

MEMORANDUM

DATE: August 23, 2016

TO: Brandon Thueson, Weber County Fire Marshal

FROM: Ryan Cathey

PROJECT: Summit Powder Mountain Horizon Village

SUBJECT: Fire Protection and Site Access Variance

The proposed site plan for the Horizon Village PRUD at Summit Powder Mountain exceeds the requirements of International Fire Code (IFC) Section 503.1.1 pertaining to fire department access to “Buildings and Facilities”. The code states that:

“The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet (45 720 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.”

The current site plan has dwellings that are a maximum of 251’ linear feet from the “fire access”. See attached exhibit ET01.

The proposed development has mitigated this non-compliance by providing fire department connection (FDC) standpipes at the fire truck access points with a dry pipe extending into the development to fire protection caches in the interior of the development. These caches are located so that all non-compliant units fall within a 150’ foot protection zone around the cache. At the fire protection cache there is an FDC that corresponds to the dry pipe extending from the site access locations. This FDC can be used to receive up to 1,000 gpm of water at 150 psi. In addition, each fire protection cache has a shed full of equipment for the sole purpose of fire protection. The following is a list of items that are to be included in the fire protection shed.

Quantity	Item Description
4	50 Ft sections of 2 ½ inch fire service hose
2	High Rise Packs with 150 feet of 1 ¾ fire service hose
2	1 ¾ adjustable fog nozzles
2	2 ½ inch Gate Valves
2	2 ½” x 1 ¾” x 1 ¾” gated wyes
2	Pick Head Axe
1	6 ft pike pole
1	8 ft pike pole

1	Halogan Tool
2	2 1/2" x 1 3/4" Reducer
2	FDC Spanner (2 1/2")
1	Hydrant Wrench/Spanner
4	2 1/2 inch hose straps

It is my opinion that these proposed measures meet the intention of IFC Section 503.1.1 and provide equal protection. Therefore, I respectfully request variance of IFC Section 503.1.1 due to the protection measures have been outlined above. Please see the attached civil improvements plans and architectural drawings for details regarding the design of the utility systems and fire protection sheds.

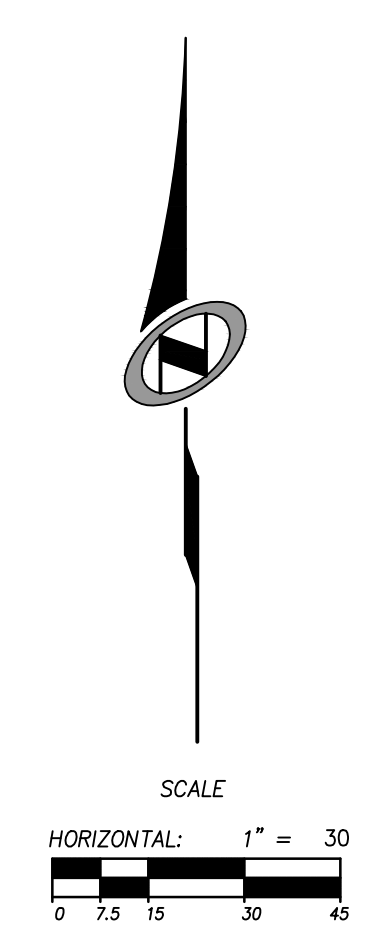
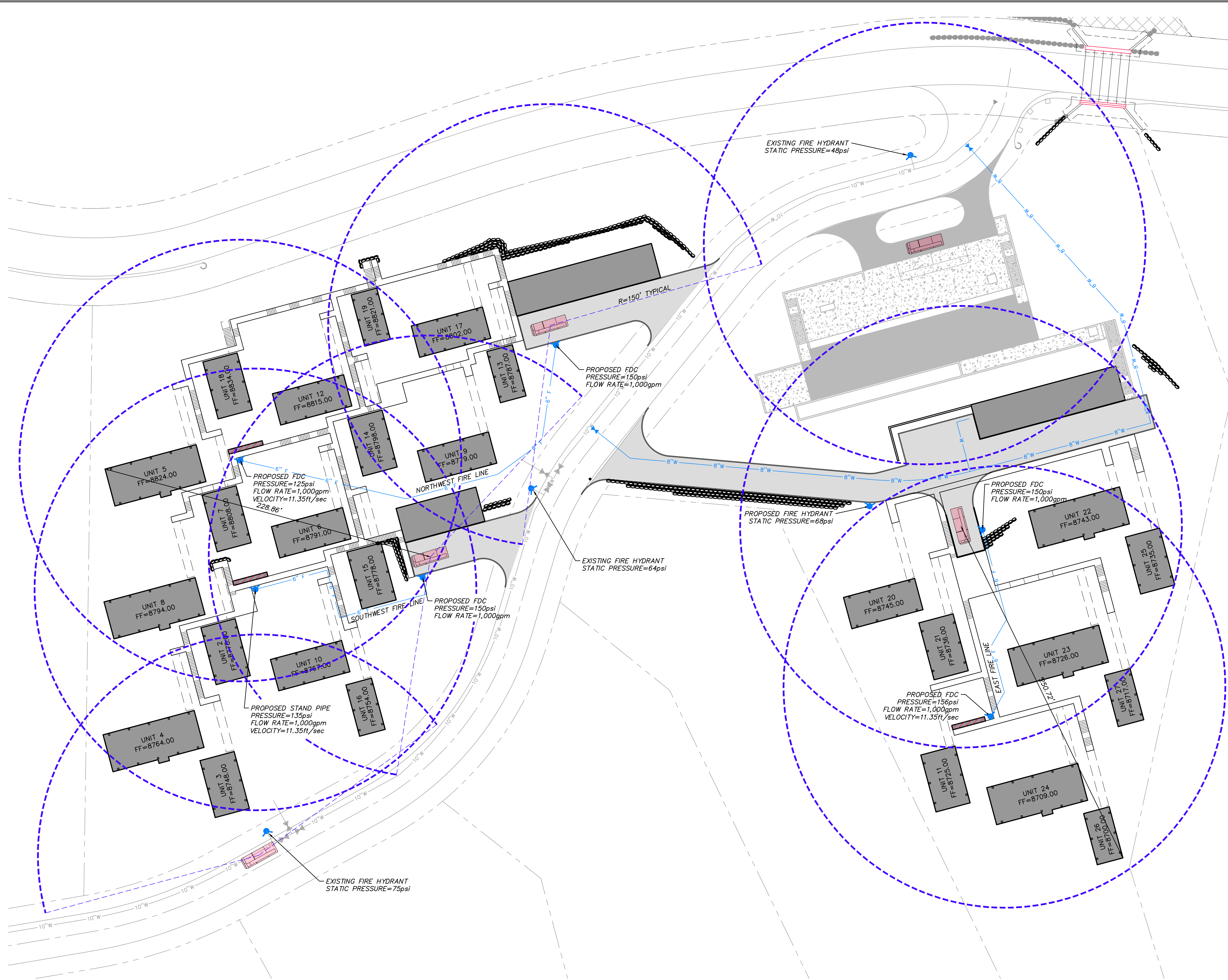
Respectfully



