



320 North Lincoln Avenue, Loveland, CO 80537
970.613.1447 TAIT.COM

June 27th, 2025

Ken Torres, PE
Castle Rock Water and Sewer
100 North Wilcox Street
Castle Rock, CO 80104

RE: CD25-0027, O'Reilly Auto Parts – Utility Conformance Letter

Dear Mr. Torres,

This utility letter has been prepared for O'Reilly Auto Parts, regarding the proposed commercial retail lot 5 at 730 North Ridge Road, Castle Rock, Colorado 80104, within Founders Marketplace Filing No. 1. The purpose of this letter is to demonstrate that the proposed utilities for the site comply with both the Town of Castle Rock's Water System Design Criteria Manual 2018 version, and the Wastewater Collection Design Criteria Manual, ensuring that the water, fire, and sanitary sewer requirements, as outlined in the Water and Sanitary Sewer Study for Founders Marketplace Filing No. 1, Block 1 by CLC Associates, Inc., are met.

Project Location and Description

The site is owned by Kings Bank LLC, and is bordered to the north by an existing King Soopers, to the east by an electric substation owned and operated by the Intermountain Rural Electric Association, and to the south and west by North Ridge Road. The proposed project covers an area of 1.212 acres and will feature a 6,721 square-foot retail building. The proposed development will also include associated parking, driveways, and landscaping. Utility easements, as required, will be provided during the final design and construction phases, in accordance with the Town's standards for type, location, and size of easements. Refer to Appendix A, for a vicinity map.

Water System

Calculated Water Demands

The Water and Sanitary Sewer Study for Founders Marketplace Filing No. 1, Block 1 assumes the Max Hour water demand as 3.49 GPM for the proposed O'Reilly Auto Parts Retail Lot C as shown in the image below.



FOUNDERS MARKETPLACE FILING NO. 1, BLOCK 1

Domestic Water Demand Analysis

CLC Associates, Inc.
8480 E. Orchard Road, Ste. 2000
Greenwood Village, CO 80111
Date: 22-Jun-2004

	Land Use	Area (acre)	Average Day Demand (gpad)	Average Day Demand (gpd)	Peak Daily Ratio	Peak Hour Ratio	Max Day Flow (gpd)	Max Hour Flow (gpd)
Founders Marketplace	commercial	12.03	1200.0	14,436	2.65	4.5	38,255	64,962
			or:	10.03	gpm	or:	26.57	45.11 gpm
	Building Size (s.f.)	Percent Total	Average Day Demand (gpm)	Max Day Demand (gpm)	Max Hour Demand (gpm)			
King Soopers	58676	75.74%	7.59	20.12	34.17			
Retail A	7800	10.07%	1.01	2.67	4.54			
Retail B	5000	6.45%	0.65	1.71	2.91			
Retail C	6000	7.74%	0.78	2.06	3.49			
Totals =>		100.00%	10.03	26.57	45.11			

Steady State Storage Requirements

Average Day	14,436	Gallons
Max Day	38,259	Gallons

Fire Flow Demand Analysis

Required Storage

King Soopers					
Building Size	58676	S.F.	Fire Flow	1625	GPM
Construction Type	V-N		Duration	4	HR
Required Fire Flow ¹	6500	GPM			
Fire Flow Reduction ²	75%		Total	390,000	Gallons
Net Required Fire Flow	1625	GPM	(812.5 gpm per hydrant)		
Retail A					
Building Size	7800	S.F.	Fire Flow	1500	GPM
Construction Type	V-N		Duration	2	HR
Required Fire Flow ¹	2250	GPM			
Fire Flow Reduction ²	75%		Total	180,000	Gallons
Net Required Fire Flow ³	1500	GPM			
Retail B					
Building Size	5000	S.F.	Fire Flow	1500	GPM
Construction Type	V-N		Duration	2	HR
Required Fire Flow ¹	2000	GPM			
Fire Flow Reduction ²	75%		Total	180,000	Gallons
Net Required Fire Flow ³	1500	GPM			
Retail C					
Building Size	6000	S.F.	Fire Flow	1500	GPM
Construction Type	V-N		Duration	2	HR
Required Fire Flow ¹	2000	GPM			
Fire Flow Reduction ²	75%		Total	180,000	Gallons
Net Required Fire Flow ³	1500	GPM			

Assumed values for
the O'Reilly lot.

¹From the Uniform Fire Code Table A-III-A-1
²Sprinkler reduction per local Fire Department
³Absolute minimum of 1500 GMP

Image A extracted from Page 13 of 73 of the Water and Sanitary Sewer Study for Founders Marketplace Filing No. 1, Block 1 by CEC Associates dated 10/8/04.

The Town of Castle Rock's standards have been updated and now include irrigation demands, resulting in increased ADD, PHD, and MDD compared to original projections. Additionally, the expected building size for the site has increased from 6,000 sf to 6,721 sf. The building type is II-B with a 25% reduction allowed per the 2018 International Fire Code since the building will be sprinkled.



This results in a required fire flow of 1750 gpm as the Water and Sanitary Sewer Study for Founders Marketplace Filing No. 1 report, accounted for. Previous calculations, based on fire flow test data as well as the water model in the Water and Sanitary Sewer Study for Founders Marketplace Filing No. 1, Block 1 by CLC Associates, indicated that a maximum hourly demand of 3.49 GPM would be required for Lot 5. However, according to the updated calculations provided below, the peak hour water demand now requires a slight increase, from 3.49 GPM to 5.6 GPM.

Average Day Demands

Average Daily Demand (ADD) for the water distribution flows were calculated based upon the Town of Castle Rock Water System Design Criteria Manual demand rates of 0.2gpd/sf for commercial retail use.

Land Use	Areas	Demand	ADD (gpd)
Retail	6,721 sf	0.2(gdp/sf)	1,345
Irrigated Land	0.18 ac	3750(gpd/ac)	675

Max Day Demands

The Maximum Daily Demand (MDD) was calculated by multiplying the ADD by the Maximum Day Demand Factor of 2.5.

Land Use	ADD (gpd)	MDD Factor	MDD (gpd)
Retail	1,345	2.5	3,363
Irrigated Land	675	1	675
Total			4,038

Peak Hour Demands

The Peak Hour Demand (PHD) was calculated by multiplying the ADD by the Peak Hour Demand Factor of 5.5.

Land Use	ADD (gpd)	PHD Factor	PHD (gpm)
Retail	1,345	5.5	5.1
Irrigated Land	675	1	0.5
Total			5.6

SFE

The total Single-Family Equivalent (SFE) for water flows were calculated per the Town of Castle Rock Water System Design Criteria flow rates listed in the table below. The Founders Marketplace assumed SFE of 3 SFE/AC, with a site total of 1.2 Ac the report planned for 3.6 SFE for



the site. As mentioned above, the Water and Sanitary Sewer Study for Founders Marketplace Filing No. 1 report did not account for any irrigation demands. The final meter size will be determined based on the required demand of the total building water supply fixture units and any additional water usage, as shown on the commercial fixture unit worksheet to be provided to the Town of Castle Rock at the time of building permitting. Based on the fixture worksheet and a meeting held with the Town of Castle Rock on June 24th, 2025 a ¾" meter will be sufficient for the domestic line, and the irrigation meter will be 1".

Land Use	Area	Typical SFE/unit	SFE
Retail	6,721 sf	0.0005	3.36
Irrigated Land	0.18 ac	9.38	1.69
Total			5.05

Water Storage

The water storage required for this development has been calculated to be the Max Day Demand plus the required fire flow per the Town of Castle Rock requirements and the 2018 International Fire Code. The Max Day Demand (MDD) has previously been calculated in this section and the fire flow has been provided as 1,750 gpm for a 2-hour duration. The required storage is as follows:

	Q	Units	Gallons
Max Day Demand	4,038	gallons per day	4,038
Fire Flow*	1,750	gallons per minute	210,000

*- 1750 gpm for 2-hour duration

Total Required
Storage 214,038 Gallons
 0.214 MG

Existing Water System

Existing Distribution System

An existing 12-inch water main runs along the private drive aisle on the north side of the development, extending northeast. This water main loops around the King Soopers site and ties into the existing water main in North Ridge Road. According to the Water and Sanitary Sewer Study for Founders Marketplace Filing No. 1, Block 1, the expected static pressure at the site is 68.79 psi.

Existing Supply Facilities

According to the Water and Sanitary Sewer Study for Founders Marketplace Filing No. 1, Block 1, this site is located within the Green Pressure zone and will rely on water supply from Storage Tank 6, situated near 2803 Ridge Road. Storage Tank 6A has a capacity of 1.99 MG, and Storage Tank 6C has a capacity of 2.23 MG. Furthermore, the master report specifies that this lot will be served by the 12" looped main, which aligns with the current plan.



Proposed Water System

Proposed Distribution System

It is anticipated that the proposed building will have one domestic service line, and one fire service line. The service lines will connect to the existing 12-inch water main within the drive aisle. The proposed irrigation system will be served by a separate tap and meter from the buildings domestic service line. An existing fire hydrant located near the entrance drive will need to be relocated behind the sidewalk. No additional fire hydrants are proposed for the site.

The Water and Sanitary Sewer Study for Founders Marketplace Filing No. 1, Block 1 by CLC Associates, Inc. outlines limits for water demand, which are listed in the tables provided. The proposed demands were calculated based on Town of Castle Rock demand per use for the proposed building. Any future development of the existing water infrastructure needed to serve this site is the responsibility of the developer. Refer to Appendix C for the proposed utility plan for this site.

Wastewater System

Calculated Wastewater Flows

The Water and Sanitary Sewer Study for Founders Marketplace Filing No. 1, Block 1 defines the sewer peak flow as the difference between the contributing Basin A and Basin B, totaling 0.0570 cfs, as illustrated in the image below.

Sanitary Sewer Calculations Founders Marketplace Filing No. 1 Castle Rock, Colorado								
Node Summary								
Node ID	Contributing Basins	S.F. Equivalents	Average Day Flow (gpd)	Average Day Flow (cfs)	Peak Factor ¹	Infiltration (gpd)	Design Peak Flow (gpd)	Design Peak Flow (cfs)
MH-1	A	152.7	30537	0.0472	5	3054	155739	0.2410
MH-2	A and B	188.8	37755	0.0584	5	3776	192551	0.2979
MH-3	C	120.6	24125	0.0373	5	2413	123040	0.1904
MH-4	A, B, and C	309.4	61880	0.0957	5	6188	315590	0.4883
MH-5	A thru E	516.5	103298	0.1598	5	10330	526822	0.8151
MH-6	A thru F	776.6	155317	0.2403	4.82	15532	763507	1.1813
Off-Site	A thru F, East Treatment	781.6	156317	0.2419	4.81	15632	767612	1.1877

¹Peak Factor equals the minimum of 5 or $3.79 \times Q^{-0.168}$, where Q is the average day flow in cfs.

Image extracted from Page 40 of 73 of the Water and Sanitary Sewer Study for Founders Marketplace Filing No. 1, Block 1 by CEC Associates dated 10/8/04.



Previous calculations established a Peak Design Flow of 0.241 cfs for the multi-family development (Basin A) located across N. Ridge Rd. to the west. For Founders Marketplace (Basin B), the total flow is the difference between MH-2 and MH-1, which results in a single family equivalents of 36.1 and a Design Peak Flow of 0.0570 cfs. Lot 5, or Retail C, is a portion of the overall discharge from Basin B, with an allocated flow of approximately 0.0044 cfs.

Average Daily Flows (ADF) for wastewater flows were calculated per the Town of Castle Rock Waste Water System Design Criteria flow rates listed in the table below.

Land Use	Area (sf)	Typical ADF/unit	ADF (gpd)
Retail	6,721	0.1	672

Peak Flows were determined by multiplying the Average Daily Flow by Peaking Factor (PF). The Peaking Factor is calculated using the following equation:

$PF = 3.65 \times [(ADF)^{-0.168}]$, ADF in millions of gallons per day; Max PF = 5.0

$PF = 3.65 \times [(0.000672)^{-0.168}] = 12.45$, therefore PF=5.0

The Peak Design flowrate is calculated by multiplying the Average Design Flows with the Peaking Factor and adding 10% of the Average Design Flow to allow for pipe infiltration and inflow.

Land Use	ADF (mgd)	Peaking Factor	PDF (mgd)	PDF+ADF*0.1 (mgd)	Peak Flow (cfs)
Retail	0.000672	5	0.00336	0.00343	0.0052

The total SFE for wastewater flows were calculated per the Town of Castle Rock Wastewater System Design Criteria flow rates listed in the table below.

Land Use	Area (sf)	Typical SFE/unit	SFE
Retail	6,721	0.0005	3.4

Existing Wastewater System

The proposed development will be tributary to an existing 8" sanitary sewer located within the utility easement that runs through the King Soopers site. These calculations indicate that, due to the increase in building square footage, the wastewater demand will also rise. The original study estimated a Peak Flow of 0.0044 cfs. The analysis above shows that the Peak Flow for the proposed development will be 0.0052 cfs, resulting in an increase of approximately 0.001 cfs in peak flow.

Proposed Wastewater System

I affirm that the proposed utility design for Lot 5, Founders Marketplace Filing No. 1, is in general conformance with the Water and Sanitary Sewer Study for Founders Marketplace Filing No. 1, Block 1,



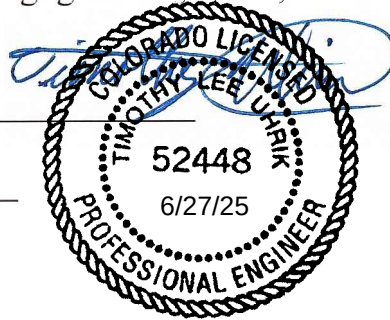
prepared by CEC Associates on 10/8/04, as well as the current Town of Castle Rock Water System Design Criteria Manual. Any future development of the existing wastewater infrastructure needed to serve this site is the responsibility of the developer. The development of this site does not require a grease interceptor. To be in accordance with Castle Rock Water a stub has been provided for a future grease interceptor. Refer to Appendix D for a copy of the Castle Rock Water Grease Interceptor Acknowledgement.

