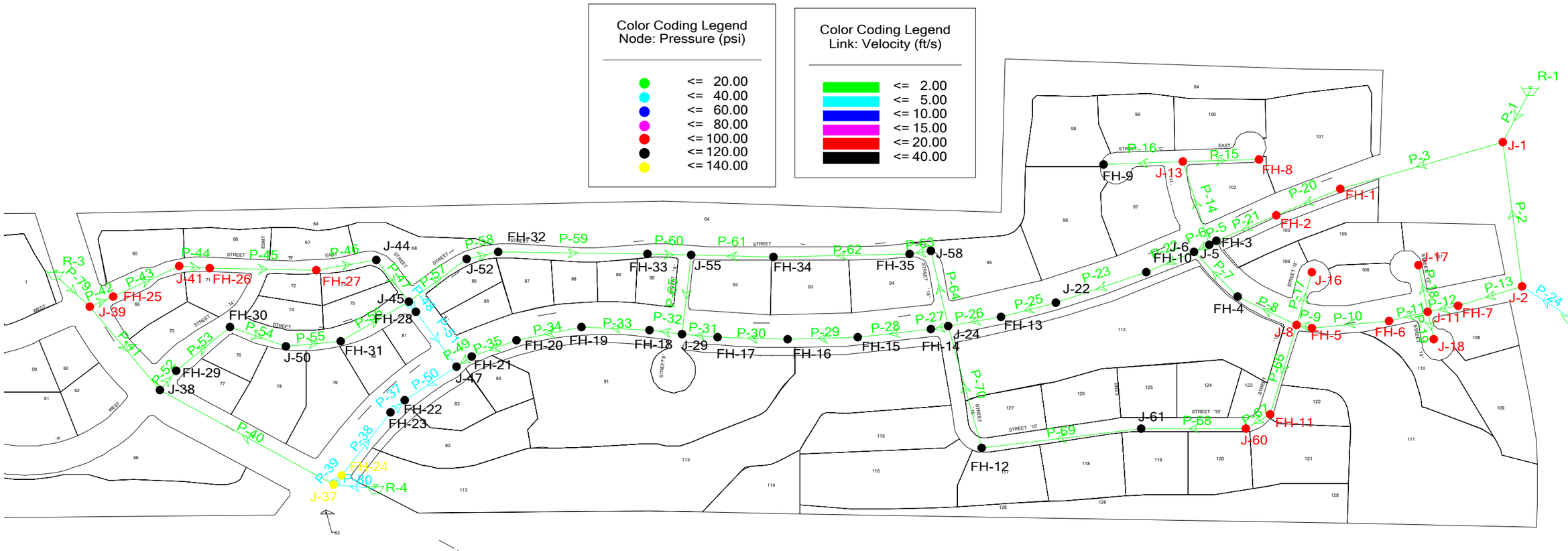


Title: Stone Creek 09-17-08
I:\...\10-xx-09 water analysis ph1&2&4.wcd
10/14/09 08:48:21 AM

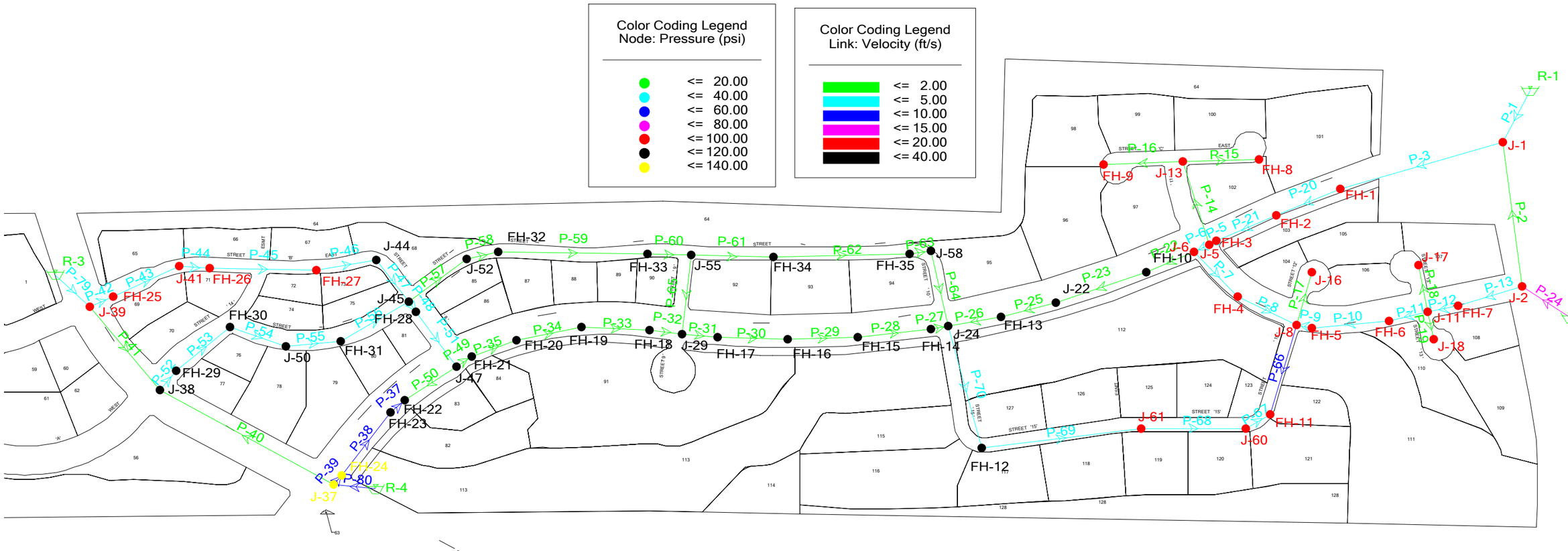
BDS Engineering, Inc.
 Haestad Methods Solution Center Watertown, CT 06795 USA +1-203-755-1666

Project Engineer: Tara Mugane
WaterCAD v7.0 [07.00.049.00]

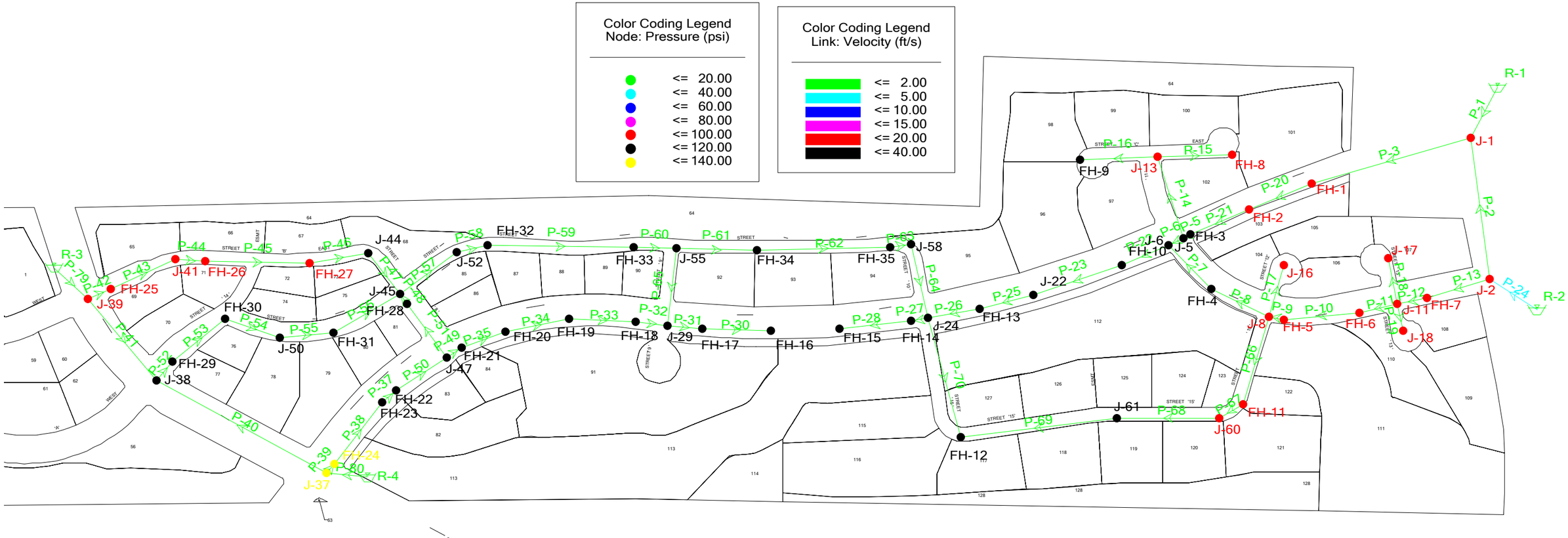
Scenario: MAX DAY, FIRE FH-22



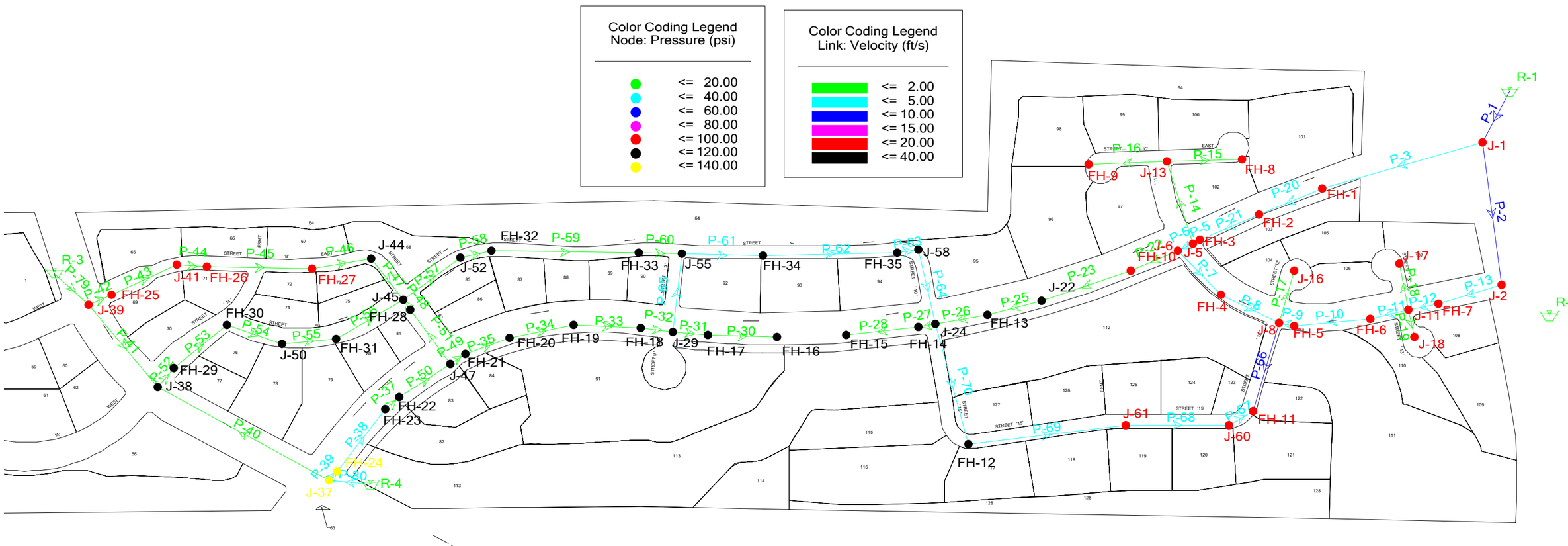
Scenario: MAX DAY, FIRE FH-22, FH-11



Scenario: PK HR, P-29 CLOSED



Scenario: MAX DAY, P-24&P-29 CLSD, FIRE FH-11



APPENDIX E: Average Daily Water Demands

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Gordon Axelson, PE, Principal

AVERAGE DAILY WATER DEMAND

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

DATE: June, 2010

[1] Based on Land Use Tables provided in the Master Plan for Stone Creek Development
[2] Based on Table 2-1 from City of San Diego Water Design Guide
[3] Residential Demand =150 gallons/person-day
[4] Industrial Demand = 6,250 gal/net acre-day (Water Design Guide, Table 2-2)
[5] Park Demand = 1,000 gal/net acre-day (Reduced from Water Design Guide, Table 2-2, No irrigation)
[6] Commercial Demand = 5,000 gal/net acre-day (Water Design Guide, Table 2-2)
[7] Commercial Hybrid Demand = 5,577 gal/net acre-day (Weighted Average of Commercial, Office,Hotel based on Sq. Footage from Master Plan for Stone Creek Development, Water Design Guide, Table 2-2)

