

VILLAGE PLAN 1B

Special Project Area



ENGINEERS
SURVEYORS
PLANNERS

May 2019
October 2019

TABLE OF CONTENTS

Table of Contents..... i

Preface i

Executive Summary..... i

Legal Description..... 1

Use Map and Buildout Allocation 2

Development Standards and Lotting Map..... 2

Open Space Plan 3

 Maintenance Plan 8

Guiding Principles 8

Utility Capacities 9

 Culinary Water 9

 Secondary Water 10

 Sanitary Sewer 10

 Storm Drain..... 10

 Offsite Utilities 11

Transportation 12

 Vehicular and Pedestrian Plan 12

 Roadway Sections 12

 Fire Department Access..... 12

 Road Name and Addressing..... 12

 Off-street Parking 12

Additional Elements..... 13

Conceptual Plans..... 14

Design Guidelines 15

Findings..... 15

Appendix A - Storm Drain Analysis

PREFACE

The following Village Plan document addresses the proposed improvements as they pertain to Village Plan 1B of Beacon Pointe located in Saratoga Springs, Utah. The property and the proposed improvements for the development are discussed in detail and follow the requirements set forth within the Village Plan requirements of the City Code of Saratoga Springs. The purpose of the document is to inform the City (Staff, Planning Commission, and City Council) and Public of the proposed general design elements, open space plans, guiding design principles and land uses for Village Plan 1B. In addition, utility capacities based on conceptual plans, will outline the methods used to anticipate the demands and service requirements necessary to provide adequate utility service and infrastructure for the proposed improvements.

EXECUTIVE SUMMARY

The proposed Village Plan 1B is an approximate 22-acre parcel located west of State Route 68 (Redwood Road) on the west end of Founders Plat A of the Beacon Pointe subdivision of Saratoga Springs. The project is ideally situated to provide connectivity and minimize impact with local and major transportation corridors.

The proposed Village Plan incorporates the following units and approximate acreages:

- 22.7 Total Acres

LEGAL DESCRIPTION

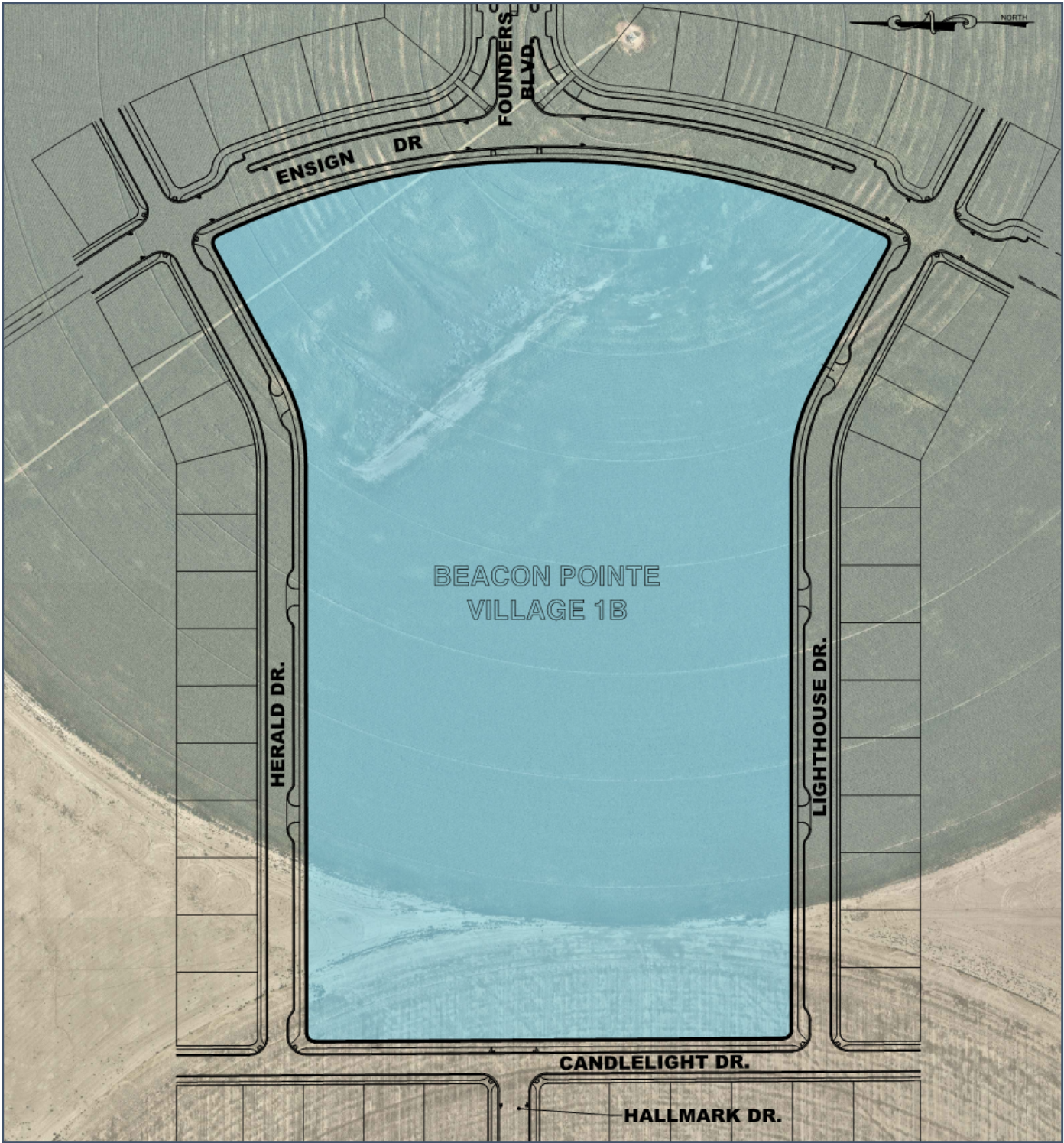
The proposed Village Plan 1B contains approximately 22.7 acres of property. Please see Appendix A for a copy of the ALTA survey for the property. The parcel metes and bounds legal description is as follows:

A portion of the Northeast Quarter and the Northwest Quarter of Section 34, Township 5 South, Range 1 West, Salt Lake Base and Meridian, described as follows:

Beginning at a point located N89°50'00"W 146.61 feet and South 862.60 feet from the North Quarter Corner of Section 34, Township 5 South, Range 1 West, Salt Lake Base and Meridian; thence N89°55'22"E 847.48 feet; thence along the arc of a 284.50 foot radius curve to the left 139.40 feet through a central angle of 28°04'23" (chord: N75°53'10"E 138.00 feet); thence N61°50'59"E 220.15 feet; thence along the arc of a 12.00 foot radius curve to the right 19.43 feet through a central angle of 92°45'00" (chord: S71°46'31"E 17.37 feet) to a point of compound curve; thence along the arc of a 1162.50 foot radius curve to the right 1030.78 feet through a central angle of 50°48'13" (chord: S0°00'06"W 997.34 feet) to a point of compound curve; thence along the arc of a 12.00 foot radius curve to the right 19.42 feet through a central angle of 92°44'49" (chord: S71°46'37"W 17.37 feet); thence N61°50'59"W 236.98 feet; thence along the arc of a 284.50 foot radius curve to the left 139.78 feet through a central angle of 28°09'01" (chord: N75°55'29"W 138.38 feet); thence West 827.47 feet; thence along the arc of a 12.00 foot radius curve to the right 18.77 feet through a central angle of 89°36'43" (chord: N45°11'39"W 16.91 feet); thence N0°23'17"W 700.10 feet; thence along the arc of a 12.00 foot radius curve to the right 18.91 feet through a central angle of 90°18'39" (chord: N44°46'02"E 17.02 feet) to the point of beginning.

Contains: ±22.71 Acres

PROPERTY BOUNDARY



USE MAP AND BUILDOUT ALLOCATION

The following Use Map depicts the proposed land uses for the proposed Village Plan 1B. The project will be completed in a single phase with the following land use type:

- Village Plan 1B.** This area is contained within Village Plan 1A of Beacon Pointe subdivision of Saratoga Springs and coincides with the specified land use within the approved Beacon Pointe Community Plan.

Two different methods were requested in determining the land use intensities for this Village. Both methods illustrate the process used in determining the Equivalent Residential Units (ERUs) for this specific Village Plan 1B. They are as follows:

Method 1 – District Area Plan Guidelines. The District Area Plan (DAP) states that one ERU is equivalent to 2,165 square feet (sf) of “non-residential area.” The 2,165 sf is generated by dividing 10,000,000 sf commercial area by 4,620 non-residential ERUs as per the DAP. The total proposed building square footage within the boundaries is approximately 110,000 sf. The following yields:

(110,000 sf) / (2,165 sf/ERU) = 50.8 ERUs

Method 2 – Water Supply Fixture Unit (wsfu). A plumbing fixture analysis was completed and based on the anticipated uses for Village Plan 1B. Calculations provided within the utility section of this Village Plan generate approximately 14.6 ERUs for the proposed Village Plan 1B.

The ERU density calculation method (Method 1) identified in the District Area Plan will be used and results in 50.8 ERUs for the proposed Village Plan 1B. Method 2 will be used later within this document for determining the anticipated utility capacities for the project and eventual impacts to the City system.