UTILITY REPORT APPROVAL BLOCKS

Engineer's Statement:

The enclosed utility report, and exhibits, were prepared by me or under my direct supervision and is correct to the best of my knowledge and belief. Said utility report has been prepared in accordance with applicable Town of Castle Rock criteria and is in conformance with the master utility plans for the affected area. I accept responsibility for any liability caused by negligent acts, errors, or omissions on my part in preparing this report.

Signature: _____
Registered Professional Engineer
State Of Colorado No. 52448
(Affix Seal)



Owner/Developer's Statement:

As Owner/Developer of Land(s) identified within this report; I agree to proceed, implement and comply with all recommendations and requirements outlined herein.

John McCoy VP Store Install & Design
Name of Developer

[Signature]
Authorized Signature



APPENDICES

Appendix A – Vicinity Map

Appendix B – Master Utility Report

Appendix C – Utility Plan

Appendix D – Grease Interceptor Acknowledgement

Appendix E – Confirmation Memo for Required Fire Flow



Appendix A – Vicinity Map



VICINITY MAP
(NOT TO SCALE)





Appendix B – Master Utility Report

**WATER AND SANITARY SEWER STUDY
FOR
FOUNDERS MARKETPLACE
FILING NO. 1, BLOCK 1
TOWN OF CASTLE ROCK, COLORADO**

October 8, 2004

Prepared for:

Flamingo Partners LLC
7600 East Arapahoe Road, Ste. 211
Centennial, Colorado 80112
Ph. (303) 771-3344
Mr. Glen Smith, Manager

Prepared by:

Joel D. Tompkins, PE
CLC Associates, Inc.
8480 E. Orchard Rd, #2000
Greenwood Village, CO 80111

(CLC Job No. 03.0292)

**WATER AND SANITARY SEWER STUDY
FOR
FOUNDERS MARKETPLACE
FILING NO. 1, BLOCK 1
TOWN OF CASTLE ROCK, COLORADO**

2.00 WATER SYSTEM ANALYSIS

2.01 Description

Founders Marketplace Filing No. 1, Block 1 will be serviced by a looped water system which connects to the adjacent green zone line at two locations. The existing green zone line being tapped was installed in Ridge Road in the summer of 2003 and is part of the Founders Parkway Transmission Line Improvements. The "green-zone" has a maximum tank elevation of 6820.0 with an operating elevation of 6807.0. The starting hydraulic grade of 6792.0 was provided by the Town's Utility Department from their master water model.

Nominal finished floor elevations for Block 1 are between 6611.0 and 6632.1; the largest structure, King Soopers, will be at 6617.5. Pressure reducing valves on the domestic service lines will be required for all proposed buildings.

Please refer to the included "Water Service Plan" for depiction of existing and proposed water lines in or affecting Founders Marketplace Filing No. 1, Block 1. Only the appurtenances in the South Ridge Road right-of-way are in-place at this time.

2.02 Modeling Assumptions

For purposes of modeling the system the following assumptions were made:

- Roughness factors for ductile iron pipe were used throughout (C=120.0). This will provide a level of conservativeness when analyzing those pipes less than 12 inches in diameter, which are or will be PVC.
- Two points of connection to the Town's "green-zone" water line in South Ridge Road will be made.
- Domestic maximum daily and hourly peak demands were distributed to the individual buildings prorated based on their percent of total building coverage.

The average water demand was determined using the land use demand rate of 1200 gpad for commercial properties, as printed in the Town's Public Works Regulations. From the same publication factors of 2.65 and 4.5 were applied to the average rate to determine the maximum day demand and peak hour demands, respectively. Thus, for the 12.03 acres of Block 1 the average demand was determined to be 14,436 gallons per day. The maximum day flow calculates to 38,255 gpd and peak hourly flow estimates to 64,962 gpd. All calculations are presented in the Appendix A.

2.03 Design Scenarios

Four different steady state models were established to determine the adequacy of the proposed system. The first model uses only the peak hourly demand of 45.12 gpm. The flows were distributed on a prorated basis to the individual buildings as described above. The resulting pipe velocities and pressure determinations were compared to the published parameters and determined to be acceptable. A summary is provided in Appendix C.

**WATER AND SANITARY SEWER STUDY
FOR
FOUNDERS MARKETPLACE
FILING NO. 1, BLOCK 1
TOWN OF CASTLE ROCK, COLORADO**

The remaining three models were developed to test fire flow parameters against the published criteria. Fire flow requirements were determined using the 1997 Uniform Fire Code and an assumption of Type V-N construction and applying a 75% reduction factor for sprinklered buildings. The flows were determined to be 1625 gpm for the King Soopers and 1500 gpm for the other three in-line retail structures. The maximum day demand is modeled as supplied in addition to those fire flows.

Fire demands were divided between two hydrants in the case of a King Soopers fire and applied to a single hydrant for fires in each of the remaining structures. Only the 6" ductile iron fire leads in the case of the Retail A and C fire models demonstrated an operating parameter outside of the Town criteria; pipe velocity reached up to 17.02 fps in both instances *which will not adversely effect these ductile iron segments* (identified as pipes f2 and f9 in the modeling). However, in the King Soopers, Retail A, and Retail C fire flow models the water mains themselves demonstrated operating parameters within the Town's specifications.

HYDRAULICS SUMMARY TABLE

Scenario	Velocity (fps)		Pressure (psi)	
	Maximum	Minimum	Maximum	Minimum
Peak Hour	0.16	0.01	78.96	68.79
Maximum Day	0.09	0.01	78.96	68.79
King Soopers Fire	10.54	0.01	76.91	55.53
Retail A Fire	9.74	0.01	77.04	64.84
Retail C Fire	9.74	0.01	77.04	47.56

Note: Does not include 6-inch ductile iron fire leads.

2.04 Volume

The calculations in the appendix demonstrate a need for 390,000 gallons of storage to provide for fire fighting needs associated with the largest structure proposed in Block 1. However, that was not the worst case fire scenario in this zone. According to data provided by (and included here at the request of) the Town of Castle Rock a fire at the future Rock Ridge Elementary would require 630,000 gallons. Total water storage required for the Green Zone and portions of the Red Zone, which are currently drawing from the Green Zone through PRV's, is estimated as 4,878,000 gallons for the maximum day demand without fire scenario consideration. Total current storage available is only 4,000,000 gallons. Including the fire flow requirement for the Elementary School there is a deficit of 1,508,279 gallons in the Red Zone tanks.

According to Town of Castle Rock representatives there exists a cross connection between the Red Zone and Green Zone which allows transfer of water into the Green Zone. This connection provides the Town the mechanism through which they have already approved developments in excess of storage capacity calculations. By approving this development the Town acknowledges that the same requirement exists

**WATER AND SANITARY SEWER STUDY
FOR
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FILING NO. 1, BLOCK 1
TOWN OF CASTLE ROCK, COLORADO**

and is exacerbated by Founders Marketplace Filing No. 1 and assumes all responsibility for meeting demand requirements through the porting of water between zones or the addition of storage capacity within the Green Zone itself.

2.05 Conclusion

Peak hour demands and fire flows can be serviced within Founders Marketplace Filing No. 1, Block 1 in compliance with the residual pressure and velocity requirements established in the Public Works Regulations of the Town of Castle Rock.

3.00 SANITARY SEWER SYSTEM ANALYSIS

3.01 Description

The sanitary sewer design for Founders Marketplace Filing No. 1, Block 1 consists of the construction of approximately 3110 lf of off-site main in addition to the on-site mains and stubs. The internal lines will stub to the Ridge Road ROW to provide for future connection of 13.05 acres on the west side of that street. On the down-gradient side of the site a stub is provided to the east, in the Highway 86 ROW, for 10.31 acres of potential Multi Family development in Castle Oaks Estates. Further down-gradient of the Highway 86 ROW the sewer main provides for an additional 20.28 acres of commercial property (Founders Marketplace Block 2) and another 53.60 acres of multi-family development.

After the final contribution point in this analysis (MH-5) the last 1550 lf of main is tied to a proposed system servicing Castle Oaks Estates at Valley View and Castle Oaks Drives. Information for the system at that location and downstream thereof is detailed in the Sanitary Sewer Study for Castle Oaks Filing No. 1. However, design grade and required pipe sizes up to the first Castle Oaks connection are as provided on the "Pipe Summary" table in Appendix D.

3.02 Design

Information in Appendix D demonstrates the expected sanitary flows generated up-stream of the Castle Oaks Estates Outfall C-2. An inflow estimate of 5 SFE equivalents has been used for the East Water Treatment Plant. All sewer lines up to the Outfall C-2 connection have had their design flows quantified and are given acceptable grade envelopes in that Appendix. All sanitary installation to the Castle Oaks Estates C-2 pipe will be 8-inches in diameter comply with the grades demonstrated in the appendix.

According to Meurer & Associates, Inc., the engineers for Castle Oaks Estates, the C-2 Outfall of the Castle Oaks Estates Utility Study, to which Founders Marketplace is tributary, is designed for 913 SFE. Of the 175.9 SFE excess, 152.7 SFE is attributed to the inclusion of the 13.05 acres on the west side of Ridge Road which has never been identified as within the sanitary district in question. It is expected that actual build out conditions will support the flow boundaries as delineated and no further action is warranted until the review of the Castle Oaks Phase II Lift Station improvements; which are triggered by build out of 1250 SFE in the Castle Oaks Sanitary District.

FOUNDERS MARKETPLACE FILING NO. 1, BLOCK 1

CLC Associates, Inc.
 8480 E. Orchard Road, Ste. 2000
 Greenwood Village, CO 80111
 Date: 22-Jun-2004

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¹From the Uniform Fire Code Table A-III-A-1²Sprinkler reduction per local Fire Department³Absolute minimum of 1500 GMP

FOUNDERS MARKETPLACE FILING NO. 1, BLOCK 1Domestic Water Demand Analysis

CLC Associates, Inc.
 2400 E. Crenshaw Road, Ste. 2000
 Greenwood Village CO 80111
 Date: 14-Jul-2004

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Fire Flow Demand AnalysisRequired Storage

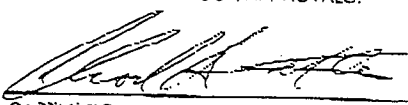
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²Sprinkler reduction per local Fire Department

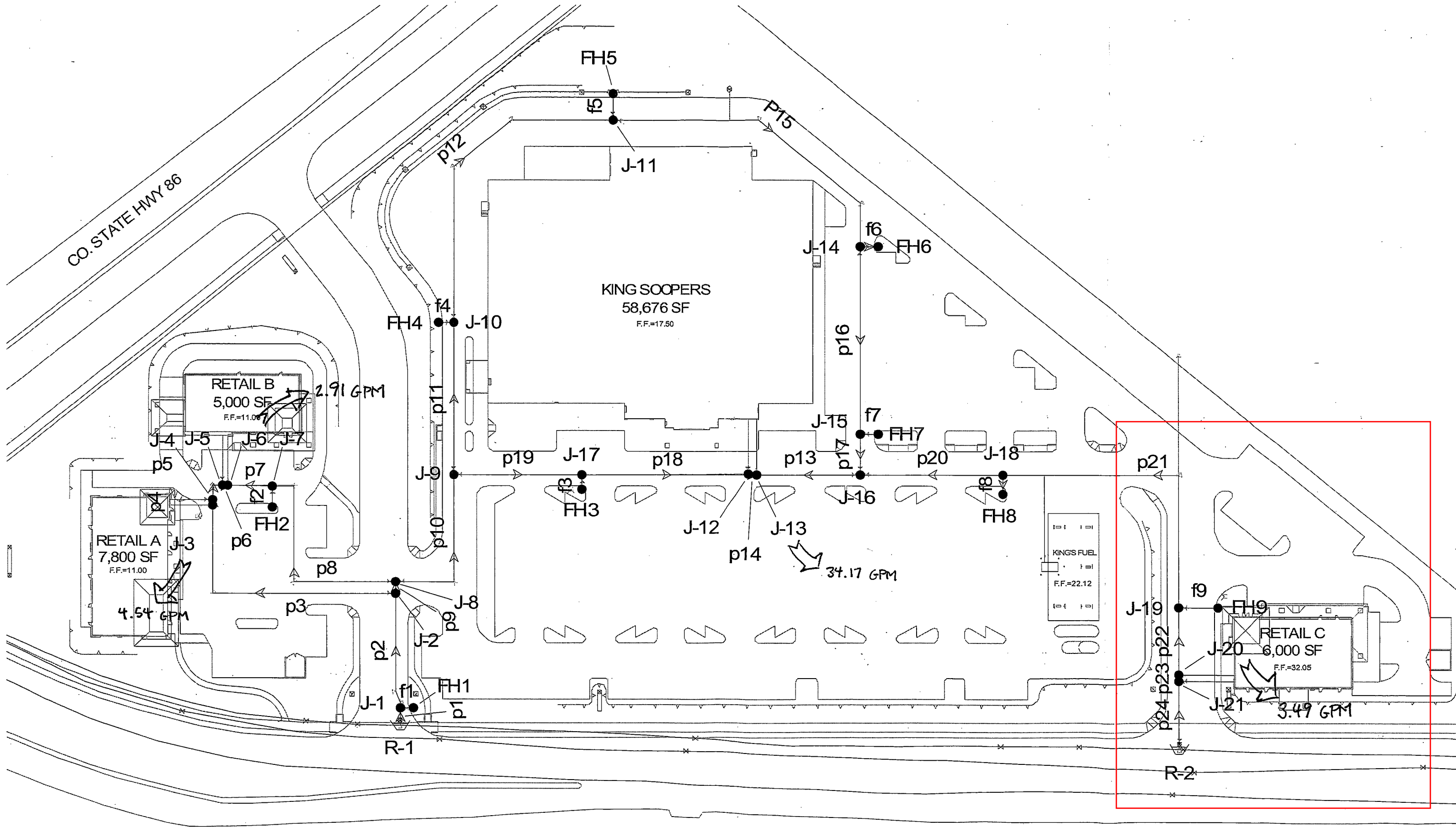
³Absolute minimum of 1500 GMP

TOWN OF CASTLE ROCK APPROVALS:


