RIDGWAY PLANNING COMMISSION SPECIAL MEETING AGENDA

Tuesday, July 13, 2021 5:30 pm

Due to COVID-19, and pursuant to the Town's Electronic Participation Policy, the meeting will be conducted both in person and via a virtual meeting portal. Members of the public may attend in person at the Community Center, located at 201 N. Railroad Street, Ridgway, Colorado 81432, or virtually using the meeting information below.

Join Zoom Meeting

https://us02web.zoom.us/j/82458606287?pwd=ZHIqZjRXQVR5M3pwNFRVNTBvWkZ1dz09 Meeting ID: 824 5860 6287 Passcode: 735153 To call in dial: 408.638.0968 or 253.215.8782 or 669.900.6833

Written comments can be submitted before the meeting to <u>kchristian@town.ridqway.co.us</u> or delivered to Town Hall Attn: Planning Commission

ROLL CALL: Chairperson: Doug Canright, Commissioners: Russ Meyer, John Clark, Thomas Emilson, Bill Liske, Michelle Montague and Jennifer Nelson

PUBLIC HEARING:

 Application: Preliminary Plat for Riverfront Village Planned Unit Development; Location: Triangle Subdivision, Lot 1; Address: TBD Highway 550; Zone: General Commercial (GC); Applicant: Joel Cantor, Alpine Homes Ridgway, LLC; Owner: Alpine Homes Ridgway, LLC

ADJOURN



То:	Town of Ridgway Planning Commission
Cc:	Preston Neill, Ridgway Town Manager
From:	TJ Dlubac, AICP, Community Planning Strategies, Contracted Town Planner
Date:	July 9, 2021
Subject: Meeting	Riverfront Village Preliminary PUD Plan and Preliminary Plat for July 13^{th} PC

APPLICATION INFORMATION

-		
	Request:	Approval of a Preliminary PUD Plan and Preliminary Plat
	Legal:	A portion of Lot 1 Triangle Subdivision
	Address:	N/A
	General Location:	North of SH62/Sherman Street, west of US550, and east of and adjacent to the Uncompangre River
	Parcel #:	430516215001
	Zone District:	GC General Commercial District
	Current Use:	Vacant
	Applicant:	Jim Kehoe, KEO studioworks
	Owner:	Joel Cantor, Alpine Homes – Ridgway LLC

PROJECT REVIEW

BACKGROUND

The lot has been previously platted as Lot 1, Triangle Subdivision in 1992 at Reception #150643. Lot 1 is a total of 8.141 acres and include both the east and west sides of the river. A portion of Lot 1 which includes the river and property west of the river was deeded to the Town in 2008 at Reception #196855.

The Preliminary PUD Plan and Preliminary Plat application was originally brought to the Ridgway Planning Commission on April 27, 2021 and has been continued by the Planning Commission to allow the development team and town staff to work through a variety of items. At their June 29th meeting, the Planning Commission, upon the request of staff, set a special meeting on July 13th to consider this application.

REQUEST

This Preliminary Planned Unit Development (PUD) Plan and Preliminary Plat are for a portion of Lot 1, identified as Lot 1R on the plans, containing 4.29 acres. The Owner is requesting a PUD zoning to allow a multi-building, mixed-use development on a portion of Lot 1, Triangle Addition to be known as Riverfront Village PUD.

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The project includes a total of 38 residential units and four (4) commercial units. The commercial units total approximately 3,983 square feet of ground-floor commercial area in a mixed-use building. The uses of each building are as follows:

Building	Commercial Sq. Ft.	Residential DU
Building CM	3,983	4
Buildings M1		6
Building M2		8
Building M3		10
Buildings D1 – D5		10
Totals	3,983sf	38

The project proposes public easements for a park towards the northern end of the property and a multi-use trail along the western edge of the property and along the eastern bank of the Uncompany River.

The project will include extension of water and sewer services to the project, with town owned and maintained water and sewer mains on easements within the parcel, a private internal street network, a master sign plan, and a new access to HWY 550 which will be coordinated with CDOT.

CODE REQUIREMENTS

RMC §7-3-16(B) CRITERIA FOR A PUD

A Planned Unit Development must meet the following conditions for approval:

- (1) It shall be in general conformity with the Town's Master Plan.
- (2) All landowners within the PUD shall consent, in writing, to the PUD.

RMC §7-3-16(E) PROCEDURES:

- PUDs shall be reviewed with the same procedures for review of subdivisions as found in Subsection 7-4-5 Subdivision Procedures. A public hearing shall be held on the PUD pursuant to the Review Procedures of Section 7-3-23.
- (2) Approval of the PUD by the Town is purely discretionary. If the Town and the applicant do not agree on all required conditions and the plan, the Town may deny approval, or the Town may unilaterally impose conditions. If the developer does not accept the conditions, that development must adhere to standard dimensional, subdivision and zoning requirements.

RMC §7-3-16(F) REQUIRED IMPROVEMENTS AND STANDARDS:

The PUD Plan shall provide for construction of the same improvements required for subdivisions in Subsection 7-4-6 and design standards of subsection 7-4-7.

RMC §7-3-16(G) Additional Requirements:

The PUD shall also show the location, size, and number of dwelling units, proposed uses for all buildings and shall further set out the location of all proposed parking areas, streets, sidewalks, bike paths, and other improvements and structures. Where appropriate, parameters, limits, or specifications may be approved in lieu of exact locations, numbers, and sizes.



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ANALYSIS

LAND USES

The applicant is requesting a mixed-use development that offers approximately 3,983 square feet of commercial uses and a total of 38 residential dwelling units on the 4.30-acre parcel.

The PUD plan would allow for all uses allowed by right in the GC zone district. Additionally, the following are uses which are uses requiring a conditional use permit in the GC zone district but requested to be allowed by right within the PUD plan by the applicant:

- Townhouse dwellings, Triplex dwellings, and Fourplex dwellings.
- Buildings 27' to 35' in height or containing more than 10,000 square feet of gross floor area.

UPDATE:

It is important to note that the mix of uses has changed since the Sketch Plan reviewed by the Planning Commission in 2020. Since the Sketch Plan approval, the developer has removed a commercial building that was intended to be a restaurant. Therefore, the amount of commercial square footage has been significantly reduced in this project. The area that was going to be a restaurant (northwest area of property) is now identified as a park which will be accessible to the public through the dedication of an easement. This change, while it alters the commercial uses of the project, provides a public amenity adjacent to the river corridor and trail.

The list of allowed uses has been refined further based on additional discussions with the applicant. By approving the PUD plan, the requested uses will be allowed by right. The Planning Commission should evaluate the requested conditional uses against the criteria set forth in Sec. 7-3-19 of RMC when considering the PUD plan. Those criteria are:

(1) The use will not be contrary to the public health, safety, or welfare.

(2) The use is not materially adverse to the Town's Master Plan.

(3) Streets, pedestrian facilities, and bikeways in the area are adequate to handle traffic generated by the use with safety and convenience.

(4) The use is compatible with existing uses in the area and other allowed uses in the District.

(5) The use will not have an adverse effect upon other property values.

(6) The location of curb cuts and access to the premises will not create traffic hazards.

(7) The use will not generate light, noise, odor, vibration, or other effects which would unreasonably interfere with the reasonable enjoyment of other property in the area.

(8) Visual impact due to a building's size shall be mitigated by means of design, landscaping, berming, and other methods of site treatment, and must be compatible with the mass and scale of existing buildings on adjacent properties, or if there are no such buildings, compatible with the mass and scale of buildings in the Town generally.

By recommending approval of the proposed PUD plan, the Planning Commission is also recommending approval of the following conditional uses:

- <u>*Townhomes:*</u> The developer would like to utilize the PUD plan process for the conditional use to allow for townhouses in the GC zone district.
- <u>Two Multifamily buildings greater than 10,000 square feet:</u> The developer would like to utilize the PUD process for the conditional use of two multi-family buildings greater than



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10,000 square feet within the GC zone district. This request should be granted since these buildings are in the interior portion of the property and are generally screened by surrounding buildings. Also, they are compatible with the mass and scape of existing buildings on adjacent properties per Sec. 7-3-11(C)(2) of RMC.

DIMENSIONAL STANDARDS

Section §7-3-15(A) sets forth the required dimensional standards which shall be met for various uses within each zone district. For the GC General Commercial District, the following standards apply to all proposed uses:

Standard	Requirement	Proposed
Min. Lot Width	30′	300'+
Min. Lot Size	5,000sf	187,308sf
Max. Lot Coverage	60%	Unknown
Min. Front Setback	15′	Approximately 60' to buildings along US550
Min. Rear Setback	8′	15′
Min. Side Setback	5′	11' along the east and 24' along the west
Max. Side on Corner Lot	7.5′	N/A
Structure Height	27′	Varies – see table below

Standard	Required	СМ	M1	M2	M3	D1	D2	D3	D4	D5
Width	30′		300' +							
Size	5,000		187,308sf (4.29ac)							
Lot Coverage	60%	Bldg. (Bldg. $(35,085.66sf) + Hardscape (70,167.75sf) = 105,253.41sf/187,308sf = 56.2\%$							
Front Setback	15′	60′	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rear Setback	8′	N/A	N/A	N/A	62′+	N/A	N/A	N/A	N/A	15′
Side Setback	8′	75′	24′	11′	31′	20′	20′	19′	19′	28′
Rida Hojaht	27' (35'	Actua	l height is	not provid	ded. Actua	l building	height, as	defined by	y RMC, sha	all be
Bldg. Height w/CU) provided with building permi			ling permit	: plans an	d shall be	in complia	nce with			
High-Water Mark Setback	75′	N/A	50′	N/A	N/A	53′	N/A	N/A	N/A	N/A

UPDATE:

Updated documents submitted on 7/8/2021 addressed the following previous review comments:

- High-Water Mark Setback distance to Buildings M1 and D1. Development between 25' and 75' from the high-water mark shall be reviewed pursuant to a Conditional Use review (Sec. 7-3-14(E)(1) of RMC. The Planning Commission should consider these criteria when evaluating the two buildings (M1 and D1) located less than 75' from the high-water mark of the Uncompander River.
 - The applicant's request stated that they would like to utilize the PUD process for the conditional use to allow buildings between the 25' and 75' of the high-water mark. The ecological Character Study describes this area as disturbed and depredated with



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no native vegetation and no defining natural habitat within the majority of the project location and within the 25' and 75' area from high-water mark.

- The side setback for Buildings D1, D2, D3, D4, & D5 were updated to indicate the distance from the western property line to the nearest portion of each building. *The updated setback measurements confirm minimum setback distances are met.*
- Midpoint of all building roofs were added to each building elevation on sheets. While the midpoint was added, the actual height, as defined by the RMC, is not identified. In the GC Zone District, a maximum height of 27' is permitted. The allowed height may be increased to 35' following Conditional Use approval. The PUD plan requests increased heights for buildings M2 and M3 to 34.5' and 35', respectively (See table below). The Planning Commission should consider Conditional Use criteria when evaluating the height allowances for these two buildings since approving the PUD plan would approve this increased height allowance.

RESIDENTIAL USES

As noted above, there are 38 total residential units proposed in this development for a total residential density of 8.8 units per acre. The residential units are proposed in a mix of structure types from attached duplex units, to townhomes, and multiple family buildings. Adequate parking is provided for the residential uses with both covered and uncovered options and private garages.

Note 5 on sheet 2 of the Preliminary Plat states that short-term rentals will be limited to townhouse units only and must be in compliance with applicable Town of Ridgway Municipal Code requirements. As explained in the overall site plan (Sheet A1.1), the only townhouse units are buildings D1-D5. Therefore, short-term rentals would be limited to 10 total units on the property. This will need to be memorialized in various locations and be made to be consistent in each of the locations such as a note on the PUD plan, in the Development Agreement, and in the declarations.

UPDATE:

Town staff and the development team have discussed these items and reached agreement in the most recent version of the plan documents. It was agreed that short term rental standards and deed restricted housing would be identified in both the plat notes and the development agreement. Town staff has coordinated the language between the two documents, and they now complement each other.

- Short term rentals are limited to Townhomes and shall meet the applicable Ridgway Municipal Code requirements.
- The deed restricted housing note specifies the units set aside for deed restrictions and the provisions of the deed restrictions are provided in the Development Agreement. The language included in the agreement is consistent with the town's typical requirements.

The updated Development Agreement and Preliminary Plat, depicting these agreed upon concepts, are attached and are acceptable to town staff as attached. No additional condition is needed to ensure compliance with short-term rental and deed restricted housing provisions.



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COMMERCIAL USES

The only building currently providing commercial uses for the entire development is in building CM. 3,983 square feet of "ground floor retail commercial" is proposed. This building is located along the eastern portion of the property and is laid out parallel to US550. There are no additional provisions limiting or identifying the allowed uses and this term is quite general. The applicant should evaluate the allowed uses (both by right and through a conditional use permit) listed above within the General Commercial zone district and identify which uses they would like to allow or disallow in the PUD.

PUBLIC ACCESS AREAS

Approximately 11.8% of the project area is slated as public use area. This area includes the river trail, river park, commercial plaza, and the sidewalk from the river to the CM building.

UPDATE:

<u>Public Easement</u>: Following a discussion on whether ownership and maintenance of the park and trail property would be transferred to the Town or if the property would remain owned by the developer, the developer decided it would be best to keep ownership of both the park and the trail and a public easement would be dedicated was the preferred method.

<u>Park:</u> The developer proposes a shelter to be installed at the park and will be responsible for installing and maintaining all improvements. The park is intended to be for passive use. This would include landscaping, shelters, and minimum improvements and will not include any recreational programming. The developer would like this to remain a quiet and relaxing amenity where residents of the project and the general public can enjoy the natural beauty of this location.

<u>Pedestrian Connection</u>: Through previous reviews, the Town had requested a public access easement be provided to connect the HWY 550 corridor to the river trail closely aligned with the current social trail traversing the property. To address this needed connection, the property will include a public access easement along the southern property line and the emergency access easement to provide a public connection through the property that is not invasive on the future residents.

PARKING

A total of 42 parking spaces are provided on the site as identified in the table breaking down uses above. Each parking space is 9'x20' in size, exceeding the required 8'x20' minimum size. The proposed parking appears to meet the minimum requirements and be adequate for the proposed uses. Of note, a rate of 1 space per 250 square feet was used to calculate the required parking for building CM. This is consistent with the general retail parking requirements. If a more intense use such as a restaurant or convenience store go into the CM building, there may be additional parking required.

ACCESS & INTERNAL CIRCULATION

<u>*HWY550:*</u> The primary access point for this project will be a new point along US550 north of the current access point. This will serve as access to the commercial uses, the 38 residential units, and be the primary access point for Lot 2, Triangle Subdivision which is the parcel south of and adjacent to this project adjacent to US550. While there appear to be access easements adequate to provide accesses to the adjacent lot through the project, there are a lot of easements in this area and additional assessment will be needed to confirm this is the case prior to recording the plat.



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<u>Emergency Access</u>: There is a secondary access point to US550 in the area of the current dirt access. This will be an emergency access only and will have a breakaway barrier installed.

<u>Internal Circulation</u>: All internal roadways are privately owned and maintained. The internal roadways are identified as a minimum of 24' which appears to be adequate for residential use. A 15' emergency access easement and gravel access road is provided along the south and east sides of Buildings M3.

UPDATE:

<u>Access Road</u>: An access road, named Jasper Lane, is provided at a 24' width to provide access off of HWY 550 to Riverfront Drive (the residential area of the project) as well as extending further to the southeast to provide access to parking for the CM building and, eventually, to Lot 2 to the south of this project. The Town had brought up questions about the width of this drive aisle explaining that pursuant to Sec. 7-4-7(C)(13), a Marginal Access Street should be 40' wide. Based on this comment, the applicant provided the following response for Planning Commission's consideration:

The commercial Access Drive is not a publicly dedicated road. This parking lot and drive access together equals 40' and dedicated for the CM mixed-use building with four residential units and 3,983 square feet of commercial, totaling 24 parking spaces. The access easement to Lot 2 is also within this access drive. The 24' width of drive aisle is adequate for two-way traffic and emergency access.

With the approach to create a site with the maximum amount of open space and achieving a balance of lot coverage and only 3,983 square feet of commercial and 24 parking spaces, a 40' ROW appears excessive and would preclude the CM building from fitting on the site with the required parking.

<u>Alley's:</u> Sec. 7-4-7(C) requires alleys in commercial areas unless the requirement is waived by the Planning Commission. In response to this request, the applicant provided the following:

The commercial building CM at 3,983 sf has been designed with an interior rear access corridor for the tenant spaces accessed at the southeast corner of the building directly connected to a service area within the parking lot. This approach reduces more paving and separates access to the housing units above.

Upon review and evaluation of this standard in the context of this project, staff is amenable to the waiver request and if the Planning Commission chooses to approve the proposed PUD plan, this waiver would be effectively approved as well.

<u>Internal Circulation</u>: Through the review, it was recommended that another emergency access be provided to the south of the property to be able to provide a fully functional secondary emergency access. The way the current road network is laid out, if there is a blockage or emergency blocking Riverfront Drive, everyone south of that – essentially all the residential units, don't have a secondary egress route.

UTILITIES

<u>*Water Service:*</u> Water service will be obtained by connecting to an existing 8" water line south of the property. The 8" line loops through the parcel within the roadways and easements and serves the residential units and commercial buildings.



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<u>Sewer Service</u>: Sewer service will be obtained by connecting to an existing 15" main line south of the property. The 15" sewer main is being extended along the southern property line to serve the development and future growth on the east side of US550. There are also 8" sewer mains proposed to serve the development.

UPDATE:

There are still a number of detailed, technical engineering comments that have not been satisfactorily addressed by the development team at this time. However, in the applicant's July 8th resubmittal, outstanding engineering comments (*See Attachment 15*) were responded to with one of the following statements:

- 1) We Agree/We Will Address
- 2) Responded to in SET Engineering Response Narrative (See Attachment 16)
- 3) Responded to in Uncompagre Engineering Response (See Attachment 16)
- 4) Outside Civil Scope
- 5) Need Additional Clarification with Town Staff

Given the productive conversations had in the last few months between the development team and the Town review team, and trying to be sensitive to keeping the project moving forward while ensuring town standards and requirements are adequately met, staff feels that, if the Planning Commission agrees, a condition of approval requiring all outstanding engineering comments dated June 22, 2021 in Attachment 15 shall be addressed to an acceptable level prior to the PUD being considered by the Town Council. (See recommended condition #4)

EASEMENTS

Great progress has been made related to clarifying and identifying appropriate easements throughout the property. Many of the previous concerns and comments have been addressed, however, the last round of comments provided to the applicant on July 2nd and responded to on July 7th have not been adequately reviewed by town staff prior to the drafting of this staff report nor prior to the special meeting. Therefore, consistent with other similar items which have not been fully reviewed prior to this PC meeting, but are technical in nature, staff suggests that a condition of approval be incorporated to ensure that there is adequate review and acceptance of the submittal prior to the PUD plan being considered by the Town Council. (See recommended condition #4)

UPDATE:

Town staff wants to continue working with the applicant to further delineate easement ownership for various easements dedicated on the plat. (See recommended condition #5)

ARCHITECTURE AND DESIGN

The architectural design has been revamped by the applicant team to comply with the Town's residential design standards. The latest round of elevations submitted accurately depict the discussions had between staff and the applicant.

<u>CM, M1, M2, & M3 Buildings</u>: These buildings appear to meet the residential design standards set forth in Sec. 6-6-5 of the RMC. Buildings M2 & M3 are being proposed to exceed the 27' height limit and



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meet the maximum height limit allowed through a conditional use review of 35' (See discussion on Dimensional Standards above for more information and analysis.)

<u>Townhomes along the west edge of the property</u>: Sec. 6-6-5(A)(4) of the RMC requires that no two townhomes with substantially similar elevations be located adjacent to each other. This provision applies to the five buildings (D1 – D5) along the western edge of the property. The most up to date version of the elevations, which has been reviewed by staff, is included as Attachment 11 to this staff report. The elevations depict differentiations in the two elevations including color palettes, type and use of different materials, and differences in window articulation, size, and location to meet the standards. It will be incumbent on the Planning Commission to determine if the proposed elevations substantially comply with the requirements of 6-6-5 of the RMC.

LANDSCAPING & ILLUMINATION

An updated landscape plan has been submitted and reviewed against town standards.

UPDATE:

In CPS's review letter dated July 2nd, deficiencies in the submitted landscape plan and lighting plan were identified.

In essence, the landscaping comment noted that an updated table would need to be included on the plan calculating the required number of trees, shrubs, distribution of trees and shrubs in front yard area, and the required groundcover types. In response to those comments, the applicant provided responses which have not been reviewed at this time. However, a condition of approval requiring a table to be added to Sheet L1.2 depicting the required number of trees, shrubs, distribution, and ground cover type as required by Sec. 6-6-4(G) of the RMC could adequately ensure that the plans meet the standards. (See recommended condition #1)

The reviewed lighting plan didn't include a table indicating the correlated color temperature (CCT) of each fixture as is required by Sec. 6-5-1(A)(5) of RMC. In the resubmitted materials received on July 8, 2021, the applicant has updated the table to include a column for the CCT in Kelvins/Unit. While the table provided in the response letter appears to meet the requirements, a condition of approval requiring the table to be added to the Lighting Plan is recommended in the recommendation below. (See recommended condition #2)

MASTER SIGN PLAN

The applicant has submitted a Master Sign Plan pursuant to Sec. 7-3-17(J) of RMC following the last Planning Commission meeting. The Master Sign Plan was reviewed against the code requirements:

• The total allowable signage square footage is 150sf. This allowance may increase by 30% (195 total square footage) through a Master Sign Plan. Based on staff's most recent review, the total square footage exceeded the maximum allowable 195sf with a proposed total of 196sf. The project is proposing the following signs:

Sign Type	Square Footage
Neighborhood Sign	24sf
Entry sign	32sf
Projecting signs	5 signs @ 8sf ea. = 40sf
Wall Signs	5 signs @ 20sf ea. = 100sf
Total Area:	196sf



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UPDATE:

The applicant has submitted responses to the comments provided on July 2nd and reduced the total square footage of signs to 192sf, complying with the requirements. Since we have not been able to fully review this amendment to the Master Sign Plan, a condition of approval is included in the staff recommendation to ensure the revisions are consistent with the RMC requirements prior to final approval of the proposal. (See recommended condition #3)

• Other than the total square footage, the Master Sign Plan appears to meet the sign standards. The Master Sign Plan is attached to this report at Attachment 12.

DEVELOPMENT AGREEMENT

A development agreement will be entered into for this project to outline expectations, responsibilities, and various provisions affecting the allowed development of the project.

This is one of the many documents for this project which have overlapping provisions which staff has not had the ability to confirm and verify that there are no contradictions between the agreement, the PUD plan, and notes on the Preliminary Plat. For example, the Development Agreement discusses short-term rentals, deed restricted housing, waivers of code requirements, and off-site improvements.

Entering into the Development Agreement will be a separate action made by the Town Council and could occur after the PUD plan is approved.

UPDATE:

Similar to many other updates in this report, an exceptional amount of progress has been made on the Development Agreement to tie up ambiguities and overlapping provisions with other documents, such as the plat notes. Town staff, including the Town Attorney, have been able to review this document and respond to the development team with comprehensive comments. The latest version of the Development Agreement was received on July 8th, and it depicts the agreed upon concepts. This document is attached and is acceptable to town staff as attached. No additional condition is needed to ensure compliance with short-term rental and deed restricted housing provisions.

COVENANTS

This development will have a common ownership association to manage and maintain the common elements of the project. The common elements of the project include all the internal streets, utility service lines, and open spaces within the project. Public amenities include the park at the northwest area of the property, the trail along the western edge of the property, and the pedestrian connection along the southern edge of the property. While these amenities are accessible to the general public, they will be installed, owned, and maintained by the established ownership entity.

Of note, there are provisions in the language that state that if these public amenities and public accesses are not maintained to the Town's standards, the town may maintain or repair such amenity or improvement and be compensated by the ownership entity by means allowed by law.



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COMPLIANCE WITH COMPREHENSIVE PLAN

This area is identified as Mixed-Use Business in the Town's 2019 Future Land Use Map. The 2019 Master Plan identifies Mixed Use Business as an area where the primary uses should be retail stores, professional offices, commercial services, and restaurants. The identified supporting uses include higher density residential uses and parks and recreational facilities. The characteristics of this area should be to support a range of commercial uses, incorporate bicycle and pedestrian facilities into the development, and provide higher density residential uses above commercial uses or in standalone buildings. The anticipated densities should be between 12 and 18 units per acre.

UPDATE:

Based on the review of the proposed development, the following Comprehensive plan policies and goals appear to be met by the proposed project:

- ENV-2: Strengthen the Umcompany River corridor as a community and environmental resource.
- COM-1: Maintain Ridgway as a community that is accessible to a range of income levels, ages, and households.
- COM-2: Encourage a diversity of housing options that meet the needs of residents.
- CHR-1: Support vibrant, diverse, save, and well-connected neighborhoods.
- CHR-5: Promote a range of opportunities and spaces for community gatherings and interactions.
- CHR-6: Maintain and enhance Ridgway's gateways, entry-corridors, and scenic vistas.
- CHR-7: Develop an interconnected system of parks, trails, open space, and recreational facilities that meets the needs of Ridgway's residents and visitors.
- GRO-2: Ensure public infrastructure, utilities, facilities, and services are sufficient to meet the needs of residents and business as the town grows.
- GRO-4: Develop a safe and efficient multi-modal transportation system, balancing the needs of all users.



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STAFF RECOMMENDATION

Upon review of the application against applicable Town standards, staff recommends that the Town of Ridgway Planning Commission recommend approval of the preliminary PUD plan and preliminary plat application to the Town Council with the following conditions:

- 1. The landscape plan be updated to include a table that clearly indicates the calculation of required number of trees and shrubs, distribution of trees and shrubs in the front yard area, and calculates and identifies the groundcover type as required in Sec. 6-6-4(G) of RMC and accepted by town staff prior to the PUD plan and preliminary plat application being considered by the Town Council.
- 2. The lighting plan be updated to identify the correlated color temperature of each fixture as required in Sec. 6-5-1(A)(5) of RMC and accepted by town staff prior to the PUD plan and preliminary plat application being considered by the Town Council.
- 3. The Master Sign Plan be updated to comply with the maximum of 195 square feet of sign area as required by Sec. 7-3-17(J)(3)(e)(ii) of RMC and accepted by town staff prior to the PUD plan and preliminary plat application being considered by the Town Council.
- 4. All outstanding engineering comments dated June 22, 2021, in attachment 16 shall be adequately addressed by the applicant and acceptable to town staff prior to the PUD plan and preliminary plat being considered by the Town Council.
- 5. Easements dedicated on the preliminary plat shall meet Town standards and be accepted by town staff prior to the PUD plan and preliminary plat application being considered by the Town Council.

ATTACHMENTS

- 1. Application
- 2. Project Narrative
- 3. Authorized Agent Letter
- 4. Traffic Impact Study
- 5. Drainage Study
- 6. Geotechnical Report
- 7. Planned Unit Development Preliminary Plat
- 8. Civil Construction Plans
- 9. Landscape Plan
- 10. Lighting Plan
- 11. Architectural Plans
- 12. Master Sign Plan
- 13. AOI, Bylaws, and Declarations
- 14. Development Agreement
- 15. July 2, 2021, Town Review Comments
- 16. July 8, 2021, Applicant Responses to town review comments





TOWN HALL PO Box 10 | 201 N. Railroad Street | Ridgway, Colorado 81432 | 970.626.5308 | www.town.ridgway.co.us

	Official Use Only Receipt #
Planning Commission Hearing Request	Date Received: Initials:
General Information	
Applicant Name JOHN SIMON - OWNER'S ALENT	Application Date 6/18/20
Mailing Address P.O. BOX 2794 TELLURIDE, CO 8143	
Phone Number 970-708-7224 Email jls 2 q.com	
Owner Name ALPINE HOMES - RIDGWAY, LLC	
Phone Number 970-708.7224 Email 115 2 2. com	
Address of Property for Hearing TRIANGLE SUBDIVISION LOT-1	RIDGWAY, CO
Zoning District GENERAL COMMERCIAL UNCOMPANCES FIVER OVER-LAY DISTRICT	

Brief Description of Requested Action

PRELIMINARY PLAT REVIEW OF MIXED USE DEVELOPMENT

Action Requested and Required Fee Payable to the Town of Ridgway

Temporary Use Permit per 7-3-13(C)	\$150.00	Subdivisions per 7-4 unless noted	
Conditional Use per 7-3-14	\$250.00	Sketch Plan	\$300.00 (+ \$10.00/lot or unit)
Change in Nonconforming Use per 7-3-15	\$150.00	Preliminary Plat	\$1,500.00 (+ \$25.00/lot or unit)
Variances & Appeals per 7-3-16	\$250.00	Preliminary Plat resubmittal	\$750.00 (+ \$25.00/lot or unit)
Rezoning per 7-3-17	\$250.00	Final Plat	\$600.00
Other Reviews Pursuant to 7-3-18	\$250.00	Minor Subdivision	\$450.00 (+ \$25.00/lot or unit)
Variance to Floodplain Reg. per 6-2	\$150.00	Lot Split	\$450.00
Master Sign Plan Pursuant to 7-3-12	\$150.00	🔲 Replat	\$150.00 (+ \$25.00/lot or unit)
Deviations from Single Family Design	\$175.00	Plat Amendment	\$250.00
Standards per 6-6		Planned Unit Dev. per 7-3-11	See Preliminary and Final Plat
Other	\$	Statutory Vested Rights per 7-5	\$1,500.00

Applicant and owner shall be jointly and severally responsible for legal, engineering, planning, administrative and miscellaneous fees, including recording costs, if incurred. (R.M.C. 7-3-20(B) and 7-4-12(B)). Water and sewer tap fees and development excise taxes are due at approval of final plats.



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Attachments Required

For All Applications

Evidence of ownership or written notarized consent of legal owner(s).

Information proving compliance with applicable criteria (see the Ridgway Municipal Code for criteria), like a narrative, site plans, and/or

architectural drawings drawn to scale on paper size of 8.5 x 11 or 11 x 17.

For Conditional Use Permits

The site plan shall show the location of building(s), abutting streets, all dimensions, off-street parking requirements, and landscaping.

Architectural drawings shall include elevations and details of building(s).

For Changes in Nonconforming Use

Description of existing non-conformity.

For Variances

The site plan shall show the details of the variance request and existing uses within 100 ft. of property.

For Rezoning

Legal description, current zoning, and requested zoning of property.

For Subdivisions

All requirements established by Municipal Code Section 7-4.

Sketch plan submittals shall be submitted at least 21 days prior to the Planning Commission hearing at which the applicant wishes to have the application considered.

Preliminary plat submittals shall be submitted at least 30 days prior to the Planning Commission hearing at which the applicant wishes to have the application considered.

Final plat submittals shall be submitted at least 30 days prior to the Planning Commission hearing at which the applicant wishes to have the application considered.

Please note that incomplete applications will be rejected.

Applicant Signature

Owner Signature

U|18/20 Date

6/10/20 Date

APPLICATION/NARRATIVE FOR SKETCH PLAN SUBDIVISION AND PUD REVIEW FOR TAVACI VILLAGE LOT 1 TRIANGLE SUBDIVISION

Date: June 18, 2020 Revised 01/25/2021, 04/30/2021

Alpine Homes-Ridgway, LLC, a Colorado limited liability company ("**Applicant**") is the current, fee title owner of certain property described on attached <u>**Exhibit**</u> "A" ("**Subject Property**").

Applicant requests that the Town schedule the Application (described below) for appropriate review and action at a duly noticed public meeting.

A copy of a current title policy showing the vesting of title to the Subject Property in the name of the applicant and a listing of all liens, encumbrances, agreements, easements, other exceptions and Statement of Authority is attached **in part 16:** Civil Drawings G-3 There are no holders of mortgages or deeds of trust whose consent is required to enable Applicant to process this Application. Based upon its review of the Title Policy, the Applicant has determined that there does not appear to be any severed mineral rights that are associated with the Subject Property.

The Subject Property is a generally triangle shaped parcel containing approximately 4.30 acres and is included within the incorporated boundaries of the Town of Ridgway. The Subject Property is depicted on the attached survey, attached as The Subject Property is currently vacant and undeveloped, except for an existing access and certain utilities serving future development on this parcel as well as providing access to development on adjacent property to the south owned by other parties. It is adjacent to and fronts on Highway #550, which is located to the east. The western boundary of the Subject Property sits above and to the east of the Uncompahgre River and is generally situated above the highwater mark of the Uncompahgre River. The Subject Property extends to point to the northerly extent of the parcel and adjoins existing commercial properties to the south. The Subject Property is generally flat and contains only sparse growth of grass.

Applicant is submitting its application for Sketch PUD/Subdivision Review ("Application") by the Town of Ridgway ("Town"), which is being compiled and will be reviewed in accordance with applicable provisions of the Ridgway Municipal Code ("Code"). The Application is for a certain development project ("Project") generally described as follows: Mixed Use Project consisting of commercial and residential development to be included in certain new buildings being constructed on the Subject Property.

The layout of the lot as well as the conceptual placement, mass/scale/height and design of the proposed buildings are as represented in the attached submittal documents.

In furtherance of the Town's submission and review standards provided for in Section 7-4-5 of the Code, the applicant states as follows:

Total number of proposed dwelling units, and maximum occupancy: 38 Residential Dwelling Units, Max Occupancy 176 (88 bedrooms x 2 occupants) of which 4 dwelling units are proposed to be deed restricted.

Affordability: An overriding goal of this project is affordability. Beyond the 4 deed restricted affordable units, the overall project is being designed in a cost effective manner by the Owner and

Project team to meet the needs of the region and community by provide additional local housing within walking distance to the Town's core.

Estimated total number of gallons per day of water system requirements, source of waters to supply subdivision requirements, and proposed dedication of water rights in accordance with existing town ordinances: _16,200 gals/day, calculations attached as Doc. 09 (Refer to Civil Plans)

Estimated total number of gallons per day of sewage to be treated and means for sewage disposal: Refer to Civil Plans

Availability of electricity, natural gas and other utilities necessary or proposed to serve the subdivision: (Refer to Exhibit K and Civil Plans)

Estimated construction cost and proposed method for financing of the streets and related facilities, water distribution system, sewage collection system, drainage facilitates and such other utilities and improvements as may be necessary: \$1,986,000 Owner financed

Evidence of legal access to the property: As indicated on the survey attached as **Doc. 08** the Subject Property adjoins State Hwy #550. Survey shows access easement to the property and the development team is working through the CDOT access permit process.

The Application includes copies of appropriate plans/drawings/reports in support of the sketch plan which address the following information/conditions:

(1) The property boundaries of the subdivision, north arrow and date. The scale of the sketch map shall not be less than one inch equals two hundred feet. The map shall include the name of the subdivision, name of the county, township, range, section and quarter section. In the case of large subdivisions requiring more than one sheet at such a scale, and index map showing the total area on a single sheet at an appropriate scale shall also be submitted.

(2) A conceptual drawing of the lot and street layout indicating the approximate area and number of individual lots and access to the property.

(3) Provisions for sufficient off-street parking, school bus stops to be approved by the school district, and mail box locations to be approved by the US Postal Service.

- PARKING REQUIREMENTS AND SQUARE FOOTAGE OF EACH BUILDING	\sum
	- 5
BUILDING CM	\prec
COMMERCIAL-RESIDENTIAL MIXED USE: 2-STORY 7,429 SF	~
GROUND LEVEL 3,983 SF RETAIL COMMERCIAL TOTAL	~ ~
PARKING: 3,983 SF/ 250 16 SPACES	~ ~
UPPER LEVEL RESIDENTIAL (4) 2- BR UNITS AT 861.5 SF AVG. EA. = 3,446 TOTAL	2
PARKING: 2 SPACES PER UNIT 8 SPACES - UNCOVERED	\sum
24 SPACES	\sum
·)
BUILDINGS M1 A & B)
MULTIFAMILY: 2-BUILDINGS, 2-STORY 3,612 SF EACH (7,224 SF TOTAL))
2 - 3 BR UNITS	5
2 - 2 BR UNITS (ONE TYPE A AND ONE TYPE B ANSI ACCESSIBLE UNITS)	\prec
2 - 1 BR UNITS	3
COVERED PARKING BPACES	~
UNCOVERED PARKING 2 SPACES	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
12 SPACES	\prec
NOTE: M1 A & B REDUCED BY TWO (2) 1-BEDROOM UNITS	\downarrow
	\mathcal{I}

	\sim
BUILDING M2)
MULTIFAMILY: 3-STORY 14,153 SF)
2 - 3 BR UNITS)
6 - 2 BR UNITS	
GARAGE 1 ST LEVEL 16 SPACES (2 PER UNIT)	
4 VISITOR SPACES	5
20 SPACES	3
	\leq
BUILDING M3	\prec
MULTIFAMILY: 3-STORY 16,506 SF	\prec
2 - 3 BR UNITS	4
6 - 2 BR UNITS (ONE TYPE A ANSI ACCESSIBLE UNIT)	4
2 - 1 BR UNITS	2
GARAGE 1 ST LEVEL 18 SPACES (2 PER UNIT, 1 PER 1-BED UNIT)	2
4 VISITOR SPACES	\downarrow
22 SPACES	\downarrow
NOTE: M3 INCREASED BY TWO (2) 1-BEDROOM UNITS	2
	\sum
BUILDINGS D1-D5 (TOWNHOMES)	
TOWNHOME: 2- STORY; 23,695 SF TOTAL (IN 5 BUILDINGS))
LIVING 1,836.5 SF (3 BR) + GARAGE 2 CARS 534 SF = 2,369.5 SF EA UNIT 20 SPACES)
ZU STACES	5
	7

School Bus Stop:

The development team is working with Shane Ayer at Ridgway School District to finalize location.

Postal Box (Centralized Delivery Unit):

The development team is working with Renee Rexford at USPS to finalize location and size.

(Refer to Architectural Site Plan for more information)

(4) Site problems, poor drainage, flood plain, wetlands or natural and geologic hazards.

The site is currently naturally draining to the north and the proposed project works with the existing drainage and improves upon it by providing detention ponds to slow the drainage before it leaves the site. The Uncompany River borders the western boundary of the site and provides a great opportunity for some riparian restoration along the bank. The floodplain follows the western edge and there are no building proposed within the flood zone. There is a wetland area along the lower bench of the riverbank that is adjacent to the site. The wetlands have a combination of open water, grasses, cattails and willows. For more information see Ecological Characterization Study.

(5) Significant natural and manmade features on the site, such as streams, lakes, natural drainageways; vegetation types including locations of wooded areas; wildlife habitats; scenic corridors; visual impacts; solar access; existing buildings; utility lines and easements; irrigation ditches; bridges and similar physical features; and existing development on adjacent property.

As shown on the civil drawings the project includes manmade detention ponds to slow drainage from the site. The project also has a good portion of the proposed green space along the existing river

corridor to enhance wildlife habitats. Visually the buildings in this project have been staggered and stepped in height to minimize their visual impact. Refer to Civil Plans for more information.

The majority of vegetation on site consists of disturbed and degraded areas with weedy, herbaceous vegetation being dominant throughout. The herbaceous vegetation consists primarily of green rabbitbrush (Chrysothamnus viscidiflorus), spineless horsebrush (Tetradymia canescens), spotted knapweed (Centaurea stoebe), common mullein (Verbascum Thapsus) and bentgrass species (Agrotsis spp.). In addition to this dominant herbaceous stratum, there is a row of 8 narrow leaf cottonwoods (Populus angustifolia) towards the middle of the property and 3 silver buffaloberry (Shepherdia argentea) shrubs scattered throughout. The adjacent property, buffering the Uncompahgre River, is reminiscent of scrubshrub riparian ecosystems, with populations of Geyer willow (Salix geyeriana), Rocky Mountain willow (Salix monticola), sandbar willow (Salix exigua), and smaller narrow leaf cottonwood species that appear to have been planted. These willow populations are found all along the bank of the Uncompahgre River, with more robust populations bordering the property to the north. Throughout the western border of the site, where it is adjacent to the Uncompahgre River and hydrology is favorable, these willow populations can be found in sparse densities.

(6) Demonstrate compatibility with natural features.

The project site has been designed to work with the natural features and to enhance them where possible. Refer to Civil Plans and Landscape Plans for more information. This property sits between the Uncompany River and Hwy 550 on a bench above the water level. The river borders the western boundary of the site and provides a great opportunity for riparian buffer planting along the proposed trail at the edge of the property. The floodplain follows the western edge and there are no buildings proposed within the flood zone. There is a wetland area along the lower bench of the riverbank that is adjacent to the site. The wetlands have a combination of open water, grasses, cattails and willows. For more information see the Ecological Characterization Report.

The majority of vegetation on site consists of disturbed and degraded areas with weedy, herbaceous vegetation being dominant throughout. The herbaceous vegetation consists primarily of green rabbitbrush (Chrysothamnus viscidiflorus), spineless horsebrush (Tetradymia canescens), spotted knapweed (Centaurea stoebe), common mullein (Verbascum Thapsus) and bentgrass species (Agrotsis spp.). In addition to this dominant herbaceous stratum, there is a row of 8 narrow leaf cottonwoods (Populus angustifolia) towards the middle of the property and 3 silver buffaloberry (Shepherdia argentea) shrubs scattered throughout. The adjacent property, buffering the Uncompahgre River, is reminiscent of scrubshrub riparian ecosystems, with populations of geyer willow (Salix geyeriana), rocky mountain willow (Salix monticola), sandbar willow (Salix exigua), and smaller narrow leaf cottonwood species that appear to have been planted. These willow populations are found all along the bank of the Uncompahgre River, with more robust populations bordering the property to the north. Throughout the western border of the site, where it is adjacent to the Uncompahgre River and hydrology is favorable, these willow populations can be found in sparse densities.

The developer is requesting the Town of Ridgway consider a Conditional Use Variance to allow for limited development within the 75' setback per Subsection 7-3-9.6 (D) and (E) of the Ridgway Municipal Code. The proposed encroachment area is shown on the Landscape Site Analysis Plan in the Ecological Characterization Report. The area to be considered for encroachment is highly degraded and consists of fill material, noxious weeds and is currently mostly void of vegetation. To offset impacts, the developer is proposing riparian/native planting along the western edge of the property where degraded riparian habitat currently exists. In addition, the developer proposes a 6' wide crusher fine soft surface walking/biking trail along the western edge of the property which connects to the pedestrian bridge in town. This would significantly increase habitat, provide bank stabilization, improve aesthetics and provide the Town and visitors with a new riverfront experience. Native plants will be used in the site drainage and water quality areas within the project, to help pull in and blend with the riparian character of the river, while also

improving connected habitat. The intent is to be very compatible with the river ecosystem and provide riparian enhancement to what exists currently.

The cultural landscape will consist of low water use, adapted and native plants. The majority of the landscape will be native grasses irrigated for establishment. In more high profile areas, such as the entry, there will be xeric shrub and perennial beds. Riparian plantings adjacent to the proposed trail will provide a transition between the river corridor and the project site, as well as a visual buffer from the river. There will be buffer plantings at the perimeter of the site to help with screening from adjacent properties and the highway. Trees are planted at the edge of parking lots to provide shade. Small lawn areas are provided at a few locations to provide a space for residents to play.

Irrigation for the site's landscape is intended to be provided by an on-site well. The well will fill up underground storage tanks for distribution to the mostly native and xeric plantings. The system will be automated and controlled.

Lighting will focus on being Dark Sky Compliant in accordance with the Town code for appropriate, lowlevel fixtures. Pedestrian scale light posts are proposed that are approximately 12' in height at key intersections for safety. On the residential buildings there are sconces and step lights to keep the light directed downward. There are bollard lights to provide point to point wayfinding at night along the pedestrian pathways. All lighting will be shielded.

Signage location and distribution are shown at a preliminary level. At the current time, the buildings do not have names or tenants so design of signage will follow the Town code in future submittals. The location of a general monument sign, building mounted signs and square footages is shown on the plans for initial intent and code compliance.

(7) Total acreage of the tract. 4.3 acres

(8) Existing and proposed zoning district boundary lines.

The Subject Property is currently classified in the "General Commercial" zone and this application does not propose to change the applicable zoning.

(9) General land use divisions including residential types, commercial, industrial, parks, open space and community facilities, including the proposals' relevance to underlining zoning.

Land Use	Portion of Site	Description	Area (acres)	%
Commercial	Bldg C & CM	Commercial buildings, commercial parking and surrounding area.	1.304 acres	30.3%
Residential	M1, M2, M3& D 1 thru 5	Residential buildings, residential parking and surrounding area	2.996 acres	69.7%

Land Use Table:

(Refer to Architectural Site Plan and Preliminary Plat of Tavaci Village Planned Unit Development for more information)

(10) Type and layout of all proposed infrastructure including streets, utilities, water and sewer systems, and impact on existing systems. **Refer to Civil Plans**

(11) Public use areas proposed to be dedicated to the public, and the purpose of the dedication, and their relationship to existing public use areas.

The Tavaci Village PUD includes a 10' wide non-motorized Public Recreation Trail Easement. This is an extension of the existing walking path along the east bank of the river.. The project also includes public oriented walks and patio at the commercial buildings C and CM intended to encourage casual social gathering and community engagement within the commercial areas.

(12) Existing and proposed land use patterns, including street system, sidewalks, green space, of both the tract proposed for development and immediately adjacent land. **Refer to Civil Plans and Landscape Plans**

(13) Documents required by Section 7-6 of the Ridgway Municipal Code. **Refer to calculations attached as Exhibit "C"**

The Applicant believes that the proposed development, as depicted on the site plan and supporting materials, is consistent with the following town review standards:

(a) Conformance with the master plan and zoning regulations:

ENV Corridor Access; COM -1-5 Distributed Approach; COM-CHR-1: Support vibrant, diverse, safe and well connected neighborhoods; CHR -6: Maintain and enhance Ridgway gateways, entry corridors, and scenic vistas; CHR-7: Develop interconnected systems of parks, trails, open space; CHR 7.2: Trail development; GRO- 1: Manage growth and development in order to maintain Ridgway's small town character, support a diverse community, and create employment opportunities.

The project contains:

1. A diversity of attainable Multi-Family, and Duplex housing units.

2. A significant expansion and an easement of the connection over the river to town with a walkable trail and enhanced river edge for community connections.

3. Sustainable design and construction approaches to energy efficiency meeting applicable IECC guidelines.

- 4. Restoration, enhancement, and preservation of Uncompany River corridor
- 5. Public oriented walkways and patio for community gathering
- 6. Enhanced entry corridor into Ridgway,
- 7. mixed-use for sustainable year-round local economy which all align with the Town's master plan.
- 8. Study area for future potential highway 550 crossing at north corner of site.
- 9. Economic growth with commercial spaces and property management and maintenance opportunities.
- 10. A river park area with a picnic pavilion, fixed grill, and lawn area for community activities and recreation

The project is located within the General Commercial zoning district with the commercial portion falling within a use by right and we are requesting a variance for multi-family residential as a conditional use.

(b) Relationship of development to topography, soils, drainage, flooding, potential natural hazard areas and other physical characteristics;

The project is along the east bank of the Uncompany river and is fairly flat. The design team has developed a plan based on the Ecological Study to preserve and protect the riverbank and enhance the drainage on the site. See Civil and Landscape plans for more information

(c) Availability of water, means of sewage collection and treatment, access and other utilities and services;

Water to the site will come from two locations to form a looped system. The first location is in the south eastern part of the site and the second location is at the north eastern part of the site. The sanitary sewer is at the south eastern corner of the site. An existing electrical easement runs along the east site of the site and power will be fed from this line. The gas line is also fed from the east side of the site with-in an existing utility easement. See Civil plans for more information

(d) Compatibility with the natural environment, wildlife, vegetation and unique natural features;

The property is a vacant, undeveloped parcel east of the Uncompany River. The proposed development will Restore, Enhance and Preserve the River corridor. Refer to Ecological Study and Landscape Plans.

(e) Public costs, inefficiencies and tax hardships

The town is in great need for a variety of attainable housing and this project will help to fill that need. The location of this site will help promote community connectivity and enhance the public use along the river. We do not see this project creating hardships for the town, we see this project as filling a need.

Respectfully Submitted

Alpine Homes-Ridgway, LLC, a Colorado limited liability company



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	Official Use Only
Authorization of Agent	Date Received: Initials:
Owner(s) information	
Name(s) Alpine Homes LLC, 6kn B Phone 727. 823. 8161 Email Property Information glenne	Deucer Date 3/6/20
Property Information Email glenne	cantorpartners.com
Property Street Address Triangle Subdivision Property Legal Address: Subdivision Triangle Filing Authorized Agent Information	
Name John Simon	
970-708-7224 11500	Lom
and the second se	

I/we, the undersigned owner/s of the above described real property located in the Town of Ridgway, Colorado, hereby authorize:

Name of Authorized Agent

to act in my/our behalf in applying for the above permits from the Town of Ridgway, as required by existing Town of Ridgway regulations pertaining to zoning, building, encroachment, excavation, and/or utilities.

Property Owner of Record

Property Owner of Record

Property Owner of Record

Date 03/09/2020

Date

Date

Traffic Impact Study

Prepared For:

Ridgway Triangle Site

NW of SH-550 & SH-62

Ridgway, Colorado



April 13, 2020



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1 Executive Summary

This report documents the traffic impact study (Study) for the proposed mixed-use development in Ridgway Colorado, known as the Ridgway Triangle Site (Project). The Project will be located west of SH-550, and just north SH-62 as shown on Figure 1. The traffic study was done in accordance with published guidelines provided by CDOT.

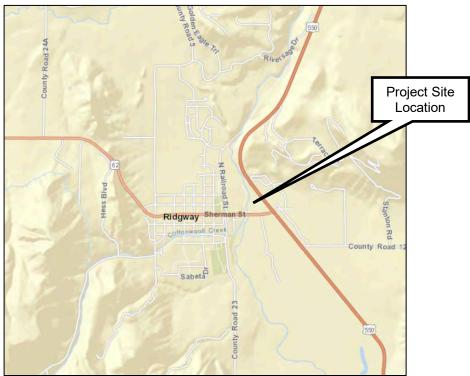


Figure 1 - Project Vicinity Map

The study analyzed the weekday morning and afternoon peak-hours. Analysis years were 2025 (assumed Project build out) and 2045 (20 years after completion). The study area included the following intersections and configurations, as directed by CDOT Region 5.

- Int. #1, SH-550 & Site Access #1 (3-leg, full-movement, stop control for site access)
- Int. #2, SH-550 & SH-62. (4-leg signal control)

Figure 2 shows the proposed Project site plan concept. The Project may be constructed in phases over the next couple years, but this study assumed a single-phase Project to be fully constructed by 2025. The Project will include 38 residential units (10 townhomes & 28 multi-family), 3,200 sf of retail, and 2,000 sf restaurant.

Access to SH-550

There would be two site connections to SH-550. First, the proposed public Site Access would connect directly to SH-550 as far north as possible (MP 103.89 LT). Second, there would be an emergency only site access at the location of the current dispensary access



(MP 103.82 LT). This emergency access is required per Section 7-4-7 (C) (2) of the Ridgway Municipal Code. Please see the first page of the appendix for this section of the code

No Access to SH-62

There is no project frontage on SH-62. However, there is a maintenance access easement on the south side of the property that connects the Project to SH-62. However, the property owner to the south (Bank) is prohibiting use of this easement for non-emergency access. Therefore, there would not be any Site Access to SH-62.



Figure 2 - Project Site Plan Concept



Conclusions

Based on the analysis presented in this report, it appears the proposed mixed-use Project would be successfully incorporated into the existing and future roadway network with one exception. The Permittee should install a northbound left turn deceleration lane on SH-550 to accommodate Project and Dispensary traffic.

Public Site Access on SH-550

- This access should be constructed with 1 inbound lane and 1 outbound lane but should be wide enough to accommodate WB-50 vehicle turning movements.
- A northbound left turn deceleration lane should be constructed on SH-550.
 - Available space: Per CDOT direction, this lane would be installed between the Site Access and the existing southbound left turn lane for the SH-62 intersection. This existing distance is approximately 450-ft.
 - CDOT Turn Lane Criteria For NR-B Hwy at 45 mph:
 - Per Table 4-5 for a "NR-B greater than 40 mph," left turn deceleration lane length should be the deceleration distance
 - Per Table 4-6, the required deceleration distance is 435-ft
 - Therefore, the total required lane length would be 435-ft
 - *Recommendation:* Construct a 435-ft long northbound left turn lane, in the existing painted median area, including the required taper.

Emergency Access on SH-550

• Reconfigure the existing Dispensary access on SH-550 to a gated emergency only access. The Site design should include a paved connection from the site to the Dispensary parking lot so that Dispensary traffic would travel through the Projects site and use the Project access to SH-550

SH-550 & SH-62 Intersection

• Improvements are not recommended as part of project action. Background traffic growth may lead to CDOT consider making some improvements over the next 25 years.

2 **Project Trips**

This section includes Project trip generation, distribution, and assignment to the roadway network.

Project Trip Generation

The study analyzed the weekday morning and afternoon peak-hour periods. Project trip generation forecasts are based on the ITE <u>Trip Generation</u> manual (Tenth Edition). Detailed project trip generation calculations for each land use and condition are provided in the Appendix.

The Project will include:

• 10 townhomes (assume single family residential - LUC 210)



- 28 multifamily apartments low rise (use LUC 220)
- Service Restaurant: 2,000 sf (assume high turnover site down restaurant LUC 932)
- Retail: 3,200 sf (assume Apparel Store LUC 876)

Trip reduction factors were not applied to the trip generation shown below. The types of land uses wouldn't have much internal capture trip reduction or pass-by capture trip reduction.

		Weekday AM			Weekday PM			Weekday		
Land Use Code & Description	Independent Variable	Peak Hour Rate	In	Out	Peak Hour Rate	In	Out	Daily Rate	In	Out
210 – Single Family Residential (Townhome)	D.U	0.74	25%	75%	0.99	63%	37%	9.44	50%	50%
220 – Multifamily Housing (low Rise)	D.U.	0.46	23%	77%	0.56	63%	37%	7.32	50%	50%
932 - Restaurant	K.S.F.	14.04	57%	43%	17.41	52%	48%	112.18	50%	50%
876 – Apparel Store	K.S.F.	4.8	54%	46%	4.20	50%	50%	66.40	50%	50%

Table 1 – Project Trip Generation Summary

	Size	Weekday AM			Weekday PM			Weekday		
Land Use Code & Description		Peak Hour Total	In	Out	Peak Hour Total	In	Out	Daily total	In	Out
210 – Single Family Residential (Townhome)	10	12	3	9	11	7	4	125	62	63
220 – Multifamily Housing (low Rise)	28	14	3	11	19	12	7	205	103	102
932 - Restaurant	2	28	16	12	35	18	17	224	112	112
876 – Apparel Store	32	15	8	7	13	6	7	212	106	106
Total		69	30	39	78	43	35	766	383	383

Project Trip Distribution & Assignment

It was assumed that all trips will be made by personal vehicles so modal split was not Necessary.

Diverted Dispensary Traffic

The diverted dispensary traffic is part of the background traffic calculation because it is existing traffic. The background traffic calculations assume the dispensary traffic continues to travel in the same patterns as identified in the traffic count. But none of this is part of the Project Trip Distribution calculation described in this section.

At the Site Access Point

There are two distinct type of land uses proposed for the Project – residential & service/retail. Each of these contribute to the overall Project trip distribution calculation in different ways. Each has its own trip generation (and a percentage of the overall trip generation) and origin/destinations.



- Residential Trips:
 - Based on daily trip generation, this use would equate to 43% of overall project trips.
 - It was assumed that 80% of these trips travel to/from the south on SH-550 for employment, recreation, or shopping purposes. As such, the AM distribution for residential trips would be 80% to the south and 20% to the north. The PM distribution would be 80% from the south and 20% from the north.
- Service/Retail Trips:
 - Based on daily trip generation, this use would equate to 57% of overall project trips.
 - It was assumed that 90% of these trips travel to/from the south on SH-550 because the majority of the population centers that would patronize the service & retail uses are located to the south and west of the Project (Ridgway area). As such, the AM distribution for residential trips would be 90% to the south and 10% to the north. The PM distribution would be 90% from the south and 10% from the north.
- Combined Trips
 - Based on the weighting factors derived from the percentage of daily trips for each category of land use, it was assumed that 86% of the overall Project trips travel to/from the south on SH-550 [(0.57 x 90%) + (0.43 x 80%) = 85.7]. As such, the distribution for Project trips would be 86% to/from the south and 14% to/from the north.

At the Intersection of SH-550 & SH-62

The traffic splits from the recent traffic counts were used to assign Project trips to specific movements at this intersection.



Figure 3 - Project Trip Distribution and Assignment Assumptions (AM)

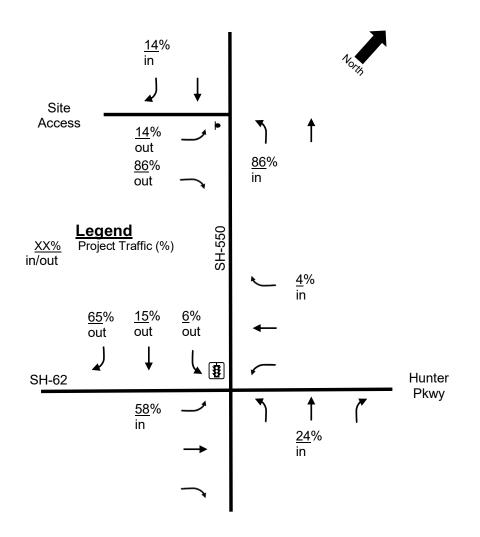
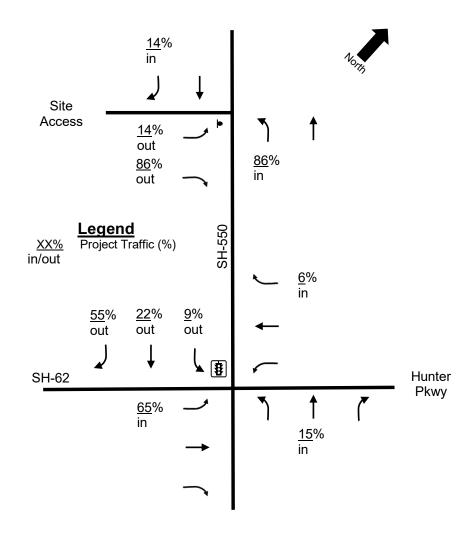




Figure 4 - Project Trip Distribution and Assignment Assumptions (PM)



Project trips for each movement were calculated by multiplying the Project trips by the trip assignment percentages, as shown on the following figure.



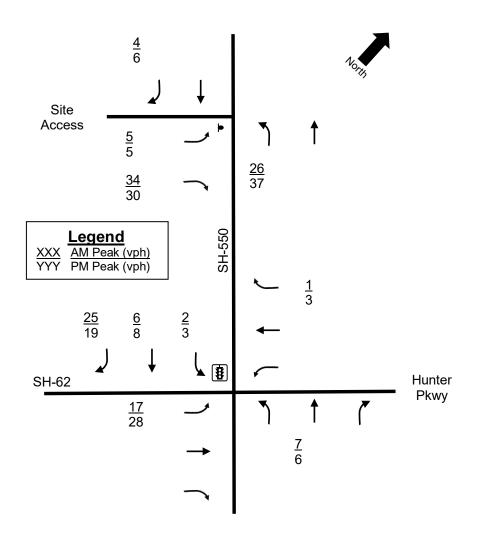


Figure 5 - Project Trips by Movement (AM/PM)

3 Existing Conditions & Future Traffic Volumes

Within the study area, SH-550 is generally a multi-lane paved highway. There are various auxiliary lanes to accommodate turning movements. The existing conditions and characteristics of SH-550 were obtained from CDOT Straight Line Diagrams.

- Access Category: NR-B
- Functional Class: Principal Arterial
- NHS: Yes
- Posted Speed Limit:
 - \circ NB = 45 mph
 - SB transitions from 60 mph to 45 mph right at Project Access Point

The following Figure shows the following lane geometry at the intersection of SH-550 & SH-62. There are not any planned or programmed highway improvements within the study area.



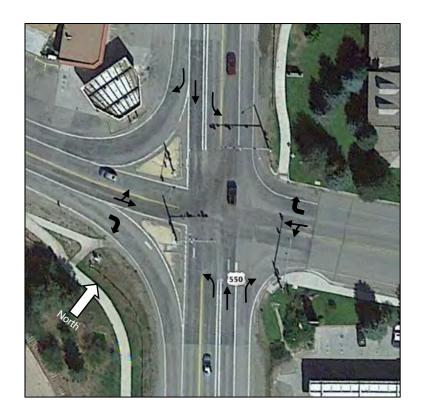


Figure 6 - Existing Intersection of SH-550 & SH-62

3.1 Existing Traffic Volumes (2020)

This section is necessary to describe the traffic counts and the peak season adjustment factor. The existing volumes were the basis for future background traffic calculations. This study does not provide and operational analysis of existing traffic.

Through a separate traffic counting service, TurnKey Consulting obtained peak hour turning movement traffic counts at the intersections in the study area (see Appendix for count summaries). At SH-550 & SH-62, the weekday peak hours were 7:45-8:45 am and 4:45-5:45 pm. The existing through traffic movements at the proposed site access point were derived from this count information at the adjacent existing intersection.

This area of Colorado sees large swings in traffic volumes throughout the year, with a summer peak. Since these traffic counts were obtained in February, it was necessary to adjust the traffic counts upwards to reflect peak season. This was based on a peak season adjustment factor of 1.7, with calculations to support this in the Appendix. This factor was based on a continuous counting station on SH-550, south of Montrose. The Appendix also includes traffic volume calculation tables, which show the existing traffic at each intersection.



3.2 Future Background Traffic Volumes

The background traffic calculation included two factors; the general growth of existing traffic, and trips generated from adjacent dispensary.

Background Traffic Growth

Per the attached CDOT historical traffic data, the 20-year growth factor is 1.18, and the following information was calculated:

- average annual growth rate = 0.83%
- 5-yr growth factor (2020 traffic counts to study year 2025) = 1.04
- 25-yr growth factor (2020 traffic counts to study year 2045) = 1.23

These factors were applied to existing traffic counts to obtain a part of the future background traffic volumes for each of the two analysis years.

Diverted Trips from the Adjacent Dispensary.

The dispensary traffic was counted to understand actual trips rather than trip generation estimates per ITE. The Project effort includes closure of the existing dispensary access and all traffic will be routed through the Project to/from the Project Site Access. So diverted traffic from the dispensary is back of the future background traffic at the Project Site Access.



Figure 7 - Existing Diverted Dispensary Trips at Site Access (AM/PM)

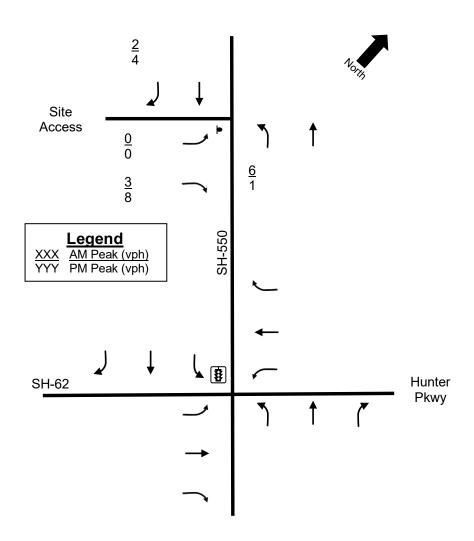
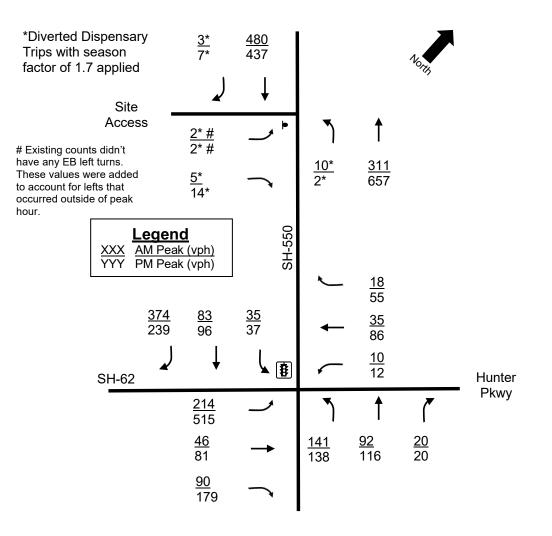




Figure 8 - Future Background Traffic Volumes - 2025 (AM/PM)





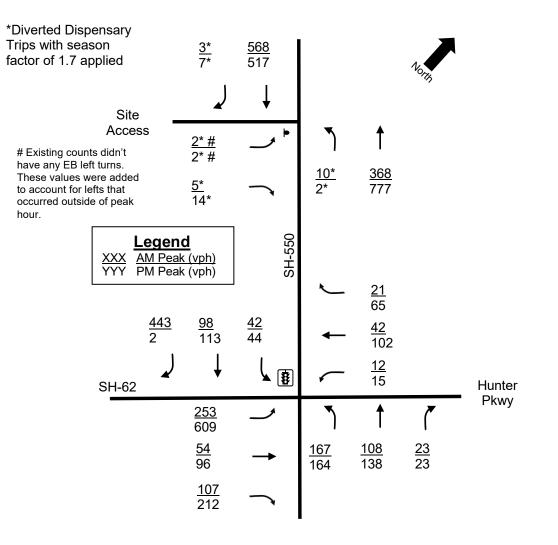


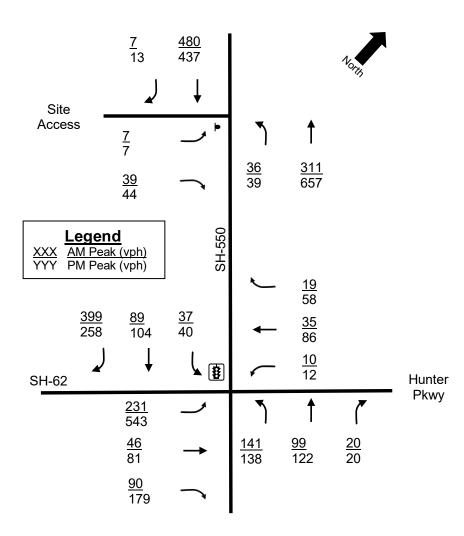
Figure 9 - Future Background Traffic Volumes - 2045 (AM/PM)



3.3 Total Future Traffic Volumes (Background + Project)

Future total traffic is the sum of project trips and background traffic.

Figure 10 - Total Future Traffic Volumes - 2025 (AM/PM)





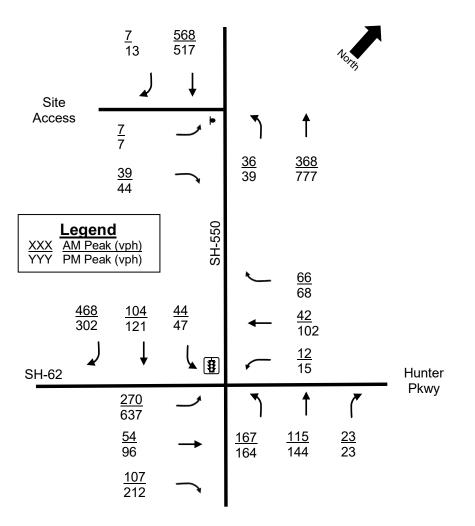


Figure 11 - Total Future Traffic Volumes - 2045 (AM/PM)

4 Peak Hour Safety & Traffic Operations Analysis

This analysis included turn lane warrant evaluations and traffic operations calculations.

4.1 Turn Lane Warrant Evaluation at Site Access Point

The Project Site Access point was evaluated to determine if turn lanes would be warranted to reduce vehicle conflicts points and crash potential. SH-550 has a speed limit of 45 mph, and an access classification NR-B. The following table shows the turn lane warrant analysis. A northbound left turn deceleration lane is required.



Auxiliary Lane	Turning Volume 2045 (VPH)	CDOT Warrant Requirements for NR-B	Lane Warranted Based on Turning Volume?	Lane Justified?
NB Left Turn Deceleration Lane (inbound)	39 (PM)	More than 10 vph when speed more than 40 mph	Yes	Yes
SB Right Turn Deceleration Lane (inbound)	13 (PM)	More than 25 vph when speed more than 40 mph	No	No (see next section also)
EB-NB Left Turn Acceleration Lane (outbound)	7 (PM)	Generally, not required unless safety problem identified, and dependent on a variety of factors	n/a	No (see next section also)
EB-SB Right Turn Acceleration Lane (outbound)	42 (PM)	Generally, not required but dependent on a variety of factors	n/a	No (2 SB lanes south of access)

Table 2 – Site Access Turn Lane Warrant & Design Summary

4.2 Intersection Distance Evaluation

SH-550 is a 4-lane highway at this location with a posted speed limit of 45 (northbound traffic) to 60 mph (southbound traffic). The alignment is straight and has a grade of less than 3% at the Site Access (no grade adjustments necessary). The design vehicle is SU truck. The following table shows the required and observed sight distance for the Project Site access to SH-550, using Colorado State Highway Access Code criteria. The following images show the sight view from this proposed Project Site Access. Adequate intersection sight distance is available in both directions.



Approx	imate Sight Dis	stance	Required Sight Distance	Actual Exceeds Required?
From Existing Site Access to	To North	900-ft	650-ft – Stopping at 60 mph (minimum per AASHTO) 900-ft – Entering At 60 mph (desirable per AASHTO)	Matches
SH-550	To South	To traffic signal and beyond in straight line	400-ft – Stopping at 45 mph (minimum per AASHTO) 675-ft – Entering At 45 mph (desirable per AASHTO)	Yes

Image #1: View to North Along SH-550 from Project Site Access Location







Image #2: View to South Along SH-550 from Project Site Access Location

4.3 Traffic Operations Results

The analysis used the latest version of Synchro Software to evaluate the existing and future traffic operations at the intersections and driveways within the study area. The concept of Level of Service (LOS) is used as a basis for computing combinations of roadway operating conditions and delay, which accommodate various level of traffic activity. By definition, six different LOS are used - A, B, C, D, E, and F. LOS "A" represents free-flow conditions with little to no delay. LOS "E" represents the maximum capacity of an intersection or roadway, where delay and/or congestion are severe.

- The future peak hour factor was 0.92.
- SH-550 has grades less than 3% so grade adjustments will be necessary for calculation of turn lane lengths.
- Per CDOT data, truck percentages will be 6% for all roads in the study area.

Table 4 summarizes intersection and movement operational LOS.



Leastian	Traffic		Year 2	025	Year 2	045
Location	Control	New Lane Geometry	Background	Total	Background	Total
Int #1 SH-550 & Site Access #1 – AM	<u>Unsignalized</u>					
Eastbound	Stop		n/a	В	n/a	В
Northbound		Left Turn Decel Lane	n/a	А	n/a	А
Southbound			n/a	А	n/a	А
Critical Movement Delay (sec)			n/a	11.9 (EB)	n/a	12.9 (EB)
Int #1 SH-550 & Site Access #1 – PM	<u>Unsignalized</u>					
Eastbound	Stop		n/a	В	n/a	С
Northbound		Left Turn Decel Lane	n/a	А	n/a	А
Southbound			n/a	А	n/a	А
Critical Movement Delay (sec)			n/a	13.1 (EB)	n/a	15.0 (EB)
Int #2 SH-550 & SH-62 - AM	<u>Signalized</u>		_	_	_	
Eastbound			D	D	D	D
Westbound			C	С	C	С
Northbound			В	В	В	В
Southbound			A	A	A	A
Overall Intersection LOS & Ave Delay (sec)	0		C (20.1)	C (20.9)	C (23.0)	C (24.2)
Int #2 SH-550 & SH-62 - PM	<u>Signalized</u>		-	_	_	_
Eastbound			E	E	F	F
Westbound			E	F	F	F
Northbound			D	D	D	D
Southbound			C	C	C	C
Overall Intersection LOS & Ave Delay (sec)			D (48.0)	D (54.7)	E (80.1)	E (87.4)

Table 4 – Intersection LOS Summary for Peak Hour Conditions

Figure 12 - Level of Service Summary - 2025 Total Traffic (AM/PM)

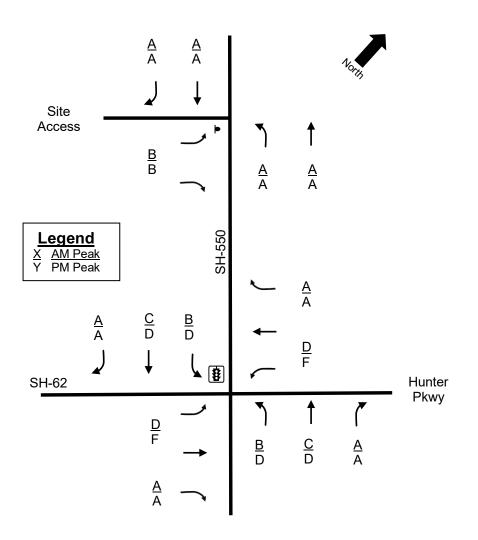
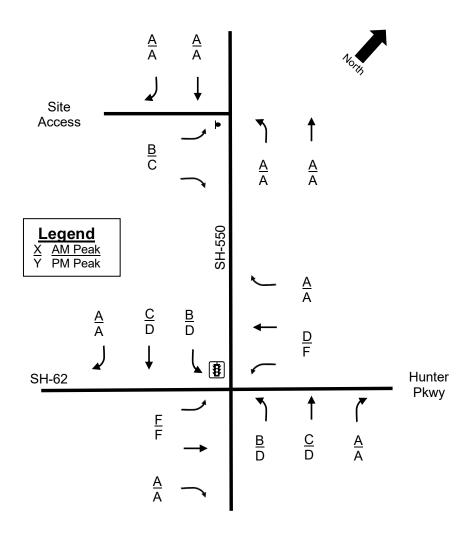




Figure 13 - Level of Service Summary - 2045 Total Traffic (AM/PM)





4.4 Individual Intersection Results & Recommendations

This section describes the recommended geometric improvements and actions resulting from increased background and project traffic.

Int. #1, SH-550 & Site Access

This proposed unsignalized full-movement intersection will have acceptable overall traffic operations in the total traffic analysis periods. A northbound left turn lane is warranted and recommended.

Recommended Improvements with Project Opening

- This access should be constructed with 1 inbound lane and 1 outbound lane but should be wide enough to accommodate WB-50 vehicle turning movements.
- A northbound left turn deceleration lane should be constructed on SH-550. Per CDOT direction, this lane would be installed between the Site Access and the existing southbound left turn lane for the SH-62 intersection. There may not be enough space for the northbound turn lane to meet CDOT's criteria for deceleration distance. If so, then a CDOT Design Waiver would be required as part of the highway design process.
- The existing Dispensary access on SH-550 should be closed to the public and made an emergency only access as part of Project Site Access construction. The Site design should include a paved connection from the site to the Dispensary parking lot so that Dispensary traffic would travel through the Projects site and use the Project access to SH-550.

Int. #2, SH-550 & SH-62

Improvements are not recommended at this intersection with Project Opening. Project traffic is a very small percentage of total traffic.

This is currently a 4-leg signal-controlled intersection. The traffic operations analysis was based on CDOT Synchro files provided by CDOT. The overall intersection would have acceptable traffic operations (LOS D or better) through the year 2025. However, the PM peak hour operations go to LOS F by the year 2045, in the summer peak season. There are likely some changes to the CDOT Synchro model that would improve these results for this isolated intersection. Specifically, the signal timing and phasing plan could be changed, and the two free-flow right turn lanes (eastbound & southbound) could be modeled as free-flow (currently modeled as yield condition).

The critical movement is the eastbound left turn, which experiences very high traffic volumes in the PM peak periods during summer peak flow. This study estimates that there would be over 600 vph making the left turn by the summer of 2045, which is twice the volume of 300 vph (general criteria for considering a second eastbound left turn lane). There are two receiving lanes on the north leg of the intersection so CDOT could consider making this improvement when warranted in the future.



5 CDOT Access Permitting Considerations

The State Highway Access Code requires CDOT access permitting for new access connections. A CDOT access permit will be necessary for:

- the proposed public Site Access connection to SH-550. The permitted traffic volume should be 101 vph (DHV) at milepost 103.89 LT. The Permittee would be the current property owner.
- the proposed private Emergency Access connection to SH-550. The permitted traffic volume should be 0 vph (DHV) at milepost 103.82 LT. The Permittee would be the current property owner.

6 Conclusions

Based on the analysis presented in this report, it appears the proposed mixed-use Project would be successfully incorporated into the existing and future roadway network with one exception. The Permittee should install a northbound left turn deceleration lane on SH-550 to accommodate Project and Dispensary traffic.

Public Site Access on SH-550

- This access should be constructed with 1 inbound lane and 1 outbound lane but should be wide enough to accommodate WB-50 vehicle turning movements.
- A northbound left turn deceleration lane should be constructed on SH-550.
 - *Available space*: Per CDOT direction, this lane would be installed between the Site Access and the existing southbound left turn lane for the SH-62 intersection. This existing distance is approximately 450-ft.
 - CDOT Turn Lane Criteria For NR-B Hwy at 45 mph:
 - Per Table 4-5 for a "NR-B greater than 40 mph," left turn deceleration lane length should be the deceleration distance
 - Per Table 4-6, the required deceleration distance is 435-ft
 - Therefore, the total required lane length would be 435-ft
 - *Recommendation:* Construct a 435-ft long northbound left turn lane, in the existing painted median area, including the required taper.

Emergency Access on SH-550

 Reconfigure the existing Dispensary access on SH-550 to a gated emergency only access. The Site design should include a paved connection from the site to the Dispensary parking lot so that Dispensary traffic would travel through the Projects site and use the Project access to SH-550

SH-550 & SH-62 Intersection

• Improvements are not recommended as part of project action. Background traffic growth may lead to CDOT consider making some improvements over the next 25 years.





Local Gov't Requirements for Emergency Access

CDOT Traffic & Hwy Data

Project Trip Generation Estimates

Project Trip Distribution & Assignment Calculations

Existing Intersection Turning Movement Count Summaries

Background Traffic Calculations

Intersection Operational Analysis



7-4-7

Ridgway Municipal Code

and approved them as completed in accordance with the final plat, other plans and applicable Town specifications.

(5) The subdivider shall be responsible for the costs to correct and repair any defect in any improvements due to materials or workmanship which appears for a period of 1 year from the date of approval of completion of any improvement, or such later date as provided in any Subdivision Improvements Agreement. As-built plans shall be submitted upon completion with the request for inspection and approval.

(6) No lot may be sold in any subdivision nor may any building, occupancy or other permit be issued if a breach of the improvements agreement occurs until such breach is remedied.

(C) (1) Prior to or at the time of submitting any final plat for any subdivision or planned unit development (or an amendment or replat thereof), the subdivider or subdivider shall submit, for review and approval by Town of Ridgway Planning and Zoning Commission, a written statement from a recognized weed control expert certifying that the subject real property is then free of all "noxious plants" (as such term is defined by C.R.S. 35-5.5-103(16). Alternately, if any such noxious plants are then determined to be present upon the subject property, the subdivider or subdivider shall submit for such review and approval a written plan for the abatement of such noxious plants. The approved plan shall be incorporated into an overall subdivision improvements agreement and the subdivider or subdivider shall remain individually responsible for the implementation thereof for a period of not less than two years unless a shorter period is expressly provided for in the subdivision improvements agreement.

(2) The foregoing requirements shall be in addition to ordinary weed control requirements imposed upon all landowners by the provisions of Chapter 12 of the Ridgway Town Code.

7-4-7 DESIGN STANDARDS.

(A) All subdivisions shall conform to the minimum design standards of, this Section. The Town Council may allow deviation from these standards if it determines that unusual topography or a hardship exists, or that alternative standards will more effectively protect the quality of the subdivision and the public welfare, or more effectively achieve the purposes of these Subdivision Regulations.

(B) All subdivisions shall be developed in accordance with the Town's Master Plans, Zoning Regulations, Flood Plain Regulations, and other applicable Town ordinances, regulations and specifications.

(C) Streets, Alleys, Lots and Blocks:

(1) All streets and alleys shall be constructed and designed in accordance with Town Street and Road Specifications.

(2) All lots shall have access to a street connected to the public street system. In order to ensure access by emergency service responders, any new subdivision street system must be connected by at least two separate routes to the state highway system. (Ord 07-2007)

(3) Access to any public highway under the jurisdiction of the State Department of Highways shall be subject to the provisions of the State Highway Access Code.

(4) Driveways and street access shall be subject to Subsection 14-5-15(B) of the

CDOT Traffic & Hwy Data



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-		R-A: Regional Highway			60	88		4100	15	0.25	1.07	It may appear that intrimation is missing from the straight line stagram. If so, reduce the number of milestpage and re-submit the request
103 From 103 To 104 A Ramps	- Underpass	CLASSIFICATION Access Control	Functional Class	NHS Designation	NB Primary Speed Limit	S B Secondary Speed Limit	TRAFFIC	AADT	DHV	Peak Truck Percentage	Year 20 Factor	lt may appoar that interm

DocuSign Envelope ID: 2C82ED12-E163-42D8-AF60-AE98B06FDD5C stations. Click the magnifying glass icon in front of a station to see count data below.

Export to Excel (/otis/API/TRANSYS/GetAadtsByRouteRefs/550B/103/104/true/true.csv)

	Station ID	Route	Start	End	Desc	ription	AADT	Year	Single Unit	Comb Trucks		20 Year Factor	DHV	DVMT	DD
4	105584	550B	98.026	103.388	ON SH 550 & CR 9Z, PC	NW/O CR 23 ORTLAND	4,100	2018	140	70	5.1	1.07	15	21,644	58
4	105585	550B	103.388	103.702	ON SH 550 MAIN ST, RI	SW/O SH 62, DGEWAY	5,100	2018	170	140	6.2	1.2	15	1,586	58
-	105586	550B	103.702	105.433	ON SH 550 62, MAIN ST	NW/O SH , RIDGEWAY	7,700	2018	230	180 (5.3	1.18	11	13,675	57
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-	ID Re	oute St	art End	AADT Ye	ar Single Trucks	Combined Trucks	% Truck	s DH	Proje		Project	ed ucks Co		jected ned Tru	cks
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to E	xcel (/o	tis/API/	TRANSY	S/GetEsa	IsByRouteRe	fs///1/false/5	50B/103	3/104/	true/tru	e.csv)					
Ro	oute Sta	rt End	Length	AADT Ye	ar 20 Year Factor	. 별자 작품이 가슴날	nbined rucks			Projec Single Ti		Projec Combi Truc	ined	18 I ESA	10.00

ON SH 550 NW/O SH 62, MAIN ST, RIDGEWAY (Station Id: 105586)

- · Daily (#daily-tab)
- Monthly Summaries (#monthly-tab)
- Annual (#annual-tab)

07/24/2019 🗘

Data is only available on select dates for Short Duration sites.

Export to Excel (/otis/API/TRANSYS/GetDailyTrafficVolumeForStationByDay/105586/false/2019-7-24.csv) View Entire Month (/otis/TrafficData/GetDailyTrafficVolumeForStationByMonth/105586/false/2019/7)

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 P = Primary direction S = Secondary direction C = Combined traffic counts
 Counts
 State
 State

Annual data is only available for continuous sites.

Click here (https://dtdapps.coloradodot.info/staticdata/Downloads/TrafficDataBase/) to download current and historical CDOT traffic databases as either Excel (.xlsx) or compressed Access (.zip)

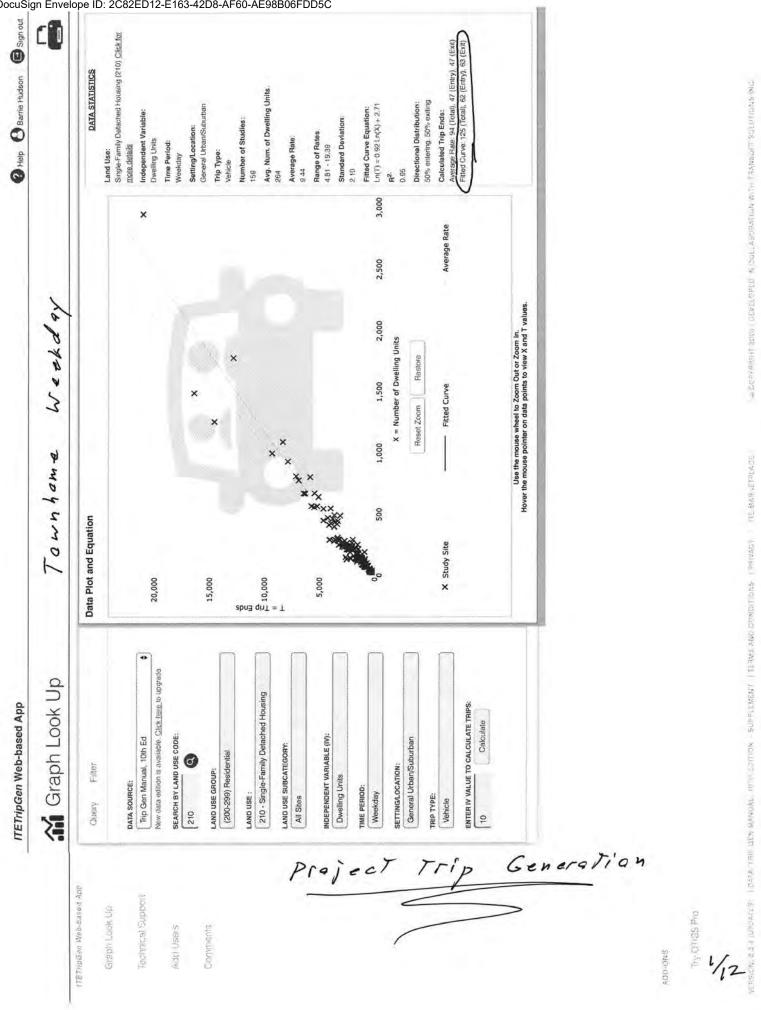
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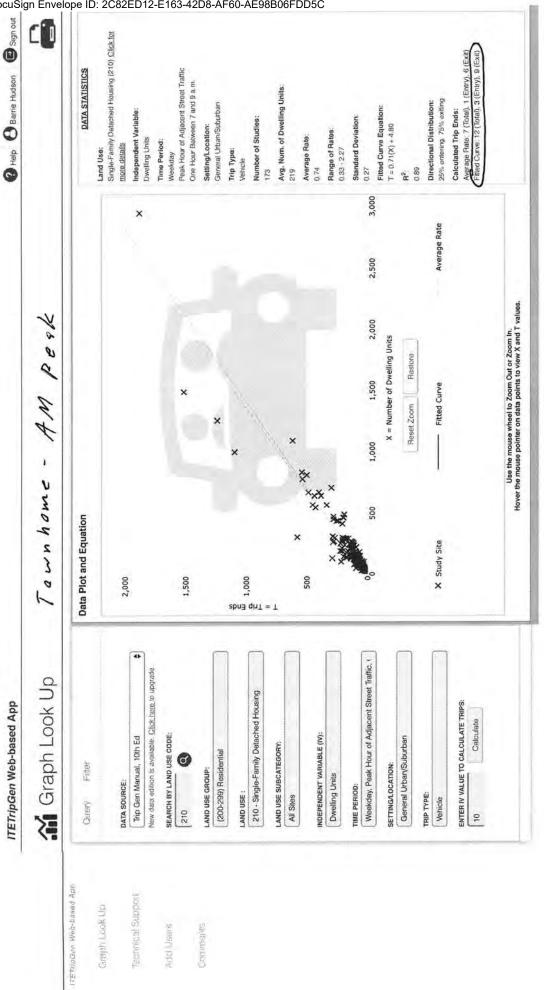
Project Trip Generation Estimates





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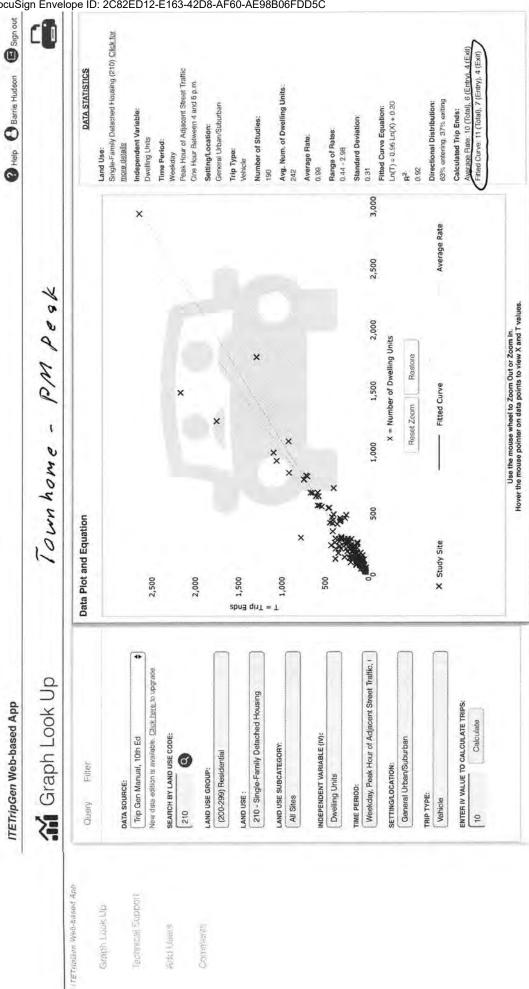
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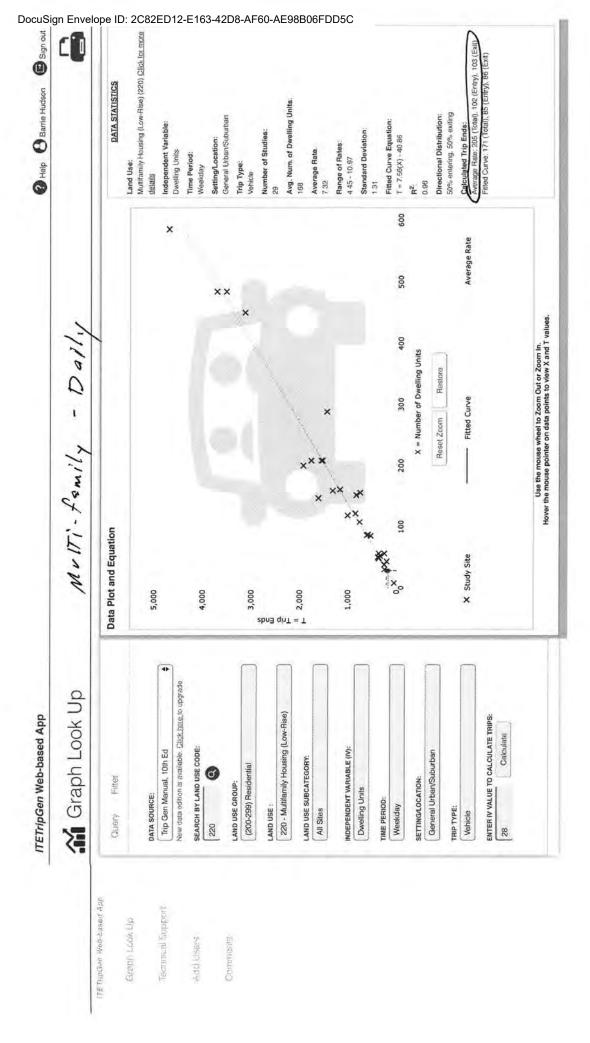
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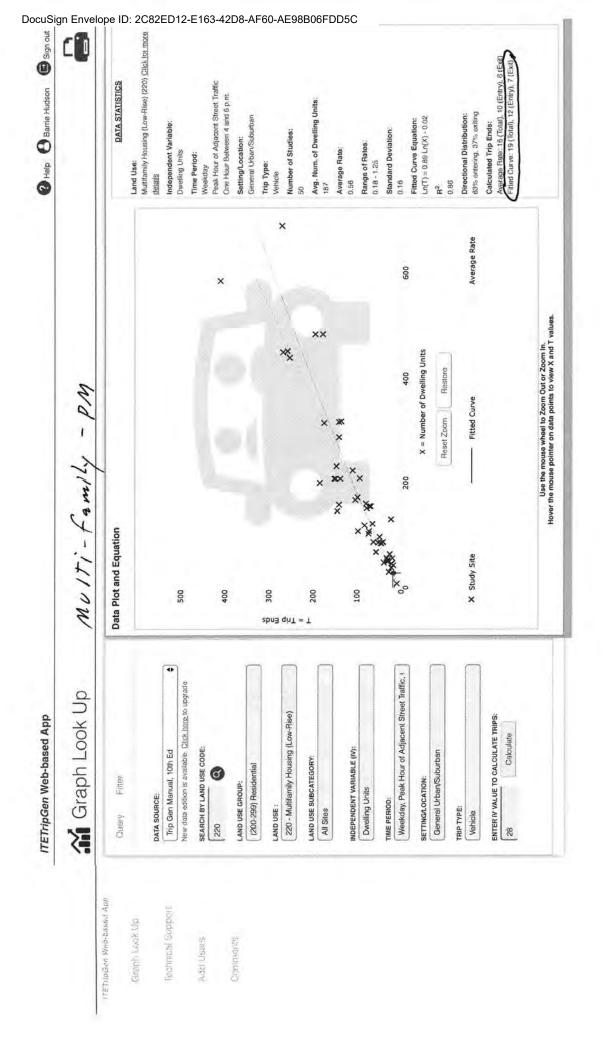
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A COPSHIGHT 2020 DEVELOPER IN COLLABORATION WITH THANSOFT SCINITIONS INC.

CIAPTI LOOK UP	10 Ulli-tamily -	AM		
Query Filter	Data Plot and Equation			DATA STATISTICS
DATA SOURCE.				Land Use: Muntfamily Housing (Low-Rise) (220) <u>Click for more</u> details
Trip Gen Manual, 10th Ed				Independent Variable: Duvation Linke
New data adition is available. Clark hane to upprade	300			Shine Burnan
SEARCH BY LAND USE CODE:				Weekday Peak Hour of Adjacent Street Traffic
LAND USE GROUP:		××		Setting/Location:
(200-299) Residential		* >	*	General UrbarvSuburban
LAND USE :		< **	¢	Trip Type: Vehicle
220 - Multifamily Housing (Low-Rise)	qinT ×			Number of Studies:
LAND USE SUBCATEGORY:	×			42 Ann Minn of Curoffine Halter
All Sites	Total Action of the second sec			Avg. Num, or uwening unus.
INDEPENDENT VARIABLE (IV):	**************************************			Average Rate: 0.46
Dwelling Units	*****			Range of Rates: 0.18 - 0.74
TIME PERIOD:	××××××			Standard Deviation:
Weekday, Peak Hour of Adjacent Street Traffic, t	00X 1 200	400 600		0.12
SETTINGLOCATION:	X = Number of Dwelling Units			Fitted Curve Equation: Ln(T) = 0.55 Ln(X) - 0.51
General Urban/Suburban	Reset Zoom	Restore		B ² .
TRIP TYPE:		and the second se		0.90
Vehicle	X Study Site	Average Rate	ate	Directional Distribution: 23% entering, 77% exiting
ENTER IV VALUE TO CALCULATE TRIPS.				Catculated Trip Ends: Average Rate: 13 (Total), 3 (Entry), 11 (Exit Fitted Curve: 14 (Total), 3 (Entry), 11 (Exit)
	Use the mouse wheel to Zoom Out or Zoom In. Hover the mouse pointer on data points to view X and T values.	i Out or Zoom In. Is to view X and T values.		

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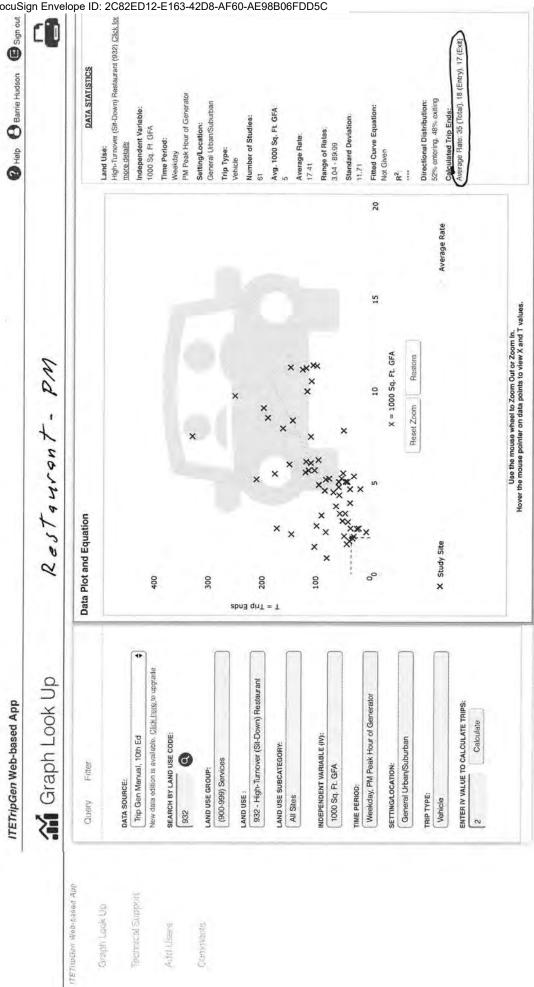
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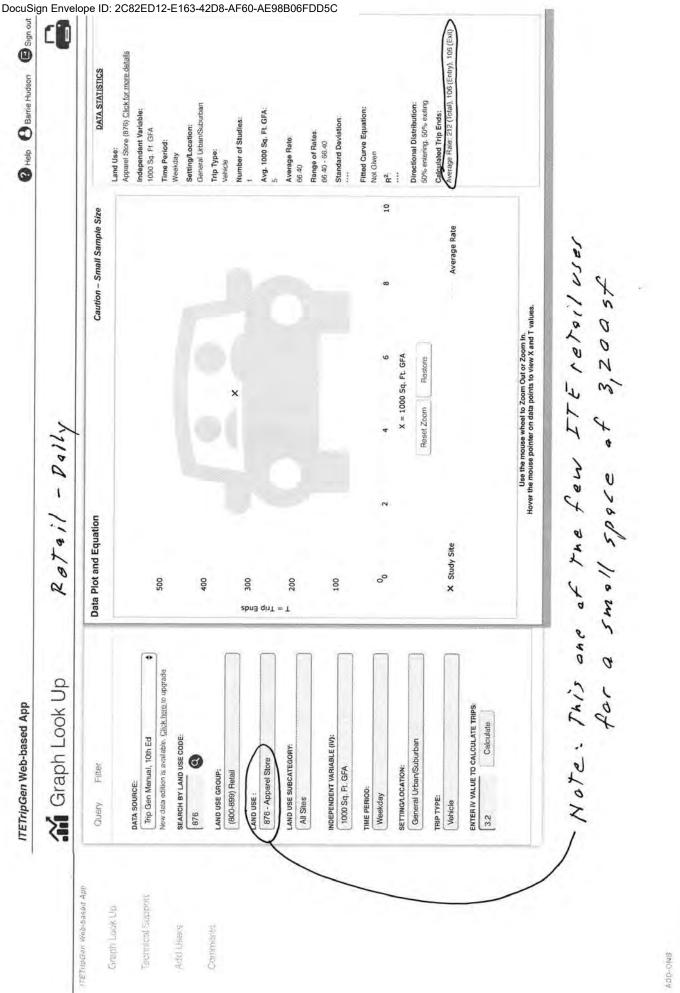
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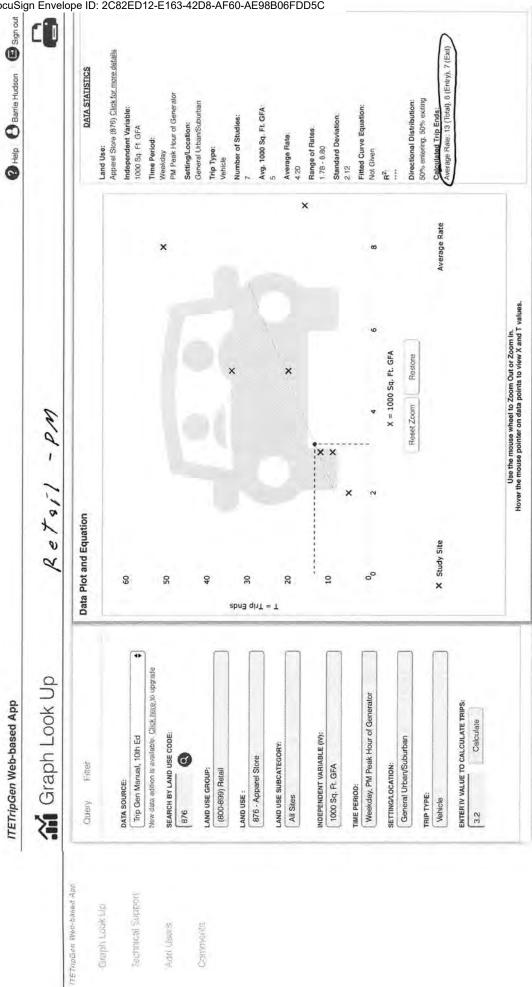


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🔐 Graph Look Up	Retail - AM		
Query Fritter	Data Plot and Equation	Caution – Small Sample Size	DATA STATISTICS
DATA SOURCE:	40		Land Use: Apparel Store (875) <u>Chick for more details</u> Independent Variable:
Trip Gen Manual, 10th Ed			1000 Sq. Ft. GFA
New data odition is available. Latek have to upgrade SEARCH BY LAND USE CODE:			Time Period: Weekday
876	30		All Peak Hour of Generator Setting/Location:
LAND USE GROUP:			General Urban/Suburban Trip Type:
(800-899) Retail	21 ×		Vehicle
LAND USE :	s S S		Number of Studies:
alois apparei alois	1T = 1		Avg. 1000 Sq. Ft. GFA: 5
LAND USE SUBCATEGORY: All Sites			Average Rate. 4 80
INDEPENDENT VARIARI F. IVV-	10		Range of Rates.
1000 Sq. FI. GFA			4 dU - 4. dU Standard Devlation.
TIME PERIOD:			Elhad Curve Equation
Weekday, AM Peak Hour of Generator	0 ₀ 2 4	6 8 10	Not Given
SETTING/LOCATION:	X = 1000 Sq. Ft. GFA	t. GFA	R ² .
General Urban/Suburban	Reset Zoom	Restore	Directional Distribution:
TRIP TYPE:			54% entering, 46% exiting
Vehicle	X Study Site	Average Rate	Calculated Trip Ends: Average Rate: 15 (Total), 8 (Entry), 7 (Exit)
ENTER IN VALUE TO CALCULATE TRIPS. 3.2 Calculate			
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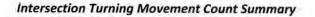
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Project Trip Distribution & Assignment Calculations







Project: Location: **Ridgway CO** EB/WB Road: SH 62 NB/SB Road: SH 550

A.M

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Intersection & 2

Count Date: 2/19/2020

APX

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Counted by:

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$\frac{4:00}{4:15} \frac{47}{12} \frac{12}{22} \frac{2}{20} \frac{1}{5} \frac{5}{9} \frac{1}{9} \frac{8}{8} \frac{1}{13} \frac{1}{9} \frac{1}{9} \frac{1}{13} \frac{1}{13} \frac{1}{9} \frac{1}{13} \frac{1}{13} \frac{1}{9} \frac{1}{13} \frac{1}{13} \frac{1}{13} \frac{1}{9} \frac{1}{13} $	Contraction of the	Left			RTOR	left			RTOP	1cft		1	PTOP	169			DTOP	1.15
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		-	-	-		_			_	-		-						-
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		1.1.2.1.1		1 C C C	2.1	S 11	1.2.2		1.1.2.5.1.1	1.200	11 A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A	1.1	1.1.2.1.1	1.1.2		1.00	1.1.2	1.5.3
$\frac{4:45}{5:00} \frac{76}{79} \frac{12}{13} \frac{15}{20} \frac{1}{3} \frac{5}{7} \frac{7}{0} \frac{14}{14} \frac{14}{14} \frac{1}{10} \frac{0}{6} \frac{6}{20} \frac{37}{37} \frac{0}{200} \frac{200}{37} \frac{14}{14} \frac{14}{14} \frac{1}{10} \frac{1}{10} \frac{14}{14} \frac{1}{10} \frac{1}{10} \frac{1}{10} \frac{14}{14} \frac{1}{10} \frac{1}{10} \frac{1}{10} \frac{14}{14} \frac{1}{10} \frac{1}{$	1.	1.000		12524		the second second	100		1.1.1.2.2.1.1.1	101.4			1.122.11		1.200	100.41	1.1.1.1.1.1.1	1.000
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1 3 CDA 11	1201	120.14	11 P. C. 11	1.1.1.1.1.1.1	1.		100.00	1.1. October 1	1.1.1			112.01					
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	5:00	79						-									1	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	5:15	75	16	21	0	2	The second	1.1.1.1	10 C - C - C	1	00.00	11.7.57.11		1.000	1000	Carlos III		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	5:30	61	5	40	0	1	17	6	1.		A COMPANY OF A		1.1.1.1.1.1		1.000	1.222	1.1.1	
Peak Hr 291 46 101 0 7 49 31 0 78 66 11 0 21 54 135 0 890 Intersection Peak Hour: 4:45-5:45 PM EB WB NB SB Total A a ward Sphif C //a for Icewing S//a No NB SB Total A a ward Sphif C //a for Icewing S//a NB NB SB Total A a ward Sphif C //a for Icewing S//a NB NB SB Total A a ward Sphif C //a for Icewing S//a NB NB SB Total A a ward Sphif C //a for Icewing S//a NB NB SB Total A a ward Sphif C //a A ward Sphif A ward NB SB Total A ward Sphif C //a A ward	5:45	48	5	17	0	0	8	5	0	13	10000		0			1.2.2.	1.	
Intersection Peak Hour: 4:45-5:45 PM Intersection Peak Hour: 4:45-5:45 PM EB WB NB SB Total Intersection Peak Hour: 4:45-5:45 PM Intersection Peak Hour: 4:45-5:45 PM Intersection Peak Hour: 4:45-5:45 PM Intersection Peak Hour: 4:45-5:45 PM Intersection Peak Hour: 4:45-5:45 PM Intersection Peak Hour: 4:45-5:45 PM Intersection Peak Hour: 4:45-5:45 PM Intersection Peak Hour: 4:45-5:45 PM Intersection Peak Hour: 4:45-5:45 PM Intersection Peak Hour: 4:45-5:45 PM Intersection Peak Hour: 4:45-5:45 PM Intersection Peak Hour: 4:45-5:45 PM Intersection Peak Hour: 4:45-5:45 PM Intersection Peak Hour: 4:48 87 15:5 210 8:58 Intersection Peak Hour: 4:17 10:41 10:41 10:41 10:41 4:43 4:	Totals	486	81	185	0	16	86	58	0	145	122	17	0	37	125	301	0	165
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Peak Hr	291	46	101	0	7	49	31	0	78	66	11	0	21	54	135	0	89
$\frac{438}{438} = \frac{3}{155} = \frac{1}{210} = \frac{1}{10} = \frac{1}$				4:	45-5:45	PM	1.11	-	~				-	-				-
$L = \frac{21/210}{312/262} = \frac{26^{-76}}{121/291} = \frac{1}{26/46} + \frac{10/31}{4} = \frac{36/87}{20/49}$								27	18	Ň				120	07	100	1	
$L = \frac{21/210}{312/262} = \frac{26^{-76}}{121/291} = \frac{1}{26/46} + \frac{10/31}{4} = \frac{36/87}{20/49}$	boun	d ;	plit	10%	for .	lesur	mp SI	2) 8	3/ 3	1				430	0/	155	210	0
	r = 47/ L = 20 = 13:	279 1279 5/210 1210 1210	- 10-	16	121/	291 🕳		↓ 212/ 135 J	47/ 54 ↓	20/ 21		10/	31					
	r = 54, L = 21,		198/	438 -	+	101 -	1		\$		F	6/	7	5//	78			
er split (ero for enterlyssite) 7 1 r	L = 21/				51/	101 -	5	'n ,	≉ 1	r	-	6/	7	21/	78			
EBL = 121/22 = 67°0 Prom sett 0 52 E	L = 21/				51/	101 -	1		★ 1 52/		<u>د</u>	6/	7	577	78			
EBL = 12/183 = 67° Prom Sett & B I E	L = 21/ L = 21/ EBL =	117 (s =	r en 67°	51/	101 -	1	1 4	A† 52/ 66		-	6/	7	37	78			
$\frac{11}{10} = \frac{121}{103} = \frac{11}{100} + \frac{11}{100} = \frac{11}{100} + \frac{11}{100} = 1$	L = 21/ L = 21/ EBL = VBR =	117 (* 12/18) 52/18 10/18	-10 fo 3 = 13 =	r ex 67 ° ~ 28 ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	51/	101 -	1	1 4	★ 143/1 ★ 52/66		ر	6/	7	377	78			
EBL = 12/183 = 67° Prom Sector 2 52 1 1 18T = 52/183 = 28"	L = 21/ L = 21/ EBL = IBT = VBR = FBL =	117 (* 1248; 52/18 10/18 291/	-10 fo 3 = 17 = 13 = 13 =	r en 67° 28° 5° 67°	51/	101 -	1	1 4	★ 143/155		<u>-</u>	6/	7	21/	78			

Existing Intersection Turning Movement Count Summaries



DocuSign Envelope ID: 2C82ED12-E163-42D8-AF60-AE98B06FDD5C

1 va Kfue count summaries

Intersection Turning Movement Count Summary

Project: Location: **Ridgway CO** EB/WB Road: Access -Dilpsasary CONSULTING EI

Counted by: APX Count Date: 2/19/2020

Time	2	Acces	s - (EB)			A	- (WB)			SH 550) - (NB)	_	1	SH 55	0 - (SB)		Total
AM	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Volum
7:00	0	0	0	0	0	0	0	0	0	17	0	0	0	77	0	0	94
7:15	0	0	0	0	0	0	0	0	0	21	0	0	0	73	0	0	94
7:30	0	0	0	0	0	0	0	0	0	20	0	0	0	68	0	0	88
7:45	0	0	1	0	0	0	0	0	1	36	0	0	0	93	1	0	132
8:00	0	0	0	0	0	0	0	0	1	49	0	0	0	54	0	0	104
8:15	0	0	1	0	0	0	0	0	0	40	0	0	0	54	1	0	96
8:30	0	0	1	0	0	0	0	0	4	51	0	0	0	71	0	0	127
8:45	0	0	0	0	0	0	0	0	0	48	0	0	0	66	2	0	116
Totals	0	0	3	0	0	0	0	0	6	282	0	0	0	556	4	0	851
	0	0	5	1.00	0	0	0		10	299	0		0	462	3		-
Peak Hr	0	0	3	0	0	0	0	0	6	176	0	0	0	272	2	0	459
					-				-				EB	WB	NB	SB	Total
Interse	ction Pe	ak Hour:	7	:45-8:45	АМ							(I	3	0	182	274	459
Time		Access	5 - (EB)		1	A	- (WB)			SH 550) - (NB)			SH 550	0 - (SB)		Total
PM	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Volum
4:00	0	0	4	0	0	0	0	0	1	74	0	0	0	71	1	0	151
4:15	0	0	2	0	0	0	0	0	1	85	0	0	0	79	1	0	168
4:30	0	0	1	0	0	0	0	0	0	80	0	0	0	64	2	0	147
4:45	0	0	4	0	0	0	0	0	0	99	0	0	0	59	1	0	163
5:00	0	0	1	0	0	0	0	0	0	108	0	0	0	45	0	0	154
	1.2.1		- 1	0	Ó	0	0	0	0	94	0	0	0	49	0	Ö	146
5:15	2	0	1	U	U	U.				24	U	U.	U	45	U		140
5:15 5:30 5:45	2 0 2	0	0	0	0	0	0	0	1	90	o	0	o	56	1	Q	148

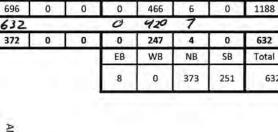
A

Peak Hr Intersection Peak Hour:

Totals

4:15-5:15

PM



$$\begin{array}{c} 8 \end{array} \end{array}$$

1/2

Ridgway CO





Counted by: APX

Count Date: 7/10/2020

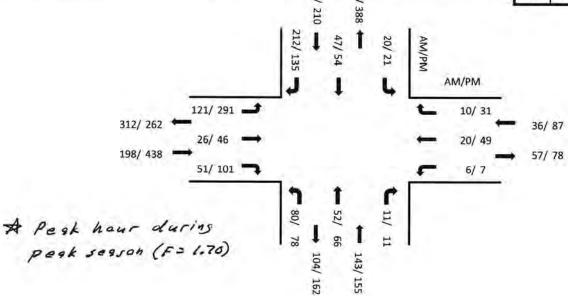
FB/WB Road: SH 62

0

Project:

Location:

Time	1.11	SH 63	2 - (EB)		T	-SH-G	2 - (WB)			SH 55	0 - (NB)	1.		SH 55	0 - (SB)	1	Tota
AM	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Volun
7:00	12	1	6	0	0	6	0	0	10	5	0	0	7	12	54	0	113
7:15	12	2	3	0	0	2	1	0	14	5	0	0	5	6	59	0	109
7:30	14	3	9	0	1	5	2	0	15	5	1	0	5	11	48	0	119
7:45	25	8	14	0	2	12	2	0	19	10	3	0	8	7	75	0	185
8:00	35	6	18	0	2	1	2	0	24	12	1	0	3	12	44	0	160
8:15	30	8	8	0	0	2	1	0	17	12	2	0	3	11	40	0	134
8:30	31	4	11	0	2	5	5	0	20	18	5	0	6	17	53	0	177
8:45	32	9	19	0	1	12	6	0	18	9	1	0	5	11	43	0	166
Totals	191	41	88	0	8	45	19	0	137	76	13	0	42	87	416	0	1163
	206	44	87		10	34	17		136	88	19		34	80	360		
	100	74	0.		10				120	00	11			0 -	200		
Peak Hr	121	26	51	0	6	20	10	0	80	52	11	0	20	47	212	0	656
Peak Hr	-		-	0	The state of the s			0	-			0	-	-		0 SB	
	121		51	0 :45-8:45	6			0	-			0	20	47	212		656 Total 656
Interse	121	26 ak Hour:	51 7		6	20	10	0	-	52	11	0	20 EB	47 WB 36	212 NB 143	SB	Tota 656
	121	26 ak Hour:	51		6	20	10 2 - (WB)	0 RTOR	-	52	11 D - (NB)	0 RTOR	20 EB	47 WB 36 SH 55	212 NB 143 0 - (SB)	SB 279	Tota 656 Tota
Interse Time	121 ction Pe	26 ak Hour: SH 62	51 7 2 - (EB)	:45-8:45	6 AM	20 	10	RTOR	80 Left	52 SH 550 Thru	11 D - (NB) Right	RTOR	20 EB 198 Left	47 WB 36 SH 55 Thru	212 NB 143 0 - (SB) Right	SB 279 RTOR	Tota 656 Tota Volum
Interse Time PM	121 ction Pe	26 ak Hour: SH 62 Thru	51 7 2 - (EB) Right	:45-8:45 RTOR	6 AM Left	20 SH 6 Thru	10 2 - (WB) Right		80	52 SH 550	11 D - (NB)		20 EB 198	47 WB 36 SH 55	212 NB 143 0 - (SB)	SB 279	Tota 656 Tota Volum
Interse Time PM 4:00	121 ction Pe Left 47	26 ak Hour: SH 62 Thru 12	51 7 2 - (EB) Right 22	:45-8:45 RTOR 0	6 AM Left 5	20 SH 6 Thru 9	10 2 - (WB) Right 8	RTOR 0	80 Left 18	52 SH 550 Thru 17	11 0 - (NB) Right 2	RTOR Q	20 EB 198 Left	47 WB 36 SH 55 Thru 24	212 NB 143 0 - (SB) Right 39	SB 279 RTOR 0	Tota 656 Tota Volum 211
Interse Time PM 4:00 4:15	121 ction Pe Left 47 47	26 ak Hour: SH 62 Thru 12 9	51 2 - (EB) Right 22 29	:45-8:45 RTOR 0 0	6 AM Left 5 1	20 <u>SH 6</u> Thru 9 13	10 A- (WB) Right 8 9	RTOR 0 0	80 Left 18 19	52 SH 550 Thru 17 10	11 D - (NB) Right 2 3	RTOR 0 0	20 EB 198 Left 8 4	47 WB 36 SH 55 Thru 24 17	212 NB 143 0 - (SB) Right 39 57	SB 279 RTOR 0 0	Tota 656 Tota Volum 211 218 193
Interse Time PM 4:00 4:15 4:30 4:45 5:00	121 ction Pe Left 47 47 53 76 79	26 ak Hour: SH 62 Thru 12 9 9 12 13	51 7 2 - (EB) Right 22 29 16	:45-8:45 RTOR 0 0 0 0 0	6 AM Left 5 1 3 1 3	20 SH 6 Thru 9 13 7 5 14	10 Right 8 9 5	RTOR 0 0	80 Left 18 19 17	52 SH 550 Thru 17 10 21	11 0 - (NB) Right 2 3 0	RTOR 0 0 0	20 EB 198 Left 8 4 2	47 WB 36 SH 55 Thru 24 17 16	212 NB 143 0 - (SB) Right 39 57 44	SB 279 RTOR 0 0 0	Tota 656 Volum 211 218 193 208
Interse PM 4:00 4:15 4:30 4:45 5:00 5:15	121 ction Pe Left 47 47 53 76 79 75	26 ak Hour: SH 62 Thru 12 9 9 12 13 16	51 7 2- (EB) Right 22 29 16 15 25 21	:45-8:45 RTOR 0 0 0 0 0 0 0	6 AM <u>Left</u> 5 1 3 1 3 2	20 <u>SH 6</u> Thru 9 13 7 5 14 13	10 Right 8 9 5 7	RTOR 0 0 0 0	80 Left 18 19 17 14 21 22	52 SH 550 Thru 17 10 21 14	11 0- (NB) Right 2 3 0 1	RTOR O O O	20 EB 198 Left 8 4 2 6	47 WB 36 SH 55 Thru 24 17 16 20	212 NB 143 0 - (SB) Right 39 57 44 37	SB 279 RTOR 0 0 0 0	Tota 656 Tota Volum 211 218
Interse PM 4:00 4:15 4:30 4:45 5:00 5:15 5:30	121 ction Pe Left 47 47 53 76 79 75 61	26 ak Hour: SH 62 Thru 12 9 9 12 13 16 5	51 7 (EB) Right 22 29 16 15 25 21 40	845-8:45 RTOR 0 0 0 0 0 0 0 0 0	6 AM Left 5 1 3 1 3 2 1	20 <u>SH 6</u> Thru 9 13 7 5 14 13 17	10 A- (WB) Right 8 9 5 7 14 4 6	RTOR 0 0 0 0 0 0 0 0	80 Left 18 19 17 14 21 22 21	52 SH 550 Thru 17 10 21 14 17 13 22	11 - (NB) Right 2 3 0 1 3 4 3	RTOR 0 0 0 0 0 0 0 0	20 EB 198 Left 8 4 2 6 5 5 5 5 5	47 WB 36 SH 55 Thru 24 17 16 20 8 11 15	212 NB 143 0 - (SB) Right 39 57 44 37 30 36 32	SB 279 RTOR 0 0 0 0 0	Tota 656 Volum 211 218 193 208 232 222 228
Interse PM 4:00 4:15 4:30 4:45 5:00 5:15	121 ction Pe Left 47 47 53 76 79 75 61 48	26 ak Hour: 5H 62 Thru 12 9 9 12 13 16 5 5 5	51 7 (EB) Right 22 29 16 15 25 21 40 17	:45-8:45 RTOR 0 0 0 0 0 0 0	6 AM <u>Left</u> 5 1 3 1 3 2	20 <u>SH 6</u> Thru 9 13 7 5 14 13 17 8	10 Right 8 9 5 7 14 4 6 5	RTOR 0 0 0 0 0 0	80 Left 18 19 17 14 21 22	52 SH 550 Thru 17 10 21 14 17 13	11 - (NB) Right 2 3 0 1 3 4	RTOR 0 0 0 0 0 0	20 EB 198 Left 8 4 2 6 5 5 5	47 WB 36 SH 55 Thru 24 17 16 20 8 11	212 NB 143 0 - (SB) Right 39 57 44 37 30 36	SB 279 RTOR 0 0 0 0 0 0 0	Tota 656 Volum 211 218 193 208 232 222
Interse PM 4:00 4:15 4:30 4:45 5:00 5:15 5:30 5:15 5:30 5:45 Totals	121 ction Pe Left 47 47 53 76 79 75 61 48 486	26 ak Hour: 5H 62 Thru 12 9 9 12 13 16 5 5 81	51 7 (EB) Right 22 29 16 15 25 21 40 17 185	845-8:45 RTOR 0 0 0 0 0 0 0 0 0	6 AM Left 5 1 3 1 3 2 1 0 0 16	20 SH 6 Thru 9 13 7 5 14 13 17 8 86	10 A- (WB) Right 8 9 5 7 14 4 6 5 58	RTOR 0 0 0 0 0 0 0 0	80 Left 18 19 17 14 21 22 21 13 145	52 SH 550 Thru 17 10 21 14 17 13 22 8 122	11 - (NB) Right 2 3 0 1 3 4 3 1 17	RTOR 0 0 0 0 0 0 0 0	20 EB 198 Left 8 4 2 6 5 5 5 5 5	47 WB 36 SH 55 Thru 24 17 16 20 8 11 15 14 125	212 NB 143 0 - (SB) Right 39 57 44 37 30 36 32	SB 279 RTOR 0 0 0 0 0 0 0 0 0	Tota 656 Volum 211 218 193 208 232 222 228
Interse PM 4:00 4:15 4:30 4:45 5:00 5:15 5:30 5:45 Totals	121 ction Pe Left 47 47 53 76 79 75 61 48 486 79 75 61 48 486 79	26 ak Hour: 5H 62 Thru 12 9 9 12 13 16 5 5 81 78	51 7 (EB) Right 22 29 16 15 25 21 40 17 185 /72	:45-8:45 RTOR 0 0 0 0 0 0 0 0 0	6 AM Left 5 1 3 1 3 2 1 0 16 <i>/2</i>	20 SH 6: Thru 9 13 7 5 14 13 17 8 86 83	10 Right 8 9 5 7 14 4 6 5 5 8 5 8 3 3	RTOR 0 0 0 0 0 0 0 0 0	80 Left 18 19 17 14 21 22 21 13 145 //37	52 SH 550 Thru 17 10 21 14 17 13 22 8	11 - (NB) Right 2 3 0 1 3 4 3 1	RTOR 0 0 0 0 0 0 0 0	20 EB 198 Left 8 4 2 6 5 5 5 5 2	47 WB 36 SH 55 Thru 24 17 16 20 8 11 15 14	212 NB 143 0 - (SB) Right 39 57 44 37 30 36 32 26	SB 279 RTOR 0 0 0 0 0 0 0 0 0 0	Tota 656 Volum 211 218 193 208 232 222 228 147
Interse PM 4:00 4:15 4:30 4:45 5:00 5:15 5:30 5:15 5:30 5:45 Totals	121 ction Pe Left 47 47 53 76 79 75 61 48 486	26 ak Hour: 5H 62 Thru 12 9 9 12 13 16 5 5 81	51 7 8 7 8 7 7 7 7 7 7 7 7 7 7 7 7 7	:45-8:45 RTOR 0 0 0 0 0 0 0 0 0 0 0 0 0	6 AM Left 5 1 3 1 3 2 1 0 16 <i>/2</i> 7	20 SH 6 Thru 9 13 7 5 14 13 17 8 86	10 A- (WB) Right 8 9 5 7 14 4 6 5 58	RTOR 0 0 0 0 0 0 0 0 0	80 Left 18 19 17 14 21 22 21 13 145	52 SH 550 Thru 17 10 21 14 17 13 22 8 122	11 - (NB) Right 2 3 0 1 3 4 3 1 17	RTOR 0 0 0 0 0 0 0 0	20 EB 198 Left 8 4 2 6 5 5 5 5 5 2 2 37	47 WB 36 SH 55 Thru 24 17 16 20 8 11 15 14 125	212 NB 143 0 - (SB) Right 39 57 44 37 30 36 32 26 301	SB 279 RTOR 0 0 0 0 0 0 0 0 0 0	Tota 656 Volum 211 218 193 208 232 222 228 147



2/2

TIS – Ridgway Triangle Site

Background Traffic Calculations



CALYR	JANCOUNT	ANCOUNT FEBCOUNT	MARCOUNT APRCOUNT	APRCOUNT	MAYCOUNT JUNCOUNT	JUNCOUNT	JULCOUNT	AUGCOUNT	SEPCOUNT	OCTCOUNT	OCTCOUNT NOVCOUNT DECCOUNT	DECCOUNT
2019	6,624	6,660	6,869	7,149	8,192	10,571	11,737	11,137	10,642	8,396	6.982	6.766
2010	5,097	5,215	5,572	5,367	6,557	8,365	9,217	8,768	8,235	6,639	5,298	5,195
2009	5,429	5,644	5,791	5,583	6,846	8,368	9,539	8,789	8,273	6.477	5.419	5.190
2008	5,365	5,602	6,077	5,955	6,905	8,397	9,021	8,783	8,092		5.738	5.263
2007	5,568	5,808	6,375	6,218	7,198	8,706	9,595	9,196			6.269	5,316
2006	5,535	5,981	6,029	6,158	7,227	8,561	9,307	8,750			6.006	5,633
2005	5,261	5,595	5,924	662'5	7,006	8,583	9,462	8,840	8,197	ľ	6.007	5.743
2004	5,119	5,277	6,043	5,892	6,961	8,413	9,262	8.750	8.445	6.720	5,544	5 741
2003	5,064	4,932	5,379	5,415	6,712	8,243		9,107	8,084	6.945	5,310	5 347
2002	4,901	5,159	5,392	5,692	6,772	8,060	8,672	7,432	7,615	6.367	5.250	5,162
Totals	53,963	55,873	59,451	59,228	70,376	86,267	94,991	89,552	84,486	69,459	57.823	55.356
% of Peak (July)	57%	29%	63%	62%	74%	91%	100%	94%	89%	73%	61%	58%
Peak Adj Factor	1.76	1.70	1.60	1.60	1.35	1.10	1.00	1.06	1.12	1.37	1.64	177
		7										

CDOT Monthly Traffic Volumes - Station 222 on US-550B from MP 117.047 to MP 122.511, SW of Vernal Road

Note: years 2011 thru 2018 did not have data for every month so they were excluded

Calculation af Peak Segson Adjustment factor

1/1

TIS - Ridgway Triangle Site

Intersection Operational Analysis



Intersection Int Delay, s/veh 1

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configuration	is 🀴		7	1	Y	
Traffic Vol, veh/h	480	7	36	311	7	39
Future Vol, veh/h	480	7	36	311	7	39
Conflicting Peds, #	/hr 0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	220	-	0	-
Veh in Median Stor	rage0#	# -	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	2	2	6	2	2
Mvmt Flow	522	8	39	338	8	42

Major/Minor I	Major	1	Major2	Minor1		
Conflicting Flow A	All 🛛	0	0 530	0 942	265	
Stage 1		-		- 526	-	
Stage 2		-		- 416	-	
Critical Hdwy		-	- 4.13	- 6.63	6.93	
Critical Hdwy Stg		-		- 5.83	-	
Critical Hdwy Stg		-		- 5.43	-	
Follow-up Hdwy		-	-2.219	- 3.5193	.319	
Pot Cap-1 Maneu	iver	-	- 1035	- 276	734	
Stage 1		-		- 558	-	
Stage 2		-		- 665	-	
Platoon blocked,		-	-	-		
Mov Cap-1 Mane			- 1035	- 266	734	
Mov Cap-2 Mane	uver	-		- 266	-	
Stage 1		-		- 558	-	
Stage 2		-		- 640	-	
Approach	S	Ξ	NW	NE		
HCM Control Dela	ay, s	0	0.9	11.8		
HCM LOS				В		

Minor Lane/Major Mvm	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	579	1035	-	-	-
HCM Lane V/C Ratio	0.086	0.038	-	-	-
HCM Control Delay (s)	11.8	8.6	-	-	-
HCM Lane LOS	В	Α	-	-	-
HCM 95th %tile Q(veh)	0.3	0.1	-	-	-

Intersection							
Int Delay, s/veh	0.8						
Movement	SET	SER	NWL	NWT	NEL	NER	ł
Lane Configurations	s 👫		٦	1	Y		
Traffic Vol, veh/h	437	13	39	657	7	44	ŧ
Future Vol, veh/h	437	13	39	657	7	44	ŧ
Conflicting Peds, #/	hr 0	0	0	0	0	0)
Sign Control	Free	Free	Free	Free	Stop	Stop)
RT Channelized	-	None	-	None	-	None	e
Storage Length	-	-	220	-	0	-	-
Veh in Median Stora	age0#	ŧ _	-	0	0	-	-
Grade, %	0	-	-	0	0	-	-
Peak Hour Factor	92	92	92	92	92	92	2
Heavy Vehicles, %	6	2	2	6	2	2	2
Mvmt Flow	475	14	42	714	8	48	z

Major/Minor	Maj	or1	Ma	jor2	Mi	nor1					
Conflicting Flow	N All	0	0	489	0 '	1280	245				
Stage 1		-	-	-	-	482	-				
Stage 2		-	-	-	-	798	-				
Critical Hdwy		-	- 4	4.13	-	6.63	6.93				
Critical Hdwy S		-	-	-	-	5.83	-				
Critical Hdwy S		-		-		5.43	-				
Follow-up Hdw			- 2.	219		.5193	3.319				
Pot Cap-1 Man	neuver	-	- 1	072	-	170	756				
Stage 1		-	-	-		588	-				
Stage 2		-	-	-	-	442	-				
Platoon blocke		-	-		-						
Mov Cap-1 Ma	neuve	r -	- 1	072	-	163	756				
Mov Cap-2 Ma	neuve	r -	-	-	-	163	-				
Stage 1		-	-	-	-		-				
Stage 2		-	-	-	-	425	-				
Approach		SE		NW		NE					
HCM Control D				0.5		13				 	1
HCM LOS	elay,	50		0.5		B					
						D					
Minor Lane/Ma	ijor Mv	/m N l	ELn1 N	IWL	NWT	SET	SER				

Capacity (veh/h)	504	1072	-	-	-	
HCM Lane V/C Ratio	0.11	0.04	-	-	-	
HCM Control Delay (s)	13	8.5	-	-	-	
HCM Lane LOS	В	А	-	-	-	
HCM 95th %tile Q(veh)	0.4	0.1	-	-	-	

Intersection						
Int Delay, s/veh	0.9					
Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	s 👫		7	1	Y	
Traffic Vol, veh/h	568	7	36	368	7	39
Future Vol, veh/h	568	7	36	368	7	39
Conflicting Peds, #/	'hr 0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	220	-	0	-
Veh in Median Stora	age0#	+ -	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	2	2	6	2	2
Mvmt Flow	617	8	39	400	8	42

Major/Minor	Maj	or1	Ma	ajor2	M	inor1				
Conflicting Flow	w All	0	0	625	0	1099	313			
Stage 1		-	-	-	-	621	-			
Stage 2		-	-	-	-	478	-			
Critical Hdwy		-	-	4.13	-	6.63	6.93			
Critical Hdwy S		-	-	-	-	5.83	-			
Critical Hdwy S		-		-	-	5.43	-			
Follow-up Hdw		-		.219		3.519				
Pot Cap-1 Mar	neuver	-	-	954		221	684			
Stage 1		-	-	-		499	-			
Stage 2		-	-	-	-	623	-			
Platoon blocke		-	-		-					
Mov Cap-1 Ma			-	954		212	684			
Mov Cap-2 Ma	neuve	r -	-	-		212	-			
Stage 1		-	-	-	-	499	-			
Stage 2		-	-	-	-	597	-			
Approach		SE		NW		NE				
HCM Control D)elay, s	s 0		0.8		12.8				
HCM LOS	-					В				

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	511	954	-	-	-
HCM Lane V/C Ratio	0.098	0.041	-	-	-
HCM Control Delay (s)	12.8	8.9	-	-	-
HCM Lane LOS	В	Α	-	-	-
HCM 95th %tile Q(veh)	0.3	0.1	-	-	-

Intersection							
Int Delay, s/veh	0.8						
Movement	SET	SER	NWL	NWT	NEL	NER	2
Lane Configurations	s 👫		٦	+	Y		
Traffic Vol, veh/h	517	13	39	777	7	44	ł
Future Vol, veh/h	517	13	39	777	7	44	ŧ
Conflicting Peds, #/	hr 0	0	0	0	0	0)
Sign Control	Free	Free	Free	Free	Stop	Stop)
RT Channelized	-	None	-	None	-	None	9
Storage Length	-	-	220	-	0	-	-
Veh in Median Stora	age0#	ŧ -	-	0	0	-	-
Grade, %	0	-	-	0	0	-	-
Peak Hour Factor	92	92	92	92	92	92	2
Heavy Vehicles, %	6	2	2	6	2	2	2
Mvmt Flow	562	14	42	845	8	48	2

Major/Minor	Maj	or1	Ma	ajor2	M	inor1			
Conflicting Flow	v All	0	0	576	0	1498	288		
Stage 1		-	-	-	-	569	-		
Stage 2		-	-	-	-		-		
Critical Hdwy		-	-	4.13		6.63	6.93		
Critical Hdwy S		-	-	-	-	5.83	-		
Critical Hdwy S	•	-	-	-		5.43	-		
Follow-up Hdw		-		.219		3.519			
Pot Cap-1 Man	leuver	-	-	995	-	123	709		
Stage 1		-	-	-	-	531	-		
Stage 2		-	-	-	-	383	-		
Platoon blocke		-	-		-				
Mov Cap-1 Ma			-	995	-	118	709		
Mov Cap-2 Ma	neuve	r -	-	-	-	118	-		
Stage 1		-	-	-	-	531	-		
Stage 2		-	-	-	-	367	-		
Approach		SE		NW		NE			
HCM Control D	elay, s	s 0		0.4		14.9			
HCM LOS						В			

Minor Lane/Major Mvm	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	420	995	-	-	-
HCM Lane V/C Ratio	0.1320).043	-	-	-
HCM Control Delay (s)	14.9	8.8	-	-	-
HCM Lane LOS	В	Α	-	-	-
HCM 95th %tile Q(veh)	0.5	0.1	-	-	-

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	500	-	~	*	2.5	25-5202	4	×	ب			`
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		र्स	7		र्स	1	ሻ	†	1	ሻ	↑	7
Traffic Volume (vph)	214	46	90	10	35	18	35	83	374	141	92	20
Future Volume (vph)	214	46	90	10	35	18	35	83	374	141	92	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		475	120		160	675		1000	250		275
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1721	1524	0	1773	1524	1703	1792	1524	1703	1792	1524
Flt Permitted		0.730			0.989		0.692			0.652		
Satd. Flow (perm)	0	1308	1524	0	1773	1524	1240	1792	1524	1169	1792	1524
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			170			170			407			158
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		620			670			1661			1039	
Travel Time (s)		16.9			18.3			25.2			15.7	
Lane Group Flow (vph)	0	283	98	0	49	20	38	90	407	153	100	22
Turn Type	Perm	NA	Perm	Split	NA		pm+pt			pm+pt	NA	Perm
Protected Phases	1 01111	8	i onn	4	4	i onn	pm pt 1	6	1 01111	5 pin pt	2	1 01111
Permitted Phases	8	Ŭ	8	•	•	4	6	Ū	6	2	-	2
Detector Phase	8	8	8	4	4	4	1	6	6	5	2	2
Switch Phase	0	0	0	т	т	т	•	U	U	U	2	-
Minimum Initial (s)	10.0	10.0	10.0	7.0	7.0	7.0	5.0	29.0	29.0	5.0	29.0	29.0
Minimum Split (s)	15.0	15.0	15.0	12.0	12.0	12.0	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	30.0	30.0	30.0	12.0	12.0	12.0	11.0	37.0	37.0	11.0	37.0	37.0
	33.3%		33.3%	13.3%	13.3%	13.3%		41.1%		12.2%	41.1%	
Maximum Green (s)	25.0	25.0	25.0	7.0	7.0	7.0	5.0	31.0	31.0	5.0	31.0	31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
. ,	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)			5.0			5.0		6.0	6.0			
Total Lost Time (s)		5.0	5.0		5.0	5.0	6.0			6.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	4.0	4.0	4.0	2.0	2.0	2.0	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	4.0	4.0	4.0	3.0	3.0	3.0	2.5	0.2	0.2	2.5	0.2	0.2
Minimum Gap (s)	2.5	2.5	2.5	0.2	0.2	0.2	0.2		0.2	0.2	0.2	0.2
Time Before Reduce (s)		20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	_	0	0		0	0
Act Effct Green (s)		21.9	21.9		7.1	7.1	34.4	29.4	29.4	37.1	34.3	34.3
Actuated g/C Ratio		0.26	0.26		0.09	0.09	0.42		0.36	0.45	0.41	0.41
v/c Ratio		0.82	0.19		0.32	0.07	0.07	0.14	0.51	0.27	0.13	0.03
Control Delay		49.3	1.2		44.3	0.5	13.9	21.5	4.9	16.4	20.5	0.1
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		49.3	1.2		44.3	0.5	13.9		4.9	16.4	20.5	0.1
LOS		D	А		D	A	В	С	Α	В	С	А

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Lane Group	EBL EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Approach Delay	36.9			31.6			8.3			16.6	
Approach LOS	D			С			А			В	
Queue Length 50th (ft)	143	0		26	0	11	35	0	49	39	0
Queue Length 95th (ft)	#266	5		62	0	29	70	61	88	76	0
Internal Link Dist (ft)	540			590			1581			959	
Turn Bay Length (ft)		475			160	675		1000	250		275
Base Capacity (vph)	400	584		152	286	544	680	831	557	768	743
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.17		0.32	0.07	0.07	0.13	0.49	0.27	0.13	0.03
Intersection Summary											
Area Type: O	ther										
Cycle Length: 90											
Actuated Cycle Length: 8	32.7										
Natural Cycle: 80											
Control Type: Actuated-L	Incoordinated										
Maximum v/c Ratio: 0.82											
Interportion Signal Dolov	· 20 1		1.	atorooat	ion I OS	· C					

Intersection Signal Delay: 20.1 Intersection Capacity Utilization 57.6%

Analysis Period (min) 15

Intersection LOS: C ICU Level of Service B

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 5: US 550 & SH 62/Hunter Pkwy

₩ø1	×02	\$ 04		
115	37 s	12.8	30 s	
◆ 105	¥ Ø6			
11 s	37 s			

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		÷.	1		र्स	1	7	1	1	7	†	1
Traffic Volume (vph)	231	46	90	10	35	19	37	89	399	141	99	20
Future Volume (vph)	231	46	90	10	35	19	37	89	399	141	99	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		475	120		160	675		1000	250		275
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1721	1524	0	1773	1524	1703	1792	1524	1703	1792	1524
Flt Permitted		0.727			0.989		0.687			0.648		-
Satd. Flow (perm)	0	1303	1524	0	1773	1524	1231	1792	1524	1162	1792	1524
Right Turn on Red	-		Yes	-		Yes			Yes			Yes
Satd. Flow (RTOR)			170			170			434			158
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		620			670			1661			1039	
Travel Time (s)		16.9			18.3			25.2			15.7	
Lane Group Flow (vph)	0	301	98	0	49	21	40	97	434	153	108	22
Turn Type	Perm	NA	Perm	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8		4	4		1	6		5	2	
Permitted Phases	8	•	8			4	6	-	6	2	_	2
Detector Phase	8	8	8	4	4	4	1	6	6	5	2	2
Switch Phase	•	•	-			•		-	•	-	_	_
Minimum Initial (s)	10.0	10.0	10.0	7.0	7.0	7.0	5.0	29.0	29.0	5.0	29.0	29.0
Minimum Split (s)	15.0	15.0	15.0	12.0	12.0	12.0	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	30.0	30.0	30.0	12.0	12.0	12.0	11.0	37.0	37.0	11.0	37.0	37.0
		33.3%		13.3%	13.3%	13.3%		41.1%			41.1%	
Maximum Green (s)	25.0	25.0	25.0	7.0	7.0	7.0	5.0	31.0	31.0	5.0	31.0	31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	4.0	4.0	4.0	3.0	3.0	3.0	2.5	0.2	0.2	2.5	0.2	0.2
Minimum Gap (s)	2.5	2.5	2.5	0.2	0.2	0.2	0.2		0.2	0.2	0.2	0.2
Time Before Reduce (s)		20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None		Min	None	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)		22.8	22.8		7.1	7.1	34.4	29.3	29.3	37.0	34.2	34.2
Actuated g/C Ratio		0.27	0.27		0.09	0.09	0.41	0.35	0.35	0.44	0.41	0.41
v/c Ratio		0.85	0.18		0.33	0.07	0.07	0.15	0.53	0.28	0.15	0.03
Control Delay		52.3	1.2		44.6	0.5	14.1	21.7	5.0	16.6	20.6	0.1
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		52.3	1.2		44.6	0.5	14.1	21.7	5.0	16.6	20.6	0.1
LOS		02.0 D	A		D	A	B	C	A	B	20.0 C	A
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Approach Delay		39.7			31.4			8.5			16.8	
Approach LOS		D			С			А			В	
Queue Length 50th (ft)		155	0		26	0	12	38	0	49	42	0
Queue Length 95th (ft)		#293	5		62	0	30	74	63	88	81	0
Internal Link Dist (ft)		540			590			1581			959	
Turn Bay Length (ft)			475			160	675		1000	250		275
Base Capacity (vph)		394	579		150	284	535	672	842	548	758	736
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.76	0.17		0.33	0.07	0.07	0.14	0.52	0.28	0.14	0.03
Intersection Summary												
Area Type: O	ther											
Cycle Length: 90												
Actuated Cycle Length: 8	3.5											

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.85 Intersection Signal Delay: 20.9 Intersection Capacity Utilization 58.5%

Intersection LOS: C

Analysis Period (min) 15

ICU Level of Service B

95th percentile volume exceeds capacity, queue may be longer.Queue shown is maximum after two cycles.

Splits and Phases: 5: US 550 & SH 62/Hunter Pkwy

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115	37 s	12.8	30 s	
+ 05	¥ Ø6			
11 s	37 s			

Lanes, Volumes, Timings 5: US 550 & SH 62

<u>5. 03 550 & 511 02</u>	3	→	-	5	+	*_	4	×	4	*	×	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		र्स	1		र्स	1	٦	1	1	5	1	1
Traffic Volume (vph)	515	81	179	12	86	55	37	96	239	138	116	20
Future Volume (vph)	515	81	179	12	86	55	37	96	239	138	116	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0	0,0	475	120	0,0	160	675	0,0	1000	250	0,0	275
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25		•	25		•
Satd. Flow (prot)	0	1719	1524	0	1782	1524	1703	1792	1524	1703	1792	1524
Flt Permitted	0	0.682	1024	U	0.994	1024	0.654	1752	1024	0.655	1152	1024
Satd. Flow (perm)	0	1222	1524	0	1782	1524	1172	1792	1524	1174	1792	1524
Right Turn on Red	0	1222	Yes	0	1702	Yes	1172	1752	Yes	11/4	1152	Yes
Satd. Flow (RTOR)			195			138			260			131
Link Speed (mph)		25	190		25	150		45	200		45	101
Link Distance (ft)		620			670			1661			1039	
Travel Time (s)		16.9			18.3			25.2			15.7	
Lane Group Flow (vph)	0	648	195	0	10.5	60	40	104	260	150	126	22
• • • • •	-	NA	Perm		NA			NA			NA	Perm
Turn Type Protected Phases	custom	NA 8	Perm	Split 4	NA 4	Penn	pm+pt	NA 6	Perm	pm+pt	NA 2	Perm
	2	0	0	4	4	4	1	0	e	5	2	2
Permitted Phases	3	•	8	4	4	4	6	~	6	2	<u> </u>	2
Detector Phase Switch Phase	3	8	8	4	4	4	1	6	6	5	2	2
Minimum Initial (s)	7.0	10.0	10.0	7.0	7.0	7.0	5.0	29.0	29.0	5.0	29.0	29.0
Minimum Split (s)	12.0	15.0	15.0	12.0	12.0	12.0	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	12.0	76.0	76.0	14.0	14.0	14.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (%)		50.7%	50.7%	9.3%	9.3%	9.3%	7.3%	24.7%	24.7%	7.3%	24.7%	24.7%
Maximum Green (s)	7.0	71.0	71.0	9.0	9.0	9.0	5.0	31.0	31.0	5.0	31.0	31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0	4.0	3.0	3.0	3.0	2.5	0.2	0.2	2.5	0.2	0.2
Minimum Gap (s)	0.2	2.5	2.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Time Before Reduce (s		20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	TTOTIO	7.0	7.0	Herio	7.0	7.0
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)	Ŭ	71.0	71.0	Ŭ	9.0	9.0	34.0	29.0	29.0	35.2	31.2	31.2
Actuated g/C Ratio		0.52	0.52		0.07	0.07	0.25	0.21	0.21	0.26	0.23	0.23
v/c Ratio		1.02	0.22		0.91	0.26	0.23	0.27	0.49	0.20	0.20	0.25
Control Delay		72.7	2.8		123.3	2.8	36.1	47.0	8.5	45.7	47.1	0.03
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	43.7	0.0	0.2
Total Delay		72.7	2.8		123.3	2.8	36.1	47.0	8.5	45.7	47.1	0.0
LOS		72.7 E			123.3 F			47.0 D		45.7 D		
		Ē	A		Ľ	A	D	ט	A	U	D	<u> </u>

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Lanes, Volumes, Timings 5: US 550 & SH 62

<u>5. 00 550 & 011 02</u>												
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Lane Group	EBL E	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Approach Delay	5	56.5			79.7			21.1			42.9	
Approach LOS		Е			E			С			D	
Queue Length 50th (ft)	~	604	0		95	0	26	77	0	103	95	0
Queue Length 95th (ft)	#	840	38		#211	0	56	133	74	166	157	0
Internal Link Dist (ft)	:	540			590			1581			959	
Turn Bay Length (ft)			475			160	675		1000	250		275
Base Capacity (vph)	1	637	888		117	229	312	408	548	322	432	466
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	1	1.02	0.22		0.91	0.26	0.13	0.25	0.47	0.47	0.29	0.05
Intersection Summary												
Area Type: O	ther											
Cycle Length: 150												
Actuated Cycle Length: 1	36											
Natural Cycle: 150												
Control Type: Actuated-L		ated										
Maximum v/c Ratio: 1.02												
Intersection Signal Delay				Ir	ntersect	ion LOS	: D					
Intersection Capacity Util		.1%		10	CU Leve	el of Ser	vice D					
Analysis Period (min) 15												
 Volume exceeds cap 	acity, que	ue is	theoret	ically inf	inite.							

Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.Queue shown is maximum after two cycles.

Splits and Phases: 5: US 550 & SH 62

₩ø1 ¹ 02	→ Ø3 \$ Ø4 → Ø8	
11s 37s	12 s 14 s 76 s	
25 206		

Lanes, Volumes, Timings 5: US 550 & SH 62

	۲	→	7	5	+	*_	4	×	4	*	×	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		é.	1		र्स	1	7	1	1	7	1	1
Traffic Volume (vph)	543	81	179	12	86	58	40	104	258	138	122	20
Future Volume (vph)	543	81	179	12	86	58	40	104	258	138	122	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		475	120		160	675		1000	250		275
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1717	1524	0	1782	1524	1703	1792	1524	1703	1792	1524
Flt Permitted		0.681			0.994		0.643			0.640		
Satd. Flow (perm)	0	1221	1524	0	1782	1524	1153	1792	1524	1147	1792	1524
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			195			138			280			131
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		620			670			1661			1039	
Travel Time (s)		16.9			18.3			25.2			15.7	
Lane Group Flow (vph)	0	678	195	0	106	63	43	113	280	150	133	22
· · · · · /	ustom	NA	Perm	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8		4	4		<u>'</u> 1	6		5	2	
Permitted Phases	3	_	8			4	6		6	2		2
Detector Phase	3	8	8	4	4	4	1	6	6	5	2	2
Switch Phase		-	-					-	-	-		_
Minimum Initial (s)	7.0	10.0	10.0	7.0	7.0	7.0	5.0	29.0	29.0	5.0	29.0	29.0
Minimum Split (s)	12.0	15.0	15.0	12.0	12.0	12.0	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	12.0	76.0	76.0	12.0	12.0	12.0	11.0	39.0	39.0	11.0	39.0	39.0
Total Split (%)		50.7%		8.0%	8.0%	8.0%		26.0%			26.0%	
Maximum Green (s)	7.0	71.0	71.0	7.0	7.0	7.0	5.0	33.0	33.0	5.0	33.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0	4.0	3.0	3.0	3.0	2.5	0.2	0.2	2.5	0.2	0.2
Minimum Gap (s)	0.2	2.5	2.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Time Before Reduce (s)	0.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)		71.0	71.0		7.0	7.0	34.0	29.0	29.0	35.2	31.2	31.2
Actuated g/C Ratio		0.53	0.53		0.05	0.05	0.25	0.22	0.22	0.26	0.23	0.23
v/c Ratio		1.05	0.22		1.14	0.30	0.14	0.29	0.51	0.47	0.32	0.05
Control Delay												
		80.6	2.7		190.6	3.6	35.3	46.4	8.3	44.7	46.3	0.2
-		80.6 0.0	2.7 0.0		190.6 0.0	3.6 0.0	35.3 0.0	46.4 0.0	8.3 0.0	44.7 0.0	46.3 0.0	0.2 0.0
Queue Delay Total Delay		80.6 0.0 80.6	2.7 0.0 2.7		190.6 0.0 190.6	3.6 0.0 3.6	35.3 0.0 35.3	46.4 0.0 46.4	8.3 0.0 8.3	44.7 0.0 44.7	46.3 0.0 46.3	0.2 0.0 0.2

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Lanes, Volumes, Timings 5: US 550 & SH 62

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Approach Delay		63.2			120.9			20.9			42.2	
Approach LOS		Е			F			С			D	
Queue Length 50th (ft)		~640	0		~107	0	27	83	0	100	99	0
Queue Length 95th (ft)		#879	37		#232	0	57	141	77	162	162	0
Internal Link Dist (ft)		540			590			1581			959	
Turn Bay Length (ft)			475			160	675		1000	250		275
Base Capacity (vph)		646	899		93	210	313	441	586	321	460	488
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		1.05	0.22		1.14	0.30	0.14	0.26	0.48	0.47	0.29	0.05
Intersection Summary												
Area Type: O	ther											
Cycle Length: 150												
Actuated Cycle Length: 1	34											

Natural Cycle: 150

Control Type: Actuated-Uncoordinated Maximum v/c Ratio: 1.14

Intersection Signal Delay: 54.7 Intersection Capacity Utilization 83.4%

Analysis Period (min) 15

Intersection LOS: D ICU Level of Service E

Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Splits and Phases: 5: US 550 & SH 62

₩Ø1 ₩Ø2	Ø3 ★ Ø4 →Ø8	
11 s 39 s	12 s 12 s 76 s	
★ Ø5 ¥ Ø6		
11 s 39 s		

<u>0.00000000000000000000000000000000000</u>	3	_→		5	+	×	4	X	\$	*	×	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		4	1		4	1	5	1	1	3	1	1
Traffic Volume (vph)	253	54	107	12	42	21	42	98	443	167	108	23
Future Volume (vph)	253	54	107	12	42	21	42	98	443	167	108	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300
Grade (%)	12	0%	12	12	0%	12	12	0%	12	12	0%	12
	0	0 /0	475	120	0 /0	160	675	0 /0	1000	250	0 /0	275
Storage Length (ft)	0		475	120		100	075		1000	250		275
Storage Lanes			1			1	25		I.	25		I
Taper Length (ft)	25	4704	4504	25	4770	4504		4700	4504		4700	4504
Satd. Flow (prot)	0	1721	1524	0	1773	1524	1703	1792	1524	1703	1792	1524
Flt Permitted	•	0.723	4504	•	0.989	4504	0.682	4700	4504	0.645	1700	4504
Satd. Flow (perm)	0	1296	1524	0	1773	1524	1222	1792	1524	1156	1792	1524
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			170			170			482			158
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		620			670			1661			1039	
Travel Time (s)		16.9			18.3			25.2			15.7	
Lane Group Flow (vph)	0	334	116	0	59	23	46	107	482	182	117	25
Turn Type	Perm	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4	4		1	6		5	2	
Permitted Phases	8		8			4	6		6	2		2
Detector Phase	8	8	8	4	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	7.0	7.0	5.0	29.0	29.0	5.0	29.0	29.0
Minimum Split (s)	15.0	15.0	15.0	12.0	12.0	12.0	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	30.0	30.0	30.0	12.0	12.0	12.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (%)	33.3%	33.3%	33.3%	13.3%	13.3%	13.3%	12.2%	41.1%	41.1%	12.2%	41.1%	41.1%
Maximum Green (s)	25.0	25.0	25.0	7.0	7.0	7.0	5.0	31.0	31.0	5.0	31.0	31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	4.0	4.0	4.0	3.0	3.0	3.0	2.5	0.2	0.2	2.5	0.2	0.2
Minimum Gap (s)	2.5	2.5	2.5	0.2	0.2	0.2	0.2		0.2	0.2	0.2	0.2
Time Before Reduce (s)		20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	None	7.0	7.0	None	7.0	7.0
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		17.0	17.0		17.0	17.0
	0		0						0.11			
Pedestrian Calls (#/hr)	0	0 24.1	24.1	0	0	0	34.2	0	29.2	36.0	22.0	0 33.9
Act Effct Green (s)					7.0	7.0		29.2		36.8	33.9	
Actuated g/C Ratio		0.28	0.28		0.08	0.08	0.40	0.34	0.34	0.43	0.40	0.40
v/c Ratio		0.91	0.21		0.40	0.08	0.09	0.17	0.57	0.34	0.16	0.04
Control Delay		60.1	2.2		47.1	0.6	14.2	21.9	5.3	17.8	20.7	0.1
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		60.1	2.2		47.1	0.6	14.2		5.3	17.8	20.7	0.1
LOS		E	A		D	A	В	С	A	В	С	A

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	~	-	-	*			+	*	⊶		•	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Approach Delay		45.2			34.1			8.7			17.5	
Approach LOS		D			С			А			В	
Queue Length 50th (ft)		178	0		32	0	14	42	0	59	46	0
Queue Length 95th (ft)		#337	15		71	0	33	80	68	103	87	0
Internal Link Dist (ft)		540			590			1581			959	
Turn Bay Length (ft)			475			160	675		1000	250		275
Base Capacity (vph)		385	572		147	282	522	660	866	534	741	723
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.87	0.20		0.40	0.08	0.09	0.16	0.56	0.34	0.16	0.03
Intersection Summary												
Area Type: O	ther											
Cycle Length: 90												
Actuated Cycle Length: 8	84.7											
Natural Cycle: 90												
Control Type: Actuated-L		nated										
Maximum v/c Ratio: 0.91												
Intersection Signal Delay				lr	ntersect	ion LOS	: C					
Intersection Capacity Util	ization 6	0.2%		10	CU Leve	el of Ser	vice B					

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 5: US 550 & SH 62/Hunter Pkwy

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11.8	37 s	12.8	30 s	
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11's	37 s			

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		4	1		र्स	1	7	†	1	ሻ	^	1
Traffic Volume (vph)	270	54	107	12	42	22	44	104	468	167	115	23
Future Volume (vph)	270	54	107	12	42	22	44	104	468	167	115	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		475	120		160	675		1000	250		275
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1721	1524	0	1773	1524	1703	1792	1524	1703	1792	1524
Flt Permitted		0.721			0.989		0.677			0.642		
Satd. Flow (perm)	0	1292	1524	0	1773	1524	1213	1792	1524	1151	1792	1524
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			170			170			509			158
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		620			670			1661			1039	
Travel Time (s)		16.9			18.3			25.2			15.7	
Lane Group Flow (vph)	0	352	116	0	59	24	48	113	509	182	125	25
Turn Type	Perm	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4	4		1	6		5	2	
Permitted Phases	8		8			4	6		6	2		2
Detector Phase	8	8	8	4	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	7.0	7.0	5.0	29.0	29.0	5.0	29.0	29.0
Minimum Split (s)	15.0	15.0	15.0	12.0	12.0	12.0	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	30.0	30.0	30.0	12.0	12.0	12.0	11.0	37.0	37.0	11.0	37.0	37.0
Total Split (%)	33.3%	33.3%	33.3%	13.3%	13.3%	13.3%	12.2%	41.1%	41.1%	12.2%	41.1%	41.1%
Maximum Green (s)	25.0	25.0	25.0	7.0	7.0	7.0	5.0	31.0	31.0	5.0	31.0	31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	4.0	4.0	4.0	3.0	3.0	3.0	2.5	0.2	0.2	2.5	0.2	0.2
Minimum Gap (s)	2.5	2.5	2.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Time Before Reduce (s)	20.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min	Min						
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)		25.1	25.1		7.0	7.0	34.1	29.1	29.1	36.6	33.7	33.7
Actuated g/C Ratio		0.29	0.29		0.08	0.08	0.40	0.34	0.34	0.43	0.39	0.39
v/c Ratio		0.93	0.20		0.41	0.09	0.09	0.19	0.60	0.35	0.18	0.04
Control Delay		64.3	2.2		47.4	0.6	14.3	22.0	5.5	18.0	20.8	0.1
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		64.3	2.2		47.4	0.6	14.3	22.0	5.5	18.0	20.8	0.1
LOS		E	A		D	A	B	C	A	B	20.0 C	A
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Approach Delay		48.9			33.9			8.9			17.7	
Approach LOS		D			С			А			В	
Queue Length 50th (ft)		192	0		32	0	14	44	0	59	50	0
Queue Length 95th (ft)		#362	15		71	0	34	84	69	103	92	0
Internal Link Dist (ft)		540			590			1581			959	
Turn Bay Length (ft)			475			160	675		1000	250		275
Base Capacity (vph)		379	566		145	280	512	651	877	525	730	714
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.93	0.20		0.41	0.09	0.09	0.17	0.58	0.35	0.17	0.04
Intersection Summary												
Area Type: C	other											
Cycle Length: 90												

Actuated Cycle Length: 85.6 Natural Cycle: 90 Control Type: Actuated-Uncoordinated Maximum v/c Ratio: 0.93

Intersection Signal Delay: 24.2 Intersection Capacity Utilization 61.1%

Analysis Period (min) 15

Intersection LOS: C ICU Level of Service B

95th percentile volume exceeds capacity, queue may be longer.Queue shown is maximum after two cycles.

Splits and Phases: 5: US 550 & SH 62/Hunter Pkwy

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Lanes, Volumes, Timings 5: US 550 & SH 62

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		र्स	1		é.	1	٦	^	1	7	1	1
Traffic Volume (vph)	609	96	212	15	102	65	44	113	283	164	138	23
Future Volume (vph)	609	96	212	15	102	65	44	113	283	164	138	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		475	120	• • •	160	675		1000	250		275
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25		•	25			25			25		-
Satd. Flow (prot)	0	1719	1524	0	1782	1524	1703	1792	1524	1703	1792	1524
Flt Permitted	U	0.668	1024	Ū	0.994	1024	0.606	1752	1024	0.618	1102	1024
Satd. Flow (perm)	0	1197	1524	0	1782	1524	1086	1792	1524	1108	1792	1524
Right Turn on Red	0	1157	Yes	U	1702	Yes	1000	1752	Yes	1100	1152	Yes
Satd. Flow (RTOR)			230			138			308			131
Link Speed (mph)		25	230		25	100		45	500		45	101
Link Distance (ft)		620			670			1661			1039	
Travel Time (s)		16.9			18.3			25.2			15.7	
	0	766	230	0	127	71	48	123	308	178	150	25
Lane Group Flow (vph)												
	custom	NA	Perm	Split	NA 4	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	0	8	0	4	4	4	1	6	<u>^</u>	5	2	
Permitted Phases	3	0	8	4	4	4	6	0	6	2	0	2
Detector Phase	3	8	8	4	4	4	1	6	6	5	2	2
Switch Phase	7.0	40.0	40.0	7.0	7.0	7.0	5.0	00.0	00.0	F 0	00.0	00.0
Minimum Initial (s)	7.0	10.0	10.0	7.0	7.0	7.0	5.0	29.0	29.0	5.0	29.0	29.0
Minimum Split (s)	12.0	15.0	15.0	12.0	12.0	12.0	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	12.0	76.0	76.0	13.0	13.0	13.0	11.0	38.0	38.0	11.0	38.0	38.0
Total Split (%)		50.7%		8.7%	8.7%	8.7%		25.3%		7.3%	25.3%	
Maximum Green (s)	7.0	71.0	71.0	8.0	8.0	8.0	5.0	32.0	32.0	5.0	32.0	32.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0	4.0	3.0	3.0	3.0	2.5	0.2	0.2	2.5	0.2	0.2
Minimum Gap (s)	0.2	2.5	2.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Time Before Reduce (s) 0.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)		71.0	71.0		8.0	8.0	34.0	29.0	29.0	35.2	31.2	31.2
Actuated g/C Ratio		0.53	0.53		0.06	0.06	0.25	0.21	0.21	0.26	0.23	0.23
v/c Ratio		1.22	0.25		1.21	0.32	0.16	0.32	0.54	0.57	0.36	0.06
Control Delay		142.3	2.7		206.1	3.8	36.3	47.4	8.5	49.5	47.7	0.2
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		142.3	2.7		206.1	3.8	36.3	47.4	8.5	49.5	47.7	0.2
LOS		F	2.7 A		200.1	A	D	D	A	-10.0 D	D	A
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Lanes, Volumes, Timings 5: US 550 & SH 62

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Approach Delay		110.1			133.6			21.3			45.3	
Approach LOS		F			F			С			D	
Queue Length 50th (ft)		~821	0		~135	0	31	92	0	123	114	0
Queue Length 95th (ft)		#1067	40		#270	0	63	152	81	191	182	0
Internal Link Dist (ft)		540			590			1581			959	
Turn Bay Length (ft)			475			160	675		1000	250		275
Base Capacity (vph)		629	910		105	220	296	424	596	311	445	477
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		1.22	0.25		1.21	0.32	0.16	0.29	0.52	0.57	0.34	0.05
Intersection Summary												
Area Type: Of	ther											
Cycle Length: 150												
Actuated Cycle Length: 1	35											
Natural Cycle: 150												
Control Type: Actuated-L		dinated										
Maximum v/c Ratio: 1.22												
Intersection Signal Delay						ion LOS						
Intersection Capacity Util	ization	91.2%		10	CU Leve	el of Ser	vice F					
Analysis Period (min) 15												

Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 5: US 550 & SH 62

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Lanes, Volumes, Timings 5: US 550 & SH 62

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		र्स	1		र्स	1	ሻ	1	1	5	1	1
Traffic Volume (vph)	637	96	212	15	102	68	47	121	302	164	144	23
Future Volume (vph)	637	96	212	15	102	68	47	121	302	164	144	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		475	120		160	675		1000	250		275
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1717	1524	0	1782	1524	1703	1792	1524	1703	1792	1524
Flt Permitted		0.667			0.994		0.591			0.599		
Satd. Flow (perm)	0	1196	1524	0	1782	1524	1059	1792	1524	1074	1792	1524
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			230			138			328			131
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		620			670			1661			1039	
Travel Time (s)		16.9			18.3			25.2			15.7	
Lane Group Flow (vph)	0	796	230	0	127	74	51	132	328	178	157	25
Turn Type c	custom	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4	4			6		5	2	
Permitted Phases	3		8			4	6		6	2		2
Detector Phase	3	8	8	4	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	7.0	7.0	5.0	29.0	29.0	5.0	29.0	29.0
Minimum Split (s)	12.0	15.0	15.0	12.0	12.0	12.0	11.0	35.5	35.5	11.0	35.5	35.5
Total Split (s)	12.0	76.0	76.0	13.0	13.0	13.0	11.0	38.0	38.0	11.0	38.0	38.0
Total Split (%)	8.0%	50.7%	50.7%	8.7%	8.7%	8.7%	7.3%	25.3%	25.3%	7.3%	25.3%	25.3%
Maximum Green (s)	7.0	71.0	71.0	8.0	8.0	8.0	5.0	32.0	32.0	5.0	32.0	32.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0	4.0	3.0	3.0	3.0	2.5	0.2	0.2	2.5	0.2	0.2
Minimum Gap (s)	0.2	2.5	2.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Time Before Reduce (s)		20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)		71.0	71.0		8.0	8.0	34.0	29.0	29.0	35.2	31.2	31.2
Actuated g/C Ratio		0.53	0.53		0.06	0.06	0.25	0.21	0.21	0.26	0.23	0.23
v/c Ratio		1.27	0.25		1.21	0.34	0.18	0.34	0.56	0.59	0.38	0.06
Control Delay		161.7	2.7		206.1	4.1	36.6	48.0	8.6	50.3	48.1	0.2
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		161.7	2.7		206.1	4.1	36.6	48.0	8.6	50.3	48.1	0.2
LOS		F	А		F	А	D	D	A	D	D	A

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Lanes, Volumes, Timings 5: US 550 & SH 62

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Approach Delay		126.1			131.8			21.5			45.9	
Approach LOS		F			F			С			D	
Queue Length 50th (ft)		~876	0		~135	0	33	99	0	123	119	0
Queue Length 95th (ft)		#1124	40		#270	0	66	163	84	191	190	0
Internal Link Dist (ft)		540			590			1581			959	
Turn Bay Length (ft)			475			160	675		1000	250		275
Base Capacity (vph)		629	910		105	220	290	424	611	303	445	477
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		1.27	0.25		1.21	0.34	0.18	0.31	0.54	0.59	0.35	0.05
Intersection Summary												
Area Type: O	ther											
Cycle Length: 150												

Actuated Cycle Length: 135 Natural Cycle: 150 Control Type: Actuated-Uncoordinated Maximum v/c Ratio: 1.27

Intersection Signal Delay: 87.4 Intersection Capacity Utilization 94.4%

Analysis Period (min) 15

Intersection LOS: F ICU Level of Service F

Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.Queue shown is maximum after two cycles.

Splits and Phases: 5: US 550 & SH 62

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STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Region 5, Traffic and Safety Unit 3803 N. Main Avenue, Suite 100 Durango, CO 81301 (970) 385-8360 (970) 385-8361 Fax



LATE FALL, WINTER AND SPRING SPECIAL PROVISIONS FOR ACCESS CONSTRUCTION AND UTILITY INSTALLATIONS

It's that time of year again when work within the Right of Way (ROW) becomes a special concern. Due to Southwest Colorado's unpredictable weather, utility work in the ROW can create several types of hazards for the traveling public, contractors and their personnel. The condition of the highway can change quickly. Mud tracked onto the highway by equipment, or ice and snowpack are just a few of the conditions that make the roadway more hazardous for all concerned. The terrain within the ROW must be kept clear of hazards as well. Holes, trenches, equipment and materials can make the terrain "unrecoverable" for a driver should his/her vehicle leave the highway. **Activities must be shut down when the roadway is other than dry.** The use of frozen materials for backfilling will only lead to settlement. The contractor must make extra effort to compact the excavation. In the spring, any settlement of backfill shall be repaired. The re-vegetation shall take place yet this fall or early next spring.



DocuSign Envelope ID: 2C82ED12-E163-42D8-AF60-AE98B06FDD5C **CRATION** Environmental Clearances Information Summary

PURPOSE - This summary is intended to inform entities external to CDOT that may be entering the state highway right-of-way to perform work related to their own facilities (such as Utility, Special Use or Access Permittees), about some of the more commonly encountered environmental permits/clearances that may apply to their activities. This listing is not all-inclusive - additional environmental or cultural resource permits/clearances may be required in certain instances. Appropriate local, state and federal agencies should be contacted for additional information if there is any uncertainty about what permits/clearances are required for a specific activity. **IMPORTANT – Please Review The Following Information Carefully – Failure to Comply With Regulatory Requirements May Result In Suspension or Revocation of Your CDOT Permit, Or Enforcement Actions By Other Agencies.**

CLEARANCE CONTACTS - As indicated in the permit/clearance descriptions listed below, the following individuals or agencies may be contacted for additional information:

- Colorado Department of Public Health and Environment (CDPHE): General Information (303) 692-2035 Water Quality Control Division (WQCD): (303) 692-3500
- Environmental Permitting Website https://www.colorado.gov/pacific/cdphe/all-permits
- CDOT Water Quality Program Manager: (303) 757-9343 <u>https://www.codot.gov/programs/environmental/water-quality</u>
 CDOT Asbestos Project Manager: Phil Kangas, (303) 512-5519
- CDOT Asbestos Project Manager: Phil Kangas, (303) 512-5519
 Colorado Office of Archaeology and Historia Process vations (202)
- Colorado Office of Archaeology and Historic Preservation: (303) 866-5216
- U.S. Army Corps of Engineers, District Regulatory Offices: Omaha District (NE CO), Denver Office (303) 979-4120 http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/Colorado.aspx
- Sacramento Dist. (Western CO), Grand Junction Office (970) 243-1199

http://www.spk.usace.army.mil/Missions/Regulatory.aspx Albuquerque

District (SE CO), Pueblo Office (719)-543-9459

http://www.spa.usace.army.mil/Missions/RegulatoryProgramandPermits.aspx

CDOT Utilities, Special Use and Access Permitting: (303) 757-9654 https://www.codot.gov/business/permits

<u>Wildlife Resources</u> - Disturbance of wildlife shall be avoided to the maximum extent practicable. Entry into areas of known or suspected threatened or endangered species habitat will require special authorization from the CDOT permitting office. If any threatened or endangered species are encountered during the progress of the permitted work, work in the subject area shall be halted and the CDOT Regional Permitting Office and Region Planning and Environmental Manager shall be contacted immediately. Authorization must be provided by CDOT prior to the continuation of work. Information about threatened or endangered species may be obtained from the CDOT website, http://www.codot.gov/programs/environmental/wildlife/guidelines, or the Colorado Parks and Wildlife (CPW) website, http://www.codot.gov/programs/environmental/wildlife/guidelines, or the Colorado Parks and Wildlife (CPW) website, http://www.cpw.state.co.us/learn/Pages/SOC-ThreatenedEndangeredList.aspx. Additional guidance may be provided by the appropriate Region Planning and Environmental Manager (RPEM).

<u>Cultural Resources</u> - The applicant must request a file search of the permit area through the Colorado Office of Archaeology and Historic Preservation (OAHP), Denver, to ascertain if historic or archaeological resources have previously been identified (<u>http://www.historycolorado.org/oahp/file-search</u>). Inventory of the permit area by a qualified cultural resources specialist may be necessary, per the recommendation of CDOT. If archaeological sites/artifacts or historic resources are known to exist prior to the initiation of the permitted work or are encountered as the project progresses, all work in the subject area shall be halted and the CDOT Regional Permitting Office and Region Planning and Environmental Manager shall be contacted immediately. Authorization must be provided by CDOT prior to the continuation of work. Additional guidance may be provided by the Regional Permitting Office and RPEM. *Contact Information:* Contact the OAHP for file searches at (303) 866-5216.

Paleontological Resources - The applicant must request a fossil locality file search through the University of Colorado Museum, Boulder (https://cumuseum.colorado.edu/research/paleontology/vertebrates/policies), and the Denver Museum of Nature and Science (http://www.dmns.org/science/collections/earth-science-collections/) to ascertain if paleontological resources have been previously identified in or near the permit area. Inventory of the permit area by a qualified paleontologist may be necessary, per the recommendation of CDOT. If fossils are encountered during the permitted work, all work in the subject area shall be halted and the CDOT Regional Permitting Office and Region Planning and Environmental Manager shall be contacted immediately. Authorization must be provided by CDOT prior to the continuation of work. Additional guidance may be provided by the Regional Permitting Office in the Permit Special Provisions. *Contact Information:* See the museum websites listed above for Paleontological Collections Manager contact information. Contact the CDOT Paleontologist for further information at <u>nicole.peavey@state.co.us</u> or (303) 7579632. The CDOT Paleontologist will not conduct a comprehensive file search independently of the museums.

Hazardous Materials, Solid Waste - The Solid Wastes Disposal Sites and Facilities Act C.R.S. 30-20-100, et al, and Regulations Pertaining to Solid Waste Disposal Sites and Facilities (6 CCR 1007-2), prohibit solid waste disposal without an approved Certificate of Designation (a landfill permit). The Colorado Hazardous Waste Act C.R.S. 25-15-301 et al, and the Colorado Hazardous Waste Regulations (6 CCR 1007-3) prohibit the transfer, storage or disposal (TSD) of hazardous waste except at permitted TSD sites. There are no permitted landfills or TSD sites within the State Highway Right of Way. Therefore, all solid or hazardous wastes that might be generated by the activities of entities entering the State Highway Right of Way must be removed from the ROW and disposed of at a permitted facility or designated collection point (e.g., for solid waste, a utility or construction company's own dumpster). If pre-existing solid waste or hazardous materials contamination (including oil or petroleum contaminated soil, asbestos, chemicals, mine tailings, etc.) is encountered during the performance of work, the permittee shall halt work in the affected area and immediately contact the CDOT Regional Permitting Office for direction as to how to proceed. *Contact Information:* Theresa Santangelo-Dreiling, CDOT Hazardous Materials Management Supervisor: (303) 512-5524.