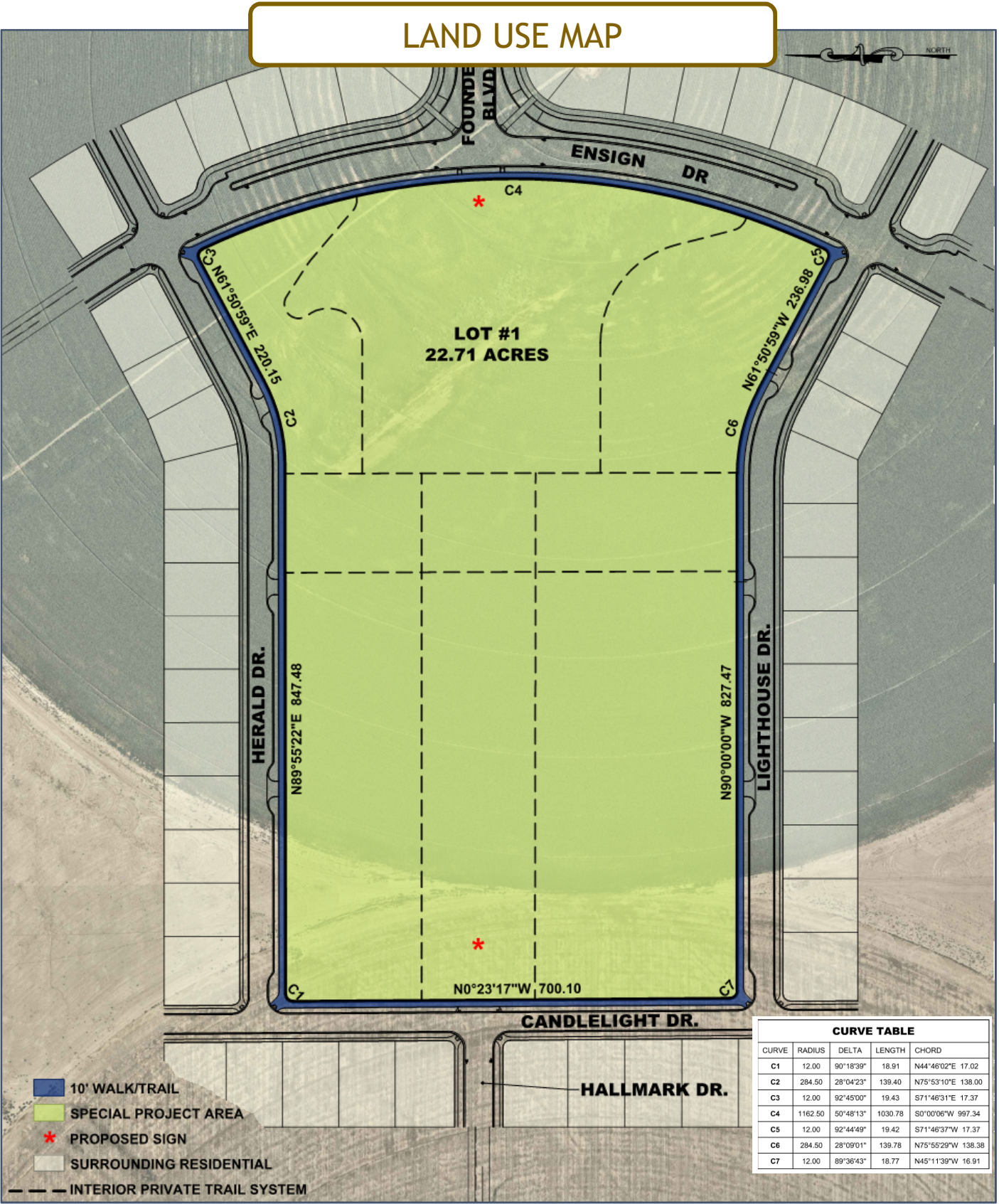
Village Plan 1B – Special Project Area

This Village is the only phase of this project and will only contain a single land use type.

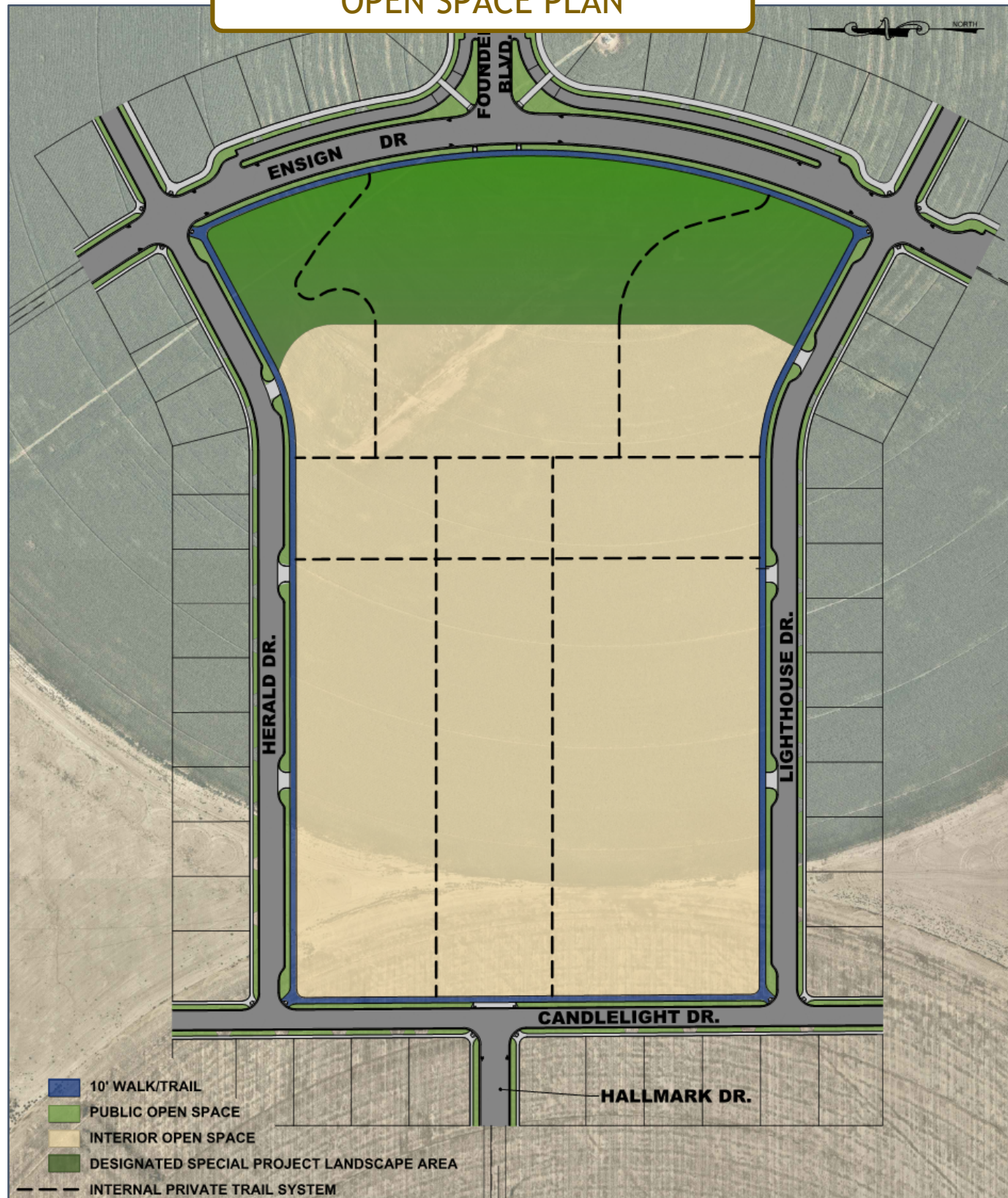
Overall Village Area:	22.7 Ac (100%)	
Special Project Area:	22.7 Ac (100%)	50 ERUs based on floor area (100%)
Right-of-Way:	0.0 ac (0%)	
Projected Population:	0 Persons	
Projected Employment:	7 Equivalent Full Time Jobs	

DEVELOPMENT STANDARDS AND LOTTING MAP

The Special Project Area is the only land use type within this proposed area. Development standards will adhere to the City Code and the latest approved version of the Standards and Specifications.



OPEN SPACE PLAN



OPEN SPACE PLAN

Open space and detailed landscaping are two key components necessary in creating an environment that will accommodate the anticipated land use within Village Plan 1B. This will be accomplished through a number of different methods that will be explained in further detail within this section. There are both proposed and existing landscape improvements that will meld in harmony with one another in order to provide the access, walkability, and continuity for the project. The DAP allows for various types of open space as discussed in the approved Community Plan for Beacon Pointe and specifically allows for a Special Use Area as identified within this Village Plan 1B. The following key elements will be provided and are based on current City Code and standards set forth in the approved Community Plan for Beacon Pointe:

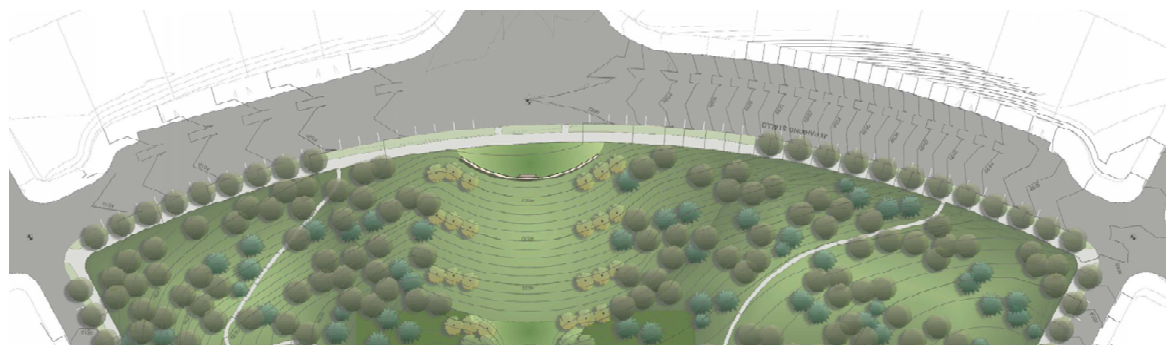
Existing Public Improvements. A 10-foot concrete trail will be installed along the entire perimeter of Village Plan 1B with the Founders Plat A improvements. This is illustrated in the image to the left, shaded in blue. Street trees along all public right-of-ways bordering the Village Plan 1B will be placed with the initial improvements of Founders Plat A of Beacon Pointe. The only exception to this street tree requirement will be as depicted below along the east boundary of the site in order to provide an unobstructed view from Founders Boulevard to Village Plan 1B.



Special Project Improvements. Village Plan 1B will incorporate significant landscape plantings, trees, shrubs and other ornamental plants. This area will provide a cohesive experience for pedestrians and patrons through proper use of trails, sidewalks, lighting, plazas and view corridors. In general and at a minimum, trees are to be planted to meet 19.06.07's tree requirements of deciduous trees (7+1 per additional 3,000 square foot (sf) over 15,001 sf) and evergreen trees (5+1 per additional 3,000 sf over 15,001 sf). Drought tolerant plant material will be installed to maintain minimum planting requirements as outlined in 19.06.



- Designated Special Project Landscape Area.** The eastern portion of the project will contain approximately 4-acres of Designated Special Project Landscape Area. This area will utilize the natural terrain in the area that will be accessed through the use of a meandering trail system that will interconnect the upper area from the lower roadway section. The rendering above shows how the existing slopes will be graded to maintain mountain views and provided open space. Meadow groundcover and drought tolerant plant material will be installed to meet minimum planting requirements including 19.06.07-2 requiring 50-percent of the landscape area to be covered with live vegetation at maturity. Public open space within the public right-of-way will be planted to maintain minimum planting requirements as outlined in 19.06. The following rendering shows a pedestrian walkway traversing the open space. Meadow groundcover and drought tolerant plant material will be installed to meet minimum planting requirements including 19.06.07-2 requiring 50-percent of the landscape area to be covered with live vegetation at maturity. Public open space will be planted to maintain minimum planting requirements as outlined in 19.06 with the exception to the streets trees previously noted.