 CASTLE ROCK FIRE AND RESCUE
 SUPPORT SERVICES

7/15/04
 DATE

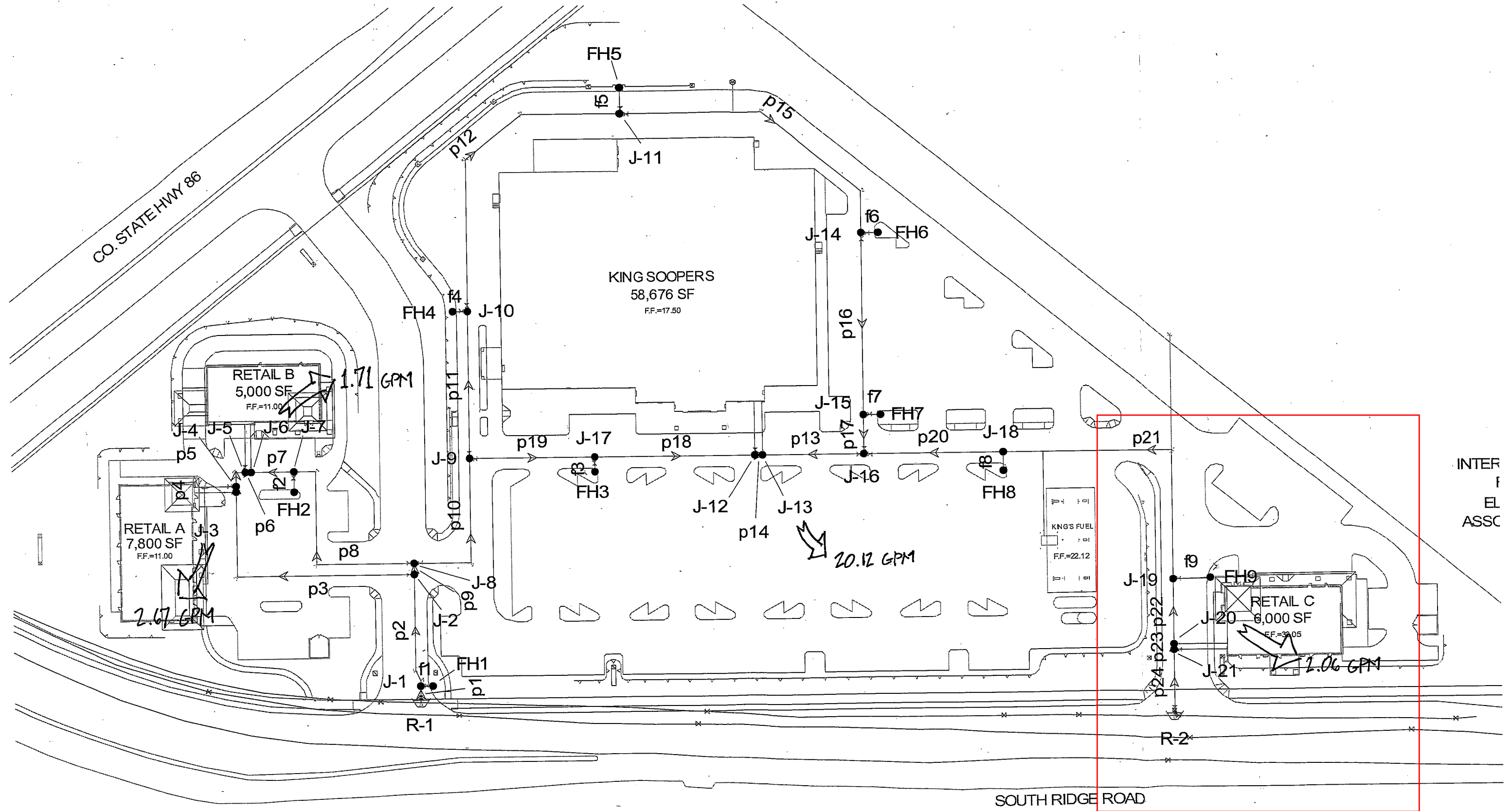
Scenario: Peak Hour



Scenario: Peak Hour **Steady State Analysis** **Junction Report**

Label	Elevation (ft)	Zone	Type	Demand (gpm)	Pattern	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-1	6,612.15	Green	Demand	0.00	Fixed	0.00	6,792.00	77.81
J-2	6,611.90	Green	Demand	0.00	Fixed	0.00	6,792.00	77.92
J-3	6,609.50	Green	Demand	4.54	Fixed	4.54	6,792.00	78.96
J-4	6,609.50	Green	Demand	0.00	Fixed	0.00	6,792.00	78.96
J-5	6,609.50	Green	Demand	0.00	Fixed	0.00	6,792.00	78.96
J-6	6,609.50	Green	Demand	2.91	Fixed	2.91	6,792.00	78.96
J-7	6,609.50	Green	Demand	0.00	Fixed	0.00	6,792.00	78.96
J-8	6,611.90	Green	Demand	0.00	Fixed	0.00	6,792.00	77.92
J-9	6,615.00	Green	Demand	0.00	Fixed	0.00	6,791.99	76.58
J-10	6,615.50	Green	Demand	0.00	Fixed	0.00	6,791.99	76.36
J-11	6,613.00	Green	Demand	0.00	Fixed	0.00	6,791.99	77.44
J-14	6,615.75	Green	Demand	0.00	Fixed	0.00	6,791.99	76.25
J-15	6,617.25	Green	Demand	0.00	Fixed	0.00	6,791.99	75.60
J-16	6,617.00	Green	Demand	0.00	Fixed	0.00	6,791.99	75.71
J-17	6,616.50	Green	Demand	0.00	Fixed	0.00	6,791.99	75.93
J-18	6,619.50	Green	Demand	0.00	Fixed	0.00	6,792.00	74.63
J-19	6,630.00	Green	Demand	0.00	Fixed	0.00	6,792.00	70.09
J-20	6,633.00	Green	Demand	3.49	Fixed	3.49	6,792.00	68.79
J-21	6,633.00	Green	Demand	0.00	Fixed	0.00	6,792.00	68.79
FH1	6,612.65	Green	Demand	0.00	Fixed	0.00	6,792.00	77.60
FH2	6,610.00	Green	Demand	0.00	Fixed	0.00	6,792.00	78.74
FH3	6,617.00	Green	Demand	0.00	Fixed	0.00	6,791.99	75.71
FH4	6,616.00	Green	Demand	0.00	Fixed	0.00	6,791.99	76.14
FH5	6,613.50	Green	Demand	0.00	Fixed	0.00	6,791.99	77.23
FH6	6,616.25	Green	Demand	0.00	Fixed	0.00	6,791.99	76.04
FH7	6,617.75	Green	Demand	0.00	Fixed	0.00	6,791.99	75.39
FH8	6,620.00	Green	Demand	0.00	Fixed	0.00	6,792.00	74.41
FH9	6,630.50	Green	Demand	0.00	Fixed	0.00	6,792.00	69.87
J-12	6,616.50	Green	Demand	0.00	Fixed	0.00	6,791.99	75.93
J-13	6,616.50	Green	Demand	34.17	Fixed	34.17	6,791.99	75.93

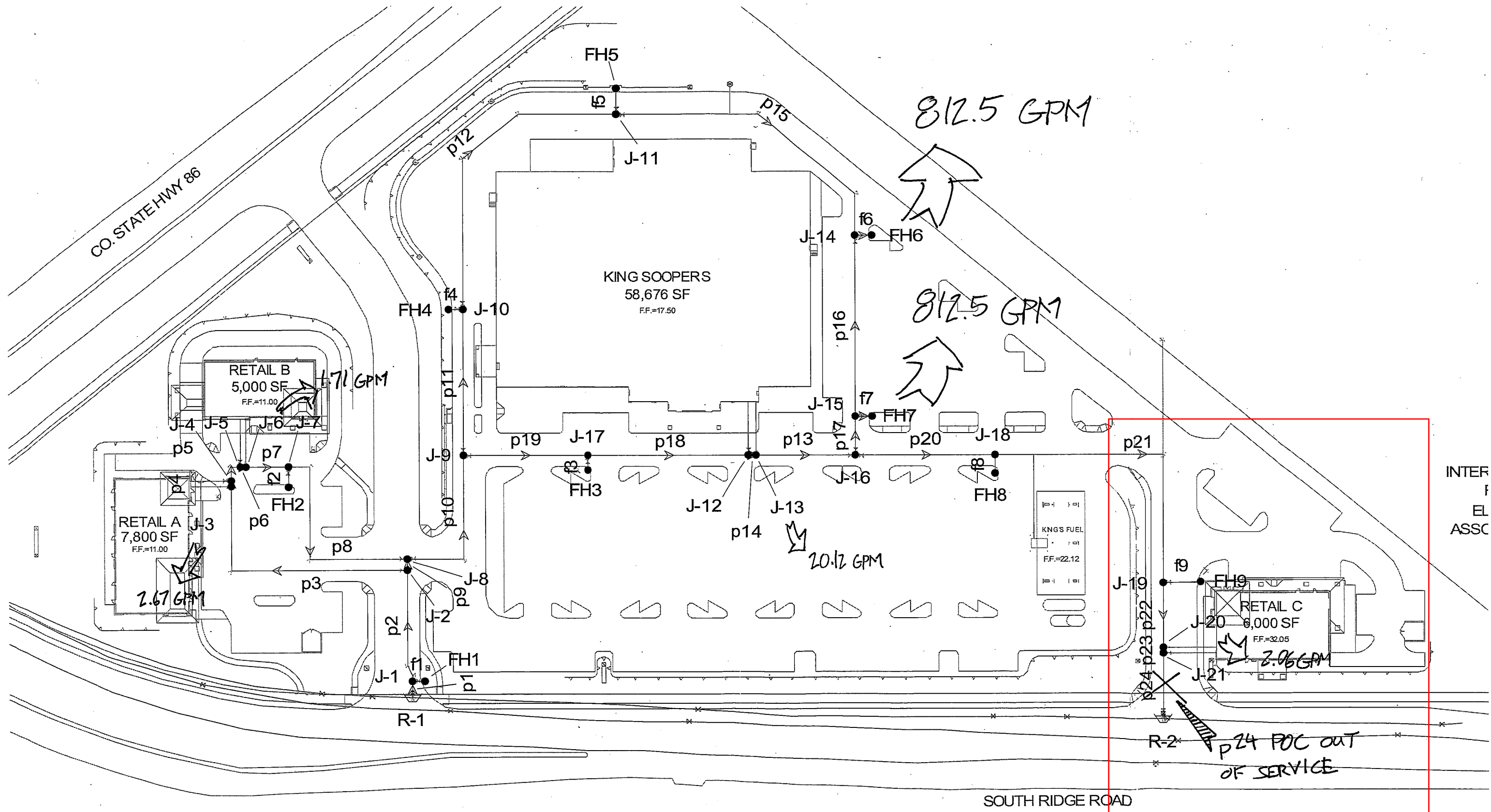
Scenario: Maximum Day



**Scenario: Maximum Day
Steady State Analysis
Junction Report**

Label	Elevation (ft)	Zone	Type	Demand (gpm)	Pattern	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-1	6,612.15	Green	Demand	0.00	Fixed	0.00	6,792.00	77.81
J-2	6,611.90	Green	Demand	0.00	Fixed	0.00	6,792.00	77.92
J-3	6,609.50	Green	Demand	2.67	Fixed	2.67	6,792.00	78.96
J-4	6,609.50	Green	Demand	0.00	Fixed	0.00	6,792.00	78.96
J-5	6,609.50	Green	Demand	0.00	Fixed	0.00	6,792.00	78.96
J-6	6,609.50	Green	Demand	1.71	Fixed	1.71	6,792.00	78.96
J-7	6,609.50	Green	Demand	0.00	Fixed	0.00	6,792.00	78.96
J-8	6,611.90	Green	Demand	0.00	Fixed	0.00	6,792.00	77.92
J-9	6,615.00	Green	Demand	0.00	Fixed	0.00	6,792.00	76.58
J-10	6,615.50	Green	Demand	0.00	Fixed	0.00	6,792.00	76.36
J-11	6,613.00	Green	Demand	0.00	Fixed	0.00	6,792.00	77.44
J-14	6,615.75	Green	Demand	0.00	Fixed	0.00	6,792.00	76.25
J-15	6,617.25	Green	Demand	0.00	Fixed	0.00	6,792.00	75.60
J-16	6,617.00	Green	Demand	0.00	Fixed	0.00	6,792.00	75.71
J-17	6,616.50	Green	Demand	0.00	Fixed	0.00	6,792.00	75.93
J-18	6,619.50	Green	Demand	0.00	Fixed	0.00	6,792.00	74.63
J-19	6,630.00	Green	Demand	0.00	Fixed	0.00	6,792.00	70.09
J-20	6,633.00	Green	Demand	2.06	Fixed	2.06	6,792.00	68.79
J-21	6,633.00	Green	Demand	0.00	Fixed	0.00	6,792.00	68.79
FH1	6,612.65	Green	Demand	0.00	Fixed	0.00	6,792.00	77.60
FH2	6,610.00	Green	Demand	0.00	Fixed	0.00	6,792.00	78.74
FH3	6,617.00	Green	Demand	0.00	Fixed	0.00	6,792.00	75.71
FH4	6,616.00	Green	Demand	0.00	Fixed	0.00	6,792.00	76.15
FH5	6,613.50	Green	Demand	0.00	Fixed	0.00	6,792.00	77.23
FH6	6,616.25	Green	Demand	0.00	Fixed	0.00	6,792.00	76.04
FH7	6,617.75	Green	Demand	0.00	Fixed	0.00	6,792.00	75.39
FH8	6,620.00	Green	Demand	0.00	Fixed	0.00	6,792.00	74.42
FH9	6,630.50	Green	Demand	0.00	Fixed	0.00	6,792.00	69.87
J-12	6,616.50	Green	Demand	0.00	Fixed	0.00	6,792.00	75.93
J-13	6,616.50	Green	Demand	20.12	Fixed	20.12	6,792.00	75.93

