
**WATER EFFICIENCY PLAN FOR
COLORADO 382 ALEXANDER PLACE**

WEP19-0001
PDP-17-0001

July 20, 2016
Revised February 12, 2019
Revised May 7, 2019
Revised July 2, 2019
Revised August 29, 2019

Prepared for:

Town of Castle Rock
Castle Rock Water
175 Kellogg Court
Castle Rock, Colorado

Prepared by:



Dewberry®

| **J3**

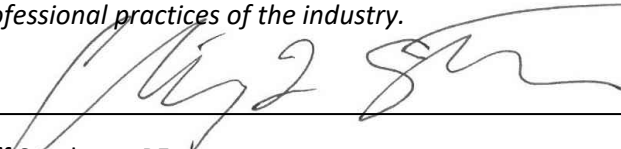
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Job No. 552001/50110779

**Water Efficiency Plan for
Colorado 382 Alexander Place**

Engineer's Certification

"This Water Efficiency Plan for the Colorado 382 Alexander Place development was prepared by me or under my direct supervision in accordance with the Town of Castle Rock's guidance and acceptable professional practices of the industry."



Cliff Stephens, PE,
Licensed Professional Engineer
State of Colorado
No. 38975

8/29/2019

Date

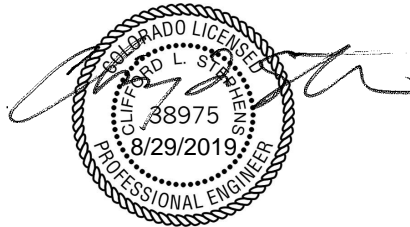


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A. PURPOSE

The purpose of this Water Efficiency Plan is to provide a guide for the developer to use in maximizing water efficiency for the development. The narrative provides a description of the project, methodology utilized for analyses and a recommended impact fee assessment.

B. GENERAL LOCATION AND DESCRIPTION

1. Location of Property

The property lies in the SE 1/4 of the NW 1/4 of Section 26, Township 7 South, Range 67 West of the 6th Principal Meridian, and in the SW 1/4 of the NE 1/4 of Section 26, Township 7 South, Range 67 West of the 6th Principal Meridian in Douglas County, State of Colorado (Vicinity Map Appendix I).

The property comprises approximately 8.37 acres currently unincorporated in Douglas County. It is bounded on the west by Lots 3 and 4, Montana Vista Subdivision, on the south by Tract D, Metzler Ranch Filing 3 Subdivision, on the north by Lot 4 Block 12, Cooper-Hook Main Place Filing 1 Subdivision, and on the east by a single family residence on 6.75 acres in unincorporated Douglas County.

2. Description of the Proposed Project

Phase 1 of the project consists of 26 age restricted single family attached units, and 63 age restricted multi-family units on the eastern 5.62 acres of the property. A future Phase 2 on the western 1.72 acres of the property will consist of a 36 bed assisted living facility and memory care unit.

C. WATER SYSTEM CHARACTERISTICS

1. Existing Supply

The proposed Alexander Place development will be served by the Town of Castle Rock's potable water system via an existing 12 inch water main located just west of the site.

2. Proposed Facilities

All water facilities on-site will be constructed according to the current Town of Castle Rock Water and Wastewater Design Criteria Manuals.

3. Irrigation Demand

Landscaping will have landscape and irrigation designs that exceed the current Town of Castle Rock landscape and irrigation standards outlined in the Landscape and Irrigation Performance Standards and Criteria Manual Section 4.2.4A, and will promote efficient water use, enhance environmental sustainability while providing exceptional aesthetics and quality of life. Total yearly irrigation demand for the project is projected at 1.37 ac-ft.

D. WATER USAGE PERFORMANCE STANDARDS

1. Indoor Water Efficiency

Single-family detached homes will be constructed according to the following indoor criteria. Minimum Standards per the Town of Castle Rock's Minimum Water Efficiency Standards will be required to be met. The standards listed below are largely based on the U.S. Environmental Protection Agency's WaterSense Version 1.1 New Home Specification; however, the values may be adjusted to reflect new technologies and updates to the WaterSense program.

1.1. Service Pressure

- 1.1.1. Limited to 60 pounds per square inch (psi) at the point of service.

1.2. Toilets

- 1.2.1. WaterSense labeled, less than or equal to 1 gallon per flush (gpf).

1.3. Urinals

- 1.3.1. WaterSense labeled, less than or equal to 0.5 gpf.

1.4. Kitchen Faucets

- 1.4.1. Less than or equal to 1.5 gallons per minute (gpm).

1.5. Bathroom Faucets

- 1.5.1. WaterSense labeled, less than or equal to 1.2 gpm.

1.6. Showerheads

- 1.6.1. WaterSense labeled, less than or equal to 1.5 gpm per showerhead.

1.7. Clothes Washers

- 1.7.1. Energy Star labeled, less than or equal to 6.0 gallons/cycle/cubic foot.
(Water Factor of 6 or less. $WF = \text{total consumption per cycle} / \text{capacity}$)
Required if financed, installed, or sold as upgrades through the homebuilder.

1.8. Dishwashers

- 1.8.1. Energy Star labeled, less than or equal to 4.25 gallons/cycle.

1.9. Installed recirculation systems will be demand-initiated.

1.10. Leak Detection

- 1.10.1. Provide continuous flow monitoring device such as Flo by Moen.

2. Outdoor Water Efficiency

2.1. Landscape Design

- 2.1.1. All front and rear yards will be designed and installed by the builder.

- 2.1.2. The following requirements shall apply to all residential landscapes:

- 2.1.2.1. Turf types shall not include Kentucky Bluegrass varieties.
Allowable turf type shall include turf species that can survive on 15" or less of supplemental irrigation per year. Allowable turf species shall be approved by the Town.

- 2.1.2.2. Maximum turf areas shall not exceed the following for the listed lot size in square feet (sf):

- 2.1.2.2.1. Lots up to 7,000 sf: 30%.
- 2.1.2.2.2. Lots between 7,001 sf and 17,000 sf: 20%.
- 2.1.2.2.3. Lots over 17,001: 20% not to exceed 5000 sf..

2.1.2.2.5. Note - Maximum turf areas for lot sizes which do not meet these specific sizes shall be adjusted based on a % ratio of similar lot sizes with Town approval.

2.1.2.2.6. In no case shall maximum turf areas exceed the limits of this Water Efficiency Plan or the maximum allowed under the Town's Landscape and Irrigation Performance Standards and Criteria.

2.1.2.3. 100% Xeriscape landscapes are allowed but must provide a minimum coverage of plant materials of 75% at 5 year maturity in front yards and side yards when adjacent to streets. Rear yards shall have a minimum of 40% plant coverage at 5 year maturity. The remainder of yard coverage can be composed of mulches, aggregate surfacing, artificial turfs or hardscape. All plants used in xeriscape are to be low to very low hydrozones per the Town of Castle Rock plant list.

2.2. Irrigation Design

2.2.1. Residential Irrigation designs shall follow the Town of Castle Rock Landscape and Irrigation Performance Standards and Criteria Manual. Refer to Sections 4 and 6 for specific requirements. Additional requirements shall include:

2.2.1.1. Controllers: Automatic irrigation system controllers shall be Town Approved weather based (ET) or soil-moisture based, that automatically adjust irrigation in response to changes in plants' needs as weather conditions change or soil moisture changes.

2.2.1.1.1. Automatic irrigation system controllers shall be WaterSense Labeled or approved by the Town.

2.2.1.1.2. Weather-based (ET) controllers without integral rain sensors shall have a separate wired or wireless rain sensor. Rain sensor must not be bypassed, and must remain fully operational.

2.2.1.1.3. Smart controllers equipped with integrated rain sensor, flow sensors and master valves shall be used.

2.2.1.1.4. Controllers shall have a minimum of 3 programs or schedules and a minimum of 3 start times per each schedule or program.

2.2.1.2. Sprinkler Heads: Pop-up or rotor heads that utilize high efficiency spray nozzles designed with head to head coverage per the Town of Castle Rock's Landscape and Irrigation Performance Standards. This may include conventional rotors, stream rotators or high efficiency pop-up spray nozzles. The DU must be verified by third-party tests.

2.2.1.2.1. Minimum pop-up height must = 6", 12" minimum for native areas.

- 2.2.1.2.2. Sprinkler bodies shall have built in pressure regulating stems and check valves
- 2.2.1.2.3. Maximum spacing for the sprinkler heads to be head to head at 90% of max. spray radius.
- 2.2.1.2.4. The turf may use a combination of pop-up sprays on areas 25' or less and short to medium range rotors in areas greater than 25'.
- 2.2.1.2.5. Traditional fixed and traditional variable arc spray nozzles are not allowed.
- 2.2.1.2.6. Pop-up spray nozzles cannot be zoned together with multi- trajectory rotating stream nozzles or traditional rotor heads.
- 2.2.1.3. Drip Irrigation: the use of a drip system will be used in all shrub bed areas, no spray type irrigation will be allowed. Minimum requirements are:
 - 2.2.1.3.1. Pressure compensating emitters
 - 2.2.1.3.2. Pressure regulation at the control valve assembly (min. of 20 PSI, max. 40 PSI)
- 2.2.1.4. Filtration at the control valve assembly (min. 200 mesh)

3. Resident Education

- 3.1. The developer/builder shall create educational materials to be provided to residents. Educational program will be approved by the Town and will contain information pertinent to the Water Efficiency Plan, water budget rate structure, and specific water conservation measures including, but not limited to, soil preparation appropriate for existing conditions and selected plant materials, smart irrigation controllers, and high efficiency sprinkler heads and nozzles.
- 3.2. Residents shall receive personal training on the care and operation of the irrigation system and plant material by the installing contractor. This shall include controller operations and programming, locations of shut off valves, rain sensors, flow sensors, mastervaults, hot water circulation, whole house flow monitoring system, winterization need, watering days as determined by address, and expected plant material watering needs.
- 3.3. Residents shall be provided seasonal education by the community for spring, summer, fall, and winter maintenance, care and waterwise conservation. This shall include presentations supplemented by written materials.
- 3.4. Residents shall be educated regarding installed indoor and outdoor water efficiency measures, including relationships with water budgets and billing rates. Education will be accomplished through the personal training and community training described above.
- 3.5. All financial costs and responsibility for implementation of the educational components shall be borne by the developer/builders.