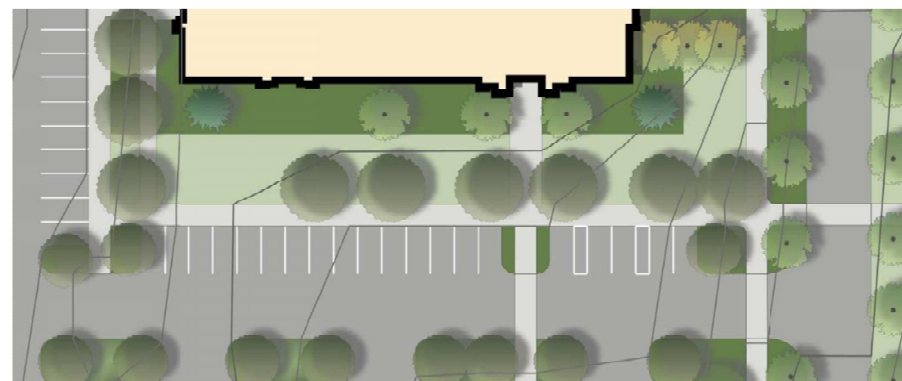


- Interior Private Sidewalk Connections.** Walkability within Village Plan 1B is a key component that will interconnect the interior land uses with one another along with providing access from the surrounding neighborhood. Interior and exterior sidewalk connections will be unified through the use of landscaping and open space. The rendering above shows the central open space aligning with Hallmark Drive. Parking lot will be planted with trees and additional plant material to maintain minimum planting requirements as outlined in 19.06 and 19.09. Sidewalks within the Village Plan 1B will vary in width from 4 to 8-feet based on the anticipated use.





- Building and Open Space Transitions.** Manicured landscaping will be used to transition between buildings, sidewalks and parking lots. The rendering above shows the typical building planting and pedestrian sidewalk. Plant material will be enhanced near buildings to screen buildings as necessary. Plant material will be installed to maintain minimum planting requirements as outlined in 19.06.

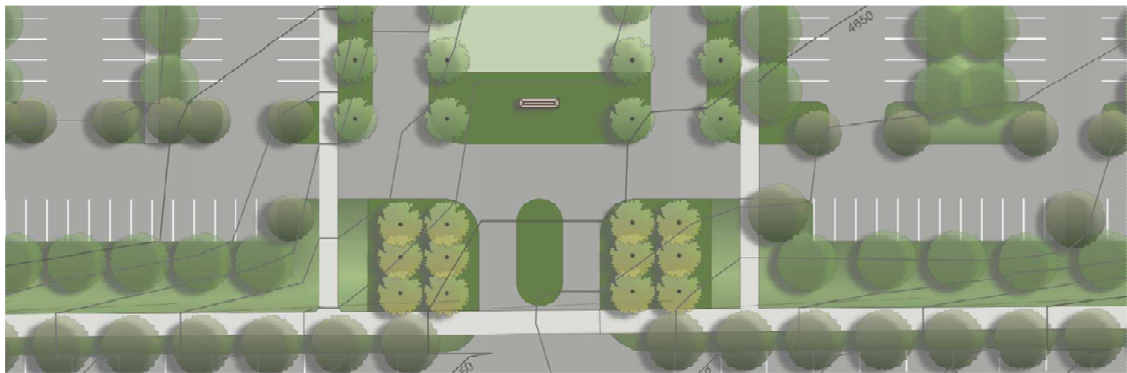


- Parking Lot Landscaping.** The interior parking lot is intended to provide landscape separated parking islands between different parking structure areas which would eliminate the need for interior planter. The rendering above shows a typical parking lot. Parking lots will be planted with trees and additional plant material to maintain minimum planting requirements as outlined in 19.06 and 19.09. Parking areas adjacent to public streets will have landscape strips of no less than 10-feet from sidewalk to parking to meet code requirements. Trees shall be planted at no less than 30-feet on center along the perimeter.





- **Vehicular Entrance Points.** The rendering above has been provided to show a typical vehicular entrance with trees and plant material anticipated at entrance points to the site. Parking areas adjacent to public streets will have landscape strips of no less than 10-feet from sidewalk to parking to meet code requirements. Trees shall be planted at no less than 30-feet on center along the perimeter. Plant material will be installed to maintain minimum planting requirements as outlined in 19.06 and 19.09.



- **Planting Schedule.** There will be various types of plant material used within Village Plan 1B include, but are not limited to the following:

Accent Trees

- | | |
|--|----------------|
| 1. Cercis Canadensis / Redbud | 2-inch Caliper |
| 2. Malus X 'Spring Snow' / Spring Snow Crabapple | 2-inch Caliper |
| 3. Prunus Sargentii 'Pink Flair' / Pink Flair Flowering Cherry | 2-inch Caliper |

Shade Trees

- | | |
|---|----------------|
| 1. Acer Platanoides 'Crimson Sentry' / Crimson Sentry Maple | 2-inch Caliper |
| 2. Acer Platanoides 'Emerald Queen' / Emerald Queen Maple | 2-inch Caliper |
| 3. Gleditsia Triacanthos Inermis 'Shademaster' / Shademaster Locust | 2-inch Caliper |
| 4. Liriodendron Tulipefera / Tulip Tree | 2-inch Caliper |

Evergreen Trees

- | | |
|--|----------------|
| 1. Picea Pungens 'Fat Albert' / Fat Albert Spruce | 10-foot Height |
| 2. Pinus Flexilis 'Vanderwolf's Pyramid' / Vanderwolf's Pyramid Pine | 8-foot Height |

Parking Lot Trees

- | | |
|---|----------------|
| 1. Acer Platanoides 'Emerald Queen' / Emerald Queen Maple | 2-inch Caliper |
| 2. Gleditsia Triacanthos Inermis 'Shademaster' / Shademaster Locust | 2-inch Caliper |

Deciduous Shrubs

- | | |
|---|----------|
| 1. Berberis Thunbergii 'Crimson Pygmy' / Crimson Pygmy Barberry | 5 Gallon |
| 2. Cornus Sericea 'Cardinal' / Red Twig Dogwood | 5 Gallon |
| 3. Euonymus Alatus 'Compactus' / Compact Burning Bush | 1 Gallon |
| 4. Forsythia X Intermedia 'Evergold' / Border Forsythia | 1 Gallon |
| 5. Hibiscus Syriacus 'Aphrodite' / Aphrodite Rose of Sharon | 1 Gallon |
| 6. Lavandula Angustifolia 'Buena Vista' / Buena Vista Lavender | 5 Gallon |
| 7. Lonicera Tatarica / Tatarian Honeysuckle | 1 Gallon |
| 8. Physocarpus Opulifolius 'Diablo' / Diablo Ninebark | 1 Gallon |
| 9. Rosa 'Radtke' / Double Knock Out Rose (Red) | 5 Gallon |
| 10. Syringa Meyeri 'Palibin' / Dwarf Korean Lilac | 1 Gallon |

Evergreen Shrubs

- | | |
|---|----------|
| 1. Buxus X 'Green Gem' / Green Gem Boxwood | 1 Gallon |
| 2. Mahonia Repens / Creeping Oregon Grape | 1 Gallon |
| 3. Pinus Mugo 'Pumilio' / Dwarf Mugo Pine | 1 Gallon |
| 4. Taxus Baccata 'Repandens' / Japanese Yew | 1 Gallon |

Grasses

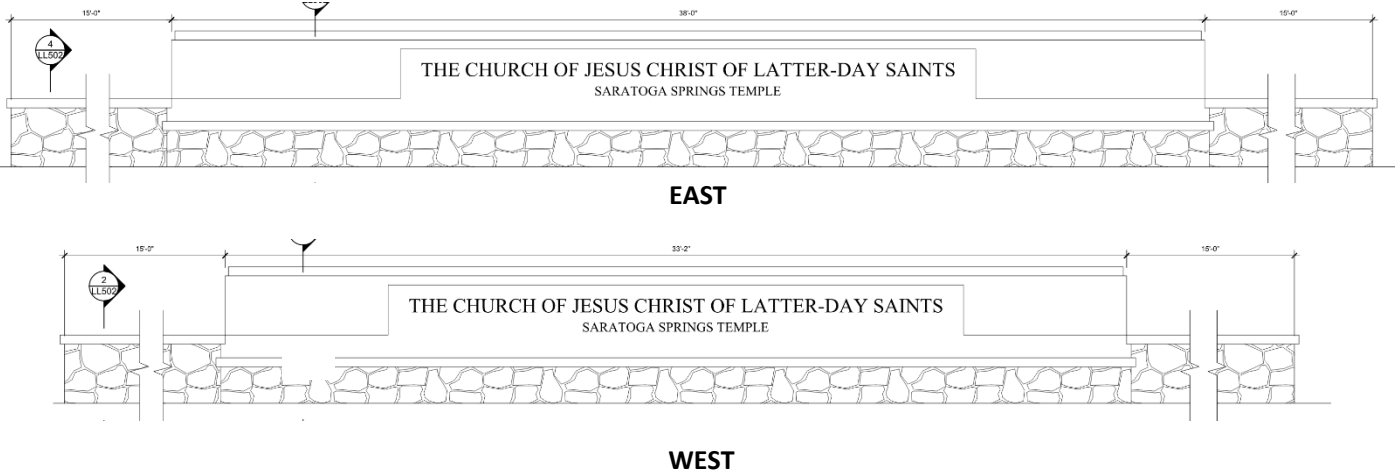
- | | |
|---|----------|
| 1. Calmagrostis X Acutiflora ‘Karl Foerster’ / Karl Forester Feather Reed Grass | 2 Gallon |
| 2. Festuca Glauca / Blue Fescue Grass | 5 Gallon |
| 3. Pennisetum Alopecuroides ‘Hameln’ / Hameln Fountain Grass | 5 Gallon |

Perennials

- | | |
|---|----------|
| 1. Agastache Cana / Double Bubble Mint | 1 Gallon |
| 2. Echinacea Purpurea / Purple Coneflower | 5 Gallon |
| 3. Gaillardia Aristata / Blanket Flower | 5 Gallon |
| 4. Heuchera X ‘Midnight Rose’ / Midnight Rose Coral Bells | 5 Gallon |
| 5. Hosta X ‘Blue Angel’ / Blue Angel Hosta | 5 Gallon |
| 6. Paeonia Lactiflora ‘Celebrity’ / Celebrity Peony | 5 Gallon |
| 7. Salvia X Sylvestris ‘May Night’ / Sage | 1 Gallon |

Note: All landscape areas are subject to design updates and shall be considered a minor amendment to be approved at staff level as long as the base requirements are met.