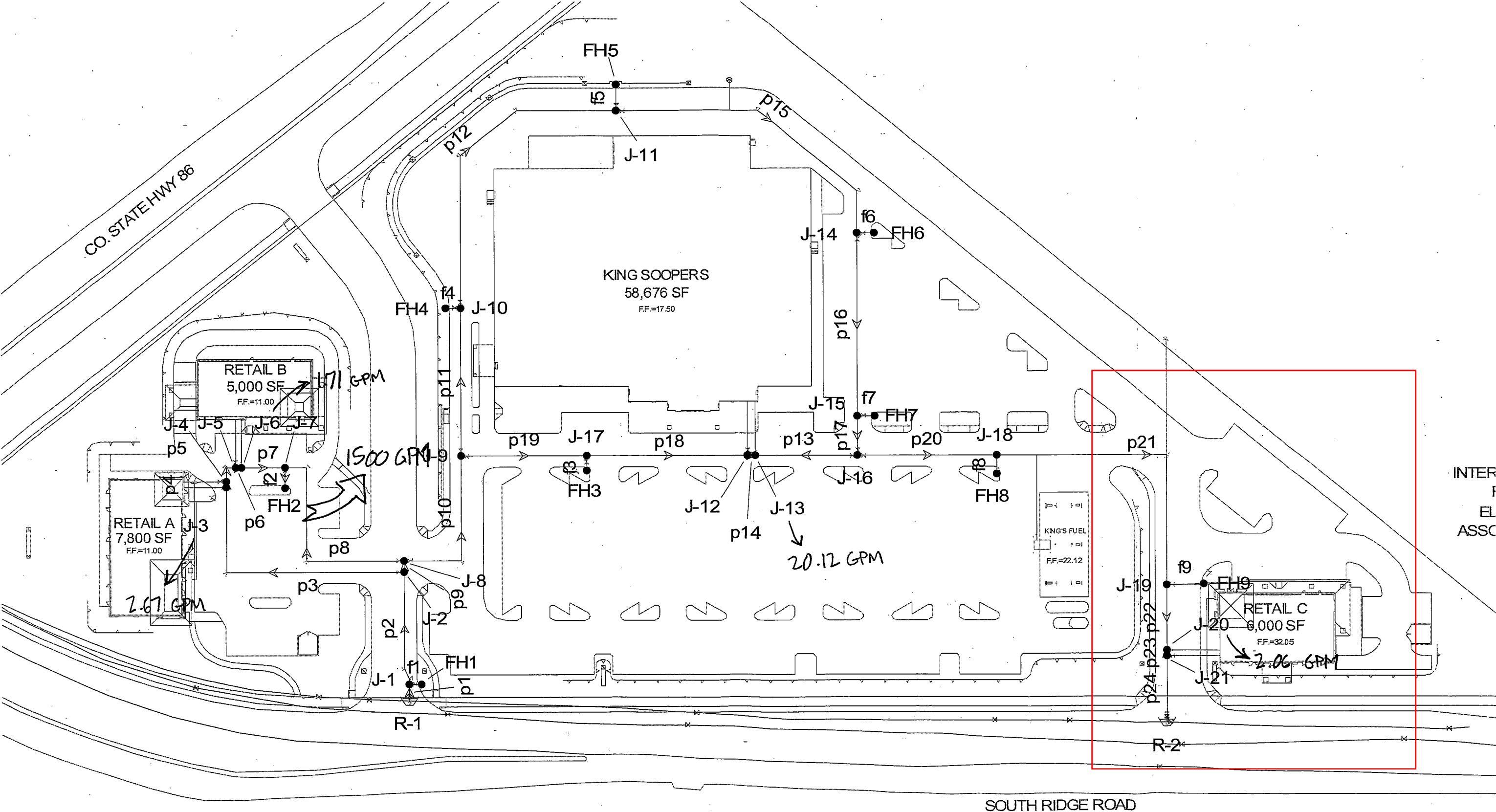
Scenario: Fire - KS



Scenario: Fire - KS
Steady State Analysis
Junction Report

Label	Elevation (ft)	Zone	Type	Demand (gpm)	Pattern	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-1	6,612.15	Green	Demand	0.00	Fixed	0.00	6,789.92	76.91
J-2	6,611.90	Green	Demand	0.00	Fixed	0.00	6,782.23	73.69
J-3	6,609.50	Green	Demand	2.67	Fixed	2.67	6,781.46	74.40
J-4	6,609.50	Green	Demand	0.00	Fixed	0.00	6,781.42	74.38
J-5	6,609.50	Green	Demand	0.00	Fixed	0.00	6,781.31	74.33
J-6	6,609.50	Green	Demand	1.71	Fixed	1.71	6,781.27	74.32
J-7	6,609.50	Green	Demand	0.00	Fixed	0.00	6,781.14	74.26
J-8	6,611.90	Green	Demand	0.00	Fixed	0.00	6,780.48	72.94
J-9	6,615.00	Green	Demand	0.00	Fixed	0.00	6,768.66	66.48
J-10	6,615.50	Green	Demand	0.00	Fixed	0.00	6,766.91	65.51
J-11	6,613.00	Green	Demand	0.00	Fixed	0.00	6,763.27	65.01
J-14	6,615.75	Green	Demand	0.00	Fixed	0.00	6,759.83	62.34
J-15	6,617.25	Green	Demand	0.00	Fixed	0.00	6,759.87	61.71
J-16	6,617.00	Green	Demand	0.00	Fixed	0.00	6,761.35	62.45
J-17	6,616.50	Green	Demand	0.00	Fixed	0.00	6,766.43	64.87
J-18	6,619.50	Green	Demand	0.00	Fixed	0.00	6,761.35	61.37
J-19	6,630.00	Green	Demand	0.00	Fixed	0.00	6,761.35	56.83
J-20	6,633.00	Green	Demand	2.06	Fixed	2.06	6,761.35	55.53
J-21	6,633.00	Green	Demand	0.00	Fixed	0.00	6,761.35	55.53
FH1	6,612.65	Green	Demand	0.00	Fixed	0.00	6,789.92	76.70
FH2	6,610.00	Green	Demand	0.00	Fixed	0.00	6,781.14	74.04
FH3	6,617.00	Green	Demand	0.00	Fixed	0.00	6,766.43	64.65
FH4	6,616.00	Green	Demand	0.00	Fixed	0.00	6,766.91	65.29
FH5	6,613.50	Green	Demand	0.00	Fixed	0.00	6,763.27	64.80
FH6	6,616.25	Green	Demand	812.50	Fixed	812.50	6,758.44	61.52
FH7	6,617.75	Green	Demand	812.50	Fixed	812.50	6,758.48	60.89
FH8	6,620.00	Green	Demand	0.00	Fixed	0.00	6,761.35	61.16
FH9	6,630.50	Green	Demand	0.00	Fixed	0.00	6,761.35	56.61
J-12	6,616.50	Green	Demand	0.00	Fixed	0.00	6,763.63	63.65
J-13	6,616.50	Green	Demand	20.12	Fixed	20.12	6,763.31	63.52

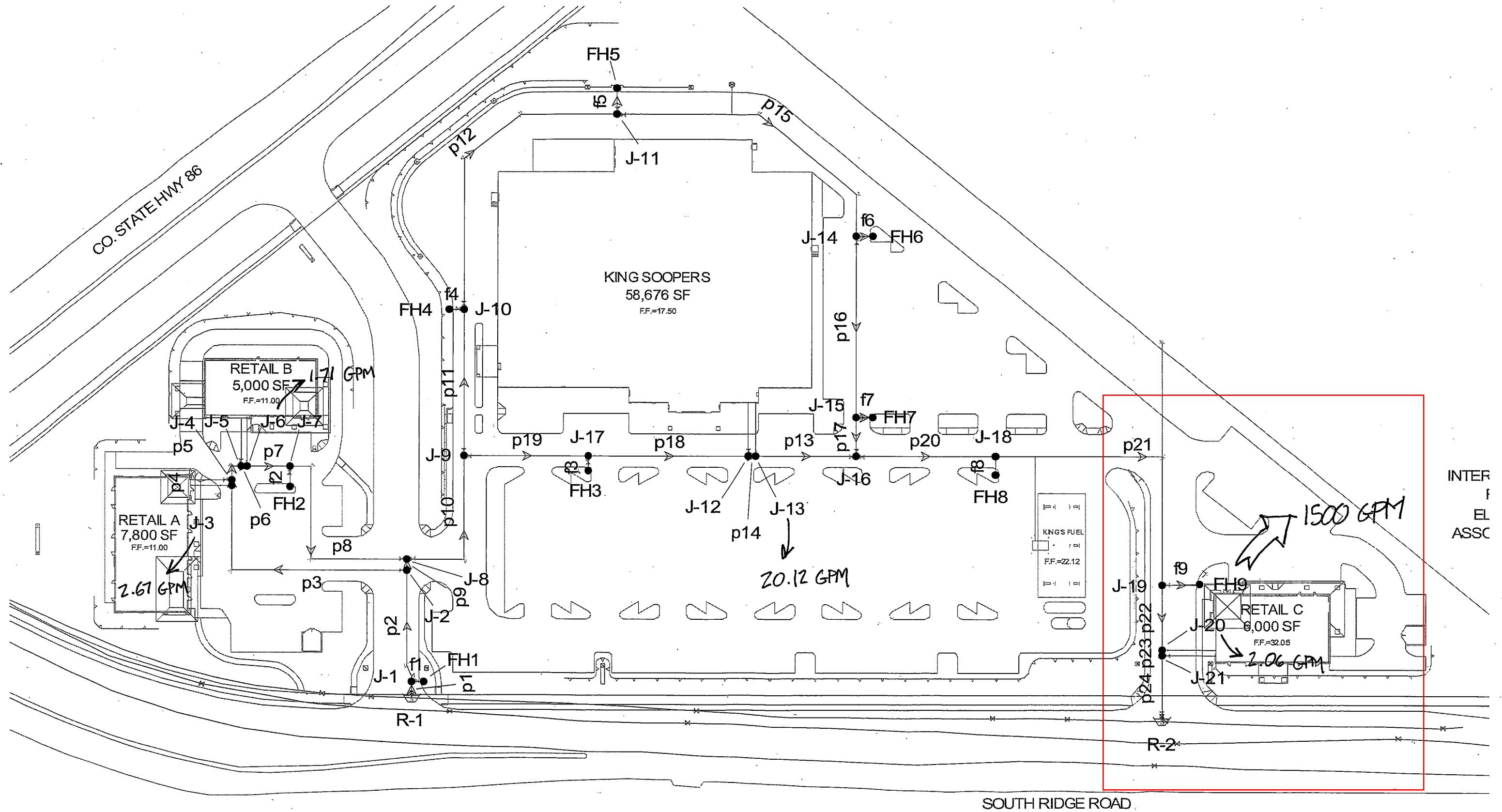
Scenario: Fire - RetA



Scenario: Fire - RetA
Steady State Analysis
Junction Report

Label	Elevation (ft)	Zone	Type	Demand (gpm)	Pattern	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-1	6,612.15	Green	Demand	0.00	Fixed	0.00	6,790.21	77.04
J-2	6,611.90	Green	Demand	0.00	Fixed	0.00	6,783.59	74.28
J-3	6,609.50	Green	Demand	2.67	Fixed	2.67	6,780.63	74.04
J-4	6,609.50	Green	Demand	0.00	Fixed	0.00	6,780.47	73.97
J-5	6,609.50	Green	Demand	0.00	Fixed	0.00	6,780.03	73.78
J-6	6,609.50	Green	Demand	1.71	Fixed	1.71	6,779.88	73.71
J-7	6,609.50	Green	Demand	0.00	Fixed	0.00	6,779.37	73.49
J-8	6,611.90	Green	Demand	0.00	Fixed	0.00	6,782.88	73.97
J-9	6,615.00	Green	Demand	0.00	Fixed	0.00	6,782.87	72.63
J-10	6,615.50	Green	Demand	0.00	Fixed	0.00	6,782.87	72.41
J-11	6,613.00	Green	Demand	0.00	Fixed	0.00	6,782.87	73.50
J-14	6,615.75	Green	Demand	0.00	Fixed	0.00	6,782.87	72.31
J-15	6,617.25	Green	Demand	0.00	Fixed	0.00	6,782.87	71.66
J-16	6,617.00	Green	Demand	0.00	Fixed	0.00	6,782.87	71.76
J-17	6,616.50	Green	Demand	0.00	Fixed	0.00	6,782.87	71.98
J-18	6,619.50	Green	Demand	0.00	Fixed	0.00	6,782.87	70.68
J-19	6,630.00	Green	Demand	0.00	Fixed	0.00	6,782.87	66.14
J-20	6,633.00	Green	Demand	2.06	Fixed	2.06	6,782.87	64.84
J-21	6,633.00	Green	Demand	0.00	Fixed	0.00	6,782.87	64.84
FH1	6,612.65	Green	Demand	0.00	Fixed	0.00	6,790.21	76.82
FH2	6,610.00	Green	Demand	1,500.00	Fixed	1,500.00	6,774.33	71.10
FH3	6,617.00	Green	Demand	0.00	Fixed	0.00	6,782.87	71.76
FH4	6,616.00	Green	Demand	0.00	Fixed	0.00	6,782.87	72.20
FH5	6,613.50	Green	Demand	0.00	Fixed	0.00	6,782.87	73.28
FH6	6,616.25	Green	Demand	0.00	Fixed	0.00	6,782.87	72.09
FH7	6,617.75	Green	Demand	0.00	Fixed	0.00	6,782.87	71.44
FH8	6,620.00	Green	Demand	0.00	Fixed	0.00	6,782.87	70.47
FH9	6,630.50	Green	Demand	0.00	Fixed	0.00	6,782.87	65.92
J-12	6,616.50	Green	Demand	0.00	Fixed	0.00	6,782.87	71.98
J-13	6,616.50	Green	Demand	20.12	Fixed	20.12	6,782.87	71.98