Asbestos Containing Materials, Asbestos Contaminated Soil - All work on asbestos containing materials (ACM) must comply with the applicable requirements of the CDPHE Air Pollution Control Division's (APCD) Regulation 8. Disposal of ACM, and work done in asbestos-contaminated soil, must comply with the CDPHE Hazardous Materials and Waste Management Division's (HMWMD) Solid

Waste Regulations. The application for any CDOT permit must specifically identify any ACM involved in the work for which permit specifically identify any ACM involved in the work for which permit specifically identify any be specified in the permit special provisions. **Contact**

Info: CDPHE APCD and HMWMD Regulations can be accessed via the CDPHE Environmental Permitting Website listed above. Additional information <u>concerning clearance on CDOT projects</u> is available from the CDOT Asbestos Project Manager (303) 5125519, or Theresa Santangelo-Dreiling, Hazardous Materials Management Supervisor: (303) 512-5524.

Transportation of Hazardous Materials - No person may offer or accept a hazardous material for transportation in commerce unless that person is registered in conformance with the United States Department of Transportation regulations at 49 CFR, Part 171. The hazardous material must be properly classed, described, packaged, marked, labeled, and in condition for shipment as required or authorized by applicable requirements, or an exemption, approval or registration has been issued. Vehicles requiring a placard, must obtain authorization and a State HAZMAT Permit from the Colorado Public Utilities Commission. *Contact Information:* For authorization and more info call the Federal Motor Safety Carrier Administration, US DOT for inter- and intra-state HAZMAT Registration (303) 969-6748. Colorado Public Utilities Commission: (303) 894-2868.

Discharge of Dredged or Fill Material – 404 Permits Administered By the U.S. Army Corps of Engineers, and Section 401 Water Quality Certifications Issued by the CDPHE WQCD - Corps of Engineers 404 permits are required for the discharge of dredged or fill materials into waters of the United States, including wetlands. There are various types of 404 permits, including nationwide permits, which are issued for activities with relatively minor impacts. For example, there is a nationwide permit for utility line activities (nwp #12). Depending upon the specific circumstances, it is possible that either a "general" or "individual" 404 permit would be required. If an individual 404 permit is required, section 401 water quality certification from the CDPHE WQCD is also required. Contact the appropriate Corps District Regulatory Office for information about what type of 404 permit may be required (contact information above). Contact the CDPHE Water Quality Control Division at (303) 692-3500.

<u>Working on or in any stream or its bank</u> - In order to protect and preserve the state's fish and wildlife resources from actions that may obstruct, diminish, destroy, change, modify, or vary a natural existing stream or its banks or tributaries, it may be necessary to obtain a Senate Bill 40 certification from the Colorado Department of Natural Resources. A stream is defined as 1) represented by a solid blue line on USGS 7.5' quadrangle maps; and/or 2) intermittent streams providing live water beneficial to fish and wildlife; and/or 3) segments of streams supporting 25% or more cover within 100 yards upstream or downstream of the project; and/or 4) segments of streams having wetlands present within 200 yards upstream or downstream of the project measured by valley length. The CPW application, as per guidelines agreed upon by CDOT and CPW, can be accessed at https://www.codot.gov/programs/environmental/wildlife/guidelines.

<u>Stormwater Construction Permit (SCP) and Stormwater Discharge From Industrial Facilities</u> - Discharges of stormwater runoff from construction sites disturbing one acre or more - or certain types of industrial facilities, such as concrete batch plants - require a CDPS Stormwater Permit. *Contact Information:* Contact the CDPHE Water Quality Control Division at (303) 692-3500. Website: https://www.colorado.gov/pacific/cdphe/wq-construction-general-permits and https://colorado.gov/pacific/cdphe/wq-commerceandindustry-permits.

<u>Construction Dewatering (Discharge or Infiltration) and Remediation Activities</u> - Discharges of water encountered during excavation or work in wet areas may require a Construction Dewatering or Remediation Activities Discharge Permit. *Contact Information:* For Construction Dewatering and Remediation Activities Discharge Permits, contact the CDPHE WQCD at (303) 6923500. For Applications and Instructions (CDPHE website): https://www.colorado.gov/pacific/cdphe/wq-construction-general-permits.

<u>Municipal Separate Storm Sewer System (MS4) Discharge Permit</u> - Discharges from the storm sewer systems of larger municipalities, and from the CDOT highway drainage system that lies within those municipalities, are subject to MS4 Permits issued by the CDPHE WQCD. For facilities that lie within the boundaries of a municipality that is subject to an MS4 permit, the owner of such facility should contact the municipality regarding stormwater related clearances that may have been established under that municipality's MS4 permit. All discharges to the CDOT highway drainage system or within the Right of Way (ROW) must comply with the applicable provisions of the Colorado Water Quality Control Act, the Water Quality Control Commission (WQCC) Regulations (https://www.colorado.gov/pacific/cdphe/wqcc-regulations-and-policies-and-water-quality-statutes) and the CDOT MS4 Permit # COS000005 (https://www.codot.gov/programs/environmental/water-quality/documents). Discharges are subject to inspection by CDOT and CDPHE. Contact the CDPHE Water Quality Control Division at (303) 692-3500 for a listing of municipalities required to obtain MS4 Permits, or go to https://www.colorado.gov/pacific/cdphe/wqce-regulations, go to: https://www.codot.gov/programs/environmental/water-quality/stormwater-programs.html.

<u>General Prohibition – Discharges</u> - All discharges are subject to the provisions of the Colorado Water Quality Control Act and the Colorado Discharge Permit Regulations. Prohibited discharges include, but are not limited to, substances such as wash water, paint, automotive fluids, solvents, oils or soaps and sediment. *Contact Information*: Contact the CDPHE Water Quality Control Division at (303) 692-3500.

<u>General Authorization - Allowable Non-Stormwater Discharges</u> - Unless otherwise identified by CDOT or the WQCD as significant sources of pollutants to the waters of the State, the following discharges to stormwater systems are allowed without a Colorado Discharge Permit System permit: landscape irrigation, diverted stream flows, uncontaminated ground water infiltration to separate storm sewers, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, uncontaminated springs, footing drains, water line flushing, flows from riparian habitats and wetlands, and flow from firefighting activities. Allowable non-stormwater discharges can be found under Illicit Discharge PDD at: https://www.codot.gov/programs/environmental/water-quality/stormwater-programs.html. *Contact Information:* The CDPHE Water Quality Control Division (telephone #'s listed above).

Erosion and Sediment Control Practices - For activities requiring a Stormwater Construction Permit, erosion control requirements will be specified in that permit. In situations where a stormwater permit is not required, all reasonable measures should be taken to minimize erosion and sedimentation according to CDOT Standard Specifications 107.25, 208, 213 and 216 (<u>https://www.codot.gov/business/designsupport/2011-construction-specifications/2011-Specs/2011-specs-book</u>). All disturbances require a stabilization plan, native seeding or landscape design plan according to applicable CDOT Standard Specifications 212-217 and 623. The CDOT Erosion Control and Stormwater Quality Guide (available from the Bid Plans Office at (303) 757-9313) should be used to design erosion controls and restore disturbed vegetation.

Disposal of Drilling Fluids - Drilling fluids used in operations such as Horizontal Directional Drilling may be classified as "discharges" DocuSign Envelope ID: 2C82ED12-E163-42D8-AF60-AE98B06FDD5C med from the construction area, removed from the State Highway Right of Way, and disposed of at permitted facilities that specifically accept such wastes. Disposal of drilling fluids into storm drains, storm sewers, roadside ditches or any other type of man-made or natural waterway is prohibited by Water Quality Control and/or Solid Waste regulations. Small quantities of drilling fluid solids (less than 1 cubic yard of solids) may be left on-site after either being separated from fluids or after infiltration of the water, provided: 1) the drilling fluid consists of only water and bentonite clay, or, if required for proper drilling properties, small quantities of polymer additives that are approved for use in drinking water well drilling; 2) the solids are fully contained in a pit, and are not likely to pose a nuisance to future work in the area, 3) the solids are covered and the area restored as required by CDOT permit requirements (Utility, Special Use, or Access Permits, etc.). *Contact Information:* Contact CDPHE (telephone #'s listed above).

<u>Noxious Weeds and Invasive Species Management Plan</u> – Noxious Weeds and Invasive Species guidance can be found by contacting the Colorado Department of Agriculture (<u>https://www.colorado.gov/pacific/agconservation/noxiousweeds</u>) and the Colorado Division of Parks and Wildlife (<u>http://cpw.state.co.us/aboutus/Pages/RS-NoxiousWeeds.aspx</u>). In either case, management plans involving the control of noxious weeds associated with the permitted activity and cleaning of equipment will be required.

<u>Concrete Washout</u> - Waste generated from concrete activities shall NOT be allowed to flow into the drainage ways, inlets, receiving waters, or in the CDOT ROW. Concrete waste shall be placed in a temporary concrete washout facility and must be located a minimum of 50 feet from state waters, drainageways, and inlets. Concrete washout shall only be performed as specified by the CDOT Environmental Program and shall be in accordance to CDOT specifications and guidelines. *Contact Information*: Contact CDPHE or find additional information on the CDOT website: https://www.codot.gov/business/designsupport/2011-construction_specifications/2011-Specs and refer to the specifications and their revisions for sections 101, 107 and 208.

Spill Reporting - Spills shall be contained and cleaned up as soon as possible. Spills shall NOT be washed down into the storm drain or buried. All spills shall be reported to the CDOT Illicit Discharge Hotline at (303) 512-4446 (4H20), as well as the Regional Permitting Office and Regional Maintenance Supervisor. Spills on highways, into waterways, any spill in the highway right-of-way exceeding 25 gallons, or that may otherwise present an immediate danger to the public shall be reported by calling 911, and shall also be reported to the CDPHE at 1-877-518-5608. More information can be found at https://www.colorado.gov/pacific/cdphe/emergencyreporting-line.

<u>About This Form</u> - Questions or comments about this Information Summary may be directed to Dan Roussin, Program Administrator, CDOT Access Management Unit, at (303) 757-9841, daniel.roussin@state.co.us

April 2020

Environmental Clearances Information Summary Page 3 of 3 Colorado Department of Transportation





Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like roads and sidewalks prevent stormwater from naturally soaking into the ground

Why is stormwater runoff a problem?

enters CDOT's storm drain system is discharged untreated into pollutants and flow into CDOT's storm drain system or directly into a stream, river, lake, wetland or reservoir. Anything that the waterways we use for fishing, swimming, and providing Stormwater can pick up debris, chemicals, dirt and other drinking water.



material, radioactive material, heat, pH, wrecked or Dredged spoil, dirt, slurry, solid waste, incinerator discarded equipment, rock, sand, any industrial, residue, sewage, sewage sludge, garbage, trash chemical waste, biological nutrient, biological <u>municipal, or agricultural waste</u>

Tips for Reporting an Illicit Discharge

Identify characteristics of the discharge (color, odor, From a safe distance try to estimate the amount of Never get too close to the illicit discharge, it may Call the illicit discharge hotline at (303) 512-4426 Obtain information on the vehicle dumping the If possible, take a photo, record a license plate. Call *CSP for illicit dumping. be dangerous!!! **REMEMBER:** Do not approach! waste (if applicable). the discharge. algae, etc.).

For more information on CDOT Utility Permits: https://www.codot.gov/business/permits/utilitie sspecialuse For more information on CDOT Access Permits: https://www.codot.gov/business/permits/access permits

For more information on CDOT Water Quality Program:

Water Quality Program Manager Denver, Colorado 80222 4201 E. Arkansas Ave. Shumate Building 303-757-9343

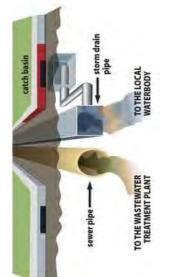


Transportation Department of

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Water Quality Program Industrial Facilities Program

stormwater can be discharged from CDOT's storm drain system otherwise known as (MS4) from the Colorado Department of CDOT has a Municipal Separate Storm Sewer System permit, Public Health and Environment. The permit states that only



programs to prevent pollutants from entering into As part of the permit, CDOT has several different the storm drain system:

- **Construction Site Program**
- New Development Redevelopment Program
 - Illicit Discharge Program
- Industrial Facilities Program
- Pollution Prevention and Good Housekeeping Public Education and Outreach Program
 - Program
 - Wet Weather Monitoring Program

Information Summary for those al for a CDOT Utility and Special Use		FINDINGI REPORTANT
clearance for that work. CDOT has		C THE THE
some type of environmental perm		
state highway right-of-way will re		DI ILEUE A DOM
company or other entity doing wo		Carter A Man
There are instances when a utility	Kiai Maria))
Education		GREATI AN POLUTANISA
individual trained.	并	
distributed; name and titl		THE GAUNTLET
informational brochures		
containing the number of	 stormwater not connected with highway drainage Similar Commodity 	which can include structural and non-structural controls.
3. Submit an annual report t	 Waste 	procedures, and practices to control site run off
discovery to CDPHE.	 Vater Stream 	Control Measures also include treatment, operating
notification within 15 day	 Crude Products 	management practices to prevent and reduce mollintion entering into CDOT's storm drain system
concerns. Provide written	< Oil	of activities, maintenance procedures, and other
discharge and water quali	 Light Heat Gas 	operating the facility. Control measures are schedules
2. Report and include inform	< Electricity	otherwise known as Best Management Practices
	 Cable television Power 	Industrial facilities can use control measures (CM)
contribute substantial pol	Communications	Lacinues
or operators that have po	or distributing the following:	
I. Educate and outreach to o	line, facility, or system producing, transmitting	for Industrial
	privately, publicly, or cooperatively owned	Control Measures
Industrial Facilities Program Ele	CDOT defines a utility, or utility facility as any	
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vork in the standards/Environmental%20Clearances% clearances. This fact sheet is given to each http://www.coloradodot.info/programs/ for a CDOT Utility and Special Use Permit applying require rmit or ias put rances or Access Permit to obtain all required environmental/resources/guidanceţ permittee and is available at: 20Info%20Summary.pdf



In compliance!!

IS THE BMP PROPERLY MAINTAINED?



COLORADO DEPARTMENT OF TRA STATE HIGHWAY ACCE		PPLICATION		Issuing authority application acceptance date:		
Please print or type - Complete this form (so - Submit an application f - If you have any question	or each access affected.	s and other documents are r to you) and attach all neces rity.	required to be subr sary documents a	e your issuing authority. mitted with your application. nd Submit it to the issuing authorit s/AccessPermits/index.htm		
1) Property owner (Permittee) Alpine Homes-Ridgway, LLC – Joe		2) Agent for permittee (if	different from prop			
Street address 301 Hillside Lane,		Mailing address	5 Denver West			
Telluride, CO 81435	ne# 813-507-4005	City, state & zip Golden, CO 804	01	Phone # (required) 970-314-4888		
joel@cantorpartners		E-mail address if availab	^{le} skip@skiphud	skip@skiphudson.com		
3) Address of property to be served by permit (requ TBD Hwy 550, Ridgway, CO		TE ACCESS				
) Legal description of property: If within jurisdiction ounty Ouray	nal limits of Municipality, city ^{block} N/A N/	section	township	45N I range 8W		
) What State Highway are you requesting access		6) What side of the highw		NW Street		
) How many feet is the proposed access from the r	1.2.1	y feet is the proposed acces	ss from the neares	st cross street?		
) What is the approximate date you intend to begin Fall 2020			ELW) from: Sr	H-62		
0) Provide existing property use None - undeveloped 1) Do you have knowledge of any State Highway a no ups, if yes - what are the per	ccess permits serving this pro mit number(s) and provide co	operty, or adjacent propertie		ve a property interest? d/or, permit date:		
2) Does the property owner own or have any intere and yes, if yes - please describe Ouray County does r 3) Are there other existing or dedicated public stree and yes, if yes - list them on you	to have a GIS system w	where adjacent property	thin the property?			
) If you are requesting agricultural field access - h N/A						
) If you are requesting commercial or industrial ac business/land use	cess please indicate the type square footage	s and number of businesses busin	and provide the fleess	oor area square footage of each. square footag		
Restaurant	2,000 s.f.					
/ariety Stores	3,200 s.f.	family apartment tough-	ing) and much as	frontin 0		
type Fownhomes & multi-family	number of units	number of units type				
Provide the following vehicle count estimates for			en returning is two	counts.		
licate if your counts are beak hour volumes or average daily volumes. single unit vehicles in excess of 30 ft.	# of passenger cars and light trucks Varies	s at peak hour volumes	at peak hour volumes. Varies			
The second secon	shicles in excess of 30 ft. # of farm vehicles (field equipment)			Total count of all vehicles 101 vph (incl adjacent Dispensary		

 a) Property map indicating other access, bordering roads and streets. b) Highway and driveway plan profile. c) Drainage plan showing impact to the highway right-of-way. d) Map and letters detailing utility locations before and after development in and along the right-of-way. 	f) Proposed access	ship maps including easements.
1- It is the applicant's responsibility to contact appropriate age to their activities. Such clearances may include Corps of Engir permits, or ecological, archeological, historical or cultural reso Information Summary presents contact information for agencie prohibited discharges, and may be obtained from Regional CD CDOT Planning/Construction-Environmental-Guidance webpag	eers 404 Permits or urce clearances. The s administering certa OT Utility/Special Use	Colorado Discharge Permit System CDOT Environmental Clearances in clearances, information about Permit offices or accessed via the
 2- All workers within the State Highway right of way shall comprocedures, and all applicable U.S. Occupational Safety and H limited to the applicable sections of 29 CFR Part 1910 - Occupation - Safety and Health Regulations for Construction. 	ealth Administration (OSHA) regulations - including, but i
Personal protective equipment (e.g. head protection, footwear, respirators, gloves, etc.) shall be worn as appropriate for the wiminimum, all workers in the State Highway right of way, except protective equipment: High visibility apparel as specified in the accompanying the Notice to Proceed related to this permit (at a protection that complies with the ANSI Z89.1-1997 standard; ar injury to feet, workers shall comply with OSHA's PPE requirement and 1926.96. If required, such footwear shall meet the requirement where any of the above-referenced ANSI standards have been apply. 3- The Permittee is responsible for complying with the Revised under the American Disabilities Act (ADA). These guidelines defined and the apple of the above for the above for the above for the above.	ork being performed, when in their vehicle Traffic Control provis minimum, ANSI/ISE, ad at all construction s ents for foot protection nents of ANSI Z41-19 revised, the most rec Guidelines that have	and as specified in regulation. At a s, shall wear the following personal ions of the documentation A 107-1999, class 2); head sites or whenever there is danger o n per 29 CFR 1910.136, 1926.95, 99. cent version of the standard shall been adopted by the Access Board
use of a defined pattern of truncated domes as detectable warn can be found on the Design and Construction Project Support w	ings at street crossing eb page at:	is. The new Standards Plans and
use of a defined pattern of truncated domes as detectable warn can be found on the Design and Construction Project Support w < <u>http://www.dot.state.co.us/DesignSupport/></u> , then click on <i>l</i> If an access permit is issued to you, it will state the terms and c permitted access not consistent with the terms and conditions li	ings at street crossing eb page at: Design Bulletins.	s. The new Standards Plans and
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EXHIBIT H

TAVACI VILLAGE - RIDGWAY

DRAINAGE REPORT

June 18, 2020

Prepared by:





Tavaci Village Drainage Report

TAVACI VILLAGE - RIDGWAY

DRAINAGE REPORT

I hereby certify that this report for the drainage design of the Tavaci Village was prepared by me (or under my direct supervision) in accordance with the provisions of the Town of Ridgway storm drainage criteria for the owners thereof.

David Schieldt, P.E.



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Appendix A – Site Maps

Appendix B – NRCS Soils Report Appendix C – Site Specific Physical Design Properties Appendix D – SWMM Modeling Results

1.0 General Location and Description

Joel Cantor in coordination with Del-Mont Consultants, Inc. (DMC) is in the process of designing the proposed Tavaci Village development. The scope of work includes the construction of multiple structures, supporting infrastructure, paving of the site, and other site modifications. The purpose of this report is to present the findings from the hydrologic analysis that was performed on the proposed layout of the property.

1.1 Site Location

The proposed facility is located on a 4.3-acre parcel situated in Section 16, Township 45 North, Range 8 West, New Mexico Principal Meridian in Ouray County, Colorado. The facility is accessed from Highway 550.

1.2 Site Description

The site naturally drains from east to west and is covered by native vegetation and weeds. The site currently discharges directly to the Uncompany River which runs along the entire western border of the property. There are no water quality features in place to treat the discharge. Site layout details will be discussed in more detail in **Section 2**.



2.0 Drainage Basins and Sub-Basins

The property functions overall as one drainage basin flowing to the west. Water leaving the site directly enters the Uncompany River. Proposed conditions produce multiple smaller sub-basins which will also discharge to the River. These sub-basins will be discussed in detail in the following sections.

2.1 Existing Drainage Sub-Basins

The existing site is comprised of one sub-basin. However, according to Town Standards, when a property discharges directly to the River, full detention is not required in an effort to not increase the peak flow in the River. That being the case, the existing site was not analyzed for historic discharge rates.

2.2 Proposed Drainage Sub-Basins

The proposed site is divided into sixteen different sub-basins. A map illustrating the delineation of the sub-basins can be found in **Appendix A**. All of the basins flow to their respective detention pond where they receive water quality treatment, and ultimately discharge to the River. **Table 2-1** presents the proposed sub-basins and their corresponding acreages.

Sub-Basin	Total Area
	(Acres)
Basin 1	0.68
Basin 2	0.77
Basin 3-1	0.05
Basin 3-2	0.20
Basin 3-3	0.08
Basin 4-1	0.54
Basin 4-2	0.28
Basin 4-3	0.11
Basin 4-4	0.15
Basin 4-5	0.11
Basin 5	0.21
Basin 6	0.20
Basin 7	0.13
Basin 8	0.13
Basin 9	0.12
Basin 10	0.17

Table 2-1: Proposed Sub-Basin Acreages



3.0 Drainage Design Criteria

3.1 Methodology

The hydrologic/hydraulic analysis of the site was performed using the Autodesk Storm and Sanitary analysis utilizing the SWMM engine platform model for a 25 year, 6 hour rainfall event and a 100 year, 6 hour rainfall event per Town of Ridgway Standards. The SWMM platform was selected due to the complex routing through the detention pond and pipe networks. The Curve Number method of determining rainfall losses due to infiltration was used. Rainfall depths were obtained for the region from NOAA Atlas 14, Volume 8, Version 2 and rainfall distribution curves were developed using a SCS Type 2 6-hour rainfall distribution. Modeling results are presented in **Appendix D**.

Soil data was obtained from a USDA Soils Report and gave a hydrologic soil group of B/D for the site, so a hydrologic soil group C was used for the site. The soils report is included in **Appendix B**.

3.2 Land Cover Hydrologic Properties

Curve numbers and corresponding Manning's N values, for hydrologic soil group C, were assigned to the various land cover types found on the project and are presented in **Table 3-1**.

Table 3-1: Land Cover Hydrologic Properties

Land Cover Type	Curve Number	Manning's N
Grass Cover >50%, Good	79	0.025
Pavement/Concrete/Building	98	0.015

3.3 Weighted Design Values

Utilizing the land cover hydrologic properties presented above, a weighted curve number and Manning's N value was calculated for each of the sub-basins presented in **Section 2.0** to be used for analysis. **Table 3-2** presents the weighted design values for proposed conditions. Detailed calculations can be found in **Appendix C**.



Sub-Basin	Total Area	Weighted	Weighted
Sub-DaSili	(Acres)	Manning's N	Curve Number
Basin 1	0.68	0.016	96.2
Basin 2	0.77	0.017	93.5
Basin 3-1	0.05	0.025	79
Basin 3-2	0.20	0.017	94.3
Basin 3-3	0.08	0.016	95.8
Basin 4-1	0.54	0.015	98
Basin 4-2	0.28	0.022	84.1
Basin 4-3	0.11	0.015	98
Basin 4-4	0.15	0.025	79
Basin 4-5	0.11	0.023	82.2
Basin 5	0.21	0.019	89.9
Basin 6	0.20	0.021	87
Basin 7	0.13	0.020	89.3
Basin 8	0.13	0.020	87.6
Basin 9	0.12	0.020	87.9
Basin 10	0.17	0.021	86.9

Table 3-2: Proposed Sub-Basin Weighted Design Values



4.0 Drainage Facility Design

4.1 Water Quality Treatment

Per Town of Ridgway requirements, this site is not required to match historical discharge rates because it discharges directly to the river. Water quality treatment is being provided in each of the ponds. The formula for calculating the required Water Quality Capture Volume (WQCV) was obtained from the Town Standards and was utilized to calculate the required WQCV for each pond. **Table 4-1** presents the required WQCV for each pond assuming a 12-hour drain time.

	Total Area Draining to Pond	Basin Imperviousness	Required Wa Capture	
Pond Name	(acres)	(decimal percentage)	(Ac-Ft)	(Cu-Ft)
Pond 1	0.68	0.91	0.012	524
Pond 2	0.77	0.77	0.010	454
Pond 3	0.33	0.69	0.004	168
Pond 4	1.18	0.63	0.013	551
Pond 5	0.21	0.57	0.002	88
Pond 6	0.20	0.42	0.002	70
Pond 7	0.13	0.54	0.001	52
Pond 8	0.13	0.45	0.001	47
Pond 9	0.12	0.47	0.001	46
Pond 10	0.17	0.42	0.001	59

Table 4-1: Water Quality Capture Volumes

4.2 Proposed Drainage

Values presented in **Table 3-2** were utilized in the model to calculate the runoff for the proposed conditions as well as to size the detention ponds and weir outlet structures. All runoff from the project site will be routed through the detention pond systems for both the 25-year and 100-year events. A schematic layout of the model with associated naming and labels is found in **Appendix A**.

Utilizing the imperviousness, site characteristics, and pipe characteristics, the outlet structures with flow limiting orifices and weirs were sized to capture the entire WQCV according to Town Standards and pass the larger storm events. The model was utilized to size the orifices to drain each pond in no less than 12 hours, and all of the ponds maintain the required 1' of freeboard in the 100-year event. The proposed pipes have all been sized to pass the 100-year event. The designs of the outlet structures are detailed in the grading drawings provided with the site submittal application.



Table 4-2 presents the discharge rates for the proposed sub-basins for both the 25-year and 100-year 6-hour storm events. This discharge value represents the flow rate that the ponds are receiving. The ultimate discharge from the pipes and outlet structures (total discharge from site) is summarized in **Table 5-1**.

	25-Year	100-Year
Sub-Basin	Discharge	Discharge
	(CFS)	(CFS)
Basin 1	0.69	0.92
Basin 2	0.73	1.00
Basin 3-1	0.01	0.02
Basin 3-2	0.20	0.26
Basin 3-3	0.08	0.11
Basin 4-1	0.55	0.74
Basin 4-2	0.09	0.19
Basin 4-3	0.11	0.15
Basin 4-4	0.02	0.04
Basin 4-5	0.02	0.05
Basin 5	0.16	0.23
Basin 6	0.11	0.19
Basin 7	0.10	0.15
Basin 8	0.06	0.10
Basin 9	0.08	0.13
Basin 10	0.10	0.17

Table 4-2: Proposed Sub-Basin Discharge Values (Pre-Detention)

Utilizing the flow rates presented above, the model was utilized to analyze the flow path of water through the pond and piping systems. With the installation of the outlet structures, the water is released in no less than 12 hours in accordance with Town requirements.



5.0 Conclusions

5.1 Drainage Concept

The drainage design has been prepared using sound engineering judgement and practices and will provide an effective means of controlling runoff on the project site as well as protect the site from damage. The design has been completed according to Town of Ridgway Standards and will result in no downstream impacts to any people or structures. Historic flow paths and water quality have been maintained.

5.2 Compliance with the Town of Ridgway Standards

Per Town of Ridgway requirements, water quality treatment shall be provided for all improved areas. The design adequately captures and routes all stormwater runoff to a detention pond where it receives water quality treatment. All of the ponds discharge to the storm network ultimately discharging to the river at 4 discharge locations. **Table 5-1** presents the ultimate peak discharge rates the river is receiving at the 4 discharge locations.

	25-Year	100-Year
Discharge Location	Discharge	Discharge
	(cfs)	(cfs)
1	0.68	0.91
2	0.15	0.23
3	0.92	1.32
4	1.29	1.90

As discussed in previous sections, the detention ponds and stormwater pipes have been designed to meet all criteria set forth in the Town of Ridgway standards. The development of this project will cause no injury to the neighboring property.



6.0 References

Town of Ridgway. Site Development Standards

United States Department of Agriculture Natural Resources Conservation Service. Web Soil Survey

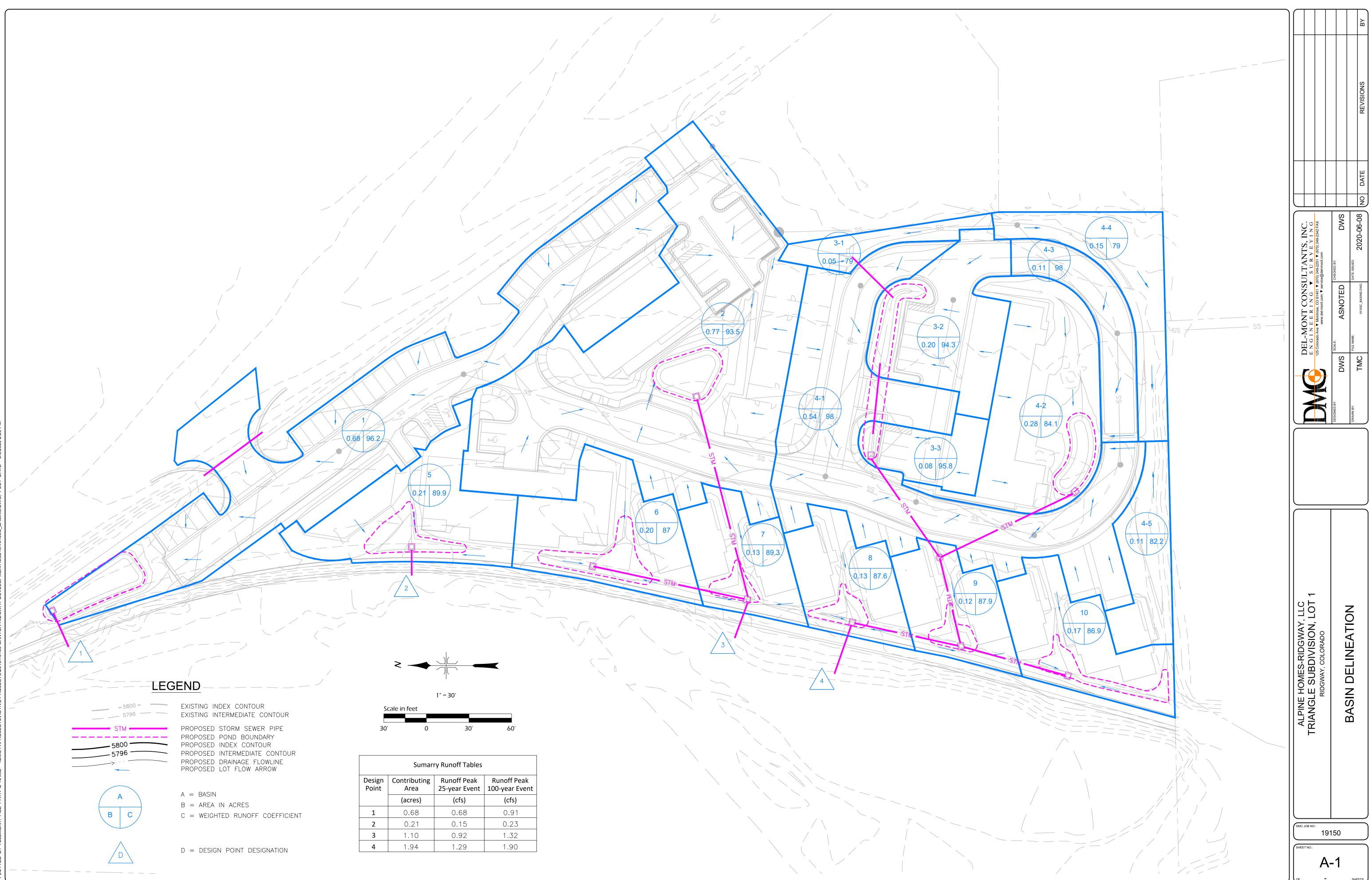
Urban Drainage and Flood Control District. *Urban Storm Drainage Criteria Manual,* Volume *1-3*, June 2001.

NOAA Atlas 14, Volume 8, Precipitation-Frequency Atlas of the United States. U.S. Department of Commerce, 2013.

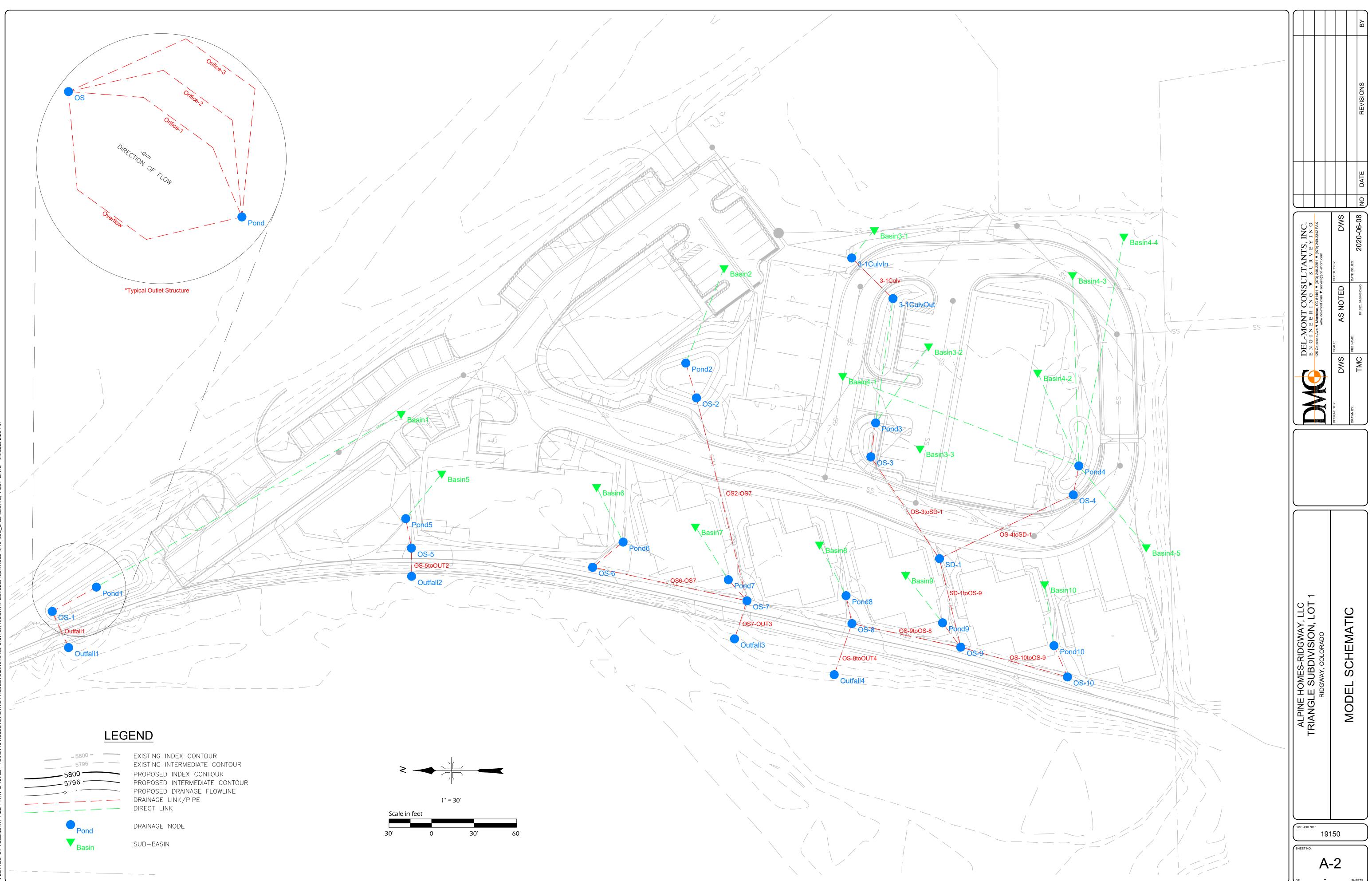








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EXHIBIT H



Huddleston-Berry

Engineering & Testing, LLC

GEOTECHNICAL INVESTIGATION TRIANGLE LOT RIDGWAY, COLORADO PROJECT #02064-0001

MOUNTAINEER CONSTRUCTION PO BOX 2794 TELLURIDE, COLORADO 81435

APRIL 27, 2020

Huddleston-Berry Engineering and Testing, LLC 2789 Riverside Parkway Grand Junction, Colorado 81501

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FIGURES

Figure 1 – Site Location Map Figure 2 – Site Plan

APPENDICES

Appendix A – Test Pit Logs from Previous Investigations Appendix B – Test Pit Logs from Current Investigation Appendix C – Laboratory Testing Results from Previous Investigations



1.0 INTRODUCTION

As part of extensive development in Western Colorado, a new mixed-use development is proposed in Ridgway. As part of the development process, Huddleston-Berry Engineering and Testing, LLC (HBET) was retained by Mountaineer Construction to conduct a supplemental geotechnical investigation at the site.

1.1 Previous Work

A previous geotechnical investigations was conducted at the site in 2003. The investigation was summarized in the following report:

 Geotechnical Evaluation, Ridgeway Hot Springs, Uncompany River, Ridgeway, Colorado by Western Technologies, Inc. for Alpha Inn Management, March 12, 2003.

1.2 Scope

As discussed above, a supplemental geologic hazards and geotechnical investigation was conducted for a proposed mixed-use development in Ridgway, Colorado. The scope of the investigation included the following components:

- Conducting a subsurface investigation to evaluate the subsurface conditions at the site and supplement the information in the referenced report.
- Providing recommendations for foundation type and subgrade preparation.
- Providing recommendations for bearing capacity.
- Providing recommendations for lateral earth pressure.
- Providing recommendations for drainage, grading, and general earthwork.
- Providing recommendations for pavements.

The investigation and report were completed by a Colorado registered professional engineer in accordance with generally accepted geotechnical and geological engineering practices. This report has been prepared for the exclusive use of Mountaineer Construction.

1.3 Site Location

The site is located between the Uncompany River and Highway 550, just north of Highway 62 in Ridgway, Colorado. The project location is shown on Figure 1 – Site Location Map.

1.4 Proposed Construction

The proposed construction is anticipated to include new townhomes, new apartment buildings, and/or new commercial buildings.



2.0 FIELD INVESTIGATION

2.1 **Previous Subsurface Investigations**

The previous subsurface investigation was conducted in February 2003 and consisted of nine test pits across the site. The test pits were excavated to depths of between 8 and 10 feet below the existing ground surface. The locations of the test pits are shown on Figure 2 – Site Plan. Typed test pit logs are included in Appendix A.

As indicated on the logs, the subsurface conditions at the site were slightly variable. Most of the test pits in the central portion of the site encountered brown, moist to wet, loose to medium dense gravel soils with some sand and cobbles. However, in the southwestern portion of the site near the Uncompany River, fill materials and/or sand and gravel soils were encountered to a depth of 5 feet where the gravels encountered in the other test pits were present.

In the northern portion of the site, fill materials and/or sandy silt were encountered to depths of between 5 and 8 feet. The gravels encountered in the central portion of the site were present below the fill. Groundwater was encountered across the site at depths of between 7 and 9 feet.

2.2 Current Subsurface Investigation

The current subsurface investigation was conducted on March 26^{th} , 2020 and consisted of four borings drilled to depths of between 18 and 20 feet below the existing ground surface. The locations of the borings are shown on Figure 2 – Site Plan. Typed boring logs are included in Appendix B. Samples of the subsurface soils were collected during Standard Penetration Testing (SPT) and using bulk sampling methods at the locations shown on the logs.

As indicated on the logs, the subsurface conditions at the site were slightly variable. However, the borings generally encountered brown, moist to wet, medium dense sandy gravel soils from the ground surface to depths of between 9 and 14 feet. The gravel was underlain by brown, wet, loose to medium dense silty, clayey sand soils to the bottoms of the borings. Groundwater was encountered during the current investigation at depths of between 8 and 11 feet.

3.0 LABORATORY TESTING

3.1 **Previous Subsurface Investigation**

Laboratory testing results from the previous subsurface investigation indicate that the shallow native soils range from non-plastic to slightly plastic. In addition, the shallow native soils were indicated to have a slight potential for expansion, with up to approximately 2.3% expansion measured in the laboratory. The laboratory testing results from the previous investigation are included in Appendix C.



4.0 **RECOMMENDATIONS**

4.1 Foundations

The shallow subsurface conditions encountered during the current investigation were fairly similar to those encountered during the previous investigation. However, the deeper geotechnical borings indicated that the native gravel soils are underlain by lower density sand soils.

In general, HBET believes that shallow foundations are still appropriate for new structures at this site. Spread footings and monolithic structural slabs are both acceptable. However, in order to limit the potential for excessive differential movements, it is recommended that foundations be constructed above a minimum of 24-inches of structural fill.

As discussed above, the laboratory testing results from the previous investigation indicated that the native soils were slightly expansive. Therefore, the native soils are not suitable for reuse as structural fill. Imported structural fill should consist of a granular. <u>non-expansive, non-free draining</u> material approved by HBET.

For spread footing foundations, the footing areas may be trenched. However, for monolithic slab foundations, the structural fill should extend across the entire building pad area, below the bottoms of the turndown edges, to a depth equal to the thickness of structural fill. Structural fill should extend laterally beyond the edges of the foundations a distance equal to the thickness of structural fill for both foundation types.

Prior to placement of structural fill, it is recommended that any existing fill materials be removed. In addition, the bottoms of the foundation excavations should be scarified to a depth of 6 to 9-inches, moisture conditioned, and re-compacted to a minimum of 95% of the standard Proctor maximum dry density, within $\pm 2\%$ of the optimum moisture content as determined in accordance with ASTM D698. Structural fill should be moisture conditioned, placed in maximum 8-inch loose lifts, and compacted to a minimum of 95% of the standard Proctor maximum dry density for fine grained soils or modified Proctor maximum dry density for coarse grained soils, within $\pm 2\%$ of the optimum moisture content as determined in accordance with ASTM D698 or D1557, respectively.

Structural fill should be extended to within 0.1-feet of the bottom of the foundation. No more than 0.1-feet of gravel should be placed below the footings or turndown edge as a leveling course.

For foundation building pads prepared as recommended with structural fill consisting of approved imported granular materials, a maximum allowable bearing capacity of 1,500 psf may be used. In addition, a modulus of subgrade reaction of 200 pci may be used for structural fill consisting of approved imported materials. Foundations subject to frost should be at least 36-inches below the final grade.



For foundations constructed as recommended, total foundation settlements are anticipated to be less than 1-inch.

4.2 Corrosion of Concrete

Water soluble sulfates are common to the soils in Western Colorado. Therefore, at a minimum, Type I-II sulfate resistant cement is recommended for construction at this site.

4.3 Non-Structural Floor Slabs and Exterior Flatwork

In order to limit the potential for movement of floor slabs and/or exterior flatwork, it is recommended that non-structural floating floor slabs be constructed above a minimum of 18-inches of structural fill with subgrade preparation, structural fill materials, and structural fill placement in accordance with the *Foundations* section of this report. It is recommended that exterior flatwork be constructed above a minimum of 12-inches of structural fill.

4.4 Lateral Earth Pressures

Stemwalls or retaining walls should be designed to resist lateral earth pressures. For backfill consisting of the native soils or imported granular, non-free draining, non-expansive material, an active equivalent fluid unit weight of 50 pcf may be used in areas where no surcharge loads are present. An at-rest equivalent fluid unit weight of 70 pcf may be used for braced walls. Lateral earth pressures should be increased as necessary to reflect any surcharge loading behind the walls.

4.5 Drainage

<u>Grading and drainage at the site are critical to the long-term performance of</u> <u>the foundations and slabs-on-grade</u>. Grading around the structures should be designed to carry precipitation and runoff away from the structures. It is recommended that the finished ground surface drop at least twelve inches within the first ten feet away from the structures. However, where impermeable surfaces (i.e. sidewalks, pavements, etc.) are adjacent to the structures, the grade can be reduced to 2.5-inches (ADA grade) within the first ten feet away from the structure.

HBET recommends that surface downspout extensions be used which discharge 15 feet from the structures or beyond the backfill zone, whichever is greater However, if subsurface downspout drains are utilized, they should be carefully constructed of solid-wall PVC and should daylight a minimum of 15-feet from the structures. In addition, an impermeable membrane is recommended below subsurface downspout drain lines. Dry wells should not be used.



In order to limit the potential for surface moisture to impact the structures, perimeter foundation drains are recommended. In general, the perimeter foundation drains should consist of prefabricated drain materials or perforated pipe and gravel systems with the flowlines of the drains at the bottoms of the foundations (at the highest point). The perimeter drains should slope at a minimum of 1% to daylight or to sumps with pumps. An impermeable membrane is also recommended at the base of the drains to limit the potential for moisture to infiltrate into the subsurface below the foundations.

4.6 Excavations

Excavations in the soils at the site may stand for short periods of time but should not be considered to be stable. Therefore, trenching and excavations should be sloped back, shored, or shielded for worker protection in accordance with applicable OSHA standards. The native soils at the site generally classify as Type C soil with regard to OSHA's *Construction Standards for Excavations*. For Type C soils, the maximum allowable slope in temporary cuts is 1.5H:1V.

4.7 **Pavements**

The proposed construction is anticipated to include paved automobile parking areas and truck traffic areas. As discussed previously, the pavement subgrade materials range from fill to gravels. However, the native soils were indicated to have a slight potential for expansion. Therefore, the minimum recommended Resilient Modulus of 3,000 psi was used for the pavement design.

Based upon the subgrade conditions and anticipated traffic loading, flexible and rigid pavement section alternatives were developed in accordance with AASHTO design methodologies. The following minimum pavement section alternatives are recommended:

	PAVEMENT SECTION (Inches)							
ALTERNATIVE	Hot-Mix Asphalt Pavement	CDOT Class 6 Base Course	CDOT Class 3 Subbase Course	Concrete Pavement	TOTAL			
А	3.0	9.0			12.0			
В	4.0	7.0			11.0			
С	3.0	6.0	6.0		15.0			
Rigid Pavement		6.0		6.0	12.0			

Automobile Parking Areas FDLA = 5 Structural Number = 2 75

Truck Traffic Areas

EDLA = 20, Structural Number = 3.50

	PAVEMENT SECTION (Inches)							
ALTERNATIVE	Hot-Mix Asphalt Pavement	CDOT Class 6 Base Course	CDOT Class 3 Subbase Course	Concrete Pavement	TOTAL			
А	3.0	15.0			18.0			
В	4.0	12.0			16.0			
С	3.0	6.0	13.0		22.0			
Rigid Pavement		6.0		8.0	14.0			



Prior to pavement placement, areas to be paved should be stripped of all topsoil, fill, or other unsuitable materials. It is recommended that the subgrade soils be scarified to a depth of 12-inches; moisture conditioned, and recompacted to a minimum of 95% of the standard Proctor maximum dry density, within $\pm 2\%$ of optimum moisture content as determined by AASHTO T-99.

Aggregate base course and subbase course should be placed in maximum 9-inch loose lifts, moisture conditioned, and compacted to a minimum of 95% and 93% of the maximum dry density, respectively, at -2% to +3% of optimum moisture content as determined by AASHTO T-180. In addition to density testing, base course should be proofrolled to verify subgrade stability.

It is recommended that Hot-Mix Asphaltic (HMA) pavement conform to CDOT grading SX or S specifications and consist of an approved 75 gyration Superpave method mix design. HMA pavement should be compacted to between 92% and 96% of the maximum theoretical density. An end point stress of 50 psi should be used. It is recommended that rigid pavements consist of CDOT Class P concrete or alternative approved by the Engineer. In addition, pavements should conform to local specifications.

The long-term performance of the pavements is dependent on positive drainage away from the pavements. Ditches, culverts, and inlet structures in the vicinity of paved areas must be maintained to prevent ponding of water on the pavement

5.0 GENERAL

The recommendations included above are based upon the results of the previous and current subsurface investigations, and on our local experience. These conclusions and recommendations are valid only for the proposed construction.

As discussed previously, the subsurface conditions at the site were slightly variable. However, the precise nature and extent of any subsurface variability may not become evident until construction. As a result, it is recommended that HBET provide construction materials testing and engineering oversight during the entire construction process.

It is important to note that the recommendations herein are intended to reduce the risk of structural movement and/or damage, to varying degrees, associated with volume change in the native soils. However, HBET cannot predict long-term changes in subsurface moisture conditions and/or the precise magnitude or extent of volume change in the subsurface materials. Where significant increases in subsurface moisture occur due to poor grading, improper stormwater management, utility line failure, excess irrigation, or other cause, either during construction or the result of actions of the property owner, several inches of movement are possible. In addition, any failure to comply with the recommendations in this report releases Huddleston-Berry Engineering & Testing, LLC of any liability with regard to the structure performance.



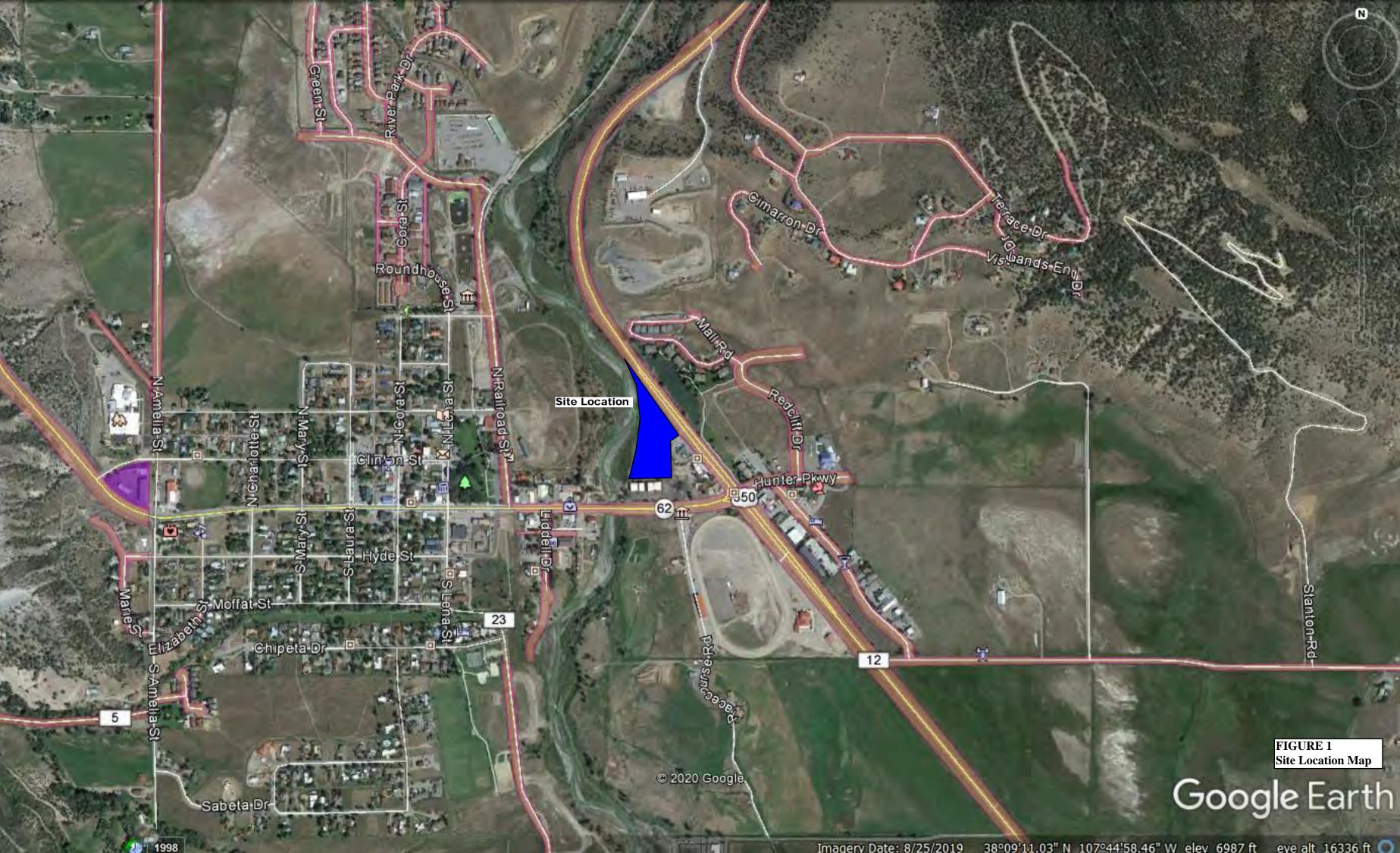
Huddleston-Berry Engineering and Testing, LLC is pleased to be of service to your project. Please contact us if you have any questions or comments regarding the contents of this report.

Respectfully Submitted: Huddleston-Berry Engineering and Testing, LLC



Michael A. Berry, P.E. Vice President of Engineering

FIGURES



Imagery Date: 8/25/2019 38°09'11.03" N 107°44'58.46" W elev 6987 ft eye alt 16336 ft 🔘

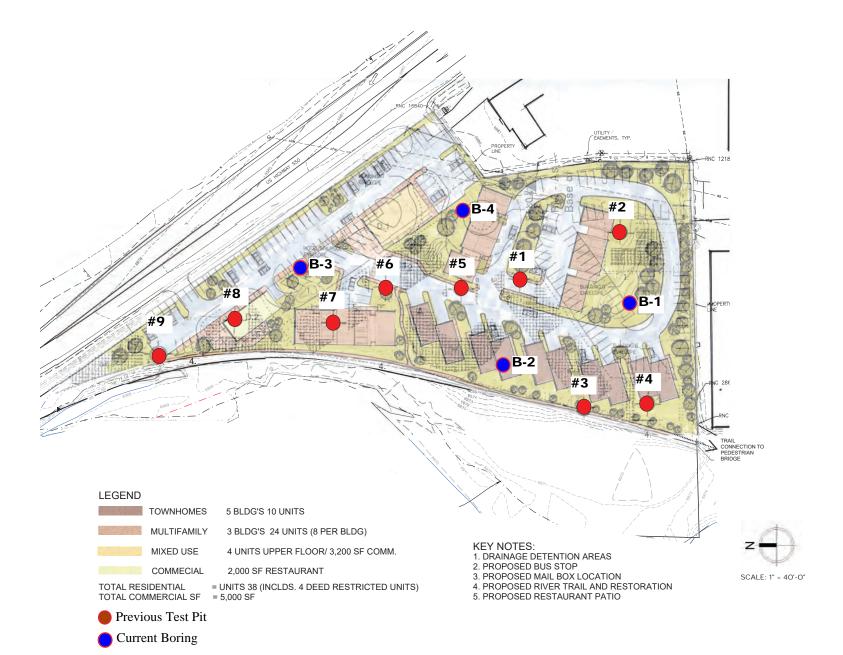
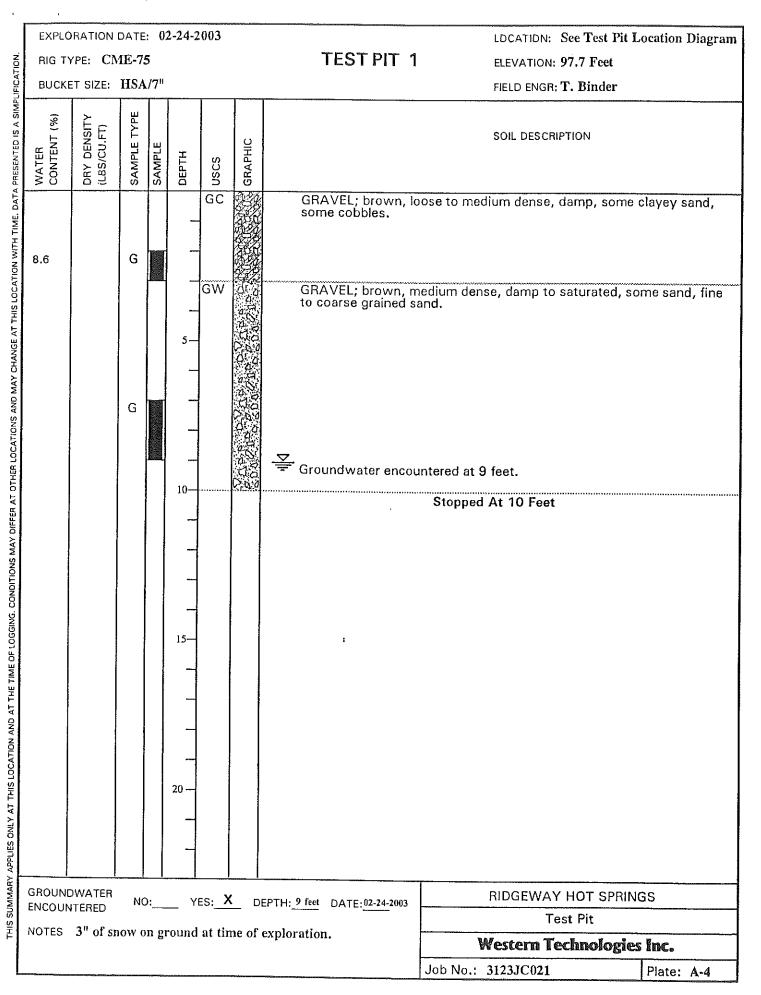


FIGURE 2 Site Plan

APPENDIX A Test Pit Logs from Previous Investigation



EXPL	ORATION	DATE	: 02	2-24-2	003			nopasytym://www.com/com/com/com/com/com/com/com/com/com/	LOCATION: See Test Pit]	Location Diagram
RIG T	YPE: Ca	t 416	С				TEST PIT 2		ELEVATION: 99.6 Feet	
BUCK	ET SIZE:	24 in	ch						FIELD ENGR: T. Binder	
WATER CONTENT (%)	DRY DENSITY (LBS/CU.FT)	SAMPLE TYPE	SAMPLE	ДЕРТН	uscs	GRAPHIC			SOIL DESCRIPTION	
		G			GW			Intered at 9	feet. At 10 Feet	urated, some
	DWATER	NO	:	YE	s: X	DF	PTH: 9 feet DATE:02-24-2003		RIDGEWAY HOT SPRIN	GS
	NIERED			'			DATE:02224-2003		Test Pit	
NOTES								W	estern Technologies	s Inc.
	9377 8-9 777	Patrice						Job No.: 3	3123JC021	Plate: A-5

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

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EXPLO	DRATION	DATE:	02	2-24-2	003	Notes and a second s	аналалаган калалаган калдаг (унформиник) талан каларакта калар (унан калан калар карафар) калалаган калар калар н	LOCATION: See Test Pit Location Diagra	un j
RIG T	YPE: Ca	t 416	С				TEST PIT 3		
BUCK	ET SIZE:	24 in	ch					FIELD ENGR: T. Binder	
WATER CONTENT (%)	DRY DENSITY (LBS/CU.FT)	SAMPLE TYPE	SAMPLE	DEPTH	uscs	GRAPHIC	ан адаан и талаан адаан ал талаан адаан ал талаан адаан	SOIL DESCRIPTION	
		G		-	GW			RAVEL; brown, loose, damp to moist, some s.	
GROUN	DWATER NTERED	NC);	YE	s: X	DE	PTH: 8 feet DATE: 02-24-2003	RIDGEWAY HOT SPRINGS	
NOTES								Test Pit	
								Western Technologies Inc.	
	Garger and the state of the sta							Job No.: 3123JC021 Plate: A-6	
Dana	a 1 of 1							2	

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Ì	EXPLO	RATION	DATE	: 02	2-24-2	003		۵. 	LOCATION: See Test Pit I	ocation Diagram							
UN.	RIG TY	PE: Ca	t 416	С				TEST PIT 4									
FICAT	BUCKE	T SIZE:	24 in	ch					FIELD ENGR: T. Binder								
SIMPL	~		ш														
PRESENTED IS A	WATER CONTENT (%)	DRY DENSITY (LBS/CU.FT)	SAMPLE TYPE	SAMPLE	DEPTH	uscs	GRAPHIC		SOIL DESCRIPTION								
H LIME. DATA						GŴ	DO CON	GRAVEL; brown, lo	own, loose, damp to moist, some sand, some cobbles.								
CHAINGE AT THIS LUCATION WITH TIME, DATA PRESENTED IS A SIMPLIFICATION.	13.5 G SM							SILTY SAND; tan to gravel.	b brown, loose to medium dense, da	mp, trace of							
									ose to medium dense, damp to satu •	rated, some							
							200	- 폴 Groundwater encou	ntered at 9 feet. Stopped At 10 Feet								
GROUNDWATER ENCOUNTERED NO: YES: X DEPTH: 9 feet DATE NOTES							DE	EPTH: 9 feet DATE: 02-24-2003	RIDGEWAY HOT SPRING Test Pit	GS							
									Western Technologies	inc.							
L		9701	(0/240)	N-GLDFRIAND	¥51				Job No.: 3123JC021	Plate: A-7							

t Jarlehander						MARANAR AND THE		22222/1224-01-00-022/2222-01-01-02-022/2222-01-01-02-022/222
EXPLORATIO			2-24-2	.003			LOCATION: See Test Pit I	location Diagram
BUCKET SIZE						TEST PIT 5	ELEVATION: 97.8 Feet	
BUCKET SIZE	24 ii	ıch	r				FIELD ENGR: T. Binder	
WATER WATER CONTENT (%) DRY DENSITY (LBS/CU.FT)	SAMPLE TYPE	SAMPLE	DEPTH	uscs	GRAPHIC		SOIL DESCRIPTION	
	G			GW		GRAVEL; brown, ic sand, some cobbles	intered at 9 feet. Stopped At 10 Feet	irated, some
GROUNDWATER):	V			DTH. 9 feet DATE 02 34 2003	RIDGEWAY HOT SPRIN	GS
ENCOUNTERED	NU	/: <u> </u>	YE	<u>; ^</u>	DE	PTH: 9 feet DATE: 02-24-2003	Test Pit	
NOTES							Western Technologies	5 Inc.
	- 2500 Pt- 444 - 44			TA10-0			Job No.: 3123JC021	Plate: A-8

ģ DATA THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME

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EXPLORATION	DATE	· 03	2-24-2	003		and the second secon	Lookala Que West	
						TEST PIT 6		Pit Location Diagram
BUCKET SIZE:								
	T				· · ·		FIELD ENGR: T. Binde	2r
WATER CONTENT (%) DRY DENSITY (LBS/CU.FT)	SAMPLE TYPE	SAMPLE	DEPTH	uscs	GRAPHIC		SOIL DESCRIPTION	
	G			GW		GRAVEL; brown, k sand, some cobble	intered at 9 feet. Stopped At 10 Feet	saturated, some
GROUNDWATER	NO		 VF	с. X			RIDGEWAY HOT SP	BINGS
ENCOUNTERED	NO:		_ TE	ə: <u>^</u>	DEI	PTH: 9 Seet DATE: 02-24-2003	Test Pit	
NOTES							Western Technolo	gies Inc.
				2100 A W			Job No.: 3123JC021	Plate: A-9

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EXPL	ORATION	DATE	: 02	2-24-2	003		<mark>999996</mark>		LOCATION: See Test Pit I	Location Diagram
RIGT	YPE: Ca	t 416	С				TESTPIT 7	,	ELEVATION: 96.5 Feet	
виск	ET SIZE:	24 ir	ch						FIELD ENGR: T. Binder	
WATER CONTENT (%)	DRY DENSITY (LBS/CU.FT)	SAMPLE TYPE	SAMPLE	DEPTH	uscs	GRAPHIC			SOIL DESCRIPTION	-
		G			GW		GRAVEL; brown, ic sand, some cobble: ⊊ Groundwater encou	intered at 9 t	feet. It 10 Feeet	Jrated, some
	DWATER	NO	:	YE	:s: X	DF	PTH: 9 feet DATE: 02-24-2003	F	RIDGEWAY HOT SPRIN	GS
ENCOU	IFRED		•			_ DE	DATE:02-24-2003		Test Pit	
NOTES								W	estern Technologies	s Inc.
	2)	10.0200		- Marija Haranga ma				Job No.: 3	123JC021	Plate: A-10



EXPLORA		DATE:	02-	24-2	003		nannan an	LOCATION: See Test Pit Location Diagram
RIG TYPE	: Cat	4160	2				TEST PIT	8 ELEVATION: 96.5 Feet
BUCKET S	SIZE: 2	24 in	ch			<u> </u>		FIELD ENGR: T. Binder
WATER CONTENT (%)	URT UENSITY (LBS/CU.FT)	SAMPLE TYPE	SAMPLE	DEPTH	uscs	GRAPHIC		SOIL DESCRIPTION
25.5		GG			ML GW		SANDY SILT; tan	GRAVEL; brown, loose, damp to moist, some les. to brown, firm, moist, some gravel. loose to medium dense, moist to saturated, some es. buntered at 8 feet. Stopped At 10 Feet
GROUNDWA ENCOUNTER NOTES		NO:		YE	s:_X	 DE	EPTH: 8 feet DATE: 02-24-2003	RIDGEWAY HOT SPRINGS Test Pit
								Western Technologies Inc.
an et a second a seco						PROVIDENCE.	anna an	Job No.: 3123JC021 Plate: A-11
								(2)

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

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EXPLC	RATION	DATE:	02	2-24-2	003	anto inime de concentra	ĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸ	LOCATION: See Test Pit Lo	cation Diagram
RIG TY	PE: Cat	t 416	С				TEST PIT 9		-
BUCKE	et size:	24 in	ch					FIELD ENGR: T. Binder	
WATER CONTENT (%)	DRY DENSITY (LBS/CU.FT)	SAMPLE TYPE	SAMPLE	рертн	uscs	GRAPHIC		SOIL DESCRIPTION	
		G					FILL O TO 8 FEET O sand, some cobble	GRAVEL; brown, loose, damp to satur s. untered at 7 feet. Stopped At 8 Feet	ated, some
	DWATER	N	0:	Y	ES: X	DI	EPTH: 7 feet DATE: 02-24-2003	RIDGEWAY HOT SPRING	S
	NTERED		·	,		0		Test Pit	
NOTES								Western Technologies I	Inc.
								Job No.: 3123JC021	Plate: A-12

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT 07HER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

APPENDIX B Boring Logs from Current Investigation

TEAL	HOINEERING HB	Huddleston-Berry Engineering & Testing, LLC 2789 Riverside Parkway Grand Junction, CO 81501 970-255-8005					BO	RIN	ig n	NUN		E 1 C	
CLI		ountaineer Construction	PROJEC	T NAME	Triang	le Lot							
			PROJEC										
DA	TE STAR	TED _3/26/20 COMPLETED _3/26/20						HOLE	SIZE	4-inc	h		
DR		ONTRACTOR S. McKracken		WATER	LEVE	LS:							
DR	ILLING M	ETHOD Simco 2000 Truck Rig	XAT	TIME OF	- DRILI	_ING _11.0) ft						
LO	GGED BY	CHECKED BY MAB	_ _ AT	END OF	DRILL	ING <u>11.0</u>	ft						
NO	TES		_ AF	TER DRI	LLING								
DEPTH	(ft) GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	/ERY % QD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	AT OL			FINES CONTENT (%)
) DE				SAMPL	RECOVERY (RQD)	COL (N V/	POCKE (t	DRY U (p	MOIS	LIQUID	PLAST LIMIT	PLASTICITY INDEX	EINES C
		Sandy GRAVEL (gw), trace cobbles, brown, moist to wet, m dense ****Hole collapsing below water table. Unable to sample. Silty, Clayey SAND (sc-sm), brown, wet, loose to medium d Bottom of hole at 20.0 feet.		SS 1	39	6-3-3 (6)							

TELLET I	HGINE	B	Huddleston-Berry Engineering & Testing, LLC 2789 Riverside Parkway Grand Junction, CO 81501 970-255-8005					BO	RIN	IG I	NUN		RE ≣ 1 C		
CL	IENT	Mo	untaineer Construction	PROJEC		Trian	gle Lot								
PR	OJE	CT NI	JMBER 02064-0001	PROJEC	T LOCAT	ION _	Ridgway, CO	2							
DA	TE S	STAR	TED _3/26/20 COMPLETED _3/26/20	GROUND ELEVATION HOLE SIZE											
			DNTRACTOR S. McKracken												
			ETHOD Simco 2000 Truck Rig	_											
			SD CHECKED BY MAB												
NO	DTES	·		AF	TER DRI	LLING		1	I	1	1				
O DEPTH		GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	(N VALUE) COUNTS BLOW	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)				FINES CONTENT (%)	
			Sandy GRAVEL (gw), trace cobbles, brown, moist to wet, me dense ***Hole collapsing below water table. Unable to sample. Silty, Clayey SAND (sc-sm), brown, wet, loose to medium der Bottom of hole at 18.0 feet.		SS 1	56	24-50						<u>a</u>		

(En la	But	Huddleston-Berry Engineering & Testing, LLC 2789 Riverside Parkway Grand Junction, CO 81501 970-255-8005					BO	RIN	ig n	NUN		R B E 1 C		
c	LIE	NT Mo	ountaineer Construction												
P	ROJ	ECT N	UMBER 02064-0001	PROJEC	T LOCAT		Ridgway, CO	<u>с</u>							
C	DATE	STAR	TED _3/26/20 COMPLETED _3/26/20	GROUND ELEVATION HOLE SIZE 4-inch											
	RIL	LING C	ONTRACTOR S. McKracken												
	RIL	LING M	ETHOD Simco 2000 Truck Rig												
L	.OGG	GED B	CHECKED BY MAB												
	OTE	S													
		GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	LIQUID LIMIT			FINES CONTENT (%)	
	0 - - - - - - - - - - - - - - - - - - -		Sandy GRAVEL (gw), trace cobbles, brown, moist to wet, me dense		SS 1	28	9-9-6 (15)					a.		EIN	
ראס. 	15														
	-														
	20				-										
			Bottom of hole at 20.0 feet.												
~ 🖵														· · · · · · · · · · · · · · · · · · ·	

Grand Junction, CO 81501 970-255-8005		PAGE 1 OF 1
IENT Mountaineer Construction PROJECT NAME Triangle Lot		
OJECT NUMBER 02064-0001 PROJECT LOCATION Ridgway, CO		
TE STARTED <u>3/26/20</u> COMPLETED <u>3/26/20</u> GROUND ELEVATION	HOLE SIZE	4-inch
ILLING CONTRACTOR S. McKracken GROUND WATER LEVELS:		
ILLING METHOD Simco 2000 Truck Rig		
GGED BY SD CHECKED BY MAB AT END OF DRILLING 10.0 ft		
TES AFTER DRILLING		
(III) GRAPHIC LOG LOG LOG LOG LOG LOG LOG LOG	(tsf) DRY UNIT WT. (pcf) MOISTURE CONTENT (%)	ATTERBBERG LIMIT PLASTIC PL
Sandy GRAVEL (gw), trace cobbles, brown, moist to wet, medium dense Silly, Clayey SAND (sc-sm), brown, wet, loose to medium dense ***Hole collapsing below water table. Unable to sample. Bottom of hole at 20.0 feet.		

APPENDIX C Laboratory Testing Results from Previous Investigation

	1	·			OIL PROI	CRITES				
TERT	_		SOIL PR	OPERTY	COMPR CONSO	ESSION / LIDATION		EXPANSION		
TEST PIT NO.	DEPTH (FEET)	SOIL CLASSIFICATION	INITIAL DRY DENSITY (PCF)	INITIAL WATER CONTENT (%)	SURCHARGE (KSF)		SURCHARGE (KSF)	EXPANSION (%)	MAXIMUM SWELL PRESSURE (KSF)	REMARKS
1	2-3	GC	116	6.0			0.1	+2.3		1,2
4	2-3	SM	110	8.0			0.1	+1.4		1,2
8	3-5	ML	109	25.5			0.1	+0.9		1,2
		ity and Initial V								

REMARKS:

- Compacted Density (approximately 95% of ASTM D698 maximum density at moisture content slightly below optimum).
 Submerged to approximate saturation.
 Dry Density determined from one ring of a multi-ring sample.
 Visual Classification.

RIDGEWAY HOT S	
RIDGEWAT HUT S	PRINGS
Soil Propertie	e

Plate: B-1



Job No.: 3123JC021

						ROPERT					
			SOIL PR	OPERTY	SHEAR S	TRENGTH	PERMEABILITY		WATER MATTI	SOLUBLE ER (PPM)	
NO.	DEPTH (FEET)	SOIL CLASSIFICATION	INITIAL DRY DENSITY (PCF)	INITIAL WATER CONTENT (%)	С (К SF)	Ø (DEGREES)	(CM/SECOND)	SPECIFIC GRAVITY	SALTS	SULFATES	REMARKS
8	3-5	ML							2700	975	
				, ,							
			-		;						
							-				
are GEND: EAR STR	in-situ va	nsity and Initial lues unless othe	Water Cor erwise note	ntent ad,		1. C a 2. V 3. C	ARKS: Compacted Der t moisture val Visual Classific Constant Head alling Head.	ue slightl [.] ation,	proximate y below c	ly 95% of A optimum}.	STM D698

- UC Unconfined Compression UU Unconsolidated Undrained
- CU Consolidated Undrained with Pore Pressure
- CU Consolidated Undrained
- **CD** Consolidated Drained

RIDGEWAY HOT SPRINGS

Soil Properties

Western Technologies Inc.

Plate: B-2

©81 WTI 092799



Job No.: 3123JC021

					PHYS	SICAL	PROF	ERT	IES	1. AUT 74 - 12 - 13 - 17 - 13 - 16 - 16 - 17 - 18 - 18 - 19 - 19 - 19 - 19 - 19 - 19		— —		
TEST PIT	DEPTH	SOIL	P	ARTICLE % PAS	SIZE DIS SING BY	TRIBUTI WEIGHT	ON	ATTE LIN	RBERG tITS	MOI R	STURE-DENS ELATIONSHII	ITY		
NO.	(FEET)	CLASSIFICATION	3 IN,	NO. 4	NO. 10	NO. 40	NO. 200	٤L	PI	DRY DENSITY (PCF)	OPTIMUM	1	'R' VALUE	REMARKS
1 8	2-3 3-5	GW ML	100 100	26 98	20 95	13 89	4.3 51.9	u -	NP NP				:	2 2
1														
1						1								
- - - - - - - - - - - - - - - - - - -		T												
				7444-974-84										
										4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
REMARKS: CLASSIFIC 1. Visual 2. Labora 3. Minus	ATION / PA tory Teste	RTICLE SIZE						<u>_</u>		I			<u></u>	
MOISTURE 4. Tested	DENSITY F	RELATIONSHIP 198 / AASHTO 557 / AASHTO	T99								/AY HOT vsical Prop		G S	
NOTE: NP			51180						W		Techno		Inc.	
							J	ob No		23JC02				e: B-3



PRELIMINARY PLAT OF: RIVERFRONT VILLAGE, PLANNED UNIT DEVELOPMENT

CERTIFICATE OF DEDICATION AND OWNERSHIP:

KNOW ALL MEN BY THESE PRESENTS that the undersigned, being the owner of certain Ridgway, Colorado, to wit:

LOT 1, TRIANGLE SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED APRIL 22 RECEPTION NO. 150643; AND THE PLAT OF SURVEY RECORDED JANUARY 26, 1995 UN 158652, AND THE PLAT OF SURVEY RECORDED DECEMBER 8, 1994 UNDER RECEPTION EXCEPT A PARCEL OF LAND WITHIN LOT 1 OF THE TRIANGLE SUBDIVISION, TOWN OF R OURAY, STATE OF COLORADO, CONVEYED IN THE DEED RECORDED JANUARY 2, 2008 L 196855. MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 1; THENCE NORTH 88°35'07" EAS OURAY COUNTY CONTROL) ALONG THE SOUTH LINE OF SAID LOT 1, 119.59 FEET;

THENCE NORTH 15°16'17" EAST, 169.01 FEET; THENCE NORTH 12°11'40" EAST, 255.36 FEET;

THENCE 359.19 FEET ALONG THE ARC OF A CURVE TO THE LEFT, WITH A CENTRAL AN RADIUS OF 600.00 FEET AND A CHORD OF NORTH 04°57'20" WEST, 353.85 FEET;

THENCE NORTH 22°06'19" WEST, 60.00 FEET;

THENCE NORTH 25°22'43" WEST, 68.43 FEET;

THENCE NORTH 30°05'32" WEST, 159.64 FEET;

THENCE NORTH 38°54'53" WEST, 43.57 FEET TO A POINT ON THE WEST LINE OF SAID THENCE SOUTH 01°31'23" WEST ALONG THE WEST LINE OF SAID LOT 1, 1057.93 FEET BEGINNING.

ALL IN THE COUNTY OF OURAY, STATE OF COLORADO.

containing 4.29 acres more or less

Has by these presents laid out and platted, as shown on this Plat, under the name Planned Unit Development. The following non-exclusive perpetual easements are dedi conveyed to the Town of Ridgway, Colorado and are reserved for the use of other shown and identified on this Plat and as further described in Platnote 9: Access an Utility Easement, Utility and Drainage Easement, Public Recreational Trail Easement, H Trail/Underpass or Overpass/Signage Easement, and Public Park Easement.

Executed this	day of	, A.D. 20

ALPINE HOMES-RIDGWAY, LLC, a Colorado limited liability company

Ву:			Date:
Printed Name:			Title:
STATE OF COLORADO)) 55	
COUNTY OF)) ss.	

The foregoing Certificate of Ownership and Dedication was acknowledged before me ____, A.D. 20____, by _____ __ of Alpine Homes-Ridgway, LLC.

Witness my hand and official seal.

Notary Public

ATTORNEY'S CERTIFICATE:

I, Thomas G. Kennedy, an attorney at law duly licensed to practice before the courts do hereby certify that I have examined the Title Commitment No. ___ Land Title Guarantee Company and according to that title policy, of all land herein p such land is in the dedicator(s) and owners, and that based upon my review of said property dedicated hereon has been dedicated free and clear of all liens and encum

LOCATED ON LOT 1R, TRIANGLE SUBDIVISION

SITUATED IN THE $E_{2}^{1}SE_{4}^{1}NW_{4}^{1}$ OF SECTION 16, TOWNSHIP 45 NORTH, RANGE 8 WEST, N.M.P.M. TOWN OF RIDGWAY, COUNTY OF OURAY, STATE OF COLORADO

I, being the owner of certain lands in the Town of	follows:	OURAY COUNTY TREASURER: I certify that as of the day of,,, there are no delinquent taxes
IEREOF RECORDED APRIL 22, 1992 UNDER	CURRENT YEARS TAXES AND ASSESSMENTS NOT YET DUE OR PAYABLE.	due, nor are there any tax liens, against the property described herein or any part thereof, and that all current taxes and special assessments have been paid in full.
RDED JANUARY 26, 1995 UNDER RECEPTION NO. 8, 1994 UNDER RECEPTION NO. 158254. LE SUBDIVISION, TOWN OF RIDGWAY, COUNTY OF CORDED JANUARY 2, 2008 UNDER RECEPTION NO.	RIGHTS OF WAY FOR DITCHES OR CANALS CONSTRUCTED BY THE AUTHORITY OF THE UNITED STATES, AS RESERVED IN UNITED STATES PATENT RECORDED JUNE 13, 1951, IN BOOK 103 AT PAGE 508.	Date:
HENCE NORTH 88°35'07" EAST (BASIS OF BEARING, D LOT 1, 119.59 FEET;	SUBJECT TO ANNEXATION PLAT OF SUNSET ENTERPRISES ADDITION FILED MARCH 10, 1980 UNDER RECEPTION NO. 127944 AND ANNEXATION ORDINANCE RECORDED MARCH 10, 1980 IN BOOK 194 AT PAGE 343.	Ouray County Treasurer PLANNING COMMISSION: Approved by the Ridgway Town Planning Commission this day of, A.D. 20, by
E LEFT, WITH A CENTRAL ANGLE OF 34°18'00", A 20" WEST, 353.85 FEET;	TERMS, CONDITIONS AND PROVISIONS OF EASEMENT GRANTED TO US WEST COMMUNICATIONS, INC. RECORDED NOVEMBER 22, 1991 IN BOOK 217 AT PAGE 791.	, vip no naging rown riaming commence and dof or, vip 20, by
	TERMS AND CONDITIONS OF SUBDIVISION IMPROVEMENTS AND LIEN AGREEMENT BETWEEN H. DARYL QUANDT AND PATRICIA KATHLEEN QUANDT AND THE TOWN OF RIDGWAY RECORDED APRIL 22, 1992 IN BOOK 222 AT PAGE 95.	TOWN COUNCIL: Approved by the Ridgway Town Council thisday of, A.D. 20, by
ON THE WEST LINE OF SAID LOT 1; SAID LOT 1, 1057.93 FEET BACK TO THE POINT OF	NOTES, EASEMENTS, RIGHTS OF WAY, AND RESTRICTIONS AS CONTAINED ON THE RECORDED PLATS FILED APRIL 22, 1992 UNDER RECEPTION NO. 150643, RECORDED DECEMBER 8, 1994 UNDER RECEPTION NO. 158254 AND RECORDED JANUARY 26, 1995 UNDER RECEPTION NO. 158652.	, Mayor.
	SUBJECT TO NOTICE CONCERNING UNDERGROUND FACILITIES OF SAN MIGUEL POWER ASSOCIATION RECORDED JUNE 22, 1993 IN BOOK 227 AT PAGE 145.	TOWN ATTORNEY'S CERTIFICATE: Approved for recording thisday of, 20
n this Plat, under the name of Riverfront Village erpetual easements are dedicated, granted and erved for the use of other benefitted parties as ed in Platnote 9: Access and Utility Easements, ecreational Trail Easement, Pedestrian	TERMS, CONDITIONS AND AGREEMENTS AS CONTAINED IN EASEMENT AGREEMENT BY AND BETWEEN RIDGWAY HOT SPRINGS, LLC AND TELLURIDE REAL ESTATE COMPANY, LLC, RECORDED JUNE 11, 2007 UNDER RECEPTION NO. 195143 AND AMENDMENT/CLARIFICATION TO EASEMENT AGREEMENT RECORDED JULY 13, 2009 UNDER RECEPTION NO. 201106.	
ic Park Easement. 20	ANY INCREASE OR DECREASE IN THE AREA OF THE LAND AND ANY ADVERSE CLAIM TO ANY PORTION OF THE LAND WHICH HAS BEEN CREATED BY OR CAUSED BY ACCRETION OR RELICTION, WHETHER NATURAL OR ARTIFICIAL; AND THE EFFECT OF THE GAIN OR LOSS OF AREA BY ACCRETION OR RELICTION UPON THE MARKETABILITY OF THE TITLE OF THE LAND.	storm drainage system for this subdivision are properly designed, meet the Town of Ridgway specifications, are adequate to serve the Subdivision shown hereon. Date:
	ANY RIGHTS OR INTERESTS OF THIRD PARTIES WHICH EXIST OR ARE CLAIMED TO EXIST IN AND OVER THE PRESENT AND PAST BED, BANKS OR WATERS OF UNCOMPAHGRE RIVER.	Engineer Registration Number
	MATTERS DISCLOSED ON IMPROVEMENT SURVEY ISSUED BY ORION SURVEYING CERTIFIED DECEMBER 12, 2019, PROJECT NO. 18079. STORED IN OUR RECORDS AS IMAGE 20049484.	BASIS OF BEARINGS: The bearing between the found rebar and cap at the (ASSUMED).
	ANY AND ALL OTHER RECORDED AGREEMENTS, COVENANTS, EASEMENTS AND DOCUMENTS OF RECORD	LINEAL UNITS STATEMENT: The Lineal Unit used on this Plat is U.S. Survey Feet
s acknowledged before me this day of as the	Dated this day of, A.D., 20 Thomas G. Kennedy, Attorney at Law	SURVEYORS CERTIFICATE: I, David R. Bulson, Colorado PLS 37662, hereby certify that this Plat was prepared under my direct supervision and that said survey is accurate to the best of my knowledge, conforms to all requirements of the Colorado Revised Statutes, and all applicable Town of Ridgway regulations, and that all required monuments have been set as shown.
My Commission expires	CERTIFICATE OF IMPROVEMENTS COMPLETION: The undersigned, Town Manager of the Town of Ridgway, does certify that all improvements and utilities required by the current Subdivision Regulations of the Town of Ridgway have been installed in this Subdivision in accordance with the specifications of the Town except for the following which have been secured pursuant to Town subdivision regulations:	RECORDER'S CERTIFICATE:
to practice before the courts of record of Colorado, nent No issued by	Date:	This Plat was filed for record in the office of the Clerk and Recorder of Ouray County atm. on the day of, 20, 20 Reception No
e policy, of all land herein platted and that title to ased upon my review of said title commitment, the clear of all liens and encumbrances, except as	Town Manager	by, by, Deputy
		ALPINE HOMES-RIDGWAY, LLC TBD Highway 550 Ridgway, CO, 81432 Ridgway CO, 81432
	NOTICE: According to Colorado Law (13-80-105, C based upon any defect in this survey within such defect. In no event may any action commenced more than ten (10) years fror	in three (3) years after you first discover

PRELIMINARY PLAT OF: RIVERFRONT VILLAGE, PLANNED UNIT DEVELOPMENT

FORMATION OF COMMON INTEREST COMMUNITY. Alpine Homes-Ridgway, LLC, a Colorado limited liability company ("Owner") as the owner of the property depicted in this plat ("Property") and as declarant under the below described Condominium Documents, states as follows:

(A) The Property is being developed as a Colorado common interest ownership community under the name Riverfront Village Planned Unit Development ("Community"), which will be reflected in certain "Condominium" Documents," including a "Condominium Map," "Condominium Declaration," and certain Articles of Incorporation and Bylaws for The Riverfront Village Owners Association, Inc., a Colorado nonprofit corporation ("Association"). The Condominium Declaration is being recorded with the recordation of this plat. The Condominium Map will be prepared, executed and recorded as the buildings, facilities and other improvements containing the Units, Common Elements and infrastructure serving the development are completed and prior to the conveyance of a Unit to a third party. Prior to their execution and recordation, the Condominium Documents will be reviewed and approved by the Town of Ridaway.

(B) The Community will consist of certain condominium units "Units", which may be separately owned by individual owners ("Unit Owners"), including certain Units usable for residential purposes ("Residential Unit(s)") and certain Units usable for commercial purposes ("Commercial Unit(s)") and, certain "Common Elements" as the same will be more particularly defined, described, designated and/or depicted on the Condominium Documents. The Residential Units are anticipated to be configured and included in either a building containing multiple Units ("Multifamily Residential Units") or as adjoining Units in a Townhome arrangement ("Townhome Dwelling Units").

(C) This Plat depicts the general location of the siting for potential buildings and improvements proposed to accommodate the Units and Common Elements that can be constructed on the Property and included in the Community. The "Improvements" consist of any and all buildings, structures, facilities and similar features that are constructed on or otherwise made to the Property at any time to accommodate, support, serve or otherwise facilitate the Units and Common Elements included in the Community or otherwise benefit the Unit Owners and Association. The final siting of the Improvements that may be shown on this Plat may be modified as plans are refined and shall be reflected in the Condominium Documents.

(D) The Owner reserves the right to undertake and complete some or all of the Improvements and annex the completed Units and Common Elements into the Community.

(E) The entirety of the Property is subjected to Reserved Rights (as defined in the Declaration), which may be exercised by Owner (as declarant) as provided for in the Condominium Documents.

2. DEVELOPMENT AGREEMENT. The Owner and the Town have entered into a certain "Development Agreement" ____, 20____ in concerning the property covered by this Plat, which was recorded on _____ Reception No. _____ in the Ouray County records.

3. VESTED RIGHTS AND PHASING PLAN. The Development Agreement establishes certain vested property rights and phasing timing and sequencing for the development of the property. Please refer to the Development Agreement for all terms, conditions and requirements relating to the vested property rights and phasing timing and sequencing for the development of the property.

4. PROVISION OF DEED RESTRICTED HOUSING. The Owner hereby restricts the ownership, use and occupancy of the following: (a) a one bedroom unit in Building M3 (to be denoted as Unit 102); (b) a one bedroom unit in (b) Utility Easement. A portion of the Community, designated and depicted as a Utility Easement on this Plat, is subject to a perpetual, non-exclusive easement which allows for the right to install, repair, replace, maintain, Building M3 (to be denoted as Unit 201); (c) a two bedroom unit in Building CM (to be denoted as Unit 202) and upgrade, use, operate and remove certain underground utilities along with a reasonable right of entry, ingress and (d) a two bedroom unit in Building CM (to be denoted as Unit 203) ("Deed Restricted Units") to the terms, egress to and from the Easement Area and adjacent public right-of-way, which easement rights are being conditions, restrictions and requirements of a Deed Restriction as provided for in Section 4 of the Development dedicated for the use and benefit of Owner, Association and/or a utility provider, including the Town of Ridgway. Agreement, which shall run in perpetuity and not expire and shall survive any foreclosure of the Deed Restricted Units. unless the restrictions are otherwise released or modified with the written consent of the Town. The (c) Utility and Drainage Easement. A portion of the Community, designated and depicted as an Access and Utility Development Agreement further establishes certain restrictions on ownership, use and pricing of the Deed Restricted Easement on this Plat, is subject to a perpetual, non-exclusive easement which allows for (i) the right to install. Units and the timing and sequencing by which the Owner must construct and convey the Deed Restricted Units. Please refer to the Development Agreement for all terms, conditions and requirements relating to the Deed repair, replace, maintain, upgrade, use, operate and remove certain underground utilities along with a reasonable Restricted Units. right of entry, ingress and egress to and from the Easement Area to and from adjacent public right-of-way and (ii) the right of Owner and Association to install, repair, replace maintain, uparade, use and operate stormwater and 5. SHORT-TERM RENTALS. Only the Townhouse Dwelling Units may be used for "Short-Term Rental" purposes. Ir drainage facilities and systems serving only development occurring in the Community, which easement rights are all events, such usage must be in compliance with applicable codes and regulations of the Town of Ridgway in being dedicated for the use and benefit of Owner, Association and/or a utility provider, including the Town of effect at the time of the proposed usage, which codes and regulations include: short-term rental regulations, Ridaway.

lodging and sales taxes, any applicable licensing, and any future amendments to the Municipal Code

(d) Public Recreational Trail Easement. A portion of the Community, designated and depicted as a "Non—Motorized Public Recreational Trail Easement" on this Plat is being created by Owner and is being dedicated, granted, and 6. COMMON ELEMENT MAINTENANCE. The Association shall have the obligation to maintain the Common Elements and Improvements located within the Community that are owned by the Association as provided for in the Declaration. This obligation shall include but not be limited to the maintenance and repair of all roads, sidewalks, fences, retaining walls, benches, lighting, shared parking areas, including snow removal, landscaping, weed mitigation

LOCATED ON LOT 1R, TRIANGLE SUBDIVISION

SITUATED IN THE $E_{2}^{1}SE_{4}^{1}NW_{4}^{1}$ OF SECTION 16, TOWNSHIP 45 NORTH, RANGE 8 WEST, N.M.P.M. TOWN OF RIDGWAY, COUNTY OF OURAY, STATE OF COLORADO

and control, irrigation systems, ditches and pipelines, drainage/stormwater management facilities, commonly owned utilities and other Community facilities. Owners of Units are responsible for the repair and maintenance of any Improvements located on their Unit, unless designated for maintenance and repair by the Association. The Town is not responsible or liable in any manner for the maintenance, repair, or operation of such Common Elements and Improvements owned and operated by the Association. In the event that said maintenance is not properly performed the Town of Ridgway, following written notice and reasonable cure, may cause the work to be done, assess the cost to the Association, may certify such charges as delinguent charges to the county Treasurer to be collected similarly to taxes, may record a lien on said Common Elements, which may be foreclosed in any lawful manner, or may pursue any other remedy available in order to collect such charges. These obligations shall run with the land and be binding upon all successors in interest to the said lot(s).

7. OUTDOOR LIGHTING. All outdoor lighting fixtures shall comply with Town regulations.

8. MAXIMUM ALLOWABLE UNITS:

- (a) The maximum number of Townhouse Dwelling Units is 10;
- (b) The maximum number of Multifamily Dwelling Units is 28;
- (c) The maximum number of Commercial Units is 4

9. EASEMENTS. Alpine Homes-Ridgway, LLC, a Colorado limited liability company as the current, fee simple owner of the property depicted in this plat has designated, created and conveyed certain easements ("Easements") as described hereinbelow benefiting and burdening portions of the property as depicted and described herein. The Easements are being established by Owner for the particular purposes and uses stated hereinbelow. The location of the Easements as depicted on this Replat are the initial alignments and may be revised during the final platting and/or creation of the condominium map to match actual location of improvements. The Easements are being reserved by Owner for the use and benefit of the particular parties indicated below, including the Association and the respective Unit Owners and their tenants, quests and invitees, and/or the Town of Ridaway and the general public as provided for herein. In the event the Owner or Association desire to amend any the terms and conditions of the Easements, including the location of the Easement Areas, and, provided the Town agrees to such modifications, the Owner, or the Association(s) and Town may file a separate instrument reflecting these modifications, which reference this Plat and need not necessarily cause an amendment to this Plat to be executed and recorded to accomplish the modifications.

(a) Access and Utility Easement. A portion of the Community, designated and depicted as an Access and Utility Easement on this Plat, is subject to a perpetual, non-exclusive easement which allows for: (i) the right to install, repair, replace, maintain, upgrade, use and operate roads, sidewalks and similar related facilities enablina vehicular and pedestrian access to and from the Community for the use and benefit of the Association, each Unit Owners and their respective tenants, quests and invitees, and (ii) the right to install, repair, replace, maintain, upgrade, use, operate and remove certain underground utilities serving development occurring in the Community along with a reasonable right of entry, ingress and egress to and from the Easement Area to and from adjacent public right—of—way, which easement rights are being dedicated for the use and benefit of Owner, Association and/or a utility provider, including the Town of Ridgway. The roads shall be privately owned and maintained by the Association. The Access Easements are also granted to and may be used by the Town and the general public for access to the Project.

conveyed to the Town of Ridgway as a perpetual, non—exclusive easement allowing for the right to install (following the initial installation of the trail by the Owner), repair, replace, maintain, use and operate a public hiker/biker, non-motorized trail.

(e) Pedestrian Trail/Underpass or Overpass/Signage Easement A portion of the Community, designated and depicted as a "Pedestrian Trail/Underpass or Overpass/Signage Easement" on this Plat is being created by Owner and is being dedicated, granted and conveyed to the Town of Ridgway as a perpetual, non-exclusive easement allowing for the right to install, repair, maintain, use and operate a public hiker/biker, non-motorized trail, construct a future highway trail underpass, and install entry signage.

(f) Public Park Easement. A portion of the Community, designated and depicted as a "Public Park Easement" on this Plat is being created by Owner and is being dedicated, granted and conveyed to the Town of Ridgway as a perpetual, non-exclusive easement allowing for the right to install (following the initial installation of the park improvement by the Owner), repair, replace, maintain, use and operate a public park for recreational purposes. Before installing other improvements, the Town shall obtain the approval of the Owner through such time as Owner still owns property within the project and thereafter, from the Association, which approval shall not be unreasonably withheld provided that the improvements are compatible with the project and would not create unacceptable impacts (light, noise, odor) to the development in the project.

10. "SOILS: Soils throughout the Ridgway area have been found to have the potential to swell, consolidate and cave and release radon. All owners, contractors, and engineers are required to investigate soil, groundwater, and drainage conditions on a particular lot prior to design and construction. On April 27, 2020, Huddleston-Berry Engineering & Testing, LLC of Colorado issued a Geotechnical Investigation discussing the soil characteristics on Lot 1 in the Triangle Subdivision, which all owners, contractors and engineering are encouraged to obtain and review prior to building. By accepting a deed to real property located in this subdivision, the owners of land herein agree to hold the Town of Ridgway harmless from any claim related to soils conditions present in this subdivision.

11. CDOT ACCESS PERMIT: Vehicular access to or from property adjoining a state highway shall be provided to the general street system, unless such access has been acquired by a public authority. Pursuant to C.R.S. \$ 43-2-147(1)(b), all lots and parcels created by this subdivision will have access to the state highway system in conformance with the state highway access code.

12. PRIOR EASEMENTS: The property platted hereon is subject to the prior easements as shown hereon, except that certain of the easements are being modified, amended and/or vacated by separate instruments as noted on this Plat.

13. The 100-year flood plain line shown was determined by Del-Mont Consultants. Inc and is based upon the analysis of David W. Schieldt, PE, CFM which are described and noted in a January 2, 2020 letter to the Town of Ridaway.

> ALPINE HOMES-RIDGWAY, LLC TBD Highway 550 Ridgway, CO, 81432

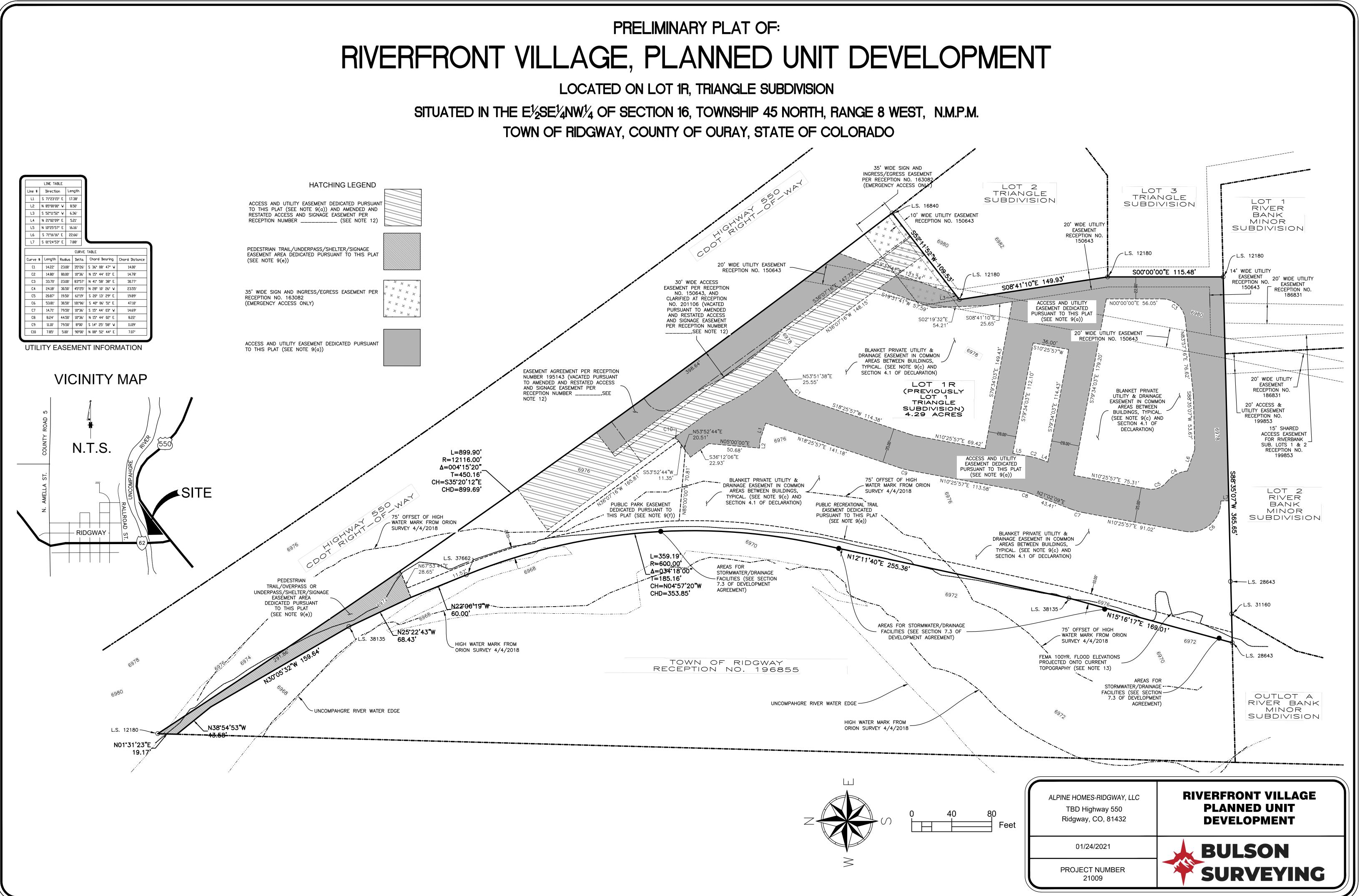
RIVERFRONT VILLAGE PLANNED UNIT DEVELOPMENT

BULSON

SURVEYING

01/24/2021

PROJECT NUMBER 21009



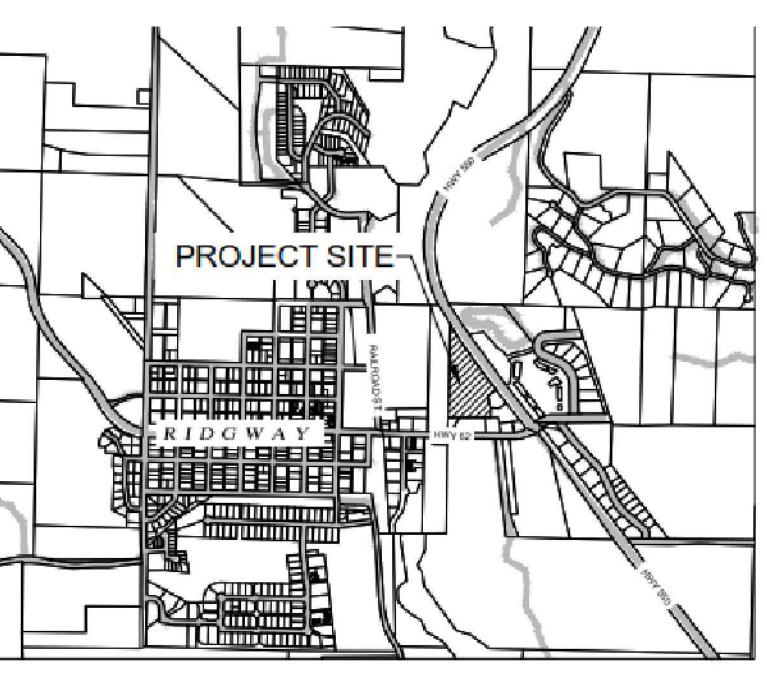
RIVERFRONT VILLAGE

CIVIL CONSTRUCTION PLANS

SHEET	LIST		
SHEET #	PLAN #	SHEET TITLE	
1	C-1	TITLE SHEET	
2	C-2	GENERAL NOTES	
3	SP-1	SITE PLAN	1
4	UTL-1	UTILITY PLAN	
5	GP-1	GRADING PLAN	
6	SW-1	STORMWATER AND WQCV MITIGATION PLAN	
7	SW-2	STORMWATER DETAILS	
8	X—1	CROSS SECTIONS	1983
9	RD-1	JASPER LANE PLAN & PROFILE	
10	RD-2	RIVERFRONT DRIVE PLAN & PROFILE	N
11	RD-3	ALPINE LOOP PLAN & PROFILE	
12	RT-1	RIVER TRAIL PLAN & PROFILE	T.
13	SS-1	SEWER RUN A PLAN & PROFILE	、世
14	SS-2	SEWER RUN B & C PLAN & PROFILE	
15	SS-3	FUTURE SEWER EXTENSION PLAN & PROFILE	
16	W—1	WATER RUN A PLAN & PROFILE	<u> </u>
17	W-2	WATER RUN B PLAN & PROFILE	
18	HC-1	HORIZONTAL CONTROL PLAN	
19	HC-2	HORIZONTAL CONTROL - INTERSECTIONS	
20	HC-3	UTILITY HORIZONTAL CONTROL PLAN	
21	CD-1	CONSTRUCTION DETAILS	
22-50	TS-1-29	RIDGWAY SPECS & STANDARDS	

RIDGWAY, COLORADO

6/15/2021



VICINITY MAP

ASSESSOR'S PARCEL #: 430516215001 GRAPHICAL SCALE (FT) ALPINE HOMES - RIDGEWAY, LLC PO BOX 81435 TELLURIDE, CO 81432 JOHN SIMON (OWNER'S REP) 970-708-7224 CIVIL ENGINEER: SET ENGINEERING, LLC 1309 EAST 3RD AVENUE, SUITE 206 DURANGO, CO 81301 JAMES GREEN, P.E. 970-403-5088 CIVIL OVERSIGHT AND DRAINAGE ENGINEER: UNCOMPAHGRE ENGINEERING, LLC P.O. BOX 3945 TELLURIDE, CO 81435 DAVID BALLODE, P.E. 970-729-0683 Uncompahgre Engineering, LLC ADO P.O. Box 3945 AG Telluride, CO 81435 SHEET COLOR/ 970-729-0683 VILL DGWAY RFR RIV 2 E N G I N E E R I N G L I 1309 E. 3rd Ave., #206 Durango, CO 81301 970-403-5088 PLAN NO. C-1 Sheet 1 of 50 Project:RIVERFRONT VILLAGE Date: 6/15/2021 Drawn By: CSS Checked By: JAG

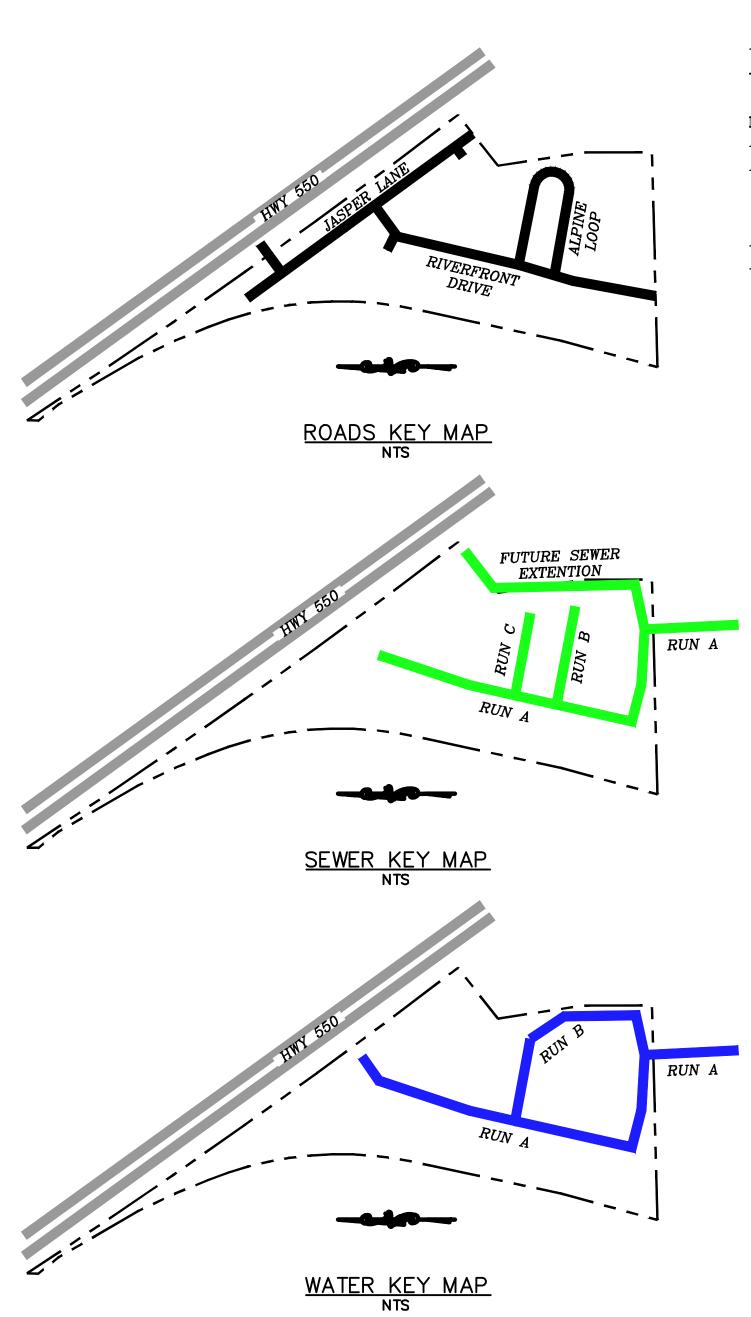
TOWN APPROVAL

SIGNATURE

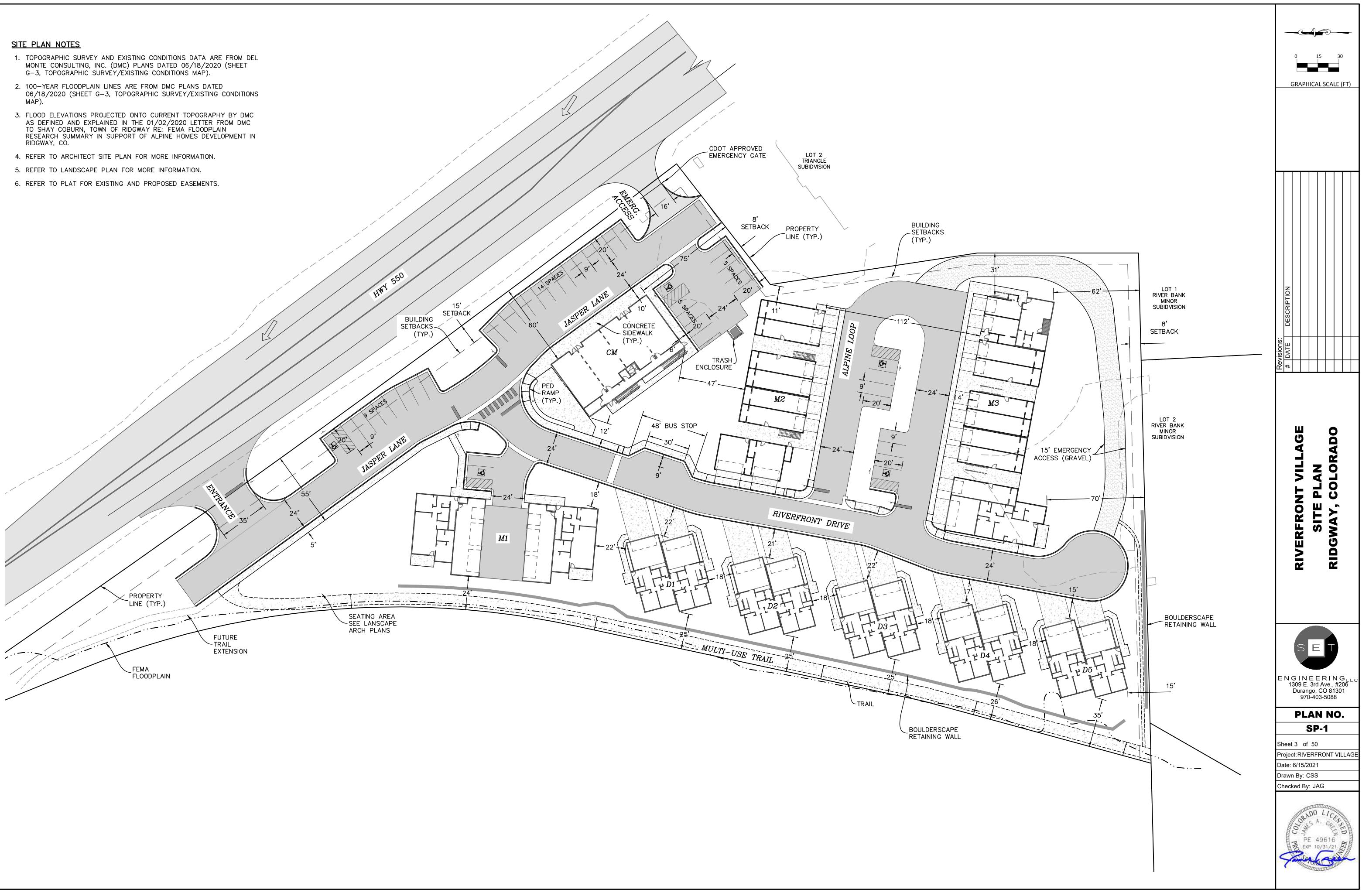
OWNER:

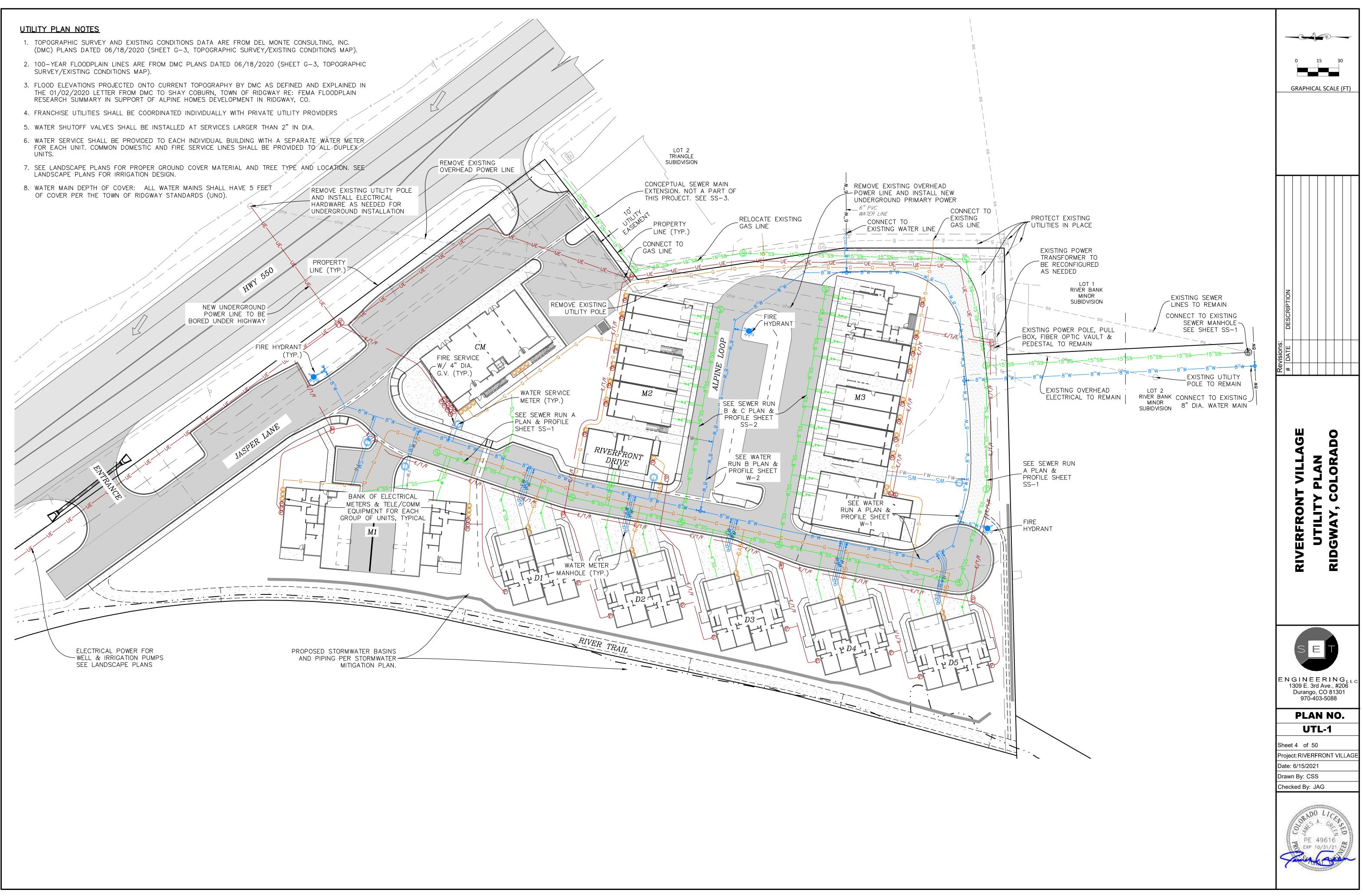
DATE

RIVE	REFRONT VILLAGE	
ASSOCIATION, BLACK H ENGINEER, THEIR STAN OF WORK AND TOWN F	CONSTRUCTED ACCORDING TO TOWN OF RIDGWAY, SAN MIGUEL POWER HILLS ENERGY, PROJECT GEOTECHNICAL ENGINEER, AND PROJECT CIVIL IDARDS AND SPECIFICATIONS. IF CONFLICTS EXIST, CONTACT THE ENGINEER	GRAPHICAL SCALE (FT)
LEGEND: Symbol	DESCRIPTION	
<pre> ohe g fo w w ss</pre>	EXISTING POWER LINE EXISTING OVERHEAD POWER LINE EXISTING GAS LINE EXISTING FIBER OPTIC LINE EXISTING WATER LINE EXISTING SEWER LINE EXISTING CULVERT EXISTING WATER VALVE EXISTING SEWER MANHOLE	
► FW FW WS WS WS 8"SS 8"SS 8"SS 8"SS 55 8"SSS 8"SS 8"SS 8"SS 8"SS 8"SS 8"SS 8"SS 8"SS	PROPOSED WATER MAIN PROPOSED WATER SERVICE PROPOSED FIRE WATER SERVICE PROPOSED FIRE WATER SERVICE PROPOSED WATER GATE-VALVE PROPOSED THRUST BLOCK PROPOSED FIRE HYDRANT PROPOSED SEWER MAIN PROPOSED SEWER SERVICE PROPOSED SEWER MANHOLE PROPOSED CULVERT PROPOSED CULVERT PROPOSED COMMON ELECTRIC/TELEPHONE/COMMUNICATIONS TRENCH PROPOSED POWER TRANSFORMER PROPOSED POWER METER PROPOSED GAS MAIN PROPOSED GAS SERVICE PROPOSED GAS MAIN PROPOSED GAS MAIN PROPOSED GAS MAIN PROPOSED GAS METER PROPOSED STORNWATER DRYWELL PROPOSED ADA OR COMBO STOP AND STREET NAME SIGN PER MUTCD PROPOSED STOP BAR PER MUTCD	NT VILLAGE AL NOTES COLORADO COLORADO
	ABBREVIATIONS: (###) = EXISTING ELEVATION BOB = BOTTOM OF BOX BOP = BOTTOM OF PIPE BOW = BACK OF WALK BTM = BOTTOM CL = CENTERLINE CO = CLEANOUT EG = EXISTING GRADE EL = ELEVATION EP = EDGE OF PAVEMENT EX = EXISTING FES = FLARED END SECTION FG - FINISH GRADE FS = FINISH SURFACE FL = FLOWLINE ELEVATION GB = GRADE BREAK	RINEERING _{LLC} 1309 E. 3rd Ave., #206 Durango, CO 81301
	GV = GATE VALVE HMA = HOT MIX ASPHALT IE = INVERT ELEVATION IR = IRRIGATION LIP = LIP OF GUTTER OHE - OVERHEAD ELECTRIC PC = POINT OF CURVATURE PCC = POINT OF CURVATURE PCR = POINT OF CURVATURE PL = PROPERTY LINE PROP = PROPOSED PT = POINT OF TANGENCY ROW = RIGHT OF WAY SD = STORM DRAIN SMH = SEWER MANHOLE TB = TOP OF BOX TBC = TOP BACK OF CURB TC = TOP OF CURB TG = TOP OF GRATE TOE = TOE OF SLOPE TOP = TOP OF PIPE OR SLOPE WM = WATER METER WS = WATER SERVICE	PLAN NO. C-2 Sheet 2 of 50 Project: RIVERFRONT VILLAGE Date: 6/15/2021 Drawn By: CSS Checked By: JAG PE 49616 EXP 10/31/21 PE 49616

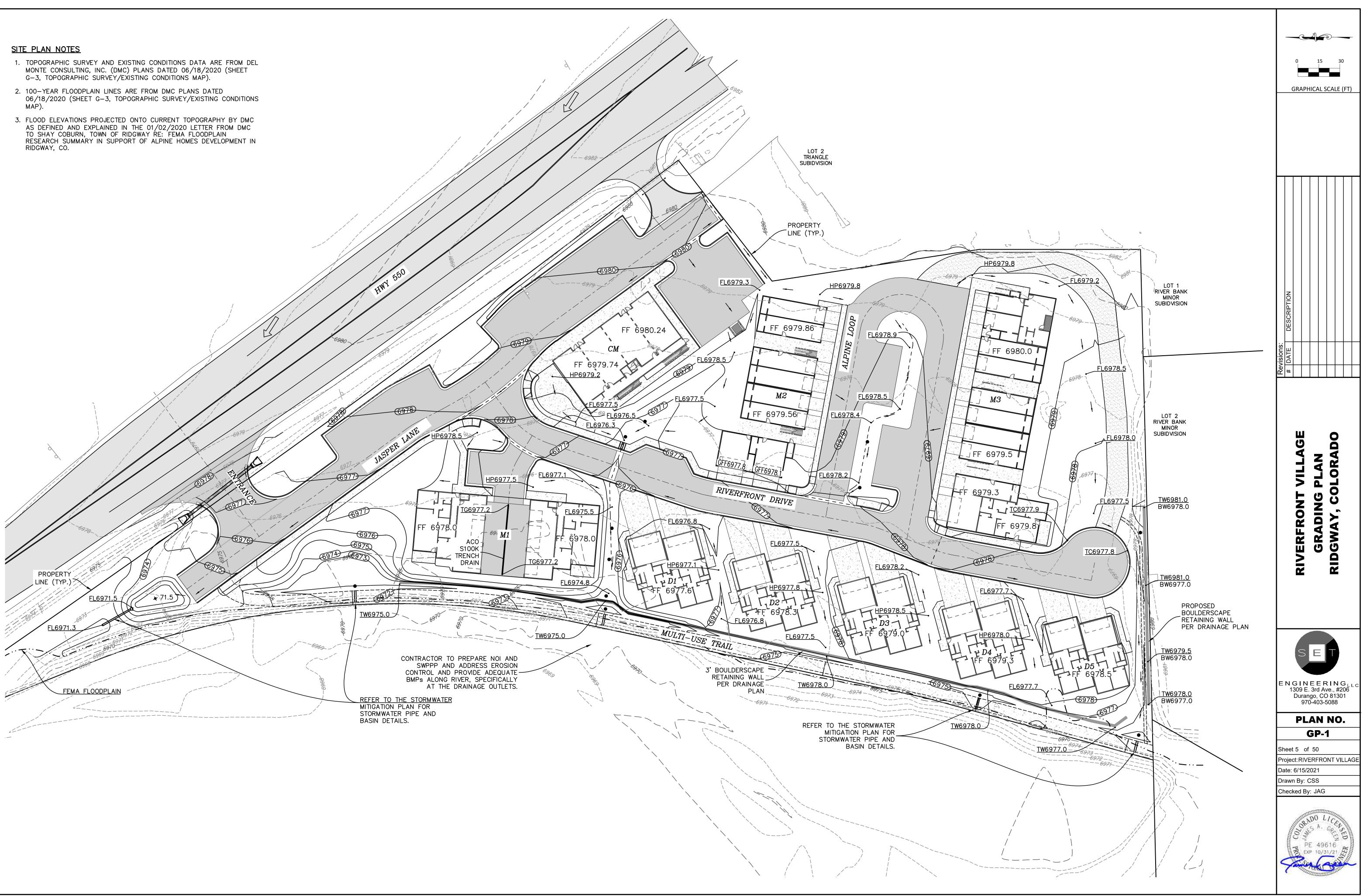


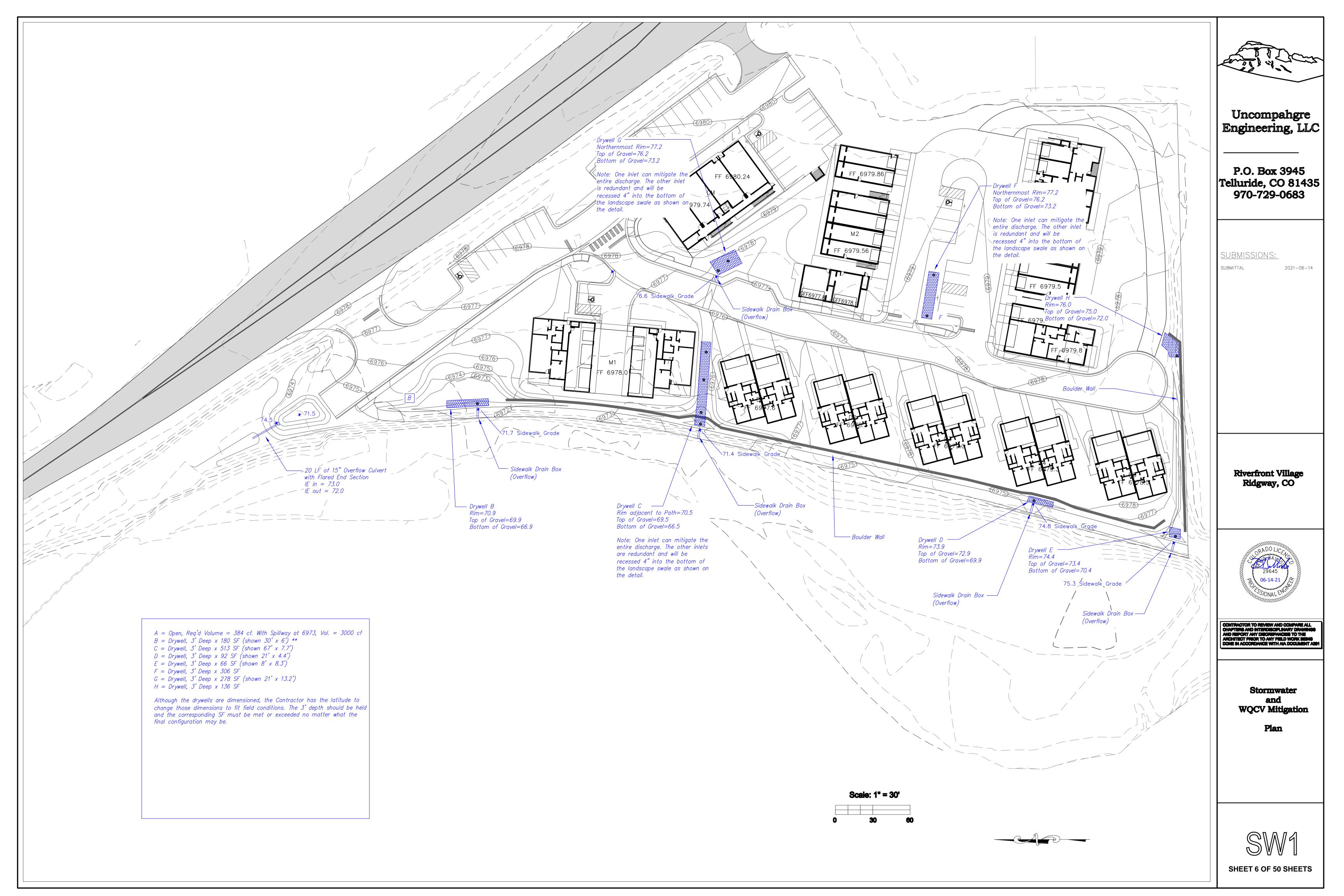
- MONTE CONSULTING, INC. (DMC) PLANS DATED 06/18/2020 (SHEET G-3, TOPOGRAPHIC SURVEY/EXISTING CONDITIONS MAP).
- MAP).
- AS DEFINED AND EXPLAINED IN THE 01/02/2020 LETTER FROM DMC TO SHAY COBURN, TOWN OF RIDGWAY RE: FEMA FLOODPLAIN RIDGWAY, CO.

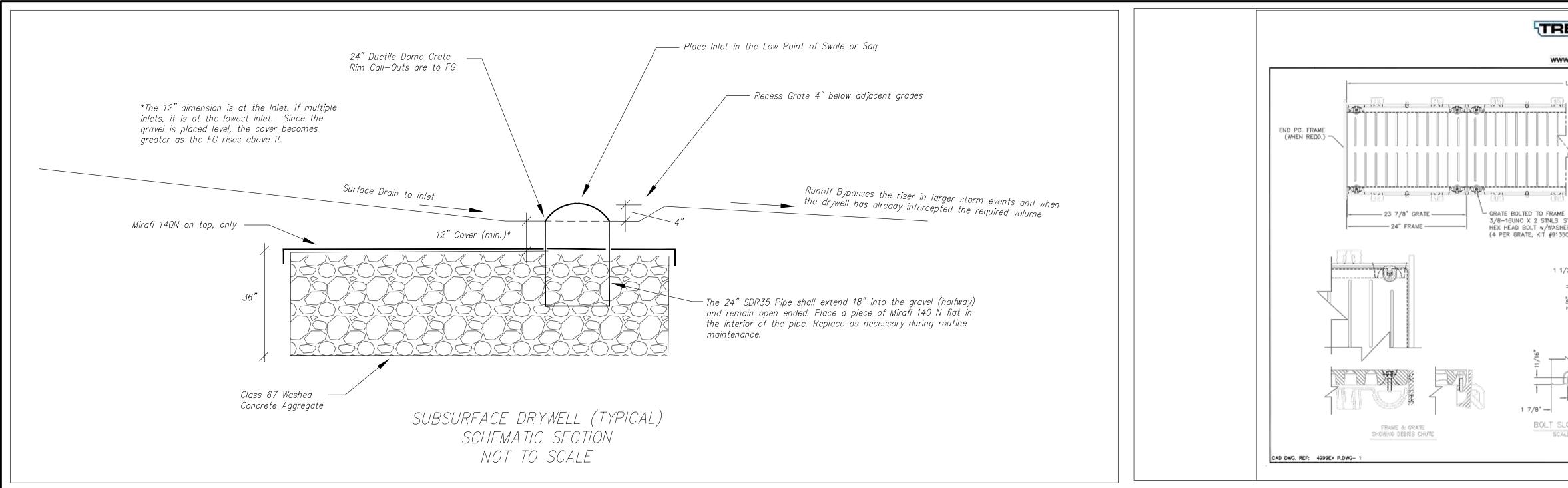


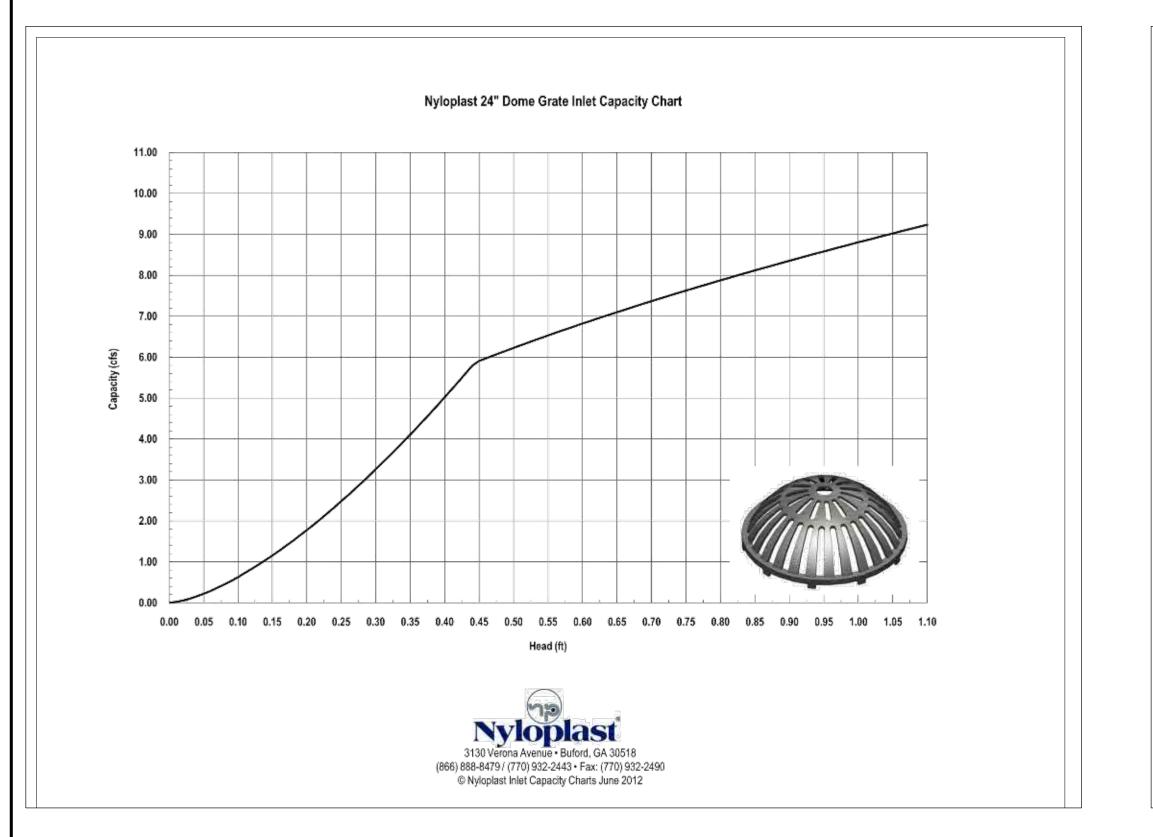


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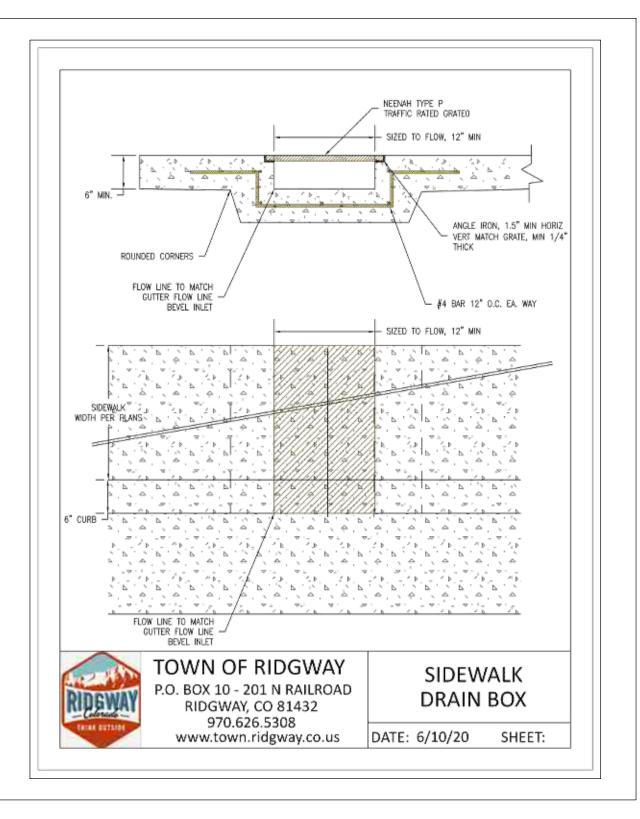






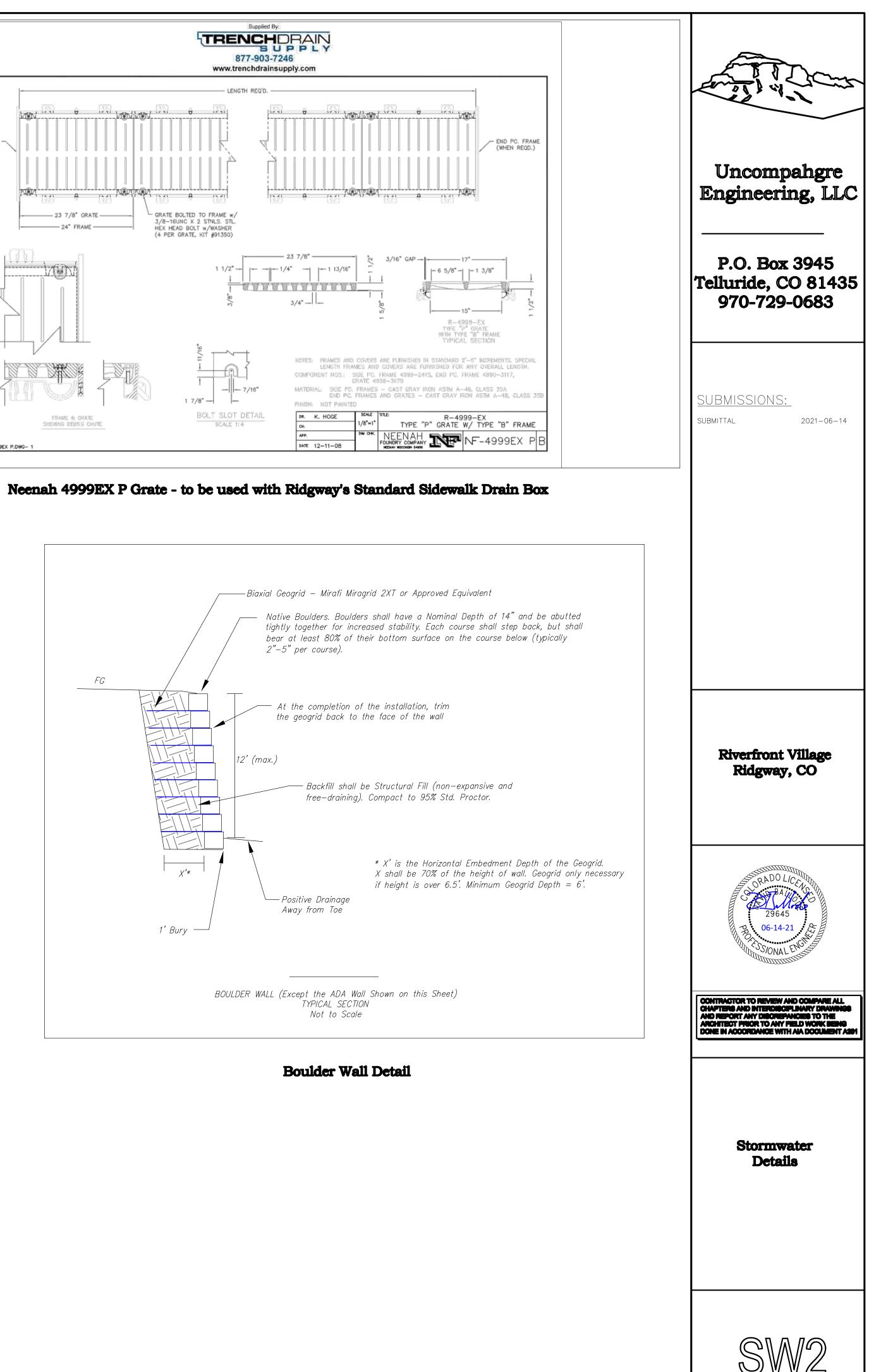


Nyloplast 24" Ductile Iron Domed Grate for all Drywell Inlets

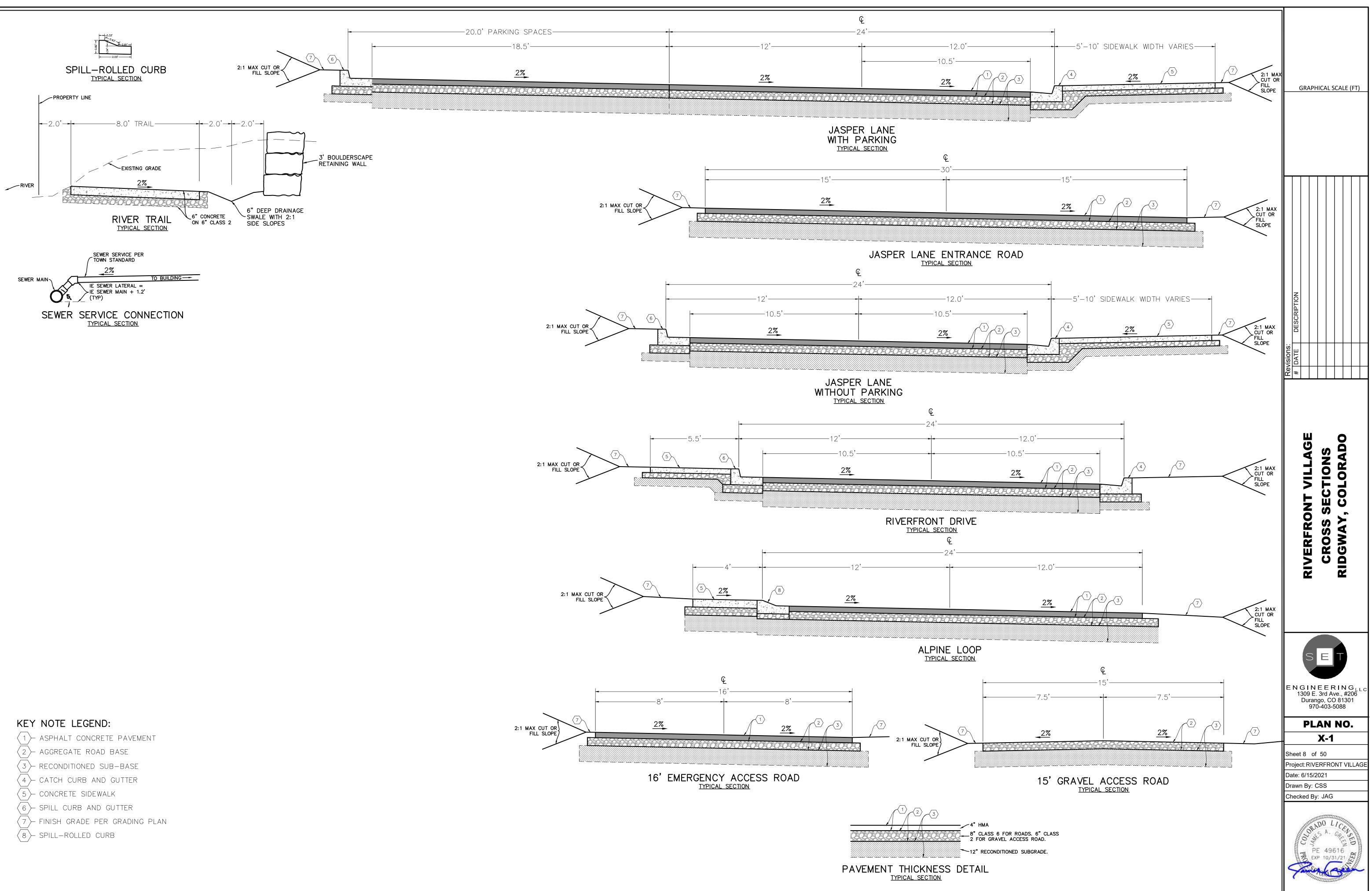


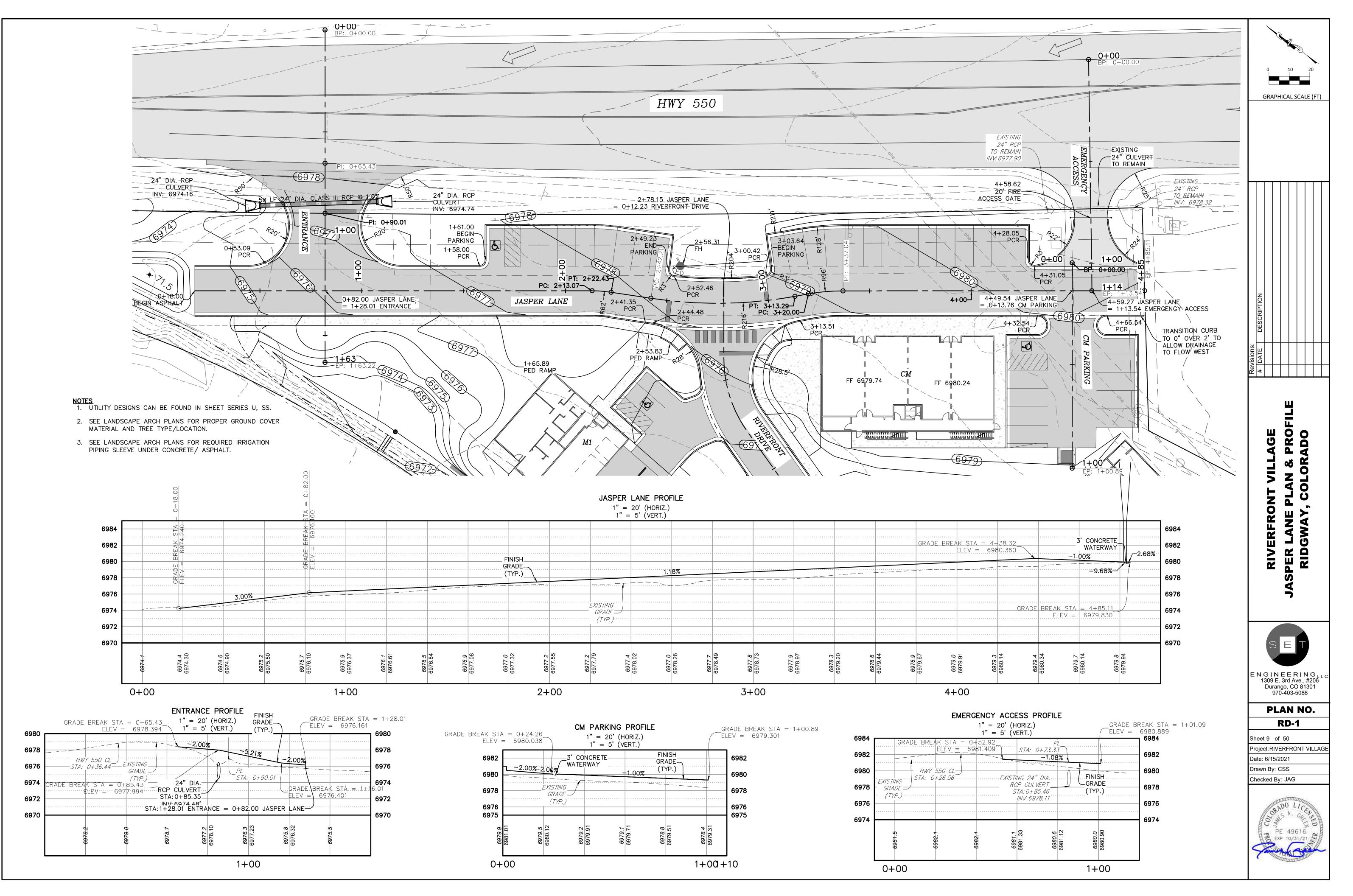
Town of Ridgway Sidewalk Drain Box Use Neenah Grate Specified on this Sheet (15" Opening)

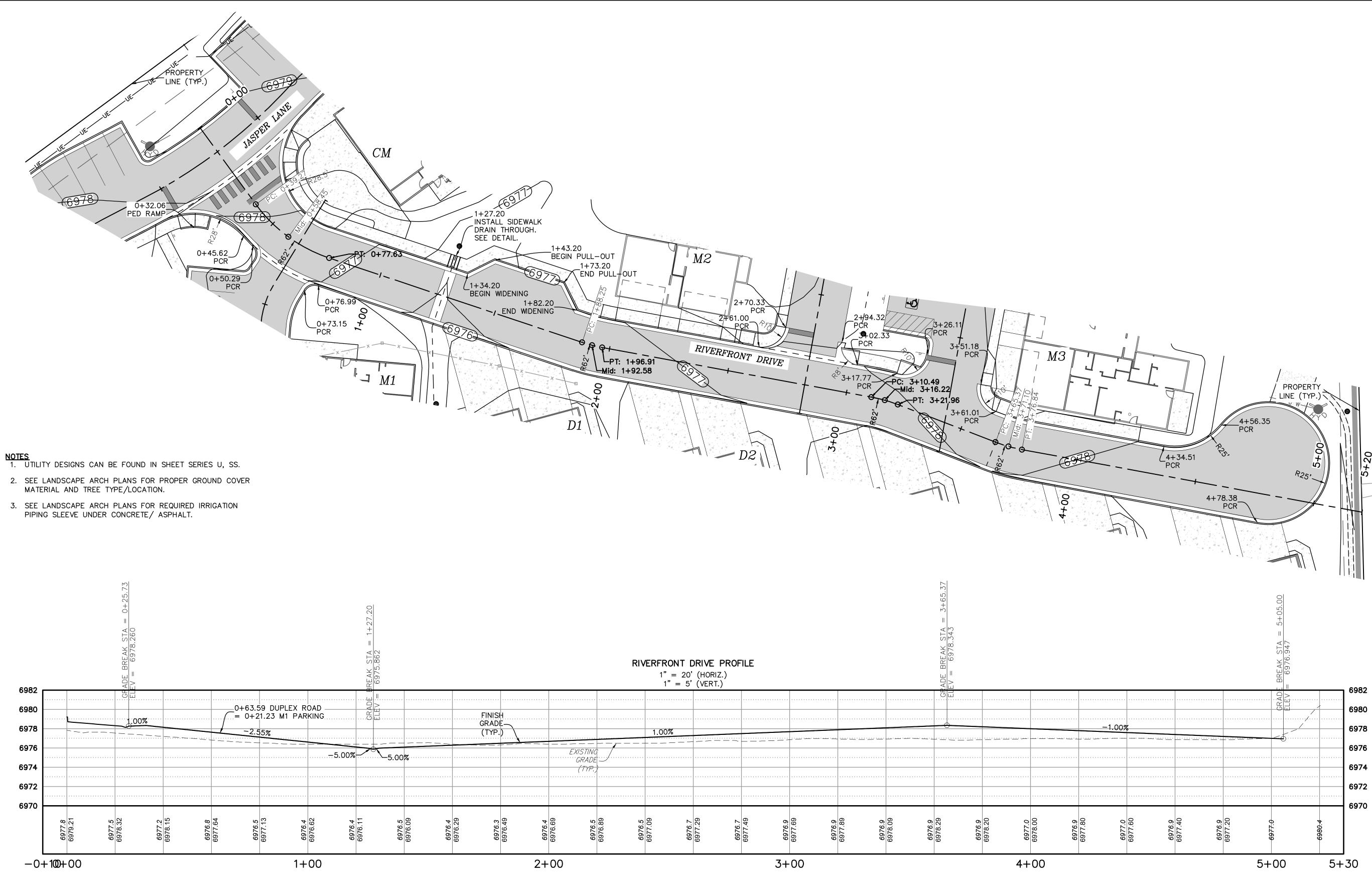
Note that these Sidewalk Drains are to be placed at the Sag Points in the Sidewalk. See Profiles.



SHEET 7 OF 50 SHEETS

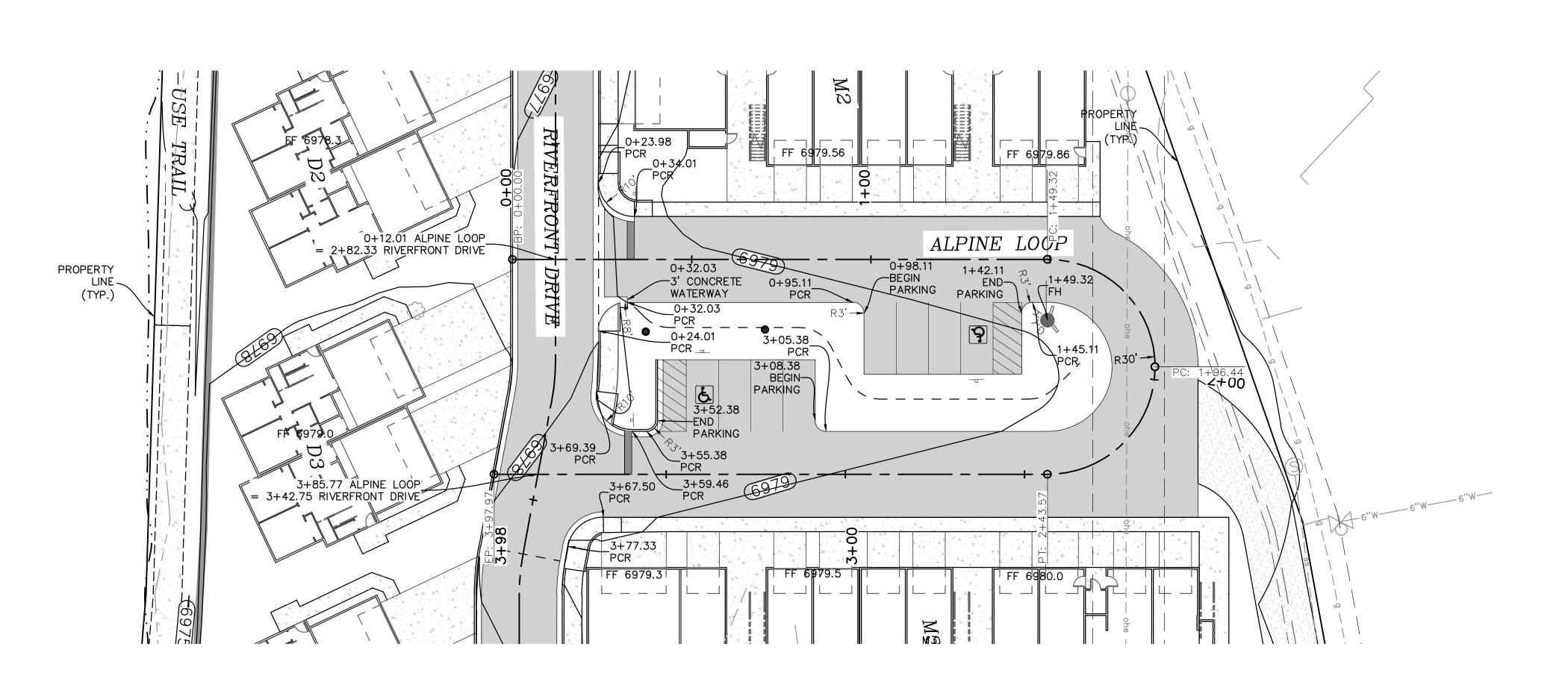






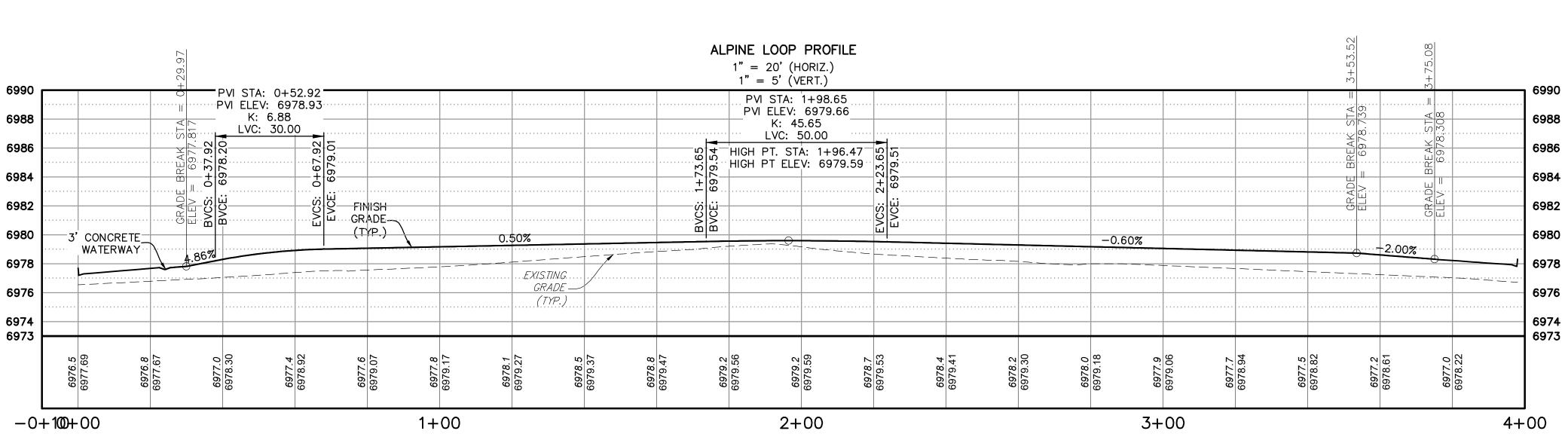


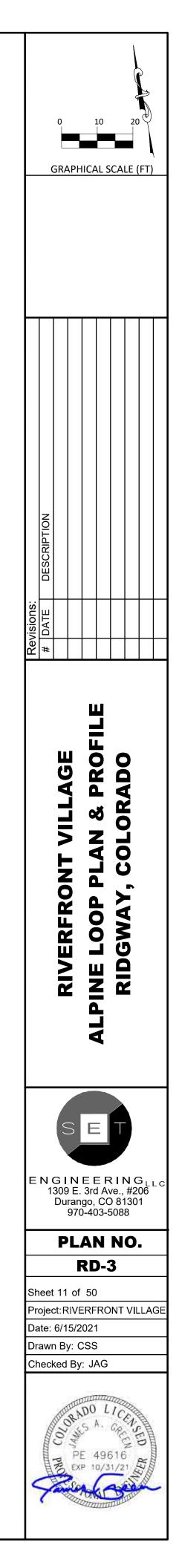




NOTES 1. UTILITY DESIGNS CAN BE FOUND IN SHEET SERIES U, SS.

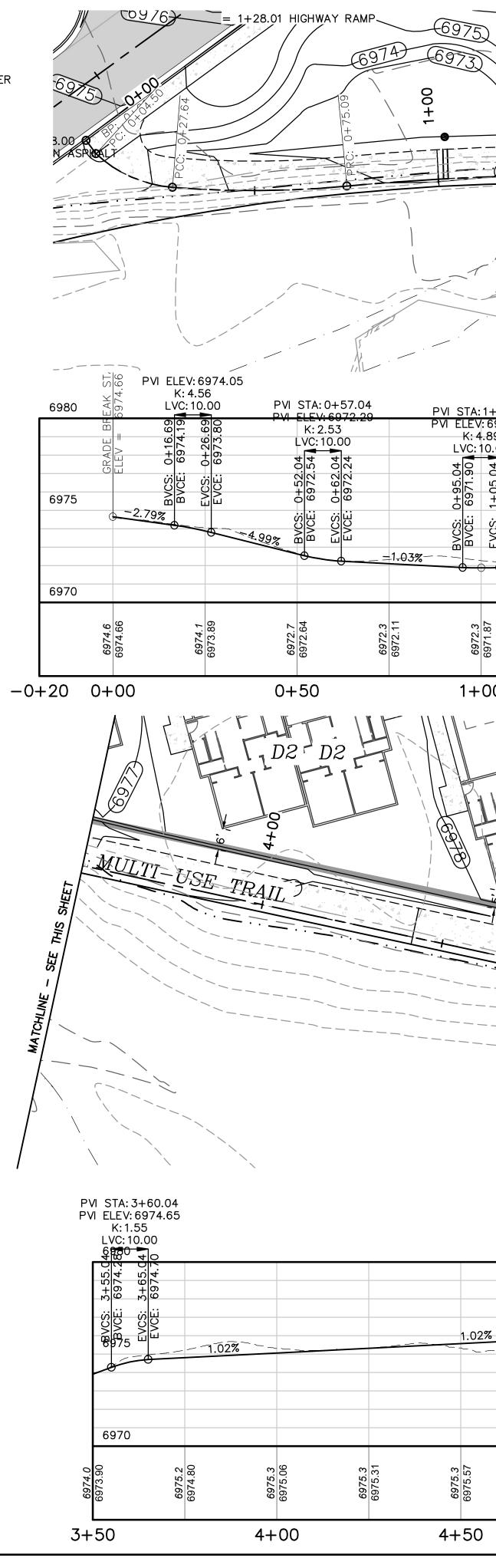
- 2. SEE LANDSCAPE ARCH PLANS FOR PROPER GROUND COVER MATERIAL AND TREE TYPE/LOCATION.
- 3. SEE LANDSCAPE ARCH PLANS FOR REQUIRED IRRIGATION PIPING SLEEVE UNDER CONCRETE/ ASPHALT.

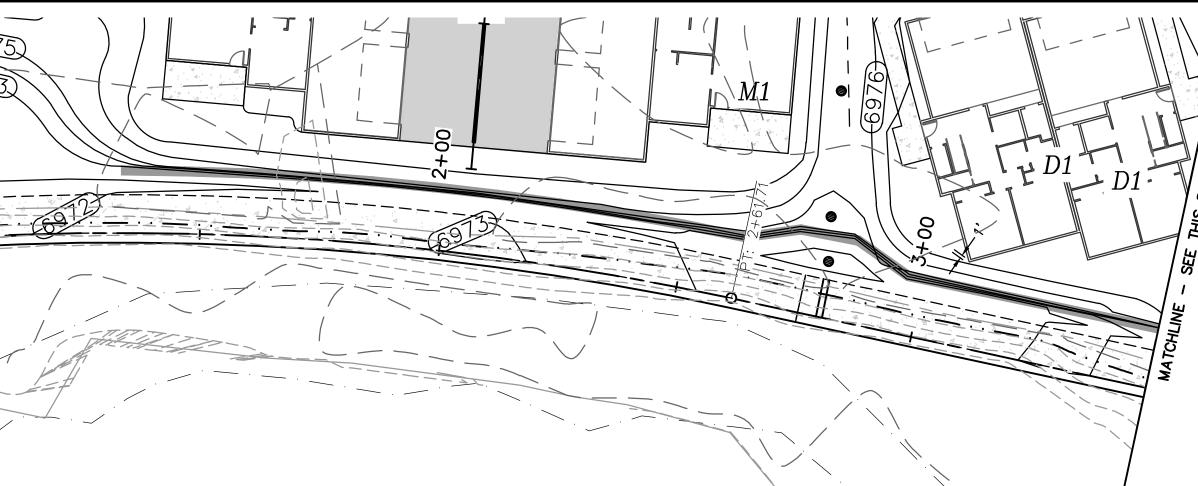


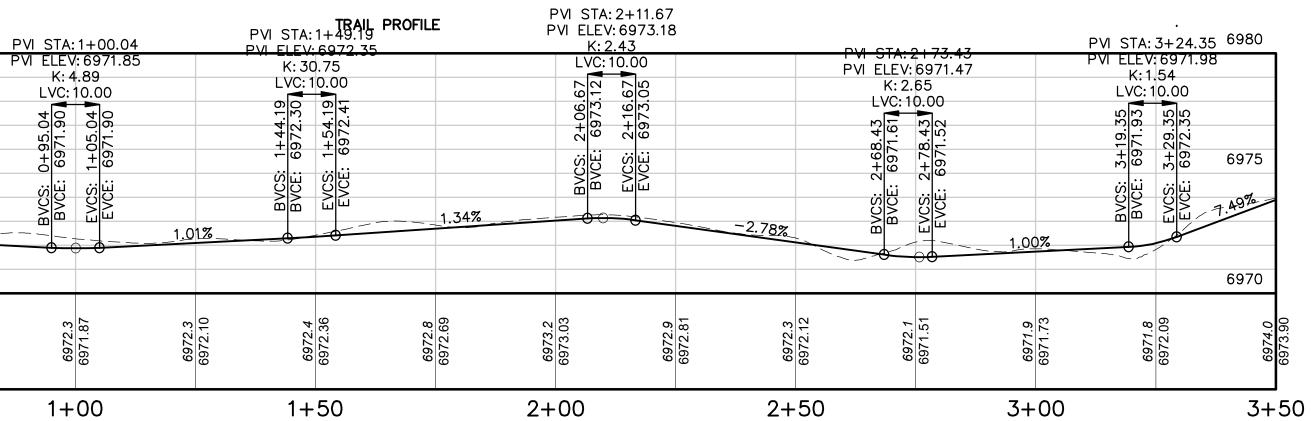


NOTES 1. UTILITY DESIGNS CAN BE FOUND IN SHEET SERIES U, SS.

- 2. SEE LANDSCAPE ARCH PLANS FOR PROPER GROUND COVER MATERIAL AND TREE TYPE/LOCATION.
- 3. SEE LANDSCAPE ARCH PLANS FOR REQUIRED IRRIGATION PIPING SLEEVE UNDER CONCRETE/ ASPHALT.





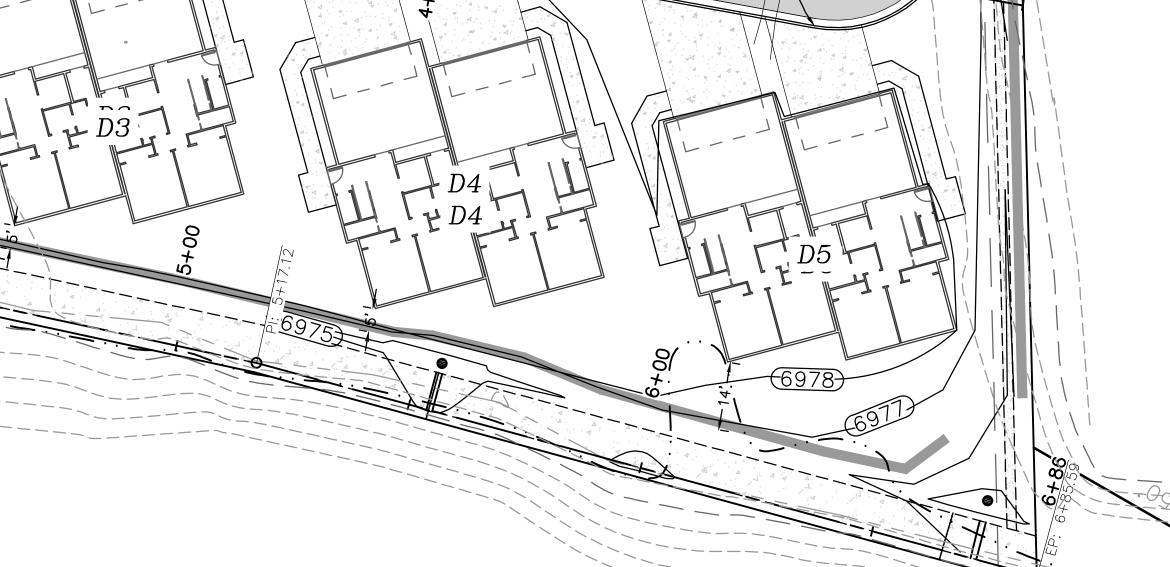


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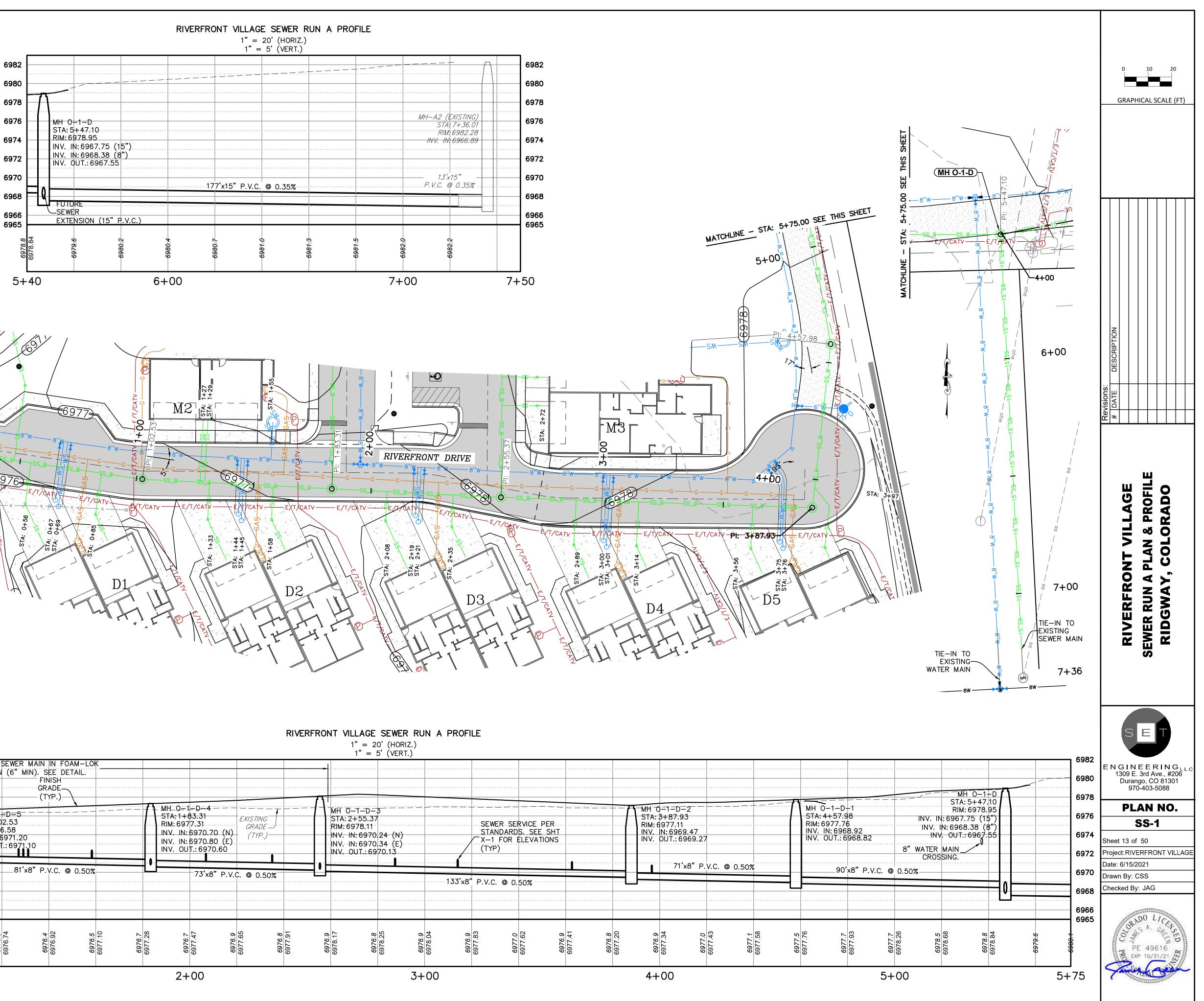


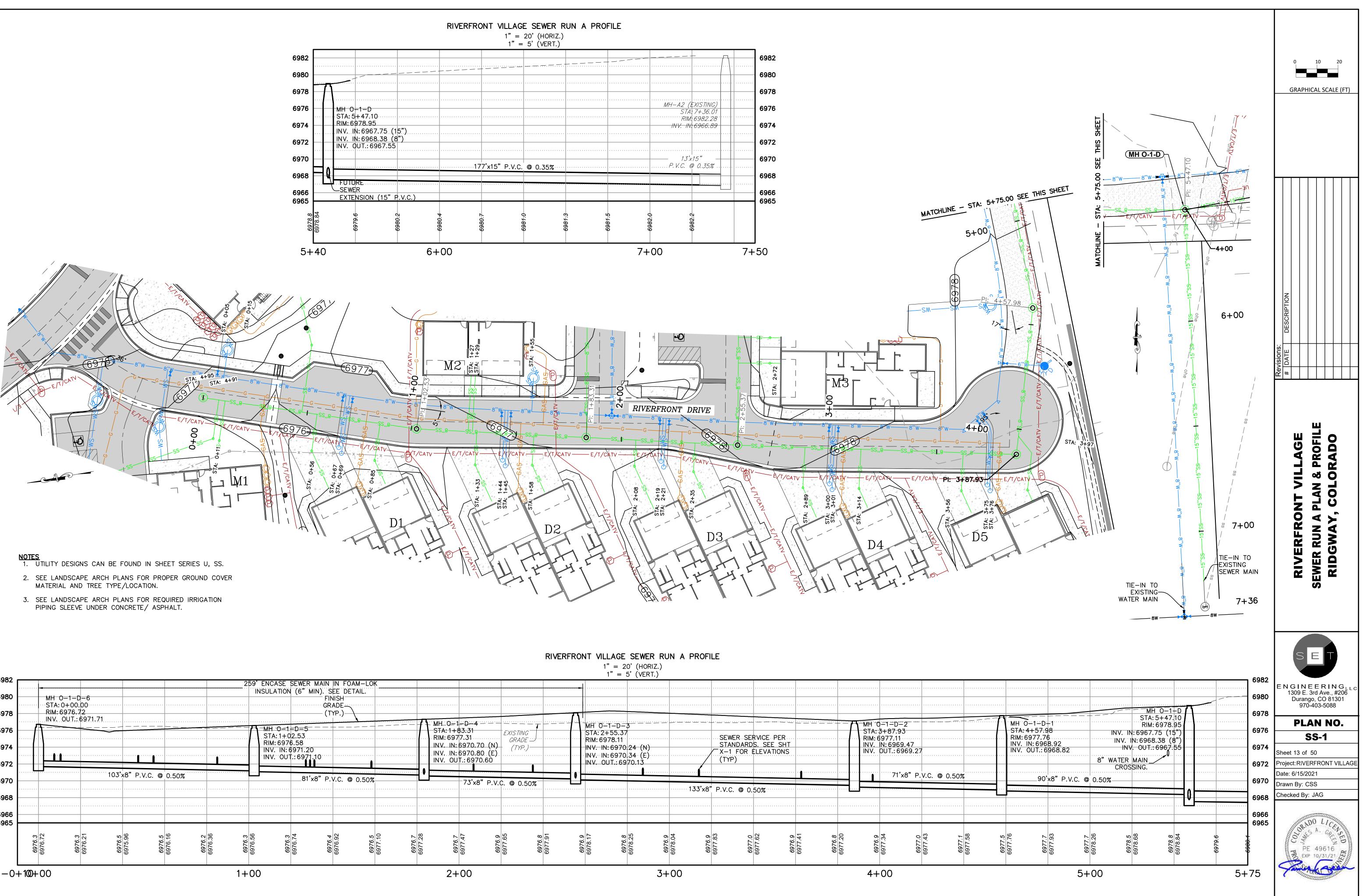
3+00

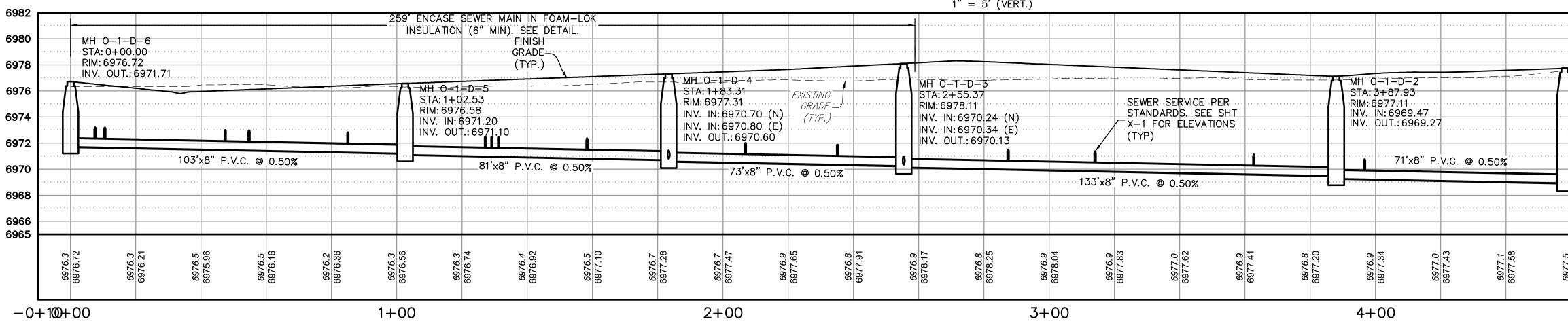


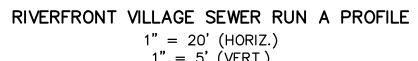
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										6970
02%		EVCS: EVCS: EVCS:	1.94%	LCCS: E	ECC: ECC: TOP ECC: ECC: ECC: ECC: ECC: ECC: ECC: ECC			BVCS: BVCE: EVCE: EVCE:		6975
		PVI STA: 4+97.35 PVI ELEV: 6976.05 K: 3.38 LVC: 10.00 <u>90 90 90 86 20 66 4</u> 4 99 90	TRAIL PROFILE	PVI STA: 5+55.12 PVI ELEV: 6974.93 K: 2.11 LVC: 10.00 <u>CFO CIO</u> <u>CO</u> <u>CFO CIO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u>CFO</u> <u></u>	PVI STA: 5+97.19 PVI ELEV: 6976.10 K: 2.63 LVC: 10.00 61.00	9 D		PVI STA: 6+65 PVI ELEV: 6975. K: 4.85 LVC: 10.00 <u>970 44</u> <u>966 49</u> <u>966 49</u>		6980

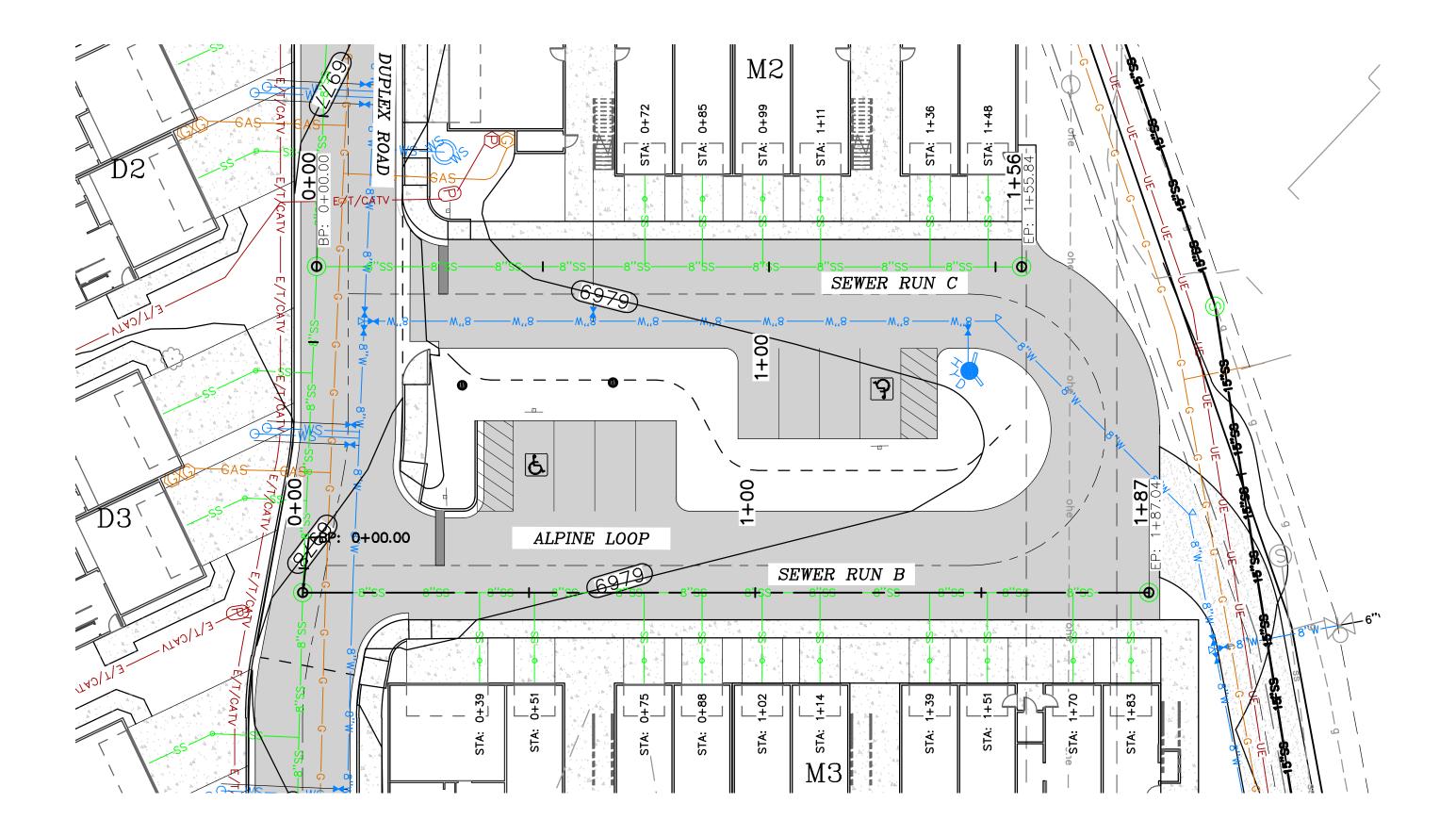








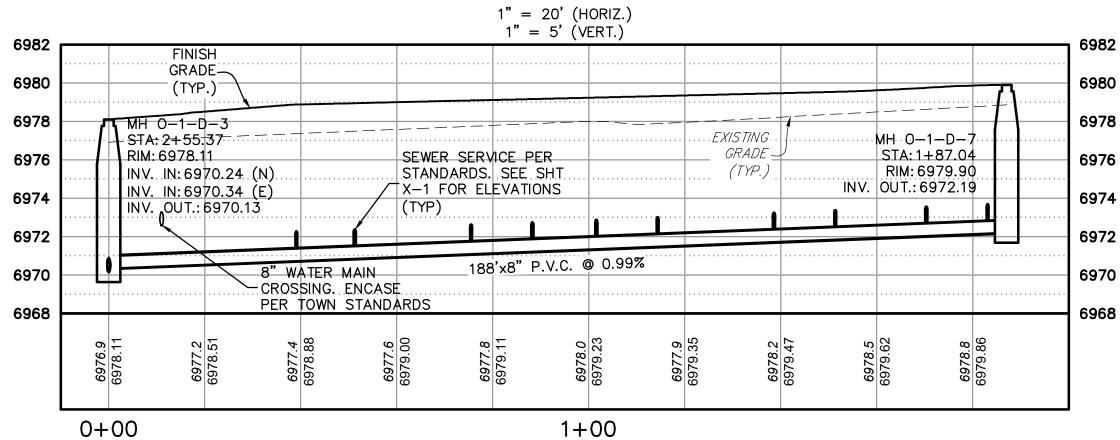




<u>NOTES</u>

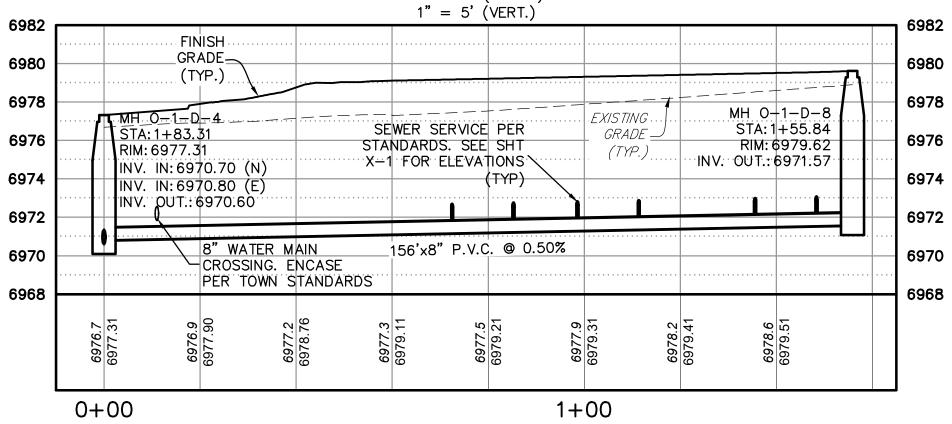
1. UTILITY DESIGNS CAN BE FOUND IN SHEET SERIES U, SS.