E. VERIFICATION

The Water Efficiency Plan requires each completed home, landscape and irrigation system be inspected by a Town approved 3rd party inspector. The 3rd party inspector shall certify that all homes, landscapes and irrigation systems are being constructed in compliance with the standards outlined in the Design Guidelines.

1. Indoor Water Efficiency Standards

As part of the building permit application, builders will be required to submit detailed information regarding the specific high-efficiency fixtures and appliances being installed in each unit and to verify that they meet or exceed the indoor Design Guidelines. A sample verification checklist is provided in the Appendix. Third party inspection must be submitted prior to Certificate of Occupancy.

2. Outdoor Water Efficiency Standards

In accordance with the Town's existing Landscape and Irrigation Performance Standards and Criteria Manual, a landscape and irrigation plan must be completed for each residential unit. Each submittal will be compared to the Design Guidelines to ensure compliance with the Alexander Place water efficiency standards. Each submittal will be compared to the irrigated turf and outdoor water budget restrictions to ensure compliance with the minimum stated standards. The submittal shall include the name of the Town-registered landscape and irrigation contractors. A sample verification checklist is provided in the Appendix. If landscape or irrigation does not pass a third party inspection, the water rights deduction (SFE) will be adjusted accordingly.

F. ESTIMATED WATER DEMANDS

1. Residential Water Demand

Residential water use estimates were calculated using Monterey Peninsula Water Management District's (MPWMD) Rule 24 – Calculation of Water Use Capacity and Capacity Fee. per the direction of Castle Rock Water Department. Rule 24 uses a fixture unit methodology for estimating residential demands, and a water use factor methodology for estimating commercial demands. This was used to determine a baseline demand for the entire development in acre feet per year (See Appendix IV, Page 24-6).

Using Rule 24 from MPWMD a yearly demand of 9.84 acre-feet was calculated. Checking this calculation using a rough demand of a half an acre foot per household (including irrigation) used by many water planners equals 13 acre feet for 26 units. An additional check assumes indoor use for a typical household of 100 gallons per capita per day, or 9.3 acre feet for 26 units assuming 3.2 people per unit. The 2010 census for Monterey County indicates a household size of 3.24 people. Thus the calculation outline in rule 24 appears reasonable for a single family detached household. However,

in a study on the impacts of 55+ communities done by the National Association of Home Builders, an average household size for ages 55 and over in Colorado was found to be 1.68 people (Appendix IV Table A-1A) . A reasonable assumption would be to proportion the yearly demand as calculated by Rule 24 by the projected actual household size of the proposed development versus household size in Monterey County. This indicates an annual demand of 5.102 acre feet per year. Using Castle rock Water's design guideline of 400 gpd per household, this equates to 2.30 Single Family Equivalents (SFE's)

2. Assisted Living/Memory Care Component

Rule 24 assumes usage based on number of beds in the facility (Appendix IV, Table 2). This calculates to a demand of 3.72 acre feet per year. This appears to be a reasonable demand. This equates to 1.67 SFE's.

3. Irrigation Component

The table below calculates irrigation usage for the overall site. Turf shall be a moderate water use blend.

Total Acreage (ac)	Building Area (ac)	Hardscape Area (ac)	Landscape Area (ac)
8.37	2.46	2.16	3.75

Landscape Type	Percent of Landscaping	Acreage	Water use/yr (in)	Water Use/yr (ac-ft)	Water Use/yr (SFE's)
Low Water Turf	7.2	0.27	10.00	0.23	0.10
Xeriscape	32.8	1.23	10.00	1.03	0.46
Non-irrigated	60.0	2.25	0.00	0.00	0.00
Total		3.75		1.25	0.56

G. CONCLUSIONS

By following industry standard design guidelines and industry water conservation practices, total annual water use for the project is estimated at 10.07 acre feet per year, or 4.53 SFE's.

H. REFERENCES

1. Rule 24, Monterey Peninsula Water Management District
2. Town of Castle Rock Landscape and Irrigation Performance Standards and Criteria Manual
3. *Approving 55+ Housing: Facts That Matter*; National Association of Home Builders
4. Town of Castle Rock Minimum Standards for Water Efficiency Plans
5. Town of Castle Rock Landscape and Irrigation Performance Standards and Criteria, April, 2018.

APPENDIX I – VICINITY MAP



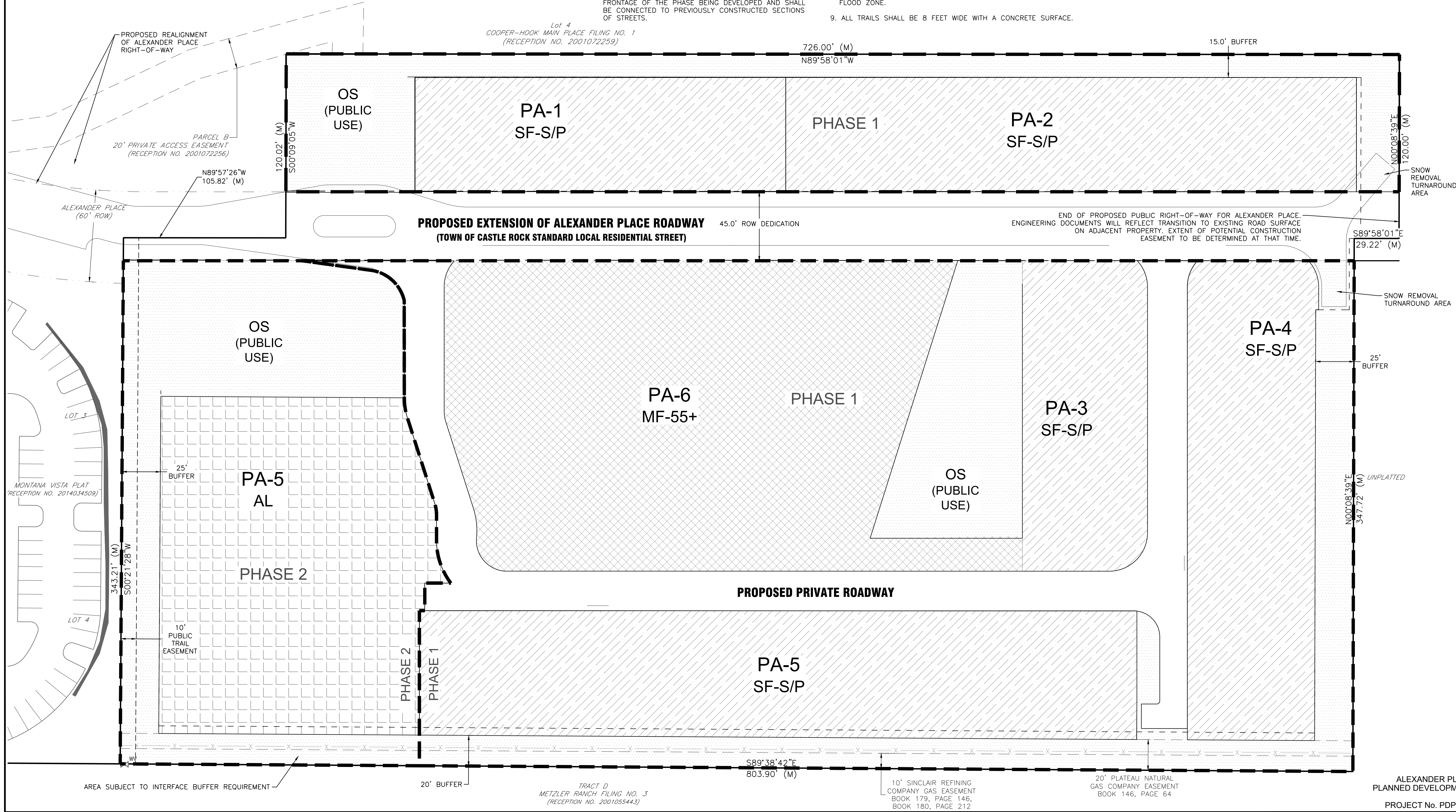
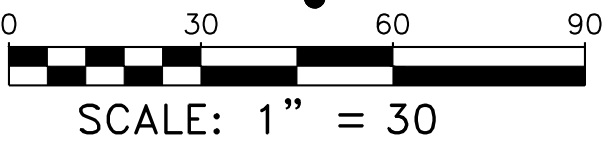
Map data ©2016 Google 500 ft