Scenario: Fire - RetC



Scenario: Fire - RetC
Steady State Analysis
Junction Report

Label	Elevation (ft)	Zone	Type	Demand (gpm)	Pattern	Demand (Calculated) (gpm)	Calculated hydraulic Grade (ft)	Pressure (psi)
J-1	6,612.15	Green	Demand	0.00	Fixed	0.00	6,790.21	77.04
J-2	6,611.90	Green	Demand	0.00	Fixed	0.00	6,783.59	74.28
J-3	6,609.50	Green	Demand	2.67	Fixed	2.67	6,782.93	75.03
J-4	6,609.50	Green	Demand	0.00	Fixed	0.00	6,782.89	75.02
J-5	6,609.50	Green	Demand	0.00	Fixed	0.00	6,782.80	74.98
J-6	6,609.50	Green	Demand	1.71	Fixed	1.71	6,782.77	74.96
J-7	6,609.50	Green	Demand	0.00	Fixed	0.00	6,782.66	74.92
J-8	6,611.90	Green	Demand	0.00	Fixed	0.00	6,782.09	73.63
J-9	6,615.00	Green	Demand	0.00	Fixed	0.00	6,771.92	67.89
J-10	6,615.50	Green	Demand	0.00	Fixed	0.00	6,770.79	67.19
J-11	6,613.00	Green	Demand	0.00	Fixed	0.00	6,768.43	67.25
J-14	6,615.75	Green	Demand	0.00	Fixed	0.00	6,766.21	65.10
J-15	6,617.25	Green	Demand	0.00	Fixed	0.00	6,764.84	63.86
J-16	6,617.00	Green	Demand	0.00	Fixed	0.00	6,764.24	63.70
J-17	6,616.50	Green	Demand	0.00	Fixed	0.00	6,769.57	66.23
J-18	6,619.50	Green	Demand	0.00	Fixed	0.00	6,757.69	59.79
J-19	6,630.00	Green	Demand	0.00	Fixed	0.00	6,742.93	48.86
J-20	6,633.00	Green	Demand	2.06	Fixed	2.06	6,742.93	47.56
J-21	6,633.00	Green	Demand	0.00	Fixed	0.00	6,742.93	47.56
FH1	6,612.65	Green	Demand	0.00	Fixed	0.00	6,790.21	76.82
FH2	6,610.00	Green	Demand	0.00	Fixed	0.00	6,782.66	74.70
FH3	6,617.00	Green	Demand	0.00	Fixed	0.00	6,769.57	66.01
FH4	6,616.00	Green	Demand	0.00	Fixed	0.00	6,770.79	66.97
FH5	6,613.50	Green	Demand	0.00	Fixed	0.00	6,768.43	67.03
FH6	6,616.25	Green	Demand	0.00	Fixed	0.00	6,766.21	64.88
FH7	6,617.75	Green	Demand	0.00	Fixed	0.00	6,764.84	63.64
FH8	6,620.00	Green	Demand	0.00	Fixed	0.00	6,757.69	59.67
FH9	6,630.50	Green	Demand	1,500.00	Fixed	1,500.00	6,734.98	45.20
J-12	6,616.50	Green	Demand	0.00	Fixed	0.00	6,766.63	64.95
J-13	6,616.50	Green	Demand	20.12	Fixed	20.12	6,766.29	64.81



CLC ASSOCIATES

8480 E. ORCHARD RD.
SUITE 2000
GREENWOOD VILLAGE
COLORADO 80111
P 303 770 5600
F 303 770 2349

DESIGN PAD

DENVER

SPOKANE

SALT LAKE CITY

PROJECT:	FOUNDERS MARKETPLACE	DATE:	JULY 21, 2004		
SUBJECT:	PARTIAL SAN FLOWS [PEAK HOUR]	BY:	JDT	JOB NO:	03.0292

PEAK FLOW FOR BASIN B' $\Rightarrow$ 0.0570 CFS

• APPORTIONED OVER PROJECT BUILDING BASED ON RELATIVE SQUARE FOOTAGE

• RETAIL A AND B

$$\left(\frac{7800 + 5000}{77476} \right) \times 0.0570 = 0.0094 \text{ CFS}$$

• RETAIL C

$$\left(\frac{6000}{77476} \right) \times 0.0570 = 0.0044 \text{ CFS}$$

• KING SCOPERS

$$\left(\frac{58676}{77476} \right) \times 0.0570 = 0.0432 \text{ CFS}$$

PIPE FLOWS

PIPE RUN	CONTRIBUTING	FLOW CFS	PIPE DIAMETER	MINIMUM GRADE	MAXIMUM GRADE
MH2A TO MH2B	RETAIL C	0.0044	8"	2.90%	3.01%
MH2B TO MH2	KING SCOPERS + RETAIL C	0.0476	8"	0.65%	2.76%
MH2C TO MH2	RETAIL A AND B	0.0094	8"	1.00%	1.00%

NOTE - THE ON-SITE SANITARY SYSTEM MEETS ALL THE DESIGN REQUIREMENTS OF THE PUBLIC WORKS REGULATIONS. THE PARTIAL FLOW ANALYSIS IS PROVIDED FOR INFORMATION ONLY AT THE REQUEST OF THE DEVELOPMENT PROJECT MANAGER.

MH2A to MH2B
Worksheet for Circular Channel

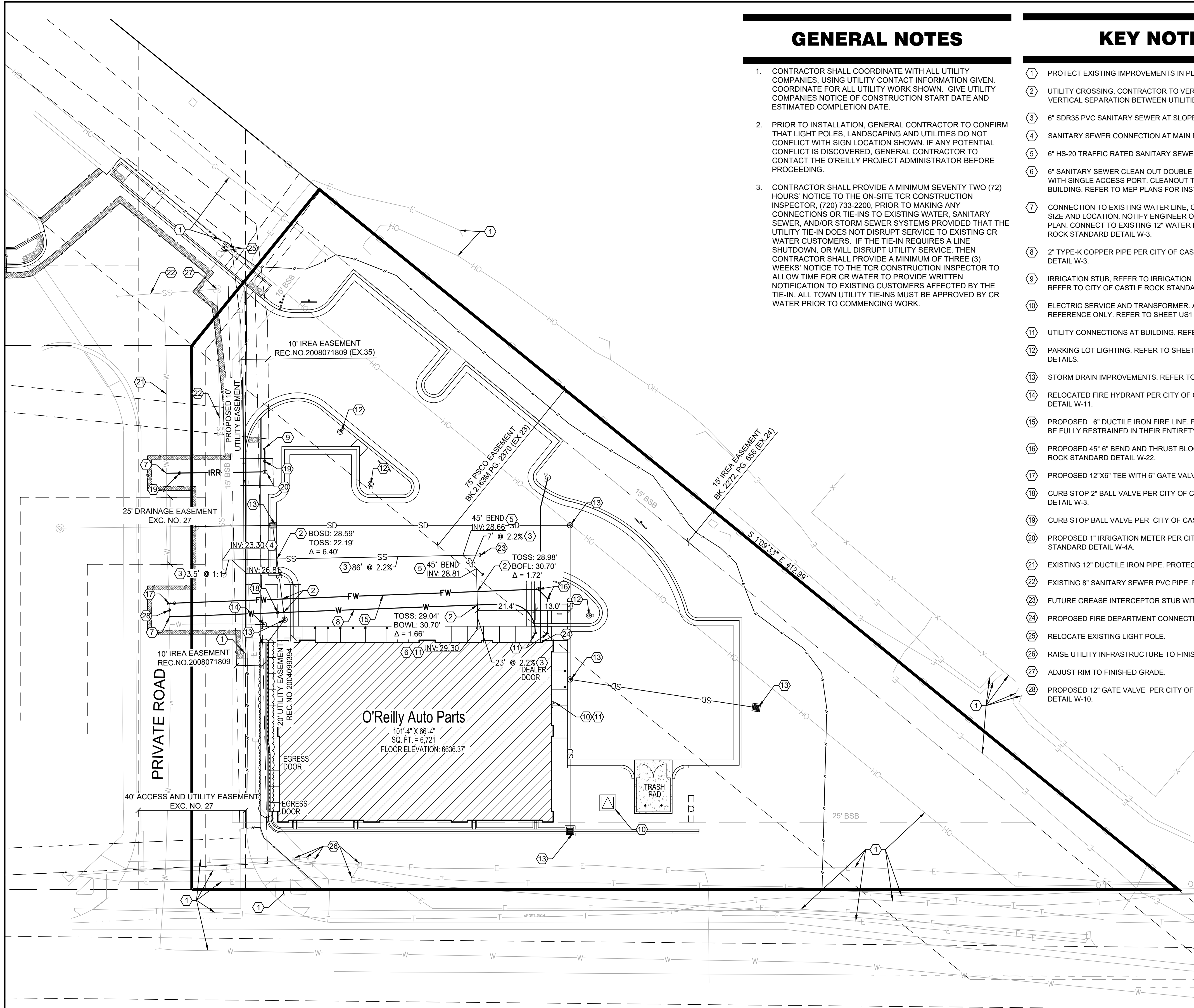
Project Description	
Project File	q:\03-0088\civil\util\founders.fm2
Worksheet	Partial Flow Calculations
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data	
Mannings Coefficient	0.011
Channel Slope	0.029000 ft/ft
Diameter	8.00 in
Discharge	0.0044 cfs

Results		
Depth	0.02	ft
Flow Area	0.33e-2	ft ²
Wetted Perimeter	0.24	ft
Top Width	0.23	ft
Critical Depth	0.03	ft
Percent Full	3.17	
Critical Slope	0.006769	ft/ft
Velocity	1.33	ft/s
Velocity Head	0.03	ft
Specific Energy	0.05	ft
Froude Number	1.97	
Maximum Discharge	2.62	cfs
Full Flow Capacity	2.43	cfs
Full Flow Slope	0.949338e-7	ft/ft
Flow is supercritical.		



Appendix C – Utility Plan



NORTH RIDGE ROAD
(PUBLIC R.O.W VARIES)

8 SITE UTILITY PLAN
C3.1 SCALE: 1" = 20'-0"

UNAUTHORIZED CHANGES & USES

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES OF THESE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS PRIOR TO CONSTRUCTION. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL.

GRAPHIC SCALE - FEET

NOTE TO CONTRACTOR

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITIES, PIPES, AND/OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. THERE MAY BE EXISTING UTILITIES NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL ASCERTAIN THE TRUE VERTICAL AND HORIZONTAL LOCATION OF THOSE UNDERGROUND UTILITIES TO BE USED PRIOR TO CONSTRUCTION AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY PUBLIC OR PRIVATE UTILITIES, SHOWN OR NOT SHOWN HEREON.

GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES, USING UTILITY CONTACT INFORMATION GIVEN. COORDINATE FOR ALL UTILITY WORK SHOWN. GIVE UTILITY COMPANIES NOTICE OF CONSTRUCTION START DATE AND ESTIMATED COMPLETION DATE.
2. PRIOR TO INSTALLATION, GENERAL CONTRACTOR TO CONFIRM THAT LIGHT POLES, LANDSCAPING AND UTILITIES DO NOT CONFLICT WITH SIGN LOCATION SHOWN. IF ANY POTENTIAL CONFLICT IS DISCOVERED, GENERAL CONTRACTOR TO CONTACT THE O'REILLY PROJECT ADMINISTRATOR BEFORE PROCEEDING.
3. CONTRACTOR SHALL PROVIDE A MINIMUM SEVENTY TWO (72) HOURS' NOTICE TO THE ON-SITE TOR CONSTRUCTION INSPECTOR, (720) 733-2200, PRIOR TO MAKING ANY CONNECTIONS OR TIE-INS TO EXISTING WATER, SANITARY SEWER, AND/OR STORM SEWER SYSTEMS PROVIDED THAT THE UTILITY TIE-IN DOES NOT DISRUPT SERVICE TO EXISTING CR WATER CUSTOMERS. IF THE TIE-IN REQUIRES A LINE SHUTDOWN, OR WILL DISRUPT UTILITY SERVICE, THEN CONTRACTOR SHALL PROVIDE A MINIMUM OF THREE (3) WEEKS' NOTICE TO THE TOR CONSTRUCTION INSPECTOR TO ALLOW TIME FOR CR WATER TO PROVIDE WRITTEN NOTIFICATION TO EXISTING CUSTOMERS AFFECTED BY THE TIE-IN. ALL TOWN UTILITY TIE-INS MUST BE APPROVED BY CR WATER PRIOR TO COMMENCING WORK.

KEY NOTES

1. PROTECT EXISTING IMPROVEMENTS IN PLACE.
2. UTILITY CROSSING, CONTRACTOR TO VERIFY MINIMUM OF 18" VERTICAL SEPARATION BETWEEN UTILITIES.
3. 6" SDR35 PVC SANITARY SEWER AT SLOPES SHOWN HEREON.
4. SANITARY SEWER CONNECTION AT MAIN PER DETAIL SS-2
5. 6" HS-20 TRAFFIC RATED SANITARY SEWER CLEAN OUT.
6. 6" SANITARY SEWER CLEAN OUT DOUBLE SWEEP COMBINATION TEE WITH SINGLE ACCESS PORT. CLEANOUT TO BE WITHIN 5' OF BUILDING. REFER TO MEP PLANS FOR INSTALLATION.
7. CONNECTION TO EXISTING WATER LINE. CONTRACTOR TO VERIFY SIZE AND LOCATION. NOTIFY ENGINEER OF DISCREPANCIES FROM PLAN. CONNECT TO EXISTING 12" WATER LINE PER CITY OF CASTLE ROCK STANDARD DETAIL W-3.
8. 2" TYPE-K COPPER PIPE PER CITY OF CASTLE ROCK STANDARD DETAIL W-3.
9. IRRIGATION STUB. REFER TO IRRIGATION PLANS FOR CONTINUATION. REFER TO CITY OF CASTLE ROCK STANDARD DETAIL W-4A AND W-4B.
10. ELECTRIC SERVICE AND TRANSFORMER. ALIGNMENT SHOWN FOR REFERENCE ONLY. REFER TO SHEET US1 FOR INSTALLATION.
11. UTILITY CONNECTIONS AT BUILDING. REFER TO MEP PLANS.
12. PARKING LOT LIGHTING. REFER TO SHEET US1 FOR ADDITIONAL DETAILS.
13. STORM DRAIN IMPROVEMENTS. REFER TO SHEET C1.1 FOR DETAIL.
14. RELOCATED FIRE HYDRANT PER CITY OF CASTLE ROCK STANDARD DETAIL W-11.
15. PROPOSED 6" DUCTILE IRON FIRE LINE. FIRE SERVICE LINES SHALL BE FULLY RESTRAINED IN THEIR ENTIRETY.
16. PROPOSED 45' 6" BEND AND THRUST BLOCK PER CITY OF CASTLE ROCK STANDARD DETAIL W-22.
17. PROPOSED 12"x6" TEE WITH 6" GATE VALVE ON FIRE LATERAL.
18. CURB STOP 2" BALL VALVE PER CITY OF CASTLE ROCK STANDARD DETAIL W-3.
19. CURB STOP BALL VALVE PER CITY OF CASTLE ROCK DETAIL W-4A.
20. PROPOSED 1" IRRIGATION METER PER CITY OF CASTLE ROCK STANDARD DETAIL W-4A.
21. EXISTING 12" DUCTILE IRON PIPE. PROTECT IN PLACE.
22. EXISTING 8" SANITARY SEWER PVC PIPE. PROTECT IN PLACE.
23. FUTURE GREASE INTERCEPTOR STUB WITH PLUG.
24. PROPOSED FIRE DEPARTMENT CONNECTION (FDC).
25. RELOCATE EXISTING LIGHT POLE.
26. RAISE UTILITY INFRASTRUCTURE TO FINISHED GRADE.
27. ADJUST RIM TO FINISHED GRADE.
28. PROPOSED 12" GATE VALVE PER CITY OF CASTLE ROCK STANDARD DETAIL W-10.