Lot No.	Proposed Use	Zone	Proposed Density [1] (du/ac)	Lot Size (ac)	# DU	Unit Density [2] (persons/du)	# People	Residential Demand [3] (gpm)	Industrial Demand [4] (gpm)	Park Demand [5] (gpm)	Commercial Demand [6] (gpm)	Commercial Hybrid Demand [7] (gpm)	Total Flow Demand (gpm)
1	RESIDENTIAL	RM-3-8	92.22	1.39	128.19	2.20	282.0	28.2	-	-	-	-	**28.2**
2	RESIDENTIAL	RM-3-8	92.22	1.17	107.90	2.20	237.4	23.7	-	-	-	-	**23.7**
3	RESIDENTIAL	RM-3-8	92.22	0.92	84.84	2.20	186.7	18.7	-	-	-	-	**18.7**
4	RESIDENTIAL	RM-3-8	72.56	0.92	66.76	2.20	146.9	14.7	-	-	-	-	**14.7**
5	RESIDENTIAL	RM-3-8	72.56	0.92	66.76	2.20	146.9	14.7	-	-	-	-	**14.7**
6	RESIDENTIAL	RM-3-8	72.56	0.86	62.40	2.20	137.3	13.7	-	-	-	-	**13.7**
7	RESIDENTIAL	RM-1-1	27.59	0.83	22.90	3.00	68.7	6.9	-	-	-	-	**6.9**
8	RESIDENTIAL	RM-1-1	27.59	0.96	26.49	3.00	79.5	7.9	-	-	-	-	**7.9**
9	RESIDENTIAL	RM-1-1	27.59	0.82	22.62	3.00	67.9	6.8	-	-	-	-	**6.8**
10	RESIDENTIAL	RM-1-1	27.59	0.77	21.24	3.00	63.7	6.4	-	-	-	-	**6.4**
11	RESIDENTIAL	RM-1-1	27.59	1.15	31.73	3.00	95.2	9.5	-	-	-	-	**9.5**
12	RESIDENTIAL	RM-3-8	72.56	0.98	71.11	2.20	156.4	15.6	-	-	-	-	**15.6**
13	RESIDENTIAL	RM-3-8	72.56	1.28	92.88	2.20	204.3	20.4	-	-	-	-	**20.4**
14	RESIDENTIAL	RM-3-8	72.56	1.11	80.54	2.20	177.2	17.7	-	-	-	-	**17.7**
15	RESIDENTIAL	RM-3-8	72.56	1.15	83.44	2.20	183.6	18.4	-	-	-	-	**18.4**
16	RESIDENTIAL	RM-3-8	72.56	1.06	76.91	2.20	169.2	16.9	-	-	-	-	**16.9**
17	RESIDENTIAL	RM-3-8	92.22	0.49	45.19	2.20	99.4	9.9	-	-	-	-	**9.9**
18	RESIDENTIAL	RM-3-8	92.22	0.54	49.80	2.20	109.6	11.0	-	-	-	-	**11.0**
19	RESIDENTIAL	RM-3-8	92.22	0.47	43.34	2.20	95.4	9.5	-	-	-	-	**9.5**
20	RESIDENTIAL	RM-3-8	92.22	0.49	45.19	2.20	99.4	9.9	-	-	-	-	**9.9**
21	RESIDENTIAL	RM-3-8	92.22	0.91	83.92	2.20	184.6	18.5	-	-	-	-	**18.5**
22	RESIDENTIAL	RM-3-8	92.22	0.92	84.84	2.20	186.7	18.7	-	-	-	-	**18.7**
23	RESIDENTIAL	RM-3-8	92.22	0.42	38.73	2.20	85.2	8.5	-	-	-	-	**8.5**
24	RESIDENTIAL	RM-3-8	92.22	0.39	35.97	2.20	79.1	7.9	-	-	-	-	**7.9**
25	RESIDENTIAL	RM-3-8	92.22	0.35	32.28	2.20	71.0	7.1	-	-	-	-	**7.1**
26	RESIDENTIAL	RM-3-8	92.22	0.34	31.35	2.20	69.0	6.9	-	-	-	-	**6.9**
27	RESIDENTIAL	RM-3-8	92.22	0.92	84.84	2.20	186.7	18.7	-	-	-	-	**18.7**
28	RESIDENTIAL	RM-3-8	92.22	0.88	81.15	2.20	178.5	17.9	-	-	-	-	**17.9**

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AVERAGE DAILY WATER DEMAND

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

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[2] Based on Table 2-1 from City of San Diego Water Design Guide
[3] Residential Demand =150 gallons/person-day
[4] Industrial Demand = 6,250 gal/net acre-day (Water Design Guide, Table 2-2)
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[7] Commercial Hybrid Demand = 5,577 gal/net acre-day (Weighted Average of Commercial, Office,Hotel based on Sq. Footage from Master Plan for Stone Creek Development, Water Design Guide, Table 2-2)

Lot No.	*Proposed Use*	*Zone*	*Proposed Density [1] (du/ac)*	*Lot Size (ac)*	*# DU*	*Unit Density [2] (persons/du)*	*# People*	*Residential Demand [3] (gpm)*	*Industrial Demand [4] (gpm)*	*Park Demand [5] (gpm)*	*Commercial Demand [6] (gpm)*	*Commercial Hybrid Demand [7] (gpm)*	*Total Flow Demand (gpm)*
29	RESIDENTIAL	RM-3-8	72.56	0.34	24.67	2.20	54.3	5.4	-	-	-	-	**5.4**
30	RESIDENTIAL	RM-3-8	72.56	0.31	22.49	2.20	49.5	4.9	-	-	-	-	**4.9**
31	RESIDENTIAL	RM-3-8	72.56	0.39	28.30	2.20	62.3	6.2	-	-	-	-	**6.2**
32	RESIDENTIAL	RM-3-8	72.56	0.31	22.49	2.20	49.5	4.9	-	-	-	-	**4.9**
33	RESIDENTIAL	RM-3-8	72.56	0.77	55.87	2.20	122.9	12.3	-	-	-	-	**12.3**
34	RESIDENTIAL	RM-3-8	72.56	0.77	55.87	2.60	145.3	14.5	-	-	-	-	**14.5**
35	MIXED-USE	CC-5-5	72.56	0.56	40.63	2.20	89.4	8.9	-	-	1.9	-	**10.9**
36	MIXED-USE	CC-5-6	72.56	0.55	39.91	2.20	87.8	8.8	-	-	1.9	-	**10.7**
37	MIXED-USE	CC-5-7	72.56	0.67	48.62	2.20	107.0	10.7	-	-	2.3	-	**13.0**
38	MIXED-USE	CC-5-8	72.56	0.38	27.57	2.20	60.7	6.1	-	-	1.3	-	**7.4**
39	RESIDENTIAL	RM-3-8	72.56	0.66	47.89	2.20	105.4	10.5	-	-	-	-	**10.5**
40	RESIDENTIAL	RM-3-8	72.56	0.66	47.89	2.20	105.4	10.5	-	-	-	-	**10.5**
41	RESIDENTIAL	RM-3-8	72.56	0.86	62.40	2.20	137.3	13.7	-	-	-	-	**13.7**
42	RESIDENTIAL	RM-3-8	72.56	0.86	62.40	2.20	137.3	13.7	-	-	-	-	**13.7**
43	RESIDENTIAL	RM-3-8	72.56	0.69	50.07	2.20	110.1	11.0	-	-	-	-	**11.0**
44	RESIDENTIAL	RM-3-8	72.56	0.69	50.07	2.20	110.1	11.0	-	-	-	-	**11.0**
45	RESIDENTIAL	RM-3-8	92.22	0.51	47.03	2.20	103.5	10.3	-	-	-	-	**10.3**
46	RESIDENTIAL	RM-3-8	92.22	0.52	47.95	2.20	105.5	10.5	-	-	-	-	**10.5**
47	RESIDENTIAL	RM-3-8	92.22	0.65	59.94	2.20	131.9	13.2	-	-	-	-	**13.2**
48	RESIDENTIAL	RM-3-8	92.22	0.65	59.94	2.20	131.9	13.2	-	-	-	-	**13.2**
49	RESIDENTIAL	RM-3-8	92.22	0.65	59.94	2.20	131.9	13.2	-	-	-	-	**13.2**
50	RESIDENTIAL	RM-3-8	92.22	0.68	62.71	2.20	138.0	13.8	-	-	-	-	**13.8**
51	PARK	OP-1-1	-	0.56	-	-	-	-	-	0.4	-	-	**0.4**
52	PARK	OP-1-1	-	0.13	-	-	-	-	-	0.0	-	-	**0.0**
53	PARK	OP-1-1	-	1.04	-	-	-	-	-	0.7	-	-	**0.7**
54	PARK	OP-1-1	-	3.01	-	-	-	-	-	2.1	-	-	**2.1**
55	PARK	OP-1-1	-	1.11	-	-	-	-	-	0.8	-	-	**0.8**
56	PARK	OP-1-1	-	2.76	-	-	-	-	-	1.9	-	-	**1.9**

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Lot No.	Proposed Use	Zone	Proposed Density [1] (du/ac)	Lot Size (ac)	# DU	Unit Density [2] (persons/du)	# People	Residential Demand [3] (gpm)	Industrial Demand [4] (gpm)	Park Demand [5] (gpm)	Commercial Demand [6] (gpm)	Commercial Hybrid Demand [7] (gpm)	Total Flow Demand (gpm)
57	OPEN SPACE (SLO	OR-1-1	-	14.13	-	-	-	-	-	-	-	-	**0.0**
58	PARK	OP-1-1	-	9.37	-	-	-	-	-	-	-	-	**0.0**
59	MIXED-USE	CC-5-5	37.04	0.89	32.97	2.60	85.7	8.6	-	-	-	3.4	**12.0**
60	MIXED-USE	CC-5-5	37.04	1.89	70.01	2.60	182.0	18.2	-	-	-	7.3	**25.5**
61	MIXED-USE	CC-5-5	37.04	1.45	53.71	2.60	139.6	14.0	-	-	-	5.6	**19.6**
62	MIXED-USE	CC-5-5	37.04	1.11	41.11	2.60	106.9	10.7	-	-	-	4.3	**15.0**
63	LIGHT INDUSTRIAL	IL-2-1	-	0.01	-	-	-	-	-	-	-	-	**0.0**
64	OPEN SPACE (SLO	OR-1-1	-	18.63	-	-	-	-	-	-	-	-	**0.0**
65	RESIDENTIAL	RM-3-8	56.21	1.36	76.45	2.60	198.8	19.9	-	-	-	-	**19.9**
66	RESIDENTIAL	RM-3-8	56.21	1.07	60.14	2.60	156.4	15.6	-	-	-	-	**15.6**
67	RESIDENTIAL	RM-3-8	56.21	1.05	59.02	2.60	153.5	15.3	-	-	-	-	**15.3**
68	RESIDENTIAL	RM-3-8	56.21	1.59	89.37	2.60	232.4	23.2	-	-	-	-	**23.2**
69	MIXED-USE	CC-5-5	37.04	1.05	38.89	2.60	101.1	10.1	-	-	-	4.1	**14.2**
70	MIXED-USE	CC-5-5	37.04	0.98	36.30	2.60	94.4	9.4	-	-	-	3.8	**13.2**
71	MIXED-USE	CC-5-5	37.04	0.92	34.08	2.60	88.6	8.9	-	-	-	3.6	**12.4**
72	MIXED-USE	CC-5-5	37.04	0.65	24.08	2.60	62.6	6.3	-	-	-	2.5	**8.8**
73	MIXED-USE	CC-5-5	37.04	0.66	24.45	2.60	63.6	6.4	-	-	-	2.6	**8.9**
74	MIXED-USE	CC-5-5	37.04	0.83	30.74	2.60	79.9	8.0	-	-	-	3.2	**11.2**
75	MIXED-USE	CC-5-5	37.04	0.72	26.67	2.60	69.3	6.9	-	-	-	2.8	**9.7**
76	MIXED-USE	CC-5-5	37.04	0.71	26.30	2.60	68.4	6.8	-	-	-	2.7	**9.6**
77	MIXED-USE	CC-5-5	37.04	0.91	33.71	2.60	87.6	8.8	-	-	-	3.5	**12.3**
78	MIXED-USE	CC-5-5	37.04	1.95	72.23	2.60	187.8	18.8	-	-	-	7.6	**26.3**
79	MIXED-USE	CC-5-5	37.04	2.07	76.67	2.60	199.3	19.9	-	-	-	8.0	**28.0**
80	MIXED-USE	CC-5-5	37.04	0.92	34.08	2.60	88.6	8.9	-	-	-	3.6	**12.4**
81	MIXED-USE	CC-5-5	37.04	0.54	20.00	2.60	52.0	5.2	-	-	-	2.1	**7.3**
82	MIXED-USE	CC-5-5	37.04	2.63	97.42	2.60	253.3	25.3	-	-	-	10.2	**35.5**
83	MIXED-USE	CC-5-5	37.04	1.2	44.45	2.60	115.6	11.6	-	-	-	4.6	**16.2**
84	MIXED-USE	CC-5-5	37.04	0.98	36.30	2.60	94.4	9.4	-	-	-	3.8	**13.2**

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AVERAGE DAILY WATER DEMAND

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

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Lot No.	*Proposed Use*	*Zone*	*Proposed Density [1] (du/ac)*	*Lot Size (ac)*	*# DU*	*Unit Density [2] (persons/du)*	*# People*	*Residential Demand [3] (gpm)*	*Industrial Demand [4] (gpm)*	*Park Demand [5] (gpm)*	*Commercial Demand [6] (gpm)*	*Commercial Hybrid Demand [7] (gpm)*	*Total Flow Demand (gpm)*
85	RESIDENTIAL	RM-3-8	64.10	0.89	57.05	2.60	148.3	14.8	-	-	-	-	**14.8**
86	RESIDENTIAL	RM-3-8	64.10	0.74	47.43	2.60	123.3	12.3	-	-	-	-	**12.3**
87	RESIDENTIAL	RM-3-8	64.10	0.99	63.46	2.60	165.0	16.5	-	-	-	-	**16.5**
88	RESIDENTIAL	RM-3-8	64.10	0.72	46.15	2.60	120.0	12.0	-	-	-	-	**12.0**
89	RESIDENTIAL	RM-3-8	64.10	0.64	41.02	2.60	106.7	10.7	-	-	-	-	**10.7**
90	RESIDENTIAL	RM-3-8	64.10	0.7	44.87	2.60	116.7	11.7	-	-	-	-	**11.7**
91	PARK	OP-1-1	-	9.83	-	-	-	-	-	6.8	-	-	**6.8**
92	BUSINESS PARK	IL-3-1	-	1.64	-	-	-	-	7.1	-	-	-	**7.1**
93	BUSINESS PARK	IL-3-1	-	1.69	-	-	-	-	7.3	-	-	-	**7.3**
94	BUSINESS PARK	IL-3-1	-	1.57	-	-	-	-	6.8	-	-	-	**6.8**
95	BUSINESS PARK	IL-3-1	-	2.18	-	-	-	-	9.5	-	-	-	**9.5**
96	LIGHT INDUSTRIAL	IL-2-1	-	3.43	-	-	-	-	14.9	-	-	-	**14.9**
97	LIGHT INDUSTRIAL	IL-2-1	-	1.99	-	-	-	-	8.6	-	-	-	**8.6**
98	LIGHT INDUSTRIAL	IL-2-1	-	2.11	-	-	-	-	9.2	-	-	-	**9.2**
99	LIGHT INDUSTRIAL	IL-2-1	-	1.72	-	-	-	-	7.5	-	-	-	**7.5**
100	LIGHT INDUSTRIAL	IL-2-1	-	1.74	-	-	-	-	7.6	-	-	-	**7.6**
101	LIGHT INDUSTRIAL	IL-2-1	-	3.67	-	-	-	-	15.9	-	-	-	**15.9**
102	LIGHT INDUSTRIAL	IL-2-1	-	1.55	-	-	-	-	6.7	-	-	-	**6.7**
103	PARK	OP-1-1	-	2.13	-	-	-	-	-	-	-	-	**0.0**
104	PARK	OP-1-1	-	0.85	-	-	-	-	-	0.6	-	-	**0.6**
105	LIGHT INDUSTRIAL	IL-2-1	-	1.53	-	-	-	-	6.6	-	-	-	**6.6**
106	LIGHT INDUSTRIAL	IL-2-1	-	1.23	-	-	-	-	5.3	-	-	-	**5.3**
107	LIGHT INDUSTRIAL	IL-1-1	-	2.15	-	-	-	-	9.3	-	-	-	**9.3**
108	LIGHT INDUSTRIAL	IL-1-1	-	1.31	-	-	-	-	5.7	-	-	-	**5.7**
109	LIGHT INDUSTRIAL	IL-1-1	-	2.47	-	-	-	-	10.7	-	-	-	**10.7**
110	LIGHT INDUSTRIAL	IL-1-1	-	1.75	-	-	-	-	7.6	-	-	-	**7.6**
111	PARK	OP-1-1	-	11.12	-	-	-	-	-	-	-	-	**0.0**
112	PARK	OP-1-1	-	9.85	-	-	-	-	-	-	-	-	**0.0**