APPENDIX II – SITE PLAN

ALEXANDER PLACE
PLANNED DEVELOPMENT PLAN & ZONING REGULATIONS
LOCATED IN THE NORTH ONE-HALF OF SECTION 26, TOWNSHIP 7 SOUTH, RANGE 67 WEST,
OF THE 6TH PRINCIPAL MERIDIAN, TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO
TOWN OF CASTLE ROCK PROJECT No.: PDP17-0001

LEGEND	
	OS - PUBLIC OPEN SPACE AREA: 1.80 ACRES±
	SF-S/P SINGLE/PAIRED COTTAGES AREA: 2.91 ACRES±
	MF 55+ 55+ RESIDENTIAL APARTMENTS AREA: 1.42 ACRES±
	AL ASSISTED LIVING, REGULAR AND MEMORY CARE AREA: 0.87 ACRES±

- GENERAL NOTES:
- STREETS AND ACCESS POINTS ARE CONCEPTUAL IN NATURE. REFINED LOCATIONS WILL BE IDENTIFIED IN THE SDP AND CDs. PROPOSED STREET SECTIONS TO MEET THE TOWN OF CASTLE ROCK ROADWAY DESIGN AND SPECIFICATIONS MANUAL, 2012.
 - PLANNING AREAS ARE DEPICTED FOR GRAPHICAL PURPOSES AND MAY CHANGE IN SIZE SO LONG AS THE OVERALL OPEN SPACE REQUIREMENTS ARE MAINTAINED. RESIDENTIAL/NONRESIDENTIAL INTERFACE REGULATIONS SHALL APPLY WHERE ALEXANDER PLACE IS ADJACENT TO COMMERCIAL DEVELOPMENT.
 - UNLESS OTHERWISE NOTED THE FULL CROSS SECTION OF STREETS SHALL BE CONSTRUCTED ALONG THE ENTIRE FRONTAGE OF THE PHASE BEING DEVELOPED AND SHALL BE CONNECTED TO PREVIOUSLY CONSTRUCTED SECTIONS OF STREETS.
 - THE DEVELOPER IS RESPONSIBLE TO MAINTAINING ALL TEMPORARY EMERGENCY VEHICLE ACCESSES, ROUTES AND GATES, INCLUDING SNOW REMOVAL.
 - ALL PUBLIC LAND DEDICATIONS SHALL BE MADE AT THE TIME OF THE FIRST PLAT, ADJACENT TO THE PLD REGARDLESS OF THE PHASE SEQUENCE.
 - AMENDMENTS TO THIS PHASING PLAN MAY BE APPROVED ADMINISTRATIVELY AS DETERMINED BY THE DEVELOPMENT SERVICES DIRECTOR.
 - TURNAROUND AREAS PER TOWN CRITERIA SHALL BE PROVIDED WHEN A ROADWAY ENDS AT AT PHASE LINE OR INTERIM TERMINUS.
 - FEMA FIRM MAP NUMBER 08035C0186G, REVISED MARCH 16, 2016. THE PROJECT AREA IS CURRENTLY IN THE ZONE X (UNSHADED) FLOOD ZONE.
 - ALL TRAILS SHALL BE 8 FEET WIDE WITH A CONCRETE SURFACE.



ENGINEERS SURVEYORS

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710 WEST COLFAX AVENUE
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PLANNED DEVELOPMENT PLAN

SITE: ALEXANDER PLACE

FOR: MARTINEZ REAL ESTATE COMPANY, LLC
599 TOPEKA WAY
CASTLE ROCK, CO 80104

REVISIONS					

Plot Scale 1: 1

Job No. RM15118

Date 06/20/2019

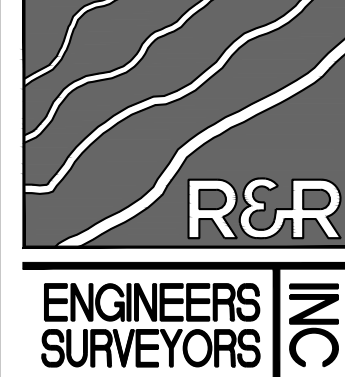
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ALEXANDER PLACE
PLANNED DEVELOPMENT PLAN
PROJECT No. PDP17-0001

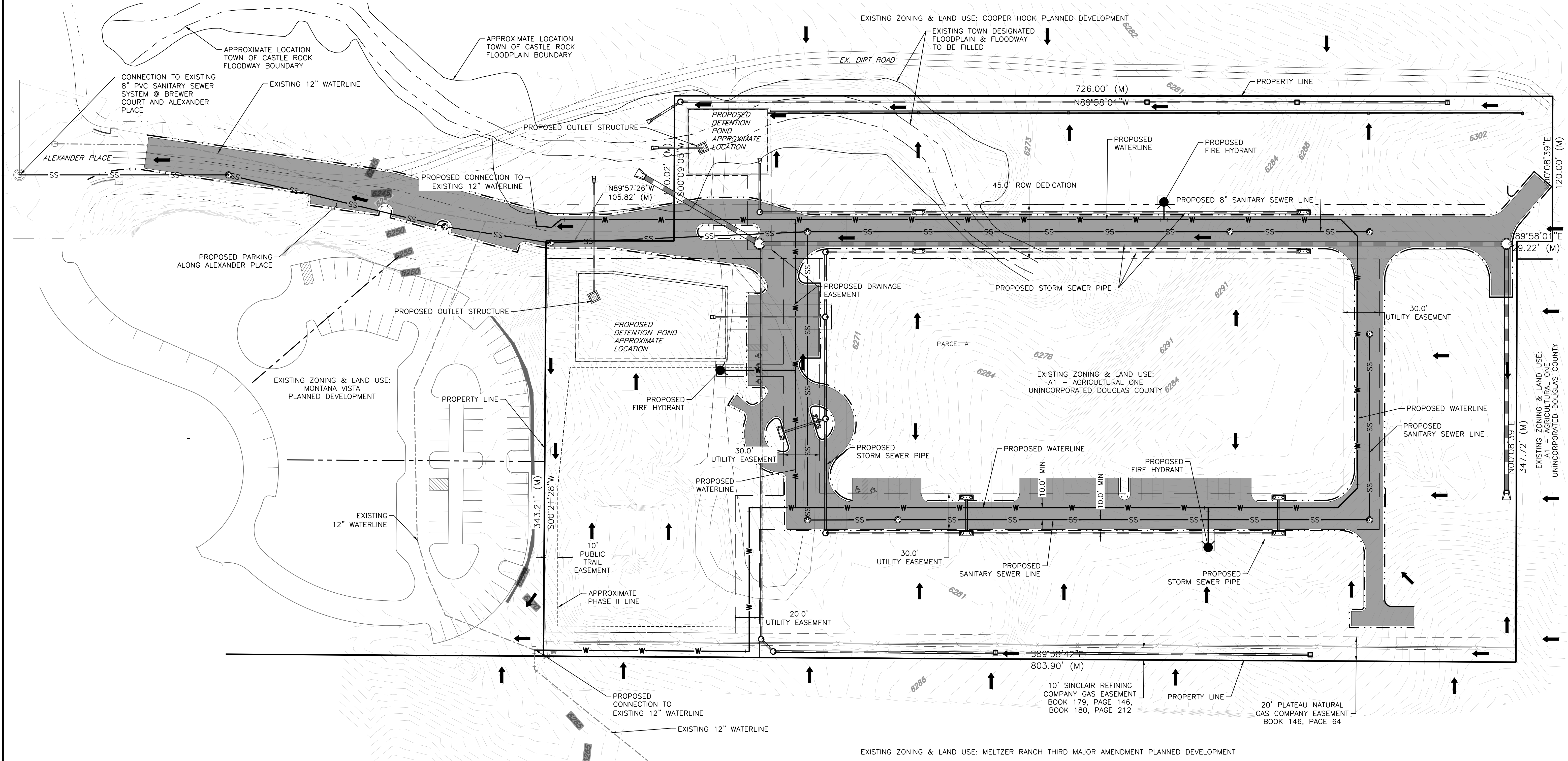
PAGE 2 OF 4

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TOWN OF CASTLE ROCK PROJECT No.: PDP17-0001



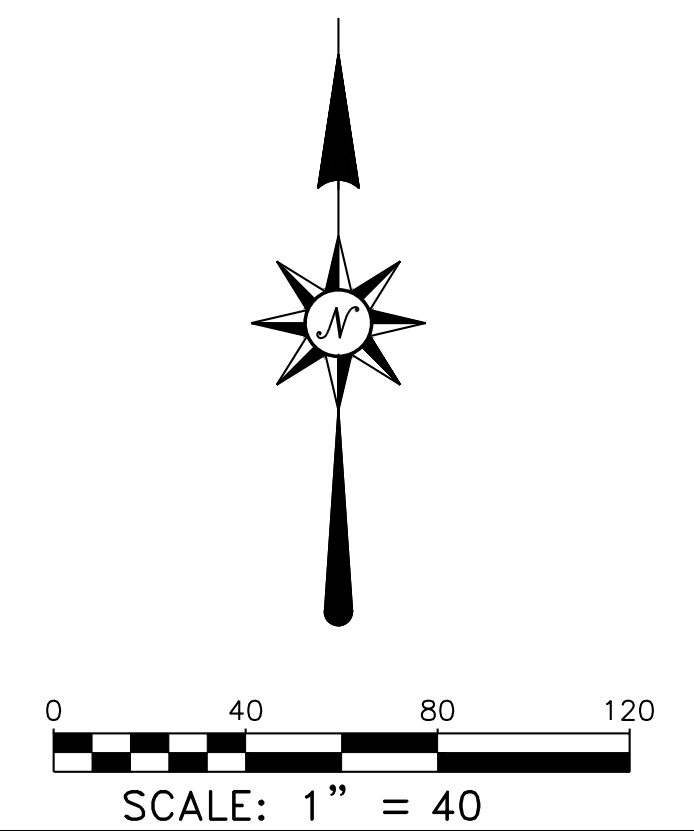
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LEGEND