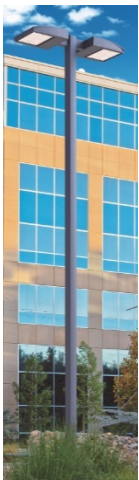
- **Monumentation and Signage.** It is intended to have two different monuments located on the east and west ends of the project. See the monument/signage examples provided below showing approximate heights and widths that will be finalized with the final site grading. Materials for the monuments will be complimentary to the buildings on the site. Final design to be provided at site plan approval and approved by City staff.



Fencing. Fencing within Village Plan 1B will be strategically placed with gates and openings along sidewalk and pedestrian corridors. Fence heights may vary in size and range from 4 to 10-feet in height depending on the need and use on the site. Examples of the fence types are as follows with illustrations to the right:

- **Decorative Aluminum Fence.** Depending on the use, the no-climb aluminum fence types will vary in height with a coating color scheme complimentary with the anticipated building on the site. Any proposed masonry fence pillars and caps will complement the materials and colors of the adjacent building to keep the theme and characteristics of the site. A wrought iron material may be used as an acceptable alternative.

- **Trash Enclosure.** The anticipated land uses on the site will utilize up to two different trash enclosures located in strategic locations to minimize visibility to the public but maximize access and accessibility to the users. Each trash enclosure will be constructed of concrete masonry units (CMU’s) with a brick veneer with a color complimentary to the building it serves. The trash enclosures will have a metal paneled or opaque fencing gate with pre-cast wall caps. A minimum of two bollards will be placed at the entrance point of each trash enclosure to provide visibility and minimize damage to the structure during use. See the example shown below.



Lighting. All lights within the City right-of-way will meet the standards and specifications approved with the Beacon Pointe Community Plan. Lighting within Village Plan 1B will vary slightly from this standard and utilize Hess or McGraw-Edison brand LED light fixtures or an approved equivalent. Examples and models of the proposed lighting are discussed below with placement and location of the lights shown within the photometric plan during the site plan approval process.

- **Parking Lot Lighting.** The parking lots and transportation corridors will be illuminated using a McGraw-Edison Gleon Galleon pole mounted luminaire with a 4,000k LED. An example of this light is shown to the left. These light poles are approximately 16-feet in height. The optics are designed to shape the distribution maximizing efficiency and application spacing. The housing finish consists of super durable TGIC polyester powder coating with colors complimentary to the buildings on site. The parking lot fixtures

will generally illuminate from dusk to dawn to provide the necessary maintenance and security needs for the site with possible dimming in specific areas at the discretion of the owner.

- **Pedestrian Pathway Lighting.** Interior trails and sidewalk will be illuminated using an Avalon pole mounted luminaire with a 4,000k LED. The light poles are approximately 10-feet in height. These fixtures will illuminate from dusk to dawn. See an example of the fixture to your right.
- **Interior Bollard Lighting.** Interior trails and sidewalks will be illuminated using a Valencia bollard light as shown in the example below. VC1070 made by Hess stand approximately 42-inches tall and will be placed intermittently along trail and sidewalk corridors within Village Plan 1B. These fixtures will illuminate from dusk to dawn.
- **Building Lighting.** Building flood lighting will be utilized to illuminate the walls and other components of the building. The building flood lighting will be 4000k LED. The fixtures will be ground mounted, roof mounted and mounted to poles. The fixtures will be aimed toward the building. These fixtures will illuminate the building from dusk to dawn.
- **Variances to the Title 19 Code.** There are a few variances to the code that should be noted:
 1. Pedestrian poles are not cut-off.
 2. Building flood lighting will be utilized and flood lighting will be aimed toward the building.

MAINTENANCE PLAN

All the proposed open space improvements as discussed above will be owned and maintained by The Church of Jesus Christ of Latter-Day Saints. The planter strips within the City right-of-way along each property boundary will be owned by the City but maintained by The Church of Jesus Christ of Latter-Day Saints.

PHASING PLAN

All improvements for the proposed Village Plan 1B will be completed in a single construction phase.

HOMEOWNERS ASSOCIATION

No homeowners association is anticipated for the project with all open space and amenities in and around the proposed Village Plan 1B to be owned and maintained by The Church of Jesus Christ of Latter-Day Saints.



GUIDING PRINCIPLES

The guiding principles for the proposed Village Plan 1B will stay consistent with those presented within the Community Plan for Beacon Pointe. The consistent standards set by the Church of Jesus Christ of Latter-Day Saints continue the legacy and heritage that has defined the Church to this day. It is the goal of the Church to create an environment that all can enjoy while integrating with the local surroundings and keep in harmony with the standards set forth by the City of Saratoga Springs. The following provides the guiding principles anticipated for the project:

- **Establishment of Standards.** Architectural design of the buildings within Village Plan 1B will be similar to other buildings owned and maintained by the Church of Jesus Christ of Latter-Day Saints within the region. Final design of the buildings within Village Plan 1B will be reviewed during the building permit process with City staff. Additional architectural standards will be presented later within this document. No Covenants, Conditions and Restrictions (CC&Rs) are anticipated for the project.
- **United Theme.** It is the desire of the Church of Jesus Christ of Latter-Day Saints to continue the legacy and heritage that has defined the Church to this day. Any improvements to Village Plan 1B will continue to exemplify this legacy and keep consistent with the standards already set by the Church. Any and all street signage and monumentation will keep consistent with similar civic uses within the region. Examples of the signage and monumentation have been previously provided. Colors and dimensions may vary with final design.
- **Minimize Impacts.** A variety of techniques have been incorporated within Village Plan 1B to decrease the impacts on the surrounding area and adjacent neighbors to the project. This is accomplished through project orientation and transportation corridors.
 - o **Project Orientation.** Village Plan 1B was specifically placed on a small ridge aligned with Founders Boulevard. Due to the topography, access to the site will be limited on the eastern edge of this major transportation corridor and funneled to the north and south sides of the project.
 - o **Transportation Corridors.** Primary access to Village Plan 1B will be located on both the north and south sides of the project. Both of the roadways located on the north and sides of the project connect with collector class roadways that will serve both local and visiting traffic. An additional access has been placed on the west side that will align with a collector class roadway that will convey traffic from the west. These collector class roadways connect with the existing State Route 68 with future connections to the north to Pony Express and the Mountain View Corridor to the west.
- **Community Plan Character.** Properly designed and placed landscaping can create a sense of character similar to other civic uses within the City. Previous landscape plans provided an example of the anticipated landscaping for the proposed Village Plan 1B. Landscaping within the planter strips of the City right-of-way will adhere to City Standards and Specifications. Interior landscaping exhibits are conceptual by nature but show the general placement of trees, shrubs and other vegetation.

UTILITY CAPACITIES

The location of the proposed Village Plan 1B has utilities located within the four-existing rights-of-way: Candlelight Drive, Lighthouse Drive, Ensign Drive and Herald Drive. The existing utilities within these four-existing rights-of-way will serve as the backbone infrastructure for the culinary water, secondary water, storm drain and sanitary sewer. Internal line connections from one right-of-way to the other will provide the necessary looping and sizing required to service the proposed uses within Village Plan 1B. The following addresses each of the different utilities and any specific requirements for each:

CULINARY WATER

There is an existing 16-inch culinary water main located within Candlelight Drive that loops back to the existing Zone 2 water line located above the Grandview subdivision to the south. There are existing 8-inch culinary mains located within Lighthouse Drive, Ensign Drive and Herald Drive that will serve as a water loop around Village Plan 1B. An additional loop will be created by extending an 8-inch culinary water main interior to the project to serve the necessary fire line and fire hydrants required on-site. Water line sizes are consistent with those depicted in the Beacon Pointe Utility Master Plan. The proposed Village Plan 1B falls entirely within the Zone 2 water zone.

Fire Flow Requirements

A fire flow test has not been conducted in and around Village Plan 1B but could be completed following the completion of the Village Plan 1A infrastructure improvements. The expected fire flow available to Village Plan 1B is expected to be adequate with the connection and looping to the existing Zone 2 water zone to the south.

There are multiple proposed buildings within Village Plan 1B which vary in size and use. Building #1 is a multi-story, approximately 86,500 square foot, Type II-B structure with a fire flow requirement of 4,250-gpm as per the International Fire Code (IFC). The IFC allows for reductions to the fire flow requirement up to 75-percent when full sprinkler protection is provided. The Fire Chief for the City of Saratoga Springs requires a minimum 1,250-gpm as per City Code. Based on these criteria, a minimum flow of 1,250-gpm yields a 71-percent reduction with the proposed full sprinkler protection. It is anticipated that the 71-percent reduction will be accepted by the State Fire Marshal and local fire authority.

Building #2 is a single story, approximately 20,650 square foot, Type V-B structure with a fire flow requirement of 2,000-gpm as per the International Fire Code (IFC). The IFC allows for reductions to the fire flow requirement up to 75-percent when full sprinkler protection is provided. The Fire Chief for the City of Saratoga Springs requires a minimum 1,250-gpm as per City Code. Based on these criteria, a minimum flow of 1,250-gpm yields a 38-percent reduction with the proposed full sprinkler protection. It is anticipated that the 38-percent reduction will be accepted by the State Fire Marshal and local fire authority. This building also includes an accessory use structure for maintenance purposes that will not require additional fire flow above the stated amount listed above.

Water Demands

Based on estimations for the proposed uses, the following provides a breakdown of the anticipated plumbing fixtures within the proposed Village Plan 1B. The plumbing fixture requirements were based on the International Building Code (IBC) 2015, Section 2902.1. The following provides a summary of the anticipated uses:

Type	Fixtures Provided	wsfu per Fixture	Total wsfu
Lavatories	47	2.0	94.0
Water Closet	40	10.0	400.0
Urinal	7	5.0	35.0
Drinking Fountains	24	0.25	6.0
Laundry Unit	5	4.0	20.0
Service Sinks	5	3.0	8.0
Shower Head	4	4.0	16.0
Other Uses	2	4.0	6.0
Total Fixtures	134		585

A total of **585.0 wsfu** is equivalent to **14.6 Equivalent Residential Connections (ERCs)** (585.0/40) as per the Saratoga Springs Drinking Water Impact Fee Plan, Section 2.4, Existing Equivalent Residential Connections.