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Lot No.	*Proposed Use*	*Zone*	*Proposed Density [1] (du/ac)*	*Lot Size (ac)*	*# DU*	*Unit Density [2] (persons/du)*	*# People*	*Residential Demand [3] (gpm)*	*Industrial Demand [4] (gpm)*	*Park Demand [5] (gpm)*	*Commercial Demand [6] (gpm)*	*Commercial Hybrid Demand [7] (gpm)*	*Total Flow Demand (gpm)*
113	PARK	OP-1-1	-	14.9	-	-	-	-	-	-	-	-	**0.0**
114	PARK	OP-1-1	-	1.58	-	-	-	-	-	-	-	-	**0.0**
115	RESIDENTIAL	RM-2-4	26.04	2.4	62.50	3.00	187.5	18.7	-	-	-	-	**18.7**
116	RESIDENTIAL	RM-2-4	26.04	3.88	101.04	3.00	303.1	30.3	-	-	-	-	**30.3**
117	HIGH TECHNOLOG	IL-3-1	-	1.81	-	-	-	-	7.9	-	-	-	**7.9**
118	HIGH TECHNOLOG	IL-3-1	-	1.97	-	-	-	-	8.6	-	-	-	**8.6**
119	HIGH TECHNOLOG	IL-3-1	-	1.62	-	-	-	-	7.0	-	-	-	**7.0**
120	HIGH TECHNOLOG	IL-3-1	-	1.56	-	-	-	-	6.8	-	-	-	**6.8**
121	HIGH TECHNOLOG	IL-3-1	-	2.41	-	-	-	-	10.5	-	-	-	**10.5**
122	HIGH TECHNOLOG	IL-3-1	-	1.02	-	-	-	-	4.4	-	-	-	**4.4**
123	HIGH TECHNOLOG	IL-3-1	-	0.45	-	-	-	-	2.0	-	-	-	**2.0**
124	RESIDENTIAL	RM-2-4	26.04	1.3	33.85	3.00	101.6	10.2	-	-	-	-	**10.2**
125	RESIDENTIAL	RM-2-4	26.04	1.2	31.25	3.00	93.7	9.4	-	-	-	-	**9.4**
126	RESIDENTIAL	RM-2-4	26.04	1.47	38.28	3.00	114.8	11.5	-	-	-	-	**11.5**
127	RESIDENTIAL	RM-2-4	26.04	1.27	33.07	3.00	99.2	9.9	-	-	-	-	**9.9**
128	OPEN SPACE (SLO	OR-1-1	-	4.58	-	-	-	-	-	-	-	-	**0.0**

APPENDIX F: Previous City Comments and Responses

The following is a list of comments from the City of San Diego in a letter dated February 24, 2009.

1) There is a typo in Table 1 on Page 2. The minimum static pressure is 65 psi.

Response: Table revised.

2) There is a typo in Table 3 on Page 3. The fire flow for condominiums and apartments is 3,000 gpm.

Response: Table revised.

3) Please add a demand table outlining the different land use categories, water demand factors, and number of units or the square footage used to calculate the demands shown in Table 2 on Page 3.

Response: Added demand table to Appendix E.

4) Please add the irrigation demand, if any, to Table 2, Page 3.

Response: There is no irrigation demand. Development will be supplied with reclaimed water. Text was added to 1st paragraph on Page 3.

5) Please add maps for each of the phases showing how the water system will be built for each phase and where the connections will be made as each phase is constructed. Show how each phase will meet the Water Department's Guidelines and Standards.

Response: Added maps. See Figures 3-7.

6) Please provide a Hydraulic Control Map, showing the existing pressure zones, facilities, and pipelines, as well as proposed facilities, and connection points to the existing system.

Response: Added map. See Figure 2.

7) Since the water pressure exceeds the Design Guide recommendations revise conclusion #5 on Page 6 to read "in excess of 80 psi."

Response: Revised.

8) Provide recommendations for mitigating pressures above 120 psi.

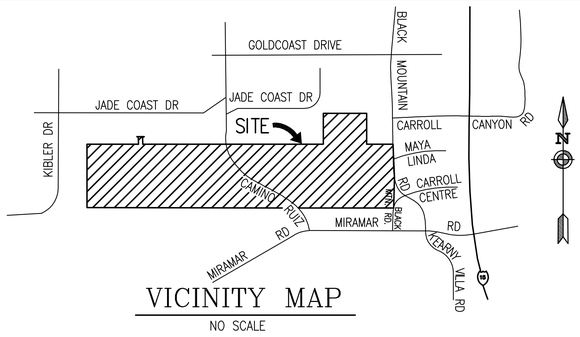
Response: A new pressure zone 570 is proposed to service the area west of Camino Ruiz. This new pressure zone eliminates the pressures greater than 120 psi. See Figure 2.3.

STONE CREEK

VESTING TENTATIVE MAP NO. 208328

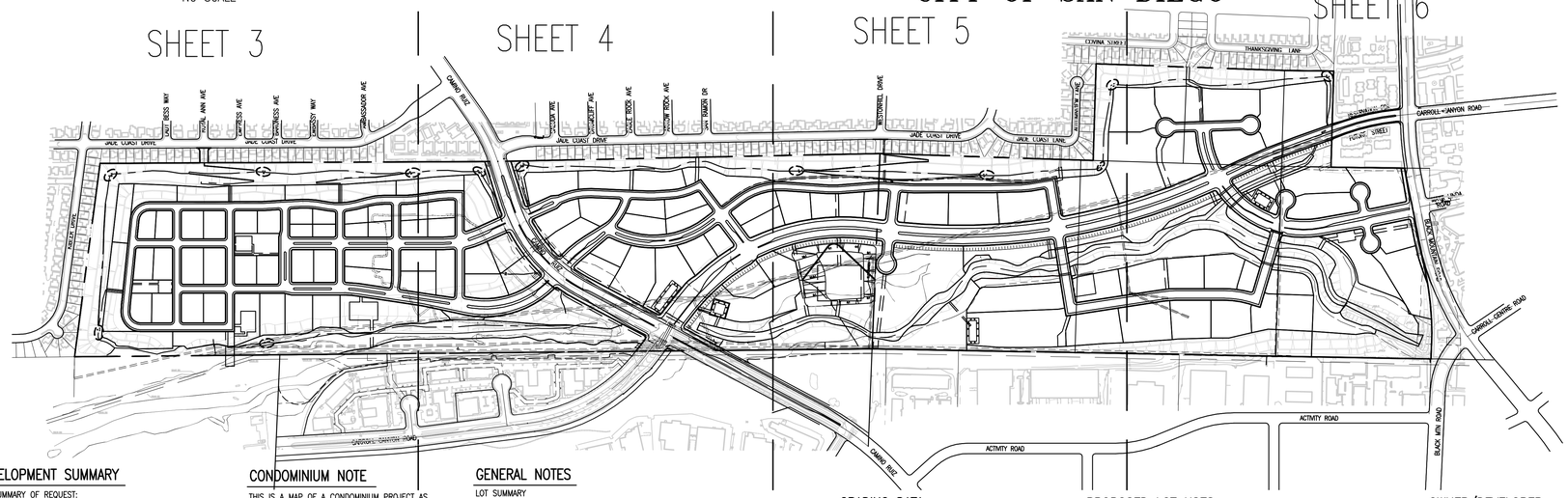
PTS NO. 67943

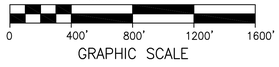
CITY OF SAN DIEGO



VICINITY MAP

NO SCALE





SHEET 1 OF 42 SHEETS

LEGAL DESCRIPTION

THE SOUTH 5 ACRES OF THE WEST 10 ACRES OF LOT 2 OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 6, TOWNSHIP 15 SOUTH, RANGE 2 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA ACCORDING TO THE OFFICIAL PLAT THEREOF.
TOGETHER WITH THE SOUTH HALF OF THE NORTHEAST QUARTER OF SECTION 6, TOWNSHIP 15 SOUTH, RANGE 2 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ALL OIL, GAS, ASPHALTUM AND OTHER HYDROCARBON SUBSTANCES, IN, ON, OR UNDER OR WHICH MAY HEREAFTER BE PRODUCED FROM THE ABOVE DESCRIBED REAL PROPERTY, AS RESERVED IN THE DEED FROM THE SPRECKELS HOLDING COMPANY, RECORDED JULY 18, 1946 IN BOOK 2185, PAGE 246 OF OFFICIAL RECORDS.
TOGETHER WITH THE RIGHT TO DRILL FOR, PRODUCE, EXTRACT AND TAKE OIL, GAS ASPHALTUM AND OTHER HYDROCARBON SUBSTANCES FROM AND TO STORE THEM UPON, THE SAID REAL PROPERTY, WITH THE RIGHT OF ENTRY THEREON AT ANY AND ALL TIMES.

ALSO EXCEPTING THEREFROM THAT PORTION LYING EASTERLY OF THE WESTERLY LINE OF CARROLL CANYON CENTRE MAP NO. 10179 FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY AUGUST 27. 1981.

PARCELS 1 AND 2 OF PARCEL MAP 15786 IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY SEPTEMBER 7, 1989.

PARCEL 'A' OF MIRA MESA VERDE UNIT NO. 14, IN THE CITY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 6912, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, APRIL 22, 1971.

THE EAST HALF OF THE SOUTH HALF OF LOT 3 IN SECTION 6, TOGETHER WITH THE WEST HALF OF THE SOUTH HALF OF LOT 3 IN SECTION 6 AND ALSO TOGETHER WITH THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 6, TOWNSHIP 15 SOUTH, RANGE 2 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO UNITED STATES GOVERNMENT SURVEY.

LOT 5 IN SECTION 6, TOWNSHIP 15 SOUTH, RANGE 2 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO UNITED STATES GOVERNMENT SURVEY.

NOTES

1. FLOOD INFORMATION IS EXISTING PER
   F.E.M.A. MAP NUMBER 06073C1344 F
   DATED JUNE 19, 1997
   PANEL 1344 OF 2375
2. EXISTING TOPOGRAPHY SHOWN IS FROM RECLAMATION PLAN DATED: 12/04/08

LANDSCAPE NOTES

1. MINIMUM TREE SEPARATION DISTANCE:
   IMPROVEMENT / MINIMUM DISTANCE TO STREET TREE
   TRAFFIC SIGNALS (STOP SIGN) – 20 FEET
   UNDERGROUND UTILITY LINES* – 5 FEET
   ABOVE GROUND UTILITY STRUCTURES – 10 FEET
   DRIVEWAY (ENTRIES) – 10 FEET
   INTERSECTIONS (INTERSECTING CURB LINES OF TWO STREETS) – 25 FEET
   *SEWER LINES – 10 FEET
2. MINIMUM 24–INCH BOX SIZE STREET TREES SHALL BE INSTALLED WITHIN TEN FEET OF THE FACE OF CURB AND IN OPENINGS HAVING A MINIMUM OF 40 SQUARE FEET OF AIR–AND WATER–PERMEABLE AREA AS FOLLOWS:
   STREET TREES WILL BE PLANTED AT A MIN. 30' O.C., EXCEPT IN AREAS PROHIBITED FOR PLANTING
3. ALL LANDSCAPE AND IRRIGATION SHALL CONFORM TO THE CITY OF SAN DIEGO LANDSCAPE ORDINANCE AND CITY OF SAN DIEGO LAND DEVELOPMENT MANUAL LANDSCAPE STANDARDS AND ALL REGIONAL STANDARDS FOR LANDSCAPE INSTALLATION AND MAINTENANCE.
4. IMPROVEMENTS SUCH AS DRIVEWAYS, UTILITIES, DRAINS, AND WATER AND SEWER LATERALS SHALL BE DESIGNED SO AS NOT TO PROHIBIT THE PLACEMENT OF STREET TREES, ALL TO THE SATISFACTION OF THE CITY MANAGER.
5. INSTALL ALL APPROVED LANDSCAPE AND OBTAIN ALL REQUIRED LANDSCAPE INSPECTIONS FROM AND OBTAIN A NO FEE STREET TREE PERMIT FOR ALL STREET TREES, AND NOTIFY AND OBTAIN SIGNATURES, FROM ANY SUBSEQUENT PROPERTY OWNER, ON A NO FEE STREET TREE PERMIT FROM PRIOR TO ANY TRANSFER OF OWNERSHIP OF THE PROPERTY. COPIES OF THESE APPROVED DOCUMENTS MUST BE SUBMITTED TO THE CITY MANAGER.