	PROPERTY LINE		PROPOSED WATERLINE		PROPOSED (UNDERGROUND) ELECTRIC LINE		EXISTING/PROPOSED STORM INLET *
	LOT LINE		EXISTING WATERLINE		EXISTING (UNDERGROUND) ELECTRIC LINE		PROPOSED STORM FLARED END SECTION *
	PROPOSED EASEMENT/SETBACK		PROPOSED STORM SEWER		PROPOSED WATERLINE BEND *		EXISTING/PROPOSED SANITARY MANHOLE *
	EXISTING EASEMENT/SETBACK		EXISTING STORM SEWER		PROPOSED WATERLINE TEE/CROSS *		EXISTING/PROPOSED CLEAN OUT *
	SECTION LINE		PROPOSED PHONE LINE		PROPOSED WATERLINE PLUG & CAP *		UNDERGROUND UTILITY CROSSING
	EXISTING RIGHT-OF-WAY		EXISTING COMMUNICATIONS LINE		EXISTING/PROPOSED FIRE DEPARTMENT CONNECTION *		DRAINAGE ARROW
	PROPOSED SAWCUT LINE		PROPOSED FIBER OPTIC LINE		EXISTING/PROPOSED REDUCER *		PROPOSED SANITARY SEWER LINE
	PROPOSED LIMITS OF CONSTRUCTION		EXISTING FIBER OPTIC LINE		EXISTING/PROPOSED GATE VALVE *		
	PROPOSED CURB		PROPOSED GAS LINE		EXISTING/PROPOSED WATER METER *		
	PROPOSED FLOW LINE		EXISTING GAS LINE		EXISTING/PROPOSED FIRE HYDRANT *		
	PROPOSED PAN/LIP		PROPOSED OVERHEAD ELECTRIC LINE		EXISTING/PROPOSED STORM MANHOLE *		
	EXISTING CURB TO REMAIN		EXISTING OVERHEAD ELECTRIC LINE				
	EXISTING FLOW LINE TO REMAIN						
	EXISTING PAN/LIP TO REMAIN						



ALEXANDER PLACE
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PROJECT No. PDP17-0001

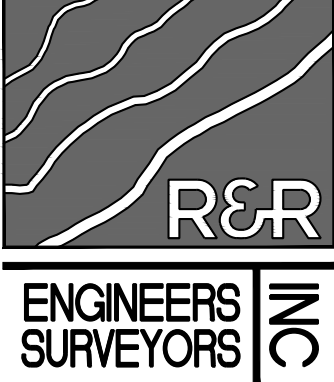
SITE PLAN

SITE: ALEXANDER PLACE
FOR: MARTINEZ REAL ESTATE COMPANY, LLC
599 TOPEKA WAY
CASTLE ROCK, CO 80104

REVISIONS

Plot Scale: 1"	
Job No. RM15118	
Date 06/20/2019	
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TOWN OF CASTLE ROCK PROJECT No.: PDP17-0001



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ZONING REGULATIONS
SITE: ALEXANDER PLACE
FOR: MARTINEZ REAL ESTATE COMPANY, LLC
599 TOPEKA WAY
CASTLE ROCK, CO 80104

REVISIONS

Plot Scale: 1:
Job No. RM15118
Date 06/20/2019
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SECTION 1
GENERAL PROVISIONS

1.1 Adoption/Authorization
On _____, pursuant to Section 17.____ of Title 17 (Zoning) of the Castle Rock Municipal Code (the “**Zoning Code**”), after appropriate public notice and hearing, the Town Council adopted the Alexander Place Senior Living PDP and Zoning regulations.

1.2 Applicability
The Alexander Place Senior Living PDP and Zoning Regulations, as approved by the Castle Rock Town Council shall run with and bind all landowners of record, their successors, heirs and assigns.

1.3 Maximum level of Development
The total number of dwelling units and apartments approved for development within the established planning areas will be the allowable cap as indicated in the Development Standards Chart in Section 6 of this document. The actual number of dwelling units and apartments will be determined at the Site Development/Plat stage of review, based upon environmental constraints, utility and street capacity, compatibility with surrounding land uses and other elevations.
A Development Standards Chart is illustrated in Section 6 below.

1.4 Relationship to Town Regulations
The provisions of the this PD plan and zoning shall prevail and govern the development of the Alexander Place PDP and Zoning regulations provided however, that in those instances where the provisions of the Alexander Place Senior Living PDP and Zoning regulations do not address a particular subject, the relevant provisions of the Town Municipal Code shall be applicable.

1.5 Severability of Provisions
If any provision hereof shall be determined to be illegal or void by the final order of any court of competent jurisdiction, the remaining provisions shall remain in full force and effect.

SECTION 2
DEVELOPMENT AGREEMENT

In addition to these regulations, certain provisions of the development of this property are controlled by an agreement between the Town of Castle Rock and the PD property owner(s).
This agreement entitled _____, was adopted by the Town of Castle Rock on the ____ day of _____ 2019, by Ordinance No ____.

SECTION 3
SITE DEVELOPMENT PLANS AND PLATS

Following approval of Alexander Place Senior Living PDP and Zoning regulations, the property owners shall submit a Site Development Plan (an “SDP”) for all or any portion or portions of the use areas as are then ready for development. No building permit will be issued until an SDP and subdivision plat have been approved

SECTION 4
DEFINITIONS

In addition to the definitions found in Title 17 of the Zoning Code, the following definition of terms shall apply to this planned development. If any conflict shall arise, these definitions shall govern:

4.1 Age Restricted Housing is defined by the Housing for Older Act (HOPA) of 1995 as housing intended and operated for occupancy by persons fifty-five (55) years of age or older. A minimum of 80% of the occupied units designated as age-restricted must be occupied by at least one (1) person fifty-five (55) years or older.

4.2 Assisted Living for Seniors is defined as housing for individual dwellings (multifamily residences) for seniors, age restricted to those fifty-five (55) years and older. Assisted Living is defined as housing for residents requiring assistance in at least two (2) or more of the six (6) ADLs or “Activities of Daily Living”. These include eating, dressing, bathing, transferring, toileting and continence. Support staff is present to monitor and help the residents including the preparation and service of three meals a day. This is not however, a Nursing facility.

4.3 Independent Living for Seniors shall mean non-assisted individual dwellings (both single family and multi-family residences) for seniors, age restricted to those fifty-five (55) years and older. There will be concierge services via a receptionist type staff member, potential optional cleaning, trash pick-up and other similar type services only. No regular meals or medical services will be provided. This includes community/multipurpose facilities for social gatherings, clubs, and other informal social uses.

4.4 Floor to Area Ratio (FAR) shall mean the ratio of the project's total gross floor area of the improvements to the size of the land.

4.5 Building Height shall mean as average finished grade to highest point on pitched roof, excluding chimneys and similar.

4.6 Setbacks shall mean the horizontal distance between a building or structure and a platted lot line (including ROW and PD boundary lines). This distance does to include the projections of eaves, overhangs, fireplaces, patios, decks, fire escapes, mechanical units, or similar architectural appurtenances, expect that no project shall extend beyond any ROW, PD boundary line, nor into any Open Space Tracts.

SECTION 5
USE AREAS

5.1 SF-S/P Single Family in Single and Paired Configuration - Maximum 26 cottages.

A. Permitted Uses

- Age restricted Single-Family Attached and Single Family Detached.

5.2 MF 55+ (Multi-family Apartment building for 55+ seniors) - Maximum 63 apartments.

A. Permitted Uses

- Age restricted multi-family dwelling units.

5.3 Assisted Living for Seniors - Maximum 36 residential units

A. Permitted uses

- Assisted Living for Seniors

5.4 Open Space Areas

Open green space for use by apartment and cottage residents; which includes walking paths with benches and sidewalks.

- Permitted Uses.
 - Park benches
 - Landscaping areas including grass areas
 - Natural terrain and areas
 - Detention ponds

- Parking lots are not permitted in Open Space.

SECTION 6
DEVELOPMENT STANDARDS

6.1 Overall Project Standards

The zoning requirements of Chapter 17 of the Town of Castle Rock Municipal Code, including off-street parking, landscaping, site development, accessory and temporary uses, and use by special review and variance processes, shall apply except as set forth in Subsection 6.2. Any proposed signage must meet the requirements of Chapter 19 of the Town of Castle Rock Municipal Code.

