Development Review Staff Report

Agenda Item 2

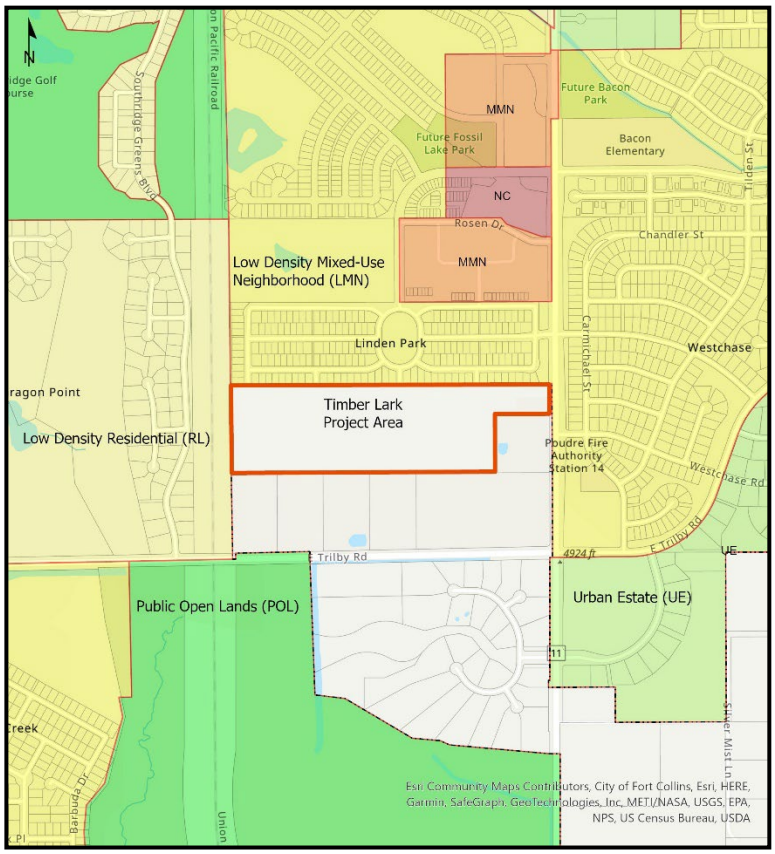
Administrative Hearing: March 30, 2022

Timber Lark Subdivision – PDP210015

Summary of Request

This is a request for a Project Development Plan (P.D.P.) to subdivide and develop 197 residential dwelling units and 1-acre park on 35.17-acres, parcel #8607400003. Primary access to the property will be served by South Timberline Road. The property is within the Low Density Mixed-Use Neighborhood (LMN) Zone District. The project would be developed in one phase and is subject to review by an Administrative Hearing Officer (Type 1) Review.

Zoning Map (ctrl + click map to follow link)



Next Steps

If approved by the decision maker, the applicant will be eligible to submit for Final Development Plan which must be consistent with the Project Development Plan and any associated conditions. The Final Plan submittal is subject to additional review and can be approved, approved with conditions, or denied based on the consistency with the Project Development Plan. After final review and approval all documents can be submitted for recordation and the project will be eligible to apply for a building permit.

Site Location

Located at 6363 S. Timberline Road, northwest of the S. Timberline Road/Trilby Road intersection.

Zoning

Low Density Mixed-Use Neighborhood (L-M-N), Zone District

Property Owner

AADT Land Holdings LLC
Alexander Aigner
13005 Lowell Blvd.
Broomfield, CO 80020

Applicant/Representative

Schroyer Resources
Steve Schroyer
900 Greenfields Court
Fort Collins, CO 80524

Staff

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Staff Recommendation

Staff recommends approval of the P.D.P., with Modifications and Alternative Compliance.

1. Project Introduction

A. PROJECT DESCRIPTION

- PDP to subdivide 35.17-acres located at 6363 S Timberline Rd (parcel # 8607400003).
- The project includes a request to develop 197 residential dwelling units, with a mix of Single-Family Detached, Two-Family, and Single-Family Attached dwellings, with a density of approximately 5.63 dwelling units per acre.
- The project includes a one-acre neighborhood park with amenities.
- Primary access to the property will be served by a connection to South Timberline Road. Secondary local street access is provided from the north through the Linden Park neighborhood. Future street connections to East Trilby Road to the south will be completed when the adjacent parcels develop in the future.
- The P.D.P. includes stormwater detention, existing mature tree habitat, and soft-path trail connections to the future multi-use trail off-site.
- The property is within the Low Density Mixed-Use Neighborhood (LMN) Zone District, subject a (Type 1) Review.
- Request for Modification of Standard to *Section 4.5 (D) (2) (c) – Mix of Housing.*
- Request for Modification of Standard to *Section 3.2.3 (C) – Solar-Oriented Residential Lots.*
- Request for Alternative Compliance to Section 3.5.2 (E)(2) – Front Setback.

B. SITE CHARACTERISTICS

1. Development Status/Background

The site currently includes:

- Vacant site, with open grass pastures
- An existing mature deciduous tree is located near the northwest portion of the site.
- Lot slopes from its high point along northern edge of property to the southeast.
- The Union Pacific Railroad to the west, private residential lots to the south and southeast, Linden Park neighborhood to the north, and S. Timberline Road to the east.
- The Timber Lark Annexation was completed on February 25, 2022.

2. Surrounding Zoning and Land Use

	North	South	East	West
Zoning	Low Density Mixed-Use Neighborhood (L-M-N)	County FA-1	Low Density Mixed-Use Neighborhood (L-M-N)	Residential Low Density (R-L)
Land Use	Linden Park Subdivision	Rural Residential large lots	West Chase Subdivision, across Timberline Road	Union Pacific Railroad/Power Trail, and South Ridge Subdivision

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C. OVERVIEW OF MAIN CONSIDERATIONS

The main considerations for staff review of the P.D.P. include: the extent of S. Timberline Road frontage improvements with the timing of this arterial street capital project, local street connections, and emergency access. This Project Development Plan has gone through 3 rounds of staff review.

Other key issues that have been explored and addressed are:

- Request for Modification of Standards to allow front and rear loaded two-family dwellings as two different housing types.
- Request for Modification of Standards to allow for a reduction from 65% to 48% of solar-oriented lots.
- Request for Alternative Compliance to allow a reduced front yard setback.
- Size of future neighborhood park and type of park amenities.
- Existing tree habitat protection.
- Storm drainage requirements.

Staff has evaluated the request under the applicable sections of the Land Use Code and finds that all issues have been addressed in compliance with the code with exception to Mix of Housing Types, number of solar oriented lots, and front setbacks.

2. Comprehensive Plan

A. CITY PLAN (2019)

City Plan, the community's comprehensive plan, last updated in 2019, provides more general city-wide policy direction for future development. The City Structure Plan map identifies the Timber Lark residential P.D.P. future land uses as Mixed-Use Neighborhoods, establishing a basis for the same zoning. Please see the attached Project Narrative for the full list of related principles and policies. Relevant key categories include:

- Principle ENV 1 – Environmental Health and related polices
- Principle LIV 1 – Community & Neighborhood Livability and related policies
- Policy SW 2.4 – Safety and Wellness and related policies
- Principle T 3 – Transportation and related policies

B. FOSSIL CREEK RESERVOIR AREA PLAN

The Fossil Creek Reservoir Area Plan (FCP), an element of City Plan, was adopted in 1998 and represents a more specific policy plan for the area. The plan provides general direction for future annexation, zoning, and development in the plan area. The FCP provides key policies relative to the P.D.P. Please see the attached Project Narrative for the full list of related principles and policies. Related Policies include:

- FC-LUF-3 Mixed-Use Neighborhoods.
- FC-T-3 Street Connectivity and Pedestrian Linkages
- FC-T-6 Off-Street Bicycle Trails
- FC-PSCF-1 Parks
- TH-2 – Natural Resources

The P.D.P. is consistent with the related policies from the *Fossil Creek Reservoir Area Plan* and *City Plan*. The P.D.P. provides L-M-N land uses, densities, and housing types consistent with current zoning and policies of approved plans. The P.D.P. provides existing tree habitat buffering, a neighborhood park and passive open space. The P.D.P. provides a network of local streets and access to South Timberline Road, a future 4-lane arterial street, and connections to future regional trail system.

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3. Public Outreach

A. NEIGHBORHOOD MEETING

Pursuant to *Section 2.2.2 – Step 2: Neighborhood Meetings*, a neighborhood meeting is not required for Administrative (Type 1) projects. A neighborhood meeting was held for the initial annexation and preliminary conceptual plans on August 23, 2021.

B. PUBLIC COMMENTS:

Staff has not received any public comments since the hearing notice on March 16. Preliminary public comments received during the neighborhood meeting are highlighted below:

- Traffic on Timberline
- Timing of expansion of Timberline to a 4-lane arterial street in area
- How will project mitigate traffic and cut-through traffic through Linden Park.
- Density and timing of proposed project.

4. Article 2 – Applicable Standards

A. BACKGROUND

This project was submitted on September 10, 2021.

B. PROJECT DEVELOPMENT PLAN PROCEDURAL OVERVIEW

1. Conceptual Review – CDR200021

A conceptual design review meeting was held on March 20, 2020. The original proposal consisted of 221 lots, with a combination of single-family detached and single-family attached dwellings, future neighborhood park, pool and clubhouse, and storm drainage area.

2. First Submittal – PDP210015

As previously mentioned, the first submittal of this project was completed on September 10, 2021. The second submittal of the PDP was on November 2, 2021, third submittal on December 7, 2021.

3. Neighborhood Meeting

A neighborhood meeting is not applicable pursuant to *2.2.2 – Step 2: Neighborhood Meetings*, for a Type I review. A neighborhood meeting was held for the initial annexation and preliminary conceptual plans on August 23, 2021.

4. Notice (Posted, Written and Published)

Posted Notice (PDP210015): August 11, 2021, Sign # 702

Written notice: March 16, 2022, 759 letters sent

Published Notice: March 18, 2022, Coloradoan confirmation #0005178275

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C. DIVISION 2.8 – MODIFICATION OF STANDARDS

The applicant requests two modification of a standards as mentioned in this report.

The Land Use Code (LUC) is adopted with the recognition that there will be instances where a project would support the implementation of City Plan, but due to unique and unforeseen circumstances would not meet a specific standard of the Land Use Code as stated. The modification process and criteria in Land Use Code Division 2.8.2(H) provide for evaluation of these instances on a case-by-case basis, as follows:

Land Use Code Modification Criteria:

"The decision maker may grant a modification of standards only if it finds that the granting of the modification would not be detrimental to the public good, and that:

(1) the plan as submitted will promote the general purpose of the standard for which the modification is requested equally well or better than would a plan which complies with the standard for which a modification is requested; or

(2) the granting of a modification from the strict application of any standard would, without impairing the intent and purpose of this Land Use Code, substantially alleviate an existing, defined and described problem of city-wide concern or would result in a substantial benefit to the city by reason of the fact that the proposed project would substantially address an important community need specifically and expressly defined and described in the city's Comprehensive Plan or in an adopted policy, ordinance or resolution of the City Council, and the strict application of such a standard would render the project practically infeasible; or

(3) by reason of exceptional physical conditions or other extraordinary and exceptional situations, unique to such property, including, but not limited to, physical conditions such as exceptional narrowness, shallowness or topography, or physical conditions which hinder the owner's ability to install a solar energy system, the strict application of the standard sought to be modified would result in unusual and exceptional practical difficulties, or exceptional or undue hardship upon the owner of such property, provided that such difficulties or hardship are not caused by the act or omission of the applicant; or

(4) the plan as submitted will not diverge from the standards of the Land Use Code that are authorized by this Division to be modified except in a nominal, inconsequential way when considered from the perspective of the entire development plan and will continue to advance the purposes of the Land Use Code as contained in Section 1.2.2.

Any finding made under subparagraph (1), (2), (3) or (4) above shall be supported by specific findings showing how the plan, as submitted, meets the requirements and criteria of said subparagraph (1), (2), (3) or (4).

1. Modification of Standards to Section 3.2.3 – Solar-Oriented Residential Lots

The applicant has submitted a request for a Modification to Section 3.2.3 (C) – *Solar-Oriented Residential Lots,* to reduce the number of residential lots from 65% to 48%.

1. LUC *Code Section 3.2.3 Citation*. This standard requires that:

(C) Solar-Oriented Residential Lots. At least sixty-five (65) percent of the lots less than fifteen thousand (15,000) square feet in area in single- and two-family residential developments must conform to the definition of a "solar-oriented lot" in order to preserve the potential for solar energy usage.

The proposed PDP on 35.17-acres includes 149 single- and two-family lots, of which 71, or 48%, are designated as solar-oriented lots.

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2. Applicant's Justification

   The Applicant requests that the modification be approved and provides the following justification based upon the following Criterion:

   The request for a reduction from 65% to 48% of solar-oriented lots will not be detrimental to the public good. The architecture of the single-family detached and two-family dwellings incorporates varied roof orientations which would allow the ability for solar-energy systems to be installed on any unit within the development, thereby promoting the intent of the Land Use Code to encourage the use of solar energy to heat homes. In addition, we find that criteria #3 has been met with this proposal, as illustrated below.

   Criteria #3 states that physical conditions such as exceptional narrowness would result in undue hardship on the owner of such property. The north to south dimension of the property is approximately 695 linear feet. There is also a 15-foot drainage easement which runs along the northern property boundary. In order to orient at least 65% of the lots so that they front onto an east-to-west street, the site would need to be redesigned to include a third east-to-west street, rather than the two currently shown on the plan. With each of these streets requiring a 53' R.O.W., this would result in single-family lots with a maximum depth of about 86 feet, rather than the 105' lot depth currently provided. Reducing the lot depths by almost 20 feet would drastically reduce the privacy and available space for future homeowners to enjoy their backyards.

   Additionally, the reduced lot depths would result in a reduction of solar gain at the back of the house since the houses would be placed much closer together. For the largest single-family detached footprint, this would result in a dimension of just 13' from the building wall to the property line, versus 32' provided with the current lot configuration. During the winter months when the sun is low in the sky, it is anticipated that the current lot configuration will provide much greater opportunity for solar gain due to the separation provided between structures.

3. Staff's Analysis of Modification Request

   Staff finds that the request for the Modification of Standard to Section 3.2.3 (C) is justified by the applicable standards in 2.8.2(H) (3):

   The plan as submitted **will not be detrimental to the public good**. The PDP includes a 17% reduction (48%) of the required applicable single-family and two-family solar-oriented lots (71 lots out of 149). Of the remaining 78 single-family and two-family lots, all these lots include building options with slopped and varied roof orientations that would accommodate solar energy rooftop systems on a portion of these roofs, still meeting the intent to preserve the potential for solar energy usage.

   (3) **Exceptional or undue hardship** upon the owner of such property. This criteria includes the same situation of this property stated below:

   "*By reason of exceptional physical conditions or other extraordinary and exceptional situations, unique to such property, including, but not limited to, physical conditions such as exceptional narrowness, shallowness or topography, or physical conditions* ***which hinder the owner's ability to install a solar energy system****" …*

   The PDP includes a large narrow rectangular parcel, with the north/south lot dimension total of 695 feet, including a 15 foot drainage easement along the north property boundary. The street layout to maximize solar-oriented lots needs to be aligned in an east/west configuration. To meet this standard three streets would need to be located on an east/west pattern, with the resulting lots having reduced lot depths of 86 feet, instead of 105 feet, and smaller rear yard space as shown in plans. The reduced lot depths would result in a reduction of solar gain at the back of the house since the houses would be placed much closer together.

   In addition, three streets are required to connect to existing stub out streets in Linden Park subdivision to the north, further bisecting the property with north/south street alignments. Many of those lots do not meet the solar orientation criteria.

   In this case, the strict application of the standard results in unusual and exceptional practical difficulties, and exceptional or undue hardship upon the owner or applicant. The hardship is not caused by an act or omission by the applicant. The overall length and narrowness of this parcel is unique, and difficult to fully apply this standard.

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2. Modification of Standards to Article Four Division 4.5 (D)(2)(c) – Mix of Housing

The applicant has submitted a request for a Modification to Division 4.5 (D)(2)(c) – *Mix of Housing,* to allow front-loaded and rear-loaded two-family dwellings to be classified as two different housing types.

1. LUC *Code Division 4.5 (D)(2)(c) Citation*. This standard requires that:

   (2) Mix of Housing. A mix of permitted housing types shall be included in any individual development plan, to the extent reasonably feasible, depending on the size of the parcel. In order to promote such variety, the following minimum standards shall be met:

   3. a minimum of four (4) housing types is required on any such project development plan containing thirty (30) acres or more.

2. Applicant's Justification

   The Applicant requests that the modification be approved and provides the following justification based upon the following Criterion (1):

   The request for two-family front-loaded and alley-loaded units to be classified as two separate housing types will not be detrimental to the public good. The intent of the requirement to provide four housing types is to ensure that the community will offer a variety of housing choices and encourage a variety in architecture. Since the project is not proposing to eliminate the fourth housing type, but rather is requesting that two-family front versus alley loaded dwellings be considered separate housing types, the intent of this requirement will still be satisfied. In addition, we find that criteria #1 listed above is being met through this proposal.

   Criteria #1 requires that the proposed modification will promote the purpose of the standard equal to or better than a plan which would comply with the standard. The Land Use Code provides a distinction between front-loaded and rear-loaded single-family detached housing types; however, there is no provision which distinguishes between front-loaded and rear-loaded two-family housing types. The two-family housing types proposed will create a dynamic streetscape by alternating garage door placements between the front and rear of the home, creating the same effect as having front and rear loaded single-family detached homes.

   Within the two-family housing types proposed, there will be 2, 3, and 4-bedroom options which will further diversify the available housing options and add unique architectural styles to the neighborhood. This range of bedroom options emphasizes the purpose of Land Use Code Article 4.5 which states that developments should "meet a wide range of needs of everyday living in neighborhoods that include a variety of housing choices."

   Additionally, the Land Use Code allows for a minimum of 5% and a maximum of 80% for anyone housing type. The project proposes no less than 13% and no more than 42% for each of the four housing types proposed, thereby maximizing the diversity of housing across the site.

   The Timber Lark project exemplifies the purpose statement for the LMN zone district. The project will provide residential housing for the community through a variety of housing choices including single-family detached with both two and three car garage options, two-family front-loaded, two- family alley-loaded, and single-family attached. Within each of these housing types, floor plans range from 2-bedroom to 4-bedroom units, further increasing the housing variety for the community.

3. Staff's Analysis of Modification Request

   Staff finds that the request for the Modification of Standard to Division 4.5 (D)(2)(c) is justified by the applicable standards in 2.8.2(H) (1):

   The plan as submitted **will not be detrimental to the public good.** The proposed PDP is not proposing to eliminate a fourth housing type, instead continuing to maintain the required four housing types, and variety of housing options within the development. Similar to single-family dwellings with both front and rear loaded products,

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incorporating the same two descriptions for two-family products provides more variation of building architecture and street facing appearance along the block face.

(1) *the plan as submitted will promote the general purpose of the standard for which the modification is requested* ***equally well or better than*** *would a plan which complies with the standard for which a modification is requested.*

The LUC permits single-family detached dwellings with rear loaded garages, and single-family detached dwellings with front or side loaded garages as two housing types. The LUC also shows two-family dwellings are an approved housing type; however, the code does not differentiate between front-loaded and rear-loaded product types for two-family dwellings. The request for a modification to this standard is to include both two-family front, versus alley rear loaded two-family dwellings as separate housing types, continuing to meet the intent of the standard in providing a variety of housing options, not diminishing the purpose or minimum requirements of the standard.

The applicant's justification is correct in that the two-family housing types proposed will create a dynamic streetscape by alternating garage door placements between the front and rear of the home, creating the same effect as having front and rear loaded single-family detached homes. Within the two-family housing types proposed, there will be 2, 3, and 4-bedroom options which will further diversify the available housing options and add unique architectural styles to the neighborhood.

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5. Article 3 - Applicable Standards

A. DIVISION 3.2 - SITE PLANNING AND DESIGN STANDARDS

Applicable Code Standard	Summary of Code Requirement and Analysis	Staff Findings
3.2.1 - Landscaping and Tree Protection	The intent of this Section is to require a fully developed landscape plan that addresses relationships of landscaping to the circulation system and parking, the building, abutting properties, and users of the site in a manner appropriate to the neighborhood context. The plan provides the following main components: • Street Trees. All local public streets will be landscaped with street trees. These parkways will be also landscaped with irrigated turf. • South and East portions of Property (Tract L and O). Along the east and south boundaries of the P.D.P. two storm drainage detention ponds are located. These areas are reseeded with native seed mix and naturalistic tree plantings within the pond slope areas. • Tract G – Neighborhood Park. Tract G includes a small 1-acre private park. This park will include full tree stocking and shrub landscaping, and irrigated turf. The park will include amenities such as walking paths, paved plaza with overhead shelter, seating, tables, BBQ, and lighting. • Tract Q – Along the northwest portion of the site an existing mature cottonwood tree is located. An approximate 50-foot natural habitat buffer is established between the single-family lots and this tree on a separate tract. This buffer will include naturalized plantings. • This standard requires that existing significant trees be preserved to the extent reasonably feasible. Upon inspecting the site, the City Forester has determined that of the 47 existing trees on site, 46 trees are to be removed, 85 mitigation trees are required. While the reason for removal of the trees is due to land development, the existing trees are rated as fair, fair minus, or poor. This is due to lack of irrigation and neglect over the decades.	Complies
3.2.1 (D) (2) – Street Trees	Wherever the sidewalk is separated from the street by a parkway, canopy shade trees must be planted at thirty-foot to forty-foot spacing (averaged along the entire front and sides of the block face) in the center of all such parkway areas. Such street trees shall be placed at least eight (8) feet away from the edges of driveways and alleys. • The plan provides 355 parkway trees on the Site (30' – 40' spacing) incompliance.	Complies
3.2.1(D)(3) Minimum Species Diversity	The intent of this standard is to avoid extensive monocultures and prevent uniform insect and disease susceptibility on a development site, based on the number of trees on the site. The plan provides 20 tree species, and none exceed the required 15% of the 329-total number of new trees.	Complies

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3.2.1(D)(4) Tree Species and Minimum Sizes	This standard requires minimum tree and shrub sizes included in the landscape plan. The minimum sizes are: Canopy shade tree - 2” caliper Evergreen tree – 8’ height Ornamental tree – 1.5” caliper Shrubs – 5 gal. • All minimum required tree and shrub sizes are met.	Complies

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3.2.2 - Access, Circulation and Parking	This standard requires that development projects accommodate the movement of vehicles, bicycles, pedestrians, and transit throughout the project and to and from surrounding areas safely and conveniently and contribute to the attractiveness of the neighborhood. • The P.D.P. includes ten public streets. The extension of A Street to S. Timberline Road intersection will be the primary access point into the site. Secondary points of access include street connections with Corona Avenue, Red Willow Drive, Weeping Willow Drive, and Golden Willow Drive to street stub outs along the north property boundary and Linden Park neighborhood. The other internal connections include private alleys that provide access to the rear-loaded garages or guest parking spaces for the P.D.P. The pedestrian and bicycle network will be a combination of public sidewalks and private walkways, and undesignated on-street bicycle circulation. This network will connect to the following: • Perimeter public sidewalk and on-street bike lane along S. Timberline Road. • Bike and pedestrian path along the west boundary to connect eventually to the future multi-use trail along the Mail Creek Ditch corridor along the north boundary of Hansen Farm P.D.P., to be built by the city with available funding. • Red Willow Drive (Local Street with bike lane on one side). • Direct street and sidewalk connections are provided with this P.D.P. to the central private park. A stormwater detention pond and passive open space includes sidewalk connections from the local street network and internal paths within this area. • For the 83 single family detached units, requiring one space per unit (lots greater than 50 feet is width). These lots will include a two-car driveway and garage per unit, requiring a total of 83 spaces. The P.D.P. provides a total of 166 spaces in compliance. A third garage option is not part of this calculation. *Parking on an internal street fronting on a lot or tract containing, attached or two-family dwellings (except for mixed-use dwellings and single-family detached dwellings) may be counted to meet the parking requirements for the development.* • For the 66 two-family dwelling units (front and rear-loaded), the minimum required spaces are 143 based on the number of bedrooms. The P.D.P. provides 132 garage spaces, and 73 additional on-street parking spaces for a total of 205 parking spaces. Number of spaces required: - 26 units x 2 spaces per unit (front loaded garage) = 52 - 13 2-bedroom units x 1.75 (rear-loaded) = 23 - 13 3-bedroom units x 2 (rear-loaded) = 26 - 14 4-bedroom units x 3 (rear-loaded) = 42 • For the 48 single family attached units, the standard requires compliance on a per bedroom-per unit basis. The minimum required number of spaces is 94 spaces. The P.D.P. provides 88 garage spaces and an additional 51 on-street spaces for a total of 139 parking spaces. Number of Spaces Required: - 8 2-bedroom units x 1.75 spaces = 14 - 40 3-bedroom units x 2 spaces = 80 • The P.D.P. provides a total of 510 parking spaces 386 spaces in garages, and 124 on-street spaces in compliance with standard.	Complies

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3.2.3 – Solar Access and Shading	This standard requires 65% of the single family lots be oriented to within 30 degrees of an east-west line to preserve the potential for solar exposure. • The P.D.P. includes a total of 149 single-family and two-family lots. The minimum required number of solar oriented lots is 97 (65%). The P.D.P. includes 71 designated solar oriented lots out of a total of 149 lots, comprising 48%. • **A request for Modification of Standards to this section is included above.**	**Complies with Modification**

B. DIVISION 3.3 – ENGINEERING STANDARDS

Applicable Code Standard	Summary of Code Requirement and Analysis	Staff Findings
3.3.1(C) – Public Sites, Reservations and Dedications	This standard requires the applicant dedicate rights-of-way for public streets, drainage easements and utility easements as needed to serve the area being developed. In cases where any part of an existing street is abutting or within the property being developed, the applicant must dedicate such additional rights-of-way as may be necessary to increase such rights-of-way to the minimum width required by Larimer County Urban Area Street Standards and the City of Fort Collins Land Use Code. • The plat for the project includes one lot that includes 22 blocks (197 lots), and 23 tracts and right-of-way for the entire property. • The project will dedicate both onsite and offsite easements prior to final plan approval.	Complies
3.3.2 – Development Improvements	Approval of final plat by the City Engineer is completed at Final Development Plan.	NA

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C. 3.4 ENVIRONMENTAL, NATURAL AREA, RECREATIONAL AND CULTURAL RESOURCE PROTECTION STANDARDS

The purpose of this Section is to ensure that when property is developed consistent with its zoning designation, the way in which the proposed physical elements of the development plan are designed and arranged on the site will protect the natural habitats and features both on the site and in the vicinity of the site.

Applicable Code Standard	Summary of Code Requirement and Analysis	Staff Findings
3.4.1 Natural Habitats and Features	The General Standard in this section requires, to the maximum extent feasible, the development plan be designed and arranged to be compatible with and to protect natural habitats and features and the plants and animals that inhabit them and integrate them within the developed landscape of the community by: (1) directing development away from sensitive resources; (2) minimizing impacts and disturbance through the use of buffer zones; (3) enhancing existing conditions; or (4) restoring or replacing the resource value lost to the community when a development will result in the disturbance of natural habitats or features. Background: The Ecological Characterization Study (ECS) was completed by Ecological Resource Consultants in June 2021, prior to the Project Development Plan submittal. The report highlights an active red-tailed hawk nest in a mature Cottonwood tree as the only natural resource on the property that warrants protection or mitigation by the Land Use Code requirements. The remainder of the site is dominated by non-native upland grasses (smooth brome, crested wheatgrass), Russian olive (invasive tree) and Rabbitbrush (native shrub). Remnants of a prairie dog colony are also present, but the colony is no longer active due to poisoning that occurred prior to the annexation and formal development submittal of the property. Also present are shallow remnant irrigation laterals from previous farming operations. However, these features are low in habitat quality and function, have not been active for years, and thus do not serve as wildlife corridors. Development Proposal: The existing site contains an active red-tailed hawk nest which does not require permanent buffering. Instead, the nest is to be protected through site design. Additionally, a 450-foot temporary buffer is required during the nesting season (February 15-July 15) of the first year of a multi-year construction project. The Colorado Parks and Wildlife (CPW) provides *recommendations* for buffering of active red-tailed hawk nests. CPW recommends a ⅓ mile buffer for active nests in rural contexts from February 15 through July 15, or until the young have fledged. Staff consulted with CPW to determine whether protective measures other than those outlined in the Land Use Code should be taken during construction (e.g., 450-foot temporary buffer). CPW representatives felt 450' was an adequate distance given the more urban context and didn't recommend additional mitigation measures. Summary: The applicant amended the original site plan to protect the red-tailed hawk nest and surrounding trees. The applicant is prepared to limit construction activity within a 450-foot buffer during the nesting season (or until the young have fledged) of the first year of construction.	Complies
3.4.3 – Water Quality	The Project is designed so that precipitation runoff flowing from the site is treated in accordance with the criteria set forth in the *Stormwater Criteria Manual*.	Complies

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3.4.8 – Parks and Trails	The intent of this standard is to ensure that all residential development connects to a park and or trails on-site and off-site in accordance with the Parks and Recreation Policy Master Plan. • The plan provides connections to the on-stie private park, and future neighborhood park in the Hansen Farm subdivision to the north, and sidewalk connections to the future multi-use regional trail off-site.	Complies

D. 3.5 – BUILDING STANDARDS

Applicable Code Standard	Summary of Code Requirement and Analysis	Staff Findings
3.5.1– Building Project and Compatibility **(B)(C)(E)(F)(G)**	These subsections require new developments in or adjacent to existing developed areas are compatible, when considered within the context of the surrounding area, by using a design that is complimentary. They should be read in conjunction with the more specific building standards contained in the zone district standards contained in Article 4. • The P.D.P. is zoned L-M-N and is located adjacent to the Linden Park subdivision to the north (LMN zoning), and existing LMN zoning and Urban Estate zoning to the south. Across Timberline Road to the east is the existing LMN zoned Westchase subdivision. • The P.D.P. will provide direct street and pedestrian connections to Timberline Road, and to future residential neighborhoods adjacent to this site. • The P.D.P. includes single-family detached dwellings, two-family dwellings, all in one and two-story buildings height limits, and two-story single-family attached dwellings. All proposed residential buildings include compatible residential architectural design elements consistent with the existing neighborhood context.	Complies
3.5.2 - (C)Housing Model Variety	This standard requires that single family attached projects that consist of more than five buildings must feature three distinctly different building designs. Buildings are considered similar unless they vary significantly in footprint size and shape (architectural style). Further, no similar buildings can be placed next to each other. With 48 single family attached (3-plex, 4-plex, and 5-plex-plex) buildings, the P.D.P. provides the following three building footprints and three shapes as determined by their architectural style in Table below: **Sizes: 4 Architectural Styles/Footprints:** 3-plex Colorado Modern, Contemporary Farmhouse, Modern Hill Country 4-plex Colorado Modern, Contemporary Farmhouse, Modern Hill Country 5-plex Colorado Modern, Contemporary Farmhouse, Modern Hill Country • The three styles are characterized by distinctive architecture and building footprint sizes. For the 12 single-family attached buildings, the three building footprints and three design styles are distributed among all the single-family attached buildings that include rear-loaded garages. As noted on the Site Plan, there are no similar buildings, as differentiated by both footprint size and shape (architectural style), placed next to each other, in compliance with this standard.	Complies

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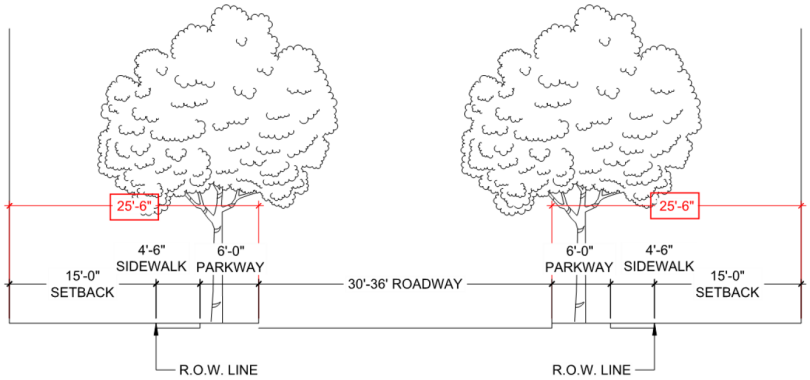
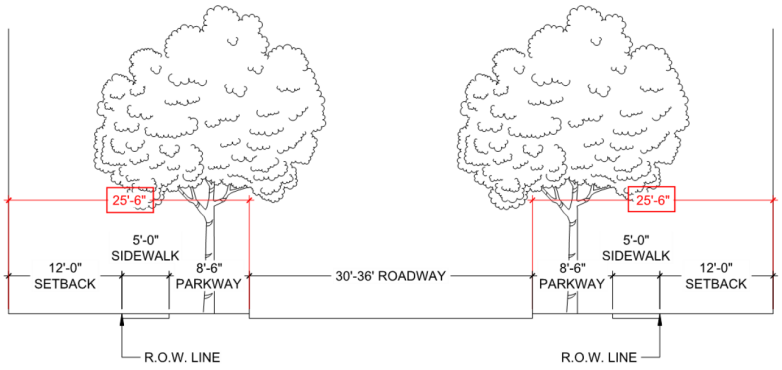
3.5.2 (D) (E) - Relationship of Dwellings to Streets and Parking, Setbacks	This standard requires that all dwellings are connected to the public street sidewalk by a connecting walkway (as specifically defined) that does not exceed 200 feet or by a major walkway spine (as specifically defined) that does not exceed 350 feet. • All the 12 single family attached building front entrances face a public street and connect directly to the street sidewalk with a distance less than 200 feet distance, in compliance with this standard. (E)(2) Setbacks from Non-arterial Streets. This standard requires that the single-family detached, two-family, and single-family attached (3 unit) buildings be setback at least 15 feet from nonarterial street right-of-way. The applicant requests an alternative compliance to LUC Article 3.5.2(E)(2) to reduce the minimum setback between residential buildings and the nonarterial street right-of-way from 15' to 12', and to reduce the minimum setback between the garage door and public sidewalk from 20' to 19' (see attached Alternative Compliance Request). During the initial design of the project, the Larimer County Urban Area Street Standards (LCUASS) defined residential and connector local street sections as having a minimum 6' tree-lined parkway and a 4.5' sidewalk. After the Timber Lark design was established, the LCUASS standards were revised to require a minimum 8.5' parkway and 5' sidewalk. This change resulted in a right-of-way dimension that was 6' wider overall, which in turn resulted in a reduced lot depth of 3' on each side of the street. Allowing for a 12' setback rather than a 15' setback will allow for more usable space in the rear yard of the home, while maintaining the same distance (25'-6") between the roadway and the face of the building or covered porch as compared to the original LCUASS standards (see Figure 1 and 2 below).  *Figure 1 - Original Street Section*  *Figure 2 - Revised Street Section*	**Complies with Alternative Compliance**

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The Timber Lark PDP is located within the LMN zone districts where alternative compliance is allowed.

2. Review Criteria. To approve an alternative plan, the decision maker must first find that the proposed alternative plan accomplishes the purposes of this Section equally well or better than would a plan which complies with the standards of this Section.

The following criteria shall be considered into the decision:

a. Porches and Entry Features.

(i) A front porch with a minimum depth of six (6) feet (as measured from the building facade to the posts, railings and spindles) and a minimum length of eight (8) feet shall be provided on single-family detached dwellings.

- For single-family detached dwellings, proposed porches range in size from 6' to 7' feet deep and 15' to 21' feet wide. In all cases they exceed the 6-foot x 8-foot minimum standard.

(ii) A clearly defined building front facing the street with a covered front porch or stoop measuring at least four (4) feet by four (4) feet shall be provided on each ground floor single-family attached dwelling.

- All dwelling units located on streets have a clearly defined building entry with a covered porch that significantly exceeds the 4-foot x 4-foot minimum requirement.

(iii) The floor elevation of the front porch or stoop shall be a minimum of eighteen (18) inches above grade.

- Many of the front porches will be 18 inches above grade; however, a portion of the single-family attached units will have porches at grade in order to meet accessibility standards.

b. Off-Street Parking. Off-street parking shall be located behind the dwelling and access to such parking shall be gained from an alley or, if there is no alley, then from the street via a driveway which, up to the rear building line of the house, does not exceed ten (10) feet in width.

- The Timber Lark PDP proposes that 45% of the dwelling units will be alley-loaded and comply with the above standard. 55% of units are front-loaded and do not meet the standard to the letter. However, the front-loaded units provide 2-3 off street garage parking spaces per unit, which is significantly more off-street parking than what is required per code. This substantially reduces the number of cars that will need to park on the street, prioritizing the pedestrian experience on the streetscape. Based on these reasons, the proposed alternative compliance will result in a design which is equal to or better than the original standard.

c. Private Open Space.

(i) A readily accessible, functional, and clearly defined private outdoor space (such as a patio, courtyard or deck) with minimum dimensions of twelve (12) feet by eighteen (18) feet shall be provided for each dwelling unit.

- Each dwelling unit within the Timber Lark community will have a usable side yard that exceeds the square footage of a 12' x 18' outdoor space. In some cases, individual outdoor spaces per dwelling unit far exceeds this minimum requirement, reaching up to 30' x 55', creating significantly more usable yard space.

(ii) All buildings on the same lot shall be spaced at least sixteen (16) feet apart.

- There is only one building proposed per lot.

d. Front Yard Fences.
(i) Front yard fences shall not exceed sixty percent (60%) opacity.

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	• This development is not proposing any front yard fences; therefore, this standard is met. *(ii) Front yard fences shall be between two and one-half (2½) feet and three (3) feet in height.* • This development is not proposing any front yard fences and therefore, this standard is not applicable. *(iii) Front yard fences made of chain link are prohibited.* • No chain link fences are proposed; therefore, this standard is met. • There are no utility conflicts because of the reduced front setback from 15' to 12' since the utility easement is 9' behind the street right-of-way. • The requested setback reduction is only for single-family detached, two-family, and single-family attached with three units. The single-family attached with more than three units will still maintain the required 9' setback.	

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E. 3.6 TRANSPORTATION AND CIRCULATION

This Section is intended to ensure that the transportation network of streets, alleys, roadways and trails is in conformance with adopted transportation plans and policies established by the City.

Applicable Code Standard	Summary of Code Requirement and Analysis	Staff Findings
3.6.1 – Master Street Plan	This criterion requires the P.D.P. to conform to the Master Street Plan. The Master Street Plan does not address streets below the collector classification. The following street, and its classification, is not part of the PDP, but adjacent to the north of Linden Park subdivision, included on the Master Street Plan: • Red Willow Drive – this street north of the P.D.P and Linden Park is shown as a two-lane collector on the Master Street Plan. However, this collector classification is not shown to extend through this site to Trilby Road to the south. If this street segment is reclassified in the future, the street cross section and on-street parking would need to be removed to accommodate bike lanes and travel lanes. • The P.D.P. does not include any street classifications above the collector level as part of the Master Street Plan. In general, the P.D.P. demonstrates overall compliance with City Plan in that development is served by a network of public streets, which provide safe and convenient internal and external connectivity.	NA
3.6.3 (B) - Street Pattern and Connectivity Standards	Section 3.6.3 (B) is the general standard that requires the local street system to provide for safety, efficiency, and convenience for all modes both within the neighborhood and to destinations outside the neighborhood. • All the proposed ten public internal streets include detached sidewalks. A portion of Red Willow Drive will include an on-street designated bike lane. The P.D.P. includes a trail segment on the west edge of the site to ultimately connect to the future Power Trail adjacent to railroad right-of-way, and regional trail link along the Mail Creek ditch corridor south of Willow Springs Subdivision. This trail is a key component of the Parks and Trails Master Plan and is expected to serve most areas along the City's southeastern edge between Fossil Creek Reservoir on the south and Poudre River on the north. • The proposed P.D.P. includes primary access from the extension of A Street to S. Timberline Road, providing access to the arterial street bike lanes and public transit routes. A secondary access is shown from the extension of Red Willow Drive, Cordova Avenue, Weeping Willow Drive, and Golden Willow Drive to the north into the Linden Park Subdivision. These streets stubbed out to the south will need to be coordinated with future development between this site and E. Trilby Road for additional connectivity in the area.	Complies
Section 3.6.3. (F)	Section 3.6.3. (F) requires that the P.D.P. incorporate and continue all sub-arterial streets stubbed to the boundary or provide for future public street connections along each boundary that abuts potentially developable land at maximum intervals of 660 feet. • The proposed P.D.P provides local-street connections to the south, where future development can occur. The P.D.P. includes four street connections to the Linden Park subdivision to the north, with each street interval of approximately 200 feet, not exceeding the 660' connectivity requirement.	Complies

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3.6.4 – Transportation Level of Service Requirements	This standard requires that the transportation needs of a proposed development can be safely accommodated by the existing transportation system, or includes appropriate mitigation of impacts, for all travel modes.
	
	A Transportation Impact Study (TIS) dated November 2021 was submitted by the applicant and reviewed by staff. The study assesses the impacts of the Timber Lark subdivision on the street system in the vicinity of the proposed development in the short range (2026) and long range (2040) futures.
	
	Vehicular Traffic:
	
	• At full buildout, the Timber Lark project would generate 1,940 daily trip ends, 145 morning peak hour trip ends and 195 afternoon peak hour trip ends.
	• Key intersections analyzed in the TIS include:
	  ○ Timberline/Trilby
	  ○ Timberline/Westchase
	  ○ Timberline/Fossil Creek
	  ○ Trilby/Red Willow
	• Currently, the key intersections all operate at an acceptable LOS with existing control and geometry. Stop-controlled left turn movements at Timberline/Fossil Creek and Timberline/Westchase currently experience the most significant delays and operate at LOS F.
	• In the long range (2040) future, the key intersections will operate at an acceptable LOS with the recommended control and geometry.
	• The Timberline/Trilby intersection is currently signalized. The Timberline/Zephyr intersection will be signalized with the Hansen Farm project in 2022. The signal at Zephyr will provide a signalized alternative for residents in the area and help alleviate some of the long delay times associated with the stop-controlled left turn movements at Timberline/Fossil Creek and Timberline/Westchase.
	• Timberline will be widened to four lanes from Stetson Creek to Zephyr. This is a city capital improvements project that is anticipated to be completed in 2022. The Timber Lark development will provide a payment in-lieu (PIL) for its Timberline frontage, rather than widen Timberline at this time.
	• At the Timberline/Trilby intersection, the eastbound left turn volume exceeds the 300+ vehicles per hour “rule of thumb” that would require dual left turn lanes. However, a single eastbound left turn lane was analyzed in the TIS for the short range (2026) future.
	
	Multi Modal Level of Service (Bikes and Pedestrians)
	
	Bike and pedestrian levels of service were evaluated, and the project is required to construct complete bike and pedestrian facilities that meet LOS standards within its site.
	
	• Acceptable level of service is achieved for bicycle and transit modes based upon the measures in the multi-modal transportation guidelines and future improvements to the street system in the area. Acceptable pedestrian and bicycle level of service can be achieved for all pedestrian destinations.
	• Bicycle and pedestrian connections to external destinations beyond the site are provided utilizing the existing sidewalk network within the Linden Park and Crowne at Timberline subdivisions as well as Timberline Road. The Timber Lark project will install sidewalk and multi-use path along its Timberline frontage from the proposed site access to Fossil Creek Parkway, which includes approximately 350 LF of offsite improvement adjacent to the Linden Park subdivision.
	• The section of Red Willow Drive within the Timber Lark project will include a dedicated bike lane.
	• Once the traffic signal is in operation at Timberline/Zephyr, the city will evaluate removing the existing pedestrian signal at Timberline/Fossil Creek Parkway. Additionally, the existing emergency signal at Westchase may be converted to a pedestrian signal in the future.
		Complies

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	• The city is currently constructing a pedestrian underpass of Timberline Road, just north of Zephyr, that will connect to the sidewalk network along Timberline. Regarding transportation, the proposal complies with Section 3.6.4 as well as Larimer County Urban Area Street Standards and the City of Fort Collins Multi-Modal Transportation Level of Service Manual.	

6. Article 4 – Applicable Standards:

A. DIVISION 4.5 – LOW DENSITY MIXED-USE NEIGHBORHOODS (L-M-N)

The Low Density Mixed-Use Neighborhood (L-M-N) District's primary purpose is to meet a wide range of needs of everyday living in neighborhoods that include a variety of housing choices, that invite walking to gathering places, services, and conveniences, and that are fully integrated into the larger community by the pattern of streets, blocks, and other linkages.

The proposed single-family dwelling is permitted use, subject to Administrative Review in this district.

Applicable Code Standard	Summary of Code Requirement and Analysis	Staff Findings
4.5 (B) Permitted Uses	The P.D.P. includes three land uses – single-family detached, two-family, and single-family attached dwellings. The three land uses are permitted in the L-M-N zone subject to Administrative (Type One) Review.	Complies
4.5 (D) (1) – Density	The P.D.P. features a total of 197 dwelling units (D.U.) on 35.17-acres. • Within the L-M-N zone there are 188 dwelling units for a gross density of 5.6 D.U. per gross acre. • The net density equals 5.8 D.U./net acre. In compliance with the standard, the gross density is under the maximum allowed (9.00 D.U./acre, and the net density exceeds the required minimum net density of 4.00 D.U./acre.	Complies

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<table>
<tr><th>Applicable Code Standard</th><th>Summary of Code Requirement and Analysis</th><th>Staff Findings</th></tr>
<tr><td>4.5 (D) (2) – Mix of Housing</td><td>This standard requires that for projects that are 30 acres or larger, four housing types are required. The L-M-N tracts total 35.17-acres. The overall L-M-N tracts features three housing types, with a Request for Modification of Standards to Section 4.5 (D) (2) to add a fourth housing type (see Request for Modification of Standards section above).

Table 1 - Mix of Housing
<table><tr><th>Housing Type</th><th># Of Dwelling Units</th><th>% Of Total</th></tr><tr><td>Single-Family Detached (Front-loaded garages)</td><td>83</td><td>42.5 %</td></tr><tr><td>Two-Family
(Front-loaded garages)</td><td>26</td><td>13%</td></tr><tr><td>Two-Family
(Rear-loaded garages)
See request for Modification of Standards.</td><td>40</td><td>20%</td></tr><tr><td>Single-Family Attached (Rear-loaded garages)</td><td>48</td><td>24.5 %</td></tr><tr><td>Total:</td><td>197</td><td>100 %</td></tr></table>Single Family Attached Dwellings are defined as dwellings that are attached to one or more dwellings or buildings, with each dwelling located on its own separate lot. These units are often referred to as townhomes. In the case of this P.D.P., units are arranged in the following manner: 3-plex (4 buildings), 4-plex (4 buildings), and 5-plex (4 buildings).</td><td>Complies, with Modification</td></tr>
<tr><td>4.5 (6) – Access to Small Park</td><td>This standard requires that for projects greater than ten acres a small neighborhood park or privately owned park that is at least one-acre in size be located within a maximum of 1/3 mile of at least 90% of the dwellings in the project.

• The P.D.P. identifies a private park in Tract G (1 +/- acres) on the site plan. A future larger size public neighborhood park is part of the Hansen Farm property to the north, intended to serve the surrounding L-M-N neighborhoods.

• In addition, passive open space and stormwater detention ponds are provided in Tracts L and O which combined contain 2.96-acres. All dwellings are within one-third of a mile of both the proposed private park and the passive open space, in compliance with this standard.</td><td>Complies</td></tr>
</table>

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<table>
<tr><th>Applicable Code Standard</th><th>Summary of Code Requirement and Analysis</th><th>Staff Findings</th></tr>
<tr><td>4.5 (E) (1) (a) – Streets and Blocks</td><td>This standard requires that the local street system provide an interconnected network of streets such that blocks do not exceed 12 acres. The internal roadway network consists of the following local streets:
<table><tr><td>Public Streets</td><td>Red Willow Drive (Collector north of Linden Park)
Weeping Willow Drive
Golden Willow Drive
Corona Avenue
Street A (not named yet for A-I)
Street B
Street C
Street E
Street G
Street I</td></tr><tr><td>Private Alley/Drive</td><td>Not Named</td></tr></table>As noted, the P.D.P. includes ten new public streets identified above. The other roadways are private alleys. The largest block is defined by Weeping Willow Drive, Street A, B and G, containing 12 dwelling lots. This block is approximately 8.26-acres and thus below the allowable maximum. The other blocks are smaller, due to separation from streets or pedestrian connections between lots.</td><td>Complies</td></tr>
</table>

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7. Findings of Fact/Conclusion

In evaluating the request for the Timber Lark Subdivision Project Development Plan, PDP210015, staff makes the following findings of fact:

A. The P.D.P. is consistent with related policies in the Fossil Creek Reservoir Area Plan, an element of City Plan, and City Plan.

B. The P.D.P. complies with the process located in Division 2.2 – Common Development Review Procedures for Development Applications of Article 2 – Administration.

C. The P.D.P. complies with the applicable standards located in Division 4.5, Low Density Mixed-Use Neighborhood of Article Four – Districts, if the request of Modification of Standard to Section 4.5 (D) (2) (c) is approved.

D. The Modification complies with process located in Division 2.2 – Common Development Review Procedures for Development Applications of Article 2 – Administration. The Modification of Standard to Section 4.5 (D) (2) (c) – *Variation of Housing Types,* is justified by the applicable standards in 2.8.2(H) (1).

E. The P.D.P. complies with the applicable standards located in Article 3 - General Development Standards of Article Three, if the request of Modification of Standard to Section 3.2.3 (C) – *Solar-Oriented Residential Lots,* is justified by the applicable standards in 2.8.2 (H) (3), and the request for Alternative Compliance to Section 3.5.2 (E)(2) - *Setbacks from Non-arterial Streets*, is justified by the applicable standards in 3.5.2 (E) (2) (a).

8. Recommendation

Staff recommends approval of the Timber Lark Subdivision, PDP210015.

9. Attachments

1. Vicinity Map
2. Zoning Map
3. Master Street Plan Map
4. City Structure Plan Map
5. Project Narrative
6. Site/Landscape Plan Set
7. Utility Plan
8. Plat
9. Building Elevations – Single-Family Attached
10. Alternative Compliance Request – Front Setbacks
11. Modification Request – Housing Types
12. Modification Request – Solar Oriented Lots
13. Traffic Impact Study
14. Ecological Characterization Study
15. Neighborhood Meeting Summary – Annexation/Conceptual Plan
16. Staff Hearing Presentation

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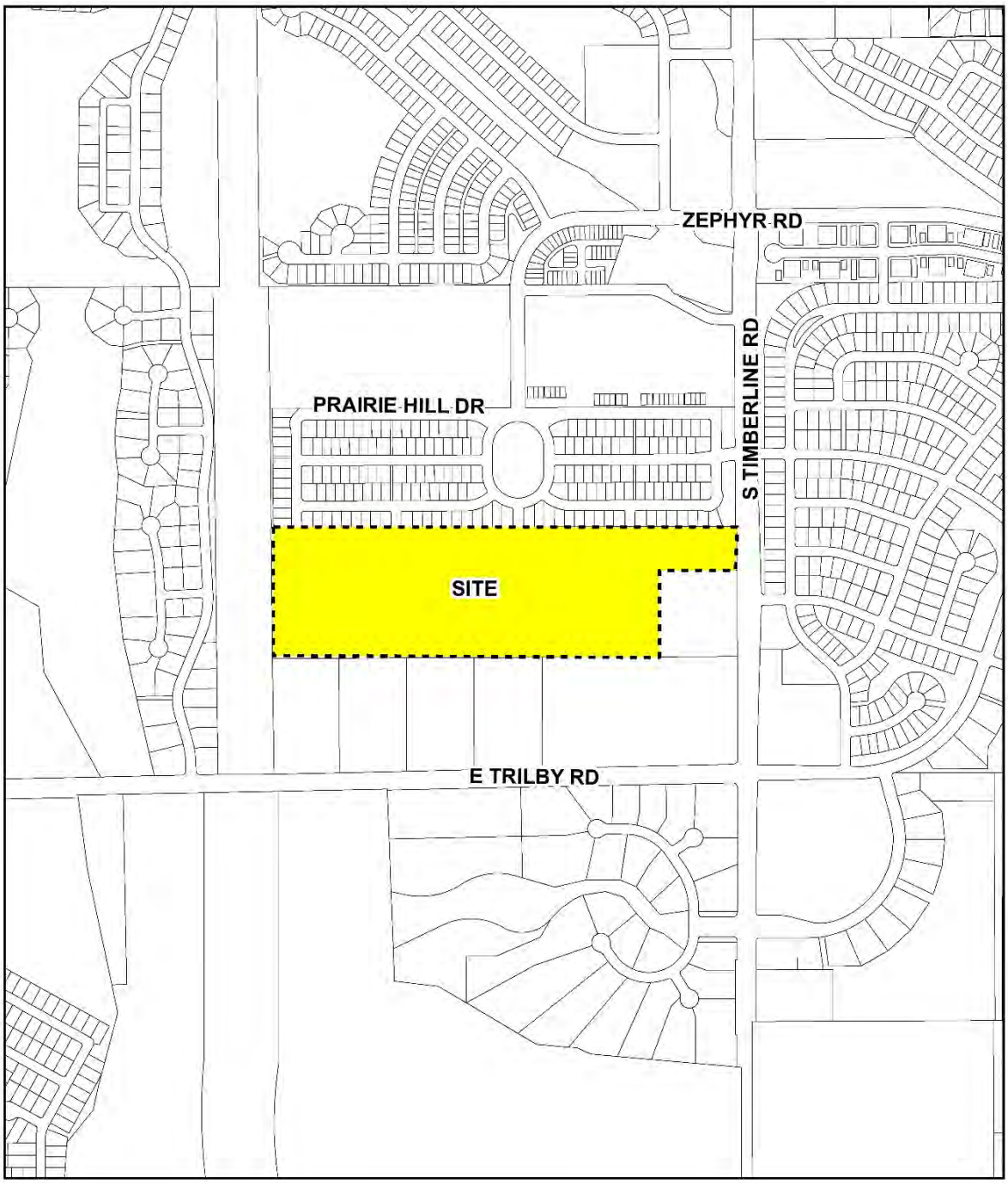
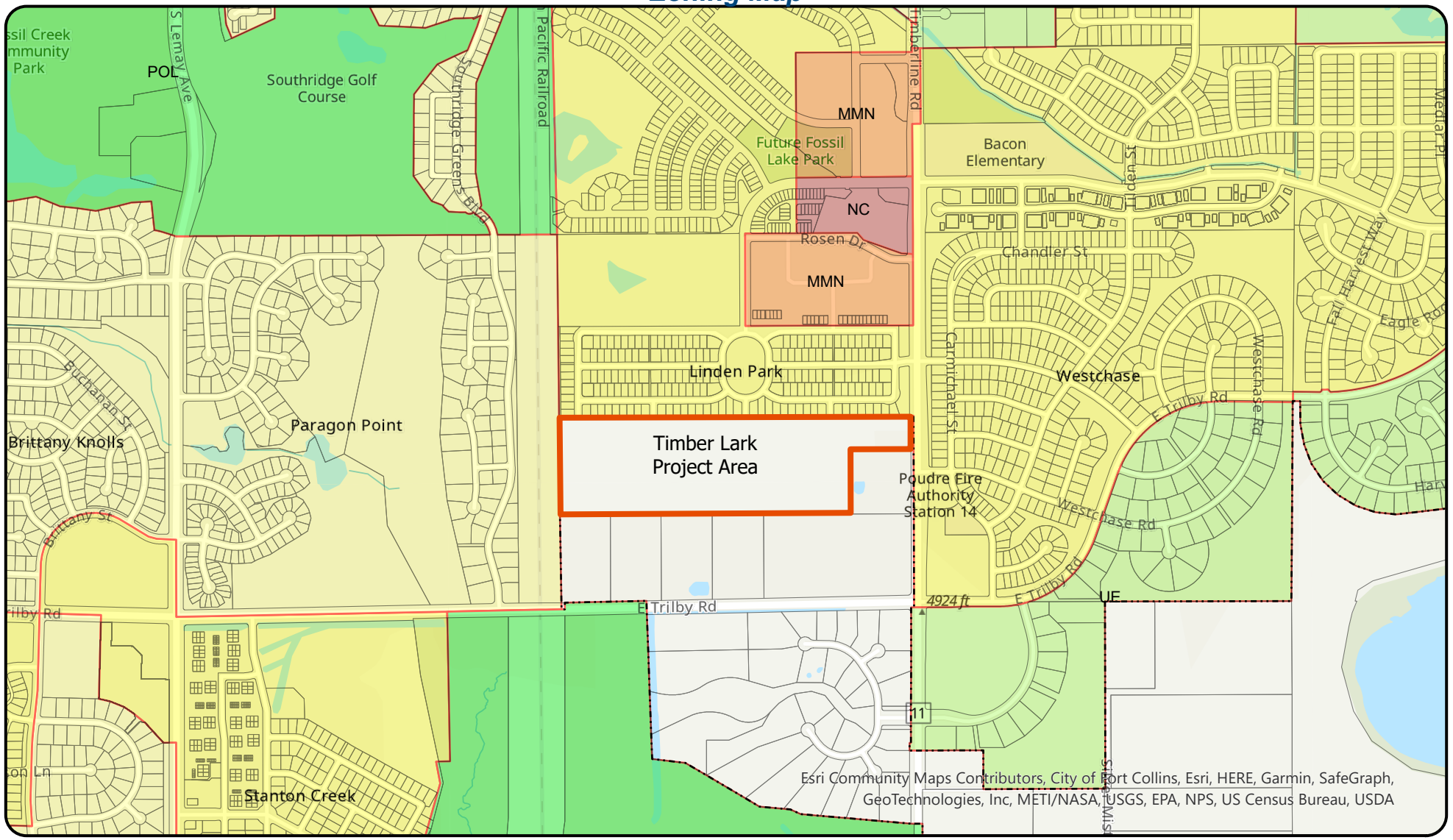


Timber Lark PDP
Vicinity Map

Timber Lark PDP

Zoning Map



Legend

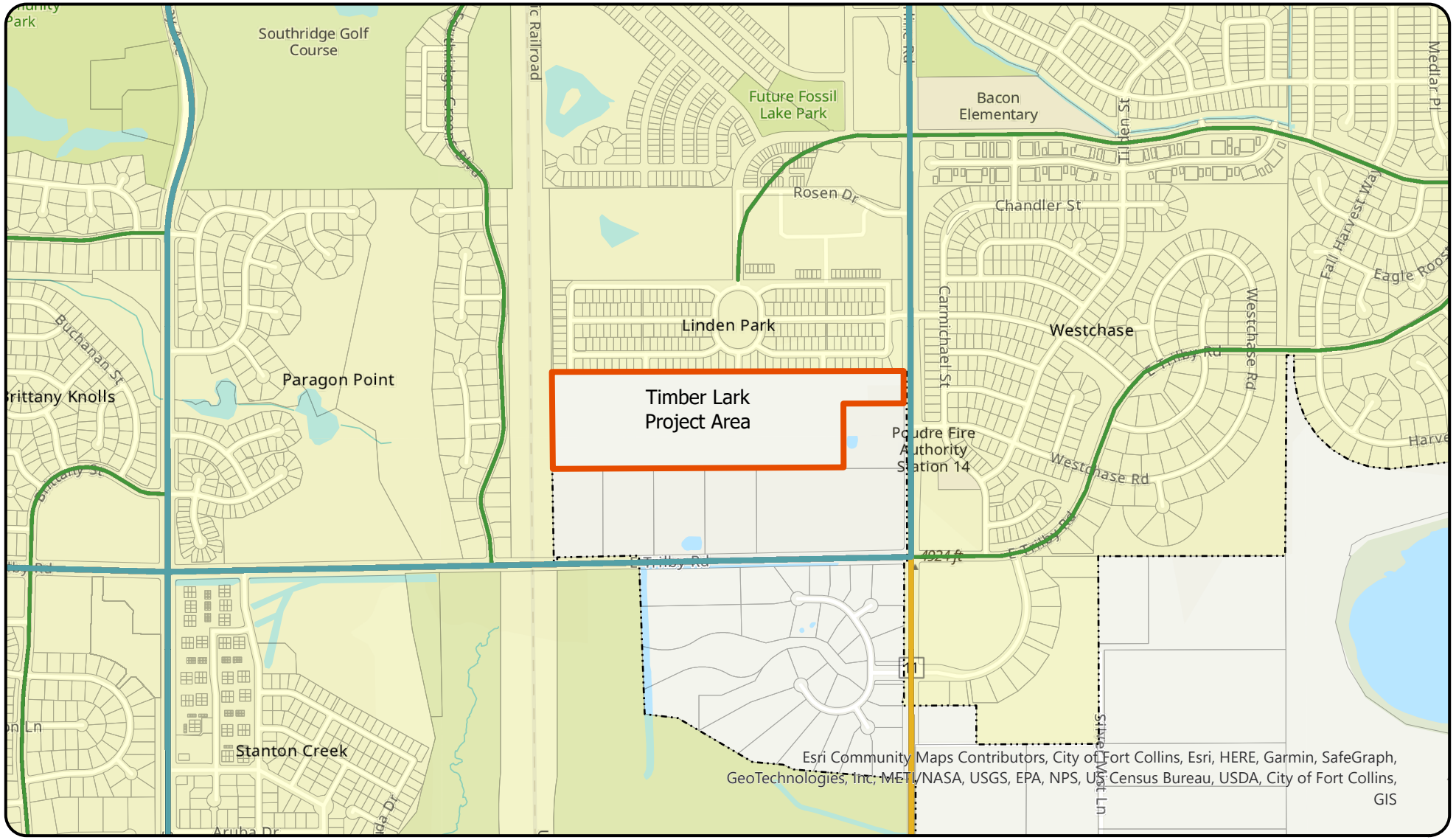
- Low Density Mixed-Use Neighborhood (LMN)
- Medium Density Mixed-Use Neighborhood (MMN)
- Neighborhood Commercial (NC)
- Public Open Lands (POL)
- Low Density Residential (RL)
- Urban Estate (UE)
- parcels
- City Limits

City of Fort Collins

Printed: March 22, 2022

Timber Lark PDP

Master Street Plan



Legend

- parcels
- City Limits

Master Street Plan Point Features

- Potential Grade Separated Rail Crossing
- Potential Roundabout

Inside GMA

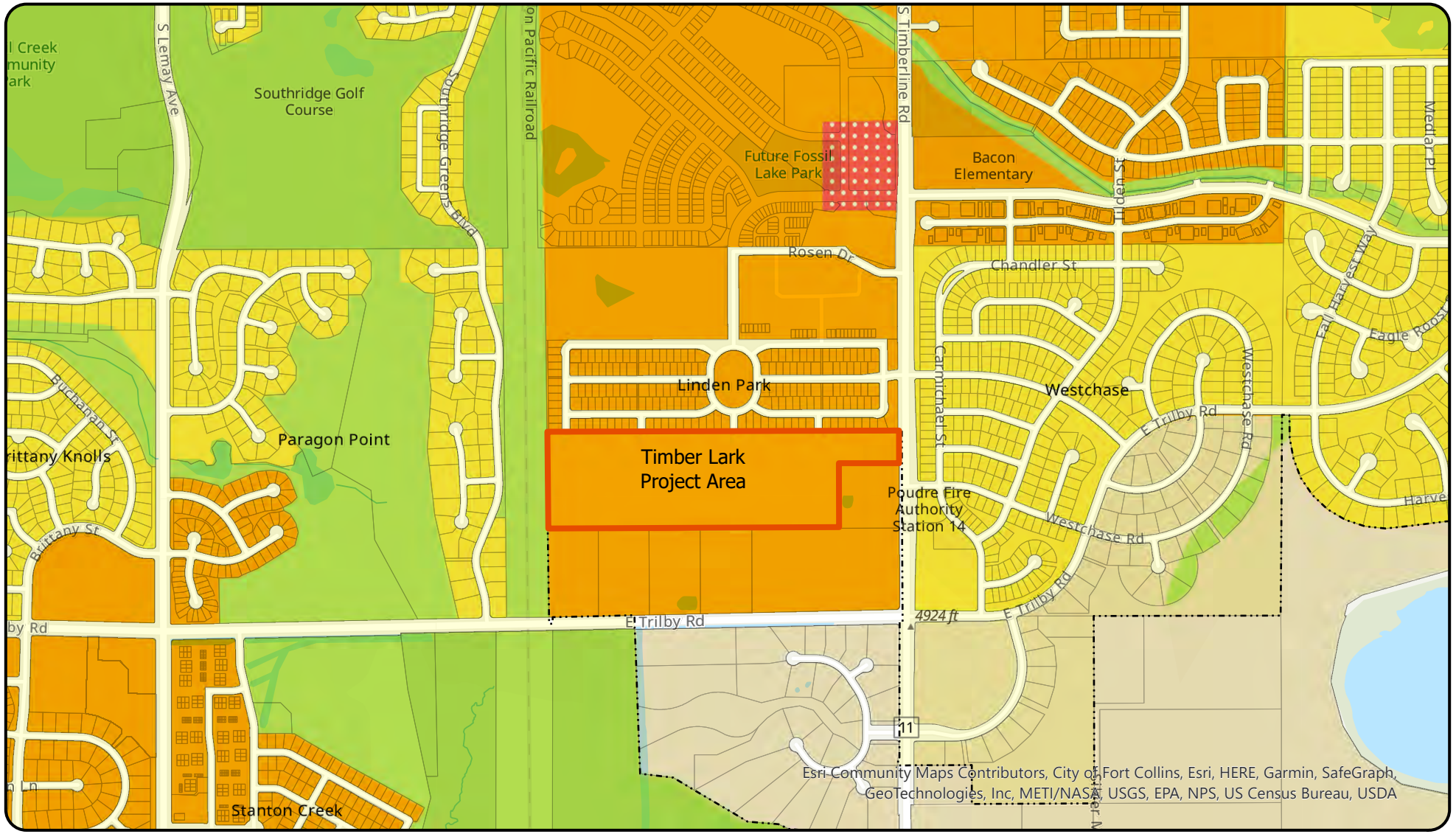
- Collector 2 Lanes
- Arterial 2 Lanes
- Arterial 4 Lanes
- Major Arterial 6 Lanes

City of Fort Collins

Printed: March 23, 2022

Timber Lark PDP

Structure Plan



Legend

- Community Separator
- Adjacent Planning Area
- Adjacent Planning Area
- Campus District
- Community Separator
- Downtown District
- Industrial District
- Mixed Employment District
- Mixed Neighborhood
- Neighborhood Mixed Use District
- Parks and Natural/Protected Lands
- R&D/Flex District
- Rural Neighborhood
- Single Family Neighborhood
- Suburban Mixed Use District
- Urban Mixed Use District
- parcels
- City Limits

City of Fort Collins

Printed: March 22, 2022

ripley design
LANDSCAPE ARCHITECTURE, LAND PLANNING

November 3, 2021

Timber Lark Residential
Project Development Plan (PDP) Narrative

Project Team

Owner
Alex Aigner, AADT Land Holdings, LLC

Applicant
Steve Schroyer, Schroyer Resources

Planner/Landscape Architect
Katy Thompson, Ripley Design Inc.

Civil Engineer
Robbie Lauer, Northern Engineering

Traffic Engineer
Matt Delich, Delich Associates

Introduction and Background

Previously called South Timberline Residential, the Timber Lark property is located on Timberline Road, northwest of the intersection of Trilby and Timberline Road. The property is situated adjacent to the Linden Park subdivision to the north, the Union Pacific Railroad to the west, private residential lots to the south and southeast, and Timberline Road to the east.

The project team will also be applying for annexation concurrently with the PDP, and the property is anticipated to be zoned Low Density Mixed-Use (LMN).

The 35.17 acre site is proposed to consist entirely of residential uses, with housing types including single-family detached, two-family front and rear loaded, and single-family attached. There will also be a neighborhood park at approximately 1 acre in size. While the LMN zone district allows for a maximum 9 dwelling units per acre, this proposed community is requesting 5.63 dwelling units per acre.

Transportation and Connectivity

The project site will be primarily accessed from Timberline Rd to the east, which is currently a two-lane arterial street with a center lane. Four street connections are also proposed to the north to allow for connectivity between the existing Linden Park subdivision and this proposed development. While the local street connection which is proposed to Timberline Rd anticipates a right-in-right-out turning movement, there will also be access to the signalized intersection located at Timberline Rd and Fossil Creek Parkway to the north. A street stub has been provided with this project so that a future connection can be made to Timberline Road where it aligns with Westchase Road.

Bike lanes currently existing along Timberline Road. A pedestrian trail is also proposed along the west edge of the property which will connect in with the existing Linden Park trail.

Natural Features

The Timber Lark property is currently a vacant site. There are several old irrigation channels across the site which have not been in operation for many years. An Ecological Characterization Study (ECS) Report was submitted with this application which found no wetland or habitat features associated with the channels. This project does propose to accommodate a new, 24" irrigation pipe to serve the private lots to the south if needed. The ECS report explains that the proposed development will have minimal impact on general wildlife in the local vicinity, largely due to the position of the property adjacent to existing high-density subdivisions and the railroad.

The ECS report identified an active red-tailed hawk nest existing cottonwood tree near the northwest portion of the site. The site has been re-designed to preserve this tree as part of the proposed development.

Architectural Design

For a project development with over 30 acres, four housing types are required per code. To satisfy this requirements, single-family detached (front-loaded), two-family (front-loaded), two-family (rear-loaded), and single-family attached (rear-loaded) housing types are provided. While the Fort Collins Land Use Code does not differentiate between two-family front versus rear loaded products, we believe the architectural variety will meet or exceed the intent of the code. See modification request included in this submittal for additional information.

For the single family attached buildings, three different building sizes are proposed in addition to three different building designs which will combine to create a diverse and interesting community. These different building designs and plex configurations allow for 9 unique building possibilities. In addition, four different unit types within the different plex configurations are provided, with each having a different width, depth, and porch size. As we increase from a 3-plex to a 4 or 5-plex, the combination of those units varies the overall building design and footprint, creating variety through varying jogs in the buildings and changes in massing. Major differences between the Colorado Modern, Contemporary Farmhouse and Modern Hill Country building designs include changes in materials, building massing and decorative elements, rooflines, lighting fixtures, window massing, and railing styles.

Phasing Schedule

The project is anticipated to be constructed in one phase.

City Plan

The project will comply with the City Plan. In particular, the following principles of the plan are most relevant.

Environmental Health

- Principle ENV 1: Within the developed landscape of Fort Collins, natural habitat/ecosystems (wildlife, wetlands, and riparian areas) will be protected and enhanced.
- Policy ENV 4.6 – Utilize Corridors Provide public access, promote wildlife movement, and link neighborhoods, parks, and activity centers, commercial centers, and streets through a network of open lands and trails along streams, drainageways, and irrigation ditch corridors, where compatible with natural habitats, utilizing environmentally sensitive trail design.

Community and Neighborhood Livability

- Principle LIV 1: City development will be contained by well-defined boundaries that will be managed using various tools including utilization of a Growth Management Area, community coordination, and Intergovernmental Agreements.

- Principle LIV 7: A variety of housing types and densities for all income levels shall be available throughout the Growth Management Area.
- Policy LIV 7.2 – Develop an Adequate Supply of Housing Encourage public and private for-profit and non-profit sectors to take actions to develop and maintain an adequate supply of single-and multiple-family housing, including mobile homes and manufactured housing.
- Policy LIV 7.4 – Maximize Land for Residential Development Permit residential development in most neighborhoods and districts in order to maximize the potential land available for development of housing and thereby positively influence housing affordability.
- Principle LIV 9: The City shall promote resource conservation and efficiency in the construction of new houses as well as upgrades to existing houses.
- Principle LIV 10: The city's streetscapes will be designed with consideration to the visual character and the experience of users and adjacent properties. Together, the layout of the street network and the streets themselves will contribute to the character, form, and scale of the city.
- Principle LIV 14: Require quality and ecologically sound landscape design practices for all public and private development projects throughout the community.
- Policy LIV 14.3 – Design Low Maintenance Landscapes Design new landscaping projects based on maintainability over the life cycle of the project using proper soil amendment and ground preparation practices, as well as the appropriate use of hardscape elements, trees, mulches, turf grass, other plant materials, and irrigation systems. Low maintenance practices can be achieved in both turf and non-turf planting areas, provided these areas are designed and installed to minimize weeds, erosion and repairs.
- Principle LIV 19: The City Structure Plan Map establishes the desired development pattern for the City, serving as a blueprint for the community's desired future.
- Policy LIV 19.1 – Land Use Designations Utilize the City Structure Plan Map to set forth a basic framework, representing a guide for future land use and transportation decisions.
- PRINCIPLE LIV 21: New neighborhoods will be integral parts of the broader community structure, connected through shared facilities such as streets, schools, parks, transit stops, trails, civic facilities, and a Neighborhood Commercial Center or Community Commercial District.

- Policy LIV 21.2 – Design Walkable Blocks While blocks should generally be rectilinear or otherwise distinctly geometric in shape, they may vary in size and shape to avoid a monotonous repetition of a basic grid pattern or to follow topography. In order to be conducive to walking, determine block size by frequent street connections within a maximum length of about 300 to 700 feet.
- Principle LIV22: The design of residential neighborhoods should emphasize creativity, diversity, and individuality, be responsive to its context, and contribute to a comfortable, interesting community.
- Policy LIV 22.4 – Orient Buildings to Public Streets or Spaces Orient residential buildings towards public sidewalks or other public outdoor spaces that connect to streets, the commercial core, and transit stops. Examples of public outdoor spaces include parks, squares, gardens with walkways, and courtyards.
- Principle LIV 23: Neighborhoods will feature a wide range of open lands, such as small parks, squares, greens, play fields, natural areas, orchards and community gardens, greenways, and other outdoor spaces to provide linkages and recreational opportunities both for neighborhoods and the community as a whole.
- Policy LIV 26.4 – Balance Resident Preferences with Communitywide Interests: In determining the acceptability of changes to parcels of land adjacent to existing residential developments, balance the adjacent residents' preferences with communitywide interests.
- Principle LIV 28: Low Density Mixed-Use Neighborhoods will provide opportunities for a mix of low density housing types in a setting that is conducive to walking and in close proximity to a range of neighborhood serving uses.
- Policy LIV 28.1 – Density. Low Density Mixed-Use Neighborhoods will have an overall minimum average density of four (4) dwelling units per acre, excluding undevelopable areas. This minimum density for parcels 20 acres or less will be three (3) dwelling units per acre.
- Policy LIV 28.2 – Mix of Uses. Include other neighborhood-serving uses in addition to residential uses. Although the actual mix of uses in each neighborhood will vary, Low Density Mixed-Use Neighborhoods may include the following:
    - Principal uses: Predominantly detached single family homes; however, may include a range of duplexes, townhomes, and small scale multi-family dwellings (twelve or less units per building).

- Policy LIV 28.3 – Mix of Housing Types Distribute a variety of housing types to make an attractive, marketable neighborhood with housing for a diversity of people. Include a minimum of four (4) distinct housing types in any residential project containing more than thirty (30) acres. As the acreage of the residential project increases, so should the number of housing types.

Safety and Wellness

- Policy SW 2.4 – Design for Active Living. Promote neighborhood and community design that encourages physical activity by establishing easy access to parks and trails, providing interesting routes that feature art and other visually interesting elements, and locating neighborhoods close to activity centers and services so that physically active modes of transportation are a desirable and convenient choice. (Also see the Community and Neighborhood Livability and Transportation

Transportation

- Principle T 3: Land use planning decisions, management strategies, and incentives will support and be coordinated with the City's transportation vision.
- Principle T 4: Transportation infrastructure will be designed to be sensitive to the surrounding land use context.
- Policy T 4.1 – Context-Sensitive Design. Design transportation projects with consideration for the land use context or setting through careful planning, consideration of different perspectives, and tailoring designs to particular project circumstances and locations. The intent of the policy is to ensure that transportation projects not only move vehicles, bicycles, and pedestrians safely and efficiently, but are also sensitive to the land use, environmental, scenic, aesthetic, and historic values of the area.
- Policy T 4.2 – Interface with Open Lands Transportation corridors that are adjacent to open lands and community separators will be designed in a manner that avoids negative impacts. Where avoidance is not possible, impacts will be minimized and mitigated while still maintaining the intended function of the Transportation Corridor.
- Policy T 4.4 – Attractive and Safe Neighborhood Streets Neighborhood streets will provide an attractive environment and be safe for pedestrians, bicyclists, and drivers as well as having a well-designed streetscape, including detached sidewalks, parkways, and well-defined crosswalks.

- Policy T 4.5 – Infill and Redevelopment Areas Where the established street pattern and design may not conform to current street standards, allow for alternative contextual design.
- Principle T 12: The pedestrian network will provide a safe, easy, and convenient mobility option for all ages and abilities.
- Policy T 12.1 – Connections. Direct pedestrian connections will be provided from places of residence to transit, schools, activity centers, work, and public facilities.
- Policy T 13.2 – Neighborhood Traffic. Provide a complete street network that minimizes through traffic on collector and local streets in neighborhoods.
- Principle T 16: The transportation system will be managed to minimize environmental impacts.

Fossil Creek Reservoir Area Plan

The project will comply with the Fossil Creek Reservoir Area Plan. In particular, the following principles of the plan are most relevant.

- FC-LUF-1 Community Design. New urban development will be required to be consistent with the principles and policies for community design and new residential neighborhoods established by the Fort Collins City Plan.
- FC-LUF-3 Mixed-Use Neighborhoods. These neighborhoods will consist of a mix of housing types near parks, schools, and a neighborhood center. The density will be a minimum overall average of either 3 or 5 units per acre, with an overall maximum of 8 dwelling units per acre, and maximum of 12 units per acre for any single phase. This residential classification will require design and development standards agreed upon by both Larimer County and the City of Fort Collins. The method of calculating densities shown in Appendix A.
- FC-LUF-5 Relationships and Transitions at Edges of Neighborhood Development. Where a new neighborhood develops next to existing lower-density residential development, the neighborhood design and layout should complement the established patterns of buildings and outdoor spaces along the edge, with no drastic and abrupt increase in the size of buildings or intensity of building coverage.
- FC-T-1 Street Location and Design. Locate streets according to the general alignments shown on the Land Use Plan, and design them to be consistent with the City's street

standards, connectivity standards in the City's Land Use Code and the proposed Intergovernmental Agreement

- FC-T-3.2 Providing for both intra- and inter-neighborhood connections to knit developments together rather than forming barriers between them.
- FC-T-6 Off-Street Bicycle Trails. Provide off-road pedestrian and bicycle trails through the open space areas south of the Reservoir at appropriate locations that will not have an adverse impact on sensitive habitats. The Fossil Creek Trail is anticipated to come from the west, linking the Regional Preserve and potential Regional Park with the City's open space system. The off-street bicycle trail is indicated on the Land Use Plan
- TH-2. Natural and cultural resources shall be identified, conserved and protected. Environmental quality and impacts shall be considered when evaluating changes in land use. Long-term cumulative impacts of land use policies and decisions on environmental resources shall be monitored and used to evaluate the performance of the planning process.

TIMBER LARK RESIDENTIAL

PROJECT DEVELOPMENT PLAN

LAND USE CHART

ZONING	LMN

DENSITY	

GROSS	
GROSS AREA	1,532,128 SF (35.17 AC)
TOTAL DWELLING UNITS	197
GROSS DENSITY	5.6 DU/AC

NET*	
NET AREA	1,484,535 SF (34.08 AC)
TOTAL DWELLING UNITS	197
NET DENSITY	5.8 DU/AC

DENSITY NOTES:
1. THE NET AREA CALCULATION HAS BEEN DETERMINED BY SUBTRACTING THE AREA OF THE PARK (47,593 SF) FROM THE GROSS AREA OF THE DEVELOPMENT.

AREA COVERAGE

GROSS	AREA (SF)	%
RESIDENTIAL LOTS	830,042	54.24
DRIVES AND PARKING (EXCLUDES PUBLIC ROW)	34,114	2.23
OPEN SPACE AND LANDSCAPE (EXCLUDES PUBLIC ROW)	253,065	16.54
HARDSCAPE (EXCLUDES PUBLIC ROW)	20,838	1.36
**PUBLIC STREET RIGHT-OF-WAY	392,272.00	25.63
HARDSCAPE	70,926	
DRIVES AND PARKING	255,079	
LANDSCAPE	66,267	
TOTAL GROSS COVERAGE	**1,530,331.00 SF (35.13 AC)**	**100.00**

NET	AREA (SF)	%
RESIDENTIAL LOTS	830,042	72.93
DRIVES AND PARKING	34,114	3.00
OPEN SPACE AND LANDSCAPE	253,065	22.24
HARDSCAPE (WALKS & PLAZAS)	20,838	1.83
TOTAL NET COVERAGE	**1,138,059.00 SF (26.13 AC)**	**100.00**

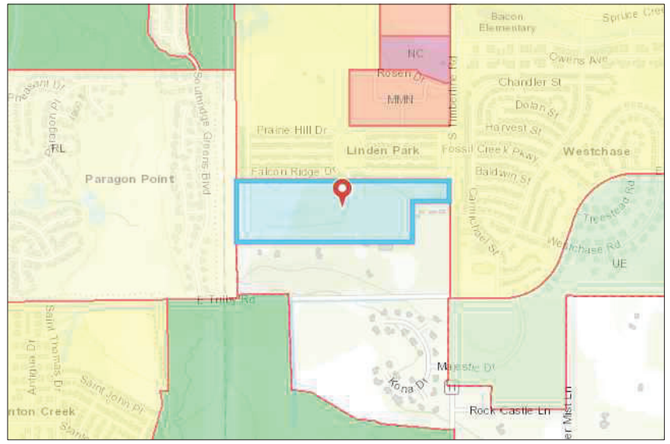
HOUSING TYPE BREAKDOWN		
UNIT TYPE:	DWELLING UNITS	% (DU)
SINGLE-FAMILY DETACHED (FRONT LOADED)	83	42
TWO-FAMILY (FRONT LOADED)	26	13
TWO-FAMILY (ALLEY LOADED)	40	20
SINGLE-FAMILY ATTACHED	48	24
3 PLEX (4 BUILDINGS)		
4 PLEX (4 BUILDINGS)		
5 PLEX (4 BUILDINGS)		
TOTAL	**197**	**100.00**

BUILDING HEIGHT		
UNIT TYPE:	MAXIMUM HEIGHT ALLOWED (STORIES)	PROVIDED HEIGHT (STORIES)
SINGLE-FAMILY DETACHED (FRONT LOADED)	2.5	2
TWO-FAMILY (FRONT LOADED)	2.5	2
TWO-FAMILY (ALLEY LOADED)	2.5	2
SINGLE-FAMILY ATTACHED		
3 PLEX	3	2
4 PLEX	3	2
5 PLEX	3	2

PARKING REQUIREMENTS				
UNIT TYPE:	REQUIRED PARKING PER UNIT	NUMBER OF UNITS	TOTAL SPACES REQUIRED	TOTAL SPACES PROVIDED
SINGLE-FAMILY DETACHED (FRONT LOADED)	1	83	83	166
TWO-FAMILY (FRONT LOADED)	2	26	52	52
ADDITIONAL ON-STREET PARKING				12
TWO-FAMILY (ALLEY LOADED)				
2-BEDROOM UNIT	1.75	13	23	26
3-BEDROOM UNIT	2	13	26	26
4-BEDROOM UNIT	3	14	42	28
ADDITIONAL ON-STREET PARKING				61
SINGLE-FAMILY ATTACHED				
2-BEDROOM UNIT	1.75	8	14	8
3-BEDROOM UNIT	2	40	80	80
ADDITIONAL ON-STREET PARKING				51
TOTAL PARKING SPACES:			**226**	**510**

PARKING NOTES:
1. SINGLE-FAMILY DETACHED DWELLINGS WILL HAVE A 3-CAR GARAGE OPTION WHICH IS NOT REFLECTED IN THE PARKING CALCULATION.
2. TWO-FAMILY (FRONT LOADED) DWELLINGS WILL HAVE 3 BEDROOMS.
3. SINGLE-FAMILY ATTACHED AND TWO-FAMILY ALLEY-LOADED PARKING REQUIREMENTS WILL BE PARTIALLY MET THROUGH THE ON-STREET PARKING SPACES PROVIDED ALONG ADJACENT PUBLIC STREETS (PER ARTICLE 3.2.2.(K)(b)). SEE SITE PLAN ENLARGEMENT SHEETS FOR LOCATIONS OF ON-STREET PARKING.

VICINITY MAP



SITE PLAN NOTES

1. THE PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FINAL PLANS. AMENDMENTS TO THE PLANS MUST BE REVIEWED AND APPROVED BY THE CITY PRIOR TO THE IMPLEMENTATION OF ANY CHANGES TO THE PLANS.
2. REFER TO FINAL UTILITY PLANS FOR EXACT LOCATIONS AND CONSTRUCTION INFORMATION FOR STORM DRAINAGE STRUCTURES, UTILITY MAINS AND SERVICES, PROPOSED TOPOGRAPHY, STREET IMPROVEMENTS.
3. REFER TO THE SUBDIVISION PLAT AND UTILITY PLANS FOR EXACT LOCATIONS, AREAS AND DIMENSIONS OF ALL EASEMENTS, LOTS, TRACTS, STREETS, WALKS AND OTHER SURVEY INFORMATION.
4. ALL ROOFTOP AND GROUND MOUNTED MECHANICAL EQUIPMENT MUST BE SCREENED FROM VIEW FROM ADJACENT PROPERTY AND PUBLIC STREETS. IN CASES WHERE BUILDING PARAPETS DO NOT ACCOMPLISH SUFFICIENT SCREENING, THEN FREE-STANDING SCREEN WALLS MATCHING THE PREDOMINANT COLOR OF THE BUILDING SHALL BE CONSTRUCTED. OTHER MINOR EQUIPMENT SUCH AS CONDUIT, METERS AND PLUMBING VENTS SHALL BE SCREENED OR PAINTED TO MATCH SURROUNDING BUILDING SURFACES.
5. ALL CONSTRUCTION WITH THIS DEVELOPMENT PLAN MUST BE COMPLETED IN ONE PHASE UNLESS A PHASING PLAN IS SHOWN WITH THESE PLANS.
6. ALL SINGLE FAMILY DETACHED HOMES SHALL MEET OR EXCEED THE GARAGE DOOR STANDARDS AS OUTLINED IN 3.5.2(E) OF THE LAND USE CODE.
7. A MINIMUM OF FOUR HOUSING MODELS FOR THE SINGLE FAMILY HOMES SHALL BE REQUIRED. THESE HOUSING MODELS SHALL MEET OR EXCEED THE STANDARDS AS OUTLINED IN 3.5.2(C) OF THE LAND USE CODE.
8. ALL EXTERIOR LIGHTING PROVIDED SHALL COMPLY WITH THE FOOT-CANDLE REQUIREMENTS IN SECTION 3.2.4 OF THE LAND USE CODE AND SHALL USE A CONCEALED, FULLY SHIELDED LIGHT SOURCE WITH SHARP CUT-OFF CAPABILITY SO AS TO MINIMIZE UP-LIGHT, SPILL LIGHT, GLARE AND UNNECESSARY DIFFUSION.
9. SIGNAGE AND ADDRESSING ARE NOT PERMITTED WITH THIS PLANNING DOCUMENT AND MUST BE APPROVED BY SEPARATE CITY PERMIT PRIOR TO CONSTRUCTION. SIGNS MUST COMPLY WITH CITY SIGN CODE UNLESS A SPECIFIC VARIANCE IS GRANTED BY THE CITY.
10. FIRE HYDRANTS MUST MEET OR EXCEED POUDRE FIRE AUTHORITY STANDARDS. ALL BUILDINGS MUST PROVIDE AN APPROVED FIRE EXTINGUISHING SYSTEM.
11. ALL BIKE RACKS PROVIDED MUST BE PERMANENTLY ANCHORED.
12. ALL SIDEWALKS AND RAMPS MUST CONFORM TO CITY STANDARDS. ACCESSIBLE RAMPS MUST BE PROVIDED AT ALL STREET AND DRIVE INTERSECTIONS AND AT ALL DESIGNATED ACCESSIBLE PARKING SPACES. ACCESSIBLE PARKING SPACES MUST SLOPE NO MORE THAN 1:48 IN ANY DIRECTION. ALL ACCESSIBLE ROUTES MUST SLOPE NO MORE THAN 1:20 IN DIRECTION OF TRAVEL AND WITH NO MORE THAN 1:48 CROSS SLOPE.
13. COMMON OPEN SPACE AREAS AND LANDSCAPING WITHIN RIGHT OF WAYS, STREET MEDIANS, AND TRAFFIC CIRCLES ADJACENT TO COMMON OPEN SPACE AREAS ARE REQUIRED TO BE MAINTAINED BY A PROPERTY OWNERS' ASSOCIATION. THE PROPERTY OWNERS' ASSOCIATION IS RESPONSIBLE FOR SNOW REMOVAL ON ALL ADJACENT STREET SIDEWALKS AND SIDEWALKS IN COMMON OPEN SPACE AREAS.
14. THE PROPERTY OWNER FOR EACH RESIDENTIAL LOT IS RESPONSIBLE FOR SNOW REMOVAL ON ALL STREET SIDEWALKS ADJACENT TO EACH RESIDENTIAL LOT.
15. PRIVATE CONDITIONS, COVENANTS, AND RESTRICTIONS (CC&R'S), OR ANY OTHER PRIVATE RESTRICTIVE COVENANT IMPOSED ON LANDOWNERS WITHIN THE DEVELOPMENT, MAY NOT BE CREATED OR ENFORCED HAVING THE EFFECT OF PROHIBITING OR LIMITING THE INSTALLATION OF XERISCAPE LANDSCAPING, SOLAR/PHOTO-VOLTAIC COLLECTORS (IF MOUNTED FLUSH UPON ANY ESTABLISHED ROOF LINE), CLOTHES LINES (IF LOCATED IN BACK YARDS), ODORCONTROLLED COMPOST BINS, OR WHICH HAVE THE EFFECT OF REQUIRING THAT A PORTION OF ANY INDIVIDUAL LOT BE PLANTED IN TURF GRASS.
16. ANY DAMAGED CURB, GUTTER AND SIDEWALK EXISTING PRIOR TO CONSTRUCTION, AS WELL AS STREETS, SIDEWALKS, CURBS AND GUTTERS, DESTROYED, DAMAGED OR REMOVED DUE TO CONSTRUCTION OF THIS PROJECT, SHALL BE REPLACED OR RESTORED TO CITY OF FORT COLLINS STANDARDS AT THE DEVELOPER'S EXPENSE PRIOR TO THE ACCEPTANCE OF COMPLETED IMPROVEMENTS AND/OR PRIOR TO THE ISSUANCE OF THE FIRST CERTIFICATE OF OCCUPANCY.
17. FIRE LANE MARKING: A FIRE LANE MARKING PLAN MUST BE REVIEWED AND APPROVED BY THE FIRE OFFICIAL PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY. WHERE REQUIRED BY THE FIRE CODE OFFICIAL, APPROVED SIGNS OR OTHER APPROVED NOTICES THAT INCLUDE THE WORDS NO PARKING FIRE LANE SHALL BE PROVIDED FOR FIRE APPARATUS ACCESS ROADS TO IDENTIFY SUCH ROADS OR PROHIBIT THE OBSTRUCTION THEREOF. THE MEANS BY WHICH FIRE LANES ARE DESIGNATED SHALL BE MAINTAINED IN A CLEAN AND Revised November 12, 2015 3 LEGIBLE CONDITION AT ALL TIMES AD BE REPLACED OR REPAIRED WHEN NECESSARY TO PROVIDE ADEQUATE VISIBILITY.
18. PREMISE IDENTIFICATION: AN ADDRESSING PLAN IS REQUIRED TO BE REVIEWED AND APPROVED BY THE CITY AND POUDRE FIRE AUTHORITY PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY. UNLESS THE PRIVATE DRIVE IS NAMED, MONUMENT SIGNAGE MAY BE REQUIRED TO ALLOW WAY-FINDING. ALL BUILDINGS SHALL HAVE ADDRESS NUMBERS, BUILDING NUMBERS OR APPROVED BUILDING IDENTIFICATION PLACED IN A POSITION THAT IS PLAINLY LEGIBLE, VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY, AND POSTED WITH A MINIMUM OF SIX-INCH NUMERALS ON A CONTRASTING BACKGROUND, WHERE ACCESS IS BY MEANS OF A PRIVATE ROAD AND THE BUILDING CANNOT BE VIEWED FROM THE PUBLIC WAY, A MONUMENT, POLE OR OTHER SIGN OR MEANS SHALL BE USED TO IDENTIFY THE STRUCTURE.
19. AT THE HEARING FOR THIS PROJECT DEVELOPMENT PLAN, THE DECISION MAKER APPROVED A REQUEST FOR A MODIFICATION TO THE LAND USE CODE ARTICLE 3.2.3(C), AT LEAST 65% OF SINGLE- AND TWO-FAMILY RESIDENTIAL LOTS LESS THAN 15,000 SQUARE FEET MUST CONFORM TO THE DEFINITION OF A SOLAR-ORIENTED LOT, TO PERMIT A REDUCTION FROM 65% TO 48% OF SOLAR-ORIENTED LOTS
20. AT THE HEARING FOR THIS PROJECT DEVELOPMENT PLAN, THE DECISION MAKER APPROVED A REQUEST FOR A MODIFICATION TO THE LAND USE CODE ARTICLE 4.5(D), A MINIMUM OF FOUR HOUSING TYPES ARE REQUIRED FOR ANY PROJECT CONTAINING THIRTY OR MORE ACRES WITHIN THE LMN DISTRICT, TO PERMIT FRONT-LOADED AND REAR-LOADED TWO-FAMILY DWELLINGS TO BE CLASSIFIED AS TWO DIFFERENT HOUSING TYPES.
21. THE TIMBERLINE ROAD STREETSCAPE IMPROVEMENTS ALONG THE FRONTAGE ROAD ARE PART OF THE CITY CAPITAL IMPROVEMENTS PROJECT. THIS PROJECT WILL PAY A FEE IN LIEU OF PROVIDING THESE IMPROVEMENTS.