OWNER/ SITE ADDRESS (341–060–41) 60.91 ACRES

CALMAT CO., dba VULCAN MATERIALS COMPANY, WESTERN DIVISION
CAMINO RUIZ
SAN DIEGO, CA. 92126–4517

OWNER/ SITE ADDRESS (341–060–42) 93.71 ACRES

CALMAT CO., dba VULCAN MATERIALS COMPANY, WESTERN DIVISION
CAMINO RUIZ
SAN DIEGO, CA. 92126–4517

OWNER/ SITE ADDRESS (341–132–13) 0.13 ACRES

CALMAT CO., dba VULCAN MATERIALS COMPANY, WESTERN DIVISION
JADE COAST ROAD
SAN DIEGO, CA. 92126–4517

OWNER/ SITE ADDRESS (341–190–05) 100.27 ACRES

CALMAT CO., dba VULCAN MATERIALS COMPANY, WESTERN DIVISION
WESTONHILL DRIVE
SAN DIEGO, CA. 92126–4517

OWNER/ SITE ADDRESS (341–200–02) 4.96 ACRES

CALMAT CO., dba VULCAN MATERIALS COMPANY, WESTERN DIVISION
BLACK MOUNTAIN ROAD
SAN DIEGO, CA. 92126–4517

OWNER/ SITE ADDRESS (341–200–03) 28.55 ACRES

CALMAT CO., dba VULCAN MATERIALS COMPANY, WESTERN DIVISION
10050 BLACK MOUNTAIN ROAD
SAN DIEGO, CA. 92126–4517

LAMBERT COORDINATES

266–1721

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS MAP IS THE NAD 83, ZONE 6 GRID BEARING BETWEEN CITY OF SAN DIEGO CONTROL STATIONS 650 AND 649 PER RECORD OF SURVEY MAP NO. 14492
I.E. N 18°28'48" W

THE COMBINED SCALE FACTOR AT STATION 650 IS 0.9999717
GRID DISTANCE = GROUND DISTANCE X COMBINED SCALE FACTOR.

QUOTED BEARINGS FROM REFERENCE MAPS OR DEEDS MAY OR MAY NOT BE IN TERMS OF SAID SYSTEM.

BENCH MARK

BRASS PLUG IN TOP OF INLET AT SOUTHEAST CORNER OF JADE COAST DRIVE DRIVE AND CAMINO RUIZ.
ELEVATION: 428.174

ASSESSORS PARCEL NO.

341–060–41
341–060–42
341–132–13
341–190–05
341–200–02
341–200–03

EXISTING ZONING

341–060–41	A–1–10
341–060–42	M–1B
341–132–13	RS–1–14
341–190–05	A–1–10
341–200–02	A–1–10
341–200–03	A–1–10

DEVELOPMENT SUMMARY

1. SUMMARY OF REQUEST:
   EXISTING USES: AGGREGATE MINING UNDER APPROVED CONDITIONAL USE PERMIT NO. 315–PC
   PROPOSED USES: MIX OF USES, INCLUDING A MIXED–USE CORE (RETAIL, HOTEL, OFFICE AND RESIDENTIAL), MULTI FAMILY RESIDENTIAL, BUSINESS PARK, INDUSTRIAL, HIGH TECHNOLOGY, OPEN SPACE/PARKS, ENHANCED CREEK CORRIDOR, PUBLIC STREETS AND RESERVATION FOR BUS RAPID TRANSIT (BRT).
   REQUIRED DISCRETIONARY APPROVALS/PERMITS: AMENDMENT TO HE MIRA MESA COMMUNITY PLAN, STONE CREEK MASTER PLAN, TENTATIVE MAP, AND REZONE.
2. STREET ADDRESS:
   WEST OF BLACK MOUNTAIN ROAD, SOUTH OF JADE COAST DRIVE, NORTH OF MIRAMAR ROAD AND EAST OF KIBLER DRIVE.
3. SITE AREA:
   TOTAL SITE AREA (GROSS): 287.913 ACRES, 12,541,490.28 S.F.
   NET SITE AREA: 227.07 ACRES, 9,891,169 S.F.
   (NET SITE AREA EXCLUDES REQUIRED STREETS AND PUBLIC DEDICATIONS)
4. ZONING:
   EXISTING ZONING: AR–1–1, IL–2–1, RS–1–14.
   PROPOSED ZONING: RM–1–2, RM–2–5, RM–3–9, RM–4–10, RM–4–11, CC–5–5, IL–1–1, IL–2–1, IL–3–1, OP–1–1, OR–1–1.
   EXISTING ADJACENT ZONING: NORTH–AR–1–1, RM–3–7, RS–1–14; SOUTH–AR–1–1, IL–2–1; EAST–AR–1–1, IL–2–1; WEST–RS–1–14.
5. DENSITY: PER STONE CREEK MASTER PLAN
6. YARD/SETBACK: PER STONE CREEK MASTER PLAN
7. PARKING (RESIDENTIAL): PER STONE CREEK MASTER PLAN
8. BRUSH MANAGEMENT ZONE 1 IS 60' OR ZONE 1 = 25', ZONE 2 = 40'
9. LAND USE:
   MIXED USE (OFFICE, COMMERCIAL RETAIL, HOTEL, RESIDENTIAL), RESIDENTIAL, BUSINESS PARK, LIGHT INDUSTRIAL, HIGH TECHNOLOGY, ASPHALT/CONCRETE PLANTS, MINING, OPEN SPACE/PARKS.
10. DEVIATIONS: SIDE YARD SETBACK, FRONT YARD SETBACK, REAR YARD SETBACK.

UTILITY NOTE

ALL WATER SERVICES INCLUDING DOMESTIC, IRRIGATION, AND FIRE TO EACH LOT SHALL REQUIRE PRIVATE, ABOVE GROUND BACK FLOW PREVENTION DEVICES.

FIRE NOTES

1. PROVIDE FIRE ACCESS ROADWAY SIGNS OR RED CURBS IN ACCORDANCE WITH: FHPS POLICY A–000–1.
2. TEMPORARY STREET SIGNS ARE REQUIRED IN ACCORDANCE WITH: UFC 901.4.5.

STORM WATER BMP NOTES

1. PRIOR TO THE ISSUANCE OF ANY CONSTRUCTION PERMIT, THE SUBDIVIDER SHALL ENTER INTO A MAINTENANCE AGREEMENT FOR THE ONGOING PERMANENT BMP MAINTENANCE.
2. PRIOR TO THE ISSUANCE OF ANY CONSTRUCTION PERMIT, THE SUBDIVIDER SHALL INCORPORATE ANY CONSTRUCTION BEST MANAGEMENT PRACTICES NECESSARY TO COMPLY WITH CHAPTER 14, ARTICLE 2, DIVISION 1 (GRADING REGULATIONS) OF THE SAN DIEGO MUNICIPAL CODE, INTO THE CONSTRUCTION PLANS OR SPECIFICATIONS.

CONDOMINIUM NOTE

THIS IS A MAP OF A CONDOMINIUM PROJECT AS DEFINED IN SECTION 1350 ET. SEQ. OF THE CIVIL CODE OF THE STATE OF CALIFORNIA AND IS FILED PURSUANT TO THE SUBDIVISION MAP ACT. THE MAXIMUM NUMBER OF CONDOMINIUMS ALLOWED FOR EACH LOT IS SUMMARIZED IN THE TABLE BELOW. THE GRAND TOTAL OF CONDOMINIUMS IS NOT TO EXCEED 4,445 UNITS.

ALL PARK LOTS TO BE MAINTAINED BY A HOMEOWNERS ASSOCIATION, PROPERTY OWNERS ASSOCIATION, OR MASTER ASSOCIATION.

LOT NO.	MAXIMUM CONDOMINIUM UNITS	LOT NO.	MAXIMUM CONDOMINIUM UNITS
1	151	44	50
2	127	45	9
3	100	46	9
4	67	47	11
5	67	48	11
6	62	49	11
7	14	50	12
8	17	59	26
9	14	60	55
10	13	61	42
11	20	62	32
12	71	65	99
13	93	66	78
14	81	67	76
15	82	68	115
16	77	69	30
17	53	70	28
18	59	71	27
19	51	72	142
20	53	73	144
21	198	74	24
22	200	75	21
23	46	76	21
24	42	77	26
25	38	78	57
26	37	79	60
27	100	80	27
28	96	81	16
29	37	82	71
30	34	83	28
31	42	84	25
32	34	85	65
33	84	86	54
34	84	87	72
35	16	88	52
36	16	89	46
37	19	90	51
38	19	118	70
39	48	119	113
40	48	127	35
41	62	128	38
42	62	129	43
43	50	130	37

GENERAL NOTES

LOT SUMMARY

1. NUMBER OF LOTS:
   HIGH TECH/RESIDENTIAL LOTS: 7
   RESIDENTIAL LOTS: 66
   INDUSTRIAL LOTS: 14
   BUSINESS PARK LOTS: 4
   MIXED USE VILLAGE CORE: 20
   OPEN SPACE / PARKS: 35
   RECLAMATION SLOPES: 3
   PUBLIC RIGHT OF WAY: TOTAL AREA: 61.74 ACRES
2. TOTAL AREA WITHIN SUBDIVISION IS 287.90 ACRES GROSS.
3. DRAINAGE SYSTEM: AS REQUIRED BY CITY ENGINEER
4. SCHOOL DISTRICT: SAN DIEGO UNIFIED SCHOOL DISTRICT
5. ALL NEW UTILITIES WILL BE LOCATED UNDERGROUND
6. CONTOUR INTERVAL: AS NOTED
7. ALL PROPOSED SLOPES ARE 2:1 UNLESS NOTED OTHERWISE.
8. GRADING SHOWN HEREON IS PRELIMINARY AND IS SUBJECT TO MODIFICATION IN FINAL DESIGN.
9. LOT DIMENSIONS AND SETBACKS SHALL ADHERE TO UNDERLYING ZONE(S) AND THE STONE CREEK MASTER PLAN.
10. ALL EXISTING BUILDINGS AND STRUCTURES SHALL BE REMOVED.
11. ALL PARK AND OPEN SPACE LOTS TO BE MAINTAINED BY A HOMEOWNERS ASSOCIATION, PROPERTY OWNERS ASSOCIATION, OR MASTER ASSOCIATION.
12. ALL PUBLIC WATER FACILITIES AND ASSOCIATED EASEMENTS WILL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE CITY OF SAN DIEGO WATER FACILITY DESIGN GUIDELINES AND CITY REGULATIONS, STANDARDS AND PRACTICES PERTAINING THERETO.
13. THIS TENTATIVE MAP INCLUDES MULTIPLE MAP UNITS WHICH MAY BE FILED AS INDIVIDUAL FINAL MAPS AS PERMITTED BY THE CALIFORNIA STATE SUBDIVISION MAP ACT. THE DEVELOPER RESERVES THE RIGHT TO FILE THE FINAL MAPS OUT OF NUMERICAL SEQUENCE. THE CITY ENGINEER SHALL REVIEW SUCH MAP UNITS AND IMPOSE REASONABLE CONDITIONS RELATING TO THE FILING OF SAID MAP UNITS.
14. NO TREES OR SHRUBS EXCEEDING THREE FEET IN HEIGHT AT MATURITY SHALL BE INSTALLED WITHIN TEN FEET OF ANY PUBLIC SEWER FACILITIES.
15. DRAINAGE FACILITIES OUTSIDE THE PUBLIC RIGHT–OF–WAY SHALL BE PRIVATE AND PRIVATELY MAINTAINED.

OCCUPANCY CLASSIFICATION	ZONING DESIGNATION	TYPE OF CONSTRUCTION
MULTI–FAMILY COMMERCIAL BUSINESS PARK INDUSTRIAL HIGH TECH	RM–1–2, RM–2–5, RM–3–9, RM–4–10, RM–4–11 CC–5–5 IL–3–1 IL–1–1, IL–2–1 IL–3–1	TYPE–V / RATED

PARKING CALCULATION WORKSHEET

USE	PARKING REQUIREMENTS		
COMMERCIAL RETAIL	RETAIL SALES, COMMERCIAL SERVICES, AND MIXED–USE DEVELOPMENT, 1.0 TO 5.5 PARKING SPACES PER 1,000 SQ. FT. EATING AND DRINKING ESTABLISHMENTS, 1.0 TO 20.0 PARKING SPACES PER 1,000 SQ. FT.		
VISITOR ACCOMMODATIONS	1.0 SPACE PER ROOM		
PROFESSIONAL OFFICE	3.3 TO 5.0 SPACES PER 1,000 SQ. FT.		
MEDICAL, DENTAL & HEALTH PRACTITIONERS	4.0 TO 6.0 SPACES PER 1,000 SQ. FT.		
LIGHT INDUSTRIAL/ RESEARCH & DEVELOPMENT	2.5 TO 4.0 SPACES PER 1,000 SQ. FT.		
RESIDENTIAL	1 BEDROOM: 1.5 PARKING SPACES/UNIT	2 BEDROOMS: 2.0 PARKING SPACES/UNIT	3 TO 4 BEDROOMS: 2.25 PARKING SPACES/UNIT COMMON AREA (FOR LARGE DEVELOPMENTS): 15 PERCENT OF TOTAL OFF–STREET PARKING SPACES REQIRED

GRADING DATA

TOTAL AMOUNT OF SITE TO BE GRADED:	114.5 AC
PERCENT OF TOTAL SITE GRADED:	39.7%
AMOUNT OF CUT:	174,500 CUBIC YARDS
AMOUNT OF FILL:	10,101,500 CUBIC YARDS
AMOUNT OF IMPORT SOIL:	9,927,000 CUBIC YARDS
MAXIMUM HEIGHT OF CUT SLOPES:	75 FEET; 2:1 SLOPE RATIO
MAXIMUM HEIGHT OF FILL SLOPES:	65 FEET; 2:1 SLOPE RATIO
RETAINING / CRIB WALLS LENGTH MAXIMUM HEIGHT	 5,985 LINEAL FEET 9.6 FEET

1. AMOUNT OF SITE WITH 25 PERCENT SLOPES OR GREATER (ALL MANUFACTURED SLOPES): 60.8 AC
2. PERCENT OF THE EXIST. SLOPES STEEPER THAN 25% PROPOSED TO BE GRADED 53.1%
3. PERCENT OF TOTAL SITE WITH 25 PERCENT SLOPES OR GREATER: 21.1%
4. FILL PLACED IN THE SFHA FOR THE PURPOSE OF CREATING A BUILDING PAD MUST BE COMPACTED TO 95% OF THE MAXIMUM DENSITY OBTAINABLE WITH THE STANDARD PROCTOR TEST FILL METHOD ISSUED BY THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM STANDARD D–698).