6.2 Development Design Standards and Guidelines

PD Zoning Regulations			
ZONING CATEGORY and PLANNING AREAS	SF-S/P (single/paired cottages)	MF-55+ (55+ residential apartments)	AL (Assisted Living, Regular and Memory Care)
Maximum number of Units per Zoning Area/Density	26	63	36
Maximum Gross Density (8.37/ac)	Max 125 units or Max 15 units per acre for entire PD		
Overall Minimum Open Space for entire PD	20% of gross site area		
Maximum FAR (for entire PD)	Maximum 60%		
Cottage sizes, apartment sizes and AL unit sizes	1750-2000 sqft	725-1300 sqft	360-625 sqft
Maximum Building Heights (measured as average grade to highest point on pitched roof-excluding chimneys and similar) see footnote	32' (1 story cottages)	57' (avg 3 1/2 story apartment building), 3 stories exposed at one end and 4 stories exposed at opposite end	35' (1 story assisted Living)
Setbacks			
Garage & Driveway	20'	20'	20'
Front Setbacks	15'	15'	15'
Side Setbacks	10'	10'	10'
Rear Setbacks	15'	15'	15'
Open Space Setbacks - No Deck/Patio Encroachment	0'	0'	0'
Alexander Place Buffers	15'	15'	15'
Parking for each Zone Category/Planning Area	2 per cottage + 2 visitors in each driveway + general parking for visitors conveniently located. Visitor parking shall be non-exclusive and shared between Zoning Categories and Planning Areas.	1 per apartment + 1 per employee + visitors. Visitor parking shall be non-exclusive and shared between Zoning Categories and Planning Areas.	1 per unit + 1 per employee + visitors. Visitor parking shall be non-exclusive and shared between Zoning Categories and Planning Areas.

SECTION 7
ACCESSORY USES

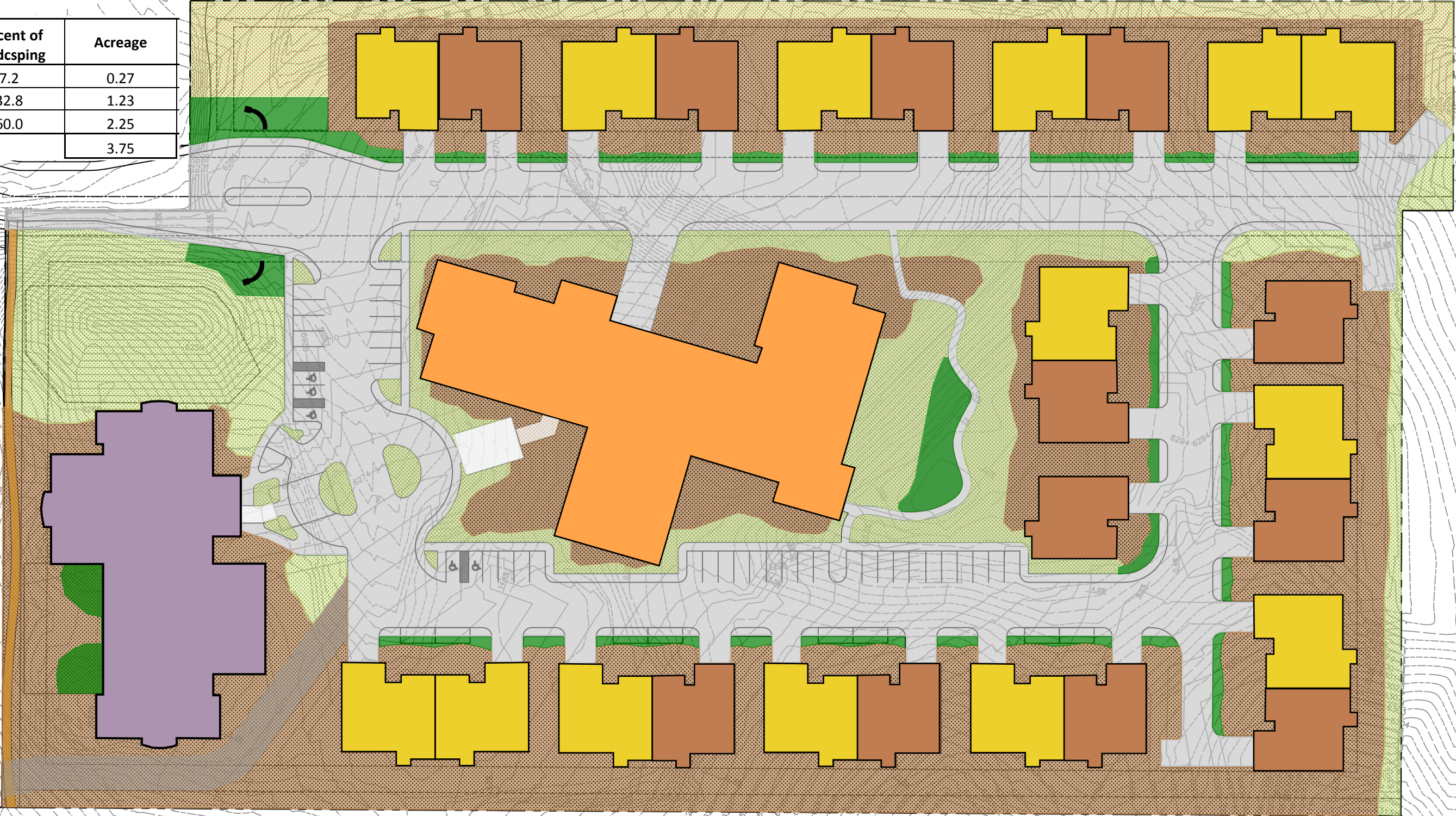
7.1 Permitted Uses.

- Entertainment, TV lounge and Living room, multipurpose room/social/gathering area(s) with small residential style kitchenette and adjacent storage room, and fitness room with exercise equipment.
 - Staff support spaces
 - Home occupations subject to Town of Castle Rock Municipal Code 17.52.230 (excluding in-home Daycare)
 - Public Utilities
 - Roadways, bike paths, pedestrian trails
 - Parking areas
- Wireless cellular facilities

APPENDIX III – LANDSCAPE CONCEPT PLAN

Landscape Type	Percent of Landscaping	Acreage
Irrigated Turf	7.2	0.27
Xeriscape	32.8	1.23
Non-irrigated	60.0	2.25
Total		3.75

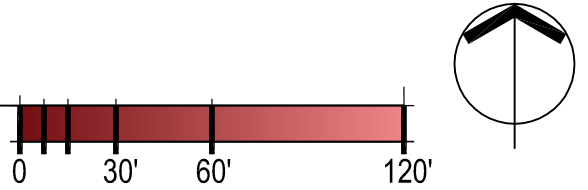
- IRRIGATED TURF LOW WATER USAGE SUCH AS NATIVE GRASS
- XERISCAPE ORNAMENTAL GRASSES/NATIVE SPECIES LOW TO VERY LOW HYDROZONES
- NON-IRRIGATED AREAS RIVER ROCK
- STREET AND SIDEWALK
- SIDEWALK



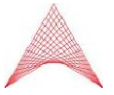
CASTLE ROCK SENIORS DEVELOPMENT - SITE PLAN - OPTION I Rev.2