- 2. SEE LANDSCAPE ARCH PLANS FOR PROPER GROUND COVER
- 3. SEE LANDSCAPE ARCH PLANS FOR REQUIRED IRRIGATION
- MATERIAL AND TREE TYPE/LOCATION.
- PIPING SLEEVE UNDER CONCRETE/ ASPHALT.



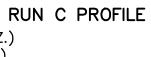
RIVERFRONT VILLAGE SEWER RUN B PROFILE

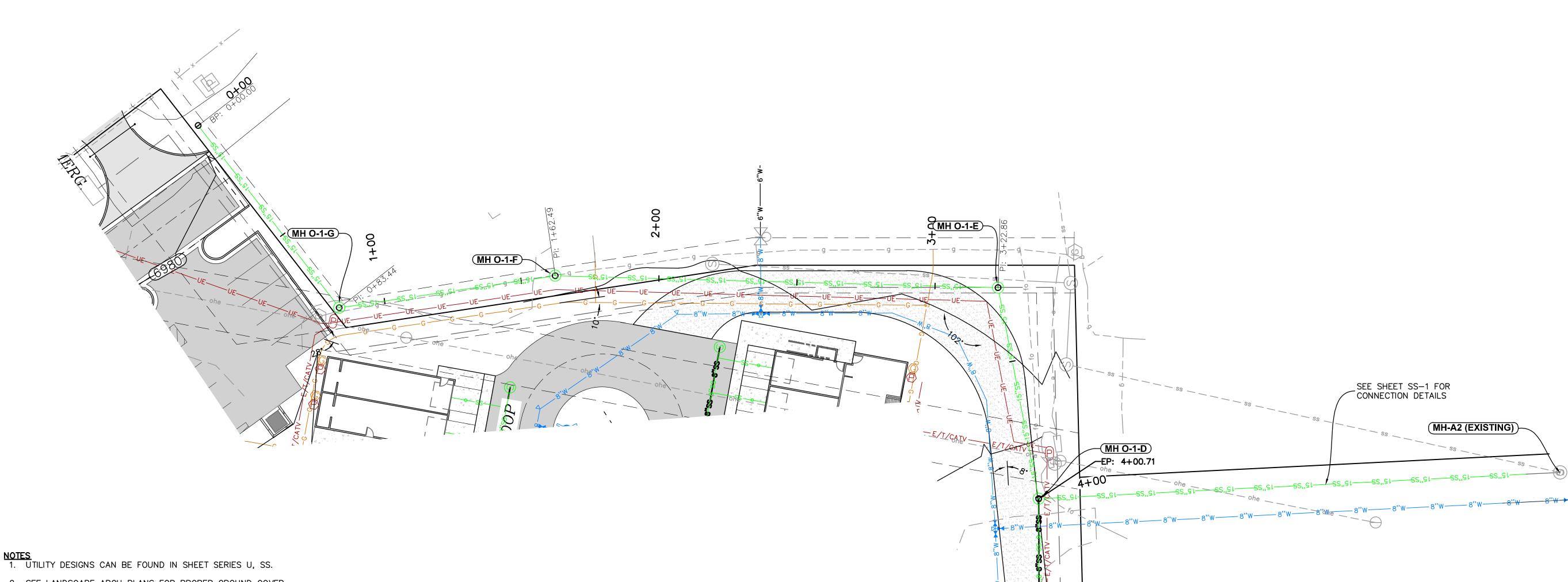
6982 6980 6978 6976 6974



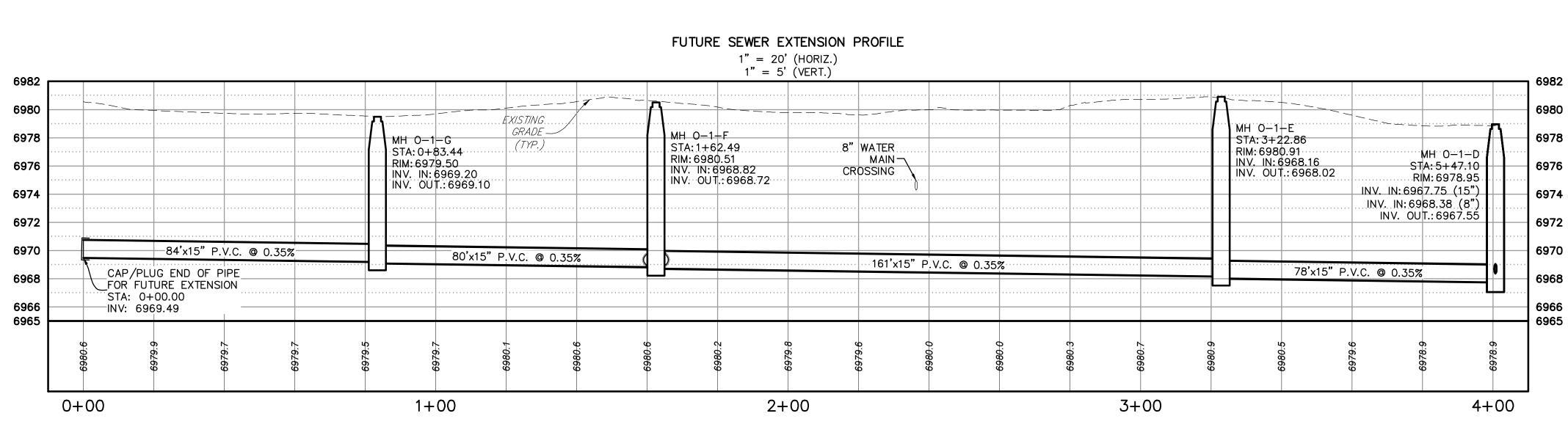
RIVERFRONT VILLAGE SEWER RUN C PROFILE 1" = 20' (HORIZ.)

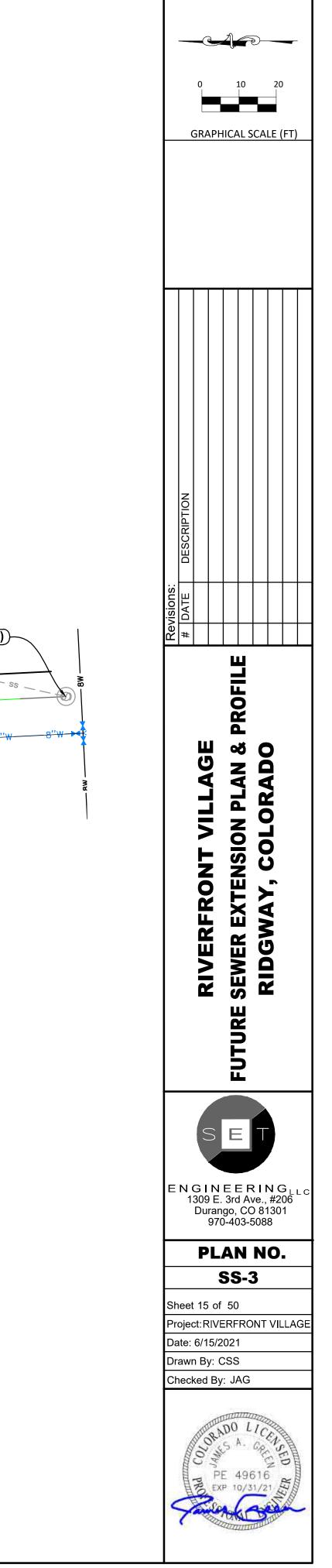


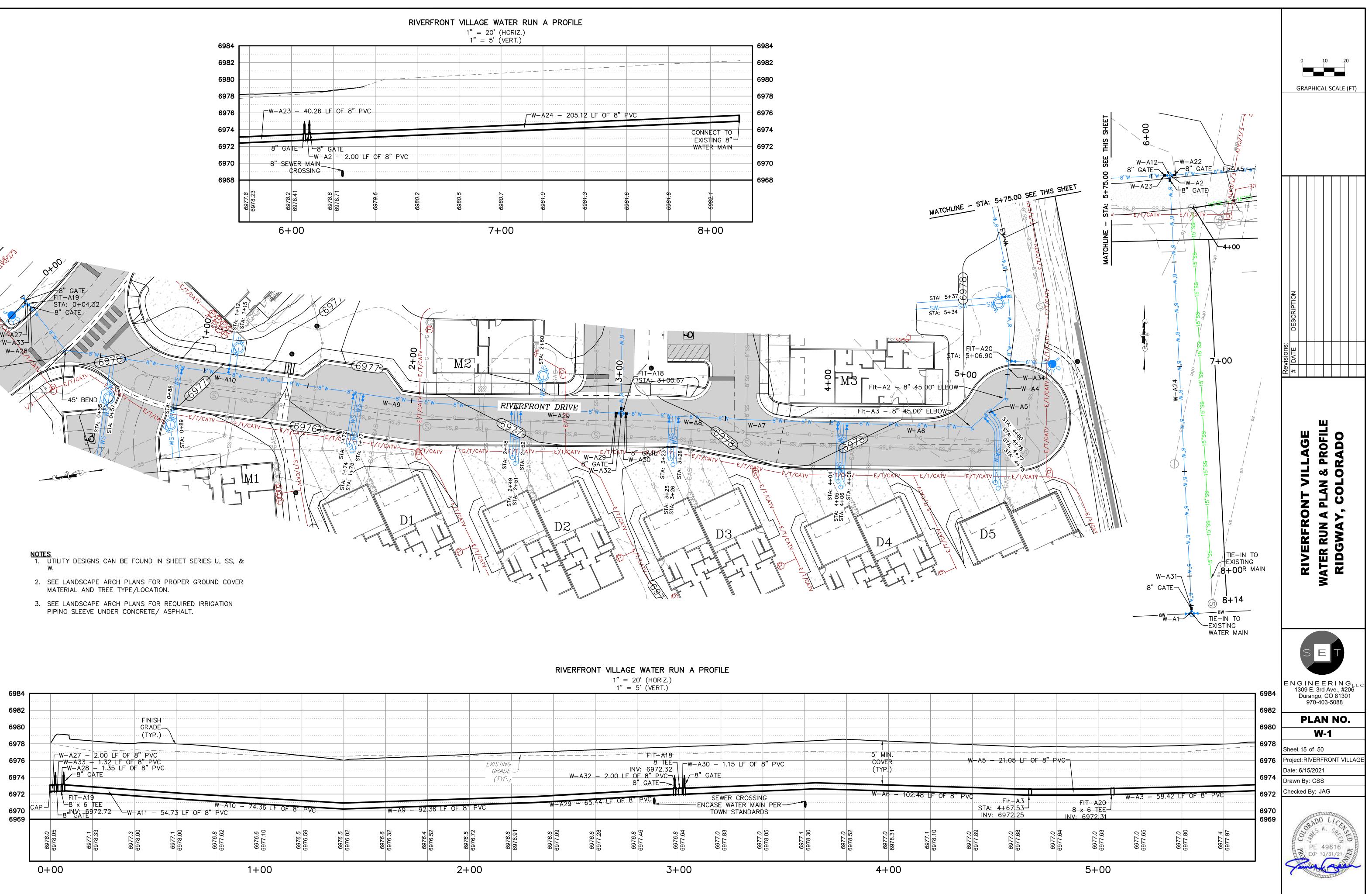


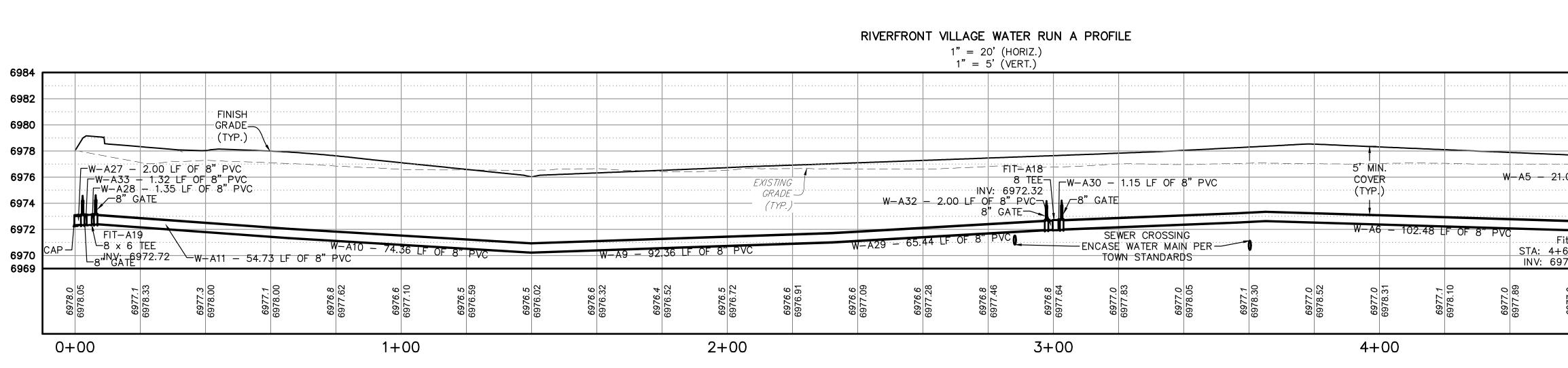


- 2. SEE LANDSCAPE ARCH PLANS FOR PROPER GROUND COVER MATERIAL AND TREE TYPE/LOCATION.
- 3. SEE LANDSCAPE ARCH PLANS FOR REQUIRED IRRIGATION PIPING SLEEVE UNDER CONCRETE/ ASPHALT.



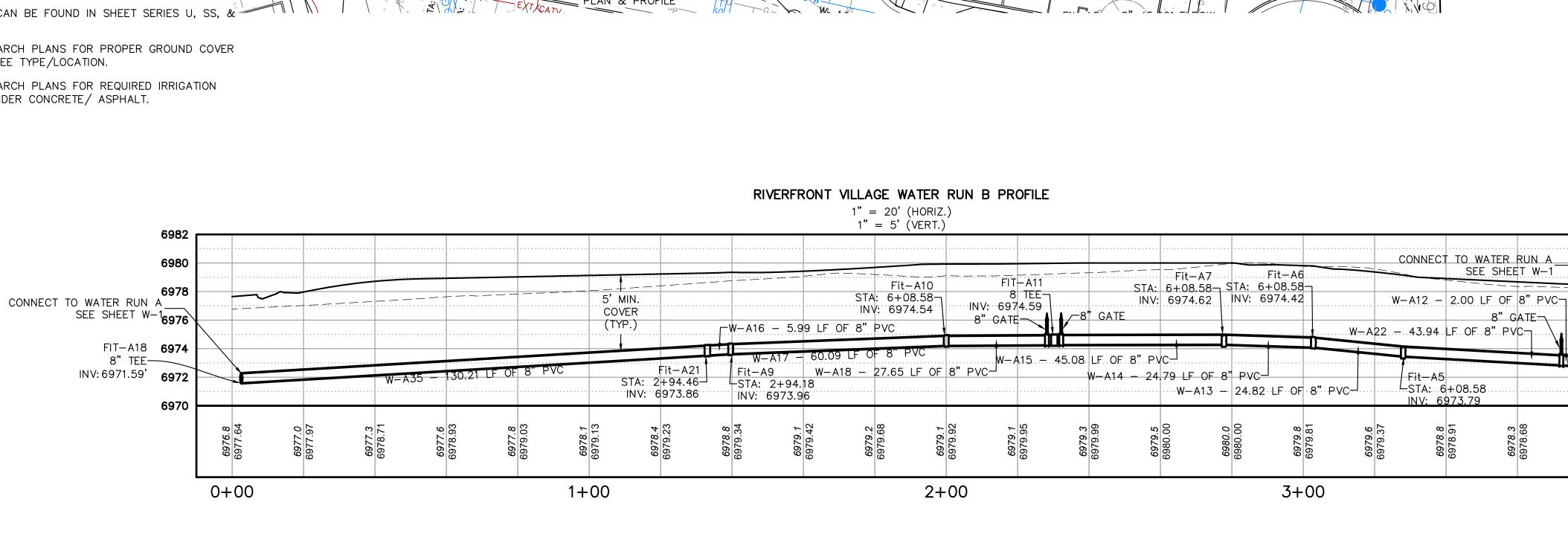






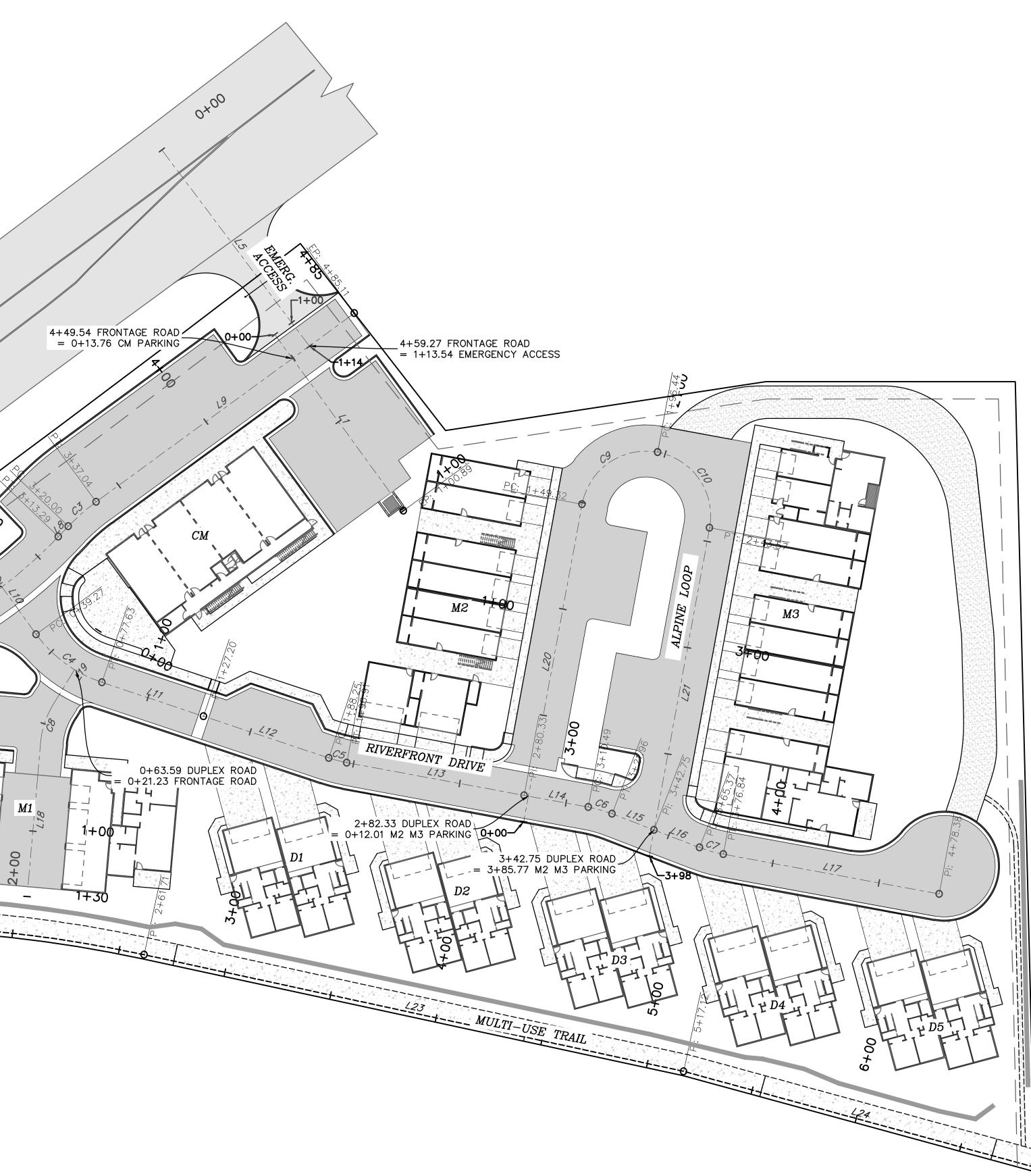


- NOTES 1. UTILITY DESIGNS CAN BE FOUND IN SHEET SERIES U, SS, & -W.
- 2. SEE LANDSCAPE ARCH PLANS FOR PROPER GROUND COVER MATERIAL AND TREE TYPE/LOCATION.
- SEE LANDSCAPE ARCH PLANS FOR REQUIRED IRRIGATION PIPING SLEEVE UNDER CONCRETE/ ASPHALT.

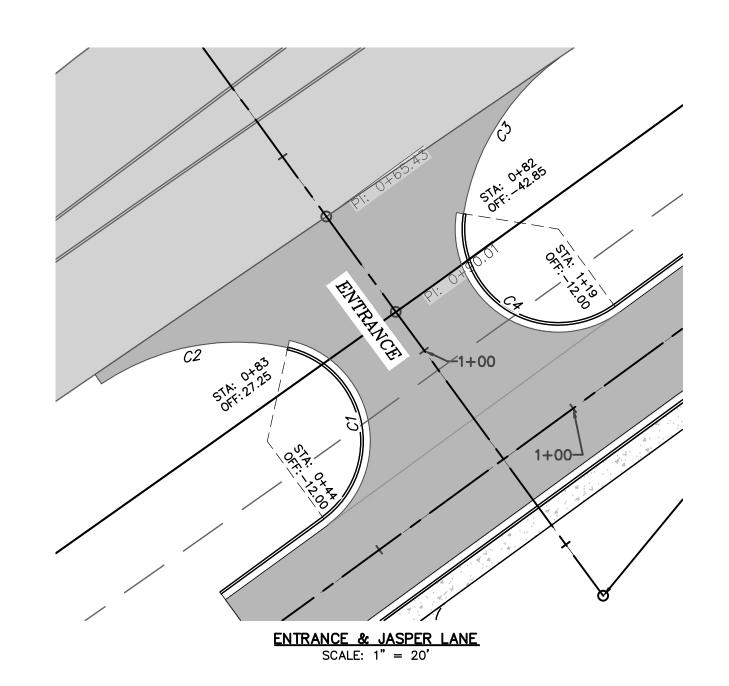


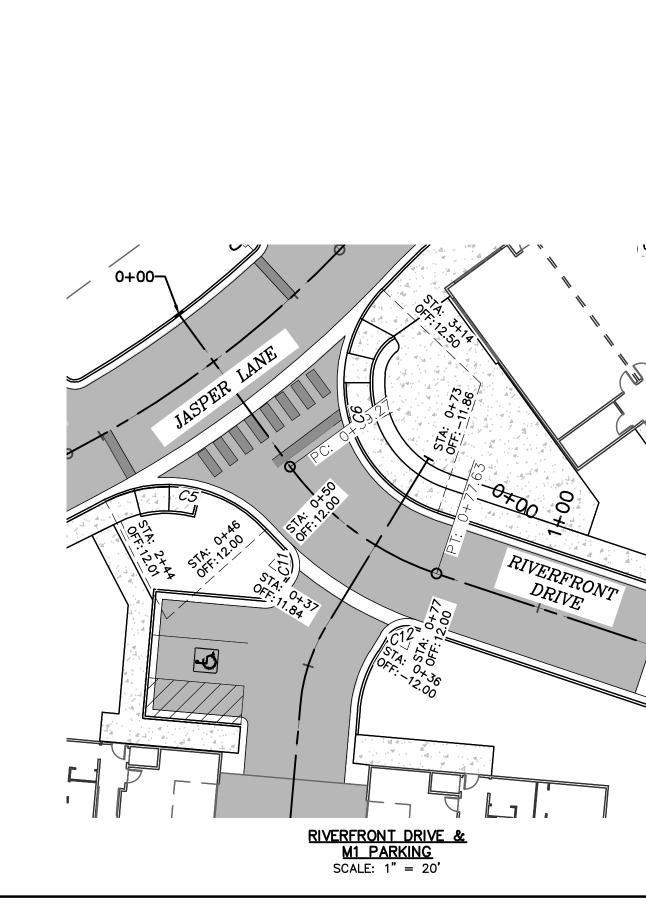
	O 10 20 GRAPHICAL SCALE (FT)
Revisions:	# DATE DESCRIPTION
	RIVERFRONT VILLAGE WATER RUN B PLAN & PROFILE RIDGWAY, COLORADO
E	NGINEERING _{LLC} 1309 E. 3rd Ave., #206 Durango, CO 81301 970-403-5088
Pr Da Dr	PLAN NO. W-2 neet 17 of 50 oject: RIVERFRONT VILLAGE ate: 6/15/2021 rawn By: CSS necked By: JAG
<	PE 49616 EXP 10/31/21

1 100.89 \$53*52'44"W 22 73.21 \$53*52'44"W 33 24.57 \$53*52'44"W 44 65.43 \$63*52'44"W 45 113.54 \$53*52'44"W 46 65.43 \$63*52'44"W 47 65.43 \$53*52'44"W 48 65.43 \$53*52'44"W 49 65.43 \$53*52'44"W 44 65.43 \$53*52'44"W 45 \$113.54 \$53*02'32"W 46 213.07 \$56*07'16"E 77 19.77 \$27'28'07"E 8 6.70 \$46*17'29"E 9 148.07 \$36*08'22"E 10 39.27 \$53*52'44"W 11 49.57 \$18*25'57"W 12 61.05 \$18*25'57"W 13 83.42 \$10*25'57"W 14 30.16 \$10*25'57"W 15 20.79 \$21*02'09"W 16 22.62 \$21*02'09"W 17 101.54 \$10*25'57"W 18 71.97 N84*57'56"W	L1 100.89 \$53'52'44"W L2 73.21 \$53'52'44"W L3 24.57 \$53'52'44"W L4 65.43 \$53'52'44"W L5 113.54 \$53'52'44"W L5 113.54 \$53'52'44"W L6 213.07 \$36'07'16"E L7 19.77 \$27'28'07"E L8 6.70 \$46'17'29"E L9 148.07 \$36'08'22"E L10 39.27 \$53'52'44"W L11 49.57 \$18'25'57"W L12 61.05 \$18'25'57"W L13 83.42 \$10'25'57"W L14 30.16 \$10'25'57"W L15 20.79 \$21'02'09"W L16 22.62 \$21'02'09"W L17 101.54 \$10'25'57"W L18 71.97 N84'57'56"W L19 40.89 N56'35'31"W L20 149.32 \$79'34'03"E L21 154.41 N79'34'03"W L22 4.50 \$53'52'44"W L22 4.50 \$5
2 73.71 Se352'44'W 3 74.77 Se352'44'W 4 66.43 Se352'44'W 5 113.54 Se350'44'W 5 113.54 Se350'44'W 6 213.57 Se300'16'E 6 213.57 Se300'16'E 6 213.57 Se300'16'E 6 213.57 Se300'16'E 6 215.57 Se350'44'W 6 6 22.000 11474 DIDSe'11' 6 8 35.000 11474 DIDSE'11' 6 9 20.999 47.122 BRCCCCCC 6 10 30.000 7.124 BRCCCCCC 6 10 30.000 7.124 BRCCCCCC 6 10 50.000 124 BRCCCCCC 6 10 50.000 16 5015' 6 12 267.741 47.453 CICCO15' 6 13 602.001 86.615 CI745'4' 14 30.16 SIG2537'W 15 20.22 52 322'30'E 7 154.41 N/934'03'W 22 4 56 S855'44'W 22 4 56 S855'44'W 22 4 56 S855'44'W 22 4 56 S855'44'W 24 108.40 SISTS11'W 7 10154 SIG2537'W 18 7.1140'W 7 1054.41 N/934'03'W 24 108.40 SISTS11'W 7 1054.41 N/934'03'W 7 1054.41 N/934'03'W 24 108.40 SISTS11'W 7 1054.41 N/934'03'W 7 1054.41 N/934'03'W 24 108.40 SISTS11'W 7 1054.41 N/934'03'W 7 1056.41 N/934'04'W 7 1056.41 N/934'W 7 1056.41 N/	L2 73.21 \$53*52'44"W L3 24.57 \$53*52'44"W L4 65.43 \$53*52'44"W L5 113.54 \$53*02'32"W L6 213.07 \$36*07'16"E L7 19.77 \$22728'07"E L8 6.70 \$46*17'29"E L9 148.07 \$35*08'22"E L10 39.27 \$55*52'44"W L11 49.57 \$18*25'57"W L12 61.05 \$18*25'57"W L13 83.42 \$10*25'57"W L14 30.16 \$10*25'57"W L15 20.79 \$21*02'09"W L14 30.16 \$10*25'57"W L15 20.79 \$21*02'09"W L16 22.62 \$21*02'09"W L17 101.54 \$10*25'57"W L18 71.97 N84*57'56"W L19 40.89 N58*35'31"W L20 149.32 \$79*34'03"E L21 154.41 N79*34'03"W L22 4.50 \$55*5'2'44"W L22 4.50 \$
3 24 57 853.52/44/W 4 66.43 53332/44/W 5 115.54 55302/22/W 6 23.67 53602/22/W 6 8.70 546772/26 6 8.70 546772/26 7 19.77 5272870/26 8 148.67 53602/27/W 10 33.27 53.52577W 11 49.57 51.822577W 12 61.05 51.822577W 13 83.42 51022577W 14 30.16 51022577W 15 83.42 51022577W 16 22.62 513025577W 17 10.15.4 51022557W 18 71.97 85457267W 17 10.15.4 51702557W 18 71.97 85457267W 19 40.88 Ne8.35131W 22 52.4141 173132126 21 164.41 173132127020FW 22 25.53 52714702FW 24 166.46 31516177W 0 <td>324.57S53'52'44"W.4$65.43$S53'52'44"W.5113.54S53'02'32"W.6213.07S36'07'16"E.719.77S27'28'07"E.8$6.70$S46'17'29"E.9148.07S36'08'22"E.9148.07S36'08'22"E.1039.27S53'52'44"W.1149.57S18'25'57"W.12$61.05$S18'25'57"W.1383.42S10'25'57"W.1430.16S10'25'57"W.1520.79S21'02'09"W.1622.62S21'02'09"W.17101.54S10'25'57"W.1871.97N84'57'56"W.1940.89N58'35'31"W.20149.32S79'34'03"E.21154.41N79'34'03"W.224.50S53'52'44"W.23255.41S12'11'40"W.24168.46S15'16'17"W</td>	324.57S53'52'44"W.4 65.43 S53'52'44"W.5113.54S53'02'32"W.6213.07S36'07'16"E.719.77S27'28'07"E.8 6.70 S46'17'29"E.9148.07S36'08'22"E.9148.07S36'08'22"E.1039.27S53'52'44"W.1149.57S18'25'57"W.12 61.05 S18'25'57"W.1383.42S10'25'57"W.1430.16S10'25'57"W.1520.79S21'02'09"W.1622.62S21'02'09"W.17101.54S10'25'57"W.1871.97N84'57'56"W.1940.89N58'35'31"W.20149.32S79'34'03"E.21154.41N79'34'03"W.224.50S53'52'44"W.23255.41S12'11'40"W.24168.46S15'16'17"W
4 66.43 5025244*W 5 113.34 5530232*W 6 215.07 526072*C 7 12.77 52725075 8 6.70 52617/29*E 8 6.70 52617/29*E 8 6.70 52617/29*E 8 6.70 52617/29*E 8 6.70 52617/29*E 10 30.27 55352*4*W 11 49.57 5152557*W 12 6.05 5152557*W 13 53.42 507557*W 14 50.16 5102557*W 15 22.73 521020*W 16 22.62 577W 17 101.84 5102557*W 18 7.197 NN457/54*W 19 40.18 5102557*W 12 101.44 70252*C 10 30.000 47.124 0900010*C 10 30.200 17.513 02572*30 11 36.200 186.616 01745*41* 12 40.32 577352*W 12 4.50 50552*4*W 23 154.41 775757*W 24 164 1775757*W 24 164 5151517*W 24 164.46 5151517*W 25 25.57 51211*40*W 26 0+22.00 FROMERTY 27 0+28.01 HIGHWAY 6MMP - 0+22.00 FROMERTY 0+28.01 HIGHWAY 6MMP - 0+22.00 FROMERTY 0+28.01 HIGHWAY 6MMP - 0+22.00 FROMERTY 0+28.01 HIGHWAY 6MMP - 0+22.00 FROMERTY 0+00 57 14 00 57 15 00000000 17.11 41 740 14 00 57 15 00000000000 17.12 000000000 17.12 0000000000 17.12 0000000000 17.12 0000000000 17.12 00000000000 17.12 00000000000 17.12 00000000000 17.12 00000000000 17.12 00000000000 17.12 000000000000 17.12 000000000000 17.12 0000000000000 17.12 000000000000 17.12 00000000000000 17.12 00000000000000 17.12 000000000000000000000000000000000000	L4 65.43 \$53;52'44"W L5 113.54 \$53;02'32"W L6 213.07 \$36;07'16"E L7 19.77 \$27;28'07"E L8 6.70 \$46'17'29"E L9 148.07 \$36'08'22"E L10 39.27 \$53;52'44"W L11 49.57 \$18'25'57"W L12 61.05 \$18'25'57"W L13 83.42 \$10'25'57"W L14 30.16 \$10'25'57"W L15 20.79 \$21'02'09"W L16 22.62 \$21'02'09"W L17 101.54 \$10'25'57"W L18 71.97 N84'57'56"W L19 40.89 N58'35'31"W L20 149.32 \$79'34'03"E L21 154.41 N79'34'03"W L22 4.50 \$53'52'44"W L22 4.50 \$53'52'44"W L23 255.41 \$12'11'40"W L24 168.46 \$15'16'17"W
5 113.84 \$63302132"A 48 213.07 \$3670716"E 7 19.77 \$272807"E 25 6.70 \$467726"E 26 148.07 \$36708726"E 27 149.77 \$36708726"E 28 144.807 \$36708726"E 29 144.807 \$36708727"E 10 39.22 \$36708727"E 11 49.57 \$1829557"E 12 61.05 \$1829557"E 13 40.42 \$1072537"E 14 30.16 \$1072537"E 15 20.78 \$21702.06"W 16 22.82 \$21702.06"W 17 101.34 \$1072537"W 18 71.97 N445756"W 21 154.41 N74.540.5% 22 4.60 \$535244"W 23 250.47 \$1071143"W 24 168.46 \$1071143"W 24 168.46 \$1071143"W 24 168.46 \$1071143"W 24 168.46 \$1071143"W	L5 113.54 \$53'02'32"W L6 213.07 \$36'07'16"E L7 19.77 \$27'28'07"E L8 6.70 \$46'17'29"E L9 148.07 \$36'08'22"E L10 39.27 \$55'52'44"W L11 49.57 \$18'25'57"W L12 61.05 \$18'25'57"W L13 83.42 \$10'25'57"W L14 30.16 \$10'25'57"W L15 20.79 \$21'02'09"W L16 22.62 \$21'02'09"W L17 101.54 \$10'25'57"W L15 20.79 \$21'02'09"W L16 22.62 \$21'02'09"W L17 101.54 \$10'25'57"W L15 20.79 \$21'02'09"W L16 22.62 \$21'02'09"W L17 101.54 \$10'25'57"W L20 149.32 \$79'34'03"W L22 4.50 \$53'52'44"W L22 4.50 \$55'35'244"W L22 255.41 \$12'1'1'40"W L23 255.41
-6 213.02 S36*0716*C .2 19.72 S0728*C7T .3 6.70 Sx401722*E .9 148.07 S36*0212*E .9 148.07 S35*274**E .9 148.07 S102557*E .10 39.27 S370257*E .11 49.67 S12*0257*E .12 61.05 S12*0257*E .13 83.42 S1072557*E .14 30.16 S1072557*E .15 20.79 S21*02*05*E .16 71.07 M44 5/56*E .17 101 34 S102557*E .18 71.87 M44 5/56*E .17 101 34 S102557*E .18 71.87 M44 5/56*E .14 140.58 N5835*31*E .12 141.41 N703*0*E .12 144.83 N1070*1*E .13 152.41 N705*0*E .14 19.52 S10*0*1*E .14 101.52 S10*0*1*E .14 101.52 S10*0*1*E	L6 213.07 S3607'16"E L7 19.77 S27'28'07"E L8 6.70 S46'17'29"E L9 148.07 S36'08'22"E L10 39.27 S53'52'44"W L11 49.57 S18'25'57"W L12 61.05 S18'25'57"W L13 83.42 S10'25'57"W L14 30.16 S10'25'57"W L15 20.79 S21'02'09"W L16 22.62 S21'02'09"W L17 101.54 S10'25'57"W L18 71.97 N84'57'56"W L20 149.32 S79'34'03"E L21 154.41 N79'34'03"W L22 4.50 S53'52'44"W L21 154.41 N79'34'03"W L22 4.50 S53'52'44"W L23 255.41 S12'11'40"W L24 168.46 S15'16'17"W
2/2 18.77 \$27226077 8 6.70 \$4617297 9. 17.807 \$36082244" 10 39.27 \$536082244" 11 49.57 \$1825677% 12 61.05 \$1825677% 13 83.27 \$1825677% 14 30.16 \$1625677% 15 22.78 \$2102067% 14 30.16 \$1625677% 15 22.78 \$2102067% 16 71.97 \$8457561% 16 71.97 \$8457561% 17 14 30.16 18 20.78 \$2102067% 17 101.84 \$16725774 18 21.97 \$21162067% 19 40.89 \$167567% 21 154.41 \$70774107 22 4.50 \$5075244"% 22 4.50 \$50752741 24 188.46 \$1518177% 2 16.7667% 2 16.7740 19 0+28.00 FIGHWAY FAMP <td< td=""><td>L7 19.77 \$27'28'07"E L8 6.70 \$46'17'29"E L9 148.07 \$36'08'22"E L10 39.27 \$53'52'44"W L11 49.57 \$18'25'57"W L12 61.05 \$18'25'57"W L13 83.42 \$10'25'57"W L14 30.16 \$10'25'57"W L15 20.79 \$21'02'09"W L16 22.62 \$21'02'09"W L17 101.54 \$10'25'57"W L18 71.97 N84'57'56"W L9 149.32 \$79'34'03"E L20 149.32 \$79'34'03"E L21 154.41 N79'34'03"W L22 4.50 \$53'52'44"W L21 154.41 N79'34'03"W L22 4.50 \$53'52'44"W L23 255.41 \$12'11'40"W L24 168.46 \$15'16'17"W</td></td<>	L7 19.77 \$27'28'07"E L8 6.70 \$46'17'29"E L9 148.07 \$36'08'22"E L10 39.27 \$53'52'44"W L11 49.57 \$18'25'57"W L12 61.05 \$18'25'57"W L13 83.42 \$10'25'57"W L14 30.16 \$10'25'57"W L15 20.79 \$21'02'09"W L16 22.62 \$21'02'09"W L17 101.54 \$10'25'57"W L18 71.97 N84'57'56"W L9 149.32 \$79'34'03"E L20 149.32 \$79'34'03"E L21 154.41 N79'34'03"W L22 4.50 \$53'52'44"W L21 154.41 N79'34'03"W L22 4.50 \$53'52'44"W L23 255.41 \$12'11'40"W L24 168.46 \$15'16'17"W
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9. 146.07 536'08'22'T 10. 38.27 5555'44'8 11. 49.57 518'25'57'W 12. 61.05 518'25'57'W 13. 83.42 510'25'57'W 14. 30.16 510'25'57'W 15. 20.79 521'02'57'W 16. 22.62 521'02'50'W 17. 101.54 510'25'57'W 18. 71.97 N84'57'56'W 19. 40.68 N82'35'3'W 20. 14.01 72'34'03'W 21. 154.41 N72'34'03'W 22. 450 5550'24'W 23. 255.71 615'17'W 24. 108.46 5151'6'17'W - 0+22.01 HIGHWAY PAMP - 0+20.01 HIGHWAY PAMP - 0+2	L9 148.07 \$36'08'22"E L10 39.27 \$53'52'44"W L11 49.57 \$18'25'57"W L12 61.05 \$18'25'57"W L13 83.42 \$10'25'57"W L14 30.16 \$10'25'57"W L15 20.79 \$21'02'09"W L16 22.62 \$21'02'09"W L17 101.54 \$10'25'57"W L18 71.97 N84'57'56"W L19 40.89 N58'35'31"W L20 149.32 \$79'34'03"E L21 154.41 N79'34'03"W L22 4.50 \$53'52'44"W L22 4.50 \$53'52'44"W L24 168.46 \$15'16'17"W
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13 63.42 St02957"W 14 30.16 St02557"W 15 20.79 S21702'09"W 16 22.62 S21702'09"W 17 101.54 S1025'57"W 18 71.97 N84'57'56"W 19 40.89 N98'33'3"W 20 145.32 S79'34'03"E 21 154.41 N79'34'03"W 22 4.50 S53'52'44"W 22 4.50 S53'52'44"W 24 168.46 S15'16'17"W 24 168.46 S15'16'17"W 24 168.46 S15'16'17"W 24 168.46 S15'16'17"W 20 142.23 0PLEB 21 154.41 N79'54'03"E 24 168.46 S15'16'17"W 24 108.46 S15'16'17'W 24 108.46 S15'16'17'W 20 FRONTAGE 0.40 21 0.42.00'FRONTAGE 0.40 21 0.42.00'FRONTAGE 0.40 22 0.400'FRONTAGE 0.40	L13 83.42 S10'25'57"W L14 30.16 S10'25'57"W L15 20.79 S21'02'09"W L16 22.62 S21'02'09"W L17 101.54 S10'25'57"W L18 71.97 N84'57'56"W L19 40.89 N58'35'31"W L20 149.32 S79'34'03"E L21 154.41 N79'34'03"W L22 4.50 S53'52'44"W L23 255.41 S12'11'40"W L24 168.46 S15'16'17"W
14 30.16 \$102557"W 15 20.79 \$210209"W 16 22.62 \$2102597"W 18 71.97 N845756"W 18 71.97 N845756"W 19 40.89 N5635731"W 20 148.32 \$7934'03"E 21 154.41 N7934'03"E 21 154.41 N7934'03"E 22 4.56 \$63552'44"W 22 4.56 \$5352'44"W 24 168.45 \$1516'17"W 20 0+28.01-HICHWAY MAP 21 0+28.01-HICHWAY MAP 24 0+82.00 FRONTAGE OAD 25 0+104.50 E <tr< td=""><td>L14 30.16 $S10'25'57'W$ L15 20.79 $S21'02'09'W$ L16 22.62 $S21'02'09'W$ L17 101.54 $S10'25'57'W$ L18 71.97 $N84'57'56'W$ L19 40.89 $N58'35'31'W$ L20 149.32 $S79'34'03''E$ L21 154.41 $N79'34'03''W$ L22 4.50 $S53'52'44''W$ L23 255.41 $S12'11'40'W$ L24 168.46 $S15'16'17''W$</td></tr<>	L14 30.16 $S10'25'57'W$ L15 20.79 $S21'02'09'W$ L16 22.62 $S21'02'09'W$ L17 101.54 $S10'25'57'W$ L18 71.97 $N84'57'56'W$ L19 40.89 $N58'35'31'W$ L20 149.32 $S79'34'03''E$ L21 154.41 $N79'34'03''W$ L22 4.50 $S53'52'44''W$ L23 255.41 $S12'11'40'W$ L24 168.46 $S15'16'17''W$
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16 22.62 \$\$1'02'09'W 17 101.54 \$102557'W 18 71.97 N84'57'56'W 19 40.89 N58'35'31'W 20 149.32 \$79'34'03'E 21 154.41 N79'34'03'W 22 4.50 \$53'52'44'W 23 255.41 \$12'11'40'W 24 168.46 \$15'16'17'W 0 48'10'00'W 24 168.46 \$15'16'17'W 0 90'W 0 90'W 0 90'W 0 168'W 0 168'W 0 168'W 0 168'W 0 160'W 0 160	L16 22.62 $S21'02'09''W$ L17 101.54 $S10'25'57''W$ L18 71.97 $N84'57'56''W$ L19 40.89 $N58'35'31''W$ L20 149.32 $S79'34'03''E$ L21 154.41 $N79'34'03''W$ L22 4.50 $S53'52'44''W$ L23 255.41 $S12'11'40''W$ L24 168.46 $S15'16'17''W$
18 71.97 N84*57'56"W 19 40.89 N58*35'31"W 20 149.32 579'34'03"E 21 154.41 N78'34'03"W 22 4.50 555'24"W 23 255.41 512'11'0'W 24 188.46 515'16'17'W 0 19 19 0 19 19 0 19 19 19 19.46 515'16'17'W 0 19 19 0 19 19 0 19 19 19 19 19 19 19 19 10 19 10 10 19 19 10 10 10 10 10 10 11 10 10 11 10 10 11 10 10 11 10 10 11 10 10 12 10 10 14 10	L18 71.97 N84*57'56"WL19 40.89 N58*35'31"WL20 149.32 $S79*34'03"E$ L21 154.41 N79*34'03"WL22 4.50 $S53*52'44"W$ L23 255.41 $S12*11'40"W$ L24 168.46 $S15*16'17"W$
19 40.89 N58'35'31'W 20 149.32 S79'34'03'E 21 154.41 N79'34'03'W 22 4.50 S53'52'44'W 23 255.41 S15'16'17'W 24 168.46 S15'16'17'W 0 0 0 0 0 <t< td=""><td>L19$40.89$N58*35'31"WL20149.32S79*34'03"EL21154.41N79*34'03"WL224.50S53*52'44"WL23255.41S12*11'40"WL24168.46S15*16'17"W</td></t<>	L19 40.89 N58*35'31"WL20149.32S79*34'03"EL21154.41N79*34'03"WL224.50S53*52'44"WL23255.41S12*11'40"WL24168.46S15*16'17"W
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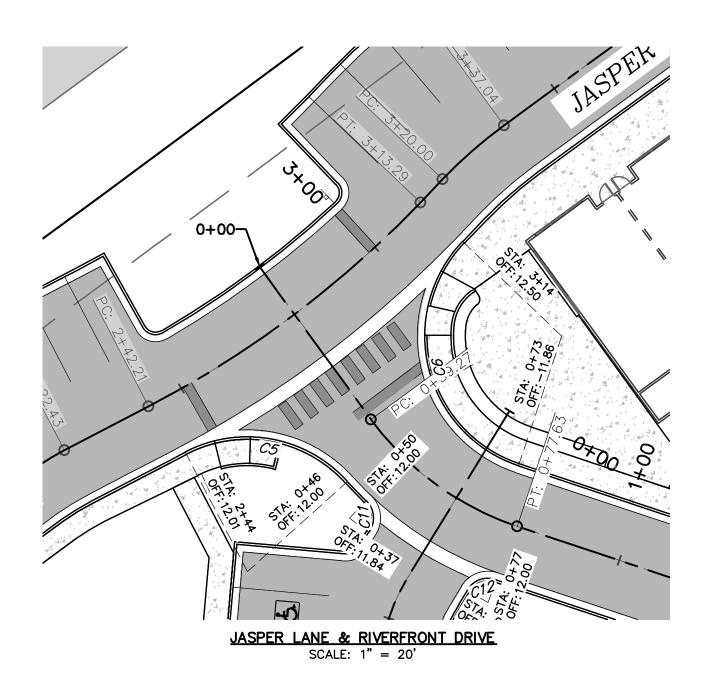




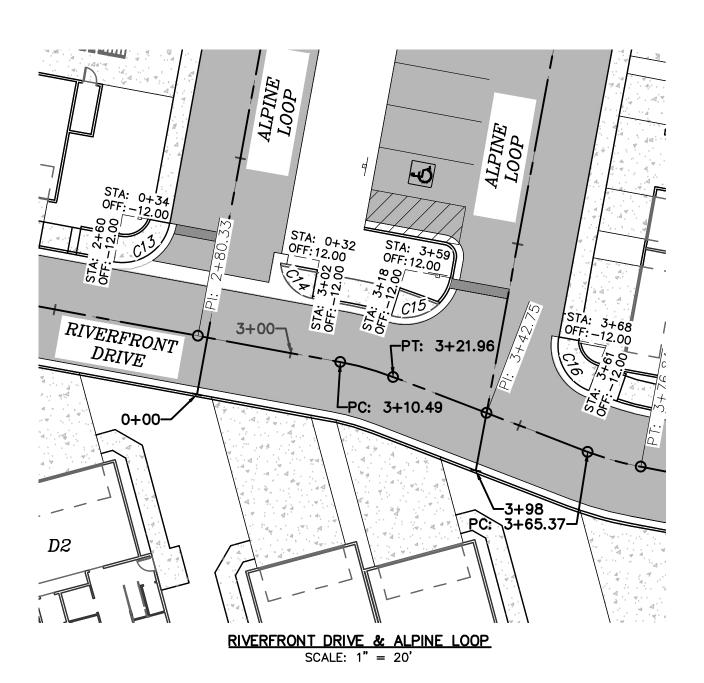


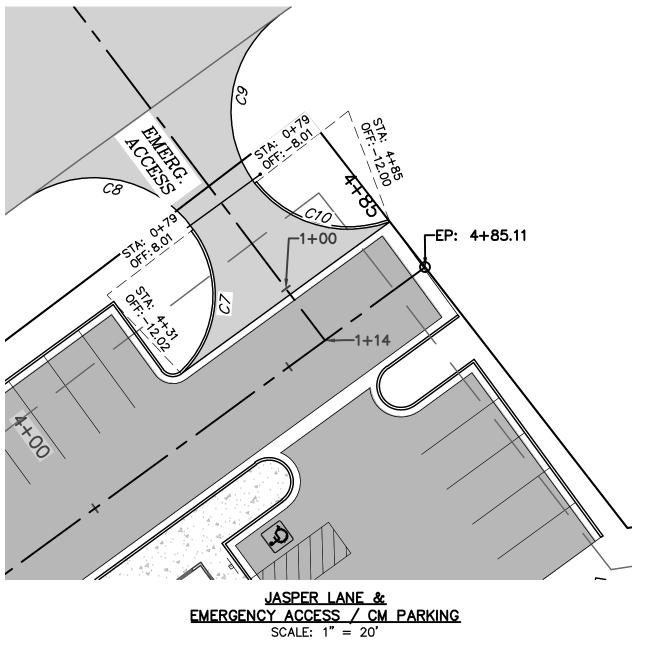


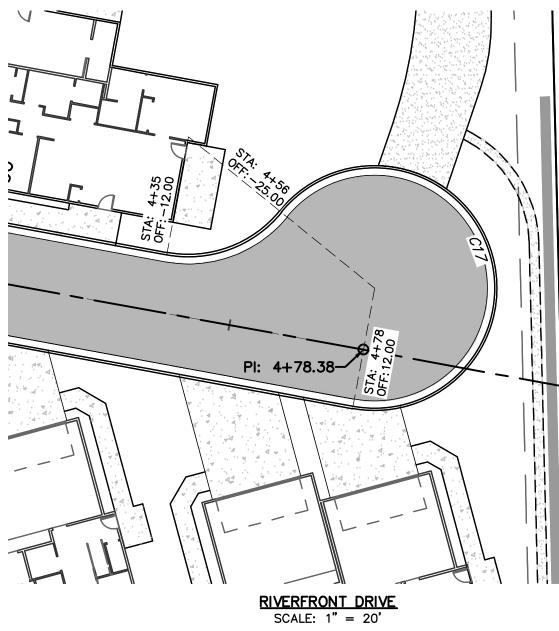
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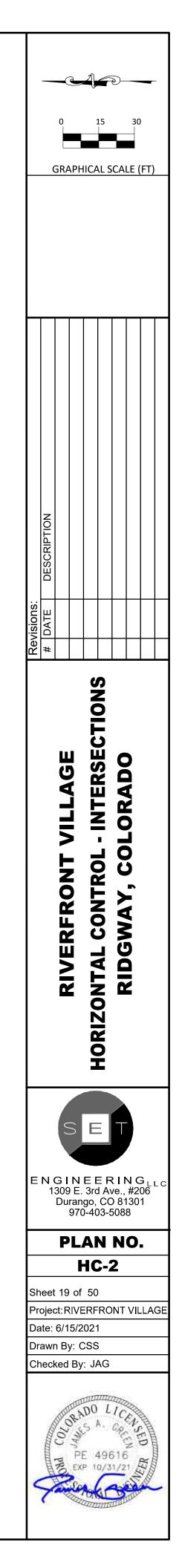


Curve Table						
Curve #	Length	Radius	Delta	Chord Direction	Chord Length	
C6	57.34	28.50	115.28	S76°04'14"W	48.15	
C12	6.72	5.00	77.02	N20°04'47"W	6.23	
C5	36.89	28.00	75.48	N10° 16' 20"E	34.28	
C13	15.71	10.00	90.00	S34°34'03"E	14.14	
C16	13.86	10.00	79.40	S60°44'03"W	12.77	
C15	10.58	10.00	60.61	S13°08'34"E	10.09	
C4	47.24	20.00	135.32	S31°32'26"W	37.00	
C2	40.65	50.00	46.59	N11°02'32"W	39.54	
С3	38.99	50.00	44.68	N58°27'34"W	38.01	
C1	45.95	20.00	131.63	N78°03'53"E	36.49	
C17	105.29	25.00	241.31	N69°46'31"E	43.01	
C10	31.33	24.59	72.99	S15°54'30"W	29.25	
С7	32.69	22.66	82.63	N85°49'15"W	29.93	
C11	7.19	5.00	82.36	N84°52'53"E	6.58	
C14	10.54	8.00	75.52	S48°11'38"W	9.80	
C8	39.96	25.00	91.58	N9°31'09"E	35.84	
C9	39.35	25.00	90.19	N81° 37' 04"W	35.41	









Parcel L		ine Table
Line #	Length	Direction
L1	32.98	S61°20'10.77"W
L2	151.75	S18°20'10.77"W
L3	68.11	S12°54'12.69"W
L4	55.97	S12°54'12.69"W
L5	102.48	S11° 53' 26.78"W
L6	21.05	S30° 36' 33.22"E
L7	9.70	S73° 34' 37.83"E
L8	42.94	N87°07'29.26"E
L9	209.35	S2°52'30.74"E
L10	46.72	N86°07'29.26"E
L11	25.11	N64° 37' 29.26"E
L12	25.08	N20° 37' 29.26"E
L13	47.45	S0°21'05.87"E
L14	60.44	S34°34'02.68"E
L15	139.62	N79°34'02.68"W
L16	102.53	S18°20'10.77"W
L17	80.78	S12°54'12.69"W
L18	72.07	S12°54'12.69"W
L19	132.55	S11°53'26.78"W
L20	70.05	S73°34'37.83"E

Curve Table						
Curve #	Length	Radius	Delta	Chord Direction	Chord Length	
С3	67.36	200.00	19.30	S83°13'34"E	67.04	
C1	47.41	500.00	5.43	S15° 37' 12"W	47.39	
C2	8.84	500.00	1.01	S12°23′50"W	8.84	

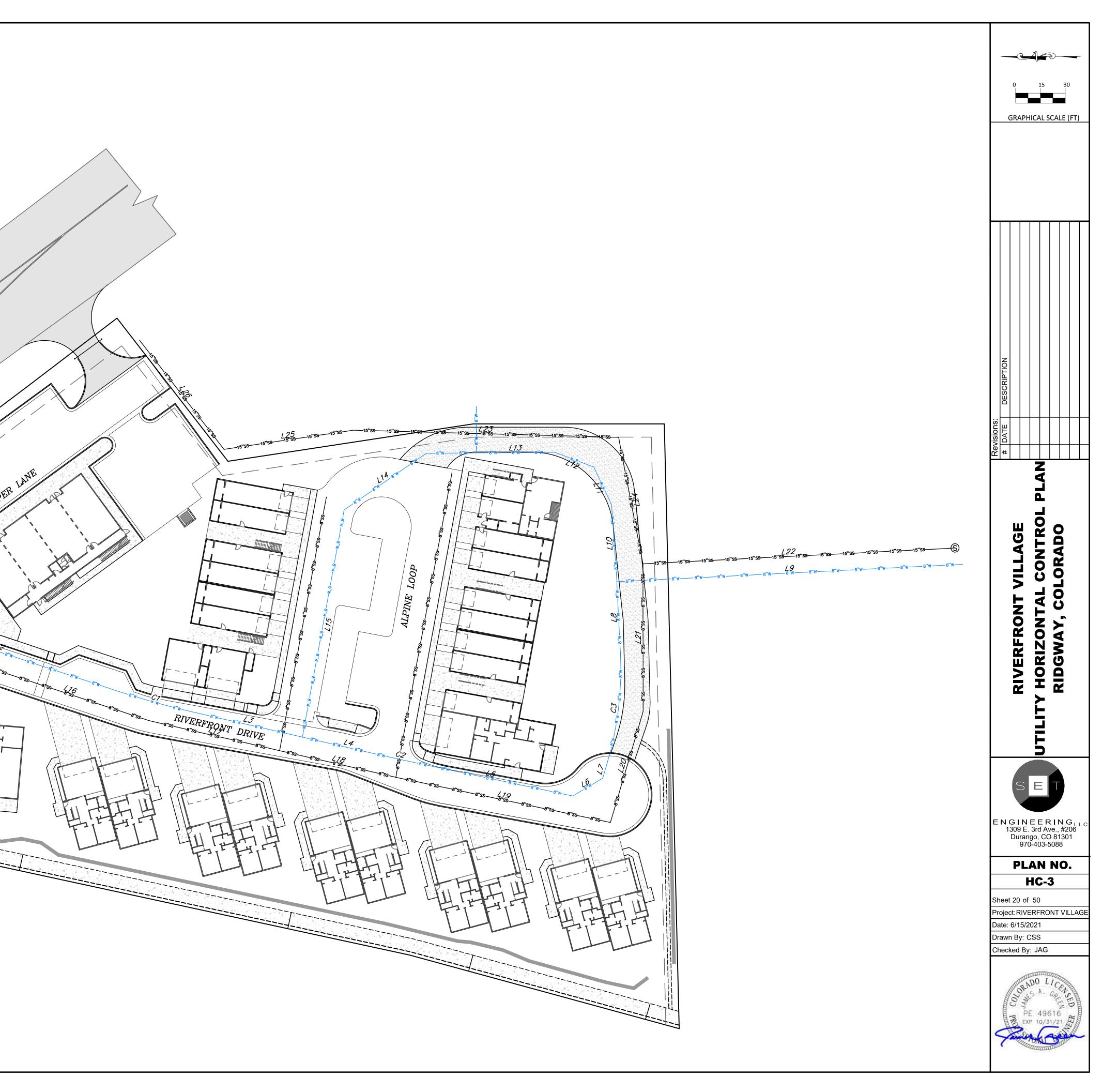
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Pc	arcel L	ine Table
Line #	Length	Direction
L21	89.12	N89°53'08.47"E
L22	176.56	S2°53′41.66"E
L23	160.37	S1°32'59.96"W
L24	77.84	S79°06'34.16"W
L25	79.05	S8°25′44.45"E
L26	83.44	S52°15'55.83"W

LANE

TASPER

ENTRI



FOAM-LOKTM **Pipeline Utility Foam**

Product Use and Design

Pipeline Utility Foam is a two component spray applied rigid urethane foam system, designed using an EPA approved Zero ODP blowing agent. Pipe Line Utility Foam may be sprayed in lift thicknesses of up to 3 feet without excessive heat buildup, splitting or scorching when applied properly.

- **Recommended Product Applications**
- Assist in erosion control Provide additional support prior to the back fill of the ditch Protect pipes placed over rock or other hard surfaces
- Provide support under hanging pipes
- Recommended Processing Parameters

Optimum hose pressure and temperature may vary as a function of the type of equipment, ambient and substrate conditions, and the specific application. It is the responsibility of the applicator to properly interpret equipment technical literature, particularly information that relates acceptable combinations of gun chamber size, proportioner output, and material pressures.

Processing Designation	Pipe Utility Foam
Equipment Dynamic Pressure	1,000 - 1,400 psi
Preheat Temperature	105 - 125 ºF (40 - 52º C)
Hose Heat Temperature	105 - 125 ºF (40 - 52º C)
Drum Storage Temperature	65 - 85 ºF (18 - 30 ºC)
Material Shelf Life	Six (6) months when stored within recommended temperature range.

 2:1 transfer pumps are recommended for material transfer from container to the proportioner.

CAUTION: Extreme care must be taken when removing and reinstalling drum transfer pumps so as NOT to reverse the "A" and "B" components.

• Do not circulate or mix other suppliers" A" or "B" component.

Physical Properties

Properties	Test Method/ Requirements	Value
ged "R" Value	ASTM C518	6.3 per inch
ompressive Strength	ASTM D1621	≥50psi
losed Cell Content	ASTM D2856	>90%

LAPOLLA Lapolla Industries, Inc. | 15402 Vantage Parkway E. Ste. 322, Houston, Texas 77032 | (888) 4-LAPOLLA | Lapolla.com

FOAM-LOK^m **Pipeline Utility Foam** Rev Date: 061218

Handling and Safety

Respiratory protection is MANDATORY! Lapolla requires that supplied In Case of Spills or Leaks Steps To Be Taken air and a full face mask be used during the application of any spray applied foam system. Contact Lapolla Industries for a copy of the Model Respiratory Protection Program developed by CPI or visit their web site at www.polyurethane.org. Persons with known respiratory - Contain and cover spilled material with a loose, absorbent material such as oil-dry, vermiculite, sawdust or Fuller's earth. allergies should avoid exposure to the "A" component. The "A" • Shovel absorbent waste material into proper waste containers component contains reactive isocyanate groups while the "B" • Wash the containinated areas thoroughly with hot, soapy water. component contains amine and/or catalysts with blowing agents. Both materials must be handled and used with adequate ventilation. The Report sizeable spills to proper environmental agent vapors must not exceed the TLV (0.02 parts per million) for isocyanates Avoid breathing vapors. Wear a NIOSH approved respirator. If inhalation of vapors occur, remove victim from contaminated area and administer oxygen if breathing is difficult. Call a physician immediately. Avoid contact with skin, eyes, and clothing. Open containers carefully, allowing any pressure to be relieved slowly and safely. Wear chemical safety goggles and rubber gloves when handling or working with these materials. In case of eye contact, immediately flush with large amounts of water for at least fifteen minutes. Consult a physician immediately. In case of skin contact, wash area with soap and water. Wash clothes before reuse.

Positive pressure ventilation of the work area is required to minimize the accumulation of vapors in the work area during the application. Improper application techniques of this foam system must be avoided. This includes excessive thickness, off ratio material, and spraying into rising foam. The potential results of improperly applied materials result in a fire or offensive odors which may not dissipate with time and/or poor product performance due to improper density of the applied material. Large masses of sprayed materials should be avoided. When large masses are generated they should be removed from the area, cut into small pieces and allowed to cool before disposal. Failure to follow this recommendation may result in a fire. It is recommended that a fire extinguisher be located in an easily accessible portion of the work area.

Applicators should ensure the safety of the jobsite and construction personnel by posting appropriate signs warning that all "hot work" such as welding, soldering, and cutting with torches should take place no less than 35 feet from any exposed foam. If "hot work" must be performed all spray polyure-thane foam should be covered with an appropriate fire or welder's blanket, and a fire watch should be provided.



- Utilize appropriate personal protective equipment (PPE).

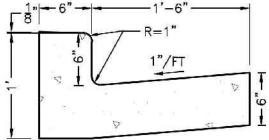
In Case of Fire

Extinguishing Media-Dry chemical extinguishers such as mono ammonium phosphate, potassium sulfate, and potassium chloride. Additionally, carbon dioxide, high expansion (proteinic) chemical foam, or water spray for large fires.

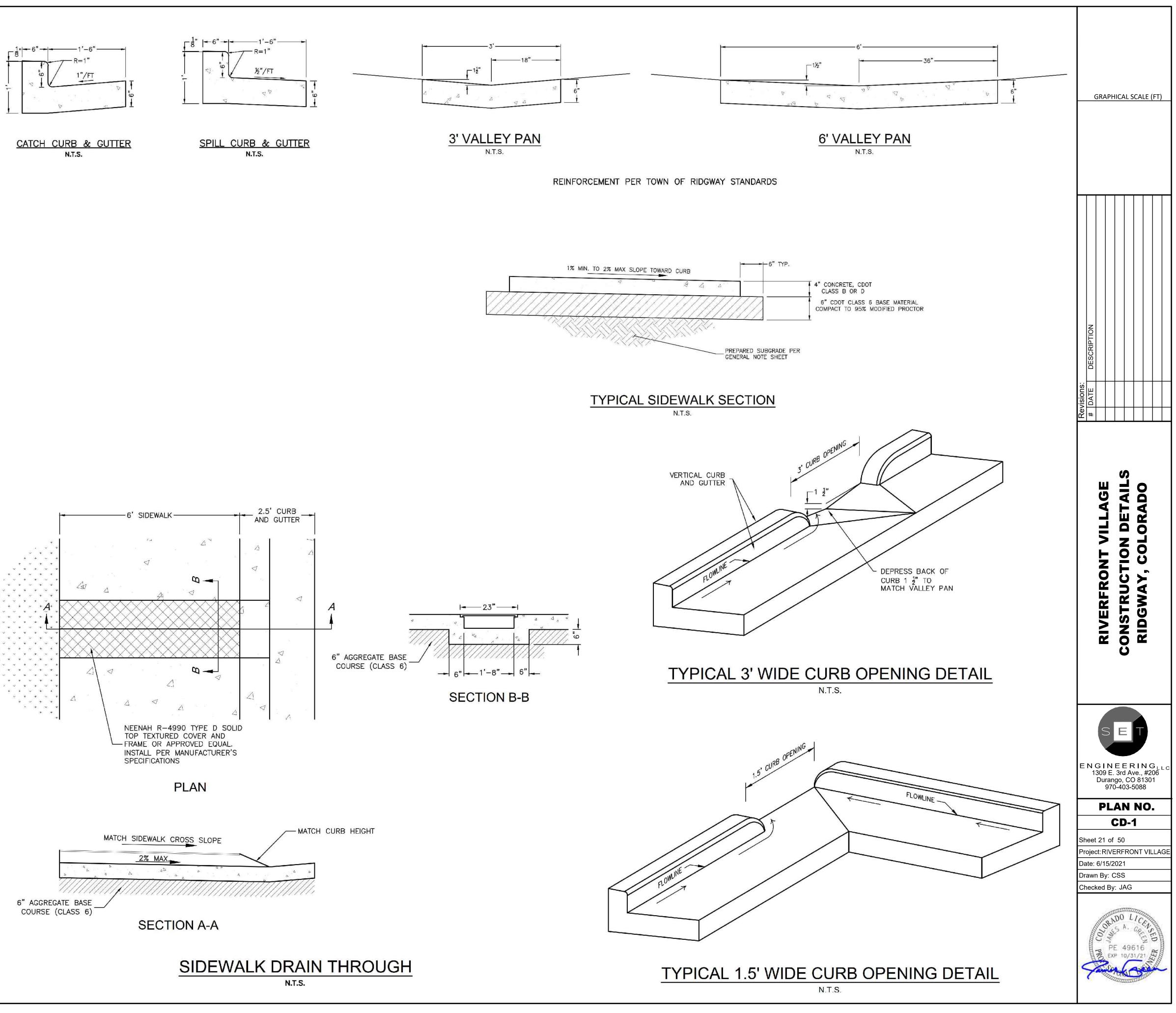
DISCLAIMER

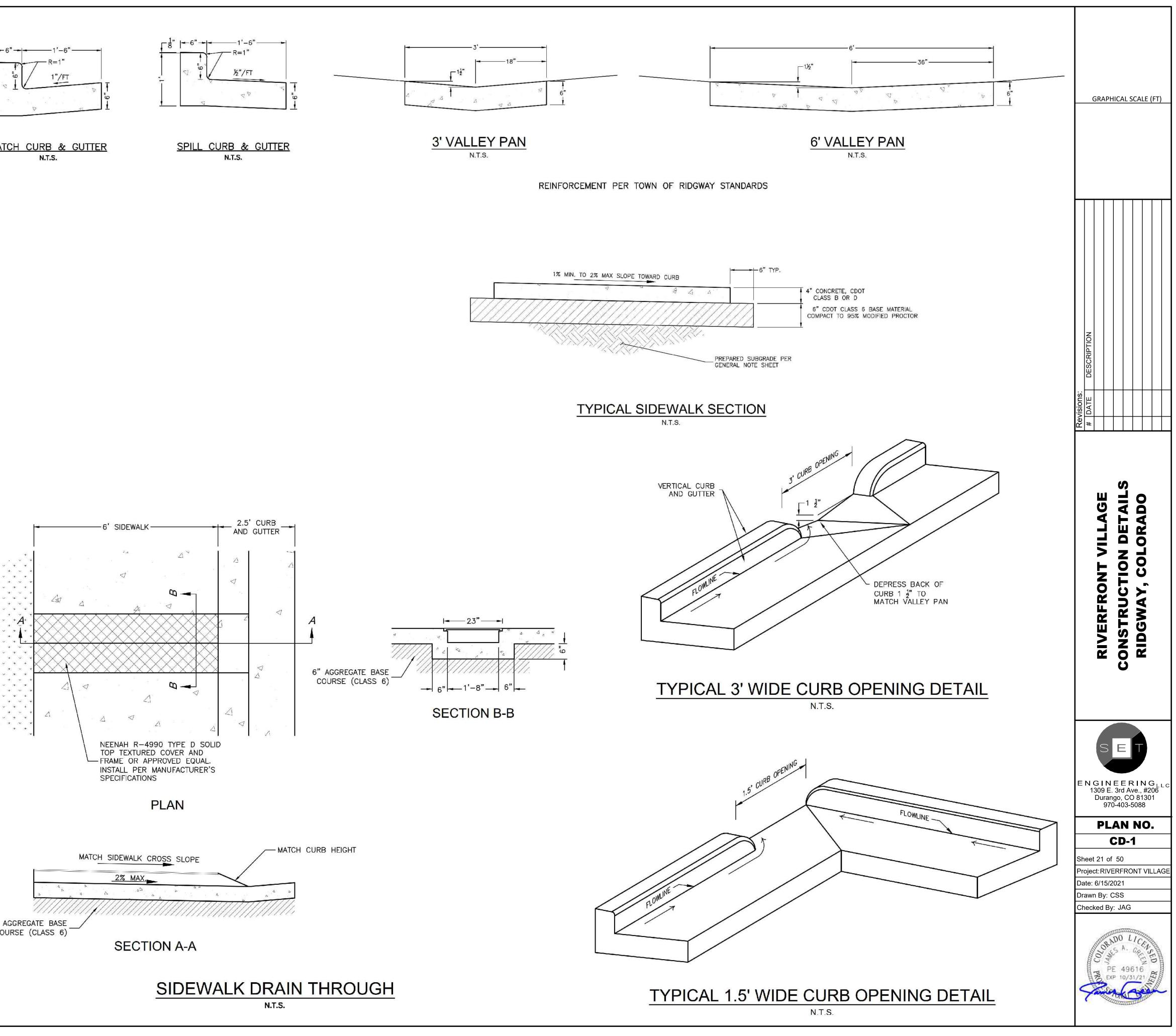
The data presented herein is not intended for use by nonprofessional applicators, or those persons who do not purchase or utilize this product in the normal course of their business. The potential user must perform any pertinent tests in order to determine the product's performance and suitability in the intended application, since final determination of fitness of the product for any particular use is the responsibility of the buyer.

All guarantees and warranties as to products supplied by Lapolla Industries may include but is not limited to, excessive heat build-up, and may shall have only those guarantees and warranties expressed in writing by the manufacturer. The buyer's sole remedy as to any material claims will be against the applicator of the product. The aforementioned data on this product is to be used as a guide and is subject to change without notice. The information herein is believed to be reliable, but unknown risks may be present. NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING PATENT WARRANTIES OR WARRANTIES OF MERCHANTABILITY OR FITNESS FOR USE, ARE MADE BY LAPOLLA WITH RESPECT TO OUR PRODUCTS OR INFORMATION SET FORTH HEREIN.



N.T.S.





injunes resulting from use.

LAPOLLA

To the best of our knowledge, the technicel data contained herein is true and accurate at the date of issuance and is subject to change without prior notice. User must contact Lapolle Industries, Inc. to verify correctness

before specifying or ordering. No guarantee of accuracy is given or implied. We guarantee our products to conform to Lapolla Industries, Inc's quality control. We assume no responsibility for coverage, performance or

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Lapolla Industries, Inc. | 15402 Vantage Parkway E. Ste. 322, Houston, Texas 77032 | (888) 4-LAPOLLA |Lapolla.com

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DIVISION 1

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4.00 MATERIALS

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MONUMENTATION

STREET CONSTRUCTION

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6.00 FORMS

4.01 Select Materials

PART II - PRODUCTS

PART III - EXECUTION

ROADWAY CROSSINGS

The provisions stipulated in this section are general in nature and shall be considered as applicable to all parts of these Standards, including any supplements and revisions as allowed by Town ordinances and regulations.

DIVISION 1 – GENERAL REQUIREMENTS

PURPOSE

The purpose of these Standards is to provide minimum standards to safeguard life, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use, location, and maintenance of all Public Improvements and private improvements of common ownership including, but not limited to, sanitary sewer systems, water supply systems, storm drainage systems, wire utilities, streets, pedestrian facilities, open space, parking lots, and appurtenances thereto.

The purpose of these Standards is also to ensure that the Town receives public facilities which are constructed with the care and materials such that the facility meets or exceeds the normal service life requirements for similar installations. Also, to ensure that when said facilities are transferred to the Town's ownership that they will be free from all defects and in suitable working order to provide the service capabilities anticipated with such a facility while protecting public and private interests.

3. APPLICABILITY

Any reference to Town Standards, construction regulations, or the like in any Town ordinance, contract, policy, permit, license or regulations shall be deemed to mean these Standards. These Standards shall apply to construction, enlargement, alteration, moving, removal, conversion, demolition, repair, and excavation of any Public Improvements or private improvements of common ownership specifically regulated herein. The provision of these Standards applies to Town contracts, utility extension agreements, and contracts made for the development of property in the Town. In the case of Town capital improvement contracts, the project specifications may supersede or modify these Standards. Alterations, additions or repairs to existing improvements shall comply with all requirements of these Standards unless specifically exempted, in writing, by the Town. The Town retains the right to require additional information, criteria, or requirements as conditions may warrant. In instances where provisions of Town ordinances are inconsistent with these Standards, the stricter regulation shall prevail.

Wherever the words "these specifications", "Standards and Specifications", "Standards" or words of similar connotation are used, it shall be understood that reference is made to the Town of Ridgway, Standard Specifications and Typical Drawings for Infrastructure Design and Construction, including all parts, supplements and revisions pertaining thereto.

Whenever references are made to standard specification, methods of testing materials, codes, practices and requirements, it shall be understood that the latest revision of said references shall govern unless a specific revision is stated.

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14.0 CONNECTIONS TO EXISTING SIDEWALKS STREET DESIGN AND CONSTRUCTION Related Work Specified Elsewhere Plan Submission and Approval Qualification of Asphalt Concrete Prod Qualification of Testing Agency Selected Borrow Material

DIVISION 1

4. INTERPRETATION

In the interpretation of the provisions of these St 4.01. In its interpretation, the provisions requirements for the protection of the public he the residents of the Town and the general public

4.02. Whenever a provision of these Standard regulation of any kind, contain any restrictions of produce higher quality shall govern.

4.03. These Standards shall not abrogate of construction plans issued or any easement or co However, if the review and approval of construct by the Town has occurred more than twelve Excavation Permit or commencement of construcomplete, the Town shall have the right to requ reports to ensure compliance with these Standar

4.04. The Town shall not act arbitrarily and sh in these Standards and in the Town code and reg what is required in these Standards, the Town C and welfare of the public.

4.05. Where there is a conflict between these Drawings, the conflict should be promptly called the resolution. In general, the more stringent s technical specifications and the typical drawing requirement

5. AMENDMENTS AND REVISIONS These Standards may be amended from time

responsibility of the Responsible Party to obtain

6. DEFINITIONS AND ABBREVIATIONS

6.01. Definitions: Wherever the following w they shall have the following meanings:

> AIR GAP shall mean the unobstructed lowest opening of the potable water syst

BACKFLOW shall mean the undesirable r

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AGED CONCRETE VALKS ere te Producer	Sub-Base Placement and Compaction Base Course Asphait Paving General Job Conditions Weather Limitations Grade Control Traffic Control Prime Coat Tack Coat Plant Mixed Asphait Surfacing Job Mixing Formula Mixing Formula Mixing Formula Asphait Distributor Bituminous Pavers Rolling Equipment Hand Tools Placement Allowabie Tolerances Density Thickness Surface Smoothness Placing the Mix Continuity of Operation Paver Placing Hand Placing Joints Compacting the Mix Testing Density Control Depth of Asphait Control Depth of Asphait Control Drainage Cleaning and Protection Cleaning Adjusting Utility Grades Frame and Adjustments Placing Frames Acceptance by the Town	TYPICAL DRAWINGS STANDARD BEDDING DETAIL SEWER / SEEP TRENCH DETAIL CASING PIPE DETAIL GATE VALVE DETAIL GATE VALVE DETAIL AIR VACUUM STATION BLOWOFF INSTALLATION THRUST BLOCK DETAIL (2 pages) 3/4-1" WATER SERVICE SERVICE RECONNECTION MANHOLE TYPICAL DROP MANHOLE (2 pages) GRAVITY CLEANOUT ELEVATION PRESSURE CLEANOUT PLAN VIEW SEWER SERVICE DETAIL STORM DRAIN INLET STREET DIMENSIONS TYPICAL ROAD SECTION WITH VERTICAL CURB TYPICAL ROAD SECTION WITH VERTICAL CURB TYPICAL ROAD SECTION WITH VERTICAL CURB TYPICAL GRAVEL STREET CUL DE SAC CUL DE SAC CUL DE SAC (UL DE SAC (UL DE SAC MONUMENT DETAILS PAVEMENT REMOVAL DRIVEWAY DETAILS MONUMENT DETAILS HANDICAP RAMP (2 pages) PARKING LAYOUT CROSSING DETAILS
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GENERAL REQUIREMENTS	DIVISION 1 GENERAL REQUIREMENTS	DIVISION 1
these Standards the following shall govern: visions of these Standards shall be regarded as the minimum ublic health, safety, comfort, convenience, prosperity, and welfare of al public. Standards or any provision in any law, ordinance, resolution, rule or ctions covering any of the same subject matter, whichever standards ogate or annul any permits or approved drainage reports and nt or covenant granted before the effective date of these Standards. sonstruction plans, specifications, and associated engineering reports twelve (12) months prior to execution of the Encroachment and f construction activities, or the improvements are not substantially to require another review process for the plans, specifications, and Standards. y and shall take care to fairly interpret and enforce the requirements and regulations. In addition, the Town shall not take actions beyond Town Code and regulations unless it is to protect the health, safety, en these General Requirements, Technical Specifications, and Typical ty called to the attention of the Town and the Town will determine ingent standard shall apply. Where there are conflicts between the I drawings, the typical drawings will generally be the governing m time to time in accordance with the Town Charter. It is the obtain all revisions to these Standards. wing words, phrases or abbreviations appear in the specifications, ructed vertical distance through the free atmosphere between the ater system feeding into a vessel and the flood level of the vessel.	BACKFLOW PREVENTION DEVICE shall mean a device or means designed to prevent backflow or backsiphonage. BACKORESSURE shall mean a condition that results when the downstream pressure in a system connected to the potable water supply exceeds the upstream pressure of the potable water supply. BACKSIPHONAGE shall mean a type of backflow created by negative pressure or sub-atmospheric pressure in the potable water supply. CONTRACTOR shall mean a person, partnership, or corporation responsible to construct improvements (facilities, infrastructure, etc.) to be dedicated to the Town for ownership or maintenance or to be constructed in a Town right of way or easement. CROSS-CONNECTION shall mean a link, connection, or channel between a source of a non-potable substance and a potable water supply. DESIGNATED PRIVATE CONSTRUCTION WORK includes: private sewer systems, water and sewer service lines to buildings, grading, drainage structures, retaining walls, parking lots, private streets and walks, fire lane, driveways, and associated construction. DEVELOPER shall mean the person, partnership, or corporation responsible for financial obligations to provide improvements for the Town's continued ownership and maintenance or to be constructed in a Town right of way or easement. DEVELOPER'S ENGINEER shall mean a duly registered professional engineer in the State of Colorado employed by the Developer to prepare the required engineerd drawings and documents for the construction of improvements for the Town's continued ownership and maintenance or to be constructed in a Town right of way or easement. DEVELOPER'S REPRESENTATIVE shall mean an assembly of two independently operating check valves between two	GREASE TRAP shall mean a generic term use no longer officially used in codes and standard HYDROMECHANICAL GREASE INTERCEPTOR that is installed in a wastewater drainage s (FOG's) from wastewater and is identified b and flow rate. The design incorporates air er and/or barriers in combination or separately 1. External flow control with air intake, 2. External flow control without air inta 3. Without external flow control, direct 4. Without external flow control, indire 5. Certified under PDI G-101 and ASME INSPECTOR shall mean an authorized repress behalf of the Town. OWNER shall mean a person, company, f developed or modified within the Town. OWNER'S REPRESENTATIVE (OR) shall mean the Owner acting on behalf of the Owner. PUBLIC IMPROVEMENTS include: all work dedicated to the Town, private property that in the future, and projects or utilities that will in the future, and projects or utilities that will RECORD DRAWINGS shall mean a set of dra the State of Colorado which reflect the improvements. Commonly referred to as "AR REDUCED PRESSURE ZONE ASSEMBLY shall r valves with a hydraulic automatic operating is located between two tightly closing shut-off RESPONSIBLE PARTY: These Standards are f and improvements in public rights of way, common ownership. Therefore, the Respon construction of public improvements projecc include but not be limited to the Contractor, Owner. SUBCONTRACTOR shall mean any person, co Town limits which has a direct or indirect co and furnishes and/or performs on-site lab performance of the Work.
	installation, 300-gallon minimum volume, 30-minute minimum retention time, baffles, a minimum of	

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GENERAL REQUIREMENTS

eneric term used to refer to all forms of grease separation and retention, odes and standards.

E INTERCEPTOR (HGI) shall mean a plumbing appurtenance or appliance ater drainage system to separate non-petroleum fats, oils, and greases d is identified by indoor installation, separation and retention efficiency, corporates air entrapment, hydromechanical separation, internal baffling ion or separately, and one of the following:

ol with air intake, directly connected

ol without air intake (vent), directly connected

w control, directly connected

w control, indirectly connected. G-101 and ASME A112.14.3

uthorized representative of the Town and/or Town's Engineer working on

on, company, firm, or corporation holding title to land that is being n the Town.

(OR) shall mean any person or persons (including Engineer) authorized by of the Owner.

clude: all work in the public right-of-way, Town property, easements ate property that will become Town property or an easement to the Town r utilities that will become the Town's responsibility to maintain.

nean a set of drawings prepared by a registered Professional Engineer in ich reflect the information of record for construction of any public referred to as "As-Builts".

ASSEMBLY shall mean an assembly of two independently operating check matic operating differential relief valve between the two check valves and closing shut-off valves with four properly located test cocks.

Standards are for the Design and Construction of Public Improvements c rights of way, Town property and easements, and private property of fore, the Responsible Party shall be anyone liable for the design and/or ovements projects related to these Standards and Specifications and may o the Contractor, Developer, permittee, builder, Engineer, consultant, and

n any person, company, firm, or corporation performing work within the ct or indirect contract with the Responsible Party or other subcontractors orms on-site labor, and/or furnishes materials in connection with the

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GRAPHICAL SCALE (FT) SCRIPTION ₽́|#| ~ ORADO U 0 C $\boldsymbol{()}$ ш≻ 4 Δ L 3 S 2 Ű ш **WA RID**

NGINEERING 1309 E. 3rd Ave., #206 Durango, CO 81301

970-403-5088

PLAN NO. TS-1

Sheet 22 of 50

Project: RIVERFRONT VILLAGE Date: 6/15/2021

Drawn By: CSS Checked By: JAG

RICCURACE THIRK OUTSIDE	
TOWN OF RIDGWAY	
STANDARD SPECIFICATION AND TYPICAL DRAWINGS FOR INFRASTRUCTURE CONSTRUCTION	
	These standards, drawings, and supporting reports, plans instruments prepared by Consolidated shall remain the property of CCS and ti all common law, statutory, and othe These documents may not be used by o
JUNE 2020	
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DIVISION 1

GENERAL REQUIREMENTS

13.03. Emergency Notice: In the case of an emergency situation, the Responsible Party shall notify of the Town by contacting the on-call Town Representative, and then proceed to safely address the emergency situation(s). Once the emergency is safely addressed, work shall cease until proper notice can be given. The non-emergency Work will then proceed in accordance with a normal work schedule. If any Work is completed and covered without oversight by the Town, that Work shall, at the Town's request, be uncovered, at no expense to the Town, so that the Town can confirm the work was completed in accordance with the approved plans and these Standards.

13.04. Testing: The Responsible Party or his representative shall be responsible for providing notice to the Town at least 24 hours in advance of any testing which will be to demonstrate compliance with the plans and Town standards. A representative of the Town shall be present at all tests for conformance with the plans and specifications and Town Standards and where applicable shall determine where and how the tests are performed. Should the Responsible Party fail to provide such notification and a representative of the Town not be present during any testing, the tests shall be deemed to have been at the convenience of the Responsible Party rather than for acceptance by the Town. The Town shall have the right to require retesting including re-exposing the work should that be necessary to demonstrate conformance with approved plans and specifications and Town requirements.

14. CONTROL OF WORK AND MATERIALS

14.01. Work Hours: Except in an emergency, the Responsible Party shall not permit work to proceed in nonregular Town work hours or overtime work without Town's written consent given in accordance with Section 13.02 regarding notification of Non-Regular Work Hours above. The Responsible Party shall reimburse Town for all expenses of Town including construction observation and testing, incurred as a result of working during non-regular hours. Regular hours shall not exceed 8 hours in a 24-hour period (and shall typically conform to the Town's normal work hours) nor 40 hours in a seven-day period, nor include Saturdays, Sundays, or legal holidays. All other work hours shall be considered "non-regular".

14.02. Delivery and Storage of Materials: The Responsible Party shall arrange for delivery of materials, products and equipment to the project site in undamaged condition in manufacturer's original, unopened containers or packaging, with identifying labels intact and legible. The Responsible Party shall store and handle products in accordance with manufacturer recommendations, referenced standards, and as specified in the specifications in a manner to protect from damage by moisture, weather, abuse, construction operations, etc. Materials shall be stored so as to ensure the preservation of their guality and suitability for the Work. Stored materials, even though approved prior to storage, will be subject to inspection prior to their use in the Work and must at that time meet all requirements of these Standards at the time they are used. Stored materials shall be located so as to facilitate inspection. The Responsible Party shall be responsible for providing adequate storage and protecting stored materials at his expense. All Federal, State, and Local requirements pertaining to storage and handling of materials must be followed.

14.03. Work Conditions

- Protect Public Safety: The Responsible Party shall maintain the condition of the Work site such that public safety and welfare are protected
- Workmanship: Workmanship shall be the very best. Lack of quality in workmanship shall be considered sufficient reason for rejection in part or in whole.

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DIVISION 1

GENERAL REQUIREMENTS

- Emergency Disruption: When service is unexpectedly disrupted, the Responsible Party shall notify each effected consumer as expeditiously as possible and notify when service will be restored and shall use all means at his disposal to minimize the length of disruption.
- Minimizing Disruptions: The length of disruption in service shall be kept to an absolute minimum. All Work which can be done in advance shall be done and inspected and found acceptable by the Town and other appropriate entities before the service interruption begins. All personnel, materials, and tools shall be on site and ready prior to disrupting service. Responsible Party shall make use of personnel, materials, and equipment which will reduce the length of service disruption. For example, megalugs and temporary restraints shall be provided in addition to required thrust blocks so water lines can be repressurized as soon as initial backfill is compacted.
- iii. Phasing Disruptions: When the Work which will cause the disruption can be phased, the Developer in coordination with the Town shall work with the effected customers to determine whether one long or multiple shorter disruptions are preferable.

Use of Explosives: The use of explosives must be approved in writing by the Town and will only be allowed when no less dangerous method is practical. If approved, the Responsible Party will use the utmost care to protect life and property and shall be liable for any damages which result. Signals warning persons of danger will be given before any blast. Excessive blasting or overshooting will not be permitted. The Town will have authority to order any method of blasting discontinued that leads to overshooting, is dangerous to the public, or destructive to property, environment or natural features.

Before any blasting is to be performed by the Responsible Party, a certificate of insurance indicating special blasting coverage in the following minimum amounts will be filed with the Town:

Property damage, each accident \$2,000,000 Public liability, bodily injury single limit or equivalent, each accident \$2,000,000 The Town reserves the right to require additional insurance coverage if the circumstances warrant.

The Town has the right to require detailed inspections by an independent consultant or by Town Inspectors on any structures or properties located in the vicinity of the blasting, both before and after the blasting activity. The cost for such inspections shall be the responsibility of the Responsible Party.

- Protection of Potable Water Supply, Streams, Lakes, and Reservoirs
- The Responsible Party shall conserve water and shall not waste or let streams flow unused and shall be sure that waters used for cleaning and flushing are disposed of in a manner which will not create a health, safety, or nuisance problem. The Responsible Party shall furnish all needed Backflow devices to ensure sanitary protection of the Town's water supply. The Owner reserves the right to curtail the Responsible Party's use of water during periods of shortage in its transmission and distribution system.
- ii. The Responsible Party will take all necessary precautions to prevent pollution of streams, lakes, and reservoirs by sediment, fuels, oils, bitumens, calcium chloride, fertilizers, insecticides, or other harmful materials. They will conduct and schedule their operations to avoid or minimize runoff, pollution, and/or siltation of streams, lakes, and reservoirs. A plan for erosion protection and drainage control shall be submitted to the Town, and all required

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DIVISION 1

	C.	Site Ma	intenance and Cleaning: Thro		
		i.	Provide all required personr reasonable standard of clean		
		ii.	Conduct cleaning and dispos laws.		
		111.	Not burn or bury rubbish and		
		iv.	Not dispose of volatile waste drains or in a manner which i		
		v.	Not dispose of wastes into st		
		vi.	Make provision to prevent "t the promptly cleaning of an infrastructure. In most cases		
		vii.	Maintain rights of way and so debris, and rubbish caused b		
		vili.	Wet down dry materials and necessary.		
		ix.	At reasonable intervals durin of waste materials, debris an		
		х.	Provide on-site trash recepta manner which will not imper obstruct drainage.		
		xi.	Remove waste materials, de public or private dumping are		
	D.	and sur areas ir original	eaning: At completion of Wor plus materials, and clean all e npacted. Leave project clear condition. Maintain clean wo le final cleaning so Town can a		
14.04. Defective Materials: All materials in defects of manufacture or damage. Materials in considered defective and rejected. Any def construction site shall be marked and rem remove rejected materials from the constraint arrange for such removal at the expense of t					

DIVISION 1

111.

or similar facilities.

16. CONSTRUCTION SAFETY REQUIREMENTS 16.01. All installations shall be made in a safe manner which complies with current OSHA and other applicable local, state, and federal requirements. The Responsible Party shall be solely responsible for

providing adequate safety on the project.

16.02. Although not obligated to do so, if the Town observes any unsafe work condition at any time, they may issue a stop work order until the unsafe condition is properly remedied.

16.03. When, in the opinion of the Town, the Responsible Party has not taken sufficient precautions for the safety of the public or the protection of the Work to be constructed, or if adjacent structures or property which may be damaged by processes of construction on account of such neglect, and an emergency arises and immediate action is considered necessary in order to protect private or public interests, the Town, WITH OR WITHOUT NOTICE to the Responsible Party, may provide suitable protection by causing such Work to be done and material to be furnished and placed as the Town may consider necessary and adequate. The cost and expense of such Work and material so furnished will be borne by the Responsible Party and will be paid within 30 days of presentation of the bills. The Town may also draw from the Responsible Party's Surety to cover any non-payment, including accrued interest and applicable overhead costs. The performance or non-performance of such emergency Work under the direction of the Town will in no way relieve the Responsible Party of responsibility for damages which may occur during or after such precaution has been

17. STOP WORK ORDER

17.01. Any Town approval may be revoked or suspended by the Town and a Stop Work Order may be issued after adequate notice to the Responsible Party if the Responsible Party fails to adequately address the notice in a timely manner given the situation (taking into consideration health, safety and welfare), for:

- construction drawings or specifications; or
- B. Violation of any provision of these Standards; or

17.02. A suspension or revocation by the Town and stop work orders shall take effect immediately upon notice to the person performing the Work in the field or if no one is on site to receive notice, to the project lead or a representative of the Responsible Party and shall remain in effect until such time as the Town cancels the Order in writing. A failure to abide by the terms of the suspension or revocation will be considered a violation of Town ordinance.

GENERAL REQUIREMENTS

oughout the construction period, the Responsible Party shall:

nel, equipment, and materials needed to maintain the site in a nliness and in accordance with this sub-section.

sal operations to comply with local ordinances and anti-pollution

d waste materials on project site.

es such as mineral spirits, oil, or paint thinner in storm or sanitary might cause ignition.

treams or waterways.

'tracking" debris onto any public street and will be responsible for ny debris which is tracked and remedying any damage to Town a track pad of sufficient size to prevent tracking will be required. surrounding properties free from accumulations of waste, rumble,

by construction operations. d rubbish to lay dust and prevent blowing dust as frequently as

ng progress of Work, clean site and public properties, and dispose d rubbish in a legally allowable manner. tacles for collection and storage of waste materials in an orderly

ede normal or emergency access or people and equipment, nor ebris and rubbish from the site and legally dispose of them at

reas off Owner's property. rk, remove waste materials, rubbish, tools, equipment, machinery exposed and visible surfaces. Correct any settlement and dress on n and ready for intended use. Restore all disturbed surfaces to ork site until project, or portion thereof, is accepted by the Town. accept a completely clean project.

stalled must conform with these Standards and shall be free of ials not meeting the requirements of these Standards will be ective or damaged materials found in the construction or on the oved from the site. In the event the Responsible Party fails to ruction site within a reasonable length of time, the Town may he Responsible Party.

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GENERAL REQUIREMENTS

drainage and erosion control measures shall be in place before starting Work. All Work must conform to all applicable local, state, and federal regulations.

Responsible party shall avoid interrupting the flow in any streams, drainages, flumes, canals,

Violations of any condition of the Encroachment and Excavation Permit or of the approved

C. Existence of any condition or the occurrence of any act which may constitute or cause a condition endangering health, life, or safety, or serious damage to property.

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DIVISION 1

GENERAL REQUIREMENTS

14.05. Unacceptable or Unauthorized Work

- A. Work which does not conform to the Town Standards and/or which results in an inferior or unsatisfactory product will be considered unacceptable Work. Unacceptable Work, whether the result of poor workmanship, poor design, use of defective materials, damage through carelessness, or any other cause which is found to exist prior to the final acceptance of the Work will be immediately removed and acceptably replaced or otherwise satisfactorily corrected by and at the expense of the Responsible Party. This expense includes total and complete restoration of any disturbed land or surface to original or better than the original condition that existed before the repairs or replacement.
- B. Unauthorized Work includes Work which is conducted without Town approval of the plans or Work which is completed without giving required notice to the Town. The Town may reject the Work and require its removal or take other actions the Town feels are appropriate. Those actions may include issuing a Stop Work Order (see Section 16) and/or requiring the Responsible Party, at no expense to the Town, to expose the Work and allow the Town observe the materials and installation.

15. PROTECTION OF FACILITIES, PROPERTY AND IMPROVEMENTS

15.01. Protection of Existing Facilities and Improvements

- A. The Responsible Party shall contact the Utility Notification Service of Colorado at 1 (800) 922-1987 or by dialing 811 in adequate advance of Work and shall notify all utility companies and interested parties 3 business days prior to commencement of Work in order to ensure that there will not be interruptions of services during construction. The Contractor shall be liable for all damages to existing structures. public or private, and he/she shall hold the Town harmless from any liability or expense for injuries, damages or repairs to such facilities.
- The Responsible Party at all times shall take proper precautions for the protection of and prevent В. damage to public and private property including but not limited to utility lines, manholes, valve boxes, survey monuments, fences, driveways, culverts, storm drains, ditches, pans, mailboxes, plantings, and other structures and improvements that maybe encountered during construction. Hand excavation and support of existing lines shall be used where necessary.
- C. In the event that during construction it is determined that any underground utility conduit, including sewers, water mains, gas mains and drainage structures and any above ground utility facilities are required to be relocated, the Responsible Party shall notify the utility owner well in advance of his approach to such utility so that arrangements with the Town and/or owners of the affected utility can be completed without delay of the Work. Prior to constructing over another utility, notify the utility and resolve any conflicts.
- Responsibility for Repair
- i. The Responsible Party shall be liable for all damages to existing structures and improvements, public or private caused by his activities or inactivities, and he/she shall save the Town harmless from any liability or expense for injuries, damages, or repairs to such facilities.

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DIVISION 1

GENERAL REQUIREMENTS

17.03. Upon receipt of a Stop Work Order, the Responsible Party shall be responsible for taking such precautions as may be necessary to prevent damage to the project, prevent inconvenience or hazardous conditions for the general public, provide for normal drainage, and to erect any necessary barricades, signs, or other facilities which may be necessary or directed by the Town.

18. CHANGES TO APPROVED PLANS

18.01. All proposed changes, except minor field changes, to the approved plans shall be submitted to the Town for review and written approval obtained prior to commencing construction. Such changes shall be submitted as soon as they are contemplated to allow as much review time as is possible and to adjust any other facilities which may be impacted by the change. "Changes" include additions and deletions as well as changes to all utilities and improvements located in public rights of way, on Town property, or in utility or other Town easements.

18.02. The Responsible Party shall distribute copies of approved changes to the Town, Utility Owner, Responsible Party sub-contractors, Developer and the Developer's Engineer and other parties with an interest or impact. No Work shall proceed on that portion of the project being revised until said revisions are submitted, approved by Town and Utility Owner and Developer and distributed.

18.03. Field changes shall be discussed with the Town and shall receive a verbal approval before being implemented. Field changes shall be defined as minor deviations in the Work which do not result in significant changes in location or function or minimum standard of the item being altered, nor a change in contract price.

19. RECORD (AS-BUILT) DRAWINGS AND OPERATION AND MAINTENANCE DATA

19.01. Unless otherwise agreed in writing, during construction the Responsible Party shall keep a log of the construction progress and the field location of the new facilities. All buried facilities and lines shall be tied to permanent surface monuments, using centerline monuments when available, at 200 foot intervals or less. Valves, fittings, appurtenances, vaults, cleanouts, and manholes shall be tied to a minimum of three permanent surface monuments. Water service connections shall also include distance from the closest vale to valve box and for sewer services the distance from the manhole and the depth from the sidewalk to the invert of the dead end stub. Depths and elevations shall be recorded at each station as well. Record Drawings shall be 24" x 36" lettered drawings, at a scale at least as large as required in Section 8, shall be prepared noting the final sizes, locations, and ties at all of the required locations. These drawings shall also note the brand names, model numbers, and sizes of all manufactured equipment installed as part of the project. Approved Record Drawings shall be a requirement for release of security and/or final completion unless the deadline is specifically extended by the Town. Once the Record Drawings have been approved by the Town, the Responsible Party shall promptly submit a mylar copy of the approved drawings, a digital copy in an AutoCAD 2020 readable and edit-able format and a shape file the Town can insert in to their GIS system per the following:

- A. DIGITAL MAP FILE SUBMITALS: Submittals require all map related data to be submitted in digital map files in either CAD (DWG), GIS (shapefile or geodatabase), or both CAD and GIS formats.
- ASSOCIATED TABULAR INFORMATION: Pertinent tabular information associated with the map data being submitted is required to be included within the CAD or GIS files. For example, all feature types need to be defined and easily distinguishable from one. In addition, each feature all pertinent

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DIVISION 1

- 111.
- whenever existing surface is destroyed.
- improvement.
- 15.02. Public Safety and Convenience

DIVISION 1

CAD or GIS file.

be defined as NAVD88.

19.02. Where equipment is installed which is not the same as equipment already in use in the Town system. the Responsible Party shall submit manufacturer's operation and maintenance literature on the equipment or device. If necessary, Responsible Party shall provide supplemental O & M data on materials if there is not sufficient detail in the manufacturer's literature to operate and maintain the equipment and for complete repair of all repairable parts. Such information shall be submitted and approved by the Town prior to the Town accepting the project as Substantially Complete. Any specialized tools required to perform such O & M shall be provided to the Town at no expense to the Town. Unless the Town already has an inventory of spare parts for the particular equipment, a complete set of spare parts to overhaul the equipment shall be provided by the Responsible Party (or Developer) to the Town prior to final acceptance.

20. ACCEPTANCE, OPERATION AND MAINTENANCE

20.01. The requirements in this section are in addition to the requirements in the Encroachment and Excavation Permit for the Work.

20.02. Following the Town determining the construction has been satisfactorily completed, all required satisfactory testing as defined in applicable minimum and standard specifications being completed and submitted, and delivery of all required equipment and materials and necessary documents (including Record Drawings and any required O&M data) to convey the system and appurtenant easements to the Town, the Town will give preliminary acceptance to the project. At this time the facilities may be tied into the Town system and service provided. For the first twelve months thereafter, longer if agreed to by Town and the Responsible Party, referred to as the Correction Period, the Responsible Party will be responsible for all operation, maintenance, and repair costs including but not be limited to, the cleaning of streets, patching of potholes, and maintenance and repair of water, storm and sanitary sewer facilities. The cost of any routine maintenance not performed by the Responsible Party that must be performed by the Town will be billed to the Responsible Party at cost plus twenty five percent (25%). During that period, the Town shall be notified when O & M and/or repairs will be performed on the facilities, and at the Town's option it may elect to have an Inspector present during such operations.

20.03. In the event of a water main break, sanitary sewer main blockage, street or bridge failure, or other emergency that may occur during the correction period, it may become necessary for the Town to undertake immediate repairs to the facilities and/or make the area safe to residents, pedestrians, or motorists. The Town will attempt to contact the Responsible Party in the event of such emergency. However, if the Responsible Party or his representative cannot be contacted quickly or if the Responsible Party is unable to take immediate action to relieve the urgent situation, the Town may proceed with such action as deemed necessary by the Town Representative, and the Responsible Party will be billed for all costs of these actions at cost plus twenty five percent (25%).

20.04. Before the end of the correction period there shall be an inspection of the system which will include a physical, and possibly video, inspection of the construction and a review of the O & M records. The

GENERAL REQUIREMENTS

Should any utility be damaged in the construction operations, the Responsible Party shall immediately notify the owner of such utility, and unless authorized by the owner of the utility, the Responsible Party shall not attempt to make repairs. The Responsible Party will be responsible for the cost of repair of underground pipes, wires or conduits damaged by them or their Subcontractors completed to the satisfaction of the owner

The Responsible Party will be responsible for the repair of any damage or destruction of property resulting from neglect, misconduct, or omission in his manner or method of execution or non-execution of the Work or caused by defective Work or the use of unsatisfactory materials. The Responsible Party will restore such property to a condition equal to or better than that existing before such damage or injury was done by repairing, rebuilding, or replacing it as may be directed by the Town, or they will otherwise make good such damage or destruction in a manner acceptable to the Town and the property owner.

E. The Responsible Party is required to provide each property with access to and from the property during the time of construction. Existing driveways shall be cut, filled, and graded as required to meet new construction. Existing driveways shall be resurfaced with the presently existing type of surfacing

F. The Responsible Party will protect and carefully preserve all land boundary, topographic, and Town survey control monuments unless otherwise arranged in writing with the Town. All monuments disturbed or removed by the Responsible Party through negligence or carelessness on his part or on the part of his employees or Subcontractors will be replaced by a land surveyor registered in the State of Colorado, at the Responsible Party's expense.

Where compaction activities could potentially impact existing improvements, the Responsible Party shall coordinate with the owner of the existing improvements to ensure protection of those

A. Disruption in Service: Should it be necessary for any utility service to existing consumers to be disrupted for any reason, the Responsible Party shall provide as much notice as possible to those whose service will be disrupted coordinating such activity with the Town to minimize impact on consumers and assist the Town in providing inspection. Responsible party shall schedule Work in a manner which will minimize disruption and inconvenience to others. At a minimum, the Responsible Party shall provide written notice to each effected consumer at least 48 hours in advance with the time, date, and estimated length of the disruption. Notice shall be by personal contact and written notice to each structure. When service to commercial customers will be disrupted, the Responsible Party and the Town shall meet with each business at least three days in advance and determine when it would be least inconvenient to have service disrupted. If at all possible, the service interruption shall be at time which will have the least impact on all the consumers effected. Should construction necessitate street or road closures, advanced notice in local newspaper will also be required. When the Work involves excavation adjacent to any building or wall along the Work, the Responsible Party will give property owners due and sufficient notice thereof, in writing with a copy to the Town. When possible, any construction operations which will result in disruption of services to residential consumers, shall be done between the hours of 10 a.m. and 4 p.m. or 11 p.m. to 4 a.m.

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GENERAL REQUIREMENTS

information associated to the individual features needs to be included with that feature inside the

C. COORDINATE SYSTEM: It is required that all digital map data submittals have a known coordinate system assigned to them. That coordinate system needs to be either the Ouray Local Coordinati System or NAD 1983 State Plane Colorado South FIPS 0503 US Feet. The vertical datum is required to

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1	GRAPHICAL SCALE (FT)								
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Project: RIVERFRONT VILLAGE Date: 6/15/2021

Drawn By: CSS Checked By: JAG

DIVISION 1

GENERAL REQUIREMENTS

Responsible Party shall notify Town of when facilities are ready and schedule the inspection. Failure to notify the Town will be reason to extend the inspection period. If, in the opinion of the Town, the system is performing satisfactorily, the Town will accept the facilities following proper assignment of all Responsible Party and vendor warranties on the Project, and assume maintenance of it. The Town may elect to extend the period of Developer's maintenance beyond twelve months until any on-going problems are corrected. If the Developer fails to correct any problems within one month of notification, the Town may correct the problems and collect the costs it incurs from the Developer at cost plus 25%. Such costs, if not promptly paid shall be a delinquent charge which may be assessed against the property being developed, in addition to any other rights and remedies the Town may have. If significant deficiencies are identified in any of the Work, the Town at its discretion may extend the correction period for up to 12 months from when the Town finds the deficiencies are remedied.

21. SERVICE RATES

21.01. The Town reserves the right to set rates for supplying services to a Development which are commensurate with the costs associated with providing the services. This means that in some instances it may be necessary to place a surcharge or to charge a higher rate to provide services to certain areas. The foregoing provisions may be modified by appropriate utility extension agreements.

21.02. During the correction period when the Town is providing services, but before the one-year inspection, the Town will charge users for the services and control all taps as provided in Town Ordinances and Regulations.

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DIVISIO	DN 2	SITE WOR
	Class B	Well graded crushed stone or crushed gravel meeting the requirement of Class 6 specified below for "Road Construction Materials."
	Class C	Selected soil of low permeability free from clods and stones greater tha 3/4 inch in maximum dimension and free of all unsuitable materials a defined below.
	Class D	Screened or Washed Rock, of single grade 1-1/2" or less, free of clay an fine particles (for gravity sewer lines use only).
	Class E	Bedding sand passing #4 screen or less (for pressurized water lines only).
2.04.	Road Construct	ion Materials

Class 2 materials shall be well graded natural or crushed aggregate with sufficient filler or binding materials which when placed and compacted result in a firm, dense, unyielding foundation. CDOT Class 6 materials shall consist of crushed gravel or crushed stone base course material of hard, durable particles or fragments of stone or gravel crushed to required size and a filler of sand or other finely divided mineral matter. Not less than 60% by weight of the aggregate particles shall be particles having at least one fractured face. The composite base course material shall be free from vegetable matter, expansive materials, and lumps or balls of clay. The class 2 and 6 materials shall meet the following requirements:

Gradation (% Passing)	Class 2	Class 6
4"	100%	
3"	95-100%	
2"		
1"		
3/4"		100%
No. 4		30-65%
No. 8	***	25-55%
No. 200	3-15%	3-12%
Liquid Limit	35 Max.	30 Max. (nonplastic)
Plasticity Index	6 Max.	6 Max.
Resistance Value	75 Min.	78 Min.
Inclusion of fractured concrete and/or recycl	ed asphalt pavement	is prohibited.

Structural subgrade and backfill materials are defined as those materials used to prepare for structural

construction.	
Class 6	Meeting the requirements of Class 6 specified above for "Road
	Construction Materials."
Class D	Washed Rock, of single grade 1-1/2" or less, free of clay and fine particles.
	(not for use around pressured pipe lines)

On site and borrow area sand and gravels if available may be used for structural backfill material except where special foundation material is otherwise specified.

Unsuitable Materials

Expansive materials and material that contain debris, roots, organics, or frozen materials, stone or concrete having a maximum dimension larger than 4 inches or materials that are unsuitable for providing

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DIVISION 2

<u>1.</u> GENERAL

These specifications are general in nature and are designed to cover excavation and backfill for embankments, roadways, pipe lines and their appurtenances, and structures. In cases where a provision is applicable to a particular type of construction or use, it is covered in the specification for the specific application e.g. Standard Specifications for Sewer System. Where there is a more stringent requirement in such a specification, compliance shall be with the specific specification which is directly applicable to the situation.

A Contractor shall comply with all applicable laws and regulations including "Rules and Regulations Governing Excavation Work" of the State of Colorado and receive an Encroachment and Excavation permit from the Town when working on Town right of way.

1.01. Description

Work under this section includes clearing and grubbing, excavation, controlling surface flow, seep, and groundwater, dewatering and stabilization, bedding and backfilling, with moisture control, and grading, and compaction to specified density and elevations needed for construction as well as complete site restoration. Also included are stockpiling excavated material to be used as fill and removal of unsuitable and excess soils from site and furnishing and installing flowable fill.

1.02. Related Work Specified Elsewhere Section 02508 - Asphalt Paving and Patching Section 02712 - Water System - Minimum Design Standards Section 02713 – Water System Construction Section 02722 - Sewer System - Minimum Design Standards Section 02723 – Sewer System Construction Section 03000 - Concrete

Contractor shall verify all drawing measurements and levels in relation to existing elevations, grades, and adjacent structures, and determine conditions and requirements for excavations, fill, backfill, and all sheeting, shoring, bracing, and protection of the premises and buildings. Contractor shall carefully and accurately lay out all lines and levels of the new construction before proceeding with any Work.

1.04. Conformance Testing

1.03. Measurements and Levels

All testing shall be performed and arranged and paid for by the Contractor. OR will determine location and frequency of such tests to ensure that minimum requirements specified below are met at all locations. At Owner's discretion. Owner may arrange for or perform additional such tests. Each lift shall be tested for compaction and moisture content at two OR designated locations per 150 lf of trench and 2 tests per 600 sf of surface area and results shall be approved by the OR. If tests fail to meet the specified density or moisture content, or to pass proof rolling tests, additional tests will be required in the vicinity of the failed test to determine the extent of the inadequate compaction, then corrective actions shall be taken by the Contractor. After the deficiencies have been corrected, additional tests will be taken in approximately the

DIVISION 2

stable slopes, fill, backfill, foundation or subgrade material for structures or surfaces shall be classified as unsuitable. Otherwise suitable material which is unsuitable due to excess moisture content will not be classified as unsuitable unless it cannot be dried by manipulation, aeration, or blending with other materials satisfactorily to meet moisture limits for proper compaction.

2.06. Topsoil

Topsoil shall consist of loose friable loam with minimum 15% organic matter, reasonably free of admixtures of subsoil, refuse, stumps, roots, rocks, brush, weeds and weed seed, heavy clay, hard clods, toxic substances or other material which would be detrimental to the proper development of vegetative growth, including construction debris.

2.07. Riprap

Material for riprap shall come from rock stockpiled while excavating or imported. Material used for riprap shall be dense, sound rock fragments which are resistant to abrasion and shall be free from cracks, seams, and other defects that would decrease its durability and to resist destruction by water and/or frost action. Unless otherwise called for on the plans riprap shall have a D-50 of 12".

2.08. Spot Subgrade Reinforcement and Sub-Grade Stabilization

Material includes sound, tough, durable crushed stone, or gravel, consisting of angular pieces varying from 1 inch to 4 inches in maximum diameter or other Engineer approved material, with necessary filler in dry conditions, and when a geotextile is used. In wet conditions, and without geotextile, rock shall be without fines. When a smaller material is necessary for filler, screened gravel, or sand may be used to completely fill all voids.

2.09. Geotextiles

Geotextiles and geogrids used for stabilization shall be designed specifically for stabilization and/or soil reinforcement and of a type recommended by the manufacturer for the application. Geotextiles for stabilization shall be a woven material Mirafi RS380i, or approved equal. Geogrids shall be at least equal to Miragrid or Tensar SS with a tensile strength of 200 x 134 psi. The grid shall have sufficiently large openings which are capable of interlocking with the on-site soils. Geotextile used to separate rock and gravel from native materials and for drains shall be non-woven 12 oz/sy filter fabric, Mirafi 1120N or approved equal.

2.10. Capillary Water Barrier Material (CWB) Clean, crushed stone, crushed or uncrushed gravel composed of hard, durable particles, uniformly graded with 1-1/2 inch maximum particle size and not more than three percent (3%) of minimum particle size passing a No. 4 sieve.

2.11. Seed, Mulch, and Tackifier

All seed shall be furnished in sealed bags or containers showing the name and address of the supplier, the seed name or mix, the lot number, net weight, % of weed seed content, and the guaranteed percentage of purity and germination. All seed furnished must be certified as free from noxious weeds as defined by local, state, BLM and USFS. Seed shall be harvested from a location of not more than 200 mile radius of the site. Seed which has become wet, moldy, old, or otherwise damaged or not labeled will be rejected. The Contractor shall furnish a signed statement certifying that the seed furnished is from a lot that has

SITE WORK

DIVISION 2 – SITE WORK

SECTION 02200 - EXCAVATION, BACKFILL, AND COMPACTION

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SITE WORK

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DIVISION 2

same location and number as was used to determine the extent of the failed area to demonstrate conformance with the specifications. The cost of all testing required due to failed tests and as needed to determine adequacy of compaction methods shall also be paid by the Contractor. In addition, Town reserves the right to contract directly for testing. The Contractor will be responsible to reimburse the Town for any Town contracted tests that fail to meet the contract requirements.

Contractor shall arrange and pay for tests for determination of maximum density and optimum moisture in accordance with the requirements of ASTM 698 - Moisture density relations of soils using a 5.5 lb. hammer and 12-inch drop for native materials and ASTM 1557 Modified Proctor for structural and road base materials. With ASTM 698 use method A, B, C, or D as appropriate, based on soil condition and judgment of the qualified party conducting tests. When appropriate, determine the correct rock correction. Samples tested shall be representative of materials to be placed.

Contractor shall arrange and pay for tests to determine optimum moisture density curve and Atterburg limits for each type of material or combination of materials encountered or utilized.

Tests for density control to verify the compaction of the materials in any area of backfill will be in accordance with the requirements of ASTM D 2922 - Density of Soil and Soil Aggregate In-Place by Nuclear Methods, or ASTM D 1556 - Density of Soil In-Place by the Sand-Cone Method. Use test results as basis for density control of compaction operations. The Town will also use visual observations of deflection (proofrolling) to determine the adequacy of moisture control and compaction.

Organic content test results shall represent organics by percent of volume and by weight.

1.05. Existing Conditions

Protect from damage or restore to original condition all surface and sub-surface improvements existing prior to commencement of construction.

Prior to commencing construction, the Contractor shall be responsible for documenting the existing condition of the construction site and surrounding areas. Photographs and written descriptions of all substandard pre-existing conditions are recommended. Width of gravel and/or pavement, depth of such, and existence of drainage should be noted for roadways, as should broken fences and other landscape and structures which are in need of repair. Unless sub-standard conditions are adequately documented prior to commencing construction, the Contractor will be held responsible for restoring the site to conditions which the Town consider to be those which are standard and/or were pre-existing. Since construction equipment tends to be destructive of gravel and asphalt roads, particular attention should also be paid to recording conditions of roads which will be traversed by construction equipment even if there will not be any construction along the specific roadway.

1.06. Protection of Existing Utilities

The Town will assist the Contractor in locating existing utilities of which it has knowledge. Contractor shall be responsible for scheduling with the Town sufficiently in advance for the Town to have someone available to provide such assistance. It will be the Contractor's responsibility to contact all other utilities to get assistance in locating their lines and buried structures. The Contractor will be responsible for verifying the locations of all utilities and for repairing any damage caused by his Work. The Contractor must file notice of intent to excavate with each of these entities at least 48 hours prior to commencing work. All utility lines, including cables and pipelines, in the vicinity of the work shall be exposed by the Contractor

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DIVISION 2

been tested by a recognized laboratory for seed testing within six months prior to the date of delivery and shall be certified weed free. Seed mix shall be a mix approved by BLM or CSU for the micro-climate where the seed is being placed. Grass areas on private property have are disturbed shall be replaced with sod of a mix similar to the surrounding area to the satisfaction of the owner.

Materials for straw mulching shall consist of straw from native grasses and shall be certified weed free in accordance with State and Federal requirements for weed free straw. Straw in such an advanced stage of decomposition as to smother or retard the normal growth of grass will not be accepted. Old, dry straw, which breaks instead of bending will not be accepted. Mulch tackifier shall be consistent with CDOT section 213.

3. EXECUTION

3.01. Clearing and Grubbing

The area to be occupied by permanent construction shall be cleared and grubbed of trees, stumps, roots, brush, rubbish, and other objectionable matter to the extent necessary for orderly performance of the work and to a depth sufficient to remove organics and other materials unsuitable for the intended purpose. Unstable saturated materials shall be removed or stabilized. All clearing limits shall be staked by the Contractor and approved by the Town prior to any construction. The Contractor is responsible for and shall exercise care in his work area. If there is disturbance to improvements or vegetation outside the clearing limits, the Contractor shall take remedial action at his own expense. No trees shall be removed or injured outside the area to be occupied by the work without the prior approval of the property owner and/or the Town. The Town will mark trees within the clearing limits to be removed.

Where applicable, strip existing topsoil prior to trenching operations. Depth of stripping shall be determined in the field by the Town based on depth of the topsoil and roots. Stockpile topsoil material for replacement after all backfilling and compacting operations are completed.

The Contractor shall be responsible for the protection of all surface improvements, structures, buried utilities, and plantings that have not been designated for removal or modification as part of this project. The Contractor shall exercise care in his work to ensure that no damage will occur to lawns, shrubs, hedges, trees, and other plantings adjacent to the right of way or in areas of access to the work. If there is disturbance to structures or plantings, the Contractor shall take remedial action at his own expense. No act, representation, or instruction of the Town shall in any way relieve the Contractor from liability for damages or costs that result from activities of the Contractor. The Contractor may with permission of the property owner, remove fences and other property to expedite trenching operations. These shall be repaired to the satisfaction of the property owner as soon as backfilling operations are completed.

3.02. Removal of Cleared and Unsuitable Materials

Materials from the clearing operations shall be the responsibility of the Contractor and shall be removed from the site of the work and disposed of in a manner satisfactory to the Owner and Town, and in accordance with state and local regulations at the expense of the Contractor. The Contractor shall make an effort to channel materials of value from the clearing and grubbing to beneficial use.

During the process of clearing or excavation, saturated soils, soils such as peat, soft clay, quicksand, cobble, large rock or other materials which are unsuitable for bedding may be encountered. Unless there is a use for these materials elsewhere on the project, these materials shall be removed from the site and disposed of by the Contractor. If removal of unsuitable materials results in excavation below the grade required for

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SITE WORK

SITE WORK

2. PRODUCTS

DIVISION 2

2.01. Submittals Contractor shall furnish preliminary representative test samples of native and base materials to an approved independent testing laboratory and shall pay for testing to determine that the materials conform with the Contract Documents and to determine proctor and optimum moisture values for each earthen and base material proposed for use on the project. Appropriately labeled samples of each material tested shall be kept on site in a one gallon zip lock bag for comparison with materials being placed. All fill and backfill material must be tested and proctor curves, and other required lab test results shall be available on site and approved by the Engineer before fill and backfill is started.

Submittal information for materials specified by CDOT tables or maximum gradation requirements will require sieve analysis and other test results to demonstrate conformance with CDOT table data and notes. Submittal shall include optimum moisture density curve for each type of material or combination of materials encountered or utilized and Atterberg limits for each clavey material.

General Use Materials

sub-grade elevations.

Imported and on-site material for general use shall be non-expansive soil, pit run, or bank run sands and gravels with 4" maximum rock size, adequate binders, capable of being compacted and tested as specified herein unless other material is specified for the particular structure or work.

Imported materials for general use shall be taken from borrow areas acceptable to the Engineer. All borrow materials shall meet the same quality criteria as is required herein for on site materials to be used

2.03. Bedding and Pipe Zone Materials Classification

the pipe.

Class A

DIVISION 2

3.03. Access Roads and Bypasses

The Contractor shall be responsible for providing all access roads required to get materials and equipment to the work areas. When required, the Contractor shall construct and maintain detours or bypasses around portions of the work that conflict with traffic. All barricades and safety devices required to protect persons from injury and to avoid property damage shall be determined and furnished by the Contractor. When necessary, the Contractor shall provide suitable bridges at crossings where traffic must cross open trenches. Construction of access ways on private or government property must have written approval of the property owner prior to commencing construction.

No road will be completely closed unless expressly approved by the Town in writing where there is minimal traffic impact. If a detour around the construction is not feasible, then the installation across the road will be made one-half at a time to allow through traffic around the construction. Adequate traffic control and signage must be provided by the Contractor and is subject to approval of the Town Marshall.

3.04. Pavement Cutting

Where trench excavation requires the removal of asphaltic and/or concrete pavement, the pavement shall be cut in a straight line parallel or perpendicular to the direction of trench excavation as applicable. The cut shall be made with a spadebit air hammer, by sawing, or with similar approved equipment to obtain a straight, square, and clean break. Ripping the asphalt/concrete will not be allowed. The pavement cuts shall be at least one foot wider in each direction than the anticipated limits of the open trench. No excavation in paved areas will be started until after the pavement has been cut. The paving material obtained from excavations in paved areas shall be disposed of by the Contractor. All areas where pavement is removed shall be restored as specified herein and shown on the typical drawings. Temporary surfaces shall be placed until the permanent repair can be made.

All surface improvements consisting of, but not limited to, pavements, gutters, driveways, curbs, and sidewalks damaged by the Contractor during the progress of work shall be replaced at Contractor expense. The construction of the repairs shall result in work equal to or better than that which existed before the damage was done.

3.05. Dust Control

The Contractor will be required to furnish and apply an environmentally acceptable dust palliative to control dust on the project site and along haul routes. Dust control may consist of water or other substances found not to be detrimental to the Work or the surroundings as approved in writing by the Town. Spreading of water or water mixture shall be done with acceptable sprinkling equipment. Such equipment shall be a type which ensures uniform and controlled distribution of the palliative without ponding, washing, or adverse impacts to the public, private property, or the environment.

3.06. Drainage

The Contractor shall maintain the excavations, borrow areas, and site free from water throughout the work and shall shape excavations and surrounding areas to minimize the entrance of water. Drain surface water or seepage by gravity or temporary pumps or other approved means. Discharge such waters in a manner which conforms with all federal, state, and local requirements. Use drainage methods which will prevent softening or undercutting of foundation bottoms or trenches or other conditions detrimental to

SITE WORK

before work is started. If, after exposure, a conflict is discovered, Contractor shall propose a remedy which shall be subject to approval of the Town and all other effected parties.

Materials for foundation(s) shall meet the requirements in the approved foundation submittal.

General use materials are intended to be used in trenches above the pipe zone, and for embankment fill to

On-site materials obtained from excavation, free of any unsuitable materials (see below), shall be deemed acceptable for general use. On-site materials encountered during excavations which are appropriate for specific uses shall be separated and stockpiled for their later intended use (i.e. topsoil, fine bedding, etc.).

Town Engineer reserves right to reject any material he/she finds to be unacceptable.

Pipe zone area is defined as the backfill placed within twelve (12) inches of the pipes fittings and appurtenances. All pipe zone materials must be free of sharp edges and other matter which could damage

> Flowable fill shall have one half sack of cement per cubic yard of concrete. Aggregates and sands for flowable fill shall meet the requirements for concrete in CDOT Section 703.

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SITE WORK

bedding, the area shall be backfilled to grade with suitable bedding materials complying with the provisions of applicable specifications for the work being constructed.

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GRAPHICAL SCALE (FT) 00 6 RA 0 6 ш ≻ 3 U Ω > 2



NGINEERING 1309 E. 3rd Ave., #206 Durango, CO 81301 970-403-5088

PLAN NO. **TS-4**

Sheet 25 of 50

Project: RIVERFRONT VILLAGE Date: 6/15/2021

Drawn By: CSS Checked By: JAG

DIVISIO	N 1		GENERAL REQUIREMENTS	DIVISIO	DN 1
		entity that is bound with and for the Responsik in these specifications. (Bonded)	le Party for the performance of		CUHP CWCB
	the work as described	in these specifications. (bonded)			DIP
	TESTING AGENCY sha	ll mean any individual, partnership, or corpo	pration which is qualified and		EPA
		the required sampling, analysis, testing, and	-		F.
	service.				Fc
					FEMA
	TOWN shall mean Tow	n of Ridgway, Colorado. When referencing an i	ndividual, the Town shall mean		FHWA
	a designee of the Towr	Council.			FIRM
	-				"Green Book"
	TOWN CODE shall mea	n the official adopted Town of Ridgway Municip	al Code of Ridgway, Colorado.		HERCP
					HDPE
	TOWN ENGINEER sha	ll mean the Town Engineer, Town of Ridgwa	y, Colorado, or his authorized		HPPS
	representatives acting	on behalf of the Town.			IAAF
					IMSA
		<u>/E</u> shall mean the Town Manager or his/her a	uthorized representative acting		ISO
	on behalf of the Town.				ITE
					MUTCD
		all mean Town of Ridgway's Standard Specifica	ations and Typical Drawings for		NFIP
	Infrastructure.				NPDES
	UTUTV shall include t	a water and server wilities of the Term of Pid	avery and all other utilities (a.g.		OR
		ne water and sewer utilities of the Town of Ridg	gway and all other utilities (e.g.		OSHA
	power, telephone, fibe	r, cable, gas, etc.) provided by other entities.			PUD
	VACUUM BREAKER sha	II mean a device designed to prevent backsipho	nago		PVC
	VACOUNI DALAKLA SIIC	in mean a device designed to prevent backsipho	lidge.		RCP
	WORK shall mean fur	nishing all labor, materials, equipment, supp	ort services and incidentals to		ROW
		all design and construction needed for the pro-			SCS
		ed project plans and including all associated it	-		UNCC
		s, testing, safety precautions, and record drawing			USDCM
		.,	.0		USC FCCCHR
6.02. meanir		ver any of the following abbreviations appear,	, they shall have the following		USGS
	AASHTO	American Association of State Highway and Tr	ansportation Official		
	ACI	American Concrete Institute		<u>7. ENF</u>	ORCEMENT
	ADA	American Disabilities Act		7.01	Analysis of the Article Marries
	AISC	American Institute of Steel Construction		7.01.	Authority of the Town
	ANSI	American National Standards Institute		А.	The Town Engineer or
	APWA	American Public Works Association			behalf of the Town
	ASA	American Standards Association			improvements, and fa
	ASTM	American Society for Testing and Materials			Standards and in othe
	ATSSA	American Traffic Safety Services Association		l	
	AWWA	American Water Works Association		В.	The Town will resolve
	C.	Centigrade		l	materials furnished, v
	CDPHE	Colorado Department of Public Health and En	vironment		fulfillment of the requ
	CDOT	Colorado Department of Transportation		_	
	CMP	Corrugated Metal Pipe		С.	The Town reserves
	CMPA	Corrugated Metal Pipe Arch		l	representative) of all

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DIVISION 1

GENERAL REQUIREMENTS

whether or not any such liability, claims, or demands alleged are groundless, false, or fraudulent. Responsible Party shall procure and maintain, and shall cause any Subcontractor of the Responsible Party to procure and maintain, the minimum insurance coverages listed below. The Responsible Party shall not allow any Subcontractor to commence Work on this project until all similar insurance required of the Subcontractor has been obtained and approved. For the duration of his Work, the Responsible Party must maintain the insurance coverage required in this section. Such coverages shall be procured and maintained with forms and insurers acceptable to Town. All coverages shall be continuously maintained from the date of commencement of Work to cover all liability, claims, demands, and other obligations assumed by the Responsible Party Responsible Party. The Responsible Party shall provide a Certificate of Insurance with the Town, its officers, employees, consultants, insurers, and self-insurance pool as additional insured. Limits of insurance shall be consistent with those required for an Encroachment Permit.

8.07. The Responsible Party shall provide proper and safe conditions for inspection of the Work.

8.08. The Responsible Party shall arrange and pay for all testing required to demonstrate Work and materials conform with the Town Standards.

8.09. The Responsible Party shall not cover or enclose work until inspected and tested in the presence of the Town's representative. When tests and inspections are complete, they shall be checked and approved by the Town. Should any work be enclosed or covered up before such inspection, testing and approval, if requested by Town, the Responsibly Party shall at his expense uncover work unless the Responsible Party has given the Town timely notice of Responsible Party's intention to cover the same and the Town has not acted with reasonable promptness in response to such notice. If any Work is covered contrary to the Town's request, the Work must be uncovered by the Responsible Party for Town's observation and replaced at Responsible Party's expense. After inspection testing, and approval, Responsible Party shall make all repairs as necessary to restore all work disturbed by him to its original condition.

8.10. If Work is performed during non-regular hours as defined in Paragraph 13.01 without authorization of Town and Work is covered during that period, Work must, if requested by the Town, be uncovered for Town's observation and replaced at Responsible Party's expense in accordance with paragraph 7.09.

8.11. The Responsible Party shall provide and maintain adequate water service for drinking and sanitation purposes, as well as for construction purposes at the job site throughout the duration of construction. He/she shall also provide proper sanitary facilities, as and where needed, for the duration of the construction.

8.12. The Responsible Party shall be required to provide adequate construction signing, flagmen, barricades, etc. to warn vehicular and pedestrian traffic of work in progress, obstacles, etc., and divert traffic as may be required in the course of construction. All signing and traffic control shall be subject to approval of the Town Marshall and generally in accordance with the Manual of Uniform Traffic Control. When specifically authorized by the Town Marshall, portions of a street may be allowed to be partially closed to traffic for construction, though typically not more than one half the street at the time. Responsible Party shall make every attempt to minimize time of such closures. In addition to the requirements listed below under "Disruption of Service", Section 14.02 it shall be the responsibility of the Responsible Party to notify the Marshall, Sheriff, Fire, Ambulance, and other applicable emergency services at least 24 hours prior to such closures.

8.13. The Responsible Party shall provide submittal information including samples, drawings, reports, field notes, cutsheets, certifications, and data as appropriate on all specific materials to be supplied for review and approval by the Town for conformance with Town Specifications. Samples shall be collected, stored and

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fulfillment of the requirements of the Town standards.

DIVISION 1

tested in accordance with methods in these Standards, or if not addressed in these Standards, as specified by the Town. Tests of materials shall be by an entity acceptable to the Town. Materials for construction shall not be purchased prior to such approval. Shop drawings shall be provided for major mechanical installations such as lift stations, pressure reducing stations, etc. Shop drawings shall be of a scale sufficiently large to show all pertinent features of the item and its layout, setting, method of connection, etc. to the Work.

8.14. Responsible Party agrees to properly maintain his Work and shall be responsible to repair any damages to Town or private property, street surfaces or improvements which impacted or are caused in any manner by the Responsible Party's Work including off site impacts.

9. PLANS FOR REVIEW

9.01. The Developer or other Responsible Party shall submit to the Town for review and approval completed plans and specifications for any proposed improvements including water, sanitary and storm sewer, streets, walks, parks, wire utilities, etc. that will become the ongoing ownership and/or maintenance of the Town or be constructed on Town property or in a Town right of way or easement. The Responsible Party will be provided with written comments and questions which result from the Town's review. Unless the requirement is waived by the Town, plans and specifications shall be prepared and stamped by an Engineer.

9.02. Plans shall include an overall plan which shows lots and blocks to be served and the locations of all utilities to be constructed. Reference to the sheet which contains the detail for the area shall also be shown.

9.03. Detail plans for all infrastructure and surface improvements shall have a minimum scale of 1 inch equals 50 feet unless the minimum lot size is larger than 3.0 acres in which case the minimum scale shall be 1 inch equals 100 feet. The scale in all cases should be sufficient to clearly illustrate the Work. Utilities should be color coded on the plans per the colors required by UNCC with lot lines and building footprint in faded background line types on utility plans. Plan view drawings shall include at least 2 foot contours to show overall topography of the lots to be served and the existing and proposed topography of the streets and drainage. Water plans shall show the location, dimension, and grades of the existing and proposed water mains, valves, fittings, hydrants, and other appurtenances, and all service lines with reference to property lines and stationing. Profiles shall be required, unless waived by the Town on an individual project basis for very short extensions. Roads and sewer lines shall have the same minimum scale and shall include both plan and profile on the same page and at related scales. Profile drawings should show all taps and crossings (including all utility mains and service lines, culverts, storm sewers etc.). Sewer plans shall show location, dimensions, stationing, and grades of mains, manholes, taps, and appurtenances. Street plans shall include locations, stationing, dimensions, and grades for centerline and gutter or drainage. Monumentation of new streets shall include permanent centerline monuments which shall be shown on the plans. All other proposed improvements shall be shown on the plans as should all existing infrastructure and improvements.

9.04. Unless otherwise approved by the Town, utility lines and pipes shall be perpendicular or parallel to rights of way lines.

9.05. Detail drawings shall be of a scale sufficient to clearly describe the particular item. The type, size, approximate location and number of all known underground utilities shall be shown on all drawings.

9.06. Where materials to be furnished are other than those commonly used by the Town, the plan submittal should include specifications and support information for those materials so that the Town can

GENERAL REQUIREMENTS

Colorado Urban Hydrograph Procedure Colorado Water Conservation Board Ductile Iron Pipe US Environmental Protection Agency

Federal Emergency Management Agency

Federal Highway Administration Flood Insurance Rate Map

Fahrenheit

Footcandles

AASHTO's "A Policy on Geometric Design of Highways and Streets" Horizontal Elliptical Reinforced Concrete Pipe

High Density Poly-Ethylene Handbook for Public Playground Safety

International Amateur Athletic Federation International Municipal Signal Association

Insurance Service Office Institute of Transportation Engineers

Manual on Uniform Traffic Control Devices

National Flood Insurance Program National Pollution Discharge Elimination System

Owner's (Town's) Representative O&M Operation and Maintenance Occupational Safety and Health Association

Planned Unit Development

Polyvinyl Chloride Reinforced Concrete Pipe

Rights-of-Way Soil Conservation Service

Utility Notification Center of Colorado

Urban Storm Drainage Criteria Manual (MANUAL) University of Southern California Foundation for Cross-Connection Control and Hydraulic Research

United States Geological Survey

A. The Town Engineer or Town's Representative designated by the Council shall have the authority on behalf of the Town to ascertain that all design and construction of infrastructure, surface improvements, and facilities are at least equal to the minimum requirements set forth in the Town Standards and in other known applicable State and Federal requirements.

The Town will resolve all questions that arise as to the quality and acceptability of designs proposed, materials furnished, work performed, interpretation of the plans and specifications, and acceptable

C. The Town reserves the right to provide full-time or part time construction inspection (Town representative) of all infrastructure and improvements which the Town will ultimately own and/or

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GENERAL REQUIREMENTS

- maintain or which is located in Town easements or rights of way. The cost of such inspection will be charged to the Responsible Party at a predetermined hourly rate. Any concerns from the Responsible Party will be reviewed promptly by the Town.
- The Town's representative, if provided, is there to ensure that the work complies with these Standards and the approved project plans. The Town's representative has the authority to reject defective material, defective workmanship, and to suspend work until such time as the Responsible Party shall correct the situation in question, subject to final decision by the Town.
- The Town's representative is authorized to inspect all work and all material furnished. Inspections may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. The Town's representative is not authorized to revoke, alter, or waive any requirements of these Standards. They are authorized to call the attention of the Responsible Party to any failure of the work or materials to conform to these Standards. The Town's representative will have the authority to reject materials until the Town resolves any and all questions at issue.
- F. The Town and its representative will, at all times, have reasonable and safe access to the work whenever it is in preparation or progress and the Responsible Party will provide proper facilities for such access and inspection.
- G. The Town will have the authority to stop work whenever such stoppage may be deemed necessary.
- The Town's representative will, in no case, act as foreman or perform other duties for the Responsible H. Party nor interfere with the management of the Work performed by the Responsible Party. Any "advice" or "opinion" which the Inspector may give the Responsible Party will not be construed as binding upon the Town Representative or the Town in any way or release the Responsible Party from fulfilling all of the terms of these Standards and the approved plans. The presence or absence of the Town's representative will not relieve, in any degree, the responsibility or the obligation of the Responsible Party.
- The Developer and/or the Developer's Engineer may assign an inspector to check any and all Work, including materials to be incorporated in the Work, and all construction methods and practice at his or the Developer's expense. The Developer's inspector will not reduce or eliminate the Town's ability to inspect the Work or enforce compliance with the approved construction documents and the Town's Standards and to assess the charges for such inspection and enforcement to the Developer or Responsible Party.

7.02. Violations: No person, firm, or corporation shall construct, enlarge, alter, repair, move, improve, remove, excavate, convert, or demolish any Public Improvements or private improvements in common ownership or permit the same to be done in violation of these Standards. Whenever any work is being done contrary to the provisions of these Standards, the Town's representative may order the Work stopped by a written notice in accordance with Section 16 of these Standards.

7.03. Deviations

A. The provisions of these Standards are not intended to prevent the use of any material or method of construction not specifically prescribed by these standards, provided any alternate has been previously approved and its use authorized in writing by the Town.

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GENERAL REQUIREMENTS

determine that the materials meet the intent of these Standards. The Responsible Party should be aware of and comply with the Operation and Maintenance submission requirements in Section 18.

9.07. The cost of development review and enforcement including but not limited to design review, legal eview, and inspection of these Standards and related Town ordinances and regulations will be based on the Town Code as amended from time to time. Refer to the Ridgway Municipal Code for fees and out-of pocket costs the Town incurs including but not limited to for Engineers, technical review, attorney's fees and/or other reasonable expenses.

9.08. The Town shall review and return one copy of said plans (assuming more than one copy was submitted) with either a stamp of approval or a letter designating necessary revisions required to receive approval. Upon presentation of the plans revised as per this letter, the Town will approve the plans without undue delay unless there are other changes to the plans which create problems or the revisions are not resubmitted within 60 days in which case they will be re-checked as outlined in the next paragraph.

9.09. If resubmittal of plans is required, the resubmitted plans shall indicate all revisions (including those not requested by the Town) from the previous submittal. If the Town supplied written comments the Responsible party shall provide a letter explain how each question was addressed. It is suggested that the Responsible Party also provide a letter responding to each of the Town's verbal comments as well.

9.10. Construction plans approved by the Town shall be effective for a period of 12 months from the date of approval unless otherwise approved in writing by the Town. After 12 months, the documents for Work not yet constructed shall be subject to re-review by the Town to bring those portions of the documents into compliance with then current Town Standards and Drawings.

9.11. Where it is determined that utility lines are necessary to serve property beyond the subdivision or development in question, the Developer will be required to design, properly size, and construct the system to permit future extensions to be made at the limits of the subdivision or development in question. Public utility systems must be designed and constructed along roads and/or through the development to facilitate future extensions.

10. RESPONSIBILITY FOR DESIGN AND CONSTRUCTION

The Town shall have full authority to review and approve all submittals and construction for compliance with Town Standards. An approval or acceptance by the Town does not relieve the Responsible Party from responsibility for ensuring that the calculations, plans, specifications, construction, and Record Drawings are in compliance with these Standards. Any approval or acceptance by the Town shall not result in any liability to the Town or its employees and consultants for any claim, suit, loss, damage, or injury resulting from the use or implementation of the approved document.

11. EASEMENT REQUIREMENTS

11.01. The following are the minimum utility easement requirements adjoining a right of way:

Front Rear with alley -5'

11.02. Side and rear lot easements are required when there is a specific need.

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DIVISION 1

Whenever there are practical difficulties involved in carrying out the provisions of these procedures not created by the Responsible Party, the Town may grant a deviation for individual cases, provided that the Town shall first find that a unique reason makes these standards impractical and that the modification is in conformity with the intent and purpose of these standards, and providing that such deviation does not lessen any design requirements or any degree of structural or operational integrity. The Responsible Party shall provide the Town with sufficient specifications, evidence, justification, calculations, and/or proof to substantiate any claims that may be made regarding the hardship and alternate material, detail, or technique. The Town, in its sole discretion, will decide upon the acceptability of any proposed deviation.

8. RESPONSIBLE PARTY RESPONSIBILITIES

8.01. It shall be the responsibility of the Responsible Party and his representatives to read and fully comply with all the provisions of the Standards and all laws and regulations that apply to local and state agencies. The Responsible Party is responsible for ensuring that all construction and construction activities and materials are in compliance with these Standards. 8.02. The Responsible Party shall take such precautions as may be necessary to provide a safe work environment, prevent damage to the project and other properties, provide for public safety, normal drainage,

and erect any necessary barricades, signs, or other facilities at his expense as required by these Standards and good construction practice.

8.03. The Responsible Party shall be solely responsible for all construction means, methods, techniques, sequences, and procedures and shall be responsible for the acts and omissions of his employees, Subcontractors, and their agents and employees.

8.04. The Responsible Party shall be solely responsible for locating all existing underground installations, including service connections, in advance of excavating. Town maps and databases are intended to be used for general information only, and the location of any utilities or property lines as found on the maps or databases shall be verified in the field prior to proceeding with design where interferences may occur or with work in the area as applicable

8.05. The Responsible Party shall conduct all his activities in a manner that protects all existing infrastructure and improvements

8.06. The Responsible Party agrees to indemnify and hold harmless the Town, its officers, employees, consultants, insurers, and self-insurance pool, from and against all liability, claims, actions, and demands, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, violation of statute, ordinance, or regulation or any other loss of any kind whatsoever, which arise out of or are in any manner connected with this contract, if such injury, loss, or damage is caused in whole or in part by, or is claimed to be caused in whole or in part by, the act, omission, error, Contractor error, mistake, negligence, or other fault of ++the Responsible Party, any Subcontractor of the Responsible Party, or any officer, employee, representative, or agent of the Responsible Party or of any Subcontractor of the Responsible Party, or which arise out of any workmen's compensation claim of any employee of the Responsible Party or of any employee of any Subcontractor of the Responsible Party. The Responsible Party agrees to investigate, handle, respond to, and to provide defense for and defend against, any such liability, claims or demands at the sole expense of the Responsible Party. The Responsible Party also agrees to bear all other costs and expenses related thereto, including court costs and attorney fees,

DIVISION 1

11.03. For all other easements not adjoining a right of way, the following minimums are required: Minimum For single subsurface utility For ditches and drainages For multiple sub-surface utilities

11.04. Buried utilities shall be no closer than 1' horizontal from the edge of the utility easement for each foot

Section 02722) Standards.

11.06. Street right of way widths shall take into account the need for future, currently unanticipated, utilities.

3 * invert depth

12' + top bank width

edge of the easement.

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12. PRE-CONSTRUCTION MEETINGS

12.01. Pre-Bid Meeting: On projects where the Responsible Party will be receiving bids, the Responsible Party is encouraged to have a meeting for interested bidders prior to receiving bids. The Responsible Party should invite all bidders and all utilities which are involved in the project to attend the meeting. One purpose of the meeting should include to make bidders aware of: the scope of the project, the site conditions, and Town requirements.

12.02. Pre-Construction Meeting: Unless the requirement is waived by the Town, a pre-construction meeting shall be held prior to commencing construction. In attendance shall be the Responsible Party, his Contractor including the on-site project superintendent and representatives of the Town as designated by the Town. Representatives of other utilities which will be impacted by the project shall be given notice of the meeting sufficiently in advance by the Responsible Party or his representative to reasonably allow their attending. The purpose of the meeting will be to review and coordinate construction schedules, review Town requirements during construction, address any questions, discuss anticipated problems, establish ground rules for working together, and develop an inspection schedule.

13. NOTIFICATIONS BY RESPONSIBLE PARTY

notify the Town or its designated representative a day (orally or in writing) in advance of resuming construction.

for the suspension of the Project in accordance with Sections 13 and 16 below.

GENERAL REQUIREMENTS

GRAPHICAL SCALE (FT)

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1309 E. 3rd Ave., #206 Durango, CO 81301 970-403-5088

> PLAN NO. TS-5

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Project: RIVERFRONT VILLAGE

Date: 6/15/2021 Drawn By: CSS Checked By: JAG

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of depth and no utility, ditch or drainage structure should be within 3' of the edge of an easement. **11.05.** Minimum separation between water and non-potable lines shall be 10' consistent with the sanitary protection requirements in the Minimum Water (Chapter 2, Section 02712) and Minimum Sewer (Chapter 2

3' * the invert depth of deepest utility + 5' between each

utility + meet requirements below for the distance to the

GENERAL REQUIREMENTS

13.01. Notification prior to Work: The Responsible Party shall notify the Town at least three (3) working days before beginning any Work. If, for any reason, the Responsible Party should halt Work on a project during any stage of construction for more than one working day, it shall be the responsibility of the Responsible Party to

13.02. Non-Regular Work Hours: If the Responsible Party intends to work non-regular work hours, Responsible Party shall notify the Town in writing and receive written approval at least 24 hours prior to such work, except in the event of an emergency. Failure to provide such notifications may provide sufficient cause

DIVISION 2

proper construction procedures. Accomplish the foregoing by the use of sumps and gravel blankets, well points, drain lines, or other means approved by the Town. Remove any water encountered to the extent necessary to provide firm subgrade. If the trench or foundation bottom or other excavation becomes unstable due to the entrance of water into the open excavation, the saturated soil shall be removed and suitable backfill placed and compacted to grade at Contractor's expense. Handling of drainage, live flow, seepage, groundwater, runoff, discharges, and other water shall be included in the scope of Contractor's unit costs for the work to which it is associated.

3.07. Excavation

Excavation for pipe shall be by open trenches unless otherwise specified or shown on the approved plans. The trench shall be excavated using conventional methods. Any method which is not in accordance with normally accepted practice must receive prior approval of the Town. Excavation shall be made to line and grade shown on the approved plans. The banks of the trench shall be kept as nearly vertical as soil conditions will permit, but shall not exceed the angle of repose of the soil. Vertical trench walls shall be used in the pipe zone wherever possible.

A. Grade Stakes

The Developer's engineer shall provide grade stakes for all pipeline excavation. These stakes shall locate the pipelines both horizontally and vertically for sewer and at least horizontally for water. Where finished grade of the ground will differ significantly from existing grade, vertical control shall be provided for water and other utilities. Maximum distance between grade stakes shall be 50 feet unless otherwise approved by the Town. All appurtenances and structures shall be staked for location and elevation. Grade stakes shall also be provided for structures and fill.

B. Tolerances

Complete excavations and fills with suitable equipment to line and grades as shown on the plans within a horizontal tolerance of ± 0.20 ft and a vertical tolerance of ± 0.1 ft unless otherwise noted on the plans or specified for a specific location or application.

Subgrade excavations for structures shall be within a horizontal tolerance of ±0.10 ft and a vertical tolerance of ± 0.05 ft unless otherwise noted on the plans or in an approved submittal.

Pipelines shall be installed to within a horizontal tolerance of \pm 0.20 ft and a vertical tolerance of \pm 0.01 ft and for gravity utility lines, structures and fills shall be installed to within a horizontal tolerance of ± 0.10 ft and a vertical tolerance of ± 0.01 ft unless otherwise noted on the plans or required by an approved foundation and/or structures submittal.

C. Stockpiling Material

Where material is excavated from the trenches and piled adjacent thereto, it shall be piled sufficiently away from the edge of the trench to prevent caving of the trench wall and to permit safe access along the trench. In unsupported trenches the minimum distance from the edge of the trench to the toe of the spoil bank should not be less than one half the total depth of the excavation, nor less than three feet or farther as soil conditions dictate. With sheeted trenches, the toe of the spoil bank should be at least three feet from the edge of the trench.

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lumps, trash, lumber, and other unsuitable or objectionable materials. The backfill placed within twelve (12) inches of the pipe (the pipe zone), shall be a Class B, C, or D material, depending on the application and site conditions, and shall not contain any sharp rocks, stones larger than 3/4" in diameter or other objects that might damage the pipe. Outside the pipe zone, backfill shall not contain rocks or other objects whose largest dimension exceeds four (4) inches. All such materia shall be removed from the work area and disposed of in a manner acceptable to the Town. Moisture control of fill will be required to facilitate achieving acceptable soil densities. Unless otherwise specified for a specific application, moisture content shall be +/- 2% of optimum.

Construct fills and embankments to the lines and grades indicated on the drawings. Immediately prior to placing fill or base material, scarify the entire area upon which fill is be placed to a depth of 12 inches. The foundation for earthen fill shall also be prepared by disking or scarifying parallel to the axis of the fill, and compacted such that the surface materials of the foundation will bond well with the first layer of fill as is specified for the subsequent layers of earthen materials.

Compact existing subgrade surfaces if densities are not equal to that required for backfill materials. Plow, step, or bench sloped surfaces steeper than 4 to 1 on which backfill is to be placed in such a manner that fill material will adequately bond with existing surfaces. Scarify where necessary to ensure uniform compaction and good bonding between lifts.

Backfill areas to grades, contours, levels, and elevations required. Place approved excavated or imported material in successive horizontal lavers of 8 inches or less loose depth for full width of cross section, bring to optimum moisture content for compaction, and compact each layer to the required density with equipment designed for compaction purposes for the type of material. Backfill systematically in continuous level layers for the full width of the cross section. Uniformly place each layer to the specified maximum lift (or less) and thoroughly blade mix or otherwise blend during the spreading to ensure uniformity of material in each layer. The distribution and gradation of the materials throughout the earthen fill shall be such that the fills will be free from lenses, pockets, streaks, or layers of material differing substantially in texture, gradation, or moisture from the surrounding materials. The materials, when compacted in the earthen fill, shall be blended sufficiently to secure the best practicable degree of compaction and stability. If there is a varying degree of permeability in material for embankments, the most impervious materials shall be placed in the central portion of the earthen fill and the more pervious materials shall be placed so that the permeability of the fill will be gradually increased toward the upstream and downstream slopes of the earthen fill. Testing of each lift shall be performed prior to placing the next lift in accordance with the specified testing requirements.

Structure and Appurtenance Backfill and Compaction

Backfill around structures and appurtenances such as vaults, manholes, foundations, buildings, valves, valve boxes, cleanouts, miscellaneous structures with care to prevent damage to the work. Materials shall be compacted to 95% standard proctor for native materials and 95% modified proctor for processed materials both at +/-2% optimum, unless otherwise noted on the plans for a particular use, using equipment which will not damage the structures, appurtenances or surrounding construction.

Compact each layer continuously over its entire area and make sufficient trips with the compaction equipment to ensure that the required density has been obtained uniformly. Backfill simultaneously on each side of foundation walls and other structures to equalize soil pressures. Do not backfill against or operate heavy equipment adjacent to walls until all structural elements

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D. Sheeting Bracing and Shoring

- trench.
- E. Drainage and Groundwater Control

Use drainage methods which will prevent softening of foundation bottoms, undercutting of footings, or other conditions detrimental to proper construction procedures. Accomplish the foregoing by the use of sumps and gravel blankets, well points, drain lines, or other means approved by the Town. Grade as necessary to prevent surface water from flowing into trenches or other excavations. Remove any surface or ground water accumulated in the excavation by the use of well points, pumps or other approved methods. If the trench bottom becomes unstable due to the entrance of surface water into the open excavation, the saturated soil shall be removed and suitable backfill placed and compacted to pipe grade.

Use of Explosives No blasting will be permitted without written consent of the Town. Should the use of explosives be required, and their use approved by the Town, exercise all possible precautions in the use, storage, or transport of same. Employ only competent, experienced personnel. Comply with all local and state requirements. Contractor assumes full responsibility and liability for all damage which may be caused by his use of explosives.

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F.

banks accumulated from the trench excavation. The backfill materials shall be free of vegetation, Section 02200 - Page 9 Section 02200 – Page 10 Section 02200 - Page 11 Published June 2020 Published June 2020 Published June 2020 SITE WORK **DIVISION 2** SITE WORK SITE WORK DIVISION 2 each direction. Concrete shall be a 3/4" CDOT Class B meeting the requirements of Section 601 with no more than 20% flyash. Thickness of the concrete mat shall equal the thickness of the surrounding concrete but not less than 4" thick. Immediately prior to placing concrete, foundation C. Surface Restoration shall be thoroughly moistened. After placing, the surface shall be shaped to match surrounding n of backfill operations and other work, the entire site shall be cleared of all debris, surface floated with a wooden or magnesium float, and given a broom finish. All outside edges of slab and all joints shall be edged with a 1/4" radius edging tool. Expansion joints shall be placed to and ground surfaces shall be finished to smooth, uniform slopes and shall present a neat and match surrounding concrete. Use tool joints, saw cut or zip strips as needed to match existing workman-like appearance. The final grade in unpaved streets and other areas will be graded to concrete. Joints shall be ¼ depth of the concrete. Place construction joints around all match existing grades without producing drainage problems. Areas which are to receive appurtenances. Premolded expansion joint filler or thicker shall be installed in the joints for the pavements, surfacing, topsoil, or landscaping shall be graded as required to allow installation of the specific surface treatment. Depths of road base shall be per typical trench detail drawing. full depth. Use of the water to finish concrete is prohibited. Concrete shall be protected from freezing for a minimum of 3 days. The concrete shall be kept continuous moisture for a minimum Restoration of grass, shrubs, and other plants shall be done to the extent required to restore the of 7 days by the use of a Town approved membrane applied in accordance with manufacturer's damaged areas to a condition as close as practical to that which existed prior to construction. Replace topsoil without compacting, to depth which was stripped in landscaped areas. Tree recommendation or other Town approved technique. . During curing all traffic both pedestrian and traffic shall be excluded. damage shall be repaired in accordance with good horticultural practice. Topsoiling No permanent pavement shall be restored until the backfill is determined to be adequate and able to properly support the pavement. All paved areas shall be replaced with suitable pavement. i. Conservation The finished surface of roads impacted directly or indirectly by the project will be restored to their When excavating, stockpile on site topsoil for future placement. Topsoil material is subject to original or better condition as determined by the owner(s) involved. Asphalt damage shall be approval. Conserve, or import if necessary, sufficient topsoil to cover a depth of 6" all disturbed repaired with hot mix asphalt (4" minimum depth, and not less than the thickness of asphalt areas which are not covered by riprap, road base, hard surface, or a structure. removed), and damaged concrete, repaired with concrete by cutting and replacing to the closest ii. Clearing control joints. The Town, County, or State Road Department as applicable, shall be notified two working days prior to repair so that inspection can be provided. Prior to placing topsoil remove vegetation and clear ground surface of all other materials that would hinder proper grading, tillage or subsequent maintenance operations. The respective property owner shall be the final judge of the acceptance of restoration work. In cases where sub-standard conditions existed prior to beginning construction, it shall be the iii. Placing Topsoil Contractor's responsibility to have documented such conditions or to restore the site to standard conditions acceptable to the Engineer, respective property owner and Town. Pavement repair Place topsoil on all disturbed areas which are not access or road ways, or designated to be covered by other materials. Prior to placing topsoil, prepare previously constructed grades as required shall be guaranteed for a period of one year. such that when topsoiling is completed the proper grade will be achieved. After grading, scarify The Town shall be the final judge of the acceptance of restoration work. The Contractor shall be areas to be topsoiled to a depth of at least six inches. Perform work only during periods when responsible for returning all roadways traversed with his equipment to conditions at least as good beneficial results are likely to be obtained.

are constructed, cured, properly braced, and approved by the Engineer. Do not operate heavy equipment closer to foundations than a horizontal distance equal to height of backfill above bottom of foundation. Compact remaining area with hand tampers suitable for material being compacted. Where needed, the hand work (e.g. compaction with a whacker) for a lift should be done in advance of and blended into the work of the larger of Perform all compaction with approved equipment well suited to location, structure, and materials being compacted. Do not begin compaction until structures are properly secured and have adequate strength. Perform compaction while the material is at the specified moisture content. Maintain optimum moisture content during final rolling and until compacted material is covered by subsequent construction. Remove loose material and protect material until covered. Pipe Zone Compaction After the pipeline has been installed, suitable backfill material shall be hand placed in up to 3" lifts to the pipe centerline (springline) and hand tamped with appropriate tamping equipment and compacted to provide firm uniform support for the pipe. Take care to ensure that sufficient material has been worked under the haunch of the pipe to provide adequate side support. With rigid pipe, if care has been taken to shape the bedding material to the curvature of the pipe, only one stage of placement will be required to bring the haunching material to the spring line. Compact haunching material to a minimum of 95% Standard Proctor Density. Additional backfill shall then be hand placed and hand compacted in 3" lifts to provide at least six inches of suitable cover over the top of the pipe before any material is placed with machinery. Take care to avoid contact between the pipe and compaction equipment to avoid damage or displacement. Where specified or called for on the plans, pipe zone shall be backfilled with flowable fill. Compaction of backfill materials shall be done in such a way the sufficient backfill has been placed to ensure that such compaction equipment will not have a damaging effect on the pipe or its installation yet ensure proper compaction through the depth of the trench and around the pipe. Any damage resulting from the backfilling or compaction of the backfill shall be repaired by the Contractor in a timely manner. At all times precautions should be taken to prevent flotation of the pipeline due to entry of water into the trench and ensure proper compaction through the depth of the trench and around the pipe.

iii. Upper Trench Compaction

Within the public right of way and in Town easements, minimum compaction through the entire depth shall be 95% of maximum dry density as measured by Standard Proctor tests for native materials. Structural materials such as road base shall be compacted to 95% of maximum dry modified Proctor. Moisture control at +/- 2% of optimum of all fill will be required to facilitate achieving acceptable densities. On private property, density shall be at least 90% or original soil density whichever is greater. Top soil need not be compacted.

In general, backfill shall be mechanically compacted by means of tamping rollers, sheep foot rollers, pneumatic tire rollers, vibrating roller or other mechanical tampers which are appropriate for the material being compacted. Compaction by jetting or flooding shall not be permitted. The trench shall be filled to provide a minimum of 3 feet of cover over the pipe before rolling equipment is used and 50 inches before utilizing a hydrohammer during compaction.

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Where necessary or called for on the excavation stabilization plan, or needed to control the width of the excavation, excavation shall be braced and sheeted to provide complete safety to persons working in or around the trenches and minimize the width of the trenches and shall comply with applicable federal (OSHA), state, and local laws, regulations, and ordinances. The Contractor shall be fully responsible for sufficiency and adequacy of bracing excavations with respect to work under construction and to adjacent utility lines and public and private property. Remove sheeting and shoring as excavations are backfilled in a manner to protect the material, construction, and compaction and/or other structures, utilities or property. No such sheeting will be permitted to remain in the trench or excavation except when, in the opinion of the Contractor, field conditions or the type of sheeting or methods of construction used by the Contractor are such as to make the removal of sheeting unsafe. In such cases, with Town approval, portions of the sheeting to be cut off to such depth as he/she may approve and permit lower portions thereof to remain in the

Maintain the excavations and site free from water throughout the work. Remove any water encountered in the trench to the extent necessary to provide firm subgrade, to keep water level below final pipe grade and to prevent entrance of water into the pipeline. Contractor shall furnish and operate adequate pumping equipment to keep the water level below the grade of construction. Water shall not be permitted to run through lengths of pipe already laid without written approval of the Town. Ends of all pipes shall be capped or plugged to ensure that water, dirt, etc., does not enter the pipe. Should any dirt, mud, etc., enter the pipe during installation. the Contractor shall flush the pipe thoroughly in the presence of the Town's representative to ensure complete removal of all foreign objects prior to connection to the existing system.

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G. Sequencing

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The Contractor shall excavate in advance of pipe laying only a sufficient length to assure steady progress in the installation of pipe. The length of open trench shall be limited where necessary to accommodate traffic, public safety, or as required by the Town and/or other entities with authority, in vicinity of the work being performed.

Pipeline installation shall follow trench excavation within 100 lineal feet. Trench backfill shall follow pipe installation within 50 lineal feet. Approved cleanup shall follow trench excavation within 300 lineal feet. Open trench length shall be kept to a minimum and not exceed the length that can be installed and backfilled in a work day. Particular care shall be taken to provide minimum interference with mail delivery and school bus operation. If the work will require a road to be closed, the Contractor shall notify the proper agencies, in writing with a copy of the notice to the Town. In State and County road rights of way, the amount of open trench permitted shall be in accordance with the requirements of the respective agencies.

H. Excavation to Grade

All installation of utilities and structures shall be to the grade designated on the approved plans and in conformance with Town specifications and standards. Excavation for water lines shall be to a depth sufficient to provide a minimum cover below finished grade of the depth listed in the Water Specification or shown on the approved Drawings. Specific authorization may be given by the Town to reduce the minimum cover by up to 6" along short sections to eliminate or minimize conflict with other utilities or to facilitate connections if O & M problems are not likely to result from such a change. Additional trench depth shall be provided where street and roadway grades will probably be lowered under future construction and where necessary to provide clearance between ditches, culverts, and other structures. The Town shall determine in the field the additional trench depth required in locations where possible future lowering of street grades or other future construction makes greater depth desirable.

Sewer line excavation shall be to the depth necessary to provide the grade and bury depth shown on the approved plans. When tying into an existing line, the Contractor shall excavate at the manhole or approved tie in and shall begin laying pipe from the existing facility unless otherwise authorized by the Town. More detailed specifications are discussed in other sections of this standards.

Where utilities are to be installed in fill, construct fill a minimum of 2' above top of pipe prior to excavation for utility installation.

Trench Width

Alignment of trenches shall be carefully controlled so that uniform distances are maintained from property lines and so that the pipe will be laid with adequate space for compaction of backfill between the pipe and trench walls. All excavation shall be of sufficient width to provide ample room for proper joining of pipe and fittings. Minimum trench width shall be twelve (12) inches plus pipe OD. Maximum trench width will be restricted to pipe diameter plus two feet unless otherwise approved by the Town. If the maximum trench width is exceeded, provide special bedding, encasement, or higher strength pipe as approved by the Town.

as existed prior to commencing construction. Again, in cases where sub-standard conditions existed prior to beginning construction, it shall be the Contractor's responsibility to have documented such conditions or to restore the site to standard conditions acceptable to the Town.

D. Patching

Prior to replacing asphalt on properly compacted backfill, square up any ragged edges of adjoining pavement. Such cutting shall be done in accordance with "Pavement Cutting" paragraph above. Apply approved prime coat to Class 6 roadbase and tack coat against sides where pavement is to be placed, in accordance with manufacturer's recommendations. Lay two 2" mats of hot bituminous asphalt to area and compact to 92-96% of Rice Density. Place patching material around the edges and work inward. Unless otherwise specified herein, materials and construction methods shall comply with the Colorado Departments of Transportation (CDOT) Specifications, Section 401 - Hot Mix Pavements.

Concrete work shall be removed and replaced to the nearest joint on each side of the trench. (See Town standard drawing for concrete replacement.) Replace at least 6" past the trench width in

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3.08.	Bedding, Backfill, and Co
A.	Pipe Bedding

i. Bedding Preparation The bottom of the trenches shall be accurately graded to provide uniform bearing and support throughout the pipe length. Excess loading of the bell will not be permitted under any circumstances. Dig bell holes and depressions for joints after trench bottom has been graded. Bell holes and depressions shall be only of such length, depth, and width as required for properly making the particular type of joint. The use of earth mounds for bedding the pipe will not be

permitted

All sharp stones, trash, and other materials which may damage the pipe or interfere with the proper bedding of the pipe and the placement and compaction of the backfill shall be removed from the trench. The soil in the bottom of the trench shall be loose, and at the optimum moisture, so that uniform bedding and compaction around the pipe is easily obtainable. Should any material be encountered which would prevent the obtaining of suitable bedding, e.g. wet, unstable, etc., the trench shall be over-excavated to a depth of 6 inches minimum below the outside bottom of the conduit, except at points of rock and earth transitions, at which point the rock shall be excavated to a minimum of 12 inches below the outside bottom of the flexible conduit as shown on the typical drawing for pipe bedding. Backfill any over-excavation, required or inadvertent, with materials equivalent to, and compacted as specified for haunching materials according to these specifications.