NOTE: ADDITIONAL WALLS UNDER 3' IN HEIGHT MAY BE REQUIRED IN RESIDENTIAL PAD AREAS BASED ON FINAL HOUSE PLOTTING.

ALL RESIDENTIAL LOCAL AND PRIVATE STREETS, WITH A GRADE BREAK OF 1% OR GREATER, SHALL HAVE VERTICAL CURVES IN ACCORDANCE WITH THE CITY OF SAN DIEGO STREET DESIGN MANUAL.

SOLAR ACCESS NOTE

THIS IS TO AFFIRM THAT THE DESIGN OF THIS SUBDIVISION PROVIDES, TO THE EXTENT FEASIBLE, FOR FUTURE PASSIVE OR NATURAL HEATING AND COOLING OPPORTUNITIES IN ACCORDANCE WITH THE PROVISION OF SECTION 66473.1 OF THE STATE SUBDIVISION MAP ACT.

DENSITY: PER STONE CREEK MASTER PLAN

SHEET SUMMARY

PROPOSED LOT USES

LOT NO.	PROPOSED USE	LOT NO.	PROPOSED USE	LOT NO.	PROPOSED USE
1	RESIDENTIAL	57	OPEN SPACE (SLOPE)	113	PARK (CREEK)
2	RESIDENTIAL	58	PARK	114	PARK (CREEK)
3	RESIDENTIAL	59	MIXED–USE	115	PARK (CREEK)
4	RESIDENTIAL	60	MIXED–USE	116	PARK (CREEK)
5	RESIDENTIAL	61	MIXED–USE	117	PARK (CREEK)
6	RESIDENTIAL	62	MIXED–USE	118	RESIDENTIAL
7	RESIDENTIAL	63	LIGHT INDUSTRIAL	119	RESIDENTIAL
8	RESIDENTIAL	64	OPEN SPACE (SLOPE)	120	HIGH TECH
9	RESIDENTIAL	65	RESIDENTIAL	121	HIGH TECH
10	RESIDENTIAL	66	RESIDENTIAL	122	HIGH TECH
11	RESIDENTIAL	67	RESIDENTIAL	123	HIGH TECH
12	RESIDENTIAL	68	RESIDENTIAL	124	HIGH TECH
13	RESIDENTIAL	69	MIXED–USE	125	HIGH TECH
14	RESIDENTIAL	70	MIXED–USE	126	HIGH TECH
15	RESIDENTIAL	71	MIXED–USE	127	RESIDENTIAL
16	RESIDENTIAL	72	RESIDENTIAL	128	RESIDENTIAL
17	RESIDENTIAL	73	RESIDENTIAL	129	RESIDENTIAL
18	RESIDENTIAL	74	MIXED–USE	130	RESIDENTIAL
19	RESIDENTIAL	75	MIXED–USE	131	OPEN SPACE (SLOPE)
20	RESIDENTIAL	76	MIXED–USE	132	CONSERVATION
21	RESIDENTIAL	77	MIXED–USE	133	PARK
22	RESIDENTIAL	78	MIXED–USE	134	PARK
23	RESIDENTIAL	79	MIXED–USE	135	PARK
24	RESIDENTIAL	80	MIXED–USE	136	PARK
25	RESIDENTIAL	81	MIXED–USE	137	PARK
26	RESIDENTIAL	82	MIXED–USE	138	PARK
27	RESIDENTIAL	83	MIXED–USE	139	PARK
28	RESIDENTIAL	84	MIXED–USE	140	PARK
29	RESIDENTIAL	85	RESIDENTIAL	141	PARK
30	RESIDENTIAL	86	RESIDENTIAL	142	PARK
31	RESIDENTIAL	87	RESIDENTIAL	143	PARK
32	RESIDENTIAL	88	RESIDENTIAL	144	PARK
33	RESIDENTIAL	89	RESIDENTIAL	145	PARK
34	RESIDENTIAL	90	RESIDENTIAL	146	PARK
35	MIXED–USE	91	PARK	147	PARK
36	MIXED–USE	92	BUSINESS PARK	148	CONSERVATION
37	MIXED–USE	93	BUSINESS PARK	149	CONSERVATION
38	MIXED–USE	94	BUSINESS PARK	150	PARK
39	RESIDENTIAL	95	BUSINESS PARK	151	PARK
40	RESIDENTIAL	96	LIGHT INDUSTRIAL		
41	RESIDENTIAL	97	LIGHT INDUSTRIAL		
42	RESIDENTIAL	98	LIGHT INDUSTRIAL		
43	RESIDENTIAL	99	LIGHT INDUSTRIAL		
44	RESIDENTIAL	100	LIGHT INDUSTRIAL		
45	RESIDENTIAL	101	LIGHT INDUSTRIAL		
46	RESIDENTIAL	102	LIGHT INDUSTRIAL		
47	RESIDENTIAL	103	PARK		
48	RESIDENTIAL	104	PARK		
49	RESIDENTIAL	105	LIGHT INDUSTRIAL		
50	RESIDENTIAL	106	LIGHT INDUSTRIAL		
51	PARK	107	LIGHT INDUSTRIAL		
52	PARK	108	LIGHT INDUSTRIAL		
53	PARK	109	LIGHT INDUSTRIAL		
54	PARK	110	LIGHT INDUSTRIAL		
55	PARK	111	PARK (CREEK)		
56	PARK	112	PARK (CREEK)		

OWNER/DEVELOPER

CALMAT CO., dba VULCAN MATERIALS COMPANY,
WESTERN DIVISION, PROPERTIES OFFICE
7220 TRADE STREET, SUITE 205
SAN DIEGO. CA 92121

(858) 530–9460 PHONE
(858) 530–9492 FAX

PLANNING

KLR PLANNING
P.O. BOX 882676
SAN DIEGO, CA 92168–2676
(619) 578–9505 FAX (619) 546–0702

CIVIL ENGINEER

BDS ENGINEERING, INC.
6859 FEDERAL BOULEVARD
LEMON GROVE, CA 91945
(619) 582–4992 FAX (619) 582–7428

ARCHITECT

CARRIER JOHNSON
1301 3RD AVENUE
SAN DIEGO, CA 92101–4012
(619) 239–2353 FAX (619) 239–6227

LANDSCAPE ARCHITECT

KTU&A
3916 NORMAL STREET
SAN DIEGO, CA 92103
(619) 294–4477 FAX (619) 294–9965

UTILITIES PROVIDED BY

GAS – SAN DIEGO GAS AND ELECTRIC
ELECTRIC – SAN DIEGO GAS AND ELECTRIC
TELEPHONE – AT&T (FORMERLY SBC & PACIFIC BELL)
CABLE TELEVISION – TIME WARNER
SEWER – CITY OF SAN DIEGO
WATER – CITY OF SAN DIEGO
FIRE PROTECTION – CITY OF SAN DIEGO

REFERENCE DRAWING

14177–6–D	30816–11–D
19208–9–D	15267–2–D
30816–9–D	15435–8–D
30816–10–D	26586–3–D
13671–5–D	13826–D

ABBREVIATIONS

AC	ACRE
A.P.N.	ASSESSOR'S PARCEL NO.
BNDRY	BOUNDARY
B.V.C.	BEGIN VERTICAL CURVE
℄	CENTERLINE
CLR	CLEARANCE
DOC.	DOCUMENT
ESMT	EASEMENT
EXIST.	EXISTING
E.V.C.	END VERTICAL CURVE
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FH	FIRE HYDRANT
F.S.	FINISHED SURFACE
GUT	GUTTER
IE	INVERT ELEVATION
L	LENGTH
LD	LEAD AND DISK
MH	MANHOLE
NO.	NUMBER
ℙ	PROPERTY LINE
PCC	PORTLAND CEMENT CONCRETE
P.I.	POINT OF INTERSECTION
R	RADIUS
(RAD.)	RADIAL
REC.	RECORDED
RCW	RECLAIMED WATER
S	SEWER
SD	STORM DRAIN
SDCO	STORM DRAIN CLEANOUT
SL	STREET LIGHT
ST	STREET
W	WATER
WM	WATER METER
W/	WITH
YR	YEAR
Δ	DELTA

STONE CREEK
WATER STUDY EXHIBIT SHEET 1 OF 6

ENGINEER OF WORK:
BDS ENGINEERING, INC.
CIVIL ENGINEERING
LAND SURVEYING
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582–4992

DWG. FILE: L:\PROJECTS\2437\Engr\Water Exhibit\WATER STUDY–1.dwg
PLOT DATE: Mar 14, 2016–3:34pm

04–23
JOB NO.

W.O. # 42–2637

AMENDMENT #1 – JANUARY 21, 2016

STONE CREEK
VESTING TENTATIVE MAP NO. 208328
PTS NO. 67943
CITY OF SAN DIEGO

EASEMENT NOTES PER COMMITMENT FOR TITLE INSURANCE BY CHICAGO TITLE COMPANY, ORDER NO. 930014063-U50, DATED JANUARY 29, 2009.

1. THE RIGHT TO CONSTRUCT, USE, MAINTAIN, ERECT, REPAIR AND REPLACE UPON SAID REAL PROPERTY AND REMOVE THEREFROM PIPE LINES, TELEPHONE AND TELEGRAPH LINES, TANKS, MACHINERY, BUILDING AND OTHER STRUCTURES, WHICH MAY BE NECESSARY OR DESIRABLE IN THE EXERCISE OF THE MINERAL RIGHTS RESERVED HEREBY, WITH RIGHTS OF WAY FOR PASSAGE OVER, UPON AND ACROSS AND INGRESS TO AND EGRESS FROM SAID REAL PROPERTY FOR ANY OR ALL PIPES, AS RESERVED IN THE DEED FROM THE SPRECKELS HOLDING COMPANY, RECORDED JULY 18, 1946 IN BOOK 2185, PAGE 346 OF OFFICIAL RECORDS.

2. AN AGREEMENT BETWEEN THE CITY OF SAN DIEGO AND CONROCK CO., A DELAWARE CORPORATION, OWNER, RECORDED MARCH 23, 1976 AS FILE NO. 76-084812, OF OFFICIAL RECORDS, RELATING TO THE INSTALLATION, MAINTENANCE AND POSSIBLE REMOVAL OF APPROXIMATELY 4,000 LINEAR FEET OF 6' CHAIN-LINK FENCE (2,000' ON EACH SIDE) EASTERLY AND WESTERLY 9' OF R/W OF CAMINO RUIZ.

3. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED APRIL 12, 1956 IN BOOK 6057, PAGE 208 AS FILE NO. 50442 OF OFFICIAL RECORDS. **TO BE QUITCLAIMED.**

4. AN EASEMENT FOR PUBLIC UTILITIES TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED JANUARY 5, 1957 IN BOOK 6408, PAGE 162 OF OFFICIAL RECORDS. **TO BE QUITCLAIMED.**

5. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED JANUARY 31, 1957 IN BOOK 6439, PAGE 564 OF OFFICIAL RECORDS. **TO BE QUITCLAIMED.**

6. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED AUGUST 30, 1957 IN BOOK 6730, PAGE 517 OF OFFICIAL RECORDS. **TO BE QUITCLAIMED.**

7. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED MAY 8, 1961 AS FILE NO. 78977, OF OFFICIAL RECORDS. **TO BE QUITCLAIMED.**

8. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED JUNE 5, 1961 AS FILE NO. 95658, OF OFFICIAL RECORDS. **TO BE QUITCLAIMED.**

9. AN EASEMENT FOR ROAD PURPOSES AND UTILITY LINES INCLUDING BUT NOT LIMITED TO SEWER, WATER, GAS AND ELECTRIC POWER LINES AND APPURTENANCES THERETO GRANTED TO R. M. MORRIS PER DEED RECORDED AUGUST 3, 1961 AS FILE NO. 132830 OF OFFICIAL RECORDS. RESTRICTIONS ON THE USE, BY THE OWNERS OF SAID LAND, OF THE EASEMENT AREA AS PROVIDED IN THE DOCUMENT REFERRED TO ABOVE. **TO BE QUITCLAIMED.**

10. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED APRIL 6, 1964 AS FILE NO. 62009, OF OFFICIAL RECORDS. **TO BE QUITCLAIMED.**

11. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED MARCH 18, 1969 AS FILE NO. 46860, OF OFFICIAL RECORDS. RESTRICTIONS ON THE USE, BY THE OWNERS OF SAID LAND, OF THE EASEMENT AREA AS PROVIDED IN THE DOCUMENT REFERRED TO ABOVE. **TO BE QUITCLAIMED.**

12. AN EASEMENT FOR A STORM DRAIN OR DRAINS INCLUDING ANY OR ALL APPURTENANCES THEREIN, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS TO CITY OF SAN DIEGO RECORDED AUGUST 15, 1972 AS FILE NO. 215379, OF OFFICIAL RECORDS. **PORTION TO BE VACATED.**

13. AN EASEMENT FOR PUBLIC STREET, EARTH EXCAVATION OR EMBANKMENT SLOPE OR SLOPES, TOGETHER WITH THE RIGHT OF WAY TO CONSTRUCT, RECONSTRUCT, OPERATE AND REPAIR A STORM DRAIN OR DRAINS, INCLUDING ANY OR ALL APPURTENANCES THERETO, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS GRANTED TO THE CITY OF SAN DIEGO, A MUNICIPAL CORPORATION PER DEED RECORDED JUNE 25, 1973 AS FILE NO. 73-173448 OF OFFICIAL RECORDS. SAID INSTRUMENT ADDITIONALLY CONTAINS THE PRIVILEGE AND RIGHT TO EXTEND DRAINAGE STRUCTURES AND EXCAVATION AND EMBANKMENT SLOPES BEYOND THE LIMITS OF THE ABOVE DESCRIBED RIGHT OF WAY WHERE REQUIRED FOR THE CONSTRUCTION AND MAINTENANCE THEREOF. **PORTION TO BE VACATED.**

14. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED MAY 20, 1974 AS FILE NO. 74-130271, OF OFFICIAL RECORDS. RESTRICTIONS ON THE USE, BY THE OWNERS OF SAID LAND, OF THE EASEMENT AREA AS PROVIDED IN THE DOCUMENT REFERRED TO ABOVE. **TO BE QUITCLAIMED.**

15. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED MARCH 25, 1975 AS FILE NO. 75-067190, OF OFFICIAL RECORDS. RESTRICTIONS ON THE USE, BY THE OWNERS OF SAID LAND, OF THE EASEMENT AREA AS PROVIDED IN THE DOCUMENT REFERRED TO ABOVE.