SHEET INDEX

OWNER'S CERTIFICATE

THE UNDERSIGNED DOES/DO HEREBY CERTIFY THAT I/WE ARE THE LAWFUL OWNERS OF THE REAL PROPERTY DESCRIBED ON THIS SITE PLAN AND DO HEREBY CERTIFY THAT I/WE ACCEPT THE CONDITIONS AND RESTRICTIONS SET FORTH ON SAID SITE PLAN.

OWNER (SIGNED) _____ Date _____

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME

THIS _____ DAY OF _____ A.D., 20 _____ . BY _____
(PRINT NAME)

AS _____

MY COMMISSION EXPIRES: _____

WITNESS MY HAND AND OFFICIAL SEAL.

_____ _____
NOTARY PUBLIC ADDRESS

PLANNING CERTIFICATE

APPROVED BY THE DIRECTOR OF COMMUNITY DEVELOPMENT AND NEIGHBORHOOD SERVICES OF THE CITY OF FORT COLLINS, COLORADO ON THIS _____ DAY OF _____, 20__.

_____
Director Signature

TIMBER LARK RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

PREPARED BY:

ripley design
LANDSCAPE ARCHITECTURE, LAND PLANNING
419 Canyon Ave. Suite 200 Fort Collins, CO 80521
phone 970.224.5828 | fax 970.225.6657 | www.ripleydesigninc.com

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900 Greenfields Court
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p. 970.481.5505

OWNER
AADT LAND HOLDINGS, LLC
Alexander Aigner
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Broomfield, CO 80020

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ENGINEER
NORTHERN ENGINEERING
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ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

COVER

SEAL:

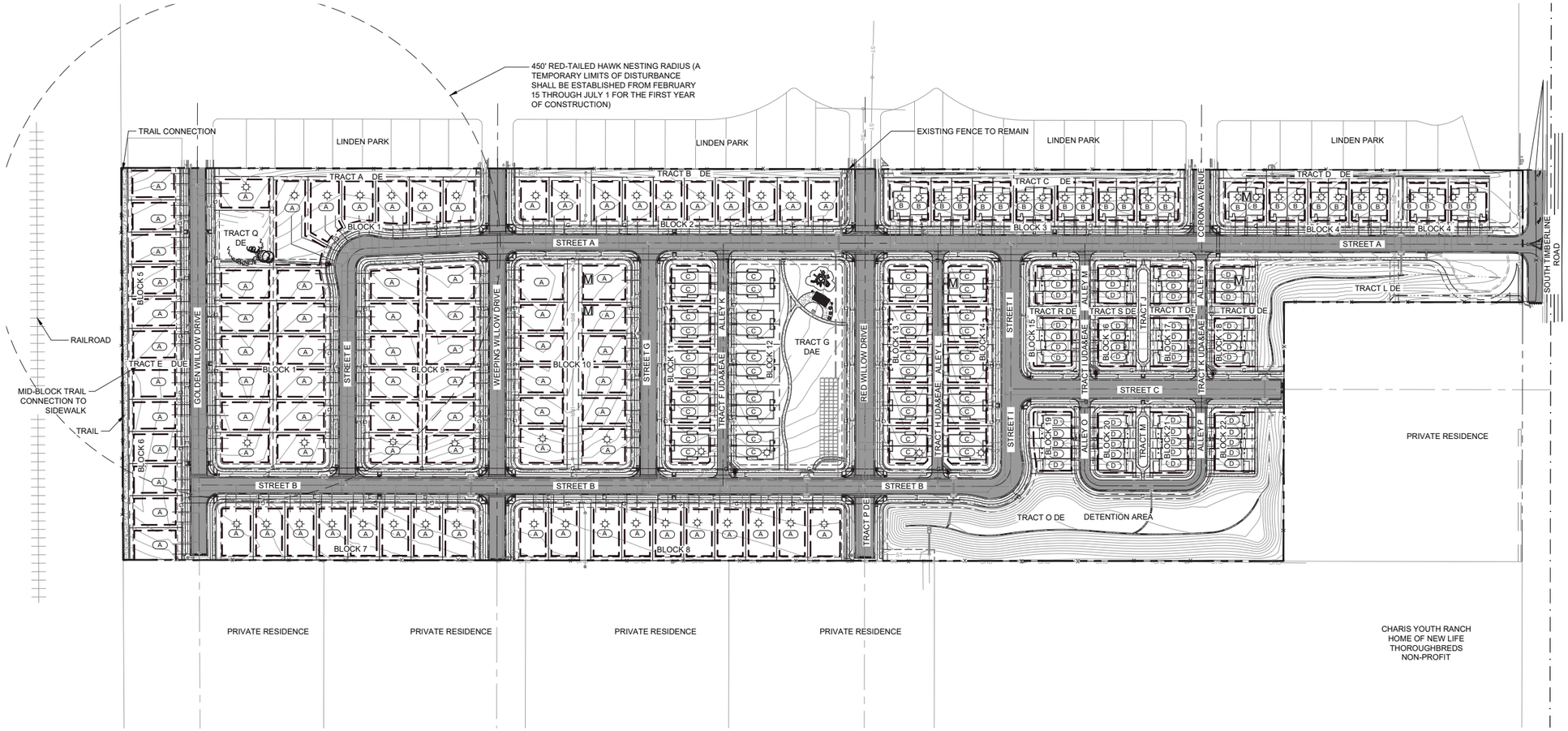
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

1 OF 31

Plotted By: Ngoc Vu **Layout:** 1 Cover **Printed On:** 12/15/2021 11:42 AM **File Name:** 1 Cover.dwg



LEGEND

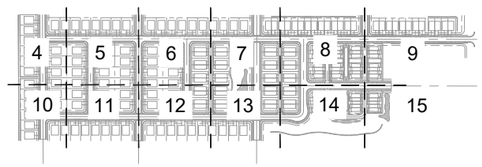
- = PROPERTY BOUNDARY
- = STORM DRAIN UTILITY
- S = SANITARY SEWER UTILITY
- SS = SANITARY SEWER SERVICE UTILITY
- W = WATER LINE UTILITY
- WS = WATER LINE SERVICE UTILITY
- IRR = IRRIGATION UTILITY
- UD = UNDERDRAIN UTILITY
- OHU = OVERHEAD ELECTRIC UTILITY
- X = EXISTING FENCE
- UE = UTILITY EASEMENT
- DE = DRAINAGE EASEMENT
- DAE = DRAINAGE & ACCESS EASEMENT
- UDA & EAE = UTILITY, DRAINAGE, ACCESS & EMERGENCY ACCESS EASEMENT
- = EXISTING TREE TO REMAIN
- = EXISTING SHRUB TO REMAIN
- = SOLAR LOT
- M = MODEL HOME
- OSP = ON-STREET PARKING

HOUSING TYPE LEGEND

- (A) SINGLE-FAMILY DETACHED
- (B) TWO-FAMILY (FRONT LOADED)
- (C) TWO-FAMILY (ALLEY LOADED)
- (D) SINGLE-FAMILY ATTACHED

KEY MAP

NTS



TIMBER LARK RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

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NORTH
SCALE: 1"=100'-0"
0 50 100 200

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

OVERALL SITE PLAN

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

2

Plotted By: Ngoc Vu **Layout:** 2 Site Plan **Printed On:** 12/15/2021 11:43 AM **File Name:** 2 Site Plan.dwg

BUILDING VARIATION LEGEND

SYMBOL	DESCRIPTION	QTY OF EACH BUILDING MODEL
	COLORADO MODERN - 3 PLEX	1
	COLORADO MODERN - 4 PLEX	1
	COLORADO MODERN - 5 PLEX	2
	CONTEMPORARY FARMHOUSE - 3 PLEX	1
	CONTEMPORARY FARMHOUSE - 4 PLEX	2
	CONTEMPORARY FARMHOUSE - 5 PLEX	1
	MODERN HILL COUNTRY - 3 PLEX	2
	MODERN HILL COUNTRY - 4 PLEX	1
	MODERN HILL COUNTRY - 5 PLEX	1

TIMBER LARK RESIDENTIAL

PDP SUBMITTAL

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NORTH SCALE: 1"=30'-0" (0 15 30 60)

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

BUILDING VARIATION EXHIBIT

SEAL:

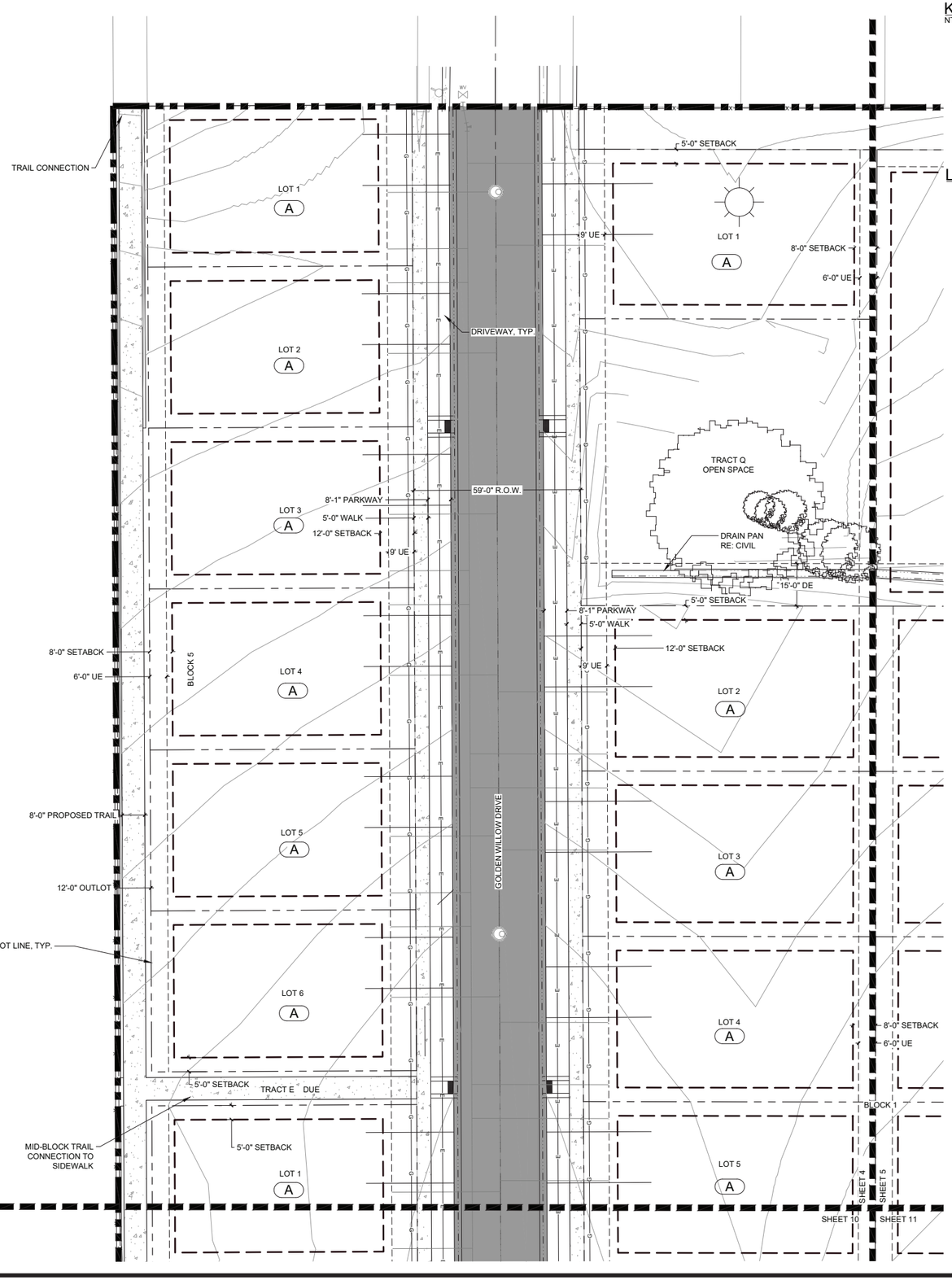
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

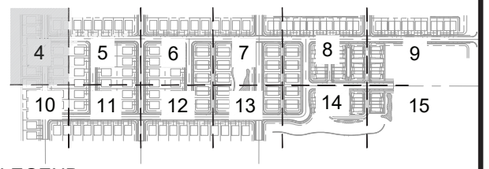
3 OF 31

Plotted By: Ngoc Vu **Layout:** 3 BUILDING VARIATION EXHIBIT **Printed On:** 12/15/2021 11:43 AM **File Name:** 3 BUILDING VARIATION EXHIBIT.dwg



KEY MAP

NTS



LEGEND

- = PROPERTY BOUNDARY
- = STORM DRAIN UTILITY
- S = SANITARY SEWER UTILITY
- SS = SANITARY SEWER SERVICE UTILITY
- W = WATER LINE UTILITY
- WS = WATER LINE SERVICE UTILITY
- IRR = IRRIGATION UTILITY
- UD = UNDERDRAIN UTILITY
- OHU = OVERHEAD ELECTRIC UTILITY
- X = EXISTING FENCE
- UE = UTILITY EASEMENT
- DE = DRAINAGE EASEMENT
- DAE = DRAINAGE & ACCESS EASEMENT
- UDA & EAE = UTILITY, DRAINAGE, ACCESS & EMERGENCY ACCESS EASEMENT
- = EXISTING TREE TO REMAIN
- = EXISTING SHRUB TO REMAIN
- = SOLAR LOT
- M = MODEL HOME
- OSP = ON-STREET PARKING

HOUSING TYPE LEGEND

- A SINGLE-FAMILY DETACHED
- B TWO-FAMILY (FRONT LOADED)
- C TWO-FAMILY (ALLEY LOADED)
- D SINGLE-FAMILY ATTACHED

TIMBER LARK RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

PREPARED BY:

ripley design
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OWNER

AADT LAND HOLDINGS, LLC
Alexander Aigner
13005 Lowell Blvd,
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ENGINEER

NORTHERN ENGINEERING
Robbie Lauer
301 N. Howes St. Suite #100
Fort Collins, CO 80521
p. 970.221.4158

NORTH SCALE: 1"=20'-0" (0, 10, 20, 40)

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

SITE PLAN ENLARGEMENT

SEAL:

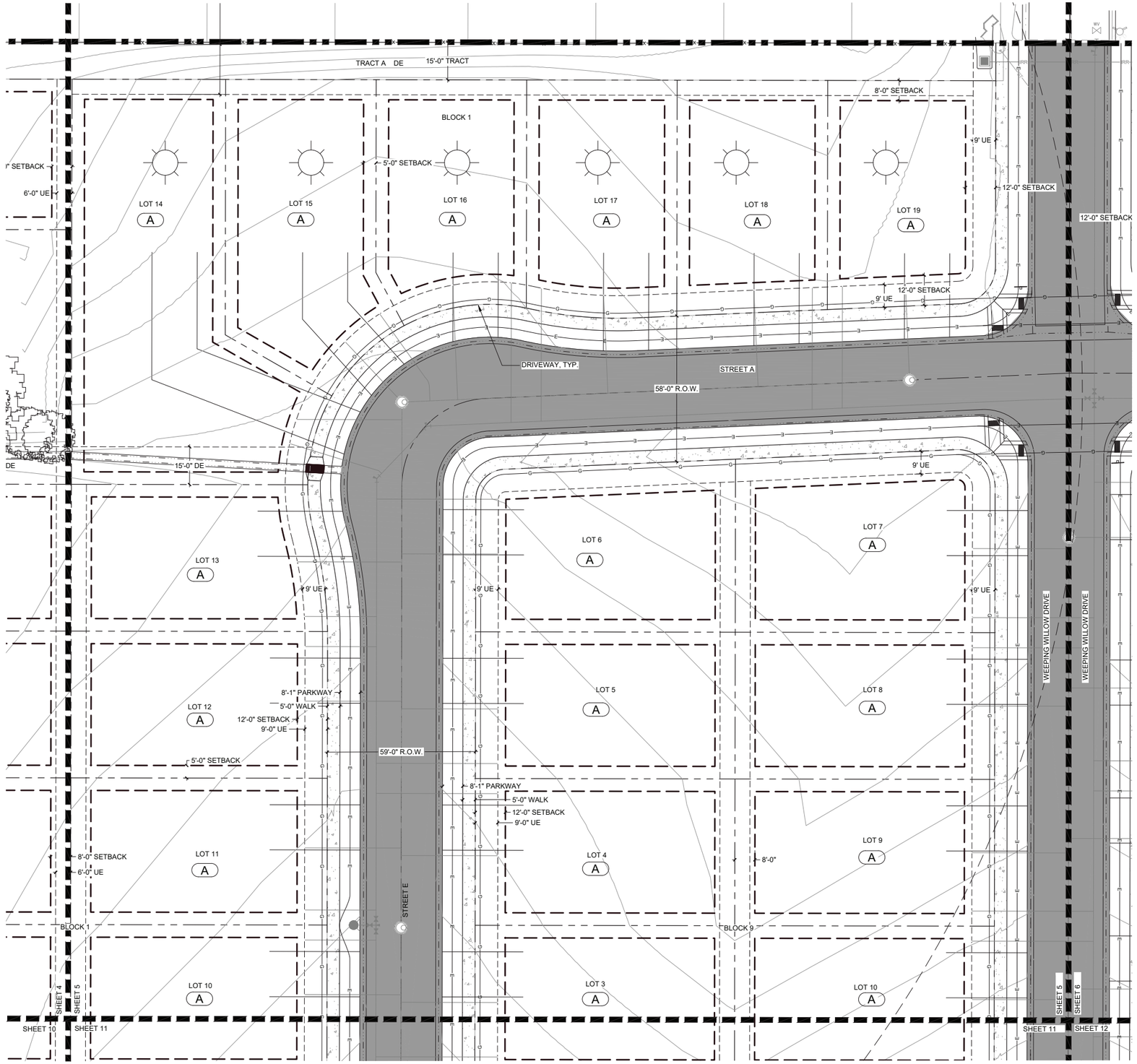
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

4

Plotted By: Ngoc Vu **Layout:** Site Plan Enlargement 1 **Printed On:** 12/15/2021 11:43 AM **File Name:** 2 Site Plan.dwg



KEY MAP
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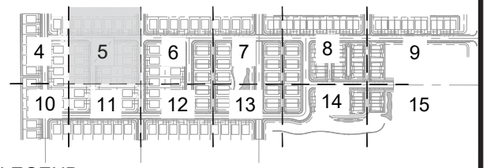

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OSP	ON-STREET PARKING

HOUSING TYPE LEGEND

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- (C) TWO-FAMILY (ALLEY LOADED)
- (D) SINGLE-FAMILY ATTACHED

TIMBER LARK RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

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SITE PLAN ENLARGEMENT

SEAL:

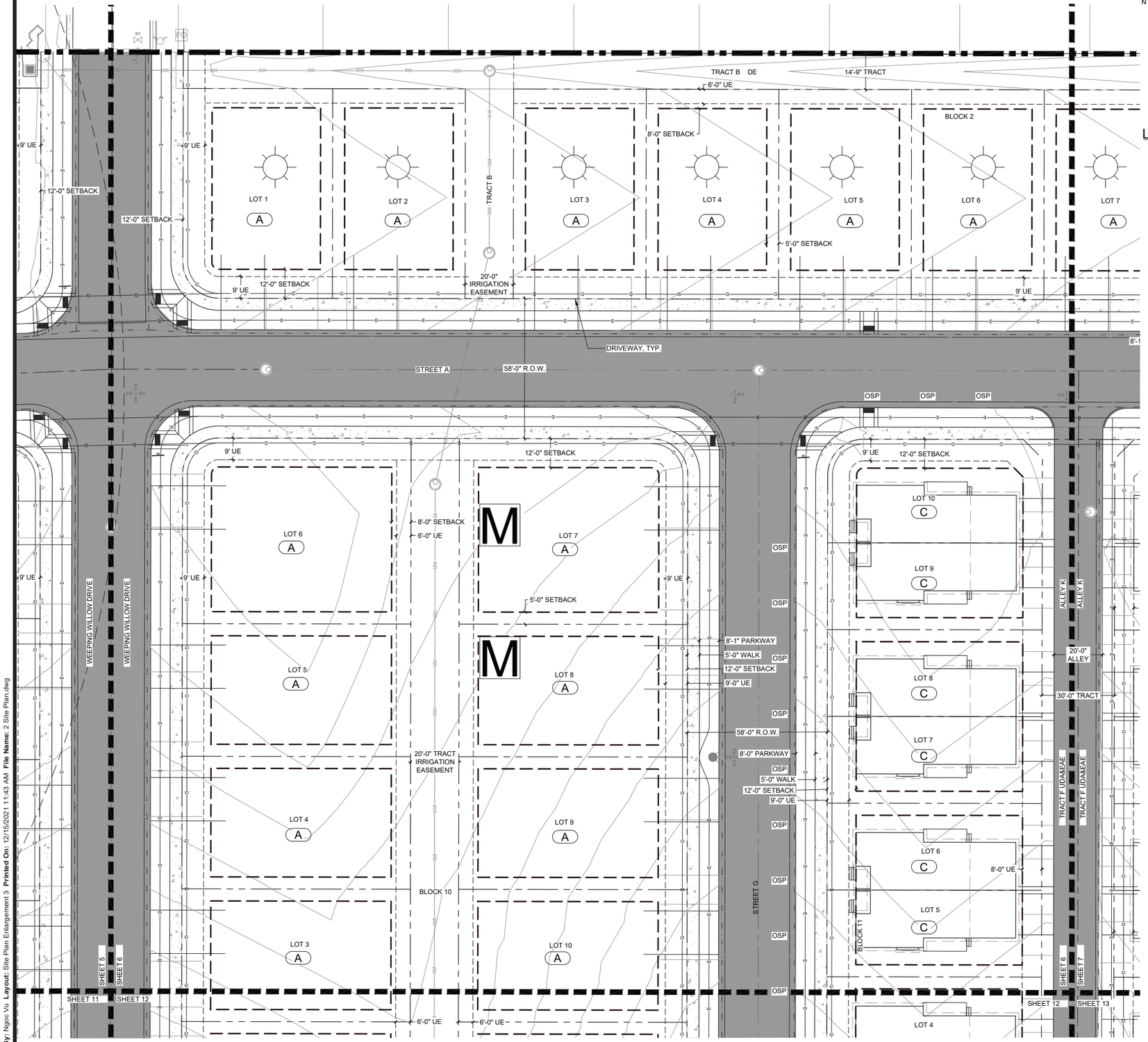
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

5

Plotted By: Ngoc Vu **Layout:** Site Plan Enlargement 2 **Printed On:** 12/15/2021 11:43 AM **File Name:** 2 Site Plan.dwg



KEY MAP

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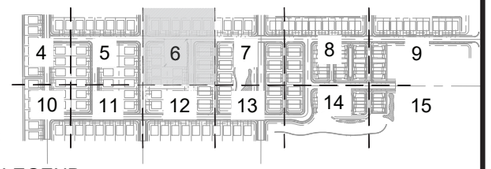

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OSP	ON-STREET PARKING

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- (C) TWO-FAMILY (ALLEY LOADED)
- (D) SINGLE-FAMILY ATTACHED

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PDP SUBMITTAL

FORT COLLINS, CO

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ORIGINAL SIZE 24X36

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SITE PLAN ENLARGEMENT

SEAL:

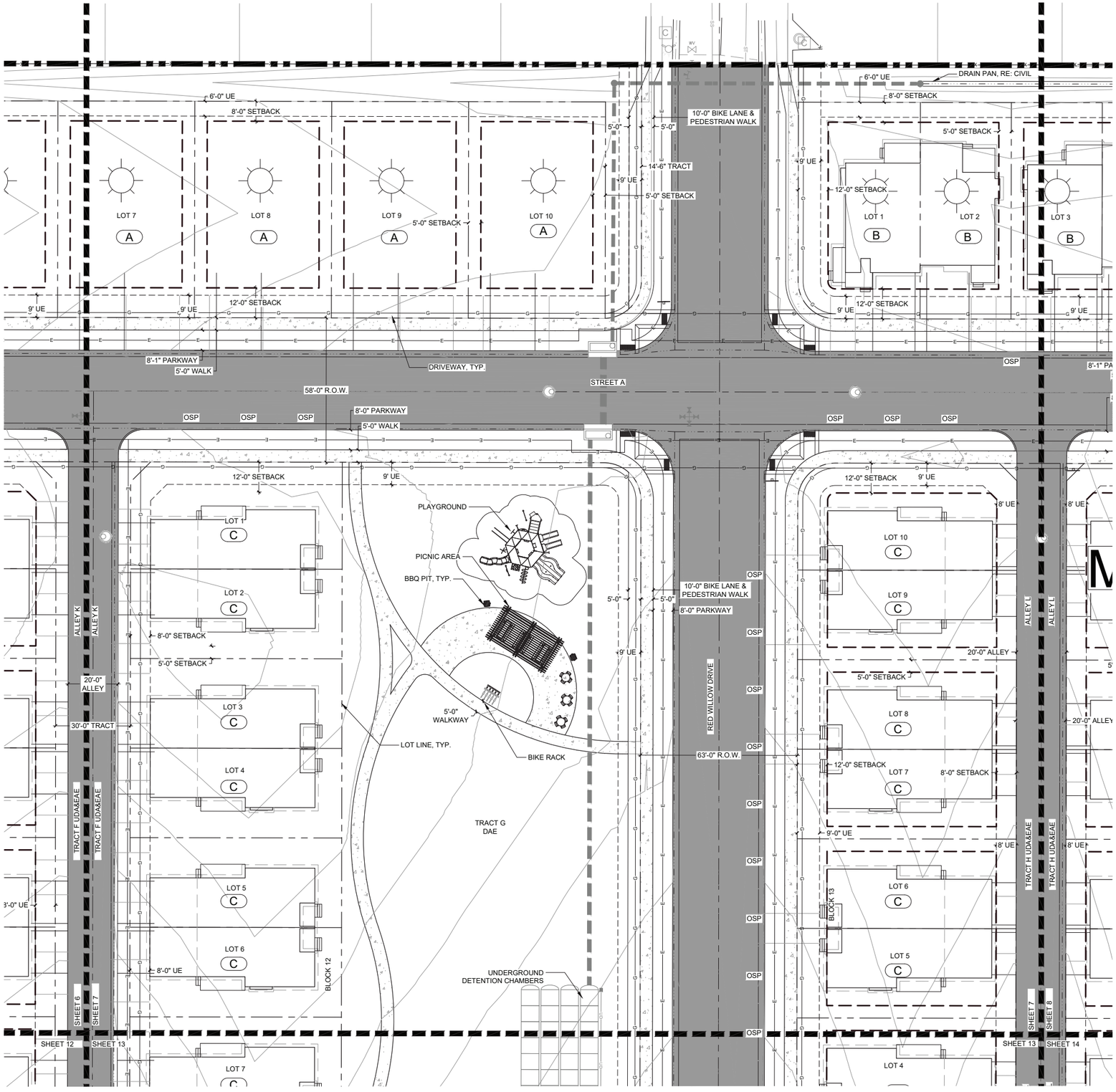
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

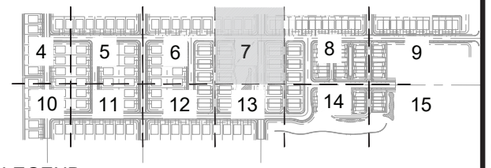
DRAWING NUMBER:

6

Plotted By: Ngoc Vu **Layout:** Site Plan Enlargement 3 **Printed On:** 12/15/2021 11:43 AM **File Name:** 2 Site Plan.dwg



KEY MAP
NTS



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M	= MODEL HOME
OSP	ON-STREET PARKING

HOUSING TYPE LEGEND

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- (D) SINGLE-FAMILY ATTACHED

NORTH SCALE: 1"=20'-0"
0 10 20 40

ORIGINAL SIZE 24X36

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REVISIONS

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PDP SUBMITTAL

FORT COLLINS, CO

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SITE PLAN ENLARGEMENT

SEAL:

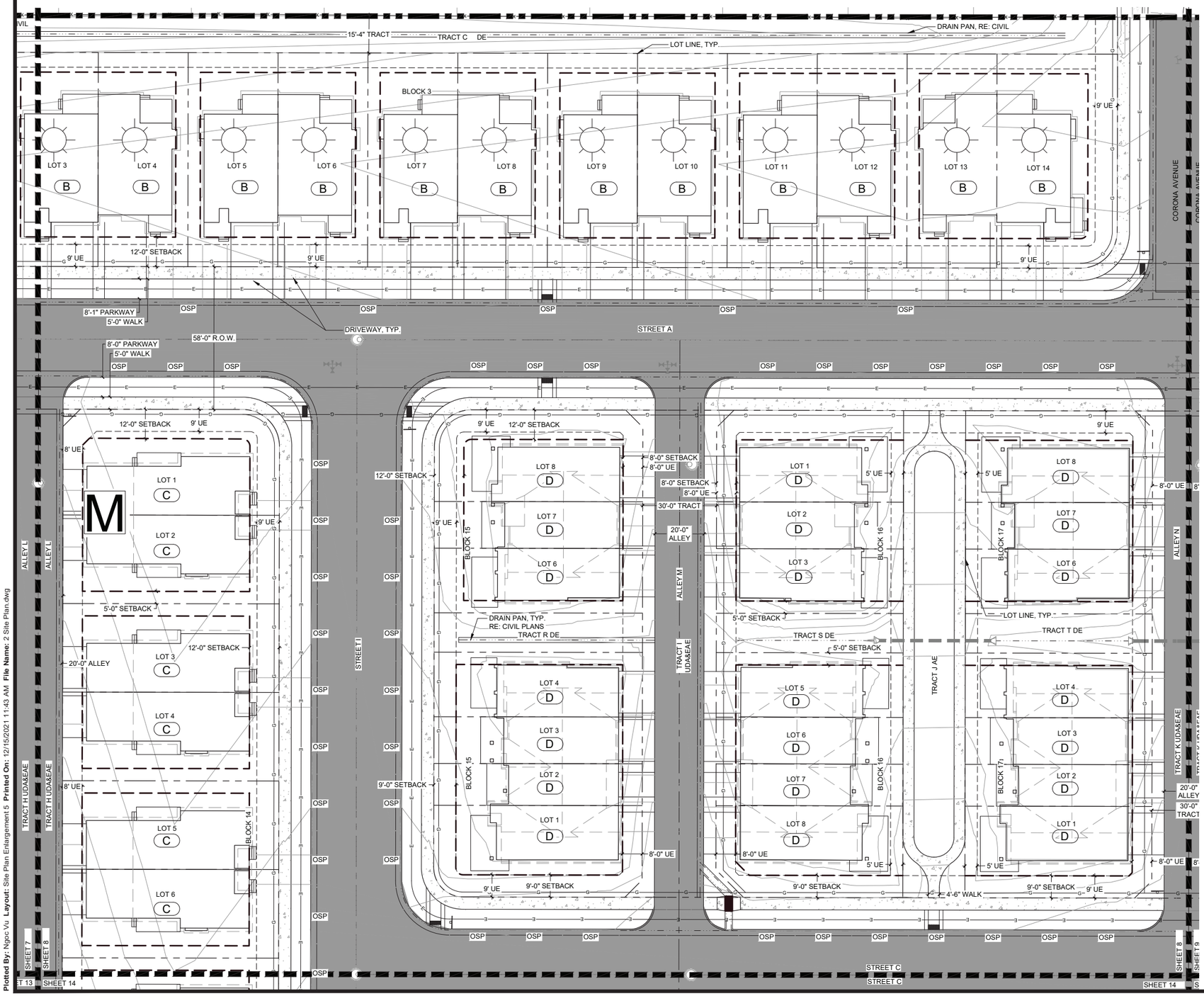
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

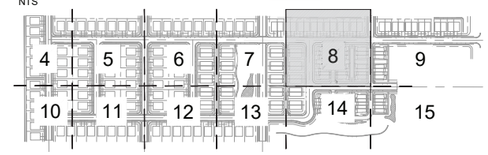
DRAWING NUMBER:

7

Plotted By: Ngoc Vu **Layout:** Site Plan Enlargement 4 **Printed On:** 12/15/2021 11:43 AM **File Name:** 2 Site Plan.dwg



KEY MAP
NTS



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M	= MODEL HOME
OSP	ON-STREET PARKING

HOUSING TYPE LEGEND

- (A) SINGLE-FAMILY DETACHED
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- (C) TWO-FAMILY (ALLEY LOADED)
- (D) SINGLE-FAMILY ATTACHED

TIMBER LARK RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

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NORTH
SCALE: 1"=20'-0"
0 10 20 40
ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

SITE PLAN ENLARGEMENT

SEAL:

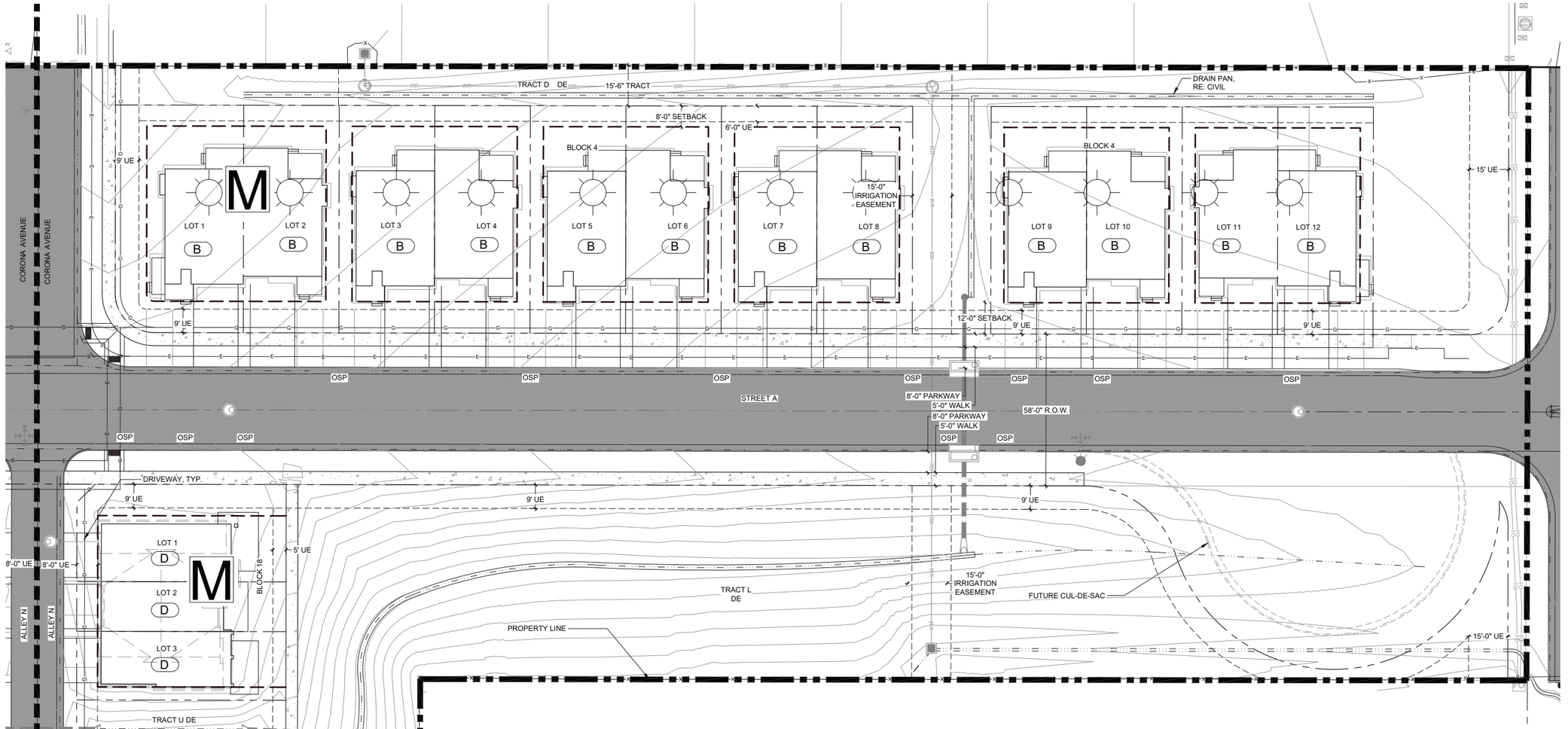
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

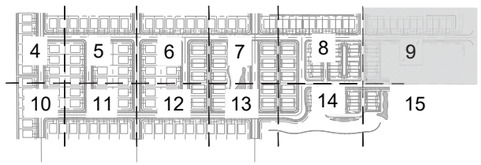
8

Plotted By: Ngoc Vu **Layout:** Site Plan Enlargement 5 **Printed On:** 12/15/2021 11:43 AM **File Name:** 2 Site Plan.dwg



KEY MAP

NTS



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HOUSING TYPE LEGEND

- (A) SINGLE-FAMILY DETACHED
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- (C) TWO-FAMILY (ALLEY LOADED)
- (D) SINGLE-FAMILY ATTACHED

Plotted By: Ngoc Vu **Layout:** Site Plan Enlargement 6 **Printed On:** 12/15/2021 11:43 AM **File Name:** 2 Site Plan.dwg

TIMBER LARK RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

PREPARED BY:

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SITE PLAN ENLARGEMENT

SEAL:

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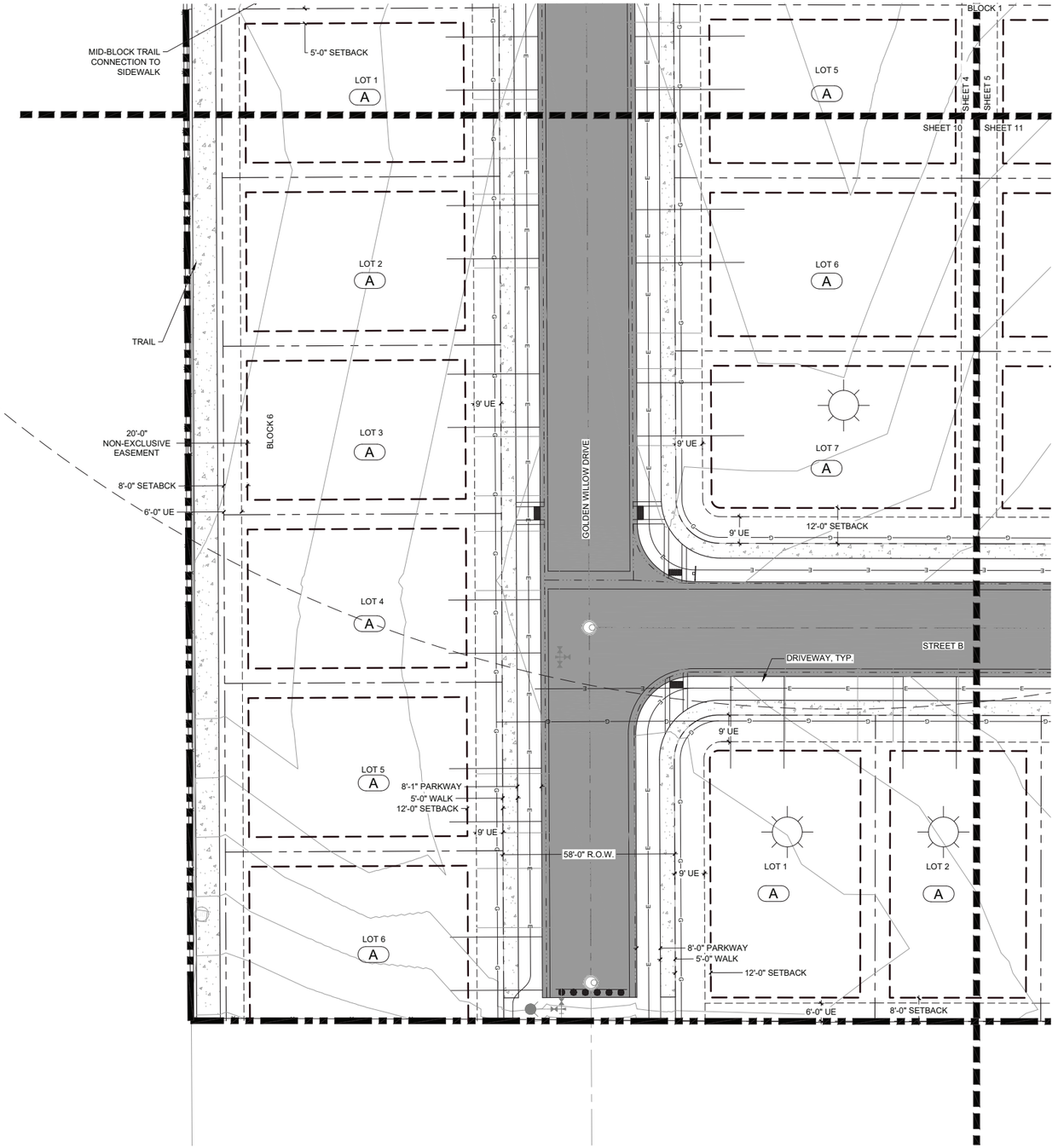
PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

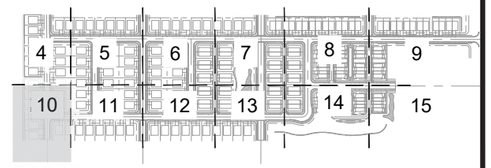
DRAWING NUMBER:

9



KEY MAP

NTS



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PDP SUBMITTAL

FORT COLLINS, CO

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SITE PLAN ENLARGEMENT

SEAL:

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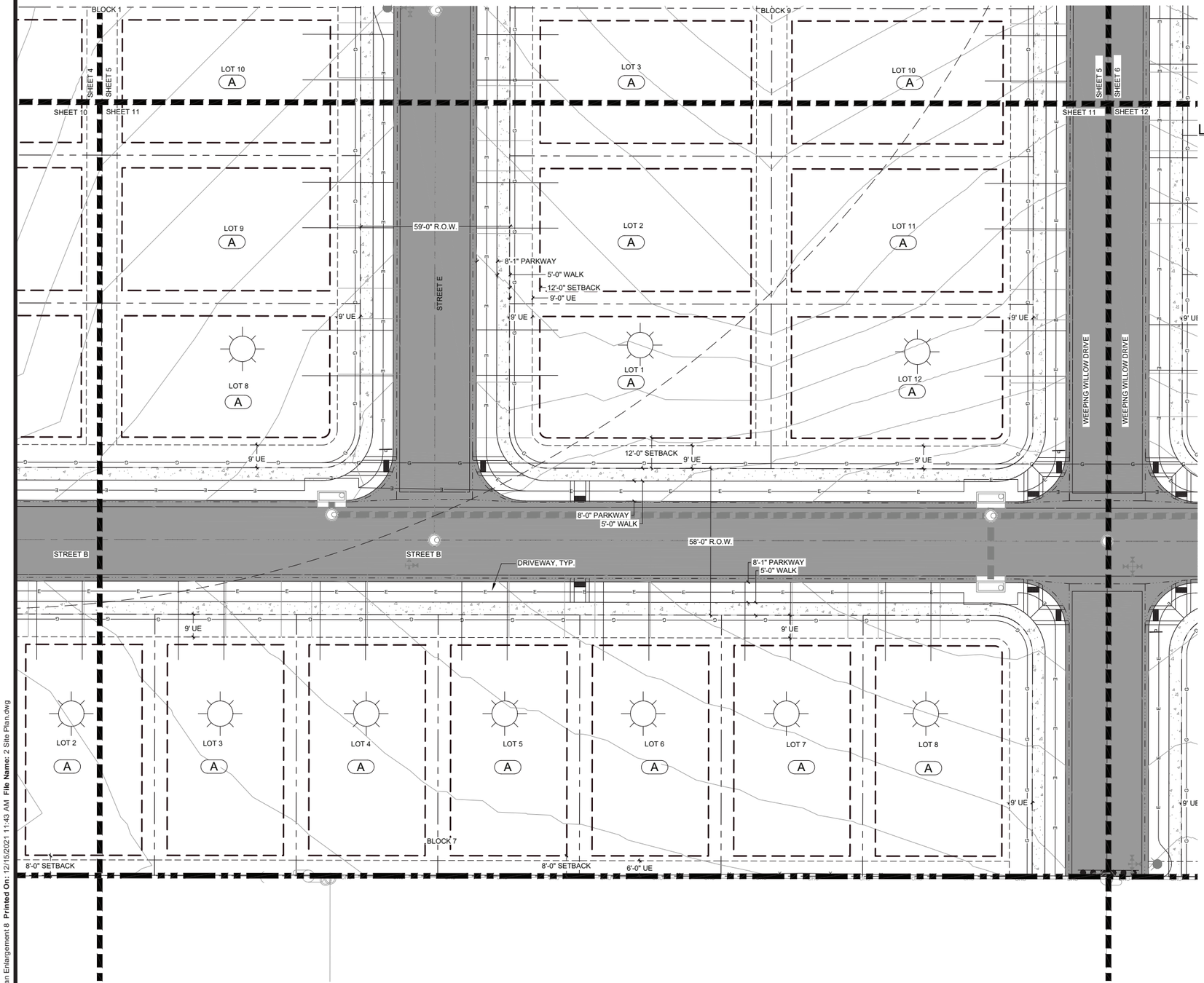
PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

10

Plotted By: Ngoc Vu **Layout:** Site Plan Enlargement 7 **Printed On:** 12/15/2021 11:43 AM **File Name:** 2 Site Plan.dwg



KEY MAP

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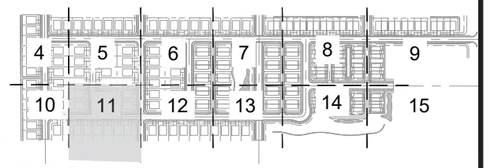

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p. 970.481.5505

OWNER

AADT LAND HOLDINGS, LLC
Alexander Aigner
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Broomfield, CO 80020

LANDSCAPE ARCHITECT

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ENGINEER

NORTHERN ENGINEERING
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NORTH SCALE: 1"=20'-0" (0, 10, 20, 40)

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

SITE PLAN ENLARGEMENT

SEAL:

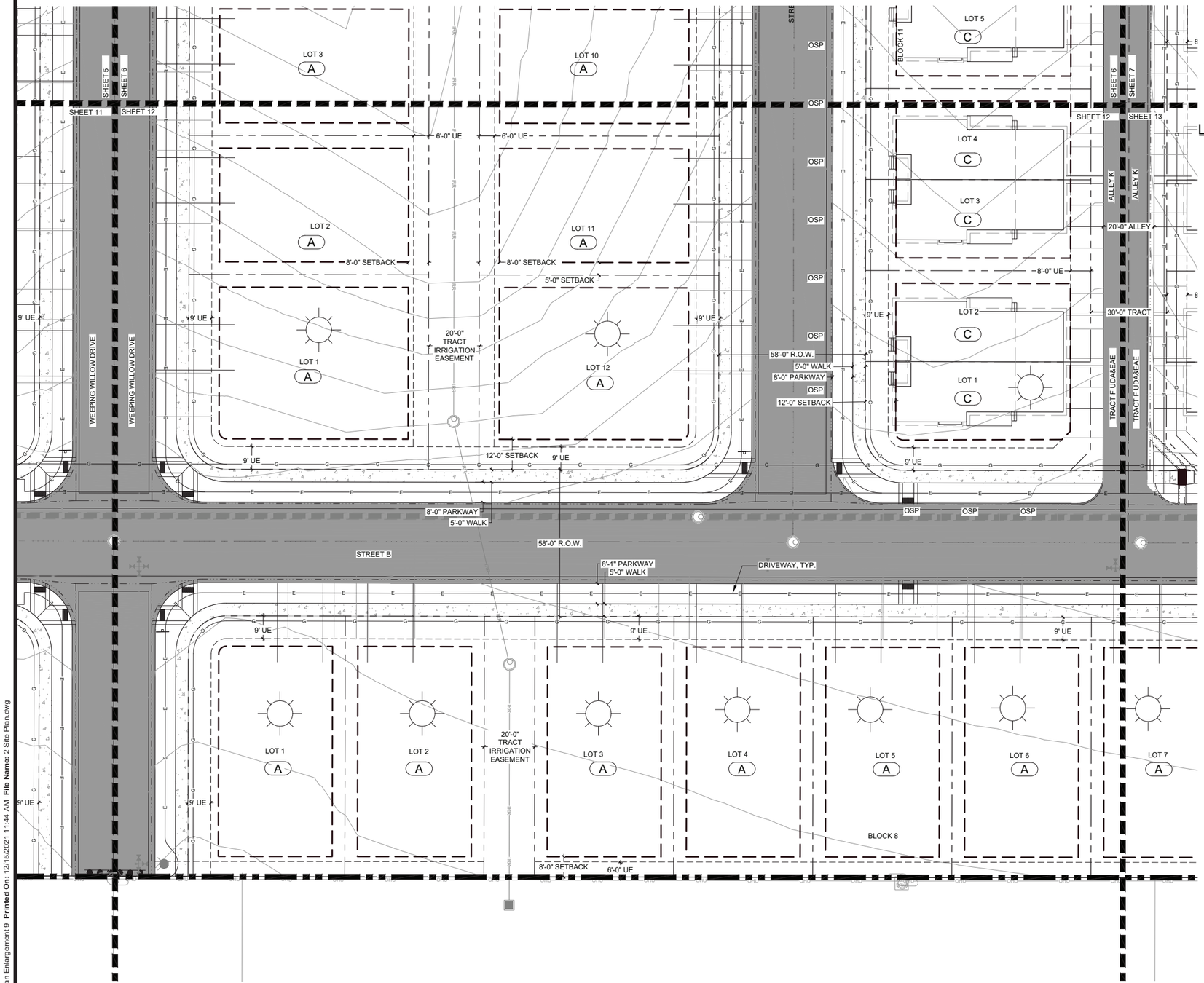
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

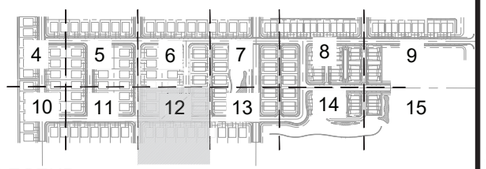
11

Plotted By: Ngoc Vu **Layout:** Site Plan Enlargement 8 **Printed On:** 12/15/2021 11:43 AM **File Name:** 2 Site Plan.dwg



KEY MAP

NTS



LEGEND

	= PROPERTY BOUNDARY
	= STORM DRAIN UTILITY
S	= SANITARY SEWER UTILITY
SS	= SANITARY SEWER SERVICE UTILITY
W	= WATER LINE UTILITY
WS	= WATER LINE SERVICE UTILITY
IRR	= IRRIGATION UTILITY
UD	= UNDERDRAIN UTILITY
OHU	= OVERHEAD ELECTRIC UTILITY
X	= EXISTING FENCE
UE	= UTILITY EASEMENT
DE	= DRAINAGE EASEMENT
DAE	= DRAINAGE & ACCESS EASEMENT
UDA & EAE	= UTILITY, DRAINAGE, ACCESS & EMERGENCY ACCESS EASEMENT
	= EXISTING TREE TO REMAIN
	= EXISTING SHRUB TO REMAIN
	= SOLAR LOT
M	= MODEL HOME
OSP	ON-STREET PARKING

HOUSING TYPE LEGEND

- (A) SINGLE-FAMILY DETACHED
- (B) TWO-FAMILY (FRONT LOADED)
- (C) TWO-FAMILY (ALLEY LOADED)
- (D) SINGLE-FAMILY ATTACHED

TIMBER LARK RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

PREPARED BY:

ripley design
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NORTH

SCALE: 1"=20'-0"

0 10 20 40

ORIGINAL SIZE 24X36

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01	PDP REVISIONS	11-3-2021

SITE PLAN ENLARGEMENT

SEAL:

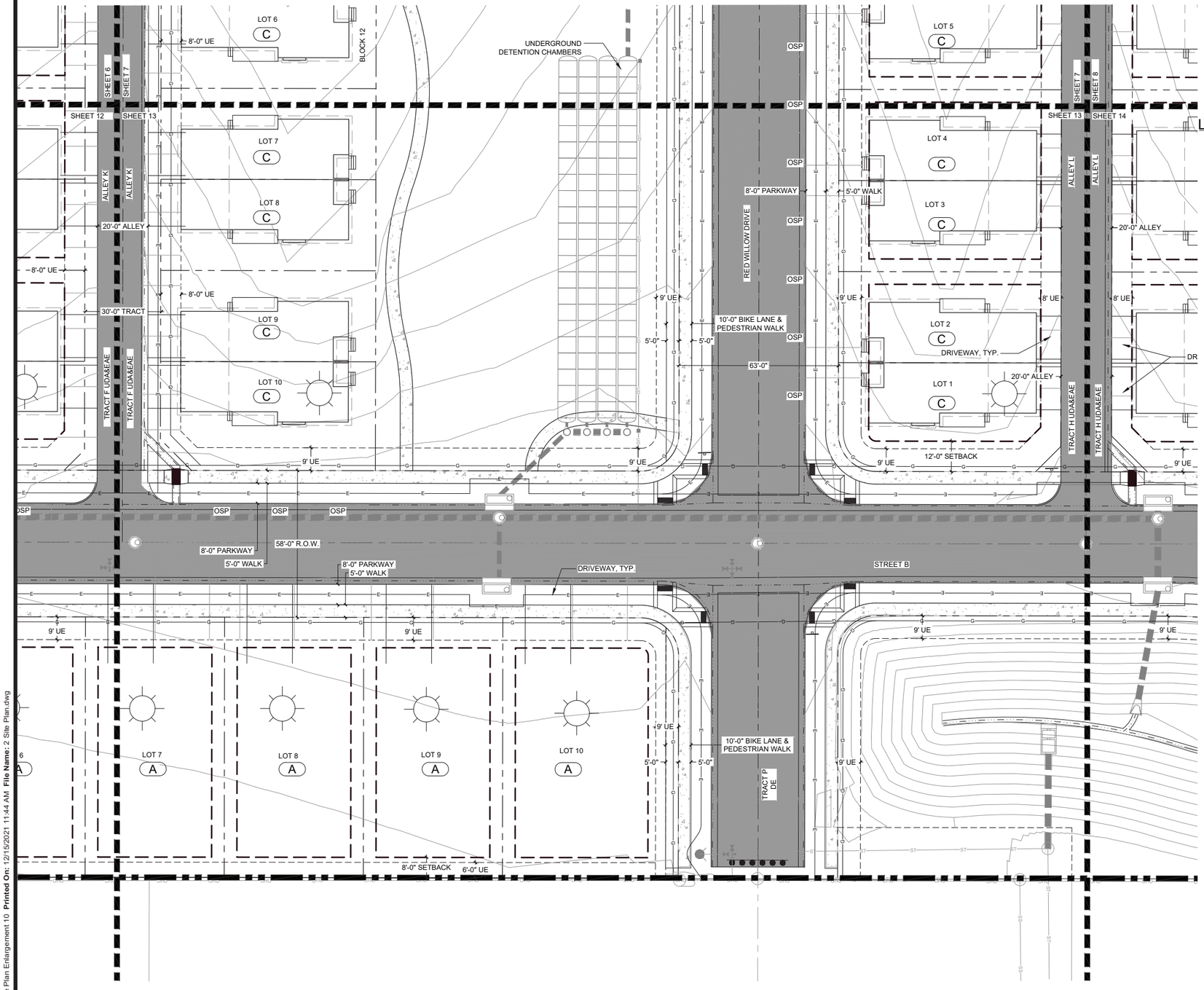
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

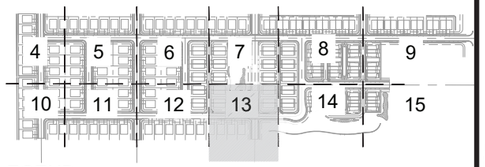
DRAWING NUMBER:

12

Plotted By: Ngoc Vu **Layout:** Site Plan Enlargement 9 **Printed On:** 12/15/2021 11:44 AM **File Name:** 2 Site Plan.dwg



KEY MAP
NTS



LEGEND

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- IRR = IRRIGATION UTILITY
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- OHU = OVERHEAD ELECTRIC UTILITY
- X = EXISTING FENCE
- UE = UTILITY EASEMENT
- DE = DRAINAGE EASEMENT
- DAE = DRAINAGE & ACCESS EASEMENT
- UDA & EAE = UTILITY, DRAINAGE, ACCESS & EMERGENCY ACCESS EASEMENT
- = EXISTING TREE TO REMAIN
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- = SOLAR LOT
- M = MODEL HOME
- OSP = ON-STREET PARKING

HOUSING TYPE LEGEND

- A SINGLE-FAMILY DETACHED
- B TWO-FAMILY (FRONT LOADED)
- C TWO-FAMILY (ALLEY LOADED)
- D SINGLE-FAMILY ATTACHED

NORTH
SCALE: 1"=20'-0"
0 10 20 40

ORIGINAL SIZE 24X36

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PDP SUBMITTAL

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SITE PLAN ENLARGEMENT

SEAL:

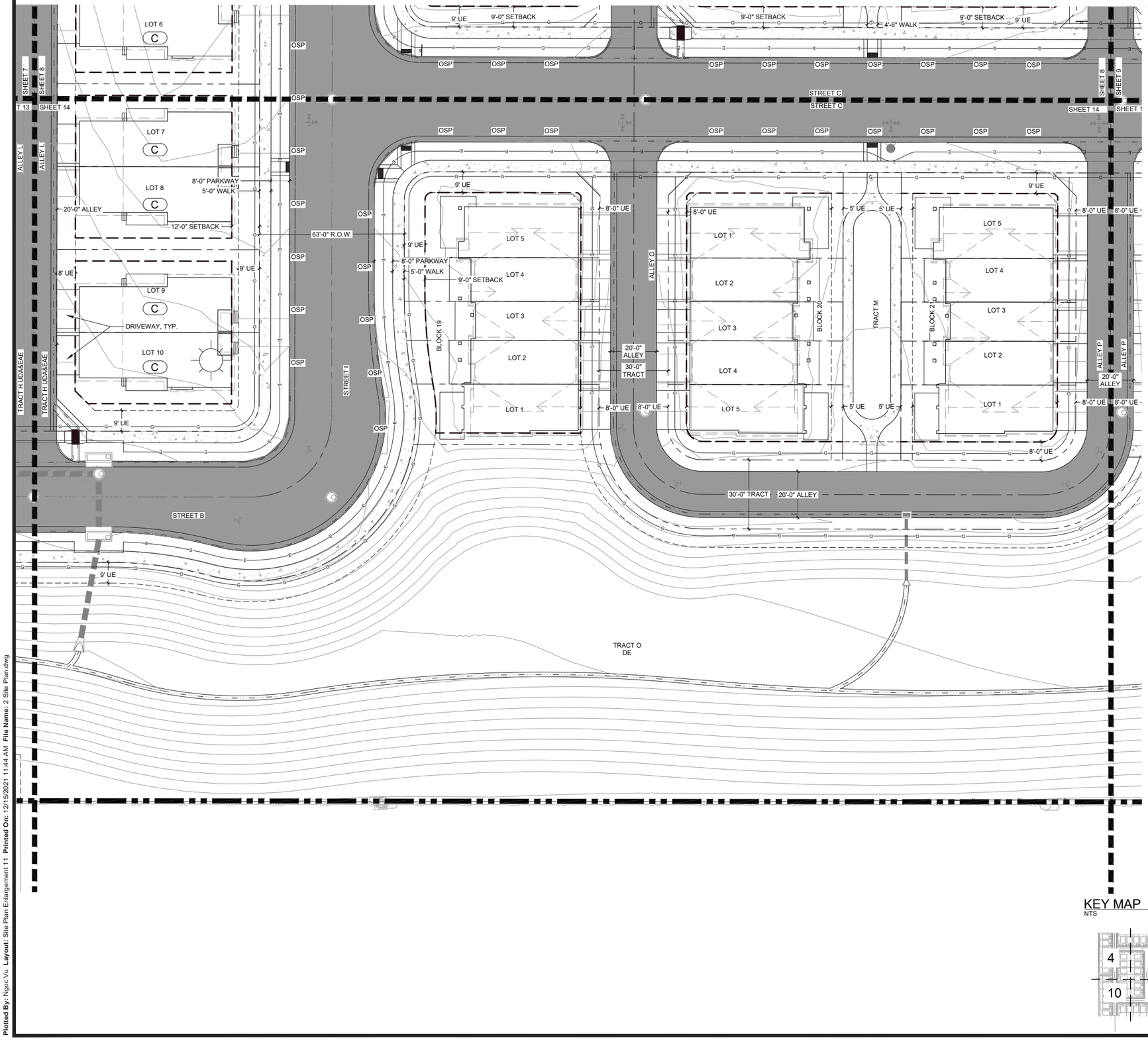
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

13

Plotted By: Ngoc Vu **Layout:** Site Plan Enlargement 10 **Printed On:** 12/15/2021 11:44 AM **File Name:** 2 Site Plan.dwg



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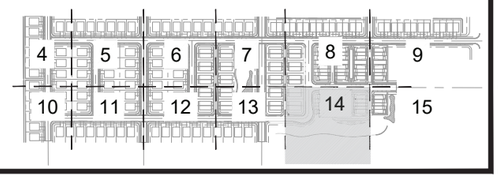
- (D) SINGLE-FAMILY ATTACHED

KEY MAP

NTS



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FORT COLLINS, CO

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NORTH SCALE: 1"=20'-0" (0, 10, 20, 40)

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

SITE PLAN ENLARGEMENT

SEAL:

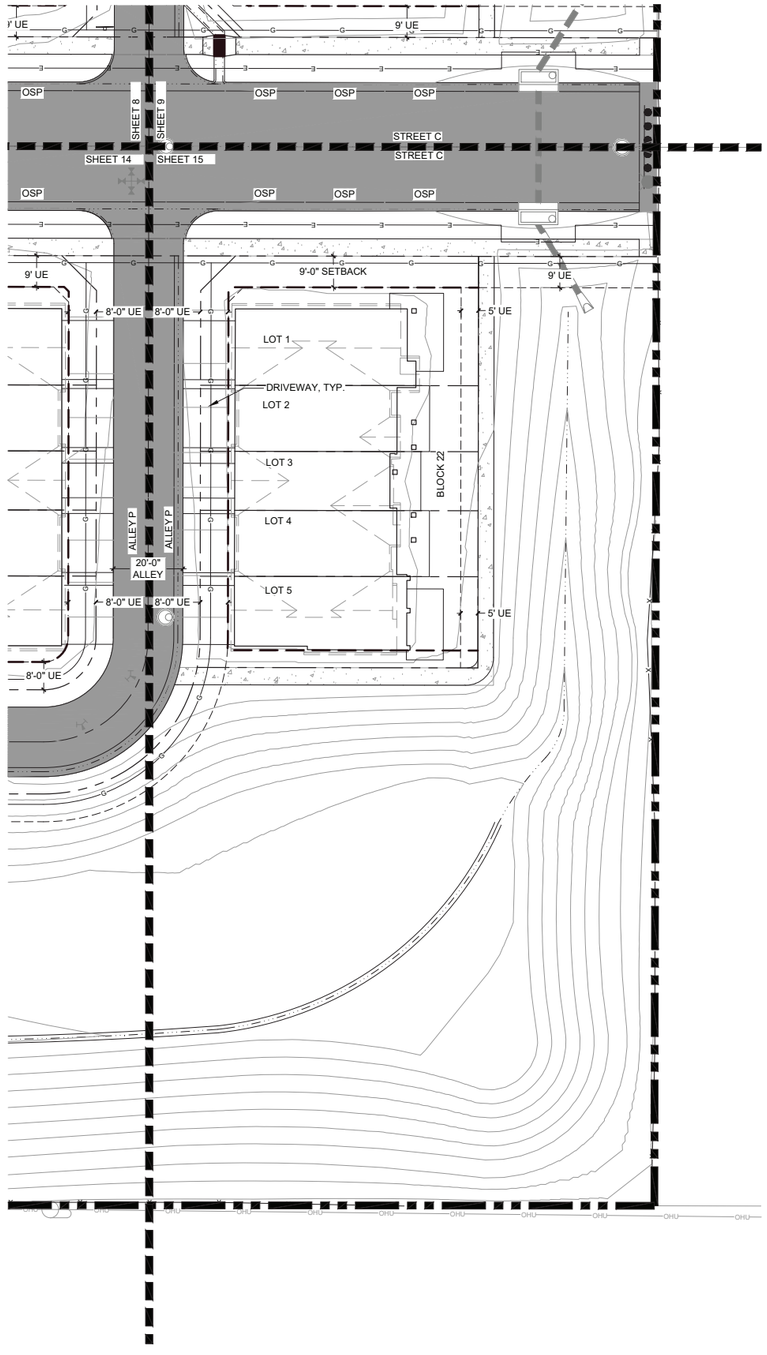
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

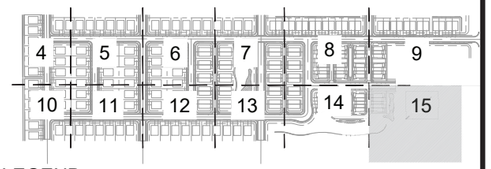
DRAWING NUMBER:

14

Plotted By: Ngoc Vu **Layout:** Site Plan Enlargement 11 **Printed On:** 12/15/2021 11:44 AM **File Name:** 2 Site Plan.dwg



KEY MAP
NTS



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X	= EXISTING FENCE
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DE	= DRAINAGE EASEMENT
DAE	= DRAINAGE & ACCESS EASEMENT
UDA & EAE	= UTILITY, DRAINAGE, ACCESS & EMERGENCY ACCESS EASEMENT
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FORT COLLINS, CO

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NORTH SCALE: 1"=20'-0" (0 10 20 40)

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

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01	PDP REVISIONS	11-3-2021

SITE PLAN ENLARGEMENT

SEAL:

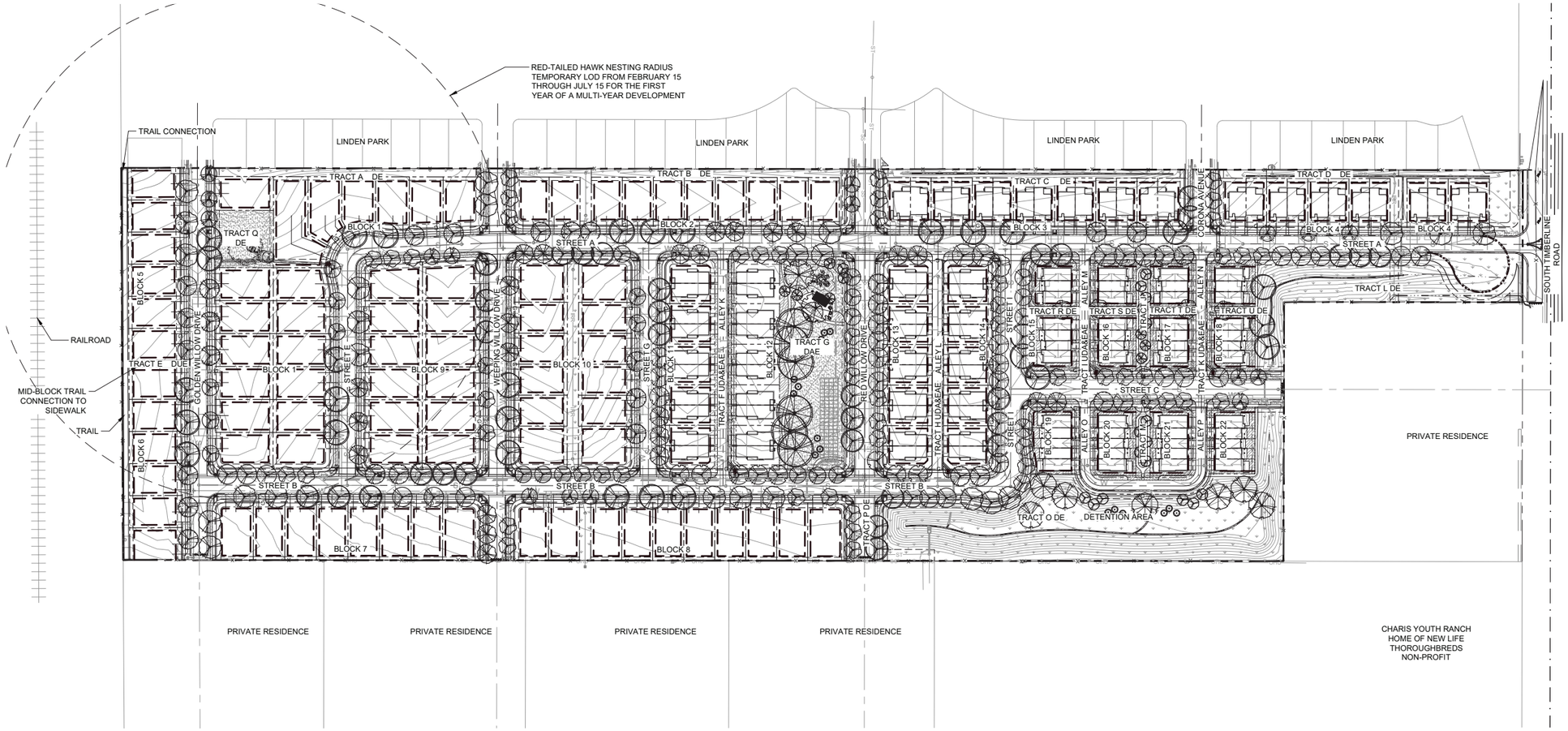
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

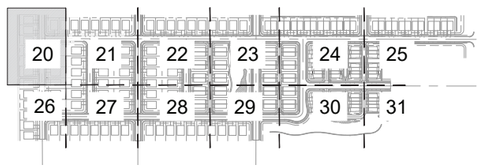
DRAWING NUMBER:

15

Plotted By: Ngoc Vu **Layout:** Site Plan Enlargement 12 **Printed On:** 12/15/2021 11:44 AM **File Name:** 2 Site Plan.dwg



KEY MAP



LEGEND

SYMBOL	02 LANDSCAPE MATERIAL DESCRIPTION
	IRRIGATED TURF
	NATIVE SEED 1
	SHRUB BED

= PROPERTY BOUNDARY
= STORM DRAIN UTILITY
= SANITARY SEWER UTILITY
= SANITARY SEWER SERVICE UTILITY
= WATER LINE UTILITY
= WATER LINE SERVICE UTILITY
= IRRIGATION UTILITY
= UNDERDRAIN UTILITY
= OVERHEAD ELECTRIC UTILITY
= EXISTING FENCE

UE	= UTILITY EASEMENT
DE	= DRAINAGE EASEMENT
DAE	= DRAINAGE & ACCESS EASEMENT
UDA & EAE	= UTILITY, DRAINAGE, ACCESS & EMERGENCY ACCESS EASEMENT

= EXISTING TREE
= EXISTING SHRUB
M = MITIGATION TREE

NOTES

1. NO TREES SHALL BE REMOVED DURING THE SONGBIRD NESTING SEASON (FEBRUARY 1 TO JULY 31) WITHOUT FIRST HAVING A PROFESSIONAL ECOLOGIST OR WILDLIFE BIOLOGIST COMPLETE A NESTING SURVEY TO IDENTIFY ANY ACTIVE NESTS EXISTING ON THE PROJECT SITE. THE SURVEY SHALL BE SENT TO THE CITY ENVIRONMENTAL PLANNER. IF ACTIVE NESTS ARE FOUND, THE CITY WILL COORDINATE WITH RELEVANT STATE AND FEDERAL REPRESENTATIVES TO DETERMINE WHETHER ADDITIONAL RESTRICTIONS ON TREE REMOVAL AND CONSTRUCTION APPLY
2. A PERMIT MUST BE OBTAINED FROM THE CITY FORESTER BEFORE ANY TREES OR SHRUBS AS NOTED ON THIS PLAN ARE PLANTED, PRUNED OR REMOVED IN THE PUBLIC RIGHT-OF-WAY. THIS INCLUDES ZONES BETWEEN THE SIDEWALK AND CURB, MEDIANS AND OTHER CITY PROPERTY. THIS PERMIT SHALL APPROVE THE LOCATION AND SPECIES TO BE PLANTED. FAILURE TO OBTAIN THIS PERMIT IS A VIOLATION OF THE CITY OF FORT COLLINS CODE SUBJECT TO CITATION (SECTION 27-31) AND MAY ALSO RESULT IN REPLACING OR RELOCATING TREES AND A HOLD ON CERTIFICATE OF OCCUPANCY.

Plotted By: Ngoc Vu **Layout:** Overall Landscape Plan **Printed On:** 12/15/2021 11:44 AM **File Name:** 2 Landscape Plan.dwg

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FORT COLLINS, CO

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0 50 100 200
ORIGINAL SIZE 24X36

ISSUED

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01	PDP SUBMITTAL	6-9-2021

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OVERALL LANDSCAPE PLAN

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

16

GENERAL LANDSCAPE NOTES

1. PLANT QUALITY: ALL PLANT MATERIAL SHALL BE A-GRADE OR NO. 1 GRADE - FREE OF ANY DEFECTS, OF NORMAL HEALTH, HEIGHT, LEAF DENSITY AND SPREAD APPROPRIATE TO THE SPECIES AS DEFINED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (AAN) STANDARDS. ALL TREES SHALL BE BALL AND BURLAP OR EQUIVALENT.

2. IRRIGATION: ALL LANDSCAPE AREAS WITHIN THE SITE INCLUDING TURF, SHRUB BEDS AND TREE AREAS SHALL BE IRRIGATED WITH AN AUTOMATIC IRRIGATION SYSTEM. THE IRRIGATION PLAN MUST BE REVIEWED AND APPROVED BY THE CITY OF FORT COLLINS WATER UTILITIES DEPARTMENT PRIOR TO THE ISSUANCE OF A BUILDING PERMIT. ALL TURF AREAS SHALL BE IRRIGATED WITH AN AUTOMATIC POP-UP IRRIGATION SYSTEM. ALL SHRUB BEDS AND TREES, INCLUDING IN NATIVE SEED AREAS, SHALL BE IRRIGATED WITH AN AUTOMATIC DRIP (TRICKLE) IRRIGATION SYSTEM, OR WITH AN ACCEPTABLE ALTERNATIVE APPROVED BY THE CITY WITH THE IRRIGATION PLANS. THE IRRIGATION SYSTEM SHALL BE ADJUSTED TO MEET THE WATER REQUIREMENTS OF THE INDIVIDUAL PLANT MATERIAL.

3. TOPSOIL: TO THE MAXIMUM EXTENT FEASIBLE, TOPSOIL THAT IS REMOVED DURING CONSTRUCTION ACTIVITY SHALL BE CONSERVED FOR LATER USE ON AREAS REQUIRING REVEGETATION AND LANDSCAPING.

4. SOIL AMENDMENTS: SOIL AMENDMENTS SHALL BE PROVIDED AND DOCUMENTED IN ACCORDANCE WITH CITY CODE SECTION 12-132. THE SOIL IN ALL LANDSCAPE AREAS, INCLUDING PARKWAYS AND MEDIANS, SHALL BE THOROUGHLY LOOSENED TO A DEPTH OF NOT LESS THAN EIGHT(8) INCHES AND SOIL AMENDMENT SHALL BE THOROUGHLY INCORPORATED INTO THE SOIL OF ALL LANDSCAPE AREAS TO A DEPTH OF AT LEAST SIX(6) INCHES BY TILLING, DISCING OR OTHER SUITABLE METHOD, AT A RATE OF AT LEAST THREE (3) CUBIC YARDS OF SOIL AMENDMENT PER ONE THOUSAND (1,000) SQUARE FEET OF LANDSCAPE AREA. PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY, A WRITTEN CERTIFICATION MUST BE SUBMITTED TO THE CITY THAT ALL PLANTED AREAS, OR AREAS TO BE PLANTED, HAVE BEEN THOROUGHLY LOOSENED AND THE SOIL AMENDED, CONSISTENT WITH THE REQUIREMENTS SET FORTH IN SECTION 12-132.

5. INSTALLATION AND GUARANTEE: ALL LANDSCAPING SHALL BE INSTALLED ACCORDING TO SOUND HORTICULTURAL PRACTICES IN A MANNER DESIGNED TO ENCOURAGE QUICK ESTABLISHMENT AND HEALTHY GROWTH. ALL LANDSCAPING FOR EACH PHASE MUST BE EITHER INSTALLED OR THE INSTALLATION MUST BE SECURED WITH AN IRREVOCABLE LETTER OF CREDIT, PERFORMANCE BOND, OR ESCROW ACCOUNT FOR 125% OF THE VALUATION OF THE MATERIALS AND LABOR PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY FOR ANY BUILDING IN SUCH PHASE.

6. MAINTENANCE: TREES AND VEGETATION, IRRIGATION SYSTEMS, FENCES, WALLS AND OTHER LANDSCAPE ELEMENTS WITH THESE FINAL PLANS SHALL BE CONSIDERED AS ELEMENTS OF THE PROJECT IN THE SAME MANNER AS PARKING, BUILDING MATERIALS AND OTHER SITE DETAILS. THE APPLICANT, LANDOWNER OR SUCCESSORS IN INTEREST SHALL BE JOINTLY AND SEVERALLY RESPONSIBLE FOR THE REGULAR MAINTENANCE OF ALL LANDSCAPING ELEMENTS IN GOOD CONDITION. ALL LANDSCAPING SHALL BE MAINTAINED FREE FROM DISEASE, PESTS, WEEDS AND LITTER, AND ALL LANDSCAPE STRUCTURES SUCH AS FENCES AND WALLS SHALL BE REPAIRED AND REPLACED PERIODICALLY TO MAINTAIN A STRUCTURALLY SOUND CONDITION.

7. REPLACEMENT: ANY LANDSCAPE ELEMENT THAT DIES, OR IS OTHERWISE REMOVED, SHALL BE PROMPTLY REPLACED IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS.

8. THE FOLLOWING SEPARATIONS SHALL BE PROVIDED BETWEEN TREES/SHRUBS AND UTILITIES:

   40 FEET BETWEEN CANOPY TREES AND STREET LIGHTS
   15 FEET BETWEEN ORNAMENTAL TREES AND STREETLIGHTS
   10 FEET BETWEEN TREES AND PUBLIC WATER, SANITARY AND STORM SEWER MAIN LINES
   6 FEET BETWEEN TREES AND PUBLIC WATER, SANITARY AND STORM SEWER SERVICE LINES.
   4 FEET BETWEEN SHRUBS AND PUBLIC WATER AND SANITARY AND STORM SEWER LINES
   4 FEET BETWEEN TREES AND GAS LINES

9. ALL STREET TREES SHALL BE PLACED A MINIMUM EIGHT (8) FEET AWAY FROM THE EDGES OF DRIVEWAYS AND ALLEYS PER LUC 3.2.1(D)(2)(a).

10. PLACEMENT OF ALL LANDSCAPING SHALL BE IN ACCORDANCE WITH THE SIGHT DISTANCE CRITERIA AS SPECIFIED BY THE CITY OF FORT COLLINS. NO STRUCTURES OR LANDSCAPE ELEMENTS GREATER THAN 24" SHALL BE ALLOWED WITHIN THE SIGHT DISTANCE TRIANGLE OR EASEMENTS WITH THE EXCEPTION OF DECIDUOUS TREES PROVIDED THAT THE LOWEST BRANCH IS AT LEAST 6' FROM GRADE. ANY FENCES WITHIN THE SIGHT DISTANCE TRIANGLE OR EASEMENT MUST BE NOT MORE THAN 42" IN HEIGHT AND OF AN OPEN DESIGN.

11. THE DEVELOPER SHALL ENSURE THAT THE FINAL LANDSCAPE PLAN IS COORDINATED WITH ALL OTHER FINAL PLAN ELEMENTS SO THAT THE PROPOSED GRADING, STORM DRAINAGE, AND OTHER DEVELOPMENT IMPROVEMENTS DO NOT CONFLICT WITH NOR PRECLUDE INSTALLATION AND MAINTENANCE OF LANDSCAPE ELEMENTS ON THIS PLAN.

12. MINOR CHANGES IN SPECIES AND PLANT LOCATIONS MAY BE MADE DURING CONSTRUCTION -- AS REQUIRED BY SITE CONDITIONS OR PLANT AVAILABILITY. OVERALL QUANTITY, QUALITY, AND DESIGN CONCEPT MUST BE CONSISTENT WITH THE APPROVED PLANS. IN THE EVENT OF CONFLICT WITH THE QUANTITIES INCLUDED IN THE PLANT LIST, SPECIES AND QUANTITIES ILLUSTRATED SHALL BE PROVIDED. ALL CHANGES OF PLANT SPECIES AND LOCATION MUST HAVE WRITTEN APPROVAL BY THE CITY PRIOR TO INSTALLATION.

13. ALL PLANTING BEDS SHALL BE MULCHED TO A MINIMUM DEPTH OF THREE INCHES.

14. IRRIGATED TURF SHALL BE TEXAS BLUEGRASS/KENTUCKY BLUEGRASS HYBRID VORTEXT BY KORBY SOD LLC OR APPROVED EQUAL.

15. EDGING BETWEEN GRASS AND SHRUB BEDS SHALL BE 18" X 4" ROLLED TOP STEEL SET LEVEL WITH TOP OF SOD OR APPROVED EQUAL.

WATER USE TABLE

HYDROZONE	AREA (SF)	WATER NEEDED (GALLONS/SF)	ANNUAL WATER USE (GALLONS)
HIGH	160964.00	15	2,414,460.00
MODERATE	37460.00	10	374,600.00
LOW	163604.00	3	490,812.00
TOTAL	362,028	9.0597	3,279,872
ANNUAL WATER USE NOT TO EXCEED 15 GAL./SF. AVERAGE OVER THE SITE			

STREET TREE NOTES

1. A PERMIT MUST BE OBTAINED FROM THE CITY FORESTER BEFORE ANY TREES OR SHRUBS AS NOTED ON THIS PLAN ARE PLANTED, PRUNED OR REMOVED IN THE PUBLIC RIGHT-OF-WAY. THIS INCLUDES ZONES BETWEEN THE SIDEWALK AND CURB, MEDIANS AND OTHER CITY PROPERTY. THIS PERMIT SHALL APPROVE THE LOCATION AND SPECIES TO BE PLANTED. FAILURE TO OBTAIN THIS PERMIT IS A VIOLATION OF THE CITY OF FORT COLLINS CODE SUBJECT TO CITATION (SECTION 27-31) AND MAY ALSO RESULT IN REPLACING OR RELOCATING TREES AND A HOLD ON CERTIFICATE OF OCCUPANCY.

2. CONTACT THE CITY FORESTER TO INSPECT ALL STREET TREE PLANTINGS AT THE COMPLETION OF EACH PHASE OF THE DEVELOPMENT. ALL MUST BE INSTALLED AS SHOWN ON THE LANDSCAPE PLAN. APPROVAL OF STREET TREE PLANTING IS REQUIRED BEFORE FINAL APPROVAL OF EACH PHASE.

3. STREET LANDSCAPING, INCLUDING STREET TREES, SHALL BE SELECTED IN ACCORDANCE WITH ALL CITY CODES AND POLICIES. ALL TREE PRUNING AND REMOVAL WORKS SHALL BE PERFORMED BY A CITY OF FORT COLLINS LICENSED ARBORS WHERE REQUIRED BY CODE.STREET TREES SHALL BE SUPPLIED AND PLANTED BY THE DEVELOPER USING A QUALIFIED LANDSCAPE CONTRACTOR.

4. THE DEVELOPER SHALL REPLACE DEAD OR DYING STREET TREES AFTER PLANTING UNTIL FINAL MAINTENANCE INSPECTION AND ACCEPTANCE BY THE CITY OF FORT COLLINS FORESTRY DIVISION. ALL STREET TREES IN THE PROJECT MUST BE ESTABLISHED, WITH AN APPROVED SPECIES AND OF ACCEPTABLE CONDITION PRIOR TO ACCEPTANCE.

5. SUBJECT TO APPROVAL BY THE CITY FORESTER -- STREET TREE LOCATIONS MAY BE ADJUSTED TO ACCOMMODATE DRIVEWAY LOCATIONS, UTILITY SEPARATIONS BETWEEN TREES, STREET SIGNS AND STREET LIGHTS. STREET TREES TO BE CENTERED IN THE MIDDLE OF THE LOT TO THE EXTENT FEASIBLE. QUANTITIES SHOWN ON PLAN MUST BE INSTALLED UNLESS A REDUCTION IS APPROVED BY THE CITY TO MEET SEPARATION STANDARDS.

A PERMIT MUST BE OBTAINED FROM THE CITY FORESTER BEFORE ANY TREES OR SHRUBS AS NOTED ON THIS PLAN ARE PLANTED, PRUNED OR REMOVED IN THE PUBLIC RIGHT-OF-WAY. THIS INCLUDES ZONES BETWEEN THE SIDEWALK AND CURB, MEDIANS AND OTHER CITY PROPERTY. THIS PERMIT SHALL APPROVE THE LOCATION AND SPECIES TO BE PLANTED. FAILURE TO OBTAIN THIS PERMIT IS A VIOLATION OF THE CITY OF FORT COLLINS CODE SUBJECT TO CITATION (SECTION 27-31) AND MAY ALSO RESULT IN REPLACING OR RELOCATING TREES AND A HOLD ON CERTIFICATE OF OCCUPANCY.

TREE PROTECTION NOTES

1. ALL EXISTING TREES WITHIN THE LIMITS OF THE DEVELOPMENT AND WITHIN ANY NATURAL AREA BUFFER ZONES SHALL REMAIN AND BE PROTECTED UNLESS NOTED ON THESE PLANS FOR REMOVAL.

2. WITHIN THE DRIP LINE OF ANY PROTECTED EXISTING TREE, THERE SHALL BE NO CUT OR FILL OVER A FOUR-INCH DEPTH UNLESS A QUALIFIED ARBORIST OR FORESTER HAS EVALUATED AND APPROVED THE DISTURBANCE.

3. ALL PROTECTED EXISTING TREES SHALL BE PRUNED TO THE CITY OF FORT COLLINS FORESTRY STANDARDS. TREE PRUNING AND REMOVAL SHALL BE PERFORMED BY A BUSINESS THAT HOLDS A CURRENT CITY OF FORT COLLINS ARBORIST LICENSE WHERE REQUIRED BY CODE.

4. PRIOR TO AND DURING CONSTRUCTION, BARRIERS SHALL BE ERECTED AROUND ALL PROTECTED EXISTING TREES WITH SUCH BARRIERS TO BE OF ORANGE FENCING A MINIMUM OF FOUR (4) FEET IN HEIGHT, SECURED WITH METAL T-POSTS, NO CLOSER THAN SIX (6) FEET FROM THE TRUNK OR ONE-HALF (½) OF THE DRIP LINE, WHICHEVER IS GREATER. THERE SHALL BE NO STORAGE OR MOVEMENT OF EQUIPMENT, MATERIAL, DEBRIS OR FILL WITHIN THE FENCED TREE PROTECTION ZONE.

5. DURING THE CONSTRUCTION STAGE OF DEVELOPMENT, THE APPLICANT SHALL PREVENT THE CLEANING OF EQUIPMENT OR MATERIAL OR THE STORAGE AND DISPOSAL OF WASTE MATERIAL SUCH AS PAINTS, OILS, SOLVENTS, ASPHALT, CONCRETE, MOTOR OIL OR ANY OTHER MATERIAL HARMFUL TO THE LIFE OF A TREE WITHIN THE DRIP LINE OF ANY PROTECTED TREE OR GROUP OF TREES.

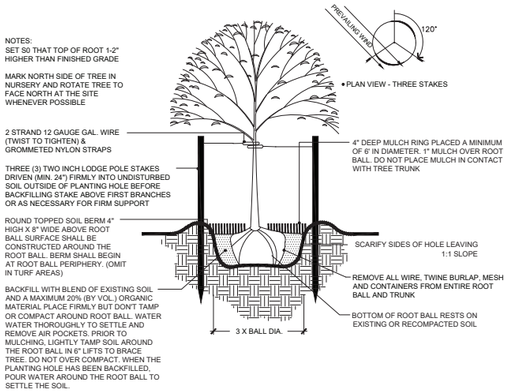
6. NO DAMAGING ATTACHMENT, WIRES, SIGNS OR PERMITS MAY BE FASTENED TO ANY PROTECTED TREE.

7. LARGE PROPERTY AREAS CONTAINING PROTECTED TREES AND SEPARATED FROM CONSTRUCTION OR LAND CLEARING AREAS, ROAD RIGHTS-OF-WAY AND UTILITY EASEMENTS MAY BE "RIBBONED OFF," RATHER THAN ERECTING PROTECTIVE FENCING AROUND EACH TREE AS REQUIRED IN SUBSECTION (G)(3) ABOVE. THIS MAY BE ACCOMPLISHED BY PLACING METAL T-POST STAKES A MAXIMUM OF FIFTY (50) FEET APART AND TYING RIBBON OR ROPE FROM STAKE-TO-STAKE ALONG THE OUTSIDE PERIMETERS OF SUCH AREAS BEING CLEARED.

8. THE INSTALLATION OF UTILITIES, IRRIGATION LINES OR ANY UNDERGROUND FIXTURE REQUIRING EXCAVATION DEEPER THAN SIX (6) INCHES SHALL BE ACCOMPLISHED BY BORING UNDER THE ROOT SYSTEM OF PROTECTED EXISTING TREES AT A MINIMUM DEPTH OF TWENTY-FOUR (24) INCHES. THE AUGER DISTANCE IS ESTABLISHED FROM THE FACE OF THE TREE (OUTER BARK) AND IS SCALED FROM TREE DIAMETER AT BREAST HEIGHT AS DESCRIBED IN THE CHART BELOW:

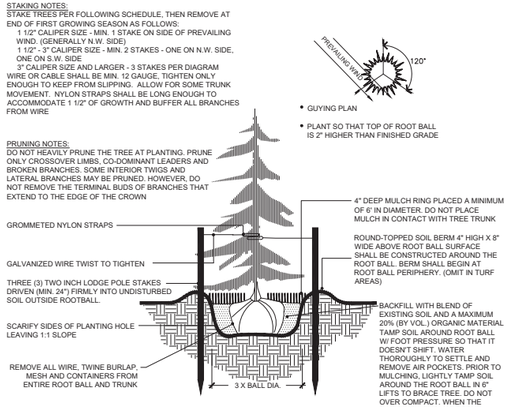
TREE DIAMETER AT BREAST HEIGHT (INCHES)	AUGER DISTANCE FROM FACE OF TREE (FEET)
0-2	1
3-4	2
5-9	5
10-14	10
15-19	12
OVER 19	15

9. NO TREES SHALL BE REMOVED DURING THE SONGBIRD NESTING SEASON (FEBRUARY 1 TO JULY 31) WITHOUT FIRST HAVING A PROFESSIONAL ECOLOGIST OR WILDLIFE BIOLOGIST COMPLETE A NESTING SURVEY TO IDENTIFY ANY ACTIVE NESTS EXISTING ON THE PROJECT SITE. IF ACTIVE NESTS ARE FOUND, THE CITY ENVIRONMENTAL PLANNER WILL DETERMINE WHETHER ADDITIONAL RESTRICTIONS ON TREE REMOVAL AND CONSTRUCTION APPLY.



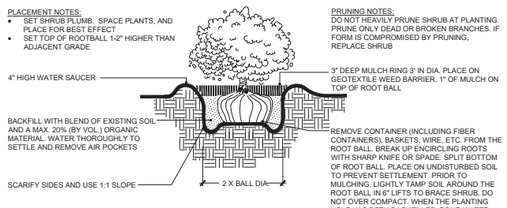
1 TREE PLANTING DETAIL - WOOD POSTS

SCALE: NTS L-PL2-PLA-02



2 CONIFER TREE PLANTING DETAIL - WOOD POSTS

SCALE: NTS L-PL2-PLA-16



3 SHRUB PLANTING DETAIL

SCALE: NTS L-PL2-PLA-14

TIMBER LARK RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

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NORTH

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

LANDSCAPE NOTES & DETAILS

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

17 OF 31

Plotted By: Ngoc Vu **Layout:** 5 Landscape Notes & Details **Printed On:** 12/15/2021 11:44 AM **File Name:** 5 Landscape Notes & Details.dwg

PLANT SCHEDULE

CANOPY TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
	GTS	4	GLEDITSIA TRIACANTHOS `SKYLINE` / SKYLINE HONEY LOCUST	B & B	2"	
	PA	6	PLATANUS X ACERIFOLIA / LONDON PLANE TREE	B & B	2"	
	PDM	7	POPULUS DELTOIDES MONILIFERA / PLAINS COTTONWOOD	B & B	2"	
	QB	2	QUERCUS BUCKLEYI / BUCKLEY OAK	B & B	2"	
	QMB	3	QUERCUS MACROCARPA / BURR OAK	B & B	2"	
EVERGREEN TREES	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**CONT**	**CAL**	**SIZE**
	PPH	15	PICEA PUNGENS `HOOPSII` / HOOPSI SPRUCE	B & B	-	6` HT
STREET TREE	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**CONT**	**CAL**	**SIZE**
	CSN	28	CATALPA SPECIOSA / NORTHERN CATALPA	B & B	2"	
	COC	25	CELTIS OCCIDENTALIS / COMMON HACKBERRY	B & B	2"	
	GBA	11	GINKGO BILOBA `AUTUMN GOLD` TM / AUTUMN GOLD MAIDENHAIR TREE	B & B	2"	
	GDE	30	GYMNOCLADUS DIOICA `ESPRESSO` / KENTUCKY COFFEETREE	B & B	2"	
	QMC	28	QUERCUS MUEHLENBERGII / CHINKAPIN OAK	B & B	2"	
	QSO	29	QUERCUS SHUMARDII / SHUMARD OAK	B & B	2"	
	TAF	26	TILIA AMERICANA `BAILYARD` TM / FRONTYARD AMERICAN LINDEN	B & B	2"	
	TAR	21	TILIA AMERICANA `REDMOND` / REDMOND AMERICAN LINDEN	B & B	2"	
	UFE	27	ULMUS X `FRONTIER` / FRONTIER ELM	B & B	2"	
	UNH	26	ULMUS X `NEW HORIZON` / NEW HORIZON ELM	B & B	2"	
ORNAMENTAL TREE	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**CONT**	**CAL**	**SIZE**
	ATG	6	ACER TATARICUM `GARANN` TM / HOT WINGS TATARIAN MAPLE	B & B	2"	
	AO	16	AESCULUS GLABRA / OHIO BUCKEYE	B & B	2"	
	AGA	11	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE` / AUTUMN BRILLIANCE APPLE SERVICEBERRY	B & B	2"	
	PCH	8	PYRUS CALLERYANA `CHANTICLEER` / CHANTICLEER ORNAMENTAL PEAR	B & B	2"	

TREE SPECIES DIVERSITY

PER CITY OF FORT COLLINS 3.2.1(D)3 PROPOSED PLAN MUST HAVE A SPECIES DIVERSITY OF (10-19 TREES > 50%, 20-39 TREES > 33%, 40-59 TREES > 25%, 60+ TREES > 15%). OF THE 330 TOTAL TREES SURVEYED AND PROPOSED ON SITE, NO SPECIES MAY HAVE MORE THAN 49 QUANTITY.