LEGEND

	AREA OF LIGHT DUTY CONCRETE
	NEW BUILDING CONSTRUCTION
	AREA OF CONCRETE
	PROPERTY LINE
	ADJACENT PROPERTY/ ROW LINE
	BUILDING SETBACK LINE
	PROPOSED EASEMENT
	EXISTING GAS LINE
	EXISTING WATER LINE
	EXISTING SEWER LINE
	EXISTING OVERHEAD ELECTRIC LINE
	EXISTING TELEPHONE SERVICE LINE
	EXISTING ELECTRIC LINE
	PROPOSED WATER SERVICE LINE
	PROPOSED FIREWATER LINE
	PROPOSED SS SERVICE LINE
	PROPOSED STORM DRAIN
	PROPOSED RIDGELINE
	PROPOSED GRADE BREAK
	PROPOSED SWALE
	LIMITS OF DISTURBANCE
	PROPOSED WALL
	PROPOSED SITE SIGN
	PROPOSED SIGN
	PROPOSED TRANSFORMER
	PROPOSED BOLLARD
	PROPOSED WATER METER
	PROPOSED SS CLEANOUT
	PROPOSED BACKFLOW PREVENTOR
	EXISTING FIRE HYDRANT
	PROPOSED LIGHT POLE
	EXISTING MANHOLE
	EXISTING INLET
	PROPOSED INLET
	PROPOSED RIPRAP
	PROPOSED SAWCUT
	MILL AND OVERLAY

EXISTING CONDITIONS NOTE

1. THE CONTRACTOR IS OBLIGATED TO INSPECT FOR EXISTING CONDITIONS/INSTALLATIONS AND AVAILABLE INFORMATION PRIOR TO SUBMITTING A BID, REFER TO SPECIFICATIONS ALSO.
2. EXISTING INSTALLATIONS (SUCH AS WATER MAINS/LINES, GAS MAINS/LINES, SEWER MAINS/LINES, TELEPHONE LINES, POWER LINES, AND UTILITY STRUCTURES IN THE VICINITY OF THE WORK TO BE DONE) ARE INDICATED ON THE DRAWINGS ONLY TO THE EXTENT THAT SUCH INFORMATION HAS BEEN MADE AVAILABLE TO OR DISCOVERED BY THE ENGINEER IN PREPARING THE DRAWINGS. THERE IS NO GUARANTEE AS TO THE ACCURACY OR COMPLETENESS OF SUCH INFORMATION, AND ALL RESPONSIBILITY FOR THE ACCURACY AND COMPLETENESS THEREOF IS EXPRESSLY DISCLAIMED.
3. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR LOCATING ALL EXISTING INSTALLATIONS.
4. ANY DELAY, ADDITIONAL WORK, FEES OR EXTRA COST TO THE CONTRACTOR CAUSED BY RESULTING FROM DAMAGE TO OR MODIFICATIONS OF EXISTING INSTALLATIONS BY THE CONTRACTOR OR AFFECTED UTILITY COMPANY SHALL NOT CONSTITUTE A CLAIM FOR EXTRA WORK, ADDITIONAL PAYMENT OR DAMAGES.
5. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONSTRUCTION PRIOR TO SUBMITTING HIS BID. NO EXTRAS WILL BE PAID DUE TO UNANTICIPATED EXISTING CONDITIONS / INSTALLATIONS.
6. UNUSED EXISTING SERVICES WILL NEED TO BE REMOVED AND CAPPED AT THE WATER OR SANITARY MAIN.

EXISTING UTILITY NOTES

CONTRACTOR TO CONFIRM MINIMUM BURY DEPTH IS MAINTAINED OVER EXISTING UTILITIES.

CAUTION:
INFORMATION ON THIS DRAWING CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

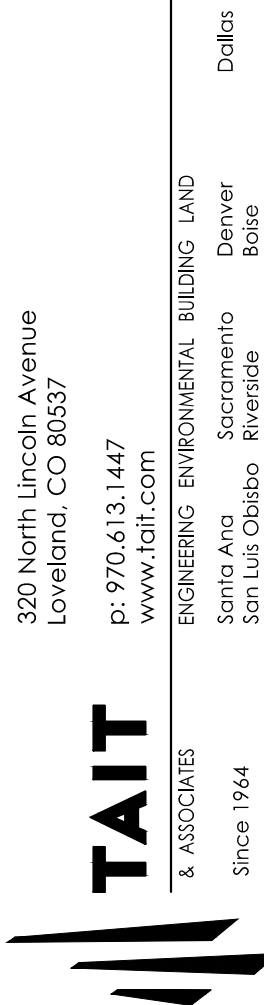


TOWN APPROVAL BLOCK	
TOWN OF CASTLE ROCK APPROVAL PLANS ARE HEREBY APPROVED FOR ONE YEAR FROM DATE OF DEVELOPMENT SERVICES APPROVAL.	
DEVELOPMENT SERVICES	DATE

PROFESSIONAL ENGINEER CERTIFICATION
I HEREBY AFFIRM THAT THESE FINAL
CONSTRUCTION PLANS WERE PREPARED UNDER
MY DIRECT SUPERVISION, IN ACCORDANCE WITH
ALL APPLICABLE TOWN OF CASTLE ROCK AND
STATE OF COLORADO STANDARDS AND
STATUTES, RESPECTIVELY, AND THAT I AM FULLY
RESPONSIBLE FOR ALL DESIGN AND REVISIONS
RELATIVE TO SAID PLANS.

(SIGNATURE AND SEAL HERE) DATE

PREPARED UNDER THE SUPERVISION OF TAIT & ASSOCIATES, INC.



PROJECT:
NEW O'REILLY AUTO PARTS STORE
N. RIDGE RD.
CASTLE ROCK, CO #2
SITE UTILITY PLAN

O'Reilly AUTO PARTS
CORPORATE OFFICES
233 SOUTH PATTERSON
SPRINGFIELD, MISSOURI 65802
(417) 862-2674 TELEPHONE

COMM # 4880
DATE: 01/31/25
REVISION
DATE: 05/08/25
06/27/25
08/22/25

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IRRIGATION NOTES

- SYSTEM DESIGN BASED ON THE ASSUMPTION OF THE AVAILABILITY OF 14 G.P.M. WITH 10 P.S.I. AT THE SOLE AND 45 P.S.I. AT THE HEADS.
- ALL LATERAL LINES THAT ARE NOT LABELED SHALL BE 3/4" DIAMETER.
- CONTRACTOR TO VERIFY LOCATION OF ALL UTILITIES PRIOR TO INITIATION OF ANY DEMOLITION OR CONSTRUCTION OPERATIONS. ANY DAMAGE TO EXISTING UTILITIES SHALL BE CONTRACTOR'S RESPONSIBILITY.
- COORDINATE ALL IRRIGATION INSTALLATION OPERATIONS WITH CIVIL, MECHANICAL, AND ELECTRICAL ENGINEERING SHEETS.
- CONTRACTOR SHALL COORDINATE INSTALLATION OF IRRIGATION CONDUIT AND SLEEVES UNDER HARD SURFACES WITH RESPECTIVE CONTRACTORS.
- ALL SLEEVES SHALL BE INSTALLED AS PART OF IRRIGATION CONTRACT. APPROXIMATE LOCATION OF SLEEVES ARE SHOWN ON THE IRRIGATION PLAN. FIELD VERIFY LOCATION. ALL ENDS OF SLEEVES SHALL BE TAPE OR CAPPED AND MARKED WITH 2"X 4" PAINTED STAKE EXTENDING TO 24" ABOVE GRADE. STAKES SHALL NOT BE REMOVED UNTIL THE IRRIGATION SYSTEM IS COMPLETE. ALL SLEEVES SHALL EXTEND A MINIMUM OF 18" BEYOND BACK OF CURB OR EDGE OF PAVEMENT. PROVIDE COMPACTED BACKFILL AS NECESSARY AT HARD SURFACE LOCATIONS.
- CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND FEES REQUIRED FOR THIS WORK.
- IRRIGATION CONTROLLER(S) ARE TO BE LOCATED AS SHOWN ON THE PLAN. CONTROLLERS SHALL BE WIRED TO POWER SUPPLY BY A LICENSED ELECTRICIAN PER LOCAL CODES. IRRIGATION CONTRACTOR TO PROVIDE ALL REQUIRED CONNECTIONS TO 24 VOLT IRRIGATION CONTROL WIRE INSIDE THE BUILDING THROUGH APPROPRIATE SIZED CONDUIT.
- ALL HEADS ARE TO BE 12" POP-UP IN SEED AREAS. IRRIGATED AREAS CONTAINING VEGETATION WHICH POTENTIALLY MAY IMPEDE PERFORMANCE OF A 4" POP-UP SPRINKLER ARE TO BE REPLACED WITH A 12" HIGH POP-UP SPRINKLER. TEMPORARY IRRIGATION SHALL BE REMOVED IN ALL NATIVE SEED AREAS AFTER TURF IS ESTABLISHED.
- ALL ELECTRICAL WORK TO MEET OR EXCEED N.E.C., STATE CODES, LOCAL CODES, AND MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL ROCK AND DEBRIS BROUGHT TO THE SURFACE AS A RESULT OF TRENCHING OPERATIONS.
- CONTRACTOR SHALL REFER TO TOWN OF CASTLE ROCK SPECIFICATIONS AND DETAIL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
- ALL 24 VOLT POWER WIRES SHALL BE #14 AWG SOLID COPPER. ALL ABOVE GROUND 120 VOLT AND 24 VOLT WIRE SHALL BE IN PVC CONDUIT. ALL 24 VOLT CONTROL WIRES SHALL BE LOCATED IN A 3/4" CONDUIT.
- INSTALLATION SHALL COMPLY WITH ALL NATIONAL, STATE, AND LOCAL LAWS AND ORDINANCES.
- IRRIGATION CONTRACTOR SHALL PROVIDE A COMPLETE AS-BUILT DRAWING IN PDF FORMAT UPON COMPLETION OF INSTALLATION AND PRIOR TO FINAL PAYMENT.
- THE ENTIRE SYSTEM SHALL BE GUARANTEED TO BE COMPLETE AND PERFECT IN EVERY DETAIL FOR A PERIOD OF ONE YEAR FROM THE DATE OF ITS ACCEPTANCE. REPAIR OR REPLACEMENT OF ANY DEFECTS OCCURRING WITHIN THAT ONE YEAR SHALL BE FREE OF EXPENSE TO THE OWNER.
- AS PART OF THIS CONTRACT, PERFORM AT NO EXTRA COST WINTERIZATION AND SPRING START UP OF THE SYSTEM DURING THE GUARANTEE PERIOD (1 YEAR).
- ALL MATERIALS SHALL BE NEW AND WITHOUT FLAWS OR DEFECTS OF THE QUALITY AND PERFORMANCE SPECIFIED, AND SHALL MEET THE REQUIREMENTS OF THIS SYSTEM. USE MATERIALS IN SUBSTITUTION SHALL BE PERMITTED WITHOUT PRIOR WRITTEN PERMISSION OF THE OWNER OR DESIGN PROFESSIONAL.
- IRRIGATION CONTRACTOR SHALL MAKE NECESSARY MINOR FIELD ADJUSTMENTS TO SPRINKLER NOZZLES, SPRINKLERS, PIPE AND OTHER IRRIGATION EQUIPMENT LOCATIONS TO FIT THE AS-BUILT SITE. ADJUST HEAD AND PIPE LOCATIONS AS REQUIRED TO AVOID DAMAGING EXISTING TREE ROOTS. ADJUSTMENTS SHALL ENSURE HEAD TO HEAD COVERAGE AND NOT OVER SPRAY THE BUILDING OR OTHER IMPROVEMENTS.
- IRRIGATION PIPING LAYOUT IS SCHEMATIC. WHERE LINES ARE SHOWN BELOW PAVEMENT ADJACENT TO LANDSCAPE AREAS, THEY SHALL BE LOCATED IN THE LANDSCAPE AREA UNLESS SHOWN WITH A SLEEVE SYMBOL.
- BASE PLAN AND LOCATION OF EXISTING EQUIPMENT ARE SCHEMATIC IN NATURE. FIELD VERIFY ALL BASE AND EXISTING IRRIGATION ELEMENTS AND CONDITIONS PRIOR TO CONSTRUCTION AND PROVIDE NECESSARY ADJUSTMENTS.
- IRRIGATION CONTRACTOR SHALL USE THE MANUFACTURER'S APPROVED PRESSURE REGULATING MODULE AS SPECIFIED TO ADJUST ZONE OPERATING PRESSURES TO AN AVERAGE OF 30 P.S.I. IN SPRAY ZONES AND 45 P.S.I. IN ROTOR ZONES.
- ALL MAIN LINE FITTINGS SHALL BE SCHEDULE 40 SOLVENT WELD TYPE UNLESS NOTED FOR LATERAL SERVICE.
- IN THE EVENT OF A DISCREPANCY, IMMEDIATELY NOTIFY THE DESIGN PROFESSIONAL.
- CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE CERTIFICATE OF COMPLETION IRRIGATION SCHEDULE AND LANDSCAPE AND IRRIGATION SCHEDULE/HEADS, IRRIGATION AUDIT, IRRIGATION SURVEY, AND IRRIGATION WATER USE ANALYSIS.