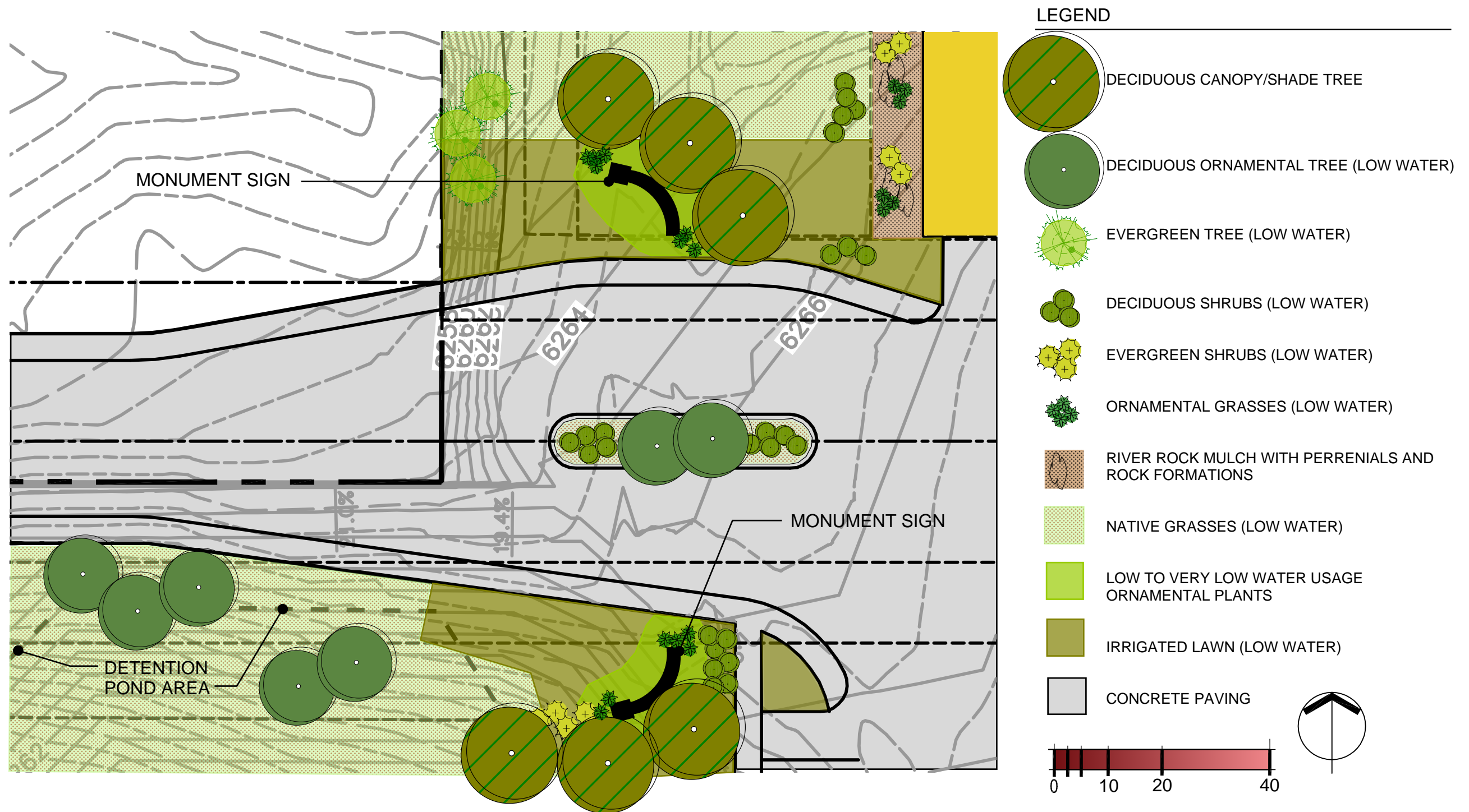
SCALE: 1:60
April 27, 2019

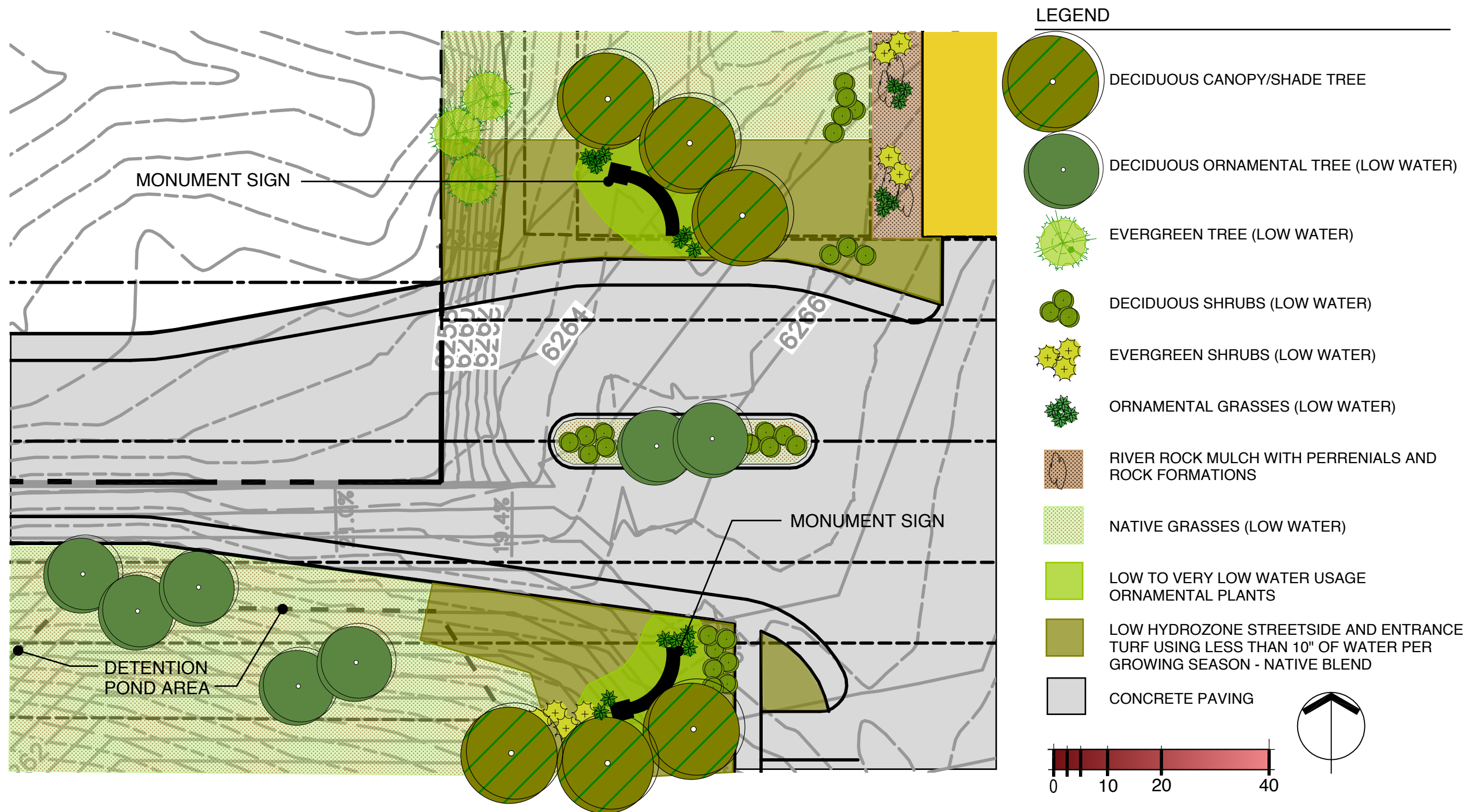
TOTAL COTTAGES = 26
TYPE A = 12
TYPE B = 14

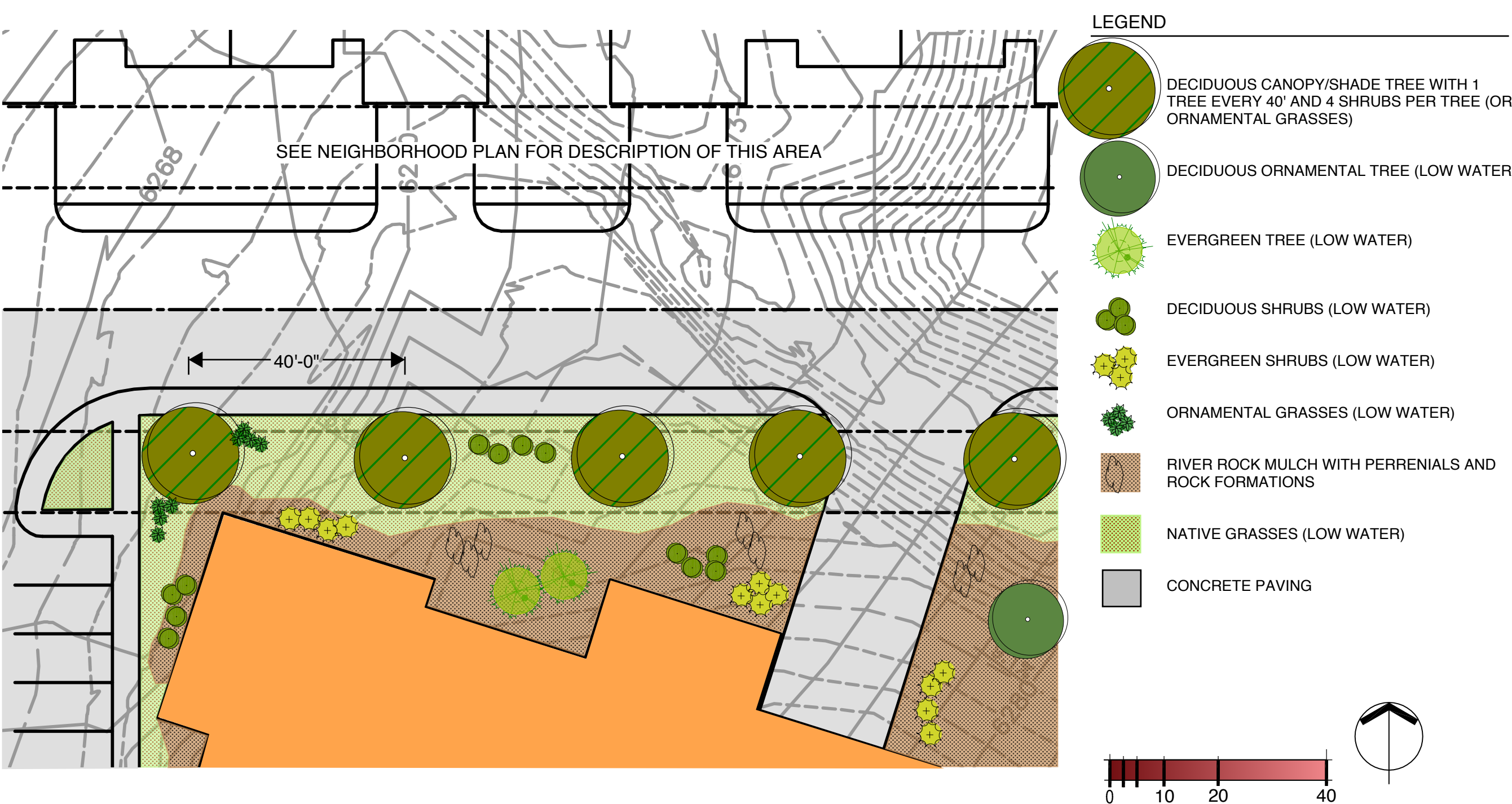


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CASTLE ROCK SENIORS DEVELOPMENT - STREETSCAPE CONCEPT PLAN

SCALE: 1:20
MARCH 31, 2019

Drought tolerant, xeriscape plant species that are native to the region and suitable to this climate shall be used. The design shall utilize water conservation. Turf shall be used only as accents along walkways for water conservation and character. Deciduous trees shall similarly be used only as accents or for shade. Landscaping along the streetscape shall include shade trees tat 40' O.C. with 4 shrubs per shade tree. Shrubs may be interpreted also as ornamental grasses. All shrubs shall be low water usage.