QTY	%	CANOPY TREES: BOTANICAL / COMMON NAME
6	1.8	PLATANUS X ACERIFOLIA / LONDON PLANE TREE
4	1.2	GLEDITSIA TRIACANTHOS `SKYLINE` / SKYLINE HONEY LOCUST
7	2.1	POPULUS DELTOIDES MONILIFERA / PLAINS COTTONWOOD
2	0.6	QUERCUS BUCKLEYI / BUCKLEY OAK
3	0.9	QUERCUS MACROCARPA / BURR OAK
QTY	**%**	**EVERGREEN TREES: BOTANICAL / COMMON NAME**
15	4.6	PICEA PUNGENS `HOOPSII` / HOOPSI SPRUCE
QTY	**%**	**STREET TREES: BOTANICAL / COMMON NAME**
28	8.5	CATALPA SPECIOSA / NORTHERN CATALPA
25	7.6	CELTIS OCCIDENTALIS / COMMON HACKBERRY
11	3.3	GINKGO BILOBA `AUTUMN GOLD` TM / AUTUMN GOLD MAIDENHAIR TREE
30	9.1	GYMNOCLADUS DIOICA `ESPRESSO` / KENTUCKY COFFEETREE
28	8.5	QUERCUS MUEHLENBERGII / CHINKAPIN OAK
29	8.8	QUERCUS SHUMARDII / SHUMARD OAK
26	7.9	TILIA AMERICANA `BAILYARD` TM / FRONTYARD AMERICAN LINDEN
21	6.4	TILIA AMERICANA `REDMOND` / REDMOND AMERICAN LINDEN
27	8.2	ULMUS X `FRONTIER` / FRONTIER ELM
26	7.9	ULMUS X `NEW HORIZON` / NEW HORIZON ELM
QTY	**%**	**ORNAMENTAL TREES: BOTANICAL / COMMON NAME**
11	3.3	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE` / AUTUMN BRILLIANCE APPLE SERVICEBERRY
8	2.4	PYRUS CALLERYANA `CHANTICLEER` / CHANTICLEER ORNAMENTAL PEAR
6	1.8	ACER TATARICUM `GARANN` TM / HOT WINGS TATARIAN MAPLE
16	4.9	AESCULUS GLABRA / OHIO BUCKEYE
329	100	

TIMBER LARK
RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

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NORTH

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

LANDSCAPE NOTES & DETAILS

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

18 OF 31

Plotted By: Ngoc Vu **Layout:** 5 Landscape Notes & Details (2) **Printed On:** 12/15/2021 11:44 AM **File Name:** 5 Landscape Notes & Details.dwg

TREE MITIGATION LEGEND

XXX EXISTING TREES TO SAVE IN PLACE

XXX EXISTING TO BE REMOVED

#	TYPE	STEMS	DBH	CONDITION	MITIGATION*	REMOVED (R), TRANSPLANTED (T), OR PRESERVED (P)
1	GREEN ASH	4	10	FAIR MINUS	1	R
2	COTTONWOOD		8-9	FAIR MINUS	3	R
3	COTTONWOOD		17	FAIR MINUS	2	R
4	COTTONWOOD		16	FAIR	1.5	R
5	COTTONWOOD	9	11-16	FAIR MINUS	4.5	R
6	COTTONWOOD	5	8-23	FAIR MINUS	3.5	R
7	COTTONWOOD		20	FAIR	2	R
8	COTTONWOOD		13	FAIR MINUS	1.5	R
9	COTTONWOOD		21	FAIR	2.5	R
10	COTTONWOOD	2	13, 5	FAIR	1.5	R
11	COTTONWOOD		20	FAIR	2	R
12	COTTONWOOD	3	10-25	FAIR MINUS	3	R
13	COTTONWOOD		15	FAIR MINUS	2	R
14	COTTONWOOD	6	8-37	FAIR MINUS	4	R
15	COTTONWOOD		20	FAIR MINUS	2	R
16	COTTONWOOD		36	FAIR	3	R
17	COTTONWOOD		18	FAIR MINUS	2	R
18	COTTONWOOD		18	FAIR	2	R
19	COTTONWOOD	2	21, 19	FAIR MINUS	3	R
20	PEAR		4	FAIR PLUS	0	R
21	PEAR		4	FAIR PLLUS	0	R
22	COTTONWOOD		31	FAIR	3	R
23	COTTONWOOD	2	23, 22	FAIR MINUS	3.5	R
24	COTTONWOOD	4	8-16	FAIR	2.5	R
25	COTTONWOOD	3	5-21	FAIR	2.5	R
26	WILLOW	2	8	FAIR MINUS	1.5	R
27	RUSSIAN OLIVE		18	POOR	1.5	R
28	RUSSIAN OLIVE		7	POOR	0	R
29	WILD PEAR		8	FAIR PLUS	1.5	R
30	RUSSIAN OLIVE		17	FAIR	2	R
31	RUSSIAN OLIVE	2	8, 12	FAIR	1.5	R
32	RUSSIAN OLIVE		12	FAIR PLUS	1.5	R
33	RUSSIAN OLIVE	3	5-7	FAIR PLUS	1	R
34	RUSSIAN OLIVE		10	FAIR PLUS	1	R
35	RUSSIAN OLIVE	3	3-6	FAIR PLUS	1	R
36	RUSSIAN OLIVE	4	2-8	FAIR PLUS	1	R
37	RUSSIAN OLIVE	2	10-12	FAIR PLUS	1.5	R
38	SIBERIAN ELM		8	FAIR PLUS	0	R
39	RUSSIAN OLIVE	3	7-10	FAIR	1	R
40	COTTONWOOD		65	FAIR	5.5	P
41	SIBERIAN ELM	2	14, 10	FAIR	1.5	R
42	RUSSIAN OLIVE		26	FAIR	2	R
43	COTTONWOOD		7	FAIR	1	R
44	RUSSIAN OLIVE	2	13, 10	FAIR	1.5	R
45	COTTONWOOD	6	14-17	FAIR	3	R
46	RUSSIAN OLIVE		20	FAIR	1.5	R
47	RUSSIAN OLIVE	5	2-6	FAIR	1	R
TOTAL MITIGATION REQUIRED					85	

NOTE: SEE LANDSCAPE PLANS FOR MITIGATION TREE LOCATIONS

TREE MITIGATION SUMMARY

TYPE	COUNT	REQUIRED MITIGATION TREES
TREES PRESERVED	1	0.0
TREES TO BE REMOVED	46	85.0
TOTAL	47	85.0

PROVIDED TREE MITIGATION

LOCATION	COUNT
MITIGATION TREES PROPOSED TO BE PLANTED *ON-SITE*	85.0
MITIGATION TREES PROPOSED TO BE PLANTED *OFF-SITE*	0.0
TOTAL	85.0
SEE LANDSCAPE PLAN FOR MITIGATION TREES	

NOTES

1. NO TREES SHALL BE REMOVED DURING THE SONGBIRD NESTING SEASON (FEBRUARY 1 TO JULY 31) WITHOUT FIRST HAVING A PROFESSIONAL ECOLOGIST OR WILDLIFE BIOLOGIST COMPLETE A NESTING SURVEY TO IDENTIFY ANY ACTIVE NESTS EXISTING ON THE PROJECT SITE. THE SURVEY SHALL BE SENT TO THE CITY ENVIRONMENTAL PLANNER. IF ACTIVE NESTS ARE FOUND, THE CITY WILL COORDINATE WITH RELEVANT STATE AND FEDERAL REPRESENTATIVES TO DETERMINE WHETHER ADDITIONAL RESTRICTIONS ON TREE REMOVAL AND CONSTRUCTION APPLY

2. A PERMIT MUST BE OBTAINED FROM THE CITY FORESTER BEFORE ANY TREES OR SHRUBS AS NOTED ON THIS PLAN ARE PLANTED, PRUNED OR REMOVED IN THE PUBLIC RIGHT-OF-WAY. THIS INCLUDES ZONES BETWEEN THE SIDEWALK AND CURB, MEDIANS AND OTHER CITY PROPERTY. THIS PERMIT SHALL APPROVE THE LOCATION AND SPECIES TO BE PLANTED. FAILURE TO OBTAIN THIS PERMIT IS A VIOLATION OF THE CITY OF FORT COLLINS CODE SUBJECT TO CITATION (SECTION 27-31) AND MAY ALSO RESULT IN REPLACING OR RELOCATING TREES AND A HOLD ON CERTIFICATE OF OCCUPANCY.

Plotted By: Ngoc Vu **Layout:** 3 Tree Mitigation Plan **Printed On:** 12/15/2021 11:45 AM **File Name:** 3 Tree Mitigation Plan.dwg

TIMBER LARK RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

PREPARED BY:

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NORTH SCALE: 1"=100'-0" (0, 50, 100, 200)

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

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No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

TREE MITIGATION PLAN

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
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REVIEWED BY:	KT

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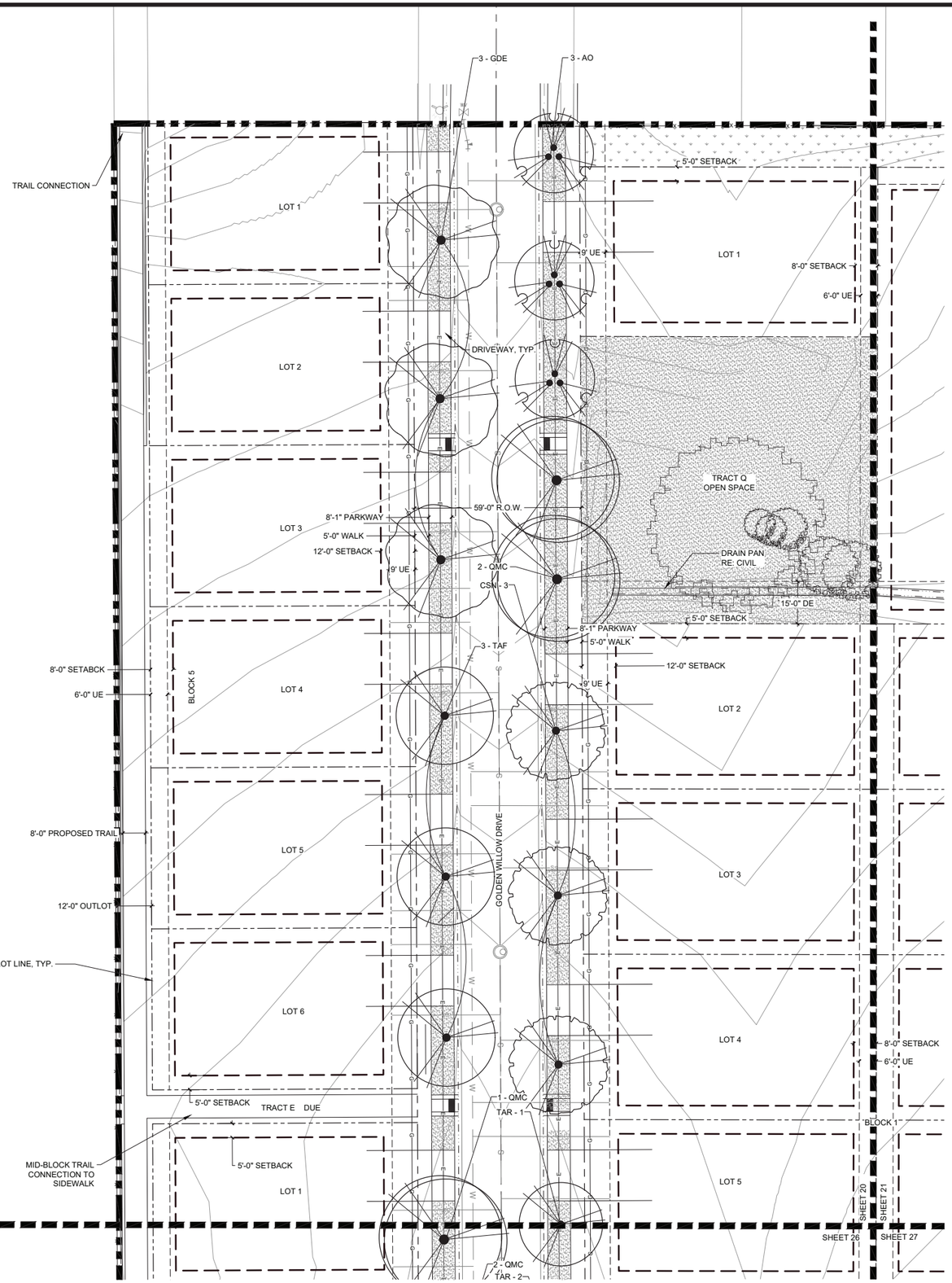
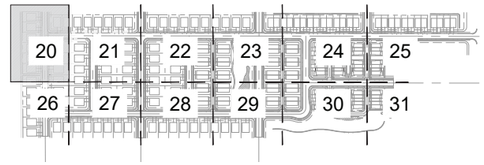
19



KEY MAP

NTS



LEGEND

SYMBOL	02 LANDSCAPE MATERIAL DESCRIPTION
	IRRIGATED TURF
	NATIVE SEED 1
	SHRUB BED

	= PROPERTY BOUNDARY
	= STORM DRAIN UTILITY
S	= SANITARY SEWER UTILITY
SS	= SANITARY SEWER SERVICE UTILITY
W	= WATER LINE UTILITY
W	= WATER LINE SERVICE UTILITY
IRR	= IRRIGATION UTILITY
UD	= UNDERDRAIN UTILITY
OHU	= OVERHEAD ELECTRIC UTILITY
X	= EXISTING FENCE
UE	= UTILITY EASEMENT
DE	= DRAINAGE EASEMENT
DAE	= DRAINAGE & ACCESS EASEMENT
UDA & EAE	= UTILITY, DRAINAGE, ACCESS & EMERGENCY ACCESS EASEMENT
	= EXISTING TREE
	= EXISTING SHRUB
M	= MITIGATION TREE

PLANT SCHEDULE

CANOPY TREES	QTY	BOTANICAL NAME
GTS	4	GLEDITSIA TRIACANTHOS `SKYLINE`
PA	6	PLATANUS X ACERIFOLIA
PDM	7	POPULUS DELTOIDES MONILIFERA
QB	2	QUERCUS BUCKLEYI
QMB	3	QUERCUS MACROCARPA

EVERGREEN TREES	QTY	BOTANICAL NAME
PPH	15	PICEA PUNGENS `HOOPSII`

STREET TREE	QTY	BOTANICAL NAME
CSN	28	CATALPA SPECIOSA
COC	25	CELTIS OCCIDENTALIS
GBA	11	GINKGO BILOBA `AUTUMN GOLD` TM
GDE	30	GYMNOCLADUS DIOICA `ESPRESSO`
QMC	28	QUERCUS MUEHLENBERGII
QSO	29	QUERCUS SHUMARDII
TAF	26	TILIA AMERICANA `BAILYARD` TM
TAR	21	TILIA AMERICANA `REDMOND`
UFE	27	ULMUS X `FRONTIER`
UNH	26	ULMUS X `NEW HORIZON`

ORNAMENTAL TREE	QTY	BOTANICAL NAME
ATG	6	ACER TATARICUM `GARANN` TM
AO	16	AESCULUS GLABRA
AGA	11	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE`
PCH	8	PYRUS CALLERYANA `CHANTICLEER`

NOTE: SEE LANDSCAPE NOTES & DETAILS SHEET FOR FULL PLANT SCHEDULE

Plotted By: Ngoc Vu **Layout:** Landscape Enlargement 1 **Printed On:** 12/15/2021 11:45 AM **File Name:** 2 Landscape Plan.dwg

TIMBER LARK RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

PREPARED BY:

ripley design
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419 Canyon Ave. Suite 200 Fort Collins, CO 80521
phone 970.224.5828 | fax 970.225.6657 | www.ripleydesigninc.com

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OWNER

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ENGINEER

NORTHERN ENGINEERING
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p. 970.221.4158

NORTH
SCALE: 1"=20'-0"
0 10 20 40
ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

LANDSCAPE ENLARGEMENT

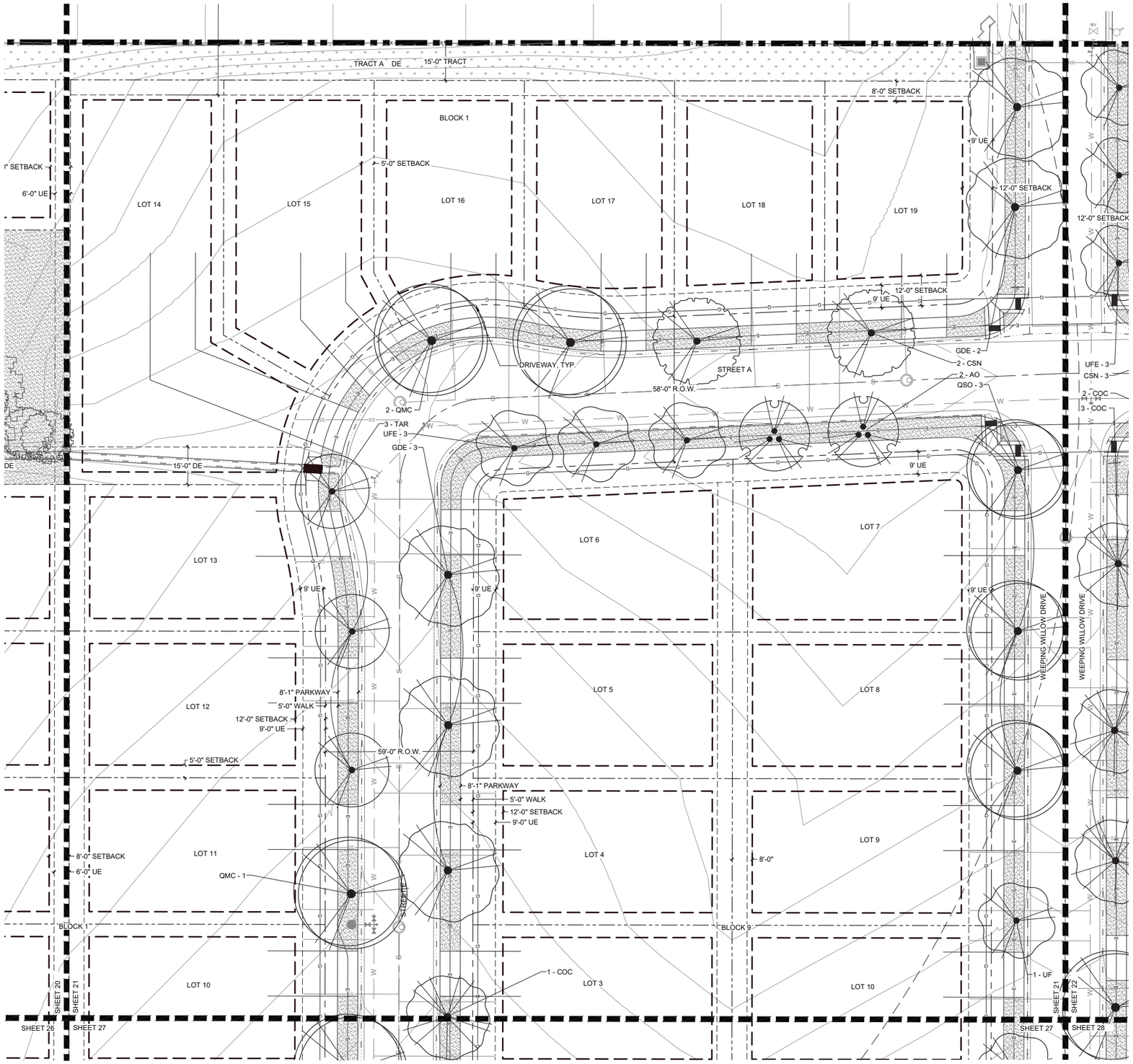
SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

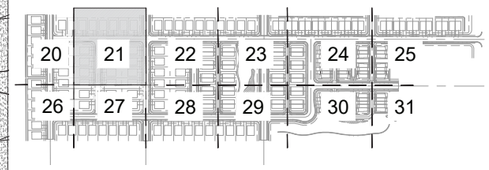
DRAWING NUMBER:

20



KEY MAP

NTS



LEGEND

SYMBOL	02 LANDSCAPE MATERIAL DESCRIPTION
	IRRIGATED TURF
	NATIVE SEED 1
	SHRUB BED

	= PROPERTY BOUNDARY
	= STORM DRAIN UTILITY
S	= SANITARY SEWER UTILITY
SS	= SANITARY SEWER SERVICE UTILITY
W	= WATER LINE UTILITY
W	= WATER LINE SERVICE UTILITY
IRR	= IRRIGATION UTILITY
UD	= UNDERDRAIN UTILITY
OHU	= OVERHEAD ELECTRIC UTILITY
X	= EXISTING FENCE
UE	= UTILITY EASEMENT
DE	= DRAINAGE EASEMENT
DAE	= DRAINAGE & ACCESS EASEMENT
UDA & EAE	= UTILITY, DRAINAGE, ACCESS & EMERGENCY ACCESS EASEMENT
	= EXISTING TREE
	= EXISTING SHRUB
M	= MITIGATION TREE

PLANT SCHEDULE

CANOPY TREES	QTY	BOTANICAL NAME
GTS	4	GLEDITSIA TRIACANTHOS `SKYLINE`
PA	6	PLATANUS X ACERIFOLIA
PDM	7	POPULUS DELTOIDES MONILIFERA
QB	2	QUERCUS BUCKLEYI
QMB	3	QUERCUS MACROCARPA

EVERGREEN TREES	QTY	BOTANICAL NAME
PPH	15	PICEA PUNGENS `HOOPSII`

STREET TREE	QTY	BOTANICAL NAME
CSN	28	CATALPA SPECIOSA
COC	25	CELTIS OCCIDENTALIS
GBA	11	GINKGO BILOBA `AUTUMN GOLD` TM
GDE	30	GYMNOCLADUS DIOICA `ESPRESSO`
QMC	28	QUERCUS MUEHLENBERGII
QSO	29	QUERCUS SHUMARDII
TAF	26	TILIA AMERICANA `BAILYARD` TM
TAR	21	TILIA AMERICANA `REDMOND`
UFE	27	ULMUS X `FRONTIER`
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ORNAMENTAL TREE	QTY	BOTANICAL NAME
ATG	6	ACER TATARICUM `GARANN` TM
AO	16	AESCULUS GLABRA
AGA	11	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE`
PCH	8	PYRUS CALLERYANA `CHANTICLEER`

NOTE: SEE LANDSCAPE NOTES & DETAILS SHEET FOR FULL PLANT SCHEDULE

Plotted By: Ngoc Vu **Layout:** Landscape Enlargement 2 **Printed On:** 12/15/2021 11:46 AM **File Name:** 2 Landscape Plan.dwg

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PDP SUBMITTAL

FORT COLLINS, CO

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NORTH SCALE: 1"=20'-0" (0 10 20 40)

ORIGINAL SIZE 24X36

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REVISIONS

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LANDSCAPE ENLARGEMENT

SEAL:

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PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

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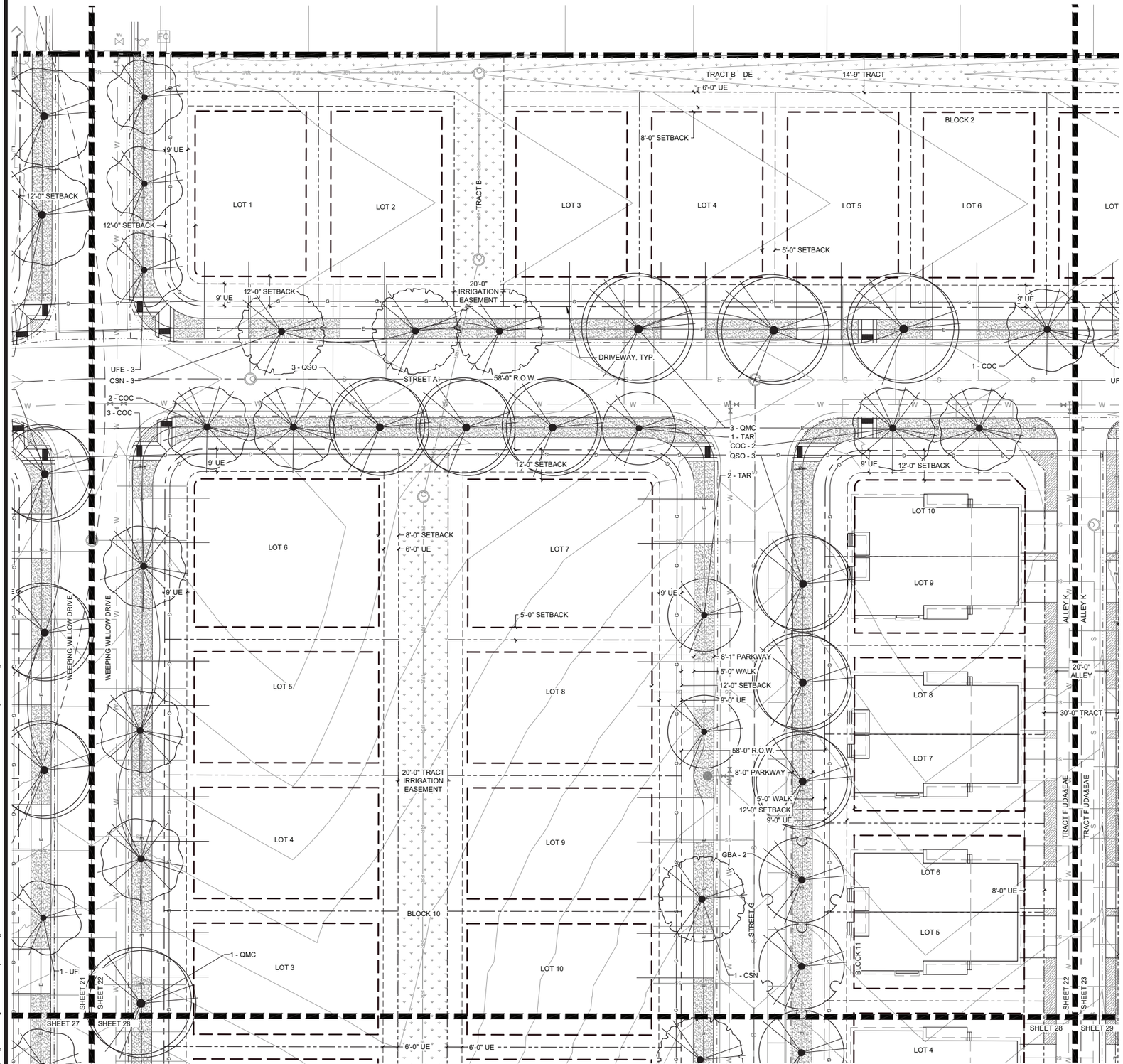
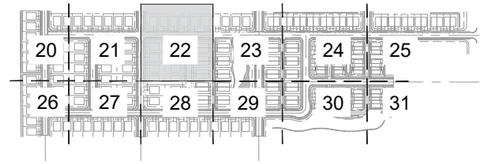


KEY MAP

NTS



LEGEND

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	SHRUB BED

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PLANT SCHEDULE

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PA	6	PLATANUS X ACERIFOLIA
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QMB	3	QUERCUS MACROCARPA

EVERGREEN TREES	QTY	BOTANICAL NAME
PPH	15	PICEA PUNGENS `HOOPSII`

STREET TREE	QTY	BOTANICAL NAME
CSN	28	CATALPA SPECIOSA
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NOTE: SEE LANDSCAPE NOTES & DETAILS SHEET FOR FULL PLANT SCHEDULE

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PDP SUBMITTAL

FORT COLLINS, CO

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NORTH SCALE: 1"=20'-0" (0 10 20 40)

ORIGINAL SIZE 24X36

ISSUED

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REVISIONS

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LANDSCAPE ENLARGEMENT

SEAL:

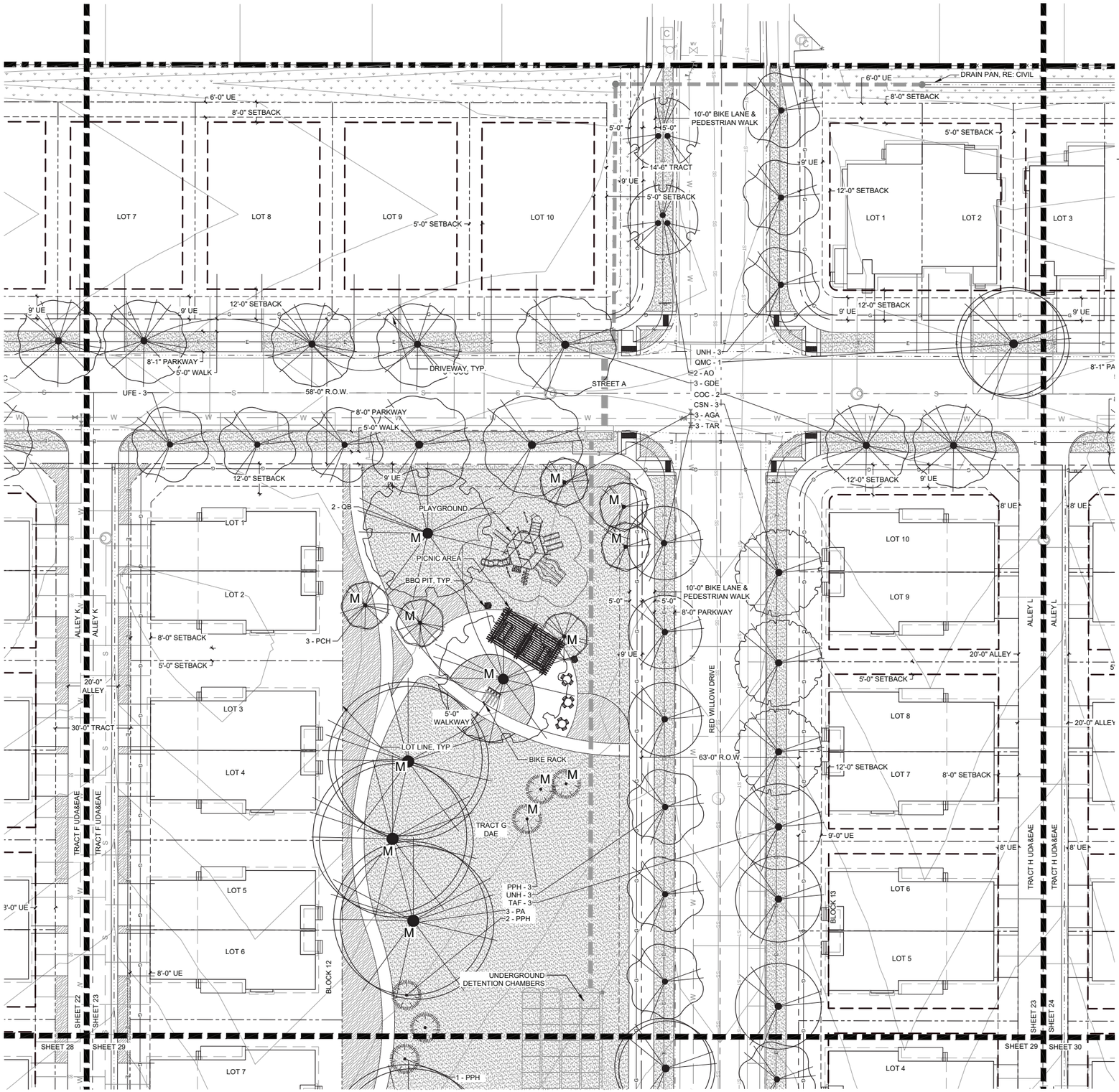
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

22

Plotted By: Ngoc Vu **Layout:** Landscape Enlargement 3 **Printed On:** 12/15/2021 11:46 AM **File Name:** 2 Landscape Plan.dwg



KEY MAP

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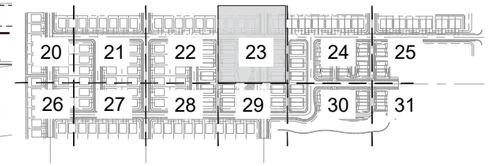

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PLANT SCHEDULE

CANOPY TREES	QTY	BOTANICAL NAME
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SCALE: 1"=20'-0"

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23

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PDP SUBMITTAL

FORT COLLINS, CO

PREPARED BY:

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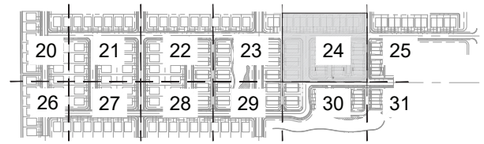
LANDSCAPE ENLARGEMENT

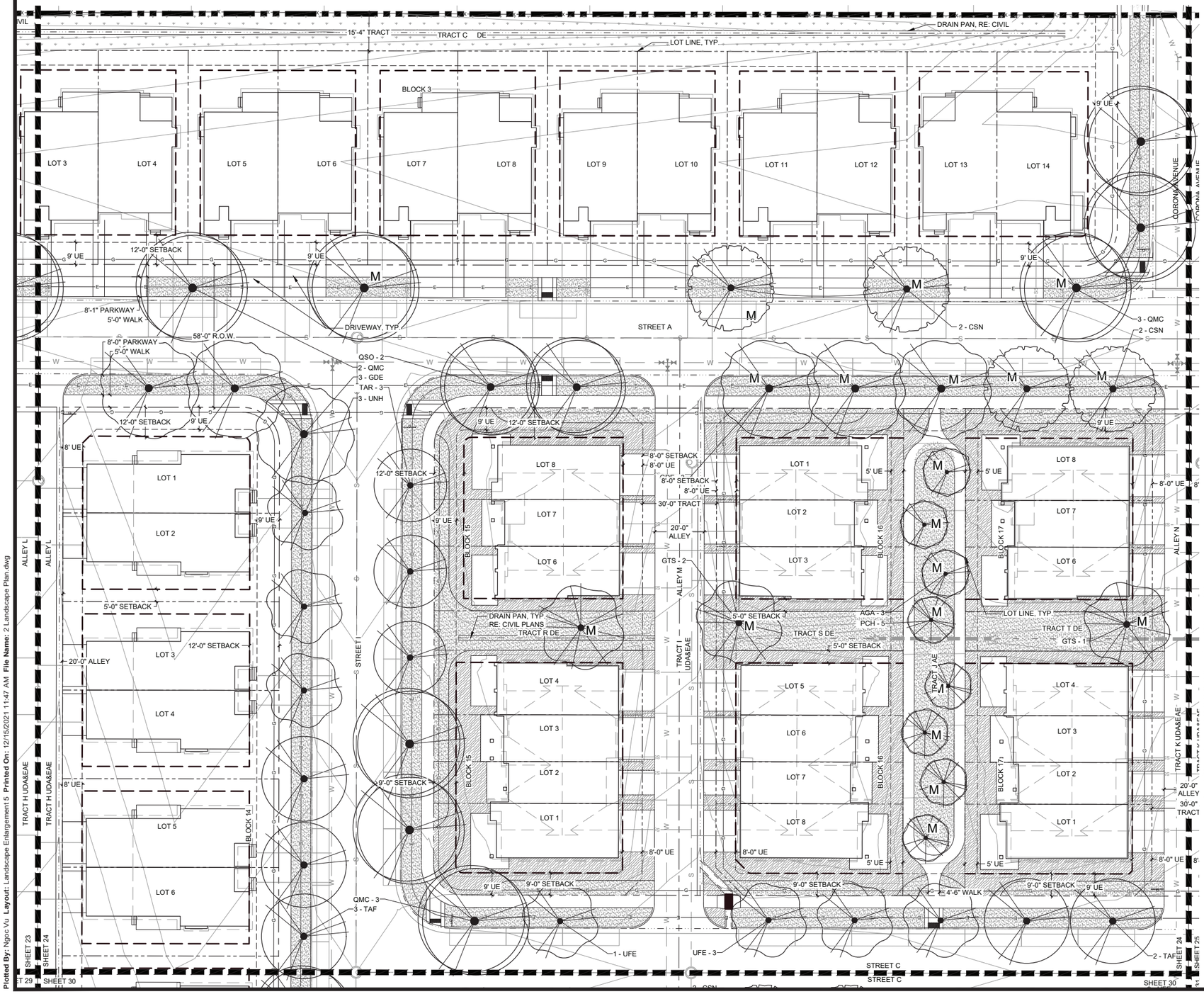
SEAL:

Plotted By: Ngoc Vu **Layout:** Landscape Enlargement 4 **Printed On:** 12/15/2021 11:46 AM **File Name:** 2 Landscape Plan.dwg

KEY MAP

NTS





LEGEND

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NOTE: SEE LANDSCAPE NOTES & DETAILS SHEET FOR FULL PLANT SCHEDULE

NORTH

SCALE: 1"=20'-0"

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LANDSCAPE ENLARGEMENT

SEAL:

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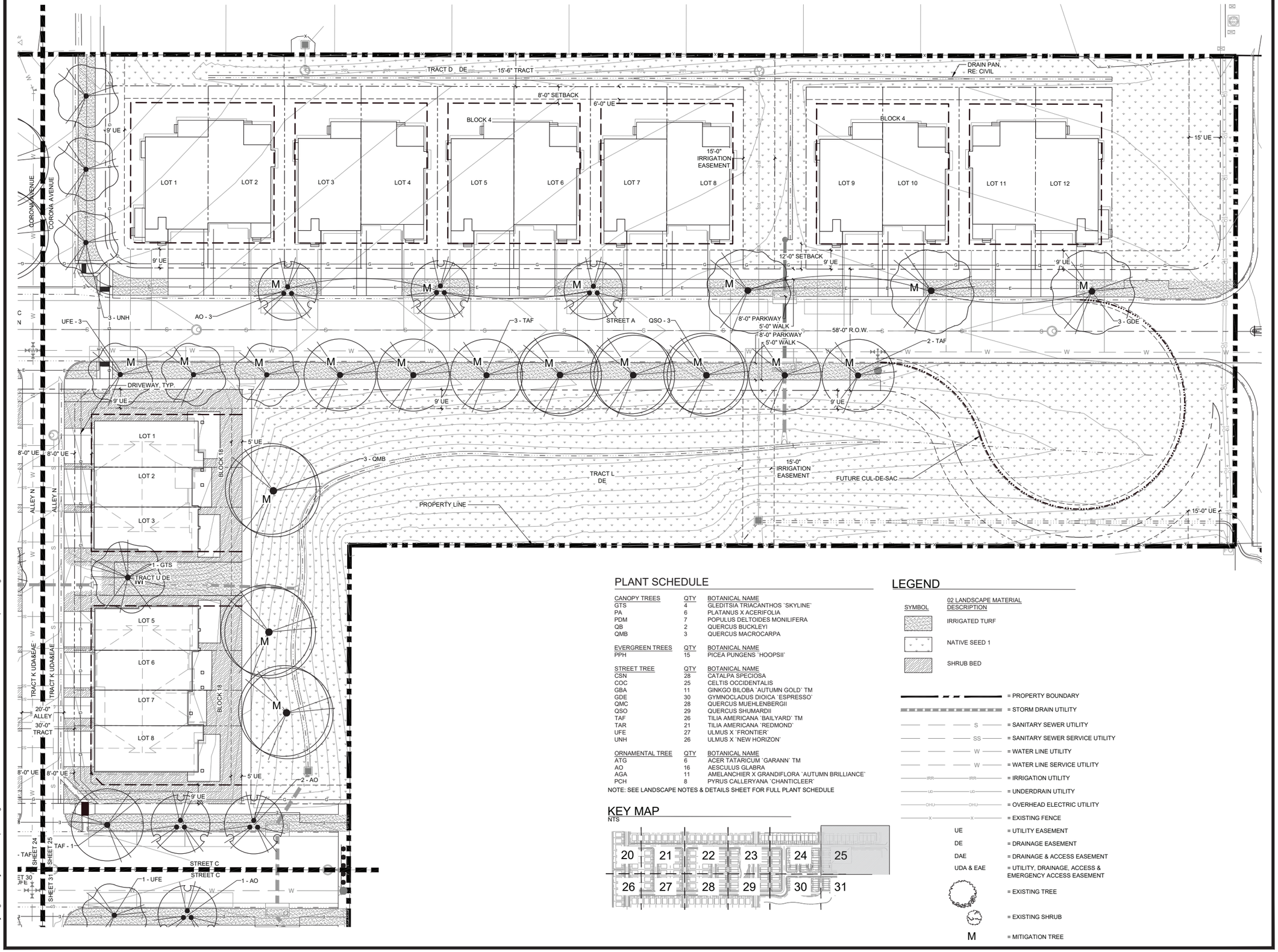
PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

24

Plotted By: Ngoc Vu **Layout:** Landscape Enlargement 5 **Printed On:** 12/15/2021 11:47 AM **File Name:** 2 Landscape Plan.dwg



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KEY MAP

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DRAWING NUMBER:

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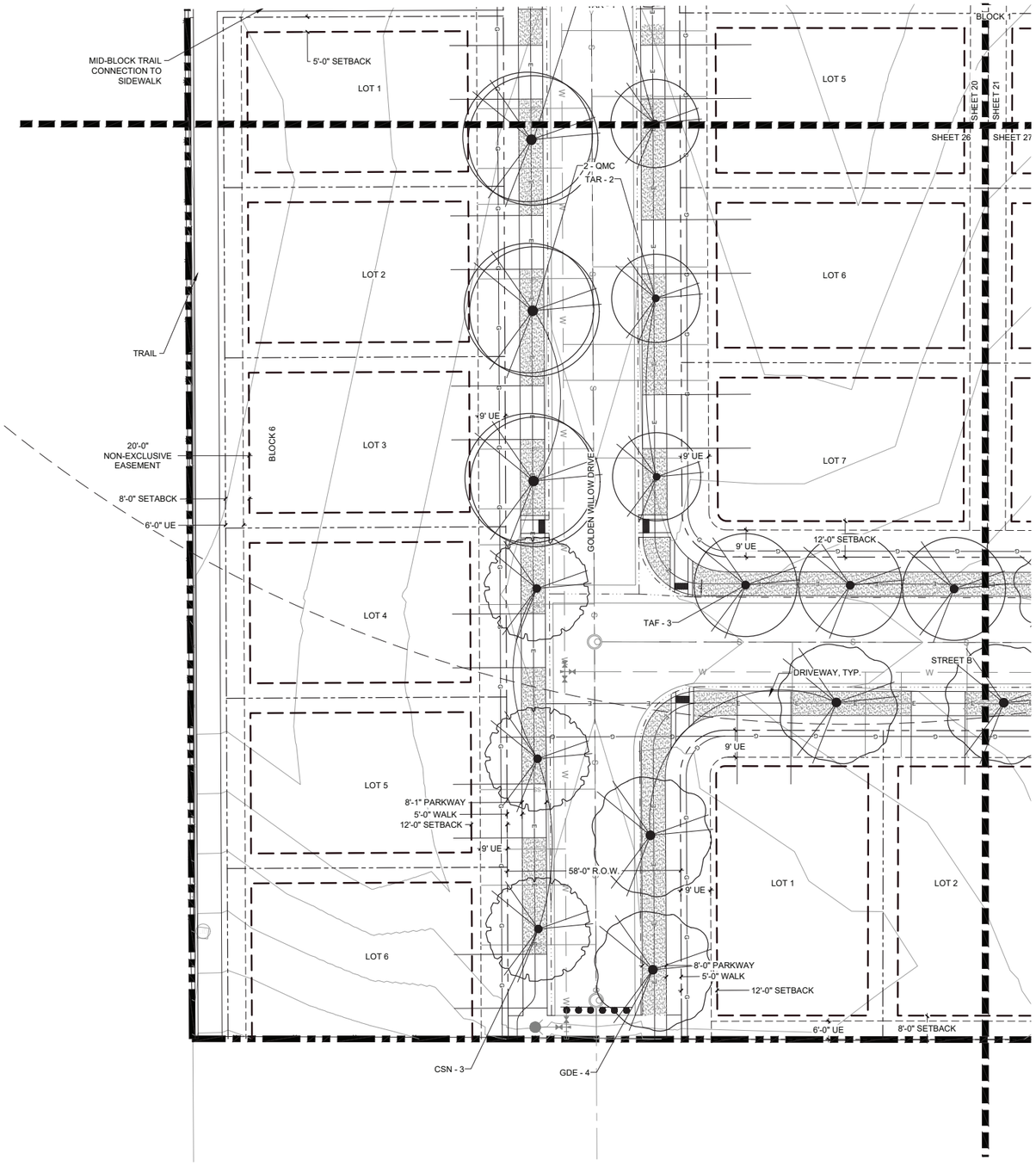
Plotted By: Ngoc Vu **Layout:** Landscape Enlargement 6 **Printed On:** 12/15/2021 11:47 AM **File Name:** 2 Landscape Plan.dwg



KEY MAP

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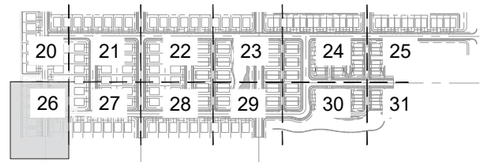

LEGEND

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S	= SANITARY SEWER UTILITY
SS	= SANITARY SEWER SERVICE UTILITY
W	= WATER LINE UTILITY
W	= WATER LINE SERVICE UTILITY
IRR	= IRRIGATION UTILITY
UD	= UNDERDRAIN UTILITY
OHU	= OVERHEAD ELECTRIC UTILITY
X	= EXISTING FENCE
UE	= UTILITY EASEMENT
DE	= DRAINAGE EASEMENT
DAE	= DRAINAGE & ACCESS EASEMENT
UDA & EAE	= UTILITY, DRAINAGE, ACCESS & EMERGENCY ACCESS EASEMENT
	= EXISTING TREE
	= EXISTING SHRUB
M	= MITIGATION TREE

PLANT SCHEDULE

CANOPY TREES	QTY	BOTANICAL NAME
GTS	4	GLEDITSIA TRIACANTHOS `SKYLINE`
PA	6	PLATANUS X ACERIFOLIA
PDM	7	POPULUS DELTOIDES MONILIFERA
QB	2	QUERCUS BUCKLEYI
QMB	3	QUERCUS MACROCARPA

EVERGREEN TREES	QTY	BOTANICAL NAME
PPH	15	PICEA PUNGENS `HOOPSII`

STREET TREE	QTY	BOTANICAL NAME
CSN	28	CATALPA SPECIOSA
COC	25	CELTIS OCCIDENTALIS
GBA	11	GINKGO BILOBA `AUTUMN GOLD` TM
GDE	30	GYMNOCLADUS DIOICA `ESPRESSO`
QMC	28	QUERCUS MUEHLENBERGII
QSO	29	QUERCUS SHUMARDII
TAF	26	TILIA AMERICANA `BAILYARD` TM
TAR	21	TILIA AMERICANA `REDMOND`
UFE	27	ULMUS X `FRONTIER`
UNH	26	ULMUS X `NEW HORIZON`

ORNAMENTAL TREE	QTY	BOTANICAL NAME
ATG	6	ACER TATARICUM `GARANN` TM
AO	16	AESCULUS GLABRA
AGA	11	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE`
PCH	8	PYRUS CALLERYANA `CHANTICLEER`

NOTE: SEE LANDSCAPE NOTES & DETAILS SHEET FOR FULL PLANT SCHEDULE

TIMBER LARK RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

PREPARED BY:

ripley design

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419 Canyon Ave. Suite 200 Fort Collins, CO 80521
phone 970.224.5828 | fax 970.225.6657 | www.ripleydesigninc.com

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NORTH

SCALE: 1"=20'-0"

0 10 20 40

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

LANDSCAPE ENLARGEMENT

SEAL:

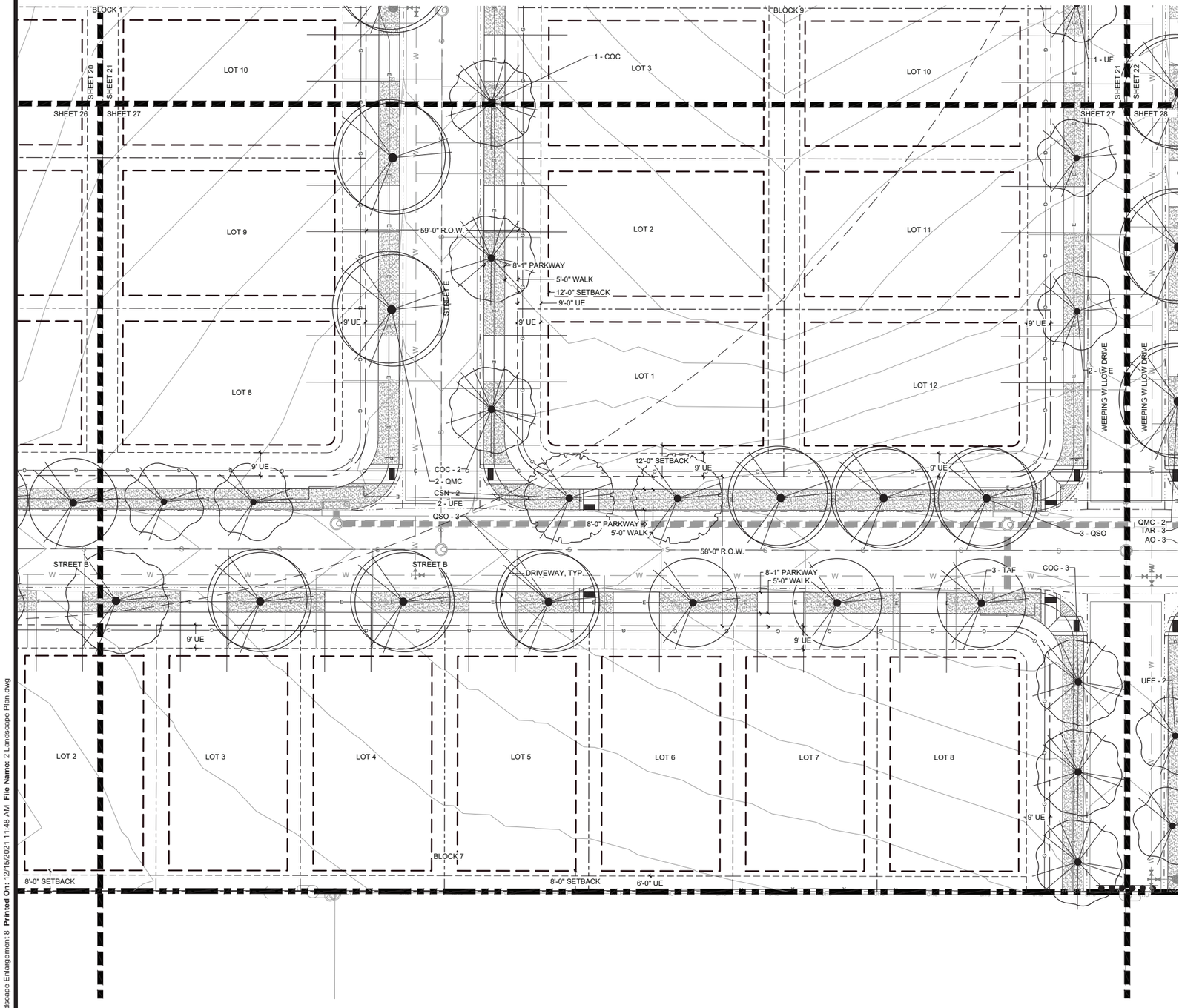
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

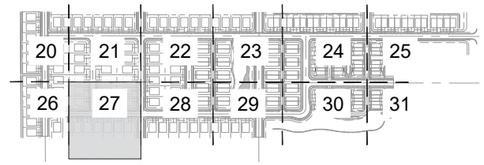
26

Plotted By: Ngoc Vu **Layout:** Landscape Enlargement 7 **Printed On:** 12/15/2021 11:48 AM **File Name:** 2 Landscape Plan.dwg



KEY MAP

NTS



LEGEND

SYMBOL	02 LANDSCAPE MATERIAL DESCRIPTION
	IRRIGATED TURF
	NATIVE SEED 1
	SHRUB BED

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PLANT SCHEDULE

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QMB	3	QUERCUS MACROCARPA

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PPH	15	PICEA PUNGENS `HOOPSII`

STREET TREE	QTY	BOTANICAL NAME
CSN	28	CATALPA SPECIOSA
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ORNAMENTAL TREE	QTY	BOTANICAL NAME
ATG	6	ACER TATARICUM `GARANN` TM
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AGA	11	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE`
PCH	8	PYRUS CALLERYANA `CHANTICLEER`

NOTE: SEE LANDSCAPE NOTES & DETAILS SHEET FOR FULL PLANT SCHEDULE

TIMBER LARK RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

PREPARED BY:

ripley design
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ENGINEER

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NORTH
SCALE: 1"=20'-0"
0 10 20 40

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

LANDSCAPE ENLARGEMENT

SEAL:

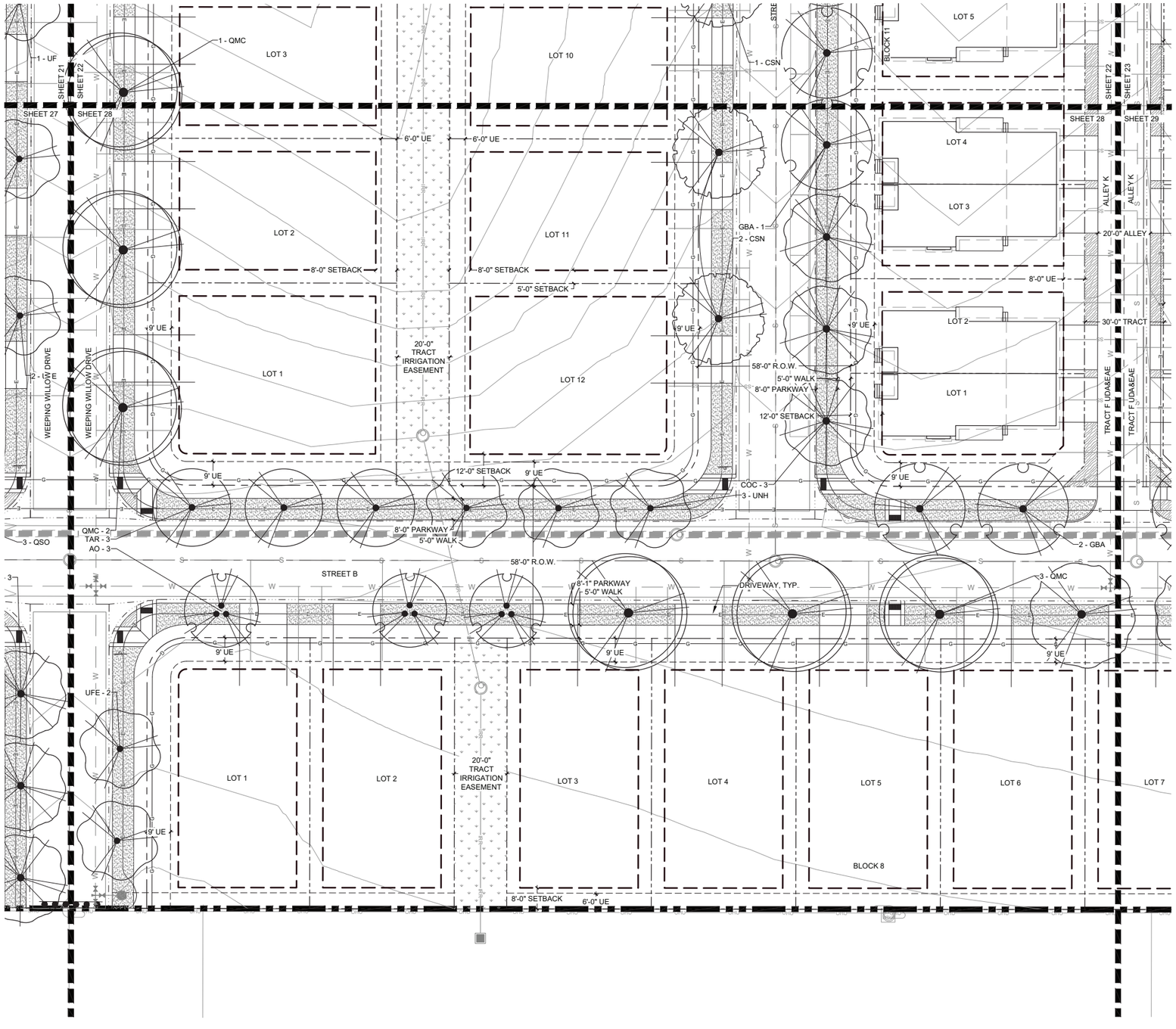
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

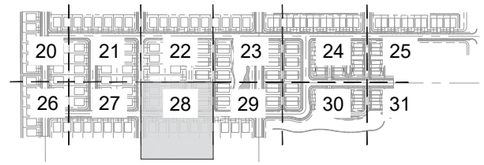
27

Plotted By: Ngoc Vu **Layout:** Landscape Enlargement 8 **Printed On:** 12/15/2021 11:48 AM **File Name:** 2 Landscape Plan.dwg



KEY MAP

NTS



LEGEND

SYMBOL	02 LANDSCAPE MATERIAL DESCRIPTION
	IRRIGATED TURF
	NATIVE SEED 1
	SHRUB BED

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PLANT SCHEDULE

CANOPY TREES	QTY	BOTANICAL NAME
GTS	4	GLEDITSIA TRIACANTHOS `SKYLINE`
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QMB	3	QUERCUS MACROCARPA

EVERGREEN TREES	QTY	BOTANICAL NAME
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ORNAMENTAL TREE	QTY	BOTANICAL NAME
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AO	16	AESCULUS GLABRA
AGA	11	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE`
PCH	8	PYRUS CALLERYANA `CHANTICLEER`

NOTE: SEE LANDSCAPE NOTES & DETAILS SHEET FOR FULL PLANT SCHEDULE

TIMBER LARK RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

PREPARED BY:

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NORTH SCALE: 1"=20'-0" (0, 10, 20, 40)

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

LANDSCAPE ENLARGEMENT

SEAL:

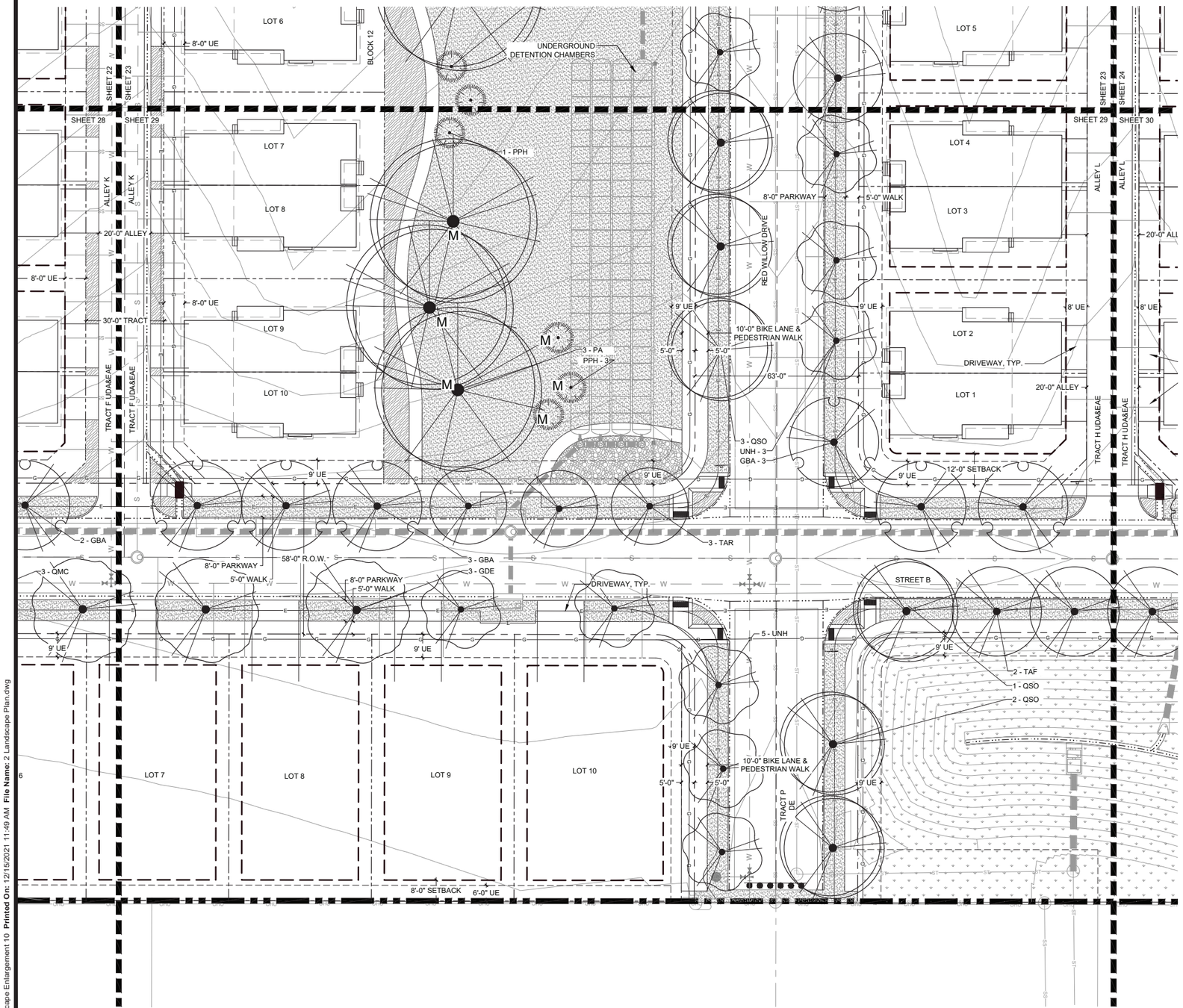
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

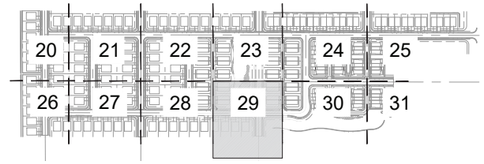
28

Plotted By: Ngoc Vu **Layout:** Landscape Enlargement 9 **Printed On:** 12/15/2021 11:49 AM **File Name:** 2 Landscape Plan.dwg



KEY MAP

NTS



LEGEND

SYMBOL	02 LANDSCAPE MATERIAL DESCRIPTION
	IRRIGATED TURF
	NATIVE SEED 1
	SHRUB BED

= PROPERTY BOUNDARY

= STORM DRAIN UTILITY

S = SANITARY SEWER UTILITY

SS = SANITARY SEWER SERVICE UTILITY

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W = WATER LINE SERVICE UTILITY

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DAE	= DRAINAGE & ACCESS EASEMENT
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= EXISTING TREE

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M = MITIGATION TREE

PLANT SCHEDULE

CANOPY TREES	QTY	BOTANICAL NAME
GTS	4	GLEDITSIA TRIACANTHOS `SKYLINE`
PA	6	PLATANUS X ACERIFOLIA
PDM	7	POPULUS DELTOIDES MONILIFERA
QB	2	QUERCUS BUCKLEYI
QMB	3	QUERCUS MACROCARPA
EVERGREEN TREES	**QTY**	**BOTANICAL NAME**
PPH	15	PICEA PUNGENS `HOOPSII`
STREET TREE	**QTY**	**BOTANICAL NAME**
CSN	28	CATALPA SPECIOSA
COC	25	CELTIS OCCIDENTALIS
GBA	11	GINKGO BILOBA `AUTUMN GOLD` TM
GDE	30	GYMNOCLADUS DIOICA `ESPRESSO`
QMC	28	QUERCUS MUEHLENBERGII
QSO	29	QUERCUS SHUMARDII
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ORNAMENTAL TREE	**QTY**	**BOTANICAL NAME**
ATG	6	ACER TATARICUM `GARANN` TM
AO	16	AESCULUS GLABRA
AGA	11	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE`
PCH	8	PYRUS CALLERYANA `CHANTICLEER`

NOTE: SEE LANDSCAPE NOTES & DETAILS SHEET FOR FULL PLANT SCHEDULE

NORTH

0 10 20 40

SCALE: 1"=20'-0"

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

PROJECT No.: R18-067

DRAWN BY: APL

REVIEWED BY: KT

DRAWING NUMBER:

29

TIMBER LARK RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

PREPARED BY:

ripley design

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p. 970.221.4158

LANDSCAPE ENLARGEMENT

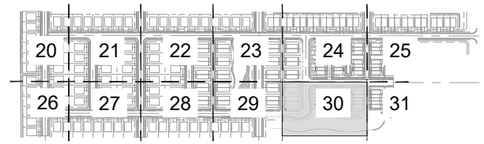
SEAL:

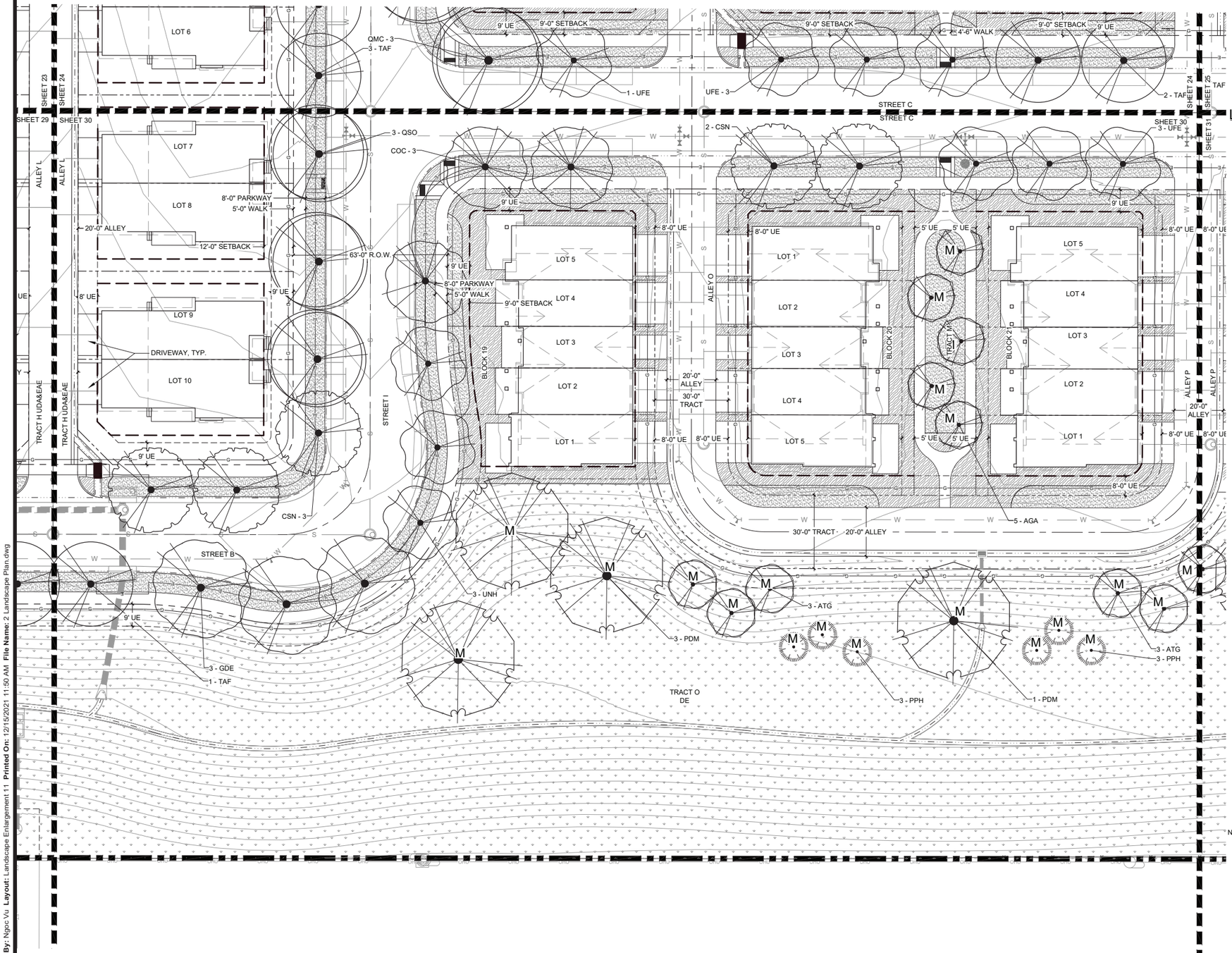
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

Plotted By: Ngoc Vu **Layout:** Landscape Enlargement 10 **Printed On:** 12/15/2021 11:49 AM **File Name:** 2 Landscape Plan.dwg

KEY MAP

NTS





LEGEND

SYMBOL	02 LANDSCAPE MATERIAL DESCRIPTION
	IRRIGATED TURF
	NATIVE SEED 1
	SHRUB BED

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PLANT SCHEDULE

CANOPY TREES	QTY	BOTANICAL NAME
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PCH	8	PYRUS CALLERYANA `CHANTICLEER`

NOTE: SEE LANDSCAPE NOTES & DETAILS SHEET FOR FULL PLANT SCHEDULE

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PDP SUBMITTAL

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NORTH

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ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

LANDSCAPE ENLARGEMENT

SEAL:

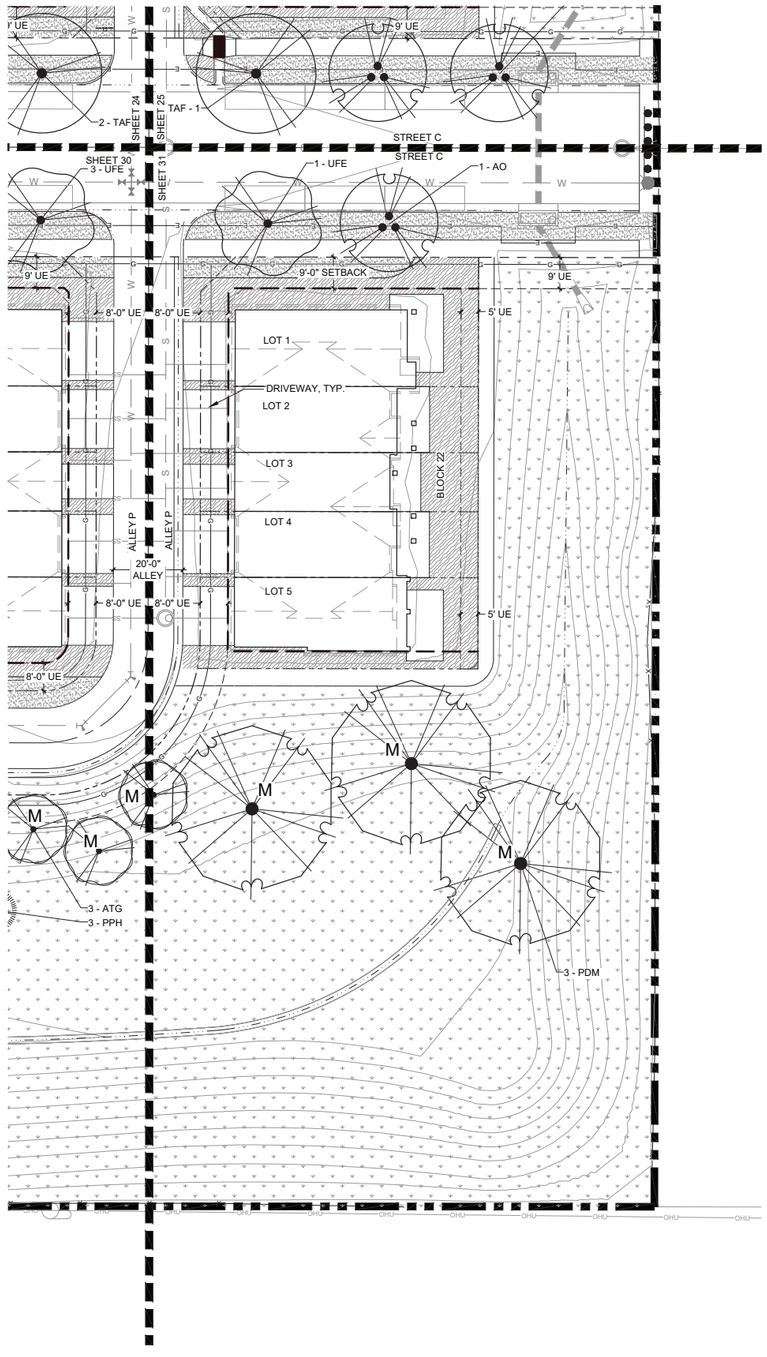
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

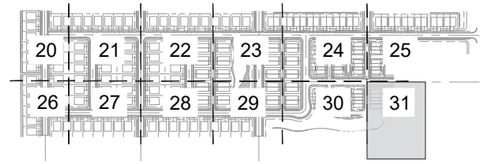
30

Plotted By: Ngoc Vu **Layout:** Landscape Enlargement 11 **Printed On:** 12/15/2021 11:50 AM **File Name:** 2 Landscape Plan.dwg



KEY MAP

NTS



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SYMBOL	02 LANDSCAPE MATERIAL DESCRIPTION
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419 Canyon Ave. Suite 200 Fort Collins, CO 80521
phone 970.224.5828 | fax 970.225.6657 | www.ripleydesigninc.com

APPLICANT

SCHROYER RESOURCES LLC
Steve Schroyer
900 Greenfields Court
Fort Collins, CO 80524
p. 970.481.5505

OWNER

AADT LAND HOLDINGS, LLC
Alexander Aigner
13005 Lowell Blvd,
Broomfield, CO 80020

LANDSCAPE ARCHITECT

RIPLEY DESIGN INC.
Katy Thompson
419 Canyon Ave. Suite 200
Fort Collins, CO 80521
p. 970.224.5828
f. 970.225.6657

ENGINEER

NORTHERN ENGINEERING
Robbie Lauer
301 N. Howes St. Suite #100
Fort Collins, CO 80521
p. 970.221.4158

NORTH SCALE: 1"=20'-0" (0, 10, 20, 40)

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	6-9-2021

REVISIONS

No.	DESCRIPTION	DATE
01	PDP REVISIONS	11-3-2021

LANDSCAPE ENLARGEMENT

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R18-067
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

31

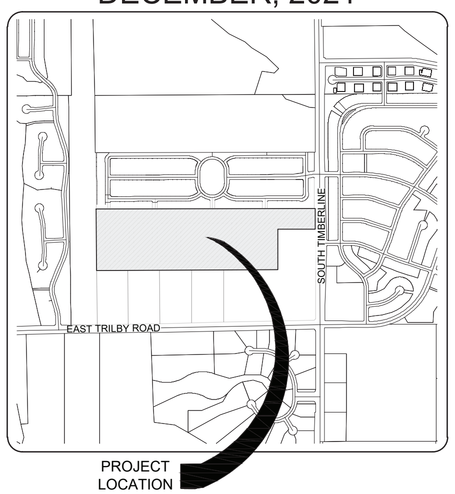
Plotted By: Ngoc Vu **Layout:** Landscape Enlargement 12 **Printed On:** 12/15/2021 11:50 AM **File Name:** 2 Landscape Plan.dwg

PRELIMINARY UTILITY PLANS FOR

TIMBER LARK RESIDENTIAL

A TRACT OF LAND LOCATED IN THE SOUTHEAST QUARTER OF SECTION 7, TOWNSHIP 6 NORTH, RANGE 68 WEST OF THE 6TH P.M., CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO

DECEMBER, 2021



NORTH

VICINITY MAP

1" = 1000'

PROJECT BENCHMARKS:

PROJECT DATUM: NAVD88

CITY OF FORT COLLINS BENCHMARK 2-02
EAST SIDE OF TIMBERLAND ROAD, 1/2 MILE NORTH OF TRILBY ROAD, ON THE MIDDLE CONCRETE PAD TO AN ELECTRIC BOX.
ELEVATION: 4964.37

CITY OF FORT COLLINS BENCHMARK 12-13
SOUTHEAST CORNER OF TIMBERLINE RD. AND TRILBY RD., ON A CONCRETE TRAFFIC SIGNAL BASE.
ELEVATION: 4926.67

PLEASE NOTE: THIS PLAN SET IS USING NAVD88 FOR A VERTICAL DATUM. SURROUNDING DEVELOPMENTS HAVE USED NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) FOR THEIR VERTICAL DATUMS.

IF NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) IS REQUIRED FOR ANY PURPOSE, THE FOLLOWING EQUATION SHOULD BE USED: NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) = NAVD88 - 3.19'

BASIS OF BEARINGS
THE EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 7, TOWNSHIP 6 NORTH, RANGE 68 WEST OF THE 6TH P.M. AS BEARING NORTH 00°06'07" EAST

FIELD SURVEY BY:

Original Field Survey:
Northern Engineering
Project No. 698-004
Date: June 5, 2019

SUBSURFACE EXPLORATION BY:

Earth Engineering Consultants, LLC
Preliminary Subsurface Exploration Report
South Timberline Development
Fort Collins, Colorado
EEC Project No. 1202034
Date: June 2, 2020

DISCLAIMER STATEMENT:

These plans have been reviewed by the City of Fort Collins for concept only. The review does not imply responsibility by the reviewing department, the City of Fort Collins Engineer, or the City of Fort Collins for accuracy and correctness of the calculations. Furthermore, the review does not imply that quantities of items on the plans are the final quantities required. The review shall not be construed for any reason as acceptance of financial responsibility by the City of Fort Collins for additional quantities of items shown that may be required during the construction phase.

CERTIFICATION STATEMENT:

I hereby affirm that these final construction plans were prepared under my direct supervision, in accordance with all applicable City of Fort Collins and State of Colorado standards and statutes, respectively; and that I am fully responsible for the accuracy of all design. revisions, and record conditions that I have noted on these plans.

CALL UTILITY NOTIFICATION CENTER OF COLORADO

811

Know what's below. Call before you dig.

CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

CONTACT INFORMATION

PROJECT TEAM:

OWNER/APPLICANT
AADT Land Holdings, LLC
Alex Aigner
13005 Lowell Boulevard
Broomfield, CO 80020

PLANNER/ LANDSCAPE ARCHITECT
Ripley Design
Katy Thompson, PLA, ULI
419 Canyon Avenue Suite 200
Fort Collins, Colorado 80521
(970) 498 -2665

SITE ENGINEER
NORTHERN ENGINEERING
Northern Engineering Services, Inc.
Robbie Lauer
301 North Howes Street, Suite 100
Fort Collins, Colorado 80521
(970) 221-4158

SITE SURVEYOR
NORTHERN ENGINEERING
Northern Engineering Services, Inc.
Bob Tessely, PLS
301 North Howes Street, Suite 100
Fort Collins, Colorado 80521
(970) 221-4158

UTILITY CONTACT LIST: *

UTILITY COMPANY			PHONE NUMBER
GAS	Xcel Energy	Pat Kreager	(970) 225-7840
ELECTRIC	City of Fort Collins Light & Power	Rob Irish	(970) 224-6167
CABLE	Comcast	Don Kapperman	(970) 567-0425
TELECOM.	CenturyLink	William Johnson	(970) 377-6401
WATER	Fort Collins-Loveland Water District	Sam Lowe	(970) 226-3104 EXT 113
WASTEWATER	South Fort Collins Sanitation District	Sam Lowe	(970) 226-3104 EXT 113
STORMWATER	City of Fort Collins Utilities	Wes Lamarque	(970) 416-2418

* This list is provided as a courtesy reference only. Northern Engineering Services assumes no responsibility for the accuracy or completeness of this list. In no way shall this list relinquish the Contractor's responsibility for locating all utilities prior to commencing any construction activity. Please contact the Utility Notification Center of Colorado (UNCC) at 811 for additional information.

SHEET INDEX

FORT COLLINS - LOVELAND WATER DISTRICT
SOUTH FORT COLLINS SANITATION DISTRICT

District Engineer Date

All changes, addendums, additions, deletions and modifications to these drawings must be approved, in writing, by the Fort Collins-Loveland Water District and the South Fort Collins Sanitation District.

KEEN BARBARA LIVING TRUST IRRIGATION APPROVAL

OWNER Date

LEWIS RIC L/CHERYL C IRRIGATION APPROVAL

OWNER Date

City of Fort Collins, CO UTILITY PLAN APPROVAL

APPROVED:	CITY ENGINEER,	APPROVED SHEETS	DATE
APPROVED:	WATER & WASTEWATER UTILITY,	APPROVED SHEETS	DATE
APPROVED:	STORMWATER UTILITY,	APPROVED SHEETS	DATE
APPROVED:	PARK PLANNING & DEVELOPMENT,	APPROVED SHEETS	DATE
APPROVED:	TRAFFIC OPERATIONS,	APPROVED SHEETS	DATE
APPROVED:	ENVIRONMENTAL PLANNER,	APPROVED SHEETS	DATE

No. | Revisions: | By: | Date:

REVIEW SET
NOT FOR CONSTRUCTION
12/15/21

NORTHERN ENGINEERING
FORT COLLINS: 301 North Howes Street, Suite 100, 80521
GREELEY: 820 8th Street, 80631
970.221.4158
northernengineering.com

PROJECT: 698-004	DESIGNED BY: M. Ruebel	DRAWN BY: C. Fierro
DATE: 12/15/21	SCALE: N/A	P. MANAGER R. Lauer

TIMBER LARK RESIDENTIAL

COVER SHEET

Sheet
CS1

GENERAL NOTES

1. All materials, workmanship, and construction of ppublic improvements shall meet or exceed the standards and specifications set forth in the Larimer County Urban Area Street Standards and applicable state and federal regulations. Where there is conflict between these plans and the specifications, or any applicable standards, the most restrictive standard shall apply. All work shall be inspected and approved by the City of Fort Collins.
2. All references to any published standards shall refer to the latest revision of said standard, unless specifically stated otherwise.
3. These public improvement construction plans shall be valid for a period of three years from the date of approval by the City of Fort Collins Engineer. Use of these plans after the expiration date will require a new review and approval process by the City of Fort Collins prior to commencement of any work shown in these plans.
4. The engineer who has prepared these plans, by execution and/or seal hereof, does hereby affirm responsibility to the City of Fort Collins, as beneficiary of said engineer's work, for any errors and omissions contained in these plans, and approval of these plans by the City of Fort Collins Engineer shall not relieve the engineer who has prepared these plans of all such responsibility. Further, to the extent permitted by law, the engineer hereby agrees to hold harmless and indemnify the City of Fort Collins, and its officers and employees, from and against all liabilities, claims, and demands which may arise from any errors and omissions contained in these plans.
5. All storm sewer construction, as well as power and other "dry" utility installations, shall conform to the City of Fort Collins standards and specifications current at the date of approval of the plans by the City of Fort Collins Engineer.
6. The type, size, location and number of all known underground utilities are approximate when shown on the drawings. It shall be the responsibility of the Developer to verify the existence and location of all underground utilities along the route of the work before commencing new construction. The Developer shall be responsible for unknown underground utilities.
7. The Developer shall contact the Utility Notification Center of Colorado (UNCC) at 1-800-922-1987, at least 2 working days prior to beginning excavation or grading, to have all registered utility locations marked. Other unregistered utility entities (i.e. ditch / irrigation company) are to be located by contacting the respective representative. Utility service laterals are also to be located prior to beginning excavation or grading. It shall be the responsibility of the Developer to relocate all existing utilities that conflict with the proposed improvements shown on these plans.
8. The Developer shall be responsible for protecting all utilities during construction and for coordinating with the appropriate utility company for any utility crossings required.
9. If a conflict exists between existing and proposed utilities and/or a design modification is required, the Developer shall coordinate with the engineer to modify the design. Design modification(s) must be approved by the City of Fort Collins prior to beginning construction.
10. The Developer shall coordinate and cooperate with the City of Fort Collins, and all utility companies involved, to assure that the work is accomplished in a timely fashion and with a minimum disruption of service. The Developer shall be responsible for contacting, in advance, all parties affected by any disruption of any utility service as well as the utility companies.
11. No work may commence within any public storm water, sanitary sewer or potable water system until the Developer notifies the utility provider. Notification shall be a minimum of 2 working days prior to commencement of any work. At the discretion of the water utility provider, a pre-construction meeting may be required prior to commencement of any work.
12. The Developer shall sequence installation of utilities in such a manner as to minimize potential utility conflicts. In general, storm sewer and sanitary sewer should be constructed prior to installation of the water lines and dry utilities.
13. The minimum cover over water lines is 4.5 feet and the maximum cover is 5.5 feet unless otherwise noted in the plans and approved by the Water Utility.
14. A State Construction Dewatering Wastewater Discharge Permit is required if dewatering is required in order to install utilities or if water is discharged into a storm sewer, channel, irrigation ditch or any waters of the United States.
15. The Developer shall comply with all terms and conditions of the Colorado Permit for Storm Water Discharge (Contact Colorado Department of Health, Water Quality Control Division, (303) 692-3590), the Storm Water Management Plan, and the Erosion Control Plan.
16. The City of Fort Collins shall not be responsible for the maintenance of storm drainage facilities located on private property. Maintenance of onsite drainage facilities shall be the responsibility of the property owner(s).
17. Prior to final inspection and acceptance by the City of Fort Collins, certification of the drainage facilities, by a registered engineer, must be submitted to and approved by the Stormwater Utility Department. Certification shall be submitted to the Stormwater Utility Department at least two weeks prior to the release of a certificate of occupancy for single family units. For commercial properties, certification shall be submitted to the Stormwater Utility Department at least two weeks prior to the release of any building permits in excess of those allowed prior to certification per the Development Agreement.
18. The City of Fort Collins shall not be responsible for any damages or injuries sustained in this Development as a result of groundwater seepage, whether resulting from groundwater flooding, structural damage or other damage unless such damage or injuries are sustained as a result of the City of Fort Collins failure to properly maintain its water, wastewater, and/or storm drainage facilities in the development.
19. All recommendations of the Preliminary Drainage Report for Timber Lark, dated December 15, 2021 by Northern Engineering Services, Inc., shall be followed and implemented.
20. Temporary erosion control during construction shall be provided as shown on the Erosion Control Plan. All erosion control measures shall be maintained in good repair by the Developer, until such time as the entire disturbed areas is stabilized with hard surface or landscaping.
21. The Developer shall be responsible for insuring that no mud or debris shall be tracked onto the existing public street system. Mud and debris must be removed within 24 hours by an appropriate mechanical method (i.e. machine broom sweep, light duty front-end loader, etc.) or as approved by the the City of Fort Collins street inspector.
22. No work may commence within any improved or unimproved public Right-of-Way until a Right-of-Way Permit or Development Construction Permit is obtained, if applicable.
23. The Developer shall be responsible for obtaining all necessary permits for all applicable agencies prior to commencement of construction. The Developer shall notify the the City of Fort Collins Inspector (Fort Collins - 221-6605) and the City of Fort Collins Erosion Control Inspector (Fort Collins - 221-6700) at least 2 working days prior to the start of any earth disturbing activity, or construction on any and all public improvements. If the City of Fort Collins Engineer is not available after proper notice of construction activity has been provided, the Developer may commence work in the Engineer's absence. However, the City of Fort Collins reserves the right not to accept the improvement if subsequent testing reveals an improper installation.
24. The Developer shall be responsible for obtaining soils tests within the Public Right-of-Way after right of way grading and all utility trench work is complete and prior to the placement of curb, gutter, sidewalk and pavement. If the final soils/pavement design report does not correspond with the results of the original geotechnical report, the Developer shall be responsible for a re-design of the subject pavement section or, the Developer may use the City of Fort Collins' default pavement thickness section(s). Regardless of the option used, all final soils/pavement design reports shall be prepared by a licensed Professional Engineer. The final report shall be submitted to the Inspector a minimum of 10 working days prior to placement of base and asphalt. Placement of curb, gutter, sidewalk, base and asphalt shall not occur until the City of Fort Collins Engineer approves the final report.
25. The contractor shall hire a licensed engineer or land surveyor to survey the constructed elevations of the street subgrade and the gutter flowline at all intersections, inlets, and other locations requested by the the City of Fort Collins inspector. The engineer or surveyor must certify in a letter to the City of Fort Collins that these elevations conform to the approved plans and specifications. Any deviations shall be noted in the letter and then resolved with the City of Fort Collins before installation of base course or asphalt will be allowed on the streets.
26. All utility installations within or across the roadbed of new residential roads must be completed prior to the final stages of road construction. For the purposes of these standards, any work except c/g above the subgrade is considered final stage work. All service lines must be stubbed to the property lines and marked so as to reduce the excavation necessary for building connections.
27. Portions of Larimer County are within overlay districts. The Larimer County Flood Plain Resolution should be referred to for additional criteria for roads within these districts.
28. All road construction in areas designated as Wild Fire Hazard Areas shall be done in accordance with the construction criteria as established in the Wild Fire Hazard Area Mitigation Regulations in force at the time of final plat approval.
29. Prior to the commencement of any construction, the contractor shall contact the Local Entity Forester to schedule a site inspection for any tree removal requiring a permit.
30. The Developer shall be responsible for all aspects of safety including, but not limited to, excavation, trenching, shoring, traffic control, and security. Refer to OSHA Publication 2226, Excavating and Trenching.
31. The Developer shall submit a Construction Traffic Control Plan, in accordance with MUTCD, to the appropriate Right-of-Way authority. (The the City of Fort Collins, Larimer County, Colorado), for approval, prior to any construction activities within, or affecting, the Right-of-Way. The Developer shall be responsible for providing any and all traffic control devices as may be required by the construction activities.
32. Prior to the commencement of any construction that will affect traffic signs of any type, the contractor shall contact the City of Fort Collins Traffic Operations Department, who will temporarily remove or relocate the sign at no cost to the contractor, however, if the contractor moves the traffic sign then the contractor will be charged for the labor, materials and equipment to reinstall the sign as needed.
33. The Developer is responsible for all costs for the initial installation of traffic signing and striping for the Development related to the Development's local street operations. In addition, the Developer is responsible for all costs for traffic signing and striping related to directing traffic access to and from the Development.
34. There shall be no site construction activities on Saturdays, unless specifically approved by the City of Fort Collins Engineer, and no site construction activities on Sundays or holidays, unless there is prior written approval by Larimer County.
35. The Developer is responsible for providing all labor and materials necessary for the completion of the intended improvements, shown on these drawings, or designated to be provided, installed, or constructed, unless specifically noted otherwise.
36. Dimensions for layout and construction are not to be scaled from any drawing. If pertinent dimensions are not shown, contact the Designer for clarification, and annotate the dimension on the as-built record drawings.
37. The Developer shall have, onsite at all times, one (1) signed copy of the approved plans, one (1) copy of the appropriate standards and specifications, and a copy of any permits and extension agreements needed for the job.
38. If, during the construction process, conditions are encountered which could indicate a situation that is not identified in the plans or specifications, the Developer shall contact the Designer and the City of Fort Collins Engineer immediately.
39. The Developer shall be responsible for recording as-built information on a set of record drawings kept on the construction site, and available to the Larimer County's Inspector at all times. Upon completion of the work, the contractor(s) shall submit record drawings to the City of Fort Collins Engineer.
40. The Designer shall provide, in this location on the plan, the location and description of the nearest survey benchmarks (2) for the project as well as the basis of bearings. The information shall be as follows:

PROJECT DATUM: NAVD88

CITY OF FORT COLLINS BENCHMARK 2-02
EAST SIDE OF TIMBERLAND ROAD, 1/2 MILE NORTH OF TRILBY ROAD, ON THE MIDDLE CONCRETE PAD TO AN ELECTRIC BOX.
ELEVATION: 4964.37

CITY OF FORT COLLINS BENCHMARK 12-13
SOUTHEAST CORNER OF TIMBERLINE RD. AND TRILBY RD., ON A CONCRETE TRAFFIC SIGNAL BASE.
ELEVATION: 4926.67

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BASIS OF BEARINGS
THE EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 7, TOWNSHIP 6 NORTH, RANGE 68 WEST OF THE 6TH P.M. AS BEARING NORTH 00°06'07" EAST

41. All stationing is based on centerline of roadways unless otherwise noted.
42. Damaged curb, gutter and sidewalk existing prior to construction, as well as existing fences, trees, streets, sidewalks, curbs and gutters, landscaping, structures, and improvements destroyed, damaged or removed due to construction of this project, shall be replaced or restored in like kind at the Developer's expense, unless otherwise indicated on these plans, prior to the acceptance of completed improvements and/or prior to the issuance of the first Certificate of Occupancy.
43. When an existing asphalt street must be cut, the street must be restored to a condition equal to or better than its original condition. The existing street condition shall be documented by the City of Fort Collins Construction Inspector before any cuts are made. Patching shall be done in accordance with the City of Fort Collins Street Repair Standards. The finished patch shall blend in smoothly into the existing surface. All large patches shall be paved with an asphalt lay-down machine. In streets where more than one cut is made, an overlay of the entire street width, including the patched area, may be required. The determination of need for a complete overlay shall be made by the Larimer County Engineer and/or the City of Fort Collins Inspector at the time the cuts are made.
44. Upon completion of construction, the site shall be cleaned and restored to a condition equal to, or better than, that which existed before construction, or to the grades and condition as required by these plans.
45. Standard Handicap ramps are to be constructed at all curb returns and at all "T" intersections.
46. After acceptance by the City of Fort Collins, public improvements depicted in these plans shall be guaranteed to be free from material and workmanship defects for a minimum period of two years from the date of acceptance.
47. The City of Fort Collins shall not be responsible for the maintenance of roadway and appurtenant improvements, including storm drainage structures and pipes, for the following private streets: N.A.
48. Approved Variances are listed as follows: N/A

CONSTRUCTION NOTES

A. Grading and Erosion Control Notes

1. The erosion control inspector must be notified at least twenty-four (24) hours prior to any construction on this site.
2. There shall be no earth-disturbing activity outside the limits designated on the accepted plans.
3. All required perimeter silt and construction fencing shall be installed prior to any land disturbing activity (stockpiling, stripping, grading, etc). All other required erosion control measures shall be installed at the appropriate time in the construction sequence as indicated in the approved project schedule, construction plans, and erosion control report.
4. At all times during construction, the Developer shall be responsible for preventing and controlling on-site erosion including keeping the property sufficiently watered so as to minimize wind blown sediment. The Developer shall also be responsible for installing and maintaining all erosion control facilities shown herein.
5. Pre-disturbance vegetation shall be protected and retained wherever possible. Removal or disturbance of existing vegetation shall be limited to the area(s) required for immediate construction operations, and for the shortest practical period of time.
6. All soils exposed during land disturbing activity (stripping, grading, utility installations, stockpiling, filling, etc.) shall be kept in a roughened condition by ripping or disking along land contours until mulch, vegetation, or other permanent erosion control BMPs are installed. No soils in areas outside project street rights-of-way shall remain exposed by land disturbing activity for more than thirty (30) days before required temporary or permanent erosion control (e.g. seed/mulch, landscaping, etc.) is installed, unless otherwise approved by the City/County.
7. In order to minimize erosion potential, all temporary (structural) erosion control measures shall:
   a. Be inspected at a minimum of once every two (2) weeks and after each significant storm event and repaired or reconstructed as necessary in order to ensure the continued performance of their intended function.
   b. Remain in place until such time as all the surrounding disturbed areas are sufficiently stabilized as determined by the erosion control inspector.
   c. Be removed after the site has been sufficiently stabilized as determined by the erosion control inspector.
8. When temporary erosion control measures are removed, the Developer shall be responsible for the clean up and removal of all sediment and debris from all drainage infrastructure and other public facilities.
9. The contractor shall immediately clean up any construction materials inadvertently deposited on existing streets, sidewalks, or other public rights of way, and make sure streets and walkways are cleaned at the end of each working day.
10. All retained sediments, particularly those on paved roadway surfaces, shall be removed and disposed of in a manner and location so as not to cause their release into any waters of the United States.
11. No soil stockpile shall exceed ten (10) feet in height. All soil stockpiles shall be protected from sediment transport by surface roughening, watering, and perimeter silt fencing. Any soil stockpile remaining after thirty (30) days shall be seeded and mulched.
12. The stormwater volume capacity of detention ponds will be restored and storm sewer lines will be cleaned upon completion of the project and before turning the maintenance over to the City/County or Homeowners Association (HOA).
13. City Ordinance and Colorado Discharge Permit System (CDPS) requirements make it unlawful to discharge or allow the discharge of any pollutant or contaminated water from construction sites. Pollutants include, but are not limited to discarded building materials, concrete truck washout, chemicals, oil and gas products, litter, and sanitary waste. The developer shall at all times take whatever measures are necessary to assure the proper containment and disposal of pollutants on the site in accordance with any and all applicable local, state, and federal regulations.
14. A designated area shall be provided on site for concrete truck chute washout. The area shall be constructed so as to contain washout material and located at least fifty (50) feet away from any waterway during construction. Upon completion of construction activities the concrete washout material will be removed and properly disposed of prior to the area being restored.
15. Conditions in the field may warrant erosion control measures in addition to what is shown on these plans. The Developer shall implement whatever measures are determined necessary, as directed by the City.