DRIP IRRIGATION NOTES

- ALL PLANTER BEDS SHALL BE IRRIGATED WITH AN INLINE EMITTER DRIP LINE IRRIGATION SYSTEM, HUNTER® HDL OR APPROVED EQUAL. ALL TREES IN THE NOTED AREA ARE TO BE IRRIGATED. THE CONTRACTOR IS RESPONSIBLE TO INSTALL THE DRIP SYSTEM AS PER MANUFACTURER'S RECOMMENDATIONS AND THE FOLLOWING REQUIREMENTS:
 - AN INLINE EMITTER DRIP LINE TUBING SHALL BE USED. THE EMITTER SPACING SHALL BE TWELVE INCHES (12") AND THE EMITTER FLOWS ARE TO BE .6 G.P.H. LATERALS SHALL BE SPACED AT TWELVE INCHES (12").
 - A MANUAL BACKFLOW FILTER SHALL BE INSTALLED ON EACH ZONE (SEE LEGEND FOR MODEL NUMBER). THE FILTER SHALL BE INSTALLED IN CONJUNCTION WITH AN ELECTRIC REMOTE CONTROL VALVE AS SPECIFIED (SIZE AS NOTED ON SCHEDULE). THE FILTER SHALL INCLUDE A 200 MESH STAINLESS STEEL SCREEN. SEE DETAIL IR 18/L2.2.
 - ALL ZONES SHALL BE INSTALLED WITH A MANUAL LINE FLUSHING VALVE. INSTALL WITH COLLAR.
 - ALL TUBING SHALL BE STAKED DOWN WITH T156 SIX INCH (6") SOIL STAPLES EVERY 3'-5' PLUS TWO ON EACH TEE, ELBOW OR CROSS.
- THE CONTRACTOR IS RESPONSIBLE TO SCHEDULE A MEETING WITH THE DESIGN PROFESSIONAL AND THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING WITH ANY IRRIGATION INSTALLATION IN ORDER TO REVIEW WORK TO BE DONE. NO CHANGES IN MATERIAL SPECIFIED OR TO THE DESIGN OF THE SYSTEM SHALL BE ALLOWED WITHOUT PRIOR APPROVAL OF THE DESIGN PROFESSIONAL.
- ALL PVC LATERAL LINES FROM VALVES TO HEADERS ARE TO BE BURIED AT MINIMUM DEPTH OF TWELVE INCHES (12"). SIZE AS NECESSARY. (SEE PIPE SIZING NOTES ON THIS SHEET).
- AFTER INSTALLATION OF THE IRRIGATION SYSTEM THE CONTRACTOR IS RESPONSIBLE TO PROVIDE THE OWNER WITH AS-BUILT DRAWINGS AND INSTRUCTIONS FOR MAINTENANCE OF THE DRIP SYSTEM.
- PROVIDE DRIP LINE TO ENSURE EACH SHRUB AND TREE RECEIVES ADEQUATE IRRIGATION SO THAT THE OPTIMUM AMOUNT OF WATER IS APPLIED TO ENSURE THE HEALTH OF ALL PLANT MATERIAL. BURY DRIP LINE AT 5" MIN. BELOW GRADE. LOCATE DRIP LINE TO OBTAIN COMPLETE COVERAGE OF PLANTER AREAS, REFER TO NOTES, SPECIFICATIONS, AND DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

SYSTEM OPERATIONAL NOTES

SYSTEM OPERATION:

(BASED ON HISTORICAL CLIMATE)

CONTROLLER SETUP:

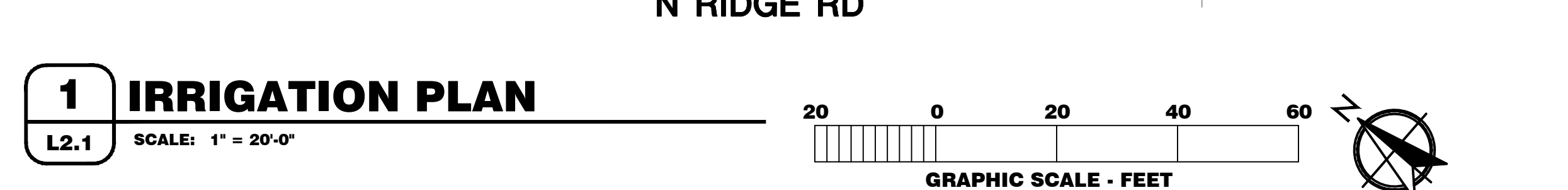
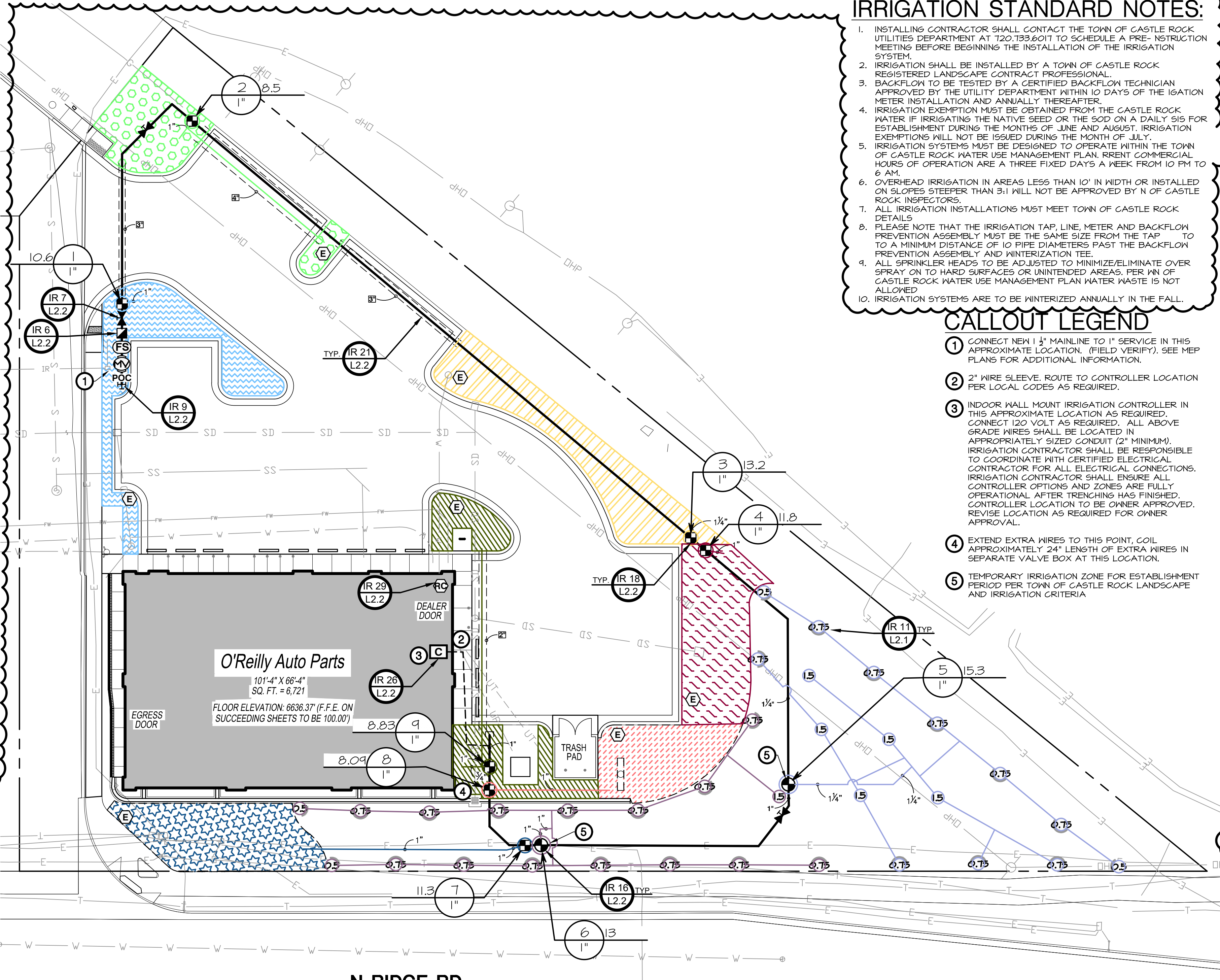
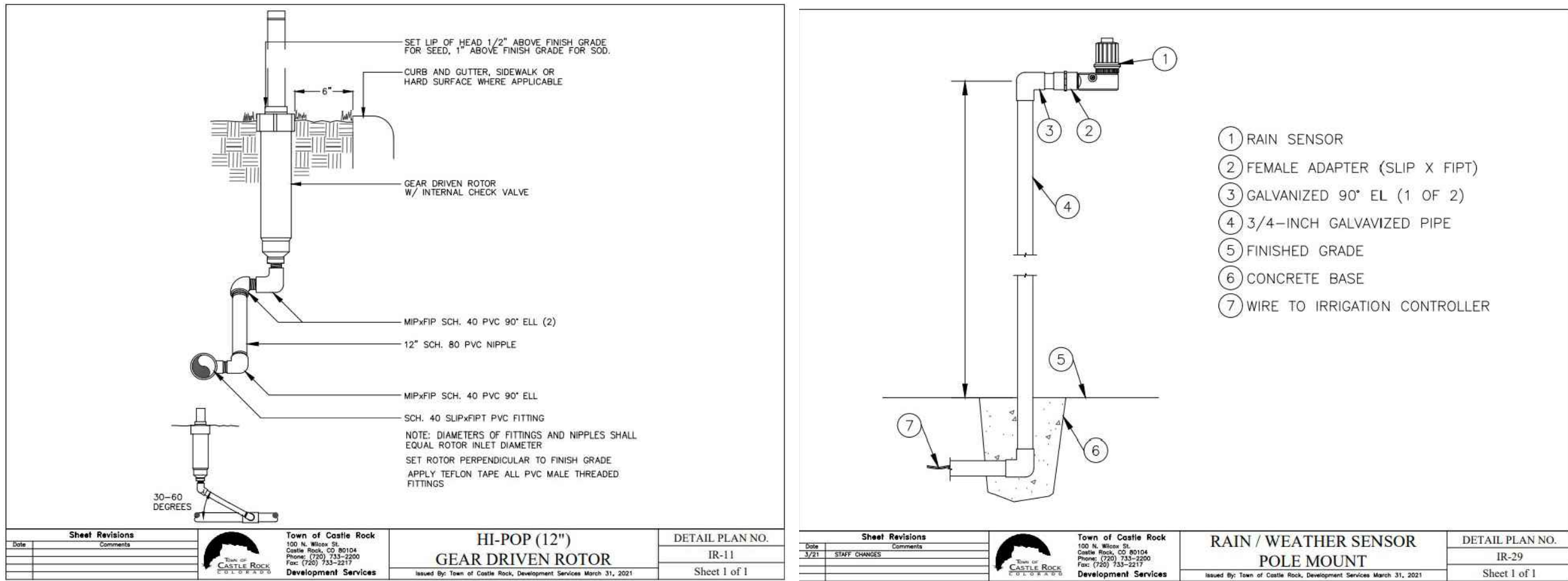
A CYCLING TECHNIQUE WILL BE USED FOR APPLICATION OF WATER. EACH STATION RUN TIME WILL BE APPLIED WITH THREE (3) DIFFERENT START TIMES. THEREFORE STATION RUN TIMES REFLECT ONE THIRD (1/3) THE TOTAL APPLICATION. PEAK WATER APPLICATION WILL REQUIRE IRRIGATION EVERY NIGHT. SET CONTROLLERS FOR START TIME #1 AT 7:30P.M., START TIME #2 AT 12:00A.M., AND START TIME #3 AT 5:30A.M. EXTEND WATER WINDOW IF REQUIRED TO MEET PEAK WATER REQUIREMENTS.

INITIAL STATION RUN TIMES:

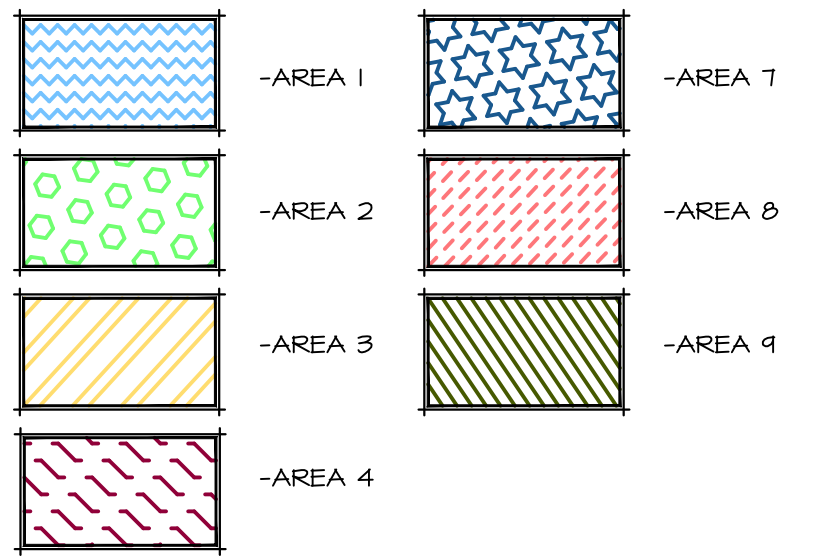
DRIP ZONES: SHRUBS - 10 MINUTE CYCLES. (6 CYCLES MINIMUM SPACED EVENLY THROUGHOUT WATER WINDOW AS NOTED ABOVE)
ROTOR ZONES: TURF - 15 MINUTE CYCLES.