16. AN EASEMENT FOR RIGHT OF WAY FOR A PUBLIC STREET, TOGETHER WITH AN EARTH EXCAVATION OR EMBANKMENT, SLOPE OR SLOPES TO CITY OF SAN DIEGO RECORDED APRIL 2, 1975 AS FILE NO. 75-75123, OF OFFICIAL RECORDS. **PORTION TO BE VACATED.**

17. AN EASEMENT FOR A STORM DRAIN OR DRAINS INCLUDING ANY OR ALL APPURTENANCES THERETO, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS AND RIGHTS INCIDENTAL THERETO TO THE CITY OF SAN DIEGO PER DEED RECORDED APRIL 10, 1975 AS FILE NO. 75-083149 OF OFFICIAL RECORDS. **TO BE VACATED.**

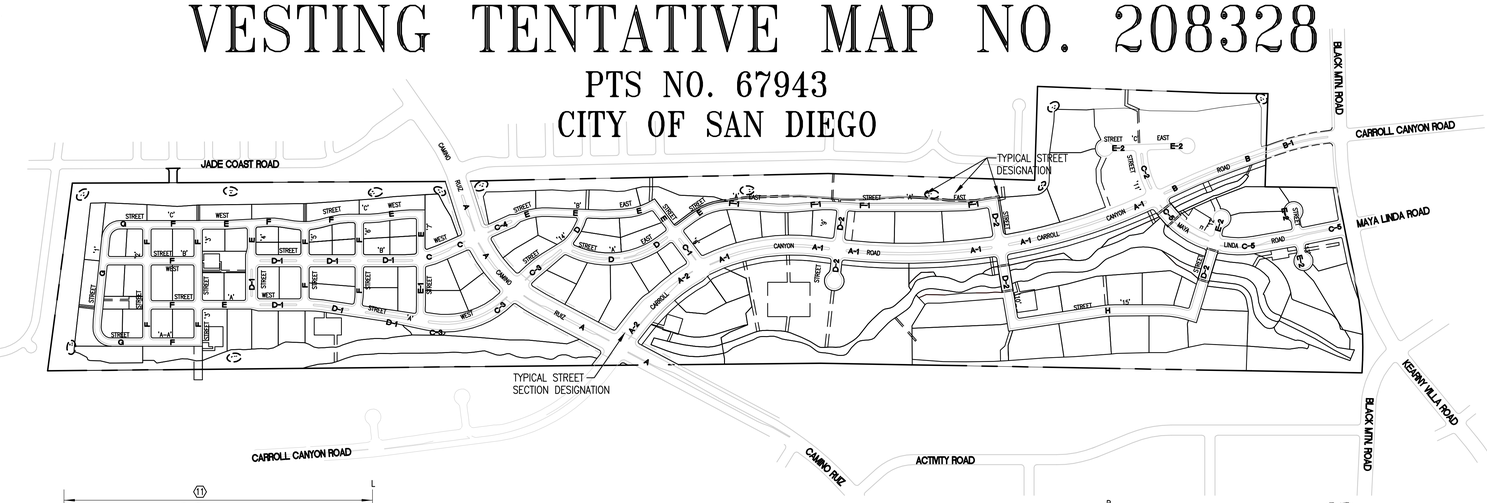
18. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED APRIL 21, 1977 AS FILE NO. 77-146813, OF OFFICIAL RECORDS.

19. AN EASEMENT FOR PUBLIC UTILITIES INGRESS, EGRESS AND RIGHTS INCIDENTAL THERETO TO SAN DIEGO GAS AND ELECTRIC COMPANY PER DEED RECORDED OCTOBER 1, 1979 AS FILE NO. 79-409099 OF OFFICIAL RECORDS.

20. AN EASEMENT FOR DRAINAGE IMPROVEMENTS AND RIGHTS INCLUSIVE THERETO RECORDED SEPTEMBER 20, 2004 AS FILE NO. 2004-0891674 OF OFFICIAL RECORDS. THE EXACT LOCATION AND EXTENT OF SAID EASEMENT IS NOT DISCLOSED IN THE DOCUMENT. AFFECTS PARCELS 1 AND 2 OF PARCEL MAP NO. 15786.

21. AN EASEMENT FOR PUBLIC STREET AND INCIDENTS AND APPURTENANCES THERETO TO THE CITY OF SAN DIEGO RECORDED JULY 6, 2005 AS FILE NO. 2005-0568797 OF OFFICIAL RECORDS.

22. A "JOINT USE AGREEMENT", DATED JULY 7, 2005, EXECUTED BY SAN DIEGO GAS AND ELECTRIC COMPANY, A CALIFORNIA CORPORATION AND THE CITY OF SAN DIEGO, RECORDED AUGUST 4, 2005 AS INSTRUMENT NO. 2005-0665971 OF OFFICIAL RECORDS.



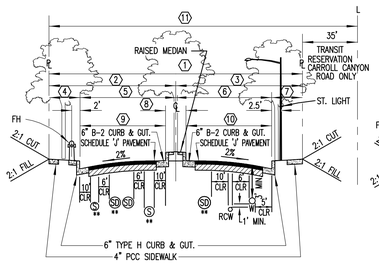
STREET SECTION NOTES

1. FOR STREET SECTION LOCATION SEE VEHICULAR CIRCULATION MAP, THIS SHEET.
2. FOR STREET DIMENSIONS SEE STREET SECTION TABLE BELOW EACH STREET SECTION.
3. FOR STREET DESIGNATIONS, SEE SHEETS 3, 4, 5 & 6 AND VEHICULAR CIRCULATION MAP AND STREET SECTION TABLE.

* BASIC SEPARATIONS ARE SHOWN. IF DURING FINAL ENGINEERING DESIGN IT IS DETERMINED THAT BASIC SEPARATIONS CANNOT BE OBTAINED, THEN THE SPECIAL PROVISIONS OF THE NOVEMBER 2009 EDITION OF THE CITY OF SAN DIEGO RECYCLED WATER SYSTEM GUIDELINES, SECTION 4, DETAIL RW-107 SHALL APPLY.

LEGEND

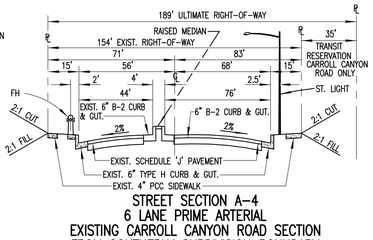
	SYMBOL
CURB & GUTTER	
PCC SIDEWALK	
STORM DRAIN PIPE	SD
CURB INLET	CI
STORM DRAIN CLEANOUT	SDCO
SEWER MANHOLE	
SEWER MAIN (PUBLIC)	S
TRUNK SEWER	TS
WATER MAIN (POTABLE)	W
RECYCLED WATER MAIN	RCW
GATE VALVE	
FIRE HYDRANT (3 WAY)	FH
STREET LIGHT	SL
RETAINING WALL	
CENTERLINE	
PROPERTY LINE	
EASEMENT LINE	
DAYLIGHT LINE	
FLOOD PLAIN	
FLOODWAY	
STREET TREES	



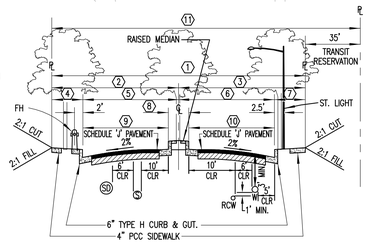
STREET SECTION A
6 LANE MAJOR
NO SCALE

55 MPH DESIGN SPEED

STREET SECTION TABLE											
SECTION DESIGNATION	DIMENSION INDICATOR										
6 LANE MAJOR	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
SECTION A	168'	78'	90'	22'	56'	68'	22'	24'	44'	56'	—
SECTION A-1	139'	73'	66'	22'	51'	51'	15'	14'	44'	44'	174'
SECTION A-2	161'	78'	83'	22'	56'	68'	15'	24'	44'	56'	196'
SECTION A-3	173'	90'	83'	22'	68'	68'	15'	24'	56'	56'	208'
SECTION DESIGNATION	STREET DESIGNATION										
SECTION A	CAMINO RUIZ										
SECTION A-1	CARROLL CANYON ROAD										
SECTION A-2	CARROLL CANYON ROAD										
SECTION A-3	CARROLL CANYON ROAD										



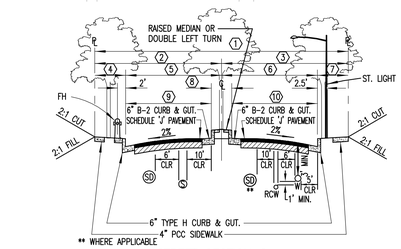
STREET SECTION A-4
6 LANE PRIME ARTERIAL
EXISTING CARROLL CANYON ROAD SECTION FROM SOUTHERLY SUBDIVISION BOUNDARY TO WESTERLY OF CAMINO RUIZ
NO SCALE



STREET SECTION B
4 LANE MAJOR
NO SCALE

55 MPH DESIGN SPEED

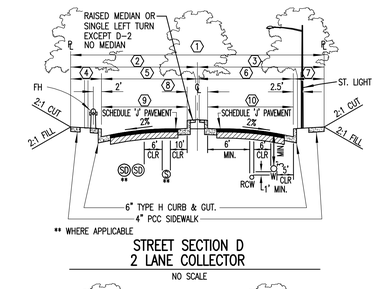
STREET SECTION TABLE											
SECTION DESIGNATION	DIMENSION INDICATOR										
4 LANE MAJOR	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
SECTION B	98'	49'	49'	12'	37'	37'	12'	14'	30'	30'	133'
SECTION B-1	88'	44'	44'	7'	37'	37'	7'	10'	32'	32'	—
SECTION DESIGNATION	STREET DESIGNATION										
SECTION B	CARROLL CANYON ROAD										
SECTION B-1	CARROLL CANYON ROAD										



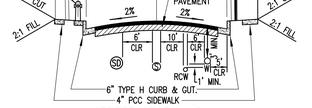
STREET SECTION C
4 LANE URBAN COLLECTOR
NO SCALE

35 MPH DESIGN SPEED

STREET SECTION TABLE										
SECTION DESIGNATION	DIMENSION INDICATOR									
4 LANE URBAN COLLECTOR	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
SECTION C	114'	57'	57'	15'	42'	42'	15'	24'	30'	30'
SECTION C-1	110'	55'	55'	14'	41'	41'	14'	14'	34'	34'
SECTION C-2	104'	52'	52'	14'	38'	38'	14'	14'	31'	31'
SECTION C-3	122'	65'	57'	15'	50'	42'	15'	24'	38'	30'
SECTION C-4	116'	59'	57'	15'	44'	42'	15'	6'	50'	30'
SECTION C-5	120'	60'	60'	15'	45'	45'	15'	4'	38'	48'
SECTION C-6	120'	60'	60'	15'	45'	45'	15'	10'	30'	50'
SECTION DESIGNATION	STREET DESIGNATION									
SECTION C	STREET 'B' WEST									
SECTION C-1	STREET '8'									
SECTION C-2	STREET '11'									
SECTION C-3	STREET 'A' WEST									
SECTION C-4	STREET '14'									
SECTION C-5	MAYA LINDA ROAD									
SECTION C-6	MAYA LINDA ROAD									



STREET SECTION D
2 LANE COLLECTOR
NO SCALE

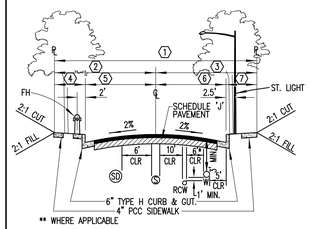


STREET SECTION D-4
2 LANE COLLECTOR
NO SCALE

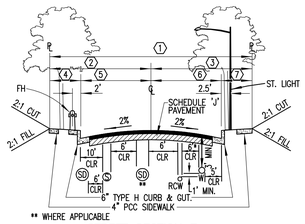
NOTE
PARKING PERMITTED ON ONE SIDE OF STREET. RED CURBS OR NO PARKING SIGNS REQUIRED ON ONE SIDE OF STREET.