The anticipated demand for the proposed Village Plan 1B is approximately 134 fixtures. The architectural plans provide more specific detail to the types of fixtures that can be reviewed and compared to the standards set in the International Plumbing Code (IPC).

SECONDARY WATER

There is an existing 24-inch secondary water main located within Candlelight Drive that loops back to the existing Zone 2 water line located above the Grandview subdivision to the south. There are existing 6-inch secondary mains located within Lighthouse Drive, Ensign Drive and Herald Drive that will serve as a water loop around Village Plan 1B. There are no anticipated water loop planned interior to Village Plan 1B. The landscaping needs of the project will be served by existing secondary water laterals installed with Founders Plat A. Water line sizes are consistent with those depicted in the Beacon Pointe Utility Master Plan. The proposed Village Plan 1B falls entirely within the Zone 2 water zone.

Overall Water Demand

The following design criteria was used in determining the secondary water demand for the project:

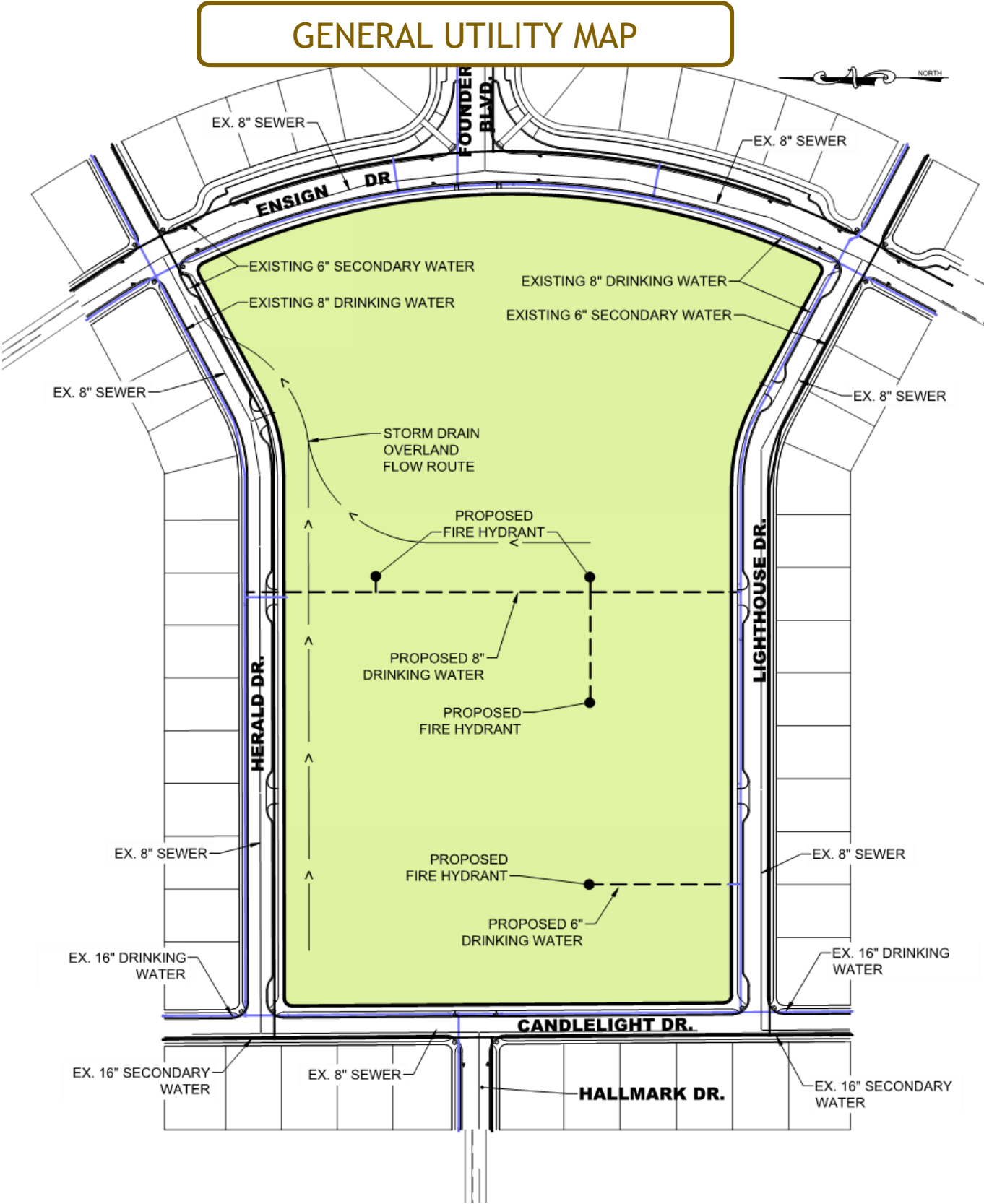
- Water Rights (WR) Required: 3.13 ac-ft/Irrigated Acre (IA) per year
- Storage Required: 9,216 gal/IA
- Peak Day Demand: 7.5 gpm/IA

The overall secondary water demand for source and storage is as follows:

Type of Use	Irrigated Area (acres)	Water Right Req'd (ac-ft/IA)	Total Water Right Req'd (ac-ft)	Storage Req'd (gal/IA)	Total Storage (gal)
Civic	5.9	3.13	18.47	9,216	54,374

SANITARY SEWER

There is an existing 8-inch sanitary sewer main located within Herald Drive and Lighthouse Drive that will collect the sanitary sewer waste for Building #1 and Building #2 of Village Plan 1B. Necessary sanitary sewer infrastructure and service laterals will be installed as per City Standards.



STORM DRAIN

A preliminary storm drain study in the Appendix A – Storm Drain Analysis was completed for the proposed Village Plan 1B and follows the design requirements provided within the Community Plan for Beacon Pointe. The proposed uses within the site have been evaluated on a preliminary basis to determine the best methodology to discharge from the site with little impact to the downstream system. The following provides a summary of the findings with the full report:

- All storm water runoff (10-year storm event) from the site will be collected using curb inlets or similar devices at various points within the project. The runoff will then be conveyed using pipes to the northeast corner of the project to a discharge point or pipe installed with Founders Plat A at Beacon Pointe.
- A total of 11.8 cfs will be discharged during a 10-year storm event which coincides with the allowed discharge specified in the Community Plan for Beacon Pointe. All downstream pipe has been sized to accept this stormwater discharge along with the surrounding area and convey runoff to two future detention basins downstream.
- A total of 26.6 cfs will be discharged during a 100-year storm event and will surface flow through the parking lots to the northeast corner of the project. A drainage swale will be installed within the landscaping and convey flows from the parking lot to the public right-of-way that will convey runoff for Founders Plat A of Beacon Pointe.
- Master planned and existing road extensions have been accounted for within the storm drainage model to drain undetained.
- The modeling is based on the latest storm drainage criteria provided by the City.

OFFSITE UTILITIES

There are no offsite utilities required with the improvement of the proposed Village Plan 1B. Each of the utilities discussed above are adjacent to the property as depicted in the General Utility Map.

TRANSPORTATION

The following addresses various elements related to the transportation design and service to the proposed Village Plan 1B and is in harmony with the City’s Transportation Master Plan. This includes design parameters for proposed roadways and cross sections as it is applicable to the site.

VEHICULAR AND PEDESTRIAN PLAN

Transportation and pedestrian access in and around Village Plan 1B is a key element for the Church and the proposed uses on the site. There are four existing right-of-ways located around the site. Transportation access points to the site are planned at seven different locations to the existing right-of-ways adjacent to the site: three on the north, three on the south and one on the west. These various access points have been strategically placed to spread the flow of traffic rather than concentrating at one or two points of access. There are major transportation corridors that will be constructed with Founders Plat A at Beacon Pointe on all sides of Village Plan 1B. It is anticipated with future planning that Ensign Drive and Hallmark Drive will serve as collector class transportation corridors with a right-of-way width of approximately 77-feet or larger. Herald Drive and Lighthouse Drive have been adjusted to 73-foot right-of-way that will accommodate street parking on the Special Project side of the development. Candlelight Drive is the smallest of the right-of-ways at 59-feet and follows the standards outlined by the City Standards and Specifications.

Pedestrian access to the site will be provided with connections to the existing 10-foot trail that surrounds Village Plan 1B. Main sidewalk routes ranging from 4 to 8-feet in width will be aligned with internal transportation corridors with additional sidewalks placed intermittently within the parking lot for access to parking stalls. Due to existing topography on the east end of the project, access will be limited to two separate 4-foot sidewalk routes that will meander up the terrain to the main level of the site.

ROADWAY SECTIONS

There are no proposed changes to the roadway sections already approved with the Community Plan for Beacon Pointe.