B. Street Improvement Notes

1. All street construction is subject to the General Notes on the cover sheet of these plans as well as the Street Improvements Notes listed here.
2. A paving section design, signed and stamped by a Colorado licensed Engineer, must be submitted to the City of Fort Collins Engineer for approval, prior to any street construction activity, (full depth asphalt sections are not permitted at a depth greater than 8 inches of asphalt). The job mix shall be submitted for approval prior to placement of any asphalt.
3. Where proposed paving adjoins existing asphalt, the existing asphalt shall be saw cut, a minimum distance of 12 inches from the existing edge, to create a clean construction joint. The Developer shall be required to remove existing pavement to a distance where a clean construction joint can be made. Wheel cuts shall not be allowed unless approved by the City of Fort Collins Engineer in Fort Collins.
4. Street subgrades shall be scarified the top 12 inches and re-compacted prior to subbase installation. No base material shall be laid until the subgrade has been inspected and approved by the City of Fort Collins Engineer.
5. Ft. Collins only. Valve boxes and manholes are to be brought up to grade at the time of pavement placement or overlay. Valve box adjusting rings are not allowed.
6. When an existing asphalt street must be cut, the street must be restored to a condition equal to or better than its original condition. The existing street condition shall be documented by the Inspector before any cuts are made. Cutting and patching shall be done in conformance with Chapter 25, Reconstruction and Repair. The finished patch shall blend smoothly into the existing surface. The determination of need for a complete overlay shall be made by the City of Fort Collins Engineer. All overlay work shall be coordinated with adjacent landowners such that future projects do not cut the new asphalt overlay work.
7. All traffic control devices shall be in conformance with these plans or as otherwise specified in M.U.T.C.D. (including Colorado supplement) and as per the Right-of-Way Work Permit traffic control plan.
8. The Developer is required to perform a gutter water flow test in the presence of the City of Fort Collins Inspector and prior to installation of asphalt. Gutters that hold more than 1/4 inch deep or 5 feet longitudinally, of water, shall be completely removed and reconstructed to drain properly.
9. Prior to placement of H.B.P. or concrete within the street and after moisture/density tests have been taken on the subgrade material (when a full depth section is proposed) or on the subgrade and base material (when a composite section is proposed), a mechanical "proof roll" will be required. The entire subgrade and/or base material shall be rolled with a heavily loaded vehicle having a total GVW of not less than 50,000 lbs. and a single axle weight of at least 18,000 lbs. with pneumatic tires inflated to not less that 90 p.s.i.g. "Proof roll" vehicles shall not travel at speeds greater than 3 m.p.h. Any portion of the subgrade or base material which exhibits excessive pumping or deformation, as determined by the City of Fort Collins Engineer, shall be reworked, replaced or otherwise modified to form a smooth, non-yielding surface. The City of Fort Collins Engineer shall be notified at least 24 hours prior to the "proof roll." All "proof rolls" shall be preformed in the presence of an Inspector.

C. Traffic Signing and Pavement Marking Construction Notes

1. All signage and marking is subject to the General Notes on the cover sheet of these plans, as well as the Traffic Signing and Marking Construction Notes listed here.
2. All symbols, including arrows, ONLYS, crosswalks, stop bars, etc. shall be pre-formed thermo-plastic.
3. All signage shall be per the City of Fort Collins Standards and these plans or as otherwise specified in MUTCD.
4. All lane lines for asphalt pavement shall receive two coats of latex paint with glass beads.
5. All lane lines for concrete pavement should be epoxy paint.
6. Prior to permanent installation of traffic striping, symbols, and signs their placement shall be approved by the City of Fort Collins Traffic Engineer. The developer shall place temporary tabs, tape or flags depicting alignment and location. Contact City of Fort COllins Traffic Operations at 970-221-6630 for field review.
7. Pre-formed thermo-plastic applications shall be as specified in these Plans and/or these Standards.
8. Epoxy applications shall be applied as specified in CDOT Standard Specifications for Road and Bridge Construction.
9. All surfaces shall be thoroughly cleaned prior to installation of striping or markings.
10. All sign posts shall utilize break-away assemblies and fasteners per the Standards.
11. A field inspection of location and installation of all signs shall be performed by the City of Fort Collins Traffic Engineer. All discrepancies identified during the field inspection must be corrected before the 2-year warranty period will begin.
12. The Developer installing signs shall be responsible for locating and protecting all underground utilities.
13. Special care shall be taken in sign location to ensure an unobstructed view of each sign.
14. Signage and striping has been determined by information available at the time of review. Prior to initiation of the warranty period,the City of Fort Collins Traffic Engineer reserves the right to require additional signage and/or striping if the City of Fort Collins Traffic Engineer determines that an unforeseen condition warrants such signage according to the MUTCD or the CDOT M and S Standards. All signage and striping shall fall under the requirements of the 2-year warranty period for new construction (except fair wear on traffic markings).
15. Sleeves for sign posts shall be required for use in islands/medians. Refer to Chapter 14, Traffic Control Devices, for additional detail.

D. Storm Drainage Notes

1. The City of Fort Collins shall not be responsible for the maintenance of storm drainage facilities located on private property. Maintenance of onsite drainage facilities shall be the responsibility of the property owner(s).
2. All recommendations of the Preliminary Drainage Report for Timber Lark, dated December 15, 2021 by Northern Engineering Services, Inc., shall be followed and implemented.
3. Prior to final inspection and acceptance by the City of Fort Collins, certification of the drainage facilities, by a registered engineer, must by submitted to and approved by the Stormwater Utility Department. Certification shall be submitted to the Stormwater Utility Department at least two weeks prior to the release of a certificate of occupancy for single family units. For commercial properties, certification shall by submitted to the Stormwater Utility Department at least two weeks prior to the release of any building permits in excess of those allowed prior to certification per the Development Agreement.

E. Utility Notes

1. All water and sanitary sewer construction shall be performed according to the Fort Collins-Loveland Water District and the South Fort Collins Sanitation District standards and specifications.
2. Construction of water and sewer facilities require a precon meeting with district operations staff prior to construction.
3. Contractor shall notify district inspectors prior to starting work.
4. Contractor shall contact the sanitation district for sewer inspection 48 hours prior to connecting to existing sewer stubs.
5. All commercial domestic services require a reduced pressure backflow prevention device.
6. All water lines shall be a minimum of (5) five feet and a maximum of (6) feet below final grade.
7. All district shall only be operated by district operations staff.
8. Pipe Pressure and vacuum testing shall be witnessed by district inspectors. Waterline bacteria tests shall also be taken by district inspectors.
9. Once the system is operational and all tests have passed, contractor shall request substantial completion with a letter to the district that includes the dollar value of the water and sewer improvements listed separately.
10. As-builts shall be submitted in pdf and dwg to the district for final approval.
11. If groundwater is encountered within the depth of sewer construction, manholes must be water-proofed.
12. The size, type and location of all known underground utilities are approximate when shown on these drawings. It shall be the responsibility of the contractor to verify the existence of all underground utilities in the area of work. Before commencing new construction , the contractor shall be responsible for locating all underground utilities and shall be responsible for all unknown underground utilities.
13. All water fittings and valves are only graphically represented and are not to scale.
14. Manhole rim elevations are to be adjusted to $\frac{1}{4}$" below finished grade. If necessary, cone sections shall be rotated to prevent lids being located within bicycle or vehicle wheel paths

DRAWING FILENAME: P:\698-004\Dwg\698-004_COVR.dwg LAYOUT NAME: CS2 DATE: Dec 15, 2021 - 10:20am CAD OPERATOR: mason
LIST OF XREFS: [698-004_NES-xborder] [TitleBlock Reference Whole - 24X36 - Whole- CAF] [TitleBlock Reference - 24X36 - CAF]

No. | Revisions: | By: | Date:

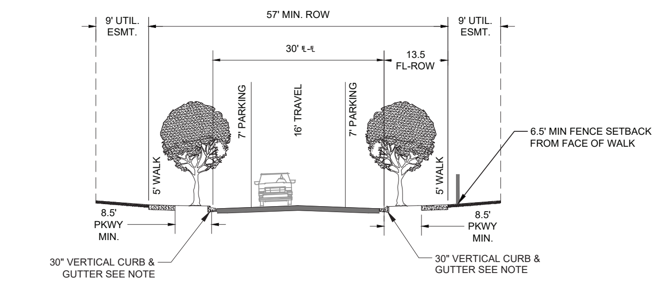
REVIEW SET
NOT FOR CONSTRUCTION
12/15/21

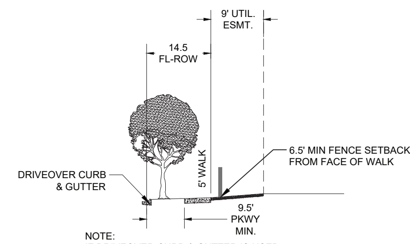
NORTHERN ENGINEERING
FORT COLLINS: 301 North Howes Street, Suite 100, 80521
GREELEY: 820 8th Street, 80631
970.221.4158
northernengineering.com

PROJECT: 698-004	DESIGNED BY: M. Ruebel	DRAWN BY: C. Fierro
DATE: 12/15/21	SCALE: N/A	P. MANAGER R. Lauer

TIMBER LARK RESIDENTIAL
GENERAL & CONSTRUCTION NOTES

TYPICAL SECTIONS



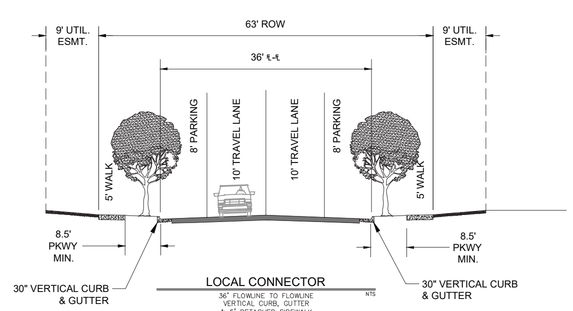


NOTE:
IF DRIVEOVER CURB & GUTTER IS USED
AN ADDITIONAL 1-FT OF RIGHT-OF-WAY IS ADDED
AND PARKWAY INCREASED TO 9.5-FT

RESIDENTIAL LOCAL

30' FLOWLINE TO FLOWLINE
VERTICAL/DRIVE OVER(D/O) CURB, GUTTER
& 5' DETACHED SIDEWALK
NTS

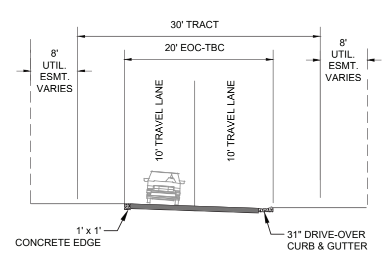
STREET	ROW	LEFT C&G	RIGHT C&G
STREET A	58' ROW	DRIVE OVER	VERTICAL
STREET B <21+81.71	58' ROW	VERTICAL	DRIVE OVER
STREET B >21+81.71	57' ROW	VERTICAL	VERTICAL
GOLDEN WILLOW DRIVE <15+62.51	59' ROW	DRIVE OVER	DRIVE OVER
GOLDEN WILLOW DRIVE >15+62.51	59' ROW	VERTICAL	DRIVE OVER
STREET E	59' ROW	DRIVE OVER	DRIVE OVER
WEEPING WILLOW DRIVE	59' ROW	DRIVE OVER	DRIVE OVER
STREET G	58' ROW	VERTICAL	DRIVE OVER
CORONA AVENUE	59' ROW	DRIVE OVER	DRIVE OVER



LOCAL CONNECTOR

36' FLOWLINE TO FLOWLINE
VERTICAL CURB, GUTTER
& 5' DETACHED SIDEWALK
NTS

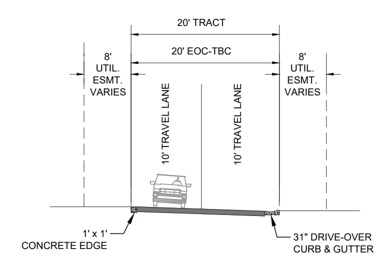
- STREET C
- RED WILLOW DRIVE
- STREET I



ALLEY (PRIVATE)

20' EOC TO TBC
NTS

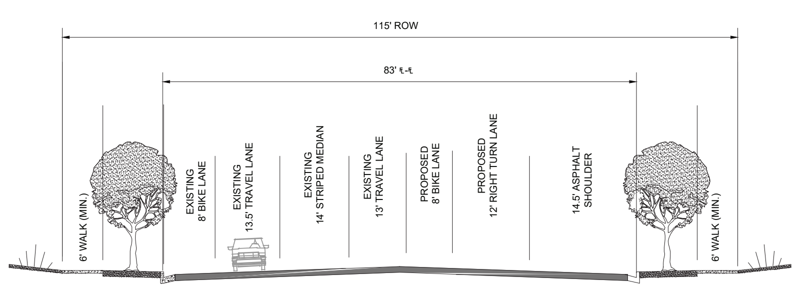
- ALLEY K
- ALLEY M
- ALLEY N
- ALLEY P
- ALLEY O



ALLEY (PRIVATE)

20' EOC TO TBC
NTS

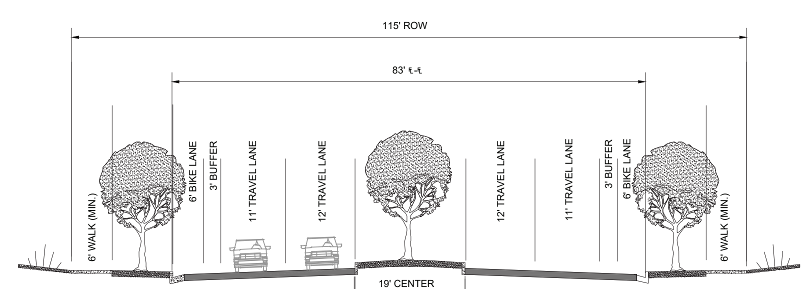
- ALLEY L



4-LANE ARTERIAL (INTERIM)

83' FLOWLINE TO FLOWLINE
VERTICAL CURB, GUTTER & 6' DETACHED SIDEWALK
NTS

- S TIMBERLINE ROAD



4-LANE ARTERIAL (ULTIMATE)

83' FLOWLINE TO FLOWLINE
VERTICAL CURB, GUTTER & 6' DETACHED SIDEWALK
NTS

- S TIMBERLINE ROAD

REVIEW SET
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12/15/21

No. | Revisions: | By: | Date:

NORTHERN ENGINEERING
FORT COLLINS: 301 North Howes Street, Suite 100, 80521
GREELEY: 820 8th Street, 80631
970.221.4158
northernengineering.com

PROJECT: 698-004
DATE: 12/15/21
DESIGNED BY: M. Ruebel
SCALE: N/A
DRAWN BY: C. Fierro
P. MANAGER R. Louer

TIMBER LARK RESIDENTIAL
TYPICAL STREET SECTIONS

Sheet
CS3

DRAWING FILENAME: P:\698-004\Dwg\698-004_CDVR.dwg LAYOUT NAME: CS3 DATE: Dec 15, 2021 - 10:20am CAD OPERATOR: mason
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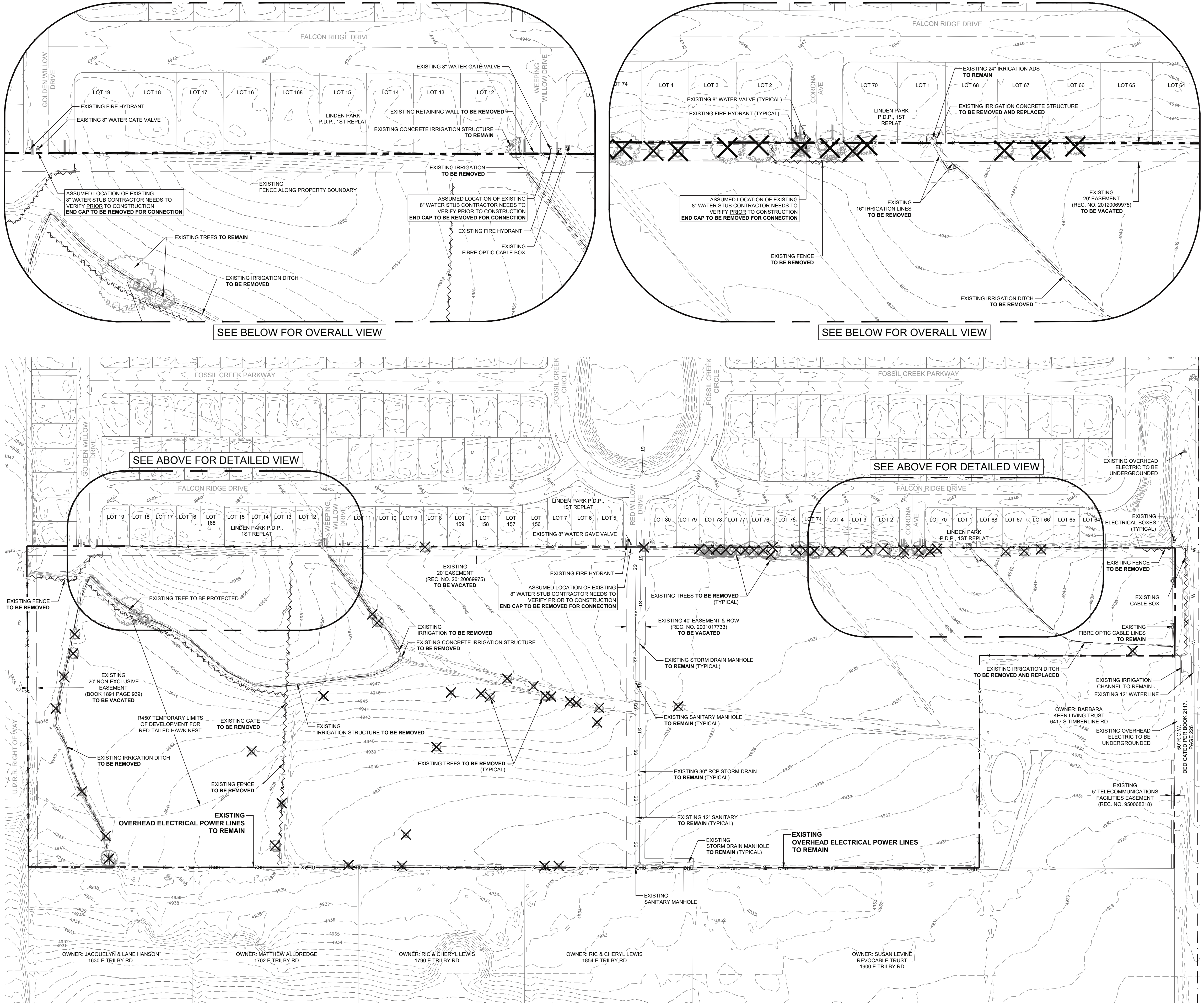
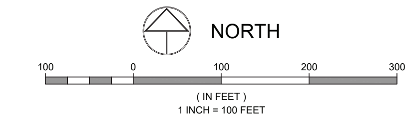




LEGEND:

- PROJECT BOUNDARY
- EXISTING RIGHT-OF-WAY
- EXISTING MAJOR CONTOUR — 5015
- EXISTING MINOR CONTOUR — 5013
- EXISTING STORM SEWER — ST
- EXISTING TELEPHONE — T
- EXISTING GAS — G
- EXISTING SANITARY SEWER — SS
- EXISTING WATER — W
- EXISTING ELECTRIC — E
- EXISTING FENCE — X
- EXISTING ELECTRIC VAULT
- EXISTING FIRE HYDRANT
- EXISTING IRRIGATION BOX
- EXISTING WATER METER
- EXISTING GAS METER
- EXISTING TELEPHONE PEDESTAL
- EXISTING TREES (TO REMAIN)
- EXISTING TREES (TO BE REMOVED)
- APPROXIMATE LIMITS OF CONCRETE/ ASPHALT REMOVAL OR MILL & OVERLAY

NOTES:

1. THE SIZE, TYPE AND LOCATION OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THESE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE OF ALL UNDERGROUND UTILITIES IN THE AREA OF THE WORK. BEFORE COMMENCING NEW CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR ALL UNKNOWN UNDERGROUND UTILITIES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING DEMOLITION, REMOVAL, REPLACEMENT, AND DISPOSAL OF ALL FACILITIES AND MATERIAL.
3. CONTRACTOR IS ENCOURAGED TO PERFORM DEMOLITION IN A MANNER THAT MAXIMIZES SALVAGE, RE-USE, AND RECYCLING OF MATERIALS. THIS INCLUDES APPROPRIATE SORTING AND STORING. IN PARTICULAR, DEMOLISHED CONCRETE, ASPHALT, AND BASE COURSE SHOULD BE RECYCLED IF POSSIBLE. THE CITY OF FORT COLLINS STREET DEPARTMENT OPERATES A CRUSHING OPERATION THAT WILL ACCEPT CONCRETE MATERIAL AT NO COST FOR CRUSHING AND RE-USE AS RECYCLED AGGREGATE. THIS OPERATION IS LOCATED AT 1380 HOFFMAN MILL ROAD AND CAN BE REACHED AT (970) 482-1249.
4. ALL SYMBOLS ARE ONLY GRAPHICALLY REPRESENTED AND ARE NOT TO SCALE.
5. CONTACT THE PROJECT SURVEYOR FOR ANY INQUIRIES RELATED TO THE EXISTING SITE SURVEY.
6. LIMITS OF STREET CUT ARE APPROXIMATE. FINAL LIMITS ARE TO BE DETERMINED IN THE FIELD BY THE CITY ENGINEERING INSPECTOR. ALL REPAIRS TO BE IN ACCORDANCE WITH CITY STREET REPAIR STANDARDS.

TREE PROTECTION NOTES:

1. ALL EXISTING TREES WITHIN THE LIMITS OF THE DEVELOPMENT AND WITHIN ANY NATURAL AREA BUFFER ZONES SHALL REMAIN AND BE PROTECTED UNLESS NOTED ON THESE PLANS FOR REMOVAL.
2. WITHIN THE DRIP LINE OF ANY PROTECTED EXISTING TREE, THERE SHALL BE NO CUT OR FILL OVER A FOUR-INCH DEPTH UNLESS A QUALIFIED ARBORIST OR FORESTER HAS EVALUATED AND APPROVED THE DISTURBANCE.
3. ALL PROTECTED EXISTING TREES SHALL BE PRUNED TO THE CITY OF FORT COLLINS FORESTRY STANDARDS. TREE PRUNING AND REMOVAL SHALL BE PERFORMED BY A BUSINESS THAT HOLDS A CURRENT CITY OF FORT COLLINS ARBORIST LICENSE WHERE REQUIRED BY CODE.
4. PRIOR TO AND DURING CONSTRUCTION, BARRIERS SHALL BE ERECTED AROUND ALL PROTECTED EXISTING TREES WITH SUCH BARRIERS TO BE OF ORANGE FENCING A MINIMUM OF FOUR (4) FEET IN HEIGHT, SECURED WITH METAL T-POSTS, NO CLOSER THAN SIX (6) FEET FROM THE TRUNK OR ONE-HALF (½) OF THE DRIP LINE, WHICHEVER IS GREATER. THERE SHALL BE NO STORAGE OR MOVEMENT OF EQUIPMENT, MATERIAL, DEBRIS OR FILL WITHIN THE FENCED TREE PROTECTION ZONE.
5. DURING THE CONSTRUCTION STAGE OF DEVELOPMENT, THE APPLICANT SHALL PREVENT THE CLEANING OF EQUIPMENT OR MATERIAL OR THE STORAGE AND DISPOSAL OF WASTE MATERIAL SUCH AS PAINTS, OILS, SOLVENTS, ASPHALT, CONCRETE, MOTOR OIL OR ANY OTHER MATERIAL HARMFUL TO THE LIFE OF A TREE WITHIN THE DRIP LINE OF ANY PROTECTED TREE OR GROUP OF TREES.
6. NO DAMAGING ATTACHMENT, WIRES, SIGNS OR PERMITS MAY BE FASTENED TO ANY PROTECTED TREE.
7. LARGE PROPERTY AREAS CONTAINING PROTECTED TREES AND SEPARATED FROM CONSTRUCTION OR LAND CLEARING AREAS, ROAD RIGHTS-OF-WAY AND UTILITY EASEMENTS MAY BE "RIBBONED OFF," RATHER THAN ERECTING PROTECTIVE FENCING AROUND EACH TREE AS REQUIRED IN SUBSECTION (G)(3) ABOVE. THIS MAY BE ACCOMPLISHED BY PLACING METAL T-POST STAKES A MAXIMUM OF FIFTY (50) FEET APART AND TYING RIBBON OR ROPE FROM STAKE-TO-STAKE ALONG THE OUTSIDE PERIMETERS OF SUCH AREAS BEING CLEARED
8. THE INSTALLATION OF UTILITIES, IRRIGATION LINES OR ANY UNDERGROUND FIXTURE REQUIRING EXCAVATION DEEPER THAN SIX (6) INCHES SHALL BE ACCOMPLISHED BY BORING UNDER THE ROOT SYSTEM OF PROTECTED EXISTING TREES AT A MINIMUM DEPTH OF TWENTY-FOUR (24) INCHES. THE AUGER DISTANCE IS ESTABLISHED FROM THE FACE OF THE TREE (OUTER BARK) AND IS SCALED FROM TREE DIAMETER AT BREAST HEIGHT AS DESCRIBED IN THE FOLLOWING CHART:
9. NO TREES SHALL BE REMOVED DURING THE SONGBIRD NESTING SEASON (FEBRUARY 1-JULY 31) WITHOUT FIRST HAVING A PROFESSIONAL ECOLOGIST OR WILDLIFE BIOLOGIST COMPLETE A NESTING SURVEY TO IDENTIFY ANY ACTIVE NESTS EXISTING ON THE PROJECT SITE. IF ACTIVE NESTS ARE FOUND, THE CITY ENVIRONMENTAL PLANNER WILL DETERMINE WHETHER ADDITIONAL RESTRICTIONS ON TREE REMOVAL AND CONSTRUCTION APPLY.
10. REFER TO LANDSCAPE AND IRRIGATION PLANS FOR ADDITIONAL TREE PROTECTION MEASURES.

CALL UTILITY NOTIFICATION CENTER OF COLORADO

811

Know what's below. Call before you dig.

CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

Revisions:

No.

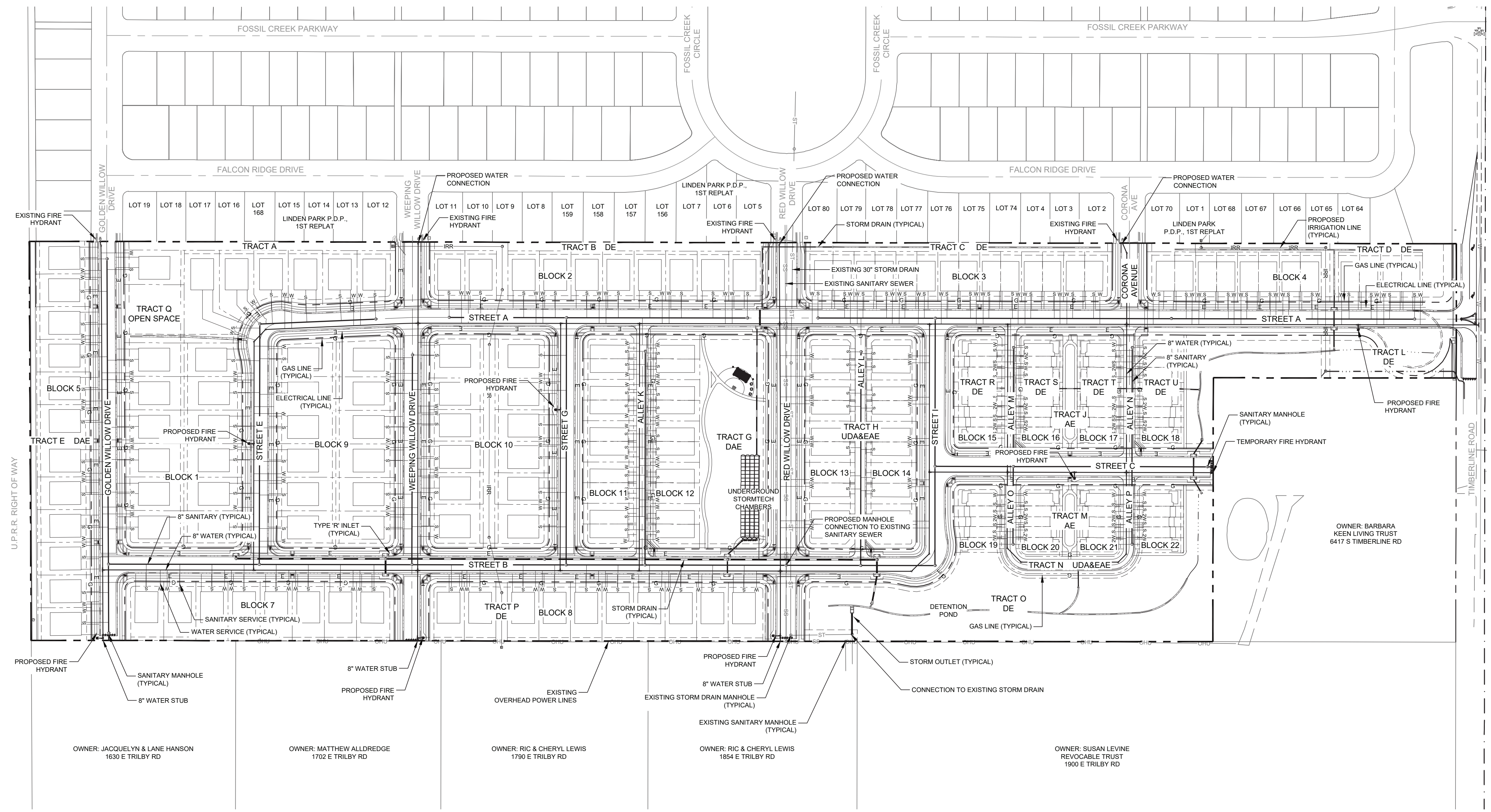
REVIEW SET
NOT FOR CONSTRUCTION 12/15/21

NORTHERN ENGINEERING
FORT COLLINS: 301 North Howes Street, Suite 100, 80521
GREELEY: 820 8th Street, 80631
970.221.4158
northernengineering.com

PROJECT: 698-004	DESIGNED BY: C. Fierro	DRAWN BY: C. Fierro
DATE: 12/15/21	SCALE: 1" = 100'	P. MANAGER R. Lauer

TIMBER LARK RESIDENTIAL
EXISTING CONDITIONS & DEMOLITION PLAN

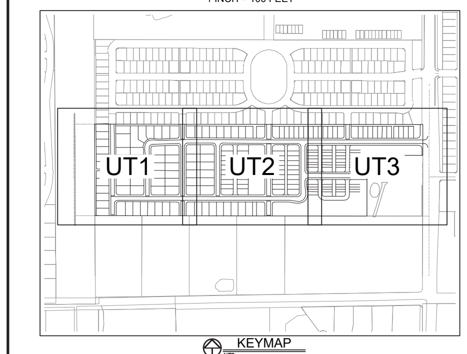
Sheet
EX1



NORTH

100 0 100 200 300

(IN FEET)
1 INCH = 100 FEET



KEYMAP

LEGEND:

- PROPOSED WATER MAIN
- EXISTING WATER MAIN
- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED SEWER SERVICE
- PROPOSED RESIDENTIAL SINGLE WATER SERVICE
- PROPOSED RESIDENTIAL DUAL WATER SERVICE
- PROPOSED UNDERDRAIN
- PROPOSED SUBDRAIN
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED STORMLINE
- PROPOSED STORMLINE
- EXISTING STORM SEWER
- PROPOSED ELECTRIC
- EXISTING TELEPHONE
- EXISTING GAS
- PROPOSED CURB & GUTTER
- PROPERTY BOUNDARY
- PROPOSED LOTLINE
- EASEMENT LINE
- RIGHT OF WAY
- LIMITS OF DEVELOPMENT
- PROPOSED STREET LIGHT

NOTES:

1. ALL WATERLINE CONSTRUCTION SHALL CONFORM TO THE FORT COLLINS-LOVELAND WATER DISTRICT STANDARD CONSTRUCTION SPECIFICATIONS CURRENT AT THE DATE OF CONSTRUCTION.
2. ALL SANITARY SEWER CONSTRUCTION SHALL CONFORM TO THE SOUTH FORT COLLINS SANITATION DISTRICT STANDARD CONSTRUCTION SPECIFICATIONS CURRENT AT THE DATE OF CONSTRUCTION.
3. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 10 FEET OF HORIZONTAL SEPARATION AND 18 INCHES OF VERTICAL SEPARATION BETWEEN ALL SEWER AND WATER LINES.
4. MINIMUM DEPTH OF COVER OVER WATER MAINS SHALL BE 5.0 FEET AND MAXIMUM COVER SHALL BE 6.0 FEET.
5. MANHOLE RIM ELEVATIONS ARE TO BE ADJUSTED TO 1/4" BELOW FINISHED GRADE. IF NECESSARY, CONE SECTIONS SHALL BE ROTATED TO PREVENT LIDS BEING LOCATED WITHIN BICYCLE OR VEHICLE WHEEL PATHS.
6. THE SIZE, TYPE AND LOCATION OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THESE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE OF ALL UNDERGROUND UTILITIES IN THE AREA OF THE WORK. BEFORE COMMENCING NEW CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR ALL UNKNOWN UNDERGROUND UTILITIES.
7. ALL WATER FITTINGS AND VALVES ARE ONLY GRAPHICALLY REPRESENTED AND ARE NOT TO SCALE.
8. ALL WATER FITTINGS TO BE MECHANICALLY RESTRAINED PER FCLWD STANDARDS.
9. ALL WATER SERVICES SHALL BE 3/4" TYPE K COPPER.

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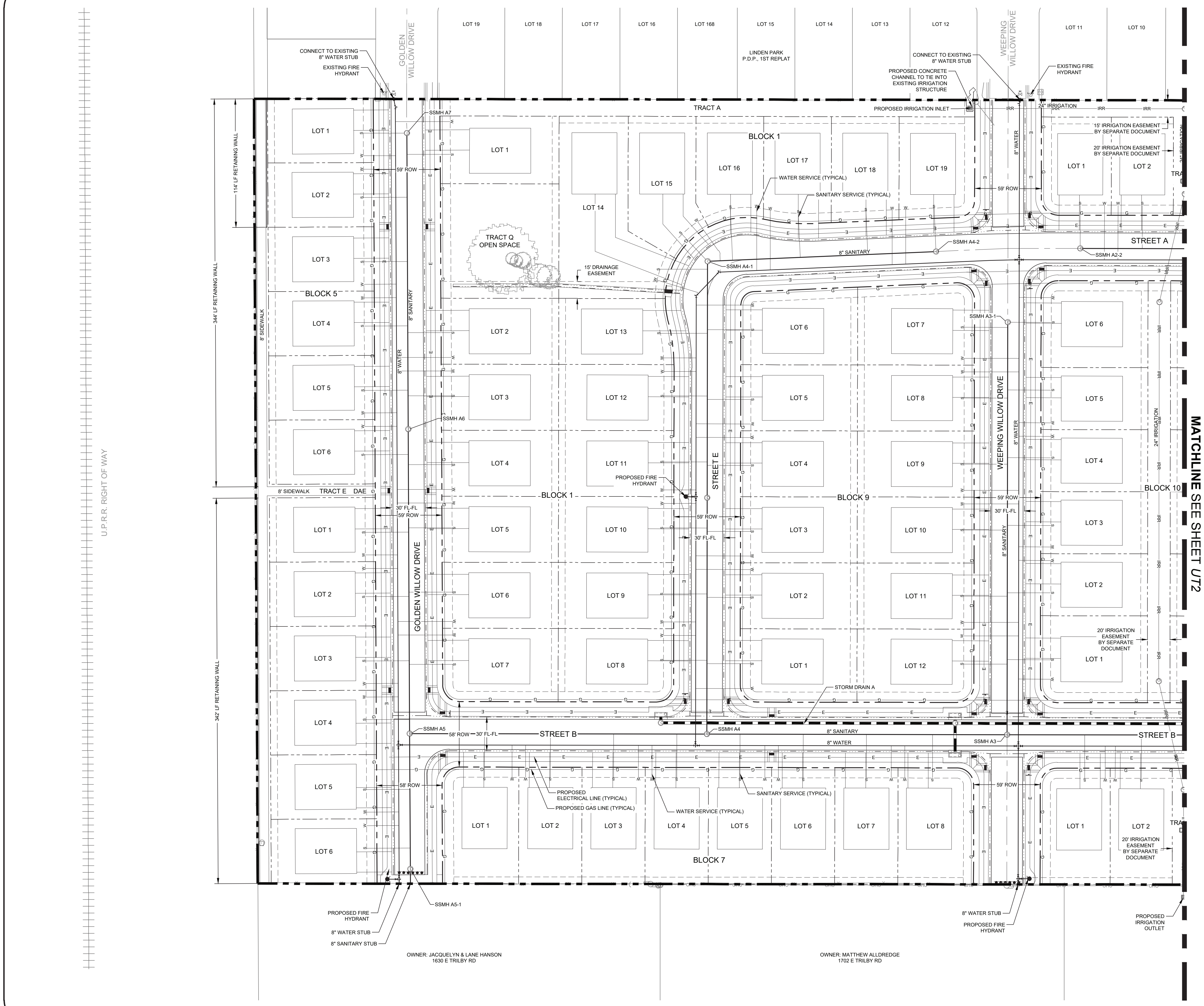
PROJECT: 698-004
DATE: 12/15/21
DESIGNED BY: M. Ruebel
SCALE: 1" = 100'
DRAWN BY: C. Fierro
P. MANAGER R. Lauer

TIMBER LARK RESIDENTIAL

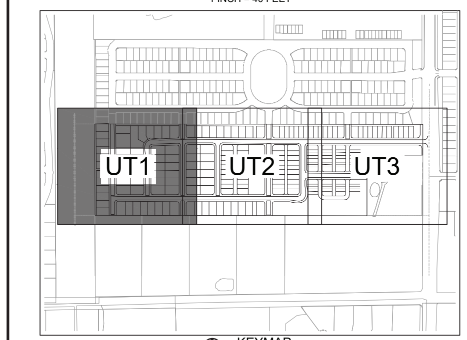
OVERALL UTILITY PLAN



NORTH

40 0 40 80 120

(IN FEET)
1 INCH = 40 FEET



KEYMAP

LEGEND:

PROPOSED WATER MAIN	
EXISTING WATER MAIN	W
PROPOSED SANITARY SEWER	
EXISTING SANITARY SEWER	SS
PROPOSED SEWER SERVICE	S
PROPOSED RESIDENTIAL SINGLE WATER SERVICE	W
PROPOSED RESIDENTIAL DUAL WATER SERVICE	W 2W
PROPOSED UNDERDRAIN	UD
PROPOSED SUBDRAIN	SD
PROPOSED FIRE HYDRANT	
EXISTING FIRE HYDRANT	
PROPOSED STORMLINE	
PROPOSED STORMLINE	
EXISTING STORM SEWER	ST
PROPOSED ELECTRIC	E
EXISTING TELEPHONE	T
EXISTING GAS	G
PROPOSED CURB & GUTTER	
PROPERTY BOUNDARY	
PROPOSED LOTLINE	
EASEMENT LINE	
RIGHT OF WAY	
LIMITS OF DEVELOPMENT	LOD
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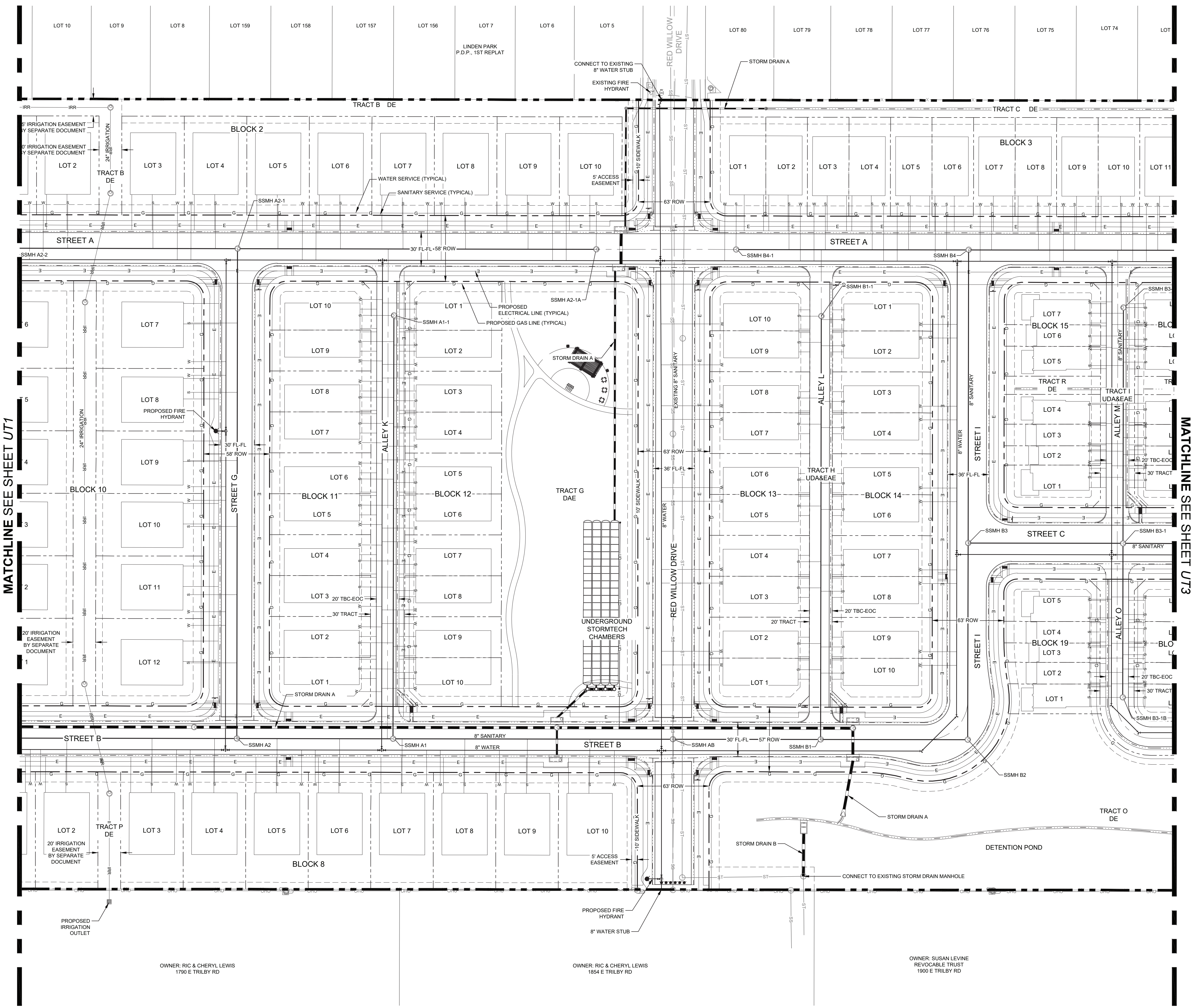
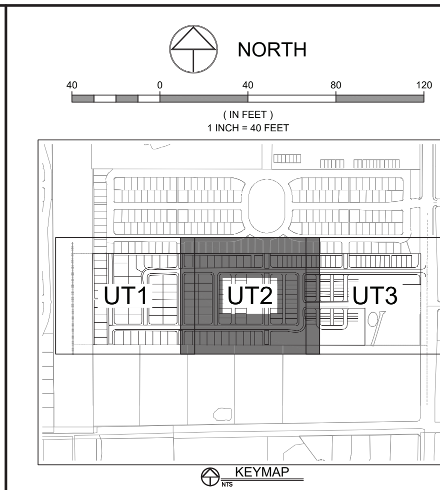
PROJECT: 698-004	DESIGNED BY: M. Ruebel	DRAWN BY: C. Fierro
DATE: 12/15/21	SCALE: 1" = 40'	P. MANAGER R. Lauer

TIMBER LARK RESIDENTIAL

UTILITY PLAN





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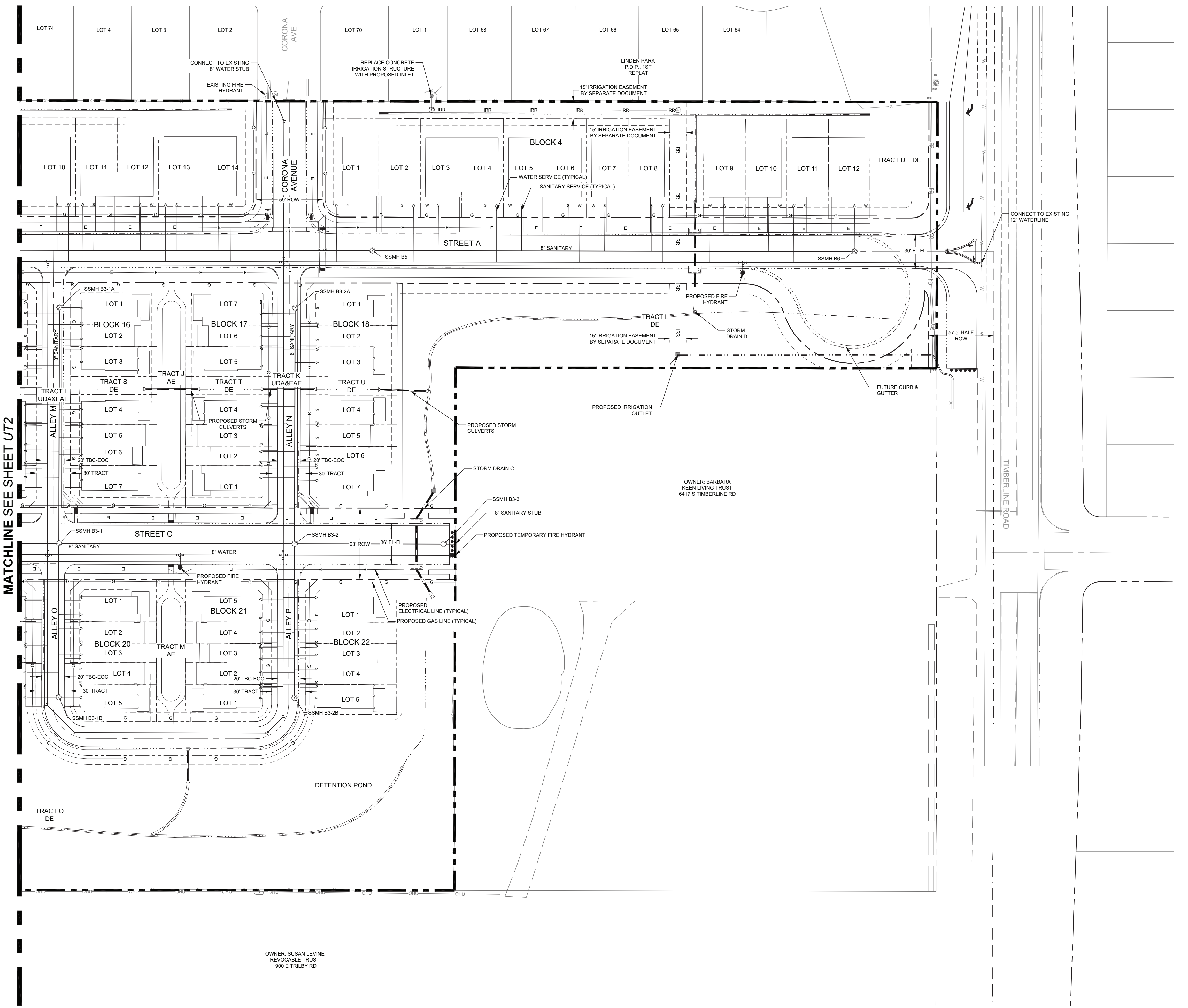
PROJECT: 698-004	DESIGNED BY: M. Ruebel	DRAWN BY: C. Fierro
DATE: 12/15/21	SCALE: 1" = 40'	P. MANAGER R. Lauer

TIMBER LARK RESIDENTIAL

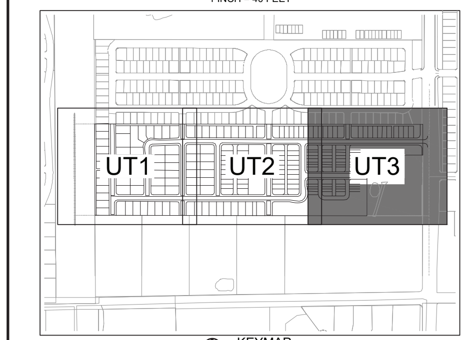
UTILITY PLAN



NORTH

40 0 40 80 120

(IN FEET)
1 INCH = 40 FEET



KEYMAP

LEGEND:

- PROPOSED WATER MAIN
- EXISTING WATER MAIN
- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED SEWER SERVICE
- PROPOSED RESIDENTIAL SINGLE WATER SERVICE
- PROPOSED RESIDENTIAL DUAL WATER SERVICE
- PROPOSED UNDERDRAIN
- PROPOSED SUBDRAIN
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED STORMLINE
- PROPOSED STORMLINE
- EXISTING STORM SEWER
- PROPOSED ELECTRIC
- EXISTING TELEPHONE
- EXISTING GAS
- PROPOSED CURB & GUTTER
- PROPERTY BOUNDARY
- PROPOSED LOTLINE
- EASEMENT LINE
- RIGHT OF WAY
- LIMITS OF DEVELOPMENT
- PROPOSED STREET LIGHT

NOTES:

1. ALL WATERLINE CONSTRUCTION SHALL CONFORM TO THE FORT COLLINS-LOVELAND WATER DISTRICT STANDARD CONSTRUCTION SPECIFICATIONS CURRENT AT THE DATE OF CONSTRUCTION.
2. ALL SANITARY SEWER CONSTRUCTION SHALL CONFORM TO THE SOUTH FORT COLLINS SANITATION DISTRICT STANDARD CONSTRUCTION SPECIFICATIONS CURRENT AT THE DATE OF CONSTRUCTION.
3. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 10 FEET OF HORIZONTAL SEPARATION AND 18 INCHES OF VERTICAL SEPARATION BETWEEN ALL SEWER AND WATER LINES.
4. MINIMUM DEPTH OF COVER OVER WATER MAINS SHALL BE 5.0 FEET AND MAXIMUM COVER SHALL BE 6.0 FEET.
5. MANHOLE RIM ELEVATIONS ARE TO BE ADJUSTED TO 1/4" BELOW FINISHED GRADE. IF NECESSARY, CONE SECTIONS SHALL BE ROTATED TO PREVENT LIDS BEING LOCATED WITHIN BICYCLE OR VEHICLE WHEEL PATHS.
6. THE SIZE, TYPE AND LOCATION OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THESE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE OF ALL UNDERGROUND UTILITIES IN THE AREA OF THE WORK. BEFORE COMMENCING NEW CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR ALL UNKNOWN UNDERGROUND UTILITIES.
7. ALL WATER FITTINGS AND VALVES ARE ONLY GRAPHICALLY REPRESENTED AND ARE NOT TO SCALE.
8. ALL WATER FITTINGS TO BE MECHANICALLY RESTRAINED PER FCLWD STANDARDS.
9. ALL WATER SERVICES SHALL BE 3/4" TYPE K COPPER.

CALL UTILITY NOTIFICATION CENTER OF COLORADO

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No. | Revisions: | By: | Date:

REVIEW SET
NOT FOR CONSTRUCTION
12/15/21

NE NORTHERN ENGINEERING
FORT COLLINS: 301 North Howes Street, Suite 100, 80521
GREELEY: 820 8th Street, 80631
970.221.4158
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PROJECT: 698-004
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SCALE: 1" = 40'
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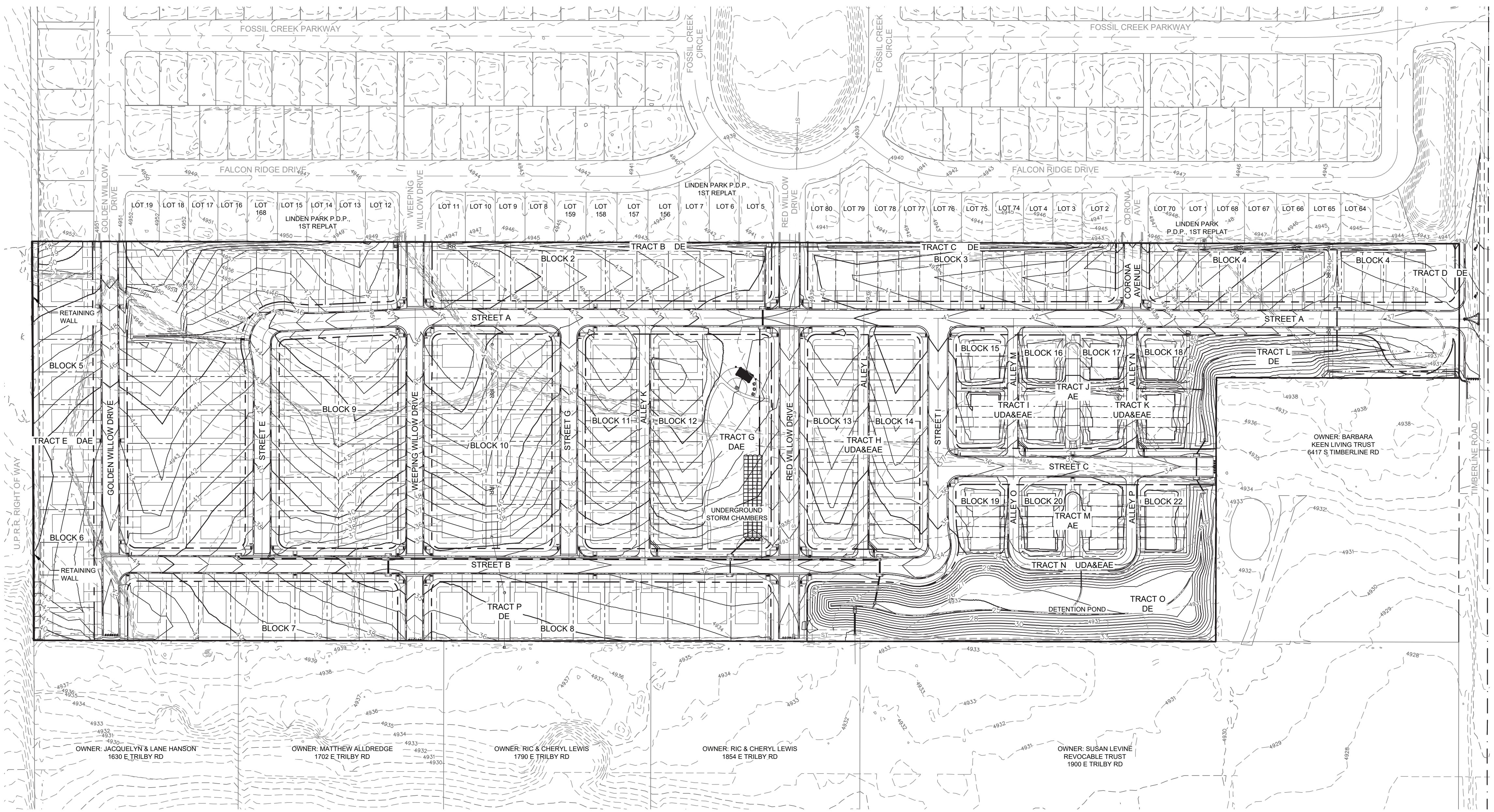
P. MANAGER R. Lauer

TIMBER LARK RESIDENTIAL

UTILITY PLAN

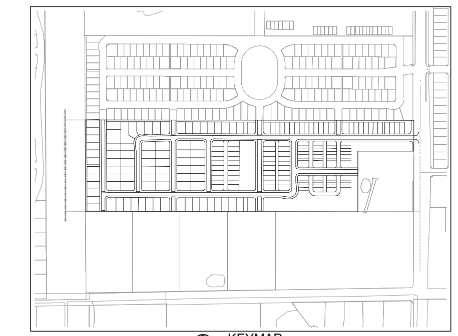
Sheet UT3



NORTH

100 0 100 200 300

(IN FEET)
1 INCH = 100 FEET



KEYMAP

LEGEND:

- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- PROPOSED STORM INLET
- PROPOSED CONTOUR (93)
- EXISTING CONTOUR (5013)
- PROPOSED SWALE
- PROPOSED CURB AND GUTTER
- PROPERTY BOUNDARY
- PROPOSED LOT LINE
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- PROPOSED EASEMENT
- NATURAL HABITAT BUFFER ZONE (NHBZ)
- LIMITS OF DEVELOPMENT (LOD)
- PROPOSED SPOT ELEVATION (36.25)
- EXISTING SPOT ELEVATION ((36.25))
- PROPOSED SLOPES (2.0%)

NATURAL HABITAT BUFFER ZONES

1. THE NATURAL HABITAT BUFFER ZONES ARE INTENDED TO BE MAINTAINED IN A NATIVE LANDSCAPE. PLEASE SEE SECTION 3.4.1 OF THE LAND USE CODE FOR ALLOWABLE USES WITHIN THE NATURAL HABITAT BUFFER ZONES.

NOTES:

1. A DETAILED LOT GRADING PLAN SHALL BE PROVIDED AT THE TIME OF BUILDING PERMIT TO ENSURE COMPLIANCE WITH LOT CERTIFICATION REQUIREMENTS. THIS MAY REQUIRE RETAINING WALLS OR EXPOSED FOUNDATIONS TO MEET SLOPE REQUIREMENTS.
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5. THE TOP OF FOUNDATION ELEVATIONS SHOWN ARE THE MINIMUM ELEVATIONS REQUIRED FOR PROTECTION FROM THE 100-YEAR STORM.
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7. ALL PROJECT DATA IS ON THE CITY OF FORT COLLINS VERTICAL DATUM; NAVD 88 (UNADJUSTED). SEE COVER SHEET FOR BENCHMARK REFERENCES.

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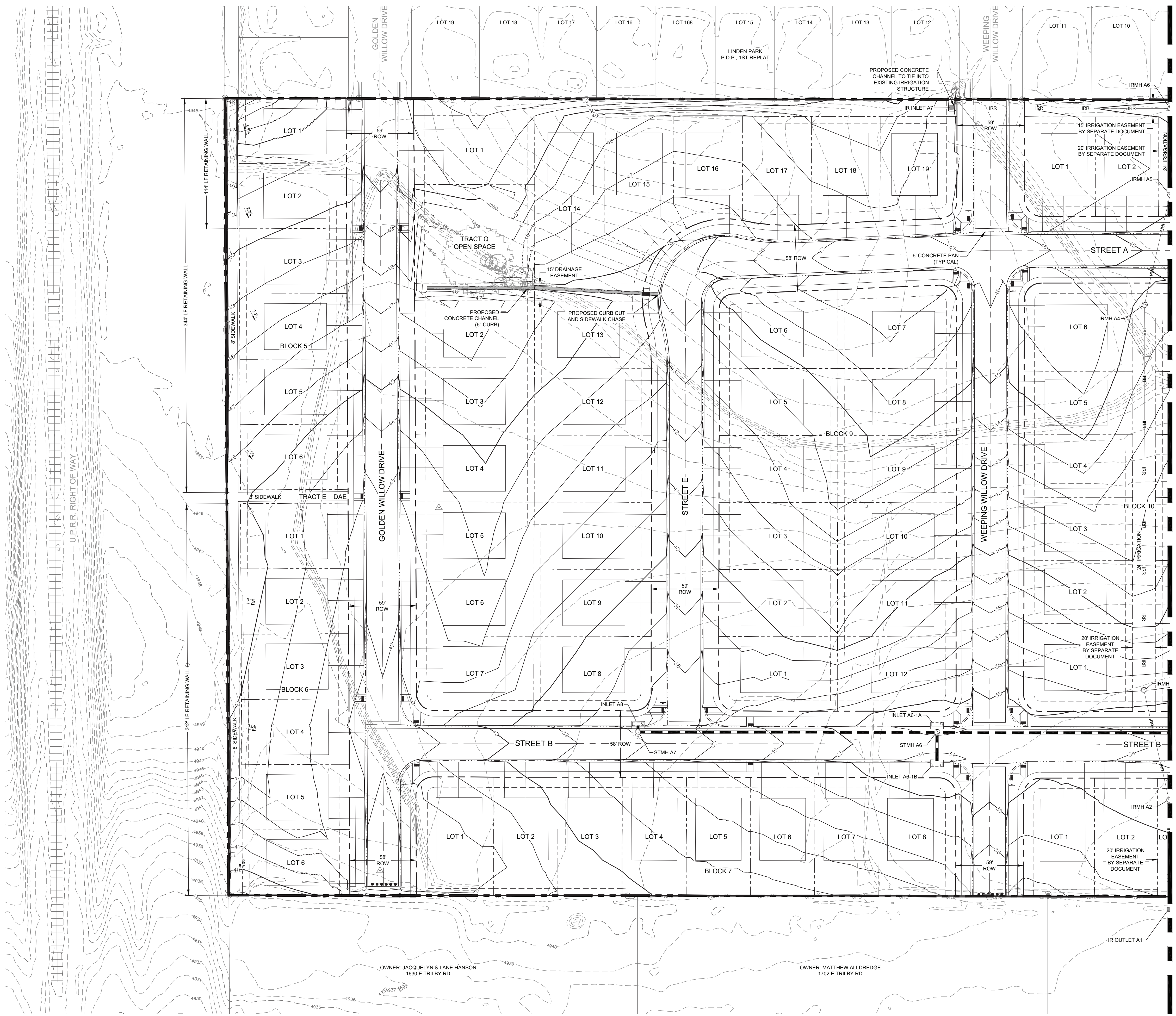
PROJECT: 698-004	DATE: 12/15/21	
DESIGNED BY: M. Ruebel	SCALE: 1" = 100'	
DRAWN BY: C. Fierro	P. MANAGER R. Lauer	

TIMBER LARK RESIDENTIAL

OVERALL GRADING PLAN



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40 0 40 80 120
(IN FEET)
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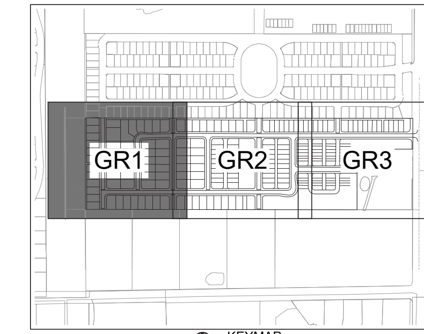

KEYMAP
NTS

LEGEND:

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- PROPOSED STORM SEWER
- PROPOSED STORM INLET
- PROPOSED CONTOUR — 93
- EXISTING CONTOUR — 5013
- PROPOSED SWALE
- PROPOSED CURB AND GUTTER
- PROPERTY BOUNDARY
- PROPOSED LOT LINE
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- PROPOSED EASEMENT
- NATURAL HABITAT BUFFER ZONE (NHBZ)
- LIMITS OF DEVELOPMENT — LOD
- PROPOSED SPOT ELEVATION — 36.25
- EXISTING SPOT ELEVATION — (36.25)
- PROPOSED SLOPES — 2.0%

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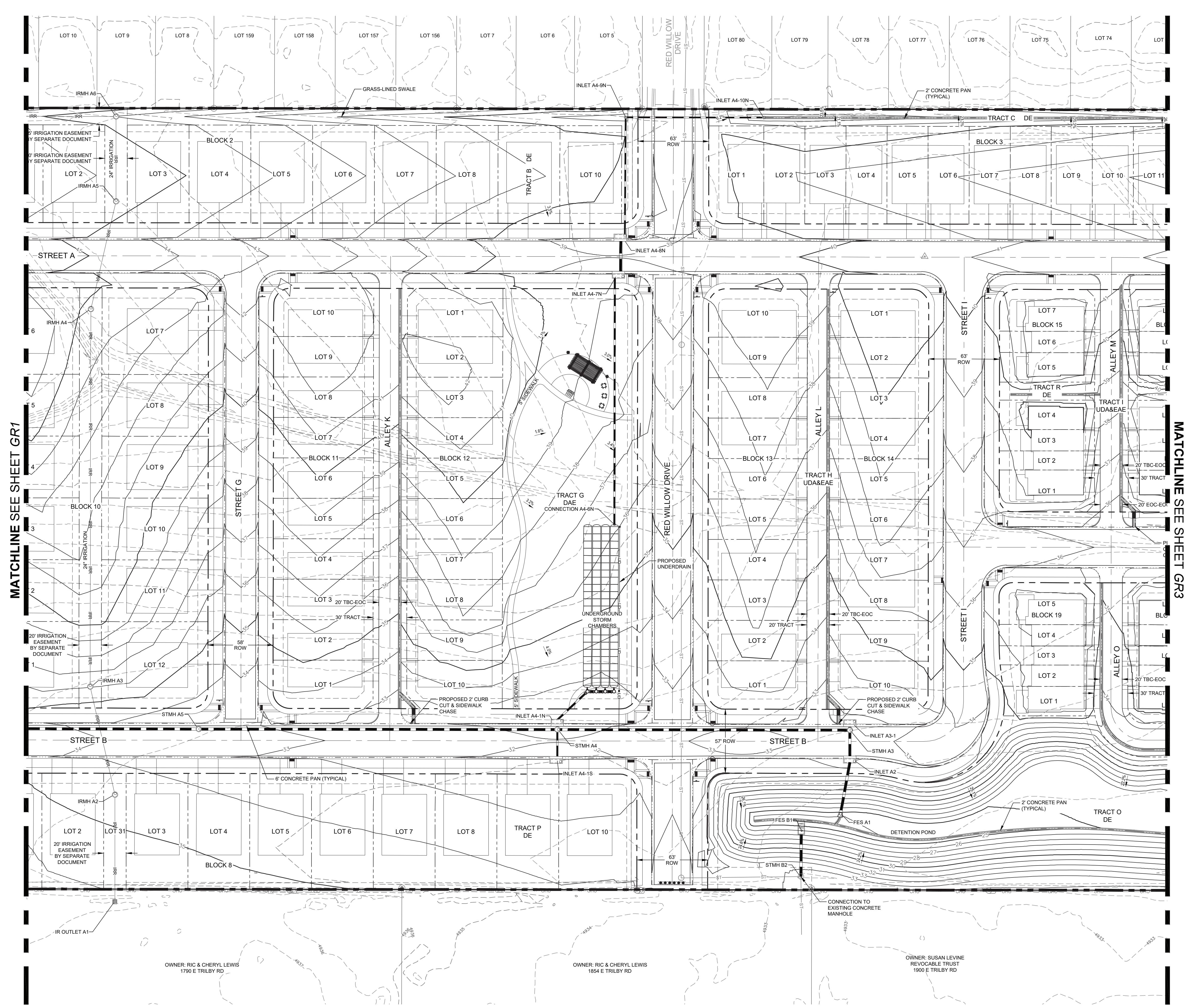
DATE: 12/15/21	SCALE: 1" = 40'	P. MANAGER R. Lauer

TIMBER LARK RESIDENTIAL

GRADING PLAN



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40 0 40 80 120

(IN FEET)
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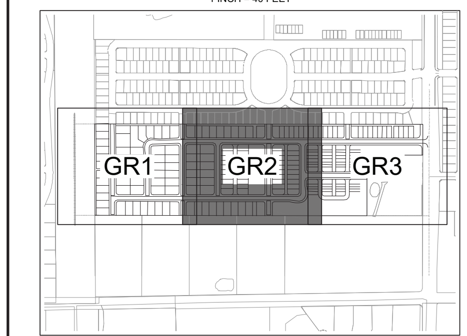

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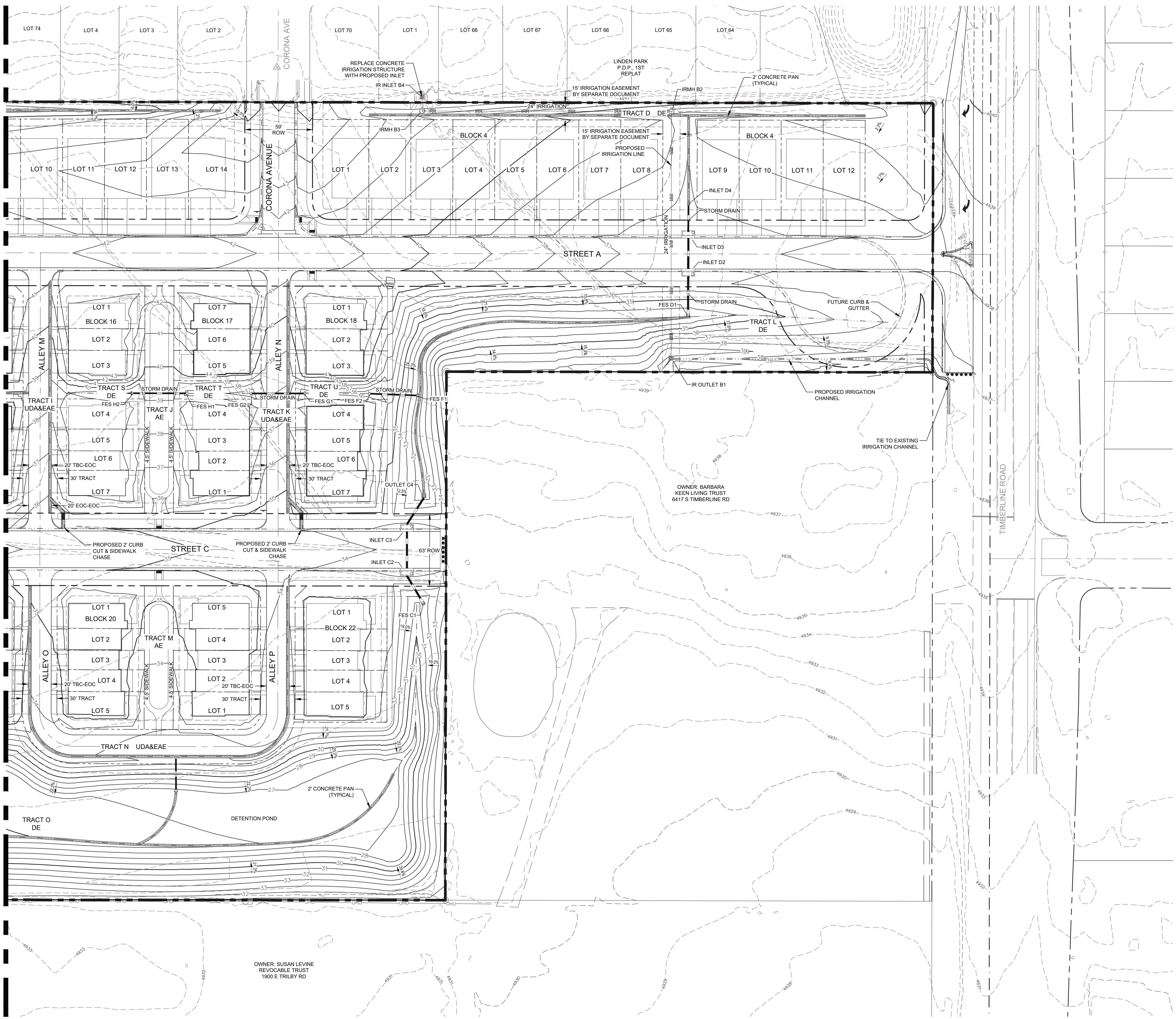
PROJECT: 698-004	DESIGNED BY: M. Ruebel	DRAWN BY: C. Fierro

TIMBER LARK RESIDENTIAL

GRADING PLAN

Sheet
GR2



NORTH

40 0 40 80 120

(IN FEET)
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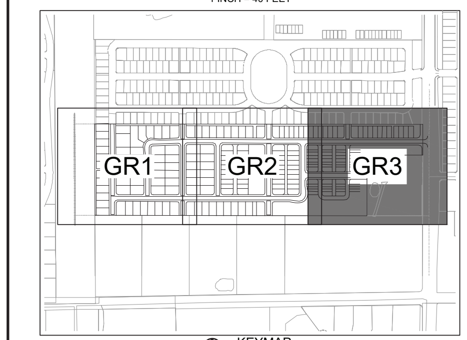

KEYMAP NTS

LEGEND:

EXISTING STORM SEWER
PROPOSED STORM SEWER
PROPOSED STORM INLET
PROPOSED CONTOUR
EXISTING CONTOUR
PROPOSED SWALE
PROPOSED CURB AND GUTTER
PROPERTY BOUNDARY
PROPOSED LOT LINE
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EASEMENT
NATURAL HABITAT BUFFER ZONE (NHBZ)
LIMITS OF DEVELOPMENT
PROPOSED SPOT ELEVATION
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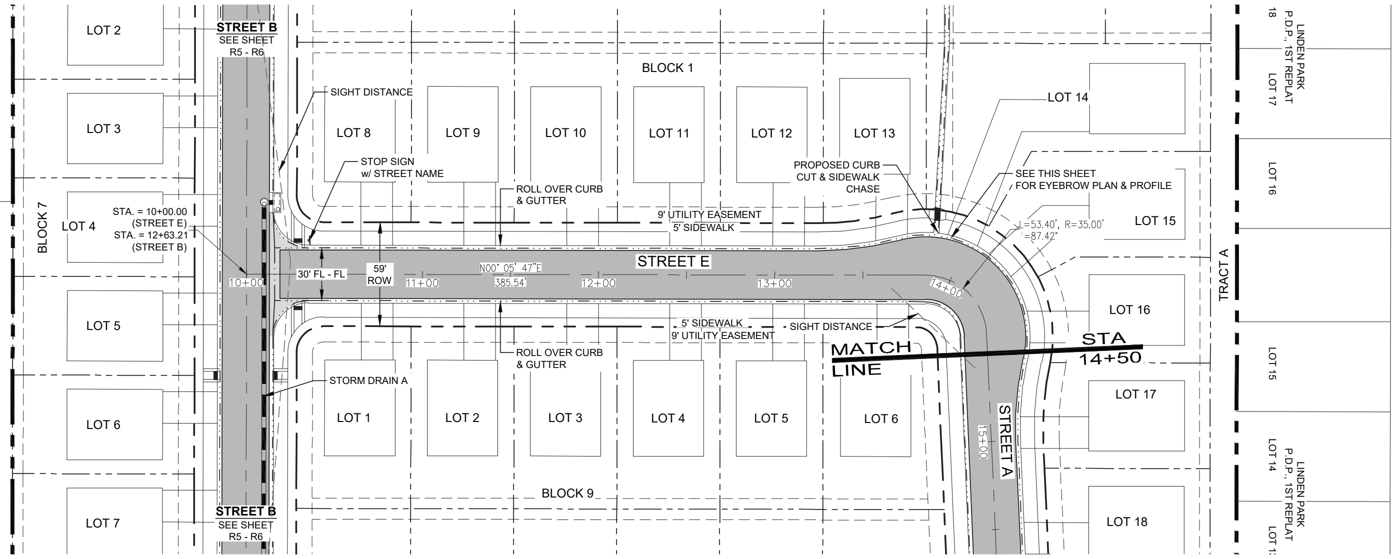
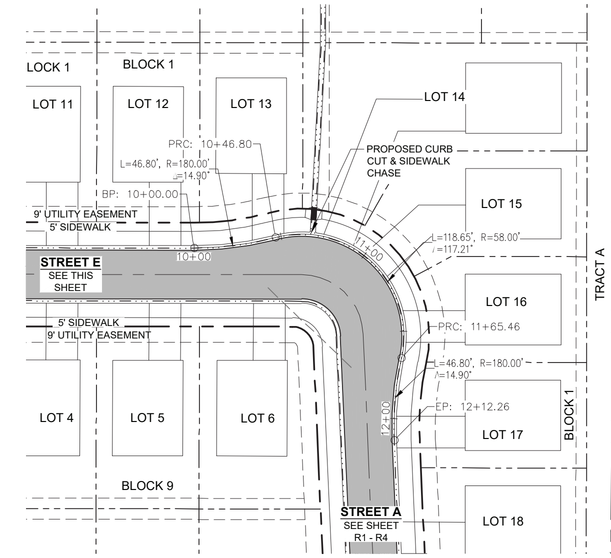
P. MANAGER R. Louer

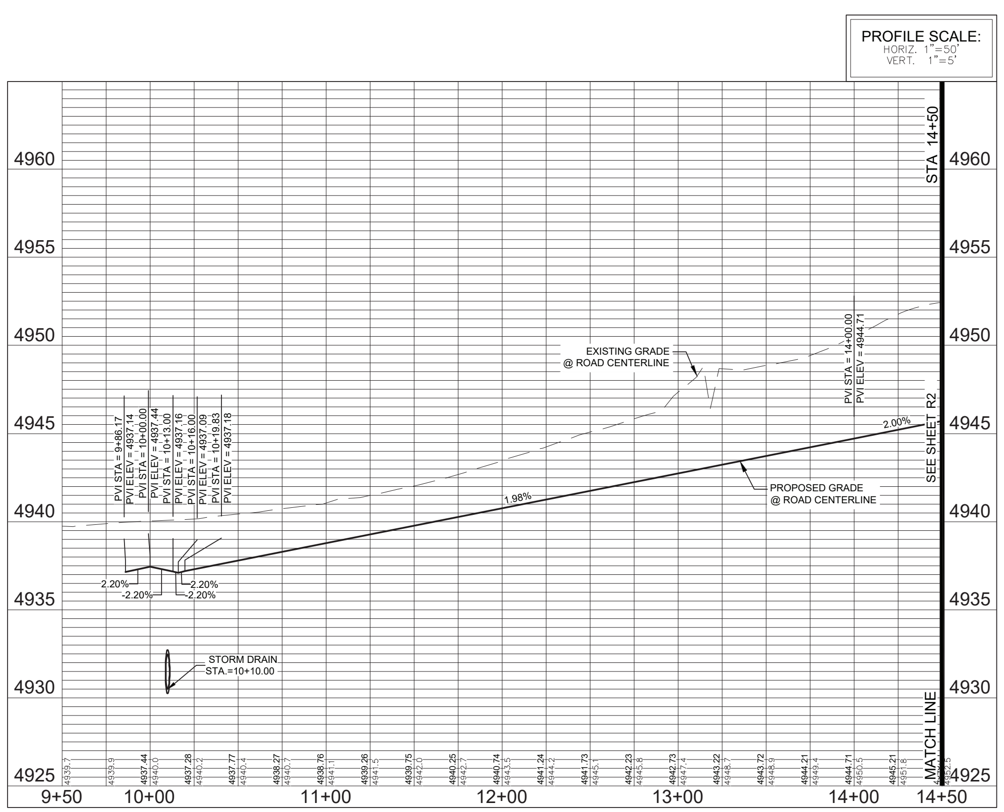
TIMBER LARK RESIDENTIAL
GRADING PLAN

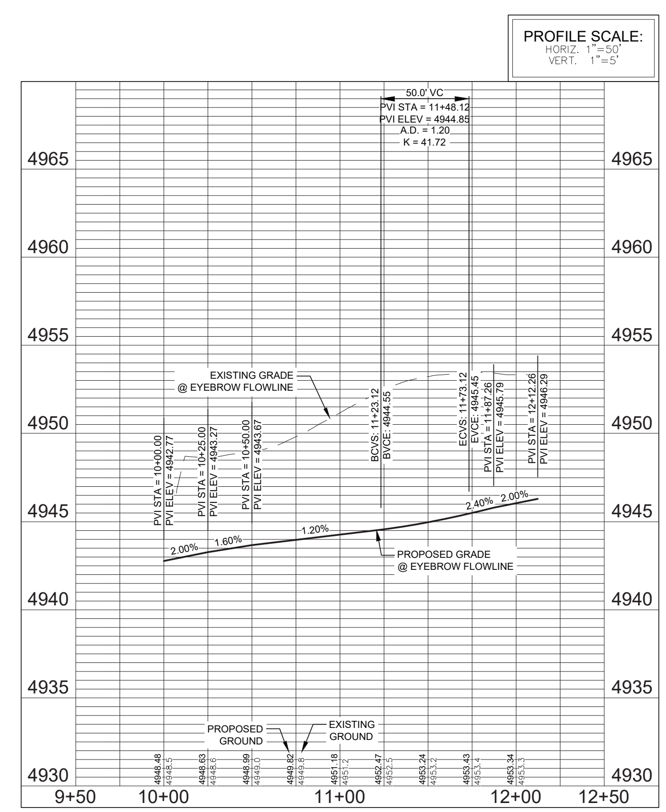


STREET E & STREET A



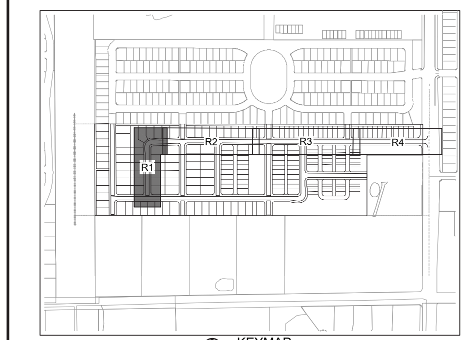
STREET E & STREET A EYEBROW





NORTH

50 0 50 100 150 Feet
(IN FEET)
1 inch = 50 ft.



KEYMAP

LEGEND:

PROPOSED CURB & GUTTER
PROPOSED CENTERLINE
PROPOSED RIGHT-OF-WAY
EXISTING RIGHT-OF-WAY
PROPERTY BOUNDARY
PROPOSED LOT LINE
EXISTING LOT LINE
EASEMENT LINE
SAWCUT LINE
PROPOSED STORM SEWER
PROPOSED STORM INLET
EXISTING STORM SEWER
LIMITS OF DEVELOPMENT — LOD
PROPOSED CONCRETE CROSSPAN (TYP.)

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3. MANHOLE RIM ELEVATIONS ARE TO BE ADJUSTED TO 1/4" BELOW FINISHED GRADE. IF NECESSARY, CONE SECTIONS SHALL BE ROTATED TO PREVENT LIDS BEING LOCATED WITHIN VEHICLE OR BICYCLE WHEEL PATHS.
4. EXPANSION JOINTS SHALL BE PROVIDED IN ALL TRAILS AT MAXIMUM SPACING OF 50 FEET.
5. LIMITS OF STREET CUT ARE APPROXIMATE. FINAL LIMITS ARE TO BE DETERMINED IN THE FIELD BY THE TOWN ENGINEERING INSPECTOR. ALL REPAIRS TO BE IN ACCORDANCE WITH TOWN STREET REPAIR STANDARDS.
6. CONSTRUCTION ON DITCH LATERAL WILL BE LIMITED FROM OCTOBER 1 TO MAY 1 WHEN NOT IN USE.
8. PARKWAY WIDTH SHOWN ON THIS SHEET IS MEASURED FROM BACK OF CURB TO FACE OF WALK
6. PRIOR TO PERMANENT INSTALLATION OF TRAFFIC STRIPING, SYMBOLS, AND SIGNS THEIR PLACEMENT SHALL BE APPROVED BY THE CITY OF FORT COLLINS TRAFFIC ENGINEER. THE DEVELOPER SHALL PLACE TEMPORARY TABS, TAPE OR FLAGS DEPICTING ALIGNMENT AND LOCATION. CONTACT CITY OF FORT COLLINS TRAFFIC OPERATIONS AT 970-221-6630 FOR FIELD REVIEW.