If the trench bottom becomes unstable due to the entrance of water into the excavation, the saturated soil shall be removed and suitable bedding placed and compacted to pipe grade.

ii. Placing Bedding Material The bottom of the trench must be dry or well-drained before bedding and backfilling is started. Place material below and around the pipe by hand to prevent damage or displacement of the pipe. Place in lifts not to exceed 3" in compacted thickness in the pipe zone. Whenever flexible pipe is used, special care shall be employed in the pipe bedding. Flexible pipes

include PVC sewer and water pipe, fiberglass pipe, lightweight steel pipe, polyethylene pipe, and other similar pipes. Conform to recommendations of (1) AWWA C 900 Appendix A Standard for Polyvinyl Chloride (PVC) Pressure Pipe, 4 inch Through 12 inch for Water, (2) Uni-Bell PVC Handbook and relevant Unibell recommended practice manuals, and (3) ASTM Designation D 2321 Standard Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer

B. Backfill and Compaction The Contractor shall proceed with backfilling as soon as practicable, but not until Work is inspected by Town and Engineer and all tests satisfactorily completed. Compaction or

Backfill material shall consist of material which after placement and compaction will result in a stabilized soil condition capable of supporting the normal traffic and use loads that may be encountered. Normally the backfill material above the pipe zone will be obtained from the soil

consolidation shall follow as soon after the placing as is practical.

otherwise detrimental to proper grading or proposed planting. Revegetation

F.

Prior to commencing construction, it will be necessary to determine the amount and type of vegetation which naturally occurred on the areas to be disturbed. This will be done by counting the quantity of each type of vegetation in randomly selected representative quadrants of the site to be disturbed. Quadrants shall be either a square foot or a square yard depending on the density of the vegetation. Assessment shall be completed in accordance with the Contractor's Storm Water Management Plan.

Disturbed areas that are to be revegetated shall be left in a roughened condition. Roughen vertical depth shall be approximately 3". Roughening shall be completed with undulations running

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Perform spreading so that planting can proceed with little additional soil preparation or tillage. Do not place topsoil when subgrade is frozen, excessively wet, extremely dry, or in a condition

ompaction of Embankment, Pipe Lines, and Structures

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GRAPHICAL SCALE (FT) 6 RA 0 0 Ľ ш ≻ 4 3 U > 2 1309 E. 3rd Ave., #206 Durango, CO 81301 970-403-5088 PLAN NO. TS-6 Sheet 27 of 50 Project: RIVERFRONT VILLAGE Date: 6/15/2021 Drawn By: CSS Checked By: JAG

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	Where shrubs or trees were present prior to the disturbance, it is recommended that the same type shrubs and trees be re-planted at approximately the same density as originally present,
	Seeded areas that have been disturbed prior to or during mulching operations shall be reseeded. Areas not properly mulched or that are damaged shall be repaired or remulched as needed to meet the standards specified herein. Mulching activities shall not occur during windy weather.
	Unless more stringent requirements are specified in the storm water management plan, weed free native grass straw shall be applied at the rate of two tons per acre in areas that have native vegetation. It shall be uniformly crimped in with a crimper or other approved method to a minimum depth of 3". The seeded areas shall be mulched and crimped within 24 hours after seeding. Alternately a mulch with tackifier (200#/Ac) may be used. Jute, soils blanket, or other suitable covering shall be secured to all slopes steeper than 3:1 as soon after mulching as practical. The material shall be applied smoothly but loosely on the soil surface without stretching. Workers shall minimize the amount of walking of the seedbed even after the jute is applied. The upslope end of each piece of jute mesh shall be buried in a narrow trench about 6" deep. The jute shall be secured in the trench with compacted dirt fill. Where one roll of jute ends and a second begins, the upslope piece should be brought over the buried end of the second roll with a 12" overlap to form a junction slot. Where two or more widths are side by side the overlap shall be at least 6".
	On all slopes steeper than 3:1, and smaller areas seed shall be applied by means of a mechanical broadcaster at double the rate required for drill seeding. The surface shall be cat tracked up and down the side slope prior to, or just after, seeding to create depressions to help hold seed and moisture. All seed sown by mechanical broadcasters shall be raked into the soil to a depth of 1/2" prior to cat tracking.
	In all areas where the slope is 3:1 or flatter, seeding will be accomplished in general conformance with CDOT Section 213. In larger areas, use an approved mechanical power drawn drill followed by packer wheels or drag chains. The drill shall be operated in a direction generally perpendicular to the direction of the slope. Drill seed 1/2" deep with rows spaced no more than 4" apart. Seed that is extremely small shall be sowed from a separate hopper adjusted to the proper rate of application. Hydromulching will be allowed only if adequate water will be applied to the seed to keep the mulch continuously moist until the seedlings are established.
	Seed shall not be placed in windy weather or when the ground is frozen or likely to freeze in the next 48 hours. Seeding shall only take place in the fall or early spring. Hand broadcasting of seed will only be permitted for small areas which not accessible to machine methods. In places where the seed in not drilled, the application rate of the seed shall be doubled.
	Preparatory to seeding, the top 4" of the topsoil shall be tilled into an even and loose seed bed 4" deep, free of clods, in excess of 2" diameter and brought to desired line and grade. Reseeding shall be done in accordance with specifications, requirements of the landowner, the recommendations from CSU Extension, BLM, and good horticultural practice for the areas being revegetated. Seed mix on private property shall be selected by the land owner. Where lawn and in other grassy areas are disturbed, sod shall be provided for restoration. Furnish and install sod in accordance with CDOT standard 212.05. Contractor shall make arrangements to keep it moist until it is established.

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limit erosion prior to revegetation.

SITE WORK - WATER MINIMUM STANDARDS

parallel to contouring. Use erosion control logs, silt berms, silt fence, or other suitable means to

7.02. Hydrant weep hole and leach area shall not be connected to or located within 10 feet of sanitary sewers or storm drains. In cases where an existing sewer conflicts with a proposed hydrant leach area, the Town may allow encasement of the sewer, flowable fill encasing the sewer, or other solution on a case by case basis.

7.03. Use of antifreeze and hydrants that need antifreeze are prohibited.

8. SERVICE CONNECTIONS

8.01. The installation of service lines and taps will be performed by the Town public works staff, or with Town approval, under Town supervision. Residential lots shall be served by a 3/4" ID tap. No direct taps will be allowed under any circumstances. Double strap stainless steel tapping saddles of non-rigid construction shall be used on PVC pipe. Materials and construction shall conform with the materials specified in the Water Line Construction Standard Specifications (Section 02713) and in accordance with relevant typical drawings.

8.02. Service lines shall be installed perpendicular to the main and shall typically be located 10 feet inside the uphill property line. Any variance of this layout will require justification and approval of the Town. Meter cans shall be set in the public right of way at property line, or if the sidewalk is at property line either just inside the front utility easements, or just to the street side of the sidewalk. Service lines shall be stubbed across the property line through the width of the utility easement with the end sealed with a watertight seal and marked full depth with a 2 x 4 painted blue and brought to grade and marked with the depth to the service line. Place a steel T post behind the 2 x 4 post to protect it.

9. PROXIMITY STATEMENT

9.01. There shall be no physical connection between a public or private potable water supply system and a sewer, other non-potable line or appurtenance thereto which would permit the passage of any sewage, non-potable, or polluted water into the potable supply directly or through contamination of the surrounding soils.

9.02. Buried potable water lines shall not be laid closer horizontally than 10 feet outside edge to outside edge from non-potable lines and the water lines shall typically be at a higher elevation than the nonpotable. If this is not possible, separate trenches will be required and the water line shall be at least 18" above the non-potable and a pipe with a water tight welded joint such as HDPE shall be used. When water and non-potable lines cross each other, the water line shall be at least 18" above the non-potable. If this condition is not met, then where practical, the non-potable line shall be encased with a 20' PVC casing pipe centered on the water line crossing. If is not practical to case the non-potable line, the potable line shall be so cased. Should the non-potable line be above the water line, no matter what vertical separation the casing pipe shall be sealed to the carrier pipe with no-hub reducing couplings, Link-Seal or other approved method to provide a water tight seal.

9.03. Force main sewers require a separation from the water main of at least 10 feet measured horizontally unless both pipes are encased in and properly supported with pipe joints as far apart as possible with sealed end encasements. There shall be a 2' vertical separation at crossings or a watertight casing shall be provided around the force main.

9.04. There shall be a minimum clear distance vertically of 8" between the uppermost part of the lower utility and the lowermost part of the upper utility including casings to allow for proper bedding. In all

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such plantings from wildlife damage.

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cases, suitable backfill or other structural protection shall be provided to preclude settling and/or failure of any of the pipes.

9.05. No water pipe shall pass through or come within ten feet of a sewer manhole unless absolutely unavoidable, in which case adequate protection as determined by the Town Engineer must be provided.

Water lines shall have at least 5 foot horizontal separation from wire utilities. The Town shall have final review authority of all proposed designs which do not provide adequate separation. These requirements for protection of the water system against contamination from non-potable water conveyances shall apply equally to water mains and service connections.

10. CROSS CONNECTIONS AND BACKFLOW PREVENTION

There shall be no connection between the distribution system and any pipes, pumps, hydrants, or tanks whereby unsafe water or other contaminated materials may be discharged or drawn into the Town potable water system. Any interconnections between potable water supplies shall have prior written approval of the Town. All water mains, service lines and connections and appurtenance shall be installed consistent with RMC 9-1-27 Cross Connection and Backflow Prevention and meet the requirements in the Water Distribution Section of these Standards.

11. REMOVAL OF ABANDONED INFRASTRUCTURE Where new construction will replace existing infrastructure, unless otherwise approved by the Town the abandoned infrastructure shall be removed.

12. DISINFECTION AND FLUSHING

Refer to Standard Specifications - Water Line Construction for disinfection and flushing requirements.

13. TESTING

Testing of water lines, services, and appurtenances, shall conform with the requirements of AWWA and the applicable Town Code and Standard Specifications of the Town.

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unless the slope prohibits such plantings. Where trees in excess of 3" caliber are damaged or removed during project, replace trees with trees of similar species at twice the density. Protect DIVISION 2

SITE WORK - WATER MINIMUM STANDARDS

DIVISION 2 – SITE WORK

SECTION 02712 - WATER SYSTEM - MINIMUM DESIGN STANDARDS

1. MATERIALS

Pipe, fittings, valves and fire hydrants shall conform to the latest standards issued by the AWWA, Colorado Department of Public Health and Environment (CDPHE), and shall comply with Town's detailed standard specifications. In the absence of such standards, materials meeting applicable Product Standards may be submitted to the Town for review and possible approval. Jointing material used in joining pipe shall meet pipe manufacturer's specifications and AWWA Standards, Ridgway Municipal Code (RMC) 9.1,.as well as these Town's standards. All materials that could come in contact with potable water must meet NSF 61 and be so marked. Specific details for water materials are included in the Products section of the Water Distribution Standards.

2. MINIMUM FLOW

2.01. Design shall be based on an average peak flow of 4 gallons per minute (gpm) per tap and 8 gpm per dead end for lines servicing 5 or more taps. Instantaneous residential flow shall be assumed to be 15 gpm. Fire flow in residential areas shall be at least 1000 gpm unless structures are more than 20 feet apart in which case required flows can be reduced to 750 gpm. The required flow may be from more than one hydrant, provided the additional hydrants are accessible (within 300 ft) to all possible fire locations.

2.02. Commercial and industrial flows shall be designed based on the nature of the business using such references as CDPHE and Insurance Services Office (ISO) guidelines for sizing lines. The Town will have final review authority on all such lines. Fire flow in commercial and industrial areas shall be at least1500 gpm and if the business has an above average hazard, the fire flow will be determined by the Town with assistance from the State Fire Marshall's office to insure no detrimental impact on the fire rating of the

2.03. All areas shall be designed to have a maximum static head of 231 feet (100 psi) with Town mains designed to have 90 psi or less except for short distances. A minimum static head of 103 feet (45 psi). Distribution systems shall be designed to maintain a 35 psi residual pressure during required fire flow and peak residential flows. Pressure zones shall conform to existing Town zones as approved by the

3. LINE SIZE

3.01. Size and location of all water lines shall be designed by a competent, licensed engineer and must be approved by the Town. The Town may at its option waive the requirement for an engineered design when the line is less than 100 feet and will serve 3 or less residential taps. The minimum line size shall be 6 inches except that four inch mains may be installed on permanent deadends (see looping requirements below) less than 150 feet long which serve three or less houses and when a permanent flushing hydrant is provided. Any lines that temporarily deadend and that will be tapped for service before being extended shall be provided with a temporary flushing hydrant.

3.02. If the Town anticipates future expansion and or extension from the area being developed by the Responsible Party, the lines shall be design the Developer will be required to design, properly size, and

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SITE WORK - WATER SYSTEM CONSTRUCTION

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SECTION 02713 - WATER SYSTEM CONSTRUCTION

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The water lines and appurtenances shall be constructed according to standard accepted practices and as specified herein. Reference to standard specifications e.g. AWWA, ASTM, etc. made a portion of these specifications by reference shall be the latest edition and revision thereof. All water line improvements and additions must also comply with the Minimum Standards portion of the Town Standards, Section 9.1 of the Ridgway Municipal Code, and all applicable Colorado Department of Public Health and Environment (CDPHE) and EPA regulations.

1.01. Description

- A. This section covers the furnishing, installation and testing of water distribution lines and appurtenances. Contractor shall furnish all equipment necessary for said work and testing.
- B. Contractor shall follow manufacturer's recommended procedures in all handling and installation operations. All water line improvement must also comply with the Town's Minimum Standards and all applicable codes, laws, and regulations.
- Contractor shall engage the services of a licensed surveyor to layout the locations and depths of the new water infrastructure in accordance with the Town approved plans. If not done during design and incorporated into the approved construction drawings, the Contractor shall make such excavations as are necessary to determine the exact location of existing utilities which affect new construction. Where practical, new lines shall be routed to facilitate installation, allow for future maintenance, minimize existing utility conflicts and to minimize construction problems.
- 1.02. Related Work Specified Elsewhere Section 02200 – Excavation, Backfill, and Compaction Specifications Section 02712 – Water System – Minimum Design Standards Section 02723 – Sewer System Construction

1.03. Proximity Statement: Refer to Section 02712 - Minimum Design Standards for Water Distribution System

2. PRODUCTS

All materials shall be new, unused, and of the best standard quality available for the purpose intended. All materials in contact or potential contact with potable water shall be NSF 61 certified and meet all current EPA and CDPHE requirements including the lead-free requirements. All brass shall meet AWWA C-800. Where materials are specified by brand names, materials of equal quality may be substituted if the Contractor submits adequate technical and descriptive data and secures the approval of the Town unless the material is specifically noted to be the only material allowed. The Town or its designated representative shall be the sole judge of the suitability and acceptance of materials. The Town in some instances may insist on a particular brand or model (to match materials in use) to minimize the parts inventory and/or O and M requirements.

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DIVISION 2

WATER LINE DEPTHS

development in question.

In most cases water lines and services should be designed with 5' of cover. Depths of cover of more than 6' should be avoided. If there is a conflict at the 5' depth, the water line can be gradually reduced to 4 foot of cover with extruded polystyrene structural insulation rated at 400 pounds and an R value of 13 or more installed from where the depth reduces to where it returns to 5 ft of cover. If the conflict cannot be addressed by reducing the depth to 4', the depth shall be increased but only the minimum needed to make the crossing.

5. WATER LINE LOOPING

Water mains shall be designed through a subdivision and other type multi-unit development so that a continuous loop is provided for an alternate route of water, better circulation, and more even pressure. A variance of the looping requirement will be considered when the amount of pipe required to complete the loop will exceed 70% of the line required to serve the subdivision in accordance with Town specifications and the total cost of the water system extension will exceed \$6,000 per tap plus inflation (based on Ordinance 4-2016)

6. VALVE SPACING

6.01. A sufficient number of valves shall be provided on water mains so that inconvenience and sanitary hazards will be minimized during repairs. The water system for residential areas shall be designed so that only one block need be closed off in the event of a water line break. When development has a geometry other than lot and block, valves shall be placed at intervals less than 400 ft. Gate valves shall be placed at all pipe line intersections so that each segment of line can be isolated while minimizing the number of customers out of water. Where the line runs as a single segment for long distances (over 750 feet), valves should be placed at least at 800 foot intervals when taps are more than 150 feet apart with more frequent intervals being required on larger lines and in densely populated areas.

6.02. Valves shall be placed on each leg of the tee for a fire hydrant and on each branch of a tee or cross and at a minimum on the branch of a tee for permanent flush hydrants. Air vacuum valves shall be installed at high points on primary feeders and where venting high points through a fire hydrant is not feasible on other mains.

7. HYDRANTS

DIVISION 2

requirements of the Ridgway Fire District.

these a	cate of Compliance shal specifications do in fact DPHE, and NSF 61 require	com
2.01.	Ductile Iron Pipe	
	Conformance	AV
	Thickness	Cla
	Pressure Rating	15
	Joints	Ne
	Fittings	AN
	Corrosion Protection	W
2.02.	Plastic Pipe (PVC) - Wa	ter
	Conformance	A۷
	Thickness	Cla
	Pressure Rating	DF
		are
	Joints	Ru
	Fittings	Du

Marking 2.03. Copper Tubing Conformance Thickness

Service Type 2.04. Water Service Materials

and NSF 61 certified

allowed. C. Meter Setters:

Water Service Backflow Preventor

Meter Can: Meter cans shall be Bingham Taylor MMPE 24" diameter. Only this model will be

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Section 02200 - Page 17

Published June 2020

SITE WORK - WATER MINIMUM STANDARDS

SITE WORK - WATER MINIMUM STANDARDS

construct the system to permit future extensions to be made at the limits of the subdivision or

7.01. Fire hydrants shall be placed at the intervals recommended by the State Insurance Services Office, generally, at 500 foot intervals and such that hydrants are within 250 ft of property lot lines and habitable structures are entirely within 300 ft of hydrant. Hydrants shall also be located to facilitate flushing and draining even if that necessitates reducing the spacing. Hydrant leads shall be a minimum of six inches in diameter. Auxiliary valves shall be installed on all hydrant leads in conformance with typical drawings. Fire hydrant bottom valve size shall be at least five inches. Nozzle size and threads shall be confirmed with the

Section 02712 - Page 2 Published June 2020

SITE WORK – WATER SYSTEM CONSTRUCTION

submitted to the Town stating all pipe and materials furnished under nply with all referenced specifications and meet the Safe Drinking Water

WWA C151 lass 50 50 PSI eoprene Gasket AWWA C111/ with Conductivity Straps

NSI/AWWA C153 when available or C110 /rap pipe in polyethylene tubes and sealed

WWA C900

lass 150 R-18 to line pressures of 100 psi and DR-15 when typical line pressures e expected to exceed 100 psi

ubber Gasket, bell and spigot

Ductile Iron AWWA C153 when available or C110 Under 4", PVC with 200 PSI rating allowable

10 ga color coded tracer wire taped to pipe (blue for potable water and purple for non-potable. Metallic 6" wide color-coded marking tape, located 12" above water line

ASTM B88, lead free 0.65" for ¾" and 1" Potable water service lines K soft copper

Corporation Valve: Corp valves shall be A.Y. McDonald #5182 brass. Valves shall be AWWA C-800

Service Saddles: Service Saddles shall be Mueller BR2B bronze saddle with stainless steel straps and O-Ring sealed outlet, sized for the pipe to which it will be connected with the correct tap size and thread. Saddles shall be AWWA C-800 and be NSF 61 certified. Only this model will be

Meter setters shall be A.Y. McDonald #5141-077 ONLY compression brass. With ball valve shutoff and dual check valve. Meter setters shall be AWWA C-800 and NSF 61 certified.

Mueller M-98 Angle Dual check valve or can be incorporated into meter setter.

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	DESCRIPTION								
Revisions:	# DATE								
Re	#								
		IVERERONT VILLAGE		AV SDECS & STANDADDS	AI OFECO & OFANDARDO				



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1309 E. 3rd Ave., #206 Durango, CO 81301 970-403-5088

PLAN NO. **TS-7**

Sheet 28 of 50

Project: RIVERFRONT VILLAGE Date: 6/15/2021

Drawn By: CSS Checked By: JAG

F.	ON 2	SITE WORK – WATER SYSTEM CONSTRUCTION	DIVI	SION 2	
г.		igs – M 70 meter can cover with cast iron outer lid of sufficient diameter for in hole and M 70 aluminum inner frost lid. Only this model will be allowed.			ele manual override handwheel ished. Actuator shall be Bray Se
G.	mainline side of mete be diaphragm type, e removal from the pip	ure Regulator: Pressure regulators with strainers shall be installed on the ers when the pressure through the meter will exceed 80 psi. Regulators will easily field adjustable for pressure, and shall be accessible for repair without e line. Unless otherwise approved regulators shall be pre-set at 50 psi. A "Y" ag and screen removable without removing the strainer or regulator shall be end of each regulator.	2.09	 Fire Hydrants Conformance Material Pressure Rating Type 	AWWA C502 Ductile iron body, fully bro 150 PSI, minimum Breakaway traffic w/easily
н.	Curb Stop and Box: Cu	urb ball stops shall be McDonald brand brass with compression joints on both ss pinned handle with box and cap lid.		Size Joints Outlets	6" w/ 6" mechanical joint in Megalug, O.A.E. restraints 2 - 2 1/2" hose nozzles, 1 - all w/ National Standard Th
2.05.	Gate Valves Conformance	AWWA C515		Operating Nut Main Shut off Acceptable Models	1 1/2" National Standard p Gate valve per spec. above Mueller Modern Centurion
	Material Body Type Pressure Rating Joints Coating Operating Nut	Epoxy coated ductile Resilient seat, non-rising stem 150 PSI, minimum Flange or Mechanical Joint end as required typically flanged to fitting, mechanical joint to pipe Epoxy inside 2" Square, open counterclockwise (buried)	2.10		NSF/ANSI 372 Potable water, frost free, s Inlet 2" or same as existing Bury match existing water Breakaway traffic w/easily
2.06.	Acceptable Models Valve Box Location Type Base Material	Handwheel (non-buried service) Mueller, (Only these products will be accepted by Town) All buried valves not in vaults Slip type, two or three piece 5 1/4" as req'd, traffic rated Suitable for valve size, depth, and operating mechanism Cast Iron, 1/4" minimum wall thickness		Joints Outlets Interior Operating Pa Exterior Casing Operating Nut Main Shut off Model	Megalug 2000 series restra 1 - 2 1/2" hose nozzle w/ N arts Brass, bronze, and shall without excavating the hyc Ductile Iron 1 1/2" National Standard p Gate valve per spec. above Mueller 2-1/8" Post type
	Coating Cover Location Operator Extension	Bituminous varnish, plastic wrapped Cast Iron, traffic type, marked "WATER" All buried gate valves 1" minimum diameter cold rolled steel rod (where depth greater than 5 feet)	2.11	L. Yard Hydrants Service Size	equal. Potable water, frost free, w 3/4" NPT inlet, 3/4" hose b
2.07.	Butterfly 3-inch and L Conformance	arger AWWA C504	2.12	Valve 2. Air Valves:	Woodford Y34-4 or approv
	Material Type Pressure Rating Coating Seat Joints Operator Operator Operation Acceptable Models Butterfly Valve Elector	Iron Body, bronze mounted Resilient seat 150 PSI Epoxy inside Rubber Flange Electric Actuator (see below for details) Open by turning counterclockwise Bray, Mueller ric Actuator: Actuator shall be UL listed, designed to be located in a wet	2.14	At high points in wat means of air relief va	ter mains where air can accumu alves or other means approved onvenient service of the valve a Cast iron body, ASTM appr 150 PSI 3/4" minimum, sized by air 3/4" tapping saddle, tap at Corporation stop Support weight so not tran 12" above ground, pointed
	,	It shall include adjustable speed control for both opening and closing speeds will not create water hammer in the line. Wiring shall go to a terminal strip. Section 02713 – Page 3 Published June 2020		Acceptable Models	APCO or Valmatic automat Section 02713 – Pa Published June 2
DIVIŜI	ON 2	SITE WORK – WATER SYSTEM CONSTRUCTION	DIVI	SION 2	
shall I	nave the authority to ch	SITE WORK – WATER SYSTEM CONSTRUCTION nange the plans and order a deviation from the line and/or grade or arrange ures for the removal, relocation, or reconstruction of the obstructions.	Divi	The subgrade upon pipe without excession	ive settlement or stress develop
shall I with t All pip cover street propo	have the authority to ch he owners of the structu be shall be laid to the de shall be measured from unless changes in stre	hange the plans and order a deviation from the line and/or grade or arrange ures for the removal, relocation, or reconstruction of the obstructions. The depth of the top of the approved plans or pipeline typical drawing. The depth of the top of the barrel of the pipe to the established finished grade of the test grade are proposed in which case the cover shall be measured to the to staking is required at minimum 150 ft intervals for line and grade control.	DIVI	The subgrade upon pipe without excessi placed and compact Care shall be taken otherwise injured. I shall be removed to replaced with an a	ive settlement or stress develop ted around the pipe and up to in backfilling to see that the In the event that rock or excess to a depth of not less than 6" approved material and mecha is available from the upper port
shall h with t All pip cover street propo 3.05. Excave Specif	have the authority to ch he owners of the structu be shall be laid to the de shall be measured from unless changes in stre sed depth. Construction Excavation and Trence ation shall be in acco ications except as more	hange the plans and order a deviation from the line and/or grade or arrange ures for the removal, relocation, or reconstruction of the obstructions. The depth of m the top of the barrel of the pipe to the established finished grade of the ever grade are proposed in which case the cover shall be measured to the m staking is required at minimum 150 ft intervals for line and grade control. The Preparation ordance with Trench Excavation, Compaction, and Backfilling Standard stringent requirements are outlined herein.	DIVI	The subgrade upon pipe without excessi placed and compact Care shall be taken otherwise injured. I shall be removed to replaced with an a subgrade material is be imported to the jo The sealing surface o immediately before	which the pipe is placed shall of ive settlement or stress develop ted around the pipe and up to in backfilling to see that the In the event that rock or excess to a depth of not less than 6" approved material and mecha is available from the upper port ob site. of the pipe, the bell to be joine assembly. Assembly shall be rected, the gasket and the bell
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shall f with t All pip cover street propo 3.05. Excav Specif Beddi Stand lines s	have the authority to ch he owners of the structu be shall be laid to the de shall be measured from unless changes in stre sed depth. Construction Excavation and Trenci ation shall be in acco ications except as more ng for water lines shall l ards and manufacturer's hall be a low permeabili Pipe Laying Lowering Pipe into Tr the Contractor for the hydrants shall be care	aange the plans and order a deviation from the line and/or grade or arrange ures for the removal, relocation, or reconstruction of the obstructions. The depth of m the top of the barrel of the pipe to the established finished grade of the set grade are proposed in which case the cover shall be measured to the n staking is required at minimum 150 ft intervals for line and grade control. The Preparation ordance with Trench Excavation, Compaction, and Backfilling Standard stringent requirements are outlined herein. be in accordance with Section 02200 Excavation, Compaction, and Backfilling s recommendations including that select bedding for water taps and service ity material.	DIV	The subgrade upon pipe without excessiplaced and compact Care shall be taken otherwise injured. I shall be removed to replaced with an a subgrade material is be imported to the jo The sealing surface of immediately before Unless otherwise dir both be lubricated w shall be centered in that is not furnished end is inserted to the is done to the pipe, of not be permitted. Ar taken out and relaye	ive settlement or stress develop ted around the pipe and up to in backfilling to see that the In the event that rock or excess to a depth of not less than 6" approved material and mecha is available from the upper port ob site. of the pipe, the bell to be joined assembly. Assembly shall be rected, the gasket and the bell with a suitable soft vegetable so the bell and the pipe forced hol it with a depth mark shall be ma e full marked depth of the joint collar, gasket, or bell when the my pipe that has had the grade ed.
shall f with t All pip cover street propo 3.05. Excav Specif Beddi Stand lines s 3.06.	have the authority to ch he owners of the structu- be shall be laid to the de shall be measured from unless changes in stre- sed depth. Construction Excavation and Trenci ation shall be in acco ications except as more ng for water lines shall l ards and manufacturer's shall be a low permeabili Pipe Laying Lowering Pipe into Tr the Contractor for the hydrants shall be care other suitable tools of Under no circumstan	aange the plans and order a deviation from the line and/or grade or arrange ures for the removal, relocation, or reconstruction of the obstructions. The depth of m the top of the barrel of the pipe to the established finished grade of the set grade are proposed in which case the cover shall be measured to the a staking is required at minimum 150 ft intervals for line and grade control. The Preparation ordance with Trench Excavation, Compaction, and Backfilling Standard stringent requirements are outlined herein. be in accordance with Section 02200 Excavation, Compaction, and Backfilling s recommendations including that select bedding for water taps and service ity material.	DIVI	The subgrade upon a pipe without excessi- placed and compact Care shall be taken otherwise injured. I shall be removed to replaced with an a subgrade material is be imported to the jo The sealing surface of immediately before Unless otherwise dir both be lubricated w shall be centered in t that is not furnished end is inserted to the is done to the pipe, o not be permitted. Ar taken out and relaye	ive settlement or stress develop ted around the pipe and up to in backfilling to see that the In the event that rock or excess to a depth of not less than 6" approved material and mechas a vailable from the upper port ob site. Of the pipe, the bell to be joine assembly. Assembly shall be rected, the gasket and the bell with a suitable soft vegetable so the bell and the pipe forced ho I with a depth mark shall be ma e full marked depth of the joint collar, gasket, or bell when the ny pipe that has had the grade ed.
shall f with t All pig cover street propo 3.05. Excav Specif Beddi Stand lines s 3.06. A. B.	have the authority to ch he owners of the structu- be shall be laid to the de shall be measured from unless changes in stre- sed depth. Construction Excavation and Trenci ation shall be in acco ications except as more ng for water lines shall l ards and manufacturer's shall be a low permeabili Pipe Laying Lowering Pipe into Tr the Contractor for the hydrants shall be care other suitable tools of Under no circumstan Dropped or dumped r Inspection Before Insi other damage before aside for inspection b Rejected materials sh	hange the plans and order a deviation from the line and/or grade or arrange ures for the removal, relocation, or reconstruction of the obstructions. The depth of in the top of the barrel of the pipe to the established finished grade of the ever grade are proposed in which case the cover shall be measured to the is staking is required at minimum 150 ft intervals for line and grade control. The Preparation ordance with Trench Excavation, Compaction, and Backfilling Standard stringent requirements are outlined herein. be in accordance with Section 02200 Excavation, Compaction, and Backfilling is recommendations including that select bedding for water taps and service ity material. rench: Proper implements, tools and facilities shall be provided and used by e safe and convenient performance of the Work. All pipe, fittings, valves, and effully lowered into the trench piece by piece by means of a derrick, ropes, or or equipment, in such a manner as to prevent damage to pipe and fittings, tees shall the pipe or accessories be dropped or dumped into the trench, materials will be cause for rejection of same. tallation: The pipe and accessories shall be carefully inspected for cracks and e installation in the final position. Defective or unsound material shall be set by the Town who will determine if the material shall be repaired or rejected, all be removed by the Contractor from the job.		The subgrade upon a pipe without excession placed and compact Care shall be taken otherwise injured. I shall be removed to replaced with an a subgrade material is be imported to the jo The sealing surface of immediately before Unless otherwise dir both be lubricated w shall be centered in a that is not furnished end is inserted to the is done to the pipe, of not be permitted. Ar taken out and relaye Any section of pipe, taken out and replac HDPE pipe shall be workers welding HD of the size and DR be who will be welding	ive settlement or stress develop ted around the pipe and up to in backfilling to see that th In the event that rock or excess to a depth of not less than 6" approved material and mecha is available from the upper port ob site. Of the pipe, the bell to be joine assembly. Assembly shall be rected, the gasket and the bell with a suitable soft vegetable so the bell and the pipe forced ho I with a depth mark shall be ma e full marked depth of the joint collar, gasket, or bell when the ny pipe that has had the grade ad. , fittings, valves, or hydrants a ced without additional expense e installed in strict accordance OPE pipe must be trained and a teing used on this project. At to g pipe shall demonstrate his que elding any pipe for use on the
shall I with t All pig cover street propo 3.05. Excave Specif Beddi Stand lines s 3.06. A.	have the authority to ch he owners of the structu- be shall be laid to the de shall be measured from unless changes in stre- sed depth. Construction Excavation and Trenci ation shall be in acca- ications except as more ing for water lines shall l ards and manufacturer? shall be a low permeabili Pipe Laying Lowering Pipe into Tr the Contractor for the hydrants shall be care other suitable tools of Under no circumstan Dropped or dumped r Inspection Before Insi other damage before aside for inspection b Rejected materials sh Keeping Pipe Clean: E all phases of construct allowed. The interio lowered into the tren- means. Fittings shall damage the internal of in the trench, Town trench and that the question, the Town m contractor's expense	hange the plans and order a deviation from the line and/or grade or arrange ures for the removal, relocation, or reconstruction of the obstructions. Appendix the removal relocation, or reconstruction of the obstructions. Appendix the proposed plans or pipeline typical drawing. The depth of in the top of the barrel of the pipe to the established finished grade of the ever grade are proposed in which case the cover shall be measured to the in staking is required at minimum 150 ft intervals for line and grade control. A Preparation A Preparation A preparation accordance with Trench Excavation, Compaction, and Backfilling Standard stringent requirements are outlined herein. A be in accordance with Section 02200 Excavation, Compaction, and Backfilling s recommendations including that select bedding for water taps and service ity material. A preparation A proper implements, tools and facilities shall be provided and used by e safe and convenient performance of the Work. All pipe, fittings, valves, and efully lowered into the trench piece by piece by means of a derrick, ropes, or for equipment, in such a manner as to prevent damage to pipe and fittings. A press shall the pipe or accessories be dropped or dumped into the trench. Materials will be cause for rejection of same. A tallation: The pipe and accessories shall be carefully inspected for cracks and e installation in the final position. Defective or unsound material shall be set by the Town who will determine if the material shall be repaired or rejected.		The subgrade upon the pipe without excessing placed and compact Care shall be taken otherwise injured. It shall be removed to replaced with an a subgrade material is be imported to the jub the provided to the jub the sealing surface of immediately before. Unless otherwise dir both be lubricated with an it is not furnished end is inserted to the jub that is not furnished end is inserted to the jub that is not furnished end is inserted to the provide to the pipe, or not be permitted. Are taken out and replaced to the size and DR be workers welding HD of the size and DR be who will be welding back test prior to we have a uniform bead Flange and mechanicand bolts utilized in strength cast iron, or bolts shall be Cor-blu be cleaned before jo joint the plain end p care shall be taken tight manufacturer requiremanufacturer requiremanufacturer second the strength cast iron of the size and part of the size a	ive settlement or stress develop ted around the pipe and up to in backfilling to see that the In the event that rock or excess to a depth of not less than 6" approved material and mechas a vailable from the upper port ob site. of the pipe, the bell to be joiner assembly. Assembly shall be rected, the gasket and the bell with a suitable soft vegetable sof the bell and the pipe forced ho l with a depth mark shall be ma e full marked depth of the joint collar, gasket, or bell when the inv pipe that has had the grade ed. , fittings, valves, or hydrants a ced without additional expense e installed in strict accordance PE pipe must be trained and a leing used on this project. At the gipe shall demonstrate his que elding any pipe for use on the d around the joint. iccal joints shall be made with p in underground connections si r coated high strength wrought ue unless approved by the Tow binting. Only one (1) gasket will bipe shall be fully seated before to locate the gasket evenly aro thened by hand first then by red torque. Deflection at a mmendation or Table 1 in AWA
shall H with t All pip cover street propo 3.05. Excav Specif Beddi Stand lines s 3.06. A.	have the authority to ch he owners of the structu- be shall be laid to the de shall be measured from unless changes in stre- sed depth. Construction Excavation and Trence ation shall be in acco- ications except as more ng for water lines shall l ards and manufacturer's shall be a low permeabili Pipe Laying Lowering Pipe into Tr the Contractor for the hydrants shall be care other suitable tools of Under no circumstan Dropped or dumped r Inspection Before Insi other damage before aside for inspection b Rejected materials sh Keeping Pipe Clean: E all phases of construct allowed. The interio lowered into the tren means. Fittings shall damage the internal of in the trench, Town trench and that the question, the Town n contractor's expense to be videoed, then cl Laying of Pipe: The fu excavated to accomm laying unless directed from the bottom and	aange the plans and order a deviation from the line and/or grade or arrange ures for the removal, relocation, or reconstruction of the obstructions. epth shown on the approved plans or pipeline typical drawing. The depth of in the top of the barrel of the pipe to the established finished grade of the eter grade are proposed in which case the cover shall be measured to the is taking is required at minimum 150 ft intervals for line and grade control. h Preparation ordance with Trench Excavation, Compaction, and Backfilling Standard stringent requirements are outlined herein. be in accordance with Section 02200 Excavation, Compaction, and Backfilling s recommendations including that select bedding for water taps and service ity material. rench: Proper implements, tools and facilities shall be provided and used by e safe and convenient performance of the Work. All pipe, fittings, valves, and fully lowered into the trench piece by piece by means of a derrick, ropes, or or equipment, in such a manner as to prevent damage to pipe and fittings. tes shall the pipe or accessories be dropped or dumped into the trench. materials will be cause for rejection of same. tallation: The pipe and accessories shall be carefully inspected for cracks and installation in the final position. Defective or unsound material shall be set by the Town who will determine if the material shall be repaired or rejected. all be removed by the Contractor from the job. very effort shall be made to keep the interior of pipe and fittings clean during trion. This is especially important if the tablet method of disinfection is to be r of the pipe shall be thoroughly cleaned of foreign material before being than and hall be kept clean during operations by plugging or other approved l be thoroughly cleaned, with a wire brush if necessary, taking care to not coating. If the pipe laying crew cannot keep pipe clean while placing the pipe may require the line be swabbed and/or hydrojetted and video inspect		The subgrade upon a pipe without excessi placed and compact Care shall be taken otherwise injured. I shall be removed to replaced with an a subgrade material is be imported to the jo The sealing surface of immediately before Unless otherwise dir both be lubricated w shall be centered in t that is not furnished end is inserted to the is done to the pipe, o not be permitted. Ar taken out and relaye Any section of pipe, taken out and related Workers welding HD of the size and DR b who will be welding back test prior to we have a uniform bead Flange and mechania and bolts utilized in strength cast iron, or bolts shall be Cor-blu be cleaned before jo joint the plain end p care shall be taken t joints shall be taken t joints shall be taken t sionts and flanged joints shall When work is not watertight plug to pr the seal shall remain trench, enough back be allowed to enter	ive settlement or stress develop ted around the pipe and up to in backfilling to see that the In the event that rock or excess to a depth of not less than 6" approved material and mechas a vailable from the upper port ob site. of the pipe, the bell to be joined assembly. Assembly shall be rected, the gasket and the bell with a suitable soft vegetable sof the bell and the pipe forced ho l with a depth mark shall be ma e full marked depth of the joint collar, gasket, or bell when the inv pipe that has had the grade ed. , fittings, valves, or hydrants a ced without additional expense e installed in strict accordance PE pipe must be trained and a leing used on this project. At the gipe shall demonstrate his que elding any pipe for use on the d around the joint. iccal joints shall be made with p in underground connections si r coated high strength wrought ue unless approved by the Tow binting. Only one (1) gasket will bipe shall be fully seated before to locate the gasket evenly aro trened by hand first then by red torque. Deflection at a

SITE WORK - WATER SYSTEM CONSTRUCTION

ide handwheel system. Actuator shall be designed to function shall be Bray Series 70 or approved equal.

body, fully bronze mounted

traffic w/easily replaced flange chanical joint inlet, 5' minimum bury A.E. restraints on mechanical joints. ose nozzles, 1 - 4 1/2" pumper nozzle

onal Standard Thread onal Standard pentagon, open counter-clockwise

dern Centurion (Only this model will be accepted by Town)

ter, frost free, self-draining, with vacuum breaker same as existing line, outlet 2-1/2" NST existing water line typically 5-6' traffic w/easily replaced flange

00 series restraints on mechanical joints ose nozzle w/ National Standard Thread nze, and shall be removable for service and replacement avating the hydrant.

onal Standard pentagon, open counter-clockwise per spec, above

1/8" Post type Hydrant with one 2-1/2" nozzle or approved

ter, frost free, with vacuum breaker let, 3/4" hose bib lockable, 5' bury (34-4 or approved equal

air can accumulate, provisions shall be made to remove air by eans approved by the Town. Air relief valves shall be placed in ce of the valve and provide for adequate drainage. ody, ASTM approved materials

um, sized by air flow requirements

g saddle, tap at high point in line stop eight so not transferred to water line

round, pointed downward, covered with #24 mesh Imatic automatic valves or approved equal

ction 02713 – Page 4 ublished June 2020

SITE WORK - WATER SYSTEM CONSTRUCTION

is placed shall consist of materials suitable for supporting the stress development. Fine earthen materials shall be carefully pipe and up to a depth of six inches over the top of the pipe. to see that the pipe is not displaced, crushed, cracked, or t rock or excessively spongy materials are encounter t less than 6" below the bottom of the proposed lines and ial and mechanically compacted to grade. If no suitable the upper portion of the excavation, approved material shall

bell to be joined, and the elastomeric gaskets shall be cleaned embly shall be made as recommended by the manufacturer. ket and the bell or the plain end of the pipe to be jointed shall oft vegetable soap compound meeting NSF 61. The spigot end pipe forced home and brought to correct line and grade. Pipe nark shall be marked before assembly to assure that the spigot pth of the joint. Care shall be taken to ensure that no damage r bell when the pipe is being homed. Use of excessive force will had the grade or joint disturbed during or after laying shall be

or hydrants already laid and found to be defective shall be tional expense to the Town.

rict accordance with manufacturer's recommendation. All e trained and approved by the manufacturer for welding pipe is project. At the beginning of welding each day, each worker ionstrate his qualifications by successfully completing a bend e for use on the project. All welds shall be full depth and shall

be made with properly sized machine bolts and nuts. All nuts connections shall be Cor-blue, stainless steel, coated high rength wrought iron depending on soil conditions. All nuts and ved by the Town. All components of these types of joints shall (1) gasket will be permitted in a flange joint. In a mechanical seated before the gland and gasket is slipped up to the bell; sket evenly around the entire joint. All nuts on both types of first then by alternating nuts 180 degrees apart to the eflection at a mechanical joint shall not exceed either the Table 1 in AWWA C600. Buried bolts and nuts on mechanical in a 10 mil plastic and taped closed.

ppen ends of pipe and fittings shall be securely closed by a foreign materials and/or water. If there is water in the trench, the trench is pumped completely dry. Whenever water is in the ed on the pipe to prevent floating. Should any foreign material emain in the line after installation, the Contractor shall remove scraper or other approved means. Should the Contractor ther material from entering the line, he/she will be required to

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DIVISION 2

SITE WORK - WATER SYSTEM CONSTRUCTION

2.13. Cross Connection Control Valves: Where there is a potential of backflow, either backpressure or back siphonage, into the potable water supply, the service line shall be isolated from the potable supply by a backflow prevention device such as a double check valve, reduced pressure principal device (RP). pressure or atmospheric vacuum breaker depending on the location and nature of the hazard. The Town shall approve the type of device to be installed. All cross-connection control devices shall meet the standards of the Foundation for Cross Connection Control and Hydraulic Research (Foundation). The valves shall be used only as recommended by the Foundation and installation shall be in accordance with its recommendations. A list of currently approved devices and valves is available from the CDPHE. Valves shall be installed in vaults which allow for convenient testing and maintenance of the valves and they must be installed in a manner that allows for gravity drainage from the vault.

2.14. Miscellaneous Valves: Plans for all large valves, control valves, pressure reducing valves, and other specialized valves shall be submitted to the Town for review and approval. In all cases such valves shall be installed in vaults or pits that are sufficiently large to accommodate all operation and maintenance required. Bypass lines are required.

2.15. Bolts and Hardware: All bolts, nuts, and small miscellaneous hardware shall be Cor-Blue, stainless steel, or other durable corrosion resistant material approved by the Town unless specifically noted.

- 2.16. Compression Couplings: Compression couplings 2" or smaller shall be Mueller.
- 2.17. Tracer Wire and Marking Tape
- A. Tracer wire shall be 10 gauge with blue insulation.
- Marking tape at least 6" wide labeled "water" shall be placed 12" above pipes of all materials.

2.18. Insulation: Trench insulation shall be high compressive strength extruded polystyrene ridge foam insulation designed for use in engineered applications for high load bearing uses. Materials shall be a closed cell structure and meet ASTM C578 type VII. Minimum compressive strength (ASTM D1621) shall be 60 psi with an R value (ASTM C518) of 5 per inch. Insulation shall be Foamular XPS or each. Thickness

and width shall be in accordance with th	e table below:
Depth of Cover	Insulation Width and Thickness
4.5' - 5'	2" thick, 3.5' wide
4.0'-4.5'	3" thick, 3.5' wide
3.0'-4.0'	4" thick, 4' wide

Pipe crossing above water line 3" thick, 3' each side of crossing 2.19. Manholes: Manholes shall meet the requirements for manholes in the Sewer Standards (Section 02722).

3. EXECUTION

DIVISION 2

3.01. Field Locations: The Contractor shall make such excavations as are necessary to determine the exact location of existing utilities which affect new construction. Where practical, new lines shall be routed to facilitate installation, allow for future maintenance, minimize existing utility conflicts and to minimize construction problems. Notify the Town if existing utilities present conflicts for the new infrastructure.

3.02. Service Disruption: Service disruption shall conform to the requirements in the General Requirements.

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SITE WORK - WATER SYSTEM CONSTRUCTION

clean each section of pipe with a pipeline scraper or swab as it is installed. If pipeline cleanliness is in question the tablet method of disinfection will not be permitted.

Tracer wire shall be fastened to all pipes and shall be fastened to and be looped up to the surface at all valves, hydrant, and other metallic structures along the line. Tracer wire shall be 10 gauge Marking tape at least 6" wide labeled "water" shall be placed 12" above pipes of all materials.

- Sequencing: Pipeline installation shall follow trench excavation within 100 lineal feet. Trench backfill shall follow pipe installation within 100 lineal feet. Approved cleanup shall follow trench excavation within 100 lineal feet. The Town may allow changes in these requirements if field conditions warrant.
- Cutting of Pipe: The pipe shall be cut in a neat and workmanlike manner in accordance with manufacturer recommendations. No damage shall be done to the pipe or any lining or coating and the cut shall leave a smooth end at right angles to the axis of the pipe. Flame cutting of iron pipe by means of an oxyacetylene torch shall not be allowed.
- Connection to and Crossing of Existing Lines: When new pipe is to be connected to or to cross an existing pipe, the Contractor shall excavate the existing lines well in advance of the laving of the new line to enable the Town's representative to verify elevation and placement and to make any changes in grade and/or alignment of the new pipe line that may be required. Connections to existing lines shall be made at the locations shown on the approved plans unless changes are approved by the Town. In most cases where there is significant elevation adjustment (more than 18"), the Contractor shall use 22.5 degree fittings to make the adjustment. For lesser changes a gradual adjustment of elevation should be made. Place insulation where cover is less than specified depths. Coordinate timing of the cut with Town, and provide required notice to affected customers. In cutting the existing pipe take great care to minimize contamination of existing line. Keep water level in the trench below the level of the pipes. Make connection using required fittings and restrain the joint. Disinfect the line as called for below for a repaired line. Cut off and seal abandoned section unless otherwise noted on the approved plans, remove abandoned sections of line.
- 3.07. Water Service Installation
- Service Line Installation and Responsibility: All water services shall be stubbed out to through the utility easement. Generally, meters shall be set at property line. When sidewalks are set close to property line, meters shall be set in the green belt near the sidewalk. In all cases owner responsibility for the service line shall begin at the meter. Installation of service lines shall be by open cut with bedding, backfill, and compaction in conformance with the specifications herein and Standard Specifications for Excavation, Backfill, and Compaction. Depth of bury shall be 5' unless otherwise indicated on the Town approved plans. Care shall be taken in laying the service line to prohibit kinks in the line. In placing backfill around pipe use only select materials which will bed and support the pipe and not cause injury to it.
- Meter Lid Elevation: The lid for the meter can boxes shall be flush to finished grade of the B. surrounding property and landscape. When a meter can must be set within a sidewalk the lid shall be set about 1/2" below grade to avoid catching on a plow.
- Curb Stop and Box: Install curb stop on service lines so that the box will be in the sidewalk or concrete. Boxes must be plumb and the box lid 1/4" below the finished concrete.

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DIVISION 2 3.03. Receiving, Handling, and Storage

Upon receipt make overall inspection that pipe has been received in good condition. Pipe and appurtenances should be inspected for any damage or imperfections and problem materials should be so marked set aside until removed from the job site. Town reserves the right to inspect all materials received and reject any which does not meet the requirements of Town specifications and standards.

Pipe, valves, fitting, and other appurtenances should be unloaded, handled, and stored in accordance with manufacturer's recommendations. Pipe shall be handled during all phases of construction in a manner that will provide the maximum protection of the pipe and any coating or lining and will prevent the intrusion of dirt or other foreign materials into the pipe. All slings, hooks, and other lifting or handling equipment which comes in contact with pipe and appurtenances shall be padded. Dropping the pipe during unloading or placing in the trench is prohibited and will be cause for rejecting that material. Do not drag pipe spigot rings on the ground and do prevent damage to the ring from contact with abrasive or hard objects. Extreme care shall be used in the handling, storage, and installation of valves and other appurtenances to prevent damage or distortion to the equipment and to ensure proper performance and assure cleanliness. Valves shall not be lifted by operating stems. Dropping materials during unloading or placement in the trench is prohibited and will be cause for rejecting that material.

Only the amount of pipe and fittings necessary to ensure efficient installation progress shall be strung along the trenches. All other pipe and fittings shall be stored in the Contractor's yard. Piping strung or stored shall be protected at all times from damage by traffic, workmen, construction operations, and other hazards. PVC pipe stored for a prolonged period of time shall be protected from sunlight.

3.04. Alignment and Grade

Pipe shall be laid and maintained to the required line and/or grade shown on the approved plans with fittings, valves, and hydrants at the required locations with spigots centered in the bells. Pipes and appurtenances shall be installed within 0.5' horizontal and 0.1' vertical of design.

Changes in horizontal or vertical alignment of the pipe at a joint shall not exceed the manufacturer's recommended deflection for the type and size pipe being laid. When the change required is more than that recommended, a fitting or several short joints of pipe shall be used. All changes in direction in excess of eight (8) degrees or the maximum deflection recommended by the manufacturer, shall require a fitting unless otherwise approved by the Town.

When new pipe is to be connected to an existing pipe or when crossing existing pipe line, the Contractor shall excavate the existing lines well in advance of the laving of the new line to enable the Town's representative to verify their elevation and placement and to make any adjustments in grade and/or alignment of the new pipe line that may be required.

The Contractor shall proceed with caution in the excavation and preparation of the trench so that the exact location of underground structures, both known and unknown, may be determined, and he/she shall be held responsible for the repair or replacement of such structures when broken or otherwise damaged. Temporary support, adequate protection, and maintenance of all underground and surface utility structures, drains, sewers, and other structures encountered in the progress of the Work shall be furnished by the Contractor at his expense.

DIVISION 2

served.

3.08. Crossings: Details for crossing roadways, canals, ditches, and arroyos (draws) are covered in a separate specification entitled "Crossings". All river crossings shall be submitted to the Town for specific review and approval.

3.09. Setting of Fittings, Valves, and Hydrants: All hydrants, valves, plugs, caps, and fittings shall be provided as shown on the approved plans and set and joined to the pipe in the manner specified herein for cleaning, laying, and joining pipe. Whenever practical, flanged fittings shall be used and gate valves bolted directly to crosses and tees as applicable. All valves, fittings, hydrants including the connections shall be wrapped in a 10 mil plastic and sealed.

Valves and Valve Boxes; Gate valves shall be installed as shown on the Town typical drawing and in accordance with the Minimum Standards adopted by the Town at the locations shown on the approved plans. In general, a valve shall be provided on each branch of a tee or cross. Care shall be taken to assure that the valve and box are plumb and that the valve box is properly supported on a concrete base, and adjusted for the correct finished grade. A box shall be provided for each buried valve and the box shall not transmit shock or stress to the valve and shall be centered over the valve put. Each valve not in the roadway shall be marked with a steel T post. The top of the post shall have a 4 x4 minimum steel plate welded to the top. The plate shall be labeled with the valve ID.

- В.
- C. shall be provided at all dead-ends of pipe.

SITE WORK - WATER SYSTEM CONSTRUCTION

Whenever obstructions are encountered during the progress of the Work and interfere to such an extent that an alteration in the approved plans is required, the Contractor shall notify the Town and the Town

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SITE WORK -- WATER SYSTEM CONSTRUCTION

Fire Protection Service Line: Service lines for fire protection, unless smaller than 2", shall be made by installing a tee in the main with a gate valve flanged to the tee. All fire services shall be installed with a Town approved backflow preventions device. The property owner shall be responsible for maintenance of the fire service from the tee on the main to and through the property being

Hydrants: Hydrants shall be located as shown on the approved plans. Final location will be approved by the Town in the field and should provide complete accessibility and minimize the possibility of damage from vehicles or injury to pedestrians. Hydrants shall be accurately set to the proper bury lines so that bolts are accessible and shall be securely anchored when it is plumb. A gravel fill shall be placed around the hydrant barrel drain port as shown on the typical drawings. Each hydrant shall be connected to the main with a 6" minimum diameter branch controlled by an independent 6" gate valve, installed in accordance with the typical drawings for hydrant and gate valve installation adopted by the Town. The Contractor in the presence of the Town shall test each hydrant by operating it through several open and close cycles.

Dead Ends: All unconnected ends of pipe shall have a valve, and plug or cap installed on it with appropriate restraint. In general, plugs shall be inserted into the bells of all dead-end fittings. Spigot ends of accessories, fittings and plain ends of plastic pipe shall be capped. Blind flanges shall be used on flange fittings. A reaction or thrust block and mechanical restraint such as a megalug

Thrust Blocks: A reaction or thrust block shall be provided at each bend, tee, valve, hydrant, plug, and at reducers or fittings where changes in pipe diameter or direction occur. The size and shape of the thrust blocking shall be as shown on the typical drawing. Concrete shall be a 6 sack, 4000 psi at 28 days mix approved by the Town. Maximum water cement ratio shall be 0.42. The concrete shall be placed between the poly wrapped pipe or appurtenance and the undisturbed wall of the trench. The concrete shall be placed in such a manner that no concrete is in contact with any bolts or nuts on the fitting etc. so that the pipe and fitting joints will be accessible for repair by poly wrapped the full joint and taping closed. In addition, a joint restraint system such as a megalug shall also be provided on all mechanical joints.

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GRAPHICAL SCALE (FT) 6 RA 0 0



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1309 E. 3rd Ave., #206 Durango, CO 81301 970-403-5088

PLAN NO. **TS-8**

Sheet 29 of 50

Project: RIVERFRONT VILLAGE Date: 6/15/2021

DIVISIO	DN 2 SITE WORK – WATER SYSTEM CONSTRUCTION	DIVISION 2
E.	Air Valves: Air valves shall be installed in all locations where air is likely to accumulate in the water line, most often at high spots in the line. A tap shall be made in the top of the line and a corporation stop installed in the tap. The line shall then be connected to an air valve installed in a manhole or vault that meets the requirements of the material specifications above and shall be installed in accordance the standard drawing adopted by the Town. The valve shall be installed at 4 feet below finished grade. A frost-free lid shall be provided. Adequate insulation shall be installed around the valve to protect it from freezing.	approved new line, pipe insta
F.	Cross Connection Control Valves: Cross connection control valves shall be installed in a manner which conforms with the recommendations of the Foundation for Cross Connection Control and Hydraulic Research and applicable CDPHE regulations and shall have sufficient space around and access to the valve to allow for proper testing.	W
G.	Vaults: Vaults where needed or required shall be of concrete with minimum wall thickness of 6 inches or the minimum required to properly encase the re-enforcing steel required by the structure. The vault shall be of such size as to allow easy operation and maintenance of the equipment contained therein with no less than 18" clear around the outside of the pipe. A 24" minimum access hatch shall be provided over the manway steps to allow access to the vault. Opening size and location shall allow for removal of any facilities that need to be maintained. Vaults shall include either a floor drain or sump depending on groundwater conditions.	During the pressure. period is t acceptanc allowed b until the le
specifi pipe z zone k	Bedding and Compaction: Bedding, backfilling, and compaction shall be in accordance, with ation Backfill, and Compaction Standard Specifications of the Town and pipe manufacturer's cation. Special attention shall be given to placing and compacting select bedding material in the one. The haunching on PVC pipe shall be compacted to 95% Standard Proctor. Bedding and pipe backfill of water lines shall be fine grained and relatively impermeable rather than a graded material. Ill shall not be wheel compacted until there is a minimum of 36" of compacted cover over the top of	When sep procedure and the du Each gate times ope 3.12. D
3.11.	Hydrostatic Testing	A. G
servico advice	ontractor shall be required to perform hydrostatic tests on all water mains, laterals, dead ends, and e lines in accordance with AWWA specifications C600. Prior to making the test the Contractor shall the Town of the time and place of the test so that adequate inspection can be provided. Prior to mance of the test the pipeline shall be completely filled with water for a period of 24 hours.	pi W Ti al
the lir necess device allowe case c leaks i	ist shall be conducted in the presence of the Town or its authorized representative. The testing of the shall be done without being connected to existing lines unless approved by the Town. All sary apparatus for pressure testing including the pump, pipe connection, gauges, and measuring is shall be furnished by the Contractor at no cost to the Town. If connections to the existing lines are ad by the Town, it is with the understanding that the Contractor assumes any and all responsibility in if damage or failure of the existing system. Leakage through connections to the existing system, in the existing lines, or leaking valves under the test pressure will invalidate the test and required the factor to find another means to test the line.	B. Pi Er th C. Pr m ca
the Co filled t of the and le	o testing, all air shall be bled from the lines. If permanent air vents are not located at all high points, ontractor shall install corporation stops at such high points so the air can be expelled as the line is then the corps closed. The lines shall be tested at 150 psi or 1.5 times the normal working pressure lines, whichever is greater, for not less than two (2) hours when performing the combined pressure akage test. Test pressure shall be measured at the high point in the line. All taps, gauges (3" face, 0- si, at least 5 psi gradations), and necessary equipment shall be provided by the Contractor as	ai w ke n
	Section 02713 – Page 11 Published June 2020	
DIVISIO	DN 2 SITE WORK – WATER SYSTEM CONSTRUCTION	DIVISION 2
(a)	COLORADO Department of Public Health & Environment	comments General p discharge
Dedicat	ed to protecting and improving the health and environment of the people of Colorado	
	Low Risk Discharge Guidance	This disch
	Discharges of Potable Water January 15, 2016	Policy. Th condition: documen
	Scope and Purpose of Modification	this guida
	evised guidance document is effective January 15, 2016. In addition to editorial revisions, the ing substantive modifications were made: Added definitions.	When the enforcem discharge
	 Clarified the limitations on discharges for which this guidance is applicable, including what is included in a "potable water distribution system." 	Discharge with prop
	 Clarified that certain discharges associated with "super-chlorinated" water may be allowed under this guidance when the criteria and conditions are met. 	that woul concern is
	 Added conditions allowing for the use of chemical dechlorination. Clarified the requirements and practices for preventing erosion. 	solids and dechlorin
	 Identified an allowable concentration for residual chlorine in discharges to classified surface waters, consistent with 5 CCR 1002-31, The Basic Standards and Methodologies for Surface Water. 	There are water sys
the dr Tanks	es related to potable water distribution systems were made in response to comments received on aft permit <u>COG604000 General Permit for Discharges from Hydrostatic Testing of Pipelines,</u> and <u>Similar Vessels</u> . The final permit was issued on November 23, 2015 and is effective on April	are additi are not su generate the divisic authorize
final p distrib accore divisio during	6. Summaries of the comments and the division's responses are included in the fact sheet for the ermit. In the final permit, the division excluded discharges of potable water from potable water oution systems and reaffirmed that these discharges are more appropriately covered in lance with WQP-27, Low Risk Discharges Policy, as an alternative to general permit coverage. The on determined that clarifications should be made to this guidance regarding the issues raised the general permit renewal process and aligned the timeline of this update with the timeline for ce of the final permit.	was availa number o June 2008 issued the with the t of dischar without re
	ard to clarifications regarding what is included in a potable water distribution system, the	discharge
divisio guidar Clarity autho	in found that discharges associated with testing of new lines were consistent with scope of the ice as long as the construction and installation methods did not render the water non-potable. If was added to this guidance since construction contractors had previously applied and obtained rization for the discharge of water, including potable water, associated with the installation and g of new lines, under the COG604000 General Permit.	The criter anyone cl The follow
	ard to super-chlorinated water, the division determined that the super-chlorination of water in	this guida be dispose
potabl for de	e water distribution systems does not render the water non-potable, and that control measures chlorination of superchlorinated water are highly effective and widely available. Since comments cOG604000 General Permit requested clarification regarding whether permit coverage under the	wastewat Alternativ

general permit would be available for superchlorinated discharges, and since in response to other

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d by the Town; however, the Town r , between valves shall be tested to d alled will be accepted if the leakage is

Where:

L = Allowable leakage (gal/hrN = Number of joints in the li D = Nominal Pipe Diameter (P = Testing pressure (psig)

e test, the test pressure shall not lose . The total gallons of water required t the total leakage. If the total leakage nce. All visible leaks will be repaired r based on the above formula, Contract leakage is less than or equal to the allo

eparate pressure and leakage tests ar res detailed in AWWA C600. The dura duration of the leakage test shall be a r

valve shall be tested to ensure that i erating pressure in the closed position

- Disinfection of Potable Waterlines General: Flushing and disinfection of procedure set forth in AWWA C651
- water line which have been exposed The Contractor shall provide all tempo l other necessary apparatus required will not be allowed.
- Pipe Cleaning: If the pipe contains dirt Engineer will not be removed during t the interior of the pipe with a 5 percen
- Preliminary Flushing: The pipeline sha method is used, to remove all remain ninimum velocity of 5 ft./sec. for 5 annot, in the opinion of the Town E and swabbed with a 5% hypochlorite with the Tablet Method. Use of tablet kept clean and dry duration installation not allowed and preliminary flushing is

s the division excluded all discharge permit, the division is clarifying in t s associated with super-chlorinated

Backgro

charge policy guidance has been deve This guidance is only applicable to disc identified below. Refer to the Alt t for additional information for dis dance.

e provisions of this guidance are met, nent for the discharge of potable wat e has resulted in an adverse impact to

s of potable water are a type of indu per management are not expected t d cause or contribute to a violation s total residual chlorine, however, o id oil and grease may become polluta nation techniques, filters, oil booms,

re a large number of discharges of po stems are subject to the Colorado P tional public and private systems that ubject to 5 CCR 1002-11. These syst the types of discharges covered by t sion had a general permit in place, th e discharges from potable water distr ilable, 35 systems applied for and obt f systems expected to discharge. Th 8 to provide an alternative to genera e first low risk discharge guidance fo timeline for termination of the COG3 arges may occur at all times of the ye resulting in a clear general benefit to

eria provided in this guidance must be laiming to discharge under this low r

owing are examples of common disch lance. Discharges that do not meet th sed of properly, which may include s ater treatment facility or treating and ive Disposal Options section at the en

P

SITE WORK – WATER SYSTEM CONSTRUCTION	DIVISION 2	SITE WORK – WATER SYSTEM CONSTRUCTION	DIVISION 2
on may utilize its own gauges if it so elects. Each section of the to demonstrate that each valve will hold the test pressure. No te so greater than that determined by the following formula:	D. Chlorine Application: In g tablet method may be us	eneral, chlorine shall be applied using the continuous feed method. The ed on short extensions (up to 2500 ft.) of small diameter mains (12-inch segments require using the continuous feed method.	the danger from such pollu dissolve slowly and continue
$L = \frac{N * D * \sqrt{P}}{7400}$ I/hr)	a minimum concentration minimum of 24 hours af chlorine throughout the the 24 hours fails to mee	: Introduce water into the line at a constant rate while adding chlorine at on of 25 mg/l. Maintain the chlorinated water in the pipeline for a cer which period the treated water shall contain no less than 10 mg/l of entire length. Repeat the above procedure if the residual at the end of t the minimum concentration. Note that use of the slug method, requires less than 100 mg/l solution and not less than 50 mg/l free Cl2 at the end	The following procedure is co i. Swabbing with Hypo the repair (particular line shall be swabbed ii. Flushing - Thorough
er (in) (i) lose more than 5 psig without being pumped back up to the test kage is less than the allowable, the line can be given preliminary ed regardless of the amount of leakage. If leakage exceeds that tractor shall identify problems, make repairs, and repeat the test e allowable leakage. Is are to be performed, test procedures shall conform with the duration of the pressure test shall be a minimum of one (1) hour the a minimum of four (4) hours. That it operates properly and provides watertight seal under 1 1/2 tion. In of potable waterlines shall be done in accordance with the 551 Disinfecting Water Mains. All water lines and sections of sed including lines owned by other parties must be disinfected. mporary blowoffs, pumps, chlorination equipment, chlorine and uired. The placement of powder chlorine in each joint of pipe a dirt or heavy encrusted matter that in the opinion of the Town ing the flushing operation, the Contractor shall clean and swab rcent chlorine solution. e shall be flushed prior to disinfection, except when the tablet maining foreign material. The flushing operation shall develop a r 5 minutes minimum through the length of the pipe. If dirt rd ne ngineer, be removed by flushing, the pipe shall be cleaned orite disinfecting solution. Preliminary flushing cannot be used blet method for disinfection is only allowed if the pipe has been lation. If the pipe has not been kept clean, the tablet method is ng is required.	 line or if the water is be used with this method, i exercised. Place tablets i Refer to Table 3 of AWW 3 for 8" pipe in 20' joints an adhesive appropriate water into the pipeline at period of 24 hours. The remain until the chlorine comg/l. When the tablet preliminary flushing spect H. Disposal of Super Chloric conformance with CDPP property and improveme I. Bacteriologic Tests: After service, collect samples absence of coliform org requirements of the publess than one for chlorina collect samples in sterilic collect samples in sterilic collect samples using a hour of Procedure: the disinfection procedure while the mains remain may not require disinfect swabbed with chlorine in When an old line is open 	nated Waters: All flushing of chlorinated water shall be completed in E guidance and in a manner that protects with environment and all	introduced during re directions is recomm and continued until comparable chlorine Where practicable, in additi located shall be isolated, all as described for new lines, es contact time reduced to as continued until discolored w system. Bacteriologic samples shall b the procedures can be deter each side of the main break.
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arges from potable water systems from the COG604000 in this modification to the guidance document that certain ted water may be allowed under this guidance. Exground and Discussion Heveloped in accordance with WQP-27, Low Risk Discharges to discharges meeting the low risk discharge criteria and the Aternative Disposal Options section at the end of this a discharges that do not meet the criteria and conditions of meet, the division will not actively pursue permitting or water, unless on a case-by-case basis the division finds that a find ustrial activity with short term, infrequent discharges that do contain pollutants in concentrations that are toxic or cion of a water quality standard. The typical pollutant of ar, depending on how the discharge occurs, total suspended lutants of concern. These pollutants can be handled using ms, and other control measures. If potable water. For example, approximately 2,000 public o primary Drinking Water Regulations (5 CCR 1002-11). There that distribute water intended for human consumption which systems operate potable water distribution systems that by this guidance. From October 2001 through December 2008, the <u>Treated Water Distribution Permit (COG380000)</u> , to distribution systems. During the seven years permit coverage obtained permit coverage, a small number relative to the The division established the Low Risk Discharge Policy in neral permit coverage, as mall number relative to the the univision established the Low Risk Discharge Policy in neral permit coverage, as mall number relative to the the division established the Low Risk Discharge Policy in neral permit coverage for low risk discharges. The division set por patable water discharges in January 2009, which aligned COG380000 general permit. The division finds that these types e year, and require a resource intensive effort to permit, it to environmental quality due to the low risk nature of the scharges that do not meet the criteria for discharging under t the criteria for cov	distribution of potable of potable water are no covered under this guid discharges from cleanin pollutant concentration with Colorado Primary Discharges from conveyance or storage guidance. <u>Pefinitions</u> <u>Seconder of the second second</u>	g debris and foreign materials from new sections of pipe which have s making the water unsuitable for human consumption in accordance Drinking Water Regulations (5 CCR 1002-11). cleaning or maintaining components at a construction or utility yard guidance. a distribution system, tank or storage facility that is used for of materials other than potable water are not covered under this iteria. Conditions, and Control Measures iteria. Conditions, and Control Measures iteria a symposis is appropriate for the identified contamination e mechanical assembly is appropriate for the identified contaminant at d is an in-line field-testable assembly. Surface Water: is a surface water with a classification in the ric Standards Regulation for each of the seven river basins in Colorado. segment within the river basin can be found in the numeric and a basin regulation. as: are any best management practice or other method used to prevent of pollutants to waters of the state. means water suitable for human consumption in accordance with ng Water Regulations (5 CCR 1002-11), or water intended for human life or private supply system not subject to 5 CCR 1002-11.	 Exclusion of Process water distribution systems, Processes include, but are nor hydrostatic testing of pip Requirement for Rewater (any stream, creek, schlorine in excess of 0.011 necessary for removing chlocontent may be limited by the classified state surface water at the point where it discharing in an operator is unsure of this guidance, that they ass therefore subject to the 0.01 Exclusion of Dischard of cleaning materials or che allowed under this guidance, that they ass therefore subject to the 0.01 Exclusion of Dischard of cleaning materials or che allowed under this guidance, that they ass therefore subject to the 0.01 Additional chlorine remaintaining the potab water. Special attentio implemented for dech. Dechlorination chem residual chlorine and it is on the land surface. from erosion by reducing versary to preverted by recessary to preverted by encessary to preverted by a necessary the state waters or form flore existing beneficial uses.
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SITE WORK – WATER SYSTEM CONSTRUCTION

ollution. Tablets have the advantage in such a situation because they inue to release hypochlorite as water is pumped from the excavation.

s considered as a minimum that may be used.

ypochlorite Solution - The interior of all pipe and fittings used in making ularly couplings and tapping sleeves) and the open section of the existing bbed with a 5% hypochlorite solution before they are installed.

ough flushing is the most practical means of removing contamination g repairs. If valving and hydrant locations permit, flushing from both mmended. Flushing shall be started as soon as the repairs are completed until discolored water is eliminated and the water being discharged has a orine residual to the water in the distribution system.

ddition to the above procedures a section of main in which the break is , all service connections shut off, and the section flushed and chlorinated , except that the dose may be increased to as much as 500 mg/l, and the o as little as 1/2 hour. After chlorination, flushing shall be resumed and water is eliminated, and chlorine concentration is equal to that in the

all be taken after repairs to provide a record by which the effectiveness of etermined. If the direction of flow is unknown, samples shall be taken on

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SITE WORK – WATER SYSTEM CONSTRUCTION

cess Discharges: With the exception of hydrostatic testing of potable ems, the potable water shall not be used in any additional processes. are not limited to, any type of washing, heat exchange, manufacturing, pipelines not associated with treated water distribution systems.

Removal of Chlorine: If the discharge is directly to a state surface k, gully, whether dry or flowing), it must not contain any residual 11 mg/L. The operator is responsible for determining what is chlorine from the discharge. If the discharge is to a ditch, chlorine d by the owner of the ditch. However, if the ditch returns flow to waters, it must not contain residual chlorine in excess of 0.011 mg/L ischarges to the classified state surface water. It is recommended that e of the status of the receiving water for a discharge in accordance with y assume a receiving water is a classified state surface water and ne 0.011 mg/L chlorine limitation.

charges with Cleaning Materials and Added Chemicals: The addition chemicals to the potable water source water or discharge is not ance, except for additional chlorine and dechlorination chemicals below

rine may be added to the potable water source for the purposes of otable water distribution system, including the use of super-chlorinated tention should be paid to the selection and use of control measures echlorinating superchlorinated waters. hemicals may be added to the discharge for the purposes of removing

and in accordance with the manufacturer's label.

ions: The discharge shall not cause erosion of a land surface that could eceiving water. Signs of visible erosion that have the potential to cause tream controls measures implemented include the formation of rills or face. Energy dissipation devices designed to protect downstream areas velocity of flow (such as hose attachments and erosion controls), event erosion.

Discharge: The discharge shall not contain solid materials in settle to form bottom deposits detrimental to the beneficial uses of n floating debris, scum, or other surface materials sufficient to harm

irements and Property Rights:

nust comply with the lawful requirements of federal agencies, unties, drainage districts, ditch owners, and other local agencies harges to storm drain systems, conveyances, ditches or other water r jurisdiction.

luded in this document in no way reduces the existing authority of the sewer, ditch owner, or other local agency, from prohibiting or placing ions on the discharge.

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NS:	E DESCRIPTION								
Revisions:	# DATE								





NGINEERING_{LI} 1309 E. 3rd Ave., #206 Durango, CO 81301 970-403-5088

PLAN NO. TS-9

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Project: RIVERFRONT VILLAGE Date: 6/15/2021

		SITE WORK – WATER SYSTEM CONSTRUCTION		DIVISION 2
discharging in accord by the division to he implementing contro	uld be implemented as necessary to lance with this guidance. The followi p ensure that the discharge will not	meet the conditions above, by anyone ng control measures have been developed negatively affect water quality. When conditions of this guidance may not be additional solutions.		being met. It is associated with a met.
* Discharg toxicity to vege	es to the Ground: For discharge to t	he ground, the water should not cause any water to drain <u>slowly</u> so that it soaks into		the potential to pick up a distribution systems and p The discharge shous suspended solids and sediment is inherent
	e to the Ground instead of Dechlor	ination: The conditions for removing to the ground and does not result in		impacts should be m across bare soils. The discharge shoup petroleum products/
water read to dechlor • Dechlor	hing a state surface water. This opti	on should be considered as an alternative o contain chlorine at concentrations		absorbent oil pad, bo discharge. A visible s
chlorine m discharge the 0.011 necessary, detected; potable wa	ust be done for any direct discharge to a storm sewer or conveyance when mg/L limitation prior to reaching a st may be achieved by allowing water ensuring dechlorination occurs betwee			appurtenances into a pota and maintained in a way t covered under this guidan All pipe, fittings, a industry standards fo procedures include,
dechlorina All chemic When usin	al additions must be in accordance w g chemicals in the dechlorination pro	s to remove chlorine from the discharge. ith the manufacturer's specifications.		(Installation of Ducti standard operating p necessary to remove components prior to covered under this g
chlorine; t reaching a the water. occur, ope	hat adequate mixing occurs; and that surface water for the dechlorination In cases where the discharge of water rators should allow additional time for	t enough time is allowed prior to flow chemicals to react with the chlorine in er that had been super-chlorinated will		generated wastewate wastewater treatmer disposed of. Practices should be maintenance to mini
responsibi chlorine li that an EP •	ity to ensure that adequate processe mitation prior to discharge to a classi A approved test method be used to n Discharge Testing: There are a varie:	is are followed to meet the 0.011 mg/L ified state surface water. It is not required hake this determination. ty of methods to test for chlorine in the		appurtenances that c Removing Pollutar other debris should be use after discharge or that ori
detect metho chlorir îs usin testing	e to ensure that this limitation is me g a "color-wheel test kit" available fi			suspended solid removal p As a final measure downst to provide some additiona measures should be used a specifications.
to mai 0.011 hold ti	Discharging without Testing: In some te a determination that the chlorine of mg/L without analysis. This may be b me or travel time to a classified stat	e cases, it may be possible for an operator concentration in a discharge is below vased on a determination that the given e water, based on other discharge-specific evels to result in the chlorine limitation		Water that does not meet the crite meets the conditions of this guidan the division, or disposed of through
	Section 02713 – Page 1 Published June 2020			
DIVISION 2	Minimum Gr	SITE WORK – SEWER MINUMUM STANDARD		DIVISION 2
DIVISION 2 <u>Sewer Diameter</u> 4 inch 6 inch 8 inch and larger	<u>Minimum Gra</u> 2.0 or 1/2 incl 1.00 0.50	ade (percent)	· · · · · · · · · · · · · · · · · · ·	shall be provided with pipe sizes se flows. The inlet and outlet details so that either barrel may be out of s
Sewer Diameter 4 inch 6 inch 8 inch and larger 3.04. Minimum Veloci	2.0 or 1/2 incl 1.00 0.50	ade (percent) h per foot a minimum of 2 fps at design flows unless		shall be provided with pipe sizes so flows. The inlet and outlet details so that either barrel may be out of s <u>6. SERVICE CONNECTIONS</u>
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 Sewer Diameter 4 inch 6 inch 8 inch and larger 3.04. Minimum Veloci the Town approves a dev 3.05. Maximum Slope steeper than that, contr Where velocities greater liquids from separating fr 3.06. Manhole Spacing connection with other set 450 feet for lines larger th maximum change in direc Sewer lines shall be strai stubbed out with suitable 3.07. Flexible Joints ne walls and other solid strue 3.08. Terminal Manho sewer service. 3.09. Underdrains: Wh cleanouts or manholes se intervals for the underdra below the sewer main 3.10. Drop Manhole: manhole is in excess of 2/ 3.11. Depth of Bury: N Bury of 7 to 9 feet is con Town. 4. LIFT STATIONS The need for pumping fa beginning design. The uright to dictate the loc maintenance services fro 5. INVERTED SIPHONS The use of inverted siph Town does approve the minimum pipe size of 6 in 	2.0 or 1/2 incl 1.00 0.50 by: Pipes must be designed to flow at iation which will only be considered unclean Sewer shall be designed with slopes of the slope of the sewer with the than 5 feet per second are attained, so om the solids and to protect against do and Design: Manholes shall be provide wer main; maximum spacing shall be nan 15 inches. A minimum of 0.10' for tion of 45 degrees and 0.20 feet for do ght and not curved between manhole e size pipe wherever future extension of ar Manhole: Provide a flexible joint in ctures. le: There shall be a terminal manhole here underdrains are to be constructer hall be provided for the underdrain tin. Typically underdrains installed with Drop manholes should be provided of a inches. Designs that require drop mani- dinimum cover on sewer mains shall sidered normal. Depths outside this cilities and the design of these facilities m the developer and/or to impose add provided a siphon system, the system to a siphon system, the system to a sight and shall be provided with neces	ade (percent) h per foot a minimum of 2 fps at design flows unless nder extreme circumstances. s of less than 10%. If the ground profile is use of adequately spaced drop manholes special provisions shall be made to keep the isplacement by erosion and shock. ded at every change in direction or grade, or 400 feet for lines 15 inches or smaller, and ot drop shall be provided in manholes with a hanges in direction greater than 45 degreess is in both line and grade. Manholes shall be of the sewer is anticipated. In the pipe 12 to 18 inches from all manhole e at the end of all sewer lines, past the lass d with the sewer mains (or other locations) at each manhole or at 400 foot maximum h sewer mains shall be place to the side and when the change in elevation through the anholes, require Town authorization. normally be seven foot to ground surface is range will require specific approval of the s truly necessary. The Town reserves the s to be constructed and to require extra		 shall be provided with pipe sizes set flows. The inlet and outlet details a so that either barrel may be out of set of the set of the

d be conducted to minimize the potential that it will contact waste, and avoid picking up any oil and grease. When possible, an oom or similar device should be used to eliminate oil from the neen must not be evident in the discharge.

nd other appurtenances associated with the discharge should meet cleanliness for a public water. Examples of standard operating out are not limited to, those found in ANSI/AWWA Standard C600-10. e-Iron Mains and Their Appurtenances), or any other applicable ocedures that reflect industry standards of cleanliness. When it is lebris, foreign material or other gross contamination from nstallation, wastewater generated from such activities may not be dance. Such activity should occur at a location that allows for to be sent to the sanitary sewer with permission of the local facility. Such wastewater could also be otherwise collected and

its; Control measures for filtering or settling suspended solids and to remove solids or other debris that have either been picked up inated from within the potable water system. Examples of actices include but are not limited to, check dams and filter bags. ream from additional control measures, inlet protection can be used removal and to allow for redundancy. Pollutant removal control nd maintained in accordance with the manufacturers'

ria of this guidance or that cannot be discharged in a manner that ce must be either authorized by a CDPS discharge permit issued by an alternative means. Because the water sources addressed in this

ected to secure velocities of at least 3.0 feet per second for average hall be arranged so that the normal flow is diverted to one barrel and rvice for cleaning.

Id not be any closer than five feet to the side property line, and no ough or in front of any adjoining property. Whenever possible, service r to the main and shall be located 10 feet inside the downhill property service lines shall be 1/8 inch (1%) per foot (2% preferred) and for 4 mum cover of the sewer service shall be three (3) feet at the property

ided in the sewer main for service connections at each building site. rawings in plan and profile. Tapping saddles will only be allowed with ces which necessitate their use and not allowed for new construction. that the upper invert of one-eighth bend connected to the fitting will than the inside top of the sewer main. Service lines installed during through the front utility easement, have a cleanout out at the water and air tight seal and marked with a 2 x 4 brought to grade and the depth of the line. Riser connections shall be installed where the more than 12 feet below finished ground surface. See Standard more detail on service stub-ins and connections.

y owner begins building a basement or any habitable structure below hall ensure that the level of the most adjacent sewer is 6 inches in of the lowest fixture or drain in said basement. This requirement will wner installs a sewer lift station or an approved backflow prevention

d to a point at least 20 feet up from the lowest lot corner adjacent to t to be served and terminate in a manhole. Service connections will a manholes except when the diameter of the service line is 50% or ecial manhole shall be added for that purpose. Only with the approval s be allowed immediately above or below a manhole.

hall conform with the Standard Specifications for Sewer System xcavation, Backfill, and Compaction, Specifications (Section 02200). inches below the pipe barrel to springline (half way up the pipe). to support the pipe and must be 95% Standard Proctor. The first one be hand placed, hand compacted, select material as defined in the ions. For gravity sewer line construction, a single size screen rock sed as select bedding. Place a non-woven geotextile on top of the e zone in a geotextile wrap.

as less than four feet of cover, provisions shall be made to protect pipe insulation may be required.

SITE WORK – WATER SYSTEM CONSTRUCTION

the operator's responsibility to ensure they understand the variables specific discharge to ensure that the chlorine limitation has been

Jp After Release: The discharge should be conducted to minimize ditional pollutants following release from the potable water prior to discharge to a water of the state.

Id be conducted to minimize the potential to pick up additional to control erosion. It is understood that minimal suspension of to any water running across soils. However potential water quality nimized through practices such as diffusing flows and avoiding flows

alling Components: When installing new pipe, fittings and ble water distribution system, the components should be prepared minimize the potential for contribution of pollutants to discharges

implemented during transport, storage, installation, and nize introduction of contaminants to pipe, fittings, and other ould contribute pollutants to discharges.

Alternative Disposal Options

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SITE WORK - SEWER MINUMUM STANDARDS

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DIVISION 2

SITE WORK – WATER SYSTEM CONSTRUCTION

guidance are not covered by an existing general permit, it is expected that obtaining a CDPS permit will not be a practical solution for most discharges.

Water not meeting the criteria and conditions of this guidance may be sent to the sanitary sewer with permission of the local wastewater treatment facility or otherwise collected and disposed. If discharge is to the sanitary sewer, contact the local wastewater treatment facility prior to discharge. System owners may grant blanket authorization to discharge to their systems. This must be done to ensure that the facility is able to accept the discharge. Not all facilities are able to accept such discharges. Note that additional restrictions or local guidelines may apply.

If the waste is collected for disposal, it may be hauled off site for disposal at a facility that is authorized to discharge the water through an existing CDPS permit or in accordance with disposal requirements administered through the Colorado Hazardous Materials and Waste Management Division.

Alternatively the water may be land applied in a way that results in complete evapotranspiration. This will likely only be an option when the quantities of water are small.

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DIVISION 2

SITE WORK - SEWER MINUMUM STANDARDS

7.03. An approved cut-off wall shall be constructed on the lower side of crossings such as under open ditches, canals, or creeks, to prevent water from following the sewer trench.

7.04. Where design velocities exceed 5 fps, special provisions shall be made to protect against pipe displacement by shock and/or erosion.

7.05. Underdrains, where required, shall be formed by creating a non-woven geotextile wrap around screened bedding around the sewer pipe and underdrain. See Sewer / Seep trench typical drawing.

8. PROTECTION OF WATER SUPPLIES

8.01. There shall be no physical connection between a public or private potable water supply system and a sewer, or appurtenance thereto which would permit the passage of any sewage, non-potable, or polluted water into the potable supply directly or through contamination of the surrounding soils.

8.02. Whenever possible, sewer mains and service lines should be laid at least 10 feet, horizontally, from any existing or proposed water main. Should local conditions prevent a horizontal separation of 10 feet, a sewer may be laid closer than 10 feet to a water main if it is laid in a separate trench, or it is laid in the same trench with the water mains located at one side on a bench of undisturbed earth with at least five feet of horizontal separation.

8.03. Unless there is at least 10 feet horizontal separation, the elevation of the crown of the sewer must be at least 18 inches below the invert of the water main or the sewer line encased.

8.04. Whenever sewer must cross under water mains, the sewer shall be laid at such an elevation that the top of the sewer is at least 18 inches below the bottom of the water main. When the elevation of a sewer cannot be buried to meet the above requirement, the water main may be relocated to provide this separation or the sewer pipe shall be encased by either a single joint of PVC or HDPE pipe for a distance of 10 feet on each side of the water. When possible, one full length of water main shall be centered over the sewer so that both joints will be as far from the sewer as possible. When it is impractical to encase the sewer, the water line shall be encased with the same criteria above.

8.05. When sewer lines or services cross above water mains or services, the water mains must be protected at a minimum by the criteria above In such cases, there shall be no joints within ten feet on each side of the water line. In all cases where the sewer line is above the water, a casing shall be required and the ends of the casing shall be sealed in a watertight manner with a reducing no-hub gasket or other approved method. Both lines should be pressure tested to assure water tightness.

8.06. There shall be a minimum clear distance vertically of 8" between the uppermost part of the lower utility and the lowermost part of the upper utility including casings to allow for proper bedding. In all cases, suitable backfill or other structural protection shall be provided to preclude settling and/or failure of any of the pipes.

8.07. The Town shall have final review authority of all proposed designs which do not provide adequate separation. These requirements for protection of the water system against contamination from nonpotable water conveyances shall apply equally to water mains and service connections.

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DIVISION 2

In addition to the requirements for plan approval in the General Requirements, the plans shall clearly show the lots and blocks to be served and the location of the sanitary sewer mains with reference to property lines. All service wyes shall be stationed for proper control and for future location. Profiles shall give dimensions, grade, rim elevations, and invert elevations into and out of the manholes of the sewer to be constructed. The plan view shall include topographic information with at least 2 foot contours for all lots in the service area.

2. DESIGN FLOW

1. PLAN APPROVAL

2.01. The design shall include consideration for providing service to the entire area tributary to the outfall point. Estimates of residential sewage contribution shall be based on 100 gallons per capita per day with a peak hour factor of 3. Minimum residential population density shall be figured on a basis of 3.5 persons per house, structure density based on the zone, and 70 percent of total land area developed as residential unless otherwise zoned, subdivided, or restricted.

2.02. Institutional, commercial, and industrial sewage contribution estimates shall be based on the design criteria set by the Colorado Department of Public Health and Environment (CDPHE) with review by the Town. Allowance shall be made for infiltration flow of 50 gallons per day per inch diameter per mile of pipe. Design flow shall be the sum of the peak flow as computed above and the flow due to infiltration as determined above or by actual field experience if worse.

2.03. Sewers 15 inches in diameter and smaller shall carry the peak design flow at a maximum flow depth of half the pipe diameter. Sewers larger than 15" in diameter may be designed to flow up to three quarters full at peak design flow rate. The minimum velocity at the design flow rate shall be 2.0 feet per second (fps). Where actual flow will be much below normal for several years the minimum velocity shall be achieved by suitable grades at the partial design flow.

3. PIPING DETAILS

than PVC pipe shall be permitted only with prior approval of the Town.

3.02. Size: Normally sanitary sewer mains shall be 8 inch diameter or larger to facilitate maintenance. Service connections shall be 4 inch diameter or larger. Six (6) inch sewer mains may be installed under special conditions where only 3 or fewer residential connections will be made to the line, and where approved by the Town. Smaller force mains may be used under certain conditions with approval of the

supersede the grade criteria:

DIVISION 2

9. MISCELLANEOUS REQUIREMENTS

9.01. Rain water leaders, roof drains, surface drains, or ground water drains shall not be connected to the sanitary sewer. Each sanitary sewer service system shall be separate from the drainage system.

10. TESTING

& exfiltration, and pressure testing.

SITE WORK – SEWER MINUMUM STANDARDS

DIVISION 2 – SITE WORK

SECTION 02722 - SEWER SYSTEM - MINIMUM DESIGN STANDARDS

3.01. Materials: Piping materials shall meet the requirements specified in the Standard Specifications for Sewer Collection System Construction. In most cases pipe shall be SDR 35 PVC. Use of materials other

3.03. Grades: The following minimum grades shall apply unless hydraulic (flow) requirements above

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SITE WORK – SEWER MINUMUM STANDARDS

9.02. Grease and sand traps shall be installed where required by the provisions of the Ridgway Municipal Code and/or the International Plumbing Code.

Testing of sewer lines and services, manholes and appurtenances shall conform with the requirements of the applicable portions of the Sewer System Construction (Section 02723) regarding lamping, vacuum, in-

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	RIVERER							

[DIVISION 2 SITE WORK – SEWER SYSTEM CONSTRUCTION	DIVISIO	DN 2	
	DIVISION 2 – SITE WORK SECTION 02733 - SEWER SYSTEM CONSTRUCTION	A.	Polyvinyl Chloride (PVC) Pipe
	1. <u>GENERAL</u> 1.01. Related Work Specified Elsewhere		Conformance Pressure Rating Joints ** Service	SDR 35, 3034 PVC sewer or hea Gravity, open channel flow Unibell bell and spigot, elastom Gravity sewer lines, sewer servi
5	Section 02220 - Excavation, Backfill and Compaction Section 02713 – Water System Construction Section 02722- Minimum Design Standards – Sewer Collection System 1.02. Description		Maximum Warp Fittings Conformance Pressure Rating	1/32 inches per foot Schedule 40 or Schedule 80 PV0 ASTM 1785 or AWWA C900 150 psi working pressure
t	Work specified in this Section includes furnishing, installing, and testing of sewer mains, service lines, temporary services, drain and seep lines, manholes, valves, fittings, cleanouts, appurtenances, and manholes, and testing requirements for sewage and seep piping systems.		Joints ** Fittings Service	Unibell bell and spigot, elastom AWWA C151/A21.51 Pressure sewer lines
t	Sewers shall be constructed of such size and laid to such grades as approved by the Town. The Town must be notified in accordance with the General Requirements of when pipe will be laid. No pipe shall be laid or covered until it has been inspected by the Town.		Conformance Pressure Rating Joints ** Fittings	Schedule 40 PVC 150 psi working pressure Solvent weld conforming to A Recommended practices for So Schedule 40 - solvent cemented
	Pressure sewer lines shall conform with applicable sections of these specifications and with the sections of Water Line Standard Specifications as they apply to installation and testing of piping lines under pressure.	В.	Service Ductile Iron Pipe and Fi	Force mains less than 3" in dian
	1.03. Certificates of Compliance Certificate of Compliance shall be submitted to the Town stating all pipe and materials furnished under		Conformance Class	AWWA C151/A21.51 Class 50
t	these specifications do in fact comply with all referenced specifications.		Lining Coating Pressure Rating	Cement Mortar, or epoxy Polyethylene wrap tubes, tape : 100 psi working pressure
	I.04. Referenced Standards A. Uni-Bell PVC Pipe Association - Recommended Practice for the Installation of Polyvinyl Chloride		Joints **	Push on, Super Bell-tite ved by the Town prior to purchas
E	Sewer Pipe (UNI-B-5) latest revision B. Uni-Bell PVC Pipe Association - Recommended Practice for Low Pressure Air Testing of Installed Sewer Pipe (UNI-B-6) latest revision	C.	High Density Polyethyle Conformance	ne (HDPE) Pipe Perforated 4-10" AASHTO M252, ASTM F20 12" - 60" AASHTO M294, ASTM
C	C. C478 Standard Specifications for Precast Reinforced Concrete Manhole Sections		Joints Service	Perforated Bell and Spigot Seep line
	2. PRODUCTS	D.	High Density Polyethyle	ene (HDPE) Pipe
	2.01. Pipe Materials All materials shall be new, and of the best standard quality available for the purpose intended. Where		Conformance Thickness Pressure Rating	AWWA C906, DI or IPS DR 11 200 PSI operating pressure
r s	materials are specified by brand names, materials of equal quality may be substituted if the Contractor submits adequate technical and descriptive data and secures the approval of the Town. The Town or its		Joints Fittings	Butt fusion, Heat welded 200 psi, HDPE butt fused, hea
i	designated representative shall be the sole judge of the suitability and acceptance of materials. The Town in some instances may insist on a particular brand or model (to match materials in use) to minimize the parts inventory and/or O and M requirements.		Restraints Service	AWWA C153 or C110, 250 psi, Concrete & Megalug 2000 serie Only where shown on the plan
	Section 02733 – Page 1			allowed, HDPE will need to mee Section 02733 - Page 2
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[DIVISION 2 SITE WORK – SEWER SYSTEM CONSTRUCTION	DIVISIO	DN 2	
F	Marking (warning) tape at least 6" wide labeled "sewer" shall be placed 12" above pipes of all materials.	3.04.	Alignment and Grade	
less.	3. EXECUTION	Basic c	control shall be set with	d stationing will be provided by stakes, spikes, shiners, or crosse all be provided within 150 feet
	3.01. Handling and Storage Exercise proper precautions in unloading, handling, stockpiling, and installation in order to prevent	stakes	on the ground at 150 f	t intervals which the Contracto tractor shall transfer line and
C	damage to materials and to insure delivery and installation in a sound and acceptable condition. Special care shall be taken to protect the plastic on the spigot ends from any contact with the earth.	preser	vation of stakes and othe	approved by the Town, with spot r line and grade references is the
c s	Remove any broken or damaged materials from the construction site and do not use in any portion of the construction. Any damaged, broken, or otherwise defective materials which are included in the construction shall be removed and replaced by the Contractor at his expense. Handle pipe using wide slings; the use of hooks or other equipment which could damage pipe will not be permitted. During pipe	alignm increas	ent and grade. Where sed to 0.03 feet.	all be laid to within 0.1 feet he e design sewer grades are great carefully controlled so that the
	handling, protect against impact shocks and fall. 3.02. Underground Obstructions	compa provid	ection of backfill between e ample room for prope	n the pipe and trench walls. All r joining and compaction of pip
	The Contractor shall proceed with caution in the excavation and preparation of the trench so that the excavation and unknown, may be determined. Hand	provid	ed. Maximum trench w	e twelve (12) inches plus pipe vidth will be restricted to pipe aximum trench width is exceede
e L	excavation shall be used where necessary. If required, the Contractor will excavate and locate existing utilities ahead of trench excavation in order that necessary grade changes or utility adjustments may be known ahead of time. The Contractor will be responsible for notifying all appropriate utilities such as gas, electric, telephone, cable, etc. when working in areas where there may be such utilities.	higher Contra	strength pipe as approve actor shall furnish and ut	
T	The Contractor shall preserve intact any underground utilities encountered during construction unless they interfere with new pipe lines or structures being installed. When underground utilities will interfere with	accura and wa	cy of the pipe laser can bater in the pipe.	be adversely impacted by a num
a t	proposed construction, notify the utility and the Town. Contractor shall make suitable arrangements to adjust the proposed construction. In case any such utilities or other structures are accidentally broken, they shall be immediately replaced in a condition at least equal to that in which they were found, at the Contractor's expense.	by the that th templa	Town. When the laser on the laser of the laser will describe the laser shall be placed in the	e trench bottom, manhole invert equipment is placed in the trend center of the conduit. As each pipe's end and the vertical and ily placed conduit sections shall
3	3.03. Excavation	trench	excavation and placem	ent of bedding materials. The insure its correct vertical and he
	Excavation and preparation of the trench bottom shall be in accordance with Excavation, Backfill, and Compaction Standard Specifications (Section 02200) as should all backfill and compaction.			duit line is properly ventilated.
c s r F	Excavation for pipe shall generally be by open trenches unless otherwise specified, required on the plans, or approved by the Town. The trench shall be excavated using conventional methods. Methods other than standard cut and cover must receive prior approval of the Town. The banks of the trench shall be kept as nearly vertical as soil conditions will permit, but shall not exceed the angle of repose of the soil. The Responsible Party shall assume shoring will be needed. Boring and pipe bursting methods where specified or authorized must be approved in advance by the Town.	3.05. A.	other damage before in bells that are not full ar	nd accessories shall be carefully nstallation in the final position. nd continuous, pipe that does no Rejected materials shall be prom
E	Excavation for manholes and other accessories to have 16 inch minimum clearance on all sides.	B.	Installation Instructions	1
t t	Excavation shall not be carried below the required level. Excess excavation below required level shall be backfilled with structural gravels, or concrete, as appropriate for proper backfill and use, and shall be thoroughly tamped to achieve the density required in the pipe zone or manhole foundation as appropriate.		instructions and recom	hall conform with applicable pre- mendations, and with these spe- e conflicts, the more stringent
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SITE WORK – SEWER SYSTEM CONSTRUCTION	DIVISION 2 SITE WORK – SEWER SYSTEM CONSTRUCTION	DIVISION 2
3034 PVC sewer or heavier walled open channel flow peel and spigot, elastomeric gasket sewer lines, sewer service lines has per foot at 0 or Schedule 80 PVC 785 or AWWA C900 working pressure leal and spigot, elastomeric gasket C151/A21.51 sewer lines 4 0 PVC working pressure weld conforming to ASTM D-2564 & D-2855 (Specifications and tended practices for Solvent-Cemented Joints with PVC pipe) a - solvent cemented per ASTM D-2564 ains less than 3" in diameter only C151/A21.51 Mortar, or epoxy face wrap tubes, tape seal ends working pressure source prove proto purchasing the pipe and fittings.) Pipe Perforated SHTO M252, ASTM F2648; 'ASHTO M254, ASTM F2648 and F2306 de Spigot solution to purchasing the pipe and fittings.) Pipe G306, DI or IPS operating pressure on, Heat welded HDFE butt fused, heat welded when available or Ductile Iron c153 or C110, 250 psi; * Megalug 2000 series or equal for DI MJ fittings er shown on the plans or specifically approved by the Town. If HDFE butt fused, heat welded when available or Ductile Iron c153 or C110, 250 psi;	 Service Cronections Electrolization tapping saddle or tee E. Steel Casing Pipe Service Cronections Buried Pipe Encasement Conformance AWWA C2003 Min Yeld Strength 35,000 psi Min Yeld Strength 35,000 psi Min Yeld Strength 35,000 psi Min Yeld Strength 35,000 psi Pipe Wall Meterior Coating Cod I are pacy coating (16 mil milmum) exterior; Interior Coating Cod I are pacy coating (16 mil milmum) exterior; Min Yeld Strength 36,000 psi Pipe Mark 10,000 psi Pipe Pipe Mark 10,000 psi Pipe Pipe Mark 10,000 psi Pipe Pipe Pipe Pipe Pipe Pipe Pipe Pip	 C. Frame and Covers Where approved by the Totan alloy of aluminum with cover shall weigh about 66 except where noted on the clear opening of 24 inchest shown on plans, frost free I A good fit is required betwared and water. To ensure goot face of the cover shall be more notch along the edge of place. Other means of open purchased. D. Manhole Steps: Epoxy coat built into each manhole. approximately 5 inches from inches of bar on each side, foot from slipping off the samproximately 5 inches from the rim to the first stee. E. Non-Shrink Grout: Comment for a highly corrosive envirous submitted for review and and the spaced eventy at 1 from the rim to the first stee. E. Non-Shrink Grout: Comment for a highly corrosive envirous submitted for review and and any fires shall be spaced events at 1 from the rim to the first stee. G. Pipe Connections: Flexible Gaske Type Preformed Conformance Fed. Spec. G. Pipe Connections: Flexible and all fats. H H. Geotextile: Geotextile used any fines shall be a needle equal. 2.03. Tracer Wire and Marking Ta Tracer wire shall be insulated 10 gas to all buried non-metallic pipes incon the outside of each manhole and line wire and any breaks in wire shall be insulated to gat to all buried non-metallic pipes incon the outside of each manhole and line wire and any breaks in wire shall be an each and the state of the shall be insulated 10 gas to all buried non-metallic pipes incon the outside of each manhole and line wire and any breaks in wire shall be an each and the state of the shall be insulated to gas to all buried non-metallic pipes incon the outside of each manhole and line wire and any breaks in wire shall be an each and the state of the shall be an each and the state of the shall be an each and the state of the shall be an each and the state of the shall be an each and the state of the shall be an each and the state of the shall be an each and the state of the shall be an each and the state o
SITE WORK – SEWER SYSTEM CONSTRUCTION In g will be provided by land surveyors retained by the Developer. Wikes, shiners, or crosses set at the surface and on an offset from wided within 150 feet of each manhole and for grade and offset is which the Contractor shall use to confirm his elevation while hall transfer line and grade from these control points to the by the Town, with spot checks by the Town's representative. The grade references is the responsibility of the Contractor. I to within 0.1 feet horizontal and 0.02 feet vertical of design sewer grades are greater than 1.0% vertical tolerance can be controlled so that the pipe will be laid with adequate space for and trench walls. All excavation shall be of sufficient width to and compaction of pipe and fittings, typically 16" plus pipe OD. (12) inches plus pipe OD assuming proper compaction can be	 DIVISION 2 SITE WORK – SEWER SYSTEM CONSTRUCTION Pipe shall be laid and maintained to the required line and/or grade shown on the plans at the required locations with spigots centered in the bells. When new pipe is to be connected to an existing pipe or when crossing an existing pipe line, the Contractor shall excavate the existing lines well in advance of the laying of the new line to enable the Contractor and OR (Owner's representative) to verify the elevation and placement and allow for adjustments in grade and/or alignment of the new pipe line that may be required. C. Potential Conflicts: The Contractor shall proceed with caution in the excavation and preparation of the trench so that the exact location of underground infrastructure, both known and unknown, may be determined, and he/she shall be held responsible for the repair or replacement of such improvements when broken or otherwise damaged. Temporary support, adequate protection, and maintenance of all underground and surface utility structures, drains, sewers, and other structures encountered in the progress of the Work shall be furnished by the Contractor at his expense. D. Lowering Pipe into Trench: Proper implements, tools and facilities shall be provided and used by the Contractor for the safe and convenient performance of the Work. All pipe, fittings, manholes and appurtenances shall be carefully lowered into the trench piece by piece by means of strans, or 	DIVISION 2 away or adding properly or and blocks or beating or jur Lay all sewer pipes straig manholes, unless directed smooth invert at the join watertight. Immediately b of the spigot end and the g that the correct type of gas face of the gasket and the the bell with care to prever pushing the pipe home (to jolting movements. Pipe f ensure insertion to the ful brought to correct line and pipe, collar, or bell when ti Any pipe that has had the g laid.
be restricted to pipe diameter plus two feet unless otherwise rench width is exceeded, provide special bedding, encasement, or Town. In-pipe laser to assist in controlling the grade. Calibration of the y checking it over a 500 ft range on the ground. Note that the ely impacted by a number of factors including heat, strobe lights, ottom, manhole invert, or in the pipe unless otherwise approved it is placed in the trench, it shall be positioned in such a manner the conduit. As each pipe section is installed, a special target or id and the vertical and horizontal alignment checked. The beam conduit sections shall also be used to provide line and grade for idding materials. The light beam shall be periodically checked s correct vertical and horizontal alignment. Reasonable care must a properly ventilated.	 other suitable tools or equipment, in such a manner as to prevent damage to pipe and fittings. Under no circumstances shall the pipe or accessories be dropped or dumped into the trench. Dropped or dumped pipe will be rejected. All water must be kept out of the pipe and bell hole until the joint is completed and no water shall be allowed to rise in or about the pipe until the trench has been filled at least one foot above the pipe. No length of pipe shall be laid until the previous length has had sufficient backfilling placed around it to hold it securely in place and prevent floating. E. Keeping Pipe Clean: Every effort shall be made to keep the interior of pipe and fittings clean during all phases of construction. Every precaution shall be taken to prevent foreign material and trench water from entering the pipe and fittings. During construction, the Contractor shall provide and maintain adequate equipment to properly remove and dispose of all water entering the trench and any other part of the work. Keep water level below the pipe. Trench water shall not be allowed to flow through the pipe. The interior of the pipe shall be kept clean during operations by plugging or other approved means. End of the pipe shall be kept clean during operations by plugging or other approved means. End of the pipe laying crew cannot keep pipe clean while placing the pipe in the trench, Town may require that the ends of the pipe be covered before placing it in the trench and that the covers only be removed as the joints are assembled. If the cleanliness of the line is still in question, Town may require the line be hydrojetted or swabbing and video inspected at contractor's expense to confirm that it is clean. Providing access to all sections which are required to be videoed, then cleaning and reassembling pipe, shall be the responsibility of the Contractor. F. Laying and Joining Pipe 	Prior to making a solvent w be clean and dry. Trench a length of the cure time sha temperature. The minimum Pipe lines shall be checked damage has occurred after If this check shows that the defects shall be corrected b may require lamping or o completely backfilled lines. he/she proceeds. The pipe shall then be so accordance with the plans, Specifications (Section 022) tracer wire on the pipe prio the pipe). Where HDPE pipe is approver recommendation. All we manufacturer for welding p welding each day, each we successfully completing a b welds shall be full depth an of the pipe.
orm with applicable portions pipe manufacturer's installation ns, and with these specifications and referenced sections of the s, the more stringent specification shall apply unless otherwise	Begin pipe laying at the lowest point, unless otherwise directed by the Town, and install the pipe with the spigot ends pointing in the direction of flow. A firm bed must be prepared for each pipe to the required depth true to line and grade with uniform bearing for the pipe barrel and the material hollowed out underneath the bell so that the body of the pipe shall be supported for its entire length upon the bed so prepared. Adjustments to line and grade shall be made by scraping	If, in making any joint, prev re-laid. Any section of pi defective shall be taken out
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SITE WORK – SEWER SYSTEM CONSTRUCTION

Town, in non-traffic areas, the manhole frame and cover may be cast from with physical properties exhibiting strength comparable to cast iron. The t 60 pounds and the total assembly about 150 pounds. In traffic areas, the plans, cast iron covers will be required. The assembly shall have a ches. For applications with pipes under pressure and where specified or ee lids shall be furnished.

etween the frame and cover to prevent rattling in traffic and leakage of dirt good fit, the seat in the frame on which the cover rests and the matching e machined. Provisions for opening the manhole shall consist of a pickhole e of the cover. Aluminum lids shall have a locking nut to secure them in opening the manhole shall be approved by the Town before the material is

coated cast iron, plastic or other approved corrosion resistant steps shall be ole. The steps shall be at least 9 inches wide and shall protrude from the wall of the manhole, and shall be held in the wall by at least 4 ide. The steps shall be designed to provide an edge that will prevent the he side of the step. Standard manufactured manhole steps shall be used. er steel bars and material bent to form a step will not be permitted. Steps at 12 inch intervals with each step being directly below the next. Spacing step shall be as shown on the manhole typical drawing.

mercial factory-mixed product made especially for intended use, including nvironment and providing a long-term watertight seal. Material shall be nd approval by the Town.

asket Material

med flexible rubber gasket ec. SS-S210-A, Ram-Nek or approved equal.

able pipe to manhole connectors complying with ASTM C923 shall be hat enter or exit the manhole to insure a water tight seal. Boot shall consist rs design to be resistant to ozone, weather elements, chemicals including . Hose clamps to fasten the boot must be at least 304 stainless steel.

used for separation between graded rock and other backfill materials with dle punched, non-woven 12 oz minimum such as Mirafi 1120 or approved

g Tape

D gauge with green insulation for sewer lines. Tracer wire shall be fastened including service lines and shall be fastened to and looped to the surface and cleanout, and cross through the grout of the frame and cover. Service shall be connected by watertight connections.

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SITE WORK – SEWER SYSTEM CONSTRUCTION

y compacted bedding materials under the pipe and not by using wedges r jumping on the pipe.

traight between changes in alignment and at uniform grade between ed otherwise by the Town. All pipe shall be carefully centered and with a joint. The joint shall be made in a workmanlike manner and shall be ly before joining two lengths of pipe, the inside of the bell and the outside ne gasket shall be thoroughly cleaned. Caution shall be exercised to ensure gasket is used. A thin film of gasket lubricant shall be applied to the inside the spigot end of the pipe. The spigot end of the pipe shall be centered in event the joint from contacting the ground. The joint shall be completed by (to the depth mark) by hand with a slow steady pressure, without jerky or pe furnished without a depth mark shall be marked before assembly to e full design depth of the joint. The pipe shall then be properly set and and grade. Care shall be taken to ensure that no damage is done to the en the pipe is being homed. Use of excessive force will not be permitted. he grade or joint disturbed during or after laying shall be taken out and re-

nt weld joint, all water shall be removed from the trench and the pipe shall ch and pipe shall remain dry until welded joint has had time to cure. The shall be as stated on the welding solvent container as corrected for the mum curing time shall be 2 hours for the rapid set solvent.

cked by the Contractor to determine whether any displacement or other fter the trench has been backfilled approximately two feet above the pipe. t the pipeline to be out of alignment, broken, or otherwise damaged, the ed by the Contractor before proceeding with other pipe laying. The Town r other testing at this stage of backfill or may decide to only test the nes. It shall be the responsibility of the Contractor to check his work as

e secured in place by installation of bedding material and backfill, in ans, Pipe Bedding section below, and Excavation Backfill and Compaction 02200) using permeable materials for gravity sewer. Place and secure prior to bedding. Place warning tape at the top of the pipe zone (12" above

proved for use, it shall be installed in strict accordance with manufacturer's workers welding HDPE pipe must be trained and approved by the ng pipe of the size and DR being used on this project. At the beginning of worker who will be welding pipe shall demonstrate his qualifications by a bend back test prior to welding any pipe for use on the project. All n and shall have a uniform bead around the joint with no bead on the inside

previous lengths of pipe are disturbed, such lengths must be uncovered and pipe, fittings, valves, or appurtenances already laid and found to be out and replaced without additional expense to the Owner.

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ENGINEERING_{LI} 1309 E. 3rd Ave., #206 Durango, CO 81301 970-403-5088

PLAN NO. **TS-11**

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Project: RIVERFRONT VILLAGE Date: 6/15/2021

SITE WORK - SEWER SYSTEM CONSTRUCTION

G. Crossing Existing Lines

Expose existing line ahead of laying sewer pipe to allow adjustments in line and grade as needed anticipating that considerable adjustment may be needed. Where gradual grade adjust of existing line will allow for the crossing an existing pressure line, that is the preferred option. Where there is significant elevation adjustment, it will be accomplished with 22.5" fittings on the pressure line. Place insulation where cover on pressure line is less than specified cover depths. Coordinate timing of the cut of the existing line with pipeline Owner, and provide required notice to affected customers. In cutting the existing pipe, take great care to prevent contamination of existing line. Keep water level in the trench below the level of the pipes. Make connection using required fittings and restrain all joints. Disinfect the line as called for Water Line Construction Standards (Section 02713). Cut off and remove all abandoned sections.

Where water service lines need to be raised or lowered to allow sewer lines to remain on grade and there is not sufficient slack to allow for adjustment, expose at least 5' of the existing service, squarely cut the existing water service line and install new copper pipe to gradually adjust the grade of the water service line and reconnect both end of the existing water service with appropriate couplings for the existing material and the copper. If soil conditions are adverse the copper piping with Town approval the use of pure core HDPE of the same inside diameter as the existing service line may be used.

Cutting of Pipe: The pipe shall be cut in a neat and workmanlike manner in accordance with manufacturer recommendations. No damage shall be done to the pipe or any lining or coating and the cut shall leave a smooth end at right angles to the axis of the pipe. Flame cutting of iron pipe by means of an oxyacetylene torch shall NOT be allowed.

Sequencing: The Contractor shall excavate in advance of pipe laying only a sufficient length to assure steady progress in the installation of pipe. No more than 150' of trench shall be open at a time unless specifically authorized by the Town. The length of open trench shall be limited where necessary to accommodate traffic, public safety, minimize service disruptions or as required by the Town and/or other entities with authority, in vicinity of the work being performed. All open trenches shall be appropriately barricaded. No more than 20 feet of trench securely barricaded may be left open overnight. Where the work includes removing old pipe and replacing with new pipe in the same location, temporary connection between what has been replaced and the old must be made at the end of each day. In addition to requirements elsewhere related to disruption of service, all existing sewer services shall be functional at the end of construction each day.

3.06. Pipe Bedding

The bottom of the trenches shall be accurately graded to provide uniform bearing and support throughout the full pipe length without placing stress on the pipe or allowing voids under the pipe. Excess loading of the bell will not be permitted under any circumstances. Dig bell holes and depressions for joints after trench bottom has been graded. Bell holes and depressions shall be only of such length, depth, and width as required to properly make the particular type of joint. The use of earth mounds for bedding the pipe will not be permitted.

Where existing pipes are being removed and replaced with new, remove the old saturated materials and replace with new.

All sharp stones, trash, and other materials which may damage the pipe or interfere with the proper bedding of the pipe and the placement and compaction of the backfill shall be removed from the trench.

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SITE WORK - SEWER SYSTEM CONSTRUCTION

and width, non-woven geotextile placed, the trench backfilled and compacted with screened bedding material and the geotextile wrapped over the top of the screened rock once the sewer and drain lines are installed. Where underdrain nine is required, it shall be installed to a true line and grade and held in place with compacted single size screened bedding material. Additional underdrain bedding material shall then be placed to a level of at least 12" inches over the top of the underdrain pipe and the sewer pipe installed The sewer shall be installed to one side of the underdrain and be offset at least one pipe diameter measured horizontally. The sewer pipe shall be bedded to springline and compacted and then covered with additional screened rock and compacted in lifts to 12" over the sewer pipe. Underdrain pipes shall be provided with cleanouts outside each sanitary manhole. Underdrain pipe shall be continued beside manholes by use of suitable bend and other fittings.

3.14. Lift Stations and Force Mains: Where necessary and with approval of the Town, lift stations and force mains shall be constructed in accordance with Town approved plans. Force mains shall be installed from pumping facilities to tie into the gravity collection system. At design average flow, a cleansing velocity of at least two feet per second shall be maintained. When possible, force mains shall have a high point a short distance from the manhole and flow open channel into the next manhole. Where the force main enters the manhole above the invert, a fitting shall be installed to direct the flow from the entry point in the manhole to the flow channel. Automatic air relief valves shall be placed at high points in the force main to prevent air locking. Such valves shall be designed to handle sewage and be equipped with fittings to allow cleaning.

3.15. Field Quality Control (Testing)

Compaction Testing shall be consistent with the requirements in the Excavation, Backfill, and Compaction Standard Specifications (Section 02000).

A. Infiltration Test: Any observed infiltration shall be corrected.

- Tests for Displacement of Sewers: Check sewer mains to determine whether any displacement of Β. the pipe has occurred after the trench has been backfilled to two feet above the pipe and tamped as specified. Test as follows: Shine a light between manholes, boxes, and/or bends (if authorized by Town) by means of a flashlight or by reflecting sunlight with a mirror. If illuminated interior of pipeline shows poor alignment, displaced pipe, or any other defects, remedy defects until acceptable to the Town. Misalignment shall be less than 3% of pipe diameter.
- C. Ovalation of Flexible Conduits: All gravity lines constructed of flexible conduit shall be tested for ovalation. Such testing shall be performed by the Contractor using a mandrel, "Go - No Go" gauge, or by other instruments which will measure and record actual pipe deflection. Deflection shall not be measured less than 30 days after backfill is completed and shall not exceed 5% of the pipe diameter. Sections of pipe not meeting this specification shall be excavated, pipe bedding replaced, and trench again backfilled, compacted, and retested for all the tests of this sub-section. Should it still fail to meet these ovalation requirements or other required tests, the section of line shall be replaced. The Town may elect to perform this test again at any time during the one-year warranty. The Town will notify the Responsible Party in writing if problems are detected. The Responsible Party shall promptly make arrangements to correct the problem in accordance with the warranty provisions of this contract.
- Video Inspection of Line Interior: At the completion of segments of sewer (and storm) lines, the D. lines shall be jetted with water. After water ceases to flow, Contractor shall video each segment to demonstrate cleanliness, proper jointing, conformance to alignment and grade, and proper roundness. Video work shall be done in coordination with ovalation testing so the video records

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The soil in the bottom of the trench shall be slightly loose, and at optimum moisture, so that uniform bedding and compaction around the pipe is easily obtainable. Should any material be encountered which would prevent the obtaining of suitable bedding, e.g. rock, wet, unstable material, etc., the trench shall be over-excavated as shown on the typical drawing for pipe bedding. Backfill any over-excavation, required or inadvertent, with materials equivalent to, and compacted as specified for haunching materials according to these specifications. Bedding and materials in the pipe zone, shall conform with materials specified in Section 02200, Excavation Backfill and Compaction for Class D bedding for gravity pipe lines and Class C for pressure pipes. At the top of the pipe zone, install non-woven geotextile on top of the Class D fill materials and place the warning tape on top of geotextile.

3.07. Backfill and Compaction: Backfill and compaction shall be in accordance with the applicable sections of the Excavation, Backfill, and Compaction Standard Specifications.

Precast manhole bases with integral bottom barrels are required. The ground surface below the precast concrete base shall be excavated a minimum of six inches below the elevation of the bottom of the base and backfilled with Mirafi RS 380i OAE geotextile on the bottom then on compacted $\frac{3}{2}$ or 1-1/2" screened gravel. The gravel shall be carefully leveled and smoothed to give uniform support to the precast base over its entire area. The precast base shall be set at the proper location to center the manhole over the sewer

The base of the manhole shall have a minimum of five inches between the lowest invert of the manhole and the inside base to allow room for the construction of a channel or a precast channel may be utilized but must widen out at the midpoint (springline) on the pipe diameter.

Only when authorized by Town for a particular location and cause, may cast in place manhole base be constructed. When a cast in place base is authorized concrete mix shall be 6.5 sack, 0.4 water/cement ratio, 4500 psi concrete, placed on uniform compacted base and in conformance with the typical details on the plans. Bases shall extend at least eight (8) inches below the invert of the pipe and shall be benched starting at springline. Precast manhole barrel sections shall not be placed on the cast in place base until it has reached sufficient strength to provide support without damage. Cast in place bases will be held to the same leak and vacuum test requirements as precast manholes.

Set each manhole section in a band of 1" minimum thickness of RamNek OAE, to make a watertight joint. Set sections plumb and neatly point inside of joint with grout. Use sections of various heights to bring manhole ring and cover to specified elevation. Set frames and covers in a full bed of mortar or RamNek and accurately set to the grade indicated or as directed. Encase frames in cement mortar (not concrete) around entire perimeter, but not in excess of the perimeter. Install preformed flexible plastic gasket joints in accord with manufacturer's recommendations in a manner such that all surfaces are clean, dry, and warm.

All pipes shall be connected to precast manholes with a pipe boot. The opening in the manhole wall where a pipe enters or leaves shall be sealed and patched in a neat workmanlike manner, both inside and out with cement mortar. All lifting holes and other imperfections in the interior manhole wall shall be filled with cement mortar.

structures.

3.08. Manhole Construction and Installation

DIVISION 2

the testing results of the "Go-No Go" gauge. No line shall be put into service prior to the Town accepting the results of the video and leakage tests. Where there are active services connected during the line installation, video testing will be used to determine leakage as well. On new lines and lines with no active services shall be capped and the service lines tested with the mains.

Tests for Pressure Lines: Test sewer lines which will be subject to positive pressures in accordance with the testing the Town Standards for water line testing.

F. Air Test - Gravity Flow Lines

Conduct an air test on all gravity lines including service lines in conformance with UniBell publication B-6-90 and ASTM F1417. Special attention shall be paid the safety admonishments provided in that publication.

Preparation for tests: Flush and clean the line prior to testing in order to wet the pipe surfaces and produce more consistent results. Plug and brace all openings in the line and the upper end of any connections. Check all pipe plugs with a soap solution to detect any air leakage. If leaks are found, release the air pressure, eliminate the leaks and start the test procedure over again.

Procedure of Test: Low pressure air shall be slowly introduced into the sealed line until the internal air pressure reaches 4.0 psig greater than the average backpressure of any groundwater above the pipe, but not greater than 8.0 psig. Allow sufficient time for the air temperature to come to equilibrium with the temperature of the pipe and the pressure to stabilize. Refer to the UniBell publication for adjustments of required pressures due to groundwater.

After the temperature has stabilized, and the pressure is stabilized at 4.0 psig greater than the average groundwater back pressure, the air hose from the control panel to the air supply shall be shut off or disconnected. Continuously monitor the pressure gauge. Once the reading has stabilized, begin the test. The pressure reading shall be observed and the timing shall commence with a stop watch or other timing device that is at least 99.8% accurate.

If the time lapse (in seconds) for the allowable pressure drop exceeds that shown in at the end of this section, the pipe shall be presumed to be within the acceptable limits for leakage.

If the time lapse is less than that shown in the table, the Contractor shall make the necessary corrections to reduce the leakage to acceptable limits. All visible or audible leaks shall be fixed even if leakage is within acceptable limits.

Safety: The air test may be dangerous if proper precautions are not taken. All plugs must be sufficiently braced to prevent blowouts and the pipeline must be completely vented before attempting to remove the plugs.

As a safety precaution, pressurizing equipment shall be provided with a regulator set at 8 psi to avoid over-pressurizing and damaging an otherwise acceptable line.

Manhole Tests

G.

Vacuum Tests shall be performed in accordance with test methods in ASTM C 1244 following good safety practices. Do not pressurize manhole nor exceed the manufacturer's vacuum rating on vacuum disc or flat plate. Follow the manufacturer's instructions for the safe use of test plugs. Minimum test times shall conform Table 1 in ASTM C1244 which is partially quoted below:

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Provide a flexible joint in the pipe 12 to 24 inches outside from all manhole walls and other solid

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Precast concrete adjustment rings shall be installed on top of the cone to support and adjust the manhole frame to the required final grade. The maximum depth of the adjustment rings shall be eight inches, and the maximum depth from top of cone to final grade shall be as shown on the manhole typical drawing. Use Ramnek or equal between each ring and between top ring and frame to provide secure, watertight seal.

The top elevation of the manhole shall be adjusted to match final street grade with the top of the lid being 1/4-1/2" below the finished pavement and sloped to match the slope of the pavement. If manholes are located in open fields, they shall be left at least 12 inches above grade and a locking ring and cover shall be installed. Where the road surface is gravel, the manhole shall be set 4-6"" below finished gravel surface, sloped to match the surface.

3.09. Connections to Existing Manholes: Sewer pipe connections to existing manholes where there is no existing pipe stubbed out shall be made in such a manner that the finished work will conform as nearly as practicable to the requirements specified for new manhole construction. The Contractor shall carefully cut out as small an opening in the existing manhole as necessary to insert the new sewer pipe in a pipe boot using a saw which will cut a clean circular opening. The existing concrete foundation bench shall be cut with a hole saw similar to what is used to cut the manhole to the cross-section of the new pipe in order to form a smooth continuous invert similar to what would be formed in a new concrete base. Where practical, the upstream and downstream invert shall be plugged during construction to prevent flow and construction debris from entering the system. The Contractor shall pump out and clean the manhole before removing the plugs. A mortar that will securely bond to existing concrete shall be used to smoothly finish the new invert and to seal the new line, both inside and outside, so the junction is watertight and smooth.

3.10. Connecting Existing Pipes to New Manholes: Where an existing manhole is to be replaced, Contractor shall excavate and remove and dispose of the existing manhole and replace the manhole with a precast base with pipe boots to accommodate each of the sewer lines which needs to be connected to the new manhole. No more than two couplings per manhole shall be used to reconnect all the pipes. Manhole base shall be bedded in flowable fill from the manhole to three feet past the coupling for the depth of the pipe zone.

3.11. Wyes and Risers: The Contractor shall place wyes, stubs, and risers where required by the approved construction plans. Wyes shall be angled upwards so that the upper invert of a one-eighth band connected to the fitting will have an elevation equal to or higher than the inside crown of the sewer main. Riser connections shall be installed where the elevation of the top of the branch is more than 12 feet below finished ground. Riser connections shall ordinarily reach to a grade of 8 feet below finished ground surface. Temporary termini shall have water tight plugs in each branch pipe or stub. Wye and riser locations shall be marked with a fence post, tracer wire and be labeled with the depth. Details for service line connections and pipe laying are covered below and construction details are shown on typical drawings. As Built measurements shall be made by the Contractor to reference the wye or riser connection to the nearest manhole before backfilling.

3.12. Service Installations

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Materials for service lines must meet the above specifications for each type of material. All installation work shall conform to applicable portions of the pipe manufacturer's installation instructions in addition to the requirements on the Town Typical Drawing for sewer service sewer installation requirements herein, and where applicable the International Plumbing Code.

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Depth	4' Dia	5' Dia	6' Dia
8'	20 sec	26 sec	33 sec
10'	25	33	41
12'	30	39	49
14'	35	48	57
16'	40	52	67

Smoothness of inverts shall be checked for roughness by rubbing a hand in a latex glove over the full surface of the invert. If the glove is torn or snags, the surface will need to be smoothed. In addition, if Owner's representative has concerns about solids in sewage becoming snagged on roughness in the flow line, suitable materials shall be mixed with water and observed flowing through the manhole. Manholes with rough inverts or inverts which do not encourage smooth flow through the manhole will not be accepted by the Town.

3.16. Inspection Cleaning and Lamping

Final acceptance of the sewer line shall be based on an inspection for compliance with all items in these specifications. No pipe spalls, rocks, dirt, joint compounds, cement mortar, and other trash and obstructions shall be left in a sewer pipeline of any size or type. If this debris is removed by flushing, the manhole outlet shall be bagged or plugged before construction so that this debris will not be carried into or contaminate the existing lines.

Flow of any kind into the existing sewer system shall not be allowed until the sewer has been satisfactorily completed and such a connection is approved by the Town.

3.17. Restoration and Cleanup

The Contractor shall restore or replace all removed or damaged roadbase, paving, curbing, walks, sod, shrubbery, fences, irrigation ditches, or other structures or surfaces to a condition at least equal to that before the work began and to the satisfaction of the Town. The construction site shall be left neat and

Surplus materials, tools, and temporary structures shall be removed by the Contractor. All dirt, rubbish, and excess earth from excavations shall be disposed of by the Contractor and the construction site shall be left clean and orderly.

The Contractor shall maintain the surface over the trenches in approved condition against any settlement or deterioration throughout the warranty period.

3.18. Abandonment

Sewer lines, services and/or manholes that are to be taken out of service will be completed removed and shall become the property of the Contractor. Abandonment in place will not be allowed. The location shall be backfilled in 8" lifts and compacted per Town Specifications.

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DIVISION 2

Unless otherwise approved by the Town based on native soils types, all service pipe shall be bedded on 6 inches of well graded screened rock or pea gravel conforming to select bedding material in the standard specifications for Excavation and Backfill.

Sanitary sewer service lines shall be installed perpendicular to the main on the shortest and straightest route possible. There shall be a cleanout placed at property line and at any changes in grade and/or direction.

When installing a new sewer main, service wyes shall be installed as pipe laying progresses. Where a connection is being installed in an existing main and full bodied service wyes have not been previously installed in the main sewer, the main shall be cut and a section of pipe installed with a full bodied wye and coupling or if allowed by the Town the service may be tapped by cutting a hole in it sized to fit the saddle for the service line such that the tap is smooth and watertight. The cutting method shall be approved by the Town.

The Town's representative shall inspect the main and connection at every tap prior to backfilling. In the event the tap is covered before it is inspected, it shall be dug out by the Contractor, to allow visual inspection of the tap and the main by the Town. If the main sewer line is cracked or broken during the process of locating and/or tapping, it shall be repaired immediately, by replacing the broken section for at least 12" on each side of the damage. If the pipe needs to be cut, the tap shall be made with a full bodied

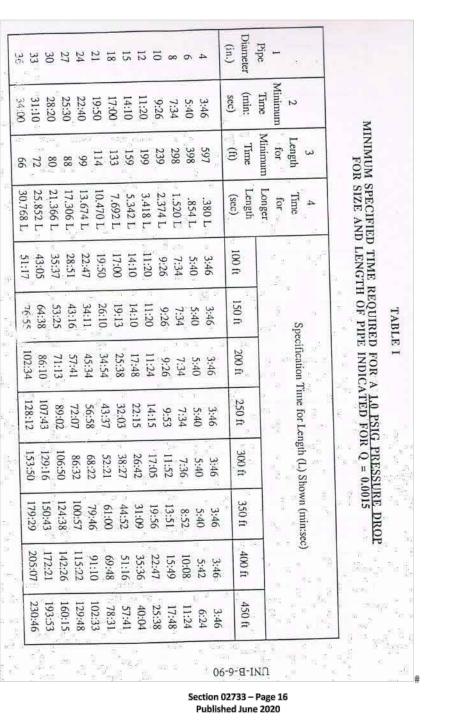
A manhole shall be installed instead of a service wye when the size of the service line is more than 50% of the size of the main. Service taps to existing manholes shall be done in accordance with the Manhole section of these specifications and shall only be allowed when there are less than 3 inlet pipes and the service pipe will be at least 60 degrees in each direction from another inlet pipe.

Where a sewer service line will cross over a water main or service, a sealed end encasement shall be furnished around the sewer service at least 10' measured horizontally in each direction from the crossing. If the sewer service crosses under a water main or service with less than 18" of separation between the top of the sewer service and the bottom of the water, the sewer service shall be encased for at least 10' horizontal in each direction of the crossing.

In no instance shall a trench extend beneath an existing sidewalk or curb unless excavation conforms with the Town standards for concrete removal. The pipe shall typically be bored, jacked, or tunneled through the earth under the curb or sidewalk. If tunneled, backfill with flowable fill. Alternately, Contractor may remove the existing sidewalk back to joints on either side of the trench, backfill in accordance with the Standard Specifications for backfill and then replace the sidewalk

Measurements shall be taken of the distances of the service wye from a manhole to the main, and the depth from back of the sidewalk or property line to invert at the main and at end of the service stub. In addition when a curb is present, the location shall be marked on the curb by a "SS" symbol. In all cases, the end of the service stub shall be marked with green painted 2 x 4 which marked at 1' increments starting at the top of the pipe brought to the surface and backed by a steel "T" fence post. Tracer wire shall be brought to grade and wrapped around the post. Where the sewer service is terminated on the lot side, install a glued-on cap.

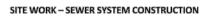
DIVISION 2



SITE WORK - SEWER SYSTEM CONSTRUCTION

3.13. Underdrains: Where excessive groundwater is encountered, and in other areas where it is deemed advantageous or necessary, gravel or piped underdrains shall be installed. Underdrains shall daylight to the nearest suitable point as approved by the Town. The trench shall be excavated to the required depth

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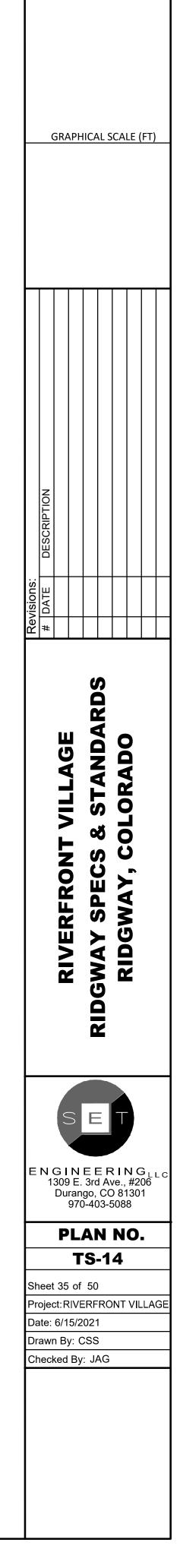
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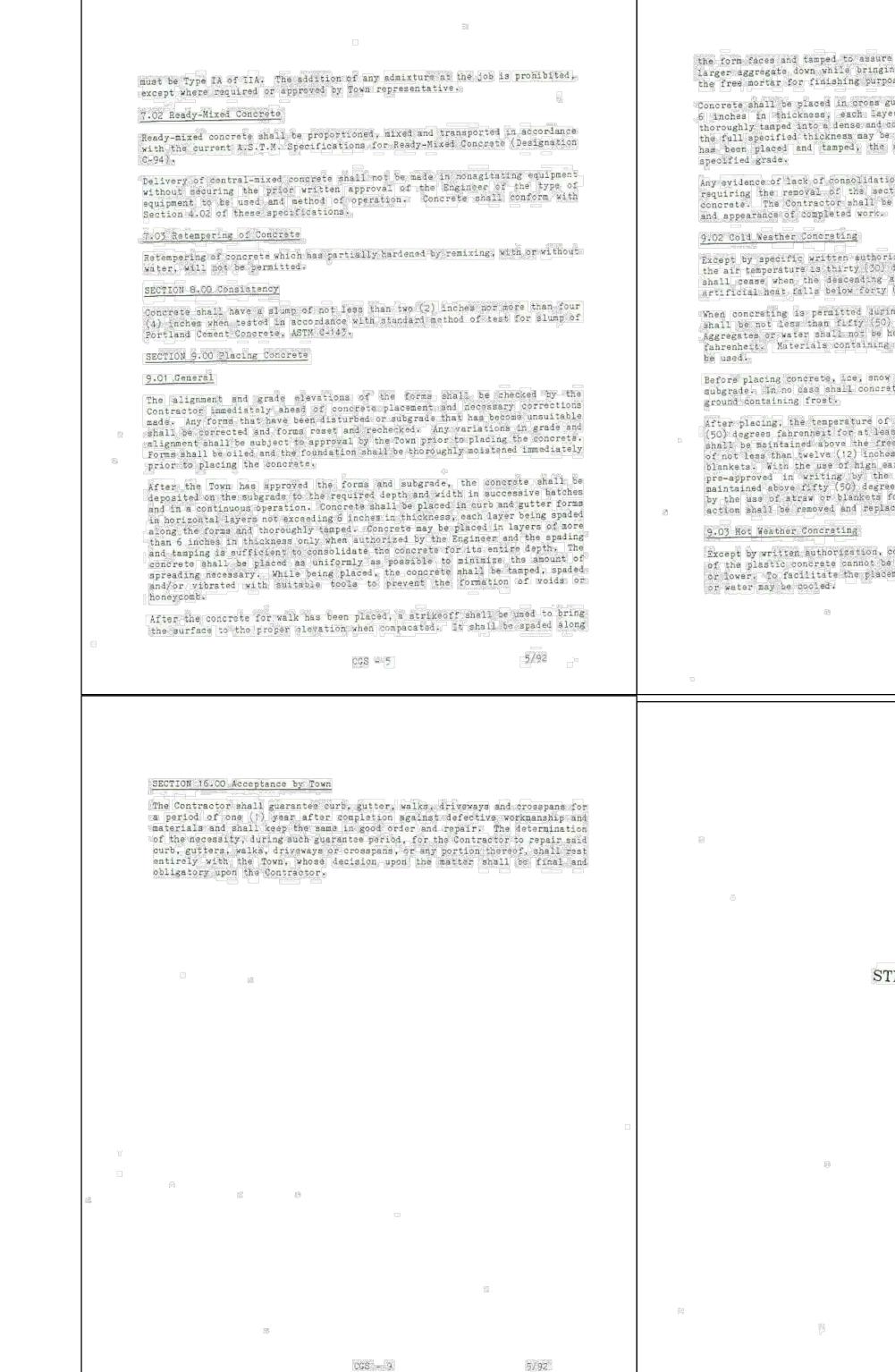
nstruction on this project, the Contractor and the Town sing slopes, erosion problems, and vegetation to set the sion.	
59 5	
2283	10
<pre>ll consist of loose friable loam reasonably free of refuse, stumps, roots, rocks, brush, weeds, heavy clay, ances or other material which would be detrimental to the regetative growth.</pre>	
shall be selected based on soil conditions.	
eeds of noxious weeds.	
e furnished in sealed bags or containers showing the name opler, the seed hame, the lot number, net weight, the content, and the guaranteed percentage of purity and furnished shall be free from such noxious weeds as Russian ndweed, Johnson grass, knapweeds, and Leafy Spurge. Seed oldy, or otherwise damaged will not be accepted. The seed certification that the seed is from a lot that has been laboratory within 6 month of date of delivery to the job.	
ppropriate to the field conditions and shall be subject.	
is - Blankets and nettings shall be picdegradeable non- numans. Unbleached, smolder resistant jute shall consist uniform open weave. The yarn shall be of a sufficiently edlings to push through, yet strong enough to prevent prevent erosion. Blankets consisting of straw and/or re-enforced with a photodegradable netting. The type ing pattern shall be designed for the type of slope, d other field conditions. Under typical conditions, d equal is recommended for slopes of 3.511 to 2.511 wed equal is recommended for slopes 2.511 to 1.511 eeper than 1.511 will reviewed by the Town of a case by	
RV-1 3/95	
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	case basis. In no case shall a blanket be used which does not meet or exceed the conditions for which the manufacturer approves of its use. PART III - EXECUTION		
	Evaluate Existing Vegetation - Prior to commencing construction it will be necessary to determine the amount and type of vegetation which naturally occurred on the areas to be disturbed. This will be done by counting the quantity of each type of vegetation in randomly selected representative quadrants of the site to be disturbed. Quadrants shall be either a square foot or a square yard depending on the density of the vegetation.	83	
	Soil Preparation - Topsoil shall not be placed until the areas to be covered have been properly prepared and grading operations in the area has been completed. Topsoil shall be placed and spread in areas where there is less than 6" of topsoil to achieve a total depth of 6" in areas to be seeded or planted. A reasonably even, loose, moist seed bed, free of weeds, rocks, clods, construction debris, and other foreign and/or other deleterious matter shall be established. Work in any organic or soil enhancement material prior to fine grading. Fine grade all areas to eliminate all visible surface undulations, rounding the tops and bottoms of all slopes and provide positive drainage for all potential surface water runoff. On slopes steeper than 4:1, the surface shall be cat tracked up and down the side slope prior to, or just after, seeding to creat depressions to help hold seed and moisture.	Ψ	CURB, GUI
	Seeding - Broadcast or drill the seed at the coverage rate recommended by the seed supplier for the field conditions. Eydromulching will be allowed if adequate water will be applied to the seed to keep the mulch continuously moist until the seedings are established.		
	Where shrubs were present prior to the disturbance, it is recommended that the same type shrubs be re-planted at approximately the same density as originally present, unless the slope prohibits such plantings.		
登 :	Mulching - Grass straw mulching shall be applied at a rate of two tons per acre. It shall be uniformly crimped in with a crimper or other approved means to a depth of at least three inches. Mulching and crimping shall occur within 24 hours of placing seed. If seeded area is disturbed prior to mulching, it shall be reseeded before the mulch is placed. Mulching activities shall not occur during windy weather.	Q	
	Soil Retention Coverings - Jute or other suitable covering shall be secured to all slopes steeper than 3:1 as soon after mulching as practical. The material shall be applied smoothly but loosely on the soil Surface without stretching. Workers shall minimize the amount of walking of the seedbed even after the jute is applied. The upslope end of each piece of jute mesh shall be buried in a narrow trench about 6° deep. The jute shall be secured in the trench with compacted dirt fill. Where one roll or jute ends and a second begins, the upslope piece should be brought over the buried end of the second roll with a 12° overlap to form a junction slot. Where two or more widths are side by side the overlap shall be at least 4°.		
	RV-2 3/95		23
000 20	RV-2 3/95		
S S S	RV-2 3/95		and conforming to the following st Sieve Designation
2 6 2 0	NV-2 3/35		and conforming to the following st Sieve Designation
	BV-2 J/95 CURB, GUTTER, & SIDEWALK STANDARDS AND SPECIFICATIONS SECTION 1.00 Scope The work sovered by this specification concerns the furnishing of all if of, equipment and materials and periforming all operations in connection with the coordance with this specification and the applicable drawings. Related work Specified Elsewhere		and conforming to the following st Sieve Designation No. 4 No. 10 No. 200 4.02 Concrete Concrete shall be composed of 0 entrained air. The concrete shall per cubic yard, a maximum of five
	BV-3 GURB, GUTTER, & SIDEWALK CURB, GUTTER, & SIDEWALK STANDARDS AND SPECIFICATIONS SECTION 1:00 Score The work covered by this specification concerns the furnishing of all for, squipment and materials and performing all operations in connection with the construction of ourb, gutter, crosspans, sidewalks and driveways is strict accordance with this specification and the applicable drawings. <u>Adated work Specified Ilsewhere</u> general Hequirements Specification <u>SECTION 2.000 Semeral Provisions</u> Expect as noted below the General Provisions applicable to this specific ion are powered in the General Fequirements Specification.		and conforming to the following gi Sieve Designation 5/4" No. 4 No. 10 No. 200 4.02 Concrete Concrete shall be composed of c entrained air. The concrete shall per ouble yard, a maximum of fiv sack of cement, and air content aggregate size of three-quarter eight (8) inches. In no case shall inches. The finished concrete compressive atrength of 3,500 ps
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	BY-3 3/95 FURE, GUTTER, & SIDEVALK CURE, GUTTER, & SIDEVALK STANDARDS AND SPECIFICATIONS SECTION 1:00 Scores The work dowered by this specification concerns the furnishing of all in or four source and materials and performing all operations in connection with the construction of curb, gutter, grosspans, sidewalks and drivens; SECTION 1:00 Scores The work dowered by this specification concerns the furnishing of all in or four source and he specification in connection with the construction of curb, gutter, grosspans, sidewalks and drivens; SECTION 1:00 Scores SECTION 2:00 Senseral Provision SECTION 2:00 Senseral Provisions Section 3:0 Senseral Provisions Section 4:0 Senseral Provisions Section 3:0 Senseral Provisions Section 4:0 Senseral Provisions Section 5:0 Senseral Provisions Section 4:0 Senseral Provisions Section 5:0 Senseral Provisions Section 5:0 Senseral Provisions Section 5:0 Senseral Provisions Section 5:0 Senseral Provisions Se		and conforming to the following st Sieve Designation 5/4" No. 10 No. 10 No. 200 4.02 Concrete Concrete shall be composed of a entrained air, The concrete shall per ouble yard, a maximum of fiv's sack of gement, and air content aggregate size of three-quarter eight (8) inches. In no case sha nches. The finished concrete compressive atrength of 3,500 ps must be approved by the Town Engi 4.03 Cement Cement used shall conform to the S 150, Type I or II, or ASTM C175 IA: ACC Assregate Aggregate shall conform to the S ASTM C33. 4.05 Wire Reinforcement
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		MINIMUM DESIGN STANDARDS	in grades is less than two percent, vertical curves may be omitted. On local streets the minimum radius of horizontal curves shall be 100 feet and 150 feet	
		CURB, GUTTER, SIDEWALKS & STREETS	on all other streets. In special topographic conditions, the Town may allow deviations from these	
		General	in special topographic conditions, the rown way allow dottelling its better requirements in order to provide the fown with better crainage or a better intersection design.	
UTTER, SIDEWALK		All curb, gutter, sidewalk, and street construction design, rights of way width and street widths shall conform to the minimum requirements enumerated on the typical Town typical drawings and the requirements of the Subdivision Regulations of the Town of Ridgway. Care shall be taken to insure continuity of grades widths, etc, of proposed, existing, and future installations. Deviations from these standards and specifications may be permitted, when in the opinion of the Town, the quality of the finished work would not vary materially from the intent of these requirements.	Multiple tee intersections shall have the leg of the tees at least 125° apart centerline to centerline to radilitate a reasonable line of sight between the intersections. If the width of the street rights of way is more than 60 feet the separation of the tees shall be increased proportionally. Sidewalks shall be located six (6) inches outside the private property line unless otherwise approved by the Town. Service Line Installation All service lines shall be installed (accordance with the appropriate Town	e) (17)-40%
SIDEWALK		Plans for proposed street construction shall be submitted on 24 x 36 inch sheets to the Town for Approval. An overall plan shall be submitted along with individual plan and profile sheets. The plans shall show lots and blocks, shall give centerline street grades, show vertical curves and the original ground profile. Grades shall be indicated for the curb and gutter for each side of the street; elevations of curb and gutter at the ends of each block shall be indicated. Cross pans shall be indicated on the street plan. The roadway width and type of curb, gutter and sidewalk shall be indicated for each street. Street Construction Gravel streets shall be accepted on residential streets.	All service lines shall be installed (accordence with up approved to the standards) prior to paving any street. Drainage All streets shall be designed to provide continuous surface irainage directed to storm drain ablets and drainage courses. Grade shall permit flow without ponding. A check shall be made to be sure of continuity of drainage design between the proposed construction and existing or future construction. In no case shall surface drainage be permitted to be disposed of overland except by approved storm drainage facilities. The Developer shall remedy any problems which are created by the addition of storm drainage from his subdivision to any	
		When asphalt pavement is to be provided, minor residential streets serving fewer than [0] lots shall have a minimum of six (6") of Class 6 base course with prime coat and a three (3") asphaltic concrete surface. Other residential and collector streets shall have a minimum of six (6") of Class 6 base course with prime and four (4") of asphaltic concrete surface. Base and surface treatment for arterial streets shall be designed by an engineer based on traffic load and soils conditions.	existing irainage. Culverts shall only be installed where V-ditches, gutters, and valley pans will not carry the necessary flow. Culverts shall be corrugated galvanized metal with metal end soctions, unless otherwise authorized by the Town. Diameter and slope shall be based on flows. Minimum diameter in roadways shall be 18" and, minimum in driveways shall be 12". <u>Monumentation</u>	
		All paved streets shall have curb, gutter, and sidewalk on both sides. The curb, gutter, and sidewalk shall conform with Town standard drawings and specifications for that work. Street Layout Street widths shall conform to Town of Ridgway standard drawings for the type of street being designed. Gravel streets shall have a cross slope of 3% and paved streets shall have at least 2% cross slope.	Centerline monuments shall be set at each streat intersection upon completion of street construction. If an existing street is to be resurfaced, the monuments shall be restored or set as necessary. Monuments in gravel streets shall a ber and cap set in concrets a minimum of 4" and a maximum of 6" below finished grade. In payed streets the bar and cap set in concrete shall be set under a valve box cover labelled survey marker with the cover set at finished grade.	
		The minimum grade for all streets is 0.5 percent. The maximum grades shall	89	18 11
		exceed 7% on any street and 5% on collector streets. Minimum length of vertice curves for all streets shall be 300 feet except that where the algebraic change	8TM-2	
		STATE -MTC.		
			5g	
gradation:				
ž By Weight Passing		4.09 Water	SECTION 6.00 Forms Forms shall be metal or wood such that exposed concrete is true, clean and free	
100 30 ±0 50 25 ±0 12	90 840 194	Water used for mixing or curing concrets shall be clean and free from injurious amounts of oil, acids, salt, alkali or organic substances harmful to concrere	of deviation and defects and share have a ball be used for construction	i n
		Notify Engineer for prior approval of the use of non-potable water.	where the radius is 150 feet of less, including of six (6) hours after the to permit their remaining in place for a minimum of six (6) hours after the	
Comment, coarse and fine aggregate, water and hall contain a minimum of six (6) sacks of ceme. Sive and eight tenths (5.8) gallons of water pe		SECTION 5.00 Grading Excavation shall be performed to the lines, grades and cross sections indicated on the approved drawings and staked out on the ground. Suitable material removed from the excavations shall be used as far as practicable for embankments and	where the radius is 150 feet of less, including of six (6) hours after the to permit their remaining in place for a minimum of six (6) hours after the concrete has been placed. Face plates for curb and gutter may be removed as soon as practicable. Each section of form shall be straight and free from warps and bends. Maximum deviation of the top surface shall not exceed one-quarter inch in ten (10) feet and the inside face not more than one-quarter inch in ten (10) feet. The method of connection between sections shall be such that the joint feet. The method of connection between sections shall be such that the joint	
Cement, coarse and fine aggregate, water and hall contain a minimum of six (6) sacks of cemen five and eight-tenths (5.2) gallons of water pe it of six percent by volume and a maximum coarse er (5/4) inch unless concrete thickness exceeds shall aggregrate exceed one and one-half (1 1/2) te shall have a minimum twenty-eight (28) day		SECTION 5.00 Grading Excavation shall be performed to the lines, grades and cross sections indicated on the approved drawings and staked out on the ground. Suitable material removed from the excavations shall be used as far as practicable for embankrents and backfilling. Unsuitable material shall be excavated below the grade shown of the drawings or indicated by grade stakes as directed by the Town and replaced with aslect material. Any material which the Engineer determines to be uncompactable shall be considered unsuitable and shall be removed and replaced Excavated materials which are considered unsuitable and any surplus of excavated	where the radius is 150 feet of less, inestrying of six (6) hours after the to permit their remaining in place for a minimum of six (6) hours after the concrete has been placed. Face plates for curb and gutter may be removed as soon as practicable. Each section of form shall be straight and free from warps and bends. Maximum deviation of the top surface shall not exceed one-quarter inch in ten (10) feet and the inside face not more than one-quarter inch in ten (10) feet. The method of connection between sections shall be such that the joint just formed is tight and free from movement in any direction. Forms that have been previously used shall be cleaned of all mortar and dirt before being set. Forms shall be set true to established line and grade and shall be thoroughly staked in place. Bracing and staking of forms shall be such that the forms remain in both horizontal and vertical alignment until their removal.	
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<pre>cament, coarse and fine aggregate, water and hall contain a minimum of six (6) sacks of cemel ive and eight-tentns (5.8) gellons of water po- it of six percent by volume and a maximum coarse ex 5/A) incommends concrete thickness exceeds shall aggregrate exceed one and one-hall (1 1/2) te shall have a minimum twenty-eight (26) day psi, Any admixture accelerators and retariers. e Standard Specification for Portland Cement, ASTM 75 for Air Entraining Portland Cement, Type 1A or a Standard Specification for Concrete Aggregate the standard Specification for Concrete Aggregate be a minimum size of S x.8 inch 10/10 gauge wine bonform to ASTX C250: mids shall conform to ASTM specification D309. be incon-extruding preformed joint filler and she is a D1751 or D1752.</pre>		SECTION 5.00 Grading Excavation shall be performed to the lines, grades and cross sections indicated on the approved travings and staked out on the ground, Suitale material removes, from the excavations shall be used as far as practicable bot the grade shown of the drawings or indicated by grade stakes as directed by the Town and replaced with gelect material. Any material which the Engineer determines to be uncompactable anall be considered unsuitable and any surplus of excavated materials which are considered unsuitable and any surplus of excavated material to be considered unsuitable, and any surplus of excavated material, but not be drawing and the approved plane and/or staked but on the ground and inposed of the the constructed by the Town Engineer. Clearing shall be constructed by information and the proved and the and the drawing and	<pre>where the radius is 150 feet 07 feet 07 a minum of six (6) hours after the concrete has been placed. Face plates for our and gutter may be removed as soon as precicable. Each section of form small be straight and free from warps and bends. Maximum deviation of the top surface shall not exceed one-quarter inch in ten 100) feet and the inside face not more than one-quarter inch in itsn (10) feet. The section of connection between sections shall be such that the joint just formed is tight and free from movement in any direction. Forms that news been previously used shall be cleaned of all mortar and dirt before baing set Forms shall be ast true to established line and grade and thall be buch that the forms remain in both horizontal and vertical alignment until their removal. At the option of the Contractor and with the approval of the Engineer, slip-form equipment may be used for the construction of monorete curb and gutter. Slip-form equipment shall be provided sith traveling sits and top forms or sufficient length of the during placement to gradue ours and homogeneous product. Site form equipment shall be provided sith traveling sits and top forms or sufficient length of the during placement to gradue ours and homogeneous product. The slip-form equipment shall have aucomatic sensor controls which operate from and offset control line. The line and grade of the slip-form equipment shall be mitomatically controlled. The slip-form equipment shall have aucomatic sensor controls which operate from an offset control line. The line and grade of the slip-form equipment shall b mitomatically controlled. <u>SDETION 7.000 Mixing Concrete</u> <u>7.01 sob-Mixed Concrete</u> <u>7.01 sob-Mixed Concrete</u> <u>7.01 sob-Mixed Concrete</u> <u>7.01 sob-Mixed the the the mixed in a drum-type maker which shall conform to the standards of the Mixes Manufacturer's formall which shall conform to the standards of the Mixes Manufacturer's form downing the aggregate common and water into a thoroughly mixed and inform mass within the specific time and di</u></pre>	
<pre>c cement, coarse and fine aggregate, water and hal sontain a minimum of aix (6) sacks of ceme. five and sight-tenths (5.8) gallons of water p. it of aix percent by volume and a maximum coarse ex 3/4) inco unless concrete thickness exceeds shall aggregrate exceed one and one-hair (1 1/2) te shall have a minimum twenty-sight (28) day psi. Any admixture except air-entraining agent ingineer, including accelerators and retarders. estandard Specification for Portland Cement, ASTM 75 for Air-Entraining Portland Cement, Type 14 or e Standard Specification for Concrete Aggregate. e Standard Specification for Concrete Aggregate. he a minimum wize of 6 X.8 inch 10/10 gauge wire standard specification for specification 0309. he a minimum wize of 6 X.8 inch 10/10 gauge wire standard specification for specification 0309. he he a minimum wite base of a standard of the specification 1000 gauge wire standard bonform to ASTM specification 0309. he he non-extruding preformed joint filler and she discussion is non-extruding preformed joint filler and she discussion.</pre>			<pre>where the radius is 190 feet of these for a minimum of six (6) hours after the to permit their resaining in place for surface analyse renoved as soon as preticable. Each action of form shall be straight and free from warps and bends. Maximum deviation of the top surface shall not exceed one-querter inch in ten (10) feet and the inside face not more than one-querter inch in ten (10) feet. The method of connection between sections anall be such that the form just formed is tight and free from novement in any direction. Forms that haves been providely used shall be cleaned of all mortary and dirt before being act forms shall be set true to established line and grade and shall be thoroughly staked in place. Bracing and staking of forms shall be such that the forms remain in both horizontal and vertical alignment until their removal. At the option of the Contractor and with the approval of the Engineer, slipeform equipment may be used for the construction of noncrate curb and gutter of the sonce the donores in auch a manner is to provide a dange and hongeneous products. Slip-form equipment shall be provided with fraveling aids and top forms of suifable dimensions, shapes, and strength to support the concrete for suifable dimensions. The equipment shall spread, consolidate and acreed the required cross section. The equipment sets to provide a dange and hongeneous product. The align-form equipment shall have automatic sensor controls which operate from an offset control line. The line and grade of the slip-form equipment shall be automatically controlled. <u>Job mixed concretes shall be mixed in a drum-type mixer which shall conform to the standards of the Mixer Manufacturers furneau of the Associated General Contractors of Assection. The mixer shall be equipment which shall conform to the standards of the Mixer Manufacturers furneau of the standards General contractors of Assection. The mixer shall be equipment which shall conform to the standards of the Mixer Manufacturers furneau of the standards General con</u></pre>	
<pre>cament, coarse and fine aggregate, water and hall contain a minimum of six (6) sacks of cemel ive and eight-tentns (5.8) gellons of water po- it of six percent by volume and a maximum coarse ex 5/A) incommends concrete thickness exceeds shall aggregrate exceed one and one-hall (1 1/2) te shall have a minimum twenty-eight (26) day psi, Any admixture accelerators and retariers. e Standard Specification for Portland Cement, ASTM 75 for Air Entraining Portland Cement, Type 1A or a Standard Specification for Concrete Aggregate the standard Specification for Concrete Aggregate be a minimum size of S x.8 inch 10/10 gauge wine bonform to ASTX C250: mids shall conform to ASTM specification D309. be incon-extruding preformed joint filler and she is a D1751 or D1752.</pre>		SECTION 5.00 Grading Excavation shall be performed to the lines, grades and cross sections indicated on the approved travings and staked out on the ground, Suitale material removes, from the excavations shall be used as far as practicable bot the grade shown of the drawings or indicated by grade stakes as directed by the Town and replaced with gelect material. Any material which the Engineer determines to be uncompactable anall be considered unsuitable and any surplus of excavated materials which are considered unsuitable and any surplus of excavated material to be considered unsuitable, and any surplus of excavated material, but not be drawing and the approved plane and/or staked but on the ground and inposed of the the constructed by the Town Engineer. Clearing shall be constructed by information and the proved and the and the drawing and	 where the radius is 100 feet of lates for summary of six (6) hours after the concrete has been placed. Face plates for such and gutter may be pronoved as soon as practicable. Each asection of form shall be straight and free from warps and bends. Maximum deviation of the top surface shall not exceed ano-quarter inch in ten 100 feet and the innuite face not more than on-quarter inch in ten 100 feet and the innuite face not more than on-quarter inch in ten 100 feet and the innuite face not more than on-quarter inch in ten 100 feet and the innuite face not more than on-quarter inch in ten 100 feet and the innuite face not more than on-quarter inch in ten 100 feet and the innuite face not more than on-quarter inch in the spin pervicualy used shall be cleaned of all mortar and list before being set forms phall be ast true to established line and grade and that the forms remain in both horizontal and vertical alignment until their removal. At the option of the Contractor and with the approval of the Engineer slip-form equipment shall be provided with freevalues slip at and your of the concrete for sufficient length of time during placement to provide shall be construction of oncrete nuth and gutter of the sufficient length of time during placement as to provide a start of our of ast control line. The line and grade of the slip form equipment shall be mannet as to provide shall concrete from sufficient length of time during placement of provide shall spready, consolidate and screed the result of the contret line. The line and grade of the slip form equipment shall be marke and grade of the slip form equipment shall be marked of the size and the dassociated Gamerol from off ast control line. The line and grade of the slip form meas within the spreate from sufficiently placed concrete. 35CFIOM 7.00 Mixing Concrete 36De mixed concrete shall be facend form as all form mass within the spreate from an off ast control. The slip form equipment shall be facend for the shard ond concrete is ob	

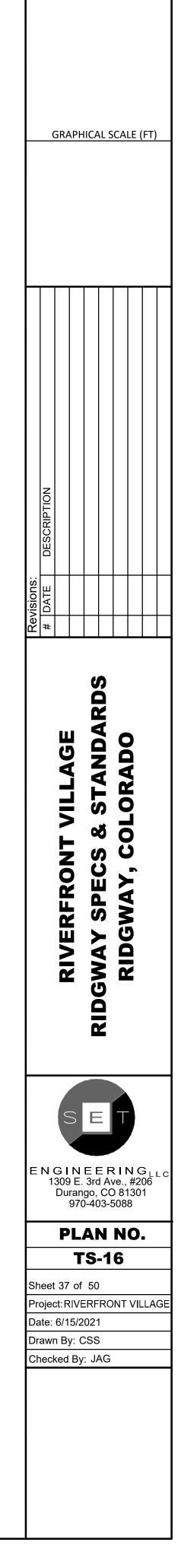




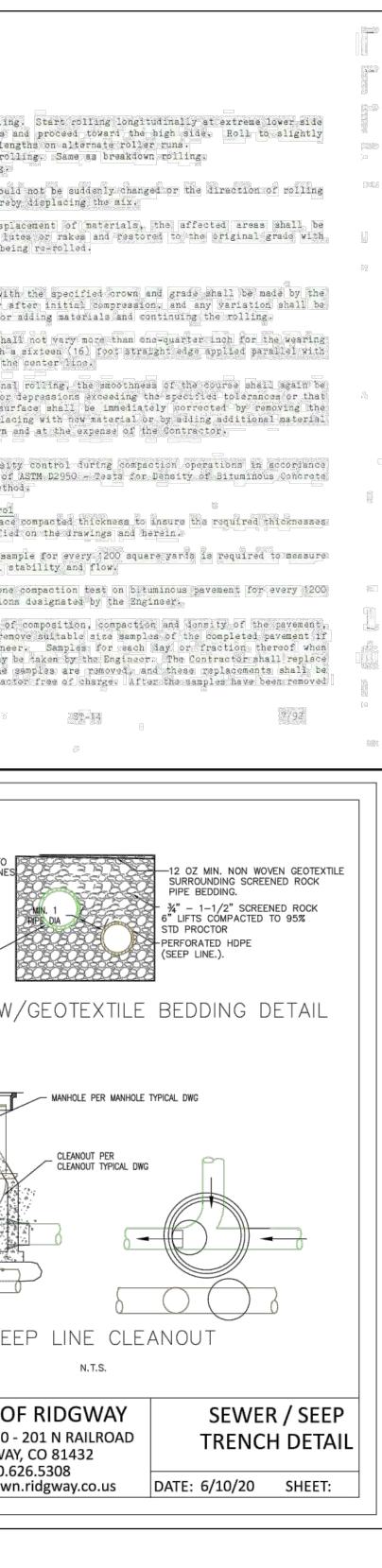
re a iense and compact mass, and to force the				
ing to the surface not less than 5/8 inch of 2 poses.		9.04 Finishing Concrete	SECTION 11.00 Defaced, Defective & Damaged Concrete	
gutters in norizontal layers of not more than yer being spaded along the form faces and compact mass. If internal vibrators are used, e placed in one operation. After the concrete		After the concrete has been placed and consolidated in the forms, it shall be finished. A float shall be used to bring the surface of the concrete to its final form; excessive working of the surface will not be permitted. The fina texture of all exposed surfaces shall be obtained by light brooming. After completion of brooming and before the concrete has taken its initial ast, all	It shall be the Contractor's responsibility to protect fresh concrete from damage as a result of vandalism or other cause; selective or damaged concrete shall be removed and replaced by and at the expense of the Contractor.	
upper surface shall be struck off to the		edges in contact with the forms shall be tooled with an edger having a one-hal inch radius. No plastering, dusting, or topping of the surface, or sprinkling with water to facilitate finishing will be permitted.	SECTION 12.00 Backfilling No power equipment used for the preparation of subgrade will be permitted	
ion shall be regarded as sufficient reason for ction. involved and its replacement with new be responsible for any defects in the quality		9.05 Joints J. Dummy Joints, Transverse joints shall be located at intervals of five (5)	adjacent to concrete curb, gutter, of alloy intersections will not be parenent following placement of the concrete. The placement of bituminous pavement adjacent to concrete curb, gutter, or slley intersections will not be permitted	
		feet in sidewalk slabs. The joints shall be tooled to a minimum depth of the sone quarter inch.	at least 2500 pei nor wild concrete paving braining placing or finishing seventh day and at least 2800 periously placed concrete. If admixtures, additional	2
rization, concrete shall not be placed unless degrees fahrenheit, and ascending and placing air temperature in the shade and away from r (40) degrees fahrenheit.		2. Contraction Joints. Unless otherwise approved by the Engineer, combination curb, gutter and sidewalk shall be constructed in ten (10) foot monolithic sections with contraction joints averaging one-quarter inch thick between sections. The templates for the contraction joints shall be made and set to allow three (3) inches clearance between bottom place of the concrete and	equipment will file on the picture of obtain high early strength concrete, grading cement or Type III cement is used to obtain high early strength concrete, grading operations will be permitted on the second day following the placement of the concrete and paving operations on the third day as long as the compressiv- strength has reached 2500 gai and 2800 pai respectively.	đr Bi
ing cold weather, the temperature of the mix) degrees fahrenheit at the time of plasing. heated to a temperature exceeding 150 degrees g frost or lumps of frozen material shall not		 Dower edge of template. Expansion Joints. Expansion joints shall be provided approximately ever fifty (50) feet in sidewalks and at crosspans and shall extend for the full 	When side forms are removed, the space adjoining the concrete shall be prompti- backfilled with suitable material, properly compacted and brought flush with the surface of the concrete and adjoining ground surface. Such compaction shall the surface of the concrete and remove that is will not harm the during concrete	
w and frost shall be removed from the forms and rate be placed against frozen ground or against	1919	depth and width of the concrete. Expansion joint material shall also installed between new structure slabs and existing concrete slabs, around fire hydrants, poles, etc., and also between the ends of sidewalk slabs a curbs. Expansion joint material must be set vertical and with the top edge flush with the finished surface. The joint shall be edged with a suitable	In embankments, the backfill shall be level with the top of the controls its least two (2) feet and then sloped to the property line.	
f the concrete shall be maintained above fifty ast four (4) days, and the concrete temperature reezing point for at least ten days by the use		edging tool.	Walks shall not be opened to pedestrian traffic for at least twenty-four (2) hours after placement. Driveways, curb, gutter and cross pans shall not opened to vehicular traffic for at least seven (7) days after placement. The Contractor shall maintain suitable barricades to comply with the foregoing	
es of loose, dry straw or with insulated curing early strength cement (the use of which must be a Town), the concrete temperature shall be	M	Concrete shall be cured by protecting it against moisture loss, rapid temperature change and from rain, flowing water and mechanical injury for a period of a less than five days aftar placement. It shall be the Contractor's responsibility	requirements. SECTION 14.00 Connections with Existing Sidewalks	
ees fahrenheit for two days and above freezing for five (5) days. Concrete injured by frost aced at the Contractor's expense.		to protect the concrete from traffic and the elements. Concrete shall be cured by the following method: 10.01 Liquid Membrane Curing	Where new sidewalk construction abuts existing sidewalks, the work shall of accomplished so that no abrupt change in grade between the old and new work results.	
concrete shall not be placed if the temperature be maintained at ninety (90) degrees fahrenheit		Curing compound may be used and shall be applied immediately after the water sheen has left the finished concrete. The compound shall be applied at a rate	SECTION 15.00 Repairs	(Caliba)
sement of concrete in not weather, the aggregate		to completely cover the surface uniformly and at a rate that will achieve the performance requirements specified in ASTM Specification 0309. The compoun- shall be kept sgitzted while being applied to prevent the pigment from settling After the forms have been removed, the exposed edges shall be covered immediate with the compound.	Where repairs are made in existing sidewalks, all edges of the old sidewal allowed to remain shall be sawcut to a minimum depth of one and one-half (1 1/ inches. No rough edges will be permitted where new construction joins old. section less than five (5) feet in length shall be placed or left in place.	
CCS - 6				J
		CCS - 5/92		C.
FREETS		STREET DESIGN AND CONSTRUCTION STANDARD SPECIFICATIONS FART I - GENERAL Scope The work covered by this specification concerns the furnishing of all labor equipment and materials and performing all operations in connection with the design and construction of streets is strict accordance with this specification and the applicable drawings. Related Work Specified Blaewhere Exception, Backfill and Compaction Standard Specifications Minimum Standards - Curb, Cutter, Sidewalks, and Streets	PART II = MATERIALS Select Borrow Material Select subgrade material shalf be a well graded mixture of sound mineral aggregate particles containing sufficient, proper quality bonding material to secure a firm, stable foundation when placed and compacted on the roadway. When tested with laboratory aleves, the select subgrade shall meet the following gradation requirements: Standard Size of Slave A inch A inch No. 4 No. 4 No. 4	
		STANDARD SPECIFICATIONS PART I - GENERAL Scope The work covered by this specification concerns the furnishing of all labor, equipment and materials and performing all operations in connection with the design and construction of streets in strict accordance with this specification and the applicable drawings. Belated Work Specified Blaewhere	Select Borrow Material Select subgrade material shall be a well graded mixture of sound mineral aggregate particles containing sufficient, proper quality bonding material to secure a firm, stable foundation when placed and compacted on the roadway. When tested with laboratory aleves, the select subgrade shall meet the following gradation requirements: <u>Standard Size of Slave</u> 3 inch 2 inch 100 90-100	

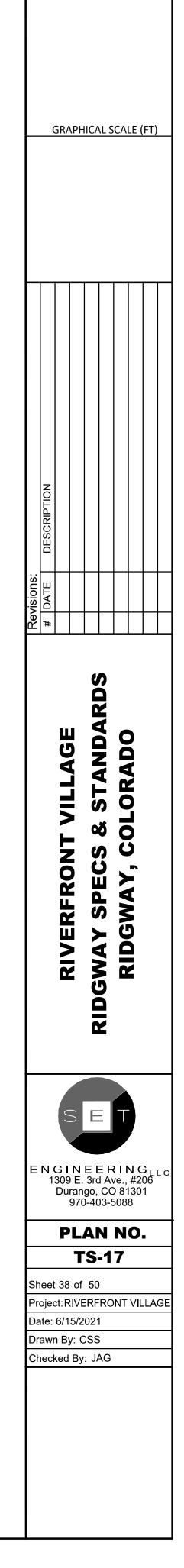


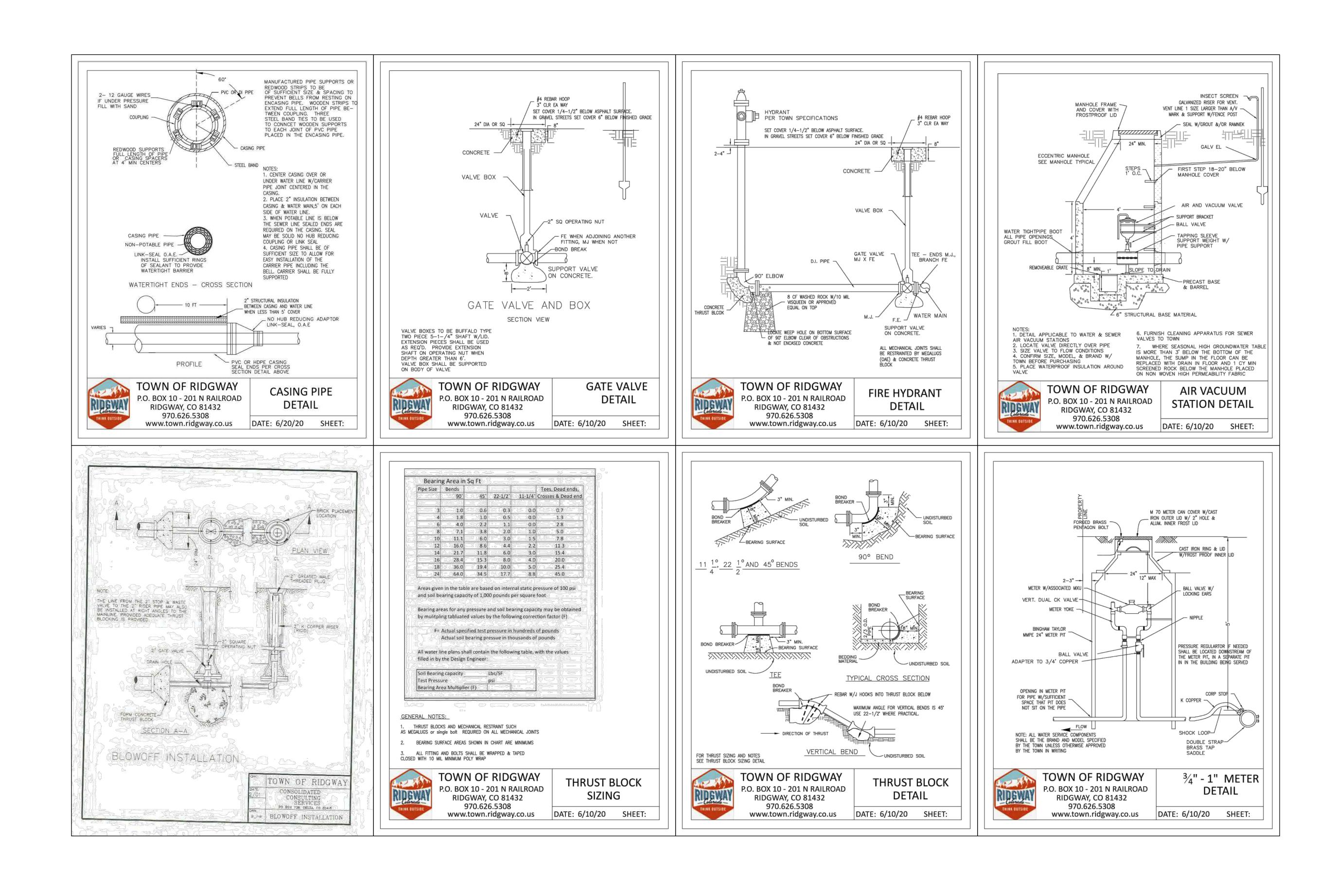
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Special interview Sp	<text><text><text></text></text></text>	The apphalic surface course shall be composed of sinears aggregate and bituninous material, mixed in a control mixing plant, and shall be placed on the plant aggregate shall be of uniform quality, around to time as mecoassary, and shall be composed of nound, burght, surfaces avoid on the plant aggregate shall be of uniform quality, around to time as mecoassary, and shall be composed of nound, burght, surfaces aggregate shall be real to avoid the three states at mecoassary and the plant aggregate shall be of uniform quality, atmented time of sing or the plant attrained or inner of fillings (a sequence) and the streng of the three streng that the trans at mecoassary, and shall be composed of nound, burght attrained of the streng of the three streng that the trans at the streng the sequence of the streng o	The paying sephalt shall be a honogenous product kerived from sephaltic trudes and shall be free from sater and any mineral methor other diverse the obtained in the sephalt. The paying sephalt analy meet the reducerting addition of a percentage as determined by i obtains formula: Sampling and besting of paying asphalt shall be in accordance with applicable AASHTO and ASTM bests. Determination of percentages of Estuminous Natorial The percentages of Ostuminous material, by weight, its be added to the segregate will would be been five and three-quarters and 70 for weight of the segregate. The exceed percentage to by used shall be fixed by the dominator of the basis of preliminary laboratory house and three quarters and file dense best and to order any phoneses of the work. PATT III - STACUTION <u>SUPERADE PERCENTION</u> File Control SUPERADE PERCENTION File Control STACOTION SUPERADE PERCENTION File Control and is provide assistance to the Contractor, A set of approved place shall be ask by field parties under the Contractor. Creating Breaving standard by new and be site at all times the Contractor. Creating Breaving standard by accessed or filed parties and it is the Contractor. Creating Breaving standard by one his proper sould be proved to be assistance to the Contractor. Creating Breaving at an event of the proper sould be available to check the set of the beneficient and in the contractor. Creating Breaving at an event will be a first colls meeting first first markets. Breaving has shall be compreted for all first built be sould all be the proved to a similar by the sould and brought up to the proper sould be compared to a similar of the percent of Modified Process Desity as determined by ACTM-1557. Other access and proves action for dust hall be less than 2 percent below, nor nove than 2% above optimus.	 Schenkments shall be constructed by depositing, placing, and compecting materials of acceptable quality above the natural ground or other surface in accordance with lines, grades and cross sections shown on the plans and/or as fequided by the Town. Bsfore any subankment is placed, closning, tree removal, and topool removed shall be performed as directed by the Town Engineer. Clearing shall be performed as directed by the Town Engineer. Clearing shall include removal and disposal of obsiructions and rubbish to a minimum depth of sight (3) inches bolow subgrade elevation; sody will be removed to a dinkum depth of sight (3) inches the outpart of the subgrade elevation. Each lift of embankment material, not to erceed six (6) inches of loose depth ishall be thoroughly and uniformly sized and noistened to full depth and compacted by roller pervised to uniform minimum density of 905 of maximum density (ASTM) 1557), and optimum moisture content of plus or along and the secured by the force for shown on the approved plans, select subgrade material shall be driven over the subgrade and affections noted. Soft and yielding material and portions of the subgrade which also course construction of the subgrade which also course active is a soft of the subgrade which also course active is active and the secured as secified herein. Subgrade shall not be approved for base four base for base for base for base depth shall be framewod at a replaced with base course material is not available for ponstructing subgrade shall not be constructed to a which here and inform the secured by the fourth of the subgrade which also do constructions and scheme and inform and the secure select subgrade anterial for base course and the secure as a secure as a secure secure and the maximum and the secure select subgrade for the secure as a secure
Apply blustness parting is block possible is block possible is block to all parting is block to		Prime Coat		
	Placing and Spreading The base course material shall be deposited and spread in a uniform layer and without segregation of size to such loose depth that when compacted, the layer shall have a thickness not to axceed four (4) inches. The base course shall be rolled with a rubber tired coller of minimum size of 8 to 12 tons and a vibrated roller. Water may be added to produce a stable condition such that when heavy construction equipment or loaded trucks are driven over the base course it is uniformly hard and unyielding. The material shall be compacted to a minimum density of 90% of modified protor density. No base course material shall be placed upon a soft, spongy or frozen sub-base or other sub-base, the stability of which is, in the opinion of the Engineer, unsuitable for the placement thereof. <u>ASPHALT PAVING</u> <u>GENERA1</u> All asphalt paving shall conform and all work shall be done in accordance with the Standard Specifications of the Colorado Department of Highways (Section 401).	The grade of asphalt and the rate of application shall be approved by the Engineer and shall be determined by considering the condition of the base course, temperature, and other conditions affecting application. When, in the opinion of the Town, the prepared base is thoroughly dry and satisfactory to receive the prime coat, the surface shall be cleaned by sweeping of other approved methods. The cleaning shall be continued until the smbedded aggregates are uncovered but not dislodged, and dust, mud and foreign matter removed. The equipment used to apply the prime coat shall be of the proper type and condition of maintenance to distribute the materials evenly and smoothly in the quantity specified. The material shall be heated to the proper tamperature when applied, and shall only be applied when the outside tamperature is above 50 degrees Fahrenheit. Apply enough material to penetrate and least, but not flood, the surface. The prime coat shall be permitted to cure until thorough and proper penetration has been obtained, but at no time shall the curring period be less than twenty-four (24) hours. Pools of bituminous material occurring in depressions shall be removed from the surface before applying the asphalt surfacing. Blot with sand and remove loose sand before paving. Protect surfaces of curb and gutter, sidewalko and other structures to prevent any asphaltic foil from being sprayed on them. Any surfaces insidvertently sprayed will be thoroughly cleaned at the expense of the Contractor.	Job Mixing Formula No work shall be started on the project nor any mixture accepted until the Contractor has submitted for the approval of the Engineer a satisfactory job mix formula based upon tests of the materials to be furnished. The formula shall be submitted in writing by the Contractor to the Town, indicating the definite percentage for each sieve fraction of aggregate and for asphalt. The intende temperature of completed mixture at the time it is discharged from the mixer much be between 255 degrees fahrenheit and 300 degrees fahrenheit. The materia furnished shall conform to the approved job mix formula within the tolerance specified herein. 7.03.5 Job Mix Tolerances Aggregate passing No. 4 Aggregate passing No. 200 sizve Mixture Temperature upon delivery at job site Paving Asphalt (Bitumen) Should a change in sources of material be made, a new job-mix formula shall pe- established before the new material is used. Prepared job mix formula shall pe-	When the asphalt is subject to cooling during long haul, it shall be covered with a tarp in the truck to maintain proper temperature for laying. The asphalt shall not be hofter than 325 degrees Fahrenheit at the plant. During periods of cold weather or for long-distance deliveries, provide insulation around entire truck bed surfaces and provide covers securely fastaned. EQUIPMENT Provide the size and quantity of equipment to insure a uniform continuity of operation and to complete the work specified within the project time schedule. Asphalt Distributor The distributor shall be in good mechanical condition and shall be capable of uniformly distributing the prime cost throughout a reasonable range of widths



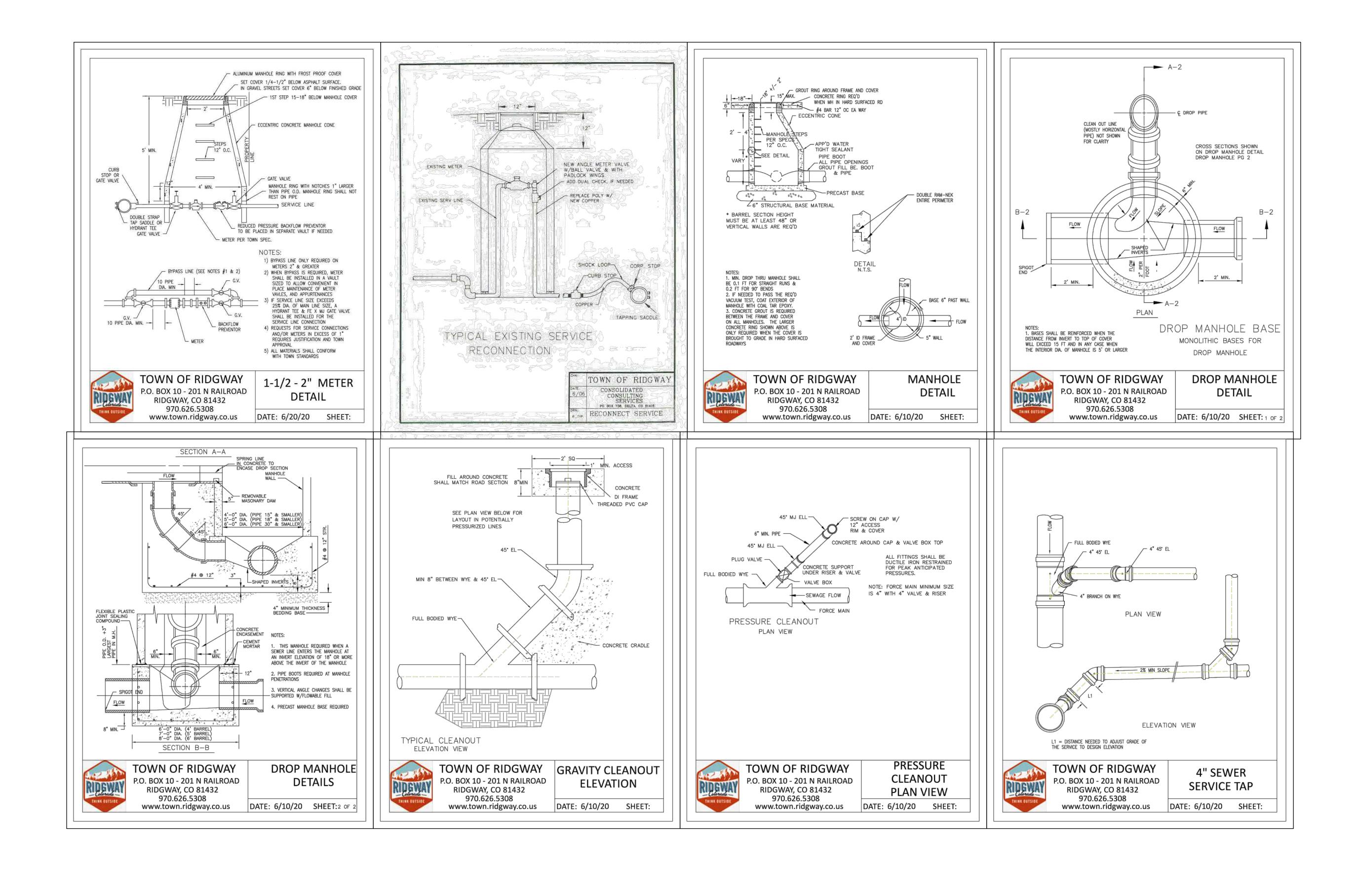
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	<text></text>	IN COOT ROW ABOVE PIPE ZONE TRENCH ZONE 4 - PAREMENT (WHERE PARED) CUT EA SUG OF PAREMENT BECK 9" MN RUE ECONSISTENT WOLCOT PERSIM IN COOT ROW ABOVE PIPE ZONE TRENCH DE PLACE OF PAREMENT BEPTH WATCH EXISTING, 4" MIN DE PLACE OF WOLF THAT TO BEST MODIFIED TO BE PLACED IN MAX 3" UTUEL CONTACT TO BEST MODIFIED COMPACTE TO BEST MODIFIED THE PLACE OF WOLF ATTEND COMPACT TO BEST MODIFIED THE CONSISTENT WOLF AND THAT TO BEST MODIFIED THE CONSISTENT WATCH TO BEST MODIFIED THE CONSISTENT WATCH TO BEST MODIFIED THE CONTACT TO BEST MODIFIED THE CONSISTENT AND THAT THAT THAT THAT THAT THAT THAT THA	HEIGHT OF WRAP ENOUGH TO ENCLOSE SEWER & SEEP LINES WITH 3" MIN ROCK BELOW AND 12" ABOVE PIPES SEWER MAIN (SIZE & MATL PER APPD PLANS) SE WER WAN SE WER WAN



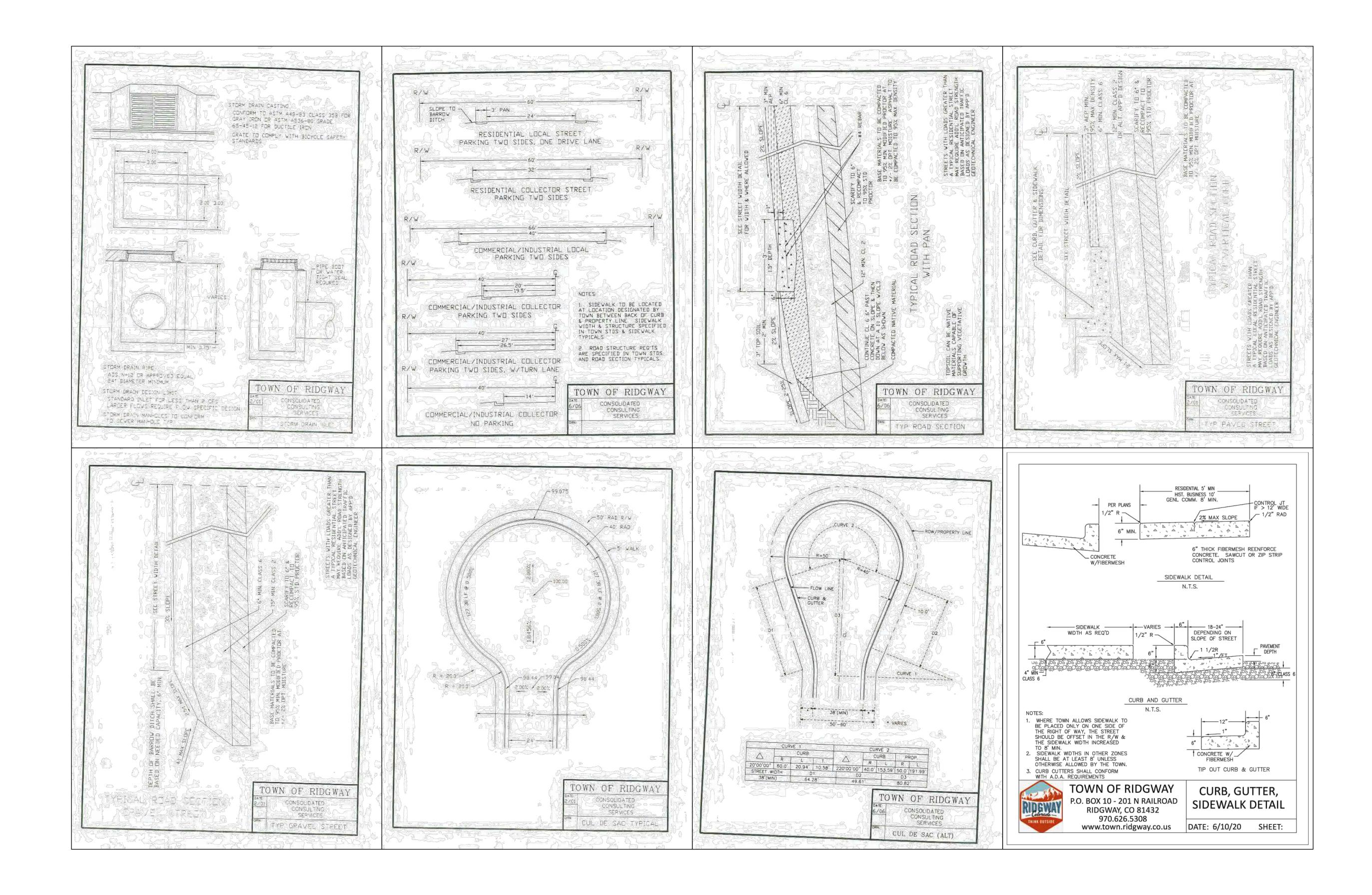


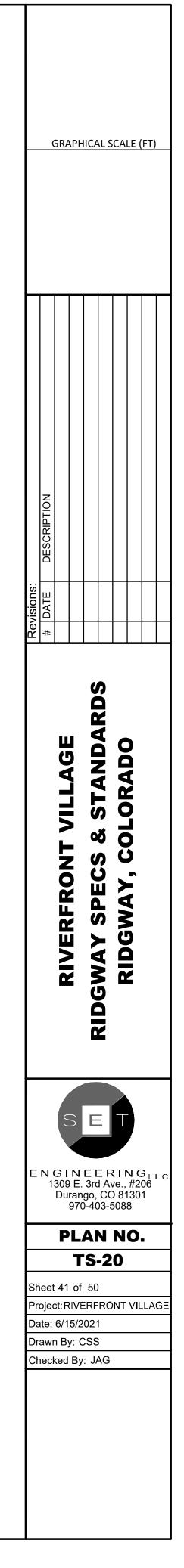


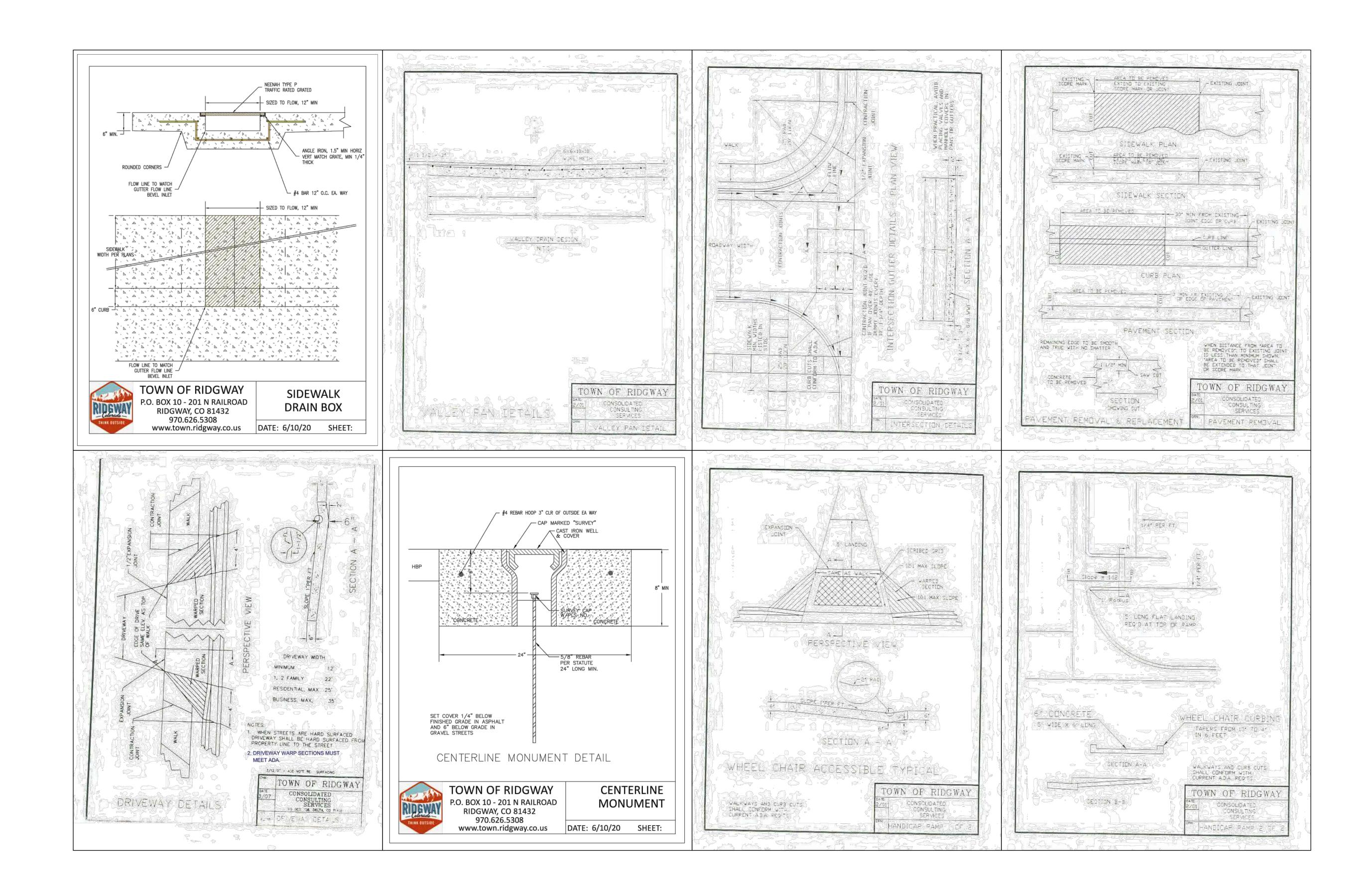


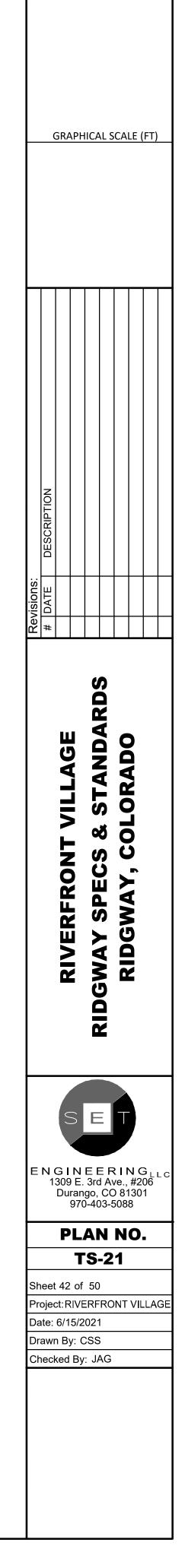


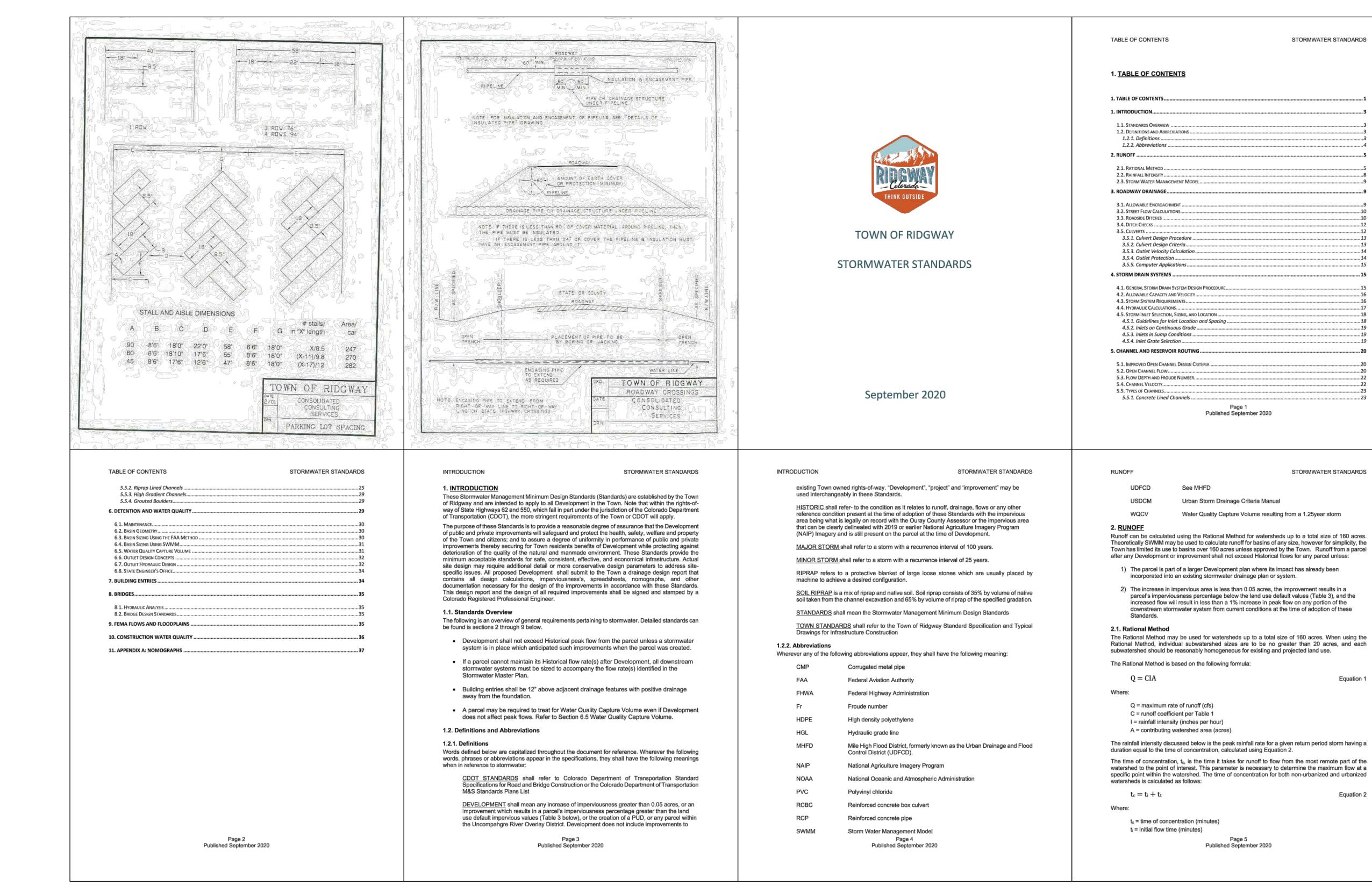












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TS-22 Sheet 43 of 50 Project:RIVERFRONT VILLAGE Date: 6/15/2021 Drawn By: CSS Checked By: JAG			RIVERFRONT VI							

STORMWATER STANDARDS

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STORMWATER STANDARDS

See MHFD

Urban Storm Drainage Criteria Manual

Water Quality Capture Volume resulting from a 1.25year storm

Runoff can be calculated using the Rational Method for watersheds up to a total size of 160 acres. Theoretically SWMM may be used to calculate runoff for basins of any size, however for simplicity, the Town has limited its use to basins over 160 acres unless approved by the Town. Runoff from a parcel after any Development or improvement shall not exceed Historical flows for any parcel unless:

1) The parcel is part of a larger Development plan where its impact has already been

2) The increase in impervious area is less than 0.05 acres, the improvement results in a parcel's imperviousness percentage below the land use default values (Table 3), and the increased flow will result in less than a 1% increase in peak flow on any portion of the downstream stormwater system from current conditions at the time of adoption of these

The Rational Method may be used for watersheds up to a total size of 160 acres. When using the Rational Method, individual subwatershed sizes are to be no greater than 20 acres, and each subwatershed should be reasonably homogeneous for existing and projected land use.