30 MPH DESIGN SPEED

STREET SECTION TABLE										
SECTION DESIGNATION	DIMENSION INDICATOR									
2 LANE COLLECTOR	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
SECTION D	86'	43'	43'	14'	29'	29'	14'	14'	22'	22'
SECTION D-1	86'	43'	43'	14'	29'	29'	14'	12'	23'	23'
SECTION D-2	76'	38'	38'	14'	24'	24'	14'	NO MEDIAN	19'	19'
SECTION D-3	76'	38'	38'	14'	24'	24'	14'	NO MEDIAN	19'	19'
SECTION D-4	78'	39'	39'	14'	25'	25'	14'	NO MEDIAN	–	–
SECTION D-5	92'	49'	43'	15'	34'	28'	15'	8'	34'	20'
SECTION DESIGNATION	STREET DESIGNATION									
SECTION D	STREET 'A' EAST									
SECTION D-1	STREET 'A' WEST, STREET 'B' WEST & STREET '4'									
SECTION D-2	STREET '9', & '10'									
SECTION D-3	STREET '10', & '12'									
SECTION D-4	STREET '10', '12' & '15'									
SECTION D-5	STREET 'B' EAST									



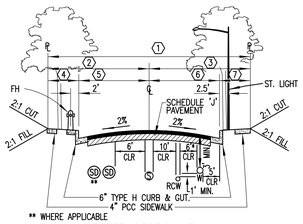
STREET SECTION E
2 LANE COLLECTOR
NO SCALE



STREET SECTION E
2 LANE COLLECTOR
NO SCALE

30 MPH DESIGN SPEED

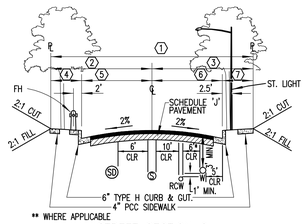
STREET SECTION TABLE										
SECTION DESIGNATION	DIMENSION INDICATOR									
2 LANE COLLECTOR	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
SECTION E	60'	30'	30'	12'	18'	18'	12'	–	–	–
SECTION E-1	62'	30'	32'	12'	18'	18'	14'	–	–	–
SECTION E-2	64'	32'	32'	12'	20'	20'	12'	–	–	–
SECTION DESIGNATION	STREET DESIGNATION									
SECTION E	STREET 'A' WEST, STREET 'C' WEST, STREET 'B' EAST, STREET '4', '7', '8' & '14'									
SECTION E-1	STREET '7'									
SECTION E-2	STREET 'C' EAST, STREET '12' & '13'									



STREET SECTION F
2 LANE SUB-COLLECTOR
NO SCALE

30 MPH DESIGN SPEED

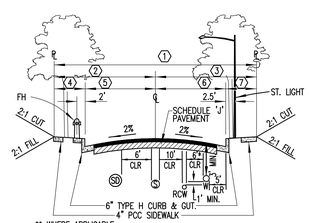
STREET SECTION TABLE										
SECTION DESIGNATION	DIMENSION INDICATOR									
2 LANE SUB-COLLECTOR	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
SECTION F	58'	29'	29'	12'	17'	17'	12'	–	–	–
SECTION DESIGNATION	STREET DESIGNATION									
SECTION F	STREET 'A-A', STREET 'A' WEST, STREET 'B' WEST, STREET 'C' WEST, STREET '2', '3', '5' & '6' STREET 'A' EAST									



STREET SECTION G
RESIDENTIAL LOCAL
NO SCALE

25 MPH DESIGN SPEED

STREET SECTION TABLE										
SECTION DESIGNATION	DIMENSION INDICATOR									
RESIDENTIAL LOCAL	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
SECTION G	58'	29'	29'	12'	17'	17'	12'	–	–	–
SECTION DESIGNATION	STREET DESIGNATION									
SECTION G	STREET 'A-A', STREET 'C' WEST & STREET '1'									



CUL-DE-SAC SECTION
NO SCALE

CUL-DE-SAC SECTION TABLE										
SECTION DESIGNATION	DIMENSION INDICATOR									
2 LANE COLLECTOR	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
SECTION E-2	134'	67'	67'	12'	55'	55'	12'	–	–	–
SECTION D-2	134'	67'	67'	12'	55'	55'	12'	–	–	–
SECTION DESIGNATION	STREET DESIGNATION									
SECTION E-2	STREET 'C' EAST, STREET '12', STREET '13'									
SECTION D-2	STREET '9'									

STONE CREEK
WATER STUDY EXHIBIT SHEET 2 OF 6

ENGINEER OF WORK:
BDS ENGINEERING, INC.
CIVIL ENGINEERING
LAND SURVEYING
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582-4992

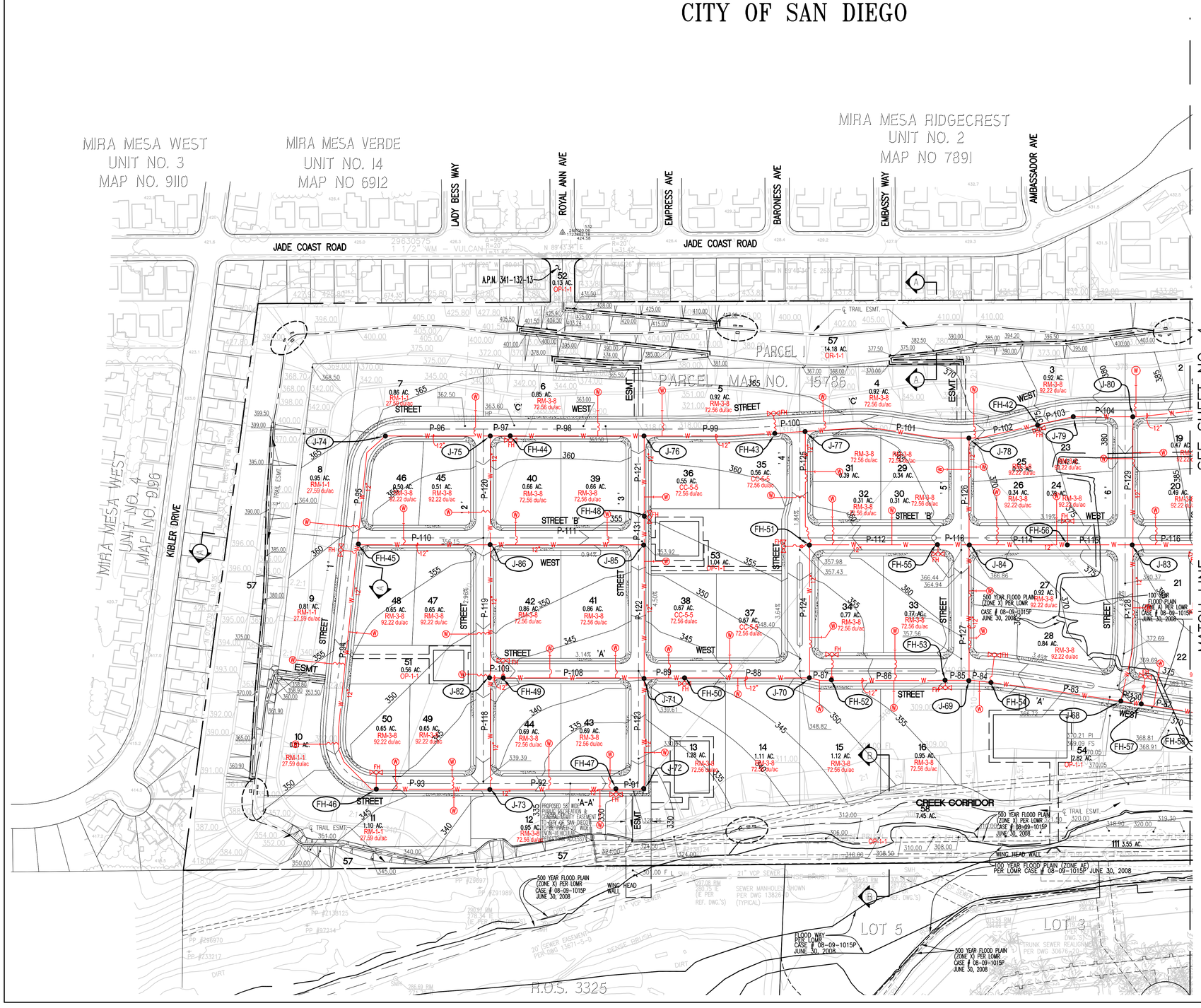
DWG. FILE: L:\PROJECTS\2437\Engr\Water Exhibit\WATER STUDY-2.dwg
PLOT DATE: Mar 14, 2016-3:35pm

04-23
JOB NO.

AMENDMENT #1 - JANUARY 21, 2016

W.O. # 42-2637

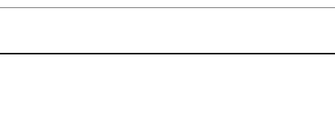
STONE CREEK
VESTING TENTATIVE MAP NO. 208328
PTS NO. 67943
CITY OF SAN DIEGO



NOTES

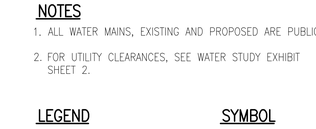
1. ALL WATER MAINS, EXISTING AND PROPOSED ARE PUBLIC.
2. FOR UTILITY CLEARANCES, SEE WATER STUDY EXHIBIT SHEET 2.

LEGEND	SYMBOL
ALL EXISTING ITEMS	(SCREENED)
NEW CONTOUR	360
SPOT ELEVATION	370.00
CURB & GUTTER	
LAND USE LABEL	RM-3-8 44.98 du/ac
FIRE HYDRANT	
GATE VAVLE	
WATER	W
WATER NODE	
WATER NODE DESIGNATOR	MH-88
WATER LINE DESIGNATOR	P-79



*BENCH WIDTH IS 6' MIN.
EXCEPT BENCH WIDTH IS 8' MIN. AT HIKING TRAIL LOCATIONS.

TYPICAL SLOPE SECTION A–A
SCALE 1"=100'



*BENCH WIDTH IS 6' MIN.
EXCEPT BENCH WIDTH IS 8' MIN. AT HIKING TRAIL LOCATIONS.

TYPICAL SLOPE SECTION B–B
SCALE 1"=100'

TYPICAL LOT SECTION
NO SCALE

N

SCALE 1"=100'

SCALE 1" = 100'
0 100' 200' 300' 400'
GRAPHIC SCALE

STONE CREEK
WATER STUDY EXHIBIT SHEET 3 OF 6

ENGINEER OF WORK:
BDS ENGINEERING, INC.
CIVIL ENGINEERING
LAND SURVEYING
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582-4992

DWG. FILE: L:\PROJECTS\04\Dwg\Water Exhibit\WATER STUDY-3.dwg
PLOT DATE: Mar 14, 2016-3:35pm

04-23
JOB NO.

W.O. # 42-2637

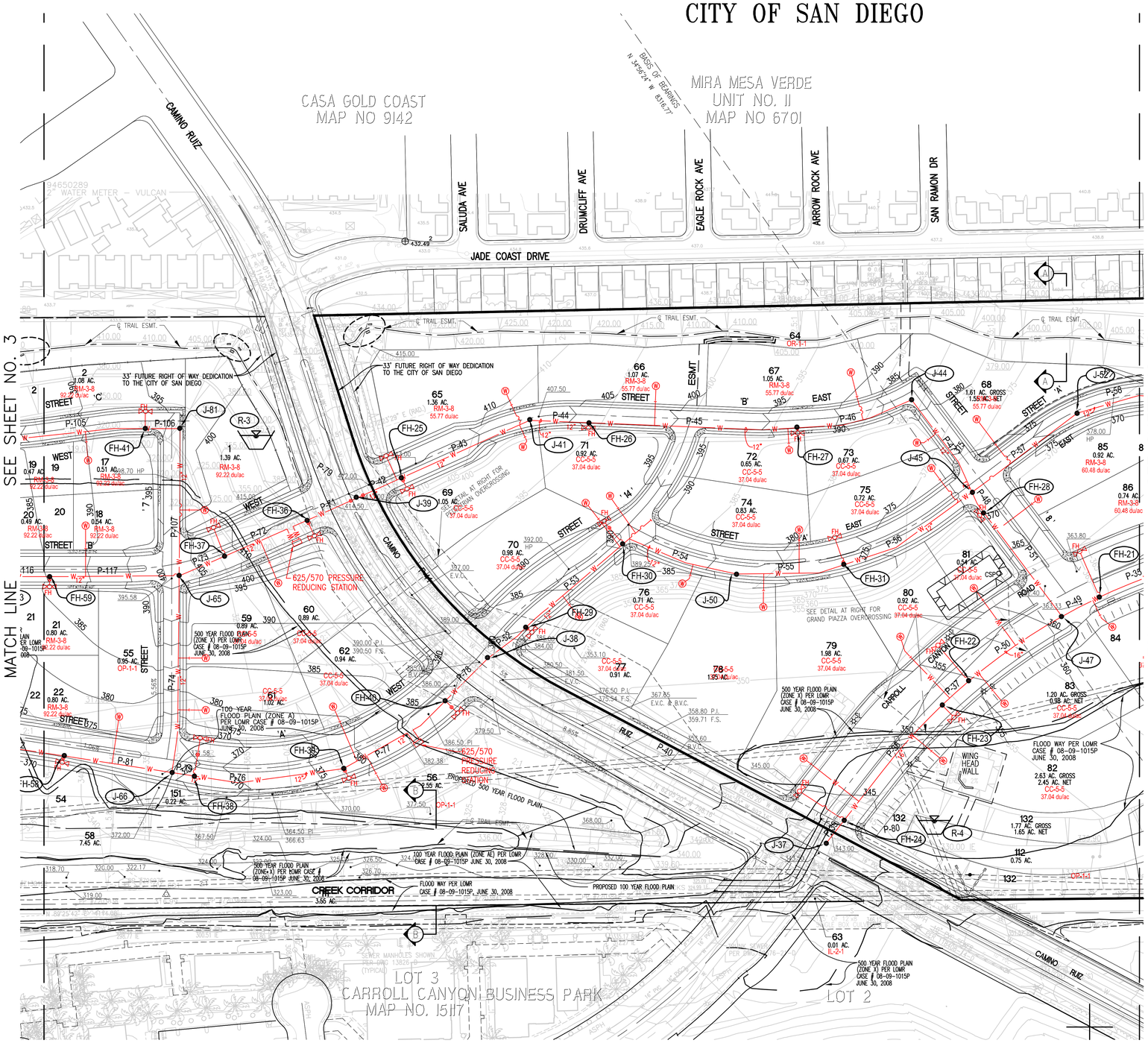
AMENDMENT #1 – JANUARY 21, 2016

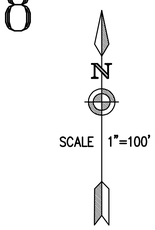
STONE CREEK

VESTING TENTATIVE MAP NO. 208328

PTS NO. 67943

CITY OF SAN DIEGO





SCALE 1" = 100'

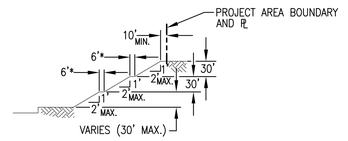
0 100' 200' 300' 400'

GRAPHIC SCALE

NOTES

1. ALL WATER MAINS, EXISTING AND PROPOSED ARE PUBLIC.
2. FOR UTILITY CLEARANCES, SEE WATER STUDY EXHIBIT SHEET 2.

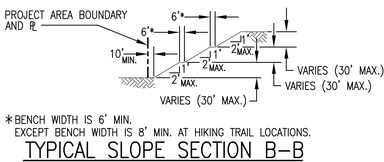
LEGEND	SYMBOL
ALL EXISTING ITEMS	(SCREENED)
NEW CONTOUR	360 / 370.00
SPOT ELEVATION	
CURB & GUTTER	
LAND USE LABEL	RM-3-8 44.98 du/ac
FIRE HYDRANT	
GATE VAVLE	
WATER	W
WATER NODE	
WATER NODE DESIGNATOR	MH-88



*BENCH WIDTH IS 6' MIN.
EXCEPT BENCH WIDTH IS 8' MIN. AT HIKING TRAIL LOCATIONS.