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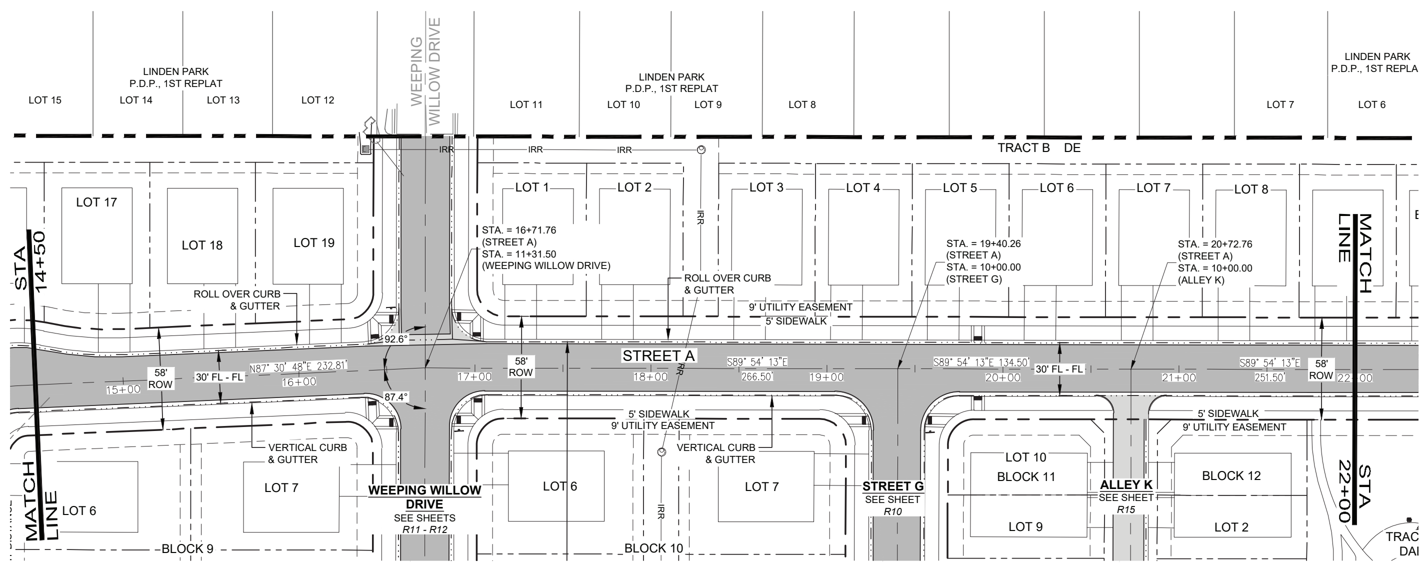
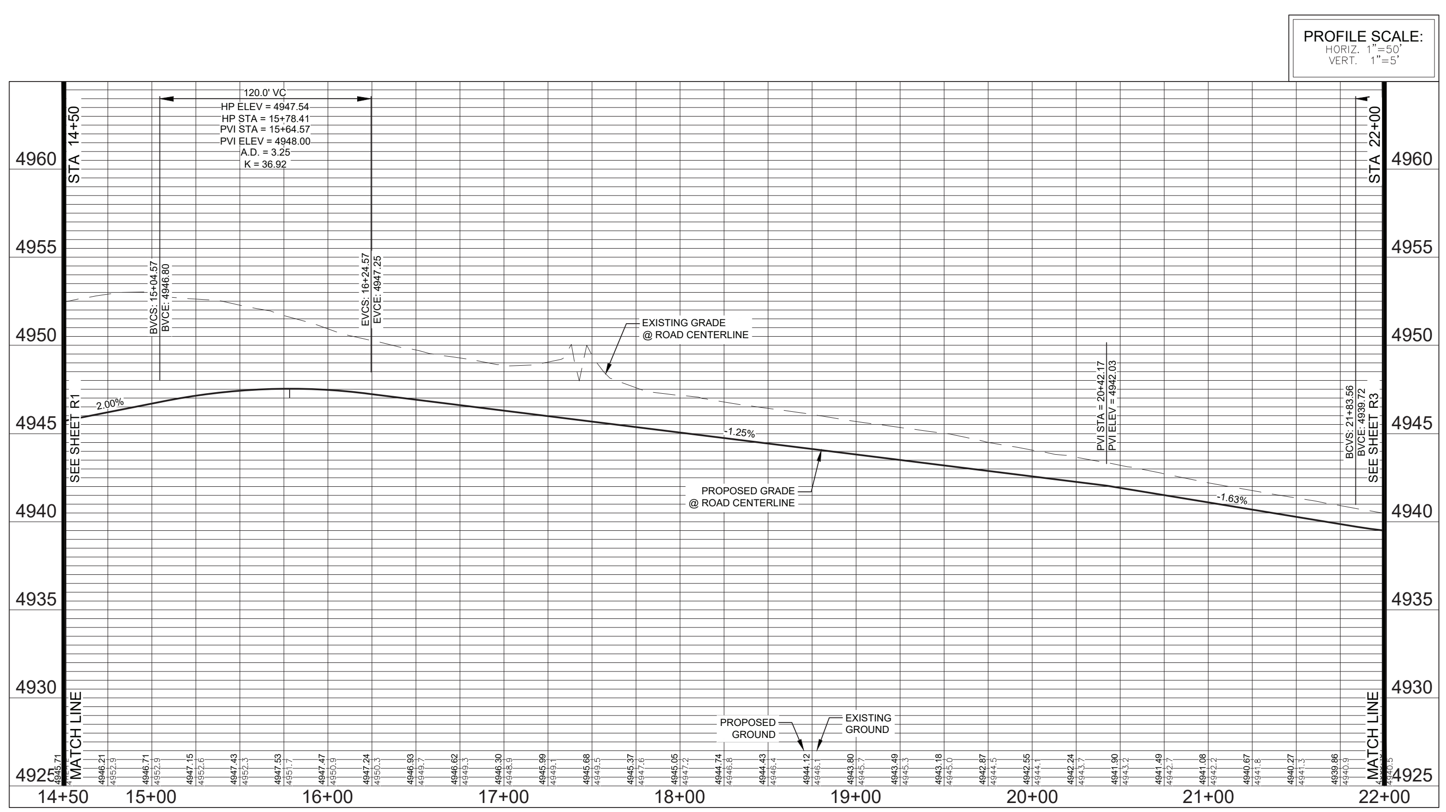
SCALE: 1" = 50'
P. MANAGER R. Lauer
PROJECT: 698-004
DESIGNED BY: M. Ruebel
DRAWN BY: C. Fierro

TIMBER LARK RESIDENTIAL

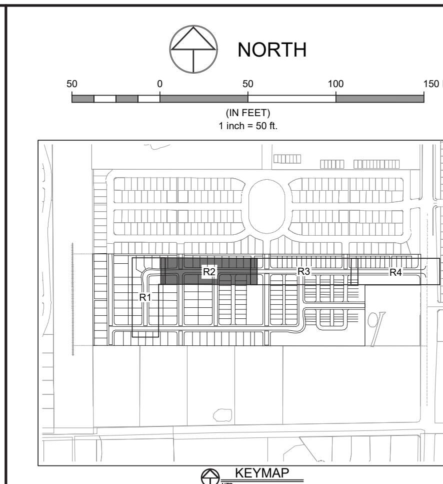
STREET E & STREET A PLAN AND PROFILE



STREET A



NORTH



KEYMAP

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No. | Revisions: | By: | Date:

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12/15/21

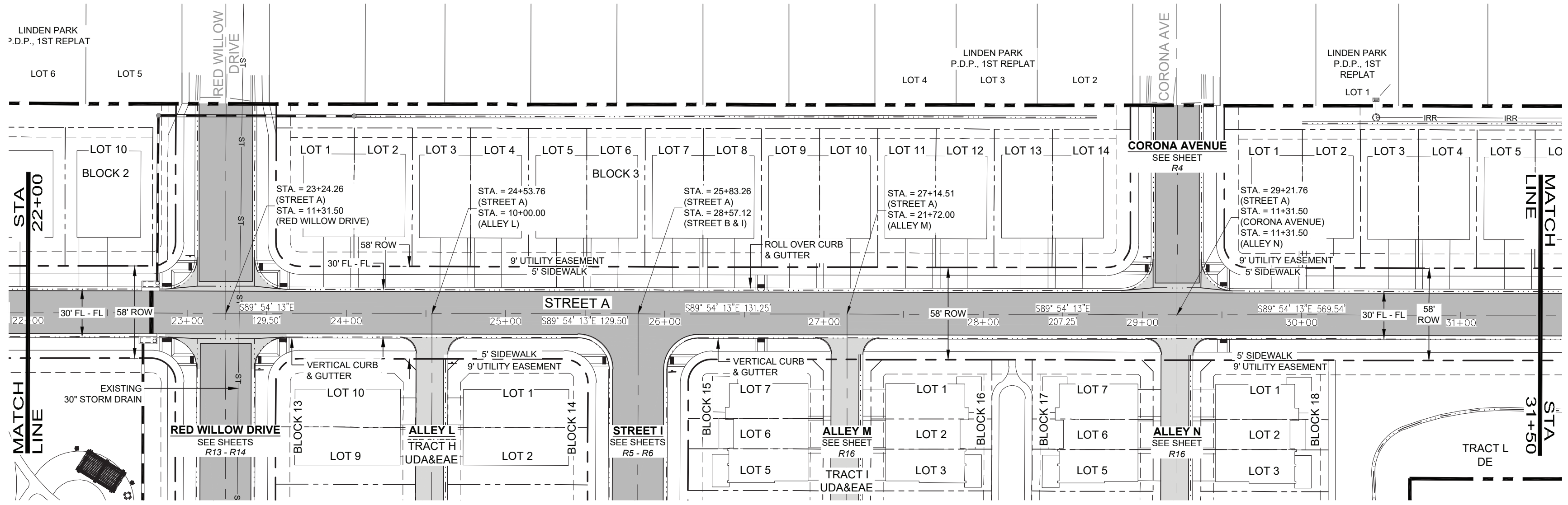
NORTHERN ENGINEERING
970.221.4158
northernengineering.com
FORT COLLINS: 301 North Howes Street, Suite 100, 80521
GREELEY: 820 8th Street, 80631

PROJECT: 698-004
DATE: 12/15/21
DESIGNED BY: M. Ruebel
SCALE: 1" = 50'
DRAWN BY: C. Fierro
P. MANAGER R. Lauer

TIMBER LARK RESIDENTIAL

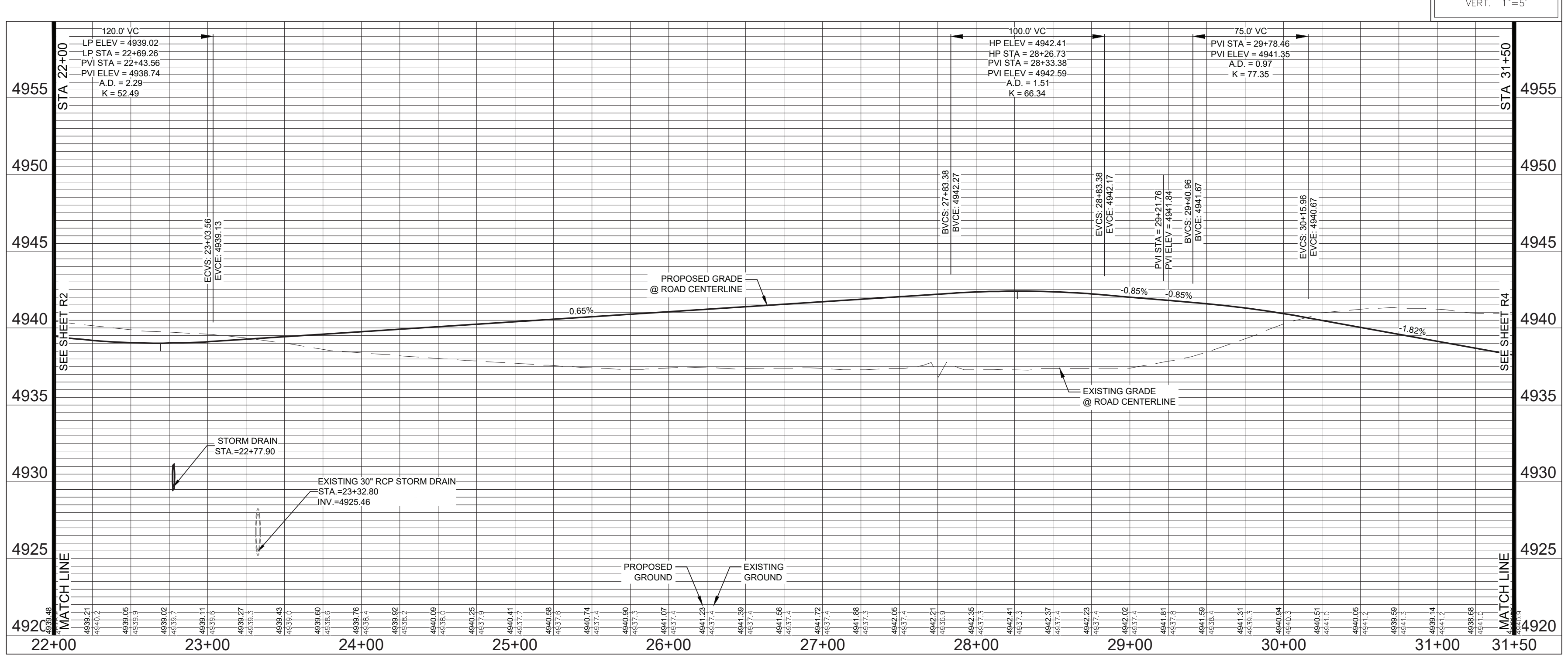
STREET A PLAN AND PROFILE

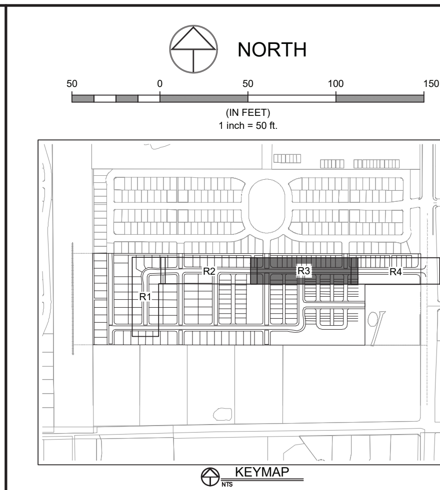
Sheet R2



STREET A

PROFILE SCALE:
HORIZ. 1"=50'
VERT. 1"=5'





LEGEND:

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- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- PROPERTY BOUNDARY
- PROPOSED LOT LINE
- EXISTING LOT LINE
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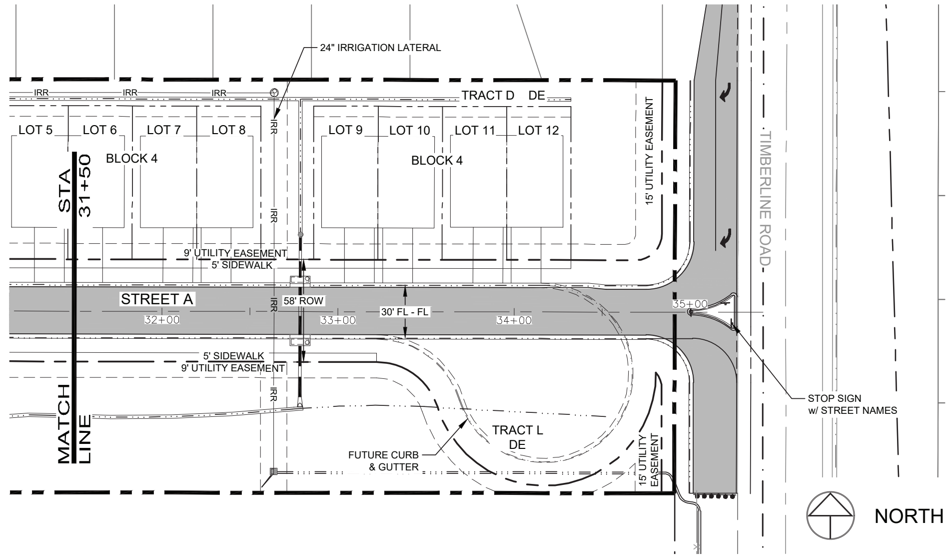
northernengineering.com

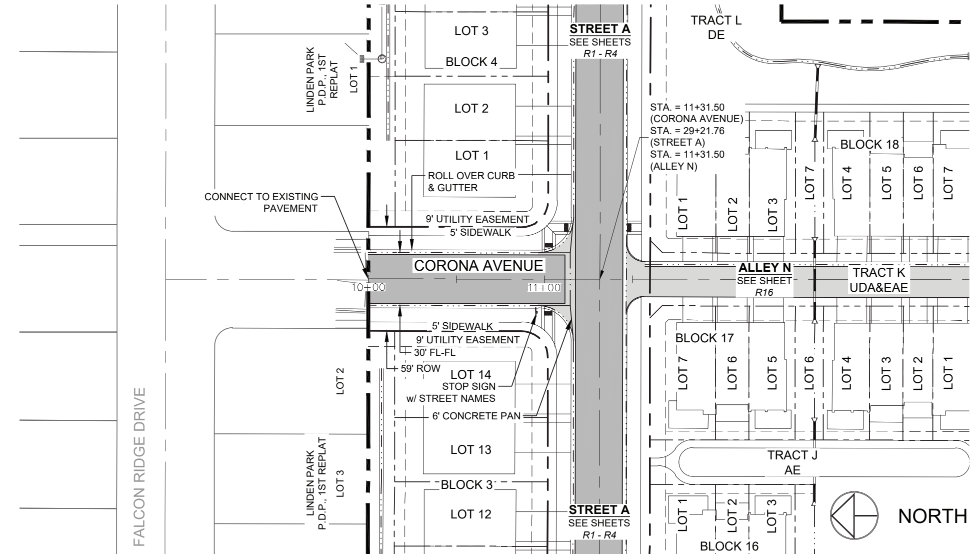
PROJECT: 698-004
DATE: 12/15/21
SCALE: 1" = 50'
DESIGNED BY: M. Ruebel
P. MANAGER: R. Louer
DRAWN BY: C. Fierro

TIMBER LARK RESIDENTIAL
STREET A PLAN AND PROFILE

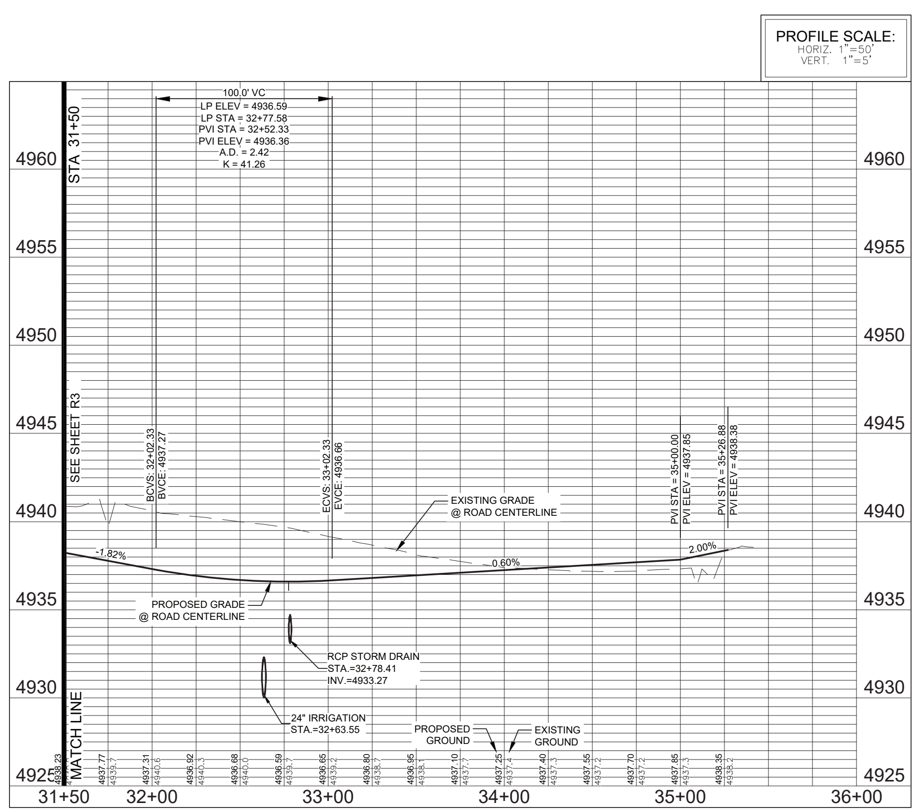
Sheet R3

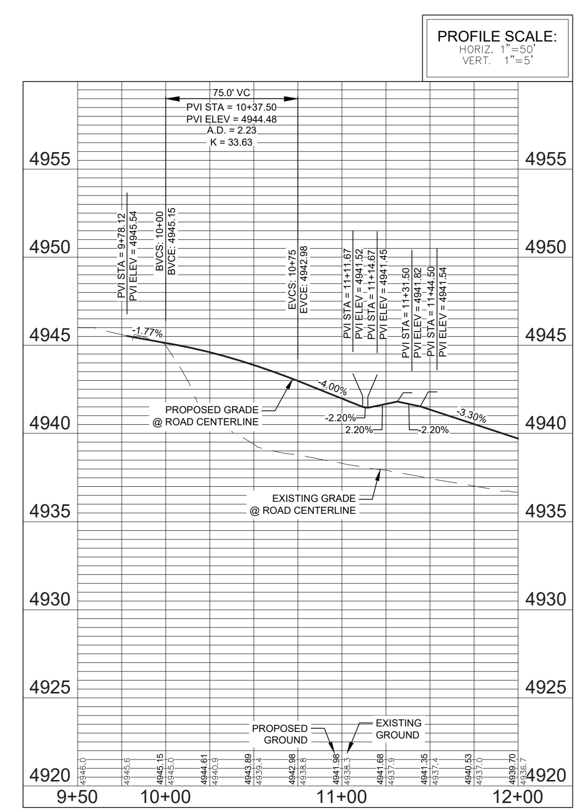


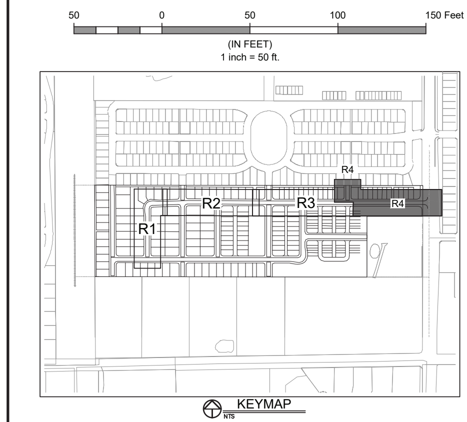
STREET A



CORONA AVENUE







LEGEND:

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PROPOSED RIGHT-OF-WAY	
EXISTING RIGHT-OF-WAY	
PROPERTY BOUNDARY	
PROPOSED LOT LINE	
EXISTING LOT LINE	
EASEMENT LINE	
SAWCUT LINE	
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PROPOSED STORM INLET	
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LIMITS OF DEVELOPMENT	LOD
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FORT COLLINS: 301 North Howes Street, Suite 100, 80521
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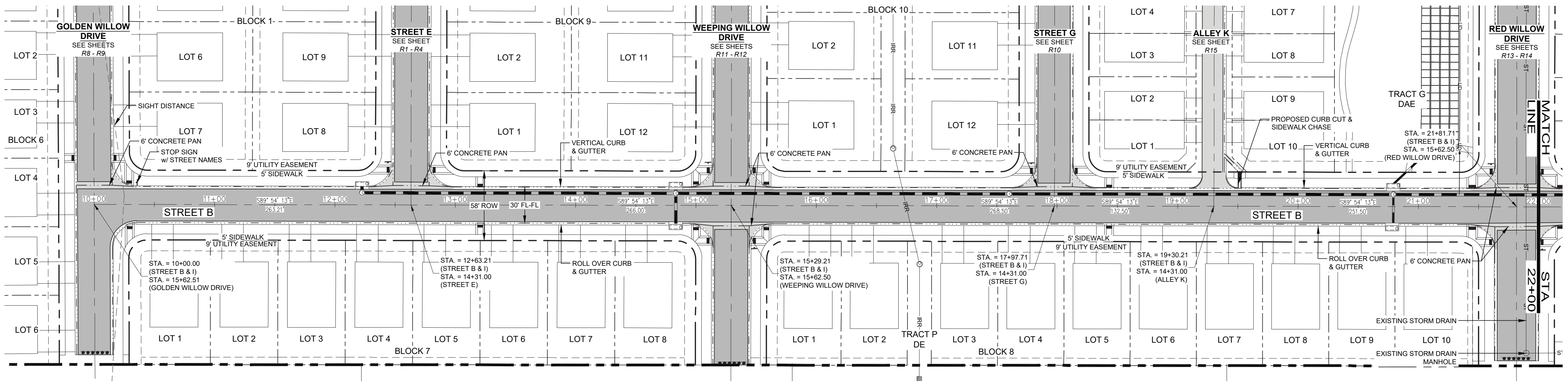
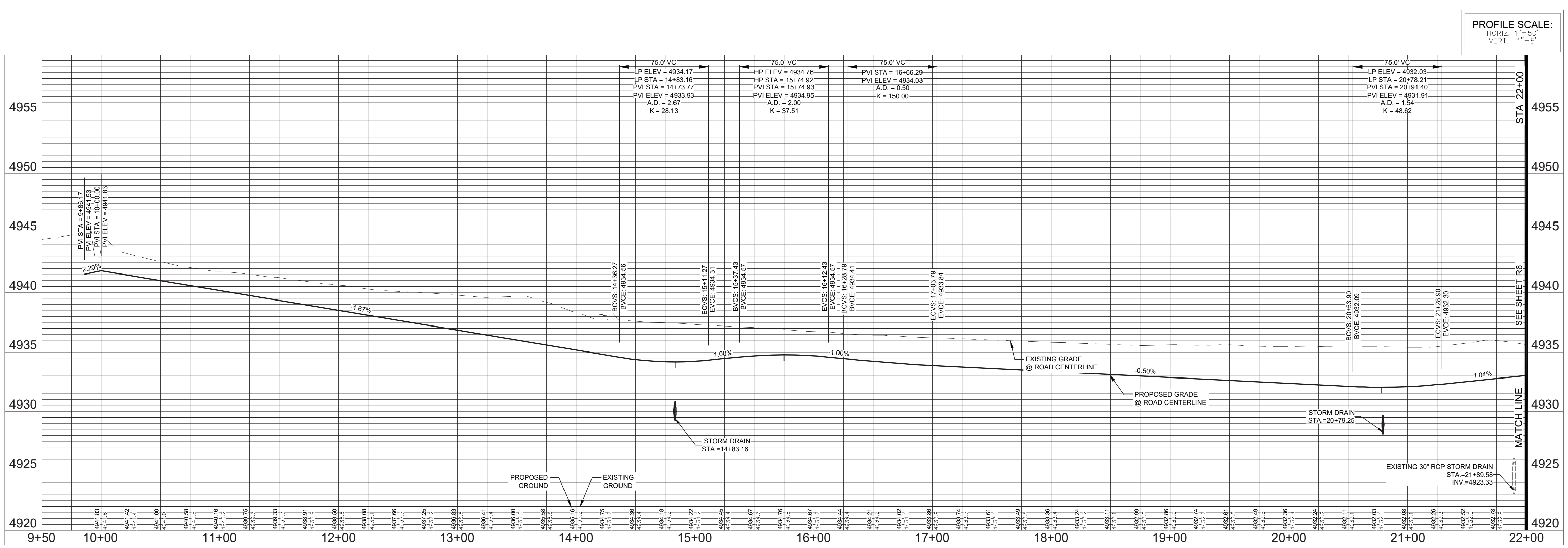
northernengineering.com

PROJECT: 698-004	DESIGNED BY: M. Ruebel	DRAWN BY: C. Fierro
DATE: 12/15/21	SCALE: 1" = 50'	P. MANAGER R. Lauer

TIMBER LARK RESIDENTIAL
STREET A & CORONA AVENUE PLAN AND PROFILE

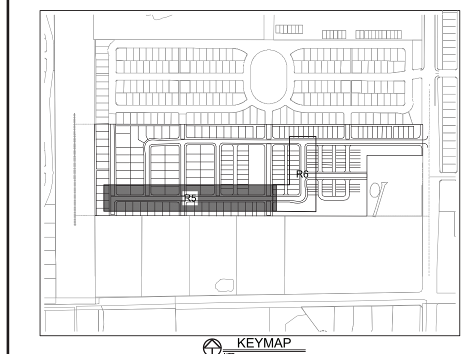


STREET B



NORTH

(IN FEET)
1 inch = 50 ft.



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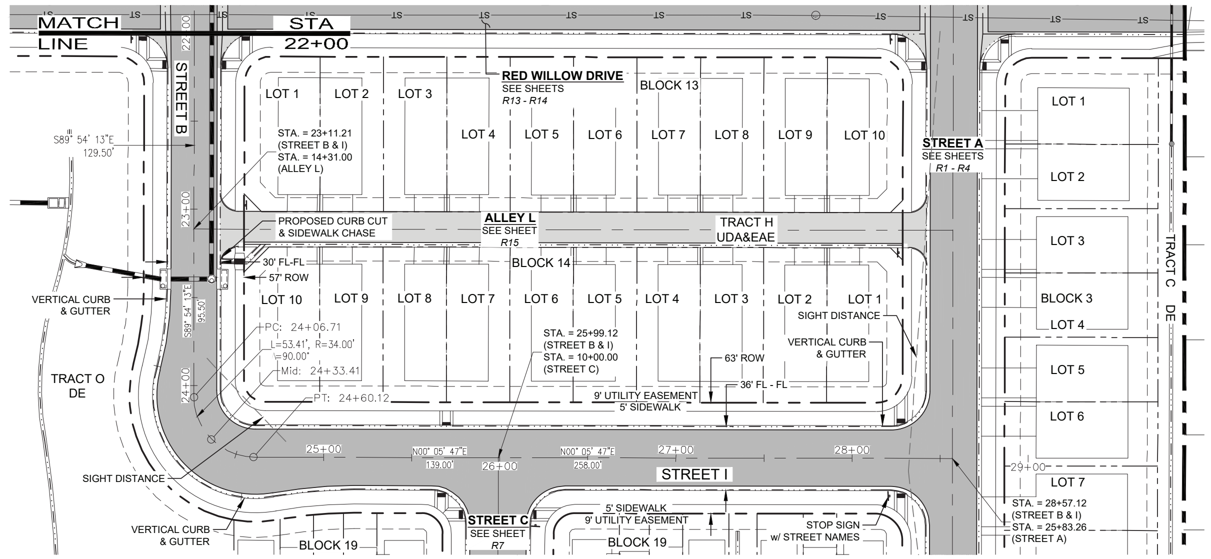
DATE: 12/15/21
SCALE: 1" = 50'
P. MANAGER: R. Louer
PROJECT: 698-004
DESIGNED BY: M. Rubel
DRAWN BY: C. Fierro

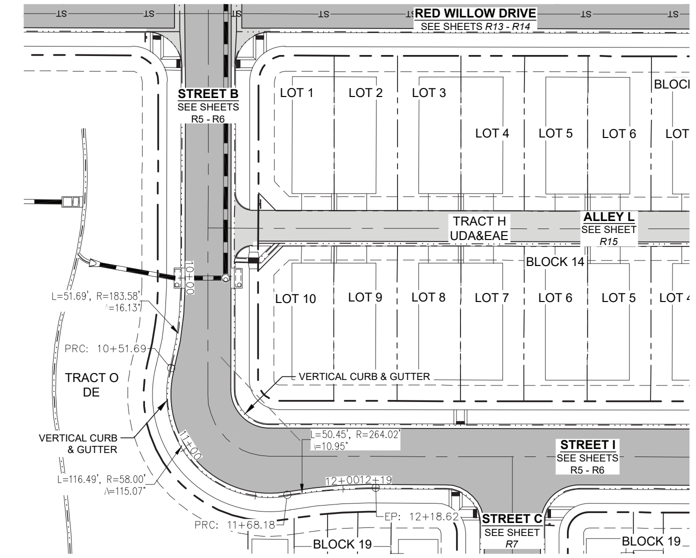
TIMBER LARK RESIDENTIAL

STREET B PLAN AND PROFILE

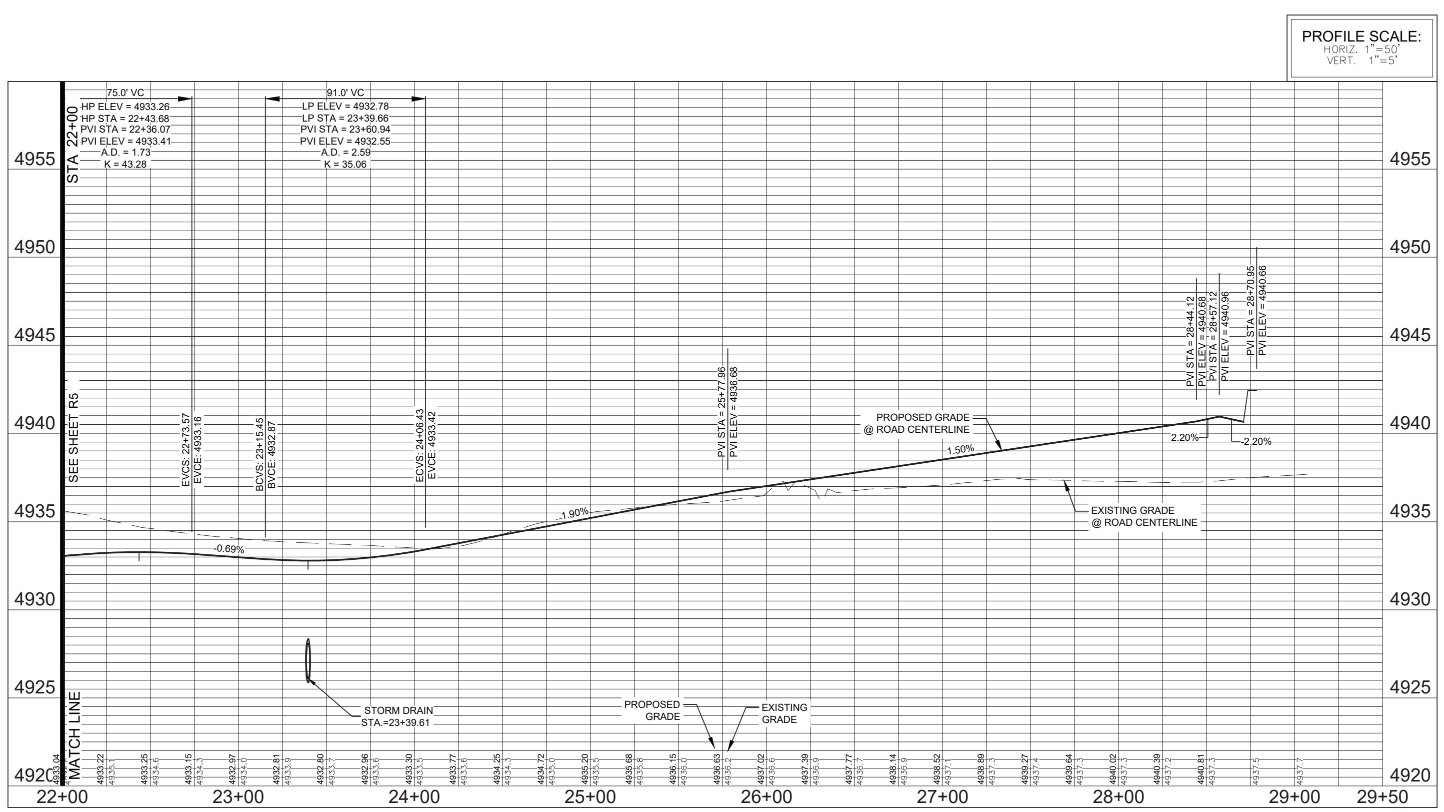
Sheet R5

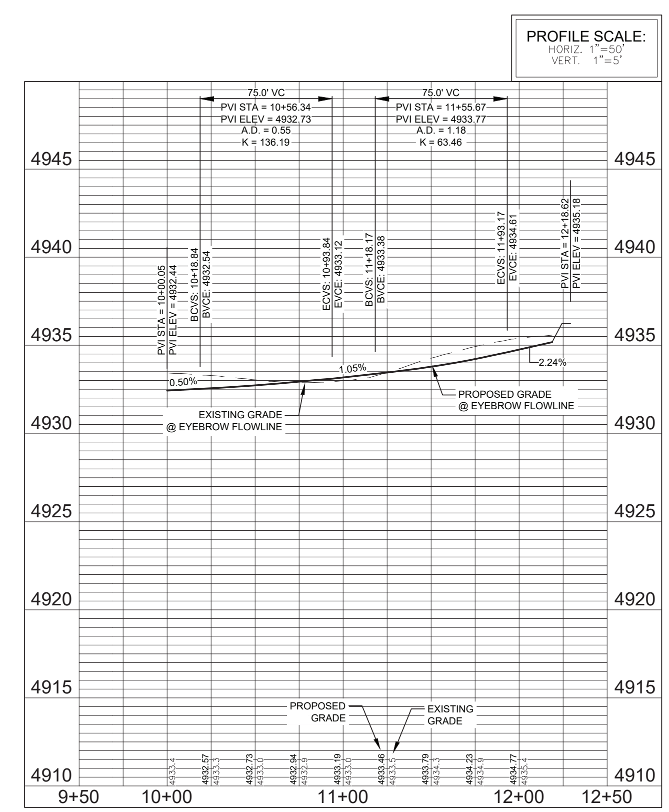


STREET B & STREET I



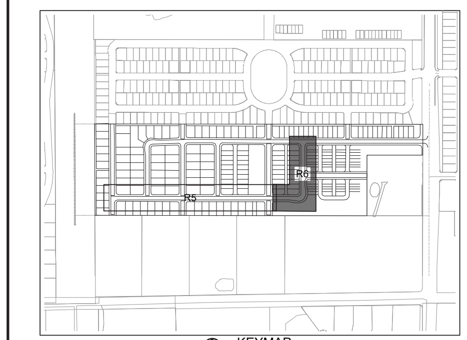
STREET B & STREET I EYEBROW





NORTH

(IN FEET)
1 inch = 50 ft.



KEYMAP

LEGEND:

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PROJECT: 698-004
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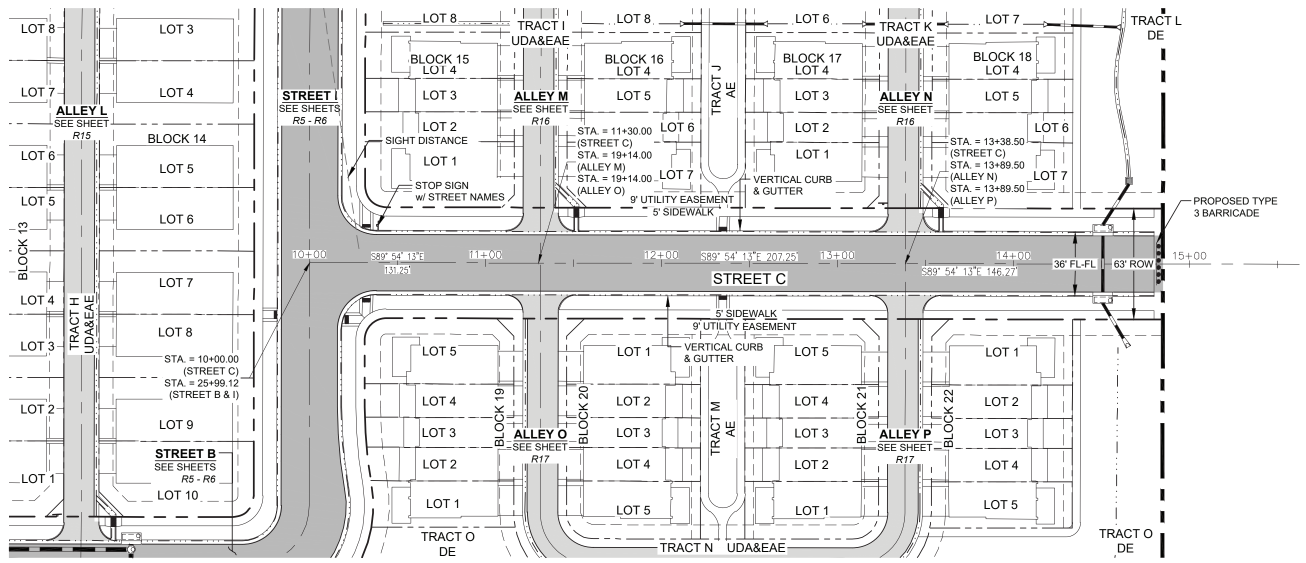
SCALE: 1" = 50'
DESIGNED BY: M. Rubel
P. MANAGER R. Louer
DRAWN BY: C. Fierro

TIMBER LARK RESIDENTIAL

STREET B & STREET I PLAN AND PROFILE



STREET C

PROFILE SCALE:
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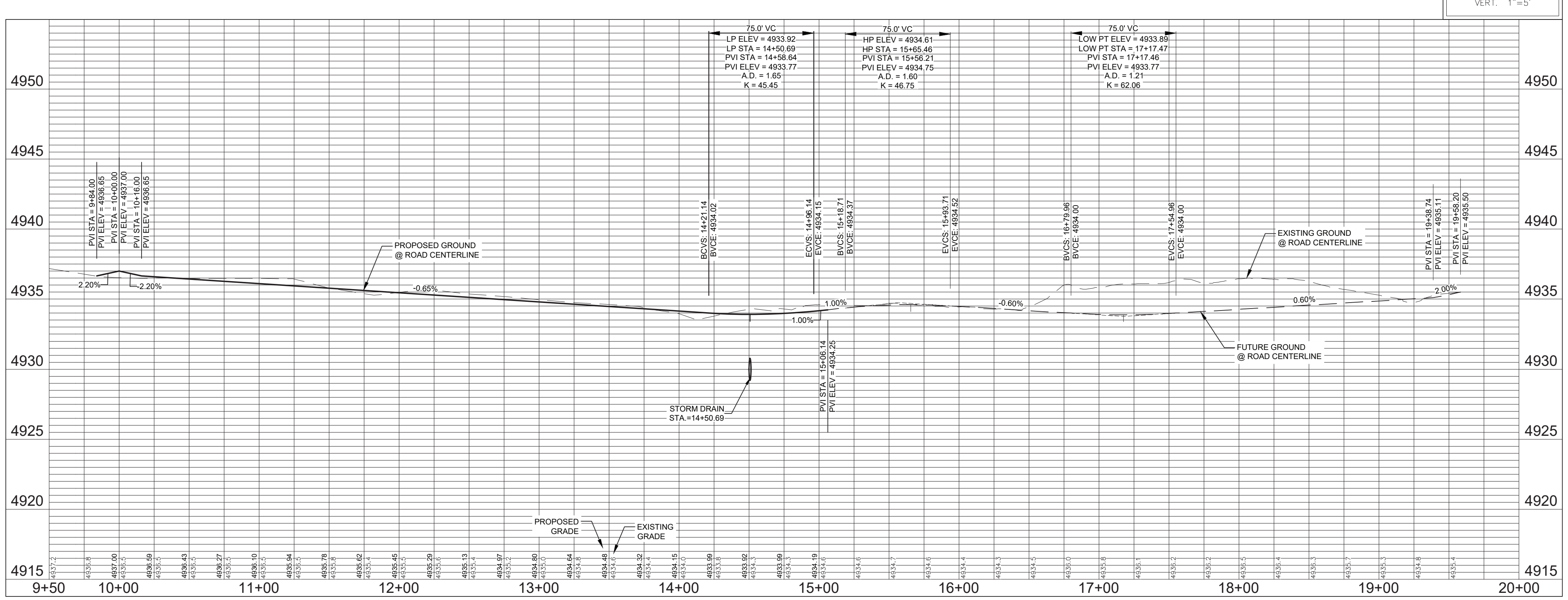

NORTH

50 0 50 100 150 Feet
(IN FEET)
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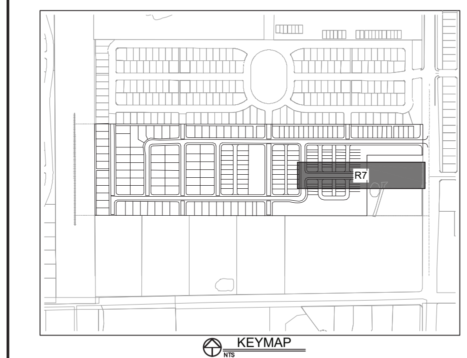

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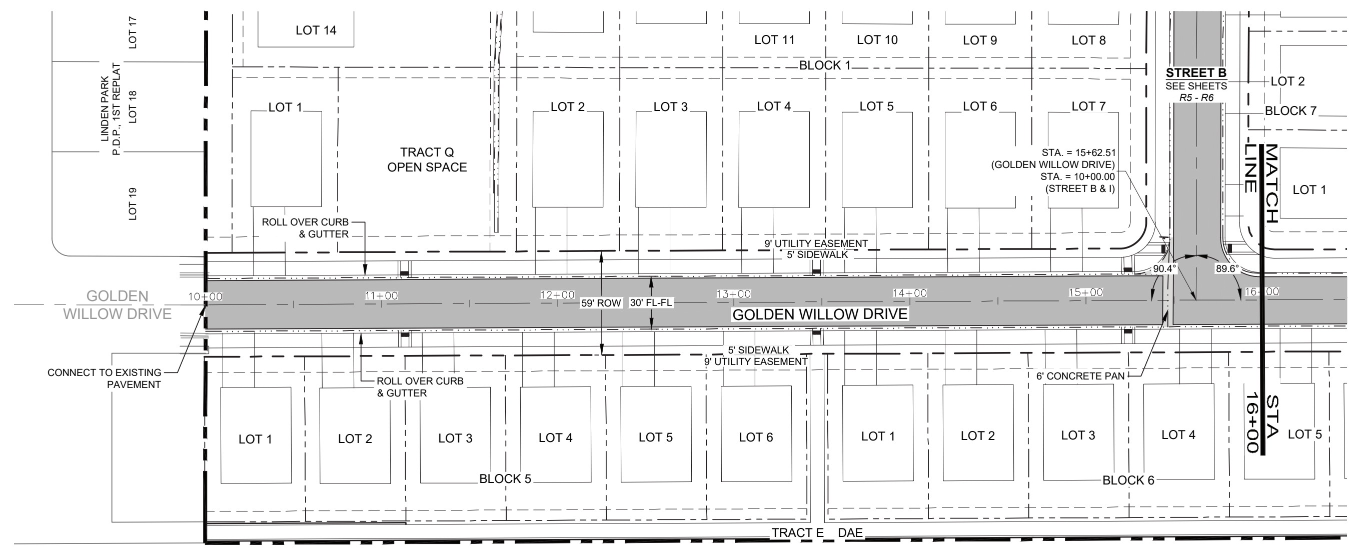
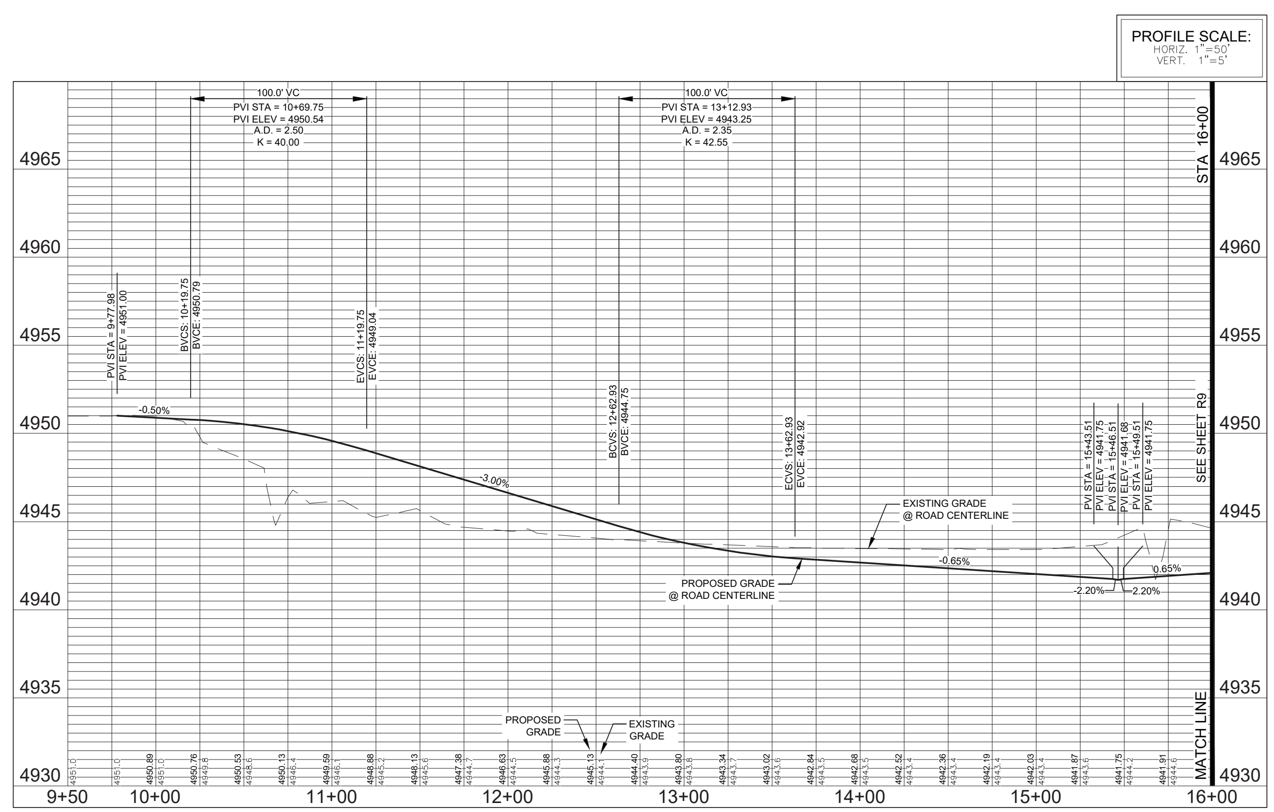
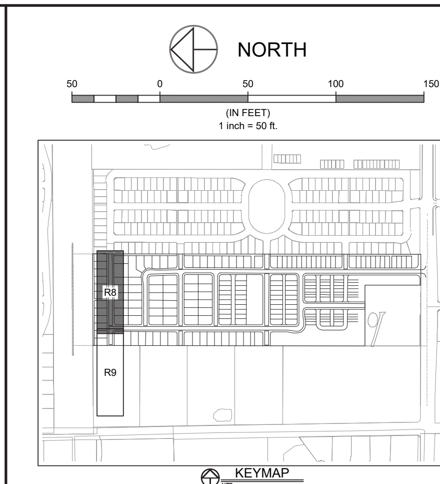
STREET C PLAN AND PROFILE



GOLDEN WILLOW DRIVE





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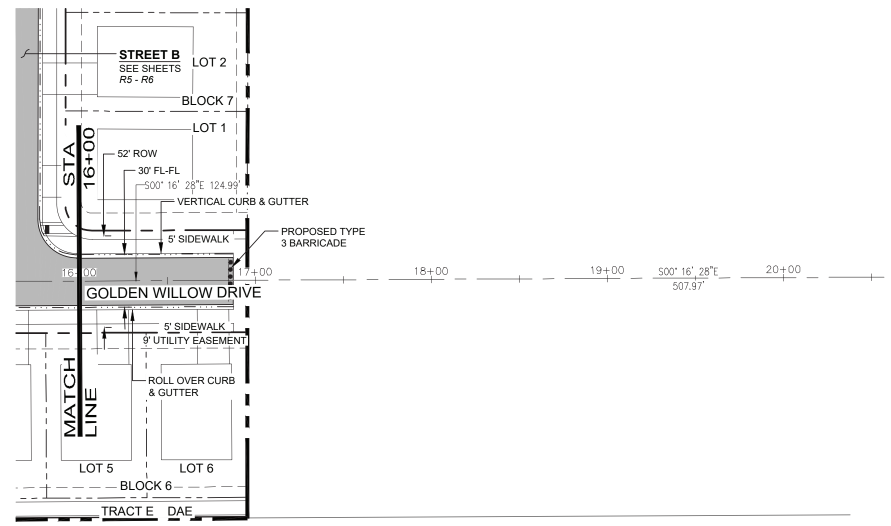
12/15/21

NORTHERN ENGINEERING
FORT COLLINS: 301 North Howes Street, Suite 100, 80521
GREELEY: 820 8th Street, 80631
970.221.4158
northernengineering.com

DATE: 12/15/21 | SCALE: 1" = 50' | P. MANAGER: R. Louer
PROJECT: 698-004 | DESIGNED BY: M. Ruebel | DRAWN BY: C. Fierro

TIMBER LARK RESIDENTIAL
GOLDEN WILLOW DRIVE PLAN AND PROFILE



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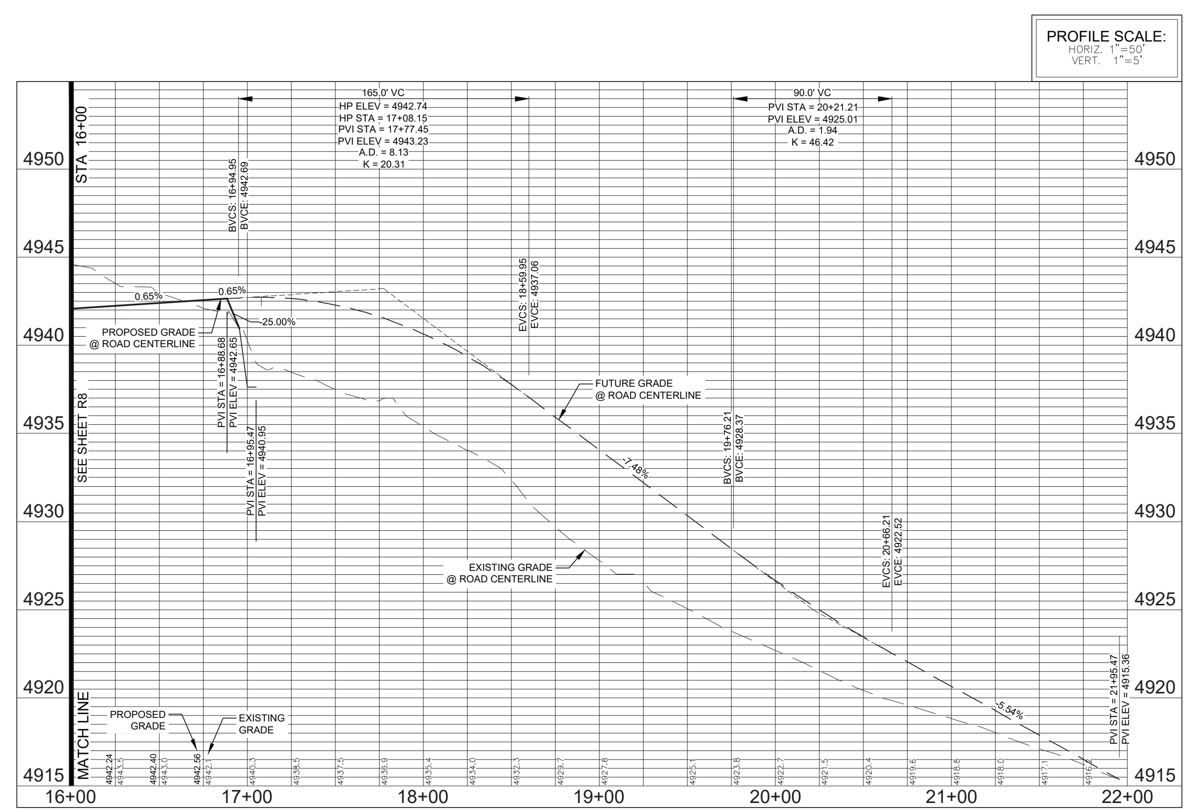
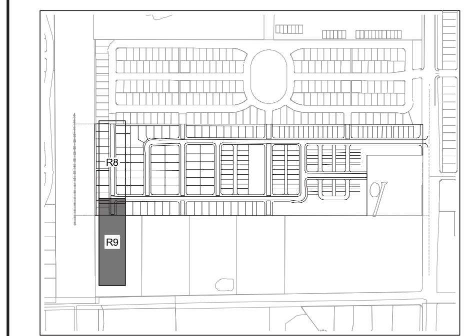


NORTH

50 0 50 100 150 Feet

(IN FEET)
1 inch = 50 ft.



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EXISTING RIGHT-OF-WAY
PROPERTY BOUNDARY
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EASEMENT LINE
SAWCUT LINE
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DATE: 12/15/21	SCALE: 1" = 50'	P. MANAGER R. Lauer

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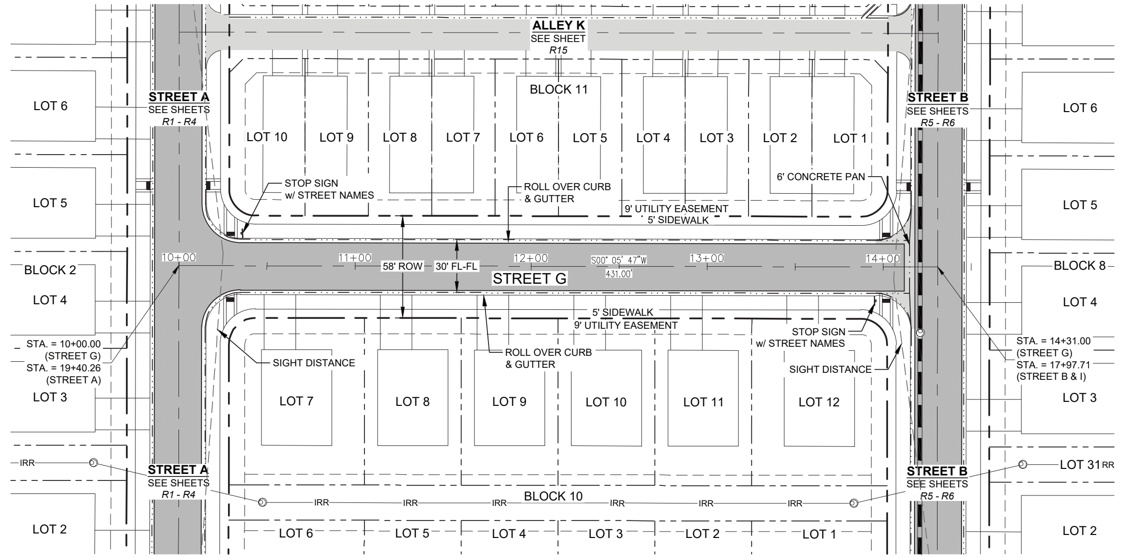
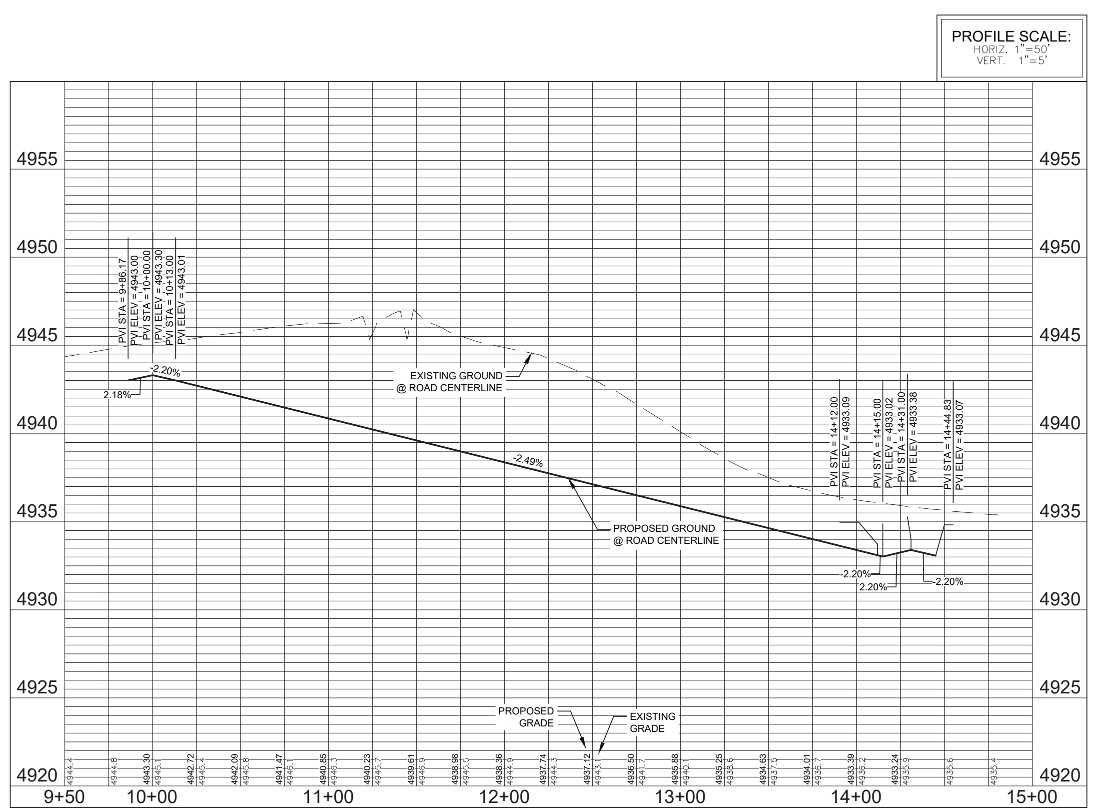
GOLDEN WILLOW DRIVE PLAN AND PROFILE



STREET G



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P. MANAGER R. Lauer

TIMBER LARK RESIDENTIAL
STREET G PLAN AND PROFILE

Sheet R10

DRAWING FILENAME: P:\698-004\Dwg\Shts\698-004_STRT_G.dwg LAYOUT NAME: R10 DATE: Dec 15, 2021 – 2:34am CAD OPERATOR: mason
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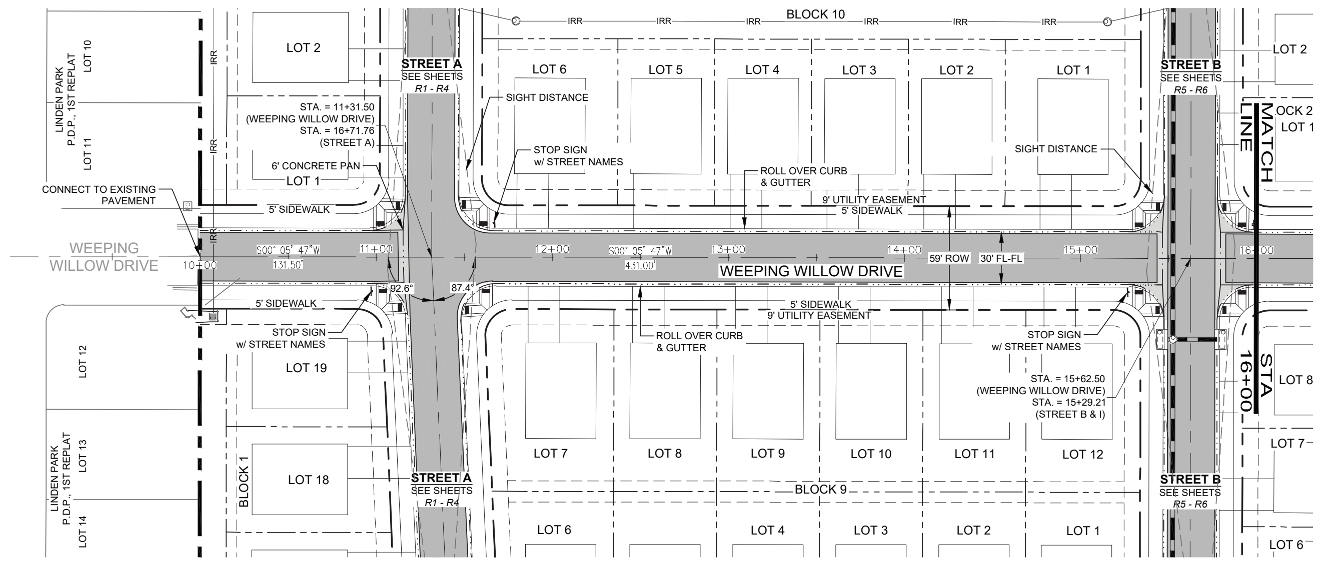
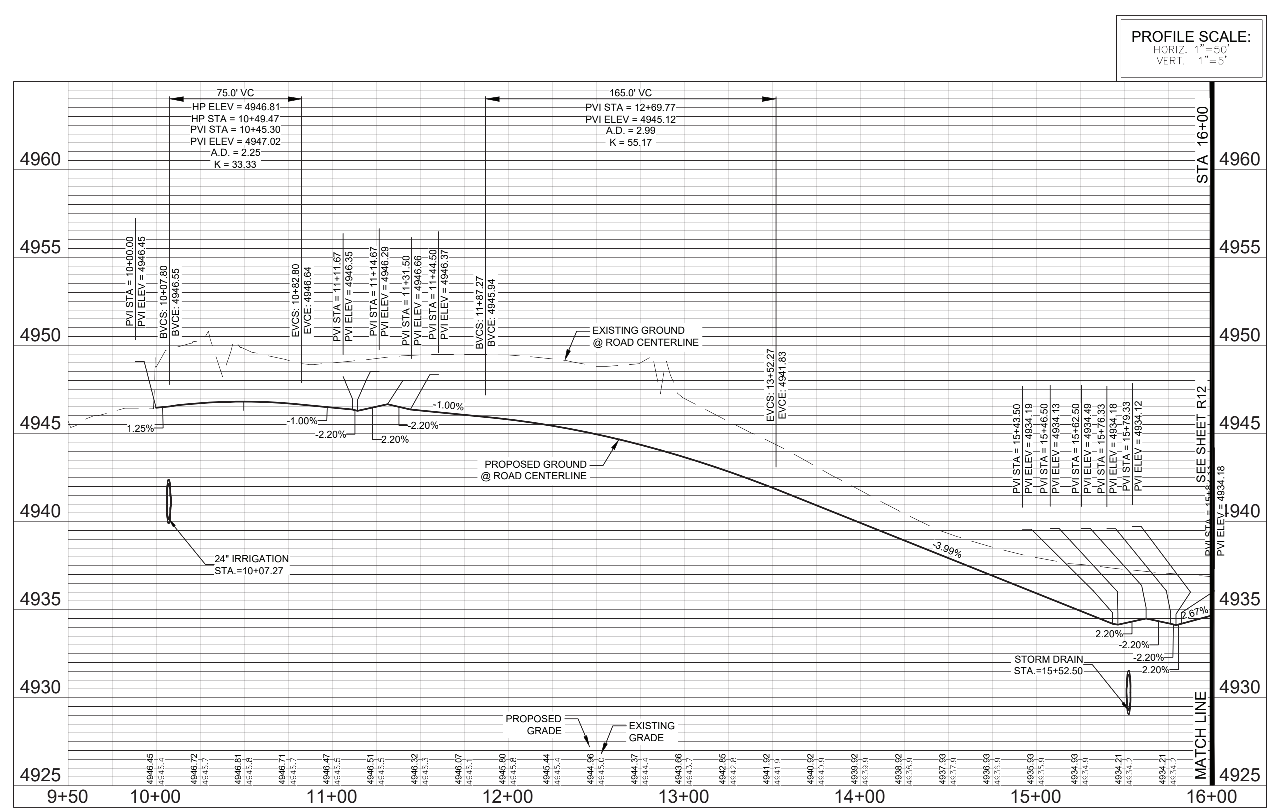
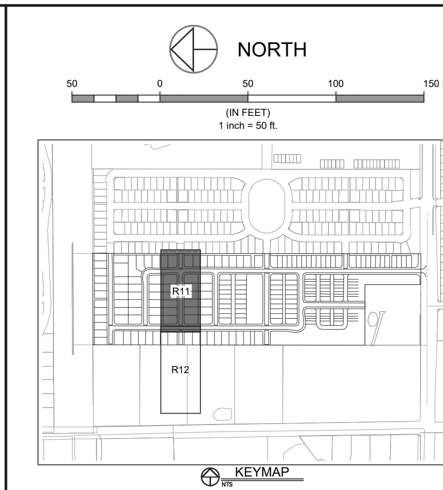


WEEPING WILLOW DRIVE





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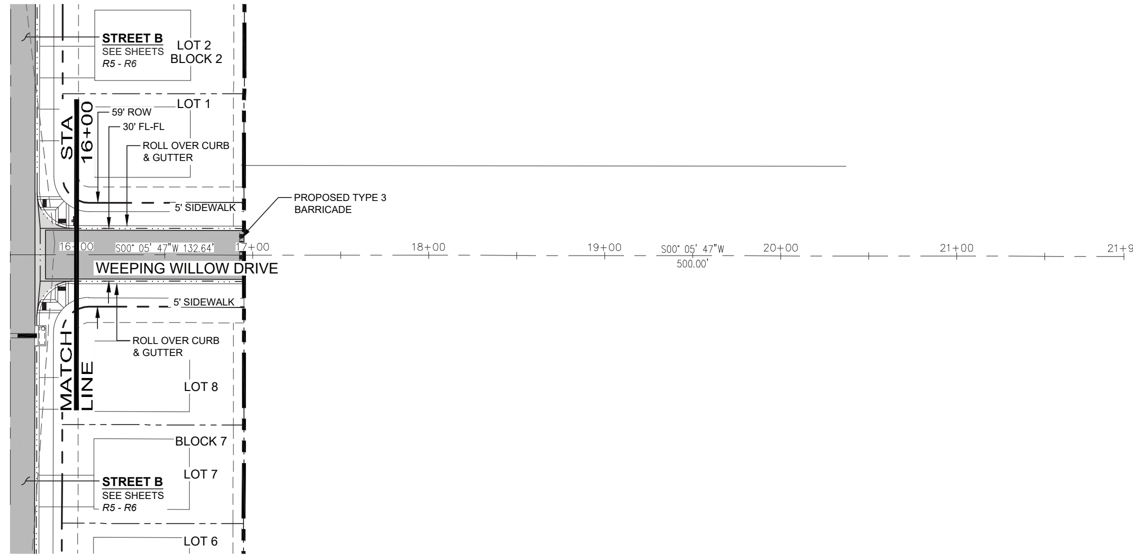
PROJECT: 698-004	DESIGNED BY: M. Ruebel	DRAWN BY: C. Fierro
DATE: 12/15/21	SCALE: 1" = 50'	P. MANAGER R. Lauer

TIMBER LARK RESIDENTIAL

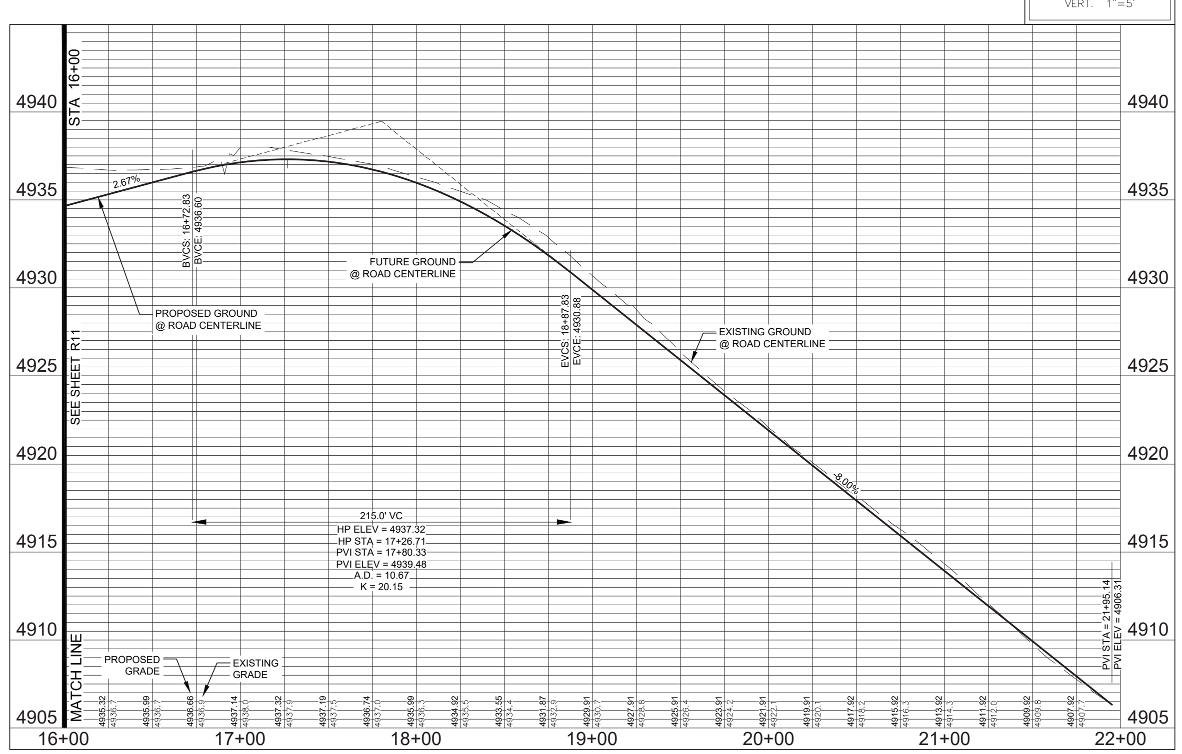
WEEPING WILLOW DRIVE PLAN AND PROFILE

Sheet
R11



WEEPING WILLOW DRIVE

PROFILE SCALE:
HORIZ. 1"=50'
VERT. 1"=5'



NORTH

50 0 50 100 150 Feet

(IN FEET)
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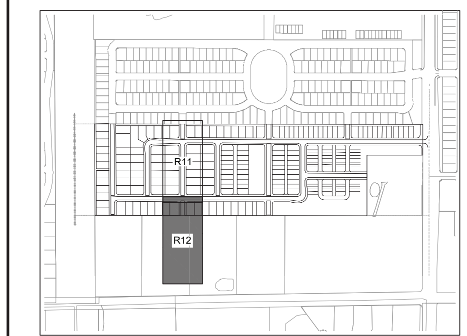

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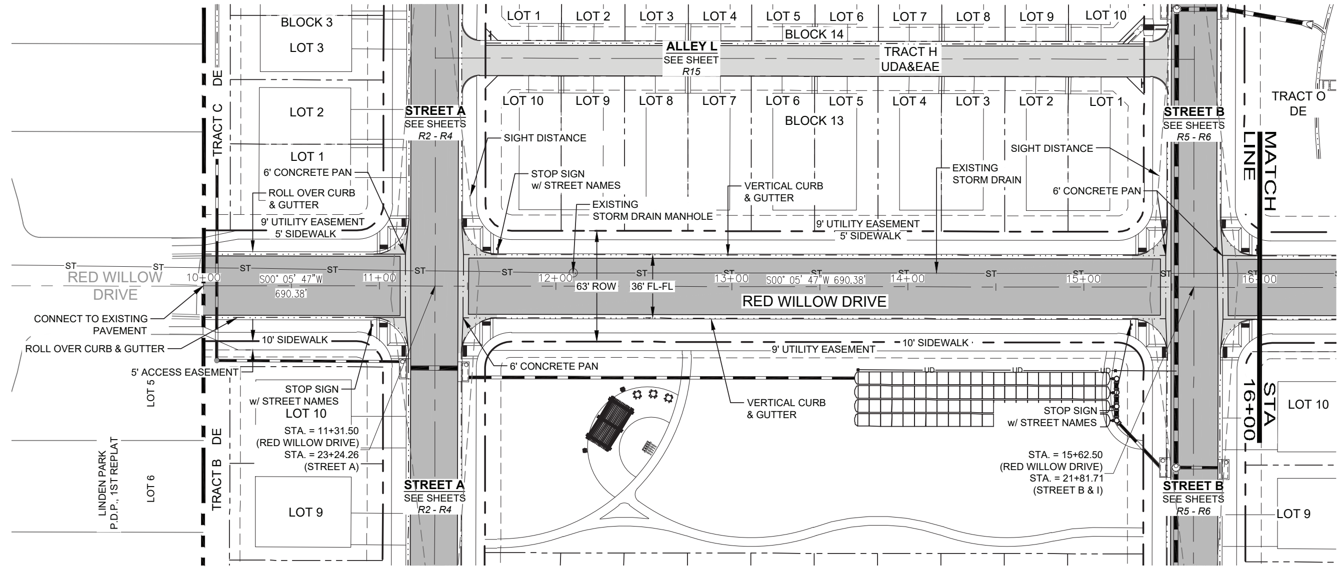
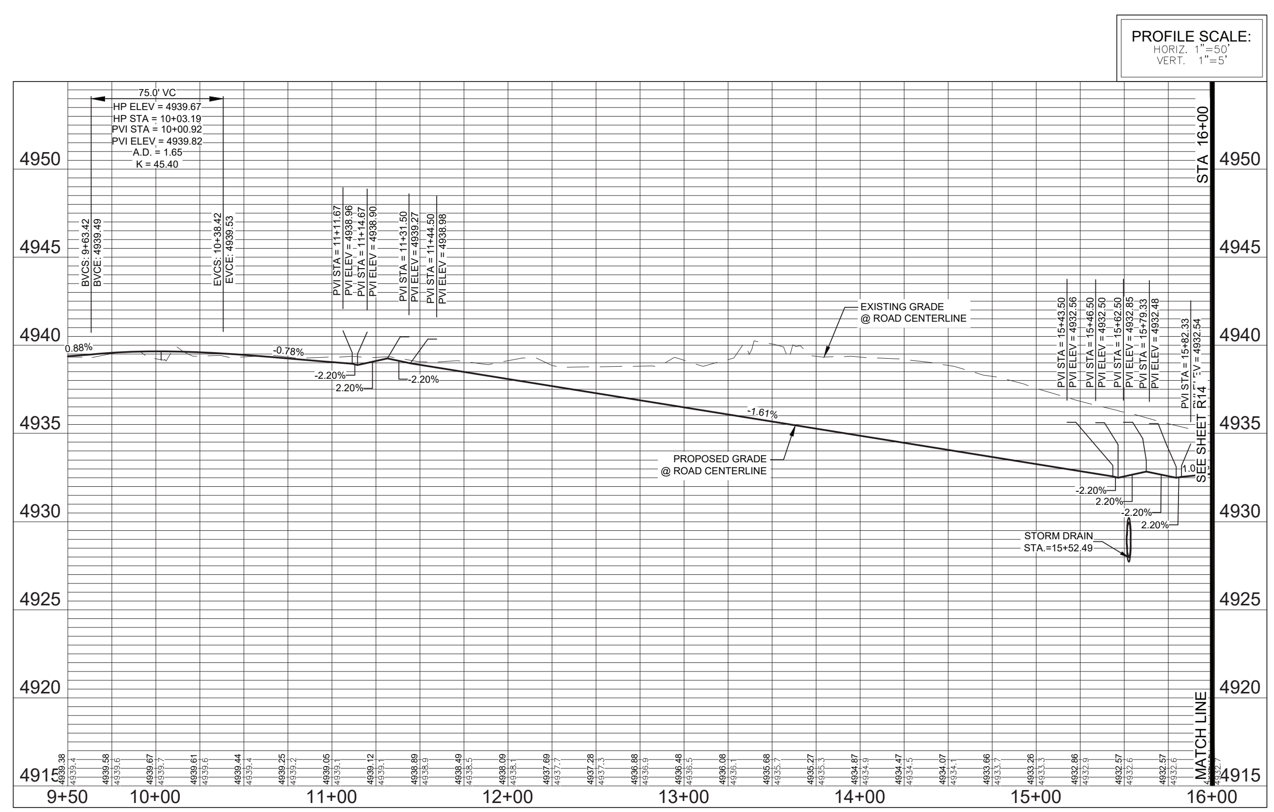
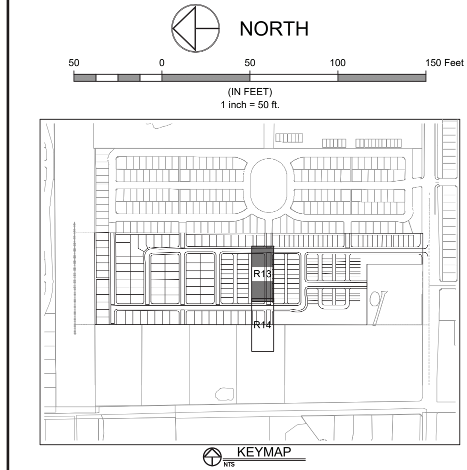
TIMBER LARK RESIDENTIAL
WEEPING WILLOW DRIVE
PLAN AND PROFILE

Sheet
R12



RED WILLOW DRIVE





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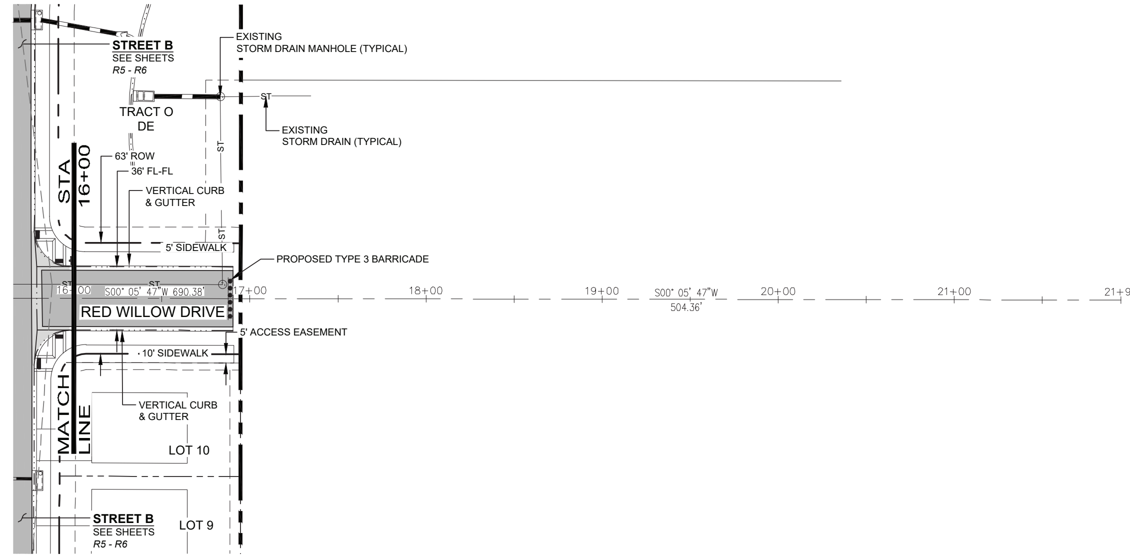
RED WILLOW DRIVE PLAN AND PROFILE

Sheet R13



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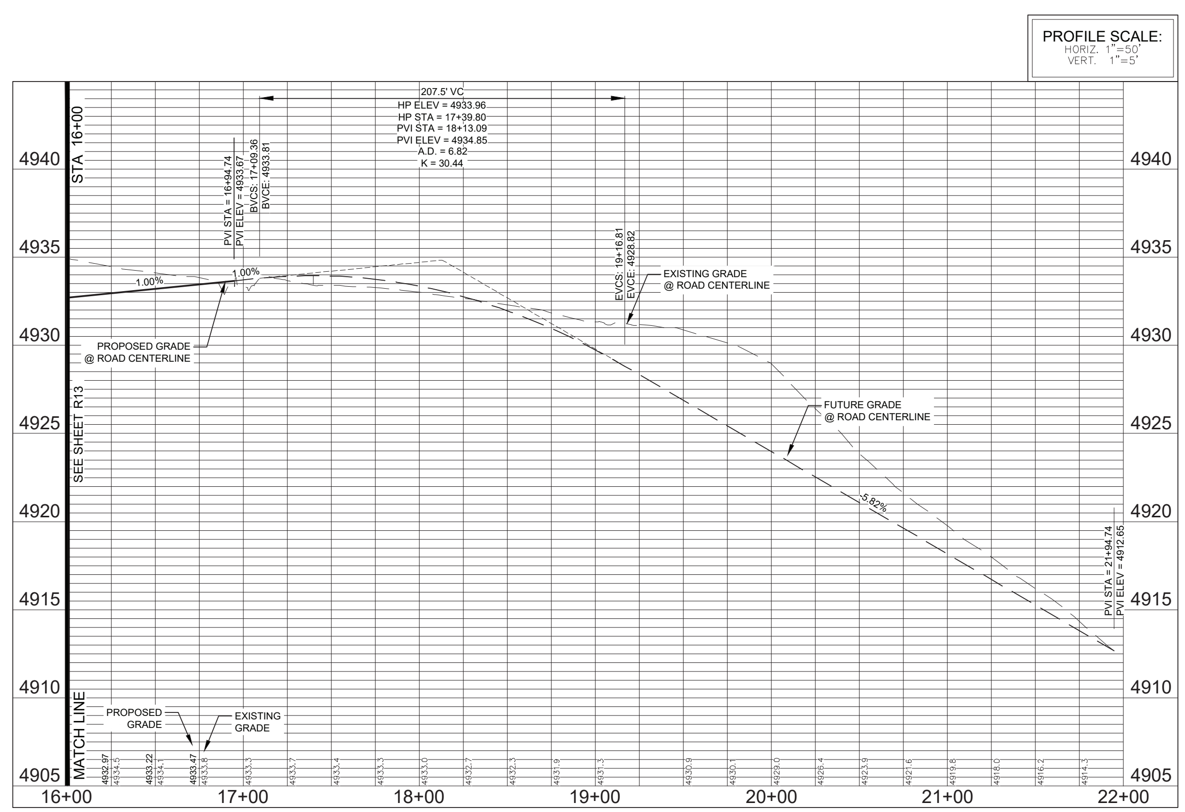
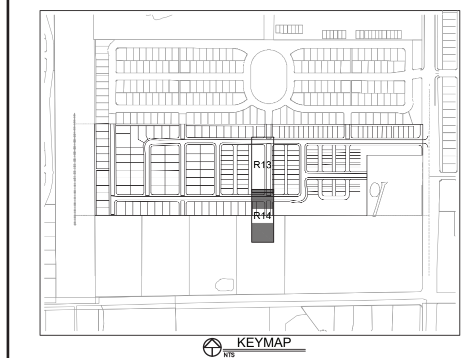


NORTH



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RED WILLOW DRIVE PLAN AND PROFILE

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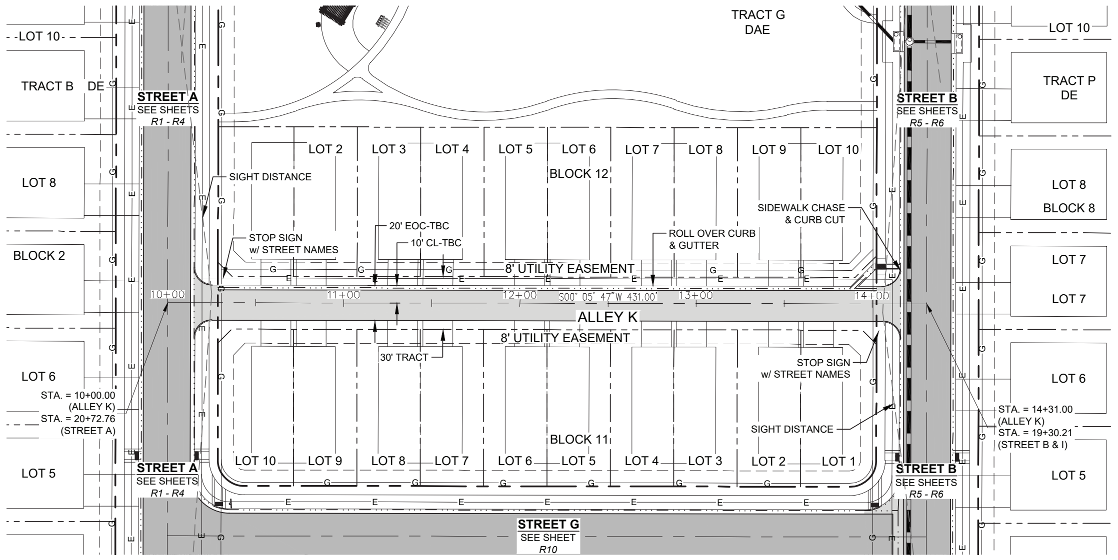
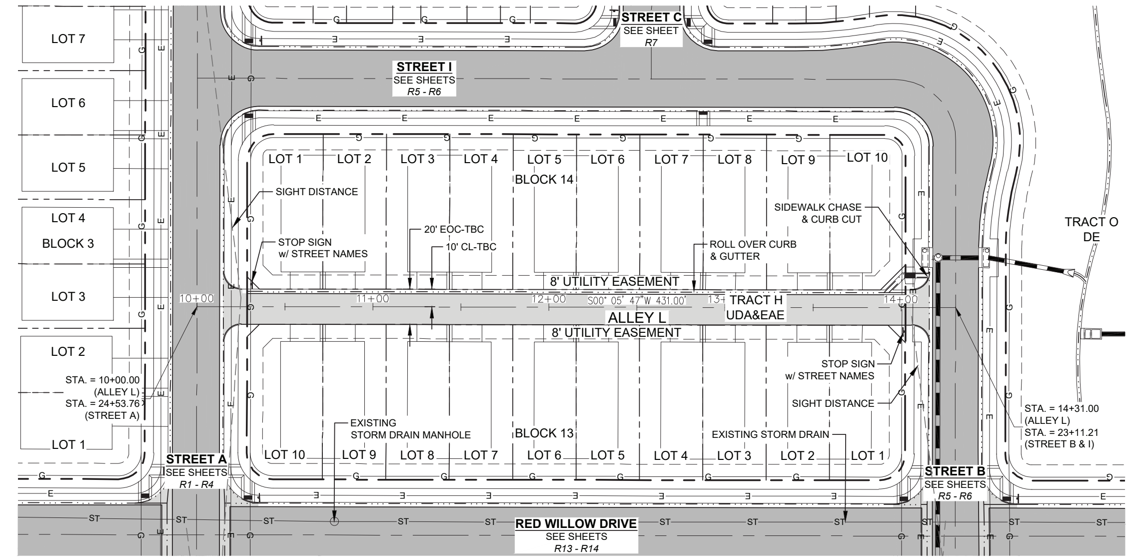


ALLEY K



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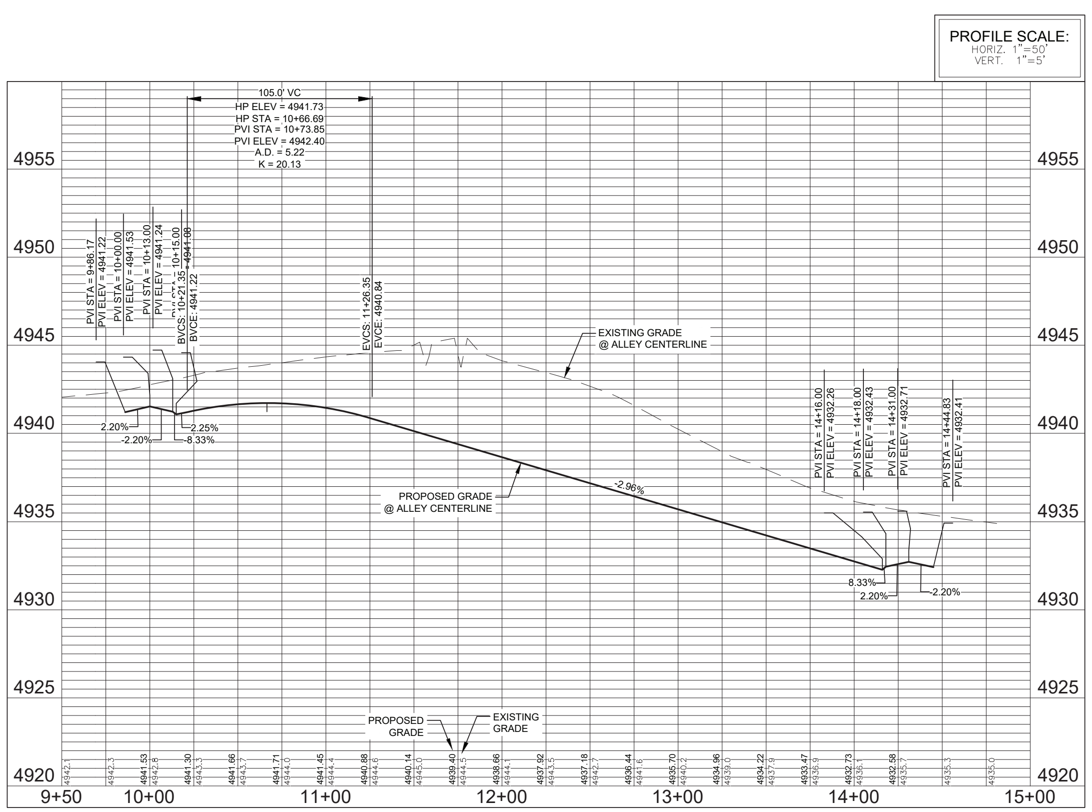

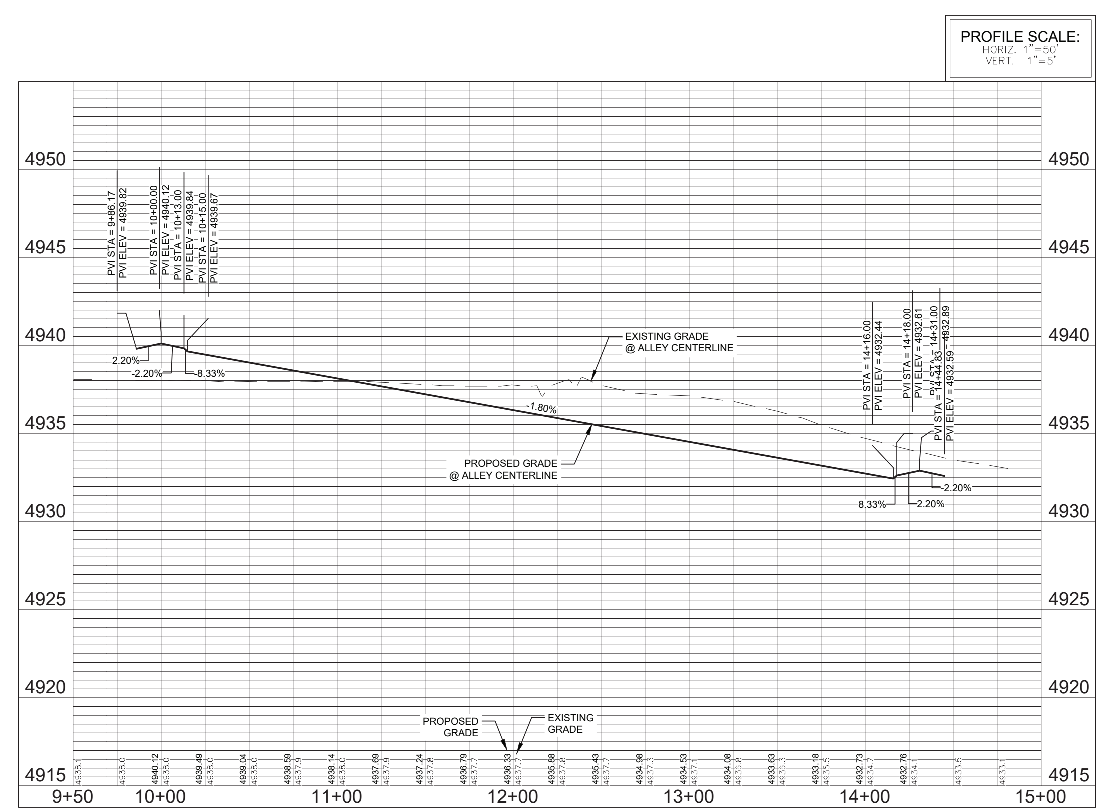

NORTH

(IN FEET)
1 inch = 50 ft.

KEYMAP

LEGEND:

- PROPOSED CURB & GUTTER
- PROPOSED CENTERLINE
- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- PROPERTY BOUNDARY
- PROPOSED LOT LINE
- EXISTING LOT LINE
- EASEMENT LINE
- SAWCUT LINE
- PROPOSED STORM SEWER
- PROPOSED STORM INLET
- EXISTING STORM SEWER
- LIMITS OF DEVELOPMENT
- PROPOSED CONCRETE CROSSPAN (TYP.)