Equation 1

duration equal to the time of concentration, calculated using Equation 2. The time of concentration, t_c, is the time it takes for runoff to flow from the most remote part of the

watershed to the point of interest. This parameter is necessary to determine the maximum flow at a specific point within the watershed. The time of concentration for both non-urbanized and urbanized

Equation 2

Page 5 Published September 2020 t_t = travel time in the ditch, channel, swale, gutter, storm drain, etc. (minutes)

For non-urban watersheds, those with up to 20% imperviousness, the minimum recommended total time of concentration is 10 minutes, and the initial flow time can be calculated as follows:

STORMWATER STANDARDS

Equation 3

 $t_i = 0.395 (1.1 - C_{25}) * \frac{L_i}{c^{1/3}}$

Where

C₂₅ = runoff coefficient for 25-year return period per Table 1 L_i = length of initial flow (feet, 300 max) S = average slope along the initial flow path (percent)

Table 1: Runoff Coefficients

Percent			Runo	ff Coefficie	nts, C _x		
Impervious	1.25-yr	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
0%	0.003	0.04	0.15	0.25	0.37	0.44	0.50
5%	0.03	0.08	0.18	0.28	0.39	0.46	0.52
10%	0.06	0.11	0.21	0.30	0.41	0.47	0.53
15%	0.10	0.14	0.24	0.32	0.43	0.49	0.54
20%	0.13	0.17	0.26	0.34	0.44	0.50	0.55
25%	0.16	0.20	0.28	0.36	0.46	0.51	0.56
30%	0.18	0.22	0.30	0.38	0.47	0.52	0.57
35%	0.22	0.25	0.33	0.40	0.48	0.53	0.57
40%	0.25	0.28	0.35	0.42	0.50	0.54	0.58
45%	0.28	0.31	0.37	0.44	0.51	0.55	0.59
50%	0.31	0.34	0.40	0.46	0.53	0.57	0.60
55%	0.34	0.37	0.43	0.48	0.55	0.58	0.62
60%	0.36	0.41	0.46	0.51	0.57	0.60	0.63
65%	0.42	0.45	0.49	0.54	0.59	0.62	0.65
70%	0.47	0.49	0.53	0.57	0.62	0.65	0.68
75%	0.52	0.54	0.58	0.62	0.66	0.68	0.71
80%	0.58	0.60	0.63	0.66	0.70	0.72	0.74
85%	0.64	0.66	0.68	0.71	0.75	0.77	0.79
90%	0.71	0.73	0.75	0.77	0.80	0.82	0.83
95%	0.79	0.80	0.82	0.84	0.87	0.88	0.89
100%	0.88	0.89	0.90	0.92	0.94	0.95	0.96

The initial flow length for both non-urbanized and urbanized watersheds is the length over which flow is expected to be sheet flow, prior to becoming concentrated in a swale. If the distance between the most remote part of the basin and the point of interest is longer than 300 feet, travel time must be added to initial flow time to calculate total time of concentration. Time to concentration shall be calculated using Manning's equation (discussed later in these Standards) or can be approximated by

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ROADWAY DRAINAGE

Table 5: Allowable Roadway Encroachment

STORMWATER STANDARDS

Criteria	Collector & Arterial Criteria				
Criteria	Minor Storm	Major Storm			
epth at gutter flow line1	6"	12"			
epth at outside edge of pavement ₂	6"	12"			
enter clear lane for emergencies	N/A	12 feet			
treet flow velocity	N/A	8 fps			
lax flow spread	N/A	Stay within public ROW			
0.11	All Other Roadways Criteria				
Criteria	Minor Storm	Major Storm			
epth at gutter flow line ₁	N/A	12"			
epth at outside edge of pavement ₂	N/A	12"			
lepth at roadway crown	0"	6"			
treet flow velocity	N/A	8 fps			
		Stay within public ROW			

Where flow exceeds what is allowable within a street, a roadside ditch or enclosed drainage system must be used to capture and convey the excess flow. Areas of existing Development or redevelopment may have roadside ditches or enclosed drainage systems, while new areas of Development are expected to have enclosed drainage systems. Roadside ditches are discussed in detail later in these Standards. When designing or redesigning a roadway with buildings already present Table 16 will also need to be consulted and met regarding to building entry elevations. If the designer feels that there are site specific challenges that prohibit being able to meet existing entry height(s) the designer shall prepare and submit a report to the Town explaining the challenges and proposing an alternate.

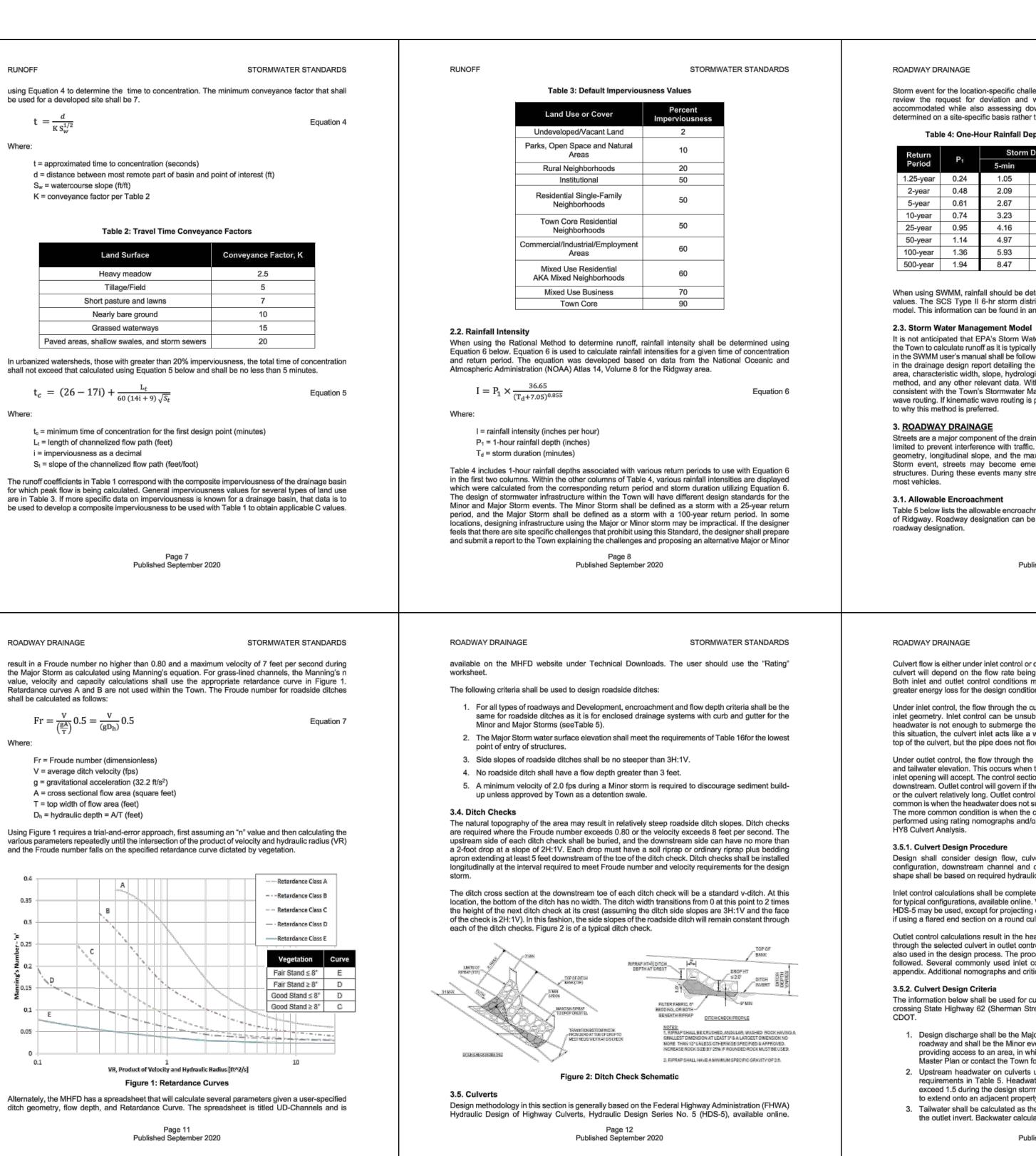
3.2. Street Flow Calculations

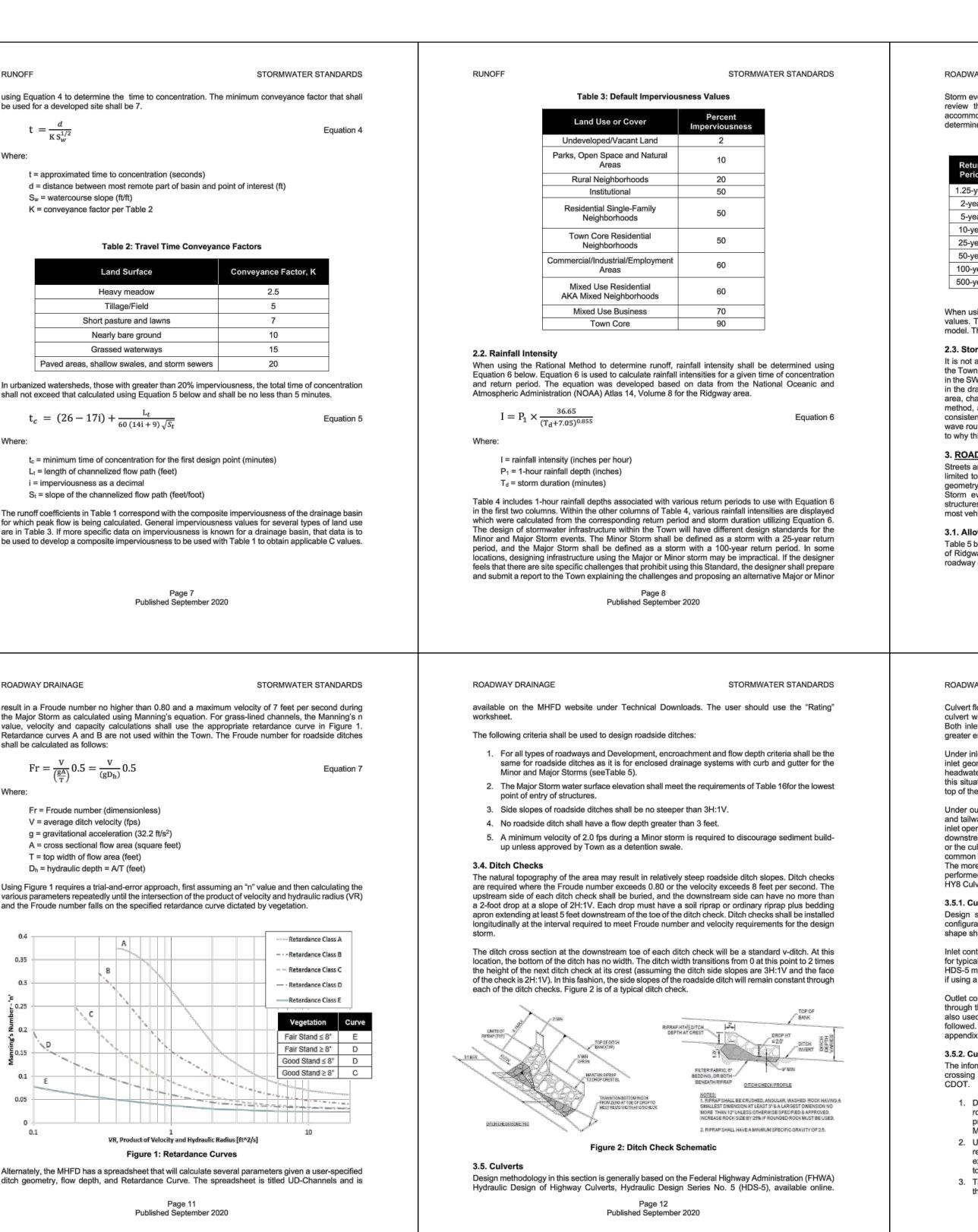
Calculations for flow capacity and velocity in a street section are based upon the limits specified for each type of roadway and the assumption that area outside the street right-of-way does not contribute to the capacity of the street drainage system. For calculation purposes, it is assumed that an infinitely high vertical wall of zero roughness exists at the right-of-way boundary, and any flow area outside this boundary is not considered in analysis. For new street designs, a combination of the storm drainage system and curb and gutter can be utilized to convey the Minor event. All street capacity calculations should be completed on a half-street basis and the same vertical-wall assumption applies to the street centerline as to the right-of-way. The Mile High Flood District (MHFD), maintains an excel spreadsheet that will calculate street hydraulic capacity given detailed user input. The spreadsheet is titled UD-Inlet and is available on the MHFD website under Technical Downloads. The website should be checked to ensure the most recent version of UD-Inlet is being used as the MHFD often updates its technical materials as new data becomes available. Detailed street flow calculations that can be completed by hand can be found in the Federal Highway Administration's (FHWA) HEC-22 Urban Drainage Design Manual.

3.3. Roadside Ditches

Roadside ditches are open channels but are discussed here because they are specifically part of the roadway drainage system. They will ideally be grass-lined and shall be designed to prevent erosion of the ditch lining. If an enclosed drainage system is present or anticipated upstream or downstream, a roadside ditch will not be allowed unless approved by the Town. Maximum longitudinal slope shall

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RUNOFF

STORMWATER STANDARDS

Storm event for the location-specific challenges with the rationale for using that storm. The Town will review the request for deviation and work with the designer to determine the storm to be accommodated while also assessing downstream impacts. Such deviations Minor Storm will be determined on a site-specific basis rather than a project-wide basis.

Table 4: One-Hour Rainfall Depths and Intensity-Duration-Frequency Values

Storm Duration and Resulting Rainfall Intensity (in/hr)									
i-min	10-min	15-min	30-min	60-min					
1.05	0.78	0.63	0.40	0.24					
2.09	1.55	1.25	0.80	0.48					
2.67	1.98	1.59	1.02	0.61					
3.23	2.40	1.93	1.24	0.75					
4.16	3.09	2.48	1.59	0.96					
4.97	3.70	2.97	1.90	1.15					
5.93	4.41	3.54	2.27	1.37					
8.47	6.29	5.05	3.24	1.95					

When using SWMM, rainfall should be determined using the latest NOAA Atlas 14, Volume 8 rainfall values. The SCS Type II 6-hr storm distribution should be used to generate the hyetograph in the model. This information can be found in an appendix of Ridgway's Stormwater Master Plan or online.

0.24

0.48

0.61

0.95

1.14

1.94

It is not anticipated that EPA's Storm Water Management Model (SWMM) will be used frequently in the Town to calculate runoff as it is typically used for large basins. If SWMM is used, recommendations in the SWMM user's manual shall be followed and design methodology shall be presented to the Town in the drainage design report detailing the parameters used including each basin's; imperviousness, area, characteristic width, slope, hydrologic soil group, precipitation losses using Horton's infiltration method, and any other relevant data. Within the model, dynamic wave routing shall be used to be consistent with the Town's Stormwater Master Plan unless the Town approves the use of kinematic wave routing. If kinematic wave routing is proposed, an explanation must be provided to the Town as

Streets are a major component of the drainage system, but their use for stormwater drainage must be limited to prevent interference with traffic. A street's flow capacity is based upon its cross-sectional geometry, longitudinal slope, and the maximum allowed depth or spread of runoff. During a Major Storm event, streets may become emergency runoff channels, routing floodwaters away from structures. During these events many streets will be inundated to the point they are impassable to

Table 5 below lists the allowable encroachment criteria for different types of roadways within the Town of Ridgway. Roadway designation can be found in the Town's Master Plan or contact the Town for

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> > STORMWATER STANDARDS

Culvert flow is either under inlet control or outlet control. Identifying if the inlet or the outlet controls the culvert will depend on the flow rate being considered, the culvert and drainageway characteristics. Both inlet and outlet control conditions must be evaluated, and the condition which produces the greater energy loss for the design condition dictates which situation will control the design.

Under inlet control, the flow through the culvert is controlled by the headwater on the culvert and the inlet geometry. Inlet control can be unsubmerged or submerged. In an unsubmerged condition, the headwater is not enough to submerge the top of the culvert and the culvert slope is supercritical. In this situation, the culvert inlet acts like a weir. In a submerged condition, headwater submerges the top of the culvert, but the pipe does not flow full. In this situation, the culvert inlet acts like an orifice.

Under outlet control, the flow through the culvert is controlled primarily by culvert slope, roughness, and tailwater elevation. This occurs when the culvert is not capable of conveying as much flow as the inlet opening will accept. The control section may be within the barrel, at the barrel exit or even further downstream. Outlet control will govern if the tailwater is high enough, the culvert slope is relatively flat, or the culvert relatively long. Outlet control will exist primarily under two conditions. The first and less common is when the headwater does not submerge the culvert inlet and the culvert slope is subcritical. The more common condition is when the culvert is flowing full. Culvert hydraulic calculations shall be performed using rating nomographs and/or culvert hydraulic analysis programs such as the FHWA's

Design shall consider design flow, culvert size and material, upstream channel and entrance configuration, downstream channel and outlet configuration, and erosion protection. Material and shape shall be based on required hydraulic capacity and the ability to meet the HS-20 loading.

Inlet control calculations shall be completed using inlet control nomographs from the FHWA's HDS-5 for typical configurations, available online. Various types of culvert entrance configurations included in HDS-5 may be used, except for projecting entrances, which must be approved by the Town. Note that if using a flared end section on a round culvert that chart 55B should be used.

Outlet control calculations result in the headwater elevation required to convey the design discharge through the selected culvert in outlet control. Critical depth charts and outlet control nomographs are also used in the design process. The procedure and variables in HDS-5 for culvert design should be followed. Several commonly used inlet control and outlet control nomographs are included in the appendix. Additional nomographs and critical depth charts are available in HDS-5.

The information below shall be used for culvert design and provided to the Town for review. Culverts crossing State Highway 62 (Sherman Street) and U.S. 550 are also subject to the requirements of

1. Design discharge shall be the Major Storm event when crossing under an arterial or collector roadway and shall be the Minor event for other roadways unless the roadway is the only road providing access to an area, in which case the Major Storm shall be used. Check the Town's Master Plan or contact the Town for roadway classification.

2. Upstream headwater on culverts under all types of roadways shall meet the encroachment requirements in Table 5. Headwater divided by culvert diameter or height (HW/D) shall not exceed 1.5 during the design storm. No increase in backwater from a culvert will be permitted to extend onto an adjacent property.

3. Tailwater shall be calculated as the depth of water downstream of the culvert measured from the outlet invert. Backwater calculations from a downstream control point are required unless Page 13

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NGINEERING 1309 E. 3rd Ave., #206 Durango, CO 81301 970-403-5088

PLAN NO. **TS-23**

Sheet 44 of 50

Project: RIVERFRONT VILLAGE Date: 6/15/2021

I		
	ROADWAY DRAINAGE	STORMWATER STANDARDS
	downstream channel normal depth approximat	ions using Manning's Equation are considered
	by the designer to be adequate and there is no improvements causing backwater. The design normal depth approximations.	downstream structure, roadway, obstruction or
	 Velocity at the culvert outlet cannot exceed the lining in Table 8. Velocities exceeding these values 	
	Minimum culvert velocity for the Minor Storm sl maximum design-flow velocity of 8 feet per se	hall be 2 feet per second. Culverts shall have a
	otherwise by the Town. Design shouldn't subje velocities greater than the culvert or surroundir	
	 Minimum cover over a culvert shall be 1 fool Culverts passing under roadways shall maint 	ain their shape and function under an HS-20
	loading. Maximum or minimum allowable cov should follow the manufacturer's recommendat	tions.
	The minimum size for all public culverts and public such as a roadside ditch shall be an 18-incl	h diameter round pipe or any shape with an
	equivalent area. For public drains through sid drain shall be used. Private drainage culverts	on private property may be as small as 8-inch
	diameter if supported by a drainage letter or stu 7. Culverts shall comply with the Town Standa	rds and CDOT Standards. Culverts shall be
	galvanized corrugated metal pipe (CMP) or dua a smooth interior and a corrugated exterior. F	Reinforced concrete pipe (RCP), or reinforced
	concrete box culverts (RCBC) may be used v elliptical, arch, or box-shaped.	
	 For public culverts and storm drain pipes place polyethylene pipe shall be used. 	
	 Culverts shall be placed to completely drain al road or sidewalk. All areas where water may locations. Culvert placement shall not include 	be impounded shall be considered for culvert
	end. If it is not possible for a culvert to have the wingwalls, and aprons shall be used as protection	ne same alignment as the channel, headwalls,
	inlet. 10. Culvert inlets and outlets shall have a flared e	
	included in the design.	
	3.5.3. Outlet Velocity Calculation The outlet velocity is calculated as follows:	
	1. If design headwater is based on inlet control, d	
	culvert barrel. The velocity at normal depth is a 2. If design headwater is based on outlet control,	determine the area of flow at the outlet (and
	corresponding velocity) based on the barrel ge a. Critical depth if the tailwater is below critica	
	 b. Tailwater depth if the tailwater is between on c. Height of the barrel if the tailwater is above 	
:	3.5.4. Outlet Protection	
	Table 8 below presents maximum permissible mean o inings. When outlet velocities exceed allowable chann	
	Page 14	
	Published Septem	iber 2020
:	STORM DRAIN SYSTEMS	STORMWATER STANDARDS
	Downloads. The website should be checked to ensure	
	used as the MHFD often updates its technical materia shall approve the use of any software other than UD-S	
	Detailed street flow calculations that can be completed Urban Drainage Design Manual. Pipe friction and ma	
4	dissipation in storm drain systems. If calculating an l considered as well as manhole losses for changes in p	pipe diameter at a manhole, differences in flow
	depth upstream and downstream of a manhole, more t and manhole benching. Pipe sizes shall be initially	selected based on capacity calculated using
	Manning's equation for open channel flow (Equation 9 drain system. Alternately, Equation 8 may be used to diameter for simular piper, rounding up to the persent	
,	diameter for circular pipes, rounding up to the nearest	
	3/-	
	$D_{i} = \left[\frac{2.16nQ_{p}}{r^{1/2}}\right]^{3/8}$	
	$D_{i} = \left[\frac{2.16nQ_{p}}{s_{o}^{1/2}}\right]^{3/8}$ Where:	standard pipe size.
,	Where:	standard pipe size. Equation 8
,	Where: D _i = initial design minimum pipe diameter (feet) Q _p = initial design peak flow rate (cfs)	standard pipe size. Equation 8
,	Where: D _i = initial design minimum pipe diameter (feet)	standard pipe size. Equation 8
	Where: D _i = initial design minimum pipe diameter (feet) Q _p = initial design peak flow rate (cfs) n = Manning roughness coefficient (see Table S _o = initial design pipe slope (feet/foot) The HGL shall be calculated for each storm drain syste	standard pipe size. Equation 8) 7) em by starting with the water surface elevation
	Where: D _i = initial design minimum pipe diameter (feet) Q _p = initial design peak flow rate (cfs) n = Manning roughness coefficient (see Table S _o = initial design pipe slope (feet/foot) The HGL shall be calculated for each storm drain syste of the outfall and working upstream, accounting for l unctions, and pipe entrances and exits in accordance of	Equation 8 () 7) em by starting with the water surface elevation losses due to pipe friction, manholes, bends, with procedures in HEC-22 or using UD-Sewer.
	Where: D _i = initial design minimum pipe diameter (feet) Q _p = initial design peak flow rate (cfs) n = Manning roughness coefficient (see Table S _o = initial design pipe slope (feet/foot) The HGL shall be calculated for each storm drain syste of the outfall and working upstream, accounting for l	Equation 8 Fequation 8 7) Em by starting with the water surface elevation losses due to pipe friction, manholes, bends, with procedures in HEC-22 or using UD-Sewer. Sities is based on peak design flow for each Minor Storm, and the depth of water in a pipe
	Where: D_i = initial design minimum pipe diameter (feet) Q_p = initial design peak flow rate (cfs) n = Manning roughness coefficient (see Table 1 S_o = initial design pipe slope (feet/foot) The HGL shall be calculated for each storm drain system of the outfall and working upstream, accounting for la unctions, and pipe entrances and exits in accordance with compliance with minimum and maximum flow veloces segment. Note that pressure flow is not allowed for the	Equation 8 Fequation 8 7) Em by starting with the water surface elevation losses due to pipe friction, manholes, bends, with procedures in HEC-22 or using UD-Sewer. Sities is based on peak design flow for each Minor Storm, and the depth of water in a pipe
	Where: D _i = initial design minimum pipe diameter (feet) Q _p = initial design peak flow rate (cfs) n = Manning roughness coefficient (see Table 1 S _o = initial design pipe slope (feet/foot) The HGL shall be calculated for each storm drain syste of the outfall and working upstream, accounting for l unctions, and pipe entrances and exits in accordance w Compliance with minimum and maximum flow veloce segment. Note that pressure flow is not allowed for the shall not exceed 0.8 times the pipe diameter for the Mi 4.5. Storm Inlet Selection, Sizing, and Location When flow in a street impacted by new Development ex- either the Minor or Major event, an enclosed drainage s	Equation 8 Equation 8) 7) 7) em by starting with the water surface elevation losses due to pipe friction, manholes, bends, with procedures in HEC-22 or using UD-Sewer. Sities is based on peak design flow for each Minor Storm, and the depth of water in a pipe nor Storm.
	 Where: D_i = initial design minimum pipe diameter (feet) Q_p = initial design peak flow rate (cfs) n = Manning roughness coefficient (see Table 5 S_o = initial design pipe slope (feet/foot) The HGL shall be calculated for each storm drain system of the outfall and working upstream, accounting for 1 unctions, and pipe entrances and exits in accordance of Compliance with minimum and maximum flow velocities segment. Note that pressure flow is not allowed for the shall not exceed 0.8 times the pipe diameter for the Mi 4.5. Storm Inlet Selection, Sizing, and Location When flow in a street impacted by new Development ex- pather the Minor or Major event, an enclosed drainage sisteret inlets for use in Ridgway are the CDOT Type 13/16 Combination inlet may also be used 	Equation 8 Equation 8 7) 7) em by starting with the water surface elevation losses due to pipe friction, manholes, bends, with procedures in HEC-22 or using UD-Sewer. Stitus is based on peak design flow for each Minor Storm, and the depth of water in a pipe nor Storm. Acceeds allowable limits of encroachment during system with inlets must be added. The standard and Type R inlets with a bicycle safe grate. A d. Note that if using a Type R inlet, the standard
	 Where: D_i = initial design minimum pipe diameter (feet) Q_p = initial design peak flow rate (cfs) n = Manning roughness coefficient (see Table 5 S_o = initial design pipe slope (feet/foot) The HGL shall be calculated for each storm drain systered for the outfall and working upstream, accounting for lunctions, and pipe entrances and exits in accordance of Compliance with minimum and maximum flow velocities segment. Note that pressure flow is not allowed for the shall not exceed 0.8 times the pipe diameter for the Miter Street inlets for use in Ridgway are the CDOT Type 13/2000 Denver Type 13/16 Combination inlet may also be used 2-inch local depression of the throat section should be foot sump (inlet sump) below the lowest pipe invertee 	Equation 8 Equation 8 7) 7) em by starting with the water surface elevation losses due to pipe friction, manholes, bends, with procedures in HEC-22 or using UD-Sewer. ities is based on peak design flow for each Minor Storm, and the depth of water in a pipe nor Storm. kceeds allowable limits of encroachment during system with inlets must be added. The standard b and Type R inlets with a bicycle safe grate. A J. Note that if using a Type R inlet, the standard b reduced to 1 inch. Each inlet shall have a 1- elevation to collect sediment and debris. Area
	 Where: D_i = initial design minimum pipe diameter (feet) Q_p = initial design peak flow rate (cfs) n = Manning roughness coefficient (see Table 5 S_o = initial design pipe slope (feet/foot) The HGL shall be calculated for each storm drain system of the outfall and working upstream, accounting for 1 unctions, and pipe entrances and exits in accordance of Compliance with minimum and maximum flow velocities segment. Note that pressure flow is not allowed for the shall not exceed 0.8 times the pipe diameter for the Mit 4.5. Storm Inlet Selection, Sizing, and Location When flow in a street impacted by new Development ex- sither the Minor or Major event, an enclosed drainage site street inlets for use in Ridgway are the CDOT Type 13 Denver Type 13/16 Combination inlet may also be used 2-inch local depression of the throat section should be 	Equation 8 Equation 8 7) 7) em by starting with the water surface elevation losses due to pipe friction, manholes, bends, with procedures in HEC-22 or using UD-Sewer. ities is based on peak design flow for each Minor Storm, and the depth of water in a pipe nor Storm. kceeds allowable limits of encroachment during system with inlets must be added. The standard a and Type R inlets with a bicycle safe grate. A d. Note that if using a Type R inlet, the standard a reduced to 1 inch. Each inlet shall have a 1- elevation to collect sediment and debris. Area loads exist include CDOT Type C and D inlets
	Where: D _i = initial design minimum pipe diameter (feet) Q _p = initial design peak flow rate (cfs) n = Manning roughness coefficient (see Table 1 S _o = initial design pipe slope (feet/foot) The HGL shall be calculated for each storm drain syste of the outfall and working upstream, accounting for l unctions, and pipe entrances and exits in accordance with compliance with minimum and maximum flow velocise segment. Note that pressure flow is not allowed for the shall not exceed 0.8 times the pipe diameter for the Mi 4.5. Storm Inlet Selection, Sizing, and Location When flow in a street impacted by new Development ex- either the Minor or Major event, an enclosed drainage s street inlets for use in Ridgway are the CDOT Type 13 Denver Type 13/16 Combination inlet may also be used 2-inch local depression of the throat section should be foot sump (inlet sump) below the lowest pipe invert en- nets approved for public use where no potential traffic with a close mesh or bicycle safe grates and the CDOT 4.5.1. Guidelines for Inlet Location and Spacing	Equation 8 Equation 8 () 7) 7) em by starting with the water surface elevation losses due to pipe friction, manholes, bends, with procedures in HEC-22 or using UD-Sewer. ities is based on peak design flow for each e Minor Storm, and the depth of water in a pipe nor Storm. exceeds allowable limits of encroachment during system with inlets must be added. The standard and Type R inlets with a bicycle safe grate. A d. Note that if using a Type R inlet, the standard e reduced to 1 inch. Each inlet shall have a 1- elevation to collect sediment and debris. Area loads exist include CDOT Type C and D inlets T Type 13 area inlet with a No. 13 grate.
	Where: $D_i = initial design minimum pipe diameter (feet) Q_p = initial design peak flow rate (cfs) n = Manning roughness coefficient (see Table 1) S_o = initial design pipe slope (feet/foot)The HGL shall be calculated for each storm drain systemof the outfall and working upstream, accounting for 1unctions, and pipe entrances and exits in accordance withminimum and maximum flow velocitssegment. Note that pressure flow is not allowed for theshall not exceed 0.8 times the pipe diameter for the Mit4.5. Storm Inlet Selection, Sizing, and LocationWhen flow in a street impacted by new Development ex-either the Minor or Major event, an enclosed drainage siztreet inlets for use in Ridgway are the CDOT Type 13Denver Type 13/16 Combination inlet may also be used2-inch local depression of the throat section should benot sump (inlet sump) below the lowest pipe invert ex-nets approved for public use where no potential trafficwith a close mesh or bicycle safe grates and the CDOT$	Equation 8 Equation 8 () 7) 7) em by starting with the water surface elevation losses due to pipe friction, manholes, bends, with procedures in HEC-22 or using UD-Sewer. Sities is based on peak design flow for each Minor Storm, and the depth of water in a pipe nor Storm. cceeds allowable limits of encroachment during system with inlets must be added. The standard and Type R inlets with a bicycle safe grate. A d. Note that if using a Type R inlet, the standard a reduced to 1 inch. Each inlet shall have a 1- elevation to collect sediment and debris. Area loads exist include CDOT Type C and D inlets T Type 13 area inlet with a No. 13 grate.
	 Where: D_i = initial design minimum pipe diameter (feet) Q_p = initial design peak flow rate (cfs) n = Manning roughness coefficient (see Table S_o = initial design pipe slope (feet/foot) The HGL shall be calculated for each storm drain system of the outfall and working upstream, accounting for lunctions, and pipe entrances and exits in accordance with minimum and maximum flow velocities agreent. Note that pressure flow is not allowed for the shall not exceed 0.8 times the pipe diameter for the Mi 4.5. Storm Inlet Selection, Sizing, and Location When flow in a street impacted by new Development ex- either the Minor or Major event, an enclosed drainage sisteret inlets for use in Ridgway are the CDOT Type 13/ Denver Type 13/16 Combination inlet may also be used 2-inch local depression of the throat section should be foot sump (inlet sump) below the lowest pipe invert en entets approved for public use where no potential traffic with a close mesh or bicycle safe grates and the CDOT 4.5.1. Guidelines for Inlet Location and Spacing Inlets should be placed where allowable encroachmen ocated within a curb ramp, but an inlet shall be located curb ramps. Inlets shall be located to prevent bypass street, although Minor Storm flows shall be allowed to c across any street shall meet the requirements of Tat 	Equation 8 Equation 8 () 7) 7) em by starting with the water surface elevation losses due to pipe friction, manholes, bends, with procedures in HEC-22 or using UD-Sewer. Sities is based on peak design flow for each Minor Storm, and the depth of water in a pipe nor Storm. Acceeds allowable limits of encroachment during system with inlets must be added. The standard and Type R inlets with a bicycle safe grate. A d. Note that if using a Type R inlet, the standard a reduced to 1 inch. Each inlet shall have a 1- elevation to collect sediment and debris. Area i loads exist include CDOT Type C and D inlets T Type 13 area inlet with a No. 13 grate.
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	 Where: D_i = initial design minimum pipe diameter (feet) Q_p = initial design peak flow rate (cfs) n = Manning roughness coefficient (see Table S_o = initial design pipe slope (feet/foot) The HGL shall be calculated for each storm drain system of the outfall and working upstream, accounting for lunctions, and pipe entrances and exits in accordance with minimum and maximum flow velocities agreent. Note that pressure flow is not allowed for the shall not exceed 0.8 times the pipe diameter for the Mi 4.5. Storm Inlet Selection, Sizing, and Location When flow in a street impacted by new Development ex- either the Minor or Major event, an enclosed drainage sisteret inlets for use in Ridgway are the CDOT Type 13/ Denver Type 13/16 Combination inlet may also be used 2-inch local depression of the throat section should be foot sump (inlet sump) below the lowest pipe invert en entets approved for public use where no potential traffic with a close mesh or bicycle safe grates and the CDOT 4.5.1. Guidelines for Inlet Location and Spacing Inlets should be placed where allowable encroachmen ocated within a curb ramp, but an inlet shall be located curb ramps. Inlets shall be located to prevent bypass street, although Minor Storm flows shall be allowed to c across any street shall meet the requirements of Tat 	Equation 8 Equation 8 () 7) em by starting with the water surface elevation losses due to pipe friction, manholes, bends, with procedures in HEC-22 or using UD-Sewer. Stess is based on peak design flow for each Minor Storm, and the depth of water in a pipe nor Storm. Acceeds allowable limits of encroachment during system with inlets must be added. The standard and Type R inlets with a bicycle safe grate. A d. Note that if using a Type R inlet, the standard and Type R inlets with a bicycle safe grate. A d. Note that if using a Type R inlet, the standard e reduced to 1 inch. Each inlet shall have a 1- elevation to collect sediment and debris. Area loads exist include CDOT Type C and D inlets Type 13 area inlet with a No. 13 grate.

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The gradation and materials for riprap shall be as specified in the CDOT Standards. Also note that the riprap sizing calculations are for angular rocks with fractured faces, nearly rectangular in shape with a breadth or thickness at least 1/3 its length. Where these riprap materials are not available, rounded river rock may be used if channel side slopes are flattened to 4H:1V and the required gradation is increased by at least 25%.

3.5.5. Computer Applications Town approval.

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Storm drains are used to convey runoff in locations where street capacity is exceeded. Typically, storm drains are sized to convey peak runoff from the Minor Storm in excess of street flow capacity as designated in Table 5. The first inlet will either be located at or upstream of where runoff first exceeds street capacity or where there is a vertical sag in the street.

to the entire Major Storm event flow. Four examples of this situation are:

- 1. Locations where street flow is not in the desired direction and there is no other feasible drainage solution.
- 2. Locations where the standard allowable Major Storm street capacities do not apply, such as
- 3. Locations where there is no viable overflow option for the Major Storm event without adversely impacting private property.
- that exceeds the allowable encroachment criteria in Table 5, in which case the storm drain system must be upsized so that the criteria for all storm events are met.

4.1. General Storm Drain System Design Procedure

- include preliminary inlet and manhole locations.
- locations.

STORM DRAIN SYSTEMS

- from the sump shall be considered.

- the downstream inlet.
- placement of any on-grade inlets during the design process.

4.5.2. Inlets on Continuous Grade

4.5.3. Inlets in Sump Conditions

Street inlets in sump conditions, such as the low point in a vertical sag, must have the capacity to capture all the runoff draining to them without exceeding maximum allowable flow depth and spread. To ensure maximum allowable ponding depth is not exceeded, and to protect against failure, flanker inlets shall be considered. Flanker inlets are located upgradient 10 to 50 feet from the primary sump inlet. Two flanker inlets shall have a combined design capacity equal to or greater than that of the primary sump inlet or inlets.

UD-Inlet will calculate hydraulic capacity of a street or area inlet in a sump condition and shall be used to calculate the hydraulic capacity of an inlet in a sump condition. The default values for clogging factors and for orifice and weir coefficients shall be used unless site conditions specifically dictate the use of different values.

4.5.4. Inlet Grate Selection Bicycle-safe grates must be used in all areas that may receive pedestrian or bicycle traffic unless specifically approved by the Town. The types of grates permitted for use with the Type 13/16 Combination inlet are valley grates in single, double, and triple-inlet configurations. Vane grates are not allowed.

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called a low tailwater basin) is required. The design of riprap aprons and basins shall be completed in accordance with the FHWA's HEC-14 or the USDCM published by the MHFD.

The FHWA's HY8 Culvert Analysis may be used in lieu of nomographs. Other programs must receive

Occasionally, inlets and storm drains must be sized to convey more than the Minor Storm event, up

negative slopes outside the curb but within the right-of-way.

4. When a storm drain system sized for the Minor event results in flooding during the Major event

The general design process for a storm drainage system is below.

1. Choose a system layout based on street rights-of-way and other drainage easements, developed topography, utility locations, and likely cost and performance. This layout should

2. Complete the hydrologic analysis of the project area. Compute peak flow in each street starting at the upper end of the project area and working downstream. The runoff from multiple streets will eventually converge at a point, so all streets that are tributary to that point must be evaluated before moving on downstream. An inlet should be located wherever the Minor or Major Storm peak street flow exceeds the allowable capacity for that street and at all sump

3. Initial storm drain sizing begins at the uppermost inlet for each street, combining individual street storm drains where appropriate. The design flow for a given storm drain segment is

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1. The location of sump inlets is fixed at the sag of the roadway vertical alignment. The inlet should be sized to maintain water depth and spread within the allowable limits in Table 5. If the Town determines a sump inlet becomes excessively large, additional inlets upgradient

2. Consider the change in tributary area to the inlet associated with any upstream or downstream location adjustment and recalculate flow depth and spread.

3. A typical design interception efficiency of an on-grade inlet is 70 to 80 percent. On-grade inlets designed to capture 100 percent of runoff are less effective hydraulically and economically.

4. Include any carryover or bypass flow from an upstream inlet when calculating the flow at a downstream inlet. Although the peak runoff to an inlet may not coincide with the peak carryover flow from an upstream inlet, these two peak flows shall be added to find the total peak flow to

5. Maximizing the use of sump inlets tends to increase the overall efficiency of the inlet system, and inlets must be installed at all street sags and at all sumps formed by intersections except where other drainage provisions have been made. Sump inlets should be located prior to the

Sumps in paved areas or in unpaved open spaces shall not pond more than 6 inches during the Minor Storm. Building entrances shall be no less than 12 inches above the Major Storm ponding depth.

Inlets on a continuous grade may allow some flow to bypass to the next downstream inlet and this bypass flow must be accounted for. Inlet capacity calculations shall include standard clogging factors. UD-Inlet, the spreadsheet developed by the MHFD and mentioned earlier in this section, will calculate hydraulic capacity of an inlet on grade given detailed geometric input. This spreadsheet shall be used to calculate the hydraulic capacity of an inlet on grade. Any carryover flow calculated at an inlet on grade shall be added to the design discharge at the next inlet. Note also that inlets on grade are typically designed to capture between 70 and 80 percent of the design discharge.

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STORM DRAIN SYSTEMS based on the sum of all flow from upstream pipes and the larger of the Major and Minor street

4. Use Manning's open channel flow, including approximate junction head losses, to compute required pipe size and slope for each pipe segment. Evaluate pipe size and/or slope at locations where significant energy losses may occur, such as large or complex pipe junctions and major pipe bends and increase the pipe size as deemed appropriate. Downstream pipes

flows exceeding the respective street capacity at the inlet just upstream from that segment.

Regardless of if computer software is used to model storm drain systems, hand calculations should be used to spot-check the computer models to ensure the software is functioning properly.

should not be smaller than upstream pipes unless the flow rate decreases significantly.

4.2. Allowable Capacity and Velocity

A storm drain shall be designed to convey all the design storm runoff from areas tributary to it as identified in Ridgway's Stormwater Master Plan. The design of surcharged storm pipes is not allowed for the Minor Storm, and capacity and velocity should generally be calculated using the Manning's equation (Equation 9). A minimum design flow velocity of 2 feet per second is required for a Minor storm. The maximum design flow velocity is 10 feet per second during any storm. The Town will review requests for a storm drain design where the design storm velocity exceeds 10 fps. Maximum outfall velocities are more restrictive as discussed in this section.

Table 6 provides Manning's n value. The designer shall consider aging of the pipe and possible abrasions, corrosion, dents, deflection, joint conditions, and potential sediment buildup when selecting roughness values.

Table 6: Manning's Roughness Coefficients for Storm Drains

Type of Conduit	Interior Wall Description	Manning's n
Concrete Pipes and Boxes	Smooth	0.013
Spiral-Rib Metal Pipes	Smooth	0.012-0.013
Corrugated Metal Pipes & Boxes Annular Corrugations Helical Corrugations	68mm x 13mm (2-2/3" x ½") corrugations 68mm x 13mm (2-2/3" x ½") corrugations	0.022-0.027
Tonoli Contiguiona	150mm x 25 mm (6" x 1") corrugations 125mm x 25mm (5" x 1") corrugations 75mm x 25mm (3" x 1") corrugations	0.022-0.025 0.025-0.026 0.027-0.028
Structural Plate Corrugations	230mm x 64mm (9" x 2 ½") corrugations 150mm x 50mm (6" x 2") corrugations	0.033-0.037 0.033-0.035
Corrugated Polyethylene (HDPE)	Smooth Corrugated	0.008-0.015 0.018-0.025
Polyvinyl Chloride (PVC)	Smooth	0.008-0.012
Cast-Iron Pipe, uncoated		0.013
Steel Pipe		0.009-0.013

Reference: Adapted from HDS-4 and HEC-22

4.3. Storm System Requirements Minimum and maximum cover are determined by the size, material, and class of pipe, as well as by the characteristics of the cover material and the expected surface loading. Consult the CDOT Page 16

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Equation 9

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When a combination inlet is to be installed with a valley grate, this is sometimes designated as a Type 13/16 Combination inlet depending on the manufacturer. The designer should consult with the manufacturer to ensure compliance with these Standards and not unconditionally specify a Type 13/16 Combination inlet. There are several valley grates that maybe used with a Type 13/16 Combination inlet. Neenah Foundry and East Jordan Ironworks are nationwide manufacturers. In public sump areas not in a roadway, such as a parking lot or unpaved open area, the CDOT close mesh grate may be used with the Type C and Type D area inlets. A CDOT Type 13 area inlet may also be used.

A "drains to river" stamp shall be included in all grate inlets. Inlet grates shall be submitted to the Town

5. CHANNEL AND RESERVOIR ROUTING

When a large or non-homogeneous watershed is being investigated, it will be required to be divided into smaller and more homogeneous subwatersheds. The storm hydrograph for each subwatershed can then be routed through the channel and combined with individual subwatershed hydrographs to develop a storm hydrograph for the entire watershed. A SWMM model must be used to route hydrographs if the complexity of the relationship between the subbasins is such that simply adding the peak flows together is not an appropriate solution. Additionally, detention storage volume may be sized using routing techniques rather than the direct Federal Aviation Authority (FAA) Method calculation provided later in these Standards.

5.1. Improved Open Channel Design Criteria

All open channel improvements for grassed channels and channels composed of native materials shall be designed in accordance with the latest version of the Urban Storm Drainage Criteria Manual (USDCM) by the Mile High Flood District (MHFD). If localized energy dissipation is required along an open channel, such as at a drop, it will also be designed in accordance with the latest version of the USDCM. All open channels within the Town of Ridgway shall be designed to convey water in a subcritical flow condition (Fr<0.8) where achievable. All open channels shall be designed with public safety in mind and adequate maintenance access shall be provided.

5.2. Open Channel Flow

The computation of uniform flow and normal depth in any open channel shall be based upon the Manning's or Uniform Flow Equation:

 $Q = \frac{1.49}{2} A R^{2/3} \sqrt{S}$

Where:

for approval.

- Q = flow rate (cfs)
- n = Manning roughness coefficient (see Table 7) A = area (square feet)
- P = wetted perimeter (feet)
- R = hydraulic radius = A/P (feet)
- S = slope of the energy grade line (feet/foot)

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Standards, the Concrete Pipe Design Manual, the Handbook of Steel Drainage and Highway Construction Products, and manufacturer specifications to determine cover requirements. Storm drains under railroads and roadways must comply with any cover requirements specified for culverts, as well as with any criteria the railroad and roadway owners may have. When designing and building a storm system, the Town Standards Section 02723 will act as the governing requirements for any details not called out.

Pipes installed under any driving or parking area shall be designed for H-20 minimum live load, and all pipes shall have a minimum of 1 foot of cover from finished grade and at least 8 inches below the bottom of the pavement to top of outside of pipe regardless of location unless special bedding is provided per the manufacturer's recommendations. In a manhole, the lowest inlet pipe invert elevation must be at least 0.2 feet higher than the outlet pipe invert elevation. Where the downstream pipe is larger than the largest upstream pipe, pipe crowns should be matched. The storm sewer system alignment shall be designed to minimize the length of pipe, stay a consistent distance from the right of way centerline, and provide a reasonably uniform pipe slope throughout. Local utility companies shall be consulted to determine the location of their existing lines and their required minimum clearances. Pipe encasement may be required in some locations where minimum utility clearances are not met. The Town and affected utility shall determine when encasement is required and approve the design of any required encasement. Designs that request relocation of utilities shall be avoided whenever possible.

Manholes or other junction structures are required at all bends, vertical drops, and changes in main line pipe size or slope. All manholes must provide access to the storm drain for maintenance and inspection. All manhole inverts shall be formed with a minimum of a half bench to provide more hydraulically-efficient flow through the manhole. The bench shall be flared up to the spring line along the length of the bench through the manhole for 12-inch pipes to facilitate camera work and cleaning. Maximum allowable manhole spacing is 400 feet.

All storm drain pipes shall have a minimum diameter of 12 inches. For non-circular pipes, these minimum diameters represent equivalent diameters based on cross-sectional areas. All storm drain pipes shall comply with the Town's Standards as well as the most recent edition of the CDOT Standards. Public storm drain pipes shall be dual walled high-density polyethylene (HDPE) with a smooth interior and a corrugated exterior with water tight bell and spigot joints or SDR 35 polyvinyl chloride (PVC). In limited cases where design constraints necessitate the use of reinforced concrete, Town approval is required.

Structure foundation drains up to 4-inch diameter may be connected directly into a storm drain pipe where an enclosed storm drain system exists but there is no storm drain manhole conveniently located to connect into. In these instances, a wye-shaped fitting shall be installed on the main and the 4-inch leg of the wye shall be used to extend the foundation drain connection to the property line, where it will terminate in a clean-out for the foundation drain. The connection shall be done in a manner that the connecting pipe does not restrict the flow capacity of the mainline storm sewer pipe nor allows root entry. No strap-on taps are permitted. A restrained connection is required for pumped flow.

The required diameter of the manhole barrel is dependent upon the size and configurations of the pipes connecting to it. For all manholes, at least 12 inches of clearance must be present from the openings for the pipes in where they intersect the inside of the manhole to preserve the structural integrity of the manhole. Approved manhole designs are in the Town Standards for 4' and 5' manholes. See CDOT Standards for 6' diameter and larger manholes.

4.4. Hydraulic Calculations

CHANNEL AND RESERVOIR ROUTING

Exca Clean, recently Clean, after we Gravel, uniform With short gras Earth, winding and slugg No vegetation Grass, some w Dense weeds (Earth bottom an Stony bottom a Cobble bottom Dragline-excavated or di No vegetation Light brush on Rock cuts Smooth and uni Jagged and irre Channels not maintaine Dense weeds, Clean bottom, Same as above Dense brush, h Lined o Trowel Finish Float Finish Gunite, good se Gunite, wavy see Concrete Bottom Dressed stone Random stone Dry rubble or rip Gravel bottom with sides Formed concret Random stone Dry rubble or rip Asphal

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The Mile High Flood District, maintains the program UD-Sewer which calculates the hydraulic grade line (HGL) within a storm sewer system. UD-Sewer is available on the MHFD website under Technical Page 17 Published September 2020

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Table 7: Manning's Roughness Coefficients

annel and Description	Roughness
rated or Dredged	Coefficient
m	
completed	.018
athering	.022
section, clean	.025
s, few weeds	.027
ish	
	.025
eeds	.030
r aquatic plants in deep channels	.035
nd rubble sides	.030
nd weedy banks	.035
and clean sides	.040
redged	
	.035
banks	.040
	1010
iform	.035
gular	.000
I, weeds and brush	1010
high as flow depth	.080
orush on sides	.050
, but highest state of flow	.070
igh state	.100
Reference Contract Press	
Built-Up Channels	Roughness Coefficient
	obemelent
	049
	.013
	.015
ection	.019
ection	.022
u uz ester	017
in mortar	.017
in mortar	.020
orap	.030
of	000
	.020
in mortar	.023
orap	.033
	845
	.013
	.016
	.016 Figure 1 Equation 14

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NGINEERING 1309 E. 3rd Ave., #206 Durango, CO 81301 970-403-5088

PLAN NO. **TS-24**

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Project: RIVERFRONT VILLAGE Date: 6/15/2021

Backwate be greate	r from cu r than no l using H	Ind Froude Number Iverts, storm drain inlets, or channel ormal depth. In these cases of gra EC-RAS. Other computer software own.	adually varie	ed flow, the w	ater surface can b
not be dea Within thi	signed to s range, t	n a channel occurs when the Froud flow at or near critical state (0.80 < l factors causing only minor changes oughness, will cause a major chan	Fr < 1.2) bec s in specific	ause flow is u energy, such	instable in this range as channel debris o
F	$r = \frac{v}{\sqrt{gD}}$	<u>_</u>			Equation 1
Where:	¥ -	-			
Fr	r = Froude	e number (dimensionless)			
	= velocity = gravitat	(fps) ional acceleration (32.2 ft/s ²)			
		ulic depth = A/T (feet)			
W	here:				
		channel flow area (square feet)			
		top width of flow area (feet)			
potential f addition o channel li clays, sha	nnel lining for erosio of revetm nings. Ero ales, cobb	pocity g is only stable up to a certain veloc n and may require a decrease in sk ent. Table 8 gives the Major Storn psive soils include; loams, sands, an bles, and gravel. Channel velocities sections of this document.	ope, change m maximum nd noncolloid	in channel bo permissible dal silts. Less	ottom material, or th velocity for commo erosive soils include
		Table 8: Maximum Permissible	Mean Char	nnel Velocity	
		Channel Lining	555 Strate States 355 State	n 100-Year ity (fps)	
		Grass in Erosive Soils	1	5.0	
		Grass in Less Erosive Soils Cobble in Erosive Soils		7.0 5.0	
		Cobble in Less Erosive Soils		7.0	
		Angular Riprap Semi-Angular Riprap		5.0 2.0	
		Grouted Riprap		5.0	
		Gabions	1	5.0	
 CHANNEL	. AND RE	SERVOIR ROUTING		STORM	WATER STANDARD
2.0	7.4%	Bouteloua gracilis 'Lovington'		'Lovington'	Blue Grama
3.0	11.2%	Bromus marginatus 'Garnet'			untain Brome
2.1 3.2	7.8%	Cleome lutea VNS Cleome serrulata VNS		Yellow Beep	olant ntain Beeplant
0.7	2.6%	Chrysothamus nauseosus albicau	lis	Tall Blue Ra	
0.4	1.5%	Eschscholzia californica VNS		California po	
0.5	1.9%	Eriogonum umbellatum VNS Gaillardia pulchella VNS		Indian blank	ver buckwheat
0.4	1.5%	Glandularia gooddingii VNS		Desert Verb	0000
0.5	1.9%	Machaeranthera bigelovii var. bige Linum lewisii	elovii VNS	Bigelow's ta Blue Flax	nsyaster
0.3	1.1%	Lupinus prunophilus		Chokecherry	· ·
2.5 0.2	9.3% 0.7%	Pascopyrum smithii 'Arriba' Penstemon eatonii		'Arriba' Wes Firecracker	tern Wheatgrass
0.3	1.1%	Penstemon palmeri VNS		Palmer Pen	
0.7 26.9	2.6%	Penstemon strictus VNS Total lbs/acre		Rocky Mour	tain Penstemon
Riprap fai of the roc Stone sizi	lures resu k; and/or ing for ore	It from: too many undersized individ improper bedding. There is no max linary riprap shall be calculated as: $\left(\frac{VS^{0.17}}{(4.5(G_s-1)^{0.66})}\right)$			
Where:	N.	4.5(G _S -1) ^{0.66} /			
	n = mean	rock size (feet)			
V	= mean o = longitue	lesign channel velocity (fps) dinal channel slope (feet/foot) ic gravity of stone (2.50 minimum)			
upstream physical of Equation round up t gradations protection	and down character 14 Error! the d ₅₀ siz s. Equation	ckness shall be 2.0 times the calcula nstream termination of a riprap lining istics of riprap stone and the grad Bookmark not defined. are defined to specified in the construction plans on 13 is not to be used for sizing	g for at least dation result d in the CDC if the calcul riprap for ru	3 feet to preve ing from the DT Standards. ated d ₅₀ falls b undowns (chu	ent undercutting. Th d ₅₀ calculated usin The designer shoul etween two standar tes) or culvert outle
Manning calculated		s coefficients for manmade ordin	nary riprap	or soil riprar	o channels shall b

 $n = 0.0395 d_{50^{1/6}}$

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Where:

CHANNEL AND RESERVOIR ROUTING

CHANNEL AND RESERVOIR ROUTING

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Equation 14

Soil Cement Concrete

5.5. Types of Channels Native materials, grass, concrete, and riprap are generally the different types of channel linings found within the Town. Channels composed of native materials and channels that are grass-lined are preferred within the Town as concrete and riprap-lined channels have higher capital, maintenance costs and potential safety concerns. The latter channel types may be considered on a case-by-case basis based on site conditions and flow characteristics. Each channel lining should be evaluated for its longevity, integrity, maintenance requirements and costs, and general suitability for community needs, among other factors.

Selection of a channel lining that is most appropriate for the site should be based on a multi-disciplinary evaluation to include hydraulic, structural, environmental, sociological, maintenance, economic, and regulatory factors. New channels should closely mimic similarly sized natural channels in the area if possible. If a hard channel lining is proposed, the designer shall consult with the Town to arrive at an acceptable design using the criteria in this section. Channel improvements should maintain the existing flow rate and alignment. New Development must not increase the peak runoff a natural channel receives unless it was designed to accommodate the added flow.

5.5.1. Concrete Lined Channels Rigid channel linings such as concrete are not recommended due to safety concerns, potential loss of

the joint. The design criteria for a concrete lined channel can be found in Table 9.

Criteria	Controlling Values
Maximum Velocity	15 fps
Froude Number	Fr ≤ 0.8 or Fr ≥ 1.2
Max Side Slope	1.5H:1V
Min Channel Radius Subcritical	2 times 100-year top width
Min Channel Radius Supercritical	Not Allowed
Min Concrete Thickness Subcritical	5"
Min Concrete Thickness Supercritical	7"
Outfalls into Concrete Channel	12" above invert
Min Bedding Layer Subcritical	6"
Min Bedding Layer Supercritical	9"
Min Freeboard	1.0' and per Equation 11
Concrete Finish	Per Table 10

CHANNEL AND RESERVOIR ROUTING

n = Manning's roughness coefficient d₅₀ = mean stone size (feet)

Proper bedding is required for long-term stability of riprap channel protection and should extend up the side slopes at least 1 foot above the design water surface. Bedding is not required for a soil riprap lining. Table 12 shows bedding thickness for different riprap gradations and native soil conditions When a channel is excavated where 50% or more of the native material is retained on the #40 sieve by weight, only a single layer of Type II material (see Table 13) is required. Otherwise, a two-layer system is required. Alternatively, a single 12-inch layer of Type II bedding can be used.

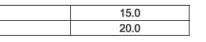
	Minimum Bedding Thickness			
Size of d ₅₀	Fine-Grained Native Soils		Coarse-Grained Native Soil	
	Type I	Type II	Type II	
d ₅₀ = 6" and d ₅₀ = 9"	4"	4"	6"	
d ₅₀ = 12"	4"	4"	6"	
d ₅₀ = 18"	4 "	6"	8"	
d ₅₀ = 24"	4ª	6"	8"	

Type I bedding is the lower layer in a two-layer system and Type II is the upper layer. Type I and Type Il bedding material specifications are given in Table 13. Type I is equivalent to the CDOT specification for fine aggregate for concrete and Type II is equivalent to the CDOT specification for Class A filter material. Landscaping, filter or other types of fabric are not a substitute for granular bedding.

Bedding Layer	Percent Passing by Weight		
Requirements	Type I	Type II	
3 inches	(10.00 (10.00 (10.00))	90-100	
1½ inches			
¾ inches		20-90	
3/8 inches	100		
#4	95-100	0-20	
#16	50-85		
#50	10-30	100 100 100 100	
#100	2-10		
#200	100 M 100 M	0-3	

The potential for erosion increases along the outside bank of a channel bend so it may be necessary to provide additional erosion protection at those locations. The minimum radius of curvature for a riprap-lined channel is two times the top width of the design flow. When radius of curvature divided by the flow top width is equal or greater to 8.0, no increase in protection is needed. Where the radius is smaller than this, an adjusted velocity shall be used to size the bends riprap size. Velocity along the outside of a bend shall be estimated using Equation 15. Bend riprap protection is to be applied to the outside quarter of the channel bottom and to the outside channel side slope a distance of at least 2 times the top width of the flow. Riprap does not need to extend upstream of the start of the curve.

STORMWATER STANDARDS



long-term structural integrity, and aesthetics, but they may be required at some sites because of restrictive site characteristics. HEC-15 by the Federal Highway Administration (FHWA) offers extensive guidance on the design of concrete channels. If design flow is supercritical in a concretelined channel, imperfections at joints can cause their rapid deterioration or complete failure. High velocities at cracks or joints can cause uplift forces under the liner. Concrete linings must be designed by a structural engineer. Concrete linings shall be continuously reinforced longitudinally and laterally to resist hydrostatic uplift forces, including from groundwater and potential local inflow behind the lining. All joints shall be designed to prevent differential movement. Construction joints are required for all cold joints and where the lining thickness changes. Reinforcement shall be continuous through

Table 9: Concrete-Lined Channel Design Criteria

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STORMWATER STANDARDS

Table 12: Granular Bedding Layer Requirements

Table 13: Granular Bedding Gradation Requirements

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Maintenance Access	Per Town
EGL and HGL	Plotted on channel profiles
	Required unless waived by the town due to very low hazard

STORMWATER STANDARDS

Flow in a concrete channel with a Froude number between 0.8 and 1.2 is unstable and increases the possibility of unanticipated hydraulic jumps forming in the channel. It should be avoided at all flows, not just the design flow. To calculate velocity and capacity, the designer should use Manning's Equation with the n values in Table 10. Contact the Town to determine acceptable concrete finishes, typically a troweled and broomed finish is preferred.

Table 10: Concrete-Lined Channel Manning's n Values

Type of Concrete Finish	Manning's n Values			
Type of Concrete Finish	Minimum	Typical	Maximum	
Trowel finish	0.011	0.013	0.015	
Float finish	0.013	0.015	0.016	
Finished, with gravel on bottom	0.015	0.017	0.020	
Broomed	-	0.016	-	
Unfinished	0.014	0.017	0.020	
Shotcrete, troweled, not wavy	0.016	0.018	0.023	
Shotcrete, troweled, wavy	0.018	0.020	0.025	
Shotcrete, unfinished	0.020	0.022	0.027	
On good excavated rock	0.017	0.020	0.023	
On irregular excavated rock	0.022	0.027	0.030	

Freeboard in a concrete channel shall be no less than 1 foot for channels with a top width up to 10 feet and the concrete lining shall be extended above the flow depth to provide the required freeboard. The Town shall be consulted for larger channels. Freeboard will be calculated as:

 $H_{fb} = 2.0 + 0.025 V(y_0)^{1/3} + \Delta y$ Equation 11

Where: Hfb = freeboard height (feet) V = velocity of flow (fps) y_o = depth of flow (feet) Δy = increase in water surface elevation due to super elevation at bends and $\Delta y = \frac{V^2 T}{2 g r_c}$

Where:

V = mean flow velocity (fps)

r _c = radius of curvature (feet)	
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 $V_a = \left(-0.147 \frac{r_c}{T} + 2.176\right) V$

Velocity along the outside of a bend can be calculated as:

Equation 15

STORMWATER STANDARDS

Equation 12

Where:

V_a = adjusted channel velocity for riprap sizing along the outside of channel bends (fps) V = mean channel velocity for the peak flow of the Major Storm event (fps)

- re = channel centerline radius (feet) T = flow top width during Major Storm event (feet)

Riprap protection for other channel transitions where the Froude number is 0.8 or less can be calculated using Equation 13 with the maximum velocity in the transition increased by 25%. Transition protection should extend upstream of the transition entrance at least 5 feet and downstream of the transition exit for a distance of at least 5 times the design flow depth. Design criteria for riprap lined channels in is Table 14.

Table 14: Riprap-Lined Channel Design Criteria

Criteria	Controlling Values
Maximum Velocity	12-15 fps (see Table 8)
Froude Number	Fr ≤ 0.8
Manning's n	Per Equation 9
Steepest Side Slope	2.5H:1V
Stone Specific Gravity	Minimum of 2.5
Riprap Gradation (d ₅₀)	Per Equation 13
Riprap Blanket Thickness	2x d ₅₀
Minimum Radius of Curvature	2x flow top width
Riprap for Bend Protection	Use Equations 13 and 15
Outfalls into Concrete Channel	1' to 2' above invert
Bedding Layer	Per Table 12 and Table 13
Minimum Freeboard	1.0' and per Equation 11
Use of Soil Riprap	Riprap d ₅₀
Use of Buried Soil Riprap	Riprap d ₅₀
Seed Mix	Water Availability
Maintenance Access	Site Specific
EGL and HGL	Plotted on channel profiles
Safety Fencing and Steps	Required unless waived by the Town due to very low hazard

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CHANNEL AND RESERVOIR ROUTING

T = top width of channel under design flow conditions (feet)

g = standard gravity (32ft/s²)

Longitudinal underdrains shall be provided along the channel bottom on 10-foot centers within a freedraining bedding layer. The underdrains shall be free draining and daylight at drops or at other locations suggested by the designer and approved by the Town. A weep hole detail and installation pattern in channel side slopes to relieve hydrostatic pressure shall be provided to the Town for review. The Town may require a low-flow swale if a small base flow is expected to avoid bottom slime, noxious

odors, and mosquito breeding. Fencing and gates for maintenance should be considered if the 100year design depth exceeds 3ft or is near areas of public access. Manhole-type steps are required for design flows which result in depths over 2ft in case emergency evacuation is required.

5.5.2. Riprap Lined Channels Riprap lined channels are not preferred by the Town but may be required based on site specific conditions such as high velocities that cannot be lowered by flattening the channel slope, limited space requiring channel side slopes steeper than 3H:1V, and where rapid changes in channel geometry occur. Use of riprap-lined channels must be approved by the Town. FHWA's HEC-15 offers extensive guidance on the design of riprap-lined channels.

Riprap refers to a protective blanket of large loose stones which are usually placed by machine to achieve a desired configuration. Soil riprap is a mix of riprap and native soil. Soil riprap consists of 35% by volume of native soil taken from the channel excavation and 65% by volume of riprap of the specified gradation. It is mixed on-site, before placement. When a riprap lining is used, all areas above frequent flow zones be protected with soil riprap, covered with 6 inches of topsoil, and revegetated with native grasses. Due to its small size, all riprap linings with a d₅₀ of 6 inches and smaller should be soil riprap. Recommended seed mixtures for where riprap is buried are shown in Table 11. The riparian seed mix is for perennial streams (near constant water in the invert) and the upland seed mix is for ephemeral streams (typically dry stream bed). Seed mixes other than those listed in Table 11 require Town approval.

	Mix %	
	10%	Juncus artic
	10%	Calamagros
	10%	Poa secund
	10%	Glyceria stri
	20%	Elymus trac
1	20%	Deschamps
1	20%	Pascopyrum
1	00%	Total lbs/acr
	Mix	
	%	
1	1.2%	Achnatherur
1	4.9%	Agropyron d
Ş	9.3%	Bouteloua c

DETENTION AND WATER QUALITY

5.5.3. High Gradient Channels Natural channels can sometimes have steep longitudinal slopes with rip-rap, cobble or rock along their bottoms. These channels are often predicted to have supercritical flow and very high velocities. However, field observations show these channels are often configured so that they are protected by natural armoring. These configurations include short, steep drops with larger rocks situated to resist flow followed by longer, flatter sections of channel. For a more in-depth discussion, the designer is encouraged to review Determination of Roughness Coefficients for Streams in Colorado by Robert D. Jarrett in cooperation with the Colorado Water Conservation Board. Equation 16 may be used as an aid to predict the roughness coefficient of a high-gradient channel provided the criteria below are met. The designer may research how to determine the friction slope if unknown as it is outside the intent of these standards.

 $n = 0.393 S_{f}^{0.38} R^{-0.16}$

Where:

n = Manning's roughness coefficient S_f = friction slope or water surface slope (feet/foot) R = hydraulic radius, (wetted area/wetted perimeter) (feet)

The basic guidelines for when this equation should be used are:

- or boulder bed material.
- radius must be between 0.5 and 7 feet.

3. The channel must not be affected by backwater.

foot of freeboard at any point along the channel.

5.5.4. Grouted Boulders 3.4) is preferred over a grouted feature.

6. DETENTION AND WATER QUALITY Development of a parcel must not result in peak runoff rates of a Minor or Major Storm that are greater than Historic conditions, unless the entire site drains directly to a public storm sewer designed to carry the undetained flow, or the Uncompany River. Detention basins can help Developments meet these criteria. Total site runoff rate is the sum of detention basin release and direct runoff, both of which must be considered separately and in combination. All detention basins must include a water quality outlet to drain the water quality capture volume within between 12 and 40 hours and must fully drain within 72 hours. Peak runoff rates can be calculated as indicated previously in Section 2 of these Standards. The maximum discharge rate from a detention basin shall not exceed the peak runoff rate of a respective storm at the time of adoption of these regulations. New subdivisions that include multiple lots should provide a coordinated system of detention for the

Table 11: Seed Mixes

Riparian Se	eed Mix
Botanic Name	Common Name
cus	Arctic Rush
stis canadensis	Bluejoint Reedgrass
da	Cany Bluegrass
riata	Fowl Mannagrass
chycaulus	Slender Wheatgrass
sia Caespitosa	Tufted Hairgrass
m smithii	Western Wheatgrass
bre	
Upland Se	ed Mix
Botanic Name	Common Name
Im hymenoides 'Rimrock'	'Rimrock' Indian Ricegrass
desertorum 'Hycrest'	'Hycrest' Crested Wheatgrass
curtipendula	Sideoats Grama
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Equation 16

1. The channel must be a natural channel that has a relatively stable bank material and a cobble

2. The channel friction slope must be between 0.01 and 0.04 feet per foot and the hydraulic

In all cases, a Major Storm flow shall never exceed a depth greater than 5.0 feet or have less than 1.0

Grouted boulders may be used for drop structures in channels. The design of all grouted boulder drop structures, including materials specifications, shall be in accordance the latest version of the USDCM. Consult with the Town prior to designing a grouted boulder drop structure. A riprap ditch check (Section

entire subdivision to minimize the number of detention basins and maintenance requirements.

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GRAPHICAL SCALE (FT) ~ ORADO U 0 U $\boldsymbol{()}$ ш ≻ ĸ 4 Δ LL 3 S Ū ш **WA RID** >



NGINEERING 1309 E. 3rd Ave., #206 Durango, CO 81301 970-403-5088

PLAN NO. **TS-25**

Sheet 46 of 50

Project: RIVERFRONT VILLAGE Date: 6/15/2021

DETENT	FION AND WATER QUALITY STORMWATER	STANDARDS
	al facilities on each lot within a subdivision are not permitted. Detention por	nds should be
6.1. Mai All deter maintain basins th sedimen	d as landscaped areas integrated into the site. intenance ntion basins must facilitate and plan for maintenance; all private facilities must hed by their owners to remove accumulated sediment and ensure the outlet dr hat serve more than a single lot or site must have access ramps to the basin ou ht removal and other maintenance within the basin. Detention basin maint ibility of the Development served by the basin.	ains freely. All tlet to facilitate
An emer flow rate account basin sha offers a s than 3H: should h sedimen	sin Geometry rgency overflow weir shall be included at the 100-year water surface elevation of or sizing the overflow weir and revetment shall be the 100-year peak inflow in for outlet becoming fully clogged. The embankment above the overflow weir an hall provide 1.0 foot of freeboard minimum above the design flow depth over the schematic. Weir flow is discussed later in this section. Basin side slopes may 1V. The basin invert shall be sloped at 2 percent or more towards the outlet. De have a length-to-width ratio not less than 2. A forebay is required to consoli at for ease of maintenance. Forebay sizing shall be per the Urban Storm Dra (USDCM) developed by the MHFD.	nto the pond to and around the weir. Figure 3 be no steeper etention basins date incoming
	POND EMBANKMENT	
	100-YEAR EMERGENCY DESIGN WSEL FREEBOARD	
	POND OVERFLOW DEPTH WATER	
	VARIES SURFACE NOTES: OVERFLOW WATER SURFACE & REVETMENT	
	DETENTION BASIN OVERFLOW WEIR SECTION SECTION SECTION SECTION SECTION SECTION SECTION SECTION SECTION SECTION SECTION SECTION SECTION SHALL BE CALCULATED BASED ON THE PEAK 190-YEAR INFLOW INTO THE POND.	
	Figure 3: Basin Freeboard Schematic	
If the Ra shall be procedur basins o	sin Sizing Using the FAA Method ational Method is used to calculate peak flows, the FAA Method described in t used to determine required basin volume. The FAA Method is a simplified hydri are that is appropriate for watersheds smaller than 200 acres that don't have mul or unusual watershed storage characteristics. Rainfall intensity values can be atlas 14 estimates which can be found online or in Ridgway's Stormwater Master	ograph routing Itiple detention determined by
	Determine the inflow volume by multiplying the peak flow rate by the time of co the detention basin as calculated by the Rational Method.	oncentration to
L	$V_i = (CIA)(T_c)(60 \text{ seconds/minute})$	Equation 17
V	Where:	
	V _i = inflow volume (cubic feet) C = Rational Method runoff coefficient for the Major or Minor Storm	
	Page 30 Published September 2020	
BUILDIN	IG ENTRIES STORMWATER	STANDARDS
ŀ	H = head on orifice measured from orifice centerline (feet)	
An orifice	e coefficient of 0.65 shall be used for sizing squared edged orifice openings an	
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An orifica 6.8. Stat Dams co specified Engineer Colorado	e coefficient of 0.65 shall be used for sizing squared edged orifice openings an te Engineer's Office onstructed for the purpose of storing water, with a surface area, volume, or o d in Colorado Revised Statues 37-87-105 as amended, shall require approva	d plates. dam height as Il by the State
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An orifica 6.8. Stat Dams co specified Engineer Colorado the Town 1. If e 2. If the 3. If in y 4. If p All new co above ar Operation party that operation 7. BUIL To help p drainage below has build to elevation appliance	the coefficient of 0.65 shall be used for sizing squared edged orifice openings and the Engineer's Office onstructed for the purpose of storing water, with a surface area, volume, or of d in Colorado Revised Statues 37-87-105 as amended, shall require approver's Office. o Revised Statute (CRS) §37-92-602 (8) provides legal protection for any detern, provided it meets the following criteria: It is owned or operated by a governmental entity or is subject to oversight by a entity; It continuously releases or infiltrates at least 97% of the runoff from a rainfall event; It continuously releases or infiltrates as quickly as practicable, but in all cases infiltrates at least 99% of the runoff within 120 hours after the end of events gravers arorm; and It operates passively and does not subject the stormwater runoff to any act process (e.g., coagulation, flocculation, disinfection, etc.) detention basins including individual site basins built by private parties must m ind be reported by the engineer of record to the state stormwater notification provide at develops the basin or its successors in interest. The Town assumes no respond at develops the basin or its successors in interest. The Town assumes no respond at develops the basin or its and elevation or water quality basin. DINC ENTRIES prevent flooding of a building, all building entrances must be at an elevation above feature or roadway. The burden shall be on the owner to show that any or ave been met. Minimum building elevations can be seen in Table 16. Where on lot line, garage floors will be allowed to be 12 inches lower than minimum if all doors entering into habitable space, mechanical, plumbing, electrices meet the elevation requirements below. Building Entry Elevations Road Drainage Type Min. Building Entry Elevations	d plates. dam height as al by the State ention basin in governmental ent that is less es releases or eater than a 5- dive treatment eet the criteria rtal online. Insibility of the nsibility for the re the adjacent iteria required e is allowed to building entry cal and other
An orifica 6.8. Stat Dams co specified Engineer Colorado the Town 1. If e 2. If the 3. If in y 4. If p All new co above ar Operation party that operation 7. BUIL To help p drainage below has build to elevation appliance	the coefficient of 0.65 shall be used for sizing squared edged orifice openings and the Engineer's Office onstructed for the purpose of storing water, with a surface area, volume, or of d in Colorado Revised Statues 37-87-105 as amended, shall require approved is office. To Revised Statute (CRS) §37-92-602 (8) provides legal protection for any detern, provided it meets the following criteria: It is owned or operated by a governmental entity or is subject to oversight by a entity; It continuously releases or infiltrates at least 97% of the runoff from a rainfall evident and or equal to a 5-year storm within 72 hours after the end of the event; It continuously releases or infiltrates as quickly as practicable, but in all case infiltrates at least 99% of the runoff within 120 hours after the end of events greater storm; and It operates passively and does not subject the stormwater runoff to any activates at least 99% of the runoff within 120 hours after the end of events greaters of the greates passively and does not subject the state stormwater notification process (e.g., coagulation, flocculation, disinfection, etc.) detention basins including individual site basins built by private parties must m and be reported by the engineer of record to the state stormwater notification point, maintenance, repair, and replacement of all detention basins is the respont at develops the basin or its successors in interest. The Town assumes no responding of a building, all building entrances must be at an elevation above a feature or roadway. The burden shall be on the owner to show that any crave been met. Minimum building elevations can be seen in Table 16. Where on lot line, garage floors will be allowed to be 12 inches lower than minimum if all doors entering into habitable space, mechanical, plumbing, electrices foundation and shall not result in flooding of a neighboring property. Table 16: Minimum Building Entry Elevations Road Drainage Type Min. Building Entry Elevation Areas with curb and gutte	Id plates.
An orifica 6.8. Stat Dams co specified Engineer Colorado the Town 1. If 2. If 3. If 9 4. If 9 All new co above ar Operation party that operation 7. BUIL To help p drainage below hat build to elevation appliance from the	the coefficient of 0.65 shall be used for sizing squared edged orifice openings and the Engineer's Office onstructed for the purpose of storing water, with a surface area, volume, or of d in Colorado Revised Statues 37-87-105 as amended, shall require approve of so office. o Revised Statute (CRS) §37-92-602 (8) provides legal protection for any detern, provided it meets the following criteria: It is owned or operated by a governmental entity or is subject to oversight by a entity; It continuously releases or infiltrates at least 97% of the runoff from a rainfall events and or equal to a 5-year storm within 72 hours after the end of the event; It continuously releases or infiltrates as quickly as practicable, but in all case infiltrates at least 99% of the runoff within 120 hours after the end of events greater storm; and It operates passively and does not subject the stormwater runoff to any active or process (e.g., coagulation, flocculation, disinfection, etc.) detention basins including individual site basins built by private parties must m ind be reported by the engineer of record to the state stormwater notification proof at develops the basin or its successors in interest. The Town assumes no respond the velops the basin or its successors in interest. The Town assumes no respond at develops the basin or its successors in interest. The Town assumes no respond at develops the basin or its successors in interest. The Town assumes no respond the partee or roadway. The burden shall be on the owner to show that any crave been met. Minimum building elevations can be seen in Table 16. Where on lot line, garage floors will be allowed to be 12 inches lower than minimum in fall doors entering into habitable space, mechanical, plumbing, electrices meet the elevation requirements below. Buildings shall also have positive of foundation and shall not result in flooding of a neighboring property. Table 16: Minimum Building Entry Elevations Road Drainage Type Min. Building Entry Elevation Areas with curb and gutte	d plates. dam height as al by the State ention basin in governmental ent that is less es releases or eater than a 5- dive treatment eet the criteria rtal online. Insibility of the nsibility for the re the adjacent iteria required e is allowed to building entry cal and other drainage away

DETENTION AND WATER QUALITY

I = design rainfall intensity (inc A = watershed area draining to T_c = Rational Method time of c

 Determine the outflow volume by mult concentration used in step 1.

Vo = (Ra)(Tc)(60 seconds/minu

Where:

V_o = outflow volume (cubic fee

T_c = Rational Method time of c R_a = allowable release rate as

The required detention pond volume fo volume and the outflow volume at the

If the entire site is not tributary to the detention basin must be decreased to compensate for si from the detention basin is the total site of Development undetained flow rate from areas percent of the total site may bypass the detention

6.4. Basin Sizing Using SWMM

If SWMM is used to calculate peak runoff rate detention basin site. The program can then b outlet design based on an iterative reservoir made, and the program is run. The output configuration as needed until the peak flow ar made during detention basin design, all desig shall be provided to the Town for review. Files calculations. The outputs shall include comm review process.

6.5. Water Quality Capture Volume The water quality capture volume (WQCV) repr period storm. Detaining this volume is consider All detention basins will be designed with a w Storm outlets, but the WQCV can be assume volume for FAA Method basin sizing. Any incrr improvement which results in a parcel's impe (Table 3), or the creation of a PUD or a par required to provide WQCV detention for the ent The WQCV detention is to be based on the entii features when further Development occurs. Th of the WQCV outlet. The equation to calculate

 $WQCV = \frac{0.65Aa(0.91i^3 - 1.19i^2 + 0.75)}{12}$

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BRIDGES

requirements may be a minimum of 12 inches approval.

In the event building entry elevations cannot m be provided by a licensed engineer and the fol Plain Management Regulations" shall apply; 6 through 6-2-4(P), 6-2-5, 6-2-8 and 6-2-9. Any re Ridgway Municipal Code 6-2 shall be interpre these stormwater regulations. The mitigation approval.

8. BRIDGES

If a bridge is required or desired within the To bridge, pier and abutment scour, backwater effer result in as little change in flow characteristic economics. The Town will review bridge design designer is required to contact FEMA for additive waterway. At the time of adoption, the Uncom regulated waterways within Town limits.

8.1. Hydraulic Analysis

The hydraulic analysis of bridges shall be co Bridge Waterways, FHWA HY-4, or HEC-RAS 8.2. Bridge Design Standards

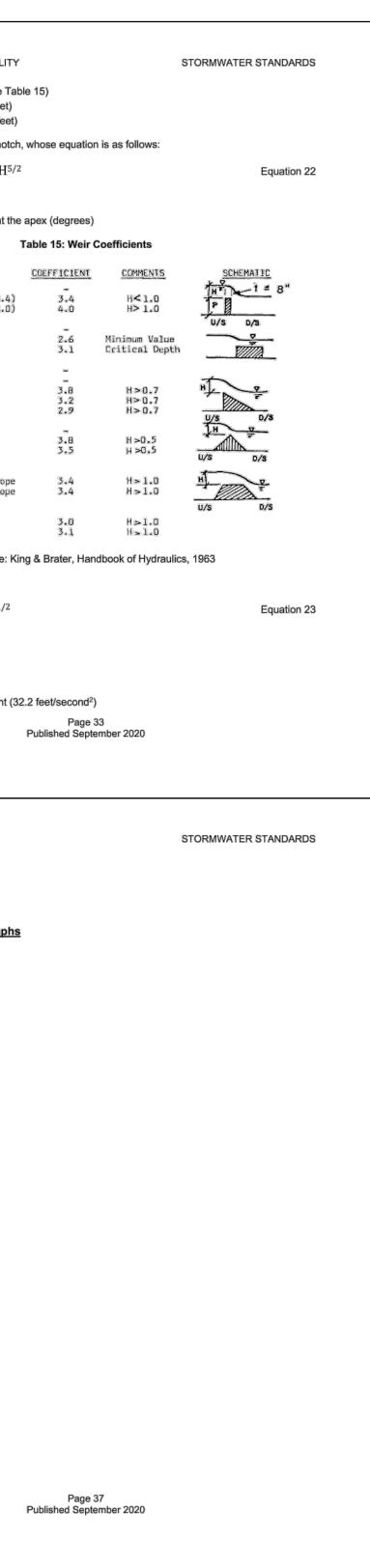
The method of planning for a bridge opening b surface profile without the presence of the bridge

- 1. The addition of the bridge to the chann
- year water surface elevation anywhere 2. The 100-year water surface elevation
- below the lowest chord of the bridge. 3. Where bridge abutments and foundation
- elevation, concrete wingwalls at angle
- existing side slopes to prevent erosion4. Where supercritical flow exists in a line flow. There shall be no encroachment i
- The design and supporting calculation prepared and certified by a Colorado F
- stormwater design work).6. In all instances, all bridges shall meet
- of Ridgway requires a Floodplain Deve designated floodplain per Ridgway Mur

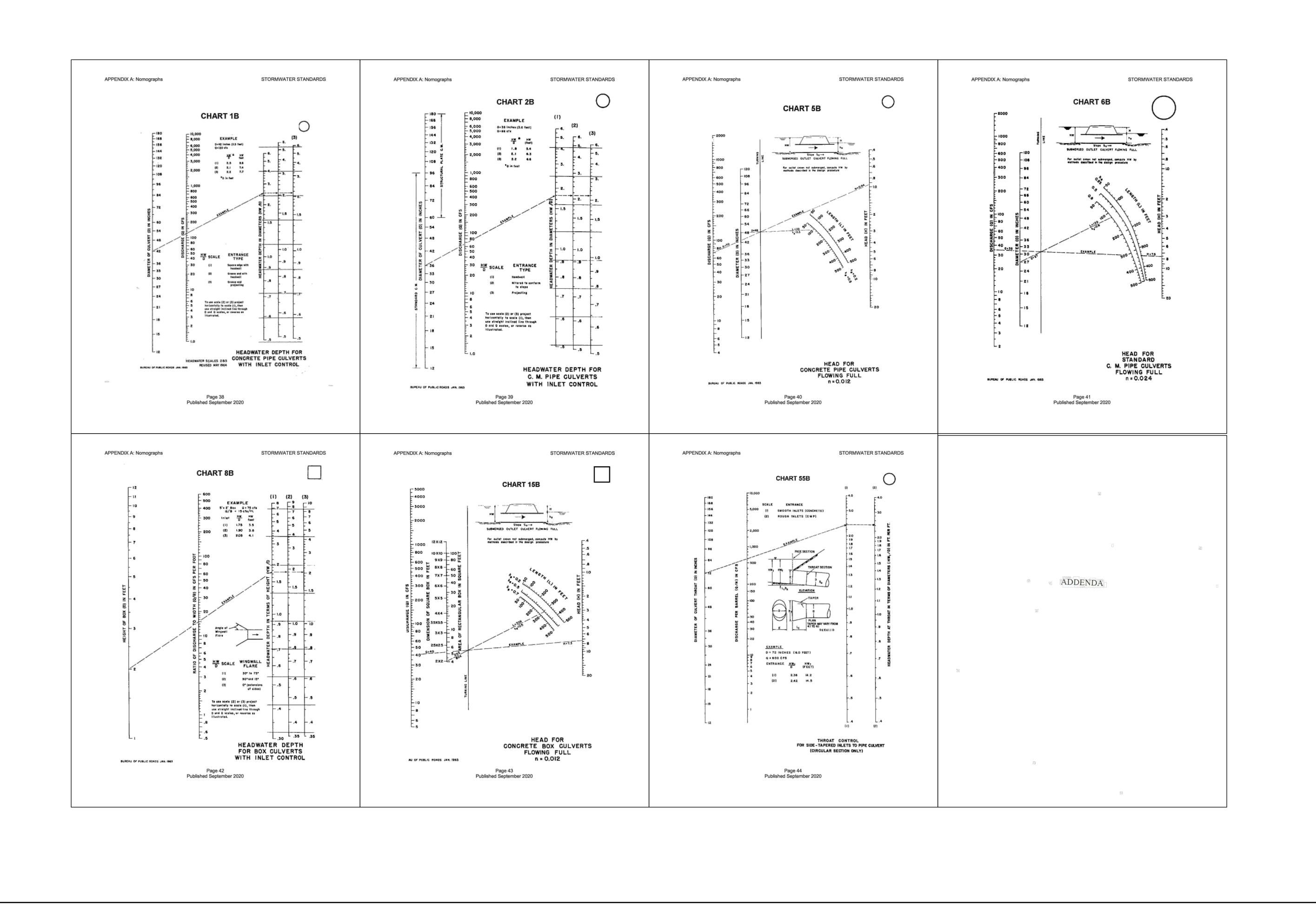
9. FEMA FLOWS AND FLOODPLAINS The Federal Emergency Management Age Uncompany River. For this waterway, the flur return periods studied in the effective model si grading and layout as well as channel improve be completed within the floodplain boundaries

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STORMWATER STANDARDS	DETENTION AND WATER QUALITY STORMWATER STANDARDS	DETENTION AND WATER QUAL
nches/hour) to the detention pond (acres) concentration (minutes)	Where: WQCV = water quality capture volume (acre-feet) A = area draining to the detention basin (acres)	C = weir coefficient (see L = horizontal length (fee H = total energy head (fee
ultiplying the allowable release rate by the same time of	a = 0.8, the WQCV drain time coefficient corresponding to a 12-hour drain time i = imperviousness as a decimal percentage	Another common weir is the v-no $Q = 2.5 \tan (\theta/2) H$
nute) Equation 18	Assuming 100% imperviousness, the above equation can be simplified to approximate required treatment volume in cubic feet if desired.	Where:
eet) concentration used in step 1 (minutes)	$WQCV_{cft} = 0.022A_{ft}$ Equation 20 Where:	Θ = angle of the notch at
as determined per these Standards (cfs) for each design storm is the difference between the inflow	WQCV _{cft} = water quality capture volume (cubic feet) A _{ft} = total impervious area (square feet)	SHAPE Sharp Crested
e design time of concentration and rainfall intensity. tion pond, the allowable release rate from the detention site runoff that is not detained. The allowable release rate existing conditions peak runoff rate minus the post- eas not draining to the detention basin. A maximum of 5	The particular treatment method for the WQCV can be determined by the owner or developer but is subject to Town approval. Treatment methods shall be recognized by the Mile High Flood District or other referenced standards. 6.6. Outlet Design Concepts	Projection Ratio (H/P = 0.4 Projection Ratio (H/P = 2.0 Broad Crested W/Sharp U/S Corner W/Rounded U/S Corner
ates, it can be used to develop inflow hydrographs at the be used to determine the required storage volume and pir routing procedure. Initial estimates of outlet size are put is reviewed, and changes are made to the outlet and an acceptable drain time are achieved. Assumptions sign calculations, and SWMM input and output text files es shall be highlighted and design values shall reference iments and/or be summarized periodically to ease in the	Detention basin outlets are complex because of the need to detain multiple events to different release rates. Several different outlet design examples can be found in the Urban Storm Drainage Criteria Manual (USDCM) developed by the MHFD. The MHFD also provides spreadsheets that can be used to aid in designing multi-stage outlets. While flow out of a detention basin is often controlled by an orifice place, no outlet pipe shall be smaller than 12 inches in diameter so that it may be easily cleaned. The invert of the lowest outlet shall be set at the lowest point in the basin or at the minimum pool elevation, if applicable. The outlet pipe shall discharge into a standard manhole or into a drainageway with proper erosion protection. All orifice plates shall be removable. The outlet structure shall be located along the downstream embankment of the basin and in a location that can be accessed for maintenance. In no case shall the outlet structure be in the middle of the pond. Each detention basin shall include a water quality outlet designed to drain the WQCV in 12 hours, a Minor Storm outlet, and a Major Storm outlet that allows for the release of any detained water at the	Triangular Section A) Vertical U/S Slope 1:1 D/S Slope 4:1 D/S Slope 10:1 D/S Slope 1:1 D/S Slope 3:1 D/S Slope Trapezoidal Section 1:1 U/S Slope, 2:1 D/S Slop 2:1/U/S Slope, 2:1 D/S Slop Road Crossings
epresents the volume associated with the 1.25-year return dered to provide the best value in water quality treatment. a water quality outlet in addition to the Minor and Major med to be contained within the Minor and Major Storm icrease of imperviousness greater than 0.05 acres, or an operviousness percentage over land use default values varcel within the Uncompangre River Overlay District is entire parcel onsite, even if other detention is not required, ntire parcels imperviousness, including existing or Historic The MHFD has spreadsheets that can aid in the design te the WQCV in Ridgway is:	allowable flow rate. An emergency overflow path shall be provided in the event the outlet later at the closes clogged or a storm larger than the Major Storm occurs. The emergency overflow shall provide conveyance of the Major Storm inflow so that there is no damage to the surrounding area or to downstream facilities. The invert of the emergency overflow should be set at or above the 100-year water surface elevation. 6.7. Outlet Hydraulic Design Hydraulic design of outlets consists of one or more weirs and orifices. The equation for a broad crested weir is: $Q = CL(H)^{3/2}$ Equation 21	Grave1 Paved Reference: The equation for orifice flow is: $Q = (C_d)(A)(2gH)^{1/2}$ Where: Q = flow (cfs)
.78i) Equation 19	Where: Q = discharge (cfs)	C_d = orifice coefficient A = area (square feet)
Page 31 ned September 2020	Page 32 Published September 2020	g = gravitational constant
STORMWATER STANDARDS	CONSTRUCTION WATER QUALITY STORMWATER STANDARDS	
es above surrounding final parcel grade with Town Staff	permit issued by the Town per Ridgway Municipal Code 6-2. Contact the Town for additional floodplain restrictions and requirements. FEMA has defined a flood zone for Cottonwood Creek but does not	
meet either of the above situations, a mitigation plan can following sections of Ridgway Municipal Code 6-2 "Flood r; 6-2-1, 6-2-2(C)(1) through 6-2-2(C)(6), 6-2-3, 6-2-4(B) reference to flood, flood plain or similar when referencing preted as 12" above final parcel grade for the purpose of on plan shall be submitted to Town staff for review and	have a model available. 10. <u>CONSTRUCTION WATER QUALITY</u> The Colorado Department of Public Health and Environment (CDPHE), as authorized by the Clean Water Act, issues permits to prevent the discharge of pollutants to waterways during construction. At the time of adoption, construction sites that will disturb one acre or more or are part of a common plan of development (such as a subdivision or commercial development) or sale are required to apply for and receive a permit for stormwater discharges associated with construction activities from the State. The CDPHE also issues permits for construction dewatering and other construction related activities.	11. <u>APPENDIX A: Nomograp</u>
Town, its design must consider flow velocity through the effects, and roadway overtopping. Bridge openings should stics as is reasonable, consistent with good design and signs based on the guidance in this section, however, the ditional requirements if the bridge is on a FEMA-regulated compander River and Cottonwood Creek are the only two	Information on the applicability of these permits and the associated requirements can be found via online for CDPHE water quality construction permits.	
completed in accordance with the FHWA Hydraulics of \S.		
g begins with calculation of the channel's 100-year water ridge. The following criteria shall then be met:		
nnel shall cause no more than 1.0 foot of rise in the 100- ere on the channel. n within the bridge shall also be a minimum of 1.0 foot		
tions are located below the 100-year water surface les of 40 degrees to 60 degrees shall be tied to the on behind the abutments. Ined channel, the bridge shall have no influence on the nt into the 100-year water surface elevation. Ons for all bridges and low water crossings shall be o Registered Professional Engineer (as is required for all		
et all applicable FEMA floodplain regulations. The Town velopment Permit for any work located within a FEMA Junicipal Code 6-2.		
Agency (FEMA) maintains a floodplain map of the flow rates and water surface elevations for each of the I shall be used for design of improvements including site ovements. Additionally, no Development of any kind may es designated by FEMA without a floodplain development		
Page 35 ed September 2020	Page 36 Published September 2020	









TOWN OF RIDGWAY	peen corrected, additional tests a
STANDARD SPECIFICATIONS AND TYPICAL DRAWINGS 1992	location and number as was used to a demonstrate conformance with the spe
ADDENDUM	The testing agency and Lts represent
The following additions and changes are hereby incorporated in the Town	relax, enlarge (or release any requi
Ridgway Standard Specifications and Typical Drawings for Infrastructure Construction dated 1992 and updated in 1995:	approve or accept any portion of the way relieve the Contractor of the construction in full compliance with
On Page E-2: Replace the text under the sub-section titled "Unsuitable Materia"	Additional testing services requeste
with the following text;	of materials of construction failing
Unsuitable Materials	of changes requested by the Contraction
Expansive materials and material that contain debris, roots, organics, sludy	Page CGS-7, in sub-section 9.05 Join
or frozen materials, stone or concrete having a maximum dimension larger than 4 inches or materials that are unsuitable for providing filly backfill,	joints, the joints shall be 1/4 the
foundation of subgrade material for structures or surfaces shall be classified as unsuitable. Materials with insufficient fines to prevent resting of route	Page ST-11, in the Placement sub-se
and/or with more than 25% rock shall also be considered unsuitable unless grade? rock is specified. Otherwise suitable material which is unsuitable due to excern	Asphaltic pavement shall have a dec
moisture content will not be classified as unsuitable unless it cannot be drive by manipulation, seration, or blending with other materials are drawn the	density of a voidless mixture compose (Density should not be less than 92

2. L

50

62

Unsuita Expansi or froz 4 inch foundat as unsu and/or w rock is molstur by manipulation, aeration, or blending with other materials satisfactorily of meet moisture limits for proper compactions.

On Fage E-4, under "Grade Stakes" subsection: At the end of that subsection add the following texts

norizontal and vertical control stakes shall be provided for all road work. (**** stakes shall be provided at a minimum of 50 foot stations, at all tangent center points of ourves and radii, and at all vertical change, intercept in tangent points.

On Page E-8, at the end of the "Upper Trench Compaction" sub-section add:

Compaction in private easements shall not be less than requested by the owner of the land and shall be a minimum of 90% unless specifically reduced by be property owner.

On Page E-10, just above "Soil Compaction Tests" add the following new subsection:

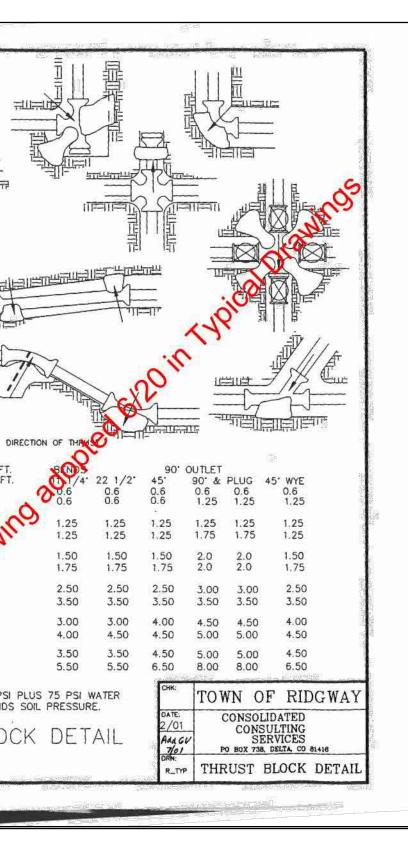
TESTING

Cesting of compacted fill materials will be performed by an independent testing laboratory acceptable, to City and Developer and designated at the preconstruction conference. Developer shall bear the cost of all tests required to demonstrate conformance with these and related specifications. A minimum of 3 density tests will be required for each lift of fill, one test for each 150 lineal feet of pipe line trench per lift, and one test per 1,000 square few of embankment per lift. Each lift shall be tested before the next lift is placed. If tests fail to meet the specified density, tests will be required if the vicinity of the failed test to determine the extent of the inadequate compact in, then corrective actions taken by the Contractor. After the deficiencies is ve

(See

-40			
Boardwalks			4. Barriers, Guardrails and
			Boardwalks shall ha
<u>General</u>		1	boardwalks continue
All boardwalks, constructed within the Town right-of-way shall a	conform to the		extent of the hazard
following procedures and specifications;		I	5. Steps/Ramps
			All steps and access
Plan Approval			have risers and treat
Plans shall be submitted to the Town for approval prior to constr			Audell's Carpenter C
be notified when construction begins, for inspection of the board	walk.	L.	be adequate barriers
		7	6. Width
Plan Submittal			Boardwalks shall be
Plans shall include the following:	L See	s Ba	and mixed zones and
1. Plot Plan(s) showing		o, mara	residential zones.
a. location of proposed boardwalk relative to existing build	ling(s)		
b. location of proposed boardwalk (lots and blocks)	Beentin't an		
c. existing sidewalks and boardwalks to which proposed t	oardwalks will		
join d. must show property corner locations relative to the boa	idually.		Lá
 nust show property comer locations relative to the boa Plan(s) showing 	rowark	Ð	
a. plan view			
b. cross sections (both ways)		1	
c. foundation/footers			
d. method of tying proposed boardwalk to adjacent buildin	gs, boardwalks		
and sidewalks			
e. elevations of adjacent streets, boardwalks and sidewalk	S i di		
f. steps and ramps			
g. barriers, guardrails and handrails			
3. Plan Details			
a. Plans shall show detail sufficient to determine that the r	ninimum		∃ĭ:
Performance/Design Standards are met.	2147 - 542-98		39 ⁻
b. Plans shall show detail sufficient to ensure compliance v	with ADA		
requirements.			
Minimum Onderson (Desile Desided			10 D
Minimum Performance/Design Standards 1. Load			
Boardwalks shall be designed to meet a load capacity of ex	t facilities or 100		
pounds per square foot, or whichever is greater.			
2. Foundation			0 <u>6</u> 1
Boardwalks shall have a foundation such that the boardwal	k shall not be		
subject to frost heave. The foundation shall be constructed			
or compacted soils capable of carrying the load.			
3. Decay Protection			
Boardwalks shall be constructed of materials sufficient to re	esist rot and shall		
have clearances from the ground adequate for decay protec	tion		
COUNCY ACTION SOOMED		0.00	NCHACTION

¢		A Contraction of the second of
peen corrected, additional tests shall be taken in approximately the same	Resolution No. 01- 04	
ocation and number as was used to determine the extent of the failed area to demonstrate conformance with the specifications. The testing agency and its representatives are not authorized to revoke, alter, relax, enlarge or release any requirement of the Contract Documents, her to approve or accept any portion of the Nork. The use of test results shall in no way relieve the Contractor of the responsibility to furnish materials and construction in full compliance with the Contract Documents.	RESOLUTION OF THE RIDGWAY TOWN COUNCIL, STATE OF COLORADO, AMENDING TOWN STANDARD SPECIFICATIONS, GENERAL REQUIREMENTS AND TYPICAL DRAWINGS FOR INFRASTRUCTURE	
Additional testing services requested by the Contractor or required as a result of materials or construction failing to meet the specifications, or as a result of changes requested by the Contractor shall also be paid for by the Contractor.	THE RIDGWAY TOWN COUNCIL DOES RESOLVE AS FOLLOWS:	
or changes reduested by the contraction sharp that for dummy and contraction joints, the joints shall be 1/4 the depth of the concrete.	WHEREAS, the Town Council requested that the Town Standard Specifications, General Requirements and Typical Drawings for Infrastructure be updated and condensed into one document; and	
Page ST-11, in the Placement sub-section, revise the 4th sentence to read:	WHEREAS, the Town Engineer presented a partial update to said document	
Asphaltic payement shall have a density of hot less than 92% of the calculated density of a voidless mixture composed of the same materials in like proportions, (Density should not be less than 92% of maximum theoretical density.)	which was adopted by the Town Council on April 11, 2001; and WHEREAS, the regulations regarding "Boardwalks" adopted by the Town	
Page ST-14, Move the first two paragraphs and title of the "Depth of Asphalt Control" subsection to just above the "Drainage" subsection and leave the last two paragraphs of that sub-section in the "Density Control" sub-section. Modify	Council on January 14, 1998 was inadvertently omitted; and WHEREAS, the Town Engineer has updated the "Thrust Block Detail" design and	
the density testing and coring frequency to one test per 350 square yards. Add to Typical Drawings:	has recommended their inclusion in the document; and WHEREAS, the Town Council wishes to include the regulations regarding	
Add the "Typical Road Section with vertical curb" details Add the "Typical Road Section in Gravel Street" details	"Boardwalks" and the "Thrust Block Detail" design into the Town Standard Specifications, General Requirements and Typical Drawings for Infrastructure.	PIPE HEIGHTS-FT
Add the "Typical woad Saciich in Weaver drived durate devalues This addendum to the Town of Ridgway Standard Specifications and Typical Drawings for Infrastructure is hereby approved by the Ridgway Town Council on <u>March</u> 13, 1996	NOW, THEREFORE, BE IT RESOLVED the Town Council of the Town of Ridgway, Colorado that the attached document entitled "Boardwalks" shall be added to, and shall amend, the Town of Ridgway Standard Specifications, General Requirements and Typical Drawings for Infrastructure.	SIZE WIDTH-F" H 2" W 4" H
	APPROVED AND ADOPTED this 11th day of July, 2001.	6" 8
nayor	fatulte	8" (ON H H
	ATTEST:	
	Pam Kraft	VALUES BASED ON 200 PS HAMMER AND 3000 POUND
	Town Clerk	THRUST BLO
4. Barriers, Guardrails and Handrails	Resolution No. 06-03	
Boardwalks shall have barriers, guardrails or handrails at the edges of the boardwalks continuous and adequate in height and strength for the full extent of the hazard. 5. Steps/Ramps	RESOLUTION OF THE RIDGWAY TOWN COUNCIL, STATE OF COLORADO, AMENDING THE TOWN STANDARD SPECIFICATIONS. GENERAL REQUIREMENTS AND TYPICAL DRAWINGS FOR INFRASTRUCTURE	STANDARD
All steps and access ramps shall conform to the load standards. Steps shall have risers and treads conforming to standard dimensions and practices (see Audell's Carpenter Guides and/or the Uniform Building Code) and there shall		The following addit Ridgway Standard Construction dated
be adequate barriers to falls from the steps or ramps. 6. Width Boardwalks shall be a minimum of 6 feet unrestricted width in commercial	THE RIDGWAY TOWN COUNCIL DOES RESOLVE AS FOLLOWS WHEREAS, the Town Council adopted by Resolution No. 01-03 on April 11, 2001 the Town Standard Specification Spe	Change: Page 1-19 buried facilities and
and mixed zones and shall be a minimum of 4 feet unrestricted width in residential zones.	for Infrastructure dated 1992 and updated in 1995; and	gas, and cable) sha intervals, using ce
	WHEREAS subsequently the same was amended by Resolution 01-04 on July 11, 2001; and	Add Page 1-19, Par
	WHEREAS, the Town Engineer has prepared Addendum 2 dated June 14, 2006 which details changes and additions to said standard specification and typical drawings, and	water services also each, service conne manhole along the
	WHEREAS, the Town Council wishes to adopt said changes and additions.	sidewalk to the inver Add: Page E-6, at er
	NOW THEREFORE, BE IT RESOLVED the Town Council of the Town of Ridgway Colorado that the attached document entitled "Town of Ridgway Standard Specifications and Typical Drawings, Addendum #2 - 6/14/06" shall be added to, and shall amend, the Town of Ridgway Standard Sec.	read "Where utilitie above top of pipe pri
	shall amend, the Town of Ridgway Standard Specifications, General Requirements and Typical Drawings for Infrastructure.	Add Page E-8, At e Class II bedding mat 12 oz Minimum Mira
2427 2010	VERIFIC THE G	
	APPROVED AND ADOPTED this 14th day of June, 2006.	Change: Page E-9, (
	APPROVED AND ADOPTED this 14th day of June, 2006	include 12 ^e of Class modified proctor at plu
	APPROVED AND ADOPTED this 14th day of June, 2006 ATTEST: Pat Willits, Mayor	include 12° of Class modified proctor at plu Delete: Page E-9, Del
	ATTEST: Par Knaft Pam Kraft, CMC	include 12° of Class modified proctor at plu Delete: Page E-9, Del Change: Page WM-1
	ATTEST: Par Kia/t	include 12° of Class modified proctor at plu Delete: Page E-9, Del Change: Page WM-1, insulated tracing wire above pipe 1 Change: Page WM-2
	ATTEST: Par Knaft Pam Kraft, CMC	insulated tracing wire
	ATTEST: Par Knaft Pam Kraft, CMC	include 12" of Class modified proctor at plu Delete: Page E-9, Del Change Page WM-1, insulated tracing wire above pipe " Change Page WM- concrete" to "PVC pipe
	ATTEST: Par Knaft Pam Kraft, CMC	include 12" of Class modified proctor at plu Delete: Page E-9, Del Change Page WM-1, insulated tracing wire above pipe " Change Page WM- concrete" to "PVC pipe



TOWN OF RIDGWAY

SPECIFICATIONS AND TYPICAL DRAWINGS - 1992

ADDENDUM #2 - 6/14/06

litions and changes are hereby incorporated in the Town of d Specifications and Typical Drawings for Infrastructure 1 1992 and updated in 1995

90

9 Paragraph 22:01 Change the 2nd sentence to read All I lines (including but not limited to water, sewer, power, phone, all be tied to permanent surface monuments at 200' minimum enterline monuments when available, or other permanent

aragraph 22.01 Add the following after the 3rd sentence. "For include the horizontal distance from the closest valve box to nection. For sever services include the distance from a a main to the service connection and the depth from the int at the dead end stub."

end of Excavation to Grade sub-section add new paragraph to ties are to be installed in fill, construct fill a minimum of 2 for to excavation for utility installation."

end of Placing Bedding Material sub-section: Add: "Where aterial has been installed, place a cover of filter fabric such as rafi 140N on top of the Class II bedding, before placing any

Change the third read. "In streets, the upper trench shall is 2 and 6" of Class 6 road base each compacted to 95% lus or minus 2% optimum moisture

elete the fourth paragraph this page

1, Plastic Pipe. Change "Marking" to read. "Place 10 gauge e directly on all pipe and place 4" wide marking tape 12"

I-3 Hydrants Change the required encasement found ipe or other means approved by Town Engineer.

Service Connection. Change the saddle material to brass

		GRA				<u> </u>	
	DESCRIPTION						
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Change Page WM-4. Proximity Statement. - Change the first paragraph to read "Potable water lines shall not be laid closer horizontally than 10 feet from sewer and other non-potable lines and the water lines shall be at a higher elevation than the non-potable. When water and non-potable lines cross each other, the water line shall be at least 18" above the non-potable. If this condition is not met, then the non-potable line shall be encased with a 20' PVC casing pipe centered around the water line crossing. Should the non potable line be above the water line, then the casing pipe shall be sealed to the carrier pipe with no-hub reducing couplings, Link-Seal or other approved method to provide a water tight seal Installation shall be in accordance with the requirements of the Town Minimum Standards for Water and CDPHE and Uniform Plumbing Code requirements."

34

Change Page W-2 Change the Plastic Pipe "Marking" requirements to read: "Place 10 gauge insulated tracing wire directly on all pipe and place 4" wide marking tape 12" above pipe "

Add: Page W-5 - Add the following sentence at the end of the first paragraph . Pipes and appurtenances shall be installed within 0.5' horizontal and 0.1' vertical of design alignment and grades."

Change Page W-7, first paragraph, second sentence to read. "All nuts and bolts utilized in underground connections shall be stainless steel or Kor-Blue (or equal) unless due to extremely aggressive soils conditions, an alternate material is approved by the Town Engineer.

Add: Page W-7 at end of Laying of Pipe sub section, add a new paragraph is reads. Electrically continuous tracer wire shall be securely taped to the top of all water lines and shall be looped up to the ground surface at each valve and hydrant. Placement of the wire shall be field directed

Delete: Page W-9, Concrete Encasement. Delete this paragraph.

Change: Page WS-1, Meter - Change meter can from CMP to Uponor round, insulated, traffic rated, molded plastic

Change Page WS-1,2 Service Pipe - Change this section to read". Pipe for water service shall be type "K" copper tubing conforming to ASTM B-88-62 and NSF standards for potable water service unless other types of tubing are specified on the Town approved drawings

Change Page WS-2, Meter: Change the last sentence of the first paragraph to read. "Meters shall be Sensus with radio read"

Add: Page WS-2, above "Execution" - Add the following subsection

Fire Protection Service Line - Valves on newly constructed fire lines shall be

A 'Fire Protection Service' subsection is added on page WS-2. We had not previously covered this topic in the standards and we have had several questions on the subject. The proposed language is not very prescriptive but is consistent. with current practice and my read of the Town Code

Change the requirements for pressure regulators to reflect current practice. On page WS-2, Pressure regulators are to be installed on the private side of the meter unless static pressures exceed 110 psi

The deletion on Page WS-3 resolve a conflict in the specs regarding service saddle materials to require brass which is what we've been requiring

On Page S-9 we have added anoption to use a glue cap rather than just a compression cap on sewer service stubs We have been allowing glue caps for years.

Page S-19 under manhole testing adds vacuum testing as in option. Add the option to use a vacuum test for manholes rather than just a water test. We have had requests to use the vacuum test and have been allowing it. Its likely a more stringent test and is clearly more accurate and quicker.

Also on S-19, we are proposing to change from requiring a video inspection of sewer lines when we think its necessary to a general requirement. This has a cost of about \$1 per foot. The video inspection provides us with better information about the condition of the line than other methods and provides us with a record of tap locations. It is becoming common practice to require lines be video'd in our neighboring communities although some provide the service rather than requiring the developer to do the work.

The following changes have been made to the typical drawings:

Standard Bedding Detail. Modified to reflect the filter fabric, tracer tape, and

requirements of 12" of class 2 in roadways.

Hydrant Added details for placement of tracer wire. We have been requiring tracer wire but have not had details on the placement

Large Water Meter. Change from gate valves to ball valves for isolation valves on large services. Ball valves in that size are more reliable and take up less space than gate valves Require bypass lines on all water services over 1" This allows for servicing the meter without putting the building out of water. The Town should padlock the bypass lines. Modify the large water service typical to show a meter setter rather than straight piping. This also facilitates servicing the meter. Moved backflow preventor to a downstream location outside the meter vault

located on the tee at the main line unless otherwise approved by the Town The property owner shall maintain all private fire lines beginning at and including this valve. All fire sprinkler taps shall be installed with an approved backflow prevention device as defined by the Town. A property requiring a domestic service line and a fire protection service line will have separate taps for each

Change Page WS-2, first sentence of second paragraph in Meter sub-section Change paragraph to read. Pressure regulators with strainers shall be installed on the customer side of the meter when the pressure on the service line will exceed 80 psi. If line pressure exceeds 110 psi, Town may require the pressure regulator to be located upstream of the meter. In either case maintenace of the regulator is the responsibility of the property owner."

saddles ..."

Add: Page S-6 above "Laying Sewer Pipe" subsection, Add new Subsection to

Tolerances

Add Page S-9, "Service Installation" Sub-section - Add at the end of the 3rd paragraph "or with a glued cap".

Add Page S-19, Manhole Testing Add the following paragraph at the end of this section: "Vacuum Testing in accordance with ASTM 1244 shall be allowed as in alternative to the above exfiltration test. Minimum vacuum for the test shall be 10 psi. During the test period, the vacuum shall not drop more than 1 psi. Test periods shall be as follows:

52

Minimum Test Times for Manhole Vacuum Test

25 30

35

Manhole Depth
8' or less 10'
12' 14'
16

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34" and 1" Services. Changed meter can from CMP to plastic, added curb stop, deleted ball valve Changes for the same reasons noted above for reconnection Air Vacuum Valve (type 1) Moved location of the valve from directly over the

water line to off the to the side. This takes the weight of the valve off the main and allows the valve to be placed away from traffic

Manhole Detail: Added a requirement for a concrete collar around the lid in paved streets.

ADA requirements.

Road section details. Increase width of valley pans on local streets from 2' to 3' This increases the capacity of the pans significantly. Originally the pans were intended to allow water into the green space behind the pan, but they are not being used that way and water is spilling onto the pavement as well as the green space in a good rain (or irrigation leak). This adds 0.5 cubic feet of concrete per lineal foot of pan (only 0.25 cf compared to curb and gutter), but also provides a modest increase in protection for the asphalt

Cul de sac (alt). Added this tear drop design to our standard circular design.

Delete: Page WM-3, Delete the 3rd Sentence which starts "Stainless steel tapping"

Sewer lines and manholes shall be laid to within 0.1' horizontal and 0.02' vertical of design alignment and grade. Where design sewer grades are greater than 1 0%, vertical tolerance will be increased to 0.03"

Manhole Diameter Time in Seconds 26 33 41 39 49 46 57

Existing Service Reconnection. Change meter can from CMP to plastic, added curb stop, deleted ball valve. Changed from ball valve to curb stop because we are seeing failures with the ball valves. The curb stops are more durable. The plastic meter cans provide better insulation, are stronger and a little more worker friendly. We have been using the plastic cans for over a year now.

Handicap Ramp Details. Modified to conform with my understanding of current

Change Page S-19, 3rd Paragraph Change 3rd paragraph to read as follows: "After the completion of segments of sewer lines, the lines shall be jetted with water After water ceases to flow, video each segment to demonstrate cleanliness, proper jointing, proper tap installation, conformance to alignment and grade, and proper roundness. Town may require that video work shall be done in coordination with ovalation testing so the video records the testing results of the "Go - No Go" gauge In addition a small steady flow of water shall be present during the video so that any variability in grade of line installation can be identified Any locations shown to have a sag of 1/4" or more shall be corrected."

Replace Replace the following typical details with the attached details dated 6.06

Standard Bedding Detail Hydrant Detail (in paved streets) Hydrant Detail (in gravel streets) Typical Existing Service Reconnection Detail Large Water Service 1" - 1" Meter Detail Air Vacuum Valve (type 1) Manhole Detail Handicap Ramp Details Typical road section with pan Typical road width requirements Cul de sac (alt)

Town Standards:

record drawings.

Page E-6 changes add a requirement that if one is laying pipe in fill that the fill needs to be placed and the trench excavated rather than the pipe being laid in with the fill. Although this circumstance does not occur often, installation in this manner is necessary to protect the pipe long term. PVC pipe relies on trench sidewalls for some of its strength. We have been requiring this, but its not covered in the current standards.

standards

current practice.

All the changes proposed on the WM pages are also to reflect current practice as is the change on Page W-2

During the construction of the school sewer line, the issue of what tolerances were applicable to what types of work arose. The Town standards did not have explicit tolerances for water or sewer. The changes on pages W-5 and S-6 would add tolerances.

practice

Change from CMP to thermoplastic molded meter cans (page WS-1) The CMP cans are not readily available and subject to corrosion. The plastic cans have improved to the point they are just as traffic resistant and provide better frost protection and corrosion protection

The Town standards are getting a little dated (1992), but staff has not had time to do the major rewrite requested a while back. To keep the standards somewhat in line with current practice we have prepared an addendum of the standards. The following is a brief explanation of the changes proposed by addendum to the

Page 1-19 changes clarify how to document line and meter locations for the

The change on Page E-8 requires placing a filter fabric on the top of washed rock before placing materials on top. Without the fabric, the fines in the native materials will over time flow into the gravel and reduce its permeability and potentially cause settlement of the trench. For the last two years, we have been adding this requirement during plan review, but it should be added to the

The changes on Page E-9 are also clarifications to make the standards reflect

The changes proposed on pages W-5, W-7, and W-9 are to reflect current

Change brand of water meet from Neptune to Sensus. Town standardized on Sensus years ago, we just never changed the standards. We need to have just one brand so that the electronic reading devices work. This change is to WS-2

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SYMBOL	MANUFACTURER	MODEL NO.	DESCRIPTION
6000	HUNTER	PROS-06-CV-PRS30	POPUP SPRAY HEAD (TURF)
e e e	HUNTER	WITH PRO-SPRAY NOZZLE PROS-06-CV-PRS30 WITH PRO-SPRAY SST, CORNER NOZZLE	POPUP SPRAY HEAD (TURF)
♦∎�∎	HUNTER	PROS-12-CV-PRS30/40-R WITH PRO-SPRAY NOZZLE	HI-POP SPRAY HEAD (SHRUB & NATIVE
	HUNTER	I-20-06-55-R WITH # STANDARD NOZZLE (BLUE)	GEAR DRIVEN ROTOR (TURF)
≭ 4 ■ # 4 ■ ■ # 4 ■	HUNTER	I-20-12 WITH # NOZZLE	HI-POP GEAR DRIVEN ROTOR (NATIVE
•	WEATHERMATIC	MAX-DW-10 SERIES W/ DECODER	ELECTRIC CONTROL VALVE
	HUNTER	HQ-44-LRC-R	QUICK COUPLING VALVE
A state of the	WEATHERMATIC	SL4800-1YR-BUNDLE-FLOW	ELECTRIC CONTROLLER
→	WEATHERMATIC	SLM5	WEATHER SENSOR DEVICE
N/S	OLDCASTLE	REFER TO SPECIFICATIONS AND DETAILS	VALVE BOXES
N/5	MATCO	201X	MANUAL DRAIN VALVE
		LINE SIZE	GATE VALVE
•	WEATHERMATIC	MAX-DW-10 SERIES	MASTER VALVE
FS	MEATHERMATIC	SLFSI-T10 - 2"	FLOW SENSOR
		CLASS 200 BE	PVC MAINLINE
		CLASS 200 BE	PVC LATERAL
		CLASS 160	PVC SLEEVING
		CLASS 200 BE - 1"	PVC DRIP LATERAL
<hr/> <hr <h<="" <hr="" td=""/> <td>TORO</td> <td>BLUE STRIPE</td> <td>POLY DRIP TUBING -3/4" MIN. WIDTH</td>	TORO	BLUE STRIPE	POLY DRIP TUBING -3/4" MIN. WIDTH
\oplus	WEATHERMATIC	SCZ-MAX-DW-10 W/ DECODER	DRIP VALVE ASSEMBLY
▶			DRIP LINE BLOW-OUT STUB
N/S	RAIN BIRD	XERI-BUG	DRIP EMITTERS
Ρ	PRECISION	MODEL #V15002X00020-075V322410NC	PUMP ASSEMBLY: 240V, 3 PHASE, 5 HP, 20 GPM @ 75 PSI
	WEATHERMATIC	SLWIRE 12-2 (GAUGE)	2-WIRE DECODER CABLE
N/5	WEATHERMATIC	SLDEC1	VALVE DECODER
©^	WEATHERMATIC	SLGDT LIGHTNING ARRESTOR	GROUNDING LOCATION
			CONTROLLER & STATION NO. CONTROL VALVE SIZE

IRRIGATION DEVELOPMENT DESIGN NOTES

- 1. THE IRRIGATION SYSTEM SHALL BE DESIGNED TO PROVIDE PEAK SEASON IRRIGATION WITHIN AN SIX NIGHT, SIX HOUR PER NIGHT WATERING PERIOD. IRRIGATION SHALL OCCUR BETWEEN THE HOURS OF 10:00 PM AND 4:00 AM.
- 2. THE MAINLINE SYSTEM WILL BE DESIGNED SUCH THAT VELOCITIES WITHIN THE MAINLINE PIPING DO NOT EXCEED FIVE FEET PER SECOND.
- 3. THE MAXIMUM FLOW RATE REQUIRED FOR THE SITE IS 20 GPM. THE STATIC PRESSURE AVAILABLE FROM PUMP SYSTEME IS 75 PSI.
- 4. THE IRRIGATION INFORMATION SHOWN ON THESE PLANS IS CONCEPTUAL
- 5. IRRIGATION DESIGN APPROACH
- 5.1. TURF AREAS: SMALL AREAS (25 FEET WIDE OR LESS) SHALL BE IRRIGATED WITH FIXED NOZZLE 6" POP-UP SPRAY HEADS WITH MATCHED 5.1.1. PRECIPITATION NOZZLES. NOZZLES SHALL BE SIZES TO PROVIDE HEAD TO HEAD COVERAGE
- 5.1.2. LARGE TURF AREAS (WIDER THAN 25 FEET) SHALL BE IRRIGATED WITH 6" POP-UP GEAR DRIVEN ROTOR HEADS WITH A MINIMUM PRECIPITATION RATE OF .45" PER HOUR FOR A FULL CIRCLE HEAD.
- 5.2. SHRUB BED AREAS - BED AREAS WITH PLANT MATERIAL ONE GALLON IN SIZE OR LARGER SHALL BE DRIP IRRIGATED. PERENNIAL AND ANNUAL BED AREAS - PERENNIAL AND ANNUAL BED AREAS SHALL BE SPRAY IRRIGATED WITH 12" POP-UP SPRAY 5.3. HEADS WITH A MAXIMUM SPACING OF 10' O.C. OR IN AREAS ARE LESS THAN 10 FT. WIDE SHALL BE IRRIGATED WITH SUBSURFACE IRRIGATION.
- 5.4 NATIVE AREAS:
- SMALL AREAS (25 FEET WIDE OR LESS) SHALL BE IRRIGATED WITH FIXED NOZZLE 6" POP-UP SPRAY HEADS WITH MATCHED 5.4.1 PRECIPITATION NOZZLES. TO BE USED FOR ESTABLISHMENT ONLY.
- LARGE TURF AREAS (WIDER THAN 25 FEET) SHALL BE IRRIGATED WITH 6" POP-UP GEAR DRIVEN ROTOR HEADS WITH A MINIMUM 5.42 PRECIPITATION RATE OF .45" PER HOUR FOR A FULL CIRCLE HEAD. TO BE USED FOR ESTABLISHMENT ONLY 5.4.3 PLANT MATERIAL IN NATIVE AREAS - SHALL BE DRIP IRRIGATED.
- 6. NO IRRIGATION WITHIN 10 FEET OF ALL BUILDING FOUNDATIONS. HAND WATERING MAY BE REQUIRED TO ESTABLISH ANY PLANT MATERIAL WITHIN 10 FET OF FOUNDATIONS.
- 7. IRRIGATION SYSTEM SHALL BE FULLY AUTOMATIC AND INCLUDE A WEATHER SENSING DEVICE.

REFER TO SHEET

IRRIGATION NOTES IR-0 IR-0 **IRRIGATION SCHEDULE** IR-10 - IR3 **IRRIGATION PLANS IRRIGATION DETAILS** IR-4 - IR6 **IRRIGATION PUMP DETAILS IR-7**

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IRRIGATION CONSTRUCTION NOTES

- 1. DRAWINGS AND BASE INFORMATION ALL BASE AND PLANTING INFORMATION HAVE BEEN PROVIDED BY DHM DESIGN. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY HYDROSYSTEMS*KDI OF ANY DISCREPANCIES BETWEEN THE UTILITY OR PLANTING PLANS AND THE IRRIGATION PLAN. IF CONTRACTOR FAILS TO NOTIFY HYDROSYSTEMS*KDI AND MAKES CHANGES TO THE IRRIGATION SYSTEM DESIGN, HE ASSUMES ALL COSTS AND LIABILITIES ASSOCIATED WITH THOSE FIELD CHANGES. REFER TO SPECIFICATIONS FOR ADDITIONAL PROJECT REQUIREMENTS.
- 2. SYSTEM PRESSURE HYDROSYSTEMS*KDI HAS INCLUDED A PUMP SYSTEM FROM THE WATER STORAGE TANK TO SUPPLY THE IRRIGATION SYSTEM. THIS SYSTEM HAS BEEN DESIGNED FOR A REQUIRED PRESSURE OF 75 PSI MINIMUM.

NOTE: STORAGE TANKS AND PUMPING SYSTEM HAVE ASSUMED A MINIMUM OF 7 GPM FROM A WELL TO FILL TANKS IN 18 HOUR. IRRIGATION SYSTEM IS DESIGNED TO WATER THE SITE IN SIX HOURS -SIX DAYS/WEEK.

3. IRRIGATION SYSTEM OPERATION INTENT - THIS IRRIGATION SYSTEM HAS BEEN DESIGNED TO IRRIGATE THE ESTABLISHED LANDSCAPE WITHIN A SIX NIGHT PER WEEK, SIX HOUR PER NIGHT WATERING WINDOW. ESTABLISHMENT WATERING WILL REQUIRE UP TO TWICE AS MUCH IRRIGATION FOR A FOUR TO SIX WEEK PERIOD. THE DESIGN IS BASED ON THE FOLLOWING PROJECTED WEEKLY APPLICATION RATES AFTER ESTABLISHMENT. THESE FIGURES ARE BASED ON A 30-YEAR AVERAGE WEATHER DATA AND WILL NEED TO BE ADJUSTED DUE TO SEASONAL CHANGES AND WEATHER CONDITIONS ABOVE AND BELOW THE AVERAGE VALUES UTILIZED.

BLUEGRASS TURF ORNAMENTAL PLANTINGS NATIVE SEED MIXES

1.94" PER WEEK PEAK SEASON .78" PER WEEK PEAK SEASON .65" PER WEEK PEAK SEASON (TWO SEASONS)

NOTE: IT IS THE INTENT OF THIS DESIGN THAT NATIVE AREAS WOULD ONLY BE IRRIGATED FOR ESTABLISHMENT. SYSTEM WILL REMAIN FOR USE DURING YEARS WITH LESS THAN NORMAL RAINFALL.

- 4. EQUIPMENT INSTALLATION IT IS THE INTENT OF THIS DESIGN THAT ALL IRRIGATION EQUIPMENT BE INSTALLED WITHIN PROPERTY LIMITS AND WITHIN LANDSCAPED AREAS. ANY EQUIPMENT OTHER THAN VALVE BOXES OR SLEEVING THAT CONTAINS PIPE OR WIRES SHOWN OUTSIDE OF THESE LIMITS IS SHOWN IN THAT LOCATION FOR GRAPHICAL CLARITY ONLY. ALL VALVE BOXES SHALL BE INSTALLED A MINIMUM OF 2'-O" FROM EDGE OF ANY PAVED SURFACES UNLESS SPECIFICALLY INDICATED ON PLANS. BOXES INSTALLED IN OPEN TURF AREAS SHALL BE KEPT TO EDGES AND STAKED FOR REVIEW IF ALONG HIGH TRAFFIC AREAS. ALL VALVE BOXES SHALL BE PLACED A MINIMUM OF 3'-O" FROM THE CENTERLINE OF ANY DRAINAGE SWALE, ALL VALVE BOXES WITHIN PAVEMENT SHALL BE TIER 15 RATED BOXES FOR HEAVY DUTY NON-DELIBERATE TRAFFIC, BOX LID COLOR SHALL MATCH ADJACENT MATERIALS, I.E. GREEN IN TURF, TAN IN WOOD MULCH, GRAY IN STONE MULCH, PURPLE FOR RECLAIMED WATER SYSTEMS (IF REQUIRED). REFER TO LANDSCAPE PLANS FOR MATERIAL COLORS AND TYPES. ALL BOXES SHALL BE INSTALLED TO BE FLUSH WITH GRADE AND IN AN ORDERLY MANNER.
- 5. PIPING INSTALLATION IRRIGATION PIPING SHALL MAINTAIN A MINIMUM DISTANCE FROM BUILDING FOUNDATIONS OF 5 FEET OR AS DESCRIBED IN SOILS REPORT, WHICHEVER IS GREATER. NO SPRAY IRRIGATION SHALL OCCUR WITHIN 10 FEET OF THE FOUNDATION. NO DRIP IRRIGATION SHALL OCCUR WITHIN 5 FEET OF THE FOUNDATION UNLESS SOIL MOISTURE SENSORS ARE INSTALLED ON VALVES SERVICING THESE AREAS. ALL IRRIGATION PIPING AND EMISSION DEVICES LOCATED ON TOP OF OR WITHIN BUILDING STRUCTURE SHALL CONFORM TO WATERPROOFING CONSULTANT REQUIREMENTS. PIPE ROUTING MAY BE SHOWN WITHIN THESE DISTANCES FOR GRAPHICAL CLARITY ONLY.
- 6. MANUAL DRAIN VALVES CONTRACTOR TO INSTALL ONE MANUAL DRAIN VALVE ON PRESSURE SUPPLY LINE DIRECTLY DOWNSTREAM OF BACKFLOW PREVENTER AND AT ALL LOW POINTS AND DEAD ENDS OF PRESSURE SUPPLY PIPING TO INSURE COMPLETE DRAINAGE OF SYSTEM. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THESE LOCATIONS IN-FIELD AND INSTALLATION LOCATIONS SHALL BE NOTED ON AS-BUILTS.
- 7. POP-UP SPRAY NOZZLES CONTRACTOR TO INSTALL PLASTIC NOZZLES ON ALL POP-UP SPRAY HEADS. INSTALL 15 SERIES NOZZLES ON ALL HEADS SPACED AT 12' TO 14'. INSTALL 12 SERIES NOZZLES ON ALL HEADS SPACED 10' TO 11'. INSTALL 10 SERIES NOZZLES ON ALL HEADS SPACED AT 8' TO 9'. INSTALL 8 SERIES NOZZLES ON ALL HEADS SPACED AT 6' TO 7'. INSTALL 5' NOZZLES ON ALL HEADS SPACED AT 5'. INSTALL SIDE STRIP NOZZLES ON ALL HEADS WITH AN "S" DESIGNATION AND RIGHT AND LEFT CORNER STRIP NOZZLES ON ALL HEADS WITH AN "L" OR "R" DESIGNATION. VARIABLE ARC NOZZLES SHOULD BE UTILIZED ADJACENT TO CURVILINEAR SHRUB BEDS OR FOR ANY ANGLES THAT ARE NOT A STANDARD NOZZLE ANGLE. WHERE INDICATED, INSTALL LOW FLOW SQ SERIES SQUARE NOZZLES AT SPACING SHOWN.
- 8. DRIP IRRIGATION REFER TO IRRIGATION DETAIL SHEET FOR DRIP EMITTER QUANTITIES AND PLACEMENT.
- 9. UNLABELED PIPING ALL UNLABELED LATERAL PIPING SHALL BE 1" MINIMUM UNLESS OTHERWISE NOTED.
- 10. SLEEVING ALL SLEEVING UNDER PAVED SURFACES SHOWN ON PLANS IS BY CONTRACTOR UNLESS OTHERWISE NOTED. SLEEVING SHALL BE INSTALLED IN THE SIZES AND QUANTITIES SHOWN ON PLANS OR BASED ON THE SCHEDULE BELOW. WHERE SLEEVES ARE SHOWN, BUT NOT LABELED, FOLLOW THE SCHEDULE BELOW. ALL MAINLINE, CONTROL WIRES AND DRIP LINES UNDER PAVED SURFACES ARE TO BE INSTALLED IN SLEEVING. ALL MAINLINE SLEEVE LOCATIONS TO INCLUDE A SEPARATE WIRE SLEEVE. SLEEVE QUANTITY)

VED PIPE SIZE/WIRE QUANTITY	REQUIRED SLEEVE SIZE & (0
³ / ₄ " - 1 ¹ / ₄ " PIPING	2" PVC (1)
$1\frac{1}{2}$ " - 2" PIPING	4" PVC (1)
1-50 CONTROL WIRES	3" PVC (1)
51-100 CONTROL WIRES	3" PVC (2)

- 11. ADJUSTMENT CONTRACTOR SHALL FINE TUNE/ADJUST THE IRRIGATION SYSTEM TO REDUCE/AVOID OVERSPRAY ONTO HARD SURFACES BY ADJUSTING NOZZLE DIRECTION AND NOZZLE RADIUS.
- 12. PLANS AND SPECIFICATIONS CONTRACTOR RESPONSIBLE TO ENSURE WORK CONFORMS TO PLANS AND SPECIFICATIONS. AT ONSET OF CONSTRUCTION, VERIFY PLANS ARE CURRENT. WHERE REQUIRED BY CITY. CONTRACTOR SHALL CONSTRUCT ONLY OFF CITY STAMPED PLANS, REVISIONS TO CITY STAMPED PLANS SHALL CONFORM TO CITY FIELD CHANGE PROCEDURES AND DOCUMENTATION.
- 13. SIMULTANEOUS ZONE OPERATION THIS IRRIGATION SYSTEM HAS BEEN DESIGNED TO OPERATE MULTIPLE ZONES SIMULTANEOUSLY BASED ON INDIVIDUAL ZONE FLOW. THE DESIGN IS INTENDED TO OPERATE MULTIPLE VALVES, UP TO THE MAXIMUM FLOW IN THE POINT OF CONNECTION NOTE. REFER TO CONTROLLER SPECIFICATION FOR MAXIMUM SIMULTANEOUS VALVE COUNT.
- 14. 2-WIRE SYSTEM NOTES CONTRACTOR SHALL INSTALL ALL TWO-WIRE COMPONENTS PER MANUFACTURER'S RECOMMENDATIONS AND STANDARDS. 14.1. CONTRACTOR SHALL USE ONLY MANUFACTURED 2-WIRE DECODER CABLE (SEE SCHEDULE FOR SPECIFIC 2-WIRE CABLE)
- 14.2. ONLY USE SINGLE STATION DECODERS (SEE SCHEDULE FOR SPECIFIC MODEL) 14.3. ONLY USE SENSOR DECODER FOR FLOW SENSOR (SEE SCHEDULE FOR SPECIFIC MODEL) IF INDICATED ON PLANS.
- 14.4. LOOP 5' OF 2-WIRE DECODER CABLE INTO ALL VALVE BOXES (WITH DECODERS AND SPLICES) FOR MAINTENANCE.
- 14.5. LOOP 2' OF 2-WIRE DECODER CABLE AS AN EXPANSION LOOP AT ALL CHANGES OF DIRECTION. 14.6. USE ONLY 3M DBR-6 WATERPROOF CONNECTORS ON ALL WIRE SPLICES AND ALL WIRE SPLICES ARE TO BE MADE WITHIN A VALVE BOX WITH CONTROL VALVES OR A SEPARATE
- 10" ROUND VALVE BOX FOR WIRE SPLICES. 14.7. INSTALL SURGE PROTECTOR RODS OR PLATES 8 LF. FROM VALVES, DECODERS, AND COMMUNICATION WIRE.
- 14.8. GROUND ALL DECODERS AND DECODER WIRE A MINIMUM OF EVERY 500' OF WIRE AT ALL ENDS OF 2-WIRE DECODER CABLE RUN. 15. WATER BUDGETS AND PROJECTIONS - HYDROSYSTEMS-KDI HAS BASED THE IRRIGATION DESIGN AND THE ASSOCIATED PROJECTED WATER USE UPON SUCH FACTORS AS CITY OR WATER
- DISTRICT IMPOSED REQUIREMENTS, PUBLISHED PLANT SPECIES WATER NEEDS, SELECTED IRRIGATION METHOD EFFICIENCIES AS REPORTED BY INDEPENDENT TESTING FACILITIES, HISTORICAL WEATHER DATA FOR THE PROJECT LOCATION, AND PROPER MAINTENANCE PROCEDURES. HYDROSYSTEMS*KDI IS NOT RESPONSIBLE, AND ACCEPTS NO RESPONSIBILITY, FOR THE ACTUAL WATER USAGE VARIATION THAT IS A RESULT OF FIELD MODIFICATIONS TO THE SYSTEM NOT MATCHING CONSTRUCTION DOCUMENTS, IMPROPER MAINTENANCE, WASTE DUE TO SYSTEM DAMAGE OR VANDALISM, OR WEATHER CONDITIONS THAT DEVIATE FROM PUBLISHED 30 YEAR HISTORICAL AVERAGES



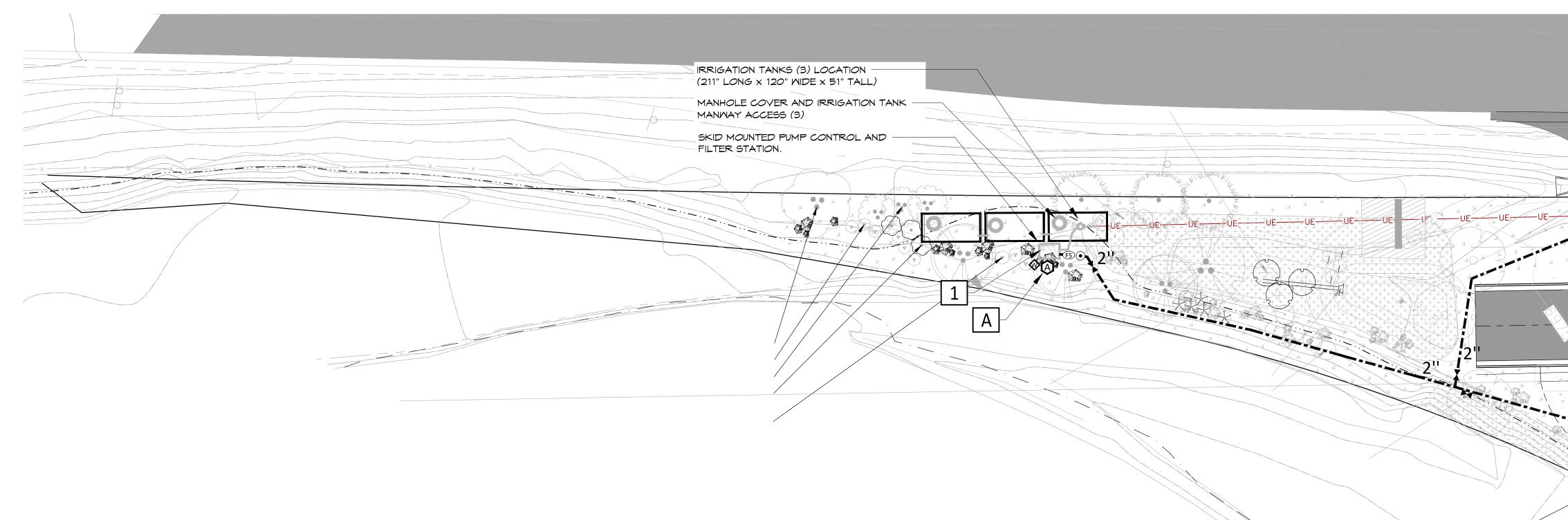


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SCHED	ULE /BER:



1

PEAK FLOW REQUIREMENT: 20 GPM. REQUIRED STATIC PRESSURE: 75 PSI FROM PUMP GENERAL CONTRACTOR TO COORDINATE INSTALL OF (3)-3525 GALLON TANKS AT APPROXIMATE LOCATION SHOWN. REFER TO DETAILS FOR INSTALLATION OF IRRIGATION PUMPING STATION. INSTALL ONE 1.5" GATE VALVE, ONE 1" FLOW SENSOR, ONE 1.5" MASTER VALVE, ONE QUICK COUPLING VALVE, AND EXTEND PVC MAINLINE AS SHOWN. 230V / 3 PHASE VOLT POWER IS AVAILABLE WITHIN (TBC) LF. OF PUMP LOCATION FROM BUILDING (TO BE COORDINATED). ELECTRICAL METER, WIRE/CONDUIT, STEP-DOWN TRANSFORMER (IF REQUIRED) AND POWER CONNECTION TO CONTROLLER IS BY CONTRACTOR WITH WORK CONFORMING TO LOCAL CODES. EXTEND ONE PE89 SHIELDED CABLE FROM FLOW SENSOR TO DATA RETRIEVAL UNIT LOCATED IN ASSOCIATED CONTROLLER. EXTEND 4 UFUL14# WIRE (TWO ORANGE AND TWO BLUE) AND CONNECT 2 OF THE WIRES FROM THE MASTER VALVE TO THE DATA RETRIEVAL BOARD IN ASSOCIATED CONTROLLER. SEE DETAIL SHEET FOR REQUIRED PIPE LENGTHS UPSTREAM AND DOWNSTREAM OF FLOW SENSING UNIT. WORK SHALL CONFORM TO LOCAL CODE. FEES AND PERMITS ASSOCIATED WITH WORK ARE TO BE OBTAINED AND PAID FOR BY CONTRACTOR. FINAL PUMP AND STORAGE TANK LOCATION SHALL BE REVIEWED AND APPROVED BY CONSULTANT PRIOR TO INSTALLATION.

A

PEDESTAL MOUNT ONE CONTROLLER (REFER TO SCHEDULE FOR MODEL & STATION COUNT), REMOTE READY, AT INDICATED LOCATION. 120 VOLT POWER IS AVAILABLE WITHIN (TBC) LF. OF CONTROLLER LOCATION FROM BUILDING (TO BE COORDINATED). ELECTRICAL METER, WIRE/CONDUIT, STEP-DOWN TRANSFORMER (IF REQUIRED) AND POWER CONNECTION TO CONTROLLER IS BY CONTRACTOR WITH WORK CONFORMING TO LOCAL CODES. EXTEND PE89 SHIELDED CABLE FROM THE FLOW SENSOR AND 4 #14 UFUL WIRES (TWO BLUE AND TWO ORANGE) FROM MASTER VALVE TO ASSOCIATED CONTROLLER. CONNECT WIRES TO THE APPROPRIATE SENSOR INPUT PORTS. FEES AND PERMITS ASSOCIATED WITH WORK ARE TO BE OBTAINED AND PAID BY CONTRACTOR. FINAL CONTROLLER LOCATION SHALL BE APPROVED BY CONSULTANT PRIOR TO INSTALLATION. MOUNT ONE WEATHERMATIC WEATHER STATION SENSOR ON POLEG WHERE THERE IS 20 FT. OF CLEARANCE FROM ANY OVERHANG OR OBSTRUCTING FEATURE. INSTALL SENSOR RECEIVER IN CONTROLLER ENCLOSURE. FINAL CONTROLLER AND SENSOR LOCATION SHALL BE APPROVED BY CONSULTANT PRIOR TO INSTALLATION.