SYSTEM BALANCING:

AS THE SYSTEM OPERATES, SOME ZONES WILL BE WET WHILE OTHERS ARE DRY. ADJUST ONLY THOSE STATIONS WHICH REQUIRE ADDITIONAL OR LESSER WATER. FOR EXAMPLE, IF STATION #15 TURF SPRAY ZONE IS ALWAYS DRY, CHANGE THE STATION #15 RUN TIME FROM FIFTEEN (15) MINUTES TO SIXTEEN (16) MINUTES. CONTINUE MAKING ADJUSTMENTS UNTIL THE ZONE MOISTURE CONTENT IS ACCEPTABLE. USE NOZZLE CHANGES OR NOZZLE SCREEN ADJUSTMENTS TO ADJUST WET AND DRY AREAS WITHIN A ZONE.



DRIP MATERIAL LEGEND



PRESSURE ANALYSIS

FLOW AVAILABLE	1"
Point of Connection Size:	19.62 GPM
Flow Available:	
PRESSURE AVAILABLE	
Static Pressure at POC:	70 PSI
Pressure Available:	70 PSI
DESIGN ANALYSIS	
Maximum Station Flow:	17 GPM
Flow Available at POC:	19.62 GPM
Residual Flow Available:	2.62 GPM
Design Pressure:	50 PSI
Friction Loss:	1.2 PSI
Fittings Loss:	0.12 PSI
Elevation Loss:	0 PSI
Loss through Valve:	3 PSI
Pressure Req. at Critical Station:	54.3 PSI
Loss for Fittings:	0.68 PSI
Loss for Main Line:	6.8 PSI
Loss for POC to Valve Elevation:	0 PSI
Loss for Backflow:	0 PSI
Loss for Master Valve:	3 PSI
Critical Station Pressure at POC:	64.2 PSI
Pressure Available:	70 PSI
Residual Pressure Available:	5.21 PSI

IRRIGATION STANDARD NOTES:

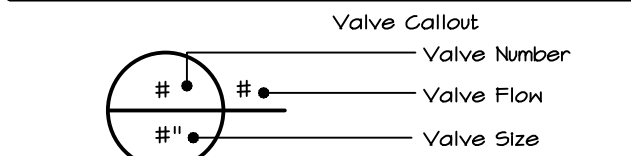
- INSTALLING CONTRACTOR SHALL CONTACT THE TOWN OF CASTLE ROCK UTILITIES DEPARTMENT AT 1-202-333-6071 TO SCHEDULE A PRE- INSTRUCTION MEETING BEFORE BEGINNING THE INSTALLATION OF THE IRRIGATION SYSTEM.
- IRRIGATION SHALL BE INSTALLED BY A TOWN OF CASTLE ROCK REGISTERED LANDSCAPE CONTRACT PROFESSIONAL.
- BACKFLOW TO BE TESTED BY A CERTIFIED BACKFLOW TECHNICIAN APPROVED BY THE UTILITY DEPARTMENT WITHIN 10 DAYS OF THE IGATION METER INSTALLATION AND ANNUALLY THEREAFTER.
- IRRIGATION EXEMPTION MUST BE OBTAINED FROM THE CASTLE ROCK WATER IF IRRIGATING THE NATIVE SEED OR THE SOO ON A DAILY SIS FOR ESTABLISHMENT DURING THE MONTHS OF JUNE AND AUGUST. IRRIGATION EXEMPTIONS WILL NOT BE ISSUED DURING THE MONTH OF JULY.
- IRRIGATION SYSTEMS MUST BE DESIGNED TO OPERATE WITHIN THE TOWN OF CASTLE ROCK WATER USE MANAGEMENT PLAN. RENT COMMERCIAL HOURS OF OPERATION ARE A THREE FIXED DAYS A WEEK FROM 10 PM TO 6 AM.
- OVERHEAD IRRIGATION IN AREAS LESS THAN 10' IN WIDTH OR INSTALLED ON SLOPES STEEPER THAN 3:1 WILL NOT BE APPROVED BY N OF CASTLE ROCK INSPECTORS.
- ALL IRRIGATION INSTALLATIONS MUST MEET TOWN OF CASTLE ROCK DETAILS.
- PLEASE NOTE THAT THE IRRIGATION TAP, LINE, METER AND BACKFLOW PREVENTION ASSEMBLY MUST BE THE SAME SIZE FROM THE TAP TO TO A MINIMUM DISTANCE OF 10 PIPE DIAMETERS FROM THE BACKFLOW PREVENTION ASSEMBLY AND WINTERIZATION TEE.
- ALL SPRINKLER HEADS TO BE ADJUSTED TO MINIMIZE/ELIMINATE OVER SPRAY ON TO HARD SURFACES OR UNINTENDED AREAS. PER NW OF CASTLE ROCK WATER USE MANAGEMENT PLAN WATER WASTE IS NOT ALLOWED.
- IRRIGATION SYSTEMS ARE TO BE WINTERIZED ANNUALLY IN THE FALL.

CALLOUT LEGEND

- CONNECT NEW 1" MAINLINE TO 1" SERVICE IN THIS APPROXIMATE LOCATION. (FIELD VERIFY). SEE MEP PLANS FOR ADDITIONAL INFORMATION.
- 2" WIRE SLEEVE. ROUTE TO CONTROLLER LOCATION PER LOCAL CODES AS REQUIRED.
- INDOOR WALL MOUNT IRRIGATION CONTROLLER IN THIS APPROXIMATE LOCATION AS REQUIRED. CONNECT 120 VOLT AS REQUIRED. ALL ABOVE GRADE WIRES SHALL BE LOCATED IN APPROPRIATELY SIZED CONDUIT (2" MINIMUM). IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH CERTIFIED ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL CONNECTIONS. IRRIGATION CONTRACTOR SHALL ENSURE ALL CONTROLLER OPTIONS AND ZONES ARE FULLY OPERATIONAL AFTER TRENCHING HAS FINISHED. REVERSE LOCATION AS REQUIRED FOR OWNER APPROVAL.
- EXTEND EXTRA WIRES TO THIS POINT, COIL APPROXIMATELY 24" LENGTH OF EXTRA WIRES IN SEPARATE VALVE BOX AT THIS LOCATION.
- TEMPORARY IRRIGATION ZONE FOR ESTABLISHMENT PERIOD PER TOWN OF CASTLE ROCK LANDSCAPE AND IRRIGATION CRITERIA

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
15 15 15	Hunter I-20-04-SR 0.5, 0.75, 1.5 Turf Rotor, 6in. Pop-Up, Adjustable and Full Circle. Plastic Riser. Drain Check Valve. Short Radius Nozzle. See detail IR 11
15	Hunter ICZ-101-25-LF Drip Control Zone Kit. 1in. ICV Globe Valve with 1in. HY100 Filter system. Pressure Regulation: 25 psi. Flow Range: 5 GPM - 15 GPM. 150 mesh stainless steel screen. See detail IR 11
E	Hunter ECO-10-12 Eco-ID, 1/2in. FPT connection with 12 psi-10 psi operating pressure. Specify with Hunter SJ swing joint.
See drip material legend	Area to Receive Dripline Hunter HDL-06-12-CV HDL-06-12-CV Hunter Dripline w/ 0.6 GPH emitters at 12" O.C. Check valve, dark brown tubing with gray striping. Dripline laterals spaced at 12" apart, with emitters offset for triangular pattern. Install with Hunter PLD barbed or PLD-LOC fittings.
15	Hunter ICV-6-FS 1in, 1-1/2in, 2in, and 3in. Plastic Electric Remote Control Valve, Globe Configuration, with NPT Threaded Inlet/Outlet, for Commercial/Municipal Use. With Filter Sentry. See detail IR 16
15	Hunter HQ-5RC Quick coupler valve, yellow rubber cover, red brass and stainless steel, with 1in. NPT inlet, 1-piece body. See detail IR 6
15	Isolation Valve. See detail IR 7
15	Hunter ICV-6-FS 1" 1in, 1-1/2in, 2in, and 3in. Plastic Electric Master Valve, Globe Configuration, with NPT Threaded Inlet/Outlet, for Commercial/Municipal Use. With Filter Sentry.
15	Hunter PHC-2400I Wi-Fi enabled, full-functioning controller with touchscreen, 24-Station fixed controller, 120 VAC, indoor model. See detail IR 26
15	Hunter MR-CLK Rain Sensor, install with 1000 ft of controller, in line of sight. 22-28 VAC/VDC 100 mA power from timer transformer. Mount as noted. See detail IR 24
15	Hunter HC-100-FLOW 1in. Flow meter for use with Hydrowise enabled controller to monitor flow and provide system alerts. Also functions as stand alone flow totalizer/sub meter on any residential or commercial irrigation system. See detail IR 4
15	Cap at the mainline for future use. Ensure water tight fitting
-----	Schedule 40 PVC for electrical control wires, size as indicated on plans. Coordinate with Electrical.
-----	Irrigation Lateral Line: PVC Schedule 40 Only lateral transition pipe sizes 1" and above are indicated on the plan, with all others being 3/4". See detail IR 21
-----	1" Irrigation Mainline: PVC Schedule 40. See detail IR 21
-----	Pipe Sleeve: PVC Schedule 40.



VALVE SCHEDULE

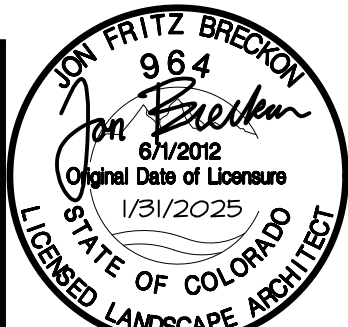
NUMBER	MODEL	SIZE	TYPE	GPM
1	Hunter ICZ-101-25-LF	1"	Area for Dripline	10.54
2	Hunter ICZ-101-25-LF	1"	Area for Dripline	8.5
3	Hunter ICZ-101-25-LF	1"	Area for Dripline	13.22
4	Hunter ICZ-101-25-LF	1"	Area for Dripline	11.82
5	Hunter ICZ-101-25-LF	1"	Area for Dripline	13.34
6	Hunter ICZ-101-25-LF	1"	Area for Dripline	13.04
7	Hunter ICV-6-FS	1"	Turf Rotor	15.25
8	Hunter ICV-6-FS	1"	Turf Rotor	15.25

TOWN APPROVAL BLOCK

TOWN OF CASTLE ROCK APPROVAL.
PLANS ARE HEREBY APPROVED FOR ONE YEAR FROM
DATE OF DEVELOPMENT SERVICES APPROVAL.

DEVELOPMENT SERVICES

DATE



TIMOTHY M. GULLOT
ARCHITECT

417.862.0558
Fax: 417.862.3265
e-mail: architect@esterfischer.com

PROJECT:
NEW O'REILLY AUTO PARTS STORE
730 N. RIDGE RD.
CASTLE ROCK, CO #2

O'Reilly AUTO PARTS
CORPORATE OFFICES
233 SOUTH PATTERSON
SPRINGFIELD, MISSOURI 65802
(417) 862-2674 TELEPHONE

COMM # 4880
DATE: 1-31-2025
REVISION
DATE: 4-28-2025

6-10-2025

7-11-2025

8-1-2025

L2.1
16 of 17



Appendix D – Grease Interceptor Acknowledgement



Commercial Business Building Permit Grease Interceptor Requirement

All Commercial Business Building Permits for new business and construction of new buildings, remodels, or tenant improvement permits will be required to comply with Town Code 13.05, Grease Interceptors Required. Applicant will be required to submit an Industry Information Questionnaire through Plum Creek Water Reclamation Authority (PCWRA) to verify if the business will require an oil/grease interceptor. Please go to the PCWRA website at:

https://www.pcwracolorado.org/pretreatment/commercial_businesses/index.php

CONSTRUCTION DRAWINGS

Please note PCWRA requires all new commercial buildings to provide a stub-out for a separate waste line for future interceptor installation, if not proposed with the project. All drainage fixtures and grease waste lines that are tied to the oil/grease must be shown in the construction drawings as well as the location of the oil/grease.

ACKNOWLEDGEMENT

The applicant must sign and date this form to acknowledge that the applicant has read and understands the Town's Code requirement regarding Grease Interceptors, PCWRA's requirement to complete an Industry Information Questionnaire and Food Service Application, and the Town's requirement that a letter from PCWRA must be provided with the Town of Castle Rock Building Permit. This signed form is required to be included in the Utility Report with the Predevelopment Plan (PDP), Site Development Plan (SDP) and Construction Document (CD) submittals.

O'Reilly Auto Parts , Lot 5 Founders Marketplace, Filing No 1 Amendment No. 2

Name of Project

730 N Ridge Road

Address of property, if known

Signature

Date

6-18-25



Appendix E – Confirmation Memo for Required Fire Flow



320 North Lincoln Avenue, Loveland, CO 80537
970.613.1447 TAIT.COM

April 21, 2025
Confirmation Memo for Required Fire Flow
Castle Rock Fire and Rescue Department
FPO@crgov.com

RE: O'Reilly Auto Parts, 730 N. Ridge Rd Castle Rock, CO #2 (CR2)

A new O'Reilly Auto Parts store is proposed at 730 N. Ridge Rd., a currently vacant site that is part of the Villages at Castle Rock planned development. The facility will provide automotive parts, accessories, and services for both individual customers and local repair shops. The project fully complies with town design standards and the 2030 Comprehensive Master Plan, with no anticipated impacts on surrounding properties or requirements for public infrastructure improvements.

The project site is approximately 1.21 acres and will consist of a parking lot with 31 parking spaces (2 will be ADA accessible), a single-story 6,721 sq.ft. building type IIB, and site landscaping. The building will be fully sprinkled per the Town of Castle Rock fire codes and requirements.

Required Fire Flow: 1750 GPM
Required Duration: 2 Hours



4/28/2025

Castle Rock Fire And Rescue Department Signature

Date

O'Reilly Auto Parts Store – Castle Rock, CO (CR2)