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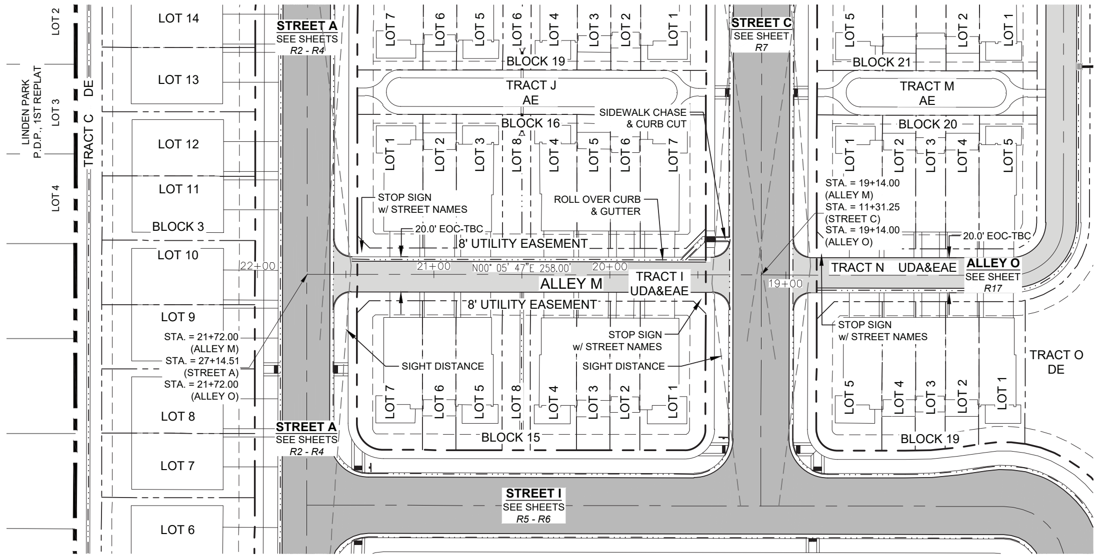
REVIEW SET
NOT FOR CONSTRUCTION
12/15/21

NORTHERN ENGINEERING
FORT COLLINS: 301 North Howes Street, Suite 100, 80521
GREELEY: 820 8th Street, 80631
970.221.4158
northernengineering.com

PROJECT: 698-004 | DATE: 12/15/21 | SCALE: 1" = 50' | DESIGNED BY: M. Ruebel | DRAWN BY: C. Fierro | P. MANAGER R. Louer

TIMBER LARK RESIDENTIAL

ALLEY K & ALLEY L PLAN AND PROFILES



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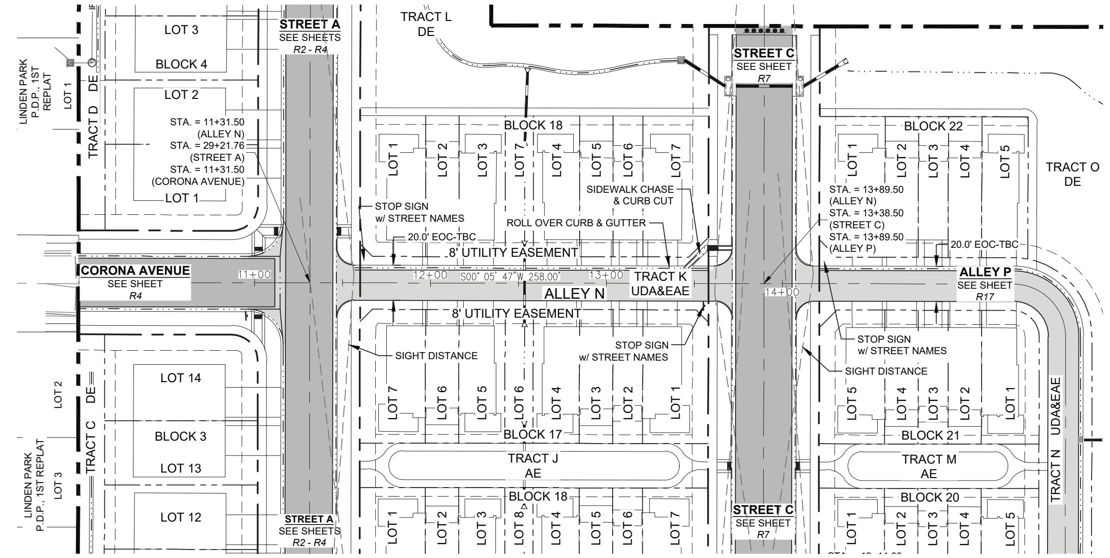

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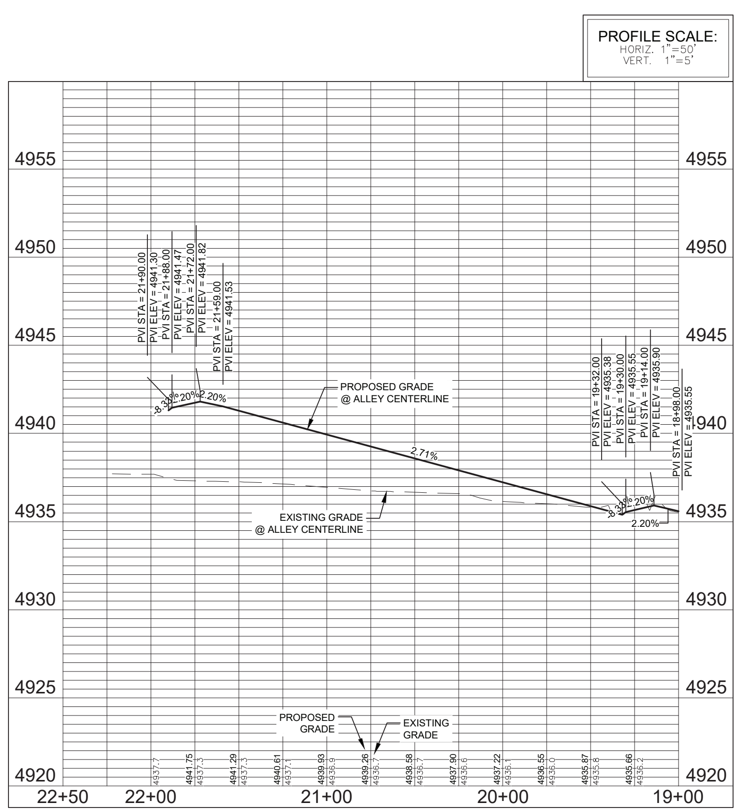
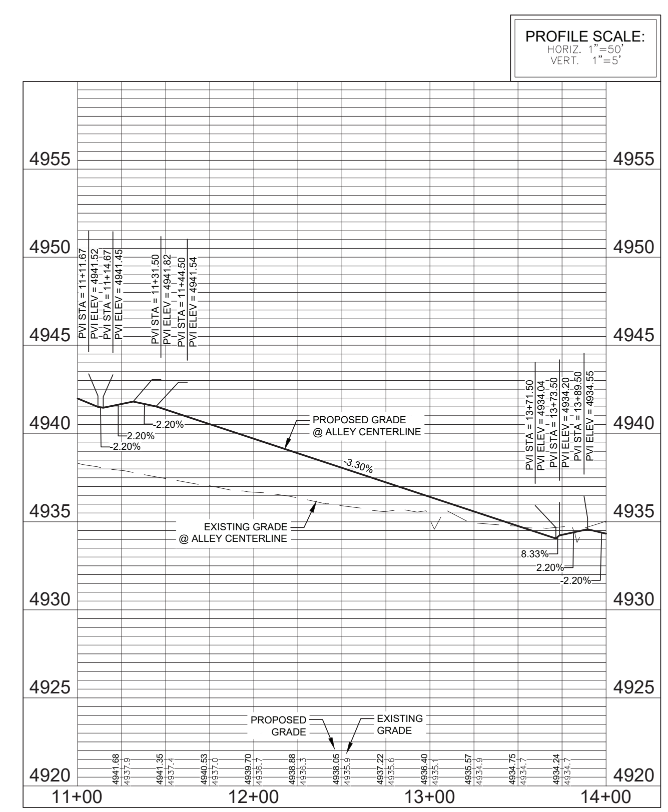
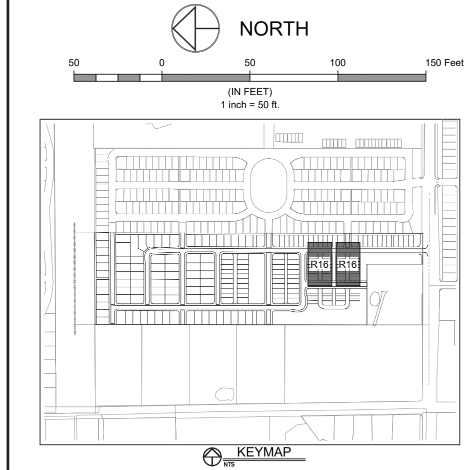




NORTH



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Revisions:

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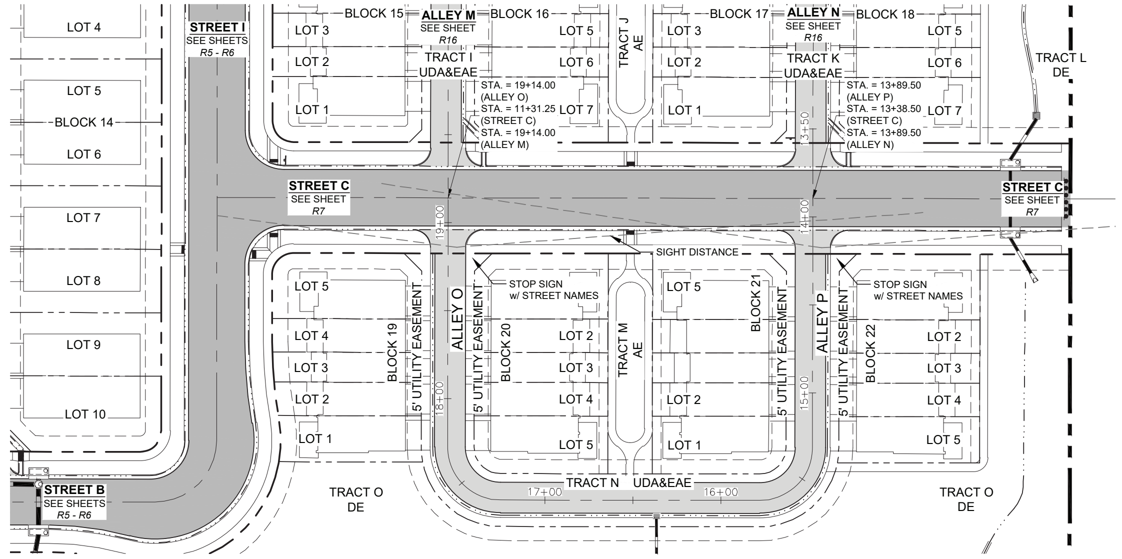
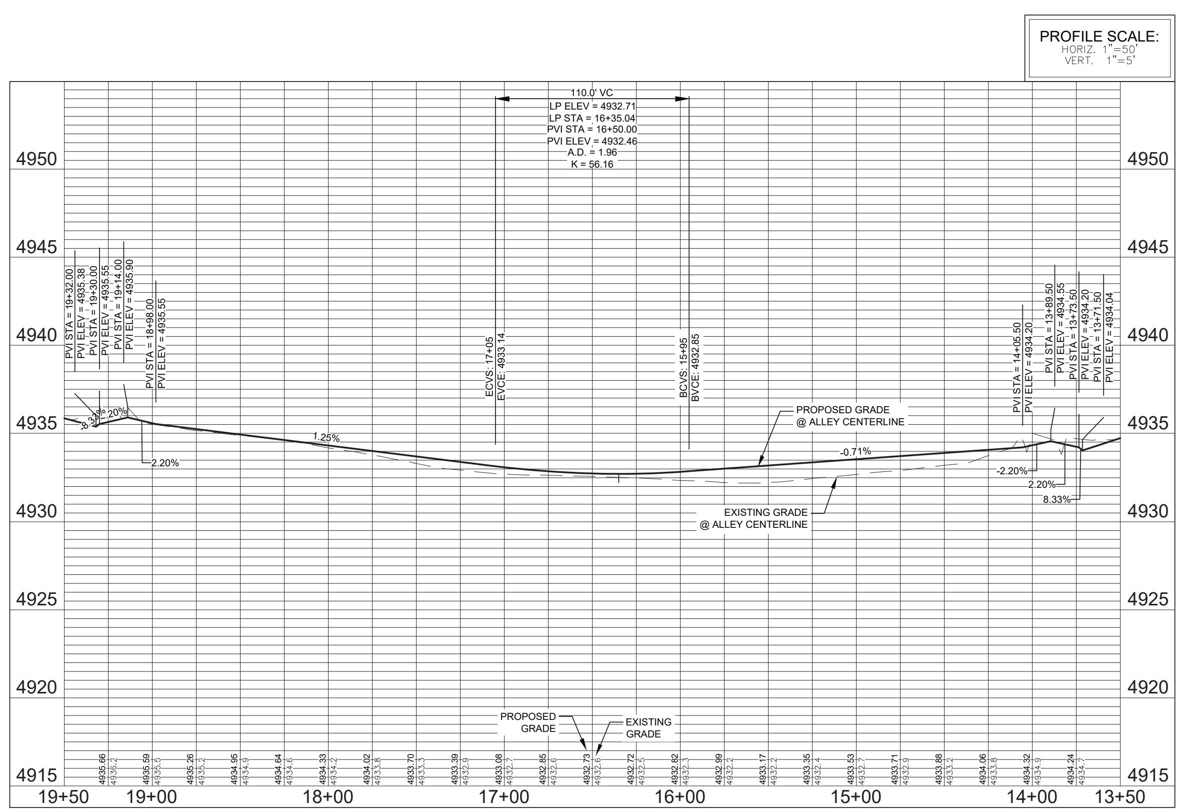
PROJECT: 698-004
DATE: 12/15/21
DESIGNED BY: M. Ruebel
SCALE: 1" = 50'
DRAWN BY: C. Fierro
P. MANAGER: R. Louer

TIMBER LARK RESIDENTIAL

ALLEY M & ALLEY N PLAN AND PROFILE

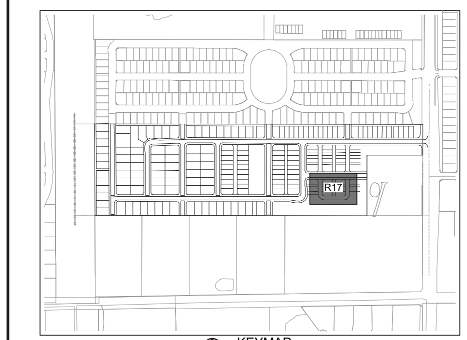


ALLEY O & ALLEY P



NORTH

(IN FEET)
1 inch = 50 ft.



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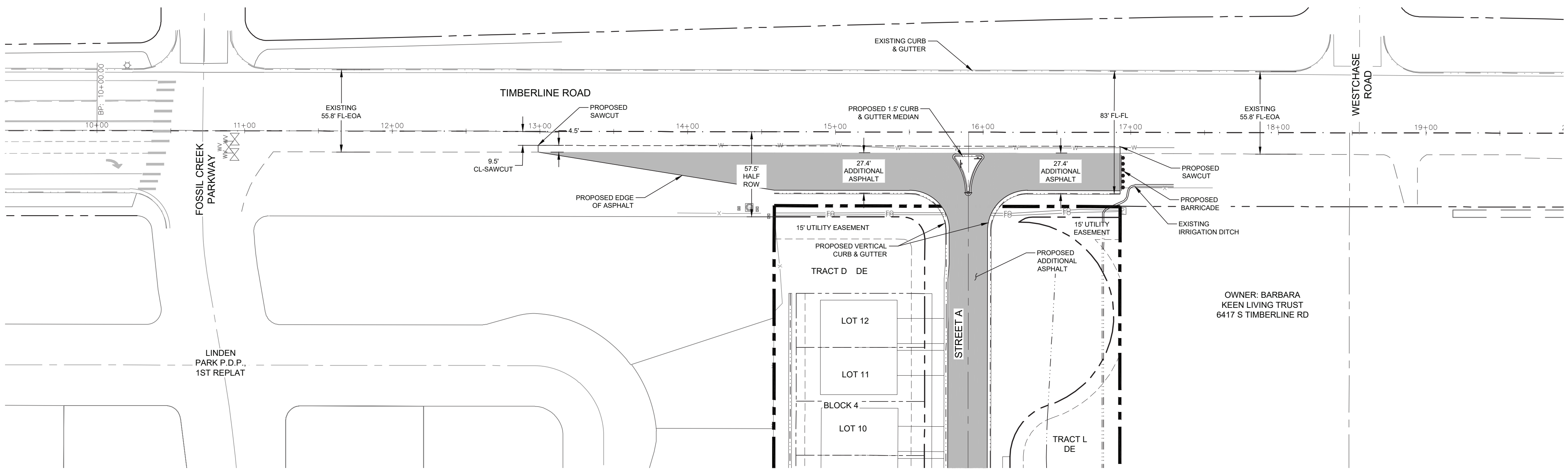
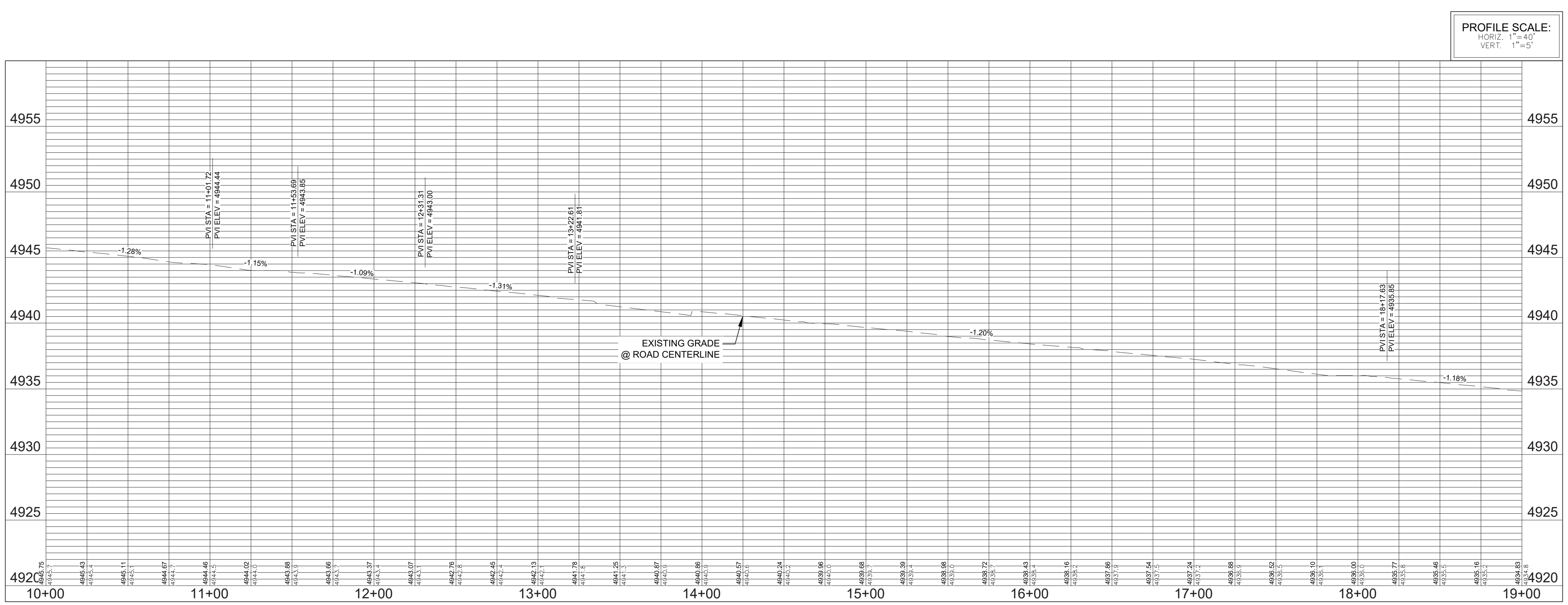
P. MANAGER: R. Louer

TIMBER LARK RESIDENTIAL

ALLEY O & ALLEY P PLAN AND PROFILE



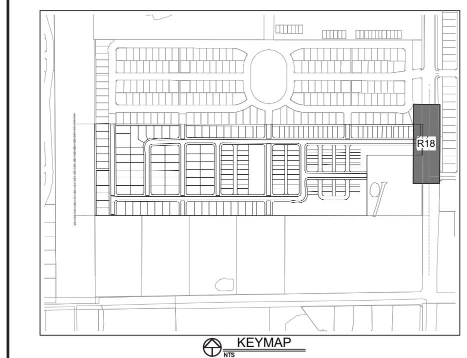
S TIMBERLINE ROAD



NORTH

40 0 40 80 120 Feet

(IN FEET)
1 inch = 40 ft.



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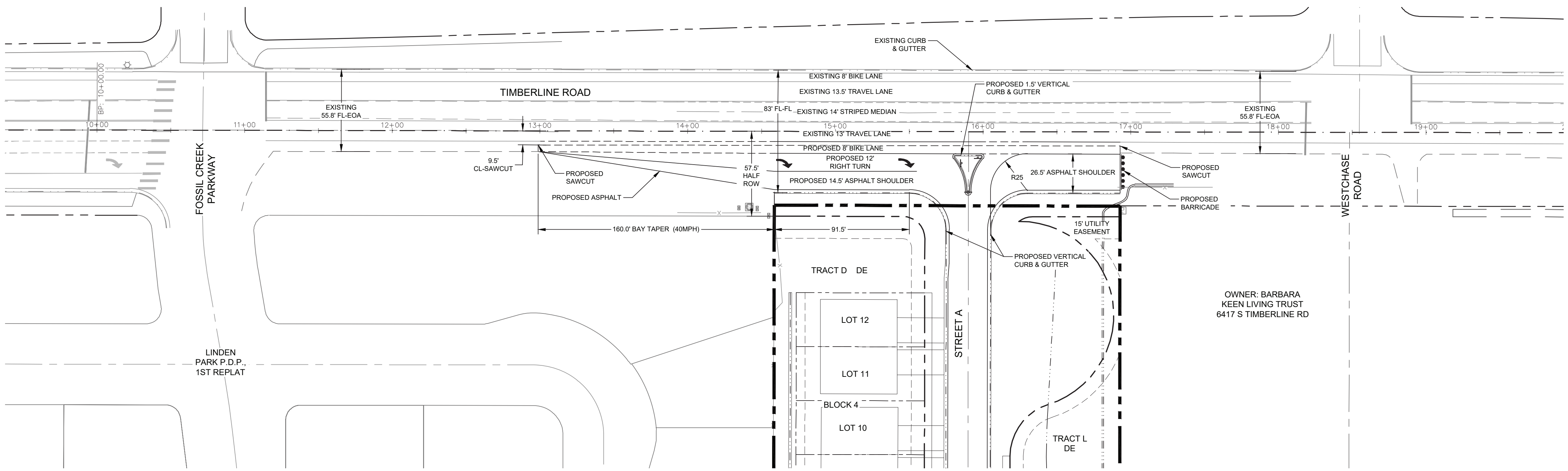
PROJECT: 698-004	DESIGNED BY: M. Ruebel	DRAWN BY: C. Fierro
DATE: 12/15/21	SCALE: 1" = 40'	P. MANAGER R. Lauer

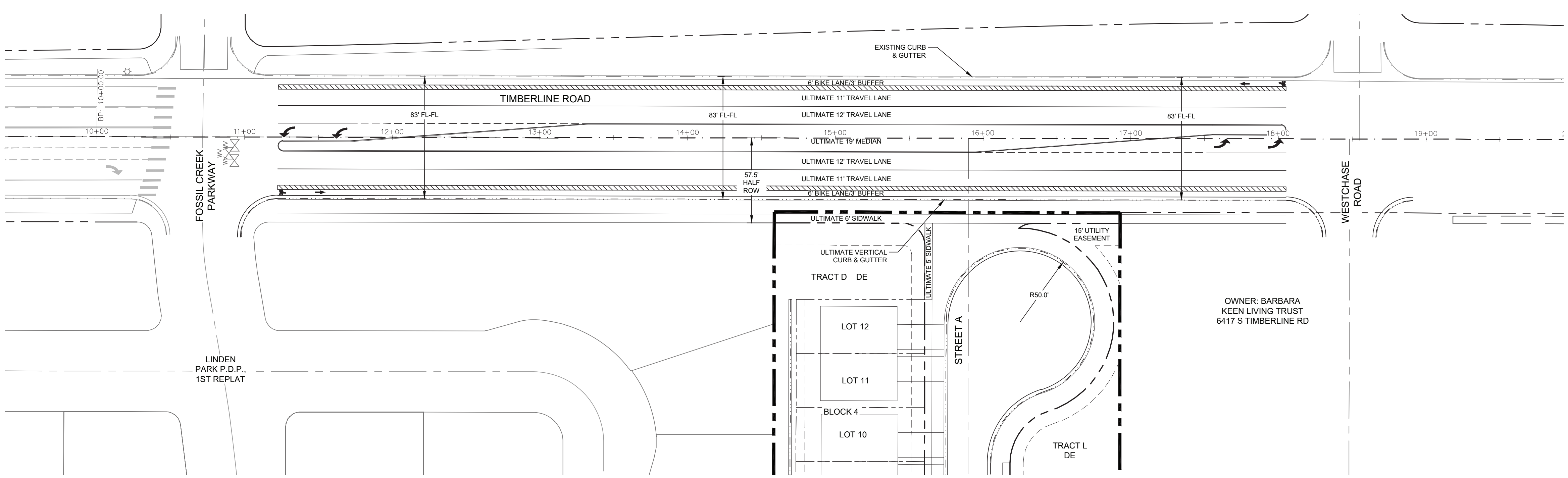
TIMBER LARK RESIDENTIAL

S TIMBERLINE ROAD PLAN AND PROFILE

Sheet
R18



A R19 TIMBERLINE ROAD - INTERIM STRIPING

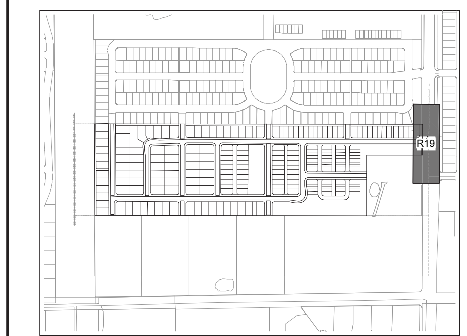


B R19 TIMBERLINE ROAD - ULTIMATE STRIPING

NORTH

40 0 40 80 120 Feet

(IN FEET)
1 inch = 40 ft.



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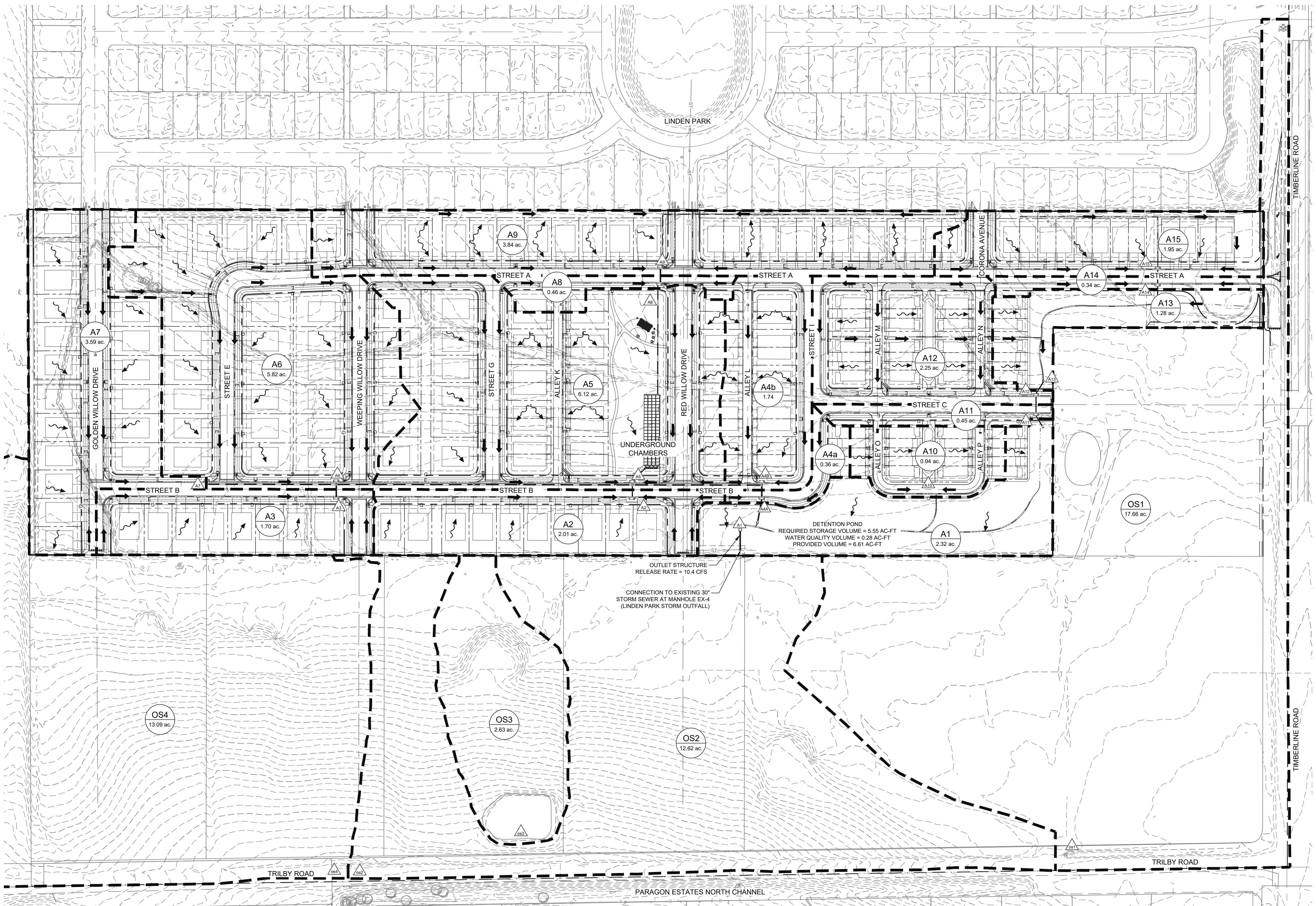
SCALE: 1" = 40'
P. MANAGER: R. Louer
PROJECT: 698-004
DESIGNED BY: M. Ruebel
DRAWN BY: C. Fierro

TIMBER LARK RESIDENTIAL
S TIMBERLINE ROAD STRIPING PLAN

Sheet R19



100 0 100 200 300

(IN FEET)
1 INCH = 100 FEET

LEGEND:

PROPOSED STORM SEWER
PROPOSED INLET
PROPOSED CONTOUR — 93
EXISTING CONTOUR — 4953
PROPOSED SWALE
PROPOSED CURB & GUTTER
PROPERTY BOUNDARY
DESIGN POINT
FLOW ARROW
DRAINAGE BASIN LABEL — BASIN DESIGNATION (A); BASIN AREA (AC) (0.22)
DRAINAGE BASIN BOUNDARY
PROPOSED SWALE SECTION

NOTES:

1. REFER TO THE PRELIMINARY DRAINAGE REPORT FOR TIMBER LARK, DATED DECEMBER 15, 2021 FOR ADDITIONAL INFORMATION.

FOR DRAINAGE REVIEW ONLY
NOT FOR CONSTRUCTION

LID Site Summary		
Total Site Area	1,532,007	sq. ft.
Total Impervious Area with LID Treatment	518,447	sq. ft.
Total Impervious Area without LID Treatment	280,506	sq. ft.
Total Impervious Area		
50% Requried Minium Area to be Treated	399,476	sq. ft.
75% Requried Minium Area to be Treated	599,214	cu. ft.
Total Treated Area	518,447	sq. ft.
Percent Impervious Treated by LID	65%	

DEVELOPED DRAINAGE SUMMARY

Design Point	Basin ID	Total Area (acres)	C2	C100	2-Yr Tc (min)	100-Yr Tc (min)	Q2 (cfs)	Q100 (cfs)
a1	A1	2.318	0.24	0.30	9.05	9.05	1.26	5.62
a2	A2	2.014	0.55	0.69	12.02	12.02	2.27	10.90
a3	A3	1.704	0.55	0.69	11.59	11.59	1.96	9.41
a4a	A4a	0.355	0.92	1.00	13.42	13.42	0.65	2.46
a4b	A4b	1.736	0.55	0.69	13.22	13.22	1.89	8.26
a6	A6	5.822	0.55	0.69	11.99	11.99	6.69	31.52
a7	A7	3.590	0.55	0.69	12.07	12.07	4.05	19.44
a8	A8	0.462	0.78	0.98	6.53	6.53	0.94	4.48
a9	A9	3.839	0.55	0.69	11.77	11.77	4.41	20.78
a10	A10	0.941	0.85	1.00	5.00	5.00	2.28	9.36
a11	A11	0.449	0.72	0.89	5.89	5.89	0.89	4.00
a12	A12	2.249	0.85	1.00	5.42	5.42	5.45	22.38
a13	A13	1.277	0.42	0.53	11.04	11.04	1.16	5.24
a14	A14	0.343	0.79	0.98	5.00	5.00	0.77	3.35
a15	A15	1.947	0.64	0.80	8.73	8.73	2.95	14.19
OFFSITE BASINS								
os1	OS1	17.659	0.20	0.25	16.90	16.90	6.29	27.81
os2	OS2	12.624	0.20	0.25	18.01	18.01	4.29	18.68
os3	OS3	2.633	0.20	0.25	13.48	13.48	1.04	4.56
os4	OS4	13.088	0.20	0.25	16.16	16.16	4.74	20.97

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Revisions:
No.

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FORT COLLINS: 301 North Howes Street, Suite 100, 80521
970.221.4158
northernengineering.com

PROJECT: 698-004
DESIGNED BY: F. Wegert
DRAWN BY: F. Wegert
DATE: 12/15/21
SCALE: 1" = 100'
P. MANAGER R. Lauer

TIMBER LARK RESIDENTIAL
DRAINAGE PLAN

Sheet
DR1

TIMBER LARK RESIDENTIAL

A TRACT OF LAND LOCATED IN THE SOUTHEAST QUARTER OF SECTION 7, TOWNSHIP 6 NORTH, RANGE 68 WEST OF THE 6TH P.M., CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO

STATEMENT OF OWNERSHIP AND SUBDIVISION:

Know all persons by these presents, that the undersigned owner(s) of the following described land:

A tract of land situate in the SE ¼ of Section 7, Township 6 North, Range 68 West of the 6th P.M., Larimer County, Colorado, which considering the East line of the said SE ¼ as bearing North and South and with all bearings contained herein relative thereto is contained within the boundary lines which begin at a point which bears N 624.80 feet, and again West 473.48 feet from the SE corner of said Section 7 and run thence West 2059.56 feet to a point on the East line of the Union Pacific Railroad; thence along said East line N 0°25' W 695.01 feet; thence East 2538.16 feet to a point on the East line of the said SE ¼; thence S 235.00 feet along the said East line; thence West 473.48 feet; thence South 460.00 feet to the Point of Beginning, County of Larimer, State of Colorado

EXCEPT that portion dedicated as a public highway in Deed of Dedication recorded May 27, 1981 in Book 2117 at Page 226, Larimer County records.

Said described tract contains 1,532,128 square feet or 35.173 acres, more or less.

For themselves and their successors in interest (collectively "Owner") have caused the above described land to be surveyed and subdivided into lots, tracts and streets as shown on this Plat to be known as TIMBER LARK RESIDENTIAL (the "Development"), subject to all easements and rights-of-way now of record or existing or indicated on this Plat. The rights and obligations of this Plat shall run with the land.

CERTIFICATE OF DEDICATION:

The Owner does hereby dedicate and convey to the City of Fort Collins, Colorado (hereafter "City"), for public use, forever, a permanent right-of-way for street purposes and the "Easements" as laid out and designated on this Plat; provided, however, that (1) acceptance by the City of this dedication of Easements does not impose upon the City a duty to maintain the Easements so dedicated, and (2) acceptance by the City of this dedication of streets does not impose upon the City a duty to maintain streets so dedicated until such time as the provisions of the Maintenance Guarantee have been fully satisfied. The streets dedicated on this Plat are the fee property of the City as provided in Section 31-23-107 C.R.S. The City's rights under the Easements include the right to install, operate, access, maintain, repair, reconstruct, remove and replace within the Easements public improvements consistent with the intended purpose of the Easements; the right to install, maintain and use gates in any fences that cross the Easements; the right to mark the location of the Easements with suitable markers; and the right to permit other public utilities to exercise these same rights. Owner reserves the right to use the Easements for purposes that do not interfere with the full enjoyment of the rights hereby granted. The City is responsible for maintenance of its own improvements and for repairing any damage caused by its activities in the Easements, but by acceptance of this dedication, the City does not accept the duty of maintenance of the Easements, or of improvements in the Easements that are not owned by the City. Owner will maintain the surface of the Easements in a sanitary condition in compliance with any applicable weed, nuisance or other legal requirements.

Except as expressly permitted in an approved plan of development or other written agreement with the City, Owner will not install on the Easements, or permit the installation on the Easements, of any building, structure, improvement, fence, retaining wall, sidewalk, tree or other landscaping (other than usual and customary grasses and other ground cover). In the event such obstacles are installed in the Easements, the City has the right to require the Owner to remove such obstacles from the Easements. If Owner does not remove such obstacles, the City may remove such obstacles without any liability or obligation for repair and replacement thereof, and charge the Owner the City's costs for such removal. If the City chooses not to remove the obstacles, the City will not be liable for any damage to the obstacles or any other property to which they are attached.

The rights granted to the City by this Plat inure to the benefit of the City's agents, licensees, permittees and assigns.

OWNER:

BY: _____

STATE OF COLORADO)
)ss.
COUNTY OF LARIMER)

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by

_____ as _____ of _____.

Witness my hand and official seal

My commission expires: _____

_____
Notary Public

LIENHOLDER:

BY: _____

STATE OF COLORADO)
)ss.
COUNTY OF LARIMER)

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by

_____ as _____ of _____.

Witness my hand and official seal

My commission expires: _____

_____
Notary Public

SOUTH FORT COLLINS SANITATION DISTRICT
EASEMENT ACCEPTANCE

REVIEWED BY: _____
GENERAL MANAGER

DATE: _____

MAINTENANCE GUARANTEE:

The Owner hereby warrants and guarantees to the City, for a period of two (2) years from the date of completion and first acceptance by the City of the improvements warranted hereunder, the full and complete maintenance and repair of the improvements to be constructed in connection with the Development which is the subject of this Plat. This warranty and guarantee is made in accordance with the City Land Use Code and/or the Transitional Land Use Regulations, as applicable. This guarantee applies to the streets and all other appurtenant structures and amenities lying within the rights-of-way, Easements and other public properties, including, without limitation, all curbing, sidewalks, bike paths, drainage pipes, culverts, catch basins, drainage ditches and landscaping. Any maintenance and/or repair required on utilities shall be coordinated with the owning utility company or department.

The Owner shall maintain said improvements in a manner that will assure compliance on a consistent basis with all construction standards, safety requirements and environmental protection requirements of the City. The Owner shall also correct and repair, or cause to be corrected and repaired, all damages to said improvements resulting from development-related or building-related activities. In the event the Owner fails to correct any damages within thirty (30) days after written notice thereof, then said damages may be corrected by the City and all costs and charges billed to and paid by the Owner. The City shall also have any other remedies available to it as authorized by law. Any damages which occurred prior to the end of said two (2) year period and which are unrepaired at the termination of said period shall remain the responsibility of the Owner.

REPAIR GUARANTEE:

In consideration of the approval of this final Plat and other valuable consideration, the Owner does hereby agree to hold the City harmless for a five (5) year period, commencing upon the date of completion and first acceptance by the City of the improvements to be constructed in connection with the development which is the subject of this Plat, from any and all claims, damages, or demands arising on account of the design and construction of public improvements of the property shown herein; and the Owner furthermore commits to make necessary repairs to said public improvements, to include, without limitation, the roads, streets, fills, embankments, ditches, cross pans, sub-drains, culverts, walls and bridges within the right-of-way, Easements and other public properties, resulting from failures caused by design and/or construction defects. This agreement to hold the City harmless includes defects in materials and workmanship, as well as defects caused by or consisting of settling trenches, fills or excavations.

Further, the Owner warrants that he/she owns fee simple title to the property shown hereon and agrees that the City shall not be liable to the Owner or his/her successors in interest during the warranty period, for any claim of damages resulting from negligence in exercising engineering techniques and due caution in the construction of cross drains, drives, structures or buildings, the changing of courses of streams and rivers, flooding from natural creeks and rivers, and any other matter whatsoever on private property. Any and all monetary liability occurring under this paragraph shall be the liability of the Owner. I further warrant that I have the right to convey said land according to this Plat.

NOTICE OF OTHER DOCUMENTS:

All persons take notice that the Owner has executed certain documents pertaining to this Development which create certain rights and obligations of the Development, the Owner and/or subsequent Owners of all or portions of the Development site, many of which obligations constitute promises and covenants that, along with the obligations under this Plat, run with the land. The said documents may also be amended from time to time and may include, without limitation, the Development Agreement, Site And Landscape Covenants, Final Site Plan, Final Landscape Plan, and Architectural Elevations, which documents are on file in the office of the clerk of the City and should be closely examined by all persons interested in purchasing any portion of the Development site.

ATTORNEY'S CERTIFICATION

I hereby certify that this Subdivision Plat has been duly executed as required pursuant to Section 2.2.3(C)(3)(a) through (e) inclusive of the Land Use Code of the City of Fort Collins and that all persons signing this Subdivision Plat on behalf of a corporation or other entity are duly authorized signatories under the laws of the State of Colorado. This Certification is based upon the records of the Clerk and Recorder of Larimer County, Colorado as of the date of execution of the Plat and other information discovered by me through reasonable inquiry and is limited as authorized by Section 2.2.3(C)(3)(f) of the Land Use Code.

Attorney: _____

Address: _____

Registration No.: _____

APPROVED AS TO FORM, CITY ENGINEER

By the City Engineer of the City of Fort Collins, Colorado this _____day of _____ A.D., 20_____.

_____
City Engineer

DIRECTOR OF COMMUNITY DEVELOPMENT AND NEIGHBORHOOD SERVICES APPROVAL

By the Director of Community Development and Neighborhood Services the City of Fort Collins, Colorado this _____ day of _____ A.D., 20_____.

_____
Director of Community Development and Neighborhood Services

SURVEYOR'S STATEMENT

I, Robert C. Tessely, a Colorado Registered Professional Land Surveyor do hereby state that this Subdivision Plat was prepared from an actual survey under my personal supervision, that the monumentation as indicated hereon were found or set as shown, and that the foregoing plat is an accurate representation thereof, all to the best of my knowledge, information and belief.

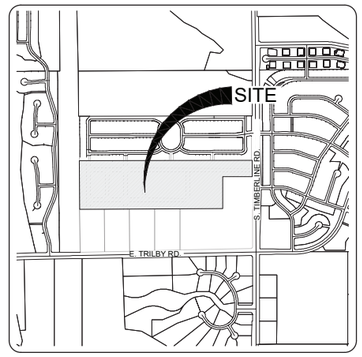
For and on Behalf of Northern Engineering
Robert C. Tessely
Colorado Registered Professional
Land Surveyor No. 38470

OWNER/APPLICANT
AADT Land Holdings, LLC
Alex Aigner
13005 Lowell Boulevard
Broomfield, CO 80020

PLANNER/
LANDSCAPE ARCHITECT
Ripley Design
Katy Thompson, PLA, ULI
419 Canyon Avenue Suite 200
Fort Collins, Colorado 80521
(970) 498 -2665

SITE ENGINEER
Northern Engineering Services, Inc.
Robbie Lauer
301 North Howes Street, Suite 100
Fort Collins, Colorado 80521
(970) 221-4158

SITE SURVEYOR
Northern Engineering Services, Inc.
Bob Tessely, PLS
301 North Howes Street, Suite 100
Fort Collins, Colorado 80521
(970) 221-4158



NORTH

VICINITY MAP
1" = 1000'

NOTICE

ALL RESPONSIBILITIES AND COSTS OF OPERATION, MAINTENANCE AND RECONSTRUCTION OF THE PRIVATE STREETS AND/OR DRIVES LOCATED ON THE PRIVATE PROPERTY THAT IS THE SUBJECT OF THIS PLAT SHALL BE BORNE BY THE OWNERS OF SAID PROPERTY, EITHER INDIVIDUALLY, OR COLLECTIVELY, THROUGH A PROPERTY OWNERS' ASSOCIATION, IF APPLICABLE. THE CITY OF FORT COLLINS SHALL HAVE NO OBLIGATION OF OPERATION, MAINTENANCE OR RECONSTRUCTION OF SUCH PRIVATE STREETS AND/OR DRIVES NOR SHALL THE CITY HAVE ANY OBLIGATION TO ACCEPT SUCH STREETS AND/OR DRIVES AS PUBLIC STREETS OR DRIVES.

SURVEYOR NOTES:

1) The Basis of Bearings is the East line of the Southeast Quarter of Section 7, Township 6 North, Range 68 West of the 6th P.M. as bearing North 00°06'07" East, and monumented as shown on drawing.

2) For all information regarding easements, right-of-way or title of record, Northern Engineering relied upon Commitment No. F0637116-383-TOW, dated May 1, 2019, prepared by Fidelity National Title Insurance Company. A current Title Commitment will be provided to the surveyor prior to final plat.

3) The lineal unit of measurement for this plat is U.S. Survey Feet.

4) Northern Engineering or the Professional Land Surveyor listed hereon, does not have the expertise to address mineral rights, and recommends the owner retain an expert to address these matters. Northern Engineering or the Professional Land Surveyor listed heron assumes no responsibility for the mineral rights upon the subject property.

5) A copy of the title commitment and the documents contained therein were provided to the owner, client and attorney listed hereon for their use and review.

6) Not all documents listed in the title commitment are plottable or definable by their terms. All easements that are definable by their descriptions are shown hereon with sufficient data to establish their position. Owner, Client and others should refer to the title commitment and those documents listed therein for a true understanding of all rights of way, easements, encumbrances, interests and title of record concerning the subject property.

7) For easements created by separate document and shown hereon refer to record document for specific terms.

8) Easements and other record documents shown or noted hereon were examined as to location and purpose and were not examined as to restrictions, exclusions, conditions, obligations, terms, or as to the right to grant the same.

9) Adjacent property owner information per the Larimer County Land information Locator.

10) Per CRS 38-51-105 (3)(a), (3)(b), (4)(b), (4)(c), & 5, the Developer/Owner of the subdivision plat has the requirement of providing monumentation of the interior corners created by this platting procedure within one year of the effective date of a sales contract. The Surveyor of record of said subdivision plat has only the required responsibility of providing for the on the ground monumentation of the external boundary of the subdivision plat.

11) There may be other documents related to the subject property that were not discovered by the land surveyor and or title company listed hereon.

12) The word "certify" or "certification" as shown and used hereon is an expression of professional opinion regarding the facts of the survey, and does not constitute a warranty or guaranty, expressed or implied. DORA Bylaws and Rules (4 CCR 730 1.6 B 2).

13) The Professional opinion of the Surveyor is not a determination of law, nor a matter of fact.

14) The adjoining rights of way are depicted hereon for reference only and as requested by the City of Fort Collins. Those areas depicted outside of the subject property boundary are for reference purposes only.

15) The subject parcel is also known as Tract B of the Exemption Plat recorded at Book 2113, Page 1682 of the Larimer County Clerk and Recorder.

16) This survey is a draft only. Monuments have not been set or upgraded. Monuments will be set and/or upgraded prior to finalizing and/or recording. "Set" corner information depicted hereon is for reference purposes only. This note will be removed prior to the surveyor signing the survey.

NOTES AT THE REQUEST OF THE CITY OF FORT COLLINS:

1) Notes as requested by the City of Fort Collins and listed hereon are being required as a condition of approval by the City of Fort Collins. The notes, as they appear hereon, were forwarded to Northern Engineering by the City of Fort Collins and shall not be construed as the act or practice of land surveying as defined by the State of Colorado. These notes simply appear hereon as a directive of the City of Fort Collins.

2) There shall be no private conditions, covenants or restrictions that prohibit or limit the installation of resource conserving equipment or landscaping that are allowed by Sections 12-120 - 12-122 of the City code.

3) FLOOD ZONE DESIGNATION: According to FIRM Panel 08069C1200F for Larimer County, dated December 12, 2006, this tract lies within a FEMA designated area of minimal flood hazard (Zone X).

SECTION: 7
TOWNSHIP: 6 N
RANGE: 68 W of the 6th PM

NORTHERN ENGINEERING
FORT COLLINS, 301 North Howes Street, Suite 100, 80521
GREELEY, 820 8th Street, 80631
970.221.4158
northern@ngineering.com

DATE: 12/15/21
SCALE: As shown
REVIEWED BY: R. Tessely
PROJECT: 698-004
CLIENT: AADT Land Holdings
DRAWN BY: L. Smith

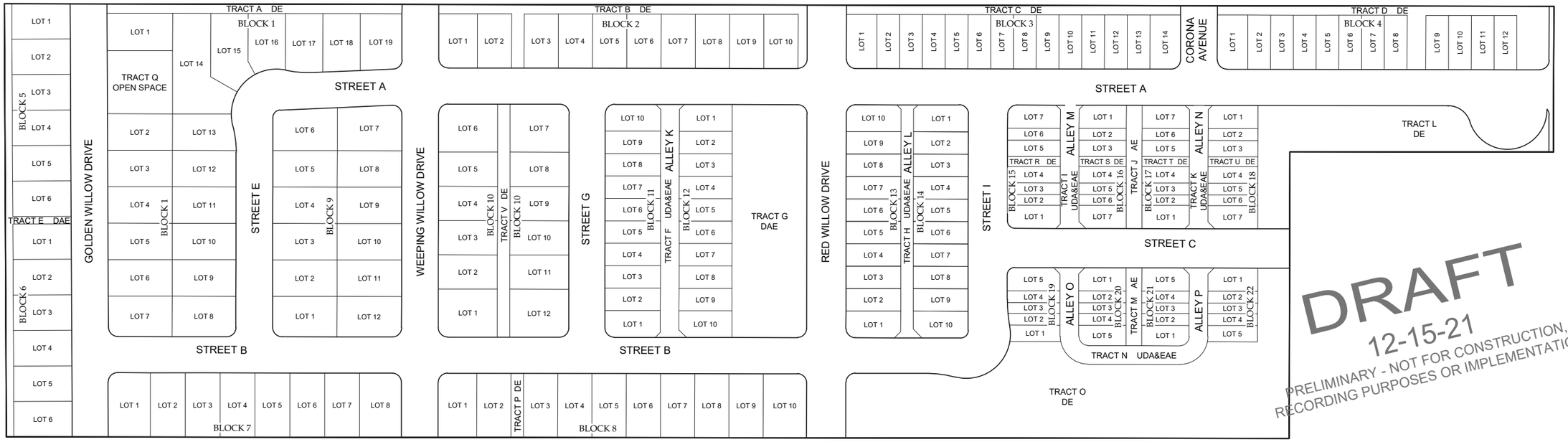
TIMBER LARK RESIDENTIAL
CITY OF FORT COLLINS
STATE OF COLORADO

Sheet
1
Of 8 Sheets

S:\Survey Jobs\698-004\Dwg\Plat\698-004 PLAT.dwg, 12/14/2021 1:13:33 PM, 1:1

TIMBER LARK RESIDENTIAL

A TRACT OF LAND LOCATED IN THE SOUTHEAST QUARTER OF SECTION 7, TOWNSHIP 6 NORTH, RANGE 68 WEST OF THE 6TH P.M., CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO



DRAFT
12-15-21
PRELIMINARY - NOT FOR CONSTRUCTION, RECORDING PURPOSES OR IMPLEMENTATION

LEGEND

	PROPOSED RIGHT-OF-WAY	UE	UTILITY EASEMENT
	BOUNDARY LINE	DE	DRAINAGE EASEMENT
	LOT LINE	AE	ACCESS EASEMENT
		DAE	DRAINAGE & ACCESS EASEMENT
		UDA&EAE	UTILITY, DRAINAGE, ACCESS & EMERGENCY ACCESS EASEMENT

NORTH

80 0 80 160 240Feet

(IN U.S. SURVEY FEET)
1 inch = 80 ft.

LAND USE TABLE

PARCEL	AREA		PERCENT	USE	OWNED & MAINTAINED BY
TRACT A	7,107 S.F.	0.16 A.C.	0.46%	Drainage Easement	HOA
TRACT B	11,827 S.F.	0.27 A.C.	0.77%	Drainage Easement	HOA
TRACT C	8,048 S.F.	0.18 A.C.	0.53%	Drainage Easement	HOA
TRACT D	15,257 S.F.	0.35 A.C.	0.99%	Drainage Easement	HOA
TRACT E	9,472 S.F.	0.22 A.C.	0.62%	Drainage & Access Easement	HOA
TRACT F	11,391 S.F.	0.26 A.C.	0.74%	Utility, Drainage, Access & Emergency Access Easement	HOA
TRACT G	44,783 S.F.	1.03 A.C.	2.92%	Drainage & Access Easement	HOA
TRACT H	7,680 S.F.	0.18 A.C.	0.50%	Utility, Drainage, Access & Emergency Access Easement	HOA
TRACT I	6,077 S.F.	0.14 A.C.	0.40%	Utility, Drainage, Access & Emergency Access Easement	HOA
TRACT J	4,869 S.F.	0.11 A.C.	0.33%	Access Easement	HOA
TRACT K	6,077 S.F.	0.14 A.C.	0.40%	Utility, Drainage, Access & Emergency Access Easement	HOA
TRACT L	33,669 S.F.	0.77 A.C.	2.20%	Drainage Easement	HOA
TRACT M	3,156 S.F.	0.07 A.C.	0.21%	Access Easement	HOA
TRACT N	14,045 S.F.	0.32 A.C.	0.92%	Utility, Drainage, Access & Emergency Access Easement	HOA
TRACT O	95,259 S.F.	2.19 A.C.	6.22%	Drainage Easement	HOA
TRACT P	2,051 S.F.	0.05 A.C.	0.13%	Drainage Easement	HOA
TRACT Q	10,837 S.F.	0.24 A.C.	0.69%	Open Space	HOA
TRACT R	1,356 S.F.	0.03 A.C.	0.09%	Drainage Easement	HOA
TRACT S	1,215 S.F.	0.03 A.C.	0.08%	Drainage Easement	HOA
TRACT T	1,215 S.F.	0.03 A.C.	0.08%	Drainage Easement	HOA
TRACT U	1,280 S.F.	0.03 A.C.	0.08%	Drainage Easement	HOA
TRACT V	7,460 S.F.	0.17 A.C.	0.49%	Drainage Easement	HOA
LOTS (197)	786,568 S.F.	18.33 A.C.	52.12%	Single-family Residential	Property Owner
ROW	429,627 S.F.	9.86 A.C.	28.04%	Right of Way	City of Fort Collins
TOTAL	1,532,126 S.F.	35.17 A.C.	100.00%		

LOT & BLOCK TABLE

BLOCK	# OF LOTS
1	19
2	10
3	14
4	12
5	6
6	6
7	8
8	10
9	12
10	12
11	10
12	10
13	10
14	10
15	7
16	7
17	7
18	7
19	5
20	5
21	5
22	5
TOTAL LOTS	197

CURVE TABLE

CURVE	DELTA	RADIUS	LENGTH	BEARING	CHORD
C1	90°49'35"	34.01'	53.91'	N44°40'38"E	48.44'
C2	89°59'40"	15.00'	23.56'	S45°05'57"W	21.21'
C3	90°00'00"	15.00'	23.56'	N44°54'13"W	21.21'
C4	90°00'00"	15.00'	23.56'	S45°05'47"W	21.21'
C5	90°00'00"	15.00'	23.56'	N44°54'13"W	21.21'
C6	88°05'23"	15.00'	23.06'	S44°08'28"W	20.86'
C7	90°00'00"	15.00'	23.56'	N44°54'13"W	21.21'
C8	87°25'01"	15.00'	22.89'	S43°48'17"W	20.73'
C9	14°53'52"	165.50'	43.03'	N85°02'17"W	42.91'
C10	163°18'28"	63.50'	180.99'	N80°59'05"E	125.65'
C11	1°05'20"	165.50'	3.15'	S00°26'53"E	3.15'
C12	90°00'00"	15.00'	23.56'	S45°05'47"W	21.21'
C13	72°32'32"	36.50'	46.21'	S53°37'57"E	43.19'
C14	90°22'15"	15.00'	23.66'	N44°54'39"E	21.28'
C15	87°25'01"	12.00'	18.31'	N43°48'17"E	16.58'
C16	92°34'59"	15.00'	24.24'	S46°11'43"E	21.69'
C17	90°00'00"	15.00'	23.56'	S45°05'47"W	21.21'
C18	90°00'00"	15.00'	23.56'	N44°54'13"W	21.21'
C19	90°00'00"	15.00'	23.56'	S44°54'13"E	21.21'
C20	90°00'00"	15.00'	23.56'	N45°05'47"E	21.21'
C21	90°00'00"	15.00'	23.56'	N44°54'13"W	21.21'
C22	90°00'00"	15.00'	23.56'	N45°05'47"E	21.21'
C23	90°00'00"	15.00'	23.56'	S44°54'13"E	21.21'

CURVE TABLE

CURVE	DELTA	RADIUS	LENGTH	BEARING	CHORD
C24	90°00'00"	15.00'	23.56'	S45°05'47"W	21.21'
C25	90°00'00"	15.00'	23.56'	N44°54'13"W	21.21'
C26	90°00'00"	15.00'	23.56'	N45°05'47"E	21.21'
C27	90°00'00"	15.12'	23.76'	S45°22'17"E	21.39'
C28	90°00'00"	15.00'	23.56'	S45°05'47"W	21.21'
C29	90°00'00"	15.00'	23.56'	N44°54'13"W	21.21'
C30	90°00'00"	15.00'	23.56'	N45°05'47"E	21.21'
C31	90°00'00"	15.00'	23.56'	S44°54'13"E	21.21'
C32	90°00'00"	12.00'	18.85'	S45°05'47"W	16.97'
C33	90°00'00"	15.00'	23.56'	S44°54'13"E	21.21'
C34	90°00'00"	15.00'	23.56'	N45°05'47"E	21.21'
C35	14°55'46"	166.50'	43.38'	S82°26'21"E	43.26'
C36	115°07'09"	70.50'	141.65'	N47°27'58"E	119.00'
C37	10°11'23"	246.50'	43.84'	N04°59'55"W	43.78'
C38	90°00'00"	12.00'	18.85'	N45°06'30"E	16.97'
C39	90°00'00"	12.00'	18.85'	N44°54'13"W	16.97'
C40	90°00'00"	15.00'	23.56'	N45°05'47"E	21.21'
C41	38°33'27"	15.00'	10.09'	S19°10'37"E	9.90'
C42	90°00'00"	45.00'	70.69'	S44°54'13"E	63.64'
C43	90°00'00"	45.00'	70.69'	N45°05'47"E	63.64'
C44	95°57'10"	70.50'	118.07'	N57°02'57"E	104.74'
C45	19°09'58"	70.50'	23.58'	N00°30'37"W	23.47'
C46	0°39'19"	246.50'	2.82'	N09°45'57"W	2.82'

CURVE TABLE

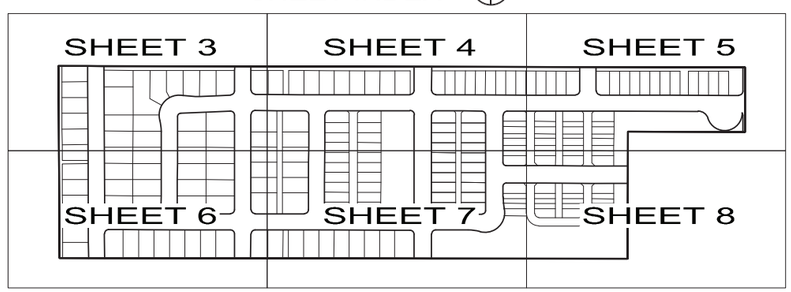
CURVE	DELTA	RADIUS	LENGTH	BEARING	CHORD
C47	4°27'13"	246.50'	19.16'	N07°12'41"W	19.16'
C48	3°57'29"	246.50'	17.03'	N03°00'20"W	17.02'
C49	1°07'22"	246.50'	4.83'	N00°27'55"W	4.83'
C50	10°53'17"	45.00'	8.55'	S05°20'52"E	8.54'
C51	79°06'43"	45.00'	62.13'	S50°20'52"E	57.31'
C52	79°06'43"	45.00'	62.13'	N50°32'25"E	57.31'
C53	10°53'17"	45.00'	8.55'	N05°32'25"E	8.54'
C54	90°00'00"	15.00'	23.56'	N44°54'13"W	21.21'
C55	90°00'00"	15.00'	23.56'	S45°05'47"W	21.21'
C56	117°12'44"	72.50'	148.32'	S43°48'17"W	123.77'
C57	14°53'52"	165.50'	43.03'	S07°21'09"E	42.91'
C58	89°37'45"	15.00'	23.46'	N45°05'21"W	21.14'
C59	0°46'40"	72.50'	0.98'	N77°58'41"W	0.98'
C60	39°39'41"	72.50'	50.19'	S81°48'09"W	49.19'
C61	32°11'24"	72.50'	40.73'	S45°52'37"W	40.20'
C62	29°19'29"	72.50'	37.11'	S15°07'10"W	36.70'
C63	15°15'31"	72.50'	19.31'	S07°10'20"E	19.25'
C64	13°48'32"	165.50'	39.89'	S07°53'49"E	39.79'
C65	87°25'02"	35.00'	53.40'	S43°48'17"W	48.37'
C66	1°54'37"	15.00'	0.50'	S89°08'28"W	0.50'
C67	88°05'23"	15.00'	23.06'	S44°08'28"W	20.86'
C68	89°59'40"	6.00'	9.42'	N45°05'57"E	8.48'

LINE TABLE

LINE	LENGTH	BEARING
L1	11.31'	S44° 54' 13"E
L2	11.31'	N45° 05' 47"E
L3	17.31'	N44° 54' 13"W
L4	11.32'	S45° 04' 52"W
L5	9.90'	S44° 54' 13"E
L6	9.90'	N45° 05' 47"E
L7	20.14'	N44° 54' 13"W
L8	14.14'	S45° 05' 47"W
L9	9.90'	S44° 54' 13"E
L10	9.90'	N45° 05' 47"E
L11	15.90'	N44° 54' 13"W
L12	9.90'	S45° 05' 47"W
L13	9.90'	S44° 54' 13"E
L14	9.91'	N45° 05' 47"E
L15	15.90'	N44° 54' 13"W
L16	9.90'	S45° 05' 47"W
L17	14.14'	S44° 54' 13"E
L18	14.14'	N45° 04' 55"E
L19	14.15'	S44° 55' 05"E
L20	14.14'	N45° 05' 47"E

SHEET INDEX

NORTH



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TOWNSHIP: 6 N
RANGE: 68 W of the 6th PM

NORTHERN ENGINEERING
FORT COLLINS, 301 North Howes Street, Suite 100, 80521
GREELEY, 820 8th Street, 80631
970.221.4158
northernengineering.com

DATE: 12/15/21
SCALE: 1"=80'
REVIEWED BY: R. Tessely
PROJECT: 698-004
CLIENT: AADT Land Holdings
DRAWN BY: L. Smith

TIMBER LARK RESIDENTIAL
CITY OF FORT COLLINS
STATE OF COLORADO

Sheet
2
Of 8 Sheets

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TIMBER LARK RESIDENTIAL

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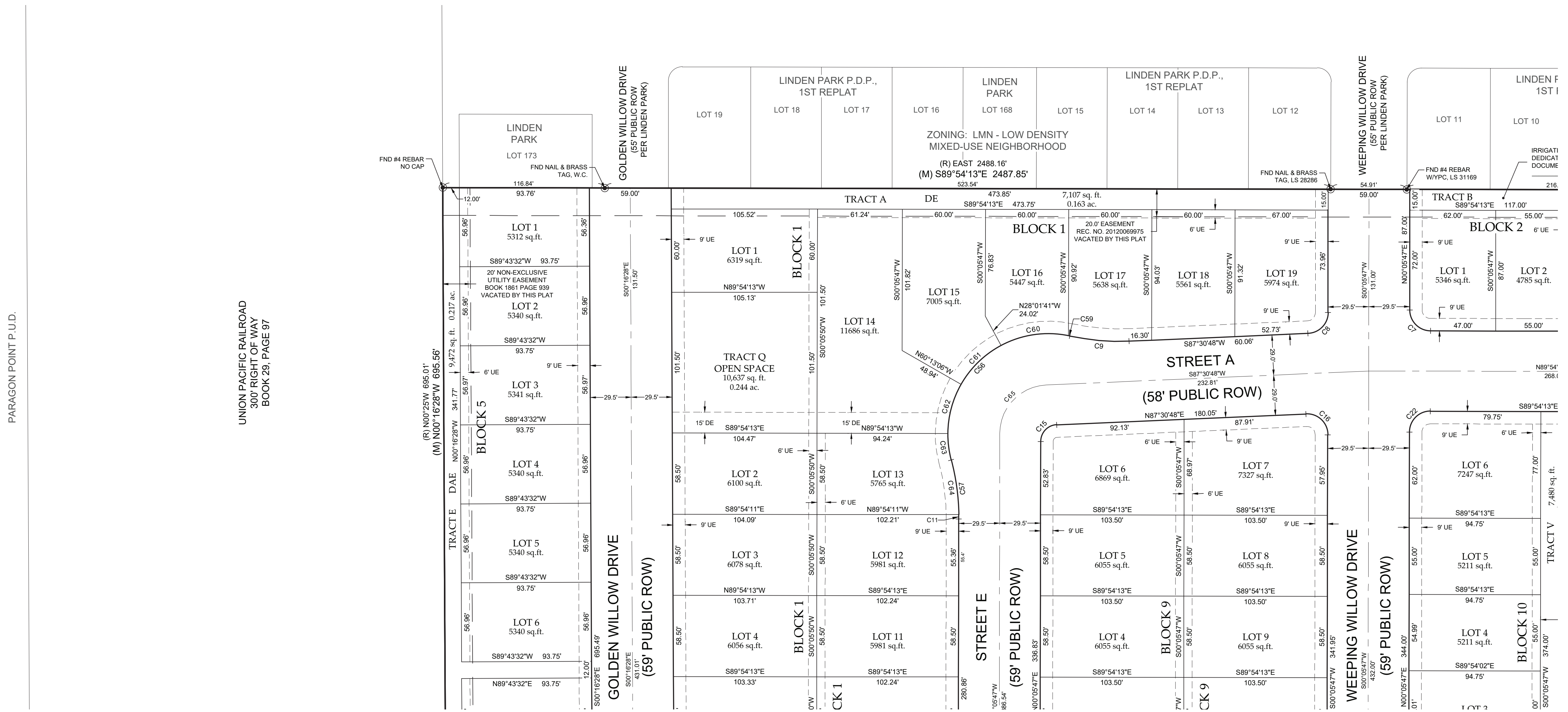

LEGEND

PROPOSED EASEMENT LINE			FOUND SECTION CORNER AS DESCRIBED
EXISTING EASEMENT LINE		UE	UTILITY EASEMENT
PROPOSED RIGHT-OF-WAY		DE	DRAINAGE EASEMENT
EXISTING RIGHT-OF-WAY		AE	ACCESS EASEMENT
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SECTION LINE		(M)	MEASURED BEARING/DISTANCE
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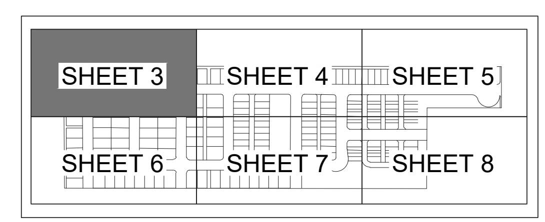
FOUND PROPERTY CORNER AS DESCRIBED		ROW	RIGHT OF WAY

NORTH

40 0 40 80 120 Feet
(IN U.S. SURVEY FEET)
1 inch = 40 ft.



KEYMAP

DRAFT
12-15-21
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NORTHERN ENGINEERING

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CLIENT: AADT Land Holdings
DRAWN BY: L. Smith
DATE: 12/15/21
SCALE: 1"=40'
REVIEWED BY: R. Tessely

TIMBER LARK RESIDENTIAL
CITY OF FORT COLLINS
STATE OF COLORADO

Sheet
3
Of 8 Sheets

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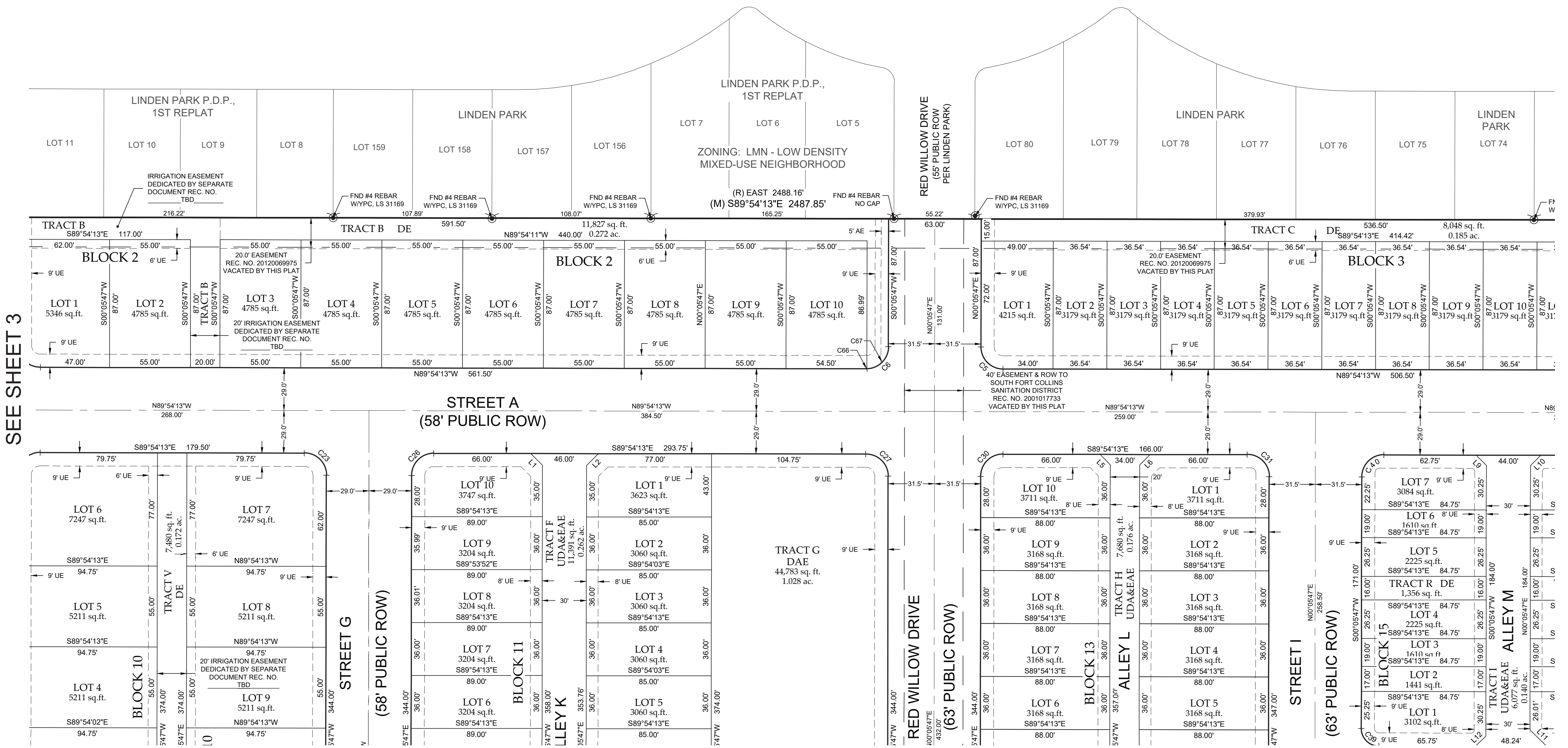

SEE SHEET 7

LEGEND

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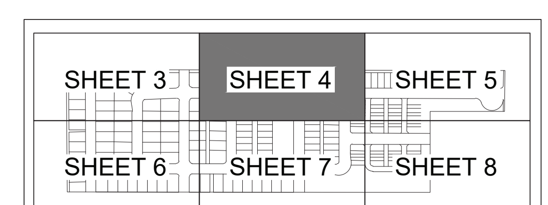

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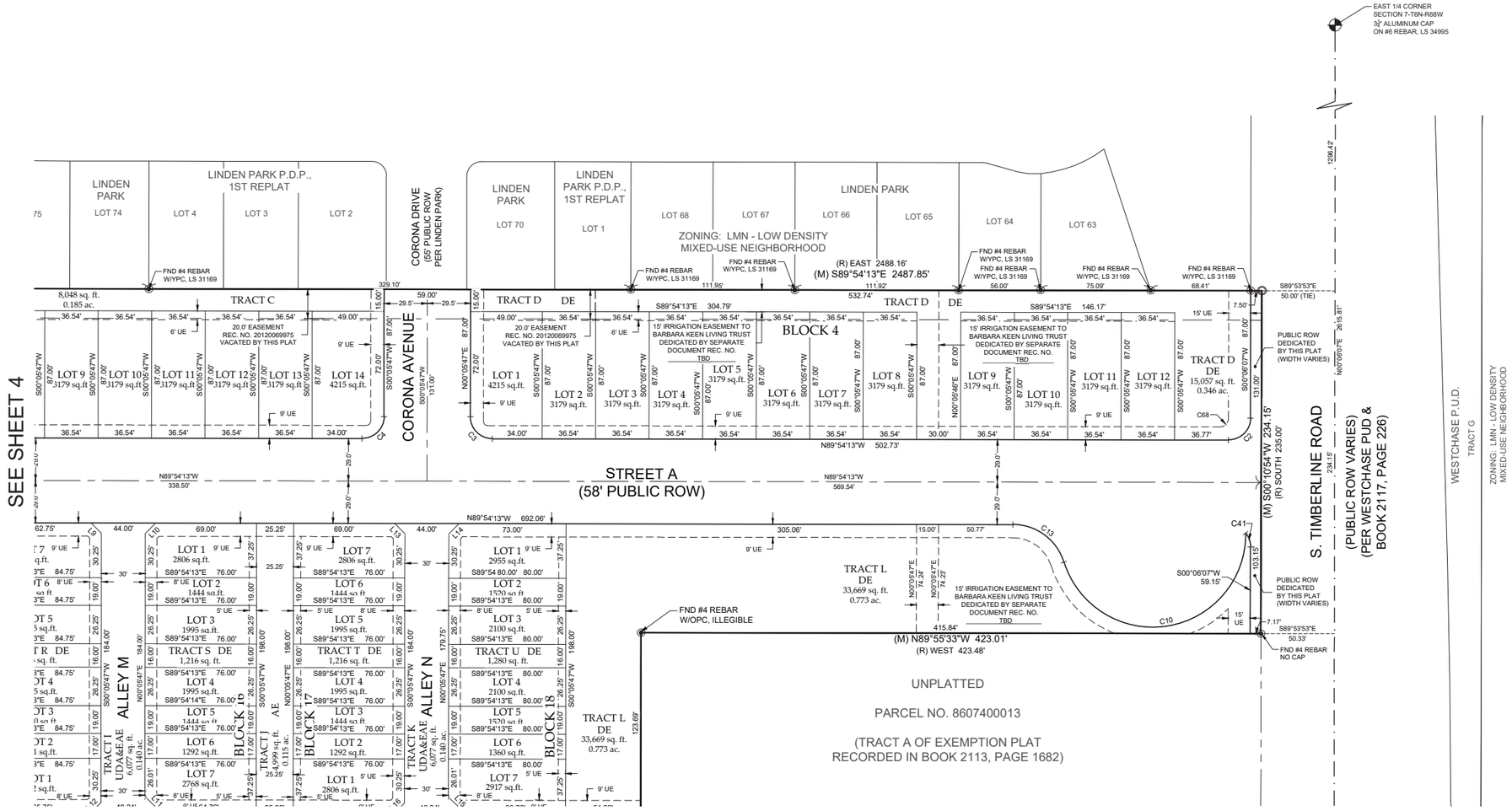

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12-15-21

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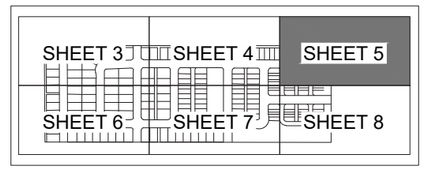

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TIMBER LARK RESIDENTIAL
CITY OF FORT COLLINS
STATE OF COLORADO

Sheet 5 Of 8 Sheets

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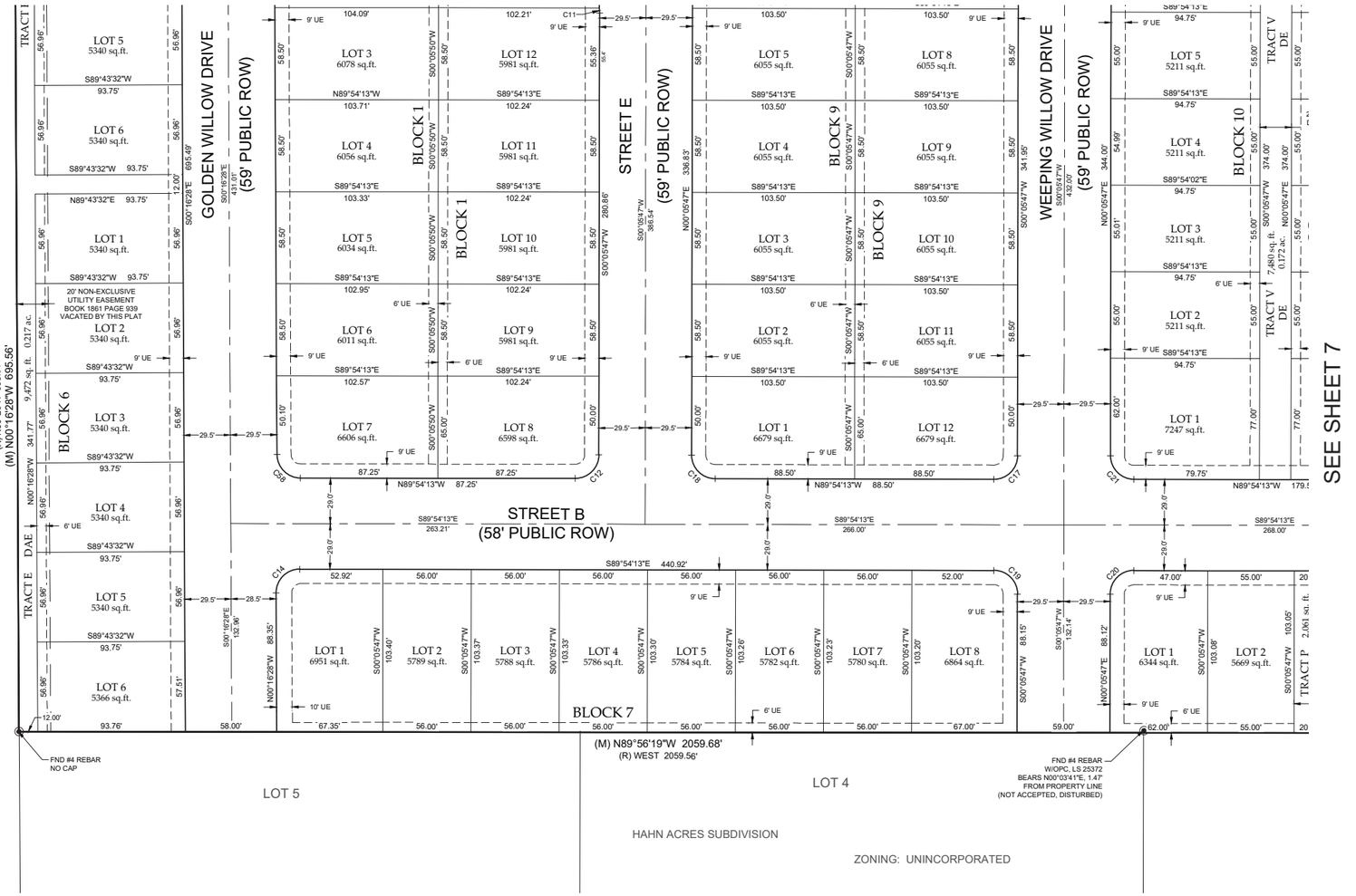

DRAFT

12-15-21

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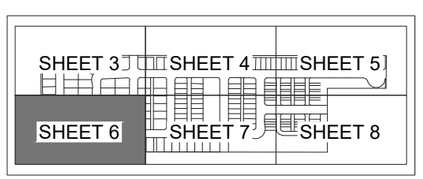

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PROJECT: 698-004
CLIENT: AADT Land Holdings
DRAWN BY: L. Smith

TIMBER LARK RESIDENTIAL
CITY OF FORT COLLINS
STATE OF COLORADO

Sheet 6
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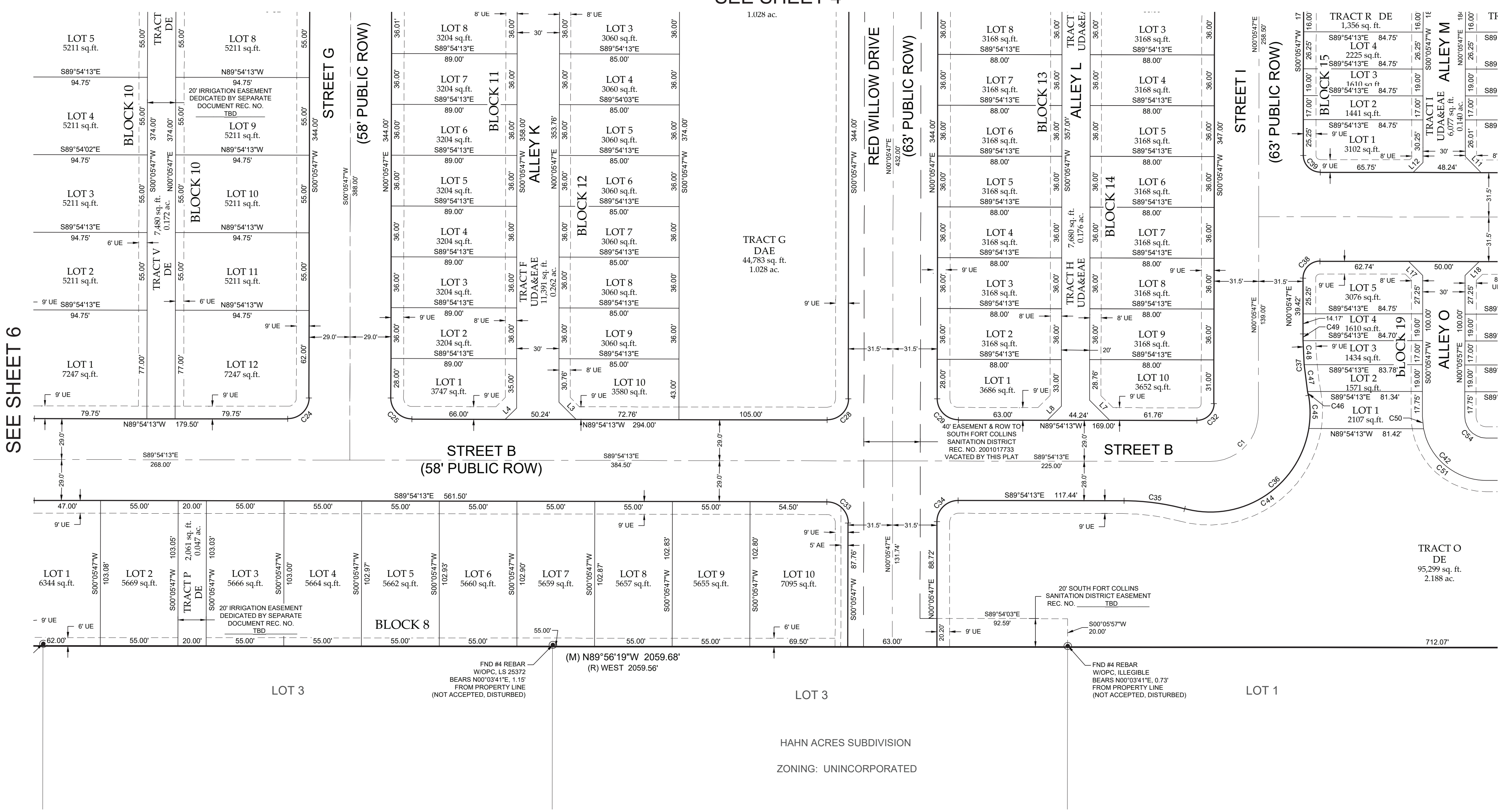

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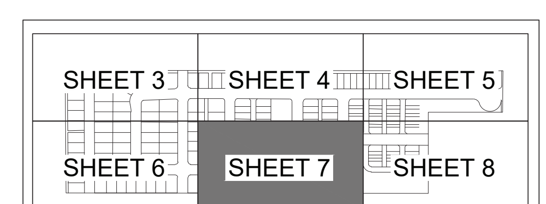

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Sheet 7 Of 8 Sheets

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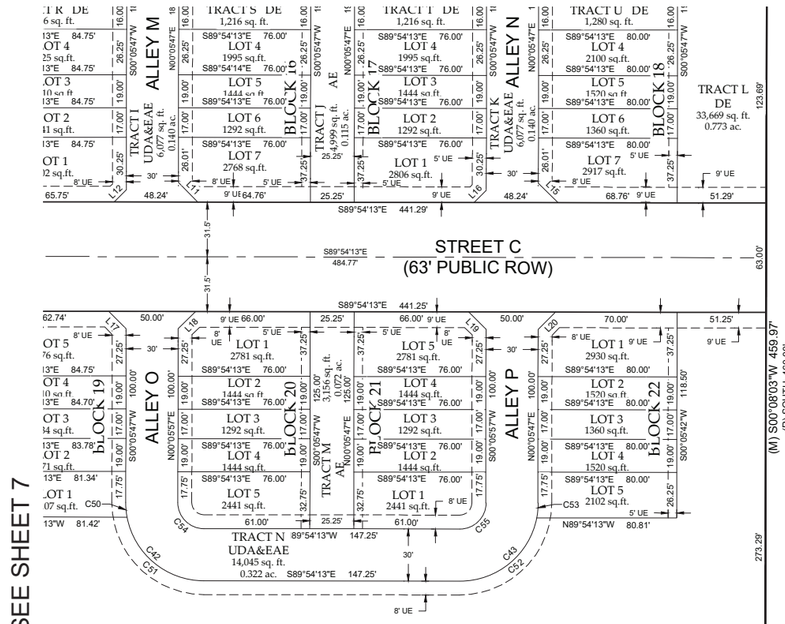

UNPLATTED

PARCEL NO. 8607400013

(TRACT A OF EXEMPTION PLAT
RECORDED IN BOOK 2113, PAGE 1682)

S. TIMBERLINE ROAD
(PUBLIC ROW VARIES)
(PER WESTCHASE PUD & BOOK 2117, PAGE 226)

HAHN ACRES SUBDIVISION

LOT 1

ZONING: UNINCORPORATED

(M) N00°09'07"E 625.29'
(R) NORTH 624.80'

SOUTHEAST CORNER
SECTION 7-T6N-R68W
3¼" ALUMINUM CAP
IN MONUMENT BOX
PLS 16847

DRAFT

12-15-21

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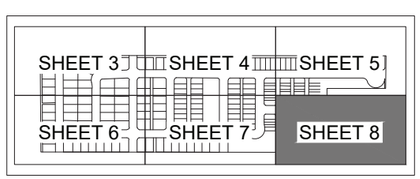

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Sheet
8
Of 8 Sheets

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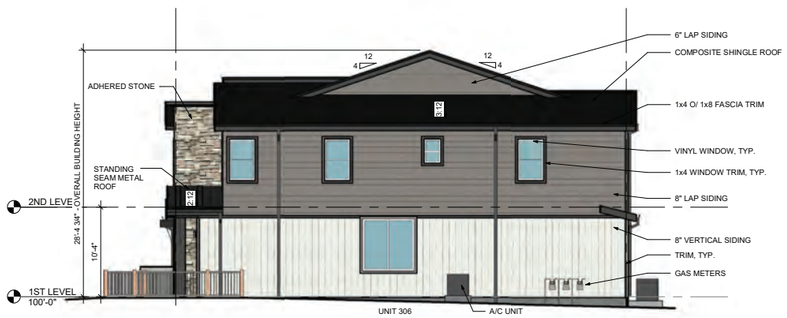
MATERIAL KEY - COLORADO MODERN ELEVATION

MATERIAL	MANUFACTURER	COLOR
BODY 1 - FIBER-CEMENT SIDING & TRIM (6" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7019 - GAUNTLET GRAY
BODY 1 - FIBER-CEMENT SIDING & TRIM (8" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7019 - GAUNTLET GRAY
BODY 2 - FIBER-CEMENT SIDING & TRIM (6" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7069 - IORN ORE
BODY 2 - FIBER-CEMENT SIDING & TRIM (8" VERTICAL SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7653 - SILVERPOINTE
FRONT DOOR	PAINT - SHERWIN-WILLIAMS	SW 7630 - RAISIN
FASCIAS, GUTTERS , DOWNPIPES	PAINT - SHERWIN-WILLIAMS	SW 7069 - IORN ORE
STONE	ZEMENT	LIMESTONE CASCASE BLEND
ROOF SHINGLES	GAF	TIMBERLINE HD CHARCOAL
STANDING SEAM METAL ROOF		BLACK

4 3-PLEX - COLORADO MODERN - LEFT ELEVATION
1/8" = 1'-0"

3 3-PLEX - COLORADO MODERN - REAR ELEVATION
1/8" = 1'-0"



2 3-PLEX - COLORADO MODERN - RIGHT ELEVATION
1/8" = 1'-0"

1 3-PLEX - COLORADO MODERN - FRONT ELEVATION
1/8" = 1'-0"

TRANSPARENCY PROVIDED - 23% (283.7 SF)
TRANSPARENCY REQUIRED - 20% (240.6 SF)

LENNAR
TIMBER LARK TOWNHOMES
FORT COLLINS

3-PLEX - ELEVATIONS - COLORADO MODERN

ARC.2

05/26/2021

Godden|Sudik
ARCHITECTS

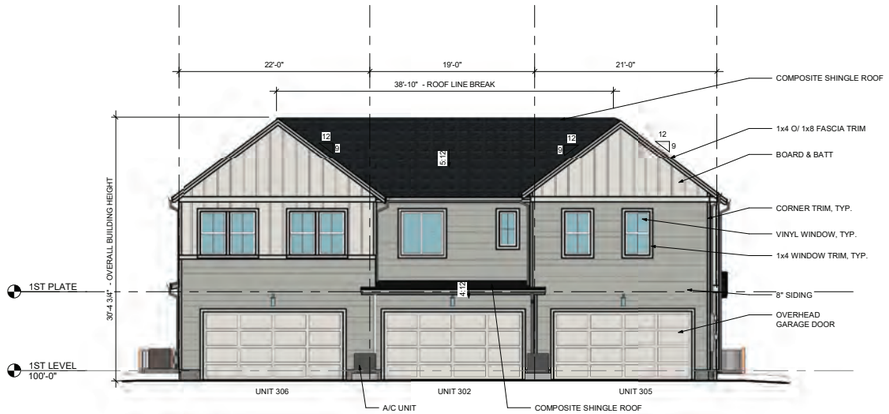
303.455.44

5975 S. QUEBEC ST., STE. 250

MATERIAL KEY - CONTEMPORARY FARMHOUSE ELEVATION

MATERIAL	MANUFACTURER	COLOR
BODY 1 - FIBER-CEMENT SIDING & TRIM (8" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7673 - PEWTER CAST
BODY 2 - BOARD & BATTEN	PAINT - SHERWIN-WILLIAMS	SW 7649 - SILVERPLATE
FRONT DOOR	PAINT - SHERWIN-WILLIAMS	SW 7625 - MOUNT ETNA
FASCIAS, GUTTERS , DOWNPIPES	PAINT - SHERWIN-WILLIAMS	SW 7649 - SILVERPLATE
ROOF SHINGLES	GAF	TIMBERLINE HD CHARCOAL
STANDING SEAM METAL ROOF		BLACK

4 3-PLEX - CONTEMPORARY FARMHOUSE - LEFT ELEVATION
1/8" = 1'-0"



3 3-PLEX - CONTEMPORARY FARMHOUSE - REAR ELEVATION
1/8" = 1'-0"

2 3-PLEX - CONTEMPORARY FARMHOUSE - RIGHT ELEVATION
1/8" = 1'-0"

TRANSPARENCY PROVIDED - 23% (279.6 SF)
TRANSPARENCY REQUIRED - 20% (240.6 SF)

1 3-PLEX - CONTEMPORARY FARMHOUSE - FRONT ELEVATION
1/8" = 1'-0"

LENNAR
TIMBER LARK TOWNHOMES
FORT COLLINS

3-PLEX - ELEVATIONS - CONTEMPORARY FARMHOUSE

ARC.4

05/26/2021

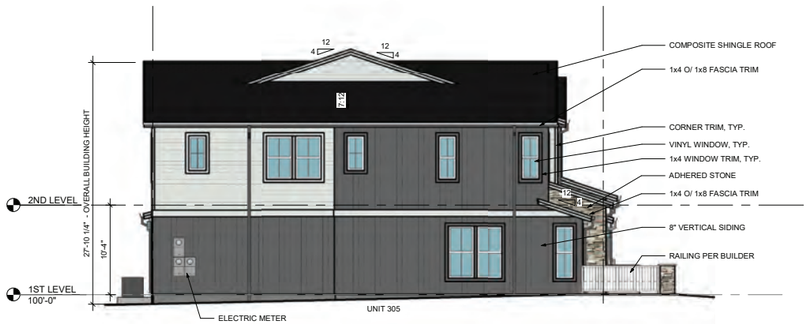
Godden|Sudik ARCHITECTS

303.455.44

5975 S. QUEBEC ST., STE. 250

MATERIAL KEY - MODERN HILL COUNTRY ELEVATION

MATERIAL	MANUFACTURER	COLOR
BODY 1 - FIBER-CEMENT SIDING & TRIM (12" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7657 - TINSMITH
BODY 1 - FIBER-CEMENT SIDING & TRIM (6" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7657 - TINSMITH
BODY 2 - HARDIE 8" SIDING & TRIM VERTICAL SIDING	PAINT - SHERWIN-WILLIAMS	SW 7674 - PEPPERCORN
BODY 2 - BOARD & BATTEN	PAINT - SHERWIN-WILLIAMS	SW 7076 - CYBERSPACE
FRONT DOOR	PAINT - SHERWIN-WILLIAMS	SW 7595 - SOMMELIER
FASCIAS, GUTTERS , DOWNPIPES	PAINT - SHERWIN-WILLIAMS	SW 7657 - TINSMITH
STONE	ZEMENT	LIMESTONE CASCASE BLEND
ROOF SHINGLES	GAF	TIMBERLINE HD - COLOR:CHARCOAL
STANDING SEAM METAL ROOF		BLACK



4 3-PLEX - MODERN HILL COUNTRY - LEFT ELEVATION
1/8" = 1'-0"

3 3-PLEX - MODERN HILL COUNTRY - REAR ELEVATION
1/8" = 1'-0"

2 3-PLEX - MODERN HILL COUNTRY - RIGHT ELEVATION
1/8" = 1'-0"

1 3-PLEX - MODERN HILL COUNTRY - FRONT ELEVATION
1/8" = 1'-0"

TRANSPARENCY PROVIDED - 22% (267.6 SF)
TRANSPARENCY REQUIRED - 20% (240.6 SF)