REFER TO S	HEET
IR-0	IRRIGATION NOTES
IR-0	IRRIGATION SCHEDULE
IR-10 - IR3	IRRIGATION PLANS
IR-4 - IR6	IRRIGATION DETAILS
IR-7	IRRIGATION PUMP DETAILS

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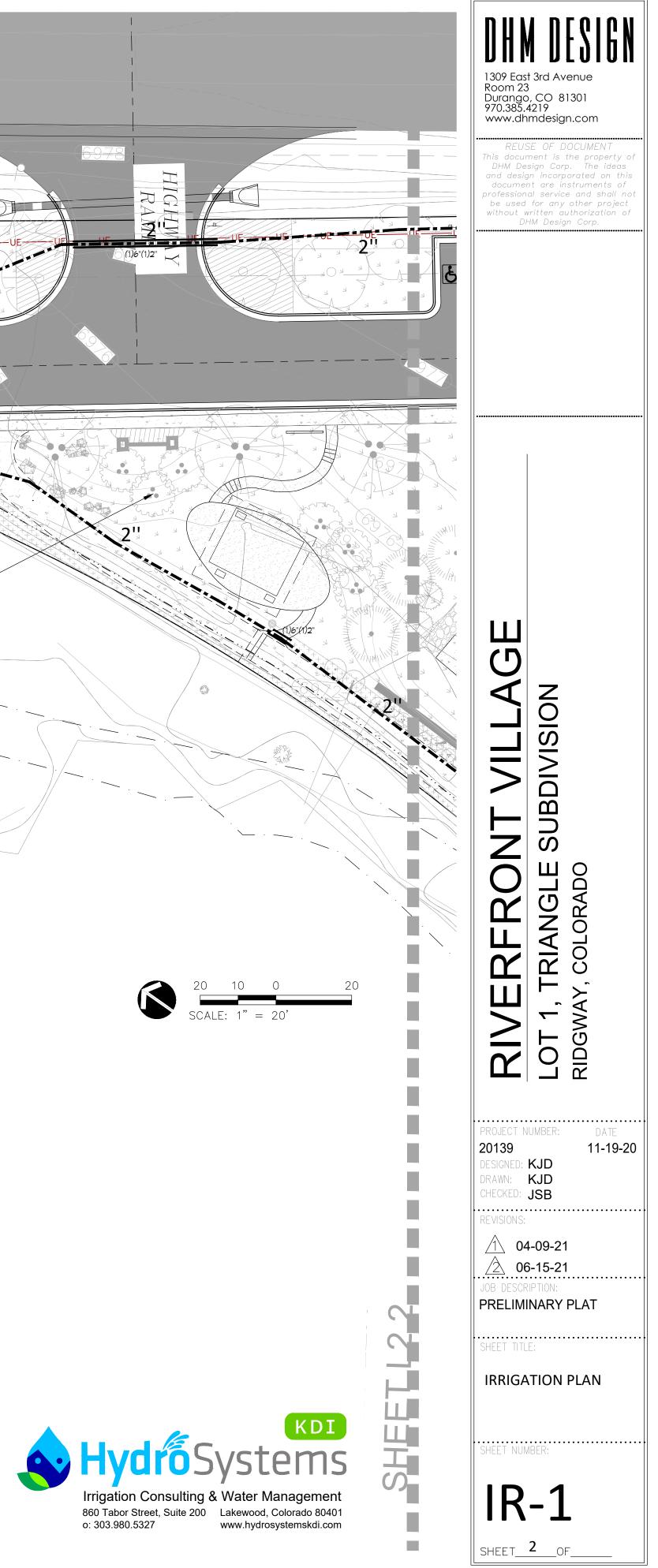
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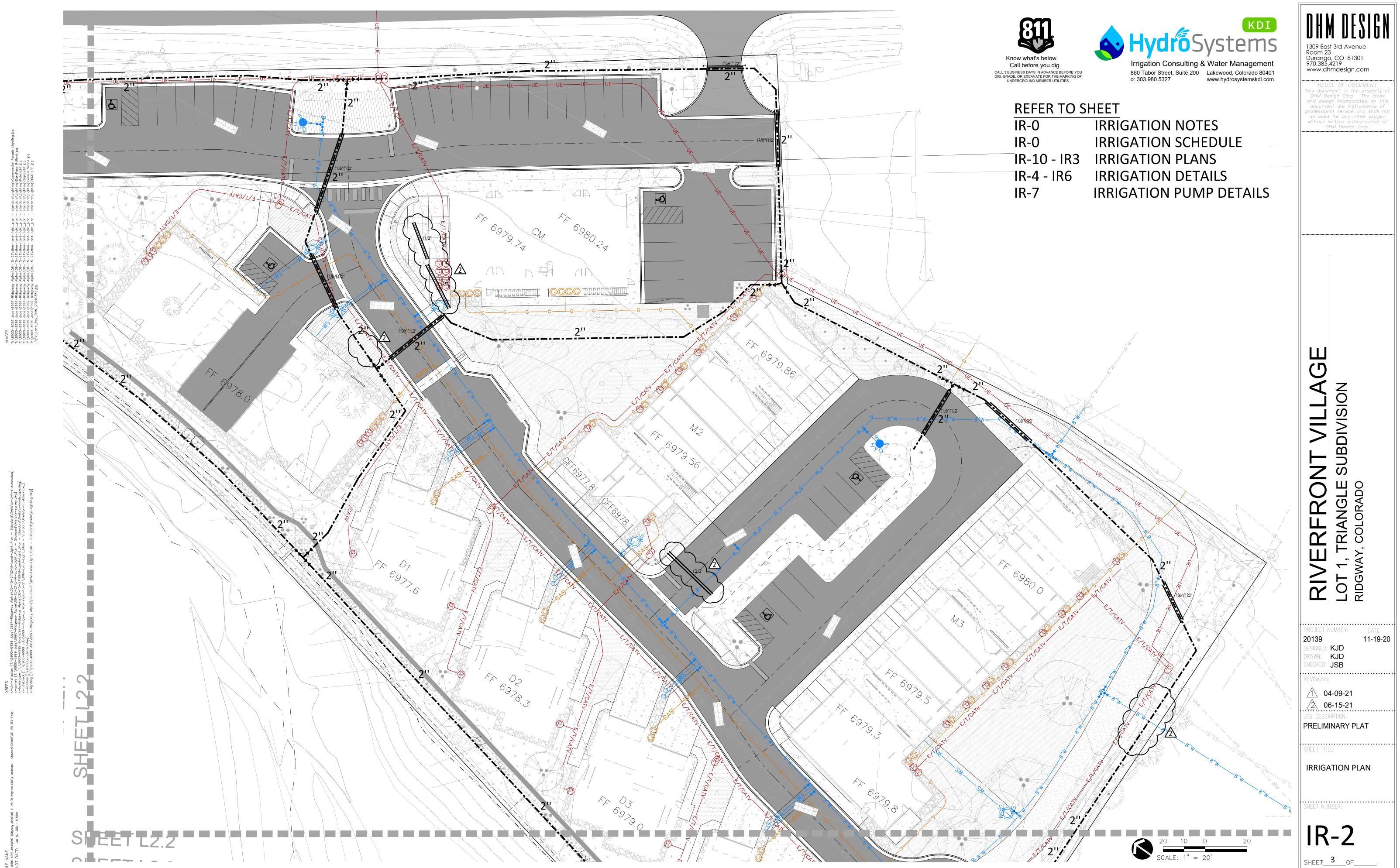
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POINT OF CONNECTION #1 - PUMP

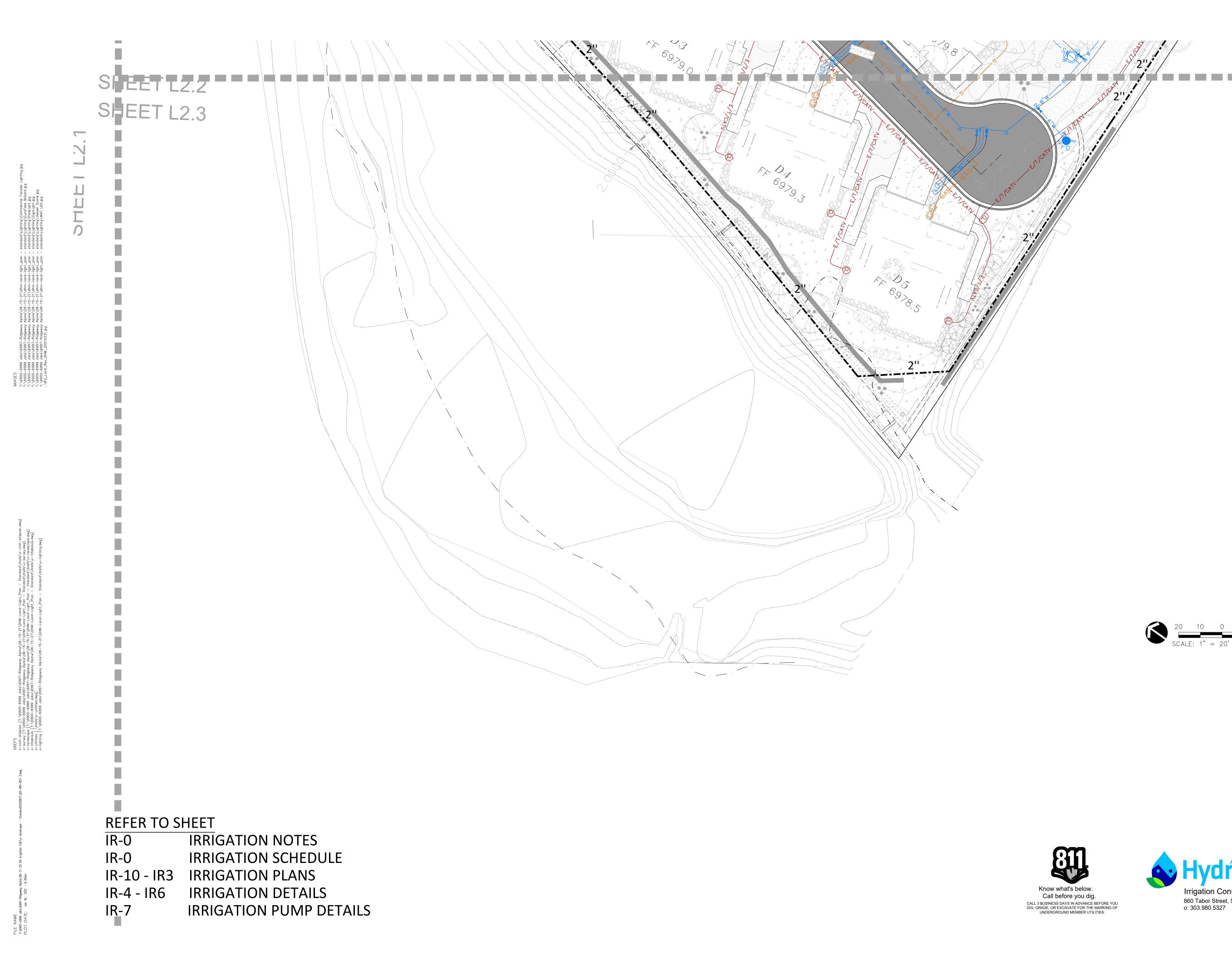
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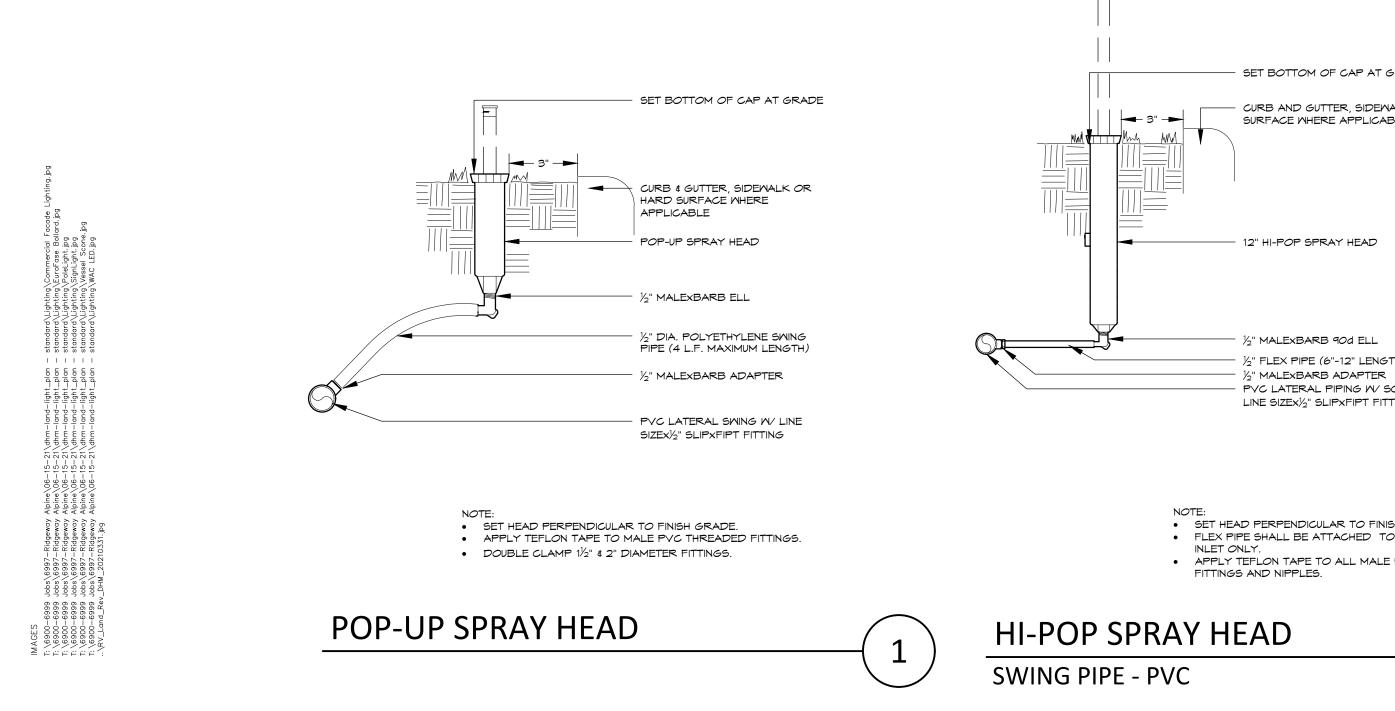
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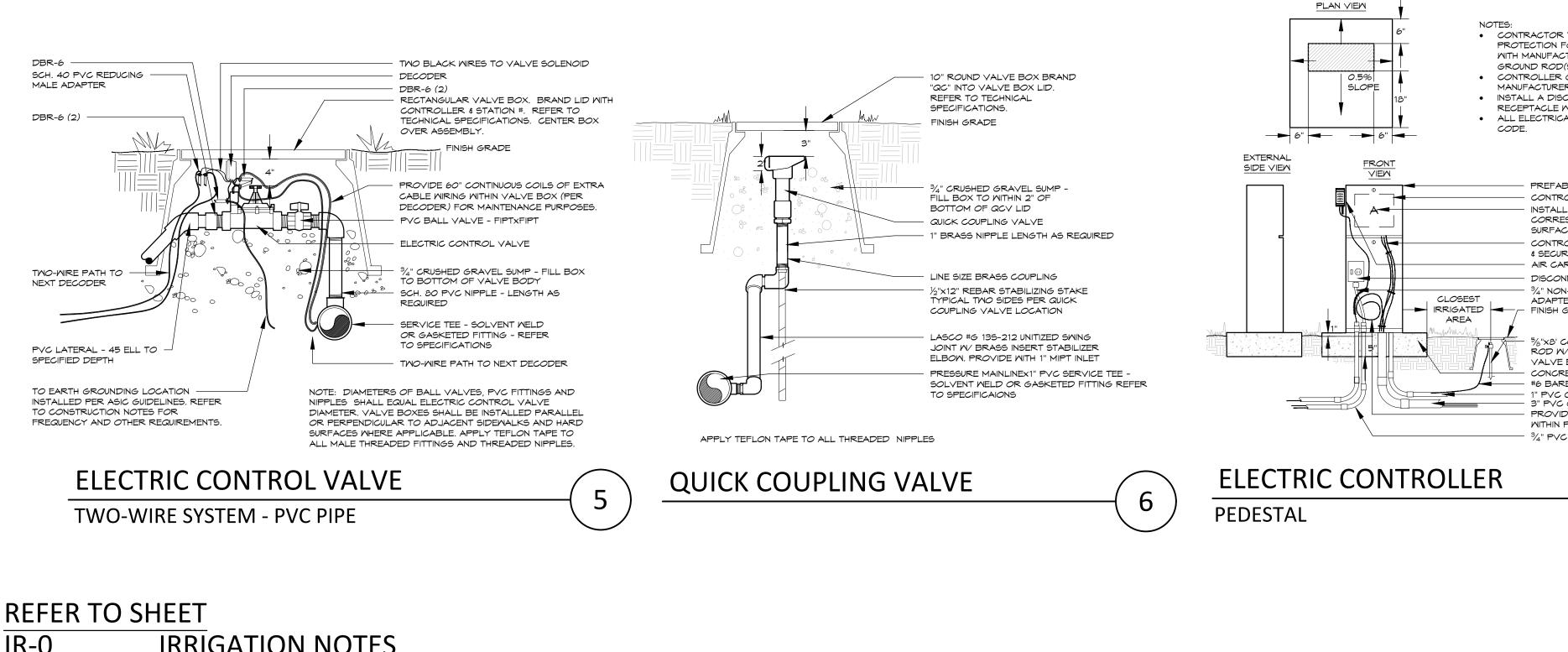


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KDI KDI HydroSystems Irrigation Consulting & Water Management 860 Tabor Street, Suite 200 Lakewood, Colorado 80401 0: 303.980.5327 Lakewood, Colorado 80401	SHEET NUMBER: IR-3 SHEET_4_OF	

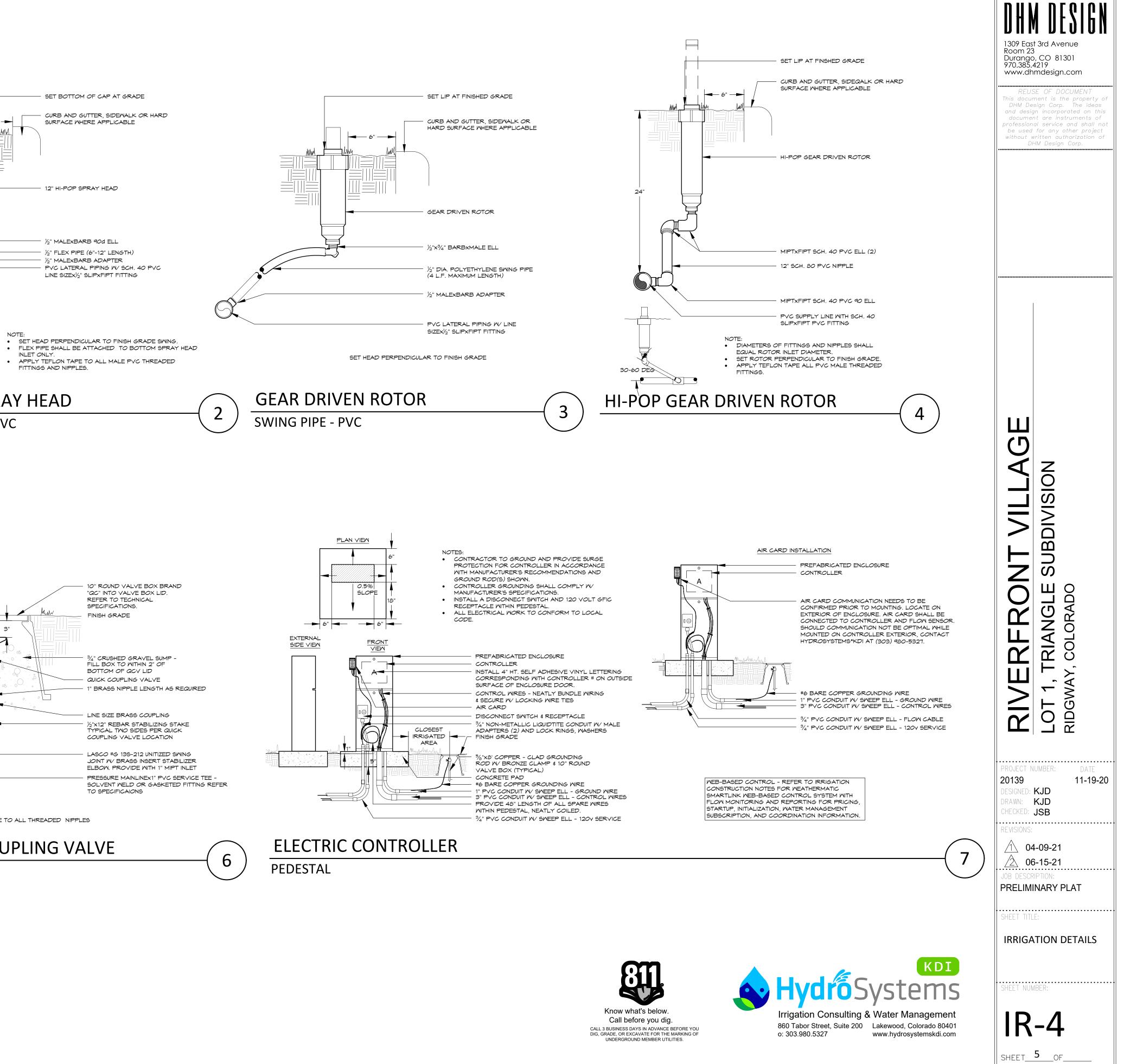


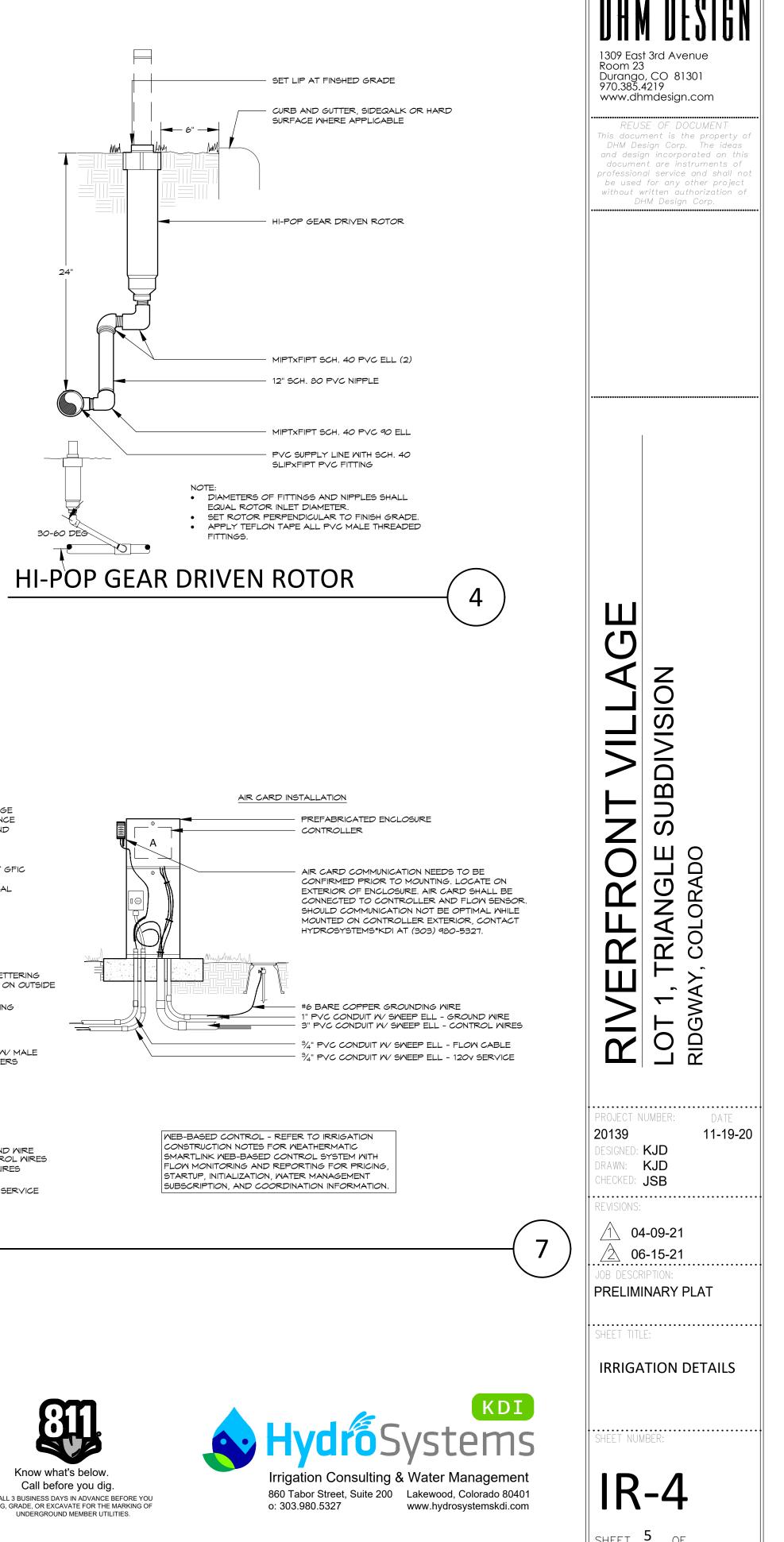
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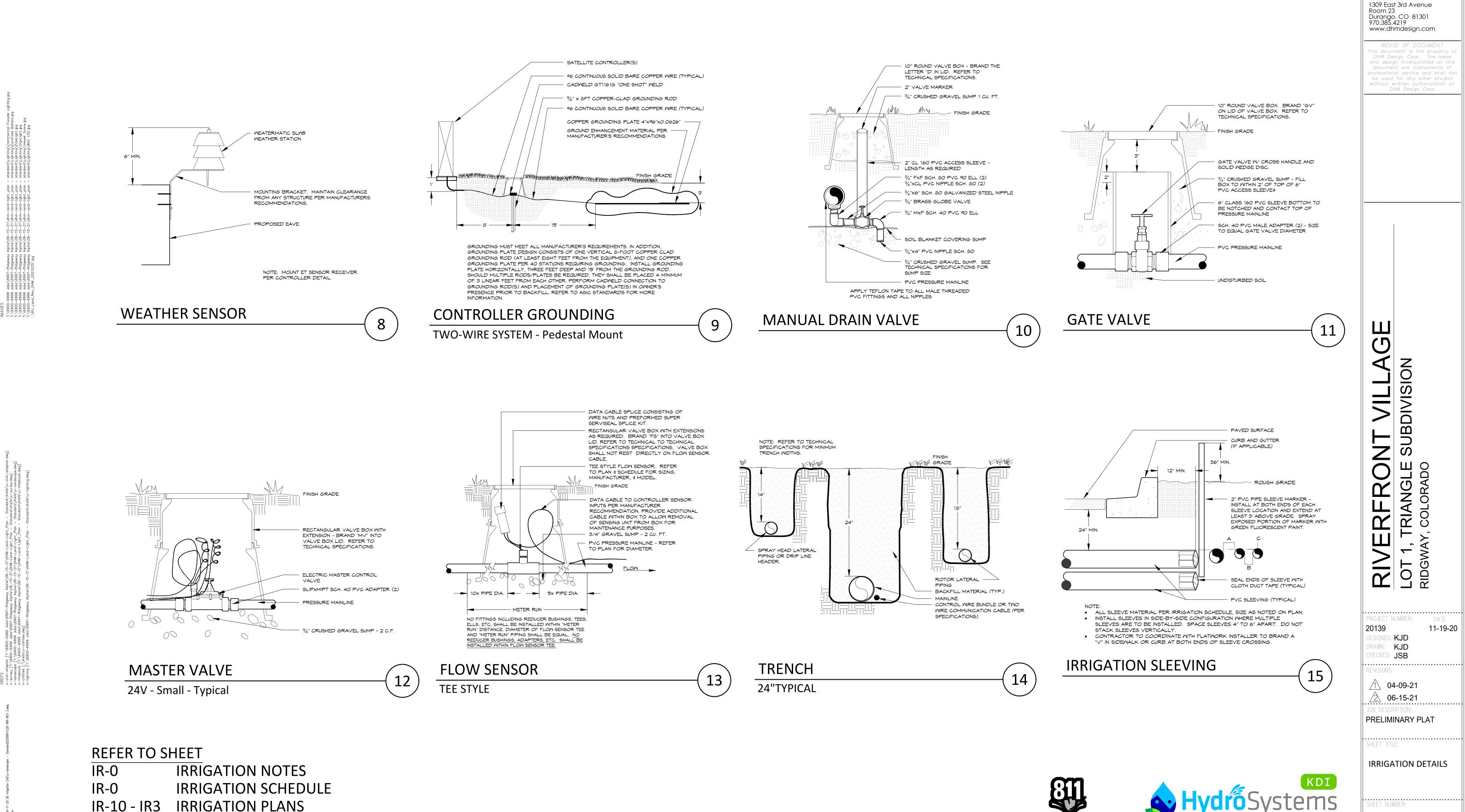


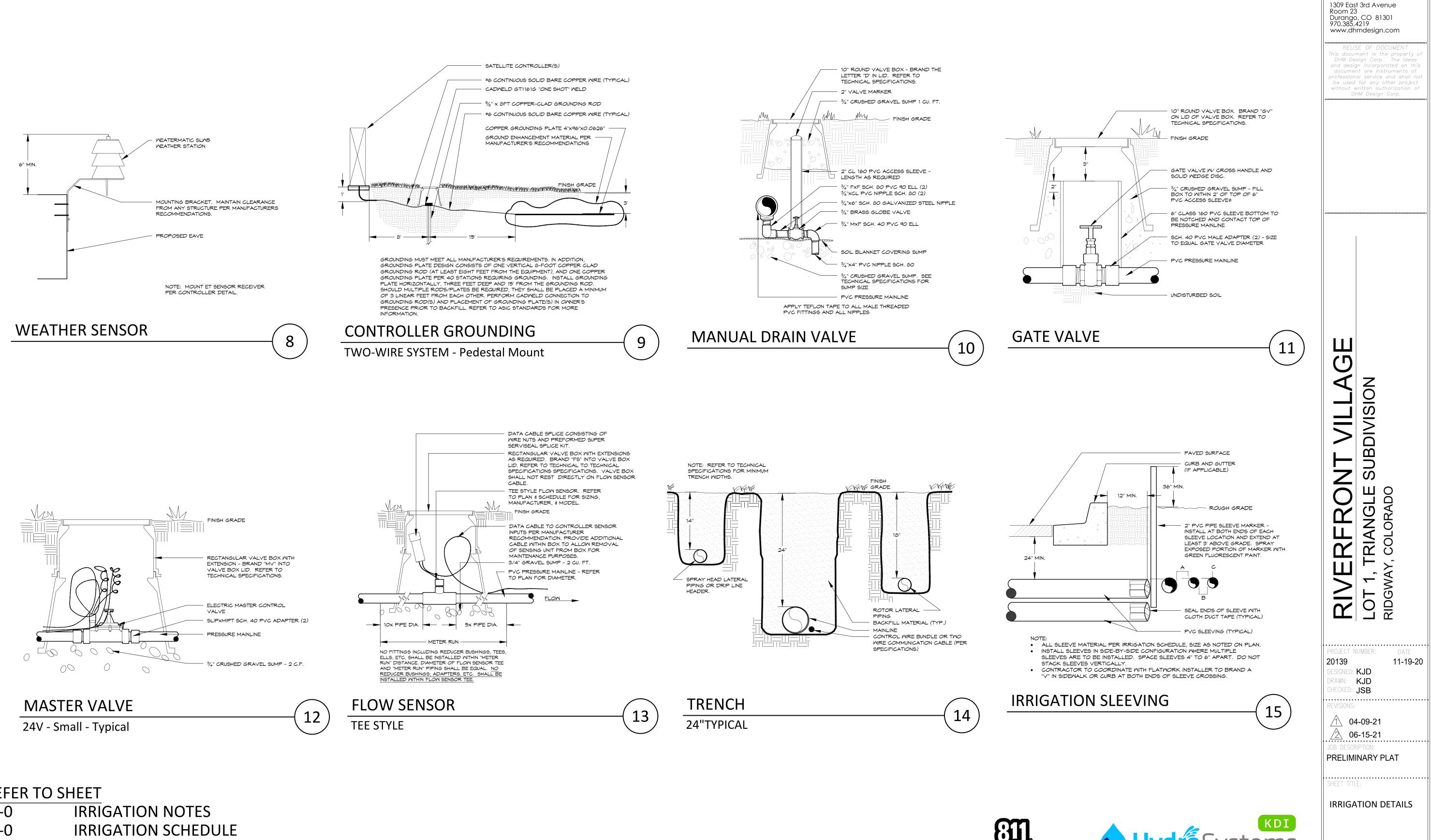


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IR-0	IRRIGATION SCHEDULE
IR-10 - IR3	IRRIGATION PLANS
IR-4 - IR6	IRRIGATION DETAILS
IR-7	IRRIGATION PUMP DETAILS









IRRIGATION NOTES
IRRIGATION SCHEDULE
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UNDERGROUND MEMBER UTILITIES.

Irrigation Consulting & Water Management 860 Tabor Street, Suite 200 Lakewood, Colorado 80401 o: 303.980.5327 www.hydrosystemskdi.com

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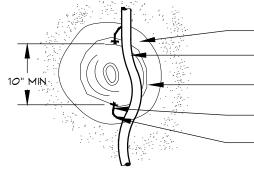
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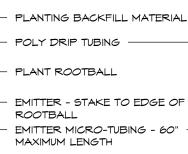
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IR-7	IRRIGATION PUMP DETAILS		

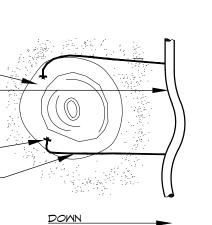
BELOW GRADE

DRIP EMITTER

PLANT SIZE	EMITTER FLOW RATE	EMITTER QTY. AT MULCHED BED LOCATIONS	EMITTER QTY. AT NATIVE SEED LOCATIONS
1 - 2 GALLON MATERIAL	0.5 GPH	ONE EACH	ONE EACH
5 GALLON MATERIAL	0.5 GPH	TWO EACH	TWO EACH
$1\frac{1}{2}$ " CALIPER TREE	1.0 GPH	THREE EACH	FOUR EACH
2" CALIPER TREE	1.0 GPH	FOUR EACH	SIX EACH
$2\frac{1}{2}$ " CALIPER TREE	1.0 GPH	SIX EACH	EIGHT EACH
3" CALIPER TREE	1.0 GPH	EIGHT EACH	TEN EACH
3 ¹ / ₂ " CALIPER TREE	1.0 GPH	NINE EACH	ELEVEN EACH
4" CALIPER TREE	1.0 GPH	TEN EACH	TWELVE EACH
6 FT. CONIFEROUS TREE	1.0 GPH	FOUR EACH	SIX EACH
8 FT. CONIFEROUS TREE	1.0 GPH	SIX EACH	NINE EACH
10 FT. CONIFEROUS TREE	1.0 GPH	EIGHT EACH	TWELVE EACH
12 FT. CONIFEROUS TREE	1.0 GPH	TEN EACH	FOURTEEN EACH

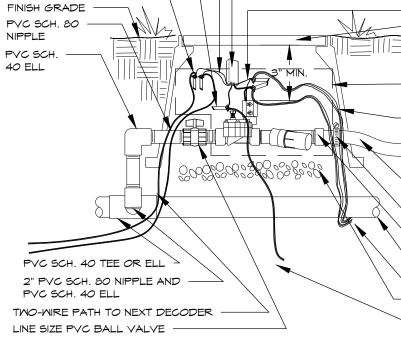






16

DRIP VALVE **TWO-WIRE SYSTEM - KIT - POLY PIPE**



NOTE:

DBR-6

DBR-6 (2)

ON DRIP TUBING.

VALVE BOX (PER DECODER) VALVE SIZE POLY PIPING -SWEEP TO SPECIFIED DEPTH STAINLESS STEEL WORM GEAR OR PINCH CLAMP

VALVE SIZE MIPTXINS. PVC ADAPTER

TWO-WIRE PATH TO NEXT DECODER

3" MIN. DEPTH $\frac{3}{4}$ " WASHED GRAVEL

TO EARTH GROUND INSTALLED IN

SEPERATE LOCATION PER ASIC GUIDELINES. 1 PER 12 DECODERS

ALL "MAINTENANCE" SPARE CONTROL/COMMON WIRING WITHIN

PROVIDE 60" CONTINUOUS COILS OF

- PVC MAINLINE

OR EVERY 1000 ft

DRIP VALVE ASSEMBLY (SEE SCHEDULE)

JUMBO VALVE BOX - BRAND BOX STATION NUMBER - REFER TO TECHNICAL SPECIFICATIONS.

LID W/ CONTROLLER AND

TWO BLACK WIRES TO VALVE SOLENOID DECODER DBR-6 (2)

INSTALL ASSEMBLY TO REST ON GRAVEL SUMP. CONTAIN ENTIRE ASSEMBLY WITHIN BOX. NO VALVE BOX EXTENSIONS WILL BE ACCEPTED. PROVIDE 3"-4" CLEARANCE BETWEEN TOP OF CONTROL VALVE SOLENOID AND BOTTOM OF VALVE BOX LID. TOP OF VALVE BOX TO BE FLUSH WITH FINISH GRADE. VALVE BOX SHALL NOT REST

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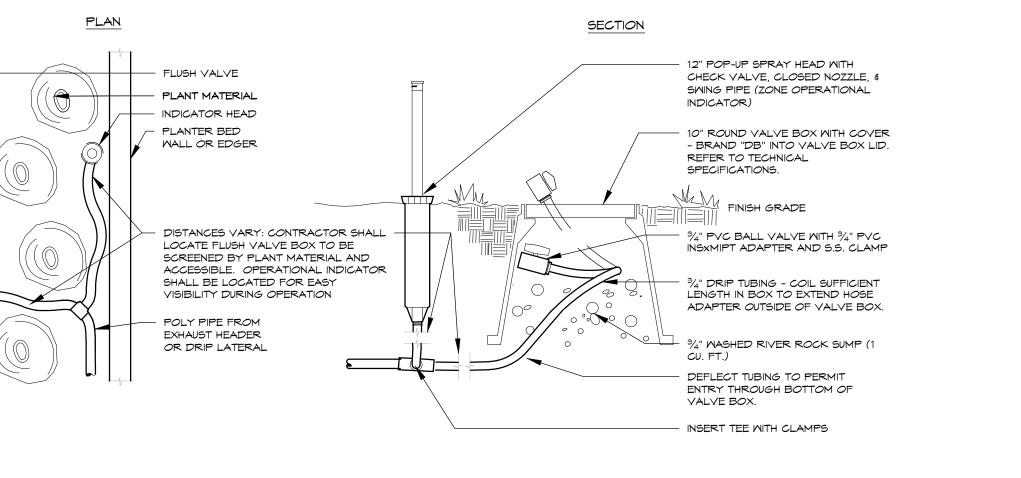
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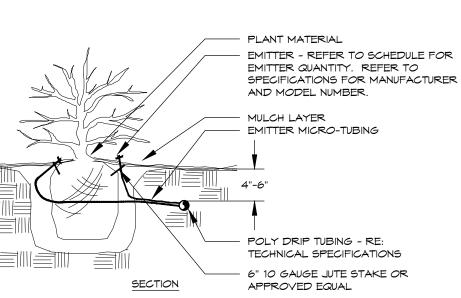
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18

DRIP FLUSH VALVE

WITH OPERATIONAL INDICATOR



APPROVED EQUAL TALL EMITTERS ON OPPOSING SIDES OF ROOTBALL. THREE OR MORE EMITTERS ALL BE EQUALLY SPACED AROUND ROOT BALL. TTERS ARE TO BE INSTALLED TO CLEAR SURFACE BY A MINIMUM OF 1" AND A

XIMUM OF 2". ISH ALL LINES THOROUGHLY, INCLUDING EMITTER MICRO-TUBING PRIOR TO TTER INSTALLATION.

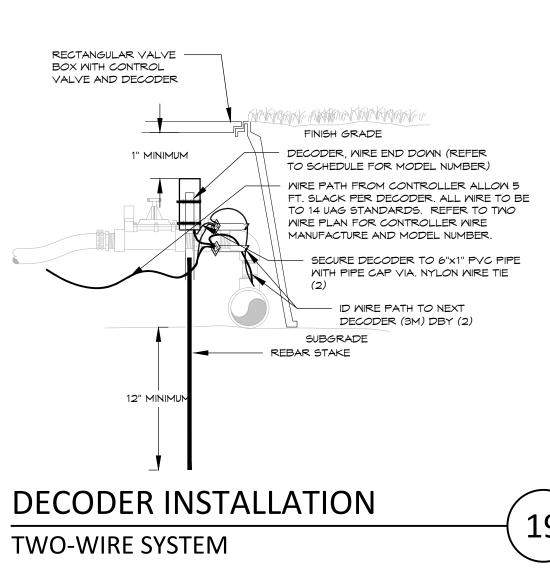
PLANTING ON A 4:1 SLOPE OR STEEPER, INSTALL BOTH EMITTERS ON UPHILL SIDE ROOT BALL. ITTERS SHALL BE SELF-FLUSHING, PRESSURE COMPENSATING-TYPE UNLESS

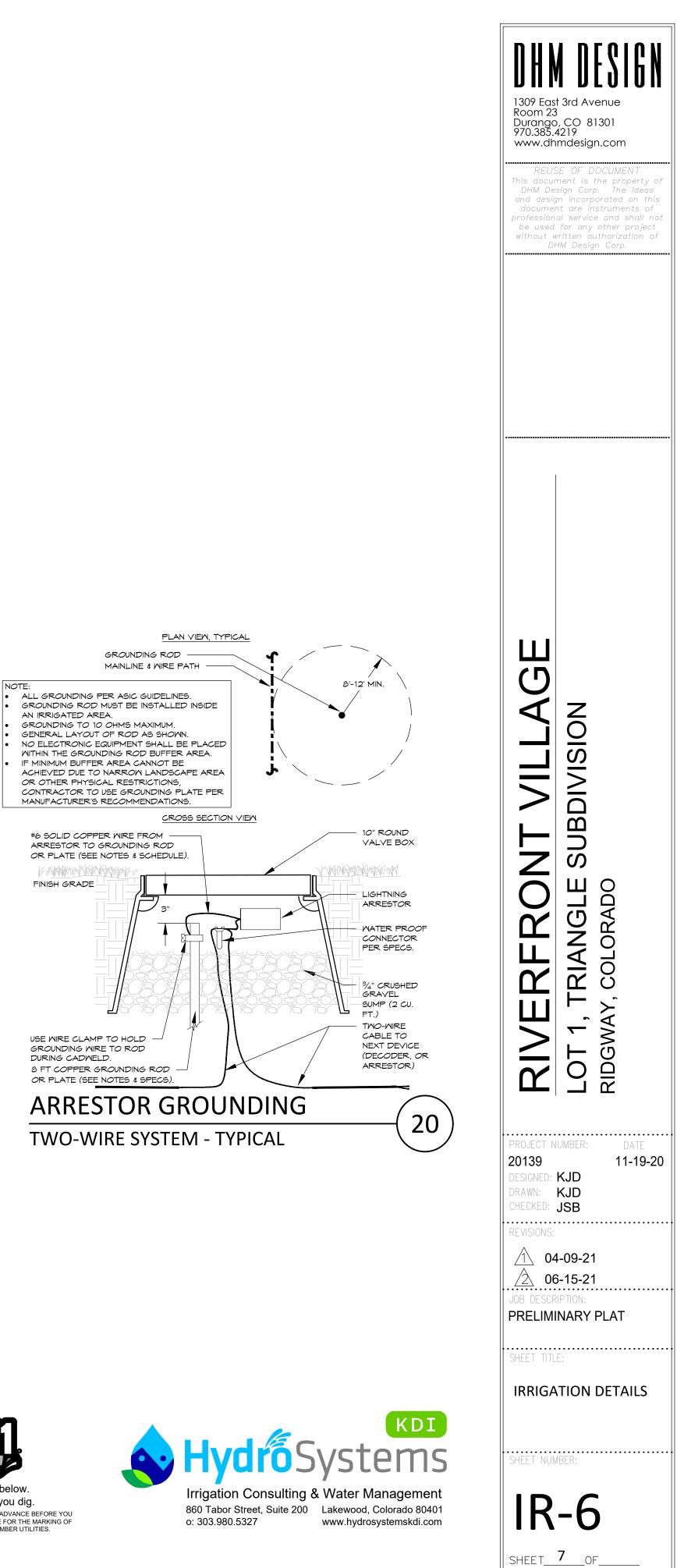
TED OTHERWISE WITHIN TECHNICAL SPECIFICATIONS. RIP VALVE ZONES ARE DESIGNED TO ACCOUNT FOR DIFFERENCES IN PLANT QUIREMENTS (HYDROZONES) AND SUN EXPOSURE. INTRACTOR SHALL ENSURE HYDROZONES ARE VALVED SEPARATELY AS SHOWN

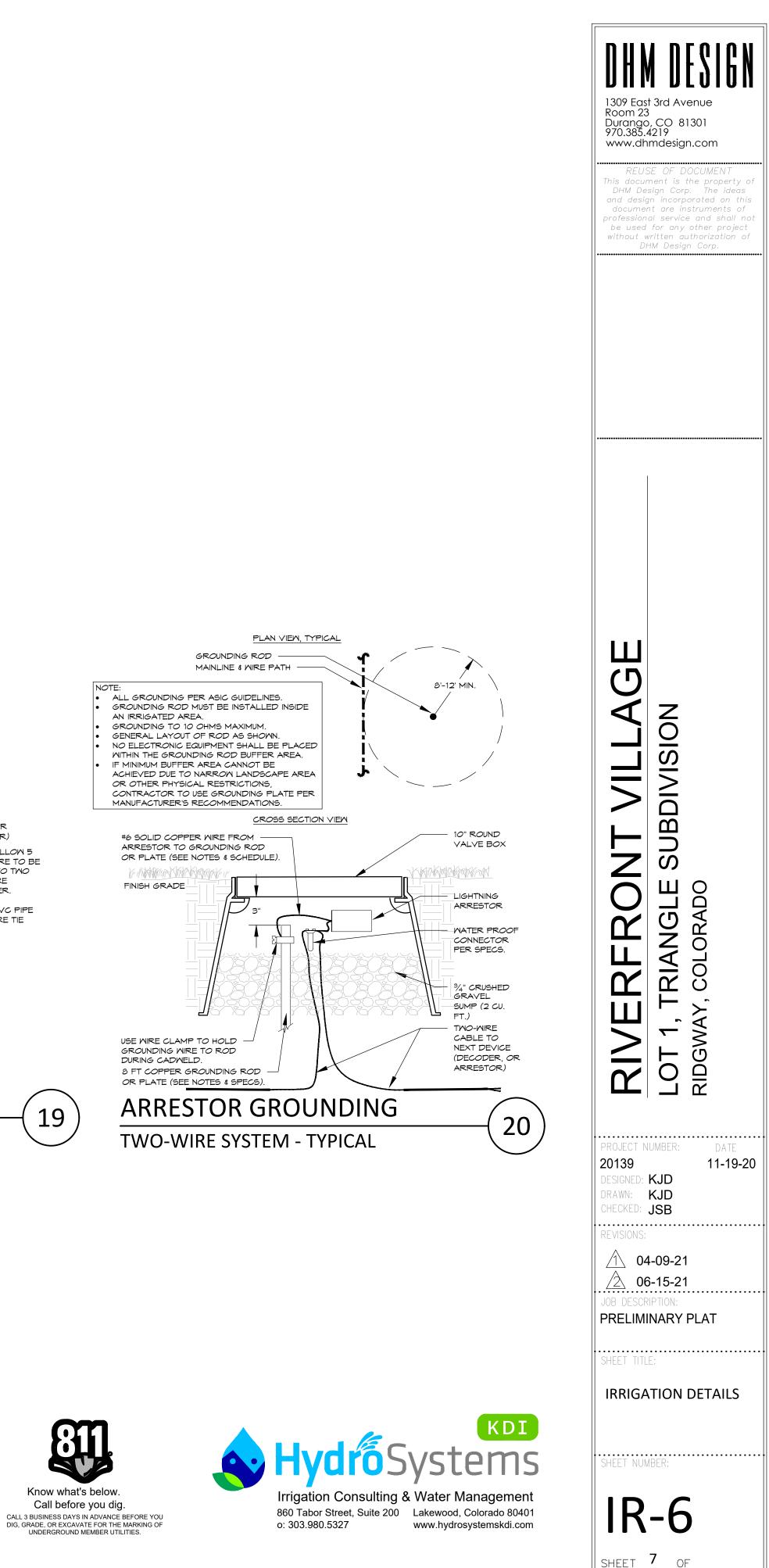
PLAN. E CONDITIONS MAY DICTATE THAT MULTIPLE SUN EXPOSURES ARE VALVED SETHER DURING THE DESIGN PROCESS. CONTRACTOR SHALL ADJUST EMITTER HEDULE AS FOLLOWS:

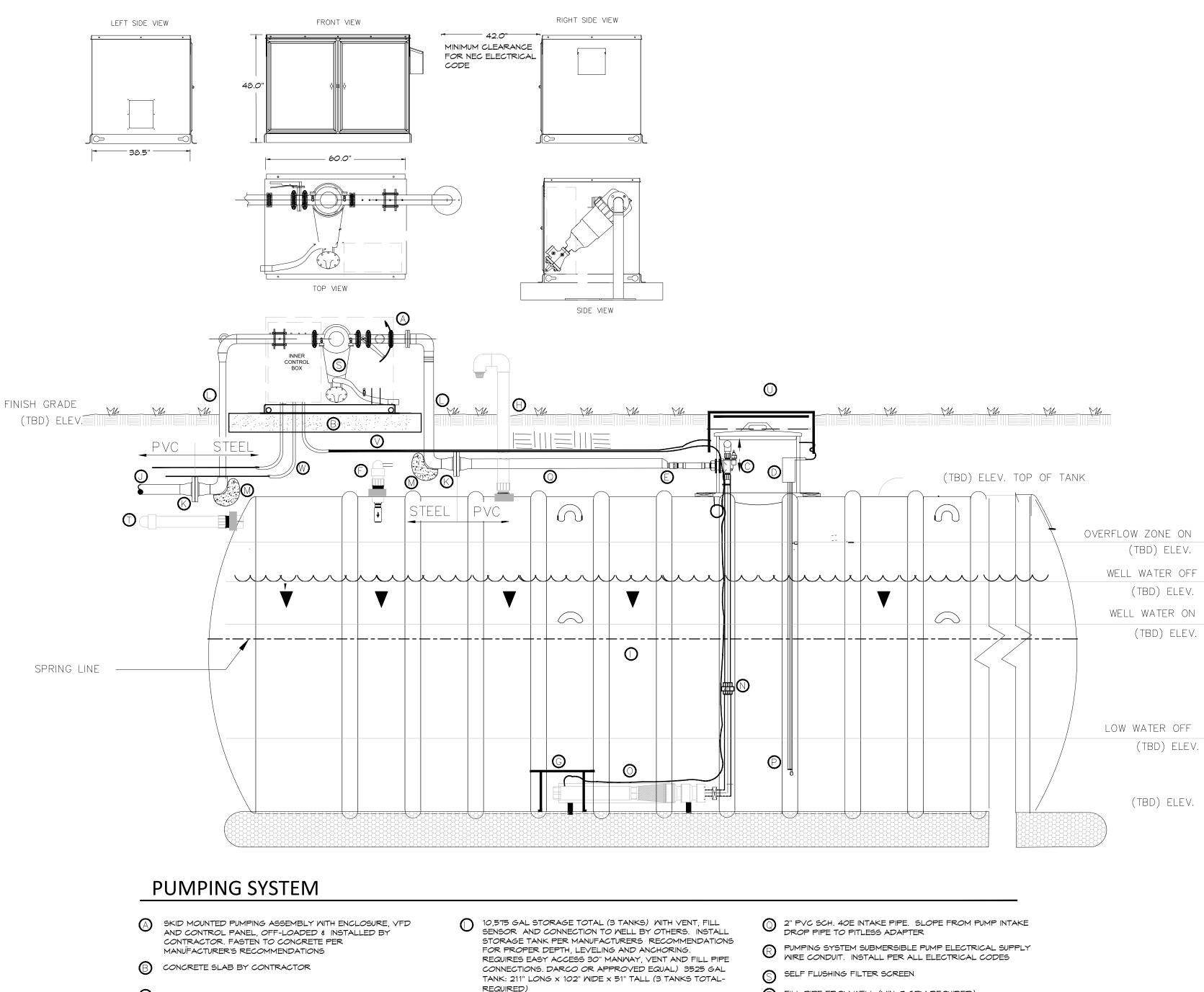
EMITTER QUANTITIES SHALL REMAIN THE SAME BUT EMITTER GALLONAGES SHALL BE DOUBLED FOR PLANTS WITH SOUTH AND WEST EXPOSURES. EMITTER QUANTITIES AND GALLONAGE SHALL BE AS SHOWN IN SCHEDULE FOR PLANTS WITH NORTH AND EAST EXPOSURES.

PLANTINGS WITH NORTH AND EAST EXPOSURE SHALL DICTATE VALVE RUN-TIMES AND CONTRACTOR SHALL ADJUST SCHEDULING ACCORDINGLY.









- 1.5" MAAS PITLESS ADAPTER WITH STAINLESS STEEL THREADED FLEXIBLE COUPLING. REINFORCE MANWAY ACCESS AS NEEDED
- \bigcirc TANK LEVEL SENSORS MOUNT BY PUMP MANUFACTURER. START FILL 12" BELOW WATER OFF ELEVATION. INSTALL BY CONTRACTOR
- (E) 1.5" x 2" HDPE DR11 ECCENTRIC REDUCER WITH ADAPTERS
- IRRIGATION STORAGE TANK FILL PIPE FROM WELL (RE: CIVIL)
- () VORTEX PLATE
- 4" GALVANIZED TANK VENT PIPE BY CONTRACTOR
- O PVC MAINLINE. INSTALL MANUAL DRAIN VALVE WITH 3 CUBIC FOOT PEA GRAVEL SUMP PRIOR TO FIRST TEE
- TRANSITION COUPLING IPS X PVC
- 2" STEEL PUMP DROP PIPES
- THRUST BLOCK
- (N) 1.5" PVC SCH. 80 PUMP DROP PIPE WITH UNION
- HORIZONTALLY MOUNTED SUBMERSIBLE PUMP 8" FROM BOTTOM OF TANK WITH CHECK VALVE ON DISCHARGE
- (P) LEVEL SENSORS. SUPPLIED BY PUMP MANUFACTURER INSTALLED BY CONTRACTOR

PUMP STATION AND STORAGE TANK **REFER TO SHEET** IR-0 **IRRIGATION NOTES** IR-0 **IRRIGATION SCHEDULE** IR-10 - IR3 **IRRIGATION PLANS** IR-4 - IR6 **IRRIGATION DETAILS**

IRRIGATION PUMP DETAILS

IR-7

WATER STORAGE TANK SYSTEM

Pumping System Notes

- PUMP STATION SHALL MEET REQUIREMENTS OF THE CONSTRUCTION DOCUMENT AND DETAILS. REQUIREMENTS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
- A) SUBMERSIBLE 2 HP, 3600RPM, 240V, 1 -PHASE PUMP.
- B) PUMP PANEL AND CONTROLS PER SPECIFICATIONS. UL LISTED. HAND/OFF/ AUTO SELECTOR SWITCH MICROPROCESSOR CONTROLLED SEQUENCING OF PUMP TWO LINE OPERATOR INTERFACE
 - PRESSURE READOUT ALARM CONDITIONS WITH SAFETY SHUTDOWN
 - LOW DISCHARGE PRESSURE SHUTDOWN
 - HIGH DISCHARGE PRESSURE SHUTDOWN VFD FAULT SHUTDOWN LOW WATER LEVEL SHUTDOWN, ALARM LIGHT OVERLOAD, PHASE, IMBALANCE/LOW VOLTAGE PROTECTION
- ETHERNET CONNECTION AND MODEM
- C) PREFABRICATED ENCLOSURE CONSTRUCTED OF MARINE GRADE ALUMINUM D) (2) 2"X 2" FLGXPE STEEL DISCHARGE PIPE WITH SWIVEL CONNECTION. REQUEST DROP DEPTH WHEN ORDERING.
- F) PRESSURE TRANSDUCER H) AIR RELEASE VALVE
- I) RISER PIPE FROM PUMP AND MOTOR
- J) CHECK VALVE K) FILL LEVEL TRANSDUCER WITH FLOAT
- 2-POINT LEVEL CONTROL/SAFETY
- L) PUMP START RELAY ON/OFF (FROM IRRIGATION CONTROLLER) M) STATION DISCHARGE ISOLATION VALVE N) EXTERNAL MOUNTED 30 AMP NEMA 4 SERVICE RATED DISCONNECT PANEL
- O) SURGE PROTECTION FOR MAIN STATION AND SOLID STATE CONTROLS P) INDIVIDUAL MOTOR FUSED PROTECTION Q) OPERATION AND MAINTENANCE MANUAL
- R) WELL PUMP START RELAY 24 VOLT AC DRY CONTACT S) OVERFLOW ZONE PUMP START - 24 VOLT AC DRY CONTACT (VIA LEVEL SENSING)
- 2. CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION BETWEEN CONCRETE PAD CONSTRUCTION, ELECTRICAL CONDUIT AND PUMP STATION INSTALLATION
- 3. CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION AND INSTALLATION PIPING BETWEEN FINAL PUMP LOCATION AND TANK CONNECTIONS 4. CONTRACTOR IS RESPONSIBLE FOR ALL CONNECTIONS BETWEEN ELECTRICAL SERVICE AND
- PUMP STATION. ALL WORK SHALL CONFORM TO ALL APPLICABLE CODES
- 6. EXCESS SOIL GENERATED BY EXCAVATION SHALL BE REMOVED FROM SITE BY CONTRACTOR.
- 7. ANCHOR PUMP SYSTEM CONTROL ENCLOSURE TO CONCRETE PAD PER MANUFACTURERS RECOMMENDATIONS'
- 8. CONTRACTOR IS RESPONSIBLE FOR ALL ADDITIONAL EQUIPMENT FOR THE INSTALLATION OF THE PUMPING THAT IS NOT SUPPLIED BY PUMP MANUFACTURER

GENERAL NOTES

- 1. TANK SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS WITH PROPER ADDITIONAL BACKFILL AND ANCHORING MATERIALS AS REQUIRED. 2. INSTALL A VORTEX PLATE OVER THE SUBMERSIBLE PUMP INTAKE AREA TO ALLOW MAX
- OF TANK. 3. ALL ELECTRICAL WORK SHALL CONFORM TO NATIONAL AND ELECTRICAL CODES. CONTRACTOR RESPONSIBLE FOR ANY REQUIRED ELECTRICAL
- DIAGRAMS AND PERMITS. 4. ANY EQUIPMENT AND/OR MATERIALS REQUIRED FOR PUMP INSTALLATION NOT SUPPLIED BY PUMP MANUFACTURER IS THE RESPONSIBILITY OF THE CONTRACTOR. VERIFY ALL INCLUDED MATERIALS PRIOR TO ORDERING PUMP.
- 5. ALL PIPE PENETRATIONS AND MANHOLE ACCESS IN CONCRETE SHALL HAVE PROPER EXPANSION MATERIAL INSTALLED.
- 6. WIRE CONDUITS: POWER SUPPLY TO IRRIGATION PUMP CONTROLLER 2. TWO YELLOW #14 AWG CONTROL WIRES FROM IRRIGATION CONTROLLER TO IRRIGATION PUMP FOR PUMP START RELAY OPERATION POWER FROM IRRIGATION CONTROLLER TO TANK
- ACCESS MANWAY 3. LEVEL SENSING WIRES FROM CONTROLLER TO TANK MANWAY 4. ETHERNET CONNECTION
- 5. FOUR # 14 AWG CONTROL WIRES UNDER ROAD TO MAINLINE IN SOFT AREA 5.1. TWO PURPLE FOR 24 VOLT AC WELL PUMP START RELAY
- 5.2. TWO GREEN FOR 24 VOLT AC OVERFLOW ZONE OPERATION 7. VERIFY PROJECT SITE WATER TABLE WITH RELATIONSHIP TO IRRIGATION TANK SPRING LINE AND COORDINATE ANY REQUIRED ANCHORING WITH MANUFACTURER.

Know what's below. Call before you dig. CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF

- FILL PIPE FROM WELL (MIN. 7 GPM REQUIRED)
- MANHOLE ACCESS 36" MINIMUM ACCESS WITH FOR TANK MANWAY ACCESS SYSTEM
- CONDUITS FOR SUBMERSIBLE POWER SUPPLY AND
- CONDUITS FOR PUMPING SYSTEM POWER SUPPLY AND #14 AWG WELL PUMP START RELAY, #14 AWG CONTROL WIRES FOR TANK OVER FLOW ZONE AND

- EXTENSION AND LEVELING RINGS AS NEEDED, COVER
- LEVEL SENSING CONTROLS. EXTEND TO TANK MANWAY
- NETWORK CONNECTION PUMP CONTROLLER.

THE PRIMARY WATER SOURCE FOR THE IRRIGATION SYSTEM WILL BE FROM A WELL, WITH A MINIMUM DELIVERY OR 7 GPM. WATER WILL BE PIPED FROM THE WELL TO THE STORAGE TANKS AND WILL BE CONTROLLED BY PUMP LEVEL TRANSDUCER IN THE TANK TO OPERATE A WELL PUMP START RELAY WELL PUMP LOCATION. (IRRIGATION PANEL WILL SEND 24 VOLT AC SIGNAL)

CONTRACTOR TO INSTALL A PRECISION PUMP STATION PPS MODEL #V15002X00020-075V322410NC SUBMERSIBLE PUMP STATION AS DETAILED. PUMP STATION SHALL PROVIDE 20 GPM AT DISCHARGE PRESSURE OF 75 PSI.

PRIMARY PUMP SHALL BE CAPABLE OF 20 GPM AT 10-15 PSI DISCHARGE PRESSURE

5. ELECTRICAL PERMITS SHALL BE OBTAINED AND PAID BY CONTRACTOR. ELECTRICAL DRAWINGS REQUIRED FOR PERMITTING SHALL BE PREPARED AND SUBMITTED BY CONTRACTOR

WATER USE - FIELD FABRICATE 24" SQUARE STEEL PLATE WITH LEGS 24" FROM BOTTOM

KJD KJD JSB



o: 303.980.5327

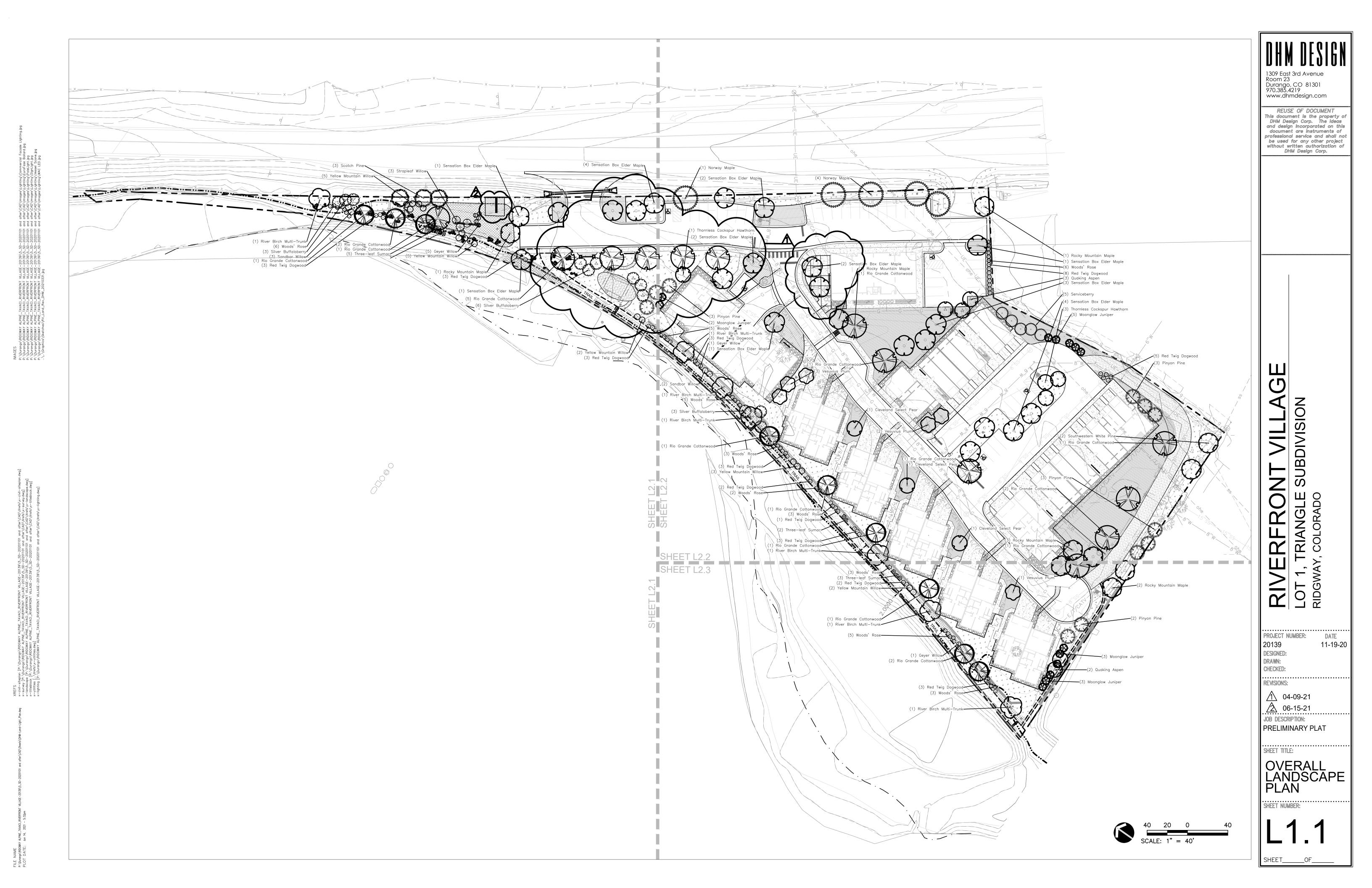


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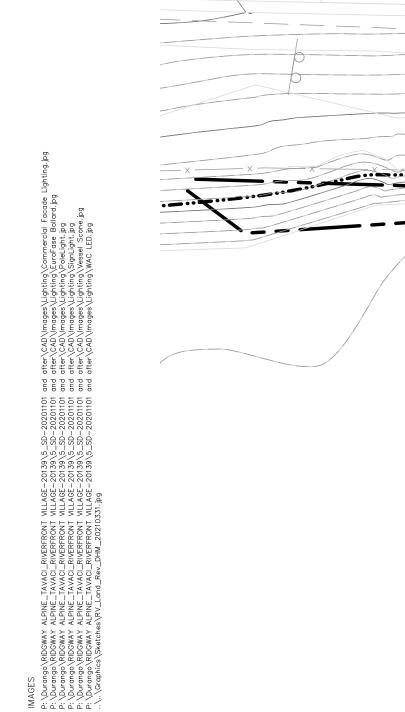
IRRIGATION DETAILS

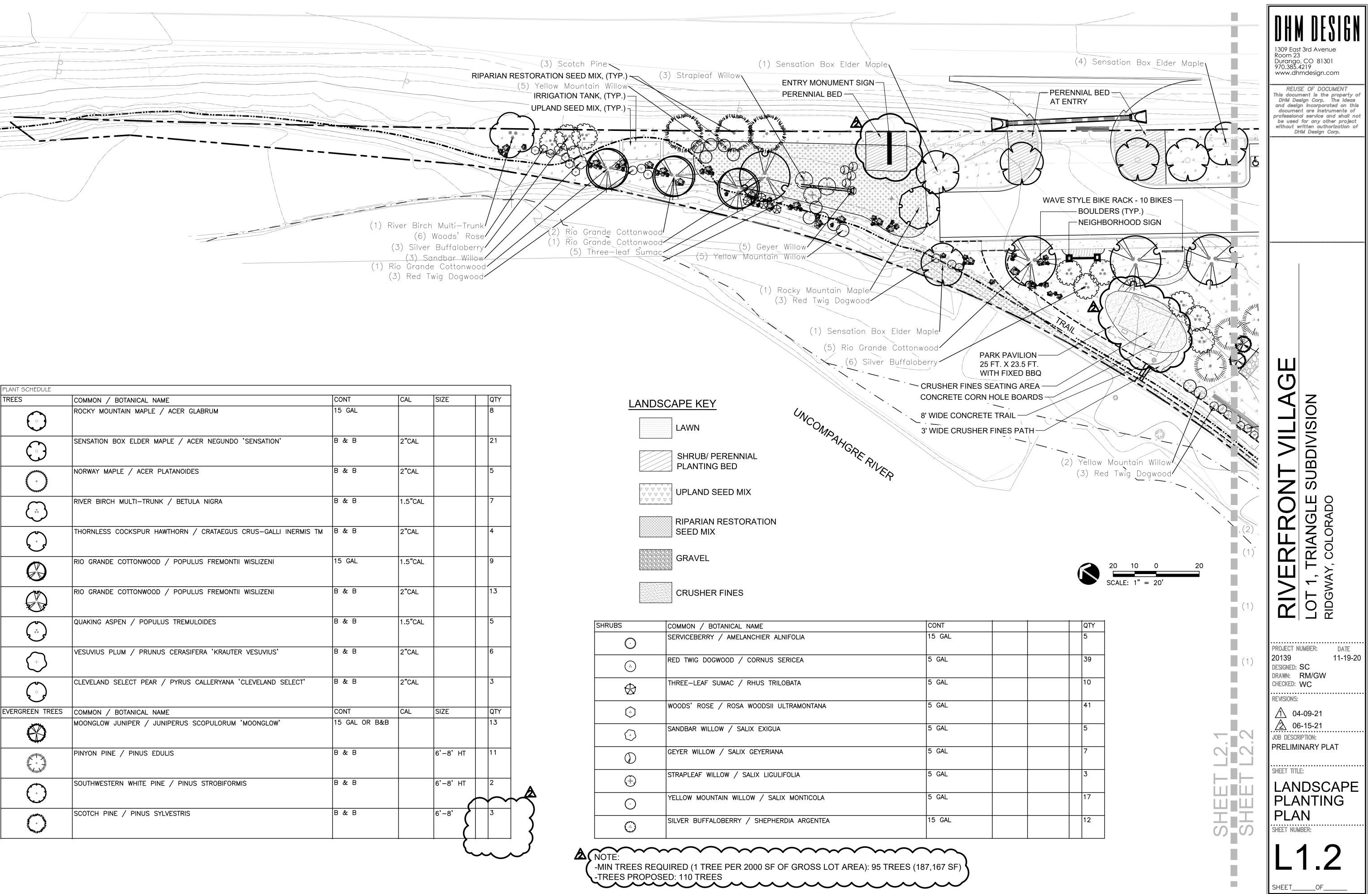




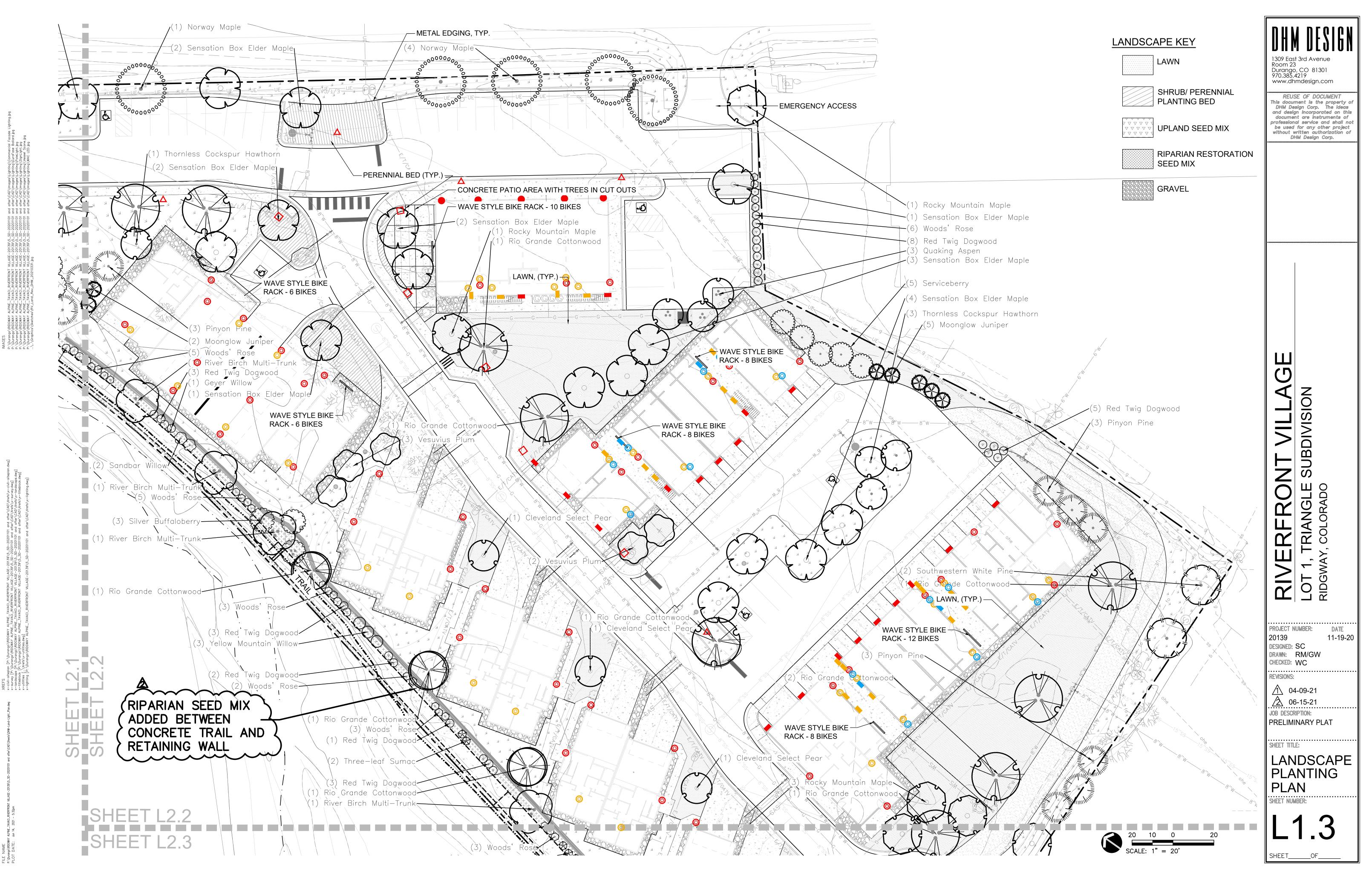
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	EVERGREE
ts/DHM-Land-Light_Plan.awg	Ŕ
ts/DHM-L	Muni

	SENSATION BOX ELDER MAPLE / ACER NEGUNDO 'SENSATION'	B & B	2"CAL	
50000000000000000000000000000000000000	NORWAY MAPLE / ACER PLATANOIDES	B & B	2"CAL	
	RIVER BIRCH MULTI-TRUNK / BETULA NIGRA	B & B	1.5"CAL	
	THORNLESS COCKSPUR HAWTHORN / CRATAEGUS CRUS-GALLI INERMIS TM	B & B	2"CAL	
\bigcirc	RIO GRANDE COTTONWOOD / POPULUS FREMONTII WISLIZENI	15 GAL	1.5"CAL	
	RIO GRANDE COTTONWOOD / POPULUS FREMONTII WISLIZENI	B & B	2"CAL	
(°,	QUAKING ASPEN / POPULUS TREMULOIDES	B & B	1.5"CAL	
	VESUVIUS PLUM / PRUNUS CERASIFERA 'KRAUTER VESUVIUS'	B & B	2"CAL	
	CLEVELAND SELECT PEAR / PYRUS CALLERYANA 'CLEVELAND SELECT'	B & B	2"CAL	
EVERGREEN TREES	COMMON / BOTANICAL NAME	CONT	CAL	SIZE
\bigcirc	MOONGLOW JUNIPER / JUNIPERUS SCOPULORUM 'MOONGLOW'	15 GAL OR B&B		
Manual	PINYON PINE / PINUS EDULIS	B & B		6'-8'
\bigcirc	SOUTHWESTERN WHITE PINE / PINUS STROBIFORMIS	B & B		6'-8'
	SCOTCH PINE / PINUS SYLVESTRIS	B & B		6'-8'

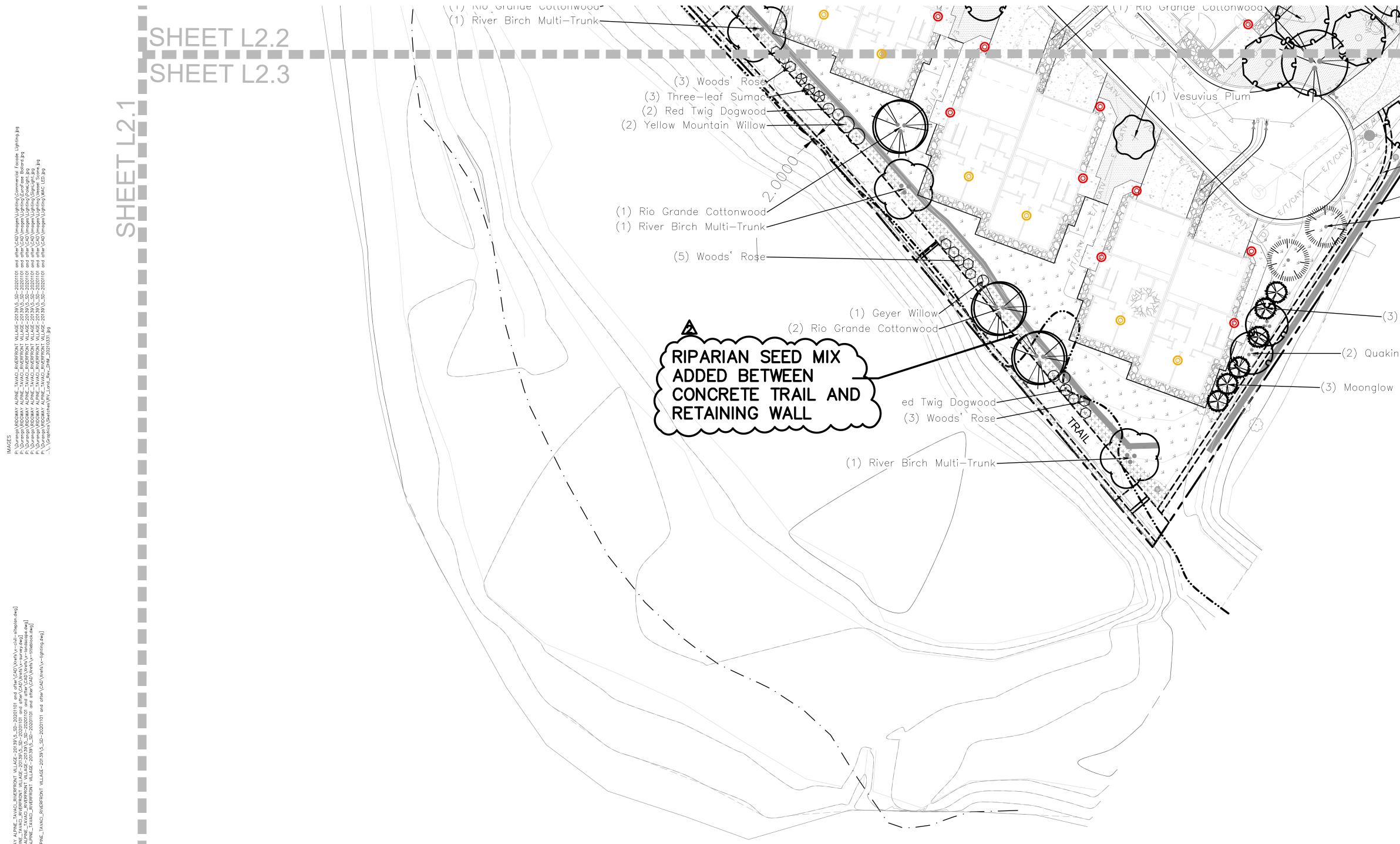




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SEED MIXES

Upland Seed Mix			
Scientific Name	<u>Common Name</u>	Percentage	Seeding Rate PLS Lbs./acre
Pascopyrum smithii	Western Wheatgrass	30%	6.6
Pseudoregneria spicata	Bluebunch Wheatgrass ("secar" variety)	20%	4.4
Elymus trachycaulus	Slender Wheatgrass	15%	3.3
Nassella viridula	Green Needlegrass	15%	3.3
Festuca idahoensis	Idaho Fescue	5%	1.1
Oryzopsis hymenoides	Indian Ricegrass	5%	1.1
Andropogon scoparius	Little Bluestem	5%	1.1
Koeleria macrantha	Prairie Junegrass	5%	1.1
	TOTAL	100%	22

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Riparian Restoration Seed Mix			
			Seeding Rate PLS
<u>Scientific Name</u>	<u>Common Name</u>	<u>Percentage</u>	Lbs./acre
Deschampsia caespitos	Tufted Hairgrass	30%	10.
Elymus lanceolatus	Streambank Wheatgrass	20%	7.
Pascopyron smithii	Western Wheatgrass	20%	7.
Carex utriculata	Beaked Sedge	10%	3
luncus balticus	Baltic Rush	10%	3
Poa palustris	Fowl Bluegrass	10%	3
	TOTAL	100%	3

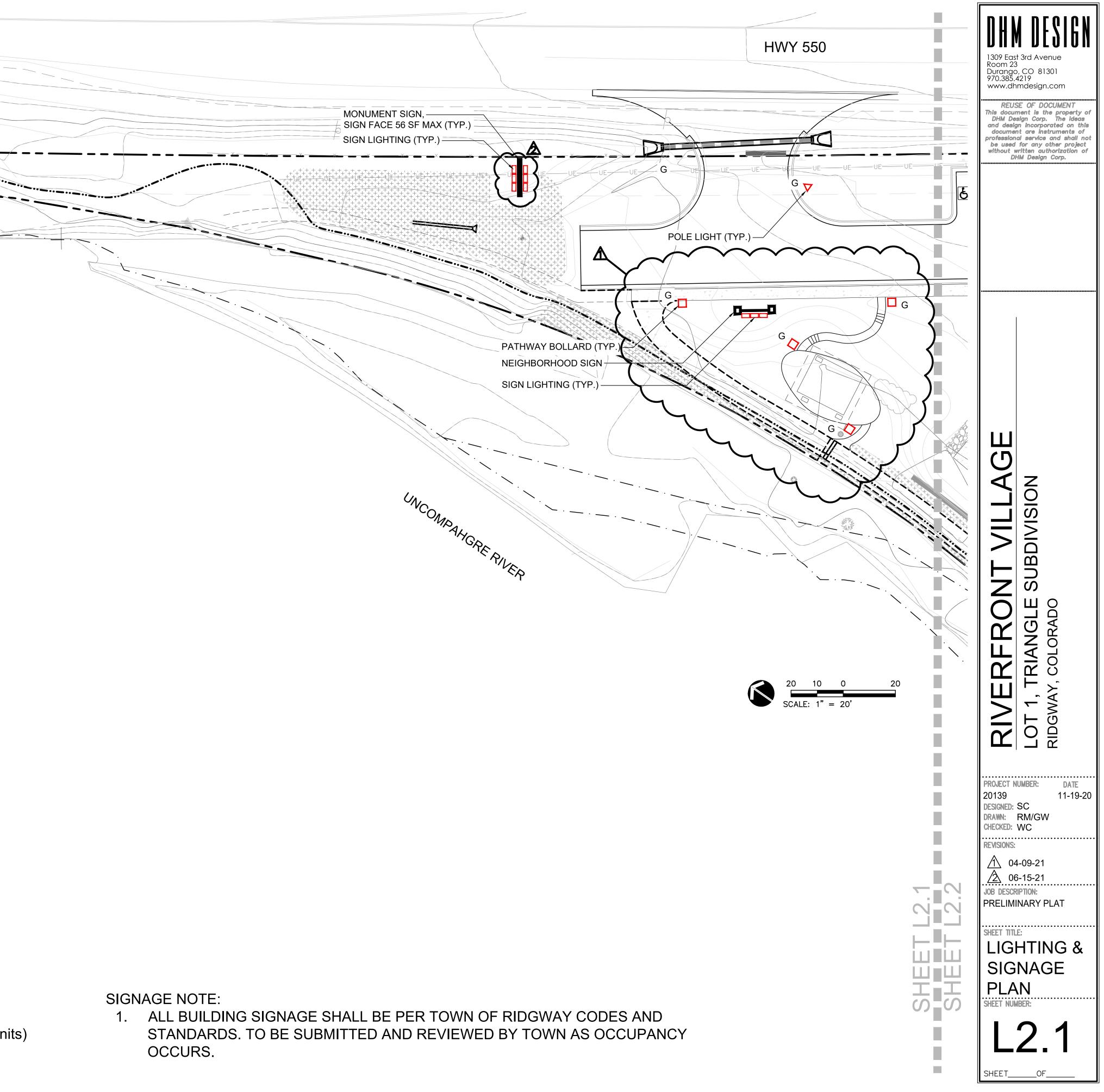
(2) Rocky Mountain Maple 2 FT. WIDE GRAVEL TRAIL (2) Pinyon Pine	DIAM DESIGN J309 East 3rd Avenue Room 23 Durango, CO 81301 970.385.4219 www.dhmdesign.com REUSE OF DOCUMENT This document is the property of DHM Design Corp. The ideas and design incorporated on this document are instruments of professional service and shall not be used for any other project without written authorization of DHM Design Corp.
Maanglow Juniper ig Aspen Juniper	RIVERFRONT VILLAGE LOT 1, TRIANGLE SUBDIVISION RIDGWAY, COLORADO
LANDSCAPE KEYImage: LawnImage: Lawn <t< td=""><td>PROJECT NUMBER: DATE 20139 11-19-20 DESIGNED: SC DRAWN: RM/GW CHECKED: WC REVISIONS: A 04-09-21 A 06-15-21 JOB DESCRIPTION: PRELIMINARY PLAT SHEET TITLE: LANDSCAPE PLANDSCAPE PLANTING PLAN SHEET NUMBER: L114</td></t<>	PROJECT NUMBER: DATE 20139 11-19-20 DESIGNED: SC DRAWN: RM/GW CHECKED: WC REVISIONS: A 04-09-21 A 06-15-21 JOB DESCRIPTION: PRELIMINARY PLAT SHEET TITLE: LANDSCAPE PLANDSCAPE PLANTING PLAN SHEET NUMBER: L114

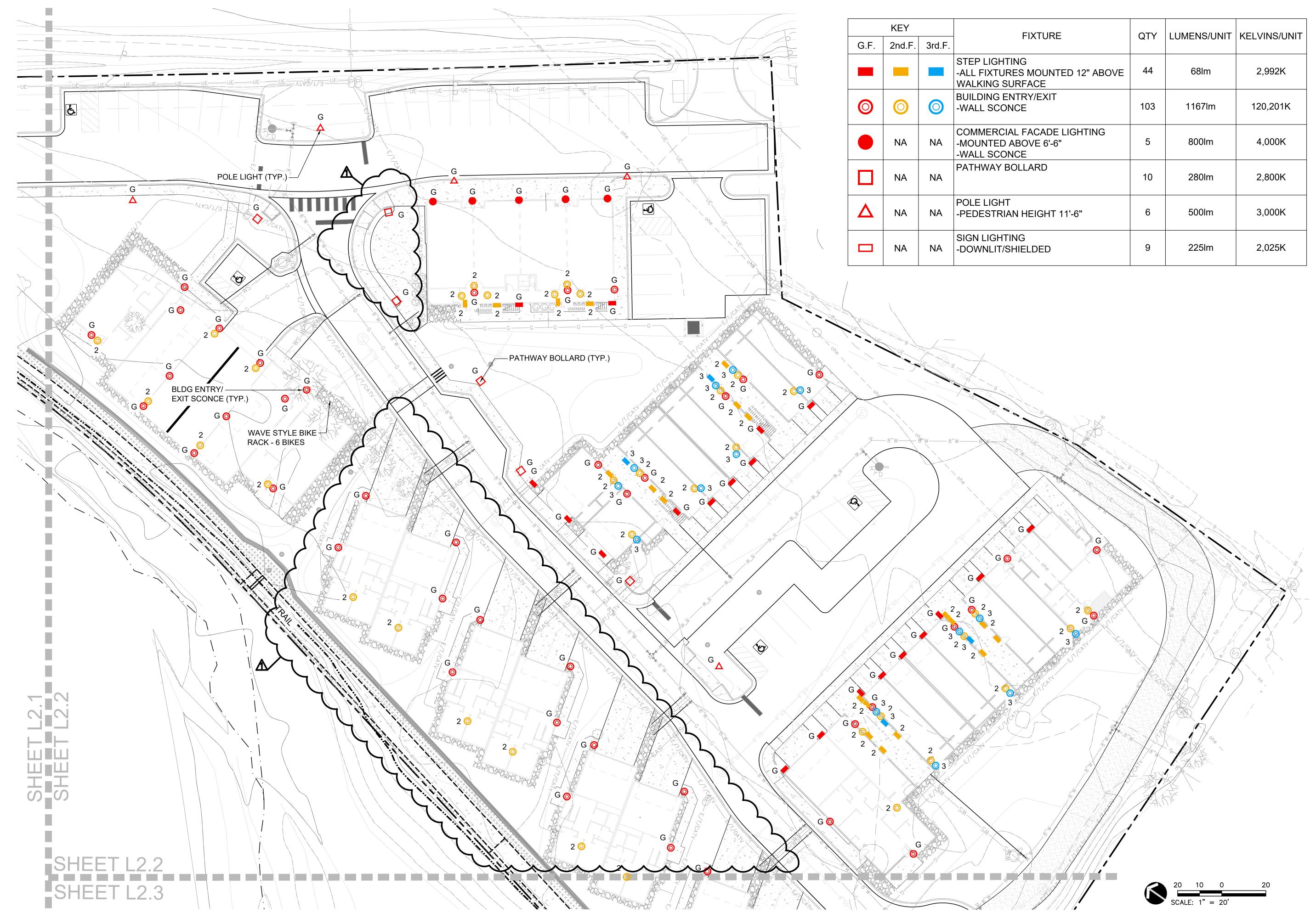
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5E - 20139/ 39/5_50- 20139/5_9 20139/5_9	G.F.	2nd.F.	3rd.F.	
LRIVERFRONT VILLA FERONT VILLAGE- ERFRONT VILLAGE- ERFRONT VILLAGE-2: RFRONT VILLAGE-2:				STEP LIC -ALL FIX WALKING
SWAY ALPINE_TAVAC ALPINE_TAVACI_RIVE ALPINE_TAVACI_RIVE Y ALPINE_TAVACI_RIVE J ALPINE_TAVACI_RIVI	Ø	0	0	BUILDING -WALL S
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		NA	NA	PATHWA
⟨DHM−Land−Light_Plan.dwg	Δ	NA	NA	POLE LIC -PEDEST
99\S_SD-20201101 and after\CAD\Sheets\DHM-Land-Light_Plan.dwg		NA	NA	SIGN LIG -DOWNL
99.5_SD-2020				

	KEY		- FIXTURE		LUMENS/UNIT	KELVINS/UNIT
G.F.	2nd.F.	3rd.F.		QTY		REEVINS/ONIT
			STEP LIGHTING -ALL FIXTURES MOUNTED 12" ABOVE WALKING SURFACE	44	68lm	2,992K
Ø	\bigcirc	0	BUILDING ENTRY/EXIT -WALL SCONCE	103	1167lm	120,201K
	NA	NA	COMMERCIAL FACADE LIGHTING -MOUNTED ABOVE 6'-6" -WALL SCONCE	5	800lm	4,000K
	NA	NA	PATHWAY BOLLARD	10	280lm	2,800K
	NA	NA	POLE LIGHT -PEDESTRIAN HEIGHT 11'-6"	6	500lm	3,000K
	NA	NA	SIGN LIGHTING -DOWNLIT/SHIELDED	Q.	225lm	2,025K

- NOTE: 1. TOTAL LUMENS: 135,018 lm 2. LUMENS ALLOWED (25,000lm/acre+2,000lm/unit): 181,500lm (4.3 acres, 38 units) 3. Statistics in table REFI ECT LIGHTING ON ALL FLOORS





IMAGES P: \Durango\RIDGWAY ALPINE_TAVAC_RIVERFRONT VILLAGE-20139\5_SD-20201101 and after\CAD\mages\Lighting\Commercial F(P: \Durango\RIDGWAY ALPINE_TAVAC_RIVERFRONT VILLAGE-20139\5_SD-20201101 and after\CAD\mages\Lighting\PoleLighting P: \Durango\RIDGWAY ALPINE_TAVAC_RIVERFRONT VILLAGE-20139\5_SD-20201101 and after\CAD\mages\Lighting\PoleLighting P: \Durango\RIDGWAY ALPINE_TAVAC_RIVERFRONT VILLAGE-20139\5_SD-20201101 and after\CAD\mages\Lighting\PoleLighting P: \Durango\RIDGWAY ALPINE_TAVAC_RIVERFRONT VILLAGE-20139\5_SD-20201101 and after\CAD\mages\Lighting\Vessel Signiting P: \Durango\RIDGWAY ALPINE_TAV

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FILE NAME P:\Durango\RIDGW PLOT DATE:

JRE	QTY	LUMENS/UNIT	KELVINS/UNIT
JNTED 12" ABOVE	44	68lm	2,992K
ХIТ	103	1167lm	120,201K
DE LIGHTING 6'-6"	5	800lm	4,000K
)	10	280lm	2,800K
HT 11'-6"	6	500lm	3,000K
D	9	225lm	2,025K

DIADA DECISION Jaop East 3rd Avenue Room 23 Durango, CO 81301 970.385.4219 www.dhmdesign.com REUSE OF DOCUMENT This document is the property of DHM Design Corp. The ideas and design incorporated on this document are instruments of professional service and shall not be used for any other project without written authorization of DHM Design Corp.
RIVERFRONT VILLAGE LOT 1, TRIANGLE SUBDIVISION RIDGWAY, COLORADO
PROJECT NUMBER: DATE 20139 11-19-20 DESIGNED: SC DRAWN: RM/GVV CHECKED: WC REVISIONS: A 04-09-21 A 04-09-21 A 06-15-21 JOB DESCRIPTION: PRELIMINARY PLAT SHEET TITLE: LIGHTING & SIGNAGE PLAN SHEET NUMBER:

SHEET___OF___

IMAGES
P: Nourongo RIDGWAY ALPINE_TAVACI_RIVERFRONT VILLAGE_20139\5_SD-20201101 and after/CAD\Images\Lighting\Commponents
P: Nourongo RIDGWAY ALPINE_TAVACI_RIVERFRONT VILLAGE_20139\5_SD-20201101 and after\CAD\Images\Lighting\EuroF
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FILE NAME P:\Durango\RIDC PLOT DATE

		KEY			ΟΤΥ		
-	G.F.	2nd.F.	3rd.F.	FIXTURE	QTY	LUMENS/UNIT	KELVINS/
				STEP LIGHTING -ALL FIXTURES MOUNTED 12" ABOVE WALKING SURFACE	44	68lm	2,992
	0	\bigcirc	0	BUILDING ENTRY/EXIT -WALL SCONCE	103	1167lm	120,20 ⁻
		NA	NA	COMMERCIAL FACADE LIGHTING -MOUNTED ABOVE 6'-6" -WALL SCONCE	5	800lm	4,000
		NA	NA	PATHWAY BOLLARD	10	280lm	2,800
-	Δ	NA	NA	POLE LIGHT -PEDESTRIAN HEIGHT 11'-6"	6	500lm	3,000
		NA	NA	SIGN LIGHTING -DOWNLIT/SHIELDED	9	225lm	2,025
L							1

STEP LIGHTING

WAC LEDme 5"W Black Horizontal 3000K LED Step and Wall Light MODEL: WL-LED100FCBK 3000K

BUILDING ENTRY/EXIT

IEET L2.2

SHEET L2.3



WAC LIGHTING YESSEL MODEL: WS-W9101 BLACK DOWN LIGHT ONLY 3000K



POLE LIGHT



MODEL: PKWS-ANG 11'-6 " HEIGHT 3000K

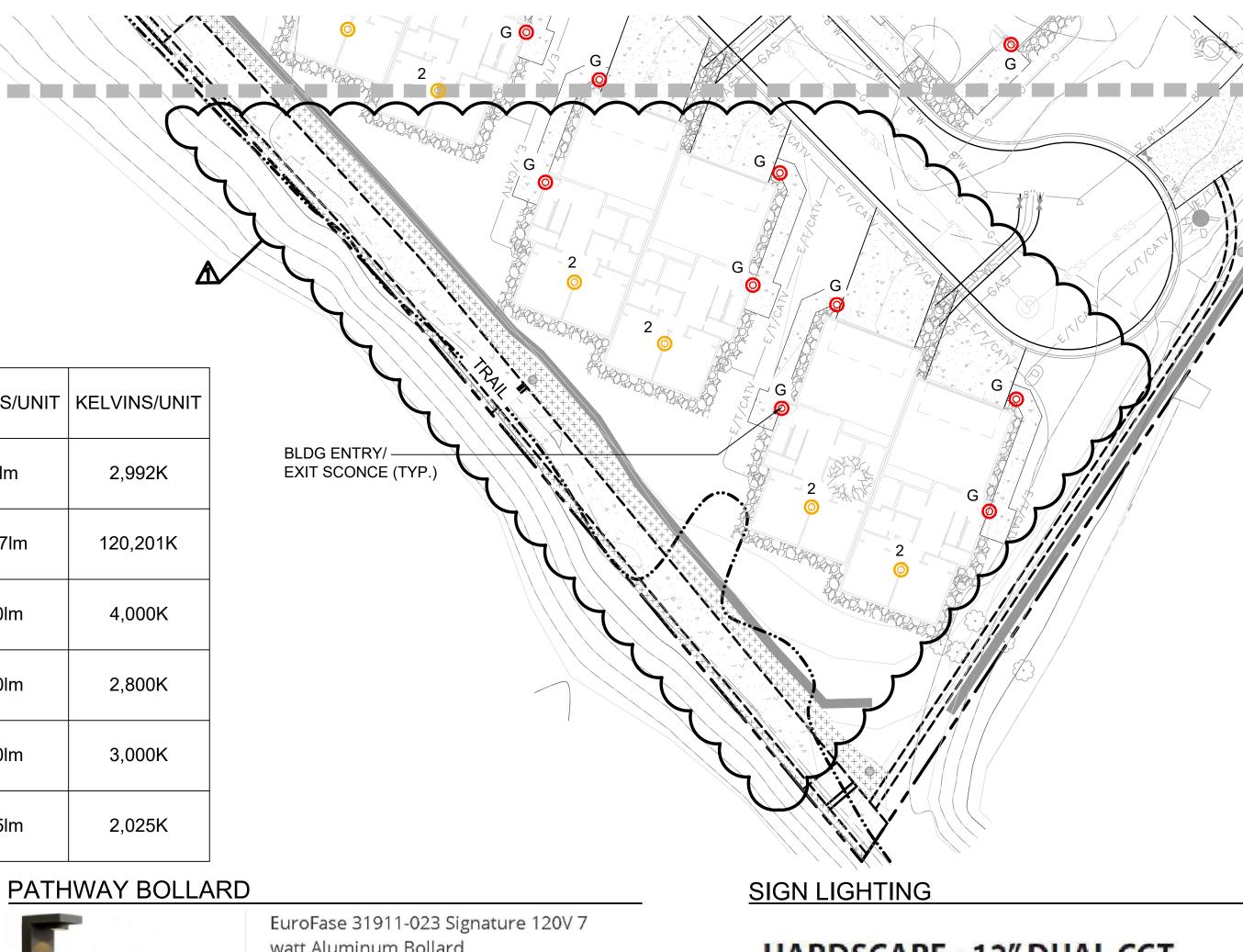
COMMERCIAL FACADE LIGHTING

WAC LIGHTING Responsible Lighting

WAC Lighting Tube 5" Tall Single Light LED Outdoor Wall Sconce -& 800 Lumens Model: WS-W2605-BZ

MODEL: WS-W2605BZ 3000K





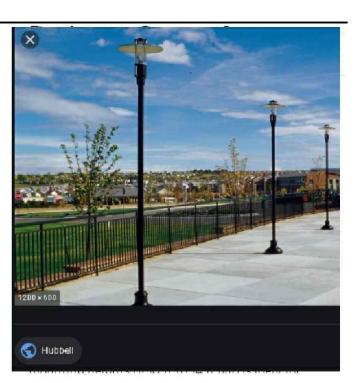
watt Aluminum Bollard MODEL: 131911-023 3000K

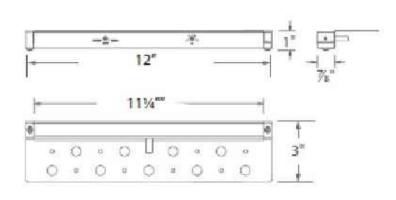
HARDSCAPE - 12" DUAL CCT

7121-27/30



ARCHITECTURAL AREA LIGHTING





PRODUCT DESCRIPTION

Hardscape luminaire. Multiple mounting options with durable aluminum constru

FEATURES

- Integrate brightness control, duo color temperature option
- Conveniently adapts into existing 12V system
- Translucent diffuser eliminates worrisome hotspots for even light projection
- Mounting options included; stainless seel under capstone brackets, clips and
- Simple two screw mounting option into handrails, bench seats, decks, steps a
- IP66 rated, protected against high pressure water jets
- Potted electronics and conformal coated LEDs for long term moisture protect
- Maintains constant lumen output against voltage drop
- Includes 6 foot lead wire
- UL 1838 Listed

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	0 10 0 20 ALE: 1" = 20' Image: Compare the second se	RIVERFRONT VILLAGE LOT 1, TRIANGLE SUBDIVISION RIDGWAY, COLORADO
l hardware and fences	SPECIFICATIONS Input: 9-15VAC (Transformer is required) Power: 7.0W / 7.3VA Brightness: 225 lm CRI: 90+ Rated Life: 50,000 hours Standards: UL,cUL Listed	PROJECT NUMBER: DATE 20139 11-19-20 DESIGNED: SC DRAWN: RM/GVV CHECKED: WC REVISIONS: Ad-09-21 A 04-09-21 A 04-09-21 JOB DESCRIPTION: PRELIMINARY PLAT SHEET TITLE: LIGHTING & SIGNAGE PLAN SHEET NUMBER: 1223

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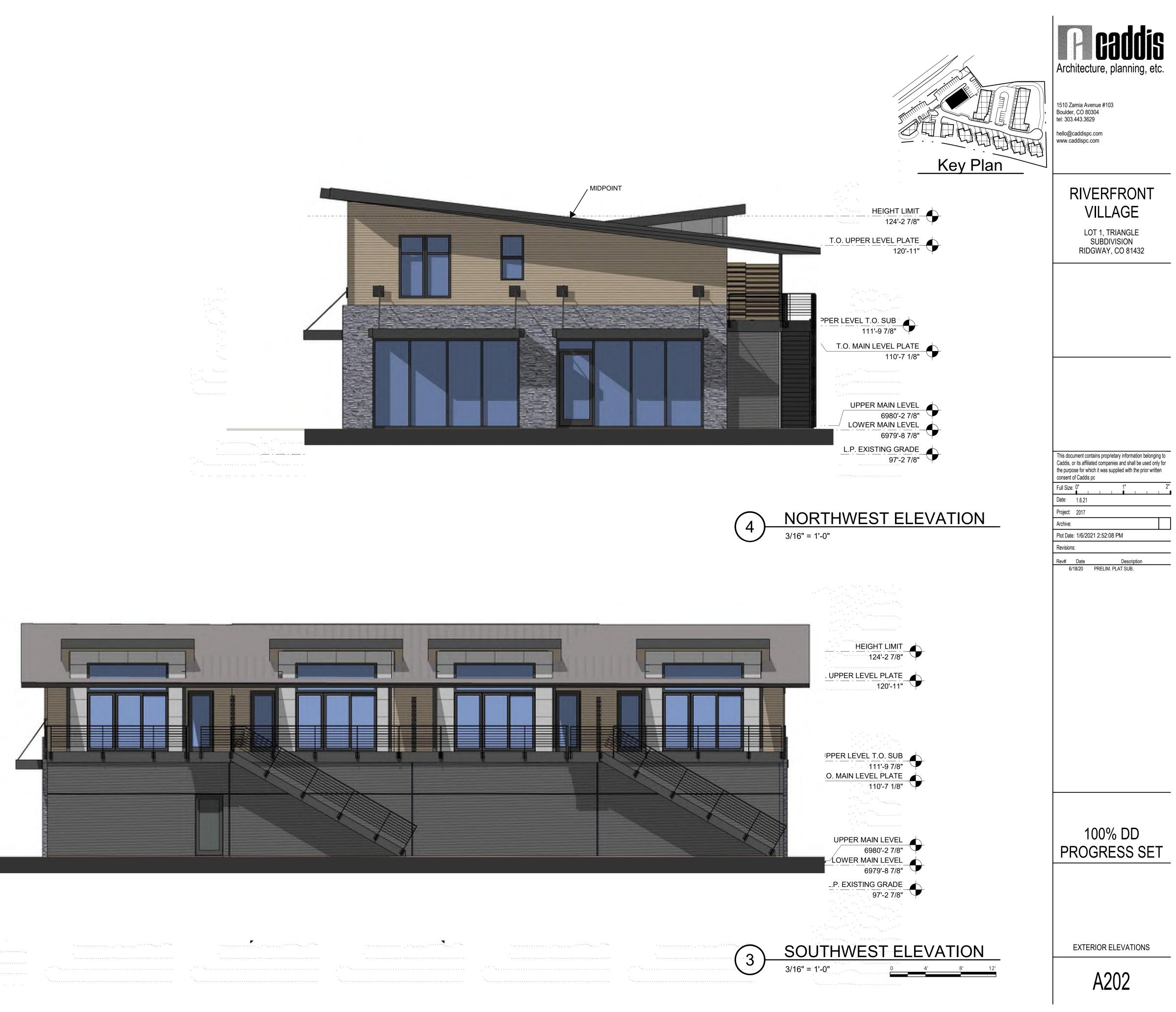
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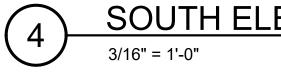
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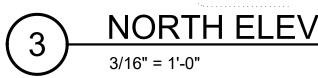
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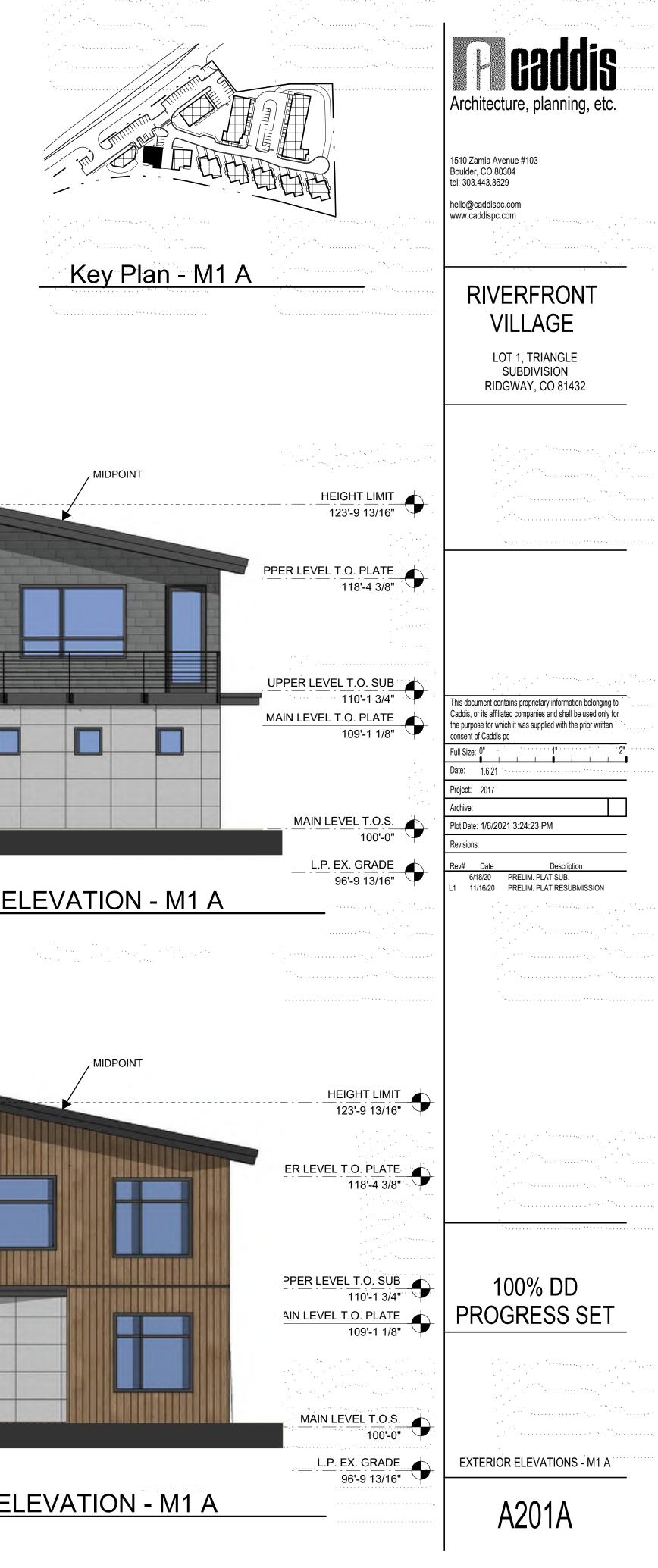
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	A SOUTH ELEN 3/16" = 1'-0"	HEIGHT LIMIT 123'-9 13/16" JPPER LEVEL T.O. PLATE 118'-4 3/8" UPPER LEVEL T.O. SUB 110'-1 3/4" MAIN LEVEL T.O. PLATE 109'-1 1/8" MAIN LEVEL T.O. PLATE 109'-1 1/8" L.P. EX. GRADE 9%-9 13/16"		
	NORTH ELEVA	UPPER LEVEL T.O. PLA 118'-4 3 UPPER LEVEL T.O. SU 110'-1 3 MAIN LEVEL T.O. PLA 109'-1 1 MAIN LEVEL T.O. PLA 109'-1 1	TE /8" JB /4" TE /8" S.	

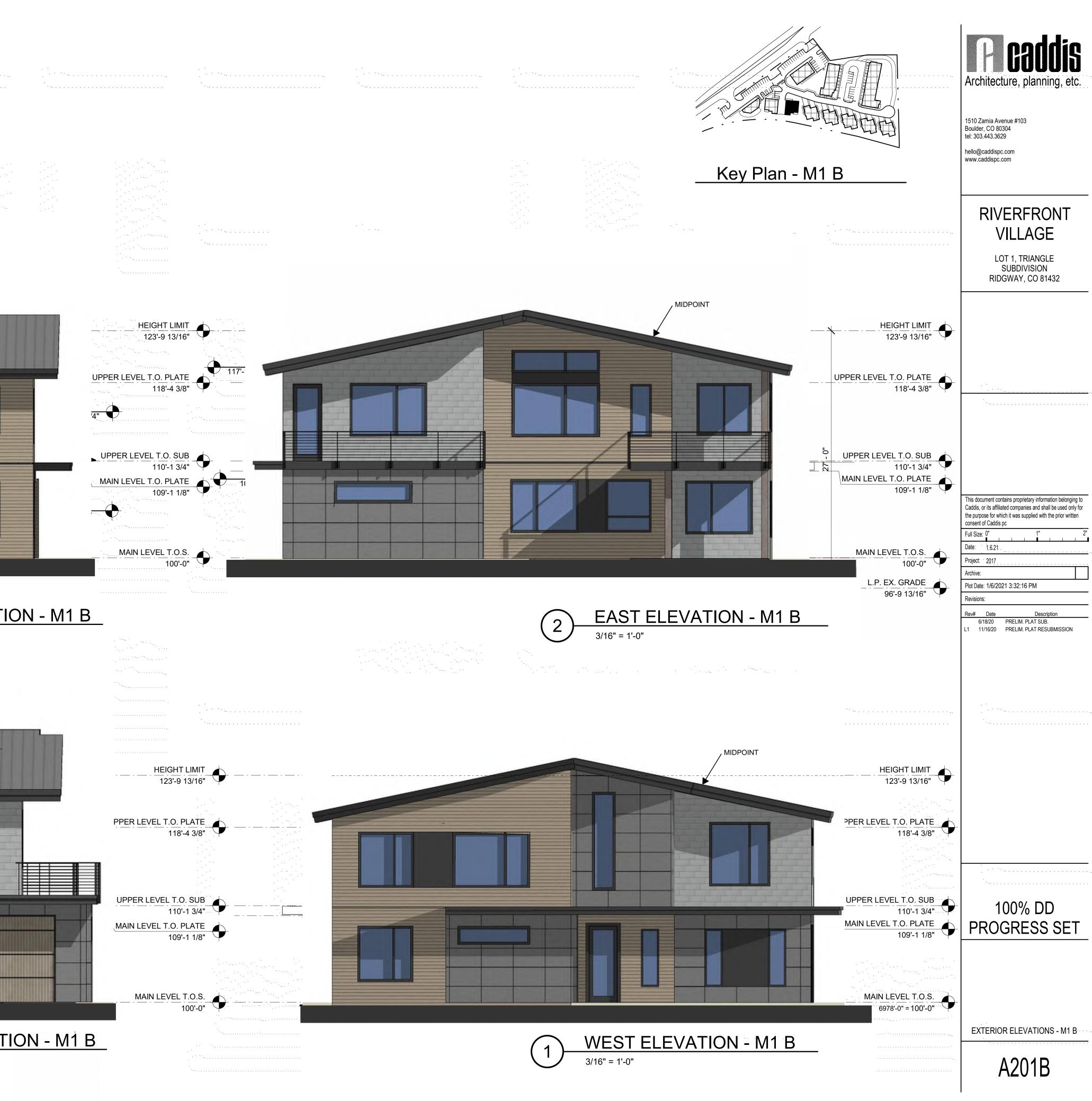








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		4	SOUTH 3/16" = 1'-0"	ELEVATIO





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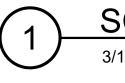




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LEVEL 1A T.O.S. 6979'-10 5/16"

LEVEL 2A T.O. SUB 6989'-0 1/16" LEVEL 1A T.O. PLATE 6987'-11 7/16"

LEVEL 3A T.O. SOB 6999'-7 7/16" LEVEL 2A T.O. PLATE 6998'-2 11/16"

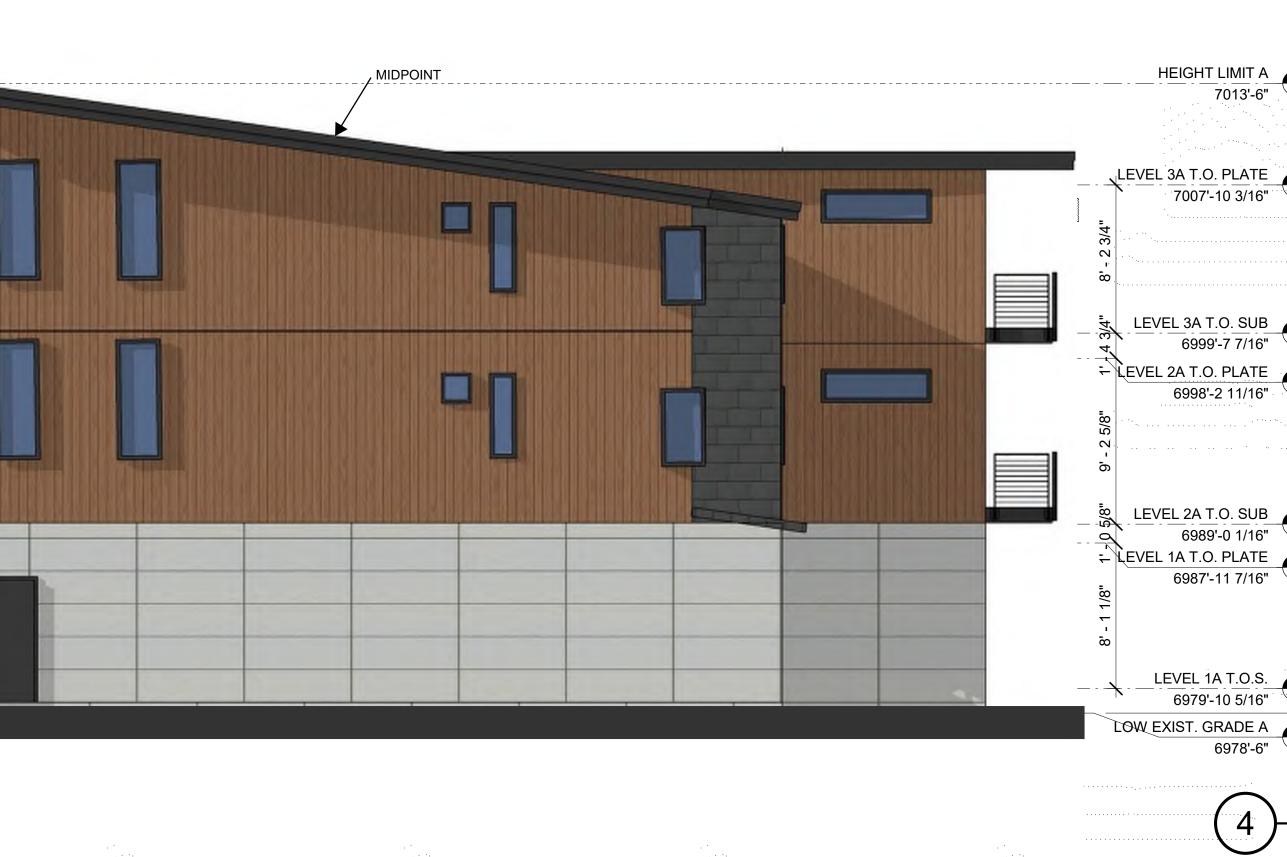
LEVEL 3A T.O. SUB _____

LEVEL 3A T.O. PLATE 7007'-10 3/16"

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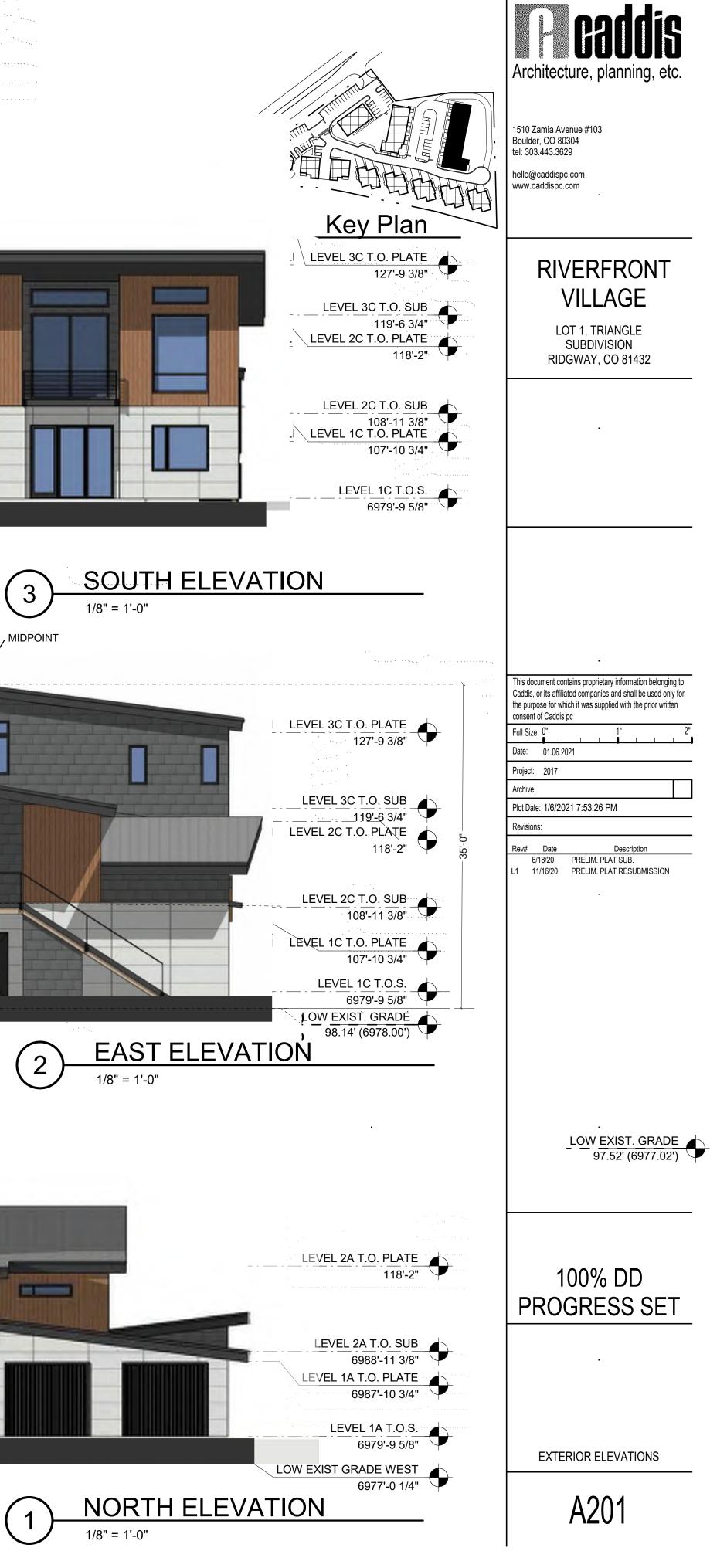
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		Caddis Architecture, planning, etc.
		1510 Zamia Avenue #103 Boulder, CO 80304 tel: 303.443.3629 hello@caddispc.com www.caddispc.com
	Key Plan	
		RIVERFRONT VILLAGE
		LOT 1, TRIANGLE SUBDIVISION RIDGWAY, CO 81432
\bullet		
32 0		
		This document contains proprietary information belonging to
		Caddis, or its affiliated companies and shall be used only for the purpose for which it was supplied with the prior written consent of Caddis pc
EAST ELEVATION		Full Size: 0" 1" 2" Date: 01.06.2021
3/16" = 1'-0"		Project: 2017 Archive:
		Plot Date: .1/6/2021 8:00:20 PM Revisions:
		Rev# Date Description 6/18/20 PRELIM. PLAT SUB.
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	EVEL 3C T.O. PLATE 7006'-0 15/16"	
	LEVEL 3C T.O. SUB	
	6997'-10 5/16"	
	6996'-5 9/16"	
		. •
	••••••••••••••••••••••••••••••••••••••	100% DD
		100% DD PROGRESS SET
	6987'-2 15/16"	
	6987'-2 15/16"	
	6987'-2 15/16"	PROGRESS SET
	6987'-2 15/16" EVEL 1C T.O. PLATE 6986'-2 5/16" <u>LOW EXIST. GR</u> 96.82" (6974 LEVEL 1C T.O.S	PROGRESS SET
3 NORTH ELEVA	6987'-2 15/16" <u>EVEL 1C T.O. PLATE</u> 6986'-2 5/16" <u>LOW EXIST. GR</u> 96.82" (6974 <u>LEVEL 1C T.O.S</u> 6978'-1 3/16"	ADE



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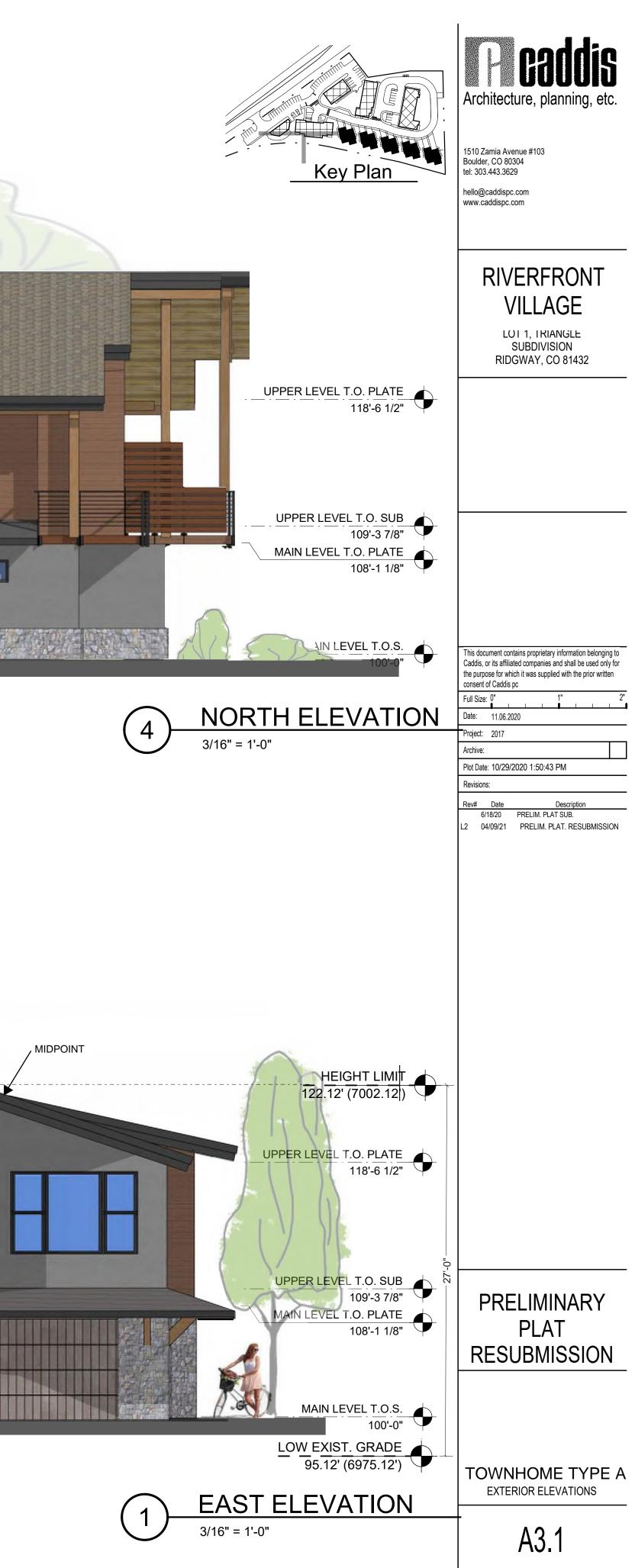










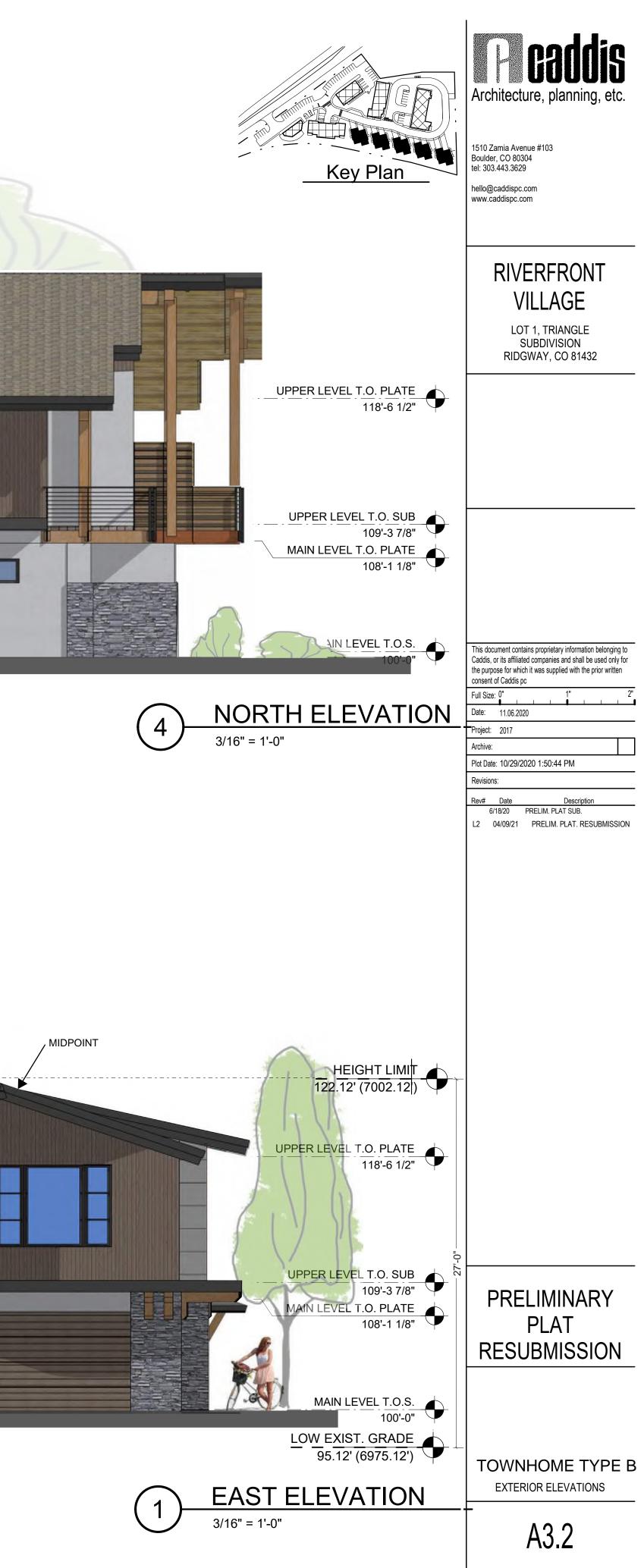












TRAFFIC, PARKING, INFORMATIONAL

FOR INFORMATION/ NO PERMIT REQUIRED











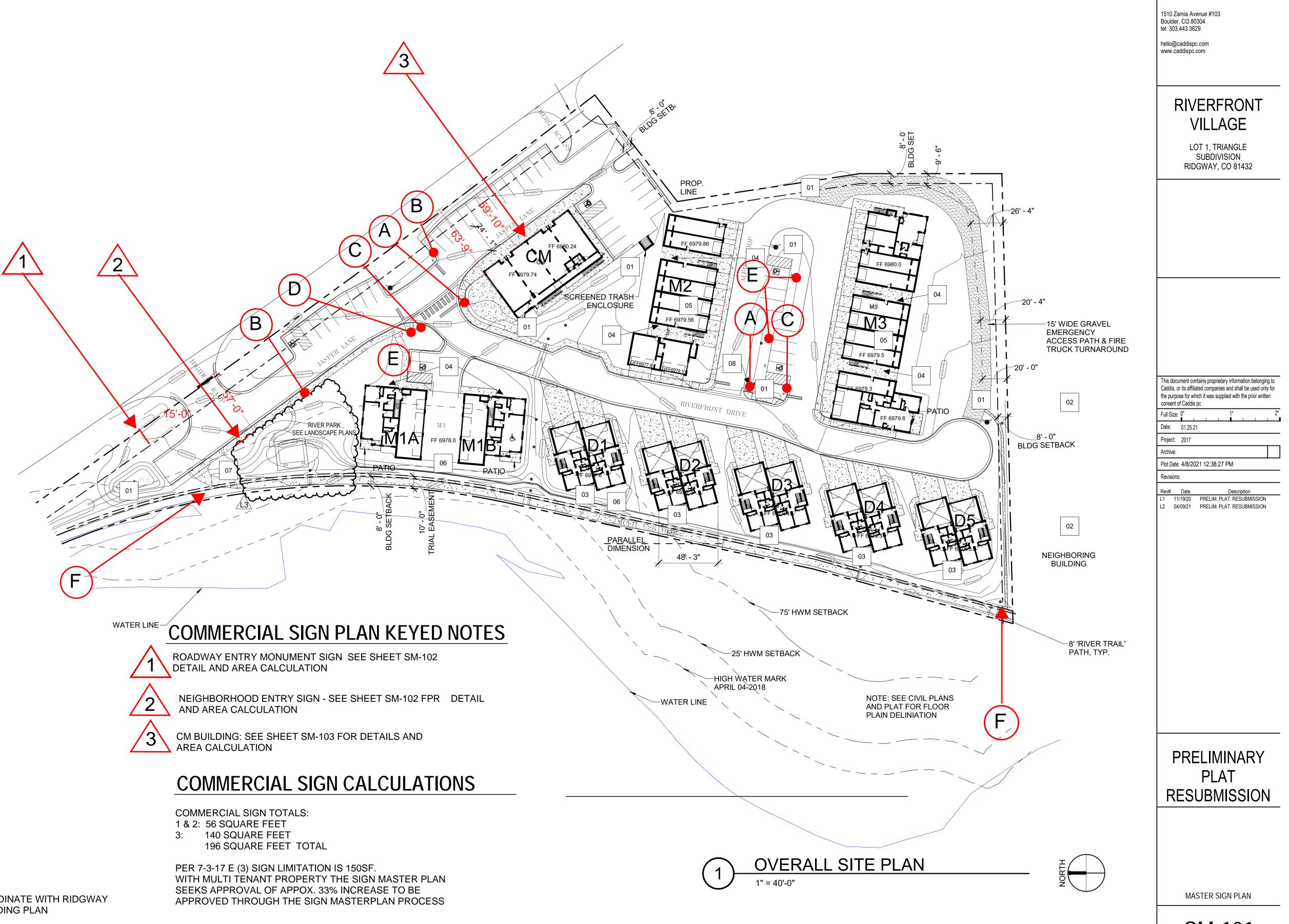


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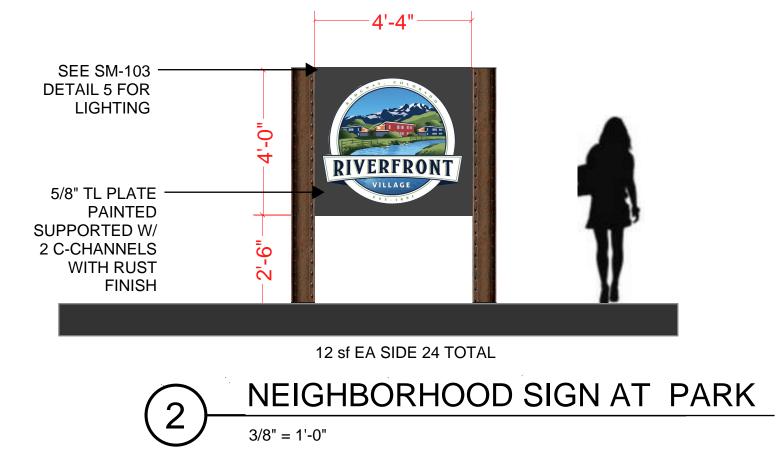
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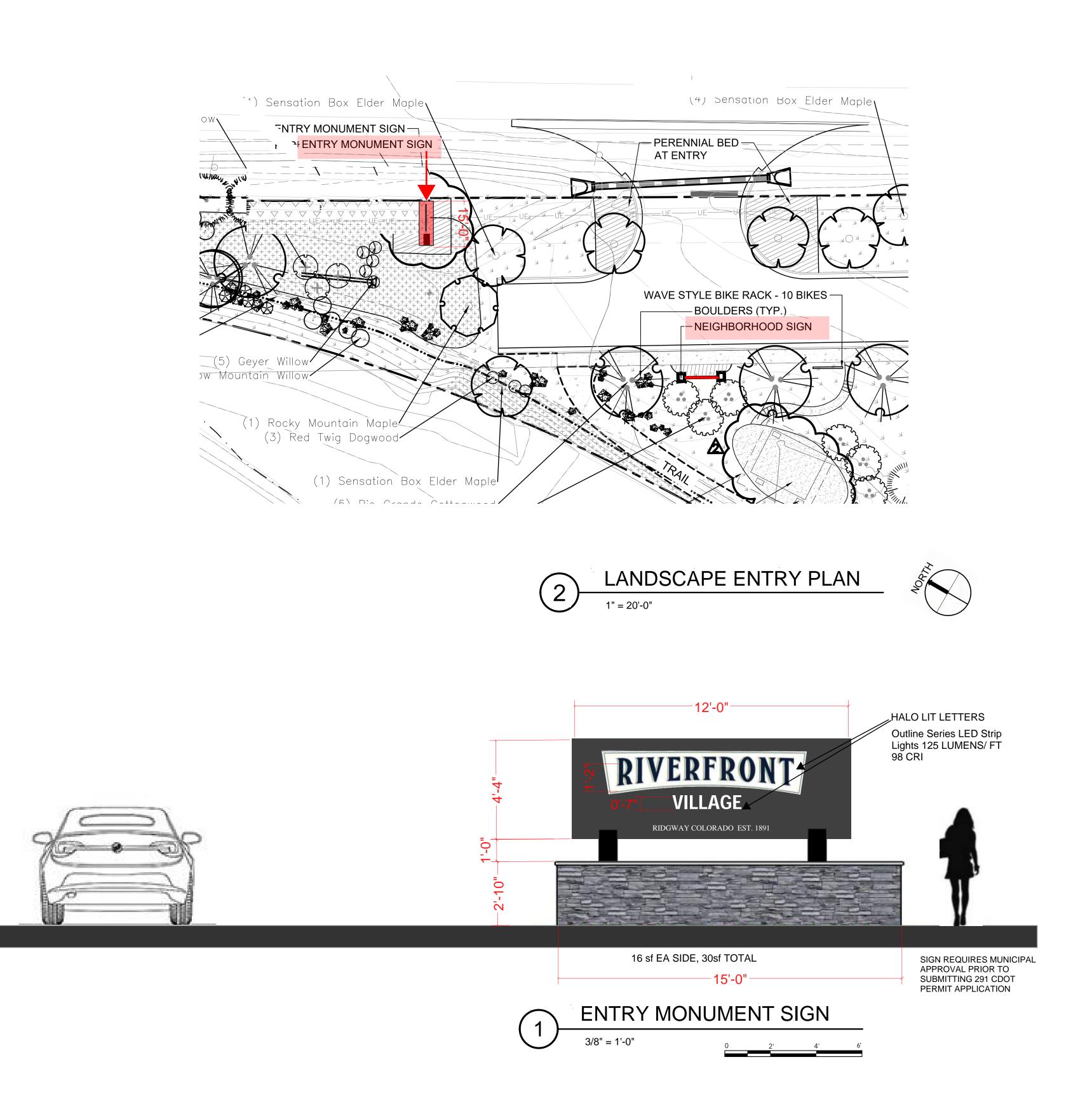
TRAIL SIGNS: COORDINATE WITH RIDGWAY SIGNAGE & WAYFINDING PLAN



SM-101

F Caddis collaborative







1510 Zamia Avenue #103 Boulder, CO 80304 tel: 303.443.3629

hello@caddispc.com www.caddispc.com

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ABOVE SPACE FOR OFFICE USE ONLY

Articles of Incorporation for a Nonprofit Corporation

filed pursuant to § 7-122-101 and § 7-122-102 of the Colorado Revised Statutes (C.R.S.)

1. The domestic entity name for the nonprofit corporation is The Riverfront Village Owners Association, Inc.

(Caution: The use of certain terms or abbreviations are restricted by law. Read instructions for more information.)

2. The principal office address of the nonprofit corporation's initial principal office is

Street address	14502 N. Dale Mabry Hwy, Ste 200				
	C/O: Holly Steffens	t number and name)			
	Tampa	FL	33618		
	(City)	(State) United S	(ZIP/Postal Coa	le)	
	(Province – if applicable)	(Country)			
Mailing address					
(leave blank if same as street address)	(Street number and na	ame or Post Office E	Box information)		
	(City)	(State)	(ZIP/Postal Co	ode)	
	(Province – if applicable)	(Country)	·		
3. The registered agent name and register are	red agent address of the nonpr	cofit corporation	n's initial register	red agent	
Name (if an individual)					
OR	(Last)	(First)	(Middle)	(Suffix)	
(if an entity) (<i>Caution:</i> Do not provide both an individ	The Law Offices of Tho	mas G. Kenr	nedy, P.C.		
Street address	307 East Colorado Ave	nue			
	(Street r	number and name)			

(City)

Telluride

CO

(State)

81435-3081

(ZIP Code)

Mailing address	P.O. Box 3081				
(leave blank if same as street address)	(Street number and name or Post Office Box information)				
	Telluride	СО	81435-3081		
	(City)	(State)	(ZIP Code)		
(The following statement is adopted by marking the The person appointed as registered	box.) agent above has consented t	to being so app	ointed.		
. The true name and mailing address of t					
Name (if an individual)					
OR	(Last)	(First)	(Middle) (Suffix,		
(if an entity) (<i>Caution:</i> Do not provide both an individ	The Law Offices of The	omas G. Ken	nedy, P.C.		
Mailing address	P.O. Box 3081				
	(Street number and name or Post Office Box information)				
	Telluride	СО	81435-3081		
	(City)	(State) United Sta	(ZIP/Postal Code)		
	(Province – if applicable)	(Country)			

5. (If the following statement applies, adopt the statement by marking the box.) The nonprofit corporation will have voting members.

6. Provisions regarding the distribution of assets on dissolution:

SEE ATTACHED "ADDENDUM TO ARTICLES"

7. (If the following statement applies, adopt the statement by marking the box and include an attachment.)

This document contains additional information as provided by law.

8. (Caution: Leave blank if the document does not have a delayed effective date. Stating a delayed effective date has significant legal consequences. Read instructions before entering a date.)

(If the following statement applies, adopt the statement by entering a date and, if applicable, time using the required format.) The delayed effective date and, if applicable, time of this document is/are

(mm/dd/yyyy hour:minute am/pm)

Notice:

Causing this document to be delivered to the Secretary of State for filing shall constitute the affirmation or acknowledgment of each individual causing such delivery, under penalties of perjury, that the document is the individual's act and deed, or that the individual in good faith believes the document is the act and deed of the person on whose behalf the individual is causing the document to be delivered for filing, taken in conformity with the requirements of part 3 of article 90 of title 7, C.R.S., the constituent documents, and the organic statutes, and that the individual in good faith believes the facts stated in the document are true and the document complies with the requirements of that Part, the constituent documents, and the organic statutes. This perjury notice applies to each individual who causes this document to be delivered to the Secretary of State, whether or not such individual is named in the document as one who has caused it to be delivered.

9. The true name and mailing address of the individual causing the document to be delivered for filing are

Risner-Tindall	Kimberly	A.	
(Last) P.O. Box 3081	(First)	(Middle)	(Suffix)
(Street number)	and name or Post Office i	Box information)	
Telluride	CO 8	31435-3081	
(City)	(State) United Stat	(ZIP/Postal Co	ode)
(Province – if applicable)	(Country)		

(If the following statement applies, adopt the statement by marking the box and include an attachment.)

This document contains the true name and mailing address of one or more additional individuals causing the document to be delivered for filing.

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ADDENDUM TO ARTICLES OF INCORPORATION OF RIVERFRONT VILLAGE SUBDIVISION OWNERS ASSOCIATION, INC., A COLORADO NONPROFIT CORPORATION

Capitalized terms not otherwise defined herein shall have the meaning set forth in the Declaration of Covenants, Conditions and Restrictions for Riverfront Village Condominiums and any supplement or amendment thereto ("**Declaration**"). All of the lands that become subject to said Declaration from time to time are hereinafter referred to as the "**Community**." In the event of a conflict between the terms, conditions and provisions of this Addendum and the Articles of Incorporation, this Addendum shall control.

ARTICLE ONE Purposes

The business, objectives and purposes for which the corporation is formed are as follows:

1. To be and constitute the "Association", to which reference is made in the Declaration establishing a plan for Riverfront Village PUD, located in the Town of Ridgway, Ouray County, Colorado ("Community"), said Declaration to be recorded in the office of the County Clerk and Recorder of Ouray County, Colorado.

2. To perform all obligations and duties of the Association and to exercise all rights and powers of the Association, as specified in the Declaration.

3. To provide an entity for the furtherance of the interest of the Owners of separate condominium units ("Units") within the Community.

ARTICLE TWO Powers

In furtherance of its purposes, but not otherwise, the corporation shall have the following powers:

1. All of the powers conferred upon non-profit corporations by the common law and the statutes of the State of Colorado in effect from time to time.

2. All of the powers necessary or desirable to perform the obligations and duties and exercise the rights and powers of the Association under the Declaration, including, without limitation, the following powers:

a. To make and collect general, limited and/or special assessments against Members for the purpose of defraying the costs, expenses and any losses of the Association, or of exercising its powers or of performing its functions.

b. To manage, control, operate, maintain, repair and improve Community common elements, as defined in the Act and the Declaration.

c. To enforce covenants, restrictions or conditions affecting any Community property, to the extent the Association may be authorized under any such covenants, restrictions or conditions, and to make and enforce rules and regulations for use of the Community.

d. To engage in activities which will actively foster, promote and advance the

common ownership interests of Owners of the Units.

e. To buy or otherwise acquire, sell or otherwise dispose of, mortgage or otherwise encumber, exchange, lease, withdraw, grant or obtain easements, licenses, permits and the like, hold, use, operate and otherwise deal with and in, real, personal and mixed property of all kinds, and any right or interest therein, for any purpose of the Association.

f. To borrow money for any purpose of the Association, limited in amount or in other respects as may be provided in the Bylaws of the Association (the "**Bylaws**").

g. To enter into, make, perform or enforce contracts of every kind and description, and to do all other acts necessary, appropriate or advisable in carrying out any purpose of the Association or any Members, with or in association with any person, firm, association, corporation or other entity or agency, public or private.

h. To act as agent, trustee, or other representative of other corporations, firms, individuals, and as such to advance the business or ownership interests of such corporations, firms or individuals, including, without limitation, any Members.

i. To adopt, alter, and amend or repeal such Bylaws as may be necessary or desirable for the proper management of the affairs of the Association, provided, however, that such Bylaws may not be inconsistent with or contrary to any provisions of the Declaration.

j. The foregoing enumeration of powers shall not limit or restrict in any manner the exercise of other and further rights and powers which may now or hereafter be allowed or permitted by law; and the powers specified in each of the paragraphs of this Article are independent powers, not to be restricted by reference to or inference from the terms of any other paragraph or provisions of this Article.

ARTICLE THREE Memberships

1. The corporation shall be a membership corporation without certificates or shares of stock. Subject to the limitations set forth in the Declaration. There shall be one class of membership.

2. There shall be one "**Membership**" in the Association for each Unit within the Community. The Person or Persons who constitute the Owner of a Unit shall automatically be the holder of the Membership appurtenant to that Unit, and shall collectively be the "**Member**" of the Association with respect to that Unit, and the Membership appurtenant to that Unit shall automatically pass with fee simple title to the Unit. Declarant shall hold a Membership in the Association for each Unit owned by Declarant. Membership in the Association shall not be assignable separate and apart from fee simple title to a Unit, and may not otherwise be separated from ownership of a Unit.

3. All Members shall be entitled to vote on all matters, with each vote allocated in the manner set forth in the Declaration. Cumulative voting is prohibited. No person or entity other than an Owner of a Unit may be a Member of the corporation.

4. A membership in the corporation and the share of a Member in the assets of the corporation shall not be assigned, encumbered or transferred in any manner except as an appurtenance to transfer of title to the Unit to which the membership pertains; provided, however, the rights of membership may be assigned to the holder of the mortgage, deed of trust or other security instrument on a Unit as further security for a loan secured by a lien on such Unit.

5. A transfer of membership shall occur automatically upon the transfer of title to the Unit to which the membership pertains; provided, however, the Bylaws may contain reasonable provisions and requirements with respect to recording such transfers on the books and records of the corporation.

6. The corporation may suspend the voting rights of a Member for failure to comply with rules and regulations or the Bylaws or with any other obligations of the Owners of a Unit under the Declaration or any agreement created thereunder.

7. The corporation, through its Bylaws, may establish requirements concerning the manner and method by which voting rights and other rights attributable to a Unit that is owned by a firm, corporation, partnership, limited liability company, association or other legal entity or any combination thereof may be exercised.

8. The Bylaws may contain provisions, not inconsistent with the foregoing, setting forth the rights, privileges, duties and responsibilities of the Members.

ARTICLE FOUR Board

1. The business and affairs of the corporation shall be conducted, managed and controlled by a Board (the "Board"), the members of which are designated as "Directors".

2. The Board shall initially consist of three (3) Directors, but may consist of as many as five (5) Directors. The method of voting on actions by the Board shall occur in the manner provided for by the Bylaws.

3. The method of election and the term of office of Directors of the Board shall be determined by the Bylaws. A member of the Board need not have an ownership interest in a Unit. A member of the Board need not be a Member of the Community.

4. Directors may be removed and vacancies on the Board shall be filled in the manner provided in the Bylaws in the manner provided for by the Bylaws.

<u>ARTICLE FIVE</u> Inurement and Dissolution

1. No part of the income or net earnings of the Association shall inure to the benefit of, or be distributable to, any Member, Director, or officer of the Association or to any other private individual, except that: (i) reasonable compensation may be paid for services rendered to or for the Association affecting one or more of its purposes; (ii) reimbursement may be made for any expenses incurred for the Association by any officer, Director, Member, agent or employee, or any other person or corporation, pursuant to and upon authorization of the Board; and (iii) rebates of excess membership dues, fees, or Assessments may be paid.

2. In the event of dissolution of the Association, the property and assets thereof remaining after providing for all obligations shall then be distributed pursuant to the Colorado Revised Nonprofit Corporation Act at Article 134, and if the Community is terminated then pursuant to the Colorado Common Interest Ownership Act at Section 38-33.3-218.

ARTICLE SIX Elimination of Certain Liabilities of Directors

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There shall be no personal liability, either direct or indirect, of any Director of the Association to the Association or to its Members for monetary damages for any breach or breaches of fiduciary duty as a Director; except that this provision shall not eliminate the liability of a Director to the Association or its Members for monetary damages for any breach, act, omission, or transaction as to which the Colorado Revised Nonprofit Corporation Act or the Colorado Common Interest Ownership Act prohibits expressly the elimination of liability. This provision is in the Association's original Articles of incorporation and thus is effective on the date of the Association's incorporation. This provision shall not limit the rights of Directors of the Association for indemnification or other assistance from the Association in accordance with applicable law. This provision shall not restrict or otherwise diminish the provisions of Colorado Revised Statutes, Section 13-21-115.7 (concerning no liability of directors except for wanton and willful acts or omissions), any amendment or successor provision to such Section, or any other law limiting or eliminating liabilities, such as Colorado Revised Statutes, Section 38-33.3-303(2) (fiduciary duties of officers and directors if appointed by Declarant; if not so appointed, then no liability except for wanton and willful acts or omissions). Any repeal or modification of the foregoing provisions of this Article by the Members of the Association or any repeal or modification of the provision of the Colorado Revised Nonprofit Corporation Act which permits the elimination of liability of directors by this Article shall not affect adversely any elimination of liability, right or protection of a Director of the Association with respect to any breach, act, omission, or transaction of such Director occurring prior to the time of such repeal or modification.

ARTICLE SEVEN Dissolution

In the event of the dissolution of the corporation, either voluntarily by the members hereof, by operation of law, or otherwise, then the assets of the corporation shall be deemed to be owned by the members in proportion to each Member's Ownership of the Common Elements of the Community.

BYLAWS OF THE RIVERFRONT VILLAGE SUBDIVISION OWNERS ASSOCIATION, INC., A COLORADO NONPROFIT CORPORATION

ARTICLE 1 INTRODUCTION AND PURPOSE

Effective Date:

These Bylaws ("**Bylaws**") of the Riverfront Village Subdivision Owners Association, Inc., a Colorado nonprofit corporation ("Association") have been duly adopted by the Association through its Board ("**Board**") as that term is defined in the Declaration (defined below) and are hereby deemed to be made effective as of the Effective Date. Each Owner is deemed to be a "**Member**" of the Association.

<u>Section 1.1 – Introduction</u>. These are the Bylaws of the Riverfront Village Subdivision Owners Association, Inc., a Colorado nonprofit corporation, which Association shall operate under the Colorado nonprofit Corporation Act ("Corporation Act"), as amended, and the Colorado Common Interest Ownership Act, as amended ("Act").

<u>Section 1.2 - Purposes</u>. The purposes for which the Association was formed are to preserve and enhance the value of the properties of Owners and to govern the Common Elements and affairs of Riverfront Village Condominiums located in the Town of Ridgway, Ouray County, Colorado ("Community"). The Community was created pursuant to certain "Governing Documents", including, without limitation, the Declaration for the Riverfront Village Condominiums ("Declaration"), the Condominium Map for Riverfront Village Condominiums as defined and referenced in the Declaration ("Map"), the Articles of Incorporation for the Association, and any Rules and Regulations, Governance Policies and Guidelines, as the same have been or may be amended and supplemented from time to time. Terms which are defined in the Declaration shall have the same meaning herein, unless defined otherwise in these Bylaws.

<u>Section 1.3 - Persons Subject to Bylaws</u>. All present or future Owners, tenants, guests, agents, contractors or any person that use or occupy, in any matter, any Unit or Common Elements within the Community, are subject to the terms and provisions of these Bylaws, and the other Governing Documents of the Community. The mere acquisition, rental or use of a Unit will signify that the Governing Documents of the Community are acceptable, ratified and will be complied with.

ARTICLE 2 BOARD

Section 2.1 - Number and Qualification.

(a) The affairs of the Community and the Association shall be governed by a Board which shall consist of three (3) persons. A Board member shall serve in the manner provided for in the Declaration. A member of the Board must be an Owner, except for Board members appointed by the Declarant. If any Unit is owned by a partnership or corporation, any officer, partner or employee of that Owner shall be eligible to serve as a Board member and shall be deemed to be an Owner for the purposes of these Bylaws. At any meeting at which Board members are to be elected, the Owners may, by resolution, adopt specific procedures for conducting the elections, which are not inconsistent with these Bylaws or the Corporation Act.

(b) The Board shall elect the officers. The Board members and officers shall take office upon election.

<u>Section 2.2 - Powers and Duties</u>. The Board may act in all instances on behalf of the Association, except as provided in the Governing Documents, these Bylaws or the Act. The Board shall have, subject to the limitations contained in the Governing Documents and the Act, the powers and duties necessary for the administration of the affairs of the Association and the Community, including the following powers and duties:

(a) Adopt amendments to these Bylaws;

(b) Adopt and amend the Rules and Regulations and the Governance Policies and Guidelines;

(c) Adopt and amend budgets for revenues, expenditures and reserves;

(d) Collect assessments for Common Expenses, Limited Common Expenses and Special Assessments from Owners. The Board shall determine the frequency for collecting assessments;

(e) Hire and discharge management companies or managers of either the Association and/or on behalf of individual Owners;

(f) Hire and discharge employees, independent contractors and agents other than managing agents of either the Association;

(g) By resolution, establish committees of Board members, permanent and standing, to perform any of the above functions under specifically delegated administrative standards as designated in the resolution establishing the committee. All committees must maintain and publish notice of their actions to Owners and the Board. However, actions taken by a committee may be appealed to the Board by any Owner within 15 days after publication of notice of that action, and the committee's action must be ratified, modified or rejected by the Board at its next regular meeting;

(h) Institute, defend or intervene in litigation or administrative proceedings or seek injunctive relief for violations of the Governing Documents or Bylaws in the Association's name, on behalf of the Association on matters affecting the Community;

(i) Make contracts and incur liabilities on behalf of the Association, provided that in the event that the Association intends to enter into a contract or otherwise incur liability for goods or services that in the aggregate is anticipated to require the expenditure of \$20,000 or more, the Board shall first prepare and submit a request for proposals, review all bids responding to the request for proposals and award the contract to the bid that the Board, in the exercise of its good faith and commercially reasonable judgment, determines to be the superior bid with consideration given to the price/cost of the services or goods, timeframe for performance, skills and reputation of contractor and such other factors deemed relevant to the Board;

(j) Regulate the use, maintenance, repair, replacement and modification of Common Elements;

(k) Cause additional improvements to be made as a part of the Common Elements;

(1) Acquire, hold, encumber and convey, in the Association's name, any right, title or interest to real estate or personal property; provided that Common Elements may be conveyed or subjected to a security interest only pursuant to Section 312 of the Act;

(m) Grant or obtain easements, licenses or permits for any period of time, including

permanent easements, and grant leases, licenses and concessions for no more than one year, through or over the Common Elements and/or adjacent property;

(n) Impose and receive a payment, fee or charge for services provided to Owners and for the use, rental or operation of the Common Elements, other than Limited Common Elements;

(o) Impose a reasonable charge for late payment of assessments and, after notice and hearing, levy reasonable fines for violation of the Governing Documents or these Bylaws;

(p) Impose a reasonable charge for the preparation and recording of amendments to the Governing Documents or statements of unpaid assessments;

(q) Provide for the indemnification of the Association's officers, Board members, committee members;

(r) Obtain and maintain officer and director liability insurance for the Association's officers, Board members, committee members;

(s) Exercise any other powers conferred by the Declaration, the Map or these Bylaws;

(t) Exercise any other power that may be exercised in the state by a legal entity of the same type as the Association; and

(u) Exercise any other power necessary and proper for the governance and operation of the Association.

<u>Section 2.3 - Association Manager</u>. The Board may employ a management company or Manager for the Community, at a compensation established by the Board, to perform duties and services authorized by the Board. Licenses, concessions and contracts may be executed by the Manager pursuant to specific resolutions of the Board and to fulfill the requirements of the budget. Regardless of any delegation to a management company or Manager, the Members of the Board shall not be relieved of responsibilities under the Governing Documents, these Bylaws or Colorado law.

<u>Section 2.4 - Removal of Board Member by Owners</u>. Except as provided for in the Declaration with respect to the rights of Declarant during the Declarant Control Period, the Owners, following the expiration of the Declarant Control Period, may, by a vote of at least two-thirds of the votes at any meeting of the Owners at which a quorum is present, may remove a Board member with or without cause and shall thereupon appoint a replacement Board member.

<u>Section 2.5 - Vacancies</u>. Vacancies in the Board, caused by any reason other than the removal of a Board member by a vote of the Owners, may be filled at a special meeting of the Board held for that purpose at any time after the occurrence of the vacancy, even though the Board members present at that meeting may constitute less than a quorum. These appointments shall be made by a majority of the remaining elected Board members constituting the Board. Each person so elected or appointed shall be a Board member for the remainder of the term of the Board member so replaced.

<u>Section 2.6 - Regular Meetings</u>. The first regular meeting of the Board shall occur within 30 days after the annual meeting of the Owners at which the Board shall have been elected. The Board shall establish the time and place of the Board meeting. No notice shall be necessary to the newly elected Board members in order to legally constitute such meeting, provided a majority of the Board members are present. The Board may set a schedule of additional regular meetings by resolution, and no further notice is necessary to constitute regular meetings. With the exception of matters that may be discussed in

executive session, as set forth in Section 38-33.3-308(3-7) of the Act, all regular and special meetings of the Board or any committee thereof shall be open to attendance by all Owners of the Association or their representatives. Without limiting the generality of the foregoing, no rule or regulation may be validly adopted during an executive session. Agendas for meetings of the Board shall be made reasonably available for examination by all Owners of the Association or their representatives. The Board may, by resolution, delegate portions of its authority to officers of the Association, but such delegation of authority shall not relieve the Board of the ultimate responsibility for management of the affairs of the Association.

<u>Section 2.7 - Special Meetings</u>. Special meetings of the Board may be called by the President or by a majority of the Board members on at least three business days' notice to each Board member. The notice shall be hand-delivered, mailed or e-mailed and shall state the time, place and purpose of the meeting.

<u>Section 2.8 - Location of Meetings</u>. All meetings of the Board shall be held within Colorado, unless all Board members consent in writing to another location.

<u>Section 2.9 - Waiver of Notice</u>. Any Board member may waive notice of any meeting in writing, including notice given by email. Attendance by a Board member at any meeting of the Board shall constitute a waiver of notice. If all the Board members are present at any meeting, no notice shall be required, and any business may be transacted at such meeting.

<u>Section 2.10 - Quorum of Board Members</u>. At all meetings of the Board, the presence of both of the Board members shall constitute a quorum for the transaction of business. At a meeting at which a quorum is present, the votes of a majority of the Board members present at a meeting at which a quorum is present shall constitute a decision of the Board. If, at any meeting, there shall be less than a quorum present, a majority of those present may adjourn the meeting. At any adjourned meeting at which a quorum is present, any business which might have been transacted at the meeting originally called may be transacted without further notice.

<u>Section 2.11 - Telephone Communication in Lieu of Attendance</u>. A Board member may attend and fully participate in a meeting of the Board by using an electronic or telephonic communication method whereby the Board member may be reasonably heard by the other members and may hear the deliberations of the other members on any matter properly brought before the Board. The Board member's vote shall be counted and the presence noted as if that Board member were present in person on that particular matter. The Board member shall be counted as being present for purposes of establishing a quorum.

<u>Section 2.12 - Proxies</u>. At any Board meeting, a Board member will be absent from the meeting who has otherwise been provided with information on an item coming before the Board and has become familiar with the subject matter, may provide the Board with a directed proxy directing the Board how to record the Board members' vote on a particular matter and, thereupon, the Board shall so record the vote. A Board member shall not grant a general proxy to any person and any such general proxy shall be rejected by the Board. A Board member may not revoke a proxy given pursuant to this provision except by actual notice of revocation to the person presiding over a meeting of the Board. A proxy is void if it is not dated or purports to be revocable without notice. A proxy shall terminate one month after its date, unless a different termination date is otherwise set forth on its face. Proxies shall be filed with the Secretary of the Association at or before the appointed time of each meeting. Proxies shall conform to C.R.S. Section 7-127-203.

<u>Section 2.13 - Consent to Corporate Action</u>. If all the Board members, separately or collectively consent in writing to any action taken or to be taken by the Association, and the number of the Board members constitutes a quorum, that action shall be a valid corporate action as though it had been

authorized at a meeting of the Board. The Secretary shall file these consents with the minutes of the meetings of the Board.

<u>Section 2.14 – Disputes Among Board Members</u>. If the two Board members cannot mutually agree upon a course of action, the Board Members shall refer the matter to Dirk DePagter or such other person mutually agreeable to the Board Members to vote on the matter and resolve the tie vote.

ARTICLE 3 OWNERS AND MEMBERSHIP

<u>Section 3.1 - Ownership</u>. Ownership of a Unit is required in order to qualify for membership in the Association. Ownership is more fully addressed in the Articles of Incorporation and the Declaration.

<u>Section 3.2 - Annual Meeting</u>. Annual meetings of Owners shall be held during each of the Association's fiscal year at such date and time as determined by the Board and set forth in the notice. At these meetings, the Board members shall be elected by ballot of the Owners, in accordance with the provisions of these Bylaws, the Declaration and the Articles of Incorporation. The Owners may transact other business as may properly come before them at these meetings. Failure to hold an annual meeting shall not work a forfeiture or dissolution of the Association. Each Owner may participate in the annual meeting by telephone.

<u>Section 3.3 - Budget Meeting</u>. Meetings of the Owners to consider proposed budgets shall be called in accordance with the Act. The budget may be considered at annual or special meetings called for other purposes as well.

<u>Section 3.4 - Special Meetings</u>. Special meetings of the Association may be called by the President, by a majority of the Board or by Owners comprising 35% of the votes in the Association. Each Owner may participate in any special meeting by telephone.

<u>Section 3.5 - Place of Meetings</u>. Meetings of the Owners shall be held anywhere (i) in the Community, (ii) the Town of Ridgway, or (iii) the County of Ouray, Colorado, and may be adjourned to a suitable place convenient to the Owners, as may be designated by the Board or the President.

<u>Section 3.6 - Notice of Meetings</u>. The Secretary or other officer specified in the Bylaws shall cause notice of meetings of the Owners to be hand-delivered, sent prepaid by United States mail to the mailing address of each Unit or to the mailing address designated in writing by the Owner or by e-mail to those Owners that are able to receive e-mail and that specify they wish to receive notices by e-mail, not less than 10 days in advance of a meeting. No action shall be adopted at a meeting except as stated in the notice.

<u>Section 3.7 - Waiver of Notice</u>. Any Owner may, at any time, waive notice of any meeting of the Owners in writing (e-mailed accepted), and the waiver shall be deemed equivalent to the receipt of notice.

<u>Section 3.8 - Adjournment of Meeting</u>. At any meeting of Owners, a majority of the Owners who are present at that meeting, either in person or by proxy, may adjourn the meeting to another time.

Section 3.9 - Order of Business. The order of business at all meetings of the Owners shall be as follows:

- (a) Roll call (or check-in procedure);
- (b) Proof of notice of meeting;
- (c) Reading of minutes of preceding meeting;
- (d) Reports;

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- (e) Board Nominations;
- (f) Election of Board members on the Board;
- (g) Ratification of budget;
- (h) Unfinished business; and
- (i) New business.

Section 3.10 - Voting.

(a) Each Unit in the Community shall have the voting rights as established in the Declaration.

(b) If title to a Unit is held by an entity, including, without limitation, a firm, corporation, partnership, trust, limited liability company, association or other legal entity or any combination thereof (hereinafter "entity"), that entity must appoint a "delegate" to represent such Included Property. Any such delegate must, at the time of the appointment and continuing throughout the period of representation of the entity, own at least a 5% equity interest in the entity. To appoint a delegate, the entity's governing body or officer must notify the Board of the appointment in writing prior to the commencement of the meeting for which the delegate is attending and participating. The Association may require proof of such equity ownership from time to time to evidence the qualification of the delegate to represent such a Unit and in the absence of such demonstration to the reasonable satisfaction of the Association, the Association may reject the right of the delegate to act on behalf of the entity until such time as satisfactory information is provided and accepted by the Association. A duly empowered delegate may participate in meetings and vote on matters requiring the vote of the Association Owners. A delegate may be a candidate for the Board and, if elected, serve as a Board member. The foregoing shall not preclude a delegate to act on behalf of an entity if duly appointed by a properly executed proxy given by the entity in conformance with these Bylaws. The moderator of the meeting may require reasonable evidence that a person voting on behalf of an entity is qualified to vote. A delegate may serve on the Board or as an officer for the Association.

Section 3.11 - Quorum. Except as otherwise provided in these Bylaws, a quorum is deemed present throughout any meeting of the Owners of the Association if the Owners of at least 35% of the owners of the Residential Units in the Community and at least 25% of the owners of Commercial Units in the Community are present at the meeting in person, by telephone or by proxy.

<u>Section 3.12 - Majority Vote</u>. Provided a quorum of allocated votes is present in person or by proxy, the affirmative vote of a majority of the total allocated votes so present in person or by telephone shall constitute approval of any matter voted upon unless a different number is required on a particular matter by the Colorado Revised Nonprofit Corporation Act, this Declaration, the Articles, or these Bylaws.

<u>Section 3.13 - Proxies.</u> At any meeting of the Owners, the vote allocated to a Unit may be cast pursuant to a proxy duly executed by an Owner or by the Owner's duly authorized attorney-in-fact, designating a particular person present at the meeting to vote on behalf of the Owner. An Owner may provide the Association with a directed proxy indicating how the Owner directs the Association to record the Owners vote on a particular matter. If a Unit is owned by more than one person, each owner of the Unit may vote or register protest to the casting of a vote by the other owners of the Unit through a duly executed proxy. An Owner may not revoke a proxy given pursuant to this provision except by actual notice of revocation to the person presiding over a meeting of the Association. A proxy is void if it is not dated or purports to be revocable without notice. A proxy shall terminate eleven (11) months after its date, unless a different termination date is otherwise set forth on its face. Proxies shall be filed with the Secretary of the Association at or before the appointed time of each meeting. Proxies shall conform to C.R.S. Section 7-127-203. All proxies shall be reviewed by the Association's Secretary or designee as to the following: (a) Validity of the signature; (b) Signatory's authority to sign for the Owner; (c) Authority of the Owner to

vote; (d) Conflicting proxies; and (e) Expiration of the proxy.

Section 3.14 - Action by Written Ballot. A vote on any action that may be taken at an annual, regular or special meeting of Owners may be taken without a meeting of the Owners, provided that the Association shall deliver a written ballot to every Owner entitled to vote on the matter by e-mail or mail, which sets forth each proposed action and provides an opportunity to vote for or against each proposed action by responding to the Association. All solicitations for votes by written ballot shall be mailed or e-mailed and shall indicate the number of responses needed to meet quorum requirements, state the percentage of approvals necessary to approve each matter, specify the time by which the response ballot must be received by the Association in order to be counted, specify the approved methods of submitting ballots, and be accompanied by written information regarding the matter to be voted upon. Ballots must be received by the Association no later than 21 calendar days from the date of the ballot, unless a different time is specified by the Board and reflected in the ballot. The Association and the Owners must send their ballots in accordance with Article 8 of these Bylaws (Notices). If so provided for in the written ballot, an action shall be deemed to be approved should an Owner fail to timely respond or otherwise act upon each matter identified for a vote in the written ballot. Approval by written ballot shall be valid when the number of votes cast by the ballot equals or exceeds the quorum required at a meeting authorizing the action and the number of approvals equals or exceeds the number required to approve the matter at a meeting. After the time to respond to the ballot has expired, the Association will tally the results and notify the Owners of the results within 15 days, unless a different time is specified by the Board.

<u>Section 3.15 - Election of Board Members</u>. Cumulative voting for Board members shall not be permitted.

<u>Section 3.16 - Chairman of Meetings</u>. At any meeting of the Owners, the Owners present shall select a Chairman and a Secretary of the meeting.

<u>Section 3.17 - Owner Addresses for Notices</u>. An Owner shall provide written notice to the Association if they wish to receive notices by United States mail only; otherwise, any notices given by the Association may be sent at the option of the Association by either (1) United States Mail (postage prepaid), or (2) e-mail. Notices include, but are not limited to, any notice required to be given by law, or otherwise given by the Association under these Bylaws or any other governing document of the Association to any Owner, or any other written instrument to be given to any Owner. Notices may be mailed or e-mailed to such Owner mailing address or e-mail address of the Unit as shown upon the Association's records. The Owner is responsible for updating the Association records if their contact information changes. If more than one Owner owns a particular Unit, then any notice or other written instrument may be addressed to all of such Owners and may be mailed or e-mailed in one mailing or e-mail message in accordance with the foregoing. Any notice or other written instrument given by the Board in accordance with the foregoing will be deemed to have been given on the date that it is mailed or e-mailed.

Section 3.18 - Rules at Meeting. The Board may prescribe reasonable rules for the conduct of all meetings of the Board and Owners. In the absence of such rules, Robert's Rules of Order shall be used.

ARTICLE 4 OFFICERS

<u>Section 4.1 - Designation</u>. The principal officers of the Association shall be the President, the Secretary and the Treasurer, all of whom shall be elected by the Board. The Board may appoint an assistant Treasurer, an assistant Secretary and other officers as it finds necessary. The President, but no other officers, needs to be a Board member. Any two offices may be held by the same person, except the offices of President and Secretary. An officer need not be an Owner of the Association.

<u>Section 4.2 - Election of Officers</u>. The officers of the Association shall be elected annually by the Board at the organizational meeting of each new Board. They shall hold office at the pleasure of the Board.

<u>Section 4.3 - Removal of Officers</u>. Upon the affirmative vote of a majority of the Board members, any officer may be removed, either with or without cause. A successor may be elected at any regular meeting of the Board or at any special meeting of the Board called for that purpose.

<u>Section 4.4 - President</u>. The President shall be the chief executive officer of the Association. The President shall preside at all meetings of the Owners and the Board. The President shall have all of the general powers and duties which are incident to the office of President of a nonprofit corporation organized under the laws of the State of Colorado, including but not limited to, the power to appoint committees from among the Owners from time to time as the President may decide is appropriate to assist in the conduct of the affairs of the Association. The President may fulfill the role of Treasurer in the absence of the Treasurer. The President may cause to be prepared and may execute amendments, attested by the Secretary, to the Declaration and these Bylaws on behalf of the Association, following authorization or approval of the particular amendment as applicable.

<u>Section 4.5 – Vice President</u>. The Vice President may exercise and perform the actions, powers, duties and functions of the President should the President be unavailable to undertake such the actions, powers, duties and functions.

<u>Section 4.6 - Secretary</u>. The Secretary shall keep the minutes of all meetings of the Owners and the Board. The Secretary shall have charge of the Association's books and papers as the Board may direct and shall perform all the duties incident to the office of Secretary of a nonprofit corporation organized under the laws of the State of Colorado. The Secretary may cause to be prepared and may attest to execution by the President of amendments to the Declaration and the Bylaws on behalf of the Association, following authorization or approval of the particular amendment as applicable.

<u>Section 4.7 - Treasurer</u>. The Treasurer shall be responsible for Association funds and securities, for keeping full and accurate financial records and books of account showing all receipts and disbursements and for the preparation of all required financial data. This officer shall be responsible for the deposit of all monies and other valuable effects in depositories designated by the Board and shall perform all the duties incident to the office of Treasurer of a nonprofit corporation organized under the laws of the State of Colorado. The Treasurer may endorse on behalf of the Association, for collection only, checks, notes and other obligations and shall deposit the same and all monies in the name of and to the credit of the Association in banks designated by the Board. Reserve funds of the Association shall be deposited in segregated accounts or in prudent investments, as the Board decides. Funds may be withdrawn from these reserves for the purposes for which they were deposited, by check or order, authorized by the Treasurer is also a Board member.

<u>Section 4.8 - Agreements, Contracts, Deeds, Checks, etc.</u> Except as provided in these Bylaws, all agreements, contracts, deeds, leases, checks and other instruments of the Association shall be executed by any officer of the Association or by any other person or persons designated by the Board.

<u>Section 4.9 - Statements of Unpaid Assessments</u>. The Treasurer, assistant treasurer, a manager employed by the Association, if any, or, in their absence, any officer having access to the books and records of the Association may prepare, certify, and execute statements of unpaid assessments, in accordance with Section 316 of the Act. The Association may charge a reasonable fee for preparing statements of unpaid assessments. The amount of this fee and the time of payment shall be established by resolution of the Board. Any unpaid fees may be assessed as a Common Expense against the Unit for which the certificate or statement is furnished.

ARTICLE 5 ENFORCEMENT

Section 5.1 - Abatement and Enjoinment of Violations by Owners. The Board shall have the right to enforce the Declaration, any Rules, and any Governance Policies adopted by the Board and remedy violations thereof in the manner prescribed in the Declaration, any Rules, and any Governance Policies , including the right to enjoin, abate or remedy by appropriate legal proceedings, either at law or in equity, the continuance of any breach.

<u>Section 5.2 - Fines for Violation</u>. By resolution, following notice and hearing, the Board may levy reasonable fines per day for each day that a violation of the Governing Documents or Rules persists after Notice and Hearing and more specifically defined in the Declaration, but this amount shall not exceed that amount necessary to insure compliance with the rule or order of the Board.

ARTICLE 6 INDEMNIFICATION

The Board members and officers of the Association shall have the liabilities, and be entitled to indemnification, as provided in the Corporation Act, the provisions of which are incorporated by reference and made a part of this document.

ARTICLE 7 RECORDS

<u>Section 7.1 - Records and Audits</u>. The Association shall maintain financial records consistent with the Governance Policies of the Association. The cost of any audit shall be a Common Expense unless otherwise provided in the Governing Documents.

<u>Section 7.2 - Examination</u>. All records maintained by the Association or the Manager shall be available for examination and copying by any Owner, any Eligible First Mortgagee, or by any of their duly authorized agents or attorneys, at the expense of the person examining the records, during normal business hours and after reasonable notice.

ARTICLE 8 MISCELLANEOUS

<u>Section 8.1 - Notices</u>. Any and all notices to the Association or the Board shall be sent to the office of the Manager, or, if there is no Manager, to the office of the Association, or to such other address as the Board may designate by written notice to all Association Owners, which may be a mailing address or e-mail address. Except as otherwise provided, all notices to any Owners shall be sent to the Association Owner's mailing address or e-mail address (as determined by the Association) as it appears in the records of and as provided by the Owner to the Association. All notices shall be deemed to have been given when mailed, except notices of change of address, which shall be deemed to have been given when received. An Owner has an affirmative duty to notify the Association, through its Manager, of their mailing address, phone number, cell number, fax number and email address and any changes to such information as such changes occur from time to time.

<u>Section 8.2 - Fiscal Year</u>. The Board shall establish the fiscal year of the Association, which shall initially be deemed to commence on January 1 and expire on December 31, unless and until changed by the Board.

<u>Section 8.3 - Waiver</u>. No restriction, condition, obligation or provision contained in these Bylaws shall be deemed to have been abrogated or waived by reason of any failure to enforce the same, irrespective of the number of violations or breaches which may occur.

<u>Section 8.4 - Office</u>. The principal office of the Association shall be at such place as the Board may from time to time designate.

<u>Section 8.5 - Working Capital</u>. A working capital fund is established pursuant to the Declaration. Any amounts paid into this fund shall not be considered as advance payment of assessments. Unless waived by Declarant, each Unit's share of the working capital fund may be collected and then contributed to the Association by the Declarant at the time the sale of the Unit is closed or at the termination of the Period of Declarant Control. If the payment of the capital fund contribution is waived by Declarant, Declarant is not obliged to otherwise fund the waived contribution to the working capital fund. Until paid to the Association, the contribution to the working capital shall be considered an unpaid Common Expense Assessment.

<u>Section 8.6 - Reserves</u>. As a part of the adoption of the regular budget the Board shall include an amount which, in its reasonable business judgment, will establish and maintain an adequate reserve fund for the replacement of improvements to the Common Elements and those Limited Common Elements that it is obligated to maintain, based upon age, remaining life and quantity and replacement cost of major Common Element improvements.

ARTICLE 9 AMENDMENTS TO BYLAWS

<u>Section 9.1 - Vote of Board</u>. The Bylaws may be amended by affirmative vote of both Board Members, following notice and opportunity to comment to all Owners, at any meeting duly called for such purpose.

<u>Section 9.2 - Restrictions on Amendments</u>. No amendment of the Bylaws shall be contrary to or inconsistent with any provision of the Declaration.

APPROVAL AND EXECUTION

The foregoing Bylaws are hereby adopted by the Association as of the Effective Date.