FIRE DEPARTMENT ACCESS

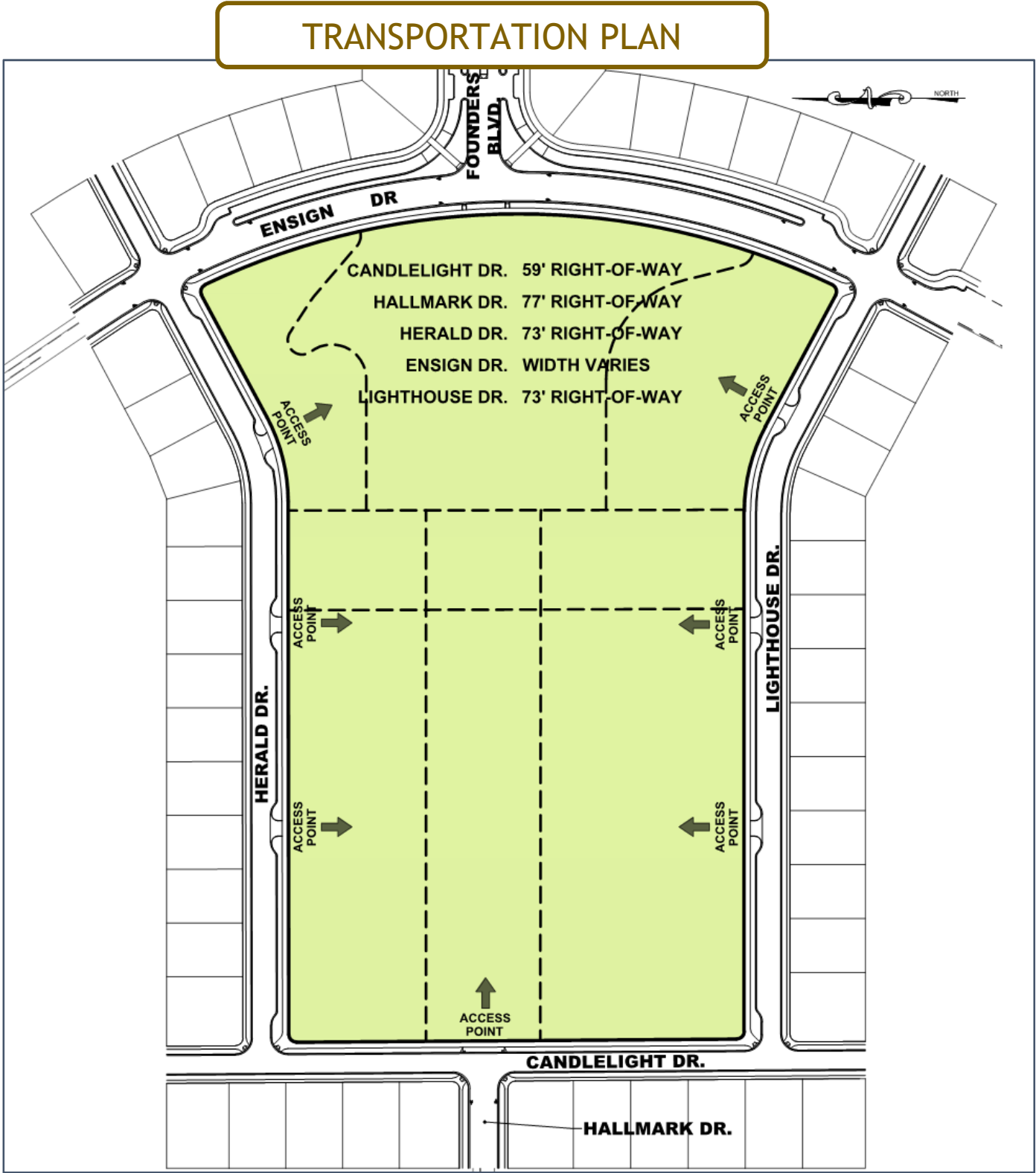
There are no proposed modifications to the City Standards and Specifications as it relates to the fire department accesses. The internal traffic circulation of the site will be addressed at the time of site plan approval with City Staff.

ROAD NAME AND ADDRESSING

As shown on the exhibit to the right, the main roadways have been named. The existing roadways around Village Plan 1B will remain the same as dedicated with Founders Plat A at Beacon Pointe: Ensign Drive (east), Herald Drive (north), Candlelight Drive (west), and Lighthouse Drive (south). No other additional roadways are planned internally to the property.

OFF-STREET PARKING

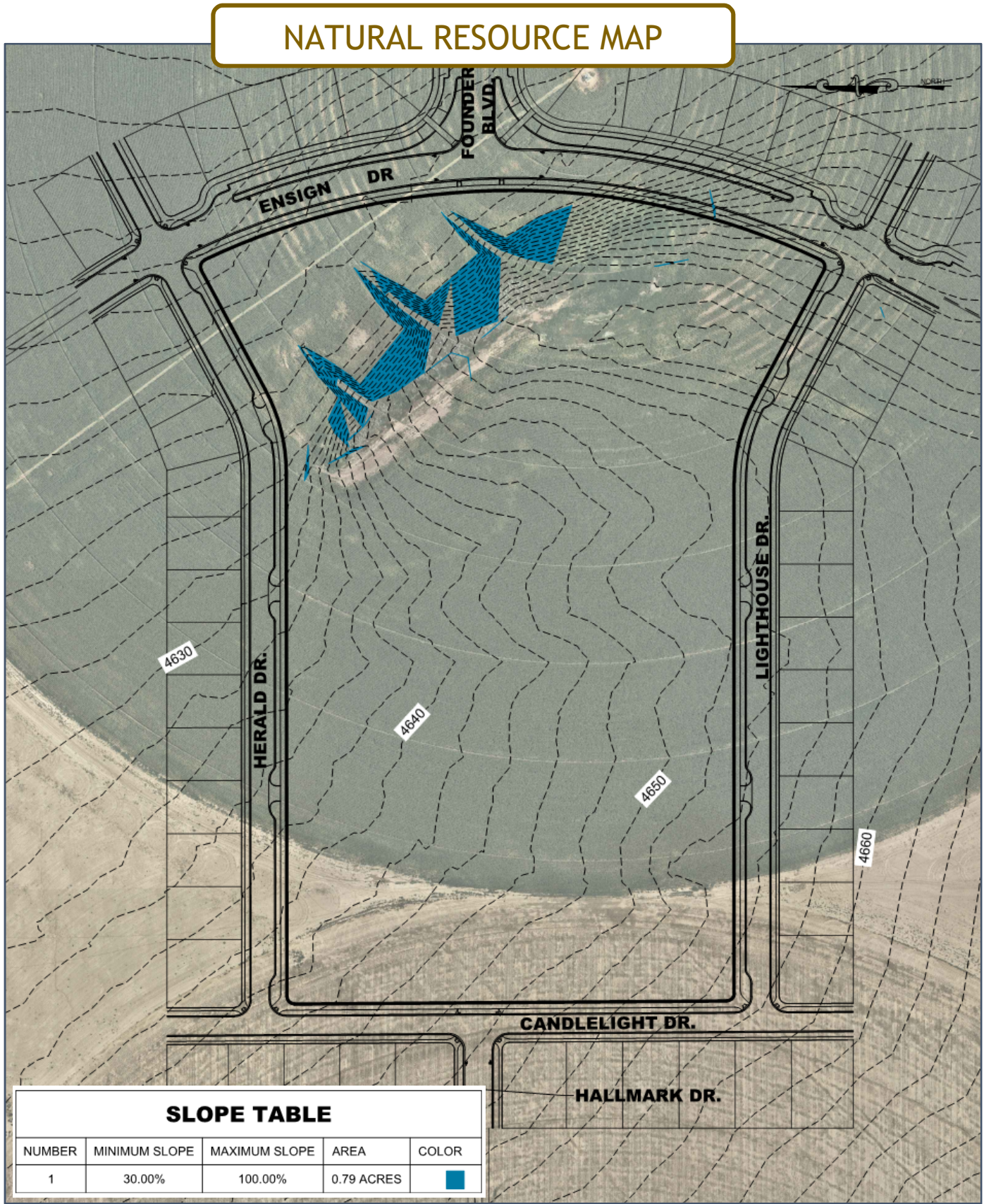
The anticipated parking layout and final quantity will be determined and based on requirements established internally by the Church of Jesus Christ of Latter-Day Saints. At a minimum, 6-stalls per 1,000-square foot of building floor area will be provided. The appropriate amount of accessible stalls will be provided as required by the International Building Code (IBC) and the Americans with Disabilities Act (ADA). The layout, quantity and placement of these stalls will be reviewed at the site plan submittal to the City.



ADDITIONAL ELEMENTS

The Natural Resource Inventory Map contains information regarding specific site elements such as:

- **Waterways.** There are no existing waterways traversing the site.
- **Geological Information.** Geological information has been obtained from Utah County Hazards Mapping as published by Utah County Public Works Department, in coordination with USGS, MAG and other applicable agencies:
 - o This area of the project falls within a low to moderate potential for liquefaction.
 - o No flood hazards have been identified. The project area is within flood zone “X” according to FIRM map 4955170115B, dated 17 July, 2002.
 - o No landslides hazards have been identified in the project site.
 - o No rock fall hazards have been identified in the project site.
 - o No wildfire hazards have been identified in the project site.
 - o No dam failure risks have been identified in the project site.
 - o No avalanche hazards have been identified in the project site.
- **Fault Lines.** According to Utah County Hazards Mapping as published by Utah County Public Works Department, no fault lines or fault ruptures are identified within the project.
- **General Soils Data.** A geotechnical investigation has been conducted on the development. Excerpts from the investigation include:
 - o Based on our observations, native soils consisted primarily of Lean CLAY (CL) and some SILT (ML) that was typically stiff to very stiff, moist and brown in color; Silty CLAY (CL-ML) was identified in some of the borings as well. Granular soils including Clayey GRAVEL (GC), Silty Clayey Gravel (GC-GM) Silty GRAVEL (GM) and Poorly Graded GRAVEL (GP) were also occasionally observed in some of the borings. Limestone bedrock was encountered in the two test pits excavated for this investigation and in several of the borings. Refusal was encountered in the borings when the limestone was encountered.
 - o Groundwater was not encountered in any of the borings completed for this investigation.
 - o In general, the native soil below a depth of 5 feet was observed to have a low potential for collapse, however, native soils were observed to have a moderate collapse potential in the upper 5 feet.
 - o Portions of the site contained shallow limestone bedrock that ranges in consistency from moderately weathered and easily excavated to competent, hard and intact that will have to be removed with the aid of rippers on a bull-dozer, hoe-ram, or potentially blasting.
 - o Footings may be established entirely on suitable, relatively undisturbed native soils encountered at a depth of 5 feet or more below the site grade or on a zone of structural fill that extends to suitable native soils. Footings founded in this manner may be proportioned for a maximum net allowable bearing capacity of **2,500 psf**. The maximum recommended net allowable bearing capacity can be increased to 3,200 psf if placed on a zone of structural fill with a minimum thickness of 24 inches.
 - o Various flexible (asphalt) and rigid (concrete) pavement sections have been prepared for parking lot, drives and heavy traffic areas that may be anticipated on the project as part of a future development. These pavement section designs have been completed for a 40-yr life expectancy and are summarized in Section 6.7 of this report.
 - o Active, at-rest and passive lateral earth pressure coefficients of 0.32, 0.48 and 3.12 respectively and seismic active and seismic passive lateral earth pressure coefficients of 0.62 and 2.54 respectively.



- o Concrete slabs-on-grade should be constructed over at least 6 inches of compacted gravel overlying a zone of structural fill that is at least 24 inches thick. The slab may be designed with a modulus of subgrade reaction of **175 psi/inch**.
- **Slopes.** There is approximately 0.83 acres of area greater than 30-percent slope that has been modified to allow for agricultural use. This area is considered man-made, isolated or without prevailing public benefit and may be graded as part of this development plan.
- **Statement of Findings.** A statement regarding the findings of this submittal can be found in the Findings section towards the end of the document.
- **Environmental Issues.**
 - o **Wetlands.** No wetlands or sources of surface or shallow groundwater have been identified in the project site.
 - o **Historical Sites.** No historical sites have been identified in the project site.
 - o **Existing Trees.** No existing trees are present on the site.
 - **Traffic Study.** A full traffic study has been included within Appendix B of the Community Plan.
- **Compliance Issues.**
 - o **Architectural Standards.** See the Design Standards provided in the following section.
 - o **Common Area Maintenance.** No common area maintenance is anticipated for this project.