APPENDIX IV – CALCULATIONS

PHASE 1 - RESIDENTIAL (See Page 24-6)				
Designation	Type	Fixtures	F.U. Value	Totals
Duplex Cottages	2 Bedroom/2 Bath	High Efficiency Toilets(2)	2.6	
		Bath/Shower (2)	4	
		Wash Basin (2- Master Bath)	1	
		Wash Basin (Second Bath)	1	
		Kitchen Sink w/ HEF Dishwasher	1.5	
		High Efficiency Washer	1	
		Laundry Sink	2	
	(26 Units)	Total	13.1	340.6
Apartments	1 Bedroom/1 Bath	High Efficiency Toilet	1.3	
		Bath/Shower	2	
		Wash Basin	1	
		Kitchen Sink w/ HEF Dishwasher	1.5	
		High Efficiency Washer	1	
	(13 Units)	Total	6.8	88.4
Apartments	1 Bedroom/2 Bath	High Efficiency Toilets (2)	2.6	
		Bath/Shower	4	
		Wash Basin	2	
		Kitchen Sink w/ HEF Dishwasher	1.5	
		High Efficiency Washer	1	
	(27 Units)	Total	11.1	299.7
Apartments	2 Bedroom/2 Bath	High Efficiency Toilets (2)	2.6	
		Bath/Shower	4	
		Wash Basin	2	
		Kitchen Sink w/ HEF Dishwasher	1.5	
		High Efficiency Washer	1	
	(13 Units)	Total	11.1	144.3
Apartments	2 Bedroom/2 Bath	High Efficiency Toilets (2)	2.6	
		Bath/Shower	4	
		Wash Basin	2	
		Kitchen Sink w/ HEF Dishwasher	1.5	
		Laundry Sink	2	
		High Efficiency Washer	1	
	(10 Units)	Total	13.1	111
Fixture Unit Grand Total				984

Indoor Annual Use (Acre Feet)

=Fixture Units X .01

9.84

PHASE 2 - ASSISTED LIVING/MEMORY CARE (See Table 2)			
Assisted Living	24 Beds	.085 AF/Bed	2.04
Memory Care	14 Beds	.12 AF/Bed	1.68

Indoor Annual Use (Acre Feet)

3.72

- b. Sites required to prepare a Landscape plan by either the Jurisdiction or the District. For all new Connections on Sites required to prepare a Landscaping plan by either the Jurisdiction or the District, the Exterior Water Demand Calculation shall be the Estimated Total Water Use plus 0.01 Acre-Foot. Any modification to the Landscaping that results in an Intensification of Use shall require a water budget adjustment through Castle Rock Water
- c. Sites with Jurisdiction Landscaping Restrictions. For all new Connections on Sites where native Landscaping is a requirement of and enforced by the Jurisdiction, the Exterior Water Demand Calculation shall be the Estimated Total Water Use plus 0.01 Acre-Foot. Any modification to the Landscaping that results in an Intensification of Use shall require a Water Permit. The native Landscaping requirement shall be a recorded covenant on the title of the property or other deed restriction enforceable by the District. The recorded covenant or deed restriction shall provide notice to each subsequent owner that any change of Landscaping may constitute an Intensification of Use which may result in collection of additional Capacity Fees and debits to a Jurisdiction's Allocation or Water Entitlement.
- d. Sites utilizing rainwater storage as a component in an Irrigation System. For all new Connections on Sites where rainwater storage is included as a source of water supply for an Irrigation System, the Estimated Total Water Use as determined by the Landscaping plan shall be reduced by the available Rainwater Harvesting Capacity. Any modification to the Landscaping that results in an Intensification of Use shall require a Water Permit. An additional 0.01 Acre-Foot of water from the Water Distribution System shall be added for outdoor water uses other than irrigation.

Sites utilizing rainwater storage as a component in an Irrigation System shall have Landscape water use restricted by a recorded covenant on the title of the property or other deed restriction enforceable by the District. The recorded covenant or deed restriction shall provide notice to each subsequent owner that failure to maintain and utilize the rainwater storage component of the Irrigation System shall constitute an Intensification of Use which may result in collection of additional Capacity Fees and debits to a Jurisdiction's Allocation or Water Entitlement and/or other enforcement actions.

- 6. Calculating Adjusted Water Use Capacity
 - a. Each fixture unit shall have a value of 0.01 Acre-Foot of water.
 - b. Water use calculations shall be rounded to the third decimal place.

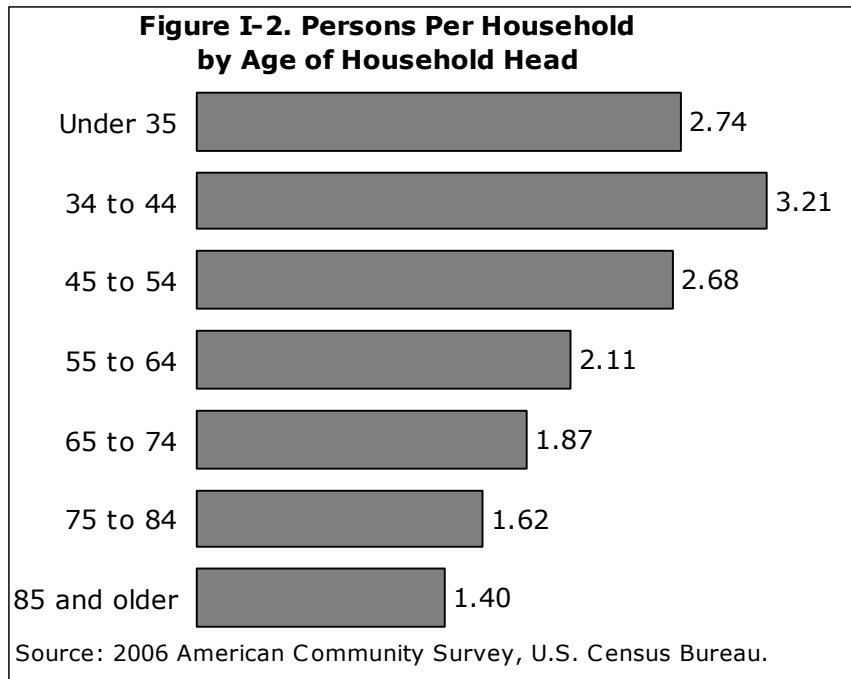
Table A1-1. Persons Per Household by Age of Household Head and by State

State	Age of Household Head						
	Under 35	34 to 44	45 to 54	55 to 64	65 to 74	75 to 84	85 and older
Alabama	2.67	3.15	2.53	2.05	1.86	1.60	1.44
Alaska	2.84	3.25	2.72	2.06	2.08	1.92	1.71
Arizona	2.91	3.27	2.64	2.11	1.90	1.66	1.46
Arkansas	2.91	3.17	2.43	2.06	1.82	1.59	1.43
California	2.96	3.42	2.98	2.33	1.97	1.70	1.46
Colorado	2.62	3.13	2.53	1.98	1.81	1.59	1.34
Connecticut	2.63	3.23	2.77	2.10	1.87	1.56	1.38
Delaware	2.70	3.23	2.67	2.00	1.86	1.63	1.38
District of Columbia	2.03	2.28	2.03	1.92	1.87	1.67	1.61
Florida	2.68	3.08	2.62	2.08	1.87	1.61	1.42
Georgia	2.73	3.09	2.61	2.10	1.89	1.65	1.41
Hawaii	2.92	3.30	2.97	2.57	2.46	2.34	2.04
Idaho	2.90	3.43	2.60	2.03	1.82	1.68	1.52
Illinois	2.71	3.26	2.75	2.15	1.86	1.62	1.34
Indiana	2.78	3.22	2.57	2.02	1.81	1.56	1.37
Iowa	2.66	3.23	2.49	1.98	1.78	1.49	1.30
Kansas	2.68	3.28	2.58	2.00	1.81	1.50	1.30
Kentucky	2.71	3.03	2.44	1.99	1.80	1.60	1.34
Louisiana	2.83	3.17	2.62	2.13	1.93	1.66	1.46
Maine	2.62	2.98	2.46	1.95	1.76	1.56	1.25
Maryland	2.60	3.16	2.73	2.15	1.90	1.65	1.50
Massachusetts	2.49	3.17	2.80	2.08	1.82	1.59	1.37
Michigan	2.70	3.25	2.63	2.06	1.83	1.58	1.36
Minnesota	2.60	3.24	2.62	2.03	1.77	1.50	1.32
Mississippi	2.92	3.21	2.57	2.11	1.94	1.61	1.48
Missouri	2.71	3.18	2.56	2.00	1.81	1.58	1.33
Montana	2.64	3.19	2.49	2.04	1.77	1.50	1.23
Nebraska	2.70	3.30	2.69	2.01	1.73	1.52	1.26
Nevada	2.91	3.15	2.58	2.06	1.84	1.71	1.38
New Hampshire	2.54	3.15	2.62	2.06	1.83	1.58	1.27
New Jersey	2.71	3.30	2.98	2.25	1.93	1.63	1.41
New Mexico	2.86	3.07	2.55	2.06	1.88	1.72	1.50
New York	2.62	3.16	2.81	2.23	1.88	1.62	1.42
North Carolina	2.63	3.09	2.50	2.03	1.81	1.59	1.42
North Dakota	2.42	3.11	2.47	2.04	1.66	1.49	1.34
Ohio	2.69	3.17	2.56	2.02	1.86	1.56	1.34
Oklahoma	2.80	3.20	2.47	1.98	1.84	1.59	1.34
Oregon	2.70	3.14	2.46	2.00	1.82	1.63	1.33
Pennsylvania	2.58	3.16	2.67	2.05	1.81	1.57	1.35
Rhode Island	2.59	3.08	2.69	2.06	1.83	1.61	1.37
South Carolina	2.67	3.08	2.54	2.10	1.88	1.65	1.45
South Dakota	2.66	3.28	2.63	1.91	1.78	1.57	1.28
Tennessee	2.73	3.08	2.51	2.04	1.80	1.59	1.42
Texas	2.89	3.34	2.75	2.21	1.94	1.70	1.45
Utah	3.21	3.97	3.11	2.32	2.06	1.73	1.46
Vermont	2.56	3.10	2.48	2.01	1.87	1.56	1.30
Virginia	2.58	3.08	2.64	2.09	1.89	1.63	1.42
Washington	2.65	3.10	2.62	2.03	1.77	1.59	1.40
West Virginia	2.74	3.12	2.44	2.03	1.81	1.58	1.34
Wisconsin	2.61	3.21	2.57	1.97	1.77	1.55	1.25
Wyoming	2.64	3.29	2.42	1.98	1.83	1.50	1.31
U.S.	2.74	3.21	2.68	2.11	1.87	1.62	1.40

Source: 2006 American Community Survey, Census Bureau.

infrastructure requirements or impact fees that are set at levels that are excessive, given the nature of 55+ communities.