Riverfront Village Subdivision Owners Association, Inc., a Colorado nonprofit corporation

By:

Printed Name:	
Title:	

DECLARATION FOR RIVERFRONT VILLAGE CONDOMINIUMS

THIS DECLARATION FOR RIVERFRONT VILLAGE CONDOMINIUMS ("**Declaration**"), is made effective as of ______, 202___ ("**Effective Date**") and is made, adopted and published by the Alpine Homes-Ridgway, LLC, a Colorado limited liability company ("**Declarant**").

ARTICLE ONE IMPOSITION OF COVENANTS

1.1. <u>General Purposes</u>.

1.1.1. Declarant is the current, fee simple owner of certain improved real estate situated in the Town of Ridgway, Ouray County, Colorado, more particularly described on attached <u>Exhibit A</u>, together with the beneficial rights and burdens arising from any agreement, covenants, easements and rights-of-way as well as any appurtenances affecting such land and any improvements constructed on the land now and in the future (together such interests are collectively referred to as the "**Real Estate**"). Title to the Real Estate is subject to those covenants, restrictions, agreements, easements and other documents or instruments of record (together such interests are collectively referred to as the "**Existing Encumbrances**").

1.1.2. Declarant desires by this Declaration to create a common interest community under the name and style of "**Riverfront Village, a Planned Community**" ("**Community**") in which portions of said Real Estate will be designated for separate ownership and use and in which the remainder of said Real Estate will be designated for common ownership solely by the owners of the separate ownership portions.

1.1.3. This Declaration is executed and recorded subject to the terms and conditions contained in the Existing Encumbrances.

1.2. Submission of Real Estate.

1.2.1. Declarant hereby submits the Real Estate to condominium ownership under and pursuant to the provisions of the Colorado Common Interest Ownership Act, Section 38-33.3-101, et seq. of the Colorado Revised Statutes, as it may be amended from time to time ("Act"), and to this Declaration and the Map for Riverfront Village Condominiums (as defined below).

1.2.2. This is the Declaration that is referred to in the Condominium Map of Riverfront Village Condominiums which will be prepared upon the completion of the improvements in the Community and thereupon executed and recorded in the Official Records ("Condominium Map" or "Map"). By this reference, the Condominium Map is incorporated in this Declaration.

1.2.3. The Community shall be deemed to be subject to any and all applicable terms and conditions contained in the Act, including amendments to the Act made subsequent to the recordation of this Declaration which are intended to be binding upon existing communities.

1.3. <u>Covenants Running With the Land</u>. All provisions of this Declaration shall be deemed to be covenants running with the land, or as equitable servitudes, as the case may be. The benefits, burdens, and other provisions contained in this Declaration shall be binding upon and shall inure to the benefit of all Owners, and their respective heirs, executors, administrators, personal representatives, successors, and assigns. All of the Real Estate shall be held, sold, conveyed, encumbered, leased, rented, occupied, and improved, subject to the provisions of this Declaration.

1.4. <u>Subject to the Town of Ridgway Codes, Laws and Regulations and Town</u> <u>Development Approvals and Requirements</u>. In all instances where Declarant has reserved rights to modify the Declaration, Map, Units and Common Elements, the exercise of such reserved rights are made expressly subject to applicable codes and regulations enacted by the Town of Ridgway ("Town"), including the Town of Ridgway Municipal Code ("Town Laws") and applicable terms, conditions, requirements and restrictions contained in any site-specific development approvals for the Property granted by the Town, including the Development Agreement ("Town Approvals"), which are collectively referred to as the "Town Development Approvals and Requirements"). Nothing herein is intended to relieve a Person from complying with applicable provisions of the Town Laws and/or the Town Development Approvals and Requirements, whether or not this requirement is expressly stated herein. The Town Development Approvals and Requirements may only be modified or amended as provided for in the Town Laws. In the event of a conflict between the Condominium Documents (defined below) and the Town Development Approvals and Requirements, the applicable Town Development Approvals and Requirements, the applicable Town Development Approvals and Requirements, the applicable Town Development

ARTICLE TWO DEFINITIONS

Capitalized terms used in this Declaration and not defined elsewhere in this Declaration have the meanings given those terms in Article 2. The following words, when used in this Declaration, shall have the meanings designated below unless the context expressly requires otherwise:

2.1. "Act" means the Colorado Common Interest Ownership Act, Article 33.3, Title 38, Colorado Revised Statutes, as amended and supplemented from time to time. In the event the Act is repealed, the Act, on the effective date of this Declaration, shall remain applicable to this Declaration.

2.2. "Employee Housing Unit" is a type of Residential Unit that has been deed restricted as provided for in the Town Development Agreement. An Employee Housing Unit is subject to all terms, conditions, restrictions and requirements contained in this Declaration and the other Condominium Documents for a Residential Unit and the Town Development Approvals and Requirements for an Employee Housing Unit.

2.3. "Allocated Interests" means: (a) the undivided interests attributable to and allocated to each of the Units in the Common Elements, (b) the Common Expense Liability attributable to and allocated to each of the Units; and (c) the voting rights in the Association attributable to and allocated to each of the Units as provided for in the Condominium Documents. The initial Allocated Interests for each of the Units in the Common Elements and Common Expense Liability will be set forth on a certain **Exhibit B** to be appended to and included in this Declaration at a later time, which will be prepared by Declarant upon the completion of the improvements in the Common Elements and Common Expense Liability are based upon the square footage of each Unit as compared to the square footage of all Units. Owners shall be entitled to one vote for each Unit owned within the Community, which shall be weighted in accordance with each Unit's Allocated Interests in the Common Elements and Common Expense Liability. The Allocated Interests for each Unit may change as a result of the Declarant's (or its assignee's) exercise of the Reserved Rights to add, remove or subdivide Units as provided for herein.

2.4. "Articles of Incorporation" or "Articles" means the Articles of the Association, which have been filed with the office of the Secretary of State of the State of Colorado, as the same may be amended from time to time.

2.5. "Assessments" means the Regular Assessments, including Limited Common Expenses, Special Assessments and Reimbursement Assessments duly assessed pursuant to this Declaration.

2.6. "Association" means Riverfront Village Subdivision Owners Association, Inc., a Colorado nonprofit corporation.

2.7. "**Board**" means the governing body of the Association, as provided for in this Declaration and as further empowered by the Articles of Incorporation and the Bylaws for the Association.

2.8. **"Budget"** means a written itemized estimate of the Common Expenses to be incurred by the Association in performing its functions under this Declaration and adopted by the Board pursuant to the Declaration.

2.9. "**Building(s)**" means each of the buildings situated on the Real Estate, together with (a) any additions or modifications or replacements that may hereafter be made thereto, and (b) all improvements and fixtures contained therein.

2.10. "Bylaws" means any instruments, however denominated, which are adopted by the Association for the regulation and management of the internal affairs of the Association, including any amendments thereto.

2.11. "Commercial Unit" means a physical portion of the Community designated to be a Commercial Unit on the Map and/or in this Declaration, which is designated for separate ownership or occupancy. The boundaries of the Commercial Unit are described in or determined by this Declaration and depicted on the Map. The Commercial Unit shall be designated by a separate number, letter, address or other symbol or combination thereof that identifies each Commercial Unit in the Community as will be more specifically set forth on **Exhibit B** to be appended to and included in this Declaration at a later time, which will be prepared by Declarant upon the completion of the improvements in the Community and be included in an amendment or supplement to this Declaration. The boundaries of the Commercial Unit as depicted and/or otherwise described on the Map shall be conclusively be deemed to be the actual boundaries of the Commercial Unit. Changes to any Commercial Unit boundary, if any, shall be described on any amendment or supplement to a Map as provided for herein.

2.12. "**Common Elements**" means all portions of the Community other than the Units. The Common Elements are owned or otherwise held in common by the Owners in undivided interests according to the Allocated Interests set forth pursuant to Section 2.2 above and consist of General Common Elements and Limited Common Elements.

"General Common Elements" means all tangible physical properties of, and other appurtenant interests associated with this Community, except the Limited Common Elements and the Units.

"Limited Common Elements" means those interests in the Common Elements which are either limited to or reserved in this Declaration, on the Map, or by authorized action of the Association, for the exclusive use of a Unit(s). If any chute, flue, duct, wire, conduit, bearing wall, bearing column, fixture or other mechanical or structural element lies partially within and partially outside the designated boundaries of a Unit, any portion thereof serving only that Unit is a Limited Common Element allocated solely to that Unit, and any portion thereof serving more than one Unit or any portion of the Common Elements is a part of the General Common Elements.

2.13. "**Common Expenses**" means expenditures made or liabilities incurred by or on behalf of the Association, together with any allocations to reserves, including all expenses incurred by the Association for any reason whatsoever in connection with the Common Elements, or the costs of any

other item or service provided or performed by the Association pursuant to the Condominium Documents or in furtherance of the purposes of the Association or in the discharge of any duties or powers of the Association, including, any fees and charges imposed by the Managing Agent pursuant to any Management Agreement.

2.14. **"Common Expenses Liability**" means the liability for a share of the Common Expenses, including any Limited Common Expenses, attributable to and allocated to each Unit in accordance with the Allocated Interests assigned to the Unit and/or as otherwise provided for in this Declaration.

2.15. "**Community**" means the Community, including each of the Units and all of the Common Elements, together with all Improvements and other amenities now or hereafter located thereon, and together with all easements, rights, appurtenances and privileges belonging or in any way pertaining thereto.

2.16. "Condominium Documents" means the basic documents creating and governing the Community, including, but not limited to, this Declaration, the Map, the Articles of Incorporation and Bylaws of the Association, any Rules promulgated by the Association and any other documents, policies and procedures relating to the Community adopted by the Association or the Board pursuant to this Declaration or the Act, as the same may be supplemented or amended from time to time.

2.17. "Condominium Map" or "Map" means the Condominium Map, which shall also be deemed to be that part of this Declaration that depicts all or any portion of the Community in three dimensions and is recorded in the Official Records.

2.18. "**Declarant**" means Alpine Homes-Ridgway, LLC, a Colorado limited liability company, its successors and assigns. A Person shall be deemed to be a "successor and assign" of Declarant if specifically designated in a duly recorded instrument as a successor or assign of Declarant under this Declaration and shall be deemed a successor and assign of Declarant only as to the particular rights or interests of Declarant under this Declaration which are specifically designated in that written instrument.

2.19. "**Declaration**" means this Declaration for the Community, together with any supplement or amendment to this Declaration and recorded in the Official Records. The term Declaration includes the Map recorded with this Declaration and all amendments to this Declaration and supplements to the Map without specific reference thereto.

2.20. "**Deed of Trust**" means a Mortgage.

2.21. "Eligible Mortgagee" means a First Mortgagee which has notified the Association in writing of its name and address and status as a First Mortgagee and has requested that it receive notices provided for herein.

2.22. "First Mortgagee" means any Person named as a Mortgagee in any First Mortgage.

2.23. "General Common Expenses" means expenditures made or liabilities incurred by or on behalf of the Association, together with any allocations to reserves, for the general benefit of all of the Units.

2.24. **"Improvement(s)"** means the Buildings, improvements, alterations, additions, repairs to the Buildings, structural or otherwise, any excavation, grading, landscaping or other work which in any way alter the Real Estate or the improvements located thereon, from its natural or improved state existing on the date this Declaration was first recorded.

2.25. "Lease" means and refers to any agreement for the leasing, rental, use or occupancy of a Unit within the Community for Short-Term Rentals or Long-Term Rentals.

2.26. "LCE Parking Space" means each Parking Space allocated to a Unit as a Limited as further described in Section 11.3.5 below.

2.27. "LCE Storage Space" means each Storage Space allocated as a Limited Common Element, as further described in Section 11.3.5 below.

2.28. "Long Term Rentals" means the rental of a Unit to any third person for residential purposes for a term of thirty consecutive days or longer.

2.29. "Management Agreement" means any contract or arrangement, if any, entered into for purposes of administering the performance of the responsibilities of a Board relative to the operation, maintenance, and management of the Community or particular portions or aspects thereof.

2.30. "**Managing Agent**" means a person, firm, corporation, or other entity, if any, employed or engaged as an independent contractor pursuant to a Management Agreement to perform management services for the Association.

2.31. "**Member**" means each Owner. Membership in the Association shall be appurtenant to, and may not be separated from, ownership of a Unit.

2.32. "Mortgage" means any mortgage, deed of trust or other security instrument, given voluntarily by the Owner of a Unit, creating a real property security interest in a Unit and recorded in the Official Records. "First Mortgage" means a mortgage which is the first and most senior of the Mortgages on the same Unit. The term "Mortgage" does not mean a statutory, tax or judicial lien. The term "Deed of Trust" when used herein shall be synonymous with the term "Mortgage."

2.33. "**Mortgagee**" means a mortgagee under a Mortgage or a beneficiary under a Deed of Trust, as the case may be, and the assignees of such Mortgagee.

2.34. "Notice and Hearing" means a written notice and hearing before the Board, or a panel appointed by the Board, as set forth in the Bylaws.

2.35. "Occupant" means: (a) any Person who is a tenant in a residence on a Unit pursuant to a Lease with the Owner thereof; (b) any Person who is present within the Community as a family member, guest or invitee of an Owner or the Association; (c) any person who is a guest, invitee, servant, tenant, employee, or licensee of Owner who is occupying a Unit and/or is present on the Common Elements for any period of time; or (d) any Person who is occupying a Unit and/or is present on the Common Elements.

2.36. "Official Records" means the Office of the Clerk and Recorder of Ouray County, Colorado.

2.37. "**Parking Space(s)**" means a physical portion of the Community identified as a parking space on the Map.

2.38. "**Person**" means an individual, association, partnership, limited liability company, corporation, trust, governmental agency, political subdivision, or any other legally established entity and/or any combination thereof.

2.39. "**Regular Assessment**" means a charge against an Owner and the Owner's Unit for purposes of covering the annual costs of operating and administering the Association and all other Common Expenses. Regular Assessments are based on a Budget adopted by the Board in accordance with this Declaration and are allocated to the Units in accordance with the Allocated Interests designated to that Unit, except that Common Expenses that in the judgment of the Board benefit fewer than all of the Units may be allocated exclusively to the Units benefited as Limited Common Expenses, as provided for herein.

2.40. "Reimbursement Assessment" means a charge determined by the Board in its sole and reasonable discretion, assessed against a particular Owner or Occupants of Owner's Unit and against the Owner's Unit for the purpose of: (a) imposing fines and penalties and/or reimbursing the Association for costs and expenses incurred by the Association in connection with the enforcement of and/or the remedying of any violation of the Condominium Documents by the Owner or by an Occupant any provision of the Condominium Documents; (b) reimbursing the Association for costs and expenses it incurs, including consulting fees, legal fees and similar expenses, incurred by the Association in taking actions for or behalf of a Unit Owner or Unit Owner's Unit; (c) imposing fines and penalties and/or reimbursing the Association for costs and expenses incurred by the Association in connection with correcting or repairing damage caused to the Community attributable to the misconduct and/or the actions or the inactions of the Owner or Occupant; or (d) for such other purposes set forth in the Condominium Documents providing for the imposition of fines or the collection of costs, expenses and the like, together with late charges and interest and attorney fees and costs, as provided for in the Condominium Documents. Reimbursement Assessments shall also include each of those fees and costs for goods and services requested by and/or otherwise provided to an Owner or Occupant by the Association or the Managing Agent.

2.41. "Residential Unit" means a physical portion of the Community designated to be a Residential Unit on the Map and/or in this Declaration, which is designated for separate ownership or occupancy. An Employee Housing Unit is deemed to be a Residential Unit and is subject to all terms. conditions, restrictions and requirements of a Residential Unit. The boundaries of each Residential Unit are described in or determined by this Declaration and depicted on the Map. Each Residential Unit shall be designated by a separate number, letter, address or other symbol or combination thereof that identifies each Residential Unit in the Community as will be more specifically set forth on Exhibit B to be appended to and included in this Declaration at a later time, which will be prepared by Declarant upon the completion of the improvements in the Community and be included in an amendment or supplement to this Declaration. The boundaries of each Residential Unit is depicted and/or otherwise described on any Map shall be conclusively deemed to be the actual boundaries of the Residential Unit. Changes to any Residential Unit boundary, if any, shall be described on any amendment or supplement to a Map as provided for herein. The Residential Units are configured in either a building containing multiple Units ("Multifamily Residential Units") or as adjoining Units in a duplex arrangement ("Duplex Residential Units").

2.42. "**Rules**" means any Rules and Regulations, Policies and Procedures promulgated by the Board for the management, preservation, safety, control, and orderly operation of the Community in order to effectuate the intent and to enforce the obligations set forth in the Condominium Documents, as amended and supplemented from time to time.

2.43. "Security Interest" means an interest in Real Estate or personal property created by contract or conveyance which secures payment or performance of an obligation. The terms include a lien created by a mortgage, deed of trust, trust deed, security deed, contract for deed, land sales contract, lease intended as security, assignment of lease or rents intended as security, pledge of an ownership interest in the Association, and any other consensual lien or title retention contract intended as security for an obligation. The holder of a Security Interest includes any insurer or guarantor of a Security Interest.

2.44. "Short Term Rentals" means the rental of a Unit to any particular guest for overnight accommodation purposes in which consideration is being paid as defined and regulated by the Town of Ridgeway codes and regulations. In no event, shall a short-term rental to a particular guest not extend longer than thirty consecutive days.

2.45. "Special Assessment" means a charge against an Owner and the Owner's Unit for purposes of reimbursing the Association for costs and expenses incurred or to be incurred by the Association for the purpose of paying for the construction, reconstruction, repair, maintenance or replacement of capital improvements to or upon or serving the Community or any part thereof, the costs of which were not included in a Regular Assessment, or for excess reconstruction costs or other extraordinary expenses or for funding any operating or reserve deficit of the Association, as authorized by the Board from time to time as provided herein.

2.46. "Storage Space(s)" means a physical portion of the Community identified as a storage space on the Map.

2.47. "Unit" means a Residential Unit (including an Employee Housing Unit) and a Commercial Unit, which is a physical portion of the Community designated for separate ownership or occupancy and the boundaries of which are depicted, described or otherwise determined by this Declaration and the Map. Each Unit includes an appurtenant undivided interest in the Common Elements corresponding with the Allocated Interest assigned to each Unit as will be set forth on <u>Exhibit B</u> to be appended to and included in this Declaration at a later time, which will be prepared by Declarant upon the completion of the improvements in the Community and be included in an amendment or supplement to this Declaration. Each Unit shall be designated by a separate number, letter, address or other symbol or combination thereof that identifies only one Unit in the Community as will be more specifically set forth on <u>Exhibit B</u> to be appended to and included in this Declaration at a later time, which will be prepared by Declarant upon the combination thereof that identifies only one Unit in the Community as will be more specifically set forth on <u>Exhibit B</u> to be appended to and included in this Declaration at a later time, which will be prepared by Declarant upon the completion of the improvements in the Community as will be more specifically set forth on <u>Exhibit B</u> to be appended to and included in this Declaration at a later time, which will be prepared by Declarant upon the completion of the improvements in the Community and be included in an amendment or supplement to this Declaration and depicted on the Map.

2.48. "Unit Owner" or "Owner" means any person who owns record title to a Unit or an undivided interest therein. The term includes a contract seller but excludes a contract purchaser, and excludes any Person having a Security Interest in a Unit or an undivided interest therein, unless such Person has acquired record title to such Unit or undivided interest pursuant to a foreclosure or any proceedings in lieu of foreclosure.

ARTICLE THREE GENERAL PROVISIONS AND RESTRICTIONS

3.1. Division into Units; Allocated Interests; Maximum Number of Units.

3.1.1. The Real Estate is hereby initially divided into _____ Units consisting of 38 Residential Units, inclusive of 28 Multifamily Residential Units and 10 Duplex Residential Units and _____ Commercial Units. The maximum number of Units that may, but need not, be created in the Community is a total of number of Units that may be constructed under the current and future Town Development Approvals and Requirements.

3.1.2. Each Unit shall consist of a separate fee simple estate in such Unit and the Allocated Interest for the Unit as will be set forth on <u>Exhibit B</u> to be appended to and included in this Declaration at a later time, which will be prepared by Declarant upon the completion of the improvements in the Community and be included in an amendment or supplement to this Declaration. Each Owner shall own his or her appurtenant undivided Allocated Interest in the Common Elements as a tenant-in-common

with the other Owners, and shall have the non-exclusive right to use and enjoy the Common Elements, subject to the provisions of the Condominium Documents.

3.1.3. <u>Inseparability of a Unit</u>. Each Unit and its appurtenant undivided interest in the Common Elements shall be inseparable and may be conveyed, leased, encumbered, devised or inherited only as a Unit.

3.2. <u>Description of Units</u>. Every contract for sale, deed, lease, security interest and every other legal document or instrument shall legally describe a Unit as follows:

______, Riverfront Village Condominiums, according to the Condominium Map for Riverfront Village Condominiums thereof recorded on ______, 202____at Reception No. ______and the Condominium Declaration for Riverfront Village Condominiums recorded on ______, 202___at Reception No. ______, all in the Office of the Clerk and Recorder of Ouray County, Colorado.

Such description shall be legally sufficient for all purposes to sell, convey, transfer, encumber or otherwise affect the Unit and its appurtenant undivided interest in the Common Elements, and to incorporate all of the rights, interests, obligations, restrictions and burdens appurtenant or incident to ownership of a Unit as set forth in this Declaration and on the Condominium Map. Each such description shall be construed to include a non-exclusive easement over the Common Elements for appropriate ingress and egress to and from each Unit, and a non-exclusive right to use and enjoy the Limited Common Elements, and an exclusive or non-exclusive right to use and enjoy any Limited Common Elements designated for the use of that Unit, subject to all applicable provisions of this Declaration.

3.3. <u>Separate Assessments and Taxation - Notice to Assessor</u>. The Association, to the extent necessary, shall give written notice to the Assessor of Ouray County, Colorado, of the creation of condominium ownership of this Community, as provided by the Act, so that each Unit, together with its undivided interest in the Common Elements, shall be deemed a separate parcel and subject to separate assessment and taxation.

3.4. Unit Boundaries.

3.4.1. <u>Unit Boundaries</u>. The boundaries of each Residential Unit and Commercial Unit are as follows: (a) the upper horizontal boundary of each Unit is the unfinished ceiling as shown on the Map, such that the drywall, concrete or other structural material comprising the ceiling is a part of the Common Elements and the finished surface over such drywall, concrete or other structural material is a part of the Unit; (b) the lower horizontal boundary of each Unit is the unfinished floor of the lowest level of the Unit as shown on the Map, such that the concrete or other structural material comprising the floor is a part of the Common Elements and the finished surface over such drywall, concrete or other structural material comprising the floor is a part of the Common Elements and the finished surface over such concrete or other structural material is a part of the Unit; and (c) the vertical boundary of each Unit is the unfinished wall bounding each Unit on all sides as shown on the Map ("Exterior Wall"), such that the drywall, concrete or other structural material comprising such wall is a part of the Common Elements and the finished surface over such drywall, concrete or other structural material is a part of the Unit.

3.4.2. <u>Relocation of Unit Boundaries</u>. Except for Declarant and its exercise of the Reserved Rights and subject to the Town Development Approvals and Requirements, no Owner or Owners may relocate the boundaries of any Unit(s) except by amendment to this Declaration in accordance with the applicable requirements hereof. In addition, except for Declarant and its exercise of

Reserved Rights, any relocation of boundaries shall be done in accordance with the procedures set forth in the Act, in particular Sections 212 and 213. All costs incurred in connection with such relocation of boundaries shall be borne by the Owner or Owners of the affected Units, including all costs incurred by the Association in connection therewith.

3.5. **No Partition of Units or Common Elements**. Except for Declarant and its exercise of the Reserved Rights and subject to the Town Development Approvals and Requirements, no Owner may assert any right or bring any action for partition or subdivision with respect to such Owner's Unit or the Common Elements. By becoming an Owner, each Owner waives any and all rights of subdivision or partition that such Owner may have with respect to such Owner's Unit and/or the Common Elements. This Section shall not, however, limit or restrict the right of the Owners of a Unit to bring a partition action pursuant to Section 38-28-101, et seq., of the Colorado Revised Statutes requesting the sale of the Unit and the division of the proceeds among such Owners; provided that no physical division of the Unit or of the Common Elements shall be permitted as a part of such action and no such action shall affect any other Unit. Any purported conveyance, encumbrance, judicial sale or other voluntary or involuntary transfer of an undivided interest in the Common Elements made without the Unit to which that interest is appurtenant is void.

3.6. **Encumbrances**. Any Owner shall have the right from time-to-time to Mortgage or encumber his interest in a Unit by a Mortgage or Deed of Trust.

Mechanic's Liens. If any Owner shall cause or permit any material to be furnished to 3.7. such Owner's Unit or any labor or services to be performed therein, neither the Association nor any other Owner of any other Unit shall be liable for the payment of any expense incurred or for the value of any work done or material furnished. All such work shall be at the expense of the Owner causing it to be done and such Owner shall be solely responsible to contractors, laborers, materialmen and other Persons furnishing labor, services or materials to such Owner's Unit. Nothing herein contained shall authorize any Owner or any Person dealing through, with or under any Owner to charge the Common Elements or any Unit other than that of such Owner with any mechanic's or materialmen's lien or other lien or encumbrance whatsoever. Notice is hereby given that the right and power to charge any lien or encumbrance of any kind against the Common Elements or against any Owner or any Owner's Unit for work done or materials furnished to any other Owner's Unit is expressly denied. If, because of any act or omission of any Owner, any mechanic's or materialmen's lien or other lien or order for the payment of money shall be filed against any of the Common Elements or against any other Owner's Unit or against any other Owner or the Association (whether or not such lien or order is valid or enforceable as such), the Owner whose or which act or omission forms the basis for such lien or order shall, at such Owner's own cost and expense, cause such lien or order to be canceled or bonded over in an amount and by a surety company reasonably acceptable to the party or parties affected by such lien or order within twenty (20) days after the filing thereof, and further such Owner shall indemnify and save harmless all such parties affected from and against any and all costs, expenses, claims, losses or damages, including reasonable attorneys' fees resulting therefrom.

3.8. Additions, Alterations or Improvements.

3.8.1. <u>Units</u>. Except for Declarant and its exercise of the Reserved Rights no additions, alterations, changes or improvements shall be constructed, made, done or permitted to any Unit by any Owner, Occupant, or employee or agent thereof, without the prior written approval of the Board. Without limiting the generality of the foregoing, said restrictions shall apply to and include (a) alteration or change of any structural elements of a Unit, including the roof, (b) painting or other alteration or change of the exterior of a Unit, including doors and windows, (c) alteration or change of any Common Elements (including Limited Common Elements) appurtenant to the Units, or (d) addition, alteration, change or removal of any landscaping. The foregoing restrictions shall not apply to nonstructural additions,

alterations, changes or improvements to the interior of a Unit, that are not visible from outside the Unit, and that are in compliance with all applicable laws, ordinances, regulations and codes. Except for alterations to a Limited Common Element which have received the prior written approval of the Board of the Association, no Owner or Occupant shall have any right to alter, change or improve in any way the Common Elements or any part thereof, said Common Elements being the exclusive responsibility and jurisdiction of the Association.

3.8.2. <u>Common Elements</u>. Except for Declarant and its exercise of the Reserved Rights, the Association, through its Board, shall have the right and authority to make any changes, alterations, improvements or additions to the Common Elements, including the Limited Common Elements. No individual Owner shall have any right to do any of such things without the express prior written consent of the Board.

3.9. Association Maintenance Responsibilities.

3.9.1. <u>Common Elements</u>. Subject to the rights and requirements of the Association to allocate Common Expenses among certain Units, and except as such obligations may otherwise be assigned to Owners in Section 3.10 below, the Association shall be responsible for certain aspects relating to the maintaining, repairing, improving, restoring and replacing the General Common Elements and certain aspects of the Limited Common Elements, as follows:

A. The sidewalks, stairs, stairwells, entry features, pathways, platforms and steps and such other pedestrian and vehicular ingress/egress, parking and maneuvering areas, including any and all related mechanical, electrical, plumbing and other service systems and equipment, systems;

Community signage;

B. The landscaping, hardscaping, street and pathway lighting and

C. Snow removal, except that snow removal on patios and decks that have been assigned as a Limited Common Element to a Unit shall be the responsibility of the Owner of the Unit to which the patio and deck has been assigned as a Limited Common Element. The Association shall remove snow from Building roofs as is reasonably required from time to time, the cost of which shall be allocated as an expense to all Owners.

D. The mechanical, electrical, plumbing and other service systems, and all related equipment, systems and facilities whether a General Common Element or Limited Common Element;

E. All structural elements and roofs, siding, foundations, common lighting and utilities and any entry features or signage;

F. Any snow melt systems for the General Common Elements, other than a snow melt system for a deck or patio assigned to a Unit as a Limited Common Element, which shall be the responsibility of the Owner of the Unit; and

G. The painting, staining, chinking or other resurfacing of the exterior surfaces of all walls and facades, exterior doors, windows, decks and balconies of the Units and General Common Elements, including the Limited Common Elements.

3.9.2. Each Unit is subject to an easement for the benefit of the Association and its Board, agents, employees and contractors, for purposes of accomplishing the maintenance and repair rights described in this Section 3.9.

3.9.3. If the need for such maintenance or repair to a Common Element results from the willful or negligent act of or from damage or destruction caused by an Owner or Occupant, the Board shall have the right to perform such maintenance or repair and to levy and collect a Reimbursement Assessment upon the Owner and the Owner's Unit for the costs and expenses incurred by the Association in connection therewith.

3.10. **Owner Maintenance Responsibilities**.

3.10.1. Each Owner of a Unit shall be responsible for:

A. Cleaning, sweeping, maintaining, repairing, improving, restoring and replacing as necessary:

(1) All interior elements and features of the Owner's Unit, including, without limitation, appliances, FF&E, personal property, hot tubs, vents, the interior non-supporting walls, improvements, fixtures, equipment, and appurtenances;

(2) All such other areas that have been assigned to the Unit as a Limited Common Element, including, without limitation, the deck and patio assigned to the Unit, including any related snowmelt system and deck/patio covering.

(3) All interior non-supporting walls, improvements, fixtures, equipment, appliances and appurtenances.

B. General cleaning, maintenance and repair of exterior doors and windows, which includes the replacement of cracked, chipped or broken glass (in conformance with the same door or window being replaced), including routine adjustments required to enable the normal, customary operation of the window and door and adequate weather stripping to prevent water intrusion. Except for Declarant and its exercise of Reserved Rights, no changes to or replacement of exterior doors or windows may be made without the prior written approval of the Association.

C. Maintaining, repairing and replacing all rain gutters and down spouts, which tie into an central drainage system.

D. Maintaining, repairing and replacing all snowmelt systems designated within the Unit or located on Limited Common Elements assigned to the Unit, including the replacement of any concrete or other materials affected by such servicing.

E. All elements and finishes associated with decks, railings and patios, including structural components and any damaged concrete.

F. Such other matters as reasonably determined by the Board and uniformly applied to all similarly styled Units.

3.10.2. In addition, each Owner shall be responsible for any damage to other Units or to the Common Elements resulting from the Owner's failure to perform or negligent performance of the Owner's maintenance and repair responsibilities as set forth herein.

3.10.3. Each Owner shall perform the Owner's maintenance and repair responsibilities in such manner as shall not unreasonably disturb or interfere with other Owners, Guests or Occupants.

3.10.4. If an Owner fails to perform any such maintenance or repair obligations within ten (10) days (or shorter time if circumstances so require) following receipt of a written notice from the Board requesting the same, the Board shall have the right to enter upon the Owner's Unit to perform such obligations on the Owner's behalf and to levy and collect a Reimbursement Assessment upon the Owner and the Owner's Unit for the costs and expenses incurred by the Association in connection therewith.

3.10.5. Each Unit is subject to an easement for the benefit of the Association and its Board, agents, employees and contractors, for purposes of accomplishing the maintenance and repair rights described in this Section 3.10.

3.10.6. In the event of a conflict between the responsibilities of the Association under Section 3.9 and an Owner under Section 3.10, the Board shall reasonably determine the party responsible.

3.11. <u>Standard of Care</u>. The Association and the individual Owners shall each use a reasonable standard of care in performing their respective maintenance, repair and upkeep responsibilities so that the entire Community will reflect a pride of ownership. Except for Declarant and its exercise of Reserved Rights, all repairs and replacements within the Community shall be substantially similar to the original construction and craftsmanship and shall be of first-class quality.

3.12. <u>Emergency Maintenance and Repair</u>. In the event of an emergency or the sudden occurrence of unanticipated conditions which threaten the health, safety or physical well-being of Persons or property within the Community or which conditions affect the common usage of Common Elements or inconvenience the Owners, the Board shall have the authority (without any notice being required) to take whatever remedial action and to undertake such maintenance, repairs and improvements as may be necessary anywhere in the Community to protect persons and property, including the right to gain reasonable access to a Unit to complete this work.

3.13. <u>Compliance with Laws</u>. No Owner or Occupant shall do any act or cause or permit anything to be done or kept in or upon its Unit, or any Common Elements, which would be in violation of any federal, state, city or other law, ordinance, regulation or code of any governmental body having jurisdiction, or of any rule or regulation promulgated by the Association, or of any provision of this Declaration, or which would result in the increase of, or cancellation of, insurance maintained by the Association.

3.14. <u>Use and Occupancy of the Residential Unit</u>.

3.14.1. Each Residential Unit shall be occupied and used for residential purposes, only in conformance with the Town Development Approvals and Requirements. No business, professional or other non-residential or commercial use shall be made within any Residential Unit except as allowed by this Declaration and the Town Development Approvals and Requirements. Home occupations may be allowed if approved by the Board on a case by case basis and if allowed by the Town Development Approvals and Requirements.

3.14.2. Notwithstanding anything to the contrary contained in this Declaration, Declarant reserves to itself and its employees, agents and contractors the right to perform such activities within the Community and the right to maintain therein such facilities as Declarant deems reasonably necessary or incidental, for purposes of completing the development and sale of Units in the Community, specifically including without limitation the maintenance of business and/or sales offices, storage areas, signs, model units, parking areas and lighting facilities.

3.15. <u>Use and Occupancy of the Commercial Units</u>.

3.15.1. Subject to the provisions of this Section 3.15, each Commercial Unit shall be occupied and used for any and all lawful purposes allowed by the Town Development Approvals and Requirements.

3.15.2. Without limiting any other rights or obligations hereunder, the following uses of Commercial Units, including appurtenant Limited Common Elements, are specifically prohibited:

(a) Bar, nightclub or dance hall; *provided*, *however*, a bar located within a restaurant shall be permitted;

(b) Massage parlor, adult book and/or video store or businesses with nude or topless acts or employees; and

(c) Uses and activities arising in connection with any and all growing, storing, maintaining, selling, distributing or using marijuana, including, without limitation, any such activities relating to a medical marijuana dispensary or any enterprise that in any way grows, cultivates distributes, transmits, gives, dispenses, supplies and/or otherwise provides marijuana to any person for any purposes, including, without limitation, for routine marijuana sales and distribution and/or any "medical use of marijuana" within the meaning of any applicable federal, state or local law, without regard to whether or not the marijuana is being distributed, transmitted, given, dispensed, cultivated, supplied or provided for cash, credit, barter or otherwise and/or for no consideration.

3.15.3. Commercial Units shall comply with all state and local regulations applicable to such Units. Any commercial operation shall conduct its operations wholly within the confines of said Commercial Unit and its appurtenant Limited Common Elements unless the Board permits use of the General Common Elements for commercial purposes.

3.15.4. <u>Changes to Rights of Commercial Unit Owners</u>. Neither the Association nor any Owner may take any action or adopt any Rule that will interfere with or diminish any right of the Owner of a Commercial Unit under this Section 3.15 without the prior written consent of the Owner of the Commercial Unit.

3.16. <u>Use and Occupancy of the Employee Housing Units</u>. All Employee Housing Units shall be occupied and used for any and all lawful purposes allowed by the Town Development Approvals and Requirements.

3.17. Vehicle Parking, Storage, Operation and Repair.

3.17.1. Parking Spaces may be used only for purposes of parking motor vehicles and not for storage or other non-conforming purposes.

3.17.2. Motorized vehicles of any kind shall only be parked or stored in designated Parking Spaces.

3.17.3. No boats, trailers, buses, motor homes, mobile homes, campers (on or off supporting vehicles), motorcycles, off-road-motorcycles, snowmobiles, recreational vehicles, all-terrain vehicles, trucks, industrial or commercial vehicles (both cabs or trailers), abandoned or inoperable vehicles (as defined below), or any other similar vehicles (excepting passenger automobiles and one ton or smaller pick-up trucks) shall be parked or stored in the Community except as approved in advance by the Board.

3.17.4. No motorized vehicle of any kind shall be maintained, repaired, repainted, serviced or rebuilt in the Community.

3.17.5. An "abandoned or inoperable vehicle" shall mean any motorized vehicle which does not display a current motor vehicle license or which is not capable of being driven under its own propulsion or which does not have an operable propulsion system within the vehicle. In the event that the Board shall determine that a vehicle is abandoned or inoperable, or is otherwise in violation of the provisions of this section, a written notice of violation describing said vehicle shall be personally delivered to the vehicle owner (if such owner can be reasonably ascertained) or shall be conspicuously placed upon the vehicle (if the owner cannot be reasonably ascertained), thereafter, the Board (as the case may be) shall have the right to remove the offending vehicle, or cause the vehicle to be removed and stored, at the sole expense of the owner of the vehicle if the vehicle is located on a roadway, or at the sole expense of the Owner on which the vehicle is located, all without liability on the part of the Board.

3.17.6. The Board may cause any unauthorized vehicle parked in the Community to be immediately towed at the cost and expense of the owner of the unauthorized vehicle.

3.17.7. The Board may adopt additional Rules restricting an Owner's ability to lease or otherwise transfer its interest in an LCE Parking Space or Parking Unit.

3.18. <u>Pets</u>.

3.18.1. An Owner of a Unit or a Guest may keep a maximum of no more than a total of two domesticated household pets (e.g. either dogs or cats) in their Unit, so long as such dog or cat is not kept for any commercial purpose and does not cause noise or odor, or does not otherwise become a nuisance or threat to other Owners or Occupants. The Board has the authority to adopt Rules which may further govern or restrict the ability of an Owner to keep Pets in their Unit. The foregoing shall not limit or restrict the right of an Owner to have fish, birds and similar species in their Unit, provided that they are in a controlled environment.

3.18.2. No Occupant, other than the Owner of the Unit shall be allowed to have a pet in a Unit unless the Board adopts Rules allowing such usage by an Occupant other than the Owner.

3.18.3. Contractors and subcontractors may not bring dogs or other pets into the Community.

3.18.4. A permitted dog or cat must be restrained at all times within the Owner's or Occupant's Unit, and shall not be permitted outside such Unit except when leashed and accompanied by the pet's owner or the owner's representative. Each dog or cat shall be properly immunized and otherwise maintained and cared for as required by applicable laws. An Owner shall promptly clean up after their pet.

3.18.5. The Owner of a Unit where a dog or cat is kept, as well as the legal owner of the pet (if not such Owner), shall be jointly and severally liable for any and all damage and destruction caused by the pet, and for any clean-up of the Owner's Unit and of streets, sidewalks, Common Elements or other Units as necessitated by such pet.

3.18.6. The Board shall be responsible for enforcing the restrictions set forth in this Section, and shall have, and is hereby given, the right and authority to determine in its sole discretion that any one or more dogs or cats are being kept for commercial purposes, or are being kept in excessive numbers, or are causing an unreasonable amount of noise or odor, or are otherwise a nuisance to other Owners or Occupants, or that an Owner or Occupant is otherwise in violation of this Section, and to take

such action or actions as it deems reasonably necessary to remedy the violation, including without limitation the levying of fines and/or Reimbursement Assessments as provided in this Declaration. Also without limiting the generality of the foregoing, the Board may require the owner or custodian of a dog that barks or howls excessively, or of a dog or cat that exhibits threatening behavior or that has other offensive habits or that otherwise violates the restrictions set forth in this Section, to confine such animal indoors, or to permanently remove such animal from the Community, and may adopt Rules governing pets.

3.19. <u>Leasing of Units</u>. Any Owner shall have the right to Lease his/her Unit under the following conditions:

3.19.1. The leasing of a Unit for Long Term Rentals or Short-Term Rentals shall be subject to in all respects and governed by the provisions of the Condominium Documents and the Town Development Approvals and Requirements.

3.19.2. Each Owner who leases a Unit for Long Term Rentals or Short-Term Rentals purposes shall be responsible for assuring compliance by the Occupant with all of the provisions of the Condominium Documents and the Town Development Approvals and Requirements and shall be jointly and severally responsible with the Occupant for any violations thereof by the Occupant. Any failure by the Occupant to comply with any of the Condominium Documents, in any respect, shall be a default by Occupant and Owner under the Condominium Documents which may be enforced against the Occupant and/or Owner by the Board.

3.20. <u>Annoying Light, Sound or Odor</u>. All exterior lighting installed or maintained on any Unit shall be consistent with the Town Development Approvals and Requirements. The use of the Units shall be subject to any applicable Town Development Approvals and Requirements that relate to noise or odor.

3.21. <u>No Hazardous or Unsafe Activities</u>. No activity shall be conducted on, and no improvement shall be constructed on, any property within the Community which is or might be unsafe or hazardous to any person or property.

3.22. <u>No Firearms</u>. The discharge of firearms, including but not limited to BB guns and pellet guns, upon or within any part of the Community (including the Units) is expressly prohibited.

3.23. <u>Garbage and Trash</u>. With the exception of dumpsters or other trash receptacles provided by the Association on Common Elements, no refuse, garbage, trash, grass, shrub, or tree clippings, plant waste, scrap, rubbish, or debris of any kind shall be kept, stored, maintained or allowed to accumulate or remain anywhere within the Community.

3.24. **<u>Right of Entry</u>**. During reasonable hours and upon reasonable notice to the Owner or Occupant of a Unit, any member of the Board, and any authorized representative of the Board shall have the right to inspect any exterior portion of a Unit's Limited Common Elements and, with the permission of the Owner or Occupant, the interior portion of the Unit. In the case of emergency, no notice or permission shall be required to inspect the interior of a Unit. The purpose of any such inspection shall be to ascertain whether or not the provisions of this Declaration have been or are being complied with, or for the purpose of exercising any rights or performing any responsibilities (maintenance, repair, etc.) established by this Declaration and such individuals shall not be deemed guilty of trespass by reason of such entry. For purposes of this section, "emergency" shall mean circumstances posing an imminent threat of injury or damage to persons or property.

3.25. <u>Association Landscaping</u>. All landscaping located on the Common Elements shall be the responsibility of the Association, and no Owner or Occupant shall perform any landscaping activities within the Community (including without limitation the planting, grooming or removal of grass, trees, bushes or other vegetation, or the planting or tending of gardens).

3.26. <u>Signs and Advertising</u>. Any exterior signs, posters, billboards or advertising devices shall conform with the Town Development Approvals and Requirements and this Declaration.

3.27. <u>Flags or Displays</u>. Any exterior flags or other displays displayed in the Community shall conform with the Town Development Approvals and Requirements and the Act.

3.28. <u>Health, Safety and Welfare, Rules</u>. In the event any uses, occupancies, activities, and facilities within the Community are deemed by the Board to be an unreasonable annoyance or nuisance, or to adversely affect the health, safety or welfare of Owners or Occupants, the Board may adopt reasonable Rules of general application in order to appropriately restrict and regulate such uses, occupancies, activities or facilities within the Community. Such Rules shall be consistent with the purposes, provisions and limitations of this Declaration.

3.29. <u>View Impairment</u>. Neither the Declarant nor the Association, guarantee or represent that any view over and across the Community from their Unit and/or the Common Elements, will be preserved without impairment. The Declarant and the Association shall have no obligation to relocate, prune, or thin trees or other landscaping except as otherwise required under a separate covenant or agreement. The Association shall have the right to add trees and other landscaping to the Common Elements. There shall be no express or implied easements for view purposes or for the passage of light and air.

3.30. **Variances**. The Board may, in its sole discretion and in extenuating circumstances, grant variances from any of the restrictions set forth in this Article 3, if the Board determines, in its discretion, (a) either (i) that a particular restriction creates a substantial hardship or burden on an Owner or Occupant, which hardship or burden was not caused by said Owner or Occupant, or (ii) that a change of circumstances since the recordation of this Declaration has rendered such restriction obsolete, and (b) that the activity permitted under the variance, in the judgment of the Board, will not have any material adverse effect on the Owners and Occupants of the Community, and is consistent with the high quality of living intended to be promoted hereby throughout the Community. When an Owner applies for a variance, the Board must give reasonable notice of the variance hearing to all Owners of Units in the Community. No variance shall conflict with ordinances or regulations of the Town of Ridgway. If a variance from Town laws or regulations is also required in connection with a matter for which a variance is desired hereunder, it shall be the Owner's responsibility to obtain such Town variance before submitting a variance application to the Board.

Notwithstanding the foregoing provisions of this Article Three, except for restrictions placed upon it by Town, Declarant shall be exempt from the restrictions in this Article Three to the extent that it impedes, in Declarant's sole discretion, its development, construction, sales, marketing or leasing activities.

ARTICLE FOUR EASEMENTS

The following "**Easements**" are hereby established by Declarant for the purposes stated and for the parties indicated. Declarant reserves the right to modify the location and/or use of any of the Easements identified in this Article Four or anywhere else in this Declaration or on the Map. Declarant also reserves the right to expand the Persons who may use the Easements. Declarant also reserves the right to transfer and assign its rights under the Easements established in this Article Four to such Persons determined by Declarant, which assignment shall be made in writing and recorded in the Official Records.

4.1. Blanket Association Utility Easement over Common Elements. There is hereby created, granted and reserved to the Association, its agents, employees and assigns and also its designees (such as a Unit Owner) a perpetual, non-exclusive blanket easement over, across, upon and under the Common Elements and under the Units for the construction, installation, operation, maintenance, servicing, repair, removal and replacement of utilities and utility lines, pipes, wires, circuits, conduits, meters, facilities and systems for the benefit of the Community or any part thereof, including but not limited to water, sewer, gas, telephone, internet, electricity, elevators, cable TV and other master TV and communication systems, as well as for drainage and stormwater management, if any, together with an easement for access, ingress and egress to accomplish such purposes, and together with the right to grant any such easement rights to utility companies. The Association or other person or entity exercising such utility easement rights shall be obligated to restore, reseed, replant and/or re-landscape the surface of any disturbed area to as close to its original condition as possible, as promptly as possible following completion of any utility work, and shall be further obligated to exercise such easement rights at such times and in such manner as to interfere as little as reasonably possible with the occupancy, use and enjoyment of the Units by the Owners and Occupants thereof. Nothing granted herein shall authorize or empower the Association to damage or unreasonably affect the existence, use and enjoyment of any Unit in the event a utility allowed under this Section 4.1 is located in or under a Unit.

4.2. **Declarant Easement over Common Elements**. There is hereby created, granted and reserved to Declarant and its successors and assigns as well as its designees a non-exclusive easement over, across, upon and under all Common Elements (including without limitation all easements benefiting the Association), including a right of access, ingress and egress thereto, and a right to use such Common Elements and each and every part thereof for all purposes reasonably related to (a) Declarant's development, improvement, maintenance, management, marketing and sale of the Community and all portions thereof, and/or (b) Declarant's exercise and implementation of the rights reserved to Declarant under this Declaration, and/or (c) the discharge by Declarant of any of its obligations under this Declarant obligations relating to the Community.

4.3. <u>Association Administrative Easement over Common Elements</u>. There is hereby created, granted and reserved to the Association, its agents, employees and assigns, a perpetual, non-exclusive easement over, across, upon and under the Common Elements and a right to use the Common Elements for purposes of enabling the Association to perform its various responsibilities and to exercise its various rights under this Declaration.

4.4. Association Easement in Units for Maintenance, Repair and Emergencies. There is hereby created, granted and reserved to the Association, its agents, employees and assigns, a perpetual, non-exclusive easement and right to enter upon all of the Units as reasonably necessary for the performance of the Association's rights and responsibilities under this Declaration and for the making of emergency repairs or reconstruction to the Building, the Units, and/or the Common Elements. For routine maintenance and non-emergency repairs, entry to a Unit shall be made only on a regular business day during regular business hours, after giving at least one day's notice in writing to the Owner. In case of emergency, where there is an imminent threat of damage or injury to person or property, entry shall be made at any time without notice or permission. The Board is hereby granted the authority to use such reasonable force as may be necessary under the circumstances to gain entry into a Unit in case of an emergency, if no other reasonable means of entry is available. The Association shall be responsible for the cost and expense of repairing all damages to property occurring as a result of such forcible entry, which costs shall be considered Common Expenses, unless the emergency and/or damage results from the willful act or negligence of an Owner or Occupant, in which event such Owner shall be solely responsible for the costs of repairing/restoring such damage. These costs can be levied, assessed and collected by the Board as a Reimbursement Assessment pursuant to the provisions of this Declaration.

4.5. Support and Encroachment Easements. Each Unit is subject to a blanket easement for support. Each Owner has an easement upon an adjoining Unit or Common Element for the purpose of accommodating any encroachment due to engineering errors, errors in original construction, reconstruction, repair, settlement or shifting or movement of the Buildings, or any other similar cause. There shall be valid easements for the maintenance of said encroachments so long as they shall exist, and the rights and obligations of Owners shall not be altered in any way by said encroachment, settlement or shifting; provided, however, that in no event shall a valid easement for encroachments occur due to the willful misconduct of an Owner. In the event a structure is partially or totally destroyed, and then repaired or rebuilt in substantially the same manner as originally constructed, the Owners agree that minor encroachments upon an abutting Unit or Common Element shall be permitted and that there shall be valid easements for the maintenance of said encroachments so long as they shall exist. Such encroachments and easements shall not be considered or determined to be encumbrances either on the Common Elements or on the Units for purposes of marketability of title or other purposes. In interpreting any and all provisions of this Declaration or of deeds, mortgages, deeds of trust or other security instruments relating to Units, the actual location of a Unit shall be conclusively deemed to be the property intended to be conveyed, reserved or encumbered, notwithstanding any minor deviations, either horizontally, vertically or laterally, from the location of such Unit as indicated on the Condominium Map.

4.6. <u>Blanket Emergency Services Easement</u>. There is hereby created, granted and reserved for the use and benefit of all police, sheriff, fire protection, ambulance and other similar emergency agencies or persons now or hereafter serving the Community and its Owners and Occupants, a perpetual, non-exclusive blanket Emergency Services Easement over, upon, along and across all properties and areas within the Community, for use in the lawful performance of their duties.

4.7. <u>Other Easements</u>. The Map may show specific easements that are intended to be created, granted and reserved for the use and benefit of the particular Owner(s) of the Unit(s) and/or the Association as indicated and designated on the Map. Each such easement indicated on the Map is hereby established by the Declarant for the purposes established herein and on the Map, which easement shall be a perpetual, non-exclusive easement over, upon, along and across that portion of the Community depicted on the Map.

4.8. <u>Reservation of Uses</u>. Declarant reserves the right for the Owner of a Unit burdened by an easement on their Unit as provided for in this Article Four ("**Reserved Easements**"), for such Owner and the Owner's successors, transferees, designees and assigns, the right to use and enjoy the portion of the Unit covered by the Reserved Easements for all lawful and desired purposes, so long as it does not interfere with the easement right granted.

ARTICLE FIVE COMMON ELEMENTS

5.1. Use and Enjoyment of Common Elements. Except as otherwise provided in this Declaration (including Declarant's Reserved Rights), each Owner shall have the non-exclusive right to use and enjoy the Common Elements, other than the Limited Common Elements, in common with all other Owners (a) for all purposes for which such Common Elements were established, and (b) as required for purposes of access and ingress to and egress from (and use, occupancy and enjoyment of) any Unit owned by the Owner or Common Elements available for the Owner's use. This right to use and enjoy the Common Elements shall extend to each Owner, Occupant, and the family members, guests and invitees of each Owner, and shall be appurtenant to each Unit, subject at all times to the provisions of this Declaration, the Articles and Bylaws, and any Rules adopted by the Board from time to time. Except for

Declarant in its exercise of Reserved Rights hereunder, no Owner or Occupant shall place any structure or improvement whatsoever upon the Common Elements, nor shall any Owner or Occupant engage in any activity which will temporarily or permanently impair free and unobstructed access to or use of all parts of the Common Elements (excepting Limited Common Elements) by all Owners and by the Association.

5.2. <u>Association May Regulate Use of Common Elements</u>. The Association, acting through the Board, shall have the right and authority to regulate the use of the Common Elements (including the Limited Common Elements) by the promulgation, enforcement and interpretation from time to time of such Rules relating thereto as the Association considers necessary or appropriate for the protection and preservation of the Common Elements and the enhancement of the use and enjoyment thereof by the Owners and Occupants. No such regulation by the Association shall affect Declarant's Reserved Rights hereunder.

5.3. **Owner Liability for Owner or Occupant Damage to Common Elements**. Each Owner shall be liable to the Association for any damage to Common Elements or for any expense, loss or liability suffered or incurred by the Association in connection with the Common Elements arising from (a) the negligence or willful misconduct of such Owner or of any Occupant, agent, employee, family member, guest or invitee of such Owner, or (b) any violation by such Owner or any Occupant, agent, employee, family member, guest or invitee of such Owner of any provisions of this Declaration, or code, including without limitation any environmental law, or of any provisions of this Declaration, or any Rules relating to the Common Elements. Each Owner shall indemnify, defend and hold the Association harmless from any loss, damage, expense or liability arising from the circumstances described in subsections (a) or (b) immediately above. The Association shall have the power to levy and collect a Reimbursement Assessment against an Owner to recover the costs, expenses, damage, losses or liabilities incurred by the Association as a consequence of any such negligence, willful misconduct or violations by the Owner or the Owner's Occupant.

5.4. **Damage or Destruction to Common Elements**. In the event of damage to or destruction of the Common Elements, including Improvements thereon, by fire or other casualty, the Association shall repair or replace the same in accordance with the provisions of Article 7 below. Repair, reconstruction, or replacement of Common Elements shall be accomplished under such contracting and bidding procedures as the Association shall determine to be appropriate, and shall be performed at such times and in such manner as to interfere as little as reasonably possible with the occupancy, use and enjoyment of undamaged Units by the Owners and Occupants thereof. If insurance proceeds available to the Association on account of damage or destruction exceed the cost of repair, reconstruction, and replacement, the Association may use the same for future maintenance, repair, improvement, and operation of Common Elements or for any other use deemed appropriate by the Board.

ARTICLE SIX ASSOCIATION

6.1. <u>Association; General Powers</u>. The Association has been formed as a Colorado nonprofit corporation under the Colorado Revised Nonprofit Corporation Act to manage the affairs of the Community. The Association shall serve as the governing body for all of the Owners and Occupants for the protection, improvement, alteration, maintenance, repair, replacement, administration and operation of the Common Elements, the levying and collection of Assessments for Common Expenses and other expenses of the Association shall have all of the powers, authority and duties as may be necessary or appropriate for the management of the business and affairs of the Community, including without limitation all of the powers, authority and duties of a Colorado corporation formed under the Colorado Revised Nonprofit Corporation Act, and all of the powers and duties provided for in the Act. The Association shall have the power to assign its right to future income, including the right to receive

Common Expense assessments, but only upon the affirmative vote of the Owners of Units to which at least 51 percent of the weighted votes in the Association are allocated. The Association shall not be deemed to be conducting a business of any kind, and all funds received by the Association shall be held and applied by it for the Owners in accordance with the provisions of this Declaration, the Articles and the Bylaws.

Association Board. The affairs of the Association shall be managed by the Board. 6.2. Until the expiration of the period of Declarant control as described in Section 6.7 below, the Board shall consist of three (3) members with each member entitled to one non-weighted vote. After expiration of the Declarant control period, the Board will consist of three (3) members, with two (2) members elected by the Owners of Residential Units and one (1) member elected by the Owners of Commercial Units. Each Board member shall have one non-weighted vote. A quorum shall be deemed present throughout any meeting of the Board if persons entitled to cast at least 51% percent of the votes on the Board are present at the beginning of the meeting or grant their proxy as provided in C.R.S. Section 7-128-205(4). With the exception of matters that may be discussed in executive session, as set forth in Section 38-33.3-308(3-7) of the Act, all regular and special meetings of the Board or any committee thereof shall be open to attendance by all Members of the Association or their representatives. Without limiting the generality of the foregoing, no rule or regulation may be validly adopted during an executive session. Agendas for meetings of the Board shall be made reasonably available for examination by all Members of the Association or their representatives. The Board shall have all of the powers, authority and duties granted or delegated to it by the Colorado Revised Nonprofit Corporation Act, this Declaration, the Articles or Bylaws. Except as provided in the Colorado Revised Nonprofit Corporation Act, this Declaration, the Articles or Bylaws, the Board may act in all instances on behalf of the Association. The Board may not, however, act on behalf of the Association to amend this Declaration, to terminate the Community, or to elect members of the Board or determine the qualifications, powers and duties, or terms of office of Board members, but the Board may fill vacancies in its membership for the unexpired portion of any term. The Board may, by resolution, delegate portions of its authority to officers of the Association, but such delegation of authority shall not relieve the Board of the ultimate responsibility for management of the affairs of the Association. No member of the Board and no officer shall be liable for actions taken or omissions made in the performance of such member's or officer's duties except for wanton and willful acts or omissions.

Notwithstanding any provision of the Condominium Documents to the contrary, only the director elected by the Owners of the Commercial Units may vote on matters put to the Board that concern solely the Commercial Units, and only the directors elected by the Owners of the Residential Units may vote on matters put to the Board that concern solely the Residential Units. All directors shall vote on matters concerning both the Residential Units and the Commercial Units and matters that cannot be clearly categorized as affecting only the Residential Units or the Commercial Units exclusively.

6.3. <u>**Rules**</u>. The Condominium Documents establish a framework of covenants and conditions that govern the Community. However, within that framework, the Association must be able to respond to unforeseen issues and changes affecting the Community. Therefore, the Board and the Association's membership are authorized to change the Rules in accordance with the following procedures, subject to the limitations set forth in Section 6.4. Generally, Rules are intended to enable the interpretation and implementation of this Declaration, the operation of the Association, and the use and enjoyment of the Common Elements (including Limited Common Elements).

6.3.1. **Board Authority**. Subject to the notice requirements and the Board's duty to exercise reasonable judgment and reasonableness on behalf of the Association and its Members, the Board, at an open meeting of the Board, may, by Resolution, adopt new Rules and modify, amend, supplement or rescind existing Rules by majority vote of the directors at any Board meeting.

6.3.2. <u>Membership Authority</u>. Subject to the notice requirements in subsection 6.3.3 below, Owners entitled to cast more than 51% of the weighted votes in the Association may also adopt new Rules and Regulations and modify or rescind existing Rules and Regulations at any meeting of the Association duly called for such purpose, regardless of the manner in which the original Rule was adopted. However, as long as Declarant membership exists, any such action shall also be subject to the Declarant's approval. In no event shall any new or amended Rules and Regulations place additional restrictions on the Commercial Unit without the express approval of the Owner of the Commercial Unit.

6.3.3. <u>Notice</u>. The Board shall send notice to all Owners concerning any proposed Rule change at least five (5) business days prior to the meeting of the Board or the membership at which such action is to be considered. At any such meeting, Owners shall have a reasonable opportunity to be heard before the proposed action is put to a vote. This notice requirement does not apply to administrative and operating policies that the Board may adopt relating to the Common Elements, notwithstanding that such policies may be published as part of the Rules.

6.3.4. <u>Effective Date</u>. A Rules change adopted under this Section 6.3 shall take effect thirty (30) days after the date on which written notice of the Rules change is given to the Owners. Notice of the adoption, amendment, or repeal of any Rule or Regulation shall be given in writing to each Owner, and copies of the currently effective Rules shall be made available to each Owner and Occupant upon request and payment of the reasonable expense of copying the same. Each Owner and Occupant shall comply with such Rules, and each Owner shall see that Occupants claiming through such Owner comply with such Rules. Such Rules shall have the same force and effect as if they were set forth in and were part of this Declaration. Such Rules may establish penalties (including the levying and collection of fines) for the violation of such Rules or of any provision of this Declaration, the Articles, or the Bylaws.

6.3.5. <u>Conflicts</u>. In the event of a conflict between the Rules and any provision of this Declaration, this Declaration shall control.

6.3.6. <u>Owners' Acknowledgment and Notice to Purchasers</u>. By accepting a deed, each Owner acknowledges and agrees that the use, enjoyment, and marketability of his or her Unit is limited and affected by the Rules, which may change from time to time. All Unit purchasers are hereby notified that the Association may have adopted changes to the Rules and that such change may not be set forth in a recorded document. A copy of the current Rules and all administrative policies are available from the Association upon request. The Association may charge a reasonable fee to cover its reproduction cost.

6.4. <u>Protection of Owners and Others</u>. Except as may be set forth in this Declaration (either initially or by amendment) all Rules that may be adopted by the Board shall comply with the following provisions:

6.4.1. <u>Similar Treatment</u>. Similarly situated Units shall be treated similarly.

6.4.2. <u>Holiday, Religious and other Displays</u>. No Rule shall abridge an Owner's right to display religious or holiday symbols and decorations on his or her Unit of the kinds normally displayed in single-family residential neighborhoods. The Board may regulate or prohibit signs or displays, the content or graphics of which the Board deems to be obscene, vulgar, or similarly disturbing to the average person.

6.4.3. **Displays of American Flags**. No Rule shall abridge an Owner's right display of the American flag in that Owner's Unit, in a window of the Owner's Unit, or on a balcony adjoining the owner's Unit if the American flag is displayed in a manner consistent with the federal flag code, P.L. 94-344; 90 Stat. 810<u>; 4 U.S.C. Section 4 to Section 10</u>. The Association may adopt reasonable rules

regarding the placement and manner of display of the American flag. The Association rules may regulate the location and size of flags and flagpoles, but shall not prohibit the installation of a flag or flagpole.

6.4.4. <u>Displays of Service Flags</u>. No Rule shall abridge an Owner's right display a service flag bearing a star denoting the service of the Owner or a member of the Owner's immediate family in the active or reserve military service of the United States during a time of war or armed conflict, on the inside of a window or door of the Owner's Unit. The Association may adopt reasonable rules regarding the size and manner of display of service flags; except that the maximum dimensions allowed shall be not less than nine inches by sixteen inches.

6.4.5. **Displays of Political Signs**. No Rule shall abridge an Owner's right display of a political sign by an Owner in that Owner's Unit, in a window of the Owner's Unit; except that an Association may prohibit the display of political signs earlier than forty-five (45) days before the day of an election and later than seven (7) days after an election day. An Association may regulate the size and number of political signs that may be placed on an Owner's property if the Association's regulation is no more restrictive than any applicable Town or county ordinance that regulates the size and number of political signs on residential property. If the Town or county does not regulate the size and number of political signs on residential property, the Association shall permit at least one political sign per political office or ballot issue that is contested in a pending election, with the maximum dimensions of thirty-six inches by forty-eight inches, on an Owner's property. As used in this Section, "political sign" means a sign that carries a message intended to influence the outcome of an election, including supporting or opposing the election of a candidate, the recall of a public official, or the passage of a ballot issue.

6.4.6. <u>Household Composition</u>. No Rule shall interfere with an Owner's freedom to determine household composition, except that the Association may impose and enforce reasonable occupancy limitations and conditions based on Unit size.

6.4.7. <u>Activities within Residential Units and Employee Housing Units</u>. No Rule shall interfere with the activities carried on within a Residential Unit or Employee Housing Unit, except that the Association may prohibit activities not normally associated with residential property. It may also restrict or prohibit activities within Residential Units and the Employee Housing Unit that create monetary costs for the Association or other Owners, that create a danger to anyone's health or safety, that generate excessive noise or traffic, that create unsightly conditions visible from outside the dwelling, or that are an unreasonable source of annoyance.

6.4.8. <u>Leasing and Transfer of Units</u>. No Rule shall prohibit leasing or transfer of any Unit or require approval prior to leasing or transferring a Unit that are inconsistent with the Town Development Approvals and Requirements and this Declaration, in particular the requirements concerning use and leasing of Units as provided for in Section 3.19.

6.4.9. <u>Abridging Existing Rights</u>. No Rule shall require that an Owner dispose of personal property kept in or on a Unit in compliance with the Rules in effect at the time such personal property was brought onto the Unit. This exemption shall apply only during the period of such Owner's ownership of the Unit and shall not apply to subsequent Owners who take title to the Unit after adoption of the Rule.

6.4.10. <u>Declarant Rights</u>. No Rule may impede Declarant's Reserved Rights to develop, construct, market, sell or lease the Community, as determined by Declarant in its sole discretion.

6.4.11. <u>Commercial Unit Rights</u>. No Rule may affect any right granted to the Owner of a Commercial Unit as further described in Section 3.15 above.

6.4.12. <u>Interference with Easements</u>. No Rule may unreasonably interfere with the exercise of any easement established by this Declaration or otherwise existing by separate document or instrument.

6.5. <u>Membership in Association</u>. There shall be one Membership in the Association for each Unit within the Community. The person or persons who constitute the Owner of a Unit shall automatically be the holder of the Membership appurtenant to that Unit, and shall collectively be the "Member" of the Association with respect to that Unit, and the Membership appurtenant to that Unit shall automatically pass with fee simple title to the Unit. Membership in the Association shall not be assignable separate and apart from fee simple title to a Unit, and may not otherwise be separated from ownership of a Unit.

Voting Rights of Members. Each Unit in the Community shall have one vote in the 6.6. Association which shall be weighted in accordance with the Allocated Interests as will be set forth on Exhibit B to be appended to and included in this Declaration at a later time, which will be prepared by Declarant upon the completion of the improvements in the Community and be included in an amendment or supplement to this Declaration. Occupants of Units shall not have voting rights. If title to a Unit is owned by more than one (1) person, such persons shall collectively cast their allocated votes. If only one of the multiple Owners of a Unit is present at the Association meeting, such Owner is entitled to cast the votes allocated to that Unit. If more than one of the multiple Owners is present, the votes allocated to that Unit may be cast only in accordance with the agreement of a majority in interest of the Owners. There is majority agreement if any of the multiple Owners casts the votes allocated to that Unit without protest being made promptly to the person presiding over the meeting by any of the other Owners of the Unit. In the event of a protest being made by one or more multiple Owners and a majority of the multiple Owners of the Unit cannot agree on how to cast their votes, any votes cast for that Unit shall be null and void with regard to the issue being voted upon. Such multiple Owners and their Unit shall nevertheless be counted in determining the presence of a quorum with respect to the issue being voted upon. A quorum is deemed present throughout any meeting of the Members of the Association if persons entitled to cast at least 30% of the weighted votes in the Association are present, in person or by proxy, at the beginning of the meeting. Provided a quorum of weighted votes is present in person or by proxy, the affirmative vote of a majority of the weighted votes so present shall constitute approval of any matter voted upon unless a different number is required on a particular matter by the Colorado Revised Nonprofit Corporation Act, this Declaration, the Articles, or the Bylaws. The votes allocated to a Unit may be cast pursuant to a proxy duly executed by a Unit Owner. If a Unit is owned by more than one person, each Owner of the Unit may vote or register protest to the casting of a vote by the other Owners of the Unit through a duly executed proxy. An Owner may not revoke a proxy given pursuant to this Section except by actual notice of revocation to the person presiding over a meeting of the Association. A proxy is void if it is not dated or purports to be revocable without notice. A proxy shall terminate eleven (11) months after its date, unless a different termination date is otherwise set forth on its face.

6.7. <u>Period of Declarant Control of Association</u>.

6.7.1. Notwithstanding any other provisions hereof, Declarant shall have and hereby reserves the power to appoint and remove, in its sole discretion, the members of the Board and the officers of the Association during the period commencing upon the recording of this Declaration and terminating no later than the earlier of (a) 60 days after conveyance of 75 percent of the Units that may be created to Unit Owners other than Declarant, (b) 2 years after the last conveyance of a Unit by the Declarant in the ordinary course of business, or (c) 2 years after any right to add new Units was last exercised by Declarant.

6.7.2. During said period of Declarant control of the Association:

6.7.2.1. Not later than 60 days after conveyance of 25 percent of the Units that may be created to Unit Owners other than Declarant, at least one member and not less than 25 percent of the members of the Board must be elected by Unit Owners other than Declarant.

6.7.2.2. Not later than 60 days after conveyance of 50 percent of the Units that may be created to Unit Owners other than Declarant, not less than 33-1/3 percent of the members of the Board must be elected by Unit Owners other than Declarant.

6.7.3. At any time prior to the termination of the period of Declarant control of the Association, the Declarant may voluntarily surrender and relinquish the right to appoint and remove officers and members of the Board, but in such event Declarant may require for the duration of the period of Declarant control of the Association, that specified actions of the Association or the Board, as described in a recorded instrument executed by Declarant, be approved by Declarant before they become effective. As to such actions, Declarant may give its approval or disapproval in its sole discretion and option, and its disapproval shall invalidate any such action by the Board or the Association.

6.8. <u>Community Technology</u>.

6.8.1. <u>Community Systems</u>. Declarant may provide, or may enter into and assign to the Association or cause the Association to enter into contracts with other Persons to provide, central telecommunication receiving and distribution systems (e.g., cable television, high speed data/Internet/intranet services, and security monitoring) and related components, including associated infrastructure, equipment, hardware, and software, to serve the Community ("Community Systems"). Any such contracts may provide for installation, operation, management, maintenance and upgrades or modifications to the Community Systems as the Declarant determines appropriate. The Association or Declarant may provide for access to any such Community Systems for all Units as a Common Expense. If particular services or benefits are provided to particular Owners or Units at their request, the benefited Owner(s) shall pay the service provider directly for such services, or the Association may assess the charges as a Regular Assessment or a Special Assessment and pay such charges to the provider on behalf of the Owners, as the Board deems appropriate.

6.8.2. **Opportunities for Community Interaction**. The Association may make use of computers, the Internet, and expanding technology to facilitate community interaction and encourage participation in Association activities. For example, the Association may create and maintain a community intranet or Internet home page, maintain an "online" newsletter or bulletin board, and offer other technology-related services and opportunities for Owners and occupants to interact and participate in Association-sponsored activities. To the extent permitted by the Act, and unless otherwise specifically prohibited in the Condominium Documents, the Association may send notices by electronic means, hold Board or Association meetings and permit attendance and voting by electronic means, and send and collect assessment and other invoices by electronic means The foregoing is not intended to authorize the termination of any of the documents or instruments relating to the Town Development Approvals and Requirements, which may only be modified or terminated, if at all, pursuant to the terms and conditions provided for in such agreements or instruments and by the Town Laws and Town Development Approvals and Requirements.

ARTICLE SEVEN INSURANCE

7.1. **Insurance Requirements**. The following types of insurance shall be obtained, maintained and kept in full force and effect at all times by the party assigned the responsibility for obtaining such coverage. The cost of any coverage required to be obtained by the Association shall be paid by the Association and allocated to the benefitted owners of Units as a Common Expense.

7.1.1. <u>Casualty Insurance</u>.

A. The Association shall obtain, maintain and keep in full force and effect property casualty/damage insurance on the Units and the Common Elements. The insurance shall include the finished interior surfaces of the walls, floors and ceilings. Such insurance shall be for broad form covered causes of loss, including casualty, fire, and extended coverage insurance including, if available at a reasonable cost, coverage for vandalism and malicious mischief. Such insurance shall be for the full insurable replacement cost of the Units and other insured property, less applicable deductibles at the time the insurance is purchased and at each renewal date, exclusive of land, excavation, foundations and other items normally excluded from property policies.

B. The Owner of each Residential Unit, Employee Housing Unit and Commercial Unit shall obtain, maintain and keep in full force and effect "contents insurance" covering damages attributable to theft, fire or other casualty on all furniture, fixtures, equipment and other personal property kept, included or otherwise maintained in their respective Unit at such Owners cost and expense.

7.1.2. <u>Liability Insurance</u>. The Association shall obtain, maintain and keep in full force and effect comprehensive general liability insurance against claims and liabilities arising in connection with the ownership, existence, use or management of the Common Elements and covering public liability or claims of liability for injury to persons and/or property, and death of any person or persons. Such liability insurance shall, to the extent reasonably obtainable, (a) have limits of not less than One Million Dollars (\$1,000,000.00) per occurrence and Two Million Dollars (\$2,000,000.00) aggregate; (b) insure the Board, the Association and its officers, and their respective employees, agents and all persons acting as agents and the Managing Agent; (c) include the Owners as additional insured's, but only for claims and liabilities arising in connection with the ownership, existence, use or management of the Common Elements; (d) cover claims of one or more insured parties against other insured parties; and (e) be written on an occurrence basis.

7.1.3. <u>Worker's Compensation</u>. The Association may, in its discretion, obtain a Worker's Compensation policy, if necessary, to meet the requirements of law.

7.1.4. <u>Directors and Officers Liability Insurance</u>. The Association may, in its discretion, carry directors and officer's liability insurance in such amounts as the Board may deem appropriate.

7.1.5. <u>Fidelity Insurance</u>. The Association shall obtain and maintain fidelity insurance coverage for the Board, the Association and its officers, and their respective employees, agents and all persons acting as agents and the Managing Agent.

7.1.6. <u>Other Insurance</u>. The Association may, in its discretion, obtain such other insurance in such amounts as the Board shall determine, from time to time, to be appropriate to protect the Association or the Owners, or as may be required by the Act.

7.1.7. <u>Annual Review</u>. The Board shall revisit the insurance coverage requirements at least every year to determine if any changes to the nature or amounts of the coverage's is necessary and appropriate.

7.2. General Provisions Respecting Insurance.

7.2.1. Insurance policies carried pursuant to Section 7.1 above shall provide that (i) each Owner is an insured person under the policy with respect to liability arising out of such Owner's

interest in the Common Elements or membership in the Association; (ii) the insurer waives its rights of subrogation under the policy against the Association, each Owner, and any person claiming by, through, or under such Owner or any other director, agent or employee of the foregoing; (c) no act or omission by any Owner, unless acting within the scope of such Owner's authority on behalf of the Association, will void the policy or be a condition to recovery under the policy; and (d) if at the time of a loss under the policy, there is other insurance in the name of an Owner covering the same risk covered by the policy, the Association's policy shall be the primary insurance. An insurer that has issued an insurance policy for the insurance described in Sections 7.1 above shall issue certificates or memoranda of insurance to the Association and, upon request, to any Owner or holder of a security interest to whom a certificate or memorandum of insurance has been issued, at their respective last-known addresses. In addition, to the extent available at reasonable cost and terms, all Association insurance shall:

A. be written with a company authorized to do business in Colorado which satisfies the requirements of the Federal National Mortgage Association, or such other secondary mortgage market agencies or federal agencies as the Board deems appropriate;

B. be written in the name of the Association as trustee for the benefited parties. All policies shall be for the benefit of the Association and its members;

C. contain an inflation guard endorsement;

D. include an agreed amount endorsement, if the policy contains a co-

insurance clause;

E. provide that each Owner is an insured person with respect to liability arising out of such Owner's status as a member of the Association;

F. include an endorsement precluding cancellation, invalidation, suspension, or non-renewal by the insurer on account of any act or omission of one or more Owners, unless acting on the Association's behalf within the scope of their authority, or on account of any curable defect or violation, without prior written demand to the Association and allowance of a reasonable time to cure the defect or violation.

7.2.2. In addition, the Board shall use reasonable efforts to secure insurance policies that list the Owners as additional insured's and provide:

A. a waiver of subrogation as to any claims against the Association's directors, officers, employees, and Managing Agent;

B. a waiver of the insurer's right to repair and reconstruct instead of paying

cash;

C. an endorsement excluding Owners' individual policies from

consideration under any "other insurance" clause;

D. an endorsement requiring at least 30 days' prior written notice to the Association of any cancellation, substantial modification, or non-renewal;

E. a cross liability provision; and

F. a provision vesting in the Board exclusive authority to adjust losses. However, Mortgagees having an interest in such losses may not be precluded from participating in the settlement negotiations, if any, related to the loss.

7.2.3. Any loss covered by the property insurance policy carried by the Association pursuant to Section 7.1 above must be adjusted with the Association, but the insurance proceeds for that loss shall be payable to any insurance trustee designated for that purpose, or otherwise to the Association, and not to any holder of a security interest. The insurance trustee or the Association shall hold any insurance proceeds in trust for the Association, the Owners, and lienholders as their interests may appear. Subject to the provisions of Section 38.33.3-313(9) of the Act, the proceeds must be disbursed first for the repair or restoration of the damaged property, and the Association, the Owners, and lienholders are not entitled to receive payments of any portion of the proceeds unless there is a surplus of proceeds after the property has been completely restored or the Community is terminated. The Association may adopt and establish written nondiscriminatory policies and procedures relating to the submittal of claims, responsibility for deductibles, and any other matters of claims adjustment. To the extent the Association settles claims for damages to real property, it shall have the authority to assess negligent Owners causing such loss or benefiting from such repair or restoration for all deductibles paid by the Association. In the event more than one Unit is damaged by a loss, the Association in its reasonable discretion may assess each affected Owner a pro rata share of any deductible paid by the Association.

7.2.4. Insurance policies and insurance coverage shall be reviewed at least annually by the Board to ascertain whether coverage under the policies is sufficient in light of the current values of the insured property and in light of the possible or potential liabilities of the Association and other insured parties. In no event shall insurance coverage obtained or maintained by the Association obviate the need for Owners and Occupants to obtain insurance for their own benefit.

7.2.5. The Association's policies may contain a reasonable deductible, which shall not be subtracted from the face amount of the policy in determining whether the policy limits satisfy the requirements of Section 7.1. In the event of an insured loss, the deductible shall be treated as a Common Expense in the same manner as the premiums for the applicable insurance coverage. However, if the Board reasonably determines, after notice and an opportunity to be heard in accordance with the By-Laws, that the loss is the result of the negligence or willful misconduct of one or more Owners, their guests, invitees, or lessees, then the Board may assess the full amount of such deductible against such Owner(s) and their Units as a Reimbursement Assessment.

7.3. <u>Nonliability of Association and Board</u>. Notwithstanding the duty of the Association to obtain insurance coverage, as stated herein, neither the Association nor any Board member, shall be liable to any Owner, Occupant, mortgagee or other person, if any risks or hazards are not covered by insurance, or if the appropriate insurance is not obtained because such insurance coverage is not reasonably obtainable on the Association's behalf, or if the amount of insurance is not adequate, and it shall be the responsibility of each Owner and Occupant to ascertain the coverage and protection afforded by the Association's insurance and to procure and pay for such additional insurance coverage and protection as the Owner or Occupant may desire.

7.4. <u>Premiums</u>. Premiums for insurance policies purchased by the Association and other expenses connected with acquiring such insurance shall be paid by the Association as a Common Expense, except that the amount of increase over any annual or other premium occasioned by the use, misuse, occupancy or abandonment of a Unit or its appurtenances, or Common Elements, by an Owner or Occupant, may at the Board's election, be assessed against that particular Owner and his Unit as a Reimbursement Assessment.

7.5. **Insurance Claims**. The Association is hereby irrevocably appointed and authorized, subject to the provisions contained herein, to adjust all claims arising under insurance policies purchased by the Association and to execute and deliver releases upon the payment of claims, and to do all other acts reasonably necessary to accomplish any of the foregoing. The Board has full and complete power to act for the Association in this regard, and may, in its discretion, appoint an authorized representative, or enter into an insurance trust agreement, wherein the trustee shall have the authority to negotiate losses under any policy purchased by the Association.

7.6. <u>Benefit</u>. Except as otherwise provided herein, all insurance policies purchased by the Association shall be for the benefit of, and any proceeds of insurance received by the Association or any insurance trustee shall be held or disposed of in trust for the Association, the Owners, or the Occupants, as their interests may appear.

7.7. <u>Other Insurance to be Carried by Owners</u>. Insurance coverage on the Units, improvements, furnishings and other items of personal property belonging to an Owner or Occupant, and public liability insurance coverage within and upon each Unit and any Limited Common Elements designated for that Unit shall be the responsibility of the Owner or Occupant of the Unit. Such policies shall conform to the requirements of this Article 7.

7.8. Damage to Community. Any portion of the Community for which insurance is required under Section 38-33.3-313 of the Act that is damaged or destroyed must be repaired or replaced promptly by the Association unless: (a) the Community is terminated; (b) repair or replacement would be illegal under any state or local statute or ordinance governing health or safety; or (c) 67 percent of the Unit Owners, including owners of every Unit or assigned Limited Common Element that will not be rebuilt, vote not to rebuild. The cost of repair or replacement in excess of insurance proceeds and reserves is a Common Expense. If the entire Community is not repaired or replaced, the insurance proceeds attributable to the damaged Common Elements must be used to restore the damaged property to a condition compatible with the remainder of the Community, and, except to the extent that other persons will be distributees, the insurance proceeds attributable to Units and Limited Common Elements that are not rebuilt must be distributed to the Owners of those properties, or to lienholders, as their interests may appear, and the remainder of the proceeds must be distributed to all Unit Owners or lienholders as their interests may appear in proportion to the Common Elements interests of the Units. In the event of damage to or destruction of all or a portion of the Common Elements due to fire or other adversity or disaster, the insurance proceeds, if sufficient to reconstruct or repair the damage, shall be applied by the Association to such reconstruction and repair. If the insurance proceeds with respect to such damage or destruction are insufficient to repair and reconstruct the damage or destruction, the Association may levy a Special Assessment in the aggregate amount of such deficiency, or if any Owner or group of Owners is liable for such damage, may levy a Reimbursement Assessment against the Owner or group of Owners responsible therefor, and shall proceed to make such repairs or reconstruction. Such Assessment shall be due and payable as provided by resolution of the Board, but not sooner than 60 days after written notice thereof. The Assessment provided for herein shall be a debt of each Unit Owner assessed and a lien on his Unit, and may be enforced and collected in the same manner as any Assessment Lien provided for in this If the entire damaged property is not repaired or replaced, the insurance proceeds Declaration. attributable to the damaged property must be used to restore the damaged property to a condition compatible with the remainder of the Community. No distributions of insurance proceeds shall be made unless made jointly payable to the Unit Owners and First Mortgagees of their respective Units, if any.

ARTICLE EIGHT LIMITED LIABILITY

Neither the Association nor its past, present or future officers or directors, nor any other employee, agent or committee member of the Association, nor the Managing Agent shall be liable to any Owner or Occupant or to any other Person for actions taken or omissions made except for wanton and willful acts or omissions. Without limiting the generality of the foregoing, the Association and the Board shall not be liable to any Owner or Occupant or other person for any action or for any failure to act with respect to any matter if the action taken or failure to act was in good faith and without malice. Acts taken upon the advice of legal counsel, certified public accountants, registered or licensed engineers, architects or surveyors shall conclusively be deemed to be in good faith and without malice. To the extent insurance carried by the Association for such purposes shall not be adequate, the Owners severally agree to indemnify and to defend the Association and the Board against claims, damages or other liabilities resulting from such good faith action or failure to act.

ARTICLE NINE ASSESSMENTS

9.1. Assessment Obligation. Each Unit Owner, by acceptance of a deed therefor (including a public trustee's or sheriff's deed), whether or not it shall be so expressed in any such deed or other instrument of conveyance, shall be deemed to covenant and agree, to pay to the Association: (a) Regular Assessments or charges, (b) Special Assessments, and (c) Reimbursement Assessments, such assessments to be established and collected as hereinafter provided (collectively the "Assessments"). The Assessments, together with interest, late charges, costs, and reasonable attorneys' fees, shall be a continuing lien and security interest upon the Unit against which each such Assessment is charged. The obligation for such payments by each Unit Owner to the Association is an independent covenant, with all amounts due from time to time payable in full without notice (except as otherwise expressly provided in this Declaration) or demand, and without set-off or deduction of any kind or nature. Each Unit Owner is liable for Assessments made against such Owner's Unit during his period of ownership of the Unit. Each Assessment, together with interest, late charges, costs and reasonable attorneys' fees, shall also be the joint, several and personal obligation of each person who was an Owner of such Unit at the time when the Assessment became due. Upon the transfer of title to a Unit, the transferor and the transferee shall be jointly, severally and personally liable for all unpaid Assessments and other charges due to the Association prior to the date of transfer, and the transferee shall be personally liable for all such Assessments and charges becoming due thereafter. Assessments attributable to a Unit shall begin to accrue at such time as the Unit is made subject to this Declaration.

9.2. <u>Statutory Lien</u>. The Association has a statutory lien pursuant to §38-33.3-316 of the Act on the Unit of an Owner for all Assessments levied against such Unit or fines imposed against such Unit's Owner from the time the Assessment or fine becomes due ("Assessment Lien"). Fees, charges, late charges, attorneys' fees, fines and interest charged by the Association pursuant to the Act or this Declaration are enforceable as Assessments. The amount of the lien shall include all such items from the time such items become due. If an Assessment is payable in installments, the Association has an Assessment Lien for each installment from the time it becomes due, including the due date set by the Board's acceleration of installment obligations.

9.3. <u>Lien Superior to Unit and Other Exemptions</u>. An Assessment Lien shall be superior to any Unit exemption now or hereafter provided by the laws of the State of Colorado or any exemption now or hereafter provided by the laws of the United States. The acceptance of a deed subject to this Declaration shall constitute a waiver of the Unit and any other exemption as against said Assessment Lien.

9.4. <u>**Priority of Lien**</u>. An Assessment Lien is prior to all other liens and encumbrances on a Unit except as follows:

9.4.1. Liens and encumbrances recorded before the recordation of this Declaration;

9.4.2. A security interest on the Unit which has priority over all other security interests on the Unit and which was recorded before the date on which the Assessment sought to be enforced became delinquent. An Assessment Lien is prior to the security interest described in the preceding sentence to the extent of an amount equal to the Regular Assessments (based on a Budget adopted by the Association pursuant to the Declaration) which would have become due, in the absence of any acceleration, during the 6 months immediately preceding institution by the Association or any party holding a lien senior to any part of the Association Lien created under this Article 9 of an action or a non-judicial foreclosure either to enforce or to extinguish the lien;

9.4.3. Liens for real estate taxes and other governmental assessments or charges against the Unit; and

9.4.4. As may otherwise be set forth in the Act. The priority of mechanics and materialmen's liens is not affected by the Act.

This Article 9 does not prohibit an action or suit to recover sums for which this Article 9 creates a lien or prohibit the Association from taking a deed in lieu of foreclosure. Sale or transfer of any Unit shall not affect the lien for an Assessment.

9.5. <u>Perfection of Lien</u>. The recording of this Declaration constitutes record notice and perfection of the statutory lien. No further recordation of any claim of lien for Assessments is required; however, a claim may be recorded at the Association's option, in which event costs and attorneys' fees incurred in connection with the preparation and filing of such claim shall be assessed against the Unit as a Reimbursement Assessment.

9.6. <u>Regular Assessments</u>.

9.6.1. A Regular Assessment shall be made annually against each Unit, based upon an annual Budget prepared by the Board, for purposes of paying: (a) the annual costs of operating and administering the Association and all other Common Expenses, (b) reasonable reserves for contingencies, replacements, and other proper purposes, if any, in such amounts and for such purposes, if at all, as determined by the Board; and (c) such other matters as may be reasonably determined by the Board to be the subject of a Regular Assessment;

9.6.2. Regular Assessments shall be allocated against each Unit in such amounts and such percentages corresponding to the Allocated Interests assigned to the Unit as will be set forth on **Exhibit B** to be appended to and included in this Declaration at a later time, which will be prepared by Declarant upon the completion of the improvements in the Community and be included in an amendment or supplement to this Declaration.

9.6.3. Regular Assessments, including Limited Common Expenses, shall be levied on a calendar year basis. Regular Assessments, including Limited Common Expenses, shall be paid in installments on a monthly, quarterly, semi-annual or annual basis, as the Board may determine from time to time, and shall be due either on the first day of each calendar month or on the first day of each calendar year quarter (January 1, April 1, July 1 and October 1), or on the first day of a semi-annual or annual period (e.g. January 1, July 1) as appropriate. Unless and until changed to a monthly or semi-annual or annual system by the Board, Regular Assessments, including Limited Common Expenses, shall be due and payable on the first day of each calendar quarter. Any Owner acquiring a Unit between installment due dates shall pay a pro rata share of the immediately preceding installment.

9.6.4. The Board shall fix the amount of the Regular Assessment, using the Budget procedure described below, at least 30 days before the end of each calendar year. Written notice of the Regular Assessments, including Limited Common Expenses, shall be sent to each Owner. Failure of the

Board timely to fix and levy the Regular Assessments, including Limited Common Expenses, for any year or to send a notice thereof to any Owner shall not relieve or release any Owner from liability for payment of Regular Assessments, including Limited Common Expenses, or any installments thereof for that or subsequent years as soon as the Board levies the Regular Assessments, including Limited Common Expenses, and provides notice thereof.

9.6.5. The Board may, but is not obligated, mail to each Owner at least 10 days prior to the due date thereof a written notice of the amount of the next quarterly (or monthly or semi annual or annual, as the case may be) installment of Regular Assessment that is due from such Owner, and the date on which such installment is due pursuant to subparagraph 9.6.4 above. Failure of the Board to send timely notice to any Owner of an installment of Regular Assessments, including Limited Common Expenses, due shall not relieve or release any Owner from liability for payment of that installment as soon as the Board in fact provides such notice.

9.6.6. In accordance with §38-33.3-314 of the Act, any surplus funds remaining after payment of or provision for Association expenses and any prepayment of or provision for reserves shall be carried forward as a credit against the next year's Budget.

9.7. <u>Allocation of Limited Common Expenses</u>.

9.7.1. The Board, in the further exercise of its sole and commercially reasonable discretion, may, but need not, allocate certain portions of the Regular Assessments, Special Assessments or other Assessments as a "Limited Common Expense" to some of the Owners as provided below.

9.7.2. In the event that the Board elects to allocate Limited Common Expenses as provided for in this Section, the Board must do so in a uniform and equitable manner among all Units and Owners in the Community. The Board shall determine annually as part of the adoption of the Budget whether some or all of the following Limited Common Expenses are to some, but not all of the Units, with such division and allocation tied to things like: (a) common usage of the Units by a Class of Unit Owners (eg. individual sets of Duplex Residential Units, all of the Duplex Residential Units, each of the Multifamily Residential Units located in a Building, or each of the Commercial Units located in a Building), (b) inclusion of only those Units in a specific Building, or (c) some other reasonable basis for the separation of Units, constituting some, but not all of the Units in the Community. If the Board elects not to allocate some or all of the following costs and expenses as Limited Common Expenses, the costs and expenses will be allocated among all of the Owners in proportion to their Allocated Interests.

A. Common Expenses attributable to only a particular Unit or class of Units shall be allocated to the Owner of the affected Unit(s);

B. Costs and expenses associated with the maintenance, repair, improvement or replacement of a Limited Common Element serving one or more Units among the Owners of the Units designated and otherwise authorized to use and enjoy the Limited Common Element;

C. Costs and expenses associated with utilities, including, without limitation, gas, electric, trash, water and sewer and other utility expenses, (unless and to the extent that these are separately metered or provided), among the Owners of the Units designated and otherwise authorized to use such utilities and services;

D. Costs and expenses associated with the maintenance, repair, improvement or replacement of chutes, flues, ducts, wires, conduits, bearing walls, bearing columns or other fixtures serving one or more Units, but less than all Units among the Owners of the Units

particularly benefitted by the chute, flue, duct, wire, conduit, bearing wall, bearing column or other fixture; and

E. Such other costs and expenses that the Board, in its reasonable discretion, determines benefits a limited class of Units and/or Owners.

9.7.3. In such event that the Board assessed a portion of the Regular Assessments as Limited Common Expenses, the Board shall assess such amounts only against the Unit(s) for which the Limited Common Expenses have been allocated. The Board shall allocate such Limited Common Expenses in a prorata manner based upon the respective size of each Unit to which the Limited Common Expense is being assigned ("**Designated Unit Allocated Limited Common Expense**"). The Association shall only assess the Unit its Designated Unit Allocated Limited Common Expense and not the Designated Limited Common Expense allocated Limited Common Expense for an amount equal to the Designated Unit Allocated Limited Common Expense for an amount equal to the Designated Unit Allocated Limited Common Expense allocated to another Unit, when the Owner of the other Unit has failed to pay its Designated Unit Allocated Limited Common Expense. The Board shall send written notice to each of the affected Owners that their Unit may be assessed with a Limited Common Expense.

9.8. Association Budget. During the last three (3) months of each calendar year thereafter, the Board shall prepare or cause to be prepared an operating budget ("Budget") for the next fiscal year. The Budget shall provide the allocation of any surplus funds remaining from any previous Budget period. Within ninety (90) days after adoption of any proposed Budget for the Association, the Board shall mail, by ordinary first-class mail, or otherwise deliver, a summary of the Budget to all the Unit Owners and shall set a date for a meeting of the Unit Owners to consider the Budget. The meeting shall be not less than 14 nor more than 60 days after the mailing or other delivery of the summary. Such meeting may, but need not be, concurrent with the annual meeting of the Members as provided in the Bylaws. The Budget shall be considered by the Owners at that meeting whether or not a quorum of Owners is present and shall be deemed to be approved unless at least 51% of the weighted vote at the meeting veto the Budget. In the event that the proposed Budget is vetoed, the Budget last ratified by the Unit Owners shall be continued until such time as the Unit Owners ratify a subsequent Budget proposed by the Board, as may be reasonably adjusted for inflation based upon the Consumer Price Index published in the Wall Street Journal and may also be adjusted to account for increases in any non-discretionary costs, expenses and fees imposed by third parties, such as property taxes, utilities and similar items.

9.9. <u>Special Assessments</u>.

9.9.1. In addition to the Regular Assessments, including Limited Common Expenses, and Reimbursement Assessments authorized in this Article 9, the Board may levy, in any assessment year, a Special Assessment applicable to that year only for the purpose of defraying, in whole or in part, the cost of any construction, reconstruction, repair, maintenance, or replacement of capital improvements (including related fixtures and personal property) to or upon or serving the Community, or for excess reconstruction costs or other extraordinary expenses, or for funding any operating deficit of the Association. Except in the event of an emergency, where no membership vote shall be required, the Board shall not levy a Special Assessment without the approval of the Unit Owners in the Community as provided below.

9.9.2. Written notice of any meeting called for the purpose of levying a Special Assessment shall be sent to all Owners no less than 30 or more than 60 days before the meeting. At the meeting, the presence of Owners in person or by proxy that are entitled to cast 50 percent of the weighted votes in the Association shall constitute a quorum. If the required quorum is not present, another meeting may be called pursuant to the same notice requirements, and the required quorum at this second meeting

shall be only 30 percent of the weighted votes in the Association. No such second meeting shall be held more than 60 days following the date of the first meeting.

9.9.3. Provided a quorum of Owners entitled to vote is present in person or by proxy in accordance with the quorum requirements set forth in the preceding paragraph, the Special Assessment shall be deemed to be approved, unless vetoed by the vote of Owners holding a majority of the weighted votes so present.

9.9.4. For purposes of this Section, the term "emergency" shall mean any circumstances or set of circumstances which pose an imminent threat of loss, damage or injury, actual or threatened, to persons or property. Special Assessments shall be allocated in the same manner as Regular Assessments, that is, in accordance with the Allocated Interests of each Unit in the Community, provided that Special Assessments that benefit fewer than all of the Units shall be allocated exclusively to the Units benefited. Special Assessments shall be due and payable to the Association on the due date fixed by the Board in the notice given to the Owners of such Special Assessment, which due date shall be no earlier than 30 days after the giving of such notice.

9.10. <u>Reimbursement Assessments</u>. In addition to the Regular Assessments, including Limited Common Expenses, and Special Assessments authorized hereunder, the Board may levy against any Owner or Owners, at any time and from time to time, a Reimbursement Assessment. Reimbursement Assessments shall be due and payable to the Association on the due date fixed by the Board in the notice given to the Owner(s) of such Reimbursement Assessment, which date shall be no earlier than 30 days after the giving of such notice.

9.11. **Working Capital**. The Association shall establish an initial working capital fund equal to 1/4 of the yearly Regular Assessment for each Unit subject to the terms of this Declaration. The working capital fund may be used by the Association to cover the cost of initial expenses and any future expenses authorized by the Board for which there are insufficient budgeted funds. The initial working capital fund shall be established upon the conveyance of the first Unit in the Project by Declarant to a third-party purchaser. Upon acquisition of record title to a Unit from Declarant, each such new Owner shall contribute to the working capital fund of the Association an amount equal to 1/4 of the yearly Regular Assessment for that Unit for the year in which the new Owner acquired title. Such payments shall not be considered advance payments of Regular Assessments. The working capital fund deposit made by such new Owner shall be non-refundable. In the event that Declarant makes payment of any working capital on behalf of any Unit, such amount shall be reimbursable to Declarant by the Unit purchaser at the closing of the sale of the Unit by Declarant to such purchaser.

9.12. <u>Reserve Accounts</u>. The Association may, but is not obligated to establish or fund reserve accounts for capital improvements or repairs to the Community. Declarant has no obligation to establish or fund any reserve accounts.

9.13. <u>Misconduct</u>. If any Common Expenses or Limited Common Expenses are caused by the misconduct of any Owner, the Board may assess that expense exclusively against such Owner's Unit as a Reimbursement Assessment.

9.14. Effect of Nonpayment of Assessments; Remedies of the Association.

9.14.1. Any Assessment or portion or installment thereof which is not paid when due (or for which a bad check is issued) shall be deemed delinquent and shall bear interest from and after the due date at the rate of interest set by the Board from time to time, which shall not be less than 12 percent nor more than 21 percent per year, and the Board may also assess a late charge thereon and/or may assess a bad check charge in the amount of 10 percent of the bad check or \$50.00, whichever is greater. The

Board may also elect to accelerate the installment obligations of any Regular Assessment for which an installment is delinquent. The delinquent Owner shall also be liable for all costs, including attorneys' fees, which may be incurred by the Association in collecting a delinquent Assessment, which collection costs shall be added to the delinquent Assessment. The Board may but shall not be required to record a Notice of Delinquent Assessment or charge against any Unit as to which an Assessment or charge is delinquent. The Notice shall be executed by an officer of the Board, and shall set forth the amount of the unpaid Assessment or charge, the name of the delinquent Owner and a description of the Unit.

9.14.2. The Assessment Lien may be foreclosed by the Association in the same manner as a mortgage on real property. The Association shall be entitled to purchase the Unit at foreclosure. The Association may also bring an action at law against the Owner personally obligated to pay the delinquent Assessment and/or foreclose the lien against said Owner's Unit in the discretion of the Association. No Owner may exempt himself or otherwise avoid liability for the Assessments provided for herein by waiver of the use or enjoyment of any Common Elements or by abandonment of the Unit against which the Assessments are made.

9.14.3. In any action by the Association to collect Assessments or to foreclose a lien for unpaid Assessments, the court may appoint a receiver to collect all sums alleged to be due from the Unit Owner prior to or during the pending of the action. The court may order the receiver to pay any sums held by the receiver to the Association during the pending of the action to the extent of the Association's Regular Assessments.

9.15. <u>Statement of Unpaid Assessments</u>. The Association shall furnish to an Owner or such Owner's designee or to a holder of a security interest or its designee upon written request, delivered personally or by facsimile transmittal or by certified mail, first class postage prepaid, return receipt requested, to the Association, a written statement setting forth the amount of unpaid Assessments currently levied against such Owner's Unit, whether delinquent or not. The statement shall be furnished within 14 days after receipt of the request and is binding on the Association, the Board, and every Owner. If no statement is furnished either delivered personally or by facsimile transmission or by certified mail, first-class postage prepaid, return receipt requested, to the inquiring party, then the Association shall have no right to assert a lien upon the Unit for unpaid Assessments which were due as of the date of the request.

9.16. <u>Assessments for Tort Liability</u>. In the event of any tort liability against the Association which is not covered completely by insurance, each Owner shall contribute for the payment of such liability as a Special Assessment. The Association may, however, require a larger contribution from fewer than all Owners under any legal or equitable principles regarding liability for negligent or willful acts or omissions.

9.17. <u>Audit</u>. The Association shall prepare audits as may be required by the Act or as otherwise elected by the Association.

ARTICLE TEN EMINENT DOMAIN

10.1. **Definition of Taking**. The term "taking", as used in this Article 10, shall mean condemnation by eminent domain or sale under threat of condemnation.

10.2. **Representation in Condemnation Proceedings of Common Elements**. In the event of a threatened taking of all or any portion of the Common Elements, the Unit Owners hereby appoint the Association through such persons as the Board may designate to represent the Association and all of the Unit Owners in connection therewith. The Association shall act in its sole discretion with

respect to any awards being made in connection with the taking and shall be entitled to make a voluntary sale to the condemnor in lieu of engaging in a condemnation action. Service of process on the Association shall constitute sufficient notice to all Unit Owners, and service of process on each individual Unit Owner shall not be necessary.

10.3. <u>Award for Common Elements</u>. Any awards received by the Association on account of the taking of Common Elements shall be paid to the Association. The Association may, in its sole discretion, retain any award in the general funds of the Association or distribute all or any portion thereof to the Unit Owners as their interests may appear. The rights of a Unit Owner and the mortgage of a Unit as to any such distribution shall be governed by the provisions of the mortgage encumbering the Unit.

10.4. <u>Taking of Units</u>. If a Unit is acquired by eminent domain or part of a Unit is acquired by eminent domain leaving the Owner with a remnant which may not practically or lawfully be used for any purpose permitted by this Declaration, the award must include compensation to the Owner for the acquired Unit and its Allocated Interests whether or not any Common Elements were acquired. Upon acquisition, unless the decree otherwise provides, that Unit's Allocated Interests are automatically reallocated to the remaining Units (as appropriate) in proportion to the respective Allocated Interests of those Units before the taking. Any remnant of a Unit is acquired by eminent domain, the award must compensate the Owner for the reduction in value of the Unit and its interest in the Common Elements whether or not any Common Elements were acquired. Upon acquisition, unless the decree otherwise, if part of a Unit is acquired by eminent domain, the award must compensate the Owner for the reduction in value of the Unit and its interest in the Common Elements whether or not any Common Elements were acquired. Upon acquisition, unless the decree otherwise provides:

10.4.1. That Unit's Allocated Interests are reduced in proportion to the reduction in the size of the Unit; and

10.4.2. The portion of Allocated Interests divested from the partially acquired Unit is automatically reallocated to that Unit and to the remaining Units (as appropriate) in proportion to the respective interests of those Units before the taking, with the partially acquired Unit participating in the reallocation on the basis of its reduced Allocated Interests.

10.5. <u>Miscellaneous</u>. The court decree shall be recorded in the Official Records. The reallocations of Allocated Interests pursuant to this Article shall be confirmed by an amendment to the Declaration prepared, executed, and recorded by the Association.

ARTICLE ELEVEN SPECIAL DECLARANT RIGHTS, DEVELOPMENT RIGHTS AND ADDITIONAL RESERVED RIGHTS

The Declarant hereby reserves for itself and its successors, assigns and designees, including the Association at such time that Declarant elects to assign such rights to the Association, the following "Special Declarant Rights," "Development Rights" and "Additional Reserved Rights" for thirty years following the recordation of this Declaration, unless sooner terminated by the written election of Declarant, in its sole discretion (collectively the "Reserved Rights"). In all events, the exercise of the Reserved Rights is subject to compliance with applicable Town Development Approvals and Requirements.

11.1. SPECIAL DECLARANT RIGHTS.

11.1.1. <u>Completion of Improvements</u>. The right to complete Improvements indicated on plats and maps filed with the Declaration and/or provided for in the Town Development Approvals and Requirements, including the right to consolidate Units by inserting internal doors leading or connecting

adjacent Units, the right to construct storage areas and such other rights indicated on the Map or elsewhere in this Declaration.

11.1.2. <u>Exercise of Reserved Rights</u>. The right to exercise: (a) any Special Declarant Rights, Additional Reserved Rights or Development Rights reserved in this Article; or (b) any other rights reserved or existing under the provisions of this Declaration or the Act.

11.1.3. <u>Consolidation on Merger</u>. The right to merge or consolidate the Community with a reasonably similar common interest community as determined by Declarant.

11.1.4. <u>Amendment of Declaration</u>. The right to amend the Declaration in connection with the exercise of any Development Rights, Special Declarant Rights or Additional Reserved Rights.

11.1.5. <u>Amendment of Community Map</u>. The right to amend the Condominium Map in connection with the exercise of any Development Rights, Special Declarant Rights or Additional Reserved Rights.

11.2. **DEVELOPMENT RIGHTS**.

11.2.1. <u>Units</u>. The Declarant reserves the right to undertake any of the following actions with respect to the Common Elements and Units owned by the Declarant:

A. Relocate boundaries between adjoining Units;

B. Enlarge, reduce or diminish the size of Units, including incorporating Common Elements into a Unit;

- C. Subdivide a Unit into one or more additional Units;
- D. Enlarge, reduce or diminish the size of areas of the Common Elements;
- E. Convert Residential Units to Commercial Units or Commercial Units to

Residential Units;

F. Reduce or diminish the size of areas of the Common Elements; and

G. Re-designate uses and activities occurring on the Common Elements, except for Limited Common Elements, which re-designation of uses and activities will require the consent of the Owner of the Unit to which the right to use Limited Common Element was assigned.

11.2.2. <u>Create Additional Buildings, Units and Common Elements</u>. The right to create or construct additional Buildings, Units, Common Elements and Limited Common Elements upon the Real Estate, to subdivide Units and to convert Units into Common Elements or to convert Common Elements into Units.

11.2.3. <u>Annex Additional Land or Units</u>. The right to add Units and to subject additional property located in the Town of Ridgway to the provisions of this Declaration.

11.2.4. <u>Withdraw Real Estate</u>. The right to withdraw Units owned by Declarant, and associated Common Elements, from the Community.

11.2.5. <u>Master Associations and Subordinate Association</u>. The right to create master associations and/or subordinate associations and to subject all or portions of the Real Estate to such master association or subordinate association;

11.2.6. <u>Relocate Boundaries of Units</u>. In exercising its Reserved Rights, Declarant may modify the boundaries of any Common Element and include areas associated with a Common Element into a Unit, provided that Declarant shall not reduce an area designated as a Limited Common Element without the consent of the Owner(s) of the Unit(s) to which the Limited Common Element has been assigned.

11.2.7. Other Rights.

A. The right to re-designate the use classification of a Unit from a Commercial Unit to Residential Unit and from a Residential Unit to a Commercial Unit;

B. The right to grant or withhold its approval and/or consent to any matter or action requiring the approval and/or consent pursuant to the Declaration;

C. The right to exercise any and all other Reserved Rights stated, established or otherwise reserved herein or otherwise allowed in the Act;

D. The right to amend the Declaration in connection with the exercise of any Reserved Rights; and

E. The right to amend the Condominium Map in connection with the exercise of any Reserved Rights.

11.3. ADDITIONAL RESERVED RIGHTS.

11.3.1. <u>Dedications</u>. The right to establish or obtain, from time to time, by dedication, grant or otherwise, utility and other easements or encroachment permits for purposes including but not limited to streets, paths, walkways, skyways, drainage, recreation areas, parking areas, ducts, shafts, flues, conduit installation areas, and to create other reservations, exceptions and exclusions for the benefit of and to serve the Owners within the Community.

11.3.2. <u>Use Agreements</u>. The right to enter into, establish, execute, amend, and otherwise deal with contracts, agreements and leases for the use, operation, lease, repair, maintenance or regulations of recreational facilities and/or Common Elements, which may or may not be a part of the Community.

11.3.3. <u>Grant Easement</u>. The right to grant and convey an easement over portions of the Common Elements to adjoining property owners or to the public to enable pedestrian and vehicular access and/or the extension of utilities to serve adjoining property, provided that the grant of such easement does not preclude uses and activities of the Common Elements contemplated by this Declaration.

11.3.4. <u>Other Rights</u>. The right to exercise any other right reserved to Declarant in this Declaration or the other Condominium Documents.

11.4. <u>Assignment of the Declarant Rights</u>. Declarant reserves the right to transfer and assign some or all of the Reserved Rights to any Person, which will be evidenced by a written assignment recorded in the Official Records, and upon such assignment, such assignee may elect to exercise any

assigned Reserved Rights subject to these Declarations and the Act and upon such election, the assignee shall assume all of the duties and obligations of the Declarant with respect to the Reserved Rights being so assigned. At such time that Declarant no longer owns a Unit in the Community, Declarant shall assign any and all Reserved Rights which Declarant continues to possess to the Association.

11.5. **No Further Authorizations Needed.** The consent of Owners or holders of Security Interests shall not be required for the Declarant or its assignees to exercise any Reserved Rights, and Declarant or its assignees may proceed without limitation at their option, subject to existing property use, zoning laws and any planned unit development requirements of the Town. Reserved Rights of the Declarant or its assignees may be exercised with respect to different parcels of the Community at different times. Additionally, Declarant or its assignees may exercise any Reserved Rights on all or any portion of the Community in whatever order is determined. Declarant or its assignees shall not be obligated to exercise any Reserved Rights or to expand the Community beyond the number of Units initially submitted.

11.6. <u>Amendment of the Declaration or Map.</u> If Declarant or its assignees elect to exercise any Reserved Rights, that party shall comply with the Act with respect to amending or supplementing the Map or the Declaration.

11.7. **Interpretation.** Recording of amendments to the Declaration and the Map pursuant to Reserved Rights in the Declaration shall automatically effectuate the terms and provisions of that amendment. Further, such amendment shall automatically vest in each existing Owner the reallocated Allocated Interests appurtenant to his Unit. Further, upon the recording of an amendment to the Declaration, the definitions used in this Declaration shall automatically be extended to encompass and to refer to the Community as expanded and to any Additional Improvements, and the same shall be added to and become a part of the Community for all purposes. All conveyances of Units after such amendment is recorded shall be effective to transfer rights in all Common Elements, whether or mot reference is made to any Amendment of the Declaration or Map.

ARTICLE TWELVE GENERAL PROVISIONS

12.1 **Duration of Declaration**. The term of this Declaration shall be perpetual.

12.2 <u>Termination of Community</u>. The Community may be terminated only by the agreement of: (a) Owners holding at least 80% of the weighted votes in the Association, and (b) all Eligible Mortgagees. In the event of such termination, the provisions of Section 38-33.3-218 of the Act shall apply.

12.3 <u>Amendment of Declaration and Map</u>.

12.3.1 This Declaration may be amended by the Declarant in certain defined circumstances, including without limitation: (a) when the Declarant is exercising Reserved Rights hereunder, (b) for purposes of correcting clerical, typographical, or technical errors; or (c) to comply with the requirements, standards or guidelines of recognized secondary mortgage markets and agencies.

12.3.2 In addition to the foregoing, subject to the provisions of this Declaration (including, but not limited to, Section 12.5) this Declaration (including the Condominium Map) may be amended by the vote or agreement of Owners to which at least 51% of the weighted votes in the Association are allocated. Any amendment of a material adverse nature to Mortgagees shall require the consent of Eligible Mortgagees representing 51% of the weighted votes of Units subject to such Mortgages.

So long as Declarant has any rights or obligations under or pursuant to this Declaration or any of the other Condominium Documents (see Article Eleven above), any proposed amendment of any provision of the Condominium Documents shall require Declarant's prior written consent to such amendment. Any amendment made without Declarant's prior written consent as required herein shall be null and void and shall have no effect. The foregoing requirement for consent of Declarant to any amendment shall terminate at the option of the Declarant as set forth in a recorded instrument executed by Declarant, but in any event, shall terminate without further act or deed in accordance with the limitations set forth in Article Eleven above; *provided, however*, in no event shall the provisions of this paragraph limit the rights of Declarant in Section 12.5 below.

12.3.3 Pursuant to Section 38-33.3-217(4.5) of the Act which provides that except to the extent expressly permitted or required by other provisions of the Act, no amendment may change the uses to which any Unit is restricted in the absence of a vote or agreement of Owners to which at least 51% of the weighted votes in the Association for such Units are allocated. This limitation does not apply in instances where the Declarant is amending the Declaration and/or the Condominium Documents pursuant to its Reserved Rights, to the fullest extent allowed by the Act.

12.3.4 Under no circumstances shall any amendment to the Declaration, the Map or any of the Condominium Documents alter, limit, impair, reduce, eliminate, extinguish, terminate or otherwise affect the Reserved Rights of Declarant or any Unit owned by Declarant without the prior written consent and approval of Declarant, which Declarant may grant or withhold in Declarant's sole discretion.

12.3.5 An amendment to this Declaration shall be in the form of a "First (or Second, etc.) Amendment to Declaration and Map." With the exception of Declarant amendments, amendments to this Declaration shall be duly executed by the President and Secretary of the Association and recorded in the Official Records.

12.3.6 No amendment to this Declaration concerning any designated Town Enforceable Restrictions shall be effective unless approved by the Town, evidenced by its consent in the Declaration Amendment.

12.4 **<u>Compliance; Enforcement</u>**.

12.4.1 Every Owner and Occupant of a Unit in the Community shall fully and faithfully observe, abide by, comply with and perform all of the covenants, conditions and restrictions set forth in this Declaration and the Condominium Documents, and all approvals granted by the Board, as the same or any of them may be amended from time to time.

12.4.2 The Board shall have the following rights and remedies:

A. The right to levy and collect, after Notice and Hearing, reasonable fines for the violation of any of the foregoing matters which shall constitute a lien upon the violator's Unit. In the event that any Person, including an Occupant, guest, or invitee of a Unit violates the Condominium Documents and a fine is imposed, the fine may, but need not, first be assessed against the violator; however, if the fine is not paid by the violator within the time period set by the Board, the Owner shall pay the fine upon notice from the Board.

B. The right to levy and collect a Reimbursement Assessment against any

Owner.

C. The right to enter upon any Unit within the Community, after giving the Owner or Occupant at least 5 days written notice of the nature of the violation (unless an emergency exists, in which case without notice), without liability to the Owner or Occupant thereof, to enforce or cause compliance with such matters, at the cost and expense of the Owner or Occupant in violation.

D. The right to cut off or suspend any or all Association services or benefits to the subject Owner or Occupant and his Unit until the violation is cured.

E. The right to suspend an Owner's right to vote (except that no notice or hearing is required if the Owner is more than 90 days delinquent in paying any Assessment).

F. The right to exercise self-help or take action to abate any violation of the Condominium Documents in a non-emergency situation (including removing personal property that violates the Condominium Documents).

G. The right to record a notice of violation with respect to any Unit on which a violation exists.

12.4.3 Failure by the Board to exercise any of the rights available to it under this Section 12.4 shall in no event be deemed a waiver of the right to do so in any other instance.

12.4.4 A decision by the Association and its Board not to enforce a particular provision shall not prevent the Association from enforcing the same provision at a later time or prevent the enforcement of any other covenant, restriction, or rule.

12.4.5 The Town is authorized to enforce compliance with a violation of a Town Enforceable Restrictions as established by and in the manner provided for in this Declaration.

12.5 Agreement to Encourage Alternative Dispute Resolution.

12.5.1 For purposes of this Section 12.5 only, the following terms have the following meanings:

- (a) "AAA" means the American Arbitration Association.
- (b) "Claimant" means any Party having a Claim.

(c) "Claim" means, except as excluded or exempted by the terms of this Section 12.5 (including Section 12.5.3 below), any claim, counterclaim, cross-claim, third-party claim, grievance or dispute between one Party and another, regardless of how it may have arisen or on what it might be based (including, but not limited to, damages, indemnity or contribution), including, without limitation, disputes arising out of or related to: (i) the interpretation, application or enforcement of any Condominium Document or the Limited Warranty; (ii) the location, size, planning, sale, development, design, construction and/or condition of the Units and Community, including, without limitation, the soils of the Community; and (iii) any statements, representations, promises, warranties, or other communications allegedly made by or on behalf of any Party relating to the foregoing.

(d) "Inspecting Party" means a Party causing an inspection of the Subject Property to be made.

related to a Unit.

"Limited Warranty" means a written limited warranty given to a Party

(e)

(f) "**Party**" means each of the following: (i) Declarant and its officers, owners, employees and agents (collectively, "**Declarant Affiliates**"); (ii) all Owners, the Association and all other Persons subject to this Declaration, their officers, owners, employees, and agents; (iii) any builder of any portion of the Project and its officers, owners, employees and agents; and (iv) any Person not otherwise subject to this Declaration who agrees to submit to this Section 12.5.

Claim.

(g) "Respondent" means any Party against whom a Claimant asserts a

(h) "**Subject Property**" means the property and all improvements thereon regarding which a Party contends a defect exists or another Claim pertains and/or property and all improvements thereon being inspected and/or repaired under the inspection right in Section 12.5.4 below.

(i) "**Termination of Mediation**" means a period of time expiring 30 days after a mediator has been agreed upon by the Parties or chosen by AAA if the Parties cannot agree or within such other time as agreed to by the Claimant and Respondent in writing, and upon the expiration of which the Claimant and Respondent have not settled the Claim.

12.5.2 Intent of Parties; Applicability of Article; and Applicability of Statutes of Limitations.

(a) Each Party agrees to work towards amicably resolving disputes, without the emotional and financial costs of litigation. Accordingly, each Party agrees to resolve all Claims only by using the procedures in this Section 12.5, and not by litigation. Further, each Party agrees that the procedures in this Section 12.5 shall be the sole and exclusive remedial process that each Party shall have for any Claim. Should any Party commence litigation or any other action against any other Party in violation of this Section 12.5, such action shall be dismissed and such Party shall reimburse all costs and expenses, including attorneys' fees and court costs, incurred by the other Party in such litigation or action within 10 days after written demand.

(b) By accepting a deed for a Unit, each Owner agrees to be bound by and to comply with this Section 12.5.

(c) The Parties agree that no Claim may be commenced after the date set forth in an applicable Limited Warranty, and if the Claim is not covered by such Limited Warranty, then when institution of legal or equitable proceedings based on such Claim would be barred by the applicable statute of limitation and/or statute of repose or as otherwise limited by this Section 12.5.

12.5.3 Unless specifically exempted by this Section 12.5, all Claims between any of the Parties shall be subject to the provisions of this Section 12.5. Notwithstanding the foregoing, unless all Parties thereto otherwise agree in writing, "Claim" does not include the following and shall not be subject to the provisions of this Section 12.5:

(a) Any action by the Association to enforce the provisions of the Condominium Documents (other than this Section 12.5) against an Owner or Occupant;

(b) Any action by the Association to assess or collect any Assessments or to enforce or foreclose any Assessment Lien;

(c) Any action, suit or proceeding to compel arbitration of a Claim or to enforce any award or decision of an arbitration conducted in accordance with this Section 12.5 or to enforce the terms of any written settlement agreement of a Claim; D:\Cantor, Joel.6417\Ridgway Property\Community Docs\Decs.1c.redline.doc

(d) Any action pursuant to the provisions of this Declaration concerning

mechanics liens.

12.5.4 Notice and Right to Inspect and Correct.

(a) Before the earlier of, as applicable (i) the delivery of a Notice of Claim as described in Colorado's Construction Defect Action Reform Act ("**CDARA**"), or (ii) initiating arbitration under Section 12.5.7 below (each referred to herein as "**Commencing a Claim**"), the Claimant shall provide notice to everyone Claimant contends contributed to the alleged problem. The notice shall state plainly and concisely:

The nature of the Claim, including all Persons involved and each Respondent's role in the Claim;

The legal or contractual basis of the Claim (i.e., the specific authority out of which the Claim arises); and

The specific relief and/or proposed remedy sought.

(b) Additionally, if the Claim involves an alleged defect or damage to any improvement or real property, then prior to Commencing a Claim, Claimant shall also provide Respondent, for a period of 60 days after delivery of the foregoing notice ("Inspection/Correction Period"), the right to access, inspect, correct the condition of, or redesign any portion of any improvement or real property allegedly containing a defect or damage or otherwise correct the alleged defect or damage. In exercising these inspection and correction rights, the Inspecting Party and Respondent shall:

(i) Act carefully to avoid unreasonable intrusion on, or harm, damage or costs to the other Party including using its best efforts to avoid causing any damage to, or interference with, any improvements on the Subject Property at issue;

(ii) Minimize any disruption or inconvenience to any Person who

occupies the Subject Property;

(iii) Remove daily all debris caused by the inspection and remaining

on the Subject Property; and

(iv) In a reasonable and timely manner, at the sole cost and expense of the Inspecting Party, promptly remove all equipment and materials from the Subject Property, repair and replace all damage, and restore the Subject Property to its pre-inspection condition unless the Subject Property is to be immediately repaired.

The Inspecting Party and Respondent shall not permit any lien, claim or other encumbrance arising from the inspection to attach to the Subject Property.

12.5.5 In the event that (a) by the end of the Inspection/Correction Period described above, Respondent has elected not to access, inspect, correct the condition of, or redesign any portion of any improvement or real property allegedly containing a defect or damage or otherwise correct the alleged defect or damage, (b) by the end of the Inspection/Correction Period, Claimant is unsatisfied with such actions undertaken by Respondent under Section 12.5.4(b) above, or (c) the Claim does not involve an alleged defect or damage of any improvement or real property, then before Commencing a Claim against any Respondent, the Parties shall first make every reasonable effort to meet in person and confer to resolve the Claim by good faith negotiation. The Parties shall seek to understand clearly the Claim and

resolve as many aspects or issues as possible. Any Party may be represented by attorneys and independent consultants to assist such Party, including by attending all negotiations.

12.5.6 If the Parties cannot resolve the Claim through negotiations under Section 12.5.5 above after attempting to do so for 20 days, Claimant shall have an additional 15 days to submit the Claim to mediation under the auspices of the AAA under the AAA's Commercial or Construction Industry Mediation Rules, as appropriate.

(a) If Claimant does not submit the Claim to mediation within such time, or does not appear for the mediation, Claimant shall be deemed to have fully and finally waived the Claim for all purposes, such that Respondent shall be deemed released and discharged from all liability to Claimant for such Claim.

(b) Any settlement of the Claim through mediation shall be documented in writing by the mediator and signed by the Parties. If mediation ends without a settlement, the mediator shall issue a notice of Termination of Mediation. This notice shall state that the Parties are at an impasse and the date that mediation was terminated.

(c) Each Party shall pay its own costs of the mediation, including its own attorneys' fees. Each Party shall share equally all of the mediator's charges. The mediation proceedings shall be conducted at a mutually agreeable location in the City and County of Denver, Colorado.

(d) If the Parties resolve any Claim through negotiation or mediation under Section 12.5.5 above or this Section 12.5.6, and any Party later fails to comply with a written settlement agreement, then any other Party may file suit or initiate arbitration proceedings to enforce such written agreement without the need to again comply with such procedures. In such event, the Party taking action to enforce the agreement shall be entitled to recover from the non-complying Party (or if more than one non-complying Party, from all such Parties pro rata) all costs incurred in enforcing such agreement, including, without limitation, attorneys' fees and costs.

12.5.7 Commencing a Claim.

(a) Only after receiving a notice of Termination of Mediation may a Claimant Commence a Claim.

(b) At least 60 days before the Association Commences a Claim, the Board must first also comply with the following:

(i) Provide notice to all Owners ("**Homeowner Notice**") in accordance with §303.5 of the Act, if applicable, and also include in such notice the following:

(1) The Approval Deadline (defined below);

(2) If the Association were to prevail, what the Board expects that the Association may recover from the Respondent(s);

(3) Whether the Board intends to enter into a contingency fee arrangement with the attorneys' representing the Association, and how much of the amount the Association recovers from the Respondent(s) will be paid to the attorney(s). What the Board estimates that, in addition to attorney fees, the Association will incur for consultants, expert witnesses, depositions, filing fees, and other expenses of pursuing the Claim;

(4) If the Association makes a Claim and does not prevail, what the Board expects the Association will incur in witness and attorneys' fees and other costs;

(5) If the Association does not recover from the Respondent(s), what it may have to pay to repair or replace any claimed defective work;

(6) A statement that until any claimed defective work is repaired or replaced, or until the Claim is concluded, the market value of the affected Units could be adversely affected;

(7) A statement that until any claimed defective work is repaired or replaced, or until the Claim is concluded, Owners of affected Units may have difficulty refinancing and prospective buyers of the affected Units may have difficulty obtaining financing. In addition, a statement that certain federal underwriting standards or regulations prevent refinancing or obtaining a new loan in projects where a construction defect is claimed. In addition, a statement that certain lenders as a matter of policy will not refinance or provide a new loan in projects where a construction defect is claimed;

(8) An estimate of the length of time it will take to reach a final resolution of the Claim (including appeals);

Claim (i.e., Special Assessments);

(9) How the Association intends to finance the pursuit of the

(10) An affirmation from each Board member voting in favor of pursuing the Claim that the foregoing are true and correct; and

(11) Any statement desired to be included in the notice by any Board member voting against pursuing the Claim.

(ii) Require that repair estimates be given by contractors other than those recommended by the Association's attorneys.

(iii) Prior to the Association Commencing a Claim, the Association must also first obtain the prior written approval to pursue the Claim from Owners of Units to which a majority of the total votes in the Project (excluding votes allocated to Units owned by Declarant) are allocated. The Association must obtain such written approval within 60 days after delivery of the Homeowner Notice or the Claim is deemed fully and finally released and may not be brought in any manner by the Association ("Approval Deadline").

(c) A Claim is commenced only by:

(i) <u>If the Claim is governed by CDARA</u>, delivering a Notice of Claim under CDARA to Respondent(s). If the Parties fail to reach agreement on an offer of settlement pursuant to CDARA's Notice of Claim process (C.R.S. §13-20-803.5) and the Claimant elects to proceed with the Claim, then the Claim may proceed only by way of the arbitration procedures set forth below, and not by way of litigation. Final, binding arbitration of the Claim shall be conducted under the auspices of the AAA and its Commercial or Construction Industry Arbitration Rules, as appropriate. Claimant must provide to Respondent a "Notice of Intent to Arbitrate," within 20 days after the conclusion of the offer of settlement procedures set forth in C.R.S. §13-20-803.5. If Claimant does not timely initiate final, binding arbitration of the Claim and timely provide a Notice of Intent to Arbitrate to Respondent, then

Claimant shall be deemed to have waived the Claim, and Respondent shall be deemed fully and finally released and discharged from all liability to Claimant for such Claim.

(ii) <u>If the Claim is not governed by CDARA</u>, then only by the arbitration procedures set forth below, and not by way of litigation. Final, binding arbitration of the Claim shall be conducted under the auspices of the AAA and its Commercial or Construction Industry Arbitration Rules, as appropriate, in which event Claimant shall provide to Respondent a "Notice of Intent to Arbitrate," within 20 days after receiving the notice of Termination of Mediation. If Claimant does not timely initiate final, binding arbitration of the Claim and timely provide a Notice of Intent to Arbitrate to Respondent, then Claimant shall be deemed to have waived the Claim, and Respondent shall be deemed fully and finally released and discharged from all liability to Claimant for such Claim.

The following arbitration procedures shall govern each arbitrated Claim:

(1) The arbitrator must be a person qualified to consider and resolve the Claim with the appropriate industry and/or legal experience.

(2) No Person shall serve as the arbitrator where that Person has any financial or personal interest in the arbitration or any family, social or significant professional acquaintance with any Party to the arbitration. Any Person designated as an arbitrator shall immediately disclose in writing to all Parties any circumstance likely to affect the appearance of impartiality, including any bias or financial or personal interest in the arbitration ("**Arbitrator Disclosure**"). If any Party objects to the service of any arbitrator within 14 days after receipt of the Arbitrator's Disclosure, such arbitrator shall be replaced in the same manner as the initial arbitrator was selected.

(3) The arbitrator shall hold at least one hearing in which the Parties, their attorneys and expert consultants may participate. The arbitrator shall fix the date, time and place for the hearing. The arbitration proceedings shall be conducted at a mutually agreeable location in the City and County of Denver, Colorado.

(4) The arbitration shall be presided over by a single arbitrator.

(5) Other than the deposition of experts and Claimant, no formal discovery shall be conducted without an order of the arbitrator or express written agreement of all Parties.

(6) Unless directed by the arbitrator, there shall be no post-hearing briefs.

(7) The arbitration award shall address each specific Claim to be resolved in the arbitration, provide a summary of the reasons therefore and the relief granted, and be rendered no later than 14 days after the close of the hearing, unless otherwise agreed by the Parties. The arbitration award shall be in writing and shall be signed by the arbitrator.

(8) The arbitrator determines all issues about whether a Claim is covered by this Article 20. Notwithstanding anything herein to the contrary (including, but not limited to, Section 12.5.7(c)(9) and Section 12.5.7(c)(10) below), if a Party contests the validity or scope of arbitration in court, the arbitrator or the court shall award reasonable attorneys' fees and expenses incurred in defending such contests, including those incurred in trial or on appeal, to the non-contesting Party.

(9) The arbitrator shall apply the substantive law of Colorado with regard to any remedy granted. The arbitrator may award injunctive relief or any other remedy available in Colorado but shall not have the power to award punitive damages, attorneys' fees and/or costs to the prevailing Party. Except as set forth in Section 12.5.7(c)(8) above, each Party is responsible for any fees and costs incurred by that Party. Any judgment upon the award rendered by the arbitrator may be entered in and enforced by any court of competent jurisdiction.

(10) The Parties shall pay their pro rata share of all arbitration fees and costs, including, without limitation, the costs for the arbitrator and their consultants.

(11) The arbitrator shall have authority to establish reasonable terms regarding inspections, destructive testing and retention of independent consultants.

(12) Except as may be required by law or for confirmation of an arbitration award, and except as otherwise provided in this Section 12.5, neither a Party nor an arbitrator may disclose the existence or contents of any arbitration without the prior written consent of all Parties to the arbitration.

12.5.8 THE PROVISIONS OF THIS SECTION 12.5 INURE TO THE BENEFIT OF DECLARANT AND THE DECLARANT AFFILIATES (AND ALL OTHER PARTIES DESCRIBED ABOVE) AND, NOTWITHSTANDING ANY OTHER PROVISION OF THIS DECLARATION, INCLUDING, WITHOUT LIMITATION, THE PROVISIONS OF SECTION 12.3 ABOVE, SHALL NOT EVER BE AMENDED WITHOUT THE WRITTEN AND RECORDED CONSENT OF DECLARANT, WITHOUT REGARD TO WHETHER DECLARANT OWNS ANY UNIT AT THE TIME OF SUCH AMENDMENT. BY TAKING TITLE TO A UNIT, EACH OWNER ACKNOWLEDGES AND AGREES THAT THE TERMS OF THIS SECTION 12.5 ARE A SIGNIFICANT INDUCEMENT TO DECLARANT'S AND THE DECLARANT AFFILIATES' WILLINGNESS TO DEVELOP AND SELL THE UNITS AND THAT IN THE ABSENCE OF THE PROVISIONS CONTAINED IN THIS SECTION 12.5, DECLARANT AND THE DECLARANT AFFILIATES WOULD HAVE BEEN UNABLE AND UNWILLING TO DEVELOP AND SELL THE UNITS FOR THE PRICES PAID BY THE ORIGINAL BUYERS.

IN ANY EVENT, ANY AMENDMENT TO OR DELETION OF ALL OR ANY PORTION OF THIS SECTION 12.5 SHALL NOT APPLY TO CLAIMS BASED ON ALLEGED ACTS OR OMISSIONS THAT PREDATE SUCH AMENDMENT OR DELETION.

THE TERMS OF THIS SECTION 12.5.8 SHALL NOT BE LIMITED BY THE PROVISIONS OF ARTICLE 11 ABOVE OR ANY OTHER PROVISION OF THIS DECLARATION.

12.5.9 IN THE EVENT THAT A COURT FINDS THAT THE DISPUTE RESOLUTION PROCEDURES SET FORTH IN THIS SECTION 12.5 ARE UNENFORCEABLE AND AS A RESULT A PARTY IS ALLOWED TO BRING A CLAIM IN COURT, ALL PARTIES AGREE THAT ANY LAWSUIT, WHETHER CLAIM OR COUNTERCLAIM, BROUGHT IN COURT SHALL BE TRIED ONLY BY A JUDGE AND NOT BY A JURY; AND EACH PARTY HEREBY KNOWINGLY, VOLUNTARILY, INTENTIONALLY, AND INTELLIGENTLY WAIVES, TO THE EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT TO A TRIAL BY JURY IN ANY SUCH SUIT.

12.6 **<u>Rights of Mortgagees</u>**.

12.6.1 Each Eligible Mortgagee shall be entitled to timely written notice of:

(a) Any condemnation loss or any casualty loss which affects a material portion of the Community or which affects any Unit on which there is a Mortgage held, insured or guaranteed by such Eligible Mortgagee;

(b) Any sixty-day delinquency in the payment of Assessments or other charges owed by an Owner whose Unit is subject to the Mortgage;

(c) Any lapse, cancellation or material modification of any insurance policy maintained by the Association; and

of Mortgagees.

(d) Any proposed action that requires the consent of a specified percentage

12.6.2 Any Mortgagee shall be entitled to pay any taxes or other charges which are in default and which may or have become a lien against the Common Elements and may pay any overdue premiums on hazard or general liability insurance policies covering the Common Elements, and shall be entitled to immediate reimbursement therefor from the Association, unless the Association is contesting any unpaid taxes or other charges and has set aside sufficient funds to pay the contested amounts if necessary.

12.6.3 In the event of a distribution of insurance proceeds or condemnation awards allocable among the Units for losses to, or taking of, Units and/or all or a part of the Common Elements, neither the Owner nor any other Person shall take priority in receiving the distribution over the right of any First Mortgagee who is a beneficiary of a First Mortgage against a Unit.

12.6.4 If this Declaration or any Condominium Documents require the approval of any Eligible Mortgagees then, the Association shall send a dated, written notice and a copy of any proposed amendment by certified or registered mail "return receipt" requested to such Eligible Mortgagee at its most recent address as shown on the recorded deed of trust or recorded assignment thereof, or as otherwise delivered by such Eligible Mortgagee to the Association. An Eligible Mortgagee that does not deliver to the Association a negative response within sixty days after the date it receives proper notice shall be deemed to have approved the proposed amendment.

12.7 <u>Notice.</u> Each Owner shall register its mailing address from time to time with the Association. Except as otherwise specifically provided in this Declaration, any notice permitted or required to be given hereunder to an Owner shall be in writing and may be delivered either personally, or by facsimile transmission, or by mail. Notices delivered personally or sent by facsimile transmission to an Owner shall be deemed given on the date so delivered or sent. If delivery is made by mail, it shall be deemed to have been delivered two (2) business days after a copy of the same has been posted in the first-class U.S. Mail, certified and return receipt requested, with adequate postage affixed, addressed to the receiving party at the address last registered by such party with the Association, or in the case of an Owner that has not provided such an address, to the Unit of that Owner. Notices to the Association shall be sent to such address as it may from time to time designate in writing to each Owner.

12.8 <u>No Dedication to Public Use</u>. Nothing contained in this Declaration shall be deemed to be or to constitute a dedication of all or any part of the Community to the public or to any public use except as may be required by the Town Development Approvals and Requirements and Requirements

12.9 <u>Safety and Security</u>. Each Owner and Occupant of a Unit, and their respective guests and invitees, shall be responsible for their own personal safety and the security of their property in the Community. The Association may, but shall not be obligated to, maintain or support certain activities within the Community designed to promote or enhance the level of safety or security which each person provides for himself or herself and his or her property. However, the Association, the Declarant (and any officers, owners, employees and agents thereof) and the Managing Agent, shall not in any way be considered insurers or guarantors of safety or security within the Community, nor shall any of them be held liable for any loss or damage by reason of failure to provide adequate security or ineffectiveness of

security measures undertaken. No representation or warranty is made that any systems or measures, including security monitoring systems or any mechanism or system for limiting access to the Community, cannot be compromised or circumvented, nor that any such systems or security measures undertaken will in all cases prevent loss or provide the detection or protection for which the system is designed or intended. Each Owner acknowledges, understands, and shall be responsible for informing any Occupants of such Owner's Unit that the Association, its Board and committees, the Declarant (and any officers, owners, employees and agents thereof) and the Managing Agent are not insurers or guarantors of security or safety and that each Person within the Community assumes all risks of personal injury and loss or damage to property, including Units and Common Elements and the contents of Units, resulting from acts of third parties.

12.10 **Interpretation of Declaration**. The provisions of this Declaration shall be liberally construed to effectuate its purposes of creating a common and general plan for the development, improvement, enhancement, protection and enjoyment of the Community, and to the extent possible, shall be construed so as to be consistent with the Act.

12.11 <u>Conflict With Condominium Map</u>. In the event of any conflict or inconsistency between the provisions of this Declaration and the Condominium Map, the provisions of said Condominium Map shall govern and control and this Declaration shall automatically be amended, but only to the extent necessary to conform the conflicting provisions hereof with the provisions of said Condominium Map.

12.12 <u>Conflict With the Act</u>. In the event of any conflict or inconsistency between the provisions of the Condominium Documents and the Act and/or the Colorado Revised Nonprofit Corporation Act, the respective provisions of the Act and/or the Colorado Revised Nonprofit Corporation Act shall govern and control and the Condominium Documents shall automatically be amended, but only to the extent necessary to conform the conflicting provisions hereof with the provisions of the Act and/or the Colorado Revised Nonprofit Corporation Act and only to the extent amendments do not conflict with the Town Development Approvals and Requirements and Requirements.

12.13 <u>Governing Law; Jurisdiction</u>. The laws of the State of Colorado shall govern the interpretation, validity, performance, and enforcement of this Declaration. Except as otherwise provided in this Declaration (including, but not limited to, Section 12.5) any legal action brought in connection with this Declaration shall be commenced in the District Court for Ouray County, Colorado, and by acceptance of a deed to a Unit each Unit Owner voluntarily submits to the jurisdiction of such court.

12.14 <u>Costs and Attorneys' Fees</u>. Except as otherwise provided in this Declaration (including, but not limited to, Section 12.5), in any action or proceeding involving the interpretation or enforcement of any provision of this Declaration, the substantially prevailing party shall recover its costs and expenses, including reasonable expert witness and attorneys' fees and costs incurred in connection therewith. An action shall be commenced only in a state court of competent jurisdiction located in Ouray County, Colorado.

12.15 <u>Severability</u>. The provisions of this Declaration shall be deemed severable and the invalidity or unenforceability of any provision shall not affect the validity or enforceability of the other provisions hereof. If any provision of this Declaration, or the application thereof to any Person or any circumstance, is invalid or unenforceable, (a) the invalid or unenforceable provision shall be reformed, to the minimum extent required to render such invalid or unenforceable provision enforceable in order to carry out, so far as may be valid and enforceable, the intent and purpose of such invalid or unenforceable provision to other Persons or circumstances shall not be affected by such invalidity or unenforceability, nor shall such invalidity or unenforceability affect the validity or enforceability of such provision.

12.16 <u>**Captions**</u>. Captions given to various Articles and Sections herein are for convenience only and are not intended to modify or affect the meaning of any of the substantive provisions hereof and shall not be considered in interpreting any of the provisions hereof.

12.17 <u>Singular Includes Plural</u>. Unless the context requires a contrary construction, as employed in this Declaration the singular shall include the plural and the plural the singular; and the masculine, feminine or neuter shall each include the masculine, feminine and neuter.

IN WITNESS WHEREOF, the Declarant does hereby adopt, execute and publish this Declaration, intending it to become effective as of the Effective Date.

DECLARANT:

Alpine Homes-Ridgway, LLC, a Colorado limited liability company

By: ______ Joel A. Cantor, Manager Date: _____

 STATE OF ______)

) ss.

 COUNTY OF _____)

Subscribed to and acknowledged before me this _____ day of ______, 202___, by Joel A. Cantor, as the Manager of Alpine Homes-Ridgway, LLC, a Colorado limited liability company.

Witness my hand and official seal.

My commission expires:

Notary Public

EXHIBIT A (Legal Description of the Real Estate)

LOT 1, TRIANGLE SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED APRIL 22, 1992 UNDER RECEPTION NO. 150643; AND THE PLAT OF SURVEY RECORDED JANUARY 26, 1995 UNDER RECEPTION NO. 158652, AND THE PLAT OF SURVEY RECORDED DECEMBER 8, 1994 UNDER RECEPTION NO. 158254;

EXCEPT A PARCEL OF LAND WITHIN LOT 1 OF THE TRIANGLE SUBDIVISION, TOWN OF RIDGWAY, COUNTY OF OURAY, STATE OF COLORADO, CONVEYED IN THE DEED RECORDED JANUARY 2, 2008 UNDER RECEPTION NO. **196855**, MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 1; THENCE NORTH 88°35'07" EAST (BASIS OF BEARING, OURAY COUNTY CONTROL) ALONG THE SOUTH LINE OF SAID LOT 1, 119.59 FEET; THENCE NORTH 15°16'17" EAST, 169.01 FEET; THENCE NORTH 12°11'40" EAST, 255.36 FEET; THENCE NORTH 12°11'40" EAST, 255.36 FEET; THENCE 359.19 FEET ALONG THE ARC OF A CURVE TO THE LEFT, WITH A CENTRAL ANGLE OF 34°18'00", A RADIUS OF 600.00 FEET AND A CHORD OF NORTH 04°57'20" WEST, 353.85 FEET; THENCE NORTH 22°06'19" WEST, 60.00 FEET; THENCE NORTH 25°22'43" WEST, 68.43 FEET; THENCE NORTH 30°05'32" WEST, 159.64 FEET; THENCE NORTH 38°54'53" WEST, 43. 57 FEET TO A POINT ON THE WEST LINE OF SAID LOT 1; THENCE SOUTH 01°31'23" WEST ALONG THE WEST LINE OF SAID LOT 1, 1057.93 FEET BACK TO THE POINT OF BEGINNING,

ALL IN THE TOWN OF RIDGWAY, COUNTY OF OURAY, STATE OF COLORADO.

EXHIBIT B (Allocated Interests)

Exhibit B will be appended to and included in this Declaration at a later time, which will be prepared by Declarant upon the completion of the improvements in the Community and be included in an amendment or supplement to this Declaration

DEVELOPMENT AGREEMENT

THIS DEVELOPMENT AGREEMENT ("**Agreement**"), made effective as of ______, 2021 ("**Effective Date**"), is made by and between Alpine Homes-Ridgway, LLC, a Colorado limited liability company ("**Property Owner**") and the Town of Ridgway, a home rule municipality and political subdivision of the State of Colorado ("**Town**"). Property Owner and Town are sometimes individually referred to as a "**Party**" and collectively as the "**Parties**". The Parties hereby agree as follows:

DEFINITIONS

The Parties acknowledge and agree to the following definitions ("**Definitions**") and further agree that each of the Definitions: (a) form a portion of the basis of this Agreement; and (b) are incorporated in this Agreement. As used herein, the following Definitions shall be given the meaning ascribed to the term as the same are stated below. To the extent possible, the Definitions shall refer to Ridgway Municipal Code.

"Association" shall mean The Riverfront Village Owners Association, Inc., a Colorado nonprofit corporation, which is the homeowners association formed in connection with the Project.

"Commercial Units" shall mean the commercial units that may be developed on the Subject Property as provided for in the Town Approvals.

"**Improvements**" shall mean the buildings that accommodate the Residential Units and the Commercial Units as well as the infrastructure serving the Project located on the Subject Property.

"Multiple Family Dwelling Units" as defined under Section 7-3-2 of the Municipal Code, that may be constructed on the Subject Property,, and said building could also include Commercial Units.

"**Municipal Code**" shall mean and refer to the duly adopted Ridgway Municipal Code (also "**RMC**"), as modified or amended from time to time.

"**Preliminary Plat**" shall mean and refer to that certain Preliminary Plat of the Subject Property associated with the preliminary approval of the Project, proposing the subdivision of the Subject Property into the Proposed Los, which has been approved by the Town. A copy of the Preliminary Plat is attached hereto as <u>**Exhibit "C"**</u>. Full size copies are on file with the Town. The Preliminary Plat shall meet the requirements of Section 7-4-5(B) of the RMC.

"**Project**" shall mean and refer to the platting and development of the Subject Property for the Proposed Lot that is being used and developed as a certain mixed use residential and commercial improvements, uses and activities, which project is commonly referred to as Riverfront Village, as the same are reflected and described in the Town Approvals, including the Preliminary Plat.

"Proposed Lot" shall collectively mean and refer to Lot 1R, as reflected on the Preliminary Plat.

"**Residential Units**" shall collectively mean the "Multiple Family Dwelling Units" and the "Townhouse Dwelling", that may be developed on the Subject Property as provided for in the Town Approvals. Any Multiple Family Dwelling or Townhouse Dwelling shall meet the definitions of Section 7-3-2 of the RMC, and shall be developed accordingly.

"Subject Property" shall mean and refer to the property as described on Exhibit A:

"Townhome Residential Units" shall mean those Residential Units that may be constructed on the Subject Property, which meet the definition of "Townhouse" pursuant to Section 7-3-2 of the RMC.

RECITALS

The Parties acknowledge and agree to the following recitals ("**Recitals**") and further agree that each of the Recitals: (a) form a portion of the basis of this Agreement; and (b) are incorporated in this Agreement.

A. The Agreement applies to the Subject Property, the Project and the resulting as authorized in the Town Approvals.

B. Property Owner submitted its application seeking approval of a "Planned Unit Development," pursuant to Section 7-3-16 of the RMC, inclusive of requests for conditional uses, waivers and variations (as noted in Section 5 below) for the Subject Property and Project ("**Application**") authorizing the platting, use and development of the Proposed Lot in connection with the Project.

C. The materials submitted with the Applications and reviewed by the Town included certain architectural design plans, infrastructure plans, engineering plans and similar plans indicating the manner that the Project would be developed ("**Development Plans**"). A copy of the Development Plans are appended to this Agreement as **Exhibit "D"**. Full size copies are on file with the Town. The Preliminary Plat, Development Plans and this Development Agreement along with the approvals granted by the Town for the Project ("**Town Approvals**"), collectively constitute a "**Site Specific Development Plan**" within the meaning of Chapter 7, Section 5 of the Municipal Code.

D. The Application was reviewed by the Town of Ridgway Planning Commission ("**Planning Commission**") at duly noticed meeting held on ______, 2021 and, after considering the evidence and testimony presented in support of the application, recommended that the Application be conditionally approved.

E. The Application was reviewed by the Town of Ridgway Town Council ("**Town Council**") at the duly noticed meeting held on ______ and, after considering the evidence and testimony presented in support of the application, conditionally approved the Application.

F. Property Owner submitted the materials and information required by the conditions of the Town Council approval to the Town. The Parties agree that ______, which is the effective date of the Town Council action on the Application, shall establish the "**Preliminary Plat Approval Date**" hereunder. Property Owner shall comply with all additional conditions on or before _____ days after the Preliminary Plat Approval Date.

G. In recognition of the Property Owner providing certain land, and the creation of certain units of Deed Restricted Housing for the Subject Property, and the Town granting the Property Owner certain variances in the RMC, the Parties wish to state and establish certain additional terms, conditions and other provisions which govern the use and development of the Subject Property, the Project and the resulting Proposed Lot as provided for herein.

AGREEMENTS

NOW, THEREFORE, in consideration of the foregoing Recitals, which are hereby incorporated as part of the agreements of the Parties and in further consideration of the mutual obligations and promises set forth below and in further consideration of the Town's approval of the Applications upon all terms and conditions contained herein, the obligations and expenditures of development undertaken by the Property Owner and the mutual obligations and promises set forth below, and for such other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as stated below.

1. **Property Owner's Compliance With the Town Approvals and Town**

<u>Acknowledgement of Approvals</u>. Property Owner agrees to comply with each of the terms and conditions of the Preliminary Plat and this Agreement, the Town Approvals and any other site-specific approvals for the project and the applicable provisions of the RMC. Subject to the conditions herein, and the completion of all conditions are requirements under both the Preliminary Plat, and Final Plat, the Town does hereby finally approve this Agreement. This Agreement shall be recorded and run with the Property.

2. **Development of the Project.**

2.1. <u>Overview of Project and Town Approvals</u>. In connection with the Town Approvals of the Preliminary Plat, this Development Agreement and Site-Specific Development Plan, Property Owner is authorized to develop the Project on the Subject Property, which shall be undertaken and completed on the Proposed Lot pursuant to the timeframes, terms, phasing, required improvements, conditions, etc. approved by the Town. The development will consist of the following elements and components, which may be modified from time to time by agreement of the Town and Property Owner:

Building	Approved Dwelling or Commercial Units In Building
Building CM	Commercial Units: multiple units
	Multiple Family Dwelling: Up to Four
	Townhouse Dwelling: None
Building M1	Commercial Units: None
	Multiple Family Dwelling: Six
	Townhouse Dwelling: None
Building M2	Commercial Units: None
	Multiple Family Dwelling: Eight
	Townhouse Dwelling: None
Building M3	Commercial Units: None
	Multiple Family Dwelling: Ten
	Townhome Dwelling: None
Building D-1	Commercial Units: None
	Multiple Family Dwelling: None
	Townhouse Dwelling: Two
Building D-2	Commercial Units: None
	Multiple Family Dwelling: None
	Townhouse Dwelling: Two
Building D-3	Commercial Units: None
	Multiple Family Dwelling: None
	Townhouse Dwelling: Two
Building D-4	Commercial Units: None
	Multiple Family Dwelling: None
	Town House Dwelling: Two

Building D-5	Commercial Units: None
	Multiple Family Dwelling: None
	Town House Dwelling: Two

2.2. <u>Infrastructure Improvements.</u> Property Owner is required to undertake and complete certain "Infrastructure Improvements" to serve the Project, as described in the attached "Schedule of Infrastructure Improvements," appended as <u>Exhibit "B"</u>. The Infrastructure Improvements consist of certain "Off-Site Infrastructure Improvements" and certain "On-Site Infrastructure Improvements", as noted on the Schedule of Infrastructure Improvements. In connection with the initiation and completion of the Infrastructure Improvements, the Town and Property Owner each recognize and agree as follows:

A. The nature and extent of the Infrastructure Improvements, as listed in the Schedule of Infrastructure Improvements, are required to serve the Project, these further offset demands to public infrastructure created by the Project. The Property Owner is required to construct/install the Infrastructure Improvements, at its cost and expenses, as provided for in this Agreement. The Infrastructure Improvements will be constructed/installed in accordance with certain **"Plans and Specifications**" on file with the Town and as approved by the Town with the Preliminary Plat.

B. The Property Owner shall construct/install the Off-Site Infrastructure Improvements and the On-Site Infrastructure Improvements, prior to the recordation of the Final Plat for the Project.

2.3. <u>Final Platting Requirements</u>. The Town and the Property Owner recognize and agree that the Ridgway Municipal Code provides that a final plat for the Project is to be submitted with the Planning Commission for review within two years of the Preliminary Plat Approval Date, see RMC 7-4-5(C)(c). All Off-Site Infrastructure and all On Site improvements required by RMC 7-6-4(B)(1) must be completed to each building pad by the time of recordation of the final plat, provided, however, it is further recognized that in the event the Property Owner is required to submit a Subdivision Improvements Agreement at final plat identifying any Improvements that have not been completed at the time of the recordation of the final plat. In the event a Subdivision Improvement Agreement is required, the Property Owner shall provide adequate security to ensure completion of the work not yet completed in a timeframe as further detailed in the Subdivision Improvement Agreement consistent with the requirements of RMC 7-4. The foregoing notwithstanding, in connection with its approval of the Project Phasing Schedule, the Town and Property Owner each recognize and agree as follows:

A. Following the completion of the installation of the Off-Site and On Site Infrastructure Improvements for the Project and upon the compliance with the Ridgway Municipal Code requirements for Final Plat, Property Owner shall be entitled to record the Final Platting of the Project, which platting will occur in one phase

B. Following the final platting and subject to complying with applicable provisions in the Ridgway Municipal Code relating to building, the Property Owner shall be able to proceed with the construction of the Building Construction Phase.

C. The Property Owner may request and the Town may consider an alternative timing and/or sequencing of the phasing of the construction of the Project, which the Town shall reasonably consider and may approve if the revised sequencing provides for a more expedient manner of development, provided such request is compliant with the RMC.

3. <u>Provision of Deed Restricted Housing</u>.

3.1. Property Owner has agreed to provide certain deed restricted housing in connection with the development of the Project in accordance with the terms and conditions of this Section 4. In furtherance of this requirement, Property Owner hereby restricts the ownership, use and occupancy of the following: (a) a one bedroom unit in Building M3 (to be denoted as Unit 102); (b) a one bedroom unit in Building M3 (to be denoted as Unit 201); (c) a two bedroom unit in Building CM (to be denoted as Unit 202) and (d) a two bedroom unit in Building CM (to be denoted as Unit 203) ("**Deed Restricted Units**") to the terms, conditions, restrictions and requirements provided for in this Section 4, which shall run in perpetuity and not expire and shall survive any foreclosure of the Deed Restricted Units, unless the restrictions are otherwise released or modified with the written consent of the Town. Any instrument of conveyance concerning a Deed Restricted Unit shall clearly indicate that the Unit is deed restricted and contain a reference to these restrictions in a form approved by the Town. The Town is granted and conveyed the right to enforce compliance with these restrictions that are applicable to the Deed Restricted Unit. The Deed Restricted Unit shall be owned and occupied by persons who qualify with the terms and conditions of these restrictions.

3.2. On the day of application, the prospective owner(s) of a Deed Restricted Unit shall maintain his/her sole residence and abode in Ouray County, Colorado, or provide written intent of his/her desire and intent to do so within 30 days of purchasing the Deed Restricted Unit. Proof of this intent must be presented to the Town in advance of any transfer of property, including the original property transfer and all subsequent resale and transfer of property. Proof shall include written documentation verifying residency within Ouray County, or residency within 30 days of application.

3.3. At the time of the purchase of a Deed Restricted Unit, including the original property transfer and all subsequent resale and transfer of property, at least one person in the household shall earn the majority of their income in Ouray County or from an employer based in Ouray County. This occupancy limitation and requirement may include at least one person in the household that is retired but previously earned the majority of their income in Ouray County or from an employer based in Ouray County. Proof of this must be presented to the Town in advance of any transfer of property. Proof shall include written documentation verifying employment within Ouray County.

3.4. At the time of purchase, including the original property transfer and all subsequent resale and transfer of property, the household income will be ____% or less of the Area Median Income [to be determined once cost of building each unit per 4.5 below is known – likely will include a different AMI for the different unit types], as the same are determined by the United States Department of Housing and Urban Development, as adjusted annually. Proof of this must be presented to the Town in advance of any transfer of property. Proof shall include written documentation, such as income tax returns, verifying annual income for the prior year. HUD income limits are derived from the most recent data provide y. HUD regarding Area Median Income Levels (AMI) for Ouray County.

3.5. The foregoing notwithstanding, there shall be an initial maximum sales price on every Deed Restricted Unit, which shall be equal to the cost of acquiring and developing the Deed Restricted Unit, plus not more than a ten (10%) profit; provided, however, that if the initial maximum sale price exceeds the maximum purchase price for an ____% AMI household for Ouray County, the Property Owner agrees to reduce the profit downward from 10% to an amount that achieve the targeted AMI affordable maximum purchase price, except that in no event will the initial maximum sales price be reduced to an amount that requires the Property Owner to achieve less that a 3% profit. Evidence of the developer's cost shall be submitted to the Town Manager, or his/her designee, who shall review the developer's computation of cost and approve, in writing, the proposed initial maximum sales price. The documents establishing the Property Owner's cost must be approved by the Town Manager, or his/her designee, prior to any transfer of property. The guiding principles in determining initial sales price of any

unit is that the Property Owner should be constructing and selling these units without exceeding the prescribed profit. In no event should the requirements of this Section 4 shall be read to require the Property Owner to lose money in connection with the sale of the Deed Restricted Unit by establishing an initial maximum sales price which causes the Property Owner to lose money in the construction and sales of the Deed Restricted Unit. The Town Manager, based on review of the Property Owner's cost, may deviate from the ____% AMI restriction if the cost plus 3% profit exceeds affordability for ___% or less income level.

3.6. The above referenced Deed Restricted Unit shall be, and remain, owner occupied. Long-term and short-term rental of these units is prohibited.

units

3.7. The Town hereby waives development excise tax RMC 3-4-1, et seq., on these 4

3.8. The Town waives all "plan check fees" and building permit fees charged by the Town on these 4 Deed Restricted Units.

3.9. The maximum resale price of these deed-restricted units is limited to an annual price appreciation cap of 3% of the initial gross purchase price. All resale pricing is subject to the review and reasonable approval of the Town of Ridgway Town Manager, or his/her designee, for the sole purpose of ensuring the resale price is in compliance with the requirements of this Section 4.

3.10. If an owner of a Deed Restricted Unit makes any capital improvements requiring a building permit to the property during his/her term of ownership, the cost of those capital improvements as indicated on the building permit shall be added to the gross resale purchase price of the property for the purpose of computing the annual price appreciation cap created herein. Any costs of capital improvements to be added to the gross purchase price of the property, including but not limited to upgrades during construction, shall require the prior, written reasonable approval of the Town.

3.11. The owner of a Deed Restricted Unit may apply to the Town Planning Commission for a waiver from the strict application of any one or more of these provisions. A waiver from the strict application of these provisions may be granted at the discretion of the Planning Commission and may only be granted if the applicant can establish that the following criteria are substantially met: (i) there are practical difficulties or unnecessary hardships caused to the individual unit owner if these provisions are strictly applied. Any such practical difficulty and/or unnecessary hardship must be of such a nature as to create an individually differentiated situation from any and all other owners of units burdened by these regulations; and (ii) the spirit of these provisions will be observed, the public health safety and welfare secured and substantial justice done by granting the waiver. The burden shall be on the applicant to establish by a preponderance of the evidence that these criteria have been met. No waiver under this provision shall be granted with less than four (4) concurring votes of the Planning Commission. Hearing procedures are defined in Ridgway Municipal Code 7-3.

3.12. The seller of the Deed Restricted Unit is responsible for ensuring compliance with these restrictions and agrees to consult with the Town of Ridgway Town Manager, or his/her designee, regarding any qualified buyer(s) and the maximum resale price under the provisions of this Section 4.

3.13. All warranty deeds for the transfer and conveyance of a Deed Restricted Unit will clearly indicate that they are deed restricted and reference this Agreement and applicable note included in the Final Plat, as amended from time to time.

3.14. Property Owner agrees that at least two of the Deed Restricted Units will be

constructed within the first phase of the project. Construction of these two units must be complete before any certificates of occupancy for any of the free market units in the Project can be issued. The remaining two units must be completed within the second phase of the Project.

4. <u>Waivers and Variances Granted for the Project.</u> The following variances and conditional uses are provided for with this Site-Specific Development Plan, pursuant to the uses under the GC Commercial District, RMC 7-3-11:

- A. Conditional use for Townhouse Dwellings in General Commercial (GC) zoning district.
- B. Conditional use for buildings over 10,000 sf in General Commercial (GC) District. (M2 and M3).
- C. Conditional use for buildings in height up to 35' in the General Commercial (GC) District.

D. Conditional use for building within the 25' to 75' setback in the UROD District, pursuant to RMC 7-3-14(E)(1).

5. Vested Rights.

5.1. <u>Intent.</u> Development of the Property in accordance with the terms and conditions of this Agreement will provide for orderly and well planned growth, promote economic development and stability within the Town, ensure reasonable certainty, stability and fairness in the land use planning process, secure the reasonable investment-backed expectations of the Property Owner, foster cooperation between the public and private sectors in the area of land use planning, and otherwise achieve the goals and purposes of the Vested Property Rights Statute, C.R.S. §24-68-101, et. seq. and Chapter 7, Article 5 of the Ridgway Municipal Code. In exchange for these benefits and the other benefits to the Town contemplated by the Agreement, together with the public benefits served by the orderly and well-planned development of the Subject Property and Project, the Property Owner desires to receive the assurance that development of the Subject Property and Project may proceed pursuant to the terms and conditions of the Agreement.

5.2. <u>Site Specific Development Plan</u>. This Development Agreement along with the Preliminary Plat, Development Plans and the Town Approvals constitutes a Site-Specific Development Plan pursuant to Section 7-5-1 of the Municipal Code.

5.3. <u>Vested Real Property Right</u>. Accordingly, this final approval has created for Property Owner's benefit a "vested real property right" as defined by C.R.S. § 24-68-101 et seq.

5.4. **Duration**. For purposes of this Agreement, the above-referenced vested real property right shall remain vested for four years from the Preliminary Plat Approval Date pursuant to RMC 7-5.

5.5. **Publication**. A notation of such vested real property right has been made on the Preliminary Plat and a notice has been published in a newspaper of general circulation within Ouray County on ______, 2021 (following the Town Council action on this Development Agreement) and again on ______, 2021 (following the Effective Date).

5.6. <u>Reliance</u>. The Property Owner has relied upon the creation of such vested real property right in entering into this Agreement.

5.7. **Future Legislation**. During the four year period in which the vested real property right shall remain vested, the Town shall not impose by legislation or otherwise any zoning or land use requirement or obligations upon Property Owner or their successors or assigns which would alter, impair or diminish the development or uses of the Subject Property and Project as set forth in this Agreement, except:

i. With the consent of the Property Owner; or

ii. Upon the discovery of natural or man-made hazards on or in the immediate vicinity of the Subject Property and Project, which could not reasonably have been discovered at the time of vested rights approval, and which, if not corrected, would pose a serious threat to the public health, safety and welfare; or

68, CRS; or	iii.	To the extent that compensation is paid, as provided in Title 24, Article
to.	iv.	Any change in state or federal law which the Town is required to adhere

The establishment of such vested real property right shall not preclude the application of ordinances or regulations which are general in nature and applicable to all property subject to land use regulation by the Town, including, but not limited to, fee assessments and building, fire, plumbing, electrical, mechanical, water and sewer codes and ordinances. Further, these vested rights are subject to any changes in state or federal law which may prompt the Town to amend the RMC.

6. <u>Intentionally Left Blank</u> 7. Other Agreements.

7.1. As part of the final platting, Property Owner, for no consideration, agrees to grant a non-exclusive, perpetual easement to the Town at the location indicated on the Preliminary Plat to accommodate the Town's installation and operation of signage reflecting an entry to the Town of Ridgway. The Town is responsible for designing, installing, operating, maintaining and repairing the signage without cost or expense to Property Owner.

7.2. As part of the final platting, Property Owner, for the consideration agreed upon herein, agrees to grant a non-exclusive, perpetual easement to the Town at the location indicated on the Preliminary Plat to accommodate the placement of a non-motorized hiker/biker trail ("**Ridgway Village West Pedestrian Path**") to assist in the creation of a connection with the Ridgway Village West development and other adjacent development east of State Highway #550 that will connect with the Public Recreation Trail (being developed by the Property Owner as part of the Project) located along the westerly edge of the Subject Property. The Property Owner is not responsible for designing, installing, operating, maintaining and repairing the Ridgway Village West Pedestrian Path nor is the Property Owner responsible for incurring any cost or expense with respect to the Ridgway Village West Pedestrian Path.

7.3. In connection with the development of the Project, the Town agrees that it shall authorize the Property Owner to install certain stormwater/drainage facilities on the Town property west of the Project at the locations indicated on the Preliminary Plat. The stormwater/drainage facilities will be owned by the Town. The Property Owner is responsible for designing and installing the stormwater/drainage facilities and the Association is responsible for operating, maintaining and repairing the stormwater/drainage facilities.

7.4. The Town shall contribute up to \$25,000.00 towards infrastructure to the Project,

which infrastructure will benefit the Town with the future development of its municipal utilities.

7.5. Design and Installation of New Offsite Sewer Service Line.

7.5.1. Property Owner agrees to design a certain Sewerline serving development in East Ridgway ("New Offsite Sewer Service Line"). The New Offsite Sewer Service Line shall be designed as a gravity feed system. Property Owner is not required to design or install any lift station or similar mechanical device as part of the New Offsite Sewer Service Line. The Property Owner's project engineer will design the New Offsite Sewer Service Line, which would be extended to a certain coordinate where the northerly extent of the line on Lot 1R will terminate and be available to a line extension that would thereupon connect to development east of Hwy #550 ("New Offsite Sewer Service Line Termination Point"). The Town has provided the coordinates of this particular location based upon how the connection to the New Offsite Sewer Service Line will need to serve development on the east side of Hwy #550. The coordinates are in form and content requested by the Property Owner's project engineer and shall include, without limitation, the designation of the longitude, latitude and depth for which the New Offsite Sewer Service Line Termination Point. The project engineer is not responsible for and shall not perform any inspecting, studying, calculating or designing any aspects of the existing or future sewer systems serving any development occurring offsite (not on Lot 1R), including development occurring on easterly side of Hwy #550. The project engineer will rely upon the accuracy of the information provided by the Town in designing the New Offsite Sewer Service Line and siting the New Offsite Sewer Service Line Termination Point and is not obligated to perform any further inspections, studies, calculations or designs of the sewer line systems and locations occurring on easterly side of Hwy #550 to verify the accuracy of the Town's information. The project engineer will submit its completed design plans for the New Offsite Sewer Service Line and the siting the New Offsite Sewer Service Line Termination Point to the Town for its final review and approval. During the course of its review, the Town shall notify the project engineer if its design plans would not properly align with and be available to connect any with any offsite sewer line extensions proposed by the Town to connect to the New Offsite Sewer Service Line and the New Offsite Sewer Service Line Termination Point. The Town agrees that it shall not hold the Property Owner or project engineer liable for any design defects attributable to the information provided by the Town. The Town shall indemnify the Property Owner and project engineer for any claims, demands, actions, damages and similar costs and expenses, arising from design defects attributable to information provided by the Town.

7.5.2. The Property Owner shall install the New Offsite Sewer Service Line and the siting the New Offsite Sewer Service Line Termination Point in accordance with the plans prepared by the project engineer and approved by the Town. The work will be commenced and completed in an orderly manner as part of the logical buildout of the Riverfront Village Planned Unit Development project.

7.5.3. The Property Owner will undertake and complete the work at its cost and expense, but for the installation of this improvement the Property Owner may use the offsets as provided by the Town pursuant to Section 7.4 of this Agreement.

7.5.4. To the extent possible, the location of the New Offsite Sewer Service Line and the New Offsite Sewer Service Line Termination Point shall occur within the existing utility easements overs Lots 1, 2 and 3 of the Triangle Subdivision. The Property Owner is not obligated to grant new/modified easements on Lot 1 to accommodate the New Offsite Sewer Service Line and the New Offsite Sewer Service Line Termination Point. Notwithstanding the foregoing, the parties shall work with each other to the extent it is necessary to expand the existing utility easements for the installation of the New Offsite Sewer Service Line To the termination Point. 7.6. <u>The New Water Facilities</u>. The Property Owner agrees to install an extension of the waterline being installed on Lot 1R, which would be extended to certain location on Lot 1R, that could then be extended to connect to development occurring on the easterly side of Hwy #550 ("Waterline Connection Point"). The siting of the Waterline Connection Point must be at a location that does not impede development on Lot 1R. The Owner will install the water line extension to the Waterline Connection Point. The Town or party seeking to extend water service will be responsible for installing the waterline under Hwy #550. The design and siting of the Waterline Connection Point shall be undertaken in connection with plans prepared by the project engineer and approved by the Town, with the Town determining the sufficiency and adequacy of the plans to provide the intended water service for all offsite development using the waterline.

7.7. <u>Town Consultant Fees</u>. Strictly for the Town's review of the New Offsite Sewer Service Line and the Waterline Connection Point, the Town is solely responsible for paying any and all fees, costs and expenses charged by its engineer, surveying, and other Town consultants or staff in connection in any/all ways with respect to the Town's review/evaluation of plans, preparation of materials, supervisions/inspection of work and other activities relating to the design and installation of the New Offsite Sewer Service Line any related water line extensions ("Town Consultant Fees"). This Section 7.7 is based on the understanding that the Property Owner shall not tie into or access the New Offsite Sewer Service Line and/or Waterline Connection Point. Absent mandatory reviews of the Project under the RMC related to the Town's review of the New Offsite Sewer Service Line and the Waterline Connection Point, the Property Owner is not responsible for paying or otherwise reimbursing the Town for any of the Town Consultant Fees and that no portion of the Town Cost Contribution shall be used by the Town to pay for the Town Consultant Fees.

7.8. <u>Waiver of Permit Fees, Tap Fees or Taxes</u>. Strictly for the costs related to the New Offsite Sewer Service Line and the Waterline Connection Point, Town shall be responsible for paying any and all permit and permit review fees, taxes, inspection fees and other similar Town impositions for the Town's design, review or other work in any way triggered by the design and installation of the New Offsite Sewer Service Line and the Waterline Connection Point and any related water line extensions ("Town Impositions"). The Property Owner is not responsible for paying or otherwise reimbursing the Town for any of the Town Impositions and that no portion of the Town Cost Contribution shall be used by the Town to pay for the Town Impositions.

7.9. <u>Cooperation of the Town Staff and Engineer.</u> The Parties shall continue to cooperate and discuss these matters in good faith, and promptly provide information requested by either party in a timely and efficient manner.

8. <u>Miscellaneous</u>.

8.1. This Agreement shall extend and inure to the benefit of, and be binding upon the Town and its successors and assigns and, except as otherwise provided herein, upon the Property Owner and its successors, legal representatives and assigns. This Agreement shall constitute an agreement running with the Property until: (a) modification or release by mutual agreement of the Town and the Property Owner; or (b) otherwise amended in accordance with the amendment procedures contained in the Municipal Code, as it presently exists or as it may hereafter be amended, or terminated; or (c) Agreement terminates pursuant to the terms identified herein and/or in RMC 7-5-4.

8.2. This Agreement shall be recorded in the records of the Clerk and Recorder of Ouray County, Colorado. This Agreement runs with the land and is binding on and inures to the benefit of the representatives, transferees, successors and assigns of the Parties.

8.3. If any term or provision of this Agreement, or the application thereof to any person or circumstances shall, to any extent, be invalid or unenforceable, the remainder of this Agreement

or the applications or such term or provision or Article to persons or circumstances other than those to which it is held invalid or unenforceable, shall not be affected thereby, and each remaining term and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

8.4. This Agreement, along with the Preliminary Plat, Development Plans and this Development Agreement along with the Town Approvals constitute the entire integrated understandings of the Parties regarding the subject matter set forth herein and no prior or contemporaneous promise, representation, term, condition, or understanding shall be of any legal force or effect, unless embodied herein in writing, or in a written amendment mutually agreed to by the Parties. Any modification of this Agreement shall be binding only if evidenced in writing signed by each Party or an authorized representative of each Party.

8.5. There are no third-party beneficiaries expressly or impliedly intended by this Agreement. No person or entity that is not a Party to this Agreement will have any rights, claims or actions under this Agreement.

8.6. A Party shall "default" under this Agreement if it breaches any of its obligations hereunder and, after receiving written notice of the breach from the other Party (the "Notifying Party"), fails to cure the breach within (i) 10 days after delivery of the notice if the breach is failure to pay money owed to the Notifying Party, or (ii) 45 days after delivery of the notice with respect to any other breach (or, if the breach by its nature cannot be cured within 30 days, the Defaulting Party (as defined below) must commence the cure within 30 days after delivery of the notice and thereafter diligently pursue the cure to completion). In the event of default by a Party ("Defaulting Party"), the Notifying Party may (1) initiate an action to compel compliance by the Defaulting Party with this Agreement, and/or (2) take the necessary action itself to cause the obligation(s) in default to be performed, in which case the Notifying Party may recover from the Defaulting Party all damages and expenses incurred to perform such obligation(s). The substantially prevailing Party shall collect its reasonable costs, expenses and fees, including reasonable expert fees and attorney's fees. A Party may pursue any and all remedies available under Colorado Law, including damages, injunctive relief and/or specific performance. The remedies shall be cumulative in nature and a Party may pursue some or all of its remedies. Personal jurisdiction and venue for any civil action commenced by any Party to this Agreement whether arising out of or relating to this Agreement will be deemed to be proper only if such action is commenced in District Court for Ouray County. This Agreement shall be governed by and construed in accordance with the laws of the State of Colorado.

8.7. This Agreement may be executed in multiple counterparts or by legible scanned/emailed or facsimile copy, each of which shall constitute an original, but all of which, taken together, shall constitute one and the same instrument. The scanned/emailed or facsimile transmission of a signed copy hereof or of any notice to be given to the other Party or his or her agent, shall be considered valid and constitute a signed original. A signed "hard copy" of the Agreement shall not be necessary, but may be executed by the Parties.

8.8. Any notice to be given hereunder shall be in writing, addressed to the appropriate Party, and shall be delivered in person; by overnight delivery or courier service; or by the United States Postal Service (or any official successor thereto), certified mail, return receipt requested, with adequate postage prepaid. Such notice shall be deemed delivered at the time of personal delivery, or, if mailed, on the date postmarked, but if mailed the time period for any required response shall run from the date of receipt by the addressee, as evidenced by the return receipt. Rejection or other failure by the addressee to accept the notice, or the inability to deliver the notice because of a change of address of which no notice was given, shall be deemed receipt of the notice on the third business day following the date postmarked. The addresses of the Parties to which notice is to be sent shall be as stated in the records of the Ouray County Assessor.

8.9. Failure of a Party hereto to exercise any right hereunder shall not be deemed a waiver of any such right and shall not affect the right of such Party to exercise at some future time said right or any other right it may have hereunder.