LENNAR
TIMBER LARK TOWNHOMES
FORT COLLINS

3-PLEX - ELEVATIONS (COLOR) - MODERN HILL COUNTRY

ARC.6

10/25/21

Godden|Sudik
ARCHITECTS

303.455.44

5975 S. QUEBEC ST., STE. 250

MATERIAL KEY - COLORADO MODERN ELEVATION

MATERIAL	MANUFACTURER	COLOR
BODY 1 - FIBER-CEMENT SIDING & TRIM (6" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7019 - GAUNTLET GRAY
BODY 1 - FIBER-CEMENT SIDING & TRIM (8" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7019 - GAUNTLET GRAY
BODY 2 - FIBER-CEMENT SIDING & TRIM (6" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7069 - IORN ORE
BODY 2 - FIBER-CEMENT SIDING & TRIM (8" VERTICAL SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7653 - SILVERPOINTE
FRONT DOOR	PAINT - SHERWIN-WILLIAMS	SW 7630 - RAISIN
FASCIAS, GUTTERS , DOWNPIPES	PAINT - SHERWIN-WILLIAMS	SW 7069 - IORN ORE
STONE	ZEMENT	LIMESTONE CASCASE BLEND
ROOF SHINGLES	GAF	TIMBERLINE HD CHARCOAL
STANDING SEAM METAL ROOF		BLACK

4 4-PLEX - COLORADO MODERN - LEFT ELEVATION
1/8" = 1'-0"

3 4-PLEX - COLORADO MODERN - REAR ELEVATION
1/8" = 1'-0"

2 4-PLEX - COLORADO MODERN - RIGHT ELEVATION
1/8" = 1'-0"

1 4-PLEX - COLORADO MODERN - FRONT ELEVATION
1/8" = 1'-0"

LENNAR
TIMBER LARK TOWNHOMES
FORT COLLINS

4-PLEX - ELEVATIONS - COLORADO MODERN

ARC.8

10/26/21

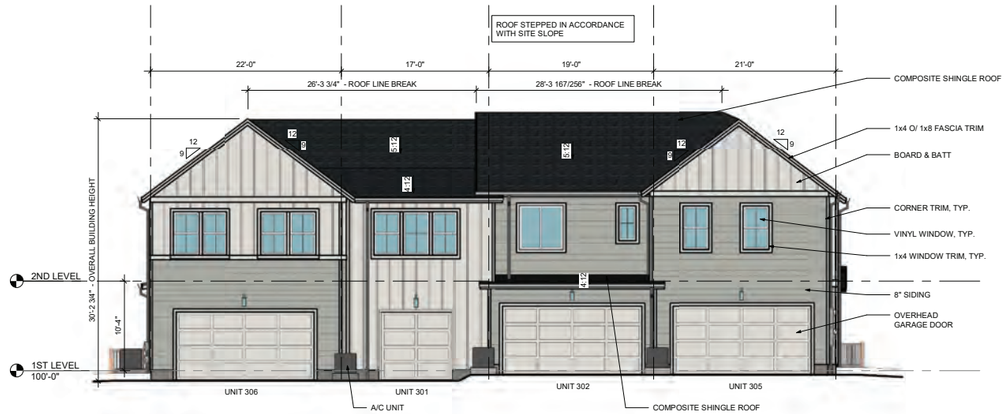
Godden|Sudik
ARCHITECTS

303.455.44

5975 S. QUEBEC ST., STE. 250

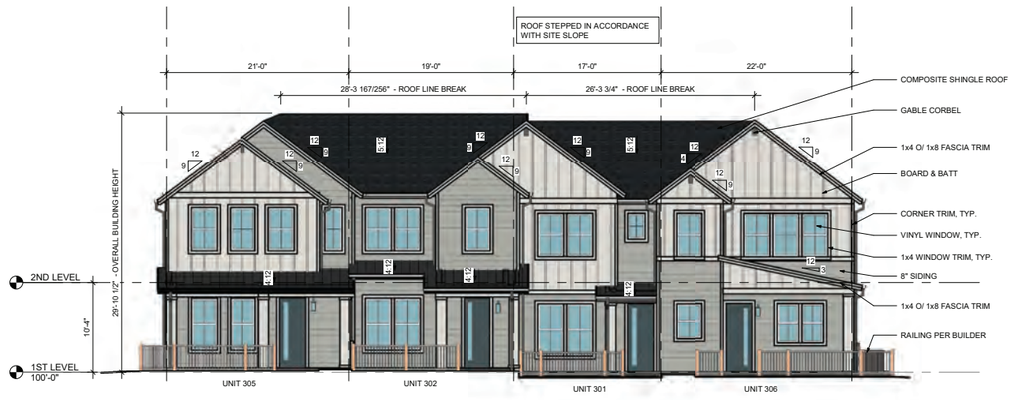
MATERIAL KEY - CONTEMPORARY FARMHOUSE ELEVATION		
MATERIAL	MANUFACTURER	COLOR
BODY 1 - FIBER-CEMENT SIDING & TRIM (8" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7673 - PEWTER CAST
BODY 2 - BOARD & BATTEN	PAINT - SHERWIN-WILLIAMS	SW 7649 - SILVERPLATE
FRONT DOOR	PAINT - SHERWIN-WILLIAMS	SW 7625 - MOUNT ETNA
FASCIAS, GUTTERS , DOWNPIPES	PAINT - SHERWIN-WILLIAMS	SW 7649 - SILVERPLATE
ROOF SHINGLES	GAF	TIMBERLINE HD CHARCOAL
STANDING SEAM METAL ROOF		BLACK

4 4-PLEX - CONTEMPORARY FARMHOUSE - LEFT ELEVATION
1/8" = 1'-0"



3 4-PLEX - CONTEMPORARY FARMHOUSE - REAR ELEVATION
1/8" = 1'-0"

2 4-PLEX - CONTEMPORARY FARMHOUSE - RIGHT ELEVATION
1/8" = 1'-0"



TRANSPARENCY PROVIDED - 23% (355.0 SF)
TRANSPARENCY REQUIRED - 20% (306.8 SF)

1 4-PLEX - CONTEMPORARY FARMHOUSE - FRONT ELEVATION
1/8" = 1'-0"

LENNAR
TIMBER LARK TOWNHOMES FORT COLLINS

4-PLEX - ELEVATIONS - CONTEMPORARY FARMHOUSE

ARC.10

10/26/21

Godden|Sudik
ARCHITECTS

303.455.44

5975 S. QUEBEC ST., STE. 250

MATERIAL KEY - MODERN HILL COUNTRY ELEVATION		
MATERIAL	MANUFACTURER	COLOR
BODY 1 - FIBER-CEMENT SIDING & TRIM (12" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7657 - TINSMITH
BODY 1 - FIBER-CEMENT SIDING & TRIM (6" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7657 - TINSMITH
BODY 2 - HARDIE 8" SIDING & TRIM VERTICAL SIDING	PAINT - SHERWIN-WILLIAMS	SW 7674 - PEPPERCORN
BODY 2 - BOARD & BATTEN	PAINT - SHERWIN-WILLIAMS	SW 7076 - CYBERSPACE
FRONT DOOR	PAINT - SHERWIN-WILLIAMS	SW 7595 - SOMMELIER
FASCIAS, GUTTERS , DOWNPIPES	PAINT - SHERWIN-WILLIAMS	SW 7657 - TINSMITH
STONE	ZEMENT	LIMESTONE CASCASE BLEND
ROOF SHINGLES	GAF	TIMBERLINE HD - COLOR:CHARCOAL
STANDING SEAM METAL ROOF		BLACK

4 4-PLEX - MODERN HILL COUNTRY - LEFT ELEVATION
1/8" = 1'-0"

3 4-PLEX - MODERN HILL COUNTRY - REAR ELEVATION
1/8" = 1'-0"

2 4-PLEX - MODERN HILL COUNTRY - RIGHT ELEVATION
1/8" = 1'-0"

1 4-PLEX - MODERN HILL COUNTRY - FRONT ELEVATION
1/8" = 1'-0"

LENNAR
TIMBER LARK TOWNHOMES
FORT COLLINS

4-PLEX - ELEVATIONS (COLOR) - MODERN HILL COUNTRY

ARC.12

05/26/2021

Godden|Sudik
ARCHITECTS

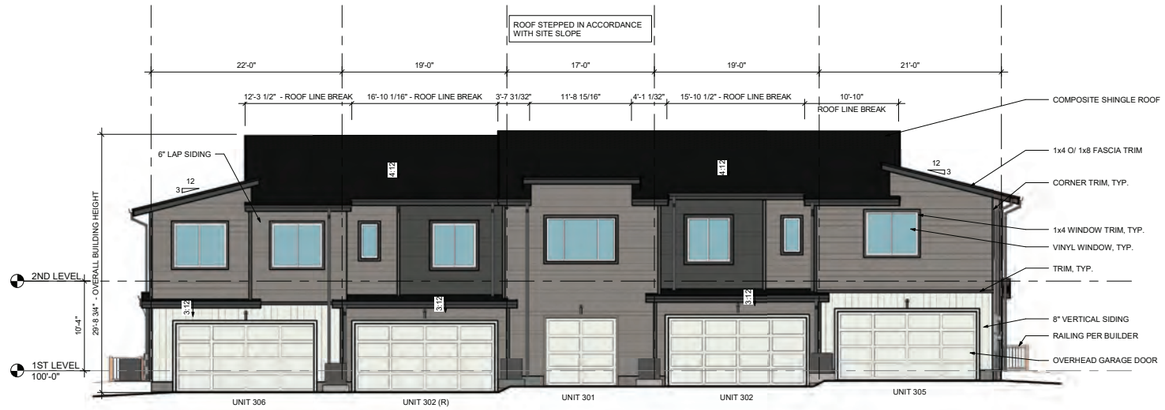
303.455.44

5975 S. QUEBEC ST., STE. 250

MATERIAL KEY - COLORADO MODERN ELEVATION

MATERIAL	MANUFACTURER	COLOR
BODY 1 - FIBER-CEMENT SIDING & TRIM (6" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7019 - GAUNTLET GRAY
BODY 1 - FIBER-CEMENT SIDING & TRIM (8" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7019 - GAUNTLET GRAY
BODY 2 - FIBER-CEMENT SIDING & TRIM (6" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7069 - IORN ORE
BODY 2 - FIBER-CEMENT SIDING & TRIM (8" VERTICAL SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7653 - SILVERPOINTE
FRONT DOOR	PAINT - SHERWIN-WILLIAMS	SW 7630 - RAISIN
FASCIAS, GUTTERS , DOWNPIPES	PAINT - SHERWIN-WILLIAMS	SW 7069 - IORN ORE
STONE	ZEMENT	LIMESTONE CASCASE BLEND
ROOF SHINGLES	GAF	TIMBERLINE HD CHARCOAL
STANDING SEAM METAL ROOF		BLACK

4 5-PLEX - COLORADO MODERN - LEFT ELEVATION
1/8" = 1'-0"



3 5-PLEX - COLORADO MODERN - REAR ELEVATION
1/8" = 1'-0"

2 5-PLEX - COLORADO MODERN - RIGHT ELEVATION
1/8" = 1'-0"

1 5-PLEX - COLORADO MODERN - FRONT ELEVATION
1/8" = 1'-0"

LENNAR
TIMBER LARK TOWNHOMES
FORT COLLINS

5-PLEX - ELEVATIONS - COLORADO MODERN

ARC.14

05/26/2021

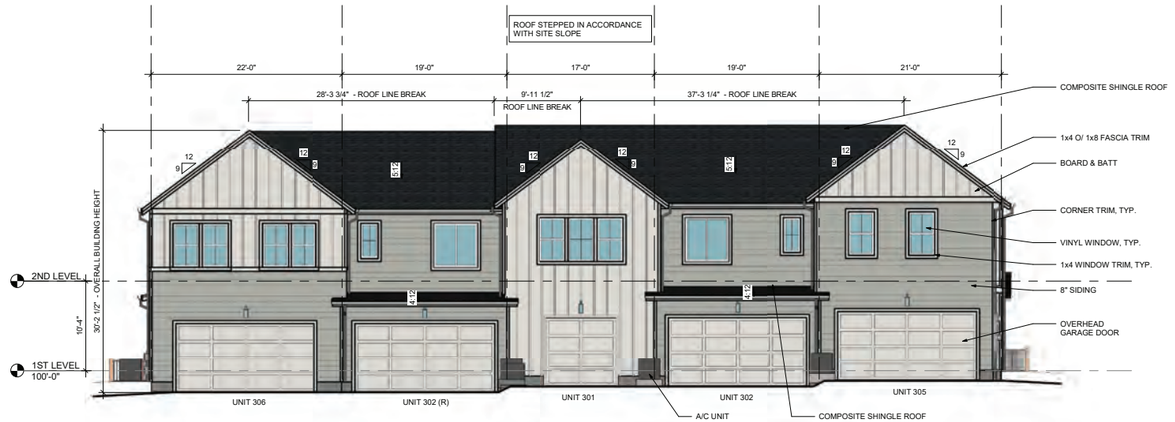
Godden|Sudik
ARCHITECTS

303.455.44

5975 S. QUEBEC ST., STE. 250

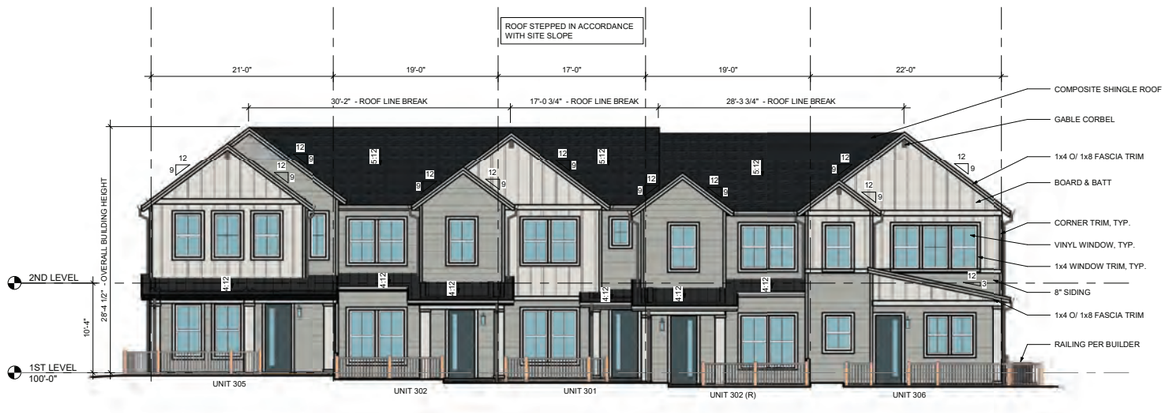
MATERIAL KEY - CONTEMPORARY FARMHOUSE ELEVATION		
MATERIAL	MANUFACTURER	COLOR
BODY 1 - FIBER-CEMENT SIDING & TRIM (8" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7673 - PEWTER CAST
BODY 2 - BOARD & BATTEN	PAINT - SHERWIN-WILLIAMS	SW 7649 - SILVERPLATE
FRONT DOOR	PAINT - SHERWIN-WILLIAMS	SW 7625 - MOUNT ETNA
FASCIAS, GUTTERS , DOWNPIPES	PAINT - SHERWIN-WILLIAMS	SW 7649 - SILVERPLATE
ROOF SHINGLES	GAF	TIMBERLINE HD CHARCOAL
STANDING SEAM METAL ROOF		BLACK

4 5-PLEX - CONTEMPORARY FARMHOUSE - LEFT ELEVATION
1/8" = 1'-0"



3 5-PLEX - CONTEMPORARY FARMHOUSE - REAR ELEVATION
1/8" = 1'-0"

2 5-PLEX - CONTEMPORARY FARMHOUSE - RIGHT ELEVATION
1/8" = 1'-0"



1 5-PLEX - CONTEMPORARY FARMHOUSE - FRONT ELEVATION
1/8" = 1'-0"

LENNAR
TIMBER LARK TOWNHOMES
FORT COLLINS

5-PLEX - ELEVATIONS - CONTEMPORARY FARMHOUSE

ARC.16

10/26/21

Godden|Sudik ARCHITECTS

303.455.44

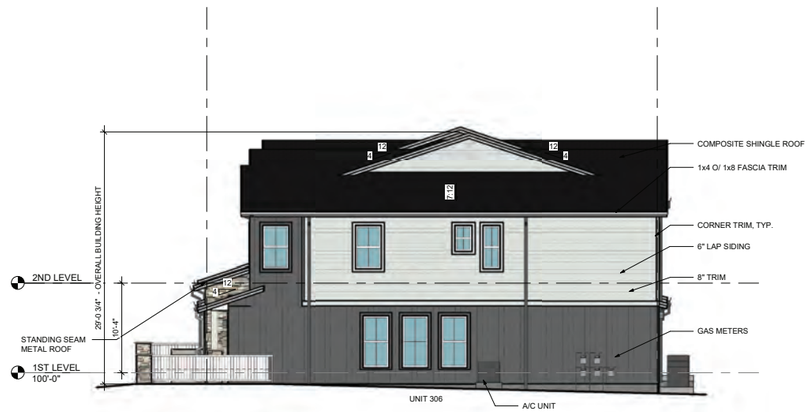
5975 S. QUEBEC ST., STE. 250

MATERIAL KEY - MODERN HILL COUNTRY ELEVATION

MATERIAL	MANUFACTURER	COLOR
BODY 1 - FIBER-CEMENT SIDING & TRIM (12" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7657 - TINSMITH
BODY 1 - FIBER-CEMENT SIDING & TRIM (6" SIDING)	PAINT - SHERWIN-WILLIAMS	SW 7657 - TINSMITH
BODY 2 - HARDIE 8" SIDING & TRIM VERTICAL SIDING	PAINT - SHERWIN-WILLIAMS	SW 7674 - PEPPERCORN
BODY 2 - BOARD & BATTEN	PAINT - SHERWIN-WILLIAMS	SW 7076 - CYBERSPACE
FRONT DOOR	PAINT - SHERWIN-WILLIAMS	SW 7595 - SOMMELIER
FASCIAS, GUTTERS , DOWNPIPES	PAINT - SHERWIN-WILLIAMS	SW 7657 - TINSMITH
STONE	ZEMENT	LIMESTONE CASCASE BLEND
ROOF SHINGLES	GAF	TIMBERLINE HD - COLOR:CHARCOAL
STANDING SEAM METAL ROOF		BLACK

4 5-PLEX - MODERN HILL COUNTRY - LEFT ELEVATION
1/8" = 1'-0"

3 5-PLEX - MODERN HILL COUNTRY - REAR ELEVATION
1/8" = 1'-0"



2 5-PLEX - MODERN HILL COUNTRY - RIGHT ELEVATION
1/8" = 1'-0"

1 5-PLEX - MODERN HILL COUNTRY - FRONT ELEVATION
1/8" = 1'-0"

TRANSPARENCY PROVIDED - 22% (420.0 SF)
TRANSPARENCY REQUIRED - 20% (380.6 SF)

LENNAR
TIMBER LARK TOWNHOMES
FORT COLLINS

5-PLEX - ELEVATIONS (COLOR) - MODERN HILL COUNTRY

ARC.18

10/26/21

Godden|Sudik
ARCHITECTS

303.455.44

5975 S. QUEBEC ST., STE. 250

ripley design
LANDSCAPE ARCHITECTURE, LAND PLANNING

November 3, 2021

Timber Lark Residential

Alternative Compliance Request
Land Use Code Article 3.5.2(E)(2)

Request

The applicant requests an alternative compliance to LUC Article 3.5.2(E)(2) to reduce the minimum setback between the residential building and the nonarterial street right-of-way from 15' to 12', and to reduce the minimum setback between the garage door and public sidewalk from 20' to 19'.

Land Use Code Citation

3.5.2 Residential Building Standards

(A) Purpose. The standards in this Section are intended to promote variety, visual interest, and pedestrian-oriented streets in residential development.

(B) *General Standard. Development Projects containing residential buildings shall place a high priority on building entryways and their relationship to the street. Pedestrian usability shall be prioritized over vehicular usability. Buildings shall include human-scaled elements, architectural articulation, and in Projects containing more than one (1) building, design variation.*

(E) Residential Building Setbacks, Lot Width and Size.

(2) Setback from Nonarterial Streets. The minimum setback of every residential building and of every detached accessory building that is incidental to the residential building shall be fifteen (15) feet from any public street right-of-way other than an arterial street right-of-way, except for those buildings regulated by Section 3.8.30 of this Code, which buildings must comply with the setback regulations set forth in Section 3.8.30. Setbacks from garage doors to the nearest portion of any public sidewalk that intersects with the driveway shall be at least twenty (20) feet.

Introduction

The project goals for the Timber Lark community align with City's objectives contained in the Purpose statement for Land Use Code Article 3.5.2 - Residential Building Standards. The neighborhood provides variety, visual interest, and pedestrian-oriented streets. Variety is achieved through the utilization of four different housing types including single-family detached, two-family

front-loaded, two-family alley-loaded, and single-family attached. Among the single-family detached and two-family housing types, there are a total of nine different housing models. Among the single-family attached units, there are three different building designs that will promote variety throughout the neighborhood. Each building design varies significantly in terms of the floor plan, exterior materials, roof lines, garage placement, and porch configuration which will result in a visually aesthetic and diverse neighborhood.

During the initial design of the project, the Larimer County Urban Area Street Standards (LCUASS) defined residential and connector local street sections as having a minimum 6' tree-lined parkway and a 4.5' sidewalk. After the Timber Lark design was established, the LCUASS standards were revised to require a minimum 8.5' parkway and 5' sidewalk. This change resulted in a right-of-way dimension that was 6' wider overall, which in turn resulted in a reduced lot depth of 3' on each side of the street. Allowing for a 12' setback rather than a 15' setback will allow for more usable space in the rear yard of the home, while maintaining the same distance (25'-6") between the roadway and the face of the building or covered porch as compared to the original LCUASS standards (see Figure 1 and 2 below).

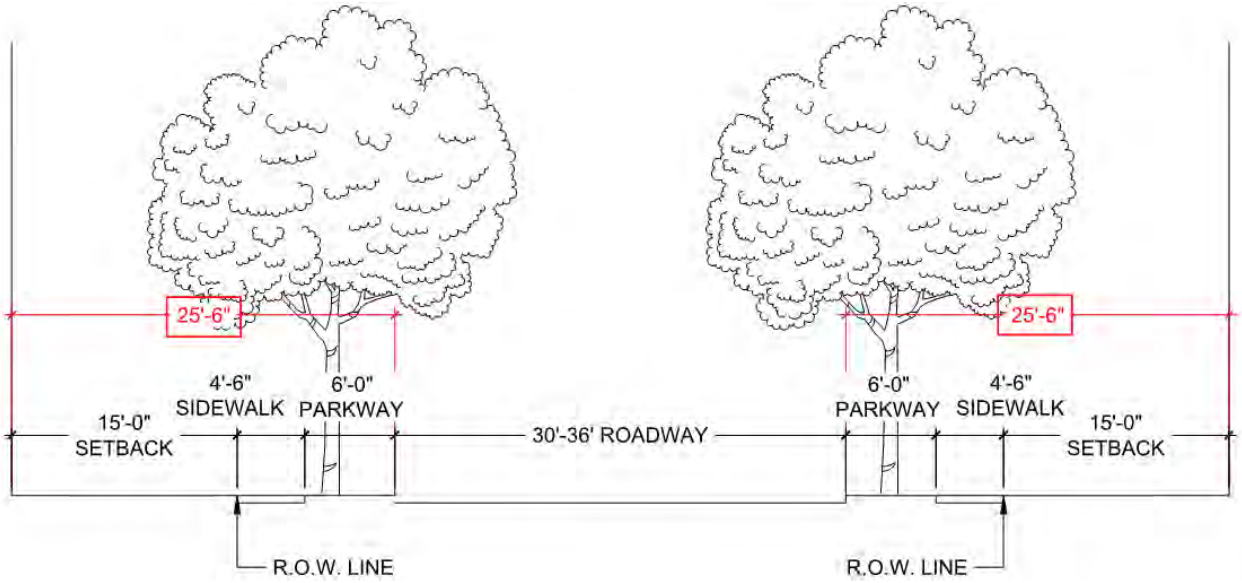


Figure 1 - Original Street Section

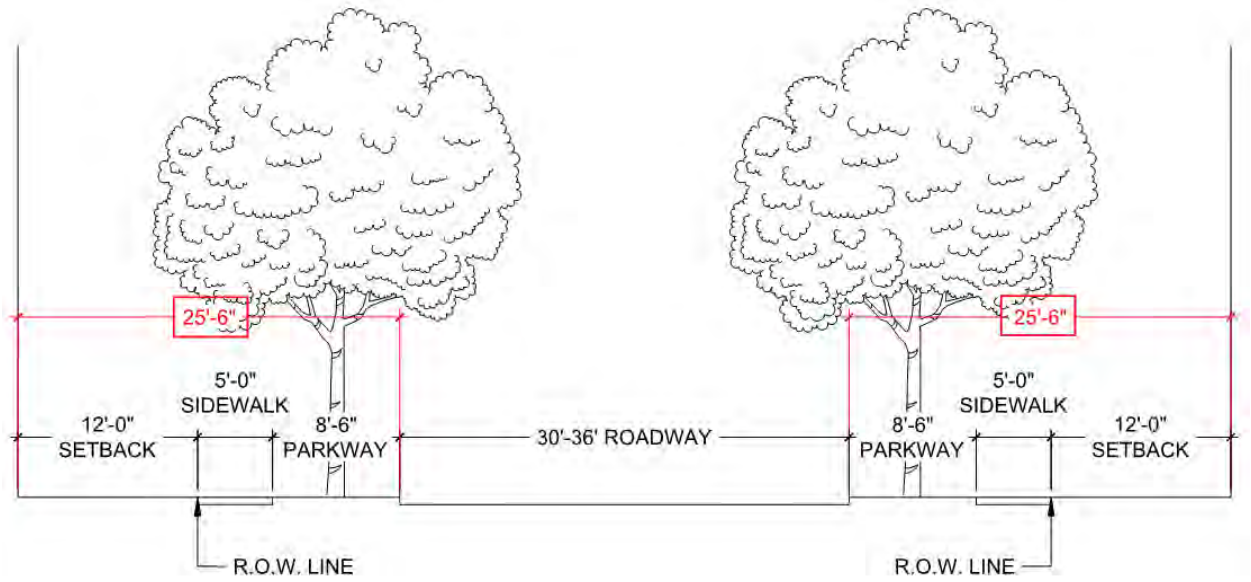


Figure 2 - Revised Street Section

The 12' setback provides adequate space for landscaping in front of the home and creates an intimate pedestrian streetscape which accomplishes the goals outlined in the Purpose statement equal to or better than the original setback standard. In addition, since the single-family attached dwellings with over three attached units fall under the 9' front setback requirements outlined in LUC Article 3.8.30, having a 12' front setback for all other dwelling units will allow for a more cohesive streetscape throughout the community.

Further, within the Timber Lark community, over 40% of the dwelling units will be alley-loaded products which orient garages out of view from the streetscape and place a high value on creating attractive building entryways that have a clear and logical relationship to the street or green space. Along all alleys, eight-foot utility easements are proposed. With alternative compliance allowing the three-foot reduced setback, encroaching into any utility easements with footings and/or building eaves can be avoided. For front-loaded units, the alternative compliance will provide opportunity for a deeper covered porch in the backyard, allowing future homeowners the ability to fully enjoy their private outdoor space.

The reduced setback from 20' to 19' between the public sidewalk and the garage door is nominal and will not result in any adverse impacts. The minimum long-term parking stall length per the Land Use Code is 18', which is less that what is proposed as part of this alternative compliance.

The proposed plan is designed to maximize the development potential of the property by utilizing its dimensional characteristics wisely. The alternative compliance is needed in order to provide an efficient logical pattern of streets, lots, and alleys with each home including a front porch. Without the reduced setback there would be a significant loss of buildable lots and reduce the applicant's ability to provide high quality homes in a desirable pedestrian-oriented neighborhood.

The decision-maker may approve alternative setbacks in the LMN Districts if they find that the alternative plan is equal to or better than a plan that meets the standard. A discussion of how the plan complies with the standards set forth in the review criteria is provided below.

Justification

(a) Alternative Compliance. Upon request by an applicant, the decision maker may approve an alternative setback that may be substituted in whole or in part for a setback that meets the standards of this Section, except that such alternative setback shall not be permitted in the R-L or U-E zone districts.

The Timber Lark PDP is located within the LMN zone districts where alternative compliance is allowed.

1. *Procedure. Alternative compliance setbacks from connector or local streets only, shall be prepared and submitted in accordance with submittal requirements for Project Development Plans. Each plan shall clearly identify and discuss the alternatives proposed and the ways in which the plan will better accomplish the purpose of this Section than would a plan which complies with the standards of this Section.*

The alternative compliance is for setbacks from connector or local streets and has been prepared and submitted in accordance with submittal requirements for the Project Development Plan. As noted above, the 12-foot setback will provide a more intimate, human-scaled streetscape that promotes social interaction while also maintaining the same distance from the home to the street edge to better accomplish the purpose of this Section than a plan that complies with the standards of this Section.

2. *Review Criteria. To approve an alternative plan, the decision maker must first find that the proposed alternative plan accomplishes the purposes of this Section equally well or better than would a plan which complies with the standards of this Section.*

In reviewing the proposed alternative plan, the decision maker shall take into account whether the alternative setback plan complies with the following standards.

(Note that the Land Use Code does not indicate that all criteria below must be met; rather, that the following criteria shall be considered into the decision).

a. Porches and Entry Features.

(i) A front porch with a minimum depth of six (6) feet (as measured from the building facade to the posts, railings and spindles) and a minimum length of eight (8) feet shall be provided on single-family detached dwellings.

For single-family detached dwellings, proposed porches range in size from 6' to 7' feet deep and 15' to 21' feet wide. In all cases they exceed the 6-foot x 8-foot minimum standard.

(ii) A clearly defined building front facing the street with a covered front porch or stoop measuring at least four (4) feet by four (4) feet shall be provided on each ground floor single-family attached dwelling.

All dwelling units located on streets have a clearly defined building entry with a covered porch that significantly exceeds the 4-foot x 4-foot minimum requirement.

(iii) The floor elevation of the front porch or stoop shall be a minimum of eighteen (18) inches above grade.

Many of the front porches will be 18 inches above grade; however, a portion of the single-family attached units will have porches at grade in order to meet accessibility standards.

b. Off-Street Parking. Off-street parking shall be located behind the dwelling and access to such parking shall be gained from an alley or, if there is no alley, then from the street via a driveway which, up to the rear building line of the house, does not exceed ten (10) feet in width.

The Timber Lark PDP proposes that 45% of the dwelling units will be alley-loaded and comply with the above standard. 55% of units are front-loaded and do not meet the standard to the letter. However, the front-loaded units provide 2-3 off street garage parking spaces per unit, which is significantly more off-street parking than what is required

per code. This substantially reduces the number of cars that will need to park on the street, prioritizing the pedestrian experience on the streetscape. Based on these reasons, the proposed alternative compliance will result in a design which is equal to or better than the original standard.

c. *Private Open Space.*

(i) A readily accessible, functional, and clearly defined private outdoor space (such as a patio, courtyard or deck) with minimum dimensions of twelve (12) feet by eighteen (18) feet shall be provided for each dwelling unit.

Each dwelling unit within the Timber Lark community will have a usable side yard that exceeds the square footage of a 12' x 18' outdoor space. In some cases, individual outdoor spaces per dwelling unit far exceeds this minimum requirement, reaching up to 30' x 55', creating significantly more usable yard space.

(ii) All buildings on the same lot shall be spaced at least sixteen (16) feet apart.

There is only one building proposed per lot.

d. *Front Yard Fences.*

(i) Front yard fences shall not exceed sixty percent (60%) opacity.

This development is not proposing any front yard fences; therefore, this standard is met.

(ii) Front yard fences shall be between two and one-half (2½) feet and three (3) feet in height.

This development is not proposing any front yard fences and therefore, this standard is not applicable.

(iii) Front yard fences made of chain link are prohibited.

No chain link fences are proposed; therefore, this standard is met.

(iv) Any privacy fence along an interior side property line shall gradually transition to the height of the front yard fence.

No front yard fences are proposed; thus, this standard is not applicable.

ripley design
LANDSCAPE ARCHITECTURE, LAND PLANNING

July 14, 2021

Timber Lark Residential

Modification Request
Land Use Code Article 4.5(D)(2)(c)

Land Use Code Citation

Per Land Use Code Article 4.5(D):

(2) Mix of Housing. A mix of permitted housing types shall be included in any individual development plan, to the extent reasonably feasible, depending on the size of the parcel. In order to promote such variety, the following minimum standards shall be met:

(a) A minimum of housing types is required on any project development plan as follows:

1. *a minimum of two (2) housing types is required on any project development plan containing at least fifteen (15) acres and less than twenty (20) acres.*
2. *a minimum of three (3) housing types is required on any project development plan containing twenty (20) acres and less than thirty (30) acres, including such plans that are part of a phased overall development; and*
3. *a minimum of four (4) housing types is required on any such project development plan containing thirty (30) acres or more.*

(c) The following list of housing types shall be used to satisfy this requirement:

1. *Single-family detached dwellings with rear loaded garages.*
2. *Single-family detached dwellings with front or side loaded garages.*
3. *Small lot single-family detached dwellings (lots containing less than four thousand [4,000] square feet or with lot frontages of forty [40] feet or less) if there is a difference of at least two thousand (2,000) square feet between the average lot size for small lot single-family detached dwellings and the average lot size for single-family detached dwellings with front or side loaded garages.*
4. *Two-family dwellings.*
5. *Single-family attached dwellings.*
6. *Two-family attached dwellings, the placement of which shall be limited to no more than two (2) dwellings per two (2) consecutive individual lots.*
7. *Mixed-use dwelling units.*
8. *Multi-family dwellings containing more than three (3) to four (4) units per building;*
9. *Multi-family dwellings containing five (5) to seven (7) units per building.*
10. *Multi-family dwellings containing more than seven (7) units per building (limited to twelve [12] dwelling units per building).*
11. *Mobile home parks.(d)A single housing type shall not constitute more than eighty (80) percent or less than five (5) percent of the total number of dwelling units.*

Requested Modification

The Timber Lark Project Development Plan (PDP) proposes to develop a 35.17-acre vacant parcel as a residential community in South Fort Collins. The project is currently working toward annexation into the City of Fort Collins and is anticipated to be zoned as a Low Density Mixed-Use (LMN) district.

Per Land Use Code Article 4.5(D), a minimum of four housing types are required for any project containing thirty or more acres within the LMN district. The code further describes eleven potential housing types which may be used to satisfy this requirement. The list differentiates front and rear loaded single family detached dwellings as two different housing types. It also shows two-family dwellings are an approved housing type; however, the code does not differentiate between front-loaded and rear-loaded product types for two-family dwellings. This project is requesting a modification to allow front-loaded and rear-loaded two-family dwellings to be classified as two different housing types.

Justification

Land Use Code Article 2.8.1(H) states that the decision-maker may grant a modification of standards only if it finds that the granting of the modification would not be detrimental to the public good; and the decision-maker must also find that the Modification meets one of the following four criteria described in the LUC.

(1) *the plan as submitted will promote the general purpose of the standard for which the modification is requested equally well or better than would a plan which complies with the standard for which a modification is requested; or*

(2) *the granting of a modification from the strict application of any standard would, without impairing the intent and purpose of this Land Use Code, substantially alleviate an existing, defined and described problem of city-wide concern or would result in a substantial benefit to the city by reason of the fact that the proposed project would substantially address an important community need specifically and expressly defined and described in the city's Comprehensive Plan or in an adopted policy, ordinance or resolution of the City Council, and the strict application of such a standard would render the project practically infeasible; or*

(3) *by reason of exceptional physical conditions or other extraordinary and exceptional situations, unique to such property, including, but not limited to, physical conditions such as exceptional narrowness, shallowness or topography, or physical conditions which hinder the owner's ability to install a solar energy system, the strict application of the standard sought to be modified would result in unusual and exceptional practical difficulties, or exceptional or undue hardship upon the owner of such property, provided that such difficulties or hardship are not caused by the act or omission of the applicant; or*

(4) *the plan as submitted will not diverge from the standards of the Land Use Code that are authorized by this Division to be modified except in a nominal, inconsequential way when*

considered from the perspective of the entire development plan, and will continue to advance the purposes of the Land Use Code as contained in Section 1.2.2.

The request for two-family front-loaded and alley-loaded units to be classified as two separate housing types will not be detrimental to the public good. The intent of the requirement to provide four housing types is to ensure that the community will offer a variety of housing choices and encourage a variety in architecture. Since the project is not proposing to eliminate the fourth housing type, but rather is requesting that two-family front versus alley loaded dwellings be considered separate housing types, the intent of this requirement will still be satisfied. In addition, we find that criteria #1 listed above is being met through this proposal.

Criteria #1 requires that the proposed modification will promote the purpose of the standard equal to or better than a plan which would comply with the standard. The Land Use Code provides a distinction between front-loaded and rear-loaded single-family detached housing types; however, there is no provision which distinguishes between front-loaded and rear-loaded two-family housing types. The two-family housing types proposed will create a dynamic streetscape by alternating garage door placements between the front and rear of the home, creating the same effect as having front and rear loaded single-family detached homes.

Within the two-family housing types proposed, there will be 2, 3, and 4-bedroom options which will further diversify the available housing options and add unique architectural styles to the neighborhood. This range of bedroom options emphasizes the purpose of Land Use Code Article 4.5 which states that developments should "*meet a wide range of needs of everyday living in neighborhoods that include a variety of housing choices*."

Additionally, the Land Use Code allows for a minimum of 5% and a maximum of 80% for any one housing type. The project proposes no less than 13% and no more than 42% for each of the four housing types proposed, thereby maximizing the diversity of housing across the site.

(A) *Purpose. The Low Density Mixed-Use Neighborhood District is intended to be a setting for a predominance of low density housing combined with complementary and supporting land uses that serve a neighborhood and are developed and operated in harmony with the residential characteristics of a neighborhood. The main purpose of the District is to meet a wide range of needs of everyday living in neighborhoods that include a variety of housing choices, that invite walking to gathering places, services and conveniences, and that are fully integrated into the larger community by the pattern of streets, blocks, and other linkages. A neighborhood center provides a focal point, and attractive walking and biking paths invite residents to enjoy the center as well as the small neighborhood parks. Any new development in this District shall be arranged to form part of an individual neighborhood.*

ripley design
LANDSCAPE ARCHITECTURE, LAND PLANNING

The Timber Lark project exemplifies the purpose statement for the LMN zone district. The project will provide residential housing for the community through a variety of housing choices including single-family detached with both two and three car garage options, two-family front-loaded, two-family alley-loaded, and single-family attached. Within each of these housing types, floor plans range from 2-bedroom to 4-bedroom units, further increasing the housing variety for the community. The site design incorporates multiple gathering spaces including a centrally located neighborhood park, a pocket park, and several courtyards. The overall street pattern and connectivity meets current code standards and has been designed to be harmonious with the existing street network which has been established by previous developments. The project also proposes to construct a community trail along the west edge of the property to tie into the existing trail to the north and enhance pedestrian connectivity to the larger community.

ripley design
LANDSCAPE ARCHITECTURE, LAND PLANNING

July 14, 2021

Timber Lark Residential

Modification Request
Land Use Code Article 3.2.3(C)

Land Use Code Citation

Per Land Use Code Article 3.2.3:

(C) Solar-Oriented Residential Lots. At least sixty-five (65) percent of the lots less than fifteen thousand (15,000) square feet in area in single- and two-family residential developments must conform to the definition of a "solar-oriented lot" in order to preserve the potential for solar energy usage.

Solar-Oriented Lot Definition

Solar-oriented lot shall mean:

1. *A lot with a front lot line oriented to within thirty (30) degrees of a true east-west line. When the lot line abutting a street is curved, the "front lot line" shall mean the chord or straight line connecting the ends of the curve. For a flag lot, the "front lot line" shall mean the lot line that is most parallel to the closest street, excluding the "pole portion of the flag lot"; or*
2. *A lot which, when a straight line is drawn from a point midway between the side lot lines at the required front yard setback to a point midway between the side lot lines at the required rear yard setback, is oriented to within thirty (30) degrees of true north along said line; or*
3. *A corner lot with a south lot line oriented to within thirty (30) degrees of a true east-west line, which south lot line adjoins a public street or permanently reserved open space; provided, however, that the abutting street right-of-way or open space has a minimum north-south dimension of at least fifty (50) feet. For the purposes of this definition, "permanently reserved open space" shall include, without limitation, parks, cemeteries, golf courses and other similar outdoor recreation areas, drainage ditches and ponds, irrigation ditches and reservoirs, lakes, ponds, wetlands, open spaces reserved on plats for neighborhood use and other like and similar permanent open space.*

Requested Modification

The Timber Lark Project Development Plan (PDP) proposes to develop a 35.17-acre vacant parcel as a residential community in South Fort Collins. The project is currently working toward annexation into the City of Fort Collins and is anticipated to be zoned as a Low Density Mixed-Use (LMN) district.

Per Land Use Code Article 3.2.3(C), at least 65% of single- and two-family residential lots less than 15,000 square feet must conform to the definition of a solar-oriented lot. In this development, there are 149 single- and two-family lots, of which 71, or 48%, are designated as solar-oriented lots.

Justification

Land Use Code Article 2.8.1(H) states that the decision-maker may grant a modification of standards only if it finds that the granting of the modification would not be detrimental to the public good; and the decision-maker must also find that the Modification meets one of the following four criteria described in the LUC.

(1) the plan as submitted will promote the general purpose of the standard for which the modification is requested equally well or better than would a plan which complies with the standard for which a modification is requested; or

(2) the granting of a modification from the strict application of any standard would, without impairing the intent and purpose of this Land Use Code, substantially alleviate an existing, defined and described problem of city-wide concern or would result in a substantial benefit to the city by reason of the fact that the proposed project would substantially address an important community need specifically and expressly defined and described in the city's Comprehensive Plan or in an adopted policy, ordinance or resolution of the City Council, and the strict application of such a standard would render the project practically infeasible; or

(3) by reason of exceptional physical conditions or other extraordinary and exceptional situations, unique to such property, including, but not limited to, physical conditions such as exceptional narrowness, shallowness or topography, or physical conditions which hinder the owner's ability to install a solar energy system, the strict application of the standard sought to be modified would result in unusual and exceptional practical difficulties, or exceptional or undue hardship upon the owner of such property, provided that such difficulties or hardship are not caused by the act or omission of the applicant; or

(4) the plan as submitted will not diverge from the standards of the Land Use Code that are authorized by this Division to be modified except in a nominal, inconsequential way when considered from the perspective of the entire development plan, and will continue to advance the purposes of the Land Use Code as contained in Section 1.2.2.

The request for a reduction from 65% to 48% of solar-oriented lots will not be detrimental to the public good. The architecture of the single-family detached and two-family dwellings incorporates varied roof orientations which would allow the ability for solar-energy systems to be installed on any unit within the development, thereby promoting the intent of the Land Use Code to encourage the use of solar energy to heat homes. In addition, we find that criteria #3 has been met with this proposal, as illustrated below.

Criteria #3 states that physical conditions such as exceptional narrowness would result in undue hardship on the owner of such property. The north to south dimension of the property is approximately

695 linear feet. There is also a 15-foot drainage easement which runs along the northern property boundary. In order to orient at least 65% of the lots so that they front onto an east-to-west street, the site would need to be redesigned to include a third east-to-west street, rather than the two currently shown on the plan. With each of these streets requiring a 53' R.O.W., this would result in single-family lots with a maximum depth of about 86 feet, rather than the 105' lot depth currently provided. Reducing the lot depths by almost 20 feet would drastically reduce the privacy and available space for future homeowners to enjoy their backyards.

Additionally, the reduced lot depths would result in a reduction of solar gain at the back of the house since the houses would be placed much closer together. For the largest single-family detached footprint, this would result in a dimension of just 13' from the building wall to the property line, versus 32' provided with the current lot configuration. During the winter months when the sun is low in the sky, it is anticipated that the current lot configuration will provide much greater opportunity for solar gain due to the separation provided between structures.

TIMBER LARK SUBDIVISION
TRANSPORTATION IMPACT STUDY

FORT COLLINS, COLORADO

NOVEMBER 2021

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Project #2109

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APPENDICES

I. INTRODUCTION

This Transportation Impact Study (TIS) addresses the capacity, geometric, and control requirements for the proposed Timber Lark Subdivision. The proposed Timber Lark Subdivision is located on the west side of Timberline Road and north of Trilby Road in Fort Collins, Colorado.

During the course of the analysis, numerous contacts were made with the project developer, project planning consultant (Ripley Design), the project engineer (Northern Engineering), and the City of Fort Collins Traffic Operations Engineer. The Transportation Impact Study Base Assumptions form and related documents are provided in Appendix A. This study generally conforms to the format set forth in the Fort Collins TIS Guidelines in the "Larimer County Urban Area Street Standards" (LCUASS). A scoping discussion was held with the Fort Collins Traffic Engineering staff. The study involved the following steps:

- Collect physical, traffic, and development data;
- Perform trip generation, trip distribution, and trip assignment;
- Determine peak hour traffic volumes;
- Conduct capacity and operational level of service analyses on key intersections;
- Analyze signal warrants;
- Conduct level of service evaluation of pedestrian, bicycle, and transit modes of transportation

This TIS is a revision of the "South Timberline Residential Transportation Impact Study," dated May 2021. This revision addresses the name change and comments from the City of Fort Collins Traffic Operations dated October 5, 2021.

II. EXISTING CONDITIONS

The location of the Timber Lark Subdivision is shown in Figure 1. It is important that a thorough understanding of the existing conditions be presented.

Land Use

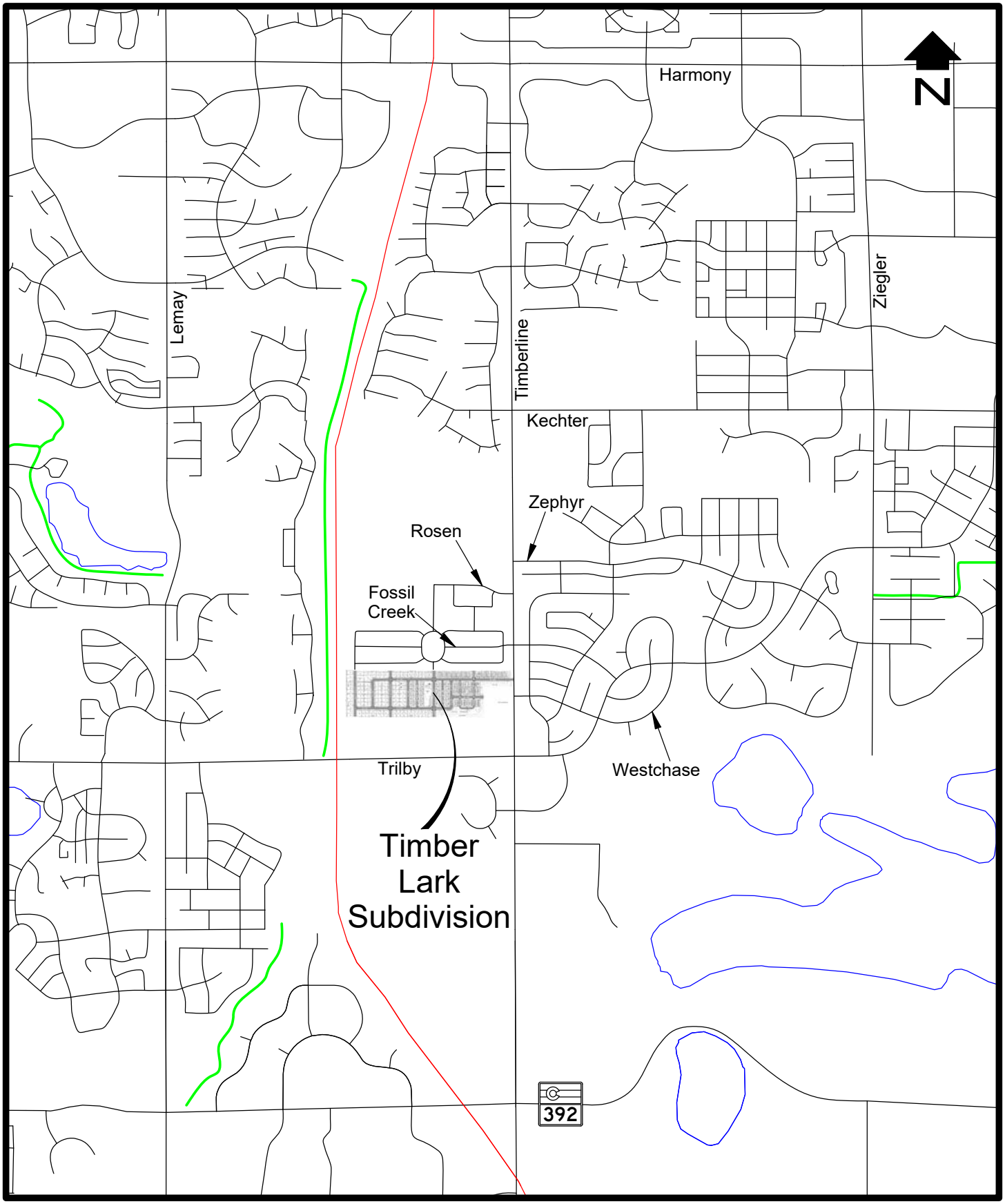
Land uses in the area are primarily residential, institutional (school), or open. There are residential uses to the east and north of the site. Bacon Elementary is to the northeast of the site. Kechter Farms (a residential use) to the east of the site and is nearly built out. The center of Fort Collins lies to the northwest of the proposed Timber Lark Subdivision site.

Streets

The primary streets near the Timber Lark Subdivision site are Timberline Road, Trilby Road, Westchase Road, and Fossil Creek Parkway. Figure 2 shows the current geometry at the key intersections.

Timberline Road is east of (adjacent to) the proposed Timber Lark Subdivision site. It is a north-south street classified as a four-lane arterial street, north of Trilby Road and a two-lane arterial street, south of Trilby Road on the Fort Collins Master Street Plan. Currently, Timberline Road has a two-lane cross section (with center lane) in this area. At the Timberline/Trilby intersection, Timberline Road has northbound and southbound left-turn lanes, one through lane in each direction, and northbound and southbound right-turn lanes. The Timberline/Trilby intersection has signal control. At the Timberline/Westgate-Driveway intersection, Timberline Road has northbound and southbound left-turn lanes (two-way continuous left-turn lanes) and one through lane in each direction. At the Timberline/Fossil Creek intersection, Timberline Road has northbound and southbound left-turn lanes (two-way continuous left-turn lanes), a northbound through/right-turn lane, a southbound through lane, and a southbound right-turn lane. The Timberline/Westgate-Driveway and Timberline/Fossil Creek have stop sign control on the minor streets. The posted speed limit on Timberline Road is 40 mph in this area.

Trilby Road is south of the proposed Timber Lark Subdivision site. It is an east-west street classified as a four-lane arterial, west of Timberline Road and a collector street, east of Timberline Road on the Fort Collins Master Street Plan. Currently, Trilby Road has a two-lane cross section. At the Timberline/Trilby intersection, Trilby Road has eastbound and westbound left-turn lanes and a through/right-turn lane in each direction. The posted speed limit on Trilby Road is 40 mph, west of Timberline Road and 25 mph, east of Timberline Road.

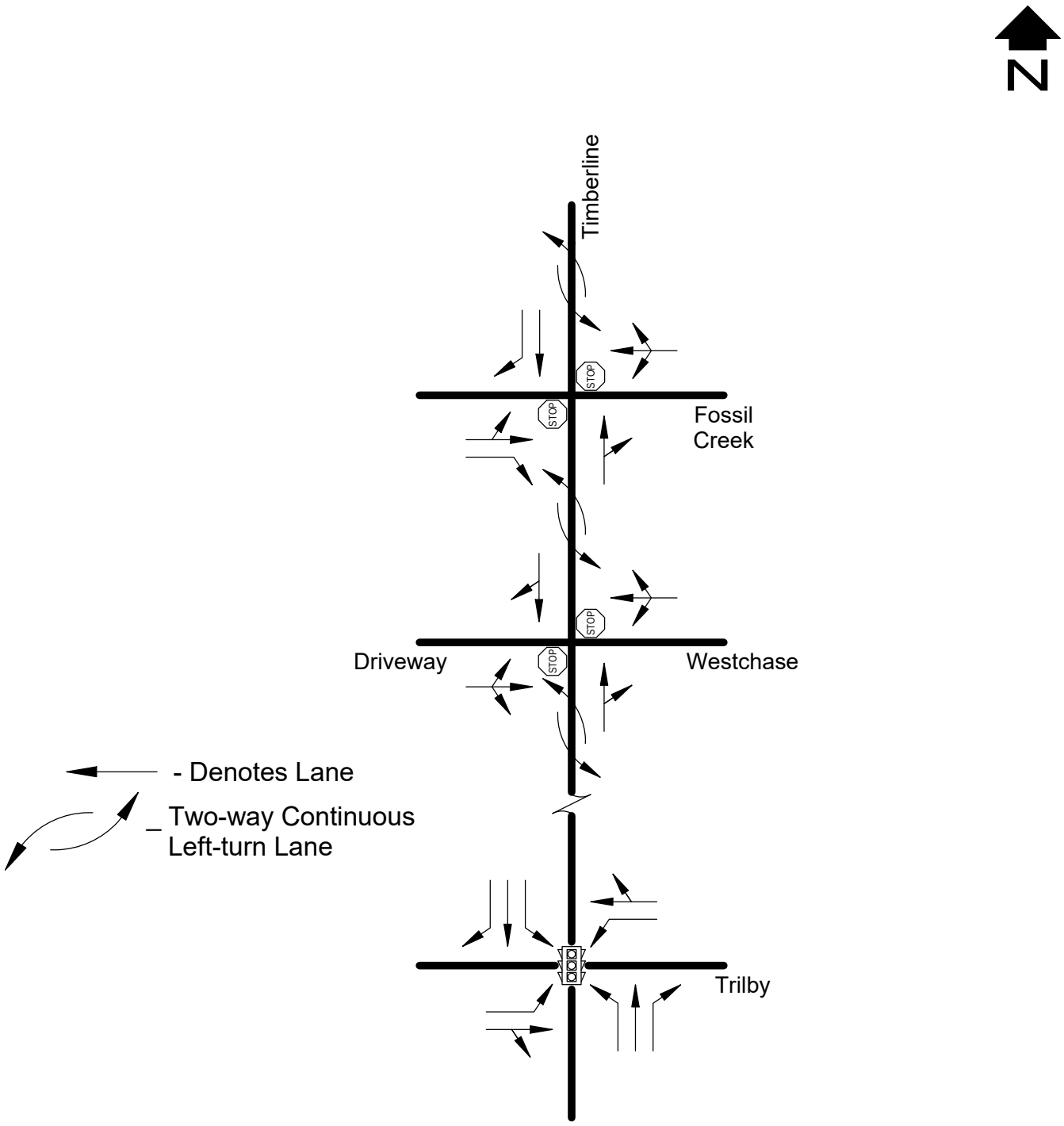


SCALE: 1"=2000'

SITE LOCATION

Figure 1

DELICH ASSOCIATES



EXISTING INTERSECTION GEOMETRY Figure 2

Fossil Creek Parkway is north of the proposed Timber Lark Subdivision site. It is an east-west street classified as a local street on the Fort Collins Master Street Plan. Currently, Fossil Creek Parkway has a two-lane cross section. At the Timberline/Fossil Creek intersection, Fossil Creek Parkway has all westbound movements combined into a single lane. The west leg (eastbound) of Fossil Creek Parkway is wide enough that right-turning vehicles bypass the through/left-turning vehicles. There is a pedestrian signal at this intersection.

Existing Traffic

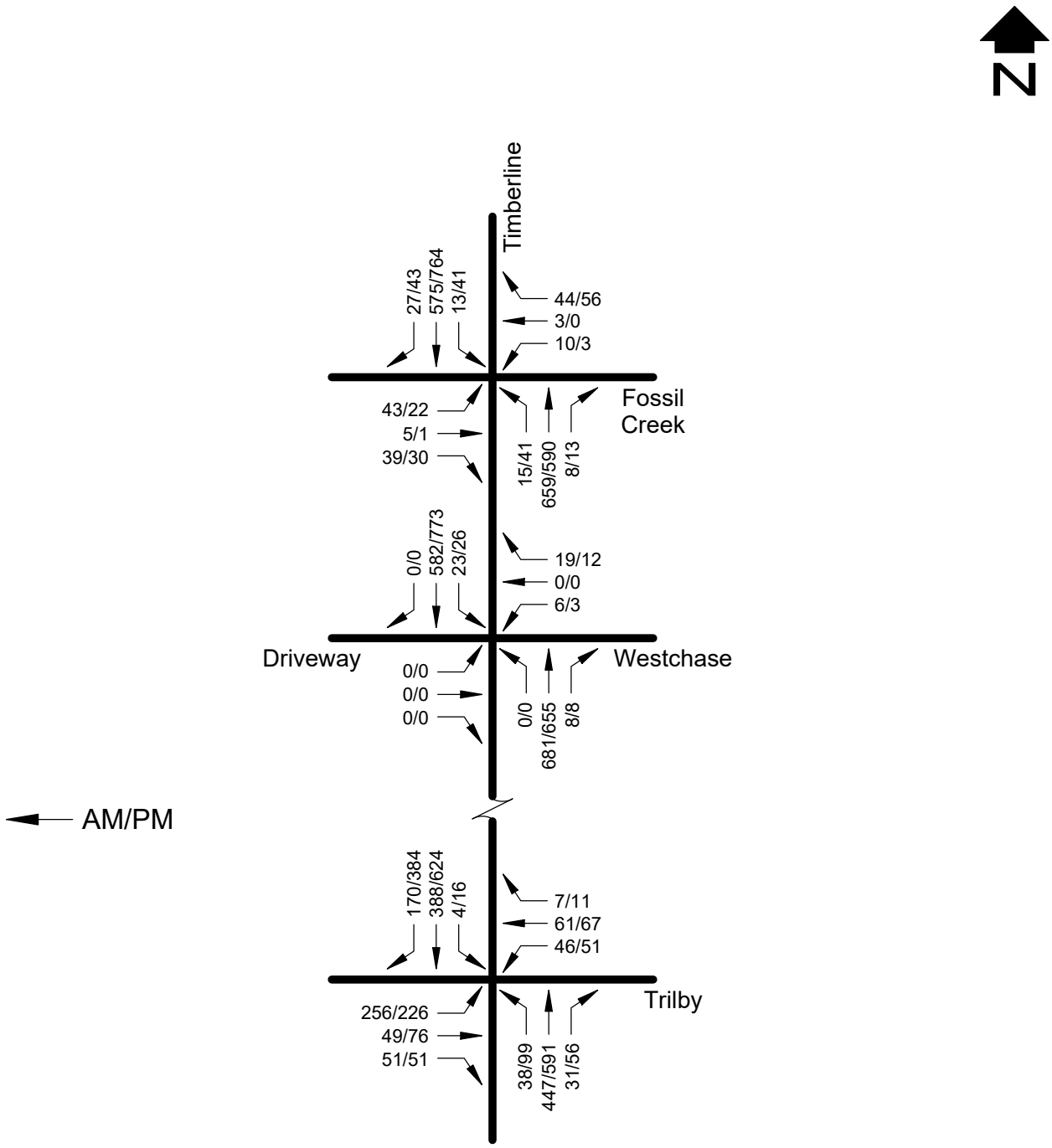
Recent peak hour traffic volumes at the Timberline/Trilby, Timberline/Westchase-Driveway, and Timberline/Fossil Creek intersections are shown in Figure 3. The counts at the Timberline/Trilby intersection were obtained in August 2019. The counts at the Timberline/Westchase-Driveway and Timberline/Fossil Creek intersections were obtained in February 2021. Raw traffic count data is provided in Appendix B. Since the counts were collected on different days and during the COVID-19 pandemic, the volumes at the Timberline/Westchase-Driveway and Timberline/Fossil Creek intersections were adjusted and are shown in Figure 4.

Existing Operation

The Timberline/Trilby, Timberline/Westchase-Driveway, and Timberline/Fossil Creek intersections were evaluated using techniques provided in the 2016 Highway Capacity Manual, 6th Edition. Using the morning and afternoon peak hour traffic shown in Figure 4, the peak hour operation is shown in Table 1. Calculation forms are provided in Appendix C. A description of level of service for signalized and unsignalized intersections from the 2016 Highway Capacity Manual and a table showing the Fort Collins Motor Vehicle LOS Standards (Intersections) are also provided in Appendix C. Acceptable operation at signalized intersections during the peak hours is defined as level of service E or better for each movement and leg, and level of service D or better overall. At arterial/arterial unsignalized intersections, acceptable operation is considered to be at level of service F for any approach leg and level of service E overall. At arterial/local unsignalized intersections, acceptable operation is considered to be at level of service F for any approach leg and level of service D overall. In such areas, it is expected that there would be substantial delays to the minor street movements at unsignalized intersections during the peak hours. This is considered to be normal in urban areas. The key intersections currently meet the Fort Collins operational criteria with existing control and geometry in the morning and afternoon peak hours.

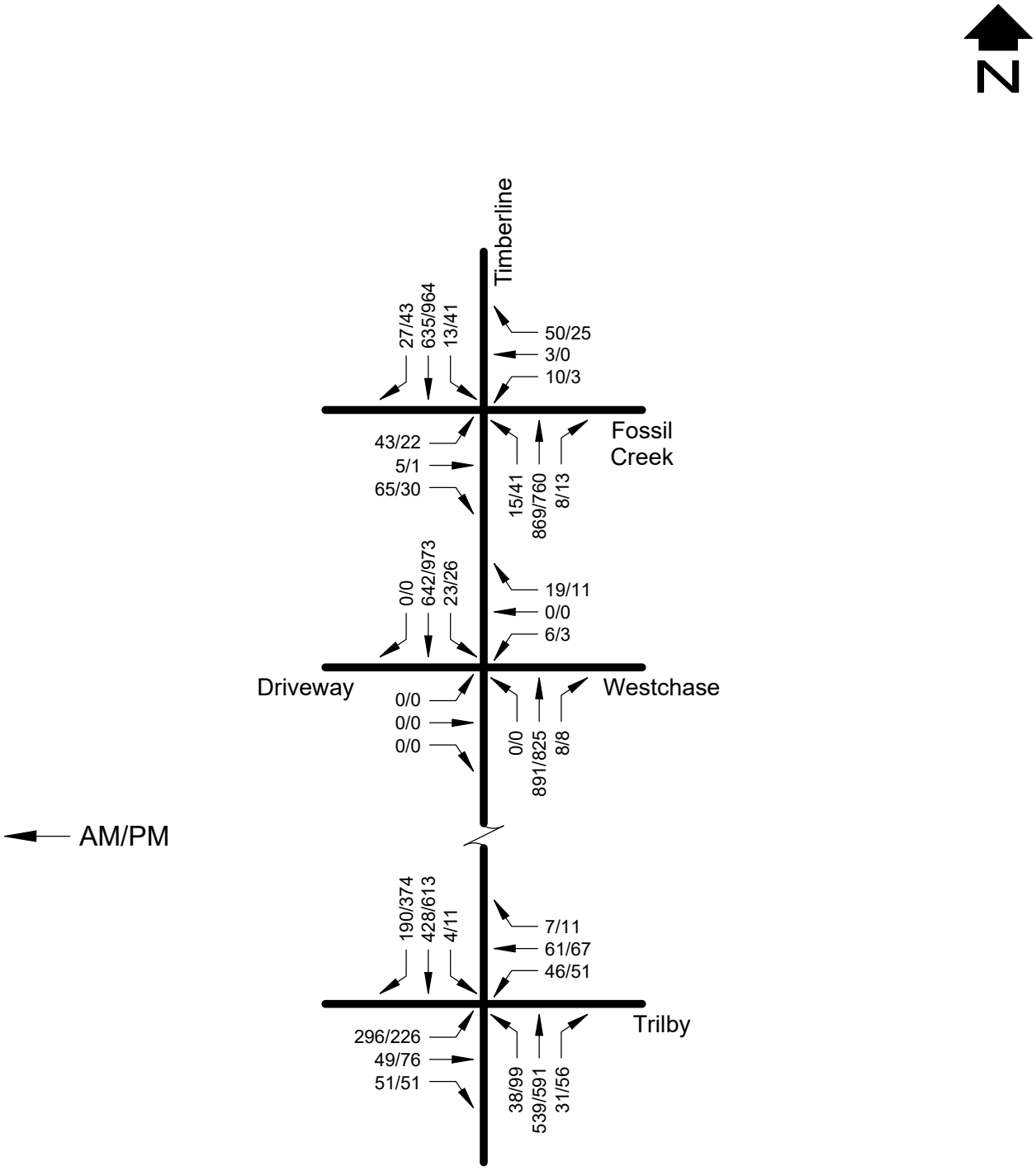
Pedestrian Facilities

There are sidewalks along the east side of Timberline Road (between Trilby Road and Zephyr Road), along Zephyr Road, along Fossil Creek Parkway, along Trilby Road (east of Timberline), and the west side of Timberline Road (near the Timberline/ Rosen intersection). Sidewalks will be incorporated within and adjacent to this development.



RECENT PEAK HOUR TRAFFIC

Figure 3



ADJUSTED RECENT PEAK HOUR TRAFFIC Figure 4

TABLE 1 Current Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
Timberline/Trilby (signal)	EB LT	E (56.7 secs)	E (78.6 secs)
	EB T/RT	C	D
	EB APPROACH	D	E (66.7 secs)
	WB LT	D	E (55.6 secs)
	WB T/RT	D	E (58.6 secs)
	WB APPROACH	D	E (57.4 secs)
	NB LT	A	B
	NB T	B	B
	NB RT	A	A
	NB APPROACH	B	B
	SB LT	B	A
	SB T	B	B
	SB RT	B	A
	SB APPROACH	B	B
	OVERALL	C	C
Timberline/Westchase-Driveway (stop sign)	EB LT/T/RT	A	A
	WB LT/T/RT	D	E (35.3 secs)
	NB LT	A	A
	SB LT	B	A
	OVERALL	A	A
Timberline/Fossil Creek (stop sign)	EB LT/T	F (195.4 secs)	F (234.4 secs)
	EB RT	B	C
	EB APPROACH	F (91.3 secs)	F (112.8 secs)
	WB LT/T/RT	E (40.2 secs)	D
	NB LT	A	B
	SB LT	B	A
	OVERALL	A	A

Bicycle Facilities

There are bicycle lanes along Timberline Road, Zephyr Road, and Trilby Road (east of Timberline Road) within the study area.

Transit Facilities

Currently, this area of Fort Collins is not served by Transfort. The closest route is Route 16 that runs along Harmony Road.

III. PROPOSED DEVELOPMENT

Timber Lark Subdivision is a residential development, located along the west side of Timberline Road, between Trilby Road and Fossil Creek Parkway in Fort Collins. Figure 5 shows a site plan of the Timber Lark Subdivision. The proposed Timber Lark Subdivision will consist of 197 single family detached dwelling units.

The short range analysis (Year 2026) includes development of the Timber Lark Subdivision site and an appropriate increase in background traffic due to normal growth and other potential developments in the area. The site plan shows that the Timber Lark Subdivision development will have one right-in/right-out access to/ from Timberline Road. In the near future, Red Willow Drive will connect to a future signal at the Timberline/Zephyr intersection through the properties to the north.

The long range analysis (Year 2040) includes development of the Timber Lark Subdivision and an appropriate increase in background traffic due to normal growth, in general accordance with the Fort Collins Structure Plan, and the "Timberline Road Widening Project – Stetson Creek Drive to Trilby Road" (April 27, 2020). In the long range (2040) future, the stub shown on the site plan is expected to be extended to line up with Westchase Road. When this occurs, the right-in/right-out site access will be closed becoming a cul-de-sac within the Timber Lark Subdivision development. The future Timberline/Westchase intersection will be a full-movement intersection with stop sign control on Westchase Road. Red Willow Drive will likely extend south to Trilby Road, by/before 2040.

Trip Generation

Trip generation is important in considering the impact of a development such as this upon the existing and proposed street system. A compilation of trip generation information contain in Trip Generation, 10th Edition, ITE was used to estimate the trips that would be generated by the proposed/expected uses at the Timber Lark Subdivision site. A trip is defined as a one-way vehicle movement from origin to destination. Table 2 shows the expected trip generation on a daily and peak hour basis. The trip generation of the Timber Lark Subdivision development resulted in 1940 daily trip ends, 145 morning peak hour trip ends, and 195 afternoon peak hour trip ends.

TABLE 2
Trip Generation

Code	Use	Size	AWDTE		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Rate	Out	Rate	In	Rate	Out
210	Single Family Detached	197 D.U.	EQ	1940	EQ	36	EQ	109	EQ	123	EQ	72

N

SCALE: 1"=400'

SITE PLAN

Figure 5

DELICH ASSOCIATES

Trip Distribution

Trip distribution for the Timber Lark Subdivision was based on existing/future travel patterns, land uses in the area, consideration of trip attractions/productions in the area, and engineering judgment. Figure 6 shows the trip distribution for the short range (2026) and long range (2040) analysis futures. The trip distribution was agreed to by City of Fort Collins staff.

Background Traffic Projections

Figures 7 and 8 show the short range (2026) and long range (2040) background traffic projections, respectively. Background traffic projections for the short range (2026) future horizon were obtained by reviewing the North Front Range Regional Transportation Plan and various traffic studies prepared for this area of Fort Collins. Based upon these sources, it was determined that traffic volumes on Timberline Road and Trilby Road would increase by approximately 1.0% per year plus other developments in the area. The developments included in the short range (2026) future are the remainder of Kechter Farms, the remainder of Mail Creek Crossing, the Hansen Property, and the Rennat Property. According to City staff, Timberline Road will be improved to a four-lane arterial in the near future north of Rosen Drive. In addition to this, a signal will be installed at the Timberline/Zephyr intersection with the development of the Hansen Property in late 2021.

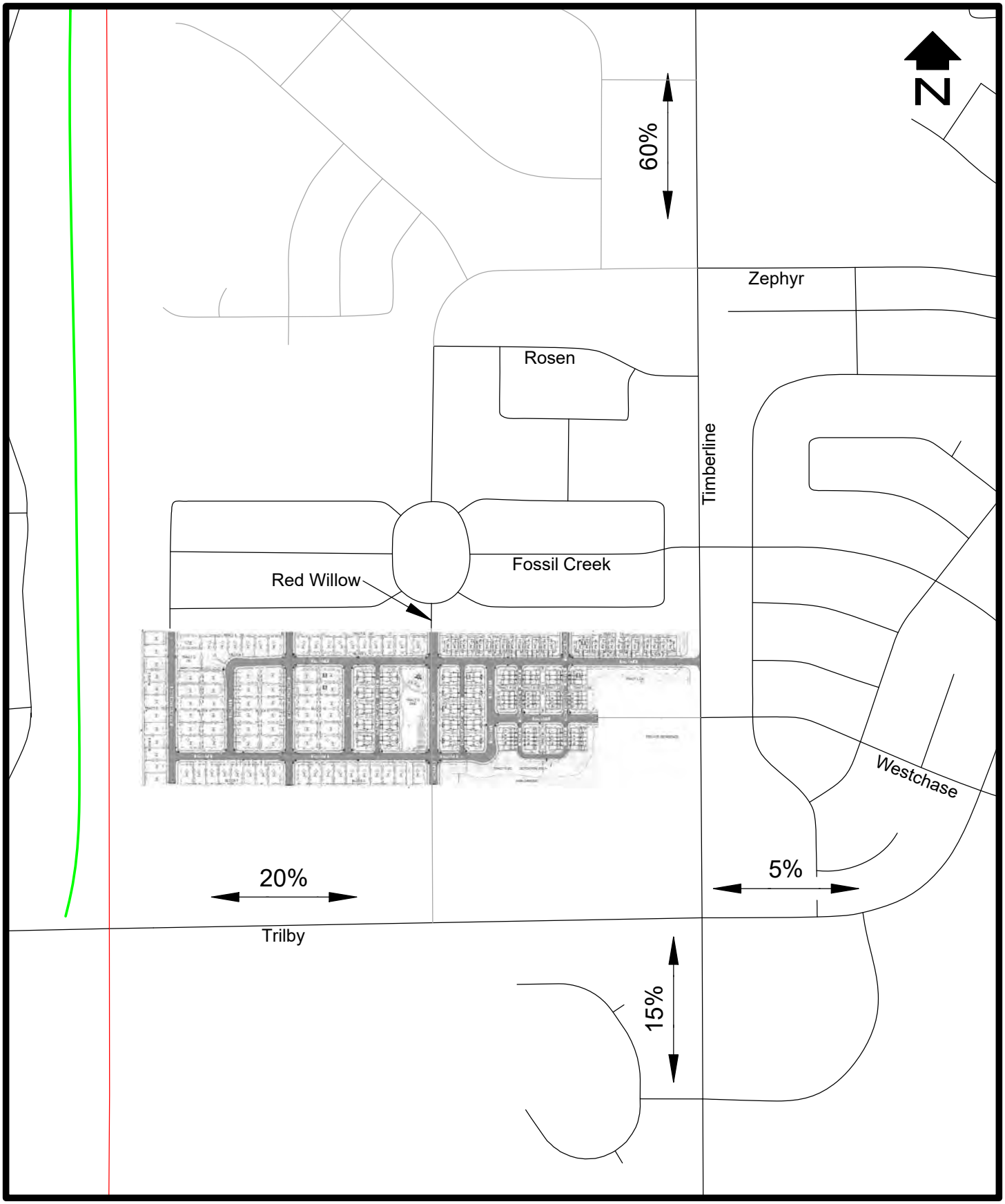
In the long range (2040) future with a signal at the Timberline/Zephyr intersection, a significant amount of existing (and future) traffic making a left turn from Fossil Creek Parkway and future Westchase Road (west leg) will choose to utilize that signal. Some traffic from the properties on the west side of Timberline Road will utilize the extension of Red Willow Drive to Trilby Road. The long range (2040) background traffic volumes shown in Figure 8 reflect this redistribution of traffic.

Trip Assignment and Total Traffic Projections

Trip assignment is how the generated and distributed trips are expected to be loaded on the street system. The assigned trips are the resultant of the trip distribution process. Figures 9 and 10 show the respective short range (2026) and long range (2040) site generated peak hour traffic assignment. Figures 11 and 12 show the respective short range (2026) and long range (2040) total (site plus background) peak hour traffic assignment.

Signal Warrants

As a matter of policy, traffic signals are not installed at any location unless warrants are met according to the Manual on Uniform Traffic Control Devices. The Timberline/ Trilby intersection is currently signalized. For the roads in the vicinity of the Timber Lark

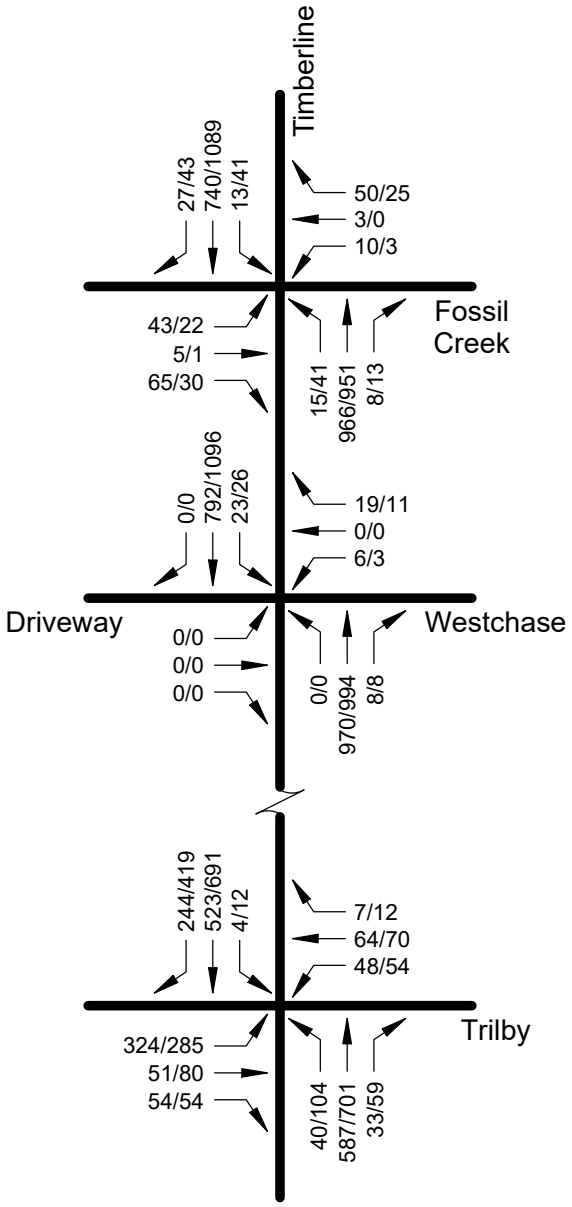


SCALE: 1"=600'

TRIP DISTRIBUTION

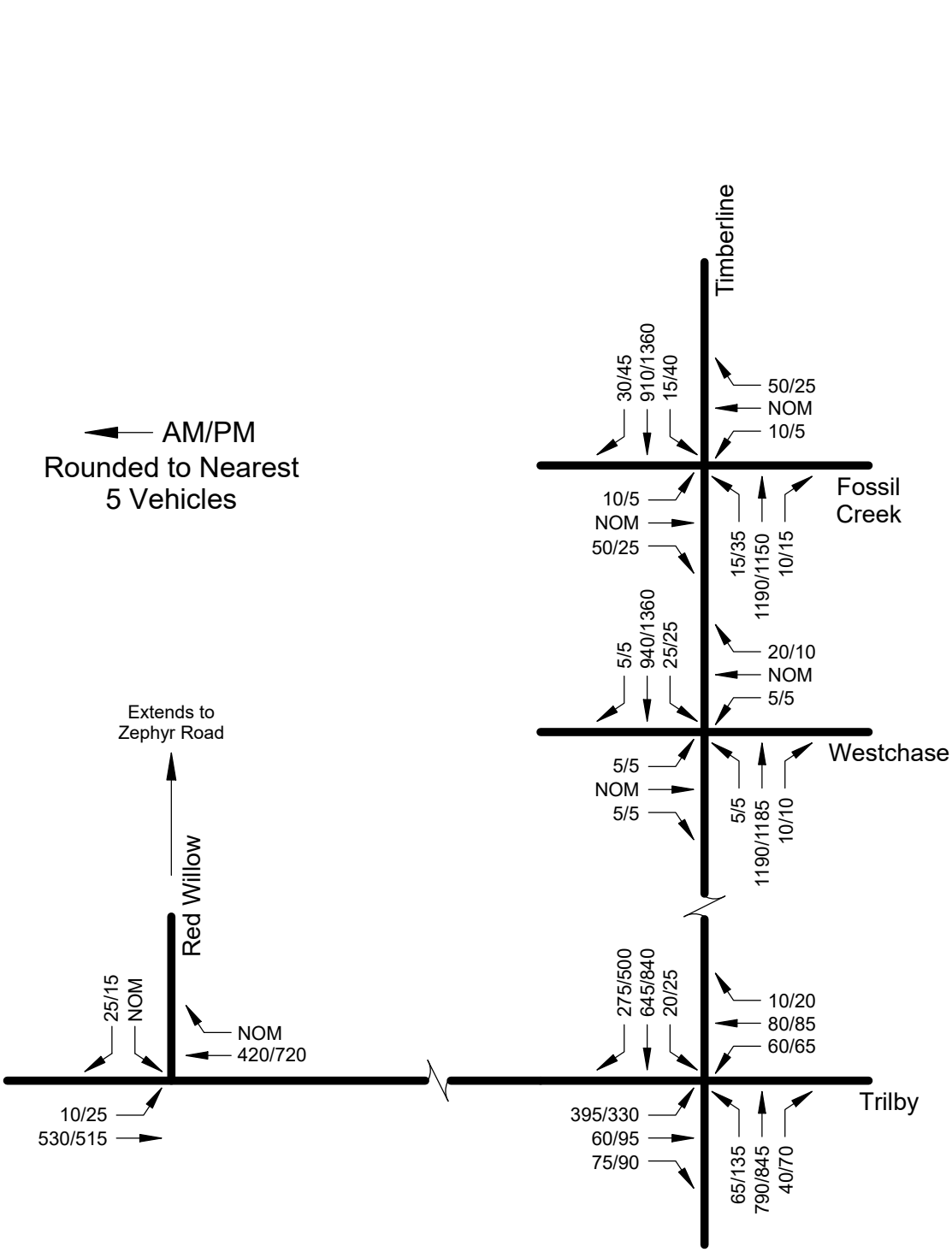
Figure 6

DELICH ASSOCIATES



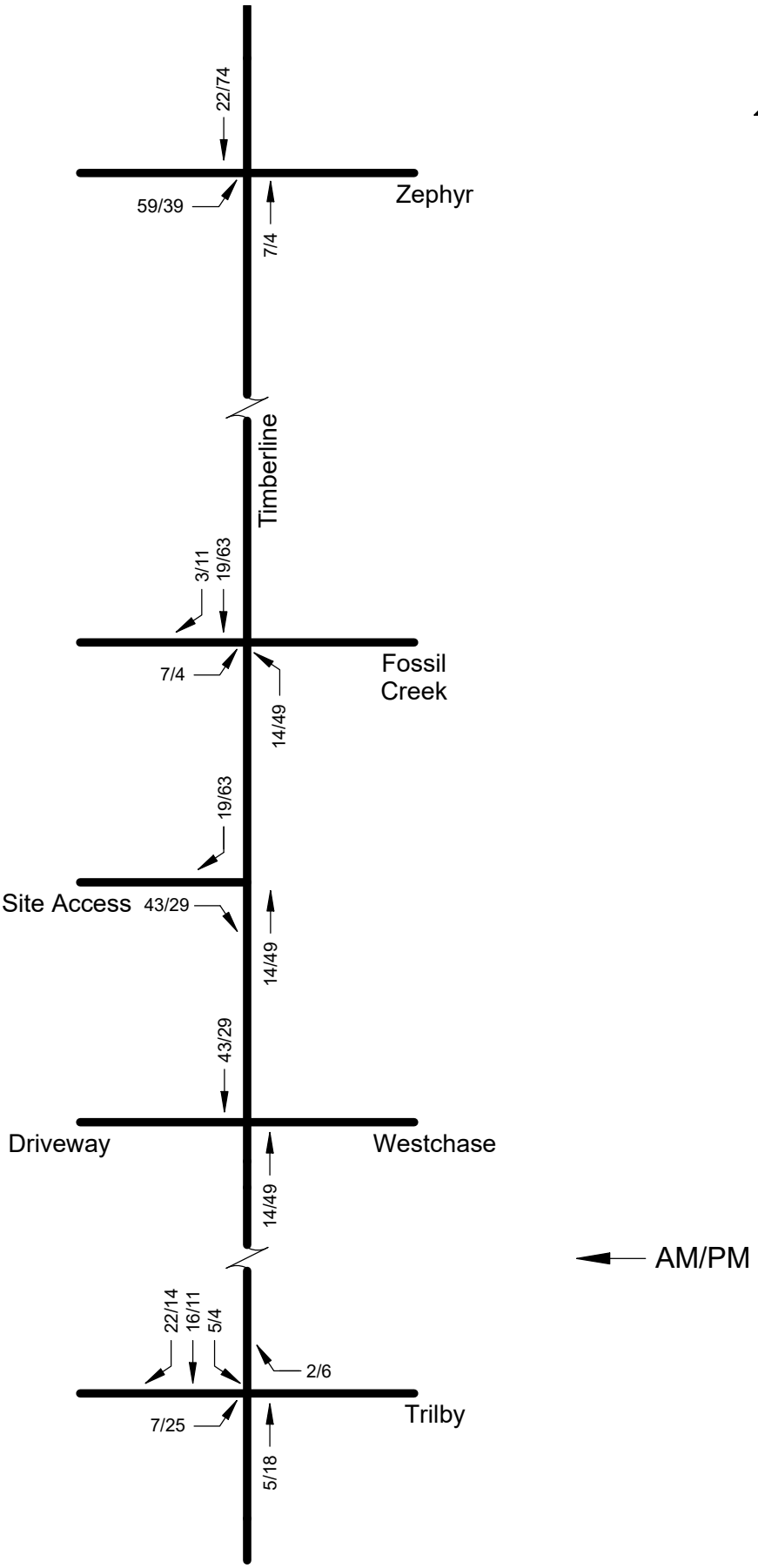
SHORT RANGE (2026) BACKGROUND PEAK HOUR TRAFFIC

Figure 7



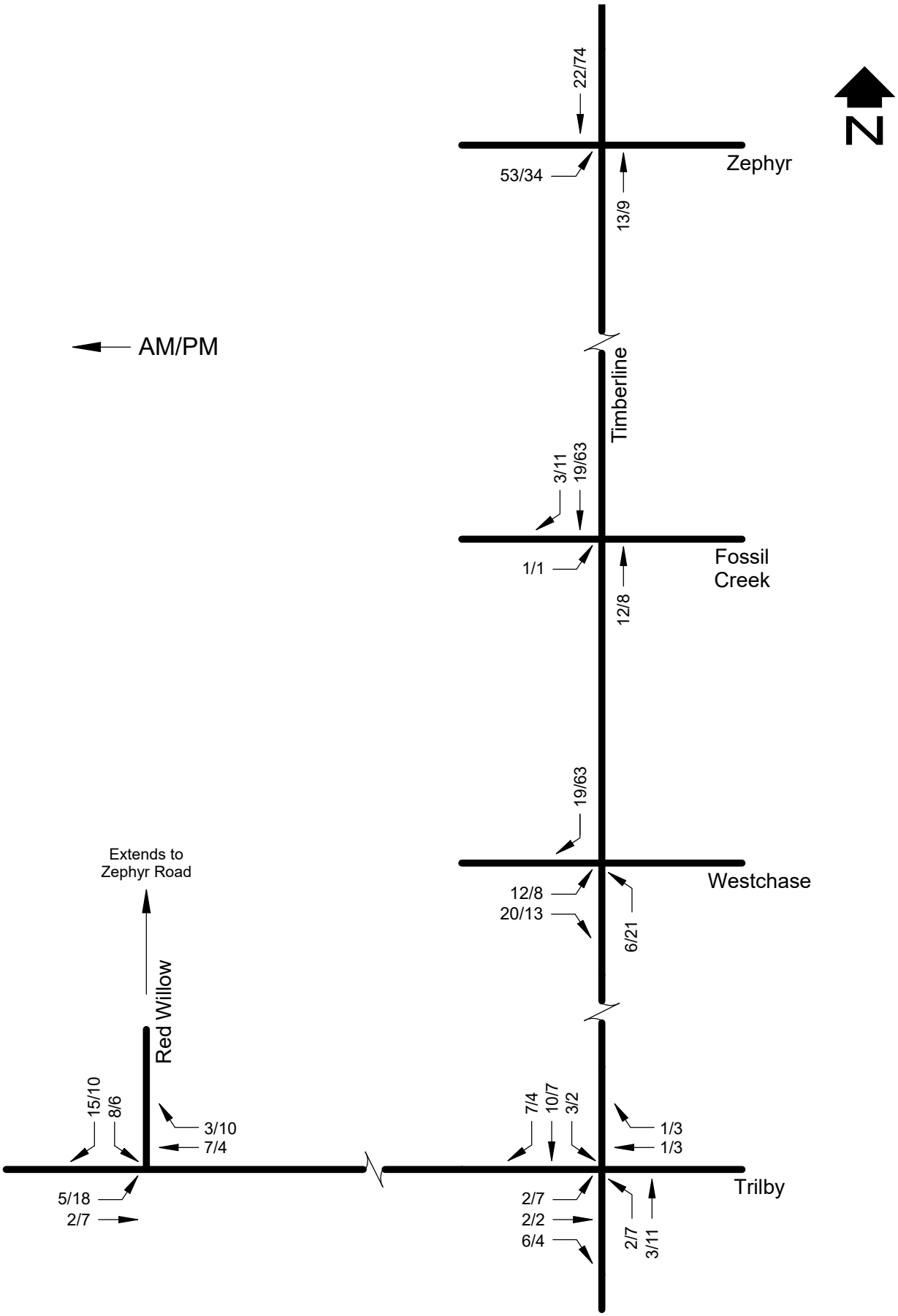
LONG RANGE (2040) BACKGROUND PEAK HOUR TRAFFIC

Figure 8



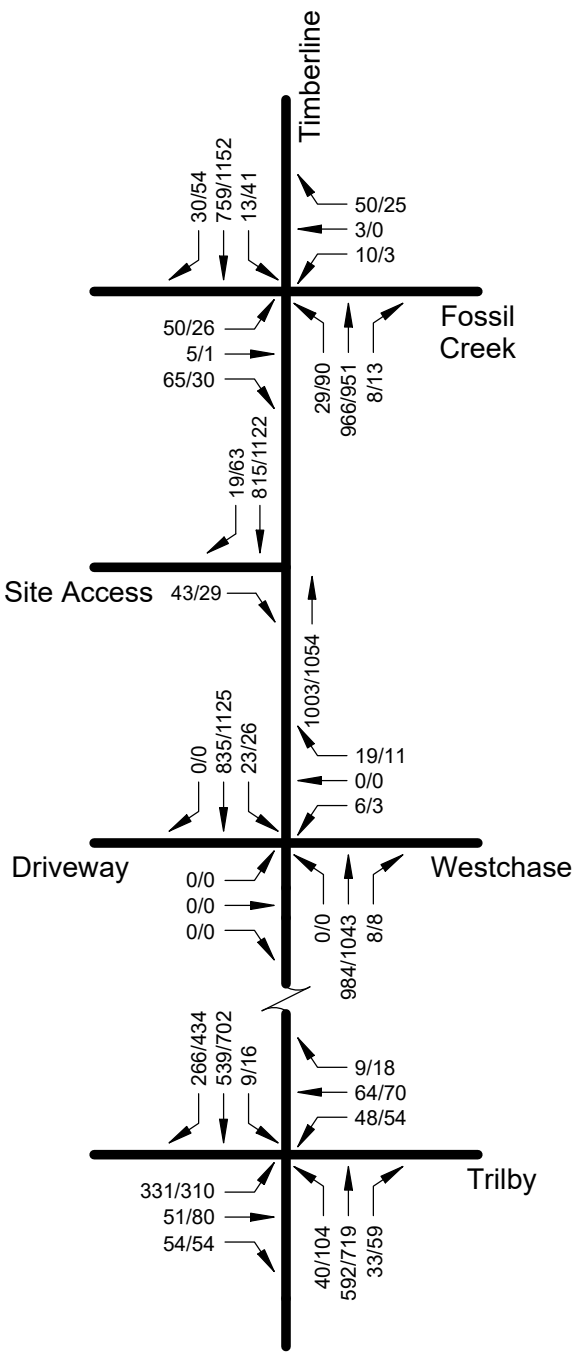
SHORT RANGE (2026) SITE GENERATED PEAK HOUR TRAFFIC

Figure 9



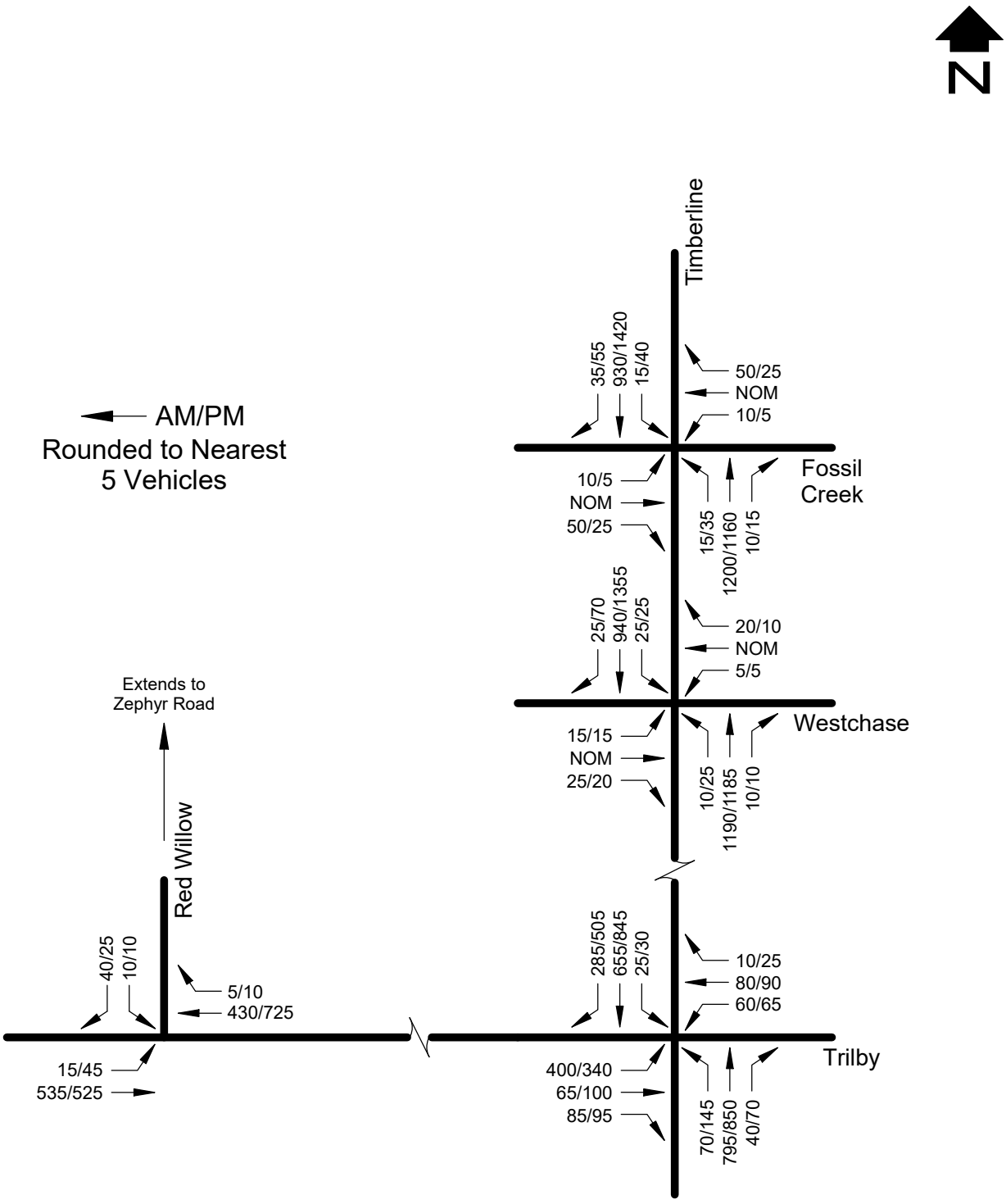
LONG RANGE (2040) SITE GENERATED PEAK HOUR TRAFFIC

Figure 10



SHORT RANGE (2026) TOTAL PEAK HOUR TRAFFIC

Figure 11



LONG RANGE (2040) TOTAL PEAK HOUR TRAFFIC

Figure 12

Subdivision development, four hour and/or eight hour signal warrants are applicable. These warrants require much data and are applied when the traffic is actually on the area road system. It is acknowledged that peak hour signal warrants should not be applied, but since the peak hour forecasts are readily available in a traffic impact study, it is reasonable to use them to estimate whether other signal warrants may be met. If peak hour signal warrants will not be met at a given intersection, it is reasonable to conclude that it is not likely that other signal warrants would be met. If peak hour signal warrants are met, it merely indicates that further evaluation should occur in the future as the development occurs. However, a judgment can be made that some intersections may meet other signal warrants.