CONCEPTUAL PLANS

- A. Wildlife Mitigation Plans.** The United States Fish and Wildlife Service has been contacted to determine whether there are any endangered species or wildlife that needs to be mitigated at this time. The Division responded and do not have any concerns due to the current agricultural use of the land.
- B. Open Space Management Plans.** All the proposed 6-acres of open space as discussed above will be owned and maintained by the Church of Jesus Christ of Latter-Day Saints including the approximate 4-acre landscaping located on the east side of the project. The planter islands within the City right-of-way along each property boundary will be owned by the City but maintained by the Church of Jesus Christ of Latter-Day Saints.
- C. Hazardous Material Remediation Plans.** No hazardous materials have been identified within the site. Should any hazardous materials be identified through further geotechnical investigation or site observation, acceptable mitigation must be completed prior to development.

DESIGN GUIDELINES

There are no proposed changes presented in these Design Guidelines that differ from the current City Code and Design Standards and Specifications. The following evaluates various design guideline items as required within the Community and Village Plan requirements:

- **Architectural Standards.** There are a total of three different buildings anticipated within Village Plan 1B. Each of the buildings will be described below with the general architectural standards anticipated with each use. Each building will be constructed of high-quality materials and have high quality architectural design. Final design and materials will be determined at the building permit phase and approved by City Staff. The grounds around these buildings will be beautifully landscaped with trees, shrubs, flowers and grasses. Village Plan 1B will be provided with exterior lighting that will safely and aesthetically illuminate the parking areas, plazas and walking paths.
 - o **Building #1.** This building shall be the temple for the Church of Jesus Christ of Latter-Day Saints and will be comprised of three floors above grade and a full basement. This building will have a tower which extends up to approximately 200-feet above the ground plan surrounding of the building. The structure of the building shall be constructed of a concrete basement/foundation, and steel framed post/beam floor and roof construction above grade. The exterior façade of this building is expected to be comprised of light to neutral colored architectural pre-cast panels. Large and small vertically oriented windows are placed around the exterior of the building and tower, and are expected to be artistically designed glass.
 - o **Building #2.** This building shall be a single-story religious meetinghouse building. The structure of this building will be comprised of concrete foundation with wood framed construction extending above grade. The exterior façade will be comprised of an earth-toned brick veneer masonry with pre-cast concrete accents, complimentary to the façade of Building #1. The roofing materials will be dark toned asphalt shingles with painted aluminum fascia. Windows will be painted aluminum with clear and translucent glazing throughout.
 - o **Building #3.** This small building will be located adjacent to Building #2 and will serve as a ground maintenance ancillary structure to the other two larger buildings. Exterior materials of this building will be complimentary to those described for the other buildings.
- **Floor Area Ratios** – The approximate anticipated building footprints on a 22.71 acre site produces an FAR of 0.20 maximum.

FINDINGS

The proposed Village Plan 1B is consistent with the goals, objectives and policies outlined within the District Area Plan (DAP) for Saratoga Springs. The DAP currently shows this area zoned for residential use and allows for civic uses similar to the proposed Village Plan 1B. Village Plan 1B will provide irreplaceable value and honor to the surrounding area with the combination of open space, high quality landscaping and beauty to the local community. In addition to these intangible qualities, the physical presence of Village Plan 1B with its abundance of manicured open space and architectural standards will create an amiable environment that can be enjoyed by all ages, young or old. The Church of Jesus Christ of Latter-Day Saints will do all they can to provide the civic service to the region and see this proposed Village Plan 1B as a worthy extension and symbol for those values within the City of Saratoga Springs.

APPENDIX A - STORM DRAIN ANALYSIS

Beacon Pointe

VILLAGE 1B STORM DRAIN ANALYSIS

May 7, 2019

Prepared By:



ENGINEERS
SURVEYORS
PLANNERS

3302 N Main Street
Spanish Fork, UT 84660
(801) 798-0555



DESCRIPTION OF DEVELOPMENT

The Beacon Pointe development site is to be located north of the existing Grandview subdivision, and west of Redwood Road, in Saratoga Springs, Utah. There is a total of approximately 372 acres in the proposed development. The development is to consist of residential housing, church areas, civic areas, parks, and other open space. The Village 1B area is to consist of church areas. The Village 1B area covers approximately 22.7 acres.

EXISTING STORM DRAINAGE FEATURES

There is no existing storm drain infrastructure that drains into this site. There is an existing storm drain stub that was installed with the Beacon Pointe Village 1A improvements that this phase will connect to.

ANTICIPATED DISCHARGE

A model was created using Autodesk Storm and Sanitary Sewer Analysis (SSA) for the proposed development. The model was set up based on the TR-55 methodology and City standards. This was done in order to estimate the peak flows that could be expected from the site.

The anticipated pervious and impervious areas were calculated for the site based on the design of the site. The pervious and impervious areas were assigned the curve numbers of 61 and 98 respectively.

The time of concentration was calculated based on the methodology outlined in the TR-55 design manual. The time of concentration was calculated from the hydraulically most distant point to the discharge point. The time of concentration calculations are shown in Table 1 below.

Table 1: Area Breakdown and Time of Concentration Calculations

Total Area (ac)	17.38	CN
Landscaping (ac)	6.22	61
Roof/Paving (ac)	11.16	98

Time of Concentration Calculations					
<u>T₁ - Sheet Flow (Landscaping/gutter)</u>					
Total Length	1300				
n ₁	0.13				
L ₁	100	ft			
S ₁	0.008	ft/ft			
<u>T₂ - Open Channel Flow (Pipe)</u>			T ₁	0.35	hr
L ₂	1200	ft	T ₂	0.09	hr
S ₂	0.005	ft/ft	T _t	0.44	hr
n ₂	0.013		T _t	26.45	min

The results from the SSA model for the total release from the 2-year, 10-year, and 100-year storm events are shown in Table 2.

Table 2: Village 1B Maximum Runoff Estimates

Storm Event	Maximum Runoff (cfs)
2-yr, 3-hr	6.19
10-yr, 3-hr	12.11
100-yr, 3-hr	26.68

As was previously mentioned, the runoff will be discharged into the existing outfall pipe installed with Village 1A. The storm drain report that was previously submitted for Village 1A including all upstream contributing areas including Village 1B. The storm drain stub that was installed for Village 1B was sized based on an assumed flow of 12.74 cfs, so it has capacity for the full 10-year discharge.

No detention is proposed for the Village 1B site. All downstream pipe infrastructure as well as the overall detention basins designed with Village 1A were sized to detain the runoff from this site as well as all future contributing areas.

The combined 10-year runoff from the Village 1A and 1B site is 28.43 cfs. Since this rate is lower than the maximum allowable runoff rate of 52.24 cfs, the detention basins that were designed with Village 1A will still not be constructed at this time. See the previously submitted Village 1A storm drain report for information on the sizing of these basins and well as the bypass pipes that will need to be routed in the future.

STORM DRAIN PIPE SIZING

The storm drain pipes are sized to convey the runoff from the 10-year storm event according to City standards. Any runoff in excess of the 10-year storm event will be conveyed by the parking lot and streets as overland flow. This overland flow will be directed to the detention basins that were sized for these flows with the Village 1A improvements.

CONCLUSION

A storm drain model was created using the SSA software to estimate the runoff from the Beacon Pointe Village 1B development area. The runoff from the development area will flow un-detained from the site into the storm drain infrastructure that was installed with Village 1A. The existing storm drain pipes installed with Village 1A were previously sized for the runoff from Village 1B. On-site pipe sizing calculations of Village 1B will be completed in the future.

APPENDIX A – SSA MODEL OUTPUT (10-YEAR STORM)

Project Description

File Name 10 YR V1B.SPF

Project Options

Flow Units CFS
Elevation Type Elevation
Hydrology Method SCS TR-55
Time of Concentration (TOC) Method User-Defined
Link Routing Method Kinematic Wave
Enable Overflow Ponding at Nodes YES
Skip Steady State Analysis Time Periods YES

Analysis Options

Start Analysis On Jan 01, 2017 00:00:00
End Analysis On Jan 02, 2017 12:00:00
Start Reporting On Jan 01, 2017 00:00:00
Antecedent Dry Days 0 days
Runoff (Dry Weather) Time Step 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step 0 00:05:00 days hh:mm:ss
Reporting Time Step 0 00:05:00 days hh:mm:ss
Routing Time Step 30 seconds

Number of Elements

Qty
Rain Gages 1
Subbasins..... 2
Nodes..... 1
 Junctions 0
 Outfalls 1
 Flow Diversions 0
 Inlets 0
 Storage Nodes 0
Links..... 0
 Channels 0
 Pipes 0
 Pumps 0
 Orifices 0
 Weirs 0
 Outlets 0
Pollutants 0
Land Uses 0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Rain Gage-03	Time Series	10-yr	Cumulative	inches				0.00	

Subbasin Summary

SN	Subbasin ID	Area	Weighted Curve Number	Total Rainfall	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ac)		(in)	(in)	(ac-in)	(cfs)	(days hh:mm:ss)
1	1B Direct Impervious	11.16	98.00	0.98	0.77	8.62	12.31	0 00:26:27
2	Sub-1B Per	6.22	61.00	0.98	0.00	0.00	0.00	0 00:26:27

Node Summary

SN	Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation	Ponded Area	Peak Inflow	Max HGL Elevation Attained	Max Surcharge Depth Attained	Min Freeboard Attained	Time of Peak Flooding Occurrence	Total Flooded Volume	Total Time Flooded
			(ft)	(ft)	(ft)	(ft)	(ft²)	(cfs)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-in)	(min)
1	Out-1	Outfall	0.00					0.00	0.00					