8.10. No Party shall be held liable for a failure to perform hereunder due to wars, strikes, acts of God, natural disasters, or other similar occurrences outside the reasonable control of that Party.

8.11. By signing this Agreement, the Parties acknowledge and represent to one another that all procedures necessary to validly contract and execute this Agreement have been performed and that the persons signing for each of the Parties have been duly authorized so to do.

8.12. The captions or headings in this Agreement are for convenience only and in no way define, limit, or describe the scope or intent of any provisions or sections of this Agreement.

8.13. The Town of Ridgway Infrastructure Standards and Typical Drawings, and thereafter, customary historic architectural, standards and norms shall be relied upon if and when necessary for purposes of interpreting, applying and enforcing the Agreement.

8.14. The Property Owner and its successors and assigns shall defend and hold the Town harmless from and against any and all claims, demands, liabilities, actions, costs, damages and attorneys' fees that may arise out of or result directly or indirectly from the Property Owner's actions or omissions in connection with the Property Owner's performance under this Agreement.

8.15. In entering into this Agreement, the Parties acknowledge and agree that they will perform their duties and obligations in good faith and that this commitment is being relied upon by each other Party. The Parties hereto warrant that each Party is a duly qualified and existing entity, capable of doing business in the state of Colorado and that the person(s) executing this Agreement are duly authorized to execute this Agreement and each Party has taken all actions necessary to obtain such authorization and that the terms and conditions of this Agreement constitute an enforceable agreement against such Party.

AGREED TO AND MADE EFFECTIVE BY THE PARTIES AS OF THE EFFECTIVE DATE.

PROPERTY OWNER:

Alpine Homes-Ridgway, LLC, a Colorado limited liability company

By:	Date:
Joel A. Cantor, Manager	
STATE OF)
COUNTY OF) ss. _)
	ged before me this day of, 2021, by Joel A. Cantor, as s-Ridgway, LLC, a Colorado limited liability company.
Witness my hand and official	seal.
	My commission expires:

Notary Public

TOWN:

Town of Ridgway, Colorado, a municipal corporation		
By:	Date:	
Printed Name: Title:	_	
ATTEST:		
Town Clerk	_	
APPROVED AS TO FORM:		
Bo Nerlin, Town Attorney	-	
STATE OF COLORADO)) ss.		
COUNTY OF OURAY)		
The foregoing instrument was acknowle, Town Manager, To	edged before me this day of own of Ridgway, Colorado.	, 2021 by
Witness my hand and official seal.		
	My commission expires:	

Notary Public

<u>Exhibit A</u> (Legal Description)

LOT 1R, TRIANGLE SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED APRIL 22, 1992 UNDER RECEPTION NO. 150643; AND THE PLAT OF SURVEY RECORDED JANUARY 26, 1995 UNDER RECEPTION NO. 158652, AND THE PLAT OF SURVEY RECORDED DECEMBER 8, 1994 UNDER RECEPTION NO. 158254, TOWN OF RIDGWAY

EXCEPT A PARCEL OF LAND WITHIN LOT 1 OF THE TRIANGLE SUBDIVISION, TOWN OF RIDGWAY, COUNTY OF OURAY, STATE OF COLORADO, CONVEYED IN THE DEED RECORDED JANUARY 2, 2008 UNDER RECEPTION NO. 196855, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 1; THENCE NORTH 88°35'07" EAST (BASIS OF BEARING, OURAY COUNTY CONTROL) ALONG THE SOUTH LINE OF SAID LOT 1, 119.59 FEET;

THENCE NORTH 15°16'17" EAST, 169.01 FEET;

THENCE NORTH 12°11'40" EAST, 255.36 FEET;

THENCE 359.19 FEET ALONG THE ARC OF A CURVE TO THE LEFT, WITH A CENTRAL ANGLE OF 34°18'00", A RADIUS OF 600.00 FEET AND A CHORD OF NORTH 04°57'20" WEST, 353.85 FEET;

THENCE NORTH 22°06'19" WEST, 60.00 FEET;

THENCE NORTH 25°22'43" WEST, 68.43 FEET;

THENCE NORTH 30°05'32" WEST, 159.64 FEET;

THENCE NORTH 38°54'53" WEST, 43. 57 FEET TO A POINT ON THE WEST LINE OF SAID LOT 1;

THENCE SOUTH 01°31'23" WEST ALONG THE WEST LINE OF SAID LOT 1, 1057.93 FEET BACK TO THE POINT OF BEGINNING,

<u>Exhibit B</u> (Schedule of Infrastructure Improvements)

Off-Site infrastructure improvements:

- 1. Extension of Sewer and water mains from SH 62
- 2. Any required shallow utilities, if any
- 3. CDOT Access Improvements on Hwy. 550 to comply with CDOT's approved Access Permit.
- 4. Project Access Drive Construction of CDOT approved access driveway from Hwy. 550 onto Lot-1.

On-site infrastructure improvements:

- 1. Installation of all underground utilities and service mains
- 2. Construction of all internal access roads, parking lots, access tracts, sidewalks, curb & gutter throughout subdivision.
- 3. Construction of storm water drainage system.
- 4. Construction of river trail.
- 5. Installation of irrigation well, storage tanks, and irrigation distribution system.
- 6. Installation of landscaping.

Installation of Sewer Extension to US Hwy 550 ROW

<u>Exhibit C</u> (Preliminary Plat)

<u>Exhibit D</u> (Development Plans)



July 2, 2021

Jim Kehoe, KEO studioworks PO Box 3371 Aspen, CO 81912

Sent via E-Mail to jim@keostudioworks.com

RE: Riverfront Village PUD – Planning Review of PUD/Preliminary Plat Re-Submitted June 15, 2021.

Mr. Kohoe:

CPS has completed a review of the documents submitted to the Town for the Preliminary Plat of Riverfront Village PUD on June 15, 2021 on behalf of the Town of Ridgway against previous review comments provided on May 8, 2021.Previous review comments that have been adequately addressed have been removed from this letter and only outstanding items needing attention are provided in this letter.

Please review these comments carefully and provide comprehensive, written responses to each.

General Comment:

- 1. Please refer to all redlines on attached plan sets for additional comments and guidance on the comments provided in this letter. All redlines shall be addressed on the applicable plans in addition to written responses to all the comments contained in this letter.
- 2. There is inconsistency between plans related to the number and location of stormwater facilities and easements draining under the proposed trail an onto the property to the west. Please compare and address all discrepancies for consistency between plan documents.
- 3. The Town Attorney has provided comments on the plat not

Preliminary Plat:

- 4. Please refer to redlines on preliminary plat attached and make all changes identified and address all questions on those redlines.
- 5. The Town Attorney has provided comments on the plat notes and Development Agreement. Those comments, while not duplicated in our review comments, are shared by CPS and must be adequately addressed in the next submittal.
- 6. The preliminary Plat still indicates January 24, 2021 as the date the plat was completed. Please update the date to the latest version date.

Site Plan (Sht SP-1):

7. Please refer to redlines on preliminary plat attached and make all changes identified and address all questions on those redlines.

Architectural Plan Set Comments:

8. Buildings M1A&B and D1 are shown as within the 75' high water mark setback, but outside the 25' setback. Please provide an actual setback dimension from the high water mark to the closest point of these buildings. (Sec. 7-3-14(E) of RMC)

Town of Ridgway Riverfront Village PUD Preliminary Plat/PUD Review Letter July 2, 2021 Page 2 of 3

- 9. The setback to the west property line to Buildings D1, D2, D3, D4, and D5 are taken from the center of the building and not the closest point of the building to the property line. Please adjust the location of and distance of measurements appropriately to identify the closest point of the building from the property line.
- 10. While the required height limit is identified on all building elevations, the actual height, as defined by the RMC, must also be identified on the elevations. Please add a measurement of the actual height of each building on all elevation sheets for each building. The height is measured from natural grade to the midpoint of a pitches roof or the top of a flat roof. (7-3-15(A), footnote (4)(a) of the RMC)

Landscaping Plan Comments:

- 11. The number of trees and shrubs identified on Sheet L1.2 do not coincide with the number of trees and shrubs we counted on the plan sets. Please refer to Sec. 6-6-4(G) for the applicable standards and provide a table indicating the calculations for determining the required and provided:
 - (1) Number of Trees (1 per 2,000sf)
 - (2) Number of Shrubs (1 per 10' of street frontage)
 - (3) Distribution of trees and shrubs in the front yard area
 - (4) Required groundcover materials in the front yard *(min. 50% live vegetation*) and throughout the site as either living or nonliving materials.

Lighting Plan Comments:

12. Please update the key table on sheets L2.1, L2.2, and L2.3 to include correlated color temperature (CCT) of each fixture. Sec. 6-5-1(A)(5) of RMC limits the CCT to 3,000 kelvin per fixture. If the CCT is what is indicated as the Kelvins/Unit in the current chart, please replace fixture types with units that meet this limitation.

Master Signage Plan Comments:

- 13. Sign permits shall be obtained through the Ridgway Building Department prior to installing any sign. Approval of the PUD, Master Sign Plan, or Landscaping and Lighting plans do not approve any sign for installation. (*Sec. 7-3-17(J)(3) of RMC*)
- 14. Amend the total sign area of the Entry Monument Sign to be 32sf. It currently says 30sf which is not correct.
- 15. Please clarify the signs on the elevations provided on sheet SM-103. The narrative states that there are 5 wall signs at 20sf each for a total of 100sf. However, the sheet calls out 2 signs on the northwest elevation, 1 sign on the north elevation, and 4 signs on the east elevation for a total of 7 signs at, presumably, 20sf each for a total of 140sf. Please verify the total number of signs being proposed and clarify elevations on Sheet SM-103.
- 16. The Master Sign Plan seeks to allow a total of 196 sf of sign face area. Sec. 7-3-17(J)(3)(e)(ii) allows up to 30% increase from the max allowed area of 150sf, or 195sf. Because this request exceeds administrative authority to approve a Master Sign Plan, this will be a request made to Planning Commission and Town Council through the PUD/PP review process.

We look forward to continuing the dialogue with you and your team in an effort to continue making meaningful progress on this project.

Town of Ridgway Riverfront Village PUD Preliminary Plat/PUD Review Letter July 2, 2021 Page 3 of 3

Sincerely,

COMMUNITY PLANNING STRATEGIES, LLC

7 Dolla

TJ Dlubac, AICP Principal / Owner 970-744-0623 TDlubac@PlanStrategize.com

- Encl: CPS Preliminary Plat Redlines CPS Civil Plan Redlines
- Cc: Joel Cantor, Cantor Partners Preston Neill, Town of Ridgway Town Manager Joanne Fagan, Town of Ridgway Town Engineer

6								
CPS Review Comments June 16, 2021		PRELIMINARY PLAT OF:						
RIVERFRONT VILLAGE, PLANNED UNIT DEVELOPMENT								
LOCATED ON LOT IR, TRIANGLE SUBDIVISION								
	SITUATED IN THE E1/28E1/2NW1/4 OF SECTION 16, TOWNSHIP 45 NORTH, RANGE 8 WEST, N.M.P.M.							
TOWN OF RIDGWAY, COUNTY OF OURAY, STATE OF COLORADO								
	CERTIFICATE OF DEDICATION AND OWNERSHIP: KNOW ALL MEN BY THESE PRESENTS that the undersigned, being the owner of certain lands in the Town of Ridgewy, Cotaroda, to wit:	followa:	OURAY COUNTY TREASURES:					
	LOT 1, TRANSLE SUBDIXION ACCORDING TO THE PLAT THEREOF RECORDED APRIL 22, 1992 UNDER RECEPTION NO. 130643; AND THE PLAT OF SURVEY RECORDED UNLIKY? 28, 1995 UNDER RECEPTION NO. 158852, AND THE PLAT OF SURVEY RECORDED DECEMBER & 1994 UNDER RECEPTION NO.	CURRENT YEARS TAKES AND ASSESSMENTS NOT YET DUE OR PAYABLE.	due, nor are there any law lens, against the property described herein or any part thereof, and that all current taxes and special assessments have been pold in full.					
	Ideada, and the Early of Barrier Reconder December 6, take Receiver Receiver No. Ideaday. Except a Angel of Land Within Lot 1 of The Travales Barrison Tom For Robany, country of Ourary, stars of Collowido, converted in the Desch Recorded January 2, 2008 Under Reception No. 198855, Jone Particulary, Deschede JAS Follows:	RIGHTS OF INVY FOR DITCHES OR CANALS CONSTRUCTED BY THE AUTHORITY OF THE UNITED STATES, AS RESERVED IN LINTED STATES PATENT RECORDED JUNE 13, 1951, IN BOOK 103 AT PAGE 508.	Dote					
	BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 1; THENCE NORTH 88'35'07" EAST (BASIS OF BEARING, OURNY COUNTY CONTROL) ALONG THE SOUTH LINE OF SAID LOT 1, 119.59 FEET;	SUBJECT TO ANNEXATION PLAT OF SUNSET ENTERPRISES ADDITION FILED MARCH 10, 1980 UNDER RECEPTION NO. 127944 AND ANNEXATION ORDINANCE RECORDED MARCH 10, 1980 IN BOOK 194 AT	Ourgy County Treasurer					
	THENCE NORTH 1916/77 EAST, 169.01 PEET; THENCE NORTH 12111/40 ⁷ EAST, 255.38 FEET; THENCE 359.19 FEET ALONG THE ARE OF A CURVE TO THE LEFT, WITH A CENTRAL ANGLE OF 3418/00 ⁷ , A	PAGE 343.	Approved by the Ridgwey Town Planning Commission this day of A.D. 20, by					
	RADIUS OF 600.00 FEET AND A CHORD OF NORTH 04'57'20" WEST, 353.85 FEET; THENCE NORTH 22'06'19" WEST, 60.00 FEET;	INC. RECORDED NOVEMBER 22, 1991 IN BOOK 217 AT PAGE 791.	Chairman.					
	THENCE NORTH 25"22"43" WEST, 68.43 FEET; THENCE NORTH 30"05"32" WEST, 159.64 FEET;	TERMS AND CONDITIONS OF SURDANSION IMPROVEMENTS AND LEN AGREEMENT BETWEEN H. DARCH QUANDT AND PATRICIA MATHLEEN QUANDT AND THE TOWN OF RIDGINAY RECORDED APRIL 22, 1992 IN BOOK 222 AT PAGE 95.	Approved by the Ridgwey Town Council thisday of , A.D. 20, by					
	THENCE NORTH 38'54'53" WEST, 43.57 FEET TO A POINT ON THE WEST LINE OF SMD LOT 1; THENCE SOUTH 01'31'23" WEST ALONG THE WEST LINE OF SMD LOT 1, 1057.93 FEET BACK TO THE POINT OF BEGINNING.	NOTES, EASEMENTS, RICHTS OF WAY, AND RESTRICTIONS AS CONTAINED ON THE RECORDED PLATS FILED APRIL 22, 1992 UNDER RECEPTION NO. 15043, RECORDED DECEMBER 8, 1994 UNDER RECEPTION NO. 158254 AND RECORDED JUNIARY 28, 1998 UNDER RECEPTION NO. 158825	, Hoyor.					
Discuss easement types with	ALL IN THE COUNTY OF OURAY, STATE OF COLORIDO.	RECARLED WHINH 20, 1990 WHER RECEIVENT NO. 1980/22 SUBJECT TO NOTICE CONCERNING UNDERRADUND FALLITIES OF SAN MIGUEL POWER ASSOCIATION RECORDED JUNE 22, 1980 IN BOOK 27/1 PAGE 145	TOWN ATTORNEY'S CERTIFICATE: Approved for meaning thisday of, 20, 20					
applicant. Specifically, 1) dedicated to Town of Ridgway, 2) Public Park Easement, 8: 3) Ped. Trail Underpace/	Hose by these presents loid out and plotted, as shown on this Pict, under the name of Riverfront Vilage Primad (Into Bastonean) - The following non-available and provided assessments are defined and	JUBE 22, 1980 IN BOUR 227 AI PINE, 140. TEINIS, CONDITIONS AN ARRESENTS AS CONTINUED IN EXSEMPTIF ARRESENT BY AND BETWEEN ROOMY HOT STEMMOS, LC: MON TRULINDER, ROLL, ESTITE COMPANY, LC, RECORDED JURE 11, 2007 (INCER RECEPTION NO. 195143 NO AMERIKANY, AND	Town Miloney					
Overpass /Signage easements.	Has by these presents licit out and plotted, as shown on this Pat, under the name of Riverfront Village Planned Unit Development. The following non-exclusive parpetuid exements are dedicated, granted and converged to the from of Ridgway, obtained and the second for the use of the transfit of provides of shown and identified on the Pat and as further described in Platnach & Access and Utility Ecsements, Utility Ecsement, Platic Remention, Platic Remention, Platic Remote Market and Utility Casement, Platic Remention, Platic Remote National Platic Remote Reduction		ENGINEER'S CERTIFICATE: , a Registered Engineer in the State of Cobrecto, do certify that the strets, curb outline & sidewich, availance availance the worker, distribution proteins free protection proteins and the					
Ind/Indepared To depara/Spope Extensit, and Patic Perk Extensit. Encoded this Gor d		ANY INCREASE OR DECREASE IN THE AREA OF THE LAND AND ANY ADVERSE CLAIM TO ANY PORTION OF THE LAND WHICH HAS BEEN CREATED BY OR CAUSED BY ACCRETION OR RELICTION, WHETHER NATURAL OR ARTIFICIAL, MAD THE EFFECT OF THE CAN OR IOLSS OF AREA BY ACCRETION OR RELICTION UPON THE	curb optier & siderects, anothery sever system, the wolor distribution system, time protection system and the storm dishings generation for this subtrialism are properly designed, meet the Town of Ridgevy specifications, are adequate to serve the Subdivision shown hereon.					
		MARKETABLITY OF THE TITLE OF THE LAND.	Dote:					
	a Colorado limited liability company	ANY TRAINS UK HIELESIS UK TIMBU PARIES MICH CUSI UK ANE CUMBU TO EASI IN AND VIEN THE PRESERY AND HIST BED, BANGS OR MARENS OF UNCOMMANCE FREE. MATTERS DISCLOSED ON IMPROVEMENT SURVEY ISSUED BY ORION SURVEYING CERTIFIED DECEMBER 12, 2019,	Engineer Registration Number					
	θ/ Dote: Printed Name: Tite:	PROJECT ND. 18079. STORED IN OUR RECORDS AS IMAGE 20049484.	BASIS OF BEARWOS: The bearing between the found rebor and cop ot the, and the found rebor and cop ot the bears (ASSUMED).					
	STATE OF COLORADO)	ANY AND ALL OTHER RECORDED AGREEMENTS, COVENANTS, EASEMENTS AND DOCUMENTS OF RECORD	LNEYL UNITS STATEMENT: The Lincol Unit used on this Plot is U.S. Survey Feet					
) 38. COUNTY OF)	Doted this dey of A.D., 20	SURVEYORS CERTIFICATE:					
	The foregoing Certificate of Ownership and Dedication was acknowledged before me this day of AD. 2D by os the os the	Thomas G. Kennedy, Attorney at Law	I, David R, Bulkon, Calcrook PJS 37662, hereby certify that this Part was prepared under my direct supervision and that and survey is accounts to the back of my knowledge, conforms to of regularisment of the Glorodo Revised Statutes, and of oppicate Toren of Ridgevy regulations, and that all required monumenta have been set or astron.					
	Witness my hand and official seal.	CERTIFICATE OF IMPROVEMENTS COMPLETION:						
	My Commission expires Notary Public	The undersigned, Tone Manager of the Tone of Röglevig, does cartify that all improvements and utilities required by the current Subdefine Regulations of the Tone of Röglevy have been Installed in this Subdefinish in accordance with the specifications of the Tone except for the following which have been secured pursuant to Tone subdefinion regulations:						
	ATTORNEY'S CERTIFICATE:	secured pursuant to Town subdivision regulations: Date:	RECORDER'S CERTIFICATE: This Pict was filed for record in the office of the Clerk and Recorder of Ouray County atm, on thedry of					
	I, Thomas G. Kennedy, an attarney at law duly licensed to practice before the courts of record of Calarada, do hereby certify that I have examined the Tille Commitment No	Town Wangger	Reception No					
	such land is in the dedicator(s) and owners, and that based upon my review of said title commitment, the property dedicated hereon has been dedicated free and clear of all liens and encumbrances, except as		County Clienk & Recorder Deputy					
			TED Highway 550 PLANNED UNIT Ridgway, CO, 81432 DEVELOPMENT					
	NOTICE: According in Caloredo Law (13-45-105, CHS) you must commence any legal action							
bestel gaon <i>erg idea</i> ¹ . In <i>it</i> series may calculate bare (2) years if the interverse bare of the date of the certification above how how the full years from the date of the certification above how								
<u></u>								

CPS Review Comments June 16, 2021

PRELIMINARY PLAT OF: RIVERFRONT VILLAGE, PLANNED UNIT DEVELOPMENT LOCATED ON LOT 1R, TRIANGLE SUBDIVISION SITUATED IN THE E1/28E1/2NW1/4 OF SECTION 16, TOWNSHIP 45 NORTH, RANGE 8 WEST, N.M.P.M. TOWN OF RIDGWAY, COUNTY OF OURAY, STATE OF COLORADO



FORMATION OF COMMON INTEREST COMMUNITY. Alphne Homes-Ridgevy, LLC, a Colorado limited liability company ("Owner") as the owner of the property depicted in this Plot ("Property") and as declarant under the below described Condominiam Documents, solides on Folgower:

The more received in the second of the second operation is the second operation of the second operating op

be firm of Rogeny, (D). The Community will consist of certain contomium units 'Units', which may be apportially event by individual events (UNI Covers'), including certain UNI tables for missionistic purposes (Passisteelli UNI(f)) can d certain UNIS and the commandly paragent Commence (UNI) can de certain Covers (Theorem et al. Theorem et al. Theorem can be appressed to be configured and backed in share a subject containing multiple UNIS (Waltership Residential UNIS) or configured to a location of tables of tables containing multiple UNIS (Waltership Residential UNIS) or configured to a location of tables of tables containing multiple UNIS (Waltership Residential UNIS) or configured to a location or compared. (Scholmer Restriction UNIS)

(2) This Pipt spects the general location of the silling for potential haldings and improvements proposed to be approximately approximate proposed to be approximately approximately

(D) The Owner reserves the right to undertake and complete some or all of the improvements and annex the completed Units and Common Dements into the Community.

(E) The entirety of the Property is subjected to Reserved Rights (as defined in the Declaration), which may be exercised by Owner (as declarant) as provided for in the Candominium Documents.

VESTED RIGHTS AND PHASING PLAN. The Development Agreement establishes certain vested property rights and phonoin luming, consequentity for the development of the property. Placer refer to the Development Agreement for the development of the property. Intelling to the vested popular rights and phenist timing and sequencing for the development of the property.

The development of the property. MORDONG of GEORENTICE MORDON, the Gener hereby restricts the sensetshy, use and scoupacy of foldwares (0) or one beforem and h Robins AD (b) to develop the LU22, (b) a cere beforem with the sensets of the SERTICE MORDON SERTING AD (b) and the senset of the Level, the sensets of the SERTICE MORDON SERTING AD (b) and the senset of the Level, and the sensets of LU22 (b) and the senset of the SERTING AD (b) and the senset of the Level, the sensets on the line of the SERTING AD (b) and the senset of the Level, the sensets on the line on other sense trender on robins of the senset of the Level, the sensets of the sense of the sense trender of the SERTING AD (b) and the sense of the level of the Level AD (b) and the senset of the level. The the sensets on the line on other sense trender of robins and the senset of the level AD (b) and the level AD (b) and the level of the Level AD (b) and the lev

SHORT-TERN REXIVLS. Only the Townhouse Residential Units may be used for "Short-Term Ren il events, such urage must be in compliance with applicable codes and regulations of the Town or it of the time of the proposed usage, which codes and regulations include: short-term methal reg ing and soles taxes, any applicable licensing, and any future amendments to the Municipal Code

6. COMMON ELECT MUNICIPALINE. The association shall have the obligation to multiple LOSE and happrovements located within the Community that are used by the Association on provided for in the above provide the statement of the statement of the statement of the statement of the statement above provide grant of the statement of the statement of the statement of the statement above provide grant of the statement of the statement of the statement of the statement above provide grant of the statement of the statement of the statement of the statement above provide grant of the statement of the statement of the statement of the statement above provide grant of the statement of the

distingui/damenter monogeneti facilitia, connucto enerei utilitas end aber Connucto facilitas. Oreas of Unita en responde for the regular con motivations et al con imprementa locati a to the Unit unas exclusion for installations, regular constitution et al c

OUTDOOR LIGHTING. All outdoor lighting faitures shall comply with Town regulations.
 MAXIMUM ALLOWABLE UNITS:

The maximum number of Townhome Residential Units is 10; The maximum number of Multifamily Residential Units is 28; The maximum number of Commercial Units is 4 (a) (b) (c)

(c) The maximum number of connected binks a 4 BDBDRDE, Subject Source-Riskey, LC, Goldweis Initial fability company as the current, fee simple over of the property depicted in this first loss despitation, created and connect cardinal connection. The current of the connect and the simple connection connect and the simple connect and the connect cardinal connection connect and the connect cardinal connect and the connect cardinal connection connect cardinal connect cardinal connect cardinal connect cardinal connection connect cardinal connect

measure to excompany the indifficults. (i) Access out UBS Example. A point for the Community, designed and capited an Access of UBS form, the adjust to a paradiat, non-accisite semantic which deep (i) for eq/i) to adjust to the point of the adjust to the semantic adjust t

Project. (d) UBUS Exament. A perion of the Community, designated and depicted as a UBUS Exament on this Pet, is subject to a perpetual, non-encubre economic which allowes for the right is install, regoin, region, monitolis, supports, san, aperation and memory entitis independing UBUs and only the reasonable (d) and san, program and approxed and the economic and a single state of the right is installed and the single dedicated for the use and thereoff. a different, Association and a cubre of the single single state of the single dedicated for the use on the single of the exament, association and a cubre of the different single are one service of the service of the service of the service in the service of th

(c) Public Researchmed Trail Economics, A section of the Community, destpended and depicted as a "New-Holder Debic Representation Trail Economics on this Prior Hange created by Synamic and Lange decided, granted and conveyed to the Team of Regrey as a perpetuie, non-exclusive searchest elsewing for the right to install, report, matricial, use and operate a public history. There is a second perpetuition of the right to install, report, matricial, use and operate a public history. There is a second perpetuition of the right to install, report, matricial, use and operate a public history.

(e) Pedestrian Trail/Underpass or Overpass/Signage Easement A partian of the Can

depicted as a "Pedestrian Trail/Underpass or Overposs/Signsfie Ecsement" on this Plot, is being created by Overe and is being dedicated, granted and conveyed to the Tays' of Ridgery as a perpetuit, han-exclusive ecsement classing for the right is install, negative methica, use and of operate a public hiker/liker, noit-molarized trail, construct a future highery trail underpose, and install entry signage.

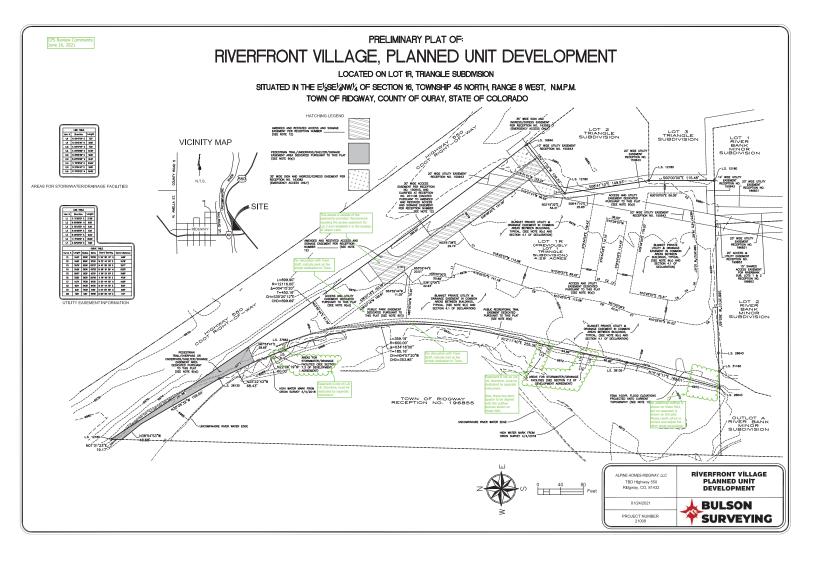
(f) Public Pork Ecsement. A portion of the <u>Community</u>, designated and depicted as a Public Park Ecsement' or this Pork is being created by Owner and is blang dedicated, granted and conveyed to the Town of Rögleng as a perpladu, non-reclaive ecsement lacibing/lark the right to use the property covered by the ecsement for <u>Dosaive</u> recreational use purposed, with no <u>improvements</u> unless approved by the Owner.

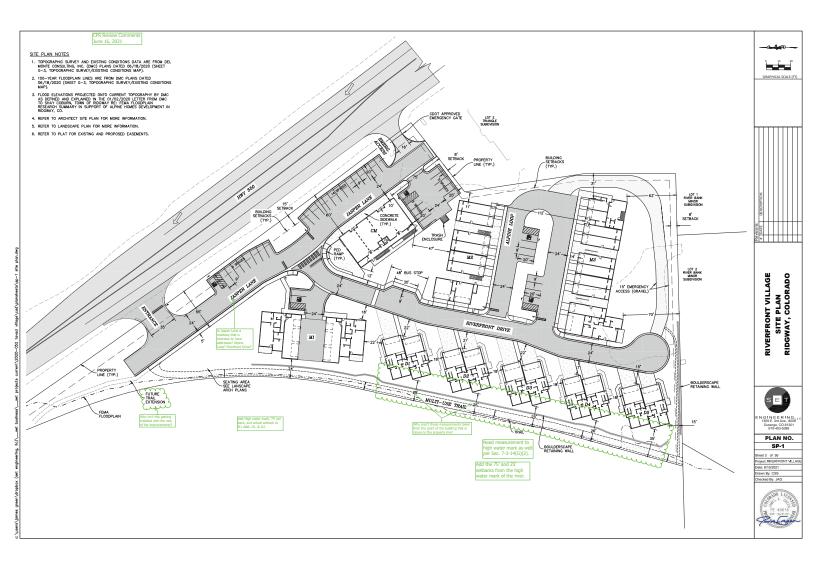
Interesting and properties, and no <u>suppresentance</u> united appreciation of the termination of the sent. Consolidate and con-traction of the sentance of the s

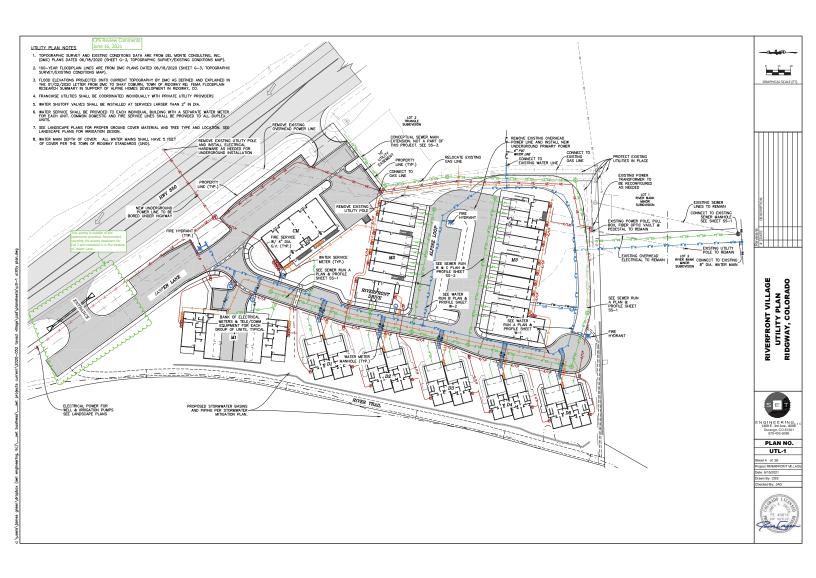
11. COOT ACCESS PEINIT: Vehicular access to or from property adjoining a state highway shall be provided to the general street system: unless such access have been acquired by a public authority. Pursuant to C.R.S. § 4.3–2-147(1)(b), oil load parates precised by this subdivision will have access to the state highway system in accidimensor with the state highway cases acoes.

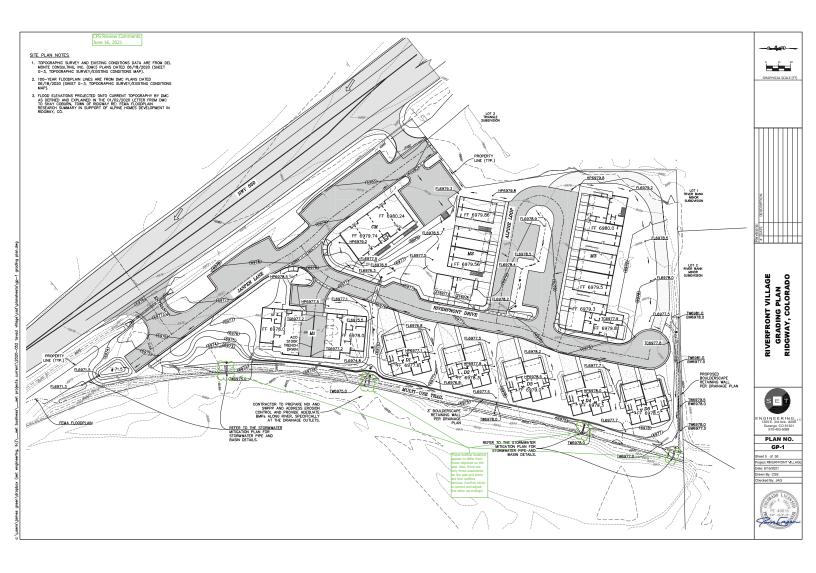
committee and in the same appropriate decision cover. The property decision therein is added to the prior extension of an added to the prior extension of a show hower. The Prior committee of restricting the following decrother extension before the prior extension of the committee of the prior backware privation prior table and the prior tables of the prior tables of the prior tables and the same privation prior tables of prior tables of the 13. The 100-year flood plain line shown was determined by Del-Mont Consultants, Inc and is based upon the analysis of David W. Schieldt, PE, CFW which are described and noted in a January 2, 2020 letter to the Town of Reference

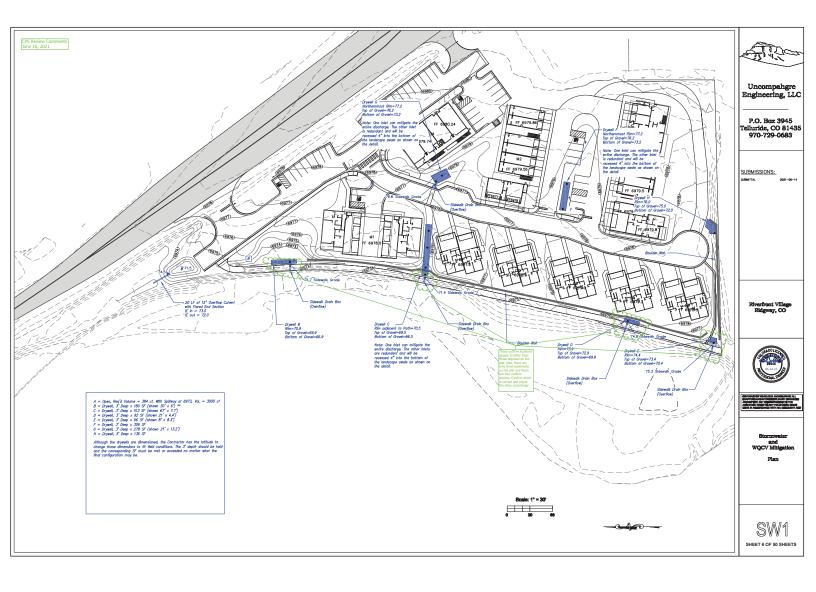
> ALPINE HOMES-RIDGWAY, LLC RIVERFRONT VILLAGE TBD Highway 550 Ridgway, CO, 81432 DEVELOPMENT 01/24/2021 **BULSON** PROJECT NUMBER SURVEYING











	Sub Section	Pg	Utility	Comment	Notes	TOWN RESPONSE 3/20/21	τον
			Wat, Sew				Chai Wat loop sew be e maii
1a	Utility Plan	Util-1, SP- 1	All	Provide information to locate all improvements and utilities horizontally and vertically e.g. sidewalks, roads, parking, water, sewer, storm in the field. All infrastructure fittings and junction angles should be noted to make sure they match available fittings.	The Contractor will be given parameters, but we don't expect them to hit our tangent lengths to the hundredth of a foot and will not be describing it that way. The contractor will have enough leeway to adjust lengths as field conditions dictate, but must build per Town Standards. A special point will be made to the Contractor so that understands that they should only use available fittings.	Please include information to locate all improvements on the plans. Regarding contractor flexibility, the Town requires complete construction plans that demonstrate that the alignments work as a condition of preliminary plat approval. The contractor is not likely going to check that when he moves something a couple of feet it still meets all the setbacks, has the correct cover fits properly in the easement etc. Please provide information to locate all the improvements. For the water line, please list the fittings. On the attached utility sheet, we listed the scales angles on the water line. The water line needs to be designed so it works with commercially available fittings.	SET is shee wate the t be w locat the a will o form
1b							Fitti the not radii take
2			All	PDF page names do not match listed sheet names. These need to match for the next review.	exactly. Please provide further, specific clarification.	Sheet 7 says its the cross sections, but pdf title is labeled SW1, sheet 8 is frontage rd in the title and SW2 on the pg. etc. After the first few pages, the pdf titles are shifted.	Ther bool
3	Resp Append	12	Building, water, Fixture Count	Confirm per building code that a commercial space only requires one 1 bathroom and that a restaurant requires just 1 sink (lav) and 1 toilet (WC) total?		Looks like mercantile requires 1 WC per 500 sf and a lav for every 750 sf. Restaurants look to require one male and one female WC per 75 . https://up.codes/s/minimum-number-of- fixtures	Resp sf/ 6 refei Its m almo Sugg sizin
4			CDOT	The access width needs to be 35 feet (not the 30 ft shown	that they will will defer to CDOT's requirements.		Perr perr intel part plan the appr can dead that
5		SP-1	permit CDOT	on the site plans). The access needs to be perpendicular to the road for 40	We'll revise the plans per CDOT's direction, Town has stated that they will will defer to CDOT's	п	that
6		SP-1 SP-1	CDOT	feet. We scale about 36'. In profile, the 1 st 20 ft need to be at 2%. Sheet RD-1 shows 3.93%.	requirements We'll revise the plans per CDOT's direction, Town has stated that they will will defer to	и	
7		SP-1	CDOT,	The Site plan in US 550 ROW needs to be updated to match the design CDOT requires	CDOT's requirements. We'll revise the plans per CDOT's direction, Town has stated that they will will defer to CDOT's requirements.	п	

WN REVIEW 6/22/21

hanged several items without indicating changes or justifying. Fater line now has a line that is not looped. This line needs to be oped. Also shortened the sewer line on Duplex so building M1 wer service is not perpendicular to the main. Sewer main needs to be extended to allow the sewer service to be perpendicular to the ain. See snapshots of the March and June plans attached

ET response says see civil plans. New planset includes alignment neets, but there is no basis of bearing, no tie to a monument for ater or sewer line. Some of the lines do not scale the distances in ne table. If one distance or angle is wrong, the rest of the utility will e wrong. Urge them to use coordinates for fittings and manhole cations. Angles for manholes are not on the sewer sheets, just on ne alignment sheet in bearings rather than in decimal degree which ill challenge suppliers. Please provide the cad file (acad/C3D 2020 ormat) you intend to provide to the contractor so we can confirm nere is sufficient information to layout the project.

ttings are not located or the angle of the fitting listed. Several of ne fittings scale to an available fitting but one is 32 degrees which is of an available angle. Also they show a water line on a 200 ft adius. That is a little tight to make 20 ft DR18 pipe bend. (looks to alke about 5-6 degrees per jt)

nere continue to be issues with the name for the sheet in the pokmark system not matching the sheet

esponse says "Per IBC 2018: Occupant Table 1004 Mercitile: 3281 / 60sf per person = 54 occupants. Per plumbing code 29021 the ferences are for Occupant, not SF. Thus 1 for under 500/ 750. etc. s my understanding that mercantile uses are very limited and that most any other classification would require additional restrooms. uggest the Developer plan for the additional fixtures units when zing the tap.

ermit extension secured. CDOT extension warns them that the ermit will expire in a year and to submit plans well in advance of itended construction. Still think they should get CDOT approval as art of Town approval. Response says they will develop required lans once get Town approvals. The accesses are needed to serve ne buildings and the work needs to completed prior to final plat opproval. Suggest the developer ask the PC and TC if CDOT approval an be a conditional of preliminary plat approval with an extended eadline to complete the CDOT approval with the understanding nat there are risks in the delaying the CDOT approval process and nat the construction needs to be completed before final plat

		UTL - 1	e/CATV	Line crosses M2+M3 road at a diagonal, all utilities should be perpendicular or parellel to easement lines/roads.			Still a depe
8							
10	Ck list resp	1	Fire	Overall comment 3b - did not find the new fire truck diagram	Specific standards/turn radius/etc. were not available, so we designed to the Telluride Fire Protection Distrcit standards. Are there specific templates that we should be designing to? We had assumed that this would be accomplished during a Fire Department review and did not see any requirements on the Fire Department website. We will add a specific diagram if provided.	position to serve the buildings. This can be done manually using parameters in the Policy on Geometric Design or with tracking	Ther parki
							In loo of du eme reco using the F
11	Dynamic	16	Fire	Please share raw data from the field test, including pitot size used.		but the tester was concerned that the prot was in buckwards.	Rega pitot teste
12				We have reviewed Bighorn's response to our previous comments regarding water service sizes. To approve the engineering documents, the Town will need to review all calculations for sizing the water services and the sizing will need to be finalized for approval. If the meter is upsized from what would be needed for the domestic service, a compound meter will be required. Whether the townhouses will be sprinkled needs to be determined and reflected on the engineering plans before the engineering plans can be approved	In Progress	reflected on the engineering plans as part of the approval of construction plans. The construction plans need to show what needs to be installed where.	engir
	Bighorn Resp	15	Fire				docu civilu
							Note and u tapp Mull
13			Fire	Fire suppression info appears to have been removed from civil plans, we will need the fire suppression system general layout, sizes, etc.	The civil will show the supply to the exterior of the building based on Bighorn's final design.	Please include size, location and calcs for the fire taps as part of engineering submittal for prel plat approval	Fire l the v
15	Genl Notes	C-2	General	General #12 There are detailed requirements for record drawings in the Town Standards General Requirements section 19 that should be included or referenced in this note.	The note will reference the Town's requirements.	Good	Rega plans new draw hype upda the r date
16	Resp Append	9	Landscape, Irrig	Pdf pg 9 #5 states that irrigation water will be purchased - What happens if the seller refuses to renew?	See attached DHM Design replies		Pleas

ill an change of direction of 32-33 degrees. Also a 200' radius curve pending on the length of the curve may require a fitting.

cluded tracking for a fire truck. Did not find the wheel base length. ere are a couple places where the truck nose encroaches into rking spaces.

looking at the fire truck tracking, noticed that if there is a blockage duplex, all access to and from the south is blocked. The nergency access only serves the road parallel to the highway. We commend that the Developer explore at least an emergency exit ing the utility easement to the south Lot 1 between the bank and e Riverview Plaza.

garding the fire hydrant testing, please provide the size of the tot tube used during the test. We know one was used because the ster was concerned he had it in backwards.

op 4 is a letter from Gordon Mull that says the water mains are operly sized and lists sizing for the fire taps. The letter needs ogineer stamped calculations to support the conclusions. Contrary App 4, App 5 says that the fire sizing is still approximate and bject to change. The line sizing needs to be final and reflected on e engineering ;plans. App 6 is addresses water and sewer demand includes a list of fixtures for the various buildings and fixture ounts. The fixture counts match what Town staff sees in IPC. This op should include who prepared the information. App 7 included lculations Bighorn but those differ from the numbers it App 6. iese discrepancies need to be resolved and the corrected ocuments submitted and the appropriate line sizing shown on the *i*l plans.

ote that 4" taps in an 8" main require a tee and any tap over 2" d under less than half the diameter of the pipe need either a pping sleeve or tee on the main. Several fire lines are listed in Mr ull's letter to be 2.5". Please confirm that they can find 2.5" taps.

re lines are on the plans. Not finding the size of the fire lines or e water services on the civil plans.

egarding town review comments on the general notes, the June lans have deleted all the general notes which is OK. However, the ew planset included copies of most of the town standards on their rawings. The Town standards should be referenced perhaps with a yperlink but not included in the planset. The standards are pdated from time to time and if this project does not start before ne next update, the documents on the planset would be out of ate. We expect the contractor to comply with the updated lease explain what happens if something changes with the vailability of augmentation water

17				Not finding the irrigation or wiring for these. Do they conflict with other utilities? Need to show irrigation piping with other utility plans (or show irrigation with the utilities on the landscape plans).	See Irrigation Plan. Prior submission at Prelim. Plat 6-15-20	Please either show the irrigation on the utility plan or vice versa. It reduces the time it takes Town staff to review for conflict.	DHM The i on the shou stand coup be re that sewe elect are r
18		RD-1	Landscape,	This sheet and others have reference to the landscape	See Irrigation Plan. Prior submission	Found them. Thanks.	urer
			Notes Landscape/ retaining wall	nlans We are not finding the referenced information on			Ther impa
20		UTL - 1	Natural Gas	Note east of M2 says connect to gas line but it is hard to see the existing line. This does not appear to be a good		Please address	Conr
21	Genl Notes	C-2	Natural Gas	Please confirm whether Black Hills allows casing of gas lines.	Yes, at road crossings	The gas company has changed hands since the last time new gas was installed in Town. If Black Hills allows encasements, please use them.	Note dry ι
	Utility Plan All	Util-1	Notes Setbacks	Notes #4 & #8. The utility plans reference working with the dry utility companies separately and that the lines on the plans are currently schematic. In order for the Town to approve the easement layout, layout of sewer and water, we need to know where other utilities will be. The engineering plans need to show the actual location of all the infrastructure and have the Add all setbacks to the civil plans - at least the setback along property line shared with Town appears to be missing	We are not expecting the town to approve Final Utility easements until the final locations of the utilities are determined. We'll add the perimeter setbacks.	Please include the dry utilities on the construction plans. We need to confirm they are properly spaced and do not conflict with what will become Town infrastructure. Similarly the easements on prel plat should should what is expected to be on final plat so we need to easements will meet Town Standards. The intent is there not be changes in utility routing after prel <u>plat aproval</u> Thank you	Alon the wate sepa Setb shee
31		SS-1	Sewer	the crowns, not the flow lines, of the pipe match. This adjustment will change the elevations of the A run.	We did not see this requirement in Town tandards and this is certainly not an industry wide requirement. We can make the change, but would like to know if the Foam- Lok will be acceptable due to this new requirement costing us valuable cover. Otherwise, we would propose leaving as is.	See 33.6 of Ten State stds which requires matching the 0.8 point between the pipes or matching the hydraulic gradeline. The easiest way to match hydraulic grade line is just to match the tops of pipes and that is easier to construct You can use the 0.8 point if like or match tops. If you do not match hydraulic grade lines and the 15" is flowing close to full, the 8" line will be submerged.	Whe pipe wate
32		SS	Sewer	Sewer profiles should be stationed from the low end to the upper end. The plans have some lines going downhill and some going uphill.	Please refer to that section in the Town standards and we will revise according to those requirements.	I have not seen sewer stationed from upstream to downstream before and so we did not specifically list it in the standards. If you wish to leave it with some lines going one way and others going the other you may will just look unusual.	Its st conf
33		ss	Sewer	The sewer profiles need to show the elevation of the water service lines and any other utility crossings as well as the water mains that cross the sewer.		The sewer profiles need to show the elevation of the water service lines and any other utility crossings as well as the water main so that the conflicts can be identified and resolved during design. In addition the plans should note where encasements are needed.	
			Sewer				The Rive far fi cont need

HM included the utilities in background to irrigation. Thank you. The irrigation does not have much separation from the water main on the east side of the parking loop for the M buildings. Plans ould reflect the separation and how it complies with the Town andards for spacing and easement requirements. There are a puple of irrigation crossings which need to be encased and should be reflected on the utility plan and profile sheet . We appreciate at for the most part the irrigation is away from the water and wer. By the entry, the irrigation is very close to underground ectrical. There are a few places where irrigation and dry utilities e relatively close together. Do the dry utility companies have any

nere are trees shown beside the retaining wall. How will that appact the walls

onnection point for the gas line is still is not pointing to a gas line

ote has been removed. The town continues to prefer that gas and y utilities under roads be encased.

ong the south line and part of the east line there are places that e gas and electric lines scale to not have adequate separation to ater and/or sewer. Please provide the required minimum parations.

tbacks should be on the plat. They are partially shown on civil eet SP-1

here there are different size inlet pipes, the grades for the inlet bes have been adjusted to match the tops. There are impacts on ater and sewer crossings that are noted elsewhere

still backwards. Hopefully this atypical way of stationing will not nfuse the contractor

ne sewer and water profile drawings are required to show all ossings of other utilities. The updated sewer plans show water ains but not service lines, irrigation lines or dry utilities.

ne June plans shortened the length of the sewer main on verfront so that the service line to the north part of building M1 is r from perpendicular to the main. This is a new design and is ontrary to Town standards. The sewer should be extended as seeded to allow for a perpendicular service line

34	Utility Plan	Util-1	Sewer	What is labeled as a "Conceptual Sewer Main Extension, Not a Part of this Project" is to be included with this project, not proposed or conceptual, per Town Standards (General Requirements, Section 9.11). The line needs to extended all the way to the 550 ROW. This main line looks to be outside the Tavaci property line in a 10 foot easement, 5 ft on each side of the property. The line is shown with 10 - 12' depths. In addition, the outside of MH 14 scales about a foot from the easement boundary. The easement width does not meet Town Code or Standards and it is not clear how it could be constructed or Sewer plan view should show the angles between lines in	Being new to this project, we did not think that this section applied since, according to that code, the sewer needs to be extended to permit future extensions. The property beyond is already being served. It's a complete separate line that has no bearing on this project - that's what the note is referring to. We aren't using it and have been unable to verify what it serves and the as-built location of any tie-in. We have requested the full plans for this sewer (not just the $2 - 8 - 1/2 \times 11$'s which we did receive) in order to see how it's installation is necessary to provide service to the east side of the highway. Due to the denth that we have		Th To River sugg effici thou
37		SS	Sewer	and out so one can tell if lines meet seperation and drop	We will add this note and verify drops.	Thank you	betw
38		SS-1	Sewer	It looks like there will be some conflicts between water services to the duplexes and the sewer main.	If there is a conflict, the water service line will be adjusted per Town standards.	approved for construction as part of preliminary plat approval	Ther mair to bu seale look and
							Per (enca whe to be roon and
39		SS-1	Sewer	We did not find stations for the service wyes to building C or M.	This will be coordinated when the final mechanical is done. The contractor will have the leeway to move the wye as long as he is	These need to be on the engineering / construciton plans. The taps are made with full bodied wyes that need to be installed as the sewer main is installed.	Seve Pleas
			Watter				Wha
			Sewer	If one extends the sewer service in a straight line toward	We appreciate the suggestion, but service		For s the k sewe reso
40		SS-1	Sewer	the duplexes, some will miss the building. Rather than add	lines are allowed to have bends in them.	Bends with cleanouts are allowed. The long term owner of the unit will be happier if the line has few or no bends.	
41		SS-1	Sewer	The sewer service to "C" looks to have about 2' of cover at the building. Three is typically the code minimum and because it's a restaurant, it may need additional drop for the grease trap.	We did not have the invert information at the time of the design. Unsure of how the Town calculated the cover, but this service will be built to Town standards.		Deve We c they minii
42		SS-1	Sewer	We will need to check minimum cover at the buildings for sewer services again once the grades are adjusted to match the tops of pipes at MH A4.	We'll provide updated plans as soon as possible for Town review. Again, the mechanical plans are not finished.	The plans for preliminary plat approval are the construction	Pleas show
43		SS-1	Sewer	We will check the math for the sewer profile once its been adjusted.	Thank you.		Plea: sewe
44		SS-1	Sewer	Where there is more than one pipe coming into a manhole, label which invert goes with which line.	We'll add to the plans.	Thank you	adde
45		66.2	Course	MH A-13 is shown outside the roadway and presumably the easement.	Final Easements have not been written. A MH outside of a roadway does not indicate that it will be outside of a Final Easement.	The easements should be shown accurately on the preliminary plat and match what is needed for the utilities. The Town needs to be sure the easements meet the widths required in the Town standards	The or and or space
		SS-3	Sewer				

Town provided a location on the east side of the highway and the verfront design team provided a design through lot 1. Mr Cantor ggested with his acquisition of Lot 2, there might be a more ficient route. By separate email, the Town will share their oughts on potentially more efficient routes.

e town standards require that the manhole plans show the angles tween the pipe. These should be added to the plans

ere are conflicts between water and sewer service lines and ains. Plans need to show how the water services cross the sewer ain or the sewer services cross the water main. The sewer service building CM will go over the water. The sewer service will need aled end encasement. The sewer services going to building M2 ok to run into the water main. Plans should reflect the crossing d how any conflicts are resolved

r General requirement 9.02 the sewer main or service should be cased unless that is not possible. There are several locations here the plans that call for the water to be encased. These need be changed to encasing the sewer. Be sure to check that there is om for the encasement and bedding between the encasement d the water line.

veral sewer services are stationed. The one to building CM is not. ease add a station for it and add any others that are missing.

hat is the basis for the water line stationing?

r sewer Run C, there does not look to be enough room between e bottom of the water and the top of the sewer to even case the wer (or water). Plans should show how this conflict will be solved.

eveloper response says they checked but did not provide any calcs. e checked the ones that looked like they could be problematic and ey look to have at least 3 feet of cover which was the UPC inimum; not sure on the IPC.

ease ensure that the sizing for the water services and fire lines are own on the plans.

ease correct the discrepancy between the stationing and the wer length between manhole at SH 62 and MH O-1-D

ded

e easements should be shown accurately on the preliminary plat d match infrastructure locations and match as well as meeting the acing requirements in the Town Standards.

47	Resp Append	9	Sidewalk	Sidewalk along river needs to be 8' wide and 6" think concrete per Town Standards for GC district. See the Town's sidewalk typical. The shoulders should be no more than 2% grade.	Acknowledged.	reflect that Also filefade the foundation for the concrete of the	There wide Deve
			River Trail				Base dime walk
			River Trail				The r the le wall. need
			River Trail				Inste the s
50	Typical sections	X-1	Sidewalk, Duplex Rd	What is the cross slope on the sidewalk? We recommend a max cross slope of 1.8% for sidewalks so if there is a construction glitch it should not exceed 2% which is an absolute max under ADA.	The cross slope is shown in the Typical Sections on the Cross Sections Sheet. It's a 2% max, not a 1.8% max. We typically don't design for glitches. Instead, we list the allowed parameter.	Exceeding the 2% leaves one at risk for an ADA issue. On private pproperty the issue would be a private one. The Town will check that the 2% is not exceeded on the Town trail where the Town would have responsibility. If it ddoes exceed 2% as constructed, it will be required to be replaced.	Plan: to ch exce reco
51		SW-1	Storm	Please provide all calculations associated with the stormwater drainage design. Be sure to include: historic, proposed, design storm, storage volume, peak flows, design flows, capacities, velocities etc.		Pg 3 section 1 2nd paragrpah requires all proposed development submit a drainage design report containing all design calcs etc stamped by PE. This project does not need to detain to peak flow, but they do need to provide the calcs. It also needs to have provisions to transport the run off from the minor and major storms.	New syste
52		18-21	Storm	Lawn imperviousness should be 10% per Town Standards, update calculations	Please refer to the separate WQCV Letter.	The Town set the lawn (parks and open space) imperviousness at 10% because the soils in Ridgway are often quite clayey. Where the Town has a standard it supersedes general reference documents. If you have detailed site specific information on the imperviousness, and wish to request a devaition, please provide the support documentation and the Town will review	
53		SW-1	Storm	The drywells are intended to provide water quality capture. How are they cleaned and kept performing as intended?	Filter fabric was added to the detail. The fabric can be removed and replaced. This, like many other things, will simply be maintained by the Owner.	Be sure that maintenance is covered as part of the CCR's. Because if they plug, water quality treatment will not occur, maintenance requirements should be included as a plat note	Look
54		SW-1	Storm	How does the drywell overflow get out of the area between M2 and M3?	It has to fill up to the point that it flows into the pan that has been extended to that area for just such a purpose.	Please ensure it does not flood the ADA alley.	Deve weig sprea whet
56					It's called out - Class 67. 38% is an industry standard. Does the Town use a different percentage? 38% is used by the Town of Telluride for this exact purpose.	What is the grading for Class 67 material proposed A class 67 can be anything 3/4" or smaller. The void ratio depends on the amount of finer material. If the design is based on a 38% void ratio, please add a note to the construction drawings that material will need to be tested to confirm the void ratio during construction.	Deve this
		SW-1	Storm	What size gravel is in the drywells? What is the basis for assuming the void space is 38%?			
58		A2.3 M1A a	Storm	Is there anything present to prevent rain, snow and ice from falling into parking lane?			Deve park That
59		SW-1	Storm	Basins need to be sized according to upstream contributing area and imperviousness not the site average of 0.57.	Please refer to the separate WGCV letter	The different basins have different imperviousness. For example basins A and E are almost all hard surfaces whereas the F basins are much more perviousness. I am not finding that the Town suggested a composite I value for sizing the water quality basins and agree with Mr Ballode that they need to be for the specific sub basins. Please use sub basin imperviousness numbers for sizing the water quality drywells	See

tere is a river trail detail on the new planset. The concrete is 8' de not the 10' Joel mentioned on the phone call. Which is the eveloper's intent.

se under the trail should be Class 6 not class 2. Please add a mension for the width of the base on each side of the concrete alkway.

e river side of the trail has a 2' catch slope on the river side and e lot side there is a 2' slope to a drainage and 2' up to a retaining all. The plat shows a 10' easement. A minimum 14' easement is reded.

stead of the 2% shoulder on the trail that the town mentioned , e show a 2:1 side slope. That is a hazard and not acceptable.

ans show 2% cross slope on the trail typical. Town staff will need check that the slope is not exceeded once constructed. If it does ceed 2%, it will need to be removed and replaced. We continue to commend that the design slope be reduced to at least 1.8%

ew storm water report submitted. All new comments on the storm stem are included in narrative on the attachment

ew storm water report submitted. All new comments on the storm sterm are included in narrative on the attachment

oks like plat note 6 covers this.

eveloper response says 2% was used when calculating the eighted average 100% was used for everything else, See calcs ins readsheet". Please explain how this addresses the question of nether water gets into ADA stalls.

veloper response says" it flows into a pan". Please explain how is addresses the question above the void ratio.

eveloper response to what keeps the rain and snow out of the rking lane says see App15. That is just the snow clip package.

e storm comments below

60	Grading	GP-1	Storm	Multiple drywell inlets appear to be outside of flow lines.	If this occurs somewhere, it will be corrected. Without specifying, we're unsure of where you are referring to.	For example, in subbasin F-1 the basin is to the south of the flow line. There may also be issues at the B, C, and D subbasins, etc.	
61		SW-1	Storm	Topo illustrates much of runoff from G, H, I, J and K sheet flowing over trail. Need to route water to drywells and take overflow to culverts under trail.	This was intentional. The land currently sheet flows to the river and we assumed the sidewalk could remain that way. Capturing that water will force a ditch on the south side of the sidewalk and at least one more inlet. Will modify.		Trail tippin and o the e the s
62		SW-1	Storm	How does driveway runoff end up in subwatershed drywell and not in the street/gutter?	The driveways have a cross slope.		Wate belov
63		SW-1	Storm	Need details and profiles for inlets, culverts or outlets. What flow and storm are they sized for?	Noted.		Did indic
64		SW-1	Storm	Need to plan on how the concentrated roof runoff from M3 makes it to the nearest drainage feature. Sheet flow will be hazardous.	It will be coordianted with the final architectural.	The architectural design should be coordinated with the drainage design so that the roof runoff goes where the drainage is available to accept it as downspout location impact the location of the concentrated flows.	Resp offici
65		SW-1	Storm	Which drywells will have gravel extended to the surface?	E and L. The note must have been indavertently deleted but will be on final plans.	Why the difference	Eleva freeb
66		SW-1	Storm	How does the daylighted flow from the M1 trench drain traverse a steep slope south towards the drywell?	Overland. This is the miniscule flow from a trench drain located in a covered garage.	event	Only storr wate
							Look dryw Dryw
67		SW-1	Storm	TOPO does not match grading plan. Ex: Building C now has a swale going through the patio.	The grading was done when the patio was a deck, so the grading would be below a deck. If that has changed, it will be addressed.		Resp found build
68		SW-1	Storm	It is unclear if roofs are guttered and if so where are the downspouts located?	Downspout locations will be provided by the Architect and incorporated into final design.		Aske inlet
69			Storm	Townhouses - roofs appears to drain directly onto building entry walks, this is safety issue with the potential for snow			Says confi
70		UTL - 1	Storm	Multiple instances where proposed basins have a pedestal or pit within them. They also should not be placed over utility lines.	The two often co-exist. We didn't see anything precluding this in the Town standards but will move one or the other.	between utilities in the Town Standards, tho the specific use of	Deve dryw Deve
71		SW-1	Storm	Provide information to locate drywells, drainages, culverts, etc. Provide dimensions not just areas for drywells.	The surveyor will be provided with all linework.	the engineering plans.	Asked respo the T use t
72		SW-1	Storm	How does water at the SW corner of the pond get from curb and gutter to the pond?	On the surface.		Deve ponc flow shou
74		SW-1	Storm	Need details for energy dissapating riprap.	Acknowledged.	Thank you	The p the s We a wher
75		SW-1	Storm				Not f
78				Provide calculations that demonstrate that the inlet grates have sufficient capacity to capture the water quality flows. Inlet capacity calcs should include standard clogging factors.	Noted. The run-off will be calculated for a 1.25-year storm and added to the table on SW-1 for everyone's benefit.	Thank you.	In res repo capa We r
		SW-2	Storm				clean treat

sins layout changed and fewer flow lines. The flow channels ould be on the plans

ail plans show a drain swale on the east side of the trail and show oping the sidewalk to the east side. With that design need to catch d channel the water and run it under the sidewalk if it drains to e east. Sidewalk can tip to the river. We don't want water from e site running over the sidewalk but its OK for the walkway to tip

atershed totally modified. The new arrangement is reviewed low in new comments

id not find elevations for inlets. If they are on the plans, please dicate where or add as needed.

sponse says arch plans will show it piped to the median. Building ficial should check during building permit review

evations for drywell feature are on the plans. All now have eeboard

nly saw minor storm in the drainage report. Both minor and major orms should be included and the report should demonstrate that ater in the channels are within limits in the storm standards

oks like runoff from M1 will run along a retaining wall to get to ywells C & E. Several f the drywells adjoin a retaining wall and ywell C runs under a retaining wall

sponse says Arch plans will cover. Keeping water away from undations is a strong recommendation in the geotech report. The ilding official should check during builling permit review.

ked where downspouts are routed Developer response says see et capacity chart. Please address how the roof runoff is routed. ys that is addressed on Arch sheets. Buidling official should nfirm.

eveloper response says its common for utilities to run thru ywalls. There is no longer water or sewer shown below a drywell. eveloper should consultant other utilities to ensure they don't

ked about how to locate the drywells on the ground. Developer sponse says its in the CAD file. They should provide the CAD file to e Town in C3D 2020 and explain how the contractor is going to e the CAD file to lay things out

eveloper response that water from the end of the C&G gets to the ond says sheet flow. Looks like its going to run from the gutter ow line toward the pond by defining its own path. A small ditch ould be provided.

e plans show storm water discharging onto the Town property on e slope to the river. Previous comment asked for riprap details. e are not finding those on the new plans. Please let us know here those details are on the plans

t finding elevations for the sidewalk drains or pans

response to questions about the drywell grate capacity, the storm port included grate headloss chart. If inlet is clean it has adequate pacity. Storm report says dome grates are resistant to clogging. e remain concerned that In a rain like on 6/24 the grate won't be can long and that is the type of storm that needs to water quality catment.

		1					1-
				Demonstrate that building entrances are a minimum of	We feel that we comply with Town Standards. With sheet	Calculaton of water elevation versus building entry should be	Resp
79				12" above adjacent drainage features as required by Town Standards.	flow, water cannot flood a building. If there is a specific concern, we will analyze.	included in the storm design report for each building.	eleva
			Storm		concern, we will analyze.		
		18-21	Storm	Please provide perc test results.	Will do.	Thank you.	Requ
							says
							perco
							is les
							year,
80							tests
							dete
							rate.
							some
							been
							assur
					The contours and typical section are shown. If deviation is	Not finding spot elevations for things like the tear drop on	Pleas
81				Not finding any grades for the flow lines, parking areas,	required, spot elevations have	Duplex road, the grades in the parking areas etc. The plans	bulbo
	Crada Dlan	GP-1	Storm	the sidewalks, concrete aprons, etc.	been or will be provided.	should include all the information needed to build the project.	area
	Grade Plan	07-1	Storm	Most of the road runoff and even part of the townhome	I would refer to the table on SW-1. This small amount will	I thought SW-1 was the water quality volumes not the runoff	Resp
				area runs to either the drainage at the toe of the retaining	not impact the wall.	volumes. The project is only detaining the 1.25 yr event, the	town
				wall on the south line and between M1 and D1. How		drainage features still need to handle the 25 year storm.	Wate
82				much water goes into each? How does the south drainage			storr
01				impact the retaining wall?			like t
							storr
	Grade Plan	GP-1	Storm				year
							New
							as it
							the s
					It is diverted in a pan. The call-outs will be adjsuted so that	If the water is diverted in the pan please be sure that water is	Grad
83				Does the water at the south end of Frontage road run into	the pan is clearly seen and called out.	included in sizing the infrastructure for the 25 year storm.	prop
	Grade Plan	GP-1	Storm	Lot 2?			towa
				Profile shows a 3' wide "waterway". What is the depth of	Town's standard detail shows 3' is acceptable. Refer to the	Thank you.	Pleas
84			Storm, CM	the pan? What's its longitudinal slope? What are the peak			
		RD-1	Parking		anyway.		
			Street,	Have you considered the maximum water depth on roadways during design storms?	Yes.	Please provide the calculations and results	Inclu
85			Storm				that
							meet T
				Runoff flowing from asphalt into a swale or similar should	We've already provided that, but we'll clarify	Thank you.	Towr Runc
86	cross sections	X-1	Street,	have a 2" drop at the pavement delineation. Refer to	on the plans.		drop
			Storm	Urban drainage if desired.			show
				The radius of the cul-de-sac is substantially less than the		Please check that wheel tracking works for each of the tighter	Fire t
94				Town's standard which requires a 40' diameter. We	just the entry to the Fire Lane.	cruves with the tender and ladder truck. The driveways on the	Look
5.				recommend meeting this standard.		duplexes angled, people are likely to prefer to back out to the	spac
		RD-2	Streets			north and will want to use the "cul de sac" to turn around.	1
					We'll revise the plans per CDOT's direction, Town has stated		Not f
95				If not already required by CDOT, the highway access will	that they will will defer to CDOT's requirements.	street is intersecting a US Hwy with a 45 mph speed limit. If needed we can find a requirement in the MUCTD and/or the	point
			Streets	need a stop sign.		cdot access code.	
	l			What are the distances to the bulbouts and parking areas	The Typical Sections cover this, but we'll add	Thanks for adding. Did not find it on the typical sections.	Did r
00			Streets,	from the center lines?	dimensions to the Site Plan.		parki
96		RD-1	Bulb Areas				infor
97		RD-1	Streets,	Radius for some of the curves are provided, but need to be	We'll add to the plans.		Have
51			Bulb Areas	provided for all.			to be

sponse says see grading plan. Did not see calculations for water evation on the grading plan or the storm water design report.

equested perc test results for sizing the drywells. Developer response ys "Soil was classified (similar to how septic systems are done). No recolation test was necessary. Soil Type 1. You can infer that the perc rate less than 15 minutes per inch. See CDPHE septic standards." In a call last ar, Town was told that Lambert ran or would run perc tests. If sts were run provide results. If we misunderstood, who etermined the soil 1 classificiation and the resultant percolation te. From what is shown in the geotech report implied there was me variability in the soils especially between the areas that have then filled and those that have not. Need to demonstrate that the sumptions about percolation are accurate.

ease provide both horizontal and spot elevations information for ilbouts, tear drops, and other shapes along the roads and parking eas.

sponse says "What little water comes off of the north side of the wnhomes will sheet drain over the wall. This is not an issue." ater running over a boulder retaining is not a good idea. The orm report shows the townhouses in 3 different basins. It looks e to reach drywell D water will need to sheet over the wall. Their orm report shows about 180 gpm will flow over the wall in a 25 ar event. There would be more in a larger event.

ew SW-1 sheet has design deviations from the GP-1 sheet at least it relates to the extent of the retaining wall. Please make sure all e sheets have the same underlying information.

ading plan now shows a high point not very far from the south operty line and water running into the parking lot east of CM ward the trash enclosure. Will that be an icing issue in the winter.

ease provide grades and locations for the pans and drainages

cluded a calculation in the storm report for 1.3 cfs as worst case at runs 2" deep in the gutter and has a spread of almost 9'. It eets the storm standards and is private. If the 100 year meets the won standards is acceptable

noff flowing from asphalt into a swale or similar should have a 2" op at the pavement delineation. Please indicate where this is

e truck tracking provided. Not sure what size truck was run. oks like the tracking shows the truck nosing into some parking aces.

ot finding the stop sign on RD-1 or GP-1. If its on the plans, please wint out where.

d not find the distances from centerline to the bulbouts and rking areas on the site plan or the road plans. Don't see enough formation to lay those out. No elevation data found.

we most of the radii on the roadways. Some for the parking look be missing.

98	Site Plan	SP-1	Streets, Emergency	Is the 15 ft emergency access width, travel lanes and turning radii adequate for fire trucks and lane reqs? What type of gate is proposed and does the fire dept and CDOT approve?	It was designed according to verbal directino from the Fire Department, so we assume it complies. CDOT items will be addressed with that permit.	Please add what is proposed to the construction drawings. Also with whom at the RFD did you speak?	respo spoke which
99		RD-3		There is a leader near sta 0+34 labelled 3' waterway in the north parking lot that does not seem to point to the pan.	We'll correct the leader.	Thank you	What
103	Typical sections	X-1	Streets, storm	On the sections without curb, what are the catch slopes? Does the drainage sit against the roadways?	2:1, no.	Please add catch slopes to the typical sections.	Adde at lea well.
107		ss-1	Utilities	Does the spacing between gas, water and sewer on "Duplex Rd." meet Section 11 of the General Requirements of the Town Standards? It looks like the gas would be totally exposed if we need to trench to the water		Please use the more stringent of the requirements. The construction plans should show the separations that are required and the utilities should be located on the plans and in the easements to meet those requirements	There meet requi
108	Utility Plan	Util-1	Water	Water meter sizes not just line sizes need to be shown on the plans (and justified). Will need compound meters if	Acknowlaged	Please provide the calculations and show on the plans	Did n did no
109	Utility Plan	Util-1	Water	The plans show the water line looping internally not crossing the highway or the river. The sketch plan presented and approved had the water connecting to a main under the highway. This should be added back into the plans. See also the Town Standards that require connections and looping (Water section 5, General Requirements section 9.11). Note this requires a CDOT Utility permit that will be a joint application prepared by	We are confident that the internal loop shown meets the looping requirement. Running a section of water across HWY 550 doesn't provide any more of a loop. The Town has represented to us that they only feed from one line. Everything east of the bridge is an internal loop, but there is no second primary loop. Perhaps this can be better understood when we get the requested as-builts of the water main.		Now Recor on th Loop.
				Water meters need to be located just inside the roadway easements or immediately bordering if an adjacent utility easement is present	Duly noted.	Please reflect the meter locations on the construction plans.	Looks Rivert shoul
110	Utility Plan	Util-1	Water				enou can a Tappi the fi
111	Utility Plan	Util-1	Water	Note #5. All water services require a shutoff before the meter.	The service shall be built to Town standard. The Town's standard drawing does not show a curb stop for new construction - only for connecting to an existing connection. We are planning on a curb stop prior to the meter	The Town meter detail shows a shutoff in the can. A curb stop is also allowed.	Prefe
112	Utility Plan	Util-1	Water	Note #10. Any change in water line cover will need Town approval.	The Contractor will be obligated to build per Town standards.	The construction plans should show that the work can be completed per the Town standards or if there are issues they should be worked out before construction.	There const
116	Genl Notes	C-2	Water	#2, control for the water line needs to include horizontal and vertical control	The CAD files will be supplied. Any point will be able to be determined.	The Town standards (022000 , 3.07)require developer's engineer provide grade stakes for all pipeline with maximum distance between stakes of no more than 50ft.	In res 3 whi segm the lo listed alignr contr the T doub
122	Utility Plan	Util-1	Water	Note that water meters in excess of 1" are required to be installed in a manhole	Yes. The meters will be installed per Town standards.	The plans should reflect the meter size and show the type of enclosure required.	Plans differ but th
123	Utility Plan	Util-1	Water	Provide profiles with finished surface grades for the water mains.	We feel that this is unnedssary. The water is pressurized and not subject to gravity constraints, The water main will be installed per Town standards - 5' of cover (min.). So a profile would just be a line copied down 5' from FG.	The problem is that the contractor needs to identify the finished grade. Having existing and proposed profile, provides some guidance, Per Div. 1 9.03 profiles are required unless waived by the town for short extensions.	Adde sure t bury

ponse says see civil sheets, did not answer to whom to they oke at RFD. Emergency gate is listed to meet CDOT requirements ich is acceptable to the Town.

nat is happening with drainage at the beginning of Alpine Loop

ded 2:1 catch slopes. Typically if there is no shoulder, roads have least a 4:1 catch slope. 2:1 is a hazard and its likely to slough as ell. Roads are private so outside Town standards

ere are places e.g. east of buildings M2 and M3 that scale to not eet the utility separation requirements. Please ensure the quirement separation is maintained.

not find line or meter sizes for the water and fire services. Also not find sewer service size

w have a deadend water line which is not acceptable. commend they compare the cost to link the deadend to the line the east side of the highway with looping back toward Alpine op.

oks like they have circles for the meter can locations. On rerfront they are shown on the lot side of the dry utilities. They ould be on the road side. The taps and the cans should also be far ough apart to be able to dig one up without impacting the next and meet the separation recommendations in the UniBell oping Guide. (See attachment) Also looks like the stationing for e fire lines is too close to an adjoining water tap.

efer the curb stop as shown in the meter can replacement detail.

ere are conflicts that need to be shown and resolved on the nstruction plans

response to request for layout information have added sheet HCwhich lists bearings and distances for the water and sewer line gments, but we did not find a tie to a control from which to begin e location and some of the line segments scale differently than is ted. If even one of the bearings or distances is off, the entire gnment will be. Its more conventional to include coordinates for ntrol. The plans should note the staking requirements. Yes its in e Town Standards that they have copied into the plan set, but I ubt the surveyor will find them.

ns need to show the meter and service sizes. The plans have ferent size circles that are presumably manholes and meter cans, t they are not called out or sized.

ded water profiles with existing and finished surface grades. Be re that the water line is staked with cut stakes to ensure the 5' ry is maintained.

Utility Plan	Util-1	Water, easement	In several locations, the water lines are shown very close to the easement line. The water line needs to consistently meet the setbacks and easement widths in Town Code and	The Town standards will be referred to and met.	Please show the easements relative to the utilities so we can confirm that easement requirements are met	Not s still v the u
Utility Plan	Util-1	Water, hvdrants	add on the west side; the hydrant in the middle of the	We had assumed that the Fire Department or the Town would specify the exact locations that they want the hydrants. That's where we will show them.	The Town suggested locations, but on the call reviewing engineering comments, the Developer's team thought those locations were problematic. If another discussion of this is needed, please let us know.	Pleas cul d
Genl Notes	C-2	Wire		We will build to Town standards if those standards are provided.	We recommend but do not require fiber. The town code has yet to be updated to require fiber or to delete CATV which has	Som sewe
Genl Notes	C-2	Wire	be encased.	We'll add this to the plans.	Thank you	Pleas
	3 & others		A number of the sheets have notes that say the topo survey, flood plain, and existing conditions were prepared by DelMont and/or Orion. Unless DelMont and Orion are going to sign the engineering plans, the engineer of record needs to take responsibility for all the information on the	The surveyor does not sign the engineering plans nor does the engineer sign off on the existing conditinos survey. These are two distinct Scopes and each will be stamped separately.	The point of this comment is you can not put responsibility on Delmont if they are not stamping the plans. If the engineer of record is "borrowing" from Delmont without a DelMont stamp, then the engineer of record is responsible for the topo and civil docign	
						Shee lines.
			Did not find any details for the retaining wall on the south side. There is a trash route on the other side of the wall. The wall needs to have adequate strength for that.	Yes. The final design of all walls will be designed for the correct loads. They will be stamped by an Engineer who will take responsibility for that design.	Please include this with the plans for preliminary plat approval	Adde ques vario wall?
						locat stabi impa loads
Grade Plan	GP-1				The grading plan looks to show stop hars at a number of	have
Grade Plan	GP-1				intersections we did not see the corresponding stop signs called out	Resp add
Grade Plan	GP-1				How does water get out of the parking areas on M2 and M3 Rd?	Look is int provi
Road Streets					Please add spot elevations for "cul de sac" and around the curves on the roads.	Resp cul d
Emergency Lane					How does the contractor know the alignment and elevations of the emergency lane off of Duplex rd.	Resp for th
					Once the plans are complete and ready for construction they must be stamped by the engineer of record.	Plans
	SP-1, landscape					Look walls
	GP-1					lt loo dryw
	U-1					Exter
	SW-1					How
	SW-1					Ther
						unde
	SW-1					Will t
	SW-1					How got t
Water	SS-1					get t On th the v
	Utility Plan Genl Notes Genl Notes Grade Plan Grade Plan Grade Plan Grade Plan Emergency Lane	Utility PlanUtil-1Genl NotesC-2Genl NotesC-2Jake othersJake othersJake othersJake othersGrade PlanGP-1Grade PlanSW-1Jake othersSW-1SW-1SW-1SW-1SW-1	Utility PlanUtil-1easementUtility PlanUtil-1Water, hydrantsGenl NotesC-2WireGenl NotesC-2WireGall Notes3 & othersImage: Second S	utility Plan util-1 Water, easement to the easement line. The water line needs to consistently meet the setbacks and easement widths in Town Code and Additional valves are needed on several hydrant tees, the one near M3 needs a valve added on the most lide, by DS, and the hydrants utility Plan util-1 hydrants ft. hydrants ft. hydrants Genl Notes C-2 Wire Not mentioned but wire utilities in road crossings needs to out of date here, we would recommend installing fiber Genl Notes C-2 Wire Not mentioned but wire utilities in road crossings needs to be encased. Genl Notes C-2 Wire Not mentioned but wire utilities in road crossings needs to be encased. Genl Notes C-2 Wire Not mentioned but wire utilities in road crossings needs to be encased. Genl Notes C-2 Wire Not mentioned but wire utilities in road crossings needs to be encased. Genl Notes C-2 Wire Not mentioned but wire utilities in road crossings needs to be encased. Genl Notes C-2 Wire Not mentioned but wire utilities in road crossings needs to be encased. Gend Notes Did not find any details for the retaining wall on the south side. There is a trash route on the other side of the wall. The wall needs to have adequate strength for that. Grade Plan GP-1 <td>Utility Plan Unit- event meet the setaboxia and essement width in Town Code and the setaboxia and essement width in Town Code and additional uncern ended so show allydatin test, by DS, additional uncern ended so show allydatin test, roomage media books the bydatin in mendial of the additional uncern ended so show allydatin test, fromage media books the bydatin in mendial of the additional uncern ended so show allydatin test, fromage media books the bydatin in mendial of the shows argenty the social testaforms that they wint the mendian test. Second test the social testaforms the mendial of the shows argenty the social testaforms the mendial of the shows argenty of the shows and/or of the shows argenty of the the books have notes that asy the top shows argenty of the shows and/or of the shows argenty of the shows and/or of the shows argenty by Delhons and/or Orion. Unless Delhon and from argent spatial to show and/or Orion. Unless Delhon and from argent spatial to show and/or Orion. Unless Delhon and additional subset shows adequate strength for thus. Yes. The final design of all wills will be designed for the score to distinct Scopes and each will be stamped paparately. Gride Plan GP-1 Image: Ima</td> <td>Number Number Number Interactions and interactions andinteractinteretion and interactinteretinteractions and interactio</td>	Utility Plan Unit- event meet the setaboxia and essement width in Town Code and the setaboxia and essement width in Town Code and additional uncern ended so show allydatin test, by DS, additional uncern ended so show allydatin test, roomage media books the bydatin in mendial of the additional uncern ended so show allydatin test, fromage media books the bydatin in mendial of the additional uncern ended so show allydatin test, fromage media books the bydatin in mendial of the shows argenty the social testaforms that they wint the mendian test. Second test the social testaforms the mendial of the shows argenty the social testaforms the mendial of the shows argenty of the shows and/or of the shows argenty of the the books have notes that asy the top shows argenty of the shows and/or of the shows argenty of the shows and/or of the shows argenty by Delhons and/or Orion. Unless Delhon and from argent spatial to show and/or Orion. Unless Delhon and from argent spatial to show and/or Orion. Unless Delhon and additional subset shows adequate strength for thus. Yes. The final design of all wills will be designed for the score to distinct Scopes and each will be stamped paparately. Gride Plan GP-1 Image: Ima	Number Number Number Interactions and interactions andinteractinteretion and interactinteretinteractions and interactio

t seeing the easements on the utility drawing. The water line is I very close to the edge of emergency access. If that is the edge of e utility easement additional width will be required

ease add a valve to the west side of the fire hydrant tee east of the I de sac

me places show fiber in with the dry utility on sheet 4 and on the wer sheets CATV.

ease add encasements for dry utilities at road crossing.

sponse says its addressed. Plans still reference DMC data on nich they relied. If SET is relying on DMC data and not taking sponsibility for the DMC data, then DMC need to stamp the plans.

eet SP-1 and others note 2 says to see Sheet G-3 for 100 yr flood es. There is no longer a sheet G-3

Ided a detail for the retaining walls. We have the following restions on it: How close are the walls to property line at the rious locations. How does soil moisture get out from behind the all? There is storm water proposed to run by the walls in several cations and in others over the wall. How will that impact the ability of the wall. Does a wall being over a drywell adversely space either? Does the wall have the strength to withstand the ads from the trash truck on the south line Does the developer ve a source for the native 14" flat boulders? Its called out as response says they are added stop signs Not finding them. Please

oks like there maybe a pan at the west end of Alpine Loop If that intended, it should be labelled and at least flow line elevations ovided.

sponse says they are added. Not finding spot elevations for the l de sac

sponse says they are added. Not finding alignment or elevation r the gravel road

ans are stamped. Make sure the updated ones are as well.

oks likes there are trees(and drainage) against by the retaining Ills. Are the walls designed to handle those

looks like water could flow under and over the retaining wall at ywell C. Is the wall designed for that.

tend the lines going to 550 to the property line

we does the water discharging storm the pond get to the river ere are drywells close to the river trail. Will the moisture dermine the walkway foundation?

Il trees near the drywells clog the wells with roots?

w does the water running along the north side of the gravel road t to the Drywelll H. Not seeing a swale

the south end east of the tear drop show a 17 degree angle on e water line. There is not such fitting

Water	W-2			Th	nis s
				th	ne fit
				th	ne lo
					e su
				int	forr
				be	etwe
App 2	Geotech			W	/e di
App 6	Wat & WW	V flows			pp r
				Rid	idgw
Plat					he p
				wo	ould

is sheet labels each fitting, but did not find a table that calls out e fitting type. It would be a good place to also put coordinates for e location of the fittings.

sure all the civil sheets (and the plat) have the same underlying ormation. We found differences on the plat vs the civil and ween Ballode and SET.

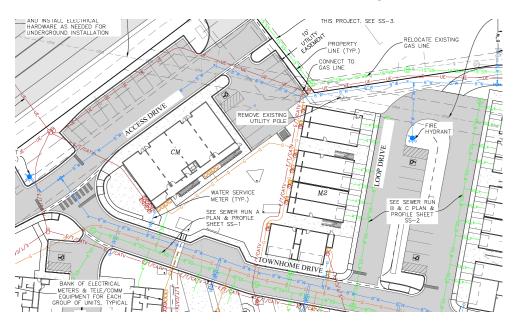
e did not find the appendices in the report.

p references Ouray County Code. That is not relevant for

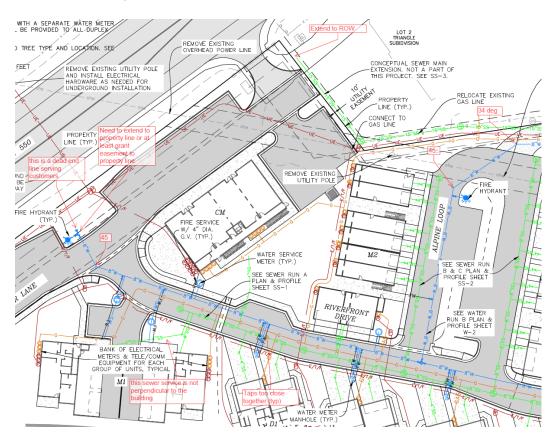
lgway. If want to use an equivalancy suggest use CDPHE on site e plat should include a legend of the line types. Color coding uld be useful too.

Utility plan changes

There are significant changes to the utility plans without any indication that they were made without Town request and the changes are contrary to Town standard. Below is a snapshot from the April 2021 planset. It shows the water line without a dead end and the sewer being extended to serve the last "lot"/ building.



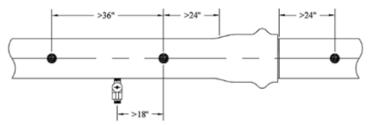
Below is from the plans submitted 6/15/21:



<u>Triangle 6/15/21 Submittal Engineering Review Attachment</u> Service Line Spacing

UniBell the PVC pipe organization in their tapping guidance shows the following:

- Position of the tap
 - ▷ For 12-inch pipe or smaller, the tap should not be located closer than 24" from:
 - > The back of the bell (where the bell transitions to the barrel of the pipe)
 - > The spigot insertion line
 - > Joint-restraint hardware



Proper Tap Spacing for 12-inch Pipe or Smaller

Review of Stormwater Documents

06. SW 1-2 – These sheets are storm water related. SW 1 shows the areas of the drainages but these do not match the SW1 sheet in the June Civil Set. Discrepancies need to be resolved.

07. Updated Drainage Report.

What is the basis for concluding the soils are Sandy Loam USDA Soil Type 1.

What is the reason for quoting the USDCM regarding volume reduction on pdf pg 3?

Please point us to the Water Quality Capture Volume calculations. The formula in the Town Standards appears to be missing some bracketing. We calculated it as follows:

WQCV = [0.65*A*a*(0.91*(i^3)-(1.19*(i^2)+0.78*i]/12

Here are our results vs what is shown on SW-1 of the Civil set. In looking at other references, it appears that the WQCV should not include the 0.65 at the start of the formula. If we take that out, the differences are much more significant. Please explain how you calculated the volume.

	A	a	i	WQCV acre ft	WQCV (cf) calc'd	Volume Per Sht SW-1 (cf) =	Dif – negative # has more storage than
						(sf*3*.38)	needed
A*	0.54	0.8	0.78	0.007	322.4	384	-61.6
В	0.37	0.8	0.78	0.005	220.9	205.2	15.7
С	1.03	0.8	0.78	0.014	614.9	584.82	30.0
D.	0.23	0.8	0.78	0.003	137.3	104.88	32.4
Е	0.33	0.8	0.78	0.005	197.0	75.24	121.8
F	0.5	0.8	0.78	0.007	298.5	348.84	-50.4
G	0.68	0.8	0.78	0.009	405.9	316.92	89.0
Н	0.45	0.8	0.78	0.006	268.6	155.04	113.6

Triangle 6/15/21 Submittal Engineering Review Attachment

* Volume is a direct value on sheet SW-1

In the Hydrology section, the report should address the major as well as the minor storm. .

How were the areas of the imperviousness table determined?

We appreciate the use of a conservative value of 100% for hard surfaces. What is the basis for 2% imperviousness for lawn area? The Town standard (Table 3) uses 10% for Parks Open Space and Natural Areas. For lawns with sandy soils with 2% or less slope, the FHWA manual uses 5-10%. We checked the calculations with values in the Town standards and the Urban Drainage manual and the resulting flows are very similar, so will allow the flows assumed in the Ballode Drainage report to be used.

There looks to be a data entry error for the intensity for the 25 year storm for the H basin on the table in the Appendix of the storm report. If that is not a typo, please explain the value.

The calculation for the sidewalk drain assumes a 15' wide by 0.4' high channel on a 2% slope and if its based on mannings its assuming gravity flow with an open top. Unless the design intent is to deepen the drain so it is deeper than the adjoining sidewalk, the depth of the channel is only 0.36' (6"-1.625" for the grate) and at that point the water would be in contact with the bottom of the grate. Using mannings and a 0.36' depth the capacity of the trough drops to 2.37 cfs and if you allow headroom to actually have open channel that would drop the depth to about 0.3' which results in a capacity of about 1.82 cfs. Please confirm whether the intent is to deepen the box and show the same on the plans or modify the box to handle the flows. Also be please confirm that inlet conditions into the box are not more flow restrictive than the values calculated with mannings.

We did not find any details for flow channels to and from the drywells in the design report or the civil plans. Please indicate where those are defined for the various channels and reflect same on the civil plans

The overflow culvert for basin A is shown on the sheet SW1 in the drainage report as 12" on the civil plans as 15". Per CulvertMaster, it looks like the 15" is needed.



July 2, 2021

Jim Kehoe, KEO studioworks PO Box 3371 Aspen, CO 81912

Sent via E-Mail to jim@keostudioworks.com

RE: Riverfront Village PUD – Planning Review of PUD/Preliminary Plat Re-Submitted June 15, 2021.

General Comment:

- 1. Please refer to all redlines on attached plan sets for additional comments and guidance on the comments provided in this letter. All redlines shall be addressed on the applicable plans in addition to written responses to all the comments contained in this letter.
- 2. There is inconsistency between plans related to the number and location of stormwater facilities and easements draining under the proposed trail an onto the property to the west. Please compare and address all discrepancies for consistency between plan documents.
- 3. The Town Attorney has provided comments on the plat not

The plat documents are being addressed as currently between Bo and Tom. Given the timing of this letter and response the inconsistencies and additional comments within the plat are noted in the attached and in progress.

Preliminary Plat:

- 4. Please refer to redlines on preliminary plat attached and make all changes identified and address all questions on those redlines.
- 5. The Town Attorney has provided comments on the plat notes and Development Agreement. Those comments, while not duplicated in our review comments, are shared by CPS and must be adequately addressed in the next submittal.
- 6. The preliminary Plat still indicates January 24, 2021 as the date the plat was completed. Please update the date to the latest version date.

Please see the attached response in the redline noted responses in the attached documents

Site Plan (Sht SP-1):

7. Please refer to redlines on preliminary plat attached and make all changes identified and address all questions on those redlines.

Please see the attached response in the redline noted responses in the attached documents

Architectural Plan Set Comments:

8. Buildings M1A&B and D1 are shown as within the 75' high water mark setback, but outside the 25' setback. Please provide an actual setback dimension from the high water mark to the closest point of these buildings. (Sec. 7-3-14(E) of RMC)

See this information added to the SP-1 sheet attached

Town of Ridgway Riverfront Village PUD Preliminary Plat/PUD Review Letter July 2, 2021 Page 2 of 3

9. The setback to the west property line to Buildings D1, D2, D3, D4, and D5 are taken from the center of the building and not the closest point of the building to the property line. Please adjust the location of and distance of measurements appropriately to identify the closest point of the building from the property line.

The SP-1 drawing now shows the correct setback positions for the D Buildings, as attached

10. While the required height limit is identified on all building elevations, the actual height, as defined by the RMC, must also be identified on the elevations. Please add a measurement of the actual height of each building on all elevation sheets for each building. The height is measured from natural grade to the midpoint of a pitches roof or the top of a flat roof. (7-3-15(A), footnote (4)(a) of the RMC)

The roof heights have been added to all elevation sheets and are within a separate file attached to this response.

Landscaping Plan Comments:

- 11. The number of trees and shrubs identified on Sheet L1.2 do not coincide with the number of trees and shrubs we counted on the plan sets. Please refer to Sec. 6-6-4(G) for the applicable standards and provide a table indicating the calculations for determining the required and provided:
 - (1) Number of Trees (1 per 2,000sf)
 - (2) Number of Shrubs (1 per 10' of street frontage)
 - (3) Distribution of trees and shrubs in the front yard area
 - (4) Required groundcover materials in the front yard *(min. 50% live vegetation*) and throughout the site as either living or nonliving materials.

Trees and shrubs as listed on Sheet L1.2 in the plant schedules were cross checked with plan sheets L1.2, L1.3 and L1.4. A total of 249 trees and shrubs are shown.

Standards in code Section 6-6-4 (G):

- 1. Trees
 - a. Total for project The site measures 187,167 of gross site area. (95) trees are required.
 (110) trees are provided.
 - b. Front yards
 - Building M1 1 tree is required for every 25 <u>l.f.</u> of street frontage. Street frontage = approx. 154 <u>l.f.</u> not including driveway. (6) trees are required. (5) trees are provided.
 - ii. Duplexes 1 tree is required for every 25 l.f. of street frontage. Street frontage = approx. 230 l.f. not including driveways. (9) trees are required. (7) trees are provided.
- 2. Shrubs
 - a. Shrubs currently shown are located primarily adjacent to the Multi-Use Trail adjacent to the river.
 - Building M1 1 shrub is required for each 10 l.f. of street frontage. Street frontage = approx. 154 l.f., not including driveway. (15) shrubs are required. (1426) s.f. of planting area is available to provide the required shrubs.
 - c. Duplexes 1 shrub is required for each 10 <u>l.f.</u> of street frontage. Street frontage = approx. 230 <u>l.f.</u>, not including driveways. (23) shrubs are required and will be provided in landscape areas in front yards of duplexes.

Town of Ridgway Riverfront Village PUD Preliminary Plat/PUD Review Letter July 2, 2021 Page 2 of 3

- 3. Groundcover materials
 - a. The site overall is covered with four main materials buildings, pavement, gravel mulch or plant materials (trees, shrubs, planting beds or grasses.) The gross site area of the site is 187,167 s.f. No areas of bare dirt are proposed within this project.
 - b. The square footage of cobble mulch proposed is 5,700 s.f. which is 3% of gross site area.
 - c. The square footage of plant materials proposed is 63,060 s.f. which is 33% of gross site area.
 - Duplexes There is a planting area of live vegetation of approx. 650 s.f. in between each duplex. There is a strip of cobble mulch between each driveway that is approximately 120 s.f. Side yards include cobble mulch against the façade where irrigation is prohibited due to geo-technical recommendations.

Landscaping at M2 and M3:

These buildings have a unique relationship and positioning on the site. The incorporation of the tuckunder parking and the consolidation of access drives between the building fronts is atypical of a street fronted layout. This building arrangement allows for expansive dedicated and shared green/open space behind each building. This site layout in turn reduced the paving area within the overall site. The design and configuration also maximized the unit daylighting and livability while providing the maximum amount of green/open space.

With this approach, we do not have a traditional front yard to these buildings. Thus, we do not meet the required tree planting quantities for front yards and may not meet the required shrub planting quantities. We do have dedicated planting areas positioned between garage doors that face the shared access drives as well as at the ends of each building. (See square footage numbers below for planting areas.) Plant material is planned for these locations which shall include shrubs. Trees are planned where space allows and where utilities are not in conflict, and thus are located within the expansive open space behind each structure. Trees are also located in an island within the access drive to buildings M2 and M3.

As calculated in front of each building, there is 594sf of planting area at M2, and 296sf of planting area at M3 between the garage doors and in front of buildings for planting. Additionally, there is 3,025 sf of island space between the access loop as a concentrated green planting area to break up the asphalt and access drive areas. In total, we have 450 linear ft of front and side yard street frontage and a combined 3,915 sf of overall planting area.

Lighting Plan Comments:

12. Please update the key table on sheets L2.1, L2.2, and L2.3 to include correlated color temperature (CCT) of each fixture. Sec. 6-5-1(A)(5) of RMC limits the CCT to 3,000 kelvin per fixture. If the CCT is what is indicated as the Kelvins/Unit in the current chart, please replace fixture types with units that meet this limitation.

	KEY		FIXTURE	QTY	LUMENS/UNIT	CCT IN	
G.F.	2nd.F.	3rd.F.	FIATORE		Lomento, ontri	KELVINS/UNIT	
-	-		STEP LIGHTING -ALL FIXTURES MOUNTED 12" ABOVE WALKING SURFACE	44	68lm	3,000K/EA	
Ø	0	0	BUILDING ENTRY/EXIT -WALL SCONCE	103	1167lm	3,000K/EA	
	NA	NA	COMMERCIAL FACADE LIGHTING -MOUNTED ABOVE 6'-6" -WALL SCONCE	5	800im	3,000K/EA	
	NA	NA	PATHWAY BOLLARD	10	280lm	3,000K/EA	
Δ	NA	NA	POLE LIGHT -PEDESTRIAN HEIGHT 11'-6"	6	500lm	3,000K/EA	
	NA	NA	SIGN LIGHTING -DOWNLIT/SHIELDED	9	225lm	DUAL CCT 2,700-3,000K/EA	

NOTE:

- 1. TOTAL LUMENS: 135,018 lm
- 2. LUMENS ALLOWED (25,000lm/acre+2,000lm/unit): 181,500lm (4.3 acres, 38 units)
- 3. QUANTITIES IN TABLE REFLECT LIGHTING ON ALL FLOORS

Master Signage Plan Comments:

- 13. Sign permits shall be obtained through the Ridgway Building Department prior to installing any sign. Approval of the PUD, Master Sign Plan, or Landscaping and Lighting plans do not approve any sign for installation. (*Sec. 7-3-17(J)(3) of RMC*)
- 14. Amend the total sign area of the Entry Monument Sign to be 32sf. It currently says 30sf which is not correct.
- 15. Please clarify the signs on the elevations provided on sheet SM-103. The narrative states that there are 5 wall signs at 20sf each for a total of 100sf. However, the sheet calls out 2 signs on the northwest elevation, 1 sign on the north elevation, and 4 signs on the east elevation for a total of 7 signs at, presumably, 20sf each for a total of 140sf. Please verify the total number of signs being proposed and clarify elevations on Sheet SM-103.
- 16. The Master Sign Plan seeks to allow a total of 196 sf of sign face area. Sec. 7-3-17(J)(3)(e)(ii) allows up to 30% increase from the max allowed area of 150sf, or 195sf. Because this request exceeds administrative authority to approve a Master Sign Plan, this will be a request made to Planning Commission and Town Council through the PUD/PP review process.

13. Will coordinate permit at the time dictated by the town process

14. Corrected 16 sf both side equals 32 sf

15. The elevations number 1 & 2 indicate the only elevation north and east to have signage, 5 signs total. Drawing number 3 is a enlarged detail of the 2 possible sign configuration shown on elevation 2 & 2.

16. Please see insert below and the adjustment to the neighborhood sign at the park to bring the total sign SF within the 30% increase for master Sign Plan.

COMMERCIAL SIGN CALCULATIONS

COMMERCIAL SIGN TOTALS:

1 & 2: 52 SQUARE FEET 3: 140 SQUARE FEET 192 SQUARE FEET TOTAL

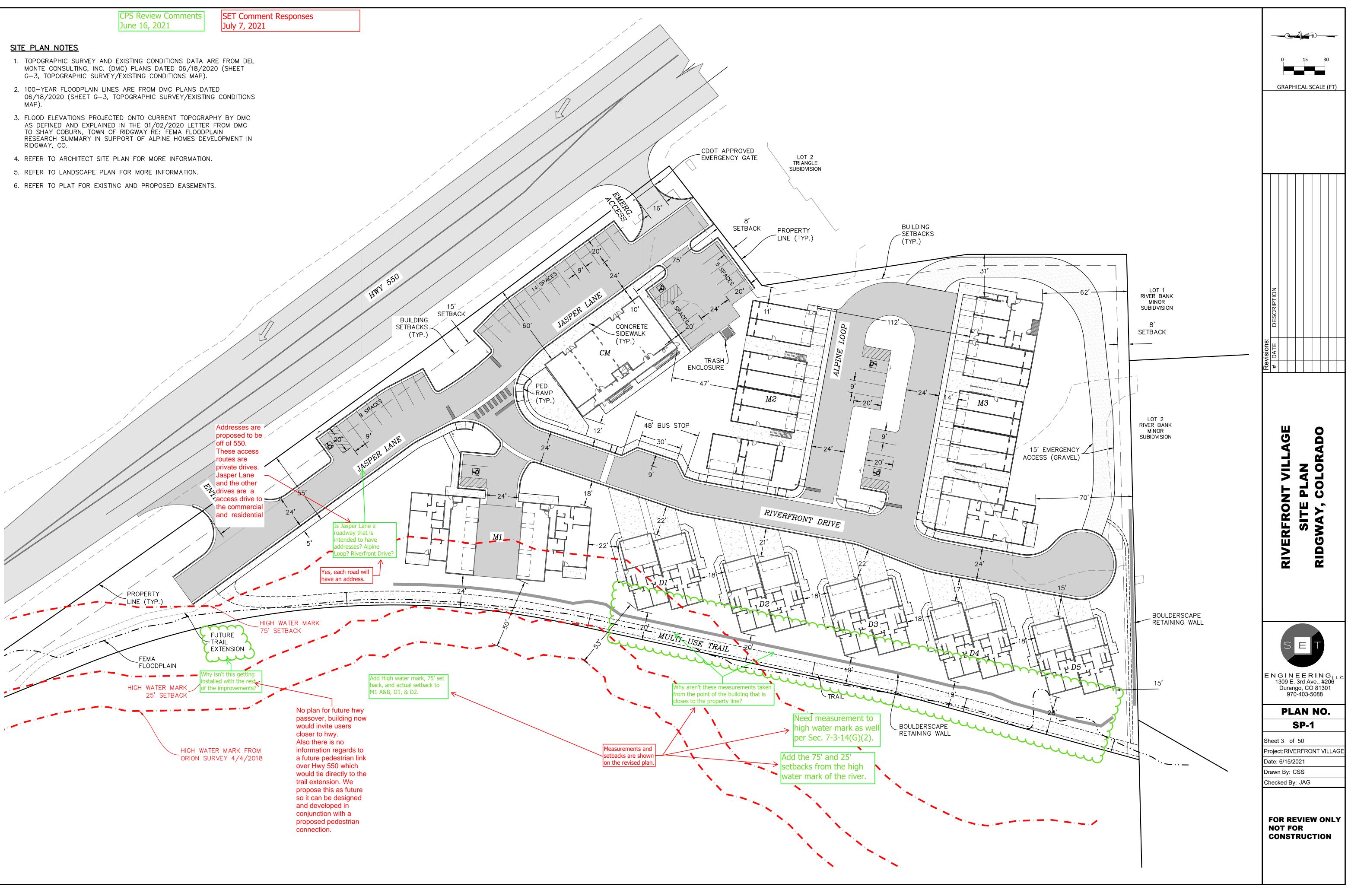
PER 7-3-17 E (3) SIGN LIMITATION IS 150SF. WITH MULTI TENANT PROPERTY THE SIGN MASTER PLAN SEEKS APPROVAL OF APPOX. 30% INCREASE TO BE APPROVED THROUGH THE SIGN MASTERPLAN PROCESS. (150 + 30% (45) = 195 sf sf total)

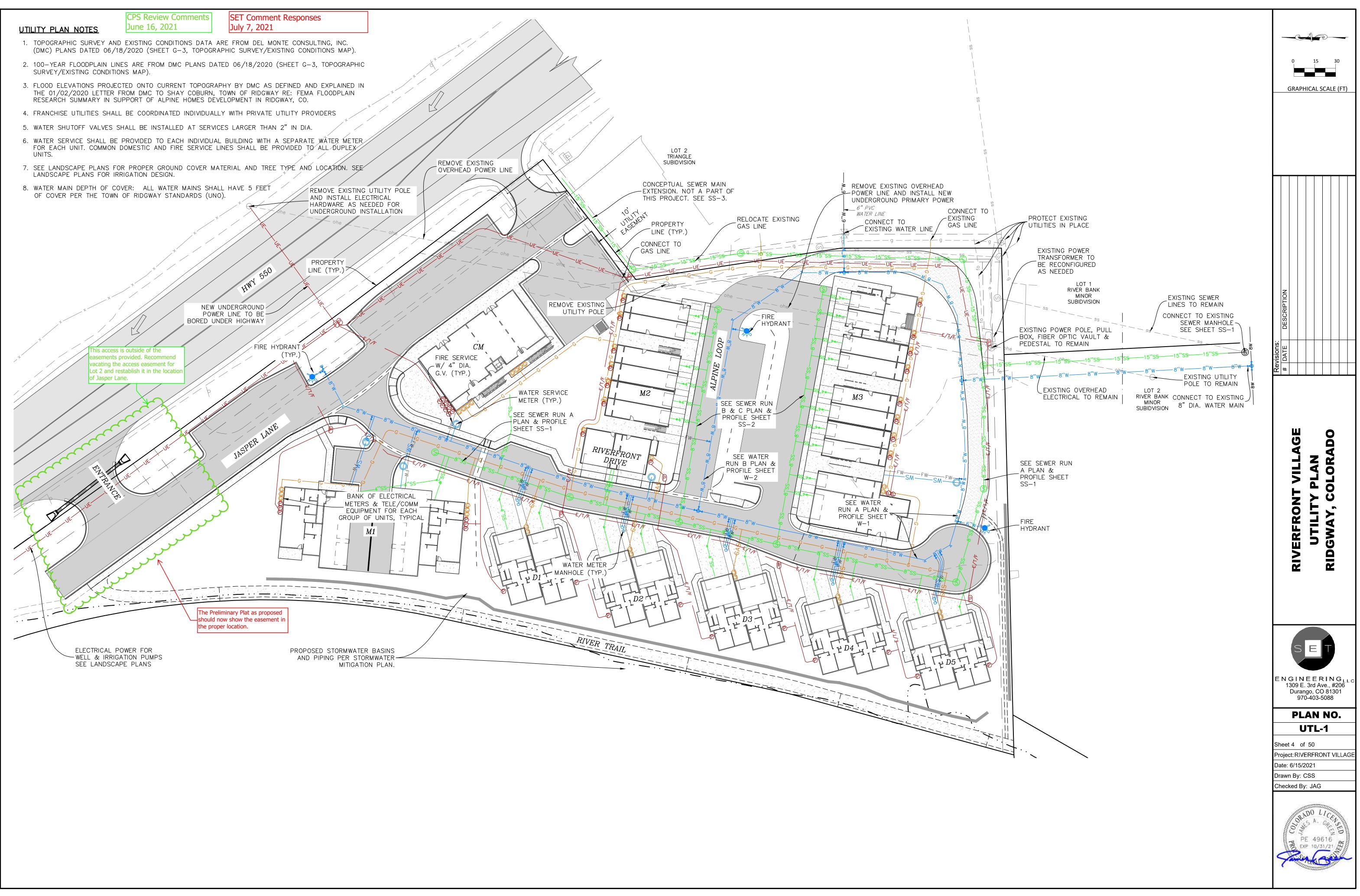
MASTER SIGN PLAN

SM-101



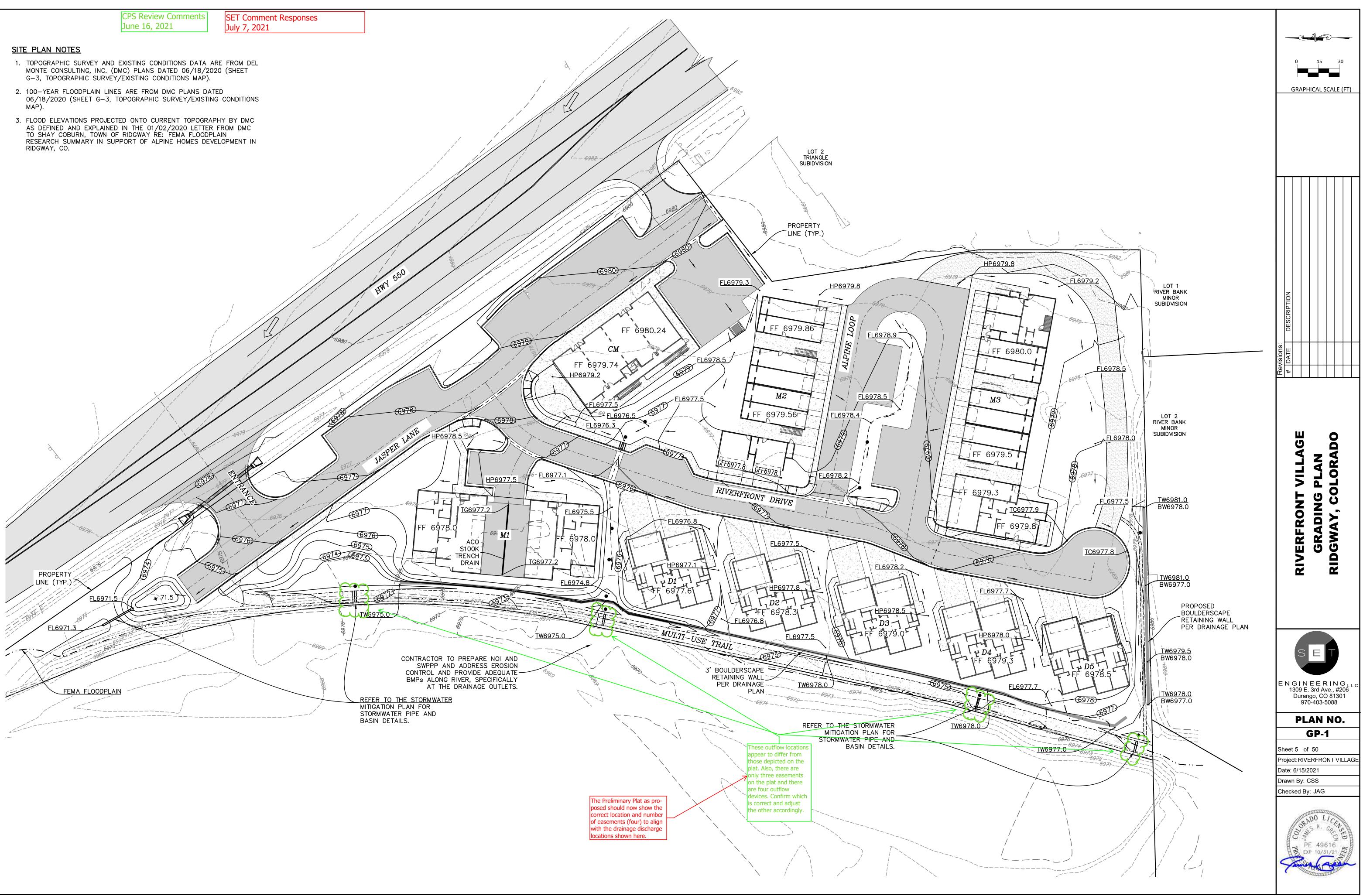
- MONTE CONSULTING, INC. (DMC) PLANS DATED 06/18/2020 (SHEET G-3, TOPOGRAPHIC SURVEY/EXISTING CONDITIONS MAP).
- MAP).
- AS DEFINED AND EXPLAINED IN THE 01/02/2020 LETTER FROM DMC TO SHAY COBURN, TOWN OF RIDGWAY RE: FEMA FLOODPLAIN RIDGWAY, CO.







- MONTE CONSULTING, INC. (DMC) PLANS DATED 06/18/2020 (SHEET G-3, TOPOGRAPHIC SURVEY/EXISTING CONDITIONS MAP).
- MAP).
- AS DEFINED AND EXPLAINED IN THE 01/02/2020 LETTER FROM DMC TO SHAY COBURN, TOWN OF RIDGWAY RE: FEMA FLOODPLAIN RESEARCH SUMMARY IN SUPPORT OF ALPINE HOMES DEVELOPMENT IN RIDGWAY, CO.





- To: TJ Dlubac Community Planning Strategies, Principal / Owner 970-744-0623 tdlubac@planstrategize.com
- From: SET Engineering
- Date: 07/07/21
- RE: Riverfront Village PUD Engineering Responses to Planning Review of PUD/Preliminary Plat Re-Submitted June 15, 2021.

Mr. Dlubac:

We want to thank you for your time and attention paid to this matter. SET Engineering (SET) has received comments and documents provided to the Applicant on July 2, 2021, that were in response to documents submitted to the Town for the Preliminary Plat of Riverfront Village PUD on June 15, 2021. SET is providing responses to the items contained in the planning letter titled "Riverfront Village_CPS Comments_07022021.pdf" and the engineering review attachment letter titled: "R-Triangle engg rev attach 063021.doc". Town staff review time only allows for these two (2) out of three (3) documents to be addressed prior to the Planning and Zoning Commission Special Hearing scheduled for July 13th, 2021. It remains the intent of the Applicant to address/satisfy all 116 of the engineering review comments as a condition of final permit issuance. Below are the responses to the provided comments in the aforementioned documents.

General Comment:

2. There is inconsistency between plans related to the number and location of stormwater facilities and easements draining under the proposed trail an onto the property to the west. Please compare and address all discrepancies for consistency between plan documents.

Response: The number and location of stormwater facilities is shown correctly on the drainage/civil plans. The drainage easements as shown on the plat have been updated to be consistent.

Site Plan (Sht SP-1):

7. Please refer to redlines on preliminary plat attached and make all changes identified and address all questions on those redlines.

Response: The redlines and questions are responded to/addressed in the attached Site Plan. We have coordinated with the surveyor to correctly display the drainage easements on the plat.



Utility Plan Changes:

Town Comment: There are significant changes to the utility plans without any indication that they were made without Town request and the changes are contrary to Town standard... It shows the water line without a dead end and the sewer being extended to serve the last "lot" / building.

Response: The water line adjustment referenced by Town staff occurred for the following reasons:

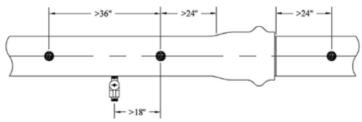
• The mechanical engineer of record, Big Horn Engineering, indicated the the loop as previsouly proposed was not required. Additionally, the "loop" provided by the previous design is not a true loop, but rather functions more as a "lollipop". Thus, moving the tie-in location from its previous layout to a different location as is currently proposed does not impact the hydraulics of the water system.

• The sewer main was shortened to resolve a water main crossing conflict. While it created a nonperpendicular service line, the water main conflict was given higher priority.

Service Line Spacing

Town Comment: UniBell the PVC pipe organization in their tapping guidance shows the following:

- Position of the tap
 - ▷ For 12-inch pipe or smaller, the tap should not be located closer than 24" from:
 - > The back of the bell (where the bell transitions to the barrel of the pipe)
 - > The spigot insertion line
 - > Joint-restraint hardware



Proper Tap Spacing for 12-inch Pipe or Smaller

Response: The civil plans will be revised to show that all water services and taps shall be consistent with thise tapping guidence from UniBell.

Please contact SET Engineering directly with any questions related to these matters.

Charlie Shew, EIT Civil Designer, SET Engineering (970) 234-8418 James Green, PE Project Manager, SET Engineering (970) 844-0306

				We agree / We will address			
						Civil Response Legend	Responded to in SET Engineering Response Narrative Responded to in Uncompagre Engineering Response Narrative
							Outside of Civil Scope
	Sub Section	Pg	Utility	Comment	Notes	TOWN RESPONSE 3/20/21	Need additional clarification with Town Staff TOWN REVIEW 6/22/21
	300 30000		Wat, Sew	Comment	ivites		Changed several items without indicating changes or justifying. Water line now has a line that is not looped. This line needs to be looped. Also shortened the sewer line on Duplex so building M1 sewer service is not perpendicular to the main. Sewer main needs to be extended to allow the sewer service to be perpendicular to the main. See snapshots of the March and June plans attached
1a	Utility Plan	Util-1, SP-	All	Provide information to locate all improvements and utilities horizontally and vertically e.g. sidewalks, roads, parking, water, sewer, storm in the field. All infrastructure fittings and junction angles should be noted to make sure they match available fittings.	We'll provide once the final alignments have been resolved. The Contractor will be given parameters, but we don't expect them to hit our tangent lengths to the hundredth of a foot and will not be describing it that way. The contractor will have enough leeway to adjust lengths as field conditions dictate, but must build per Town Standards. A special point will be made to the Contractor so that understands that they should only use available fittings.	complete construction plans that demonstrate that the	SET response says see civil plans. New planset includes alignment sheets, but there is no basis of bearing, no tie to a monument for water or sewer line. Some of the lines do not scale the distances in the table. If one distance or angle is wrong, the rest of the utility will be wrong. Urge them to use coordinates for fittings and manhole locations. Angles for manholes are not on the sewer sheets, just on the alignment sheet in bearings rather than in decimal degree which will challenge suppliers. Please provide the cad file (acad/C3D 2020 format) you intend to provide to the contractor so we can confirm there is sufficient information to layout the project.
1b	ouncy run	*	~0				Fittings are not located or the angle of the fitting listed. Several of the fittings scale to an available fitting but one is 32 degrees which is not an available angle. Also they show a water line on a 200 ft radius. That is a little tight to make 20 ft DR18 pipe bend. (looks to take about 5-6 degrees per jt)
2			All	PDF page names do not match listed sheet names. These need to match for the next review.	The Sheet Index on the cover and the Sheet Names match exactly. Please provide further, specific clarification.	Sheet 7 says its the cross sections, but pdf title is labeled SW1, sheet 8 is frontage rd in the title and SW2 on the pg. etc. After the first few pages, the pdf titles are shifted.	There continue to be issues with the name for the sheet in the bookmark system not matching the sheet
3	Resp Append	12	Building, water, Fixture Count	Confirm per building code that a commercial space only requires one 1 bathroom and that a restaurant requires just 1 sink (lav) and 1 toilet (WC) total?	Confirmed per 403.1 2018 IPC & IBC 2018	Looks like mercantile requires 1 WC per 500 sf and a lav for every 750 sf. Restaurants look to require one male and one female WC per 75 . https://up.codes/s/minimum-number-of-	Response says "Per IBC 2018: Occupant Table 1004 Mercitile: 3281 sf/ 60sf per person = 54 occupants. Per plumbing code 29021 the references are for Occupant, not SF. Thus 1 for under 500/ 750. etc. Its my understanding that mercantile uses are very limited and that almost any other classification would require additional restrooms. Suggest the Developer plan for the additional fixtures units when sizing the tap.
4	Site Plan	SP-1	CDOT permit	The access width needs to be 35 feet (not the 30 ft shown on the site plans).	We'll revise the plans per CDOT's direction, Town has stated that they will will defer to CDOT's requirements.	should be constructed as part of the development needed in advance of final plat approval.	Permit extension secured. CDOT extension warns them that the permit will expire in a year and to submit plans well in advance of intended construction. Still think they should get CDOT approval as part of Town approval. Response says they will develop required plans once get Town approvals. The accesses are needed to serve the buildings and the work needs to completed prior to final plat approval. Suggest the developer ask the PC and TC if CDOT approval can be a conditional of preliminary plat approval with an extended deadline to complete the CDOT approval with the understanding that there are risks in the delaying the CDOT approval process and that the construction needs to be completed before final plat approval.
5	Site Plan	SP-1	CDOT permit	The access needs to be perpendicular to the road for 40 feet. We scale about 36'.	We'll revise the plans per CDOT's direction, Town has stated that they will will defer to CDOT's requirements.	н	
6	Site Plan	SP-1	CDOT permit	In profile, the 1 st 20 ft need to be at 2%. Sheet RD-1 shows 3.93%.	We'll revise the plans per CDOT's direction, Town has stated that they will will defer to CDOT's requirements.	"	
7	Site Plan	SP-1	CDOT, Streets, Ingress	The Site plan in US 550 ROW needs to be updated to match the design CDOT requires	We'll revise the plans per CDOT's direction, Town has stated that they will will defer to CDOT's requirements.		
8		UTL - 1	e/CATV	Line crosses M2+M3 road at a diagonal, all utilities should be perpendicular or parellel to easement lines/roads.		See the diagonal in the parking lot east of the CM blg	Still an change of direction of 32-33 degrees. Also a 200' radius curve depending on the length of the curve may require a fitting.

10	Ck list resp	1	Fire	Overall comment 3b - did not find the new fire truck diagram	Specific standards/turn radius/etc. were not available, so we designed to the Telluride Fire Protection Distrcit standards. Are there specific templates that we should be designing to? We had assumed that this would be accomplished during a Fire Department review and did not see any requirements on the Fire Department website. We will add a specific diagram if provided.	The tender has 20 ft wheelbase and the ladder truck has a 17 ft. These are the two least flexible of their trucks. Please provide fire tracking for both these trucks to get into and out of the position to serve the buildings. This can be done manually using parameters in the Policy on Geometric Design or with tracking software	Included tracking for a fire truck. Did not find the wheel base length. There are a couple places where the truck nose encroaches into parking spaces.
							In looking at the fire truck tracking, noticed that if there is a blockage of duplex, all access to and from the south is blocked. The emergency access only serves the road parallel to the highway. We recommend that the Developer explore at least an emergency exit using the utility easement to the south Lot 1 between the bank and the Riverview Plaza.
11	Dynamic	16	Fire	Please share raw data from the field test, including pitot size used.		The cut sheet provided says the pitot for the device was fixed, but the tester was concerned that the pitot was in backwards. Which additional pitot was used during the test?	Regarding the fire hydrant testing, please provide the size of the pitot tube used during the test. We know one was used because the tester was concerned he had it in backwards.
12	Bighorn Resp	15	Fire	We have reviewed Bighorn's response to our previous comments regarding water service sizes. To approve the engineering documents, the Town will need to review all calculations for sizing the water services and the sizing will need to be finalized for approval. If the meter is upsized from what would be needed for the domestic service, a compound meter will be required. Whether the townhouses will be sprinkled needs to be determined and reflected on the engineering plans before the engineering plans can be approved		To approve the engineering documents, the Town will need to review all calculations for sizing the water services and the sizing will need to be finalized for plan approval and reflected on the construction plans that are part of the preliminary plat approval. If the meter is upsized from what would be needed for the domestic service, a compound meter will be required. Whether the townhouses will be sprinkled needs to be determined and reflected on the engineering plans as part of the approval of construction plans. The construction plans need to show what needs to be installed where.	App 4 is a letter from Gordon Mull that says the water mains are properly sized and lists sizing for the fire taps. The letter needs engineer stamped calculations to support the conclusions. Contrary to App 4, App 5 says that the fire sizing is still approximate and subject to change. The line sizing needs to be final and reflected on the engineering ;plans. App 6 is addresses water and sewer demand and includes a list of fixtures for the various buildings and fixture counts. The fixture counts match what Town staff sees in IPC. This App should include who prepared the information. App 7 included calculations Bighorn but those differ from the numbers it App 6. These discrepancies need to be resolved and the corrected documents submitted and the appropriate line sizing shown on the civil plans.
							Note that 4" taps in an 8" main require a tee and any tap over 2" and under less than half the diameter of the pipe need either a tapping sleeve or tee on the main. Several fire lines are listed in Mr Mull's letter to be 2.5". Please confirm that they can find 2.5" taps.
13			Fire	Fire suppression info appears to have been removed from civil plans, we will need the fire suppression system general layout, sizes, etc.	The civil will show the supply to the exterior of the building based on Bighorn's final design.	Please include size, location and calcs for the fire taps as part of engineering submittal for prel plat approval	Fire lines are on the plans. Not finding the size of the fire lines or the water services on the civil plans.
15	Geni Notes	C-2	General	General #12 There are detailed requirements for record drawings in the Town Standards General Requirements section 19 that should be included or referenced in this note.	The note will reference the Town's requirements.	Good	Regarding town review comments on the general notes, the June plans have deleted all the general notes which is OK. However, the new planset included copies of most of the town standards on their drawings. The Town standards should be referenced perhaps with a hyperlink but not included in the planset. The standards are updated from time to time and if this project does not start before the next update, the documents on the planset would be out of date. We expect the contractor to comply with the updated documents.
16	Resp Append	9	Landscape, Irrig	Pdf pg 9 #5 states that irrigation water will be purchased - What happens if the seller refuses to renew?	See attached DHM Design replies	Leasing augmentation water from TCW for 20 years.	Please explain what happens if something changes with the availability of augmentation water
17			Landscape, irrig	What happens it the sener reloces to relevel Not finding the irrigation or wining for these. Do they conflict with other utilities? Need to show irrigation piping with other utility plans (or show irrigation with the utilities on the landscape plans).	See Irrigation Plan. Prior submission at Prelim. Plat 6-15-20	Please either show the irrigation on the utility plan or vice versa. It reduces the time it takes Town staff to review for conflict.	Or aggmentation water DHM included the utilities in background to irrigation. Thank you. The irrigation does not have much separation from the water main on the east side of the parking loop for the M buildings. Plans should reflect the separation and how it complies with the Town standards for spacing and easement requirements. There are a couple of irrigation crossings which need to be encased and should be reflected on the utility plan and profile sheet. We appreciate that for the most part the irrigation is away from the water and sever. By the entry, the irrigation is very close to underground electrical. There are a few places where irrigation and dry utilities are relatively close together. Do the dry utility companies have any concerns?
18		RD-1	Landscape, Notes	This sheet and others have reference to the landscape	See Irrigation Plan. Prior submission	Found them. Thanks.	
			Landscape/ retaining wall				There are trees shown beside the retaining wall. How will that impact the walls
20		UTL - 1	Natural Gas	Note east of M2 says connect to gas line but it is hard to see the existing line. This does not appear to be a good		Please address	Connection point for the gas line is still is not pointing to a gas line
21	Genl Notes	C-2	Natural Gas	Please confirm whether Black Hills allows casing of gas lines.	Yes, at road crossings	The gas company has changed hands since the last time new gas was installed in Town. If Black Hills allows encasements, please use them.	Note has been removed. The town continues to prefer that gas and dry utilities under roads be encased.

	Utility Plan All	Util-1	Notes Setbacks	Notes #4 & #8. The utility plans reference working with the dry utility companies separately and that the lines on the plans are currently schematic. In order for the Town to approve the easement layout, layout of sewer and water, we need to know where other utilities will be. The engineering plans need to show the actual location of all the infrastructure and have the Add all setbacks to the civil plans - at least the setback along property line shared with Town appears to be missing	We are not expecting the town to approve Final Utility easements until the final locations of the utilities are determined. We'll add the perimeter setbacks.	Please include the dry utilities on the construction plans. We need to confirm they are properly spaced and do not conflict with what will become Town infrastructure. Similarly the easements on prel plat should should what is expected to be on final plat so we need to easements will meet Town Standards. The intent is there not be changes in utility routing after prel plat aproval Thank you	Along the south line and part of the east line there are places that the gas and electric lines scale to not have adequate separation to water and/or sewer. Please provide the required minimum separations. Setbacks should be on the plat. They are partially shown on civil sheet SP-1
31		SS-1	Sewer	Run A of the sewer profile shows flow lines for the 8" line and 15" at the same elevation. Design criteria require when different line sizes come together in a manhole that the crowns, not the flow lines, of the pipe match. This adjustment will change the elevations of the A run.	the change, but would like to know if the Foam- Lok will be	See 33.6 of Ten State stds which requires matching the 0.8 point between the pipes or matching the hydraulic gradeline. The easiest way to match hydraulic grade line is just to match the tops of pipes and that is easier to construct. You can use the 0.8 point if like or match tops. If you do not match hydraulic grade lines and the 15" is flowing close to full, the 8" line will be submerged.	Where there are different size inlet pipes, the grades for the inlet pipes have been adjusted to match the tops. There are impacts on water and sewer crossings that are noted elsewhere
32		SS	Sewer	Sewer profiles should be stationed from the low end to the upper end. The plans have some lines going downhill and some going uphill.	Please refer to that section in the Town standards and we will revise according to those requirements.	I have not seen sewer stationed from upstream to downstream before and so we did not specifically list it in the standards. If you wish to leave it with some lines going one way and others eoing the other you may will lust look unusual.	Its still backwards. Hopefully this atypical way of stationing will not confuse the contractor
33		SS	Sewer	The sewer profiles need to show the elevation of the water service lines and any other utility crossings as well as the water mains that cross the sewer.		The sewer profiles need to show the elevation of the water service lines and any other utility crossings as well as the water main so that the conflicts can be identified and resolved during design. In addition the plans should note where encasements are needed.	The sewer and water profile drawings are required to show all crossings of other utilities. The updated sewer plans show water mains but not service lines, irrigation lines or dry utilities.
			Sewer				The June plans shortened the length of the sewer main on Riverfront so that the service line to the north part of building M1 is far from perpendicular to the main. This is a new design and is contrary to Town standards. The sewer should be extended as needed to allow for a perpendicular service line
34	Utility Plan	Util-1	Sewer	What is labeled as a "Conceptual Sewer Main Extension, Not a Part of this Project" is to be included with this project, not proposed or conceptual, per Town Standards (General Requirements, Section 9.11). The line needs to extended all the way to the 550 ROW. This main line looks to be outside the Tavaci property line in a 10 foot easement, 5 ft on each side of the property. The line is shown with 10 - 12' depths. In addition, the outside of MH 14 scales about a foot from the easement boundary. The easement width does not meet Town Code or Standards and it is not clear how it could be constructed or	Being new to this project, we did not think that this section applied since, according to that code, the sever needs to be extended to permit future extensions. The property beyond is already being served. It's a complete separate line that has no bearing on this project - that's what the note is referring to. We aren't using it and have been unable to verify what it serves and the as-built location of any tie-in. We have requested the full plans for this sewer (not just the $2 - 8 - 1/2 \times 11's$ which we did receive) in order to see how it' installation is necessary to provide service to the east side o the highway. Due to the depth that we have been toid, this	consensus this can be addressed	Th Town provided a location on the east side of the highway and the Riverfront design team provided a design through lot 1. Mr Cantor suggested with his acquisition of Lot 2, there might be a more efficient route. By separate email, the Town will share their thoughts on potentially more efficient routes.
37		SS	Sewer	Sewer plan view should show the angles between lines in and out so one can tell if lines meet seperation and drop requirements. If the angle of deflection between pipes in a manhole is more than 45 degrees, there needs to be 0.2' of drop.	We will add this note and verify drops.	Thank you	The town standards require that the manhole plans show the angles between the pipe. These should be added to the plans
38		SS-1	Sewer	It looks like there will be some conflicts between water services to the duplexes and the sewer main.	If there is a conflict, the water service line will be adjusted per Town standards.	Conflicts and encasements should be identified on the plans approved for construction as part of preliminary plat approval	There are conflicts between water and sewer service lines and mains. Plans need to show how the water services cross the sewer main or the sewer services cross the water main. The sewer service to building CM will go over the water. The sewer service will need sealed end encasement. The sewer services going to building M2 look to run into the water main. Plans should reflect the crossing and how any conflicts are resolved
							Per General requirement 9.02 the sewer main or service should be encased unless that is not possible. There are several locations where the plans that call for the water to be encased. These need to be changed to encasing the sewer. Be sure to check that there is room for the encasement and bedding between the encasement and the water line.
39		SS-1	Sewer	We did not find stations for the service wyes to building C or M.	This will be coordinated when the final mechanical is done. The contractor will have the leeway to move the wye as long as he is	These need to be on the engineering / construciton plans. The taps are made with full bodied wyes that need to be installed as the sewer main is installed.	Several sewer services are stationed. The one to building CM is not. Please add a station for it and add any others that are missing.
			Watter Sewer				What is the basis for the water line stationing? For sewer Run C, there does not look to be enough room between the bottom of the water and the top of the sewer to even case the sewer (or water). Plans should show how this conflict will be resolved.
40		SS-1	Sewer	If one extends the sewer service in a straight line toward the duplexes, some will miss the building. Rather than add	We appreciate the suggestion, but service lines are allowed to have bends in them.	Bends with cleanouts are allowed. The long term owner of the unit will be happier if the line has few or no bends.	

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41				The sewer service to "C" looks to have about 2' of cover at the building. Three is typically the code minimum and because it's a restaurant, it may need additional drop for	We did not have the invert information at the time of the design. Unsure of how the Town calculated the cover, but this service will be built to Town standards.	Please provide the calculations that show the cover.	Developer response says they checked but did not provide any calcs. We checked the ones that looked like they could be problematic and they look to have at least 3 feet of cover which was the UPC minimum;
		SS-1	Sewer	the grease trap.			not sure on the IPC.
42		SS-1	Sewer	We will need to check minimum cover at the buildings for sewer services again once the grades are adjusted to match the tops of pipes at MH A4.	We'll provide updated plans as soon as possible for Town review. Again, the mechanical plans are not finished.	The plans for preliminary plat approval are the construction plans and should be complete. Need to know if and how it will work before start construction.	Please ensure that the sizing for the water services and fire lines are shown on the plans.
			_				
43		SS-1	Sewer	We will check the math for the sewer profile once its been adjusted.	Thank you.		Please correct the discrepancy between the stationing and the sewer length between manhole at SH 62 and MH O-1-D
44		SS-1	Sewer	Where there is more than one pipe coming into a manhole,	We'll add to the plans.	Thank you	added
45				label which invert goes with which line. MH A-13 is shown outside the roadway and presumably the easement.	Final Easements have not been written. A MH outside of a roadway does not indicate that it will be outside of a Final Easement.	The easements should be shown accurately on the preliminary plat and match what is needed for the utilities. The Town needs to be sure the easements meet the widths required in the Town standards	The easements should be shown accurately on the preliminary plat and match infrastructure locations and match as well as meeting the spacing requirements in the Town Standards.
47	Resp Append	9 9	Sewer Sidewalk	Sidewalk along river needs to be 8' wide and 6" think concrete per Town Standards for GC district. See the Town's sidewalk typical. The shoulders should be no more than 2% grade.	Acknowledged.	Please update the typical drawing for the river walkway to reflect that. Also include the foundation for the concrete on the typical. Please also update to make sure the drainage is not running against the walkway and destabilizing it.	There is a river trail detail on the new planset. The concrete is 8' wide not the 10' Joel mentioned on the phone call. Which is the Developer's intent.
			River Trail				Base under the trail should be Class 6 not class 2. Please add a dimension for the width of the base on each side of the concrete walkway.
			River Trail				The river side of the trail has a 2' catch slope on the river side and the lot side there is a 2' slope to a drainage and 2' up to a retaining wall. The plat shows a 10' easement. A minimum 14' easement is needed.
			River Trail				Instead of the 2% shoulder on the trail that the town mentioned , the show a 2:1 side slope. That is a hazard and not acceptable.
50	Typical sections	X-1	Sidewalk, Duplex Rd	What is the cross slope on the sidewalk? We recommend a max cross slope of 1.8% for sidewalks so if there is a construction glitch it should not exceed 2% which is an absolute max under ADA.	The cross slope is shown in the Typical Sections on the Cross Sections Sheet. It's a 2% max, not a 1.8% max. We typically don't design for glitches. Instead, we list the allowed parameter.	Exceeding the 2% leaves one at risk for an ADA issue. On private pproperty the issue would be a private one. The Town will check that the 2% is not exceeded on the Town trail where the Town would have responsibility. If it does exceed 2% as constructed, it will be required to be replaced.	Plans show 2% cross slope on the trail typical. Town staff will need to check that the slope is not exceeded once constructed. If it does exceed 2%, it will need to be removed and replaced. We continue to recommend that the design slope be reduced to at least 1.8%
51		SW-1	Storm	Please provide all calculations associated with the stormwater drainage design. Be sure to include: historic, proposed, design storm, storage volume, peak flows, design flows, capacities, velocities etc.	Per Town standards, nioot all of these thigns are required. Il information si missing, it will be added. We will provide a gutter calculation to put everyone's mind at ease. The Town does allows 6" depth at gutter flowline and the surface drainage and road grading does not allow for the site to back-up anywhere. If the Town would like a specific spot analyzed, we'd be happy to provide the cales.	Pg 3 section 1 2nd paragrpah requires all proposed development submit a drainage design report containing all	New storm water report submitted. All new comments on the storm system are included in narrative on the attachment
52		18-21	Storm	Lawn imperviousness should be 10% per Town Standards, update calculations	Please refer to the separate WQCV Letter.	The Town set the lawn (parks and open space) imperviousness at 10% because the soils in Ridgway are often quite clayey. Where the Town has a standard it supersedes general reference documents. If you have detailed site specific information on the imperviousness, and wish to request a devaition, please provide	New storm water report submitted. All new comments on the storm system are included in narrative on the attachment
53		SW-1	Storm	The drywells are intended to provide water quality capture. How are they cleaned and kept performing as intended?	Filter fabric was added to the detail. The fabric can be removed and replaced. This, like many other things, will simply be maintained by the Owner.	the support documentation and the Town will review Be sure that maintenance is covered as part of the CCR's. Because if they plug, water quality treatment will not occur, maintenance requirements should be included as a plat note	Looks like plat note 6 covers this.
54			Storm	How does the drywell overflow get out of the area between M2 and M3?	th as to fill up to the point that it flows into the pan that has been extended to that area for just such a purpose.	Please ensure it does not flood the ADA alley.	Developer response says 2% was used when calculating the weighted average 100% was used for everything else, See calcs ins spreadsheet". Please explain how this addresses the question of whether water gets into ADA stalls.
56					It's called out - Class 67. 38% is an industry standard. Does the Town use a different percentage? 38% is used by the Town of Telluride for this exact purpose.	What is the grading for Class 67 material proposed A class 67 can be anything 3/4" or smaller. The void ratio depends on the amount of finer material. If the design is based on a 38% void ratio, please add a note to the construction drawings that material will need to be tested to confirm the void ratio during construction.	Developer response says" it flows into a pan". Please explain how this addresses the question above the void ratio.
		SW-1	Storm	What size gravel is in the drywells? What is the basis for assuming the void space is 38%?			

58		A2.3 M1A a	Storm	Is there anything present to prevent rain, snow and ice from falling into parking lane?			Developer response to what keeps the rain and snow out of the parking lane says see App15. That is just the snow clip package. That won't retain rain.
59		SW-1	Storm	Basins need to be sized according to upstream contributing area and imperviousness not the site average of 0.57.	Please refer to the separate WGCV letter	The different basins have different imperviousness. For example basins A and E are almost all hard surfaces whereas the F basins are much more perviousness. I am not finding that the Town suggested a composite I value for sizing the water quality basins and agree with Mr Ballode that they need to be for the specific sub basins. Please use sub basin imperviousness numbers for sizing the water quality drowells.	See storm comments below
60	Grading	GP-1	Storm	Multiple drywell inlets appear to be outside of flow lines.	If this occurs somewhere, it will be corrected. Without specifying, we're unsure of where you are referring to.		basins layout changed and fewer flow lines. The flow channels should be on the plans
61		SW-1	Storm	Topo illustrates much of runoff from G, H, I, J and K sheet flowing over trail. Need to route water to drywells and take overflow to culverts under trail.	This was intentional. The land currently sheet flows to the river and we assumed the sidewalk could remain that way. Capturing that water will force a ditch on the south side of the sidewalk and at least one more inlet. Will modify.	yes, the water should not sheet over the sidewalk.	Trail plans show a drain swale on the east side of the trail and show tipping the sidewalk to the east side. With that design need to catch and channel the water and run it under the sidewalk if it drains to the east. Sidewalk can tip to the river. We don't want water from the site running over the sidewalk but its OK for the walkway to tip to the river.
62		SW-1 SW-1	Storm	How does driveway runoff end up in subwatershed drywell and not in the street/gutter?	The driveways have a cross slope.	Not seeing that reflected on the plans. It looks like areas R, S, U,V,W,and Y have arrows showing the flow going toward the street	Watershed totally modified. The new arrangement is reviewed below in new comments
63		SW-1	Storm	Need details and profiles for inlets, culverts or outlets. What flow and storm are they sized for?	Noted.	50.661	Did not find elevations for inlets. If they are on the plans, please indicate where or add as needed.
64		SW-1	Storm	Need to plan on how the concentrated roof runoff from M3 makes it to the nearest drainage feature. Sheet flow will be hazardous.	It will be coordianted with the final architectural.	The architectural design should be coordinated with the drainage design so that the roof runoff goes where the drainage is available to accept it as downspout location impact the location of the concentrated flows.	Response says arch plans will show it piped to the median. Building official should check during building permit review
65		SW-1	Storm	Which drywells will have gravel extended to the surface?	E and L. The note must have been indavertently deleted but will be on final plans.	Why the difference	Elevations for drywell feature are on the plans. All now have freeboard
66		SW-1	Storm	How does the daylighted flow from the M1 trench drain traverse a steep slope south towards the drywell?	Overland. This is the miniscule flow from a trench drain located in a covered garage.	Be sure the drainage reports the flows in a minor and major event	Only saw minor storm in the drainage report. Both minor and major storms should be included and the report should demonstrate that water in the channels are within limits in the storm standards
							Looks like runoff from M1 will run along a retaining wall to get to drywells C & E. Several f the drywells adjoin a retaining wall and Drywell C runs under a retaining wall
67		SW-1	Storm	TOPO does not match grading plan. Ex: Building C now has a swale going through the patio.	The grading was done when the patio was a deck, so the grading would be below a deck. If that has changed, it will be addressed.	Be sure the water won't be running close to the foundation.	Response says Arch plans will cover. Keeping water away from foundations is a strong recommendation in the geotech report. The building official should check during builling permit review.
68		SW-1	Storm	It is unclear if roofs are guttered and if so where are the downspouts located?	Downspout locations will be provided by the Architect and incorporated into final design.	Thank you	Asked where downspouts are routed Developer response says see inlet capacity chart. Please address how the roof runoff is routed.
69			Storm	Townhouses - roofs appears to drain directly onto building entry walks, this is safety issue with the potential for snow	Downspout locations will be provided by the Architect and incorporated into final design.	Be sure they do not drain to the building entry walks.	Says that is addressed on Arch sheets. Buidling official should confirm.
70		UTL - 1	Storm	Multiple instances where proposed basins have a pedestal or pit within them. They also should not be placed over utility lines.	The two often co-exist. We didn't see anything precluding this in the Town standards but will move one or the other.	Thanks for moving. Believe this is covered with the separation between utilities in the Town Standards, tho the specific use of drywells was not anticipated.	Developer response says its common for utilities to run thru drywalls. There is no longer water or sewer shown below a drywell. Developer should consultant other utilities to ensure they don't have concerns.
71		SW-1	Storm	Provide information to locate drywells, drainages, culverts, etc. Provide dimensions not just areas for drywells.	The surveyor will be provided with all linework.	The dimensions and a way to locate the drywells should be on the engineering plans.	Asked about how to locate the drywells on the ground. Developer response says its in the CAD file. They should provide the CAD file to the Town in C3D 2020 and explain how the contractor is going to use the CAD file to lay things out
72		SW-1	Storm	How does water at the SW corner of the pond get from curb and gutter to the pond?	On the surface.		Developer response that water from the end of the C&G gets to the pond says sheet flow. Looks like its going to run from the gutter flow line toward the pond by defining its own path. A small ditch should be provided.
74		SW-1	Storm	Need details for energy dissapating riprap.	Acknowledged.	Thank you	The plans show storm water discharging onto the Town property on the slope to the river. Previous comment asked for riprap details. We are not finding those on the new plans. Please let us know where those details are on the plans
75		SW-1	Storm			What are the peak flows going to each of the C inlets based on the 25 year storm? What is the slope of each of the lines through the Town property?	Not finding elevations for the sidewalk drains or pans
78		SW-2	Storm	Provide calculations that demonstrate that the inlet grates have sufficient capacity to capture the water quality flows. Inlet capacity calcs should include standard clogging factors.	Noted. The run-off will be calculated for a 1.25-year storm and added to the table on SW-1 for everyone's benefit.	Thank you.	In response to questions about the drywell grate capacity, the storm report included grate headloss chart. If inlet is clean it has adequate capacity. Storm report says dome grates are resistant to clogging. We remain concerned that In a rain like on 6/24 the grate won't be clean long and that is the type of storm that needs to water quality treatment.
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79				Demonstrate that building entrances are a minimum of 12" above adjacent drainage features as required by Town Standards.	We feel that we comply with Town Standards. With sheet flow, water cannot flood a building. If there is a specific concern, we will analyze.	Calculaton of water elevation versus building entry should be included in the storm design report for each building.	Response says see grading plan. Did not see calculations for water elevation on the grading plan or the storm water design report.
80		18-21	Storm	Please provide perc test results.	Will do.	Thank you.	Requested perc test results for sizing the drywells Developer response says "Soil was classified (similar to how septic systems are done). No percolation test was necessary. Soil Type I. You can infer that the perc rate is less than 15 minutes per inch. See CDPHE septic standards." In a call last year, Town was told that Lambert ran or would run perc tests. If tests were run provide results. If we misunderstood, who determined the soil 1 classificiation and the resultant percolation rate. From what is shown in the geotech report implied there was some variability in the soils especially between the areas that have been filled and those that have not. Need to demonstrate that the assumptions about percolation are accurate.
81	Grade Plan	GP-1		Not finding any grades for the flow lines, parking areas, the sidewalks, concrete aprons, etc.	The contours and typical section are shown. If deviation is required, spot elevations have been or will be provided.	Not finding spot elevations for things like the tear drop on Duplex road, the grades in the parking areas etc. The plans should include all the information needed to build the project.	Please provide both horizontal and spot elevations information for bulbouts, tear drops, and other shapes along the roads and parking areas.
82	Grade Plan	GP-1		Most of the road runoff and even part of the townhome area runs to either the drainage at the toe of the retaining wall on the south line and between M1 and D1. How much water goes into each? How does the south drainage impact the retaining wall?	I would refer to the table on SW-1. This small amount will not impact the wall.	I thought SW-1 was the water quality volumes not the runoff volumes. The project is only detaining the 1.25 yr event, the drainage features still need to handle the 25 year storm.	Response says "What little water comes off of the north side of the townhomes will sheet drain over the wall. This is not an issue."Water running over a boulder retaining is not a good idea. The storm report shows the townhouses in 3 different basins. It looks like to reach drywell D water will need to sheet over the wall. Their storm report shows about 180 gpm will flow over the wall in a 25 year event. There would be more in a larger event.
		0.1					New SW-1 sheet has design deviations from the GP-1 sheet at least as it relates to the extent of the retaining wall. Please make sure all the sheets have the same underlying information.
83	Grade Plan	GP-1		Does the water at the south end of Frontage road run into Lot 2?	It is diverted in a pan. The call-outs will be adjsuted so that the pan is clearly seen and called out.	If the water is diverted in the pan please be sure that water is included in sizing the infrastructure for the 25 year storm.	Grading plan now shows a high point not very far from the south property line and water running into the parking lot east of CM toward the trash enclosure. Will that be an icing issue in the winter.
84		RD-1	Storm, CM Parking	Profile shows a 3' wide "waterway". What is the depth of the pan? What's its longitudinal slope? What are the peak flows it needs to carry? (4' or greater is typical for such a	Town's standard detail shows 3' is acceptable. Refer to the Typical Section for the slope. We will be increasing this anyway.	Thank you.	Please provide grades and locations for the pans and drainages
85			Street, Storm	Have you considered the maximum water depth on roadways during design storms?	Yes.	Please provide the calculations and results	Included a calculation in the storm report for 1.3 cfs as worst case that runs 2" deep in the gutter and has a spread of almost 9'. It meets the storm standards and is private. If the 100 year meets the Town standards is acceptable
86	cross sections	X-1		Runoff flowing from asphalt into a swale or similar should have a 2" drop at the pavement delineation. Refer to Urban drainage if desired.	We've already provided that, but we'll clarify on the plans.	Thank you.	Runoff flowing from asphalt into a swale or similar should have a 2" drop at the pavement delineation. Please indicate where this is shown.
94		RD-2	Streets	The radius of the cul-de-sac is substantially less than the Town's standard which requires a 40' diameter. We recommend meeting this standard.	Thank you for the recommendation. This isn't a cul-de-sac - just the entry to the Fire Lane.	Please check that wheel tracking works for each of the tighter cruves with the tender and ladder truck. The driveways on the duplexes angled, people are likely to prefer to back out to the north and will want to use the "cul de sac" to turn around.	Fire truck tracking provided. Not sure what size truck was run. Looks like the tracking shows the truck nosing into some parking spaces.
95			Streets	If not already required by CDOT, the highway access will need a stop sign.	We'll revise the plans per CDOT's direction, Town has stated that they will will defer to CDOT's requirements.	Please furnish and install the stop sign. The drive or town street is intersecting a US Hwy with a 45 mph speed limit. If needed we can find a requirement in the MUCTD and/or the cdot access code	Not finding the stop sign on RD-1 or GP-1. If its on the plans, please point out where.
96		RD-1		What are the distances to the bulbouts and parking areas from the center lines?	The Typical Sections cover this, but we'll add dimensions to the Site Plan.	Thanks for adding. Did not find it on the typical sections.	Did not find the distances from centerline to the bulbouts and parking areas on the site plan or the road plans. Don't see enough information to lay those out. No elevation data found.
97		RD-1	Streets, Bulb Areas	Radius for some of the curves are provided, but need to be provided for all.	We'll add to the plans.		Have most of the radii on the roadways. Some for the parking look to be missing.
98	Site Plan	SP-1		Is the 15 ft emergency access width, travel lanes and turning radii adequate for fire trucks and lane reqs? What type of gate is proposed and does the fire dept and CDOT approve?	It was designed according to verbal directino from the Fire Department, so we assume it complies. CDOT items will be addressed with that permit.	Please add what is proposed to the construction drawings. Also with whom at the RFD did you speak?	response says see civil sheets, did not answer to whom to they spoke at RFD. Emergency gate is listed to meet CDOT requirements which is acceptable to the Town.
99		RD-3	Streets, M2- 3 Parking	There is a leader near sta 0+34 labelled 3' waterway in the north parking lot that does not seem to point to the pan.	We'll correct the leader.	Thank you	What is happening with drainage at the beginning of Alpine Loop
103	Typical sections	X-1	Streets,	On the sections without curb, what are the catch slopes? Does the drainage sit against the roadways?	2:1, no.	Please add catch slopes to the typical sections.	Added 2:1 catch slopes. Typically if there is no shoulder, roads have at least a 4:1 catch slope. 2:1 is a hazard and its likely to slough as well. Roads are private so outside Town standards

107		ss-1	Utilities	Does the spacing between gas, water and sewer on "Duplex Rd." meet Section 11 of the General Requirements of the Town Standards? It looks like the gas would be totally exposed if we need to trench to the water or sewer	The minimum separation between gas and any other utility will meet required separation per the Town standards and Utility Provider standards.	Please use the more stringent of the requirements. The construction plans should show the separations that are required and the utilities should be located on the plans and in the easements to meet those requirements	There are places e.g. east of buildings M2 and M3 that scale to not meet the utility separation requirements. Please ensure the requirement separation is maintained.
108	Utility Plan	Util-1	Water	Water meter sizes not just line sizes need to be shown on the plans (and justified). Will need compound meters if	Acknowlaged	Please provide the calculations and show on the plans	Did not find line or meter sizes for the water and fire services. Also did not find sewer service size
109	Utility Plan	Util-1	Water	The plans show the water line looping internally not crossing the highway or the river. The sketch plan presented and approved had the water connecting to a main under the highway. This should be added back into the plans. See also the Town Standards that require connections and looping (Water section S, General Requirements section 9.1). Note this requires a CDOT Utility permit that will be a joint application prepared by	We are confident that the internal loop shown meets the looping requirement. Running a section of water across HWY 550 doesn't provide any more of a loop. The Town has represented to us that they only feed from one line. Everything east of the bridge is an internal loop, but there is no second primary loop. Perhaps this can be better understood when we get the requested as-builts of the water main.		Now have a deadend water line which is not acceptable. Recommend they compare the cost to link the deadend to the line on the east side of the highway with looping back toward Alpine Loop.
110	Utility Plan	Util-1	Water	Water meters need to be located just inside the roadway easements or immediately bordering if an adjacent utility easement is present	Duly noted.	Please reflect the meter locations on the construction plans.	Looks like they have circles for the meter can locations. On Riverfront they are shown on the lot side of the dry utilities. They should be on the road side. The taps and the cans should also be far enough apart to be able to dig one up without impacting the next can and meet the separation recommendations in the UniBell Tapping Guide. (See attachment) Also looks like the stationing for the fire lines is too close to an adjoining water tap.
111	Utility Plan	Util-1	Water	Note #5. All water services require a shutoff before the meter.	The service shall be built to Town standard. The Town's standard drawing does not show a curb stop for new construction - only for connecting to an existing connection. We are planning on a curb stop prior to the meter pit.	also allowed.	Prefer the curb stop as shown in the meter can replacement detail.
112	Utility Plan	Util-1	Water	Note #10. Any change in water line cover will need Town approval.	The Contractor will be obligated to build per Town standards.	The construction plans should show that the work can be completed per the Town standards or if there are issues they should be worked out before construction.	There are conflicts that need to be shown and resolved on the construction plans
116	Genl Notes	C-2	Water	#2, control for the water line needs to include horizontal and vertical control	The CAD files will be supplied. Any point will be able to be determined.	The Town standards (022000 , 3.07)require developer's engineer provide grade stakes for all pipeline with maximum distance between stakes of no more than SOft.	In response to request for layout information have added sheet HC-3 which lists bearings and distances for the water and sewer line segments, but we did not find a tie to a control from which to begin the location and some of the line segments cale differently than is listed. If even one of the bearings or distances is off, the entire alignment will be. Its more conventional to include coordinates for control. The plans should note the staking requirements. Yes its in the Town Standards that they have copied into the plan set, but I doubt the surveyor will find them.
122	Utility Plan	Util-1	Water	Note that water meters in excess of 1" are required to be installed in a manhole	Yes. The meters will be installed per Town standards.	The plans should reflect the meter size and show the type of enclosure required.	Plans need to show the meter and service sizes. The plans have different size circles that are presumably manholes and meter cans, but they are not called out or sized.
123	Utility Plan	Util-1	Water	Provide profiles with finished surface grades for the water mains.	We feel that this is unnedssary. The water is pressurized and not subject to gravity constraints, The water main will be installed per Town standards - 5' of cover (min.). So a profile would just be a line copied down 5' from FG.	The problem is that the contractor needs to identify the finished grade. Having existing and proposed profile, provides some guidance, Per Div. 19.03 profiles are required unless waived by the town for short extensions.	Added water profiles with existing and finished surface grades. Be sure that the water line is staked with cut stakes to ensure the 5' bury is maintained.
132	Utility Plan	Util-1	Water, easement	In several locations, the water lines are shown very close to the easement line. The water line needs to consistently meet the setbacks and easement widths in Town Code and	The Town standards will be referred to and met.	Please show the easements relative to the utilities so we can confirm that easement requirements are met	Not seeing the easements on the utility drawing. The water line is still very close to the edge of emergency access. If that is the edge of the utility easement additional width will be required
135	Utility Plan	Util-1	Water, hydrants	Additional valves are needed on several hydrant tees, the one near M3 needs a valve added on the north side; by D5, add on the west side; the hydrant in the middle of the frontage road should be in a straight line and only one	hydrants. That's where we will show them.	The Town suggested locations, but on the call reviewing engineering comments, the Developer's team thought those locations were problematic. If another discussion of this is needed, please let us know.	Please add a valve to the west side of the fire hydrant tee east of the cul de sac
137	Genl Notes	C-2	Wire	#1, there is no CATV available in Ridgway. Our code is a bit out of date here, we would recommend installing fiber	We will build to Town standards if those standards are provided.	We recommend but do not require fiber. The town code has yet to be updated to require fiber or to delete CATV which has not been available for years	Some places show fiber in with the dry utility on sheet 4 and on the sewer sheets CATV.
141	Genl Notes	C-2	Wire	Not mentioned but wire utilities in road crossings needs to be encased.	We'll add this to the plans.	Thank you	Please add encasements for dry utilities at road crossing.
143		3 & others		A number of the sheets have notes that say the topo survey, flood plain, and existing conditions were prepared by DelMont and/or Orion. Unless DelMont and Orion are going to sign the engineering plans, the engineer of record needs to take responsibility for all the information on the	The surveyor does not sign the engineering plans nor does the engineer sign off on the existing conditinos survey. These are two distinct Scopes and each will be stamped separately.	The point of this comment is you can not put responsibility on Delmont if they are not stamping the plans. If the engineer of record is "borrowing" from Delmont without a DelMont stamp, then the engineer of record is responsible for the topo and civil design.	Response says its addressed. Plans still reference DMC data on which they relied. If SET is relying on DMC data and not taking responsibility for the DMC data, then DMC need to stamp the plans.
							Sheet SP-1 and others note 2 says to see Sheet G-3 for 100 yr flood lines. There is no longer a sheet G-3

			Did not find any details for the retaining wall on the south side. There is a trash route on the other side of the wall.	Yes. The final design of all walls will be designed for the correct loads. They will be stamped by an Engineer who will	Please include this with the plans for preliminary plat approval	Added a detail for the retaining walls. We have the following
			The wall needs to have adequate strength for that.	take responsibility for that design.		questions on it: How close are the walls to property line at the various locations. How does soil moisture get out from behind the wall? There is storm water proposed to run by the walls in several locations and in
144						others over the wall. How will that impact the stability of the wall. Does a wall being over a drywell adversely impact either? Does the
		GP-1				wall have the strength to withstand the loads from the trash truck on the south line Does the developer have a source for the native 14" flat boulders? Its called out as native boulders and we have not seen that
145	Grade Plan				The grading plan looks to show stop bars at a number of intersections we did not see the corresponding stop signs called	Response says they are added stop signs Not finding them. Please add
	Grade Plan	GP-1			out How does water get out of the parking areas on M2 and M3 Rd?	Looks like there maybe a pan at the west end of Alpine Loop If that is
146	Grade Plan	GP-1				intended, it should be labelled and at least flow line elevations provided.
147	Road Streets				Please add spot elevations for "cul de sac" and around the curves on the roads.	Response says they are added. Not finding spot elevations for the cul de sac
148	Emergency Lane				How does the contractor know the alignment and elevations of the emergency lane off of Duplex rd.	Response says they are added. Not finding alignment or elevation for the gravel road
151					Once the plans are complete and ready for construction they must be stamped by the engineer of record.	Plans are stamped. Make sure the updated ones are as well.
152		SP-1, landscape				Looks likes there are trees(and drainage) against by the retaining walls. Are the walls designed to handle those
		GP-1				It looks like water could flow under and over the retaining wall at drywell C. Is the wall designed for that.
154		U-1				Extend the lines going to 550 to the property line
153		SW-1				How does the water discharging storm the pond get to the river
		SW-1				There are drywells close to the river trail. Will the moisture undermine the walkway foundation?
		SW-1 SW-1				Will trees near the drywells clog the wells with roots?
		5-1				How does the water running along the north side of the gravel road get to the Drywelll H. Not seeing a swale
	Water	SS-1				On the south end east of the tear drop show a 17 degree angle on the water line. There is not such fitting
	Water	W-2				This sheet labels each fitting, but did not find a table that calls out the
						fitting type. It would be a good place to also put coordinates for the location of the fittings.
						Be sure all the civil sheets (and the plat) have the same underlying
						information. We found differences on the plat vs the civil and between Ballode and SET.
	App 2	Geotech				We did not find the appendices in the report.
	App 6	Wat & WW flow	NS			App references Ouray County Code. That is not relevant for Ridgway. If want to use an equivalancy suggest use CDPHE on site sewage
	Plat					The plat should include a legend of the line types. Color coding would be useful too.

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July 7, 2021

To Whom It May Concern:

The responses below are rebuttal comments to the Town comments provided on a pdf entitled "R_Triangle engg rev attach 063021.doc", specifically, the Review of Stormwater Documents contained therein.

Town: SW1 Shows areas of Drainages that don't match the SW1 Sheet.

UE (Uncompany Engineering) Response: Unfortunately, the SW1 that was attached in the report is outdated. As the design progressed, that plan sheet changed and the report did not update. The SW1 in the plan set is correct. The only difference is that the culvert outflow in the pond is 15" (see the Construction Plan Set). The report will be updated.

Town: What is the reason for quoting the USDCM regarding volume reduction on pdf pg 3? UE: For additional information.

Town: Please point us to the Water Quality Capture Volume calculations. The formula in the Town Standards appears to be missing some bracketing. We calculated it as follows: $WQCV = [0.65*A*a*(0.91*(i^3)-(1.19*(i^2)+0.78*i]/12)$

UE: I think that the Town has their bracketing incorrect and it's resulting in incorrect answers. Please see the attached WQCV taken directly from the Ridgway Standards. Shouldn't the bracket be moved to the right and adjacent to the parantheses? Maybe 2 more brackets around the first 3 coefficients?

Here's the formula from my spreadsheet. I use significantly more parentheses: WQCV= $(0.65*(A)*0.8)*((0.91*(i)^3)-(1.19*(i)^2)+(0.78*(i)))/12$

Town: Here are our results vs what is shown on SW-1 of the Civil set. In looking at other references, it appears that the WQCV should not include the 0.65 at the start of the formula. If we take that out, the differences are much more significant. Please explain how you calculated the volume.

UE: This is an interesting comment. We used the Town standards to calculate the WQCV and it definitely includes the 0.65 coefficient (again, see attached pdf). The Town is now saying that their formula – that is supplied by the Town and in their Town standards – should not contain the 0.65 coefficient. Please advise.

Town: In the Hydrology section, the report should address the major as well as the minor storm. UE: I revised the Spreadsheet to show the 100-year discharge. The largest Q has gone from 2.4 cfs to 3.4 cfs. We are still only capturing the 1.25-year storm for the WQCV and the streets can convey any additional flow. It should be noted that the Town allows for a 12" depth of flow at the gutter. There is no place on the site that could ever develop that depth before it breaks over, so we definitely think that the intent of this Town regulation has been met. If the Town has a specific place that they are concerned with, please advise and I'll provide a specific analysis at that point.

Town: We appreciate the use of a conservative value of 100% for hard surfaces. What is the basis for 2% imperviousness for lawn area? The Town standard (Table 3) uses 10% for Parks

Open Space and Natural Areas. For lawns with sandy soils with 2% or less slope, the FHWA manual uses 5-10%. We checked the calculations with values in the Town standards and the Urban Drainage manual and the resulting flows are very similar, so will allow the flows assumed in the Ballode Drainage report to be used.

UE: As discussed in the last round of comments, I think that the 10% that the Town is referring to is a **weighted** value. The 2% is used when calculating your own weighted value (like I'm doing in this analysis). I believe that my method is correct. Since there isn't a change anyway, no action is necessary.

Town: There looks to be a data entry error for the intensity for the 25 year storm for the H basin on the table in the Appendix of the storm report. If that is not a typo, please explain the value. UE: Yes, 4.09 was accidentally entered instead of 3.09. The drywell was sized for the larger volume and it works. I will make this drywell smaller in the next iteration of the plans.

Town: The calculation for the sidewalk drain assumes a 15' wide by 0.4' high channel on a 2% slope and if its based on mannings its assuming gravity flow with an open top. Unless the design intent is to deepen the drain so it is deeper than the adjoining sidewalk, the depth of the channel is only 0.36' (6"-1.625" for the grate) and at that point the water would be in contact with the bottom of the grate. Using mannings and a 0.36' depth the capacity of the trough drops to 2.37 cfs and if you allow headroom to actually have open channel that would drop the depth to about 0.3' which results in a capacity of about 1.82 cfs. Please confirm whether the intent is to deepen the box and show the same on the plans or modify the box to handle the flows. Also be please confirm that inlet conditions into the box are not more flow restrictive than the values calculated with mannings.

UE: I don't think this is an issue any more now that the Town has flipped their position on which way the sidewalk should drain (we do agree with the Town's latest assessment which is how we had it the first time). We will have the sidewalk drain to the river in the next iteration, so the bottom of the sidewalk drain will equal the 2% slope of the sidewalk above. Also, even if water did overtop, it will simply overtop a sidewalk and drain out in the same place – all of these locations are at sag points in the sidewalk. It can't flood anything. I stand by the sizing that has been included in the plan set.

However, at the main low point in the river trail sidewalk between buildings M1 and D1, we will add an additional 15" wide trench drain. So, in the next iteration, there will be two sidewalk drains at that point that are side-by-side. I've attached the next iteration of SW1 that shows these two drains.

Town: We did not find any details for flow channels to and from the drywells in the design report or the civil plans. Please indicate where those are defined for the various channels and reflect same on the civil plans.

UE: They are not intended to be well-defined channels. These are simply depressions in the landscaping. I suppose a minimum sized "channel" could be detailed, but this is overkill. This si sheet drainage from a lawn going to a drywell or overflow from a drywell through landscaping. We don't want well-defined channels in the landscaping.

Town: The overflow culvert for basin A is shown on the sheet SW1 in the drainage report as 12" on the civil plans as 15". Per CulvertMaster, it looks like the 15" is needed.

UE: I have no idea what CulvertMaster is or what parameters were inputted by the Town. I included my CDOT nomograph analysis which clearly shows that I have also sized the culvert to be 15" and it's 15" on the plans. The construction set is the set that would be issued for construction and it's correct.

David Ballode, P.E. Uncompany Engineering, LLC

FROM: Ridgway Stormwater Standards

V_o = outflow volume (cubic feet)

 T_c = Rational Method time of concentration used in step 1 (minutes)

R_a = allowable release rate as determined per these Standards (cfs)

3. The required detention pond volume for each design storm is the difference between the inflow volume and the outflow volume at the design time of concentration and rainfall intensity.

If the entire site is not tributary to the detention pond, the allowable release rate from the detention basin must be decreased to compensate for site runoff that is not detained. The allowable release rate from the detention basin is the total site existing conditions peak runoff rate minus the post-Development undetained flow rate from areas not draining to the detention basin. A maximum of 5 percent of the total site may bypass the detention basin unless approved by the Town.

6.4. Basin Sizing Using SWMM

If SWMM is used to calculate peak runoff rates, it can be used to develop inflow hydrographs at the detention basin site. The program can then be used to determine the required storage volume and outlet design based on an iterative reservoir routing procedure. Initial estimates of outlet size are made, and the program is run. The output is reviewed, and changes are made to the outlet configuration as needed until the peak flow and an acceptable drain time are achieved. Assumptions made during detention basin design, all design calculations, and SWMM input and output text files shall be provided to the Town for review. Files shall be highlighted and design values shall reference calculations. The outputs shall include comments and/or be summarized periodically to ease in the review process.

6.5. Water Quality Capture Volume

The water quality capture volume (WQCV) represents the volume associated with the 1.25-year return period storm. Detaining this volume is considered to provide the best value in water quality treatment. All detention basins will be designed with a water quality outlet in addition to the Minor and Major Storm outlets, but the WQCV can be assumed to be contained within the Minor and Major Storm volume for FAA Method basin sizing. Any increase of imperviousness greater than 0.05 acres, or an improvement which results in a parcel's imperviousness percentage over land use default values (Table 3), or the creation of a PUD or a parcel within the Uncompahgre River Overlay District is required to provide WQCV detention for the entire parcel onsite, even if other detention is not required. The WQCV detention is to be based on the entire parcels imperviousness, including existing or Historic features when further Development occurs. The MHFD has spreadsheets that can aid in the design of the WQCV outlet. The equation to calculate the WQCV in Ridgway is:

$$WQCV = \frac{0.65Aa(0.91i^3 - 1.19i^2 + 0.78i)}{12}$$
 Equation 19

Where:

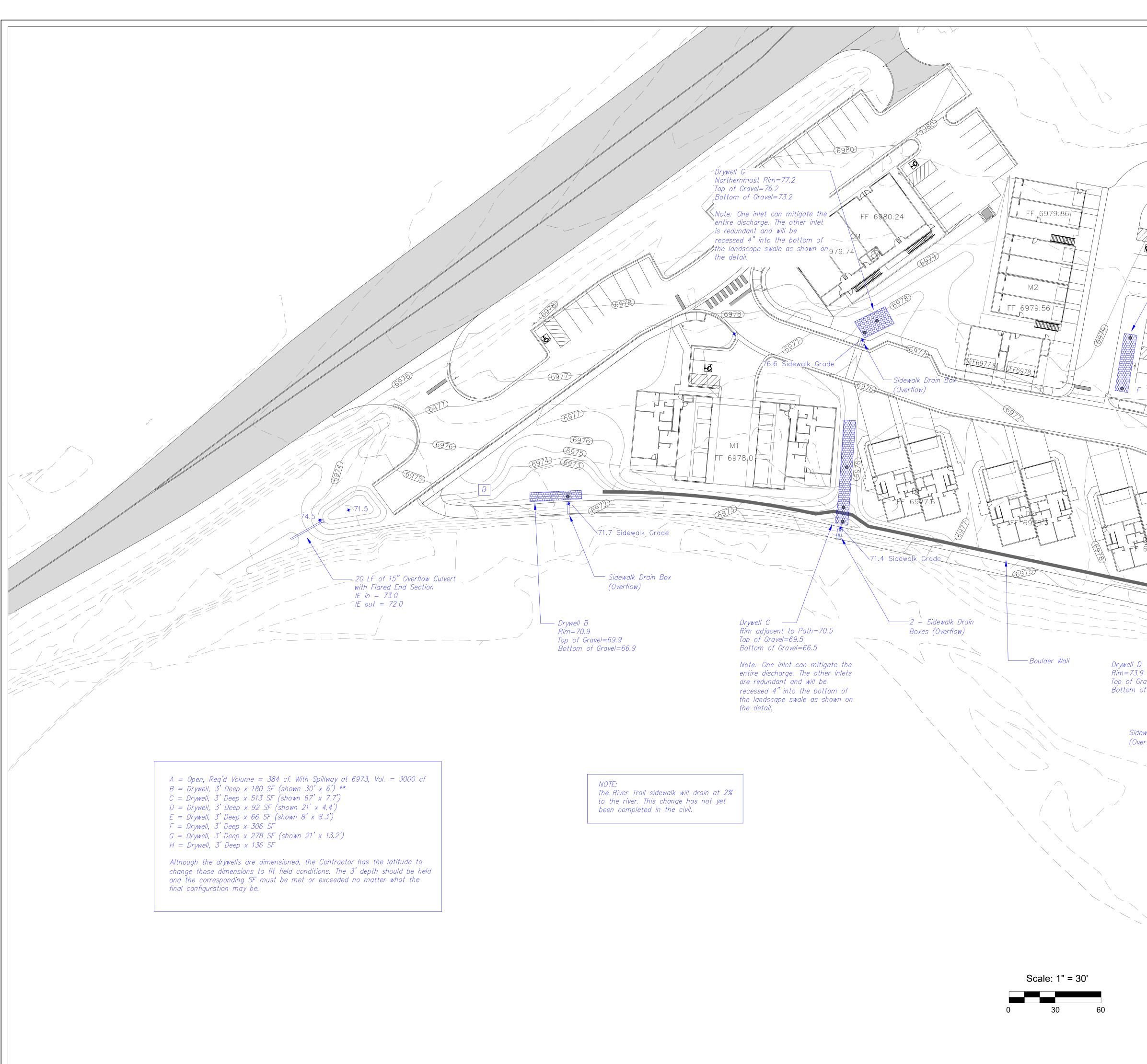
WQCV = water quality capture volume (acre-feet)

A = area draining to the detention basin (acres)

a = 0.8, the WQCV drain time coefficient corresponding to a 12-hour drain time

i = imperviousness as a decimal percentage

Assuming 100% imperviousness, the above equation can be simplified to approximate required treatment volume in cubic feet if desired.



Uncompahgre Engineering, LLC P.O. Box 3945 Telluride, CO 81435 -Drywell Northernmost Rim=77.2 Top of Gravel=76.2 Bottom of Gravel=73.2 E. 970-729-0683 Note: One inlet can mitigate the entire discharge. The other inlet is redundant and will be ∕recessed 4" into the bottom of the landscape swale as shown on \backslash SUBMISSIONS: the detail. 2021-06-14 SUBMITTAL Added 2nd Sidewalk Drain 2021-07-07 FF 6979.5 rvwell Rim=76.0 Top of Gravel=75.0 6979 Bottom of Gravel=72.0 FF-6979.8 6978 Boulder Wall l ji ft' **Riverfront Village** Ridgway, CO 6978) 74.8 Sidewalk Grade Rim=73.9 Drywell E – Rim=74.4 Top of Gravel=72.9 Bottom of Gravel=69.9 Top of Gravel=73.4 Bottom of Gravel=70.4 75.3 Sidewalk Grade Sidewalk Drain Box —___ (Overflow) Sidewalk Drain Box ——/ (Overflow) CONTRACTOR TO REVIEW AND COMPARE ALL CHAPTERS AND INTERDISCIPLINARY DRAWINGS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO ANY FIELD WORK BEING DONE IN ACCORDANCE WITH AIA DOCUMENT A201 Stormwater and WQCV Mitigation Plan SW1