55+ communities differ from traditional housing in a number of ways. One difference is simply household size, or the number of persons expected to occupy each residence. Census statistics show that average household size decreases with age, especially after age 45, and is below two persons per household for households over age 65 (Figure I-2). A similar pattern exists in virtually every state, with the exception of Hawaii (Table A1-1 in Appendix 1).



Other important differences associated with 55+ housing also exist, such as low demand for public education or parking space, and a low volume of traffic on local streets during rush hours. In order to obtain approval for 55+ communities without unnecessary delays, it would be helpful if developers had access to information that quantified these differences in a clear and concise way. The purpose of this study is to provide such information.

The study by itself will not ensure that a particular 55+ project is approved. Developers still need to make the case to local planning boards and councils that a specific project is appropriate and desirable in a specific community. This study is designed to provide supporting data that will be useful in such a situation.

The study is organized by local government budget line items in the order they appear when reported by the Governments Division of the U.S. Census Bureau. The first chapter deals with the impacts of 55+ housing on local government revenue; chapters 2 through 6 cover expenses for providing the public services that tend to be most commonly discussed in the context of 55+ housing.

TABLE 2: NON-RESIDENTIAL WATER USE FACTORS

Group I 0.00007 AF/SF

Auto Uses	Retail	Warehouse	Dental Clinic	Office	Bank	Supermarket
Church	Nail Salon	Family Grocery	Medical Clinic	Wine Tasting Room	Fast Photo	Convenience Store
Dry Cleaner (No On-Site Laundry)			Veterinary Clinic	School	Gym	

Group II 0.0002 AF/SF

Users in this category prepare and sell food/beverages that are primarily provided to customers on disposable tableware. Food with high moisture content and liquid food may be served on reusable tableware. Pizza must be served on reusable platters or on disposable plates. Glassware may be used to serve beverages.

Bakery	Pizza	Coffee House	Ice Cream Shop	Dry Cleaner (On-Site Laundry)
Catering	Deli	Bistro	Sandwich Shop	

Group III

Assisted Living (more than 6 beds) ¹	0.085 AF/Bed
Beauty Shop/Dog Grooming	0.0567 AF/Station
Child/Dependent Adult Day Care	0.0072 AF/Person
Dormitory ²	0.040 AF/Room
Laundromat	0.2 AF/Machine
Meeting Hall/Banquet Room	0.00053 AF/SF
Motel/Hotel/Bed & Breakfast	0.1 AF/Room
w/Large Bathtub (Add to room factor)	0.03 AF/Tub
Irrigated Areas beyond ten feet of any building	ETWU
Plant Nursery	0.00009 AF/SF Land Area
Public Toilet	0.058 AF/Toilet
Public Urinal	0.036 AF/Urinal
Zero Water Consumption Urinal	No Value
Restaurant (including Bar/Brewpub Seats)	0.02 AF/Interior Restaurant Seat
Exterior Restaurant Seats above the "Standard Exterior Seat Allowance" ³	0.01 AF/Exterior Restaurant Seat
Exterior Restaurant Seats within the "Standard Exterior Seat Allowance"	No Value
Restaurant (24-Hour and Fast Food)	0.038 AF/Interior Restaurant Seat
Self-Storage	0.0008 AF/Storage Unit
Skilled Nursing/Alzheimer's Care	0.12 AF/Bed
Spa	0.05 AF/Spa
Swimming Pool	0.02 AF/100 SF of Surface Area
Theater	0.0012 AF/Seat

Group IV - MODIFIED NON-RESIDENTIAL USES

Users listed in this category have reduced water Capacity from the types of uses listed in Groups I-III and have received a Water Use Credit for modifications. Please inquire for specific property information.

All New Connections: Refer to Rule 24-B, Exterior Non-Residential Water Demand Calculations

Notes: Any Non-Residential water use which cannot be characterized by one of the use categories set forth in Table 2 shall be designated as "other" and assigned a factor which has a positive correlation to the anticipated Water use Capacity for that Site.

¹ Assisted living Dwelling Units shall be permitted as Residential uses per Table 1, Residential Fixture Unit Count Values.

² Dormitory water use at educational facilities is a Residential use, although the factor is shown on Table 2

³ See Rule 24-B-1 and Rule 25.5 for information about the "Standard Exterior Seat Allowance".

APPENDIX V – VERIFICATION CHECKLIST INDOORS

Water Efficiency Verification Checklist Indoor Standards

Lot Number/Address: _____

All indoor fixtures and appliances must comply with standards listed in the current approved version of the water efficiency plan.

Summary of Proposed Fixtures and Appliances.

Complete the information on water demand and the make/model for each fixture and appliance that will be installed.

Room	Fixture/Appliance	Water Demand	Make/Model
Kitchen	Sink Faucet Dishwasher	gal/minute gal/cycle	
Bathroom 1	Toilet Sink Faucet(s) Showerhead	gal/flush gal/minute gal/minute	
Bathroom 2	Toilet Sink Faucet(s) Showerhead	gal/flush gal/minute gal/minute	
Bathroom 3	Toilet Sink Faucet(s) Showerhead	gal/flush gal/minute gal/minute	
Laundry	Sink Faucet Clothes Washer	gal/minute gal/cycle/cubic foot	
Other	Hot Water Recirculation Unit		
Other	Whole House Flow Monitoring System		

Is a 5/8-inch tap being requested? (Yes/No):

CERTIFICATION

I hereby certify that the above information is true and accurate. I understand that the falsification of any information on this submittal may disqualify me from completing or performing future work related to The Lanterns development in Castle Rock, CO.

Builder Signature: _____ Date: _____

Printed Name/Company: _____

APPENDIX VI – VERIFICATION CHECKLIST OUTDOORS

Water Efficiency Verification Checklist Outdoor Standards

Lot Number/Address: _____

Lot Size: _____

Landscape Design

The design guidelines for outdoor uses were developed to limit the use of irrigated turf and reduce overall outdoor water demands. The maximum turf area and total outdoor water demand are restricted based on lot size in square feet (sf) as shown in **Table 1** below. In no case shall maximum turf areas exceed the limits of this Water Efficiency Plan or the maximum allowed under the Town's Landscape and Irrigation Performance standards and Criteria. Turf grass type shall be low to moderate water using turf per Section 6 in the Town of Castle Rock Landscape and Irrigation Performance Standards and Criteria.

Table 1. Turf Limitations by Lot Size.

Lot Size	Turf Limitation
	(% of lot)
7,000 sq ft or less	30% (not to exceed 2,100 sq ft)
7,001 – 17,000 sq ft	20% (not to exceed 3,400 sq ft)
Over 17000 sq ft	20% (not to exceed 5000 sq ft)

Proposed landscape plans must be summarized as specified in Table 2 below. The Town of Castle Rock approved plant list shall be used to classify selected plants into the appropriate Irrigated Water Use Zone. Landscape plans must be submitted to document compliance with the turf limitations from Table 1.

Table 2. Landscape Irrigation Demands.

Irrigated Water Use Zone	Size of Zone
Moderate	_____sf
Low	_____sf
Total	_____sf

Does landscape plan comply with turf limitation? (Yes/No): _____

Type of turfgrass is _____

Does this comply with the Town of Castle Rock Landscape and Irrigation Performance Standards and Criteria which requires a lower water requiring turf?

Irrigation System Design

Automatic irrigation system controllers shall be approved by the Town, and be weather based (ET) or soil-moisture based, that automatically adjust irrigation in response to changes in the plants' needs as weather conditions or soil moisture changes. All equipment must comply with the standards listed in the current version of approved Water Efficiency Plan. Design requirements are subject to change as reflected in updated EPA WaterSense Program details and Town of Castle Rock Landscape and Irrigation Performance Standards and Criteria.

Table 3. Proposed Irrigation System Equipment.

Device	Make/Model
Smart Controller	
Fixed Spray Heads	
Rotor Heads	
Drip Emitters	
Master Valve	
Flow Sensor	
Rain Sensor	

CERTIFICATION

I hereby certify that the above information is true and accurate. I understand that the falsification of any information on this submittal may disqualify me from completing or performing future work in Castle Rock, CO.

Builder Signature: _____ Date: _____

Printed Name/Company: _____

Landscape Designer Signature: _____ Date: _____

Printed Name/Company: _____

Irrigation Designer Signature: _____ Date: _____

Printed Name/Company: _____