Subbasin Hydrology

Subbasin : 1B Direct Impervious

Input Data

Area (ac) 11.16
Weighted Curve Number 98.00
Rain Gage ID Rain Gage-03

Composite Curve Number

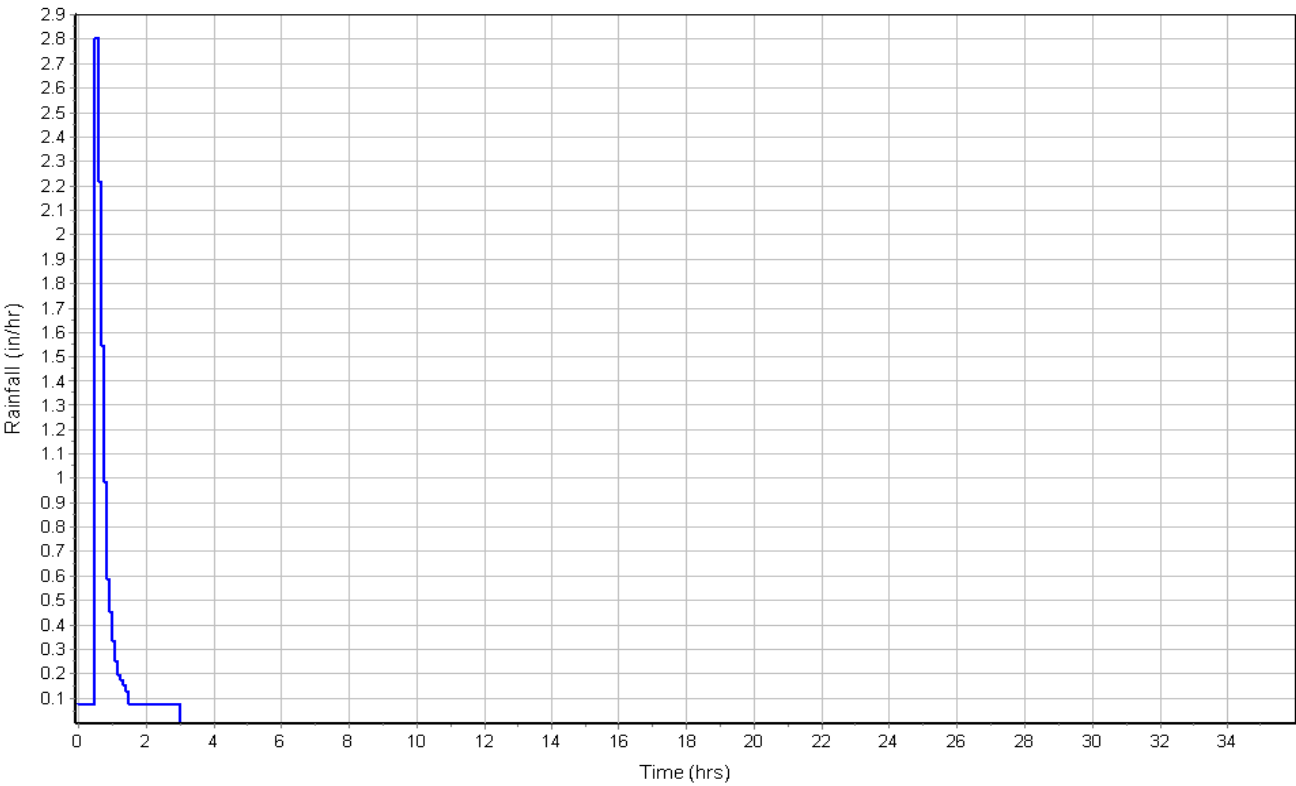
Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	11.16	-	98.00
Composite Area & Weighted CN	11.16		98.00

Subbasin Runoff Results

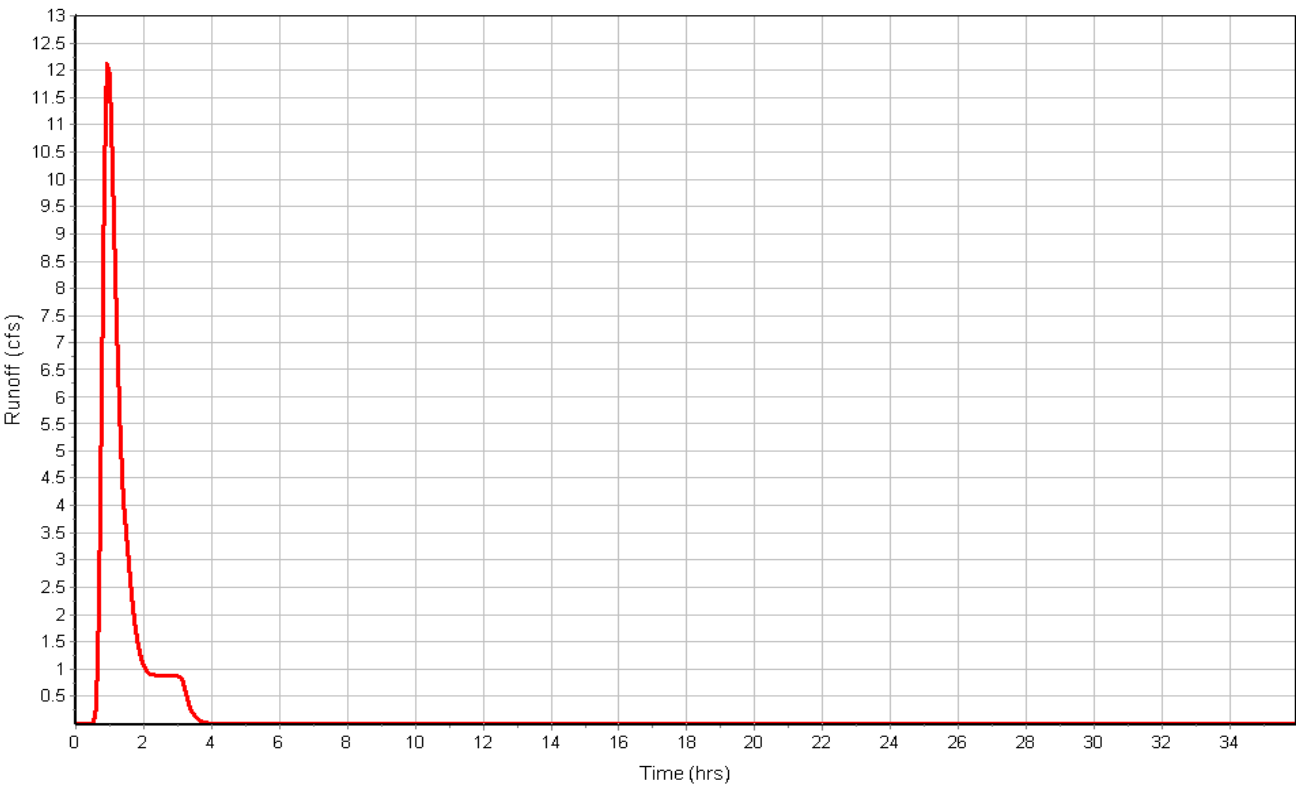
Total Rainfall (in) 0.98
Total Runoff (in) 0.77
Peak Runoff (cfs) 12.31
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:26:27

Subbasin : 1B Direct Impervious

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : Sub-1B Per

Input Data

Area (ac) 6.22
Weighted Curve Number 61.00
Rain Gage ID Rain Gage-03

Composite Curve Number

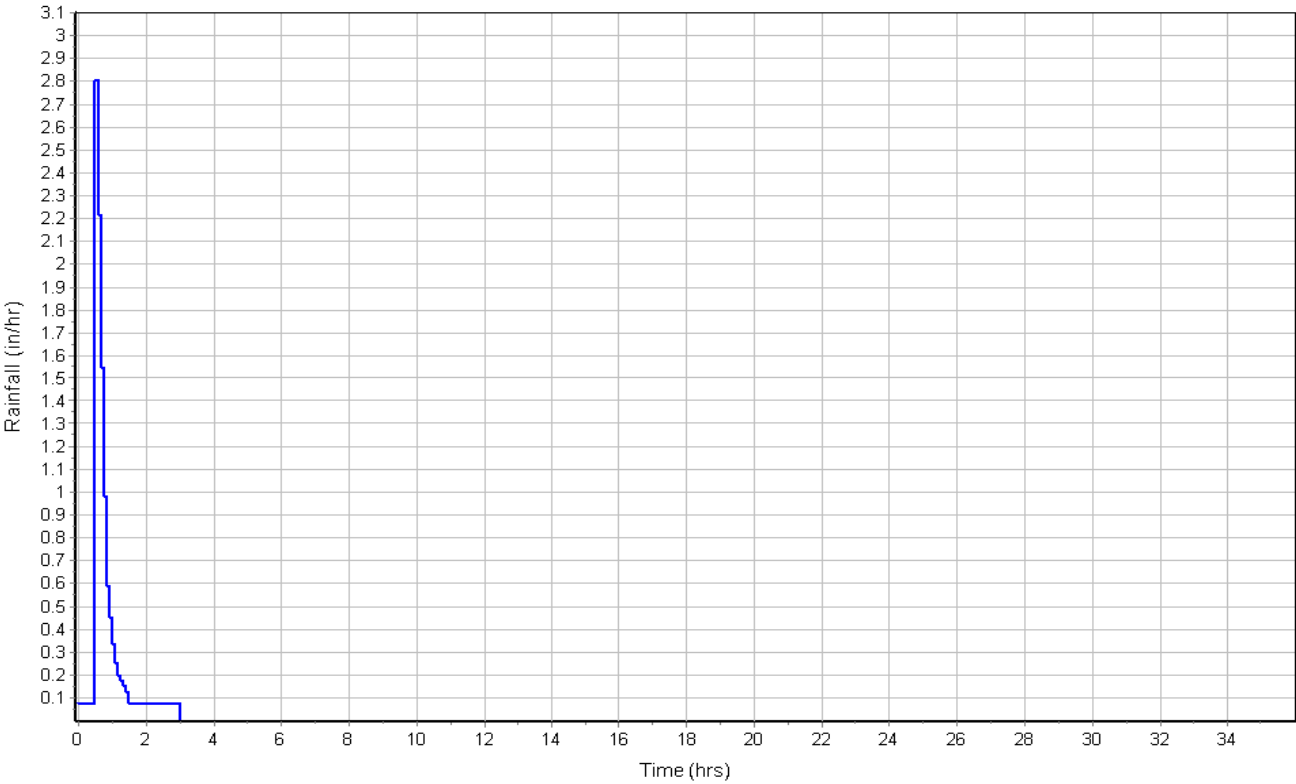
Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	6.22	-	61.00
Composite Area & Weighted CN	6.22		61.00

Subbasin Runoff Results

Total Rainfall (in) 0.98
Total Runoff (in) 0.00
Peak Runoff (cfs) 0.00
Weighted Curve Number 61.00
Time of Concentration (days hh:mm:ss) 0 00:26:27

Subbasin : Sub-1B Per

Rainfall Intensity Graph



Runoff Hydrograph