TYPICAL SLOPE SECTION A-A

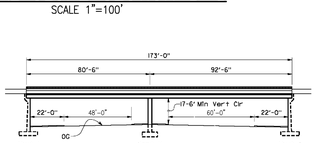
SCALE 1"=100'



*BENCH WIDTH IS 6' MIN.
EXCEPT BENCH WIDTH IS 8' MIN. AT HIKING TRAIL LOCATIONS.

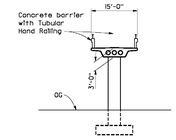
TYPICAL SLOPE SECTION B-B

SCALE 1"=100'



ELEVATION

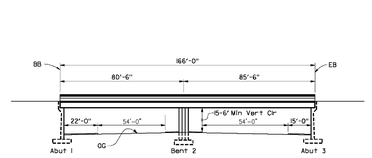
NO SCALE



TYPICAL SECTION

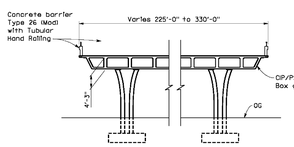
NO SCALE

PEDESTRIAN OVERCROSSING



ELEVATION

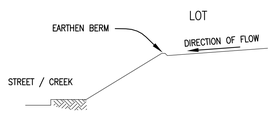
NO SCALE



TYPICAL SECTION

NO SCALE

GRAND PIAZZA OVERCROSSING



TYPICAL LOT SECTION

NO SCALE

STONE CREEK

WATER STUDY EXHIBIT SHEET 4 OF 6

ENGINEER OF WORK:
BDS ENGINEERING, INC.
CIVIL ENGINEERING
LAND SURVEYING
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582-4992

DWG. FILE: L:\PROJECTS\2437\Engr\Water Exhibit\WATER STUDY-4.dwg

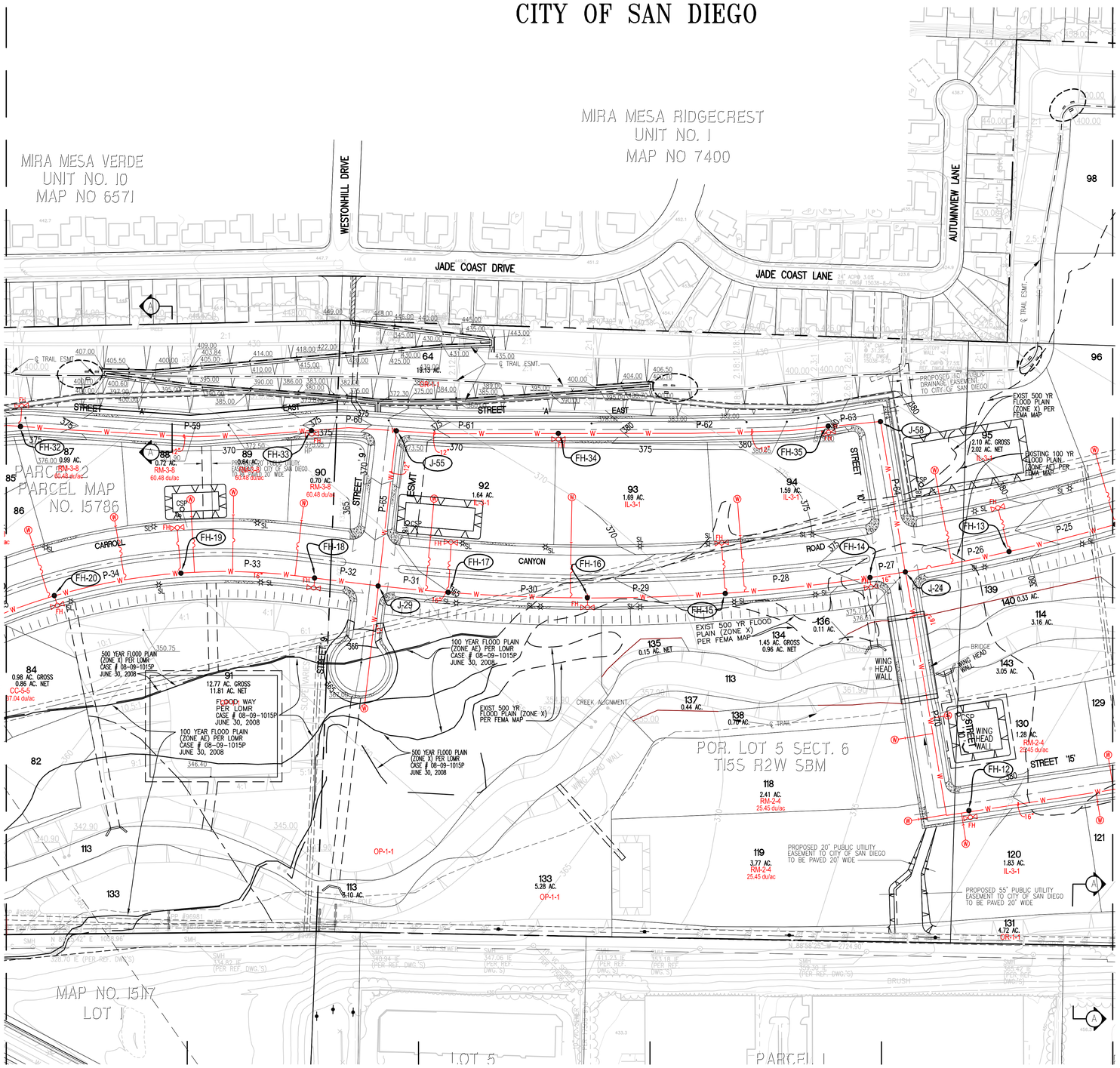
PLOT DATE: Mar 14, 2016-3:36pm

04-23
JOB NO.

W.O. # 42-2637

AMENDMENT #1 - JANUARY 21, 2016

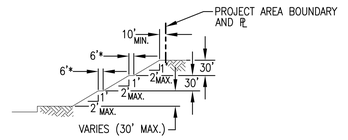
STONE CREEK
VESTING TENTATIVE MAP NO. 208328
PTS NO. 67943
CITY OF SAN DIEGO



NOTES

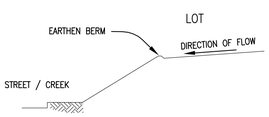
1. ALL WATER MAINS, EXISTING AND PROPOSED ARE PUBLIC.
2. FOR UTILITY CLEARANCES, SEE WATER STUDY EXHIBIT SHEET 2.

LEGEND	SYMBOL
ALL EXISTING ITEMS	(SCREENED)
NEW CONTOUR	360
SPOT ELEVATION	370.00
CURB & GUTTER	
LAND USE LABEL	RM-3-8 44.98 du/ac
FIRE HYDRANT	
GATE VAVLE	
WATER	W
WATER NODE	
WATER NODE DESIGNATOR	MH-88
WATER LINE DESIGNATOR	P-79



*BENCH WIDTH IS 6' MIN.
EXCEPT BENCH WIDTH IS 8' MIN. AT HIKING TRAIL LOCATIONS.

TYPICAL SLOPE SECTION A–A
SCALE 1"=100'



TYPICAL LOT SECTION
NO SCALE

N

SCALE 1"=100'

SCALE 1" = 100'
0 100' 200' 300' 400'
GRAPHIC SCALE

STONE CREEK
WATER STUDY EXHIBIT SHEET 5 OF 6

ENGINEER OF WORK:
BDS ENGINEERING, INC.
CIVIL ENGINEERING
LAND SURVEYING
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582-4992

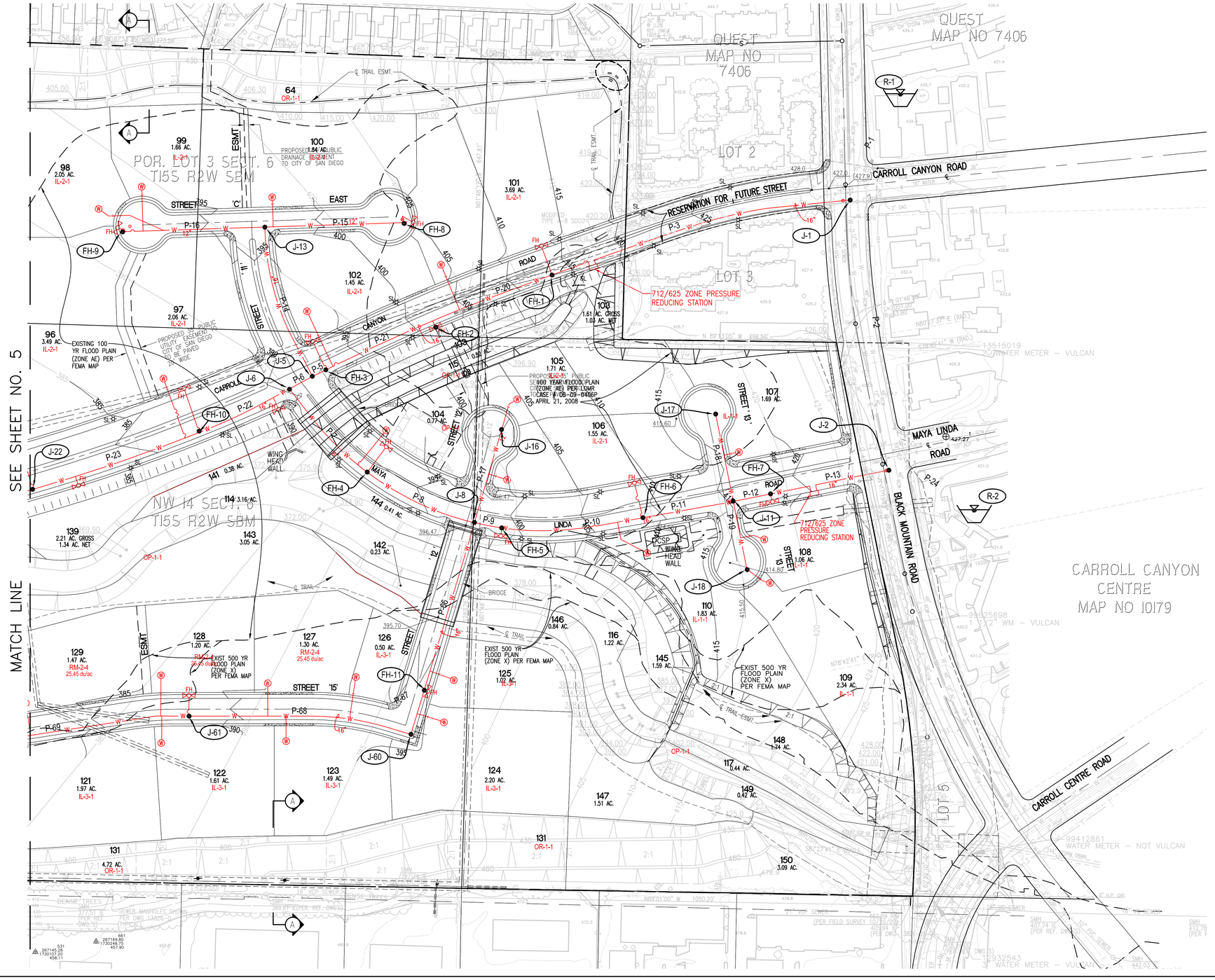
DWG. FILE: L:\PROJECTS\04237\Engr\Water Exhibit\WATER STUDY-5.dwg
PLOT DATE: Mar 14, 2016-3:36pm

04-23
JOB NO.

W.O. # 42-2637

AMENDMENT #1 – JANUARY 21, 2016

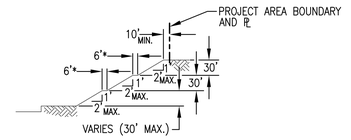
STONE CREEK
VESTING TENTATIVE MAP NO. 208328
PTS NO. 67943
CITY OF SAN DIEGO



NOTES

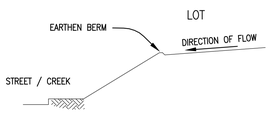
1. ALL WATER MAINS, EXISTING AND PROPOSED ARE PUBLIC.
2. FOR UTILITY CLEARANCES, SEE WATER STUDY EXHIBIT SHEET 2.

LEGEND	SYMBOL
ALL EXISTING ITEMS	(SCREENED)
NEW CONTOUR	360
SPOT ELEVATION	370.00
CURB & GUTTER	
LAND USE LABEL	RM-3-8 44.98 du/ac
FIRE HYDRANT	
GATE VAVLE	
WATER	W
WATER NODE	
WATER NODE DESIGNATOR	MH-88
WATER LINE DESIGNATOR	P-79

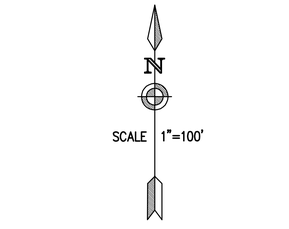


*BENCH WIDTH IS 6' MIN.
EXCEPT BENCH WIDTH IS 8' MIN. AT HIKING TRAIL LOCATIONS.

TYPICAL SLOPE SECTION A–A
SCALE 1"=100'



TYPICAL LOT SECTION
NO SCALE



STONE CREEK
WATER STUDY EXHIBIT SHEET 6 OF 6

ENGINEER OF WORK:
BDS ENGINEERING, INC.
CIVIL ENGINEERING
LAND SURVEYING
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582-4992

DWG. FILE: L:\PROJECTS\2437\Engr\Water Exhibit\WATER STUDY-6.dwg
PLOT DATE: Mar 14, 2016-3:37pm

04-23
JOB NO.

W.O. # 42-2637

AMENDMENT #1 – JANUARY 21, 2016