Ryan Cathey, PE
NV5, Inc.



OFFICES NATIONWIDE



**PRELIMINARY
 NOT FOR CONSTRUCTION**

NO.	DATE	REVISIONS

**HORIZON NEIGHBORHOOD
 FIRE PROTECTION**

PREPARED FOR: SUMMIT POWDER MOUNTAIN

DATE SUBMITTED: 8/22/2016

NV5

MURRAY, UT 84107
 WWW.NV5.COM

6217 SOUTH STATE STREET, SUITE 200
 801743.8800 TEL. 801743.0800 FAX

SHEET NUMBER
ET01

SCALE
 VERTICAL: 1" = NA
 HORIZONTAL: 1" = 30'

JOB NUMBER
SLB0793

CAUTION
 The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans, and must be approved by the preparer of these plans.

Worksheet for Northwest Fire Line

Project Description

Friction Method Manning Formula
Solve For Pressure at 2

Input Data

Pressure 1	150.00	psi
Elevation 1	8770.00	ft
Elevation 2	8803.00	ft
Length	255.00	ft
Roughness Coefficient	0.010	
Diameter	6.00	in
Discharge	1000.00	gal/min

Results

Pressure 2	125.38	psi
Headloss	23.79	ft
Energy Grade 1	9117.99	ft
Energy Grade 2	9094.19	ft
Hydraulic Grade 1	9115.99	ft
Hydraulic Grade 2	9092.19	ft
Flow Area	0.20	ft ²
Wetted Perimeter	1.57	ft
Velocity	11.35	ft/s
Velocity Head	2.00	ft
Friction Slope	0.09330	ft/ft

Worksheet for Southwest Fire Line

Project Description

Friction Method	Manning Formula
Solve For	Pressure at 2

Input Data

Pressure 1	150.00	psi
Elevation 1	8752.00	ft
Elevation 2	8772.00	ft
Length	141.00	ft
Roughness Coefficient	0.010	
Diameter	6.00	in
Discharge	1000.00	gal/min

Results

Pressure 2	135.63	psi
Headloss	13.16	ft
Energy Grade 1	9099.99	ft
Energy Grade 2	9086.83	ft
Hydraulic Grade 1	9097.99	ft
Hydraulic Grade 2	9084.83	ft
Flow Area	0.20	ft ²
Wetted Perimeter	1.57	ft
Velocity	11.35	ft/s
Velocity Head	2.00	ft
Friction Slope	0.09330	ft/ft

Worksheet for East Fire Line

Project Description

Friction Method Manning Formula
Solve For Pressure at 2

Input Data

Pressure 1	150.00	psi
Elevation 1	8746.00	ft
Elevation 2	8718.00	ft
Length	136.00	ft
Roughness Coefficient	0.010	
Diameter	6.00	in
Discharge	1000.00	gal/min

Results

Pressure 2	156.64	psi
Headloss	12.69	ft
Energy Grade 1	9093.99	ft
Energy Grade 2	9081.30	ft
Hydraulic Grade 1	9091.99	ft
Hydraulic Grade 2	9079.30	ft
Flow Area	0.20	ft ²
Wetted Perimeter	1.57	ft
Velocity	11.35	ft/s
Velocity Head	2.00	ft
Friction Slope	0.09330	ft/ft