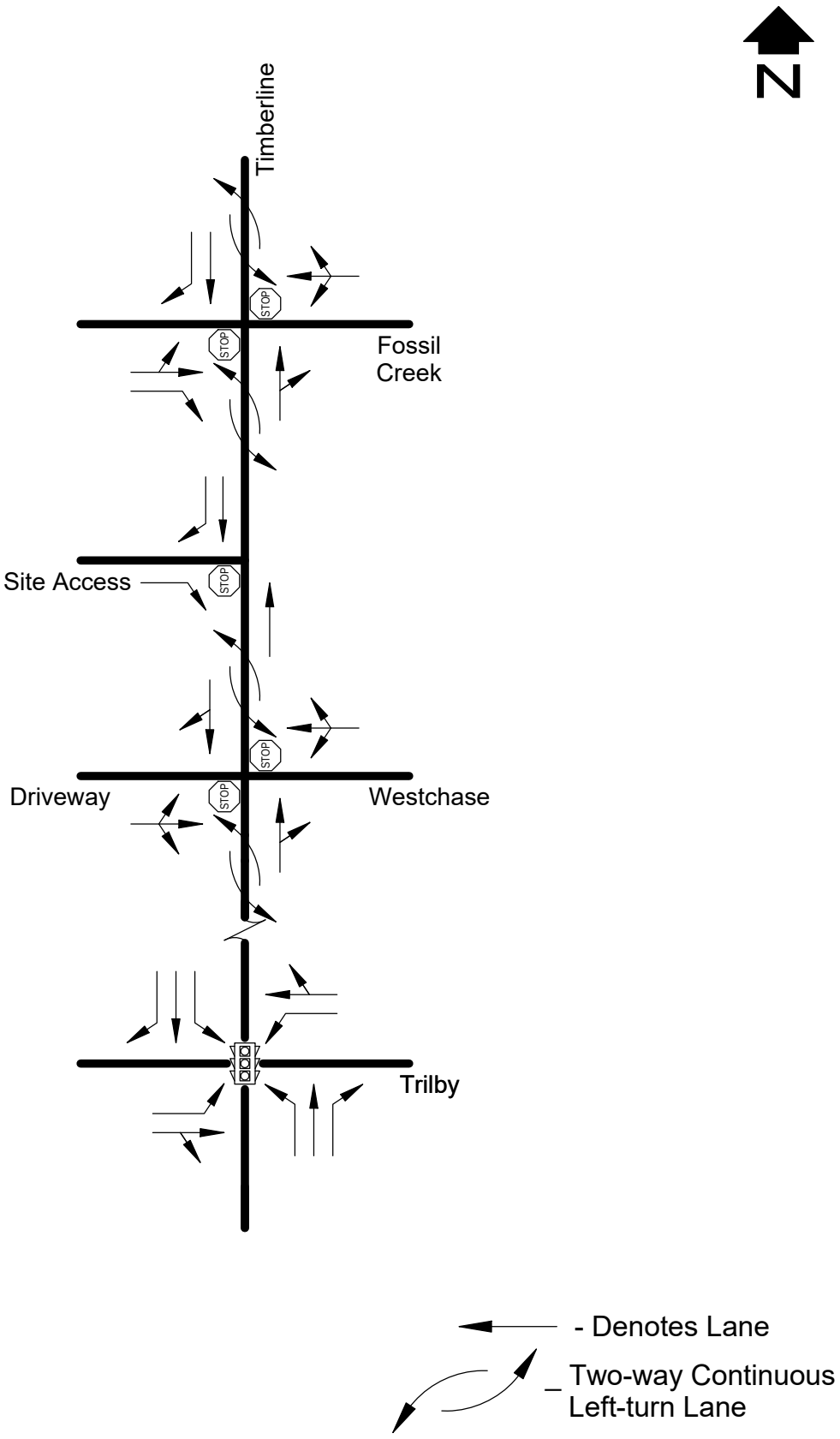
In late 2021, the Timberline/Zephyr intersection will be signalized. When this occurs, the pedestrian signal at the Timberline/Fossil Creek intersection may be removed. There will be a safe pedestrian crossing at the signalized Timberline/Zephyr intersection and a pedestrian underpass (of Timberline Road) just north of Zephyr Road. The timing of removal of the pedestrian signal at the Timberline/Fossil Creek intersection will be determined by the City of Fort Collins. With the signalization of the Timberline/Zephyr intersection, no other intersections will be signalized in this area.

There is currently an emergency signal at the Timberline/Westchase intersection. This will be converted to a pedestrian signal in the future. Along with this pedestrian signal, sidewalk should be extended on the west side of Timberline Road, south of Fossil Creek Parkway. Approximately 250 feet is along the Timber Lark Subdivision frontage. Approximately 360 feet is along the Linden Park frontage and approximately 200 feet is along the private out-parcel. The timing of the Westchase pedestrian signal is not known, but will likely occur as a City Capital Improvement Project.

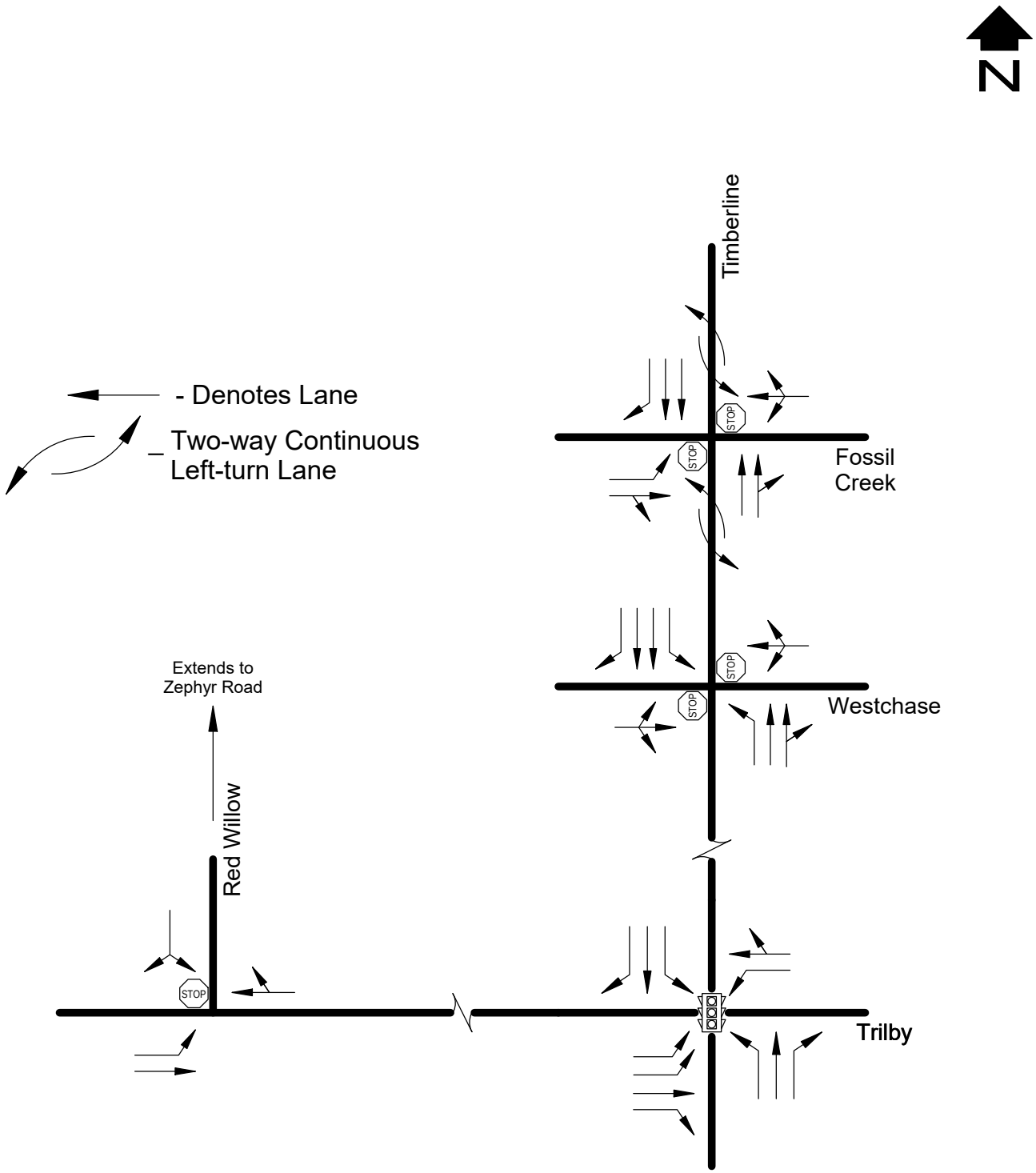
Geometry

Figure 13 shows a schematic of the minimum short range (2026) intersection geometry. According to City staff, Timberline Road will be improved to a four-lane arterial in the near future north of Rosen Drive. The Timberline/Site Access intersection is expected to be restricted to right-in/right-out movements. The Timberline/Westchase intersection is approximately 280 feet south of the Site Access. At the Timberline/Trilby intersection, the eastbound left-turn volume exceeds the 300+ vehicles per hour “rule of thumb” that would require dual left-turn lanes. However, a single eastbound left-turn lane was analyzed in this TIS for the short range (2026) future.

Figure 14 shows a schematic of the long range (2040) geometry. The geometry at the key intersections in the long range future was determined based upon achieving acceptable operation, meeting the geometric criteria in LCUASS, the City of Fort Collins Master Street Plan, and the “Timberline Road Widening Project – Stetson Creek Drive to Trilby Road” memorandum.



SHORT RANGE (2026) GEOMETRY Figure 13



LONG RANGE (2040) GEOMETRY Figure 14

Operation Analysis

Operation analyses were performed at the Timberline/Trilby, Timberline/ Westchase-Driveway, Timberline/Site Access (short range), Timberline/Fossil Creek, and Trilby/Red Willow (long range) intersections. As mentioned earlier, Timberline Road will be improved to a four-lane arterial in the near future north of Rosen Drive. The operations analyses were conducted for the short range future, reflecting a year 2026 condition, and long range future, reflecting a year 2040 condition. At the stop sign controlled intersections, if delays to the minor street movements become significant, drivers will seek alternative routes. The long range (2040) analysis is provided for informational purposes and to identify potential operational and/or geometric issues.

Using the short range (2026) background traffic volumes shown in Figure 7, the Timberline/Trilby, Timberline/Westchase-Driveway, and Timberline/Fossil Creek intersections operate as indicated in Table 3. Calculation forms for these analyses are provided in Appendix D. At the key stop sign controlled intersections, the calculated delay for the minor street left turns is commensurate with level of service F. Since it is likely that a signal will be installed at the Timberline/Zephyr intersection with the approved Hansen Property, drivers have an alternative route to make left-turns.

Using the long range (2040) background traffic volumes shown in Figure 8, the key intersections operate as indicated in Table 4. Calculation forms for these analyses are provided in Appendix E. The key intersections will meet the Fort Collins operational criteria, overall.

Using the short range (2026) total traffic volumes shown in Figure 11, the key intersections operate as indicated in Table 5. Calculation forms for these analyses are provided in Appendix F. The Timberline/Trilby, Timberline/Westchase-Driveway, Timberline/Site Access, and Timberline/Fossil Creek intersections will meet the Fort Collins operational criteria. At the key stop sign controlled intersections, the calculated delay At the Timberline/Fossil Creek intersection during both peak hours, the calculated delay for the minor street left turns is commensurate with level of service F. Since it is likely that a signal will be installed at the Timberline/Zephyr intersection with the approved Hansen Property, drivers have an alternative route to make left-turns.

Using the long range (2040) total traffic volumes shown in Figure 12, the key intersections operate as indicated in Table 6. Calculation forms for these analyses are provided in Appendix G. The key intersections will meet the Fort Collins operational criteria, overall.

Pedestrian Level of Service

Appendix H shows a map of the area that is within 1320 feet of the Timber Lark Subdivision development. The Union Pacific railroad tracks create a barrier that has no pedestrian crossings or underpasses. Therefore, the pedestrian influence area stops at

TABLE 3 Short Range (2026) Background Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
Timberline/Trilby (signal)	EB LT	E (74.2 secs)	E (56.3 secs)
	EB T/RT	C	C
	EB APPROACH	E (66.8 secs)	D
	WB LT	D	E (55.5 secs)
	WB T/RT	D	E (58.2 secs)
	WB APPROACH	D	E (57.0 secs)
	NB LT	B	B
	NB T	B	C
	NB RT	A	A
	NB APPROACH	B	C
	SB LT	B	B
	SB T	B	C
	SB RT	B	B
	SB APPROACH	B	C
	OVERALL	C	C
Timberline/Westchase-Driveway (stop sign)	EB LT/T/RT	A	A
	WB LT/T/RT	E (46.6 secs)	F (55.0 secs)
	NB LT	A	A
	SB LT	B	B
	OVERALL	A	A
Timberline/Fossil Creek (stop sign)	EB LT/T	F (398.1 secs)	F (602.3 secs)
	EB RT	C	C
	EB APPROACH	F (178.5 secs)	F (274.2 secs)
	WB LT/T/RT	F (63.6 secs)	F (51.9 secs)
	NB LT	A	B
	SB LT	B	B
	OVERALL	B	A

TABLE 4 Long Range (2040) Background Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
Timberline/Trilby (signal)	EB LT	D	E (58.1 secs)
	EB T	D	D
	EB RT	D	D
	EB APPROACH	D	E (55.4 secs)
	WB LT	E (61.0 secs)	E (66.6 secs)
	WB T/RT	D	E (59.2 secs)
	WB APPROACH	E (56.9 secs)	E (62.2 secs)
	NB LT	B	C
	NB T	C	C
	NB RT	A	A
	NB APPROACH	C	C
	SB LT	B	B
	SB T	B	C
	SB RT	B	B
	SB APPROACH	B	C
	OVERALL	C	C
Timberline/Westchase (stop sign)	EB LT/T/RT	E (44.7 secs)	F (95.3 secs)
	WB LT/T/RT	D	F (59.9 secs)
	NB LT	B	B
	SB LT	B	B
	OVERALL	A	A
Timberline/Fossil Creek (stop sign)	EB LT/T	F (95.2 secs)	F (269.9 secs)
	EB RT	B	C
	EB APPROACH	D	F (64.7 secs)
	WB LT/T/RT	E (42.6 secs)	F (66.2 secs)
	NB LT	B	B
	SB LT	B	B
	OVERALL	A	A
Trilby/Red Willow (stop sign)	SB LT/RT	B	C
	EB LT	A	A
	OVERALL	A	A

TABLE 5 Short Range (2026) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
Timberline/Trilby (signal)	EB LT	E (69.0 secs)	E (70.3 secs)
	EB T/RT	C	C
	EB APPROACH	E (62.5 secs)	E (60.8 secs)
	WB LT	D	E (55.4 secs)
	WB T/RT	D	E (58.8 secs)
	WB APPROACH	D	E (57.4 secs)
	NB LT	B	B
	NB T	B	C
	NB RT	A	A
	NB APPROACH	B	C
	SB LT	B	B
	SB T	B	C
	SB RT	B	B
	SB APPROACH	B	C
	OVERALL	C	C
Timberline/Westchase-Driveway (stop sign)	EB LT/T/RT	A	A
	WB LT/T/RT	C	D
	NB LT	A	A
	SB LT	B	B
	OVERALL	A	A
Timberline/Site Access (RT-in/RT-out)	EB RT	C	C
Timberline/Fossil Creek (stop sign)	EB LT/T	F (582.9 secs)	F (1155.5 secs)
	EB RT	C	C
	EB APPROACH	F (276.2 secs)	F (560.4 secs)
	WB LT/T/RT	F (72.5 secs)	F (77.6 secs)
	NB LT	A	B
	SB LT	B	B
	OVERALL	C	C

TABLE 6 Long Range (2040) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
Timberline/Trilby (signal)	EB LT	D	E (57.4 secs)
	EB T	D	D
	EB RT	D	D
	EB APPROACH	D	D
	WB LT	E (59.1 secs)	E (64.9 secs)
	WB T/RT	D	E (59.0 secs)
	WB APPROACH	E (56.2 secs)	E (61.3 secs)
	NB LT	B	C
	NB T	C	C
	NB RT	A	A
	NB APPROACH	B	C
	SB LT	B	B
	SB T	B	C
	SB RT	B	B
	SB APPROACH	B	C
	OVERALL	C	C
Timberline/Westchase (RT-in/RT-out)	EB LT/T/RT	E (47.8 secs)	F (171.0 secs)
	WB LT/T/RT	D	F (68.5 secs)
	NB LT	B	B
	SB LT	B	B
	OVERALL	A	A
Timberline/Fossil Creek (stop sign)	EB LT/T	F (99.9 secs)	F (335.7 secs)
	EB RT	B	C
	EB APPROACH	D	F (77.9 secs)
	WB LT/T/RT	E (43.7 secs)	F (70.5 secs)
	NB LT	B	B
	SB LT	B	B
	OVERALL	A	A
Trilby/Red Willow (stop sign)	SB LT/RT	B	C
	EB LT	A	A
	OVERALL	A	A

the railroad tracks. There will be two pedestrian destinations within 1320 feet of the Timber Lark Subdivision development and one school site. These are: 1) the various residential neighborhoods to the north of the site, 2) Bacon Elementary School, and 3) the residential area to the east of the site (Westchase/Kechter Farms). Appendix H also contains a map that shows the existing/planned pedestrian facilities within the influence area. This site is in an area type termed "other." The minimum level of service for "other" is C.

- **Directness** – The distance ratio to all pedestrian destinations is less than 1.2 (LOS A)
- **Continuity** – The continuity to pedestrian destination 1 is acceptable at LOS B, since there will be direct connection of the sidewalk system to the north. The continuity to pedestrian destinations 2 and 3 will be at LOS B in consideration of the Hansen Property (under construction) and the Rennat Property (approved).
- **Street Crossings** – The street crossings to pedestrian destination 1 is acceptable at LOS B, since the street crossings are all at local residential streets. The street crossings to pedestrian destinations 2 and 3 is at LOS B, since there is a pedestrian signal at the Timberline/Fossil Creek intersection and a marked crosswalk at the Timberline/Zephyr intersection.
- **Visual Interest and Amenity** – The visual interest and amenity to pedestrian destinations 1, 2, and 3 is acceptable at LOS B, since most of the sidewalks have some landscaped parkways and a residential neighborhood character. The only issue might be the lack of sidewalk between the Timber Lark Subdivision and the pedestrian signal at the Timberline/Fossil Creek intersection.
- **Security** – The security to pedestrian destinations 1, 2, and 3 is acceptable at LOS A, since most of the sidewalks are adjacent to residents and the area has a residential neighborhood character.

Acceptable pedestrian level of service will be achieved for all pedestrian destinations. The Pedestrian LOS Worksheet is provided in Appendix H. The signal at the Timberline/Zephyr intersection and the pedestrian underpass will provide safe crossing of Timberline Road for students attending Bacon Elementary School.

Bicycle Level of Service

Appendix H shows a map of the area that is within 1320 feet of the Timber Lark Subdivision development. There will be one bicycle destination near the Timber Lark Subdivision development. This is: 1) Bacon Elementary School to the northeast of the site. The Bicycle LOS Worksheet is provided in Appendix H. The minimum level of service for this site is C. This site is connected to Timberline Road. Therefore, it is concluded that level of service B can be achieved.

Transit Level of Service

Expansion of Transfort service to this area will likely be made by the City of Fort Collins, when appropriate.

IV. CONCLUSIONS

This study assessed the impacts of the Timber Lark Subdivision on the street system in the vicinity of the proposed development in the short range (2026) and long range (2040) futures. As a result of this analysis, the following is concluded:

- The development of the Timber Lark Subdivision is feasible from a traffic engineering standpoint. At full development, the Timber Lark Subdivision will generate approximately 1940 daily trip ends, 145 morning peak hour trip ends, and 195 afternoon peak hour trip ends.

- Currently, the key intersections are currently operating acceptably with existing control and geometry in the morning and afternoon peak hours.

- The Timberline/Trilby intersection is currently signalized. The Timberline/Zephyr intersection will be signalized as part of the Hansen Property TIS.

- The short range (2026) geometry is shown in Figure 13. According to City staff, Timberline Road will be improved to a four-lane arterial in the near future north of Rosen Drive. At the Timberline/Trilby intersection, the eastbound left-turn volume exceeds the 300+ vehicles per hour "rule of thumb" that would require dual left-turn lanes. However, a single eastbound left-turn lane was analyzed in this TIS for the short range (2026) future.

- In the short range (2026) future, given development of the Timber Lark Subdivision development and an increase in background traffic, the Timberline/Trilby, Timberline/Westchase-Driveway, Timberline/Site Access, and Timberline/ Fossil Creek intersections will meet the Fort Collins operational criteria. At the key stop sign controlled intersections, the calculated delay At the Timberline/Fossil Creek intersection during both peak hours, the calculated delay for the minor street left turns is commensurate with level of service F. Since a signal will be installed at the Timberline/Zephyr intersection with the approved Hansen Property, drivers have an alternative route to make left-turns.

- The long range (2040) geometry is shown in Figure 14.

- In the long range (2040) future, given development of the Timber Lark Subdivision development and an increase in background traffic, the key intersections will meet the Fort Collins operational criteria, overall, with the recommended geometry and control.

- Acceptable level of service is achieved for pedestrian, bicycle, and transit modes based upon the measures in the multi-modal transportation guidelines and future improvements to the street system in the area.

APPENDIX A

Attachment A
Transportation Impact Study
Base Assumptions

Project Information			
Project Name	SOUTH TIMBERLINE RESIDENTIAL		
Project Location	WEST OF T-LINE, SOUTH OF LINDEN PARK		
TIS Assumptions			
Type of Study	Full: YES		Intermediate: NO
Study Area Boundaries	North: ZEPHYR		South: TRILBY
	East: T-LINE		West: T-LINE
Study Years	Short Range: 2026		Long Range: 2040
Future Traffic Growth Rate	1% PLUS APPROVED DEVELOPMENTS		
Study Intersections	1. All access drives	5. ~~T-LINE/ZEPHYR~~ *	
	2. T-LINE/SITE (RI/RO)	6. Timberline and Westchase	
	3. T-LINE/FOSSIL CREEK	7.	
	4. T-LINE/TRILBY	8.	
Time Period for Study	AM: 7:00-9:00	PM: 4:00-6:00	Sat Noon: NO
Trip Generation Rates	TG, 10TH - ATTACHED		
Trip Adjustment Factors	Passby: N/A	Captive Market: N/A	
Overall Trip Distribution	SEE ATTACHED SKETCH		
Mode Split Assumptions	N/A		
Committed Roadway Improvements	WIDEN T-LINE (4-LANES)		
Other Traffic Studies	HANSEN TIS RENNAT TIS	Timberline Project Study We will provide	
Areas Requiring Special Study	The project access (RI/RO) how to mitigate/restrict given proximity to Westchase		

Timberline/Fossil Creek Ped Signal will be removed once the Zephyr signal is built, Timberline/Westchase signal will be converted to a Ped/Fire signal at same time.

Date: FEBRUARY 10, 2021

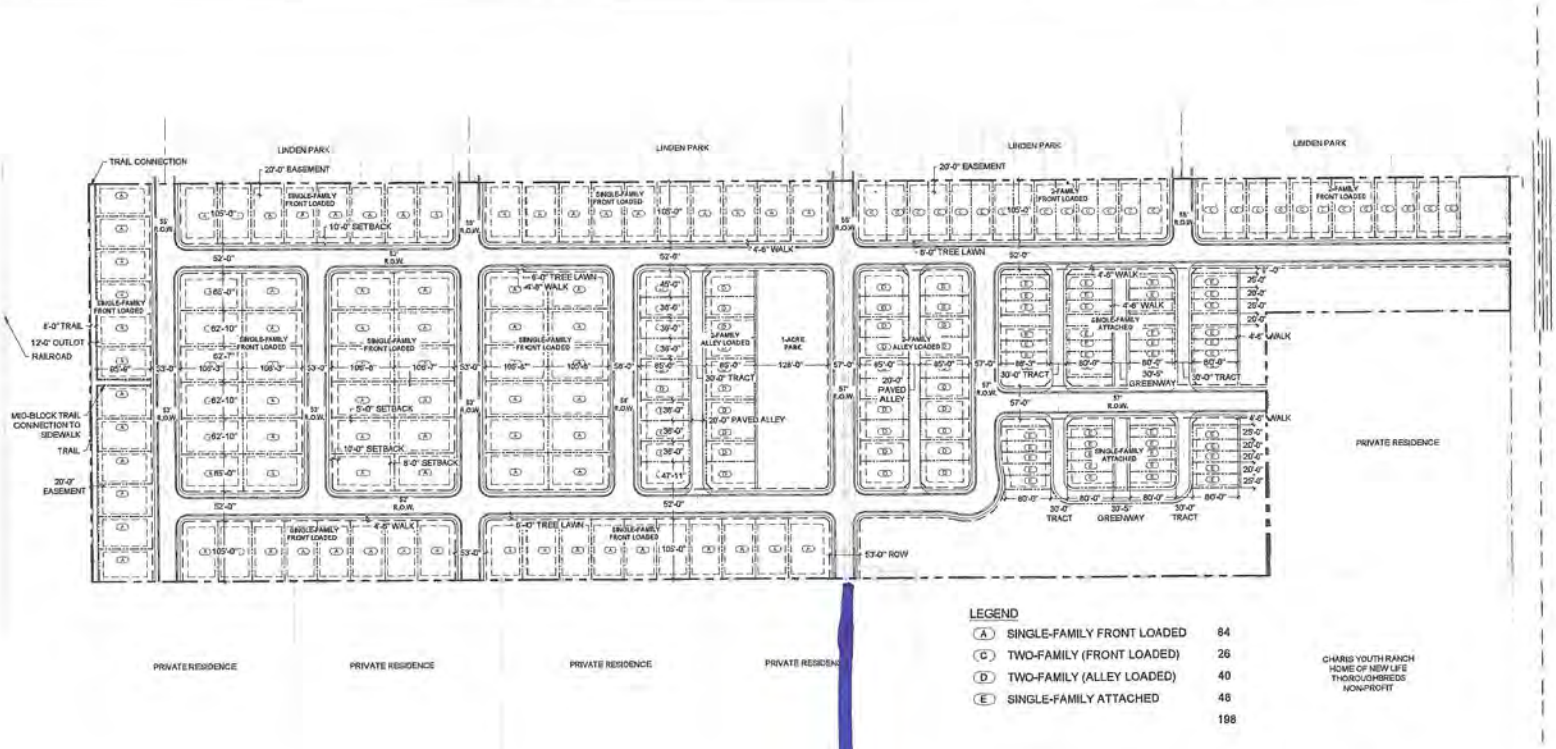
Traffic Engineer: DELICH ASSOCIATES

Local Entity Engineer: Steven Gilchrist 2/16/2021

~~* T-LINE/ZEPHYR ANALYSED WITH A SIGNAL IN SHORT RANGE FUTURE~~

2109 BAF

Note: Timberline and Zephryr is moving forward and doesn't need analysis and Timberline/Trilby will have limited improvements with Timberline Project. Requested Timberline Project Traffic Study from Eng. will send when we get it.



LEGEND

(A)	SINGLE-FAMILY FRONT LOADED	84
(C)	TWO-FAMILY (FRONT LOADED)	26
(D)	TWO-FAMILY (ALLEY LOADED)	40
(E)	SINGLE-FAMILY ATTACHED	48
		198

CONNECT TO TRILBY IN LONG RANGE

SOUTH TIMBERLINE RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

PREPARED BY:

riply design
LANDSCAPE ARCHITECTURE, LAND PLANNING

LANDSCAPE ARCHITECT
RIPLEY DESIGN INC.
Katy Thompson
419 Canyon Ave. Suite 200
Fort Collins, CO 80521
p. 970.224.5828
f. 970.225.6657

PROPERTY OWNER
AADT LAND HOLDINGS, LLC
Alexander Aigner
13005 Lowell Blvd.
Broomfield, CO 80020

APPLICANT
SCHROYER RESOURCES LLC
Steve Schroyer
900 Greenfields Court
Fort Collins, CO 80524
p. 970.481.5800

NORTH SCALE: 1"=100'-0" (0, 50, 100, 200)

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	11.24.2020

REVISIONS

No.	DESCRIPTION	DATE

SITE PLAN

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	818-067
DRAWN BY:	AK
REVIEWED BY:	BH

DRAWING NUMBER:

2

Plotted By: Andrew Pajda-Lamich Layout: 2 Site Plan Printed On: 12/16/2020 1:38 PM File Name: 2 Site Plan.dwg

Trip Generation T.G. 10th

Code	Use	Size	AWDTE		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Rate	Out	Rate	In	Rate	Out
	(A)											
210	SINGLE FAMILY	84 DU	EQ	886	EQ	16	EQ	48	EQ	54	EQ	32
	(B) (C)											
210	SINGLE FAMILY	26 DU	EQ	302	EQ	6	EQ	17	EQ	18	EQ	10
	(C) (D)											
210	SINGLE FAMILY	40 DU	EQ	448	EQ	8	EQ	25	EQ	26	EQ	16
	(D) (E)											
210	SINGLE FAMILY	48 DU	EQ	530	EQ	10	EQ	28	EQ	31	EQ	19
	TOTAL			2166		40		118		129		77


Untitled Map
Write a description for your map
Legend
SITE
20%
15%
5%
60%
Falcon Ridge Dr
Fossil Creek Pkwy
Prairie Hill Dr
Fossil Creek Cir
Linden Park
Fantail Ct
Willow Springs Way
Pacific Ct
34E
11
Carmichael St
E Trilby Rd
Westchase Rd
Andrews St
Baldwin St
Tilden St
Harvest St
Dolan St
Regal Rd
Kechter Rd
Coppervein St
East Co Road 38
Westchase
Spruce Creek Dr
Copper Crest Ln
Crossview Dr
Piney Creek Dr
Zephyr Rd
Owens Ave
Treestead Rd
Treestead Ct
Google Earth
Image © 2021 Maxar Technologies
2000 ft
N

APPENDIX B

DELICH ASSOCIATES
2272 GLEN HAVEN DRIVE
LOVELAND, CO 80538
Phone: (970) 669-2061

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 8/8/2019 Observer: City of Fort Collins

Day: Thursday Jurisdiction: Fort Collins

Intersection: Timberline/Trilby

R = right turn
S = straight
L = left turn

Time	Northbound: Timberline				Southbound: Timberline				Total	Eastbound: Trilby				Westbound: Trilby				Total	Total
Begins	L	S	R	Total	L	S	R	Total	north/south	L	S	R	Total	L	S	R	Total	east/west	All
7:30	12	131	11	154	1	127	37	165	319	77	9	21	107	13	23	2	38	145	464
7:45	7	131	13	151	0	100	44	144	295	74	14	10	98	15	12	1	28	126	421
8:00	7	83	4	94	2	85	46	133	227	53	11	4	68	10	13	0	23	91	318
8:15	12	102	3	117	1	76	43	120	237	52	15	16	83	8	13	4	25	108	345
7:30-8:30	38	447	31	516	4	388	170	562	1078	256	49	51	356	46	61	7	114	470	1548
PHF	0.79	0.85	0.6	0.84	0.5	0.76	0.92	0.85		0.83	0.82	0.61	0.83	0.77	0.66	0.44	0.75		0.83
4:30	17	161	12	190	0	191	73	264	454	58	17	22	97	14	22	3	39	136	590
4:45	33	136	14	183	5	160	89	254	437	46	17	11	74	9	14	2	25	99	536
5:00	25	161	18	204	3	149	121	273	477	65	20	4	89	13	18	1	32	121	598
5:15	24	133	12	169	8	124	101	233	402	57	22	14	93	15	13	5	33	126	528
4:30-5:30	99	591	56	746	16	624	384	1024	1770	226	76	51	353	51	67	11	129	482	2252
PHF	0.75	0.92	0.78	0.91	0.5	0.82	0.79	0.94		0.87	0.86	0.58	0.91	0.85	0.76	0.55	0.83		0.94

DELICH ASSOCIATES
2272 GLEN HAVEN DRIVE
LOVELAND, CO 80538
Phone: (970) 669-2061

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 2/17/2021 Observer: Vickie

Day: Wednesday Jurisdiction: Fort Collins

Intersection: Timberline/Westchase

R = right turn
S = straight
L = left turn

Time	Northbound: Timberline				Southbound: Timberline				Total	Eastbound: Driveway				Westbound: Westchase				Total	Total
Begins	L	S	R	Total	L	S	R	Total	north/south	L	S	R	Total	L	S	R	Total	east/west	All
7:30	0	197	1	198	10	154	0	164	362	0	0	0	0	0	0	4	4	4	366
7:45	0	203	2	205	5	147	0	152	357	0	0	0	0	3	0	10	13	13	370
8:00	0	140	5	145	4	161	0	165	310	0	0	0	0	3	0	2	5	5	315
8:15	0	141	0	141	4	120	0	124	265	0	0	0	0	0	0	3	3	3	268
7:30-8:30	0	681	8	689	23	582	0	605	1294	0	0	0	0	6	0	19	25	25	1319
PHF	n/a	0.84	0.4	0.84	0.58	0.9	n/a	0.92		n/a	n/a	n/a	n/a	0.5	n/a	0.48	0.48		0.89
4:30	0	151	2	153	6	190	0	196	349	0	0	0	0	1	0	1	2	2	351
4:45	0	158	2	160	7	195	0	202	362	0	0	0	0	0	0	4	4	4	366
5:00	0	179	2	181	4	213	0	217	398	0	0	0	0	1	0	3	4	4	402
5:15	0	167	2	169	9	175	0	184	353	0	0	0	0	1	0	4	5	5	358
4:30-5:30	0	655	8	663	26	773	0	799	1462	0	0	0	0	3	0	12	15	15	1477
PHF	n/a	0.91	1	0.92	0.72	0.91	n/a	0.92		n/a	n/a	n/a	n/a	0.75	n/a	0.75	0.75		0.92

DELICH ASSOCIATES
2272 GLEN HAVEN DRIVE
LOVELAND, CO 80538
Phone: (970) 669-2061

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 2/18/2021 Observer: Vickie

Day: Thursday Jurisdiction: Fort Collins

Intersection: Timberline/Fossil Creek

R = right turn
S = straight
L = left turn

Time	Northbound: Timberline				Southbound: Timberline				Total	Eastbound: Fossil Creek				Westbound: Fossil Creek				Total	Total
Begins	L	S	R	Total	L	S	R	Total	north/south	L	S	R	Total	L	S	R	Total	east/west	All
7:30	4	166	2	172	2	155	5	162	334	17	2	17	36	2	1	14	17	53	387
7:45	5	190	2	197	7	137	9	153	350	11	2	6	19	4	1	12	17	36	386
8:00	2	155	1	158	4	148	10	162	320	8	0	8	16	1	1	11	13	29	349
8:15	4	148	3	155	0	135	3	138	293	7	1	8	16	3	0	7	10	26	319
7:30-8:30	15	659	8	682	13	575	27	615	1297	43	5	39	87	10	3	44	57	144	1441
PHF	0.75	0.87	0.67	0.87	0.46	0.93	0.68	0.95		0.63	0.63	0.57	0.6	0.63	0.75	0.79	0.84		0.93
4:30	7	134	4	145	11	181	4	196	341	5	0	5	10	1	0	3	4	14	355
4:45	10	149	2	161	10	197	12	219	380	7	0	10	17	0	0	44	44	61	441
5:00	10	159	4	173	12	207	13	232	405	7	1	6	14	1	0	5	6	20	425
5:15	14	148	3	165	8	179	14	201	366	3	0	9	12	1	0	4	5	17	383
4:30-5:30	41	590	13	644	41	764	43	848	1492	22	1	30	53	3	0	56	59	112	1604
PHF	0.73	0.93	0.81	0.93	0.85	0.92	0.77	0.91		0.79	0.25	0.75	0.78	0.75	n/a	0.32	0.34		0.91

APPENDIX C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	296	49	51	46	61	7	38	539	31	4	428	190
Future Volume (veh/h)	296	49	51	46	61	7	38	539	31	4	428	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	348	58	16	54	72	3	45	634	1	5	504	92
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	401	372	103	162	129	5	482	1130	957	409	1089	923
Arrive On Green	0.16	0.26	0.26	0.07	0.07	0.07	0.04	0.60	0.60	0.01	0.58	0.58
Sat Flow, veh/h	1781	1411	389	1326	1783	74	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	348	0	74	54	0	75	45	634	1	5	504	92
Grp Sat Flow(s),veh/h/ln	1781	0	1800	1326	0	1857	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	18.0	0.0	3.5	4.3	0.0	4.3	1.1	22.3	0.0	0.1	17.0	2.8
Cycle Q Clear(g_c), s	18.0	0.0	3.5	4.3	0.0	4.3	1.1	22.3	0.0	0.1	17.0	2.8
Prop In Lane	1.00		0.22	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	401	0	474	162	0	135	482	1130	957	409	1089	923
V/C Ratio(X)	0.87	0.00	0.16	0.33	0.00	0.56	0.09	0.56	0.00	0.01	0.46	0.10
Avail Cap(c_a), veh/h	401	0	704	343	0	388	547	1130	957	513	1089	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	0.0	31.1	49.3	0.0	49.3	9.3	13.0	8.6	10.8	13.2	10.2
Incr Delay (d2), s/veh	17.8	0.0	0.2	1.2	0.0	3.6	0.1	2.0	0.0	0.0	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	0.0	1.5	1.5	0.0	2.1	0.4	9.1	0.0	0.0	6.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.7	0.0	31.3	50.5	0.0	52.8	9.4	15.1	8.6	10.8	14.6	10.4
LnGrp LOS	E	A	C	D	A	D	A	B	A	B	B	B
Approach Vol, veh/h		422			129			680			601	
Approach Delay, s/veh		52.2			51.9			14.7			13.9	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	69.0		34.0	4.6	71.4	21.0	13.0
Change Period (Y+Rc), s	4.0	* 6		6.0	4.0	6.0	4.0	* 6
Max Green Setting (Gmax), s	7.0	* 46		42.0	7.0	45.0	17.0	* 22
Max Q Clear Time (g_c+I1), s	3.1	19.0		5.5	2.1	24.3	20.0	6.3
Green Ext Time (p_c), s	0.0	2.0		0.2	0.0	2.2	0.0	0.3

Intersection Summary

HCM 6th Ctrl Delay		25.7
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

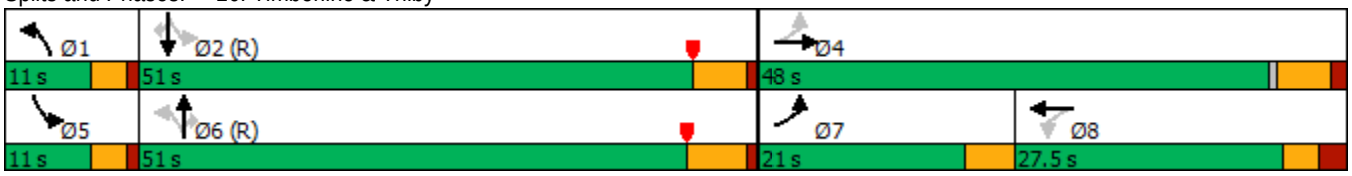
Phase Number	1	2	4	5	6	7	8
Movement	NBL	SBTL	EBTL	SBL	NBTL	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	11	51	48	11	51	21	27.5
Maximum Split (%)	10.0%	46.2%	43.4%	10.0%	46.2%	19.0%	24.9%
Minimum Split (s)	11	24.5	24	11	25	11	27.5
Yellow Time (s)	3	4.5	4.5	3	5	4	3
All-Red Time (s)	1	1	1.5	1	1	0	2.5
Minimum Initial (s)	4	7	7	4	7	4	7
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		12	11		12		15
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	61.5	72.5	13	61.5	72.5	13	34
End Time (s)	72.5	13	61.5	72.5	13	34	61.5
Yield/Force Off (s)	68.5	7.5	55.5	68.5	7	30	56
Yield/Force Off 170(s)	68.5	106	44.5	68.5	105.5	30	41
Local Start Time (s)	54.5	65.5	6	54.5	65.5	6	27
Local Yield (s)	61.5	0.5	48.5	61.5	0	23	49
Local Yield 170(s)	61.5	99	37.5	61.5	98.5	23	34

Intersection Summary

Cycle Length	110.5	
Control Type	Actuated-Coordinated	
Natural Cycle	80	

Offset: 7 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Splits and Phases: 16: Timberline & Trilby



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	348	118	54	80	45	634	36	5	504	224
v/c Ratio	0.68	0.19	0.27	0.27	0.11	0.62	0.04	0.01	0.54	0.25
Control Delay	35.0	13.2	41.8	38.5	12.2	22.6	0.1	12.0	24.3	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.0	13.2	41.8	38.5	12.2	22.6	0.1	12.0	24.3	3.4
Queue Length 50th (ft)	190	29	34	46	13	290	0	2	258	0
Queue Length 95th (ft)	244	60	65	82	31	492	0	7	364	37
Internal Link Dist (ft)		909		738		1193			874	
Turn Bay Length (ft)	250		170		350		350	275		250
Base Capacity (vph)	512	711	264	385	415	1030	924	373	928	901
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	0.68	0.17	0.20	0.21	0.11	0.62	0.04	0.01	0.54	0.25

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	76	51	51	67	11	99	591	56	11	613	374
Future Volume (veh/h)	226	76	51	51	67	11	99	591	56	11	613	374
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	266	89	34	60	79	7	116	695	19	13	721	231
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	268	102	154	126	11	384	1242	1053	438	1194	1012
Arrive On Green	0.11	0.21	0.21	0.07	0.07	0.07	0.05	0.66	0.66	0.02	0.64	0.64
Sat Flow, veh/h	1781	1289	493	1268	1693	150	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	266	0	123	60	0	86	116	695	19	13	721	231
Grp Sat Flow(s),veh/h/ln	1781	0	1782	1268	0	1843	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	13.0	0.0	7.1	5.5	0.0	5.4	2.5	23.8	0.5	0.3	27.2	7.4
Cycle Q Clear(g_c), s	13.0	0.0	7.1	5.5	0.0	5.4	2.5	23.8	0.5	0.3	27.2	7.4
Prop In Lane	1.00		0.28	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	0	370	154	0	137	384	1242	1053	438	1194	1012
V/C Ratio(X)	0.91	0.00	0.33	0.39	0.00	0.63	0.30	0.56	0.02	0.03	0.60	0.23
Avail Cap(c_a), veh/h	291	0	624	340	0	407	421	1242	1053	521	1194	1012
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	0.0	40.5	54.0	0.0	53.9	10.2	10.8	6.9	8.9	12.8	9.2
Incr Delay (d2), s/veh	31.5	0.0	0.5	1.6	0.0	4.7	0.4	1.8	0.0	0.0	2.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	3.1	1.8	0.0	2.7	0.9	9.3	0.2	0.1	10.9	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.6	0.0	41.0	55.6	0.0	58.6	10.6	12.6	6.9	8.9	15.0	9.7
LnGrp LOS	E	A	D	E	A	E	B	B	A	A	B	A
Approach Vol, veh/h		389			146			830			965	
Approach Delay, s/veh		66.7			57.4			12.2			13.7	
Approach LOS		E			E			B			B	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.5	81.6		29.9	5.4	84.7	16.0	13.9				
Change Period (Y+Rc), s	4.0	* 6		6.0	4.0	6.0	4.0	* 6				
Max Green Setting (Gmax), s	7.0	* 57		41.0	7.0	56.0	12.0	* 26				
Max Q Clear Time (g_c+I1), s	4.5	29.2		9.1	2.3	25.8	15.0	7.5				
Green Ext Time (p_c), s	0.1	3.7		0.4	0.0	2.7	0.0	0.4				

Intersection Summary

HCM 6th Ctrl Delay	24.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

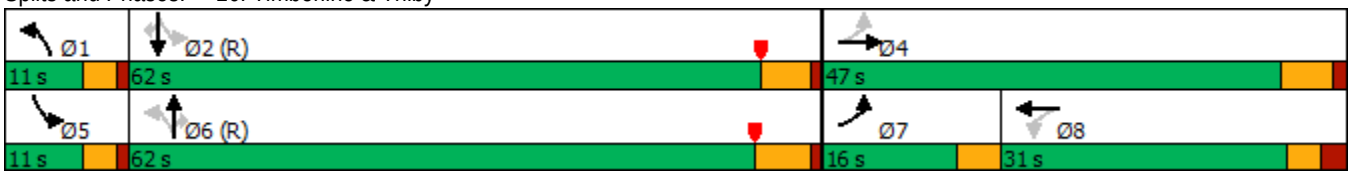
Phase Number	1	2	4	5	6	7	8
Movement	NBL	SBTL	EBTL	SBL	NBTL	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	11	62	47	11	62	16	31
Maximum Split (%)	9.2%	51.7%	39.2%	9.2%	51.7%	13.3%	25.8%
Minimum Split (s)	11	24.5	24	11	25	11	27.5
Yellow Time (s)	3	4.5	4.5	3	5	4	3
All-Red Time (s)	1	1	1.5	1	1	0	2.5
Minimum Initial (s)	4	7	7	4	7	4	7
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		12	11		12		15
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	88	99	41	88	99	41	57
End Time (s)	99	41	88	99	41	57	88
Yield/Force Off (s)	95	35.5	82	95	35	53	82.5
Yield/Force Off 170(s)	95	23.5	71	95	23	53	67.5
Local Start Time (s)	53	64	6	53	64	6	22
Local Yield (s)	60	0.5	47	60	0	18	47.5
Local Yield 170(s)	60	108.5	36	60	108	18	32.5

Intersection Summary

Cycle Length	120	
Control Type	Actuated-Coordinated	
Natural Cycle	90	

Offset: 35 (29%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Splits and Phases: 16: Timberline & Trilby



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	266	149	60	92	116	695	66	13	721	440
v/c Ratio	0.68	0.29	0.32	0.33	0.35	0.62	0.07	0.03	0.71	0.43
Control Delay	43.4	26.3	47.1	43.1	12.2	21.3	1.3	9.8	27.5	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.4	26.3	47.1	43.1	12.2	21.3	1.3	9.8	27.5	4.3
Queue Length 50th (ft)	169	70	42	60	32	297	0	3	412	19
Queue Length 95th (ft)	213	107	74	96	62	542	7	12	574	64
Internal Link Dist (ft)		909		738		1193			874	
Turn Bay Length (ft)	250		170		350		350	275		250
Base Capacity (vph)	391	633	272	407	331	1119	991	395	1009	1034
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	0.68	0.24	0.22	0.23	0.35	0.62	0.07	0.03	0.71	0.43

Intersection Summary

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	6	0	19	0	891	8	23	642	0
Future Vol, veh/h	0	0	0	6	0	19	0	891	8	23	642	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	7	0	21	0	1001	9	26	721	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1789	1783	721	1779	1779	1006	721	0	0	1010	0	0
Stage 1	773	773	-	1006	1006	-	-	-	-	-	-	-
Stage 2	1016	1010	-	773	773	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	63	82	427	64	82	293	881	-	-	686	-	-
Stage 1	392	409	-	291	319	-	-	-	-	-	-	-
Stage 2	287	317	-	392	409	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	57	79	427	62	79	293	881	-	-	686	-	-
Mov Cap-2 Maneuver	57	79	-	62	79	-	-	-	-	-	-	-
Stage 1	392	393	-	291	319	-	-	-	-	-	-	-
Stage 2	266	317	-	377	393	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	33.3	0	0.4
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	881	-	-	-	155	686	-	-
HCM Lane V/C Ratio	-	-	-	-	0.181	0.038	-	-
HCM Control Delay (s)	0	-	-	0	33.3	10.5	-	-
HCM Lane LOS	A	-	-	A	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	0	11	0	825	8	26	973	0
Future Vol, veh/h	0	0	0	3	0	11	0	825	8	26	973	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	3	0	12	0	897	9	28	1058	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2022	2020	1058	2016	2016	902	1058	0	0	906	0	0
Stage 1	1114	1114	-	902	902	-	-	-	-	-	-	-
Stage 2	908	906	-	1114	1114	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	43	58	273	43	59	336	658	-	-	751	-	-
Stage 1	253	284	-	332	356	-	-	-	-	-	-	-
Stage 2	330	355	-	253	284	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	40	56	273	42	57	336	658	-	-	751	-	-
Mov Cap-2 Maneuver	40	56	-	42	57	-	-	-	-	-	-	-
Stage 1	253	273	-	332	356	-	-	-	-	-	-	-
Stage 2	318	355	-	244	273	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	35.3	0	0.3
HCM LOS	A	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	658	-	-	-	134	751	-	-
HCM Lane V/C Ratio	-	-	-	-	0.114	0.038	-	-
HCM Control Delay (s)	0	-	-	0	35.3	10	-	-
HCM Lane LOS	A	-	-	A	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.4	0.1	-	-

Intersection												
Int Delay, s/veh	7.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	5	65	10	3	50	15	869	8	13	635	27
Future Vol, veh/h	43	5	65	10	3	50	15	869	8	13	635	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	150	-	-	150	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	5	70	11	3	54	16	934	9	14	683	29

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1710	1686	683	1734	1711	939	712	0	0	943	0	0
Stage 1	711	711	-	971	971	-	-	-	-	-	-	-
Stage 2	999	975	-	763	740	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	72	94	449	69	91	320	888	-	-	727	-	-
Stage 1	424	436	-	304	331	-	-	-	-	-	-	-
Stage 2	293	330	-	397	423	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	57	91	449	54	88	320	888	-	-	727	-	-
Mov Cap-2 Maneuver	57	91	-	54	88	-	-	-	-	-	-	-
Stage 1	416	428	-	299	325	-	-	-	-	-	-	-
Stage 2	237	324	-	325	415	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	91.3	40.2	0.2	0.2
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	888	-	-	59	449	168	727	-	-
HCM Lane V/C Ratio	0.018	-	-	0.875	0.156	0.403	0.019	-	-
HCM Control Delay (s)	9.1	-	-	195.4	14.5	40.2	10	-	-
HCM Lane LOS	A	-	-	F	B	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	4	0.5	1.8	0.1	-	-

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	1	30	3	0	25	41	760	13	41	964	43
Future Vol, veh/h	22	1	30	3	0	25	41	760	13	41	964	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	150	-	-	150	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	1	32	3	0	27	44	817	14	44	1037	46

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2051	2044	1037	2077	2083	824	1083	0	0	831	0	0
Stage 1	1125	1125	-	912	912	-	-	-	-	-	-	-
Stage 2	926	919	-	1165	1171	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	41	56	281	39	53	373	644	-	-	801	-	-
Stage 1	249	280	-	328	353	-	-	-	-	-	-	-
Stage 2	322	350	-	237	267	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	35	49	281	31	47	373	644	-	-	801	-	-
Mov Cap-2 Maneuver	35	49	-	31	47	-	-	-	-	-	-	-
Stage 1	232	265	-	306	329	-	-	-	-	-	-	-
Stage 2	278	326	-	197	252	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	112.8	30.5	0.6	0.4
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	644	-	-	35	281	171	801	-	-
HCM Lane V/C Ratio	0.068	-	-	0.707	0.115	0.176	0.055	-	-
HCM Control Delay (s)	11	-	-	234.4	19.5	30.5	9.8	-	-
HCM Lane LOS	B	-	-	F	C	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	2.5	0.4	0.6	0.2	-	-

UNSIGNALIZED INTERSECTIONS

Level-of-Service	Average Total Delay sec/veh
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

SIGNALIZED INTERSECTIONS

Level-of-Service	Average Total Delay sec/veh
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Table 4-3
Fort Collins (GMA and City Limits)
Motor Vehicle LOS Standards (Intersections)

	Overall	Any Approach Leg	Any Movement
Signalized	D[1]	E	E[2]
Unsignalized Arterial/Arterial Collector/Collector	E[3]	F[4]	
Unsignalized Arterial/Collector Arterial/Local Collector/Local Local/Local	D[3]	F[4]	
Roundabout	E[3,5]	E[5,4]	E[5]

[1] In mixed use district including downtown as defined by structure plan, overall LOS E is acceptable
[2] Applicable with at least 5% of total entering volume
[3] Use weighed average to identify overall delay
[4] Mitigation may be required
[5] Apply unsignalized delay value thresholds to determine LOS

APPENDIX D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	324	51	54	48	64	7	40	587	33	4	523	244
Future Volume (veh/h)	324	51	54	48	64	7	40	587	33	4	523	244
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	381	60	20	56	75	4	47	691	1	5	615	112
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	398	354	118	161	128	7	405	1130	957	370	1088	922
Arrive On Green	0.16	0.26	0.26	0.07	0.07	0.07	0.04	0.60	0.60	0.01	0.58	0.58
Sat Flow, veh/h	1781	1342	447	1319	1760	94	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	381	0	80	56	0	79	47	691	1	5	615	112
Grp Sat Flow(s),veh/h/ln	1781	0	1790	1319	0	1853	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	18.0	0.0	3.8	4.5	0.0	4.5	1.1	25.5	0.0	0.1	22.6	3.5
Cycle Q Clear(g_c), s	18.0	0.0	3.8	4.5	0.0	4.5	1.1	25.5	0.0	0.1	22.6	3.5
Prop In Lane	1.00		0.25	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	398	0	472	161	0	135	405	1130	957	370	1088	922
V/C Ratio(X)	0.96	0.00	0.17	0.35	0.00	0.59	0.12	0.61	0.00	0.01	0.57	0.12
Avail Cap(c_a), veh/h	398	0	700	341	0	388	469	1130	957	475	1088	922
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	0.0	31.2	49.4	0.0	49.4	10.5	13.7	8.6	11.4	14.4	10.4
Incr Delay (d2), s/veh	33.9	0.0	0.2	1.3	0.0	4.0	0.1	2.5	0.0	0.0	2.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	1.6	1.6	0.0	2.3	0.4	10.4	0.0	0.0	9.3	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.2	0.0	31.4	50.7	0.0	53.4	10.6	16.2	8.6	11.5	16.5	10.6
LnGrp LOS	E	A	C	D	A	D	B	B	A	B	B	B
Approach Vol, veh/h		461			135			739			732	
Approach Delay, s/veh		66.8			52.3			15.8			15.6	
Approach LOS		E			D			B			B	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	69.0		34.0	4.6	71.4	21.0	13.0
Change Period (Y+Rc), s	4.0	* 6		6.0	4.0	6.0	4.0	* 6
Max Green Setting (Gmax), s	7.0	* 46		42.0	7.0	45.0	17.0	* 22
Max Q Clear Time (g_c+I1), s	3.1	24.6		5.8	2.1	27.5	20.0	6.5
Green Ext Time (p_c), s	0.0	2.5		0.2	0.0	2.4	0.0	0.3

Intersection Summary

HCM 6th Ctrl Delay		29.5
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

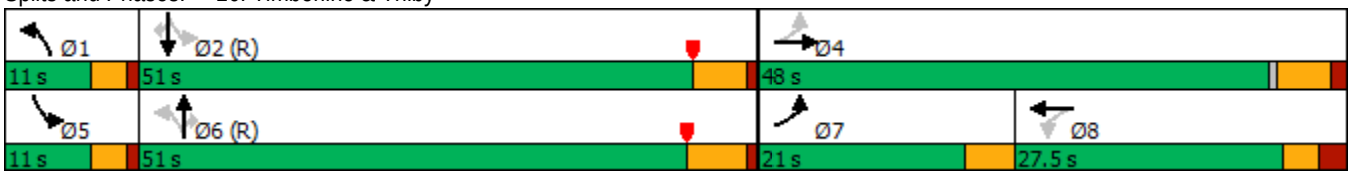
Phase Number	1	2	4	5	6	7	8
Movement	NBL	SBTL	EBTL	SBL	NBTL	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	11	51	48	11	51	21	27.5
Maximum Split (%)	10.0%	46.2%	43.4%	10.0%	46.2%	19.0%	24.9%
Minimum Split (s)	11	24.5	24	11	25	11	27.5
Yellow Time (s)	3	4.5	4.5	3	5	4	3
All-Red Time (s)	1	1	1.5	1	1	0	2.5
Minimum Initial (s)	4	7	7	4	7	4	7
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		12	11		12		15
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	61.5	72.5	13	61.5	72.5	13	34
End Time (s)	72.5	13	61.5	72.5	13	34	61.5
Yield/Force Off (s)	68.5	7.5	55.5	68.5	7	30	56
Yield/Force Off 170(s)	68.5	106	44.5	68.5	105.5	30	41
Local Start Time (s)	54.5	65.5	6	54.5	65.5	6	27
Local Yield (s)	61.5	0.5	48.5	61.5	0	23	49
Local Yield 170(s)	61.5	99	37.5	61.5	98.5	23	34

Intersection Summary

Cycle Length	110.5	
Control Type	Actuated-Coordinated	
Natural Cycle	90	

Offset: 7 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Splits and Phases: 16: Timberline & Trilby



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	381	124	56	83	47	691	39	5	615	287
v/c Ratio	0.71	0.19	0.27	0.27	0.15	0.69	0.04	0.02	0.68	0.31
Control Delay	35.7	13.2	40.9	38.3	13.2	25.6	0.1	12.2	29.3	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.7	13.2	40.9	38.3	13.2	25.6	0.1	12.2	29.3	3.4
Queue Length 50th (ft)	204	30	34	47	15	353	0	2	360	0
Queue Length 95th (ft)	269	64	66	86	31	#565	0	7	474	39
Internal Link Dist (ft)		909		738		1193			874	
Turn Bay Length (ft)	250		170		350		350	275		250
Base Capacity (vph)	533	711	262	385	314	1003	902	313	901	914
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	0.21	0.22	0.15	0.69	0.04	0.02	0.68	0.31

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	80	54	54	70	12	104	701	59	12	691	419
Future Volume (veh/h)	285	80	54	54	70	12	104	701	59	12	691	419
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	335	94	38	64	82	8	122	825	16	14	813	277
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	396	341	138	158	130	13	276	1125	954	285	1068	905
Arrive On Green	0.17	0.27	0.27	0.08	0.08	0.08	0.05	0.60	0.60	0.02	0.57	0.57
Sat Flow, veh/h	1781	1266	512	1258	1677	164	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	335	0	132	64	0	90	122	825	16	14	813	277
Grp Sat Flow(s),veh/h/ln	1781	0	1778	1258	0	1841	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	20.0	0.0	7.0	5.9	0.0	5.7	3.2	37.7	0.5	0.4	39.6	10.9
Cycle Q Clear(g_c), s	20.0	0.0	7.0	5.9	0.0	5.7	3.2	37.7	0.5	0.4	39.6	10.9
Prop In Lane	1.00		0.29	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	396	0	479	158	0	143	276	1125	954	285	1068	905
V/C Ratio(X)	0.85	0.00	0.28	0.41	0.00	0.63	0.44	0.73	0.02	0.05	0.76	0.31
Avail Cap(c_a), veh/h	396	0	682	306	0	361	304	1125	954	367	1068	905
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	0.0	34.6	53.8	0.0	53.7	17.8	17.0	9.6	15.0	19.5	13.4
Incr Delay (d2), s/veh	15.4	0.0	0.3	1.7	0.0	4.5	1.1	4.2	0.0	0.1	5.1	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	0.0	3.1	2.0	0.0	2.8	1.4	16.0	0.2	0.1	17.3	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.3	0.0	34.9	55.5	0.0	58.2	18.9	21.3	9.7	15.1	24.6	14.2
LnGrp LOS	E	A	C	E	A	E	B	C	A	B	C	B
Approach Vol, veh/h		467			154			963			1104	
Approach Delay, s/veh		50.2			57.0			20.8			21.9	
Approach LOS		D			E			C			C	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	73.5		37.3	5.5	77.2	23.0	14.3				
Change Period (Y+Rc), s	4.0	* 6		6.0	4.0	6.0	4.0	* 6				
Max Green Setting (Gmax), s	7.0	* 53		45.0	7.0	52.0	19.0	* 23				
Max Q Clear Time (g_c+I1), s	5.2	41.6		9.0	2.4	39.7	22.0	7.9				
Green Ext Time (p_c), s	0.0	3.4		0.4	0.0	2.8	0.0	0.4				

Intersection Summary

HCM 6th Ctrl Delay	28.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

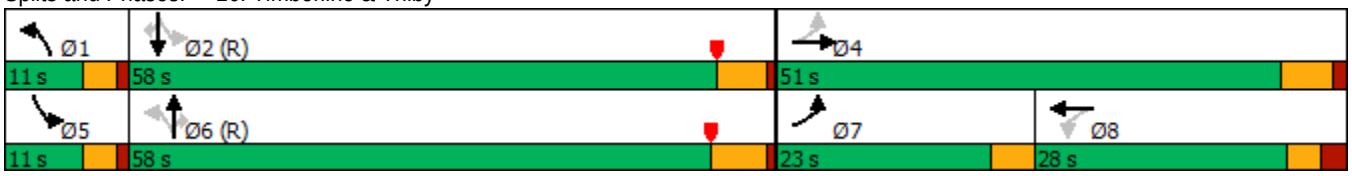
Phase Number	1	2	4	5	6	7	8
Movement	NBL	SBTL	EBTL	SBL	NBTL	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	11	58	51	11	58	23	28
Maximum Split (%)	9.2%	48.3%	42.5%	9.2%	48.3%	19.2%	23.3%
Minimum Split (s)	11	24.5	24	11	25	11	27.5
Yellow Time (s)	3	4.5	4.5	3	5	4	3
All-Red Time (s)	1	1	1.5	1	1	0	2.5
Minimum Initial (s)	4	7	7	4	7	4	7
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		12	11		12		15
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	92	103	41	92	103	41	64
End Time (s)	103	41	92	103	41	64	92
Yield/Force Off (s)	99	35.5	86	99	35	60	86.5
Yield/Force Off 170(s)	99	23.5	75	99	23	60	71.5
Local Start Time (s)	57	68	6	57	68	6	29
Local Yield (s)	64	0.5	51	64	0	25	51.5
Local Yield 170(s)	64	108.5	40	64	108	25	36.5

Intersection Summary

Cycle Length	120	
Control Type	Actuated-Coordinated	
Natural Cycle	90	

Offset: 35 (29%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Splits and Phases: 16: Timberline & Trilby



16: Timberline & Trilby

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	335	158	64	96	122	825	69	14	813	493
v/c Ratio	0.69	0.26	0.35	0.34	0.63	0.81	0.08	0.06	0.89	0.52
Control Delay	38.4	22.4	48.7	44.2	33.9	32.8	1.6	12.7	43.4	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	22.4	48.7	44.2	33.9	32.8	1.6	12.7	43.4	8.1
Queue Length 50th (ft)	198	66	44	62	41	483	0	4	600	60
Queue Length 95th (ft)	257	106	81	103	#112	#818	9	14	#797	129
Internal Link Dist (ft)		909		738		1193			874	
Turn Bay Length (ft)	250		170		350		350	275		250
Base Capacity (vph)	486	690	239	361	196	1017	910	233	909	957
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	0.69	0.23	0.27	0.27	0.62	0.81	0.08	0.06	0.89	0.52

Intersection Summary

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

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	6	0	19	0	970	8	23	792	0
Future Vol, veh/h	0	0	0	6	0	19	0	970	8	23	792	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	7	0	21	0	1090	9	26	890	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2047	2041	890	2037	2037	1095	890	0	0	1099	0	0
Stage 1	942	942	-	1095	1095	-	-	-	-	-	-	-
Stage 2	1105	1099	-	942	942	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	41	56	342	42	57	260	761	-	-	635	-	-
Stage 1	316	342	-	259	290	-	-	-	-	-	-	-
Stage 2	256	288	-	316	342	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	36	54	342	41	55	260	761	-	-	635	-	-
Mov Cap-2 Maneuver	36	54	-	41	55	-	-	-	-	-	-	-
Stage 1	316	328	-	259	290	-	-	-	-	-	-	-
Stage 2	235	288	-	303	328	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	46.6	0	0.3
HCM LOS	A	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	761	-	-	-	114	635	-	-
HCM Lane V/C Ratio	-	-	-	-	0.246	0.041	-	-
HCM Control Delay (s)	0	-	-	0	46.6	10.9	-	-
HCM Lane LOS	A	-	-	A	E	B	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.9	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	0	11	0	994	8	26	1096	0
Future Vol, veh/h	0	0	0	3	0	11	0	994	8	26	1096	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	3	0	12	0	1080	9	28	1191	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2338	2336	1191	2332	2332	1085	1191	0	0	1089	0	0
Stage 1	1247	1247	-	1085	1085	-	-	-	-	-	-	-
Stage 2	1091	1089	-	1247	1247	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	26	37	228	26	37	263	586	-	-	641	-	-
Stage 1	213	245	-	262	293	-	-	-	-	-	-	-
Stage 2	260	291	-	213	245	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	24	35	228	25	35	263	586	-	-	641	-	-
Mov Cap-2 Maneuver	24	35	-	25	35	-	-	-	-	-	-	-
Stage 1	213	234	-	262	293	-	-	-	-	-	-	-
Stage 2	248	291	-	204	234	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	55	0	0.3
HCM LOS	A	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	586	-	-	-	87	641	-	-
HCM Lane V/C Ratio	-	-	-	-	0.175	0.044	-	-
HCM Control Delay (s)	0	-	-	0	55	10.9	-	-
HCM Lane LOS	A	-	-	A	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.6	0.1	-	-

Intersection												
Int Delay, s/veh	12.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	5	65	10	3	50	15	966	8	13	740	27
Future Vol, veh/h	43	5	65	10	3	50	15	966	8	13	740	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	150	-	-	150	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	5	70	11	3	54	16	1039	9	14	796	29

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1928	1904	796	1952	1929	1044	825	0	0	1048	0	0
Stage 1	824	824	-	1076	1076	-	-	-	-	-	-	-
Stage 2	1104	1080	-	876	853	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	50	69	387	48	66	278	805	-	-	664	-	-
Stage 1	367	387	-	266	296	-	-	-	-	-	-	-
Stage 2	256	294	-	344	376	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 38	66	387	36	63	278	805	-	-	664	-	-
Mov Cap-2 Maneuver	~ 38	66	-	36	63	-	-	-	-	-	-	-
Stage 1	360	379	-	261	290	-	-	-	-	-	-	-
Stage 2	200	288	-	272	368	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	178.5	63.6	0.1	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	805	-	-	40	387	125	664	-	-
HCM Lane V/C Ratio	0.02	-	-	1.29	0.181	0.542	0.021	-	-
HCM Control Delay (s)	9.6	-	-	$ 398.1	16.3	63.6	10.5	-	-
HCM Lane LOS	A	-	-	F	C	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	5.2	0.7	2.6	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	1	30	3	0	25	41	951	13	41	1089	43
Future Vol, veh/h	22	1	30	3	0	25	41	951	13	41	1089	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	150	-	-	150	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	1	32	3	0	27	44	1023	14	44	1171	46

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2391	2384	1171	2417	2423	1030	1217	0	0	1037	0	0
Stage 1	1259	1259	-	1118	1118	-	-	-	-	-	-	-
Stage 2	1132	1125	-	1299	1305	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 23	34	235	22	32	283	573	-	-	670	-	-
Stage 1	209	242	-	251	282	-	-	-	-	-	-	-
Stage 2	247	280	-	199	230	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 19	29	235	17	28	283	573	-	-	670	-	-
Mov Cap-2 Maneuver	~ 19	29	-	17	28	-	-	-	-	-	-	-
Stage 1	193	226	-	232	260	-	-	-	-	-	-	-
Stage 2	206	258	-	160	215	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	274.2	51.9	0.5	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	573	-	-	19	235	106	670	-	-
HCM Lane V/C Ratio	0.077	-	-	1.302	0.137	0.284	0.066	-	-
HCM Control Delay (s)	11.8	-	-	$ 602.3	22.7	51.9	10.8	-	-
HCM Lane LOS	B	-	-	F	C	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	3.4	0.5	1.1	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

APPENDIX E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	395	60	75	60	80	10	65	790	40	20	645	275
Future Volume (veh/h)	395	60	75	60	80	10	65	790	40	20	645	275
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	416	63	1	63	84	7	68	832	1	21	679	164
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	510	318	269	97	131	11	361	1113	943	290	1085	920
Arrive On Green	0.15	0.17	0.17	0.05	0.08	0.08	0.04	0.59	0.59	0.03	0.58	0.58
Sat Flow, veh/h	3456	1870	1585	1781	1703	142	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	416	63	1	63	0	91	68	832	1	21	679	164
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	0	1845	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	12.8	3.2	0.1	3.8	0.0	5.3	1.6	35.7	0.0	0.5	26.3	5.3
Cycle Q Clear(g_c), s	12.8	3.2	0.1	3.8	0.0	5.3	1.6	35.7	0.0	0.5	26.3	5.3
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	510	318	269	97	0	142	361	1113	943	290	1085	920
V/C Ratio(X)	0.82	0.20	0.00	0.65	0.00	0.64	0.19	0.75	0.00	0.07	0.63	0.18
Avail Cap(c_a), veh/h	565	595	504	113	0	403	418	1113	943	373	1085	920
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	39.2	37.9	51.0	0.0	49.3	11.6	16.3	9.0	14.1	15.2	10.8
Incr Delay (d2), s/veh	8.3	0.3	0.0	10.0	0.0	4.8	0.2	4.6	0.0	0.1	2.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	1.5	0.0	2.0	0.0	2.6	0.6	15.0	0.0	0.2	10.9	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	39.5	37.9	61.0	0.0	54.1	11.9	20.9	9.0	14.2	17.9	11.2
LnGrp LOS	D	D	D	E	A	D	B	C	A	B	B	B
Approach Vol, veh/h		480			154			901			864	
Approach Delay, s/veh		51.9			56.9			20.2			16.6	
Approach LOS		D			E			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	68.8	10.0	23.7	5.9	70.4	20.2	13.4
Change Period (Y+Rc), s	4.0	* 6	5.0	6.0	4.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	7.0	* 43	6.0	34.0	7.0	42.0	17.0	23.0
Max Q Clear Time (g_c+I1), s	3.6	28.3	5.8	5.2	2.5	37.7	14.8	7.3
Green Ext Time (p_c), s	0.0	2.7	0.0	0.1	0.0	1.5	0.4	0.2

Intersection Summary	
HCM 6th Ctrl Delay	27.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

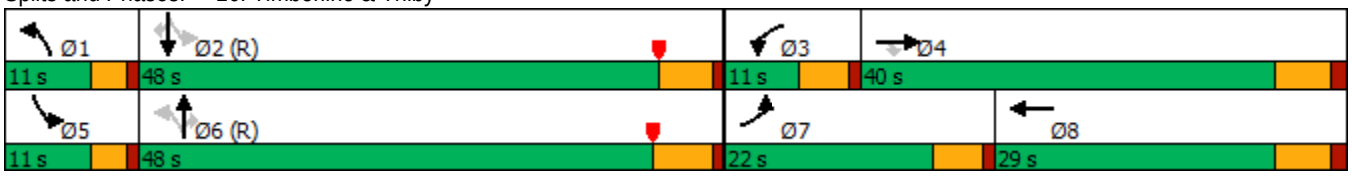
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	WBL	EBT	SBL	NBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize			Yes	Yes				
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	11	48	11	40	11	48	22	29
Maximum Split (%)	10.0%	43.6%	10.0%	36.4%	10.0%	43.6%	20.0%	26.4%
Minimum Split (s)	11	24.5	10	24	11	25	11	29
Yellow Time (s)	3	4.5	4	4.5	3	5	4	4.5
All-Red Time (s)	1	1	1	1.5	1	1	1	1.5
Minimum Initial (s)	4	7	5	7	4	7	4	7
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		12		11		12		15
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	64	75	13	24	64	75	13	35
End Time (s)	75	13	24	64	75	13	35	64
Yield/Force Off (s)	71	7.5	19	58	71	7	30	58
Yield/Force Off 170(s)	71	105.5	19	47	71	105	30	43
Local Start Time (s)	57	68	6	17	57	68	6	28
Local Yield (s)	64	0.5	12	51	64	0	23	51
Local Yield 170(s)	64	98.5	12	40	64	98	23	36

Intersection Summary

Cycle Length	110
Control Type	Actuated-Coordinated
Natural Cycle	110

Offset: 7 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Splits and Phases: 16: Timberline & Trilby



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	416	63	79	63	95	68	832	42	21	679	289
v/c Ratio	0.77	0.15	0.18	0.56	0.47	0.21	0.78	0.04	0.09	0.69	0.30
Control Delay	54.9	35.5	2.9	69.8	50.7	10.5	27.6	0.1	9.8	26.1	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.9	35.5	2.9	69.8	50.7	10.5	27.6	0.1	9.8	26.1	4.2
Queue Length 50th (ft)	145	37	0	44	61	18	395	0	5	359	12
Queue Length 95th (ft)	200	71	15	#100	110	39	#825	0	17	569	63
Internal Link Dist (ft)		2180			738		1193			874	
Turn Bay Length (ft)	250		250	170		350		350	275		
Base Capacity (vph)	561	592	584	112	403	332	1060	973	259	983	955
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.11	0.14	0.56	0.24	0.20	0.78	0.04	0.08	0.69	0.30

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	95	90	65	85	20	135	845	70	25	840	500
Future Volume (veh/h)	330	95	90	65	85	20	135	845	70	25	840	500
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	347	100	3	68	89	13	142	889	6	26	884	344
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	436	281	238	101	129	19	263	1166	988	285	1117	947
Arrive On Green	0.13	0.15	0.15	0.06	0.08	0.08	0.05	0.62	0.62	0.03	0.60	0.60
Sat Flow, veh/h	3456	1870	1585	1781	1595	233	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	347	100	3	68	0	102	142	889	6	26	884	344
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	0	1828	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	11.7	5.8	0.2	4.5	0.0	6.5	3.5	40.9	0.2	0.7	43.3	13.4
Cycle Q Clear(g_c), s	11.7	5.8	0.2	4.5	0.0	6.5	3.5	40.9	0.2	0.7	43.3	13.4
Prop In Lane	1.00		1.00	1.00		0.13	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	436	281	238	101	0	148	263	1166	988	285	1117	947
V/C Ratio(X)	0.80	0.36	0.01	0.67	0.00	0.69	0.54	0.76	0.01	0.09	0.79	0.36
Avail Cap(c_a), veh/h	518	530	449	119	0	366	286	1166	988	354	1117	947
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	45.8	43.4	55.5	0.0	53.7	19.6	16.2	8.5	14.8	18.5	12.4
Incr Delay (d2), s/veh	7.2	0.8	0.0	11.1	0.0	5.6	1.7	4.7	0.0	0.1	5.8	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	2.7	0.1	2.3	0.0	3.2	2.0	17.1	0.1	0.3	18.7	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	46.5	43.4	66.6	0.0	59.2	21.4	21.0	8.6	14.9	24.2	13.5
LnGrp LOS	E	D	D	E	A	E	C	C	A	B	C	B
Approach Vol, veh/h		450			170			1037			1254	
Approach Delay, s/veh		55.4			62.2			20.9			21.1	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	76.7	10.8	23.0	6.3	79.8	19.1	14.7
Change Period (Y+Rc), s	4.0	* 6	5.0	6.0	4.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	7.0	* 53	7.0	33.0	7.0	52.0	17.0	23.0
Max Q Clear Time (g_c+I1), s	5.5	45.3	6.5	7.8	2.7	42.9	13.7	8.5
Green Ext Time (p_c), s	0.1	3.1	0.0	0.3	0.0	2.6	0.4	0.2

Intersection Summary

HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

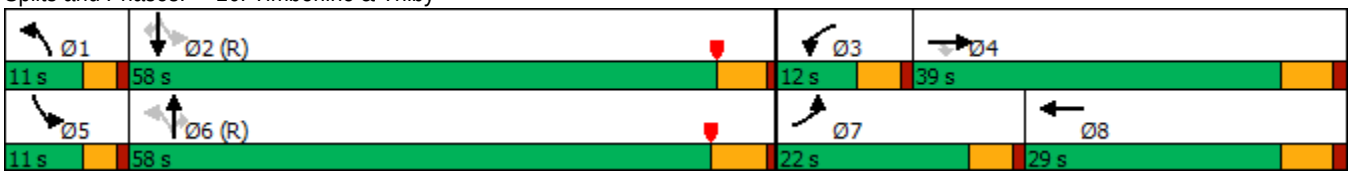
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	WBL	EBT	SBL	NBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize			Yes	Yes				
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	11	58	12	39	11	58	22	29
Maximum Split (%)	9.2%	48.3%	10.0%	32.5%	9.2%	48.3%	18.3%	24.2%
Minimum Split (s)	11	24.5	10	24	11	25	11	29
Yellow Time (s)	3	4.5	4	4.5	3	5	4	4.5
All-Red Time (s)	1	1	1	1.5	1	1	1	1.5
Minimum Initial (s)	4	7	5	7	4	7	4	7
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		12		11		12		15
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	64	75	13	25	64	75	13	35
End Time (s)	75	13	25	64	75	13	35	64
Yield/Force Off (s)	71	7.5	20	58	71	7	30	58
Yield/Force Off 170(s)	71	115.5	20	47	71	115	30	43
Local Start Time (s)	57	68	6	18	57	68	6	28
Local Yield (s)	64	0.5	13	51	64	0	23	51
Local Yield 170(s)	64	108.5	13	40	64	108	23	36

Intersection Summary

Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	110

Offset: 7 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Splits and Phases: 16: Timberline & Trilby



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	347	100	95	68	110	142	889	74	26	884	526
v/c Ratio	0.72	0.27	0.23	0.59	0.54	0.59	0.82	0.08	0.12	0.92	0.53
Control Delay	58.3	42.0	6.6	75.2	55.4	30.7	30.6	0.1	10.4	44.8	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.3	42.0	6.6	75.2	55.4	30.7	30.6	0.1	10.4	44.8	8.9
Queue Length 50th (ft)	132	67	0	52	75	52	581	0	7	630	74
Queue Length 95th (ft)	184	113	35	#111	130	124	#943	0	20	#1002	196
Internal Link Dist (ft)		2180			738		1193			874	
Turn Bay Length (ft)	250		250	170		350		350	275		
Base Capacity (vph)	514	527	526	118	369	239	1082	984	232	957	985
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.19	0.18	0.58	0.30	0.59	0.82	0.08	0.11	0.92	0.53

Intersection Summary

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

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	5	5	0	20	5	1190	10	25	940	5
Future Vol, veh/h	5	0	5	5	0	20	5	1190	10	25	940	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	5	5	0	21	5	1253	11	26	989	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1678	2315	495	1816	2315	632	994	0	0	1264	0	0
Stage 1	1041	1041	-	1269	1269	-	-	-	-	-	-	-
Stage 2	637	1274	-	547	1046	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	62	37	520	49	37	423	692	-	-	546	-	-
Stage 1	246	305	-	178	238	-	-	-	-	-	-	-
Stage 2	432	236	-	489	304	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	56	35	520	47	35	423	692	-	-	546	-	-
Mov Cap-2 Maneuver	56	35	-	47	35	-	-	-	-	-	-	-
Stage 1	244	290	-	177	236	-	-	-	-	-	-	-
Stage 2	408	234	-	461	289	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	44.7	31.3	0	0.3
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	692	-	-	101	163	546	-	-
HCM Lane V/C Ratio	0.008	-	-	0.104	0.161	0.048	-	-
HCM Control Delay (s)	10.2	-	-	44.7	31.3	11.9	-	-
HCM Lane LOS	B	-	-	E	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.6	0.2	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	5	5	0	10	5	1185	10	25	1360	5
Future Vol, veh/h	5	0	5	5	0	10	5	1185	10	25	1360	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	5	5	0	11	5	1247	11	26	1432	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2118	2752	716	2031	2752	629	1437	0	0	1258	0	0
Stage 1	1484	1484	-	1263	1263	-	-	-	-	-	-	-
Stage 2	634	1268	-	768	1489	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	29	19	373	33	19	425	468	-	-	549	-	-
Stage 1	131	187	-	180	239	-	-	-	-	-	-	-
Stage 2	434	238	-	360	186	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	27	18	373	31	18	425	468	-	-	549	-	-
Mov Cap-2 Maneuver	27	18	-	31	18	-	-	-	-	-	-	-
Stage 1	130	178	-	178	236	-	-	-	-	-	-	-
Stage 2	419	235	-	338	177	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	95.3	59.9	0.1	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	468	-	-	50	81	549	-	-
HCM Lane V/C Ratio	0.011	-	-	0.211	0.195	0.048	-	-
HCM Control Delay (s)	12.8	-	-	95.3	59.9	11.9	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.7	0.2	-	-

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1	50	10	1	50	15	1190	10	15	910	30
Future Vol, veh/h	10	1	50	10	1	50	15	1190	10	15	910	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	150	-	-	150	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	1	53	11	1	53	16	1253	11	16	958	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1649	2286	479	1803	2313	632	990	0	0	1264	0	0
Stage 1	990	990	-	1291	1291	-	-	-	-	-	-	-
Stage 2	659	1296	-	512	1022	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	65	39	533	50	37	423	694	-	-	546	-	-
Stage 1	264	323	-	173	232	-	-	-	-	-	-	-
Stage 2	419	231	-	513	312	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	53	37	533	42	35	423	694	-	-	546	-	-
Mov Cap-2 Maneuver	53	37	-	42	35	-	-	-	-	-	-	-
Stage 1	258	314	-	169	227	-	-	-	-	-	-	-
Stage 2	357	226	-	447	303	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27.4	42.6	0.1	0.2
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	694	-	-	51	533	158	546	-	-
HCM Lane V/C Ratio	0.023	-	-	0.227	0.099	0.406	0.029	-	-
HCM Control Delay (s)	10.3	-	-	95.2	12.5	42.6	11.8	-	-
HCM Lane LOS	B	-	-	F	B	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.3	1.8	0.1	-	-

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	25	5	1	25	35	1150	15	40	1360	45
Future Vol, veh/h	5	1	25	5	1	25	35	1150	15	40	1360	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	150	-	-	150	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	1	26	5	1	26	37	1211	16	42	1432	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2196	2817	716	2094	2856	614	1479	0	0	1227	0	0
Stage 1	1516	1516	-	1293	1293	-	-	-	-	-	-	-
Stage 2	680	1301	-	801	1563	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	25	18	373	30	17	435	451	-	-	564	-	-
Stage 1	125	180	-	172	231	-	-	-	-	-	-	-
Stage 2	407	229	-	344	171	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	20	15	373	23	14	435	451	-	-	564	-	-
Mov Cap-2 Maneuver	20	15	-	23	14	-	-	-	-	-	-	-
Stage 1	115	167	-	158	212	-	-	-	-	-	-	-
Stage 2	349	210	-	294	158	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	64.7	66.2	0.4	0.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	451	-	-	19	373	90	564	-	-
HCM Lane V/C Ratio	0.082	-	-	0.332	0.071	0.363	0.075	-	-
HCM Control Delay (s)	13.7	-	-	269.9	15.4	66.2	11.9	-	-
HCM Lane LOS	B	-	-	F	C	F	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.9	0.2	1.4	0.2	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	530	420	1	1	25
Future Vol, veh/h	10	530	420	1	1	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	558	442	1	1	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	443	0	-	0	1023	443
Stage 1	-	-	-	-	443	-
Stage 2	-	-	-	-	580	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1117	-	-	-	261	615
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	560	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1117	-	-	-	258	615
Mov Cap-2 Maneuver	-	-	-	-	258	-
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	560	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1117	-	-	-	584
HCM Lane V/C Ratio	0.009	-	-	-	0.047
HCM Control Delay (s)	8.3	-	-	-	11.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	515	720	1	1	15
Future Vol, veh/h	25	515	720	1	1	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	542	758	1	1	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	759	0	-	0	1353	759
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	594	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	852	-	-	-	165	406
Stage 1	-	-	-	-	462	-
Stage 2	-	-	-	-	552	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	852	-	-	-	160	406
Mov Cap-2 Maneuver	-	-	-	-	160	-
Stage 1	-	-	-	-	448	-
Stage 2	-	-	-	-	552	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	852	-	-	-	370
HCM Lane V/C Ratio	0.031	-	-	-	0.046
HCM Control Delay (s)	9.4	-	-	-	15.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

APPENDIX F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	331	51	54	48	64	9	40	592	33	9	539	266
Future Volume (veh/h)	331	51	54	48	64	9	40	592	33	9	539	266
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	389	60	19	56	75	5	47	696	1	11	634	127
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	414	371	118	161	126	8	380	1103	935	359	1071	907
Arrive On Green	0.17	0.27	0.27	0.07	0.07	0.07	0.04	0.59	0.59	0.02	0.57	0.57
Sat Flow, veh/h	1781	1362	431	1320	1734	116	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	389	0	79	56	0	80	47	696	1	11	634	127
Grp Sat Flow(s),veh/h/ln	1781	0	1793	1320	0	1850	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	19.0	0.0	3.7	4.5	0.0	4.6	1.1	26.7	0.0	0.3	24.1	4.1
Cycle Q Clear(g_c), s	19.0	0.0	3.7	4.5	0.0	4.6	1.1	26.7	0.0	0.3	24.1	4.1
Prop In Lane	1.00		0.24	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	414	0	489	161	0	134	380	1103	935	359	1071	907
V/C Ratio(X)	0.94	0.00	0.16	0.35	0.00	0.60	0.12	0.63	0.00	0.03	0.59	0.14
Avail Cap(c_a), veh/h	414	0	733	347	0	395	444	1103	935	454	1071	907
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	0.0	30.4	49.4	0.0	49.4	11.3	14.7	9.3	12.1	15.2	10.9
Incr Delay (d2), s/veh	29.6	0.0	0.2	1.3	0.0	4.2	0.1	2.7	0.0	0.0	2.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	1.6	1.6	0.0	2.3	0.4	11.0	0.0	0.1	10.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.0	0.0	30.6	50.7	0.0	53.6	11.5	17.5	9.3	12.1	17.6	11.3
LnGrp LOS	E	A	C	D	A	D	B	B	A	B	B	B
Approach Vol, veh/h		468			136			744			772	
Approach Delay, s/veh		62.5			52.4			17.1			16.5	
Approach LOS		E			D			B			B	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	68.0		35.0	5.1	69.9	22.0	13.0				
Change Period (Y+Rc), s	4.0	* 6		6.0	4.0	6.0	4.0	* 6				
Max Green Setting (Gmax), s	7.0	* 44		44.0	7.0	43.0	18.0	* 23				
Max Q Clear Time (g_c+I1), s	3.1	26.1		5.7	2.3	28.7	21.0	6.6				
Green Ext Time (p_c), s	0.0	2.6		0.2	0.0	2.3	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	29.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

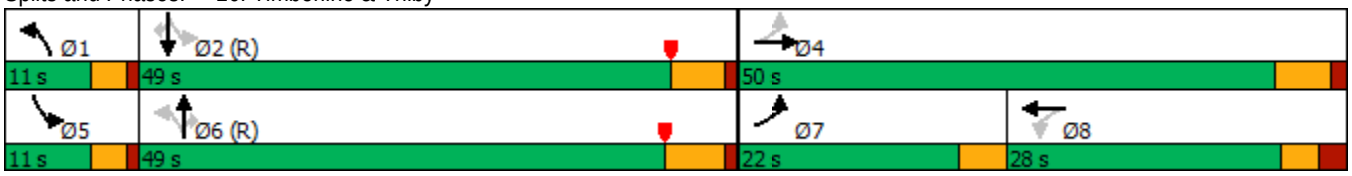
Phase Number	1	2	4	5	6	7	8
Movement	NBL	SBTL	EBTL	SBL	NBTL	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	11	49	50	11	49	22	28
Maximum Split (%)	10.0%	44.5%	45.5%	10.0%	44.5%	20.0%	25.5%
Minimum Split (s)	11	24.5	24	11	25	11	27.5
Yellow Time (s)	3	4.5	4.5	3	5	4	3
All-Red Time (s)	1	1	1.5	1	1	0	2.5
Minimum Initial (s)	4	7	7	4	7	4	7
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		12	11		12		15
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	63	74	13	63	74	13	35
End Time (s)	74	13	63	74	13	35	63
Yield/Force Off (s)	70	7.5	57	70	7	31	57.5
Yield/Force Off 170(s)	70	105.5	46	70	105	31	42.5
Local Start Time (s)	56	67	6	56	67	6	28
Local Yield (s)	63	0.5	50	63	0	24	50.5
Local Yield 170(s)	63	98.5	39	63	98	24	35.5

Intersection Summary

Cycle Length	110
Control Type	Actuated-Coordinated
Natural Cycle	90

Offset: 7 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Splits and Phases: 16: Timberline & Trilby



16: Timberline & Trilby

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	389	124	56	86	47	696	39	11	634	313
v/c Ratio	0.71	0.19	0.26	0.27	0.17	0.71	0.04	0.04	0.72	0.35
Control Delay	34.1	12.3	40.3	37.1	14.1	27.3	0.1	13.1	31.8	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	12.3	40.3	37.1	14.1	27.3	0.1	13.1	31.8	4.2
Queue Length 50th (ft)	204	29	34	48	15	365	0	4	384	6
Queue Length 95th (ft)	268	61	65	86	33	#626	0	12	508	48
Internal Link Dist (ft)		909		738		1193			874	
Turn Bay Length (ft)	250		170		350		350	275		250
Base Capacity (vph)	550	738	269	395	285	979	884	294	878	903
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	0.21	0.22	0.16	0.71	0.04	0.04	0.72	0.35

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	310	80	54	54	70	18	104	719	59	16	702	434
Future Volume (veh/h)	310	80	54	54	70	18	104	719	59	16	702	434
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	365	94	39	64	82	12	122	846	14	19	826	282
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	394	339	141	158	125	18	269	1118	947	273	1067	904
Arrive On Green	0.17	0.27	0.27	0.08	0.08	0.08	0.05	0.60	0.60	0.02	0.57	0.57
Sat Flow, veh/h	1781	1256	521	1257	1595	233	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	365	0	133	64	0	94	122	846	14	19	826	282
Grp Sat Flow(s),veh/h/ln	1781	0	1777	1257	0	1828	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	20.0	0.0	7.1	5.9	0.0	6.0	3.2	39.9	0.4	0.5	40.8	11.2
Cycle Q Clear(g_c), s	20.0	0.0	7.1	5.9	0.0	6.0	3.2	39.9	0.4	0.5	40.8	11.2
Prop In Lane	1.00		0.29	1.00		0.13	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	394	0	480	158	0	143	269	1118	947	273	1067	904
V/C Ratio(X)	0.93	0.00	0.28	0.40	0.00	0.66	0.45	0.76	0.01	0.07	0.77	0.31
Avail Cap(c_a), veh/h	394	0	681	306	0	358	296	1118	947	349	1067	904
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.4	0.0	34.6	53.7	0.0	53.7	18.4	17.7	9.8	15.7	19.8	13.5
Incr Delay (d2), s/veh	27.8	0.0	0.3	1.7	0.0	5.0	1.2	4.8	0.0	0.1	5.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	0.0	3.1	2.0	0.0	3.0	1.5	17.0	0.2	0.2	17.9	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.3	0.0	34.9	55.4	0.0	58.8	19.6	22.5	9.8	15.8	25.3	14.4
LnGrp LOS	E	A	C	E	A	E	B	C	A	B	C	B
Approach Vol, veh/h		498			158			982			1127	
Approach Delay, s/veh		60.8			57.4			22.0			22.4	
Approach LOS		E			E			C			C	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	73.5		37.4	5.9	76.7	23.0	14.4				
Change Period (Y+Rc), s	4.0	* 6		6.0	4.0	6.0	4.0	* 6				
Max Green Setting (Gmax), s	7.0	* 53		45.0	7.0	52.0	19.0	* 23				
Max Q Clear Time (g_c+I1), s	5.2	42.8		9.1	2.5	41.9	22.0	8.0				
Green Ext Time (p_c), s	0.0	3.3		0.4	0.0	2.6	0.0	0.4				

Intersection Summary

HCM 6th Ctrl Delay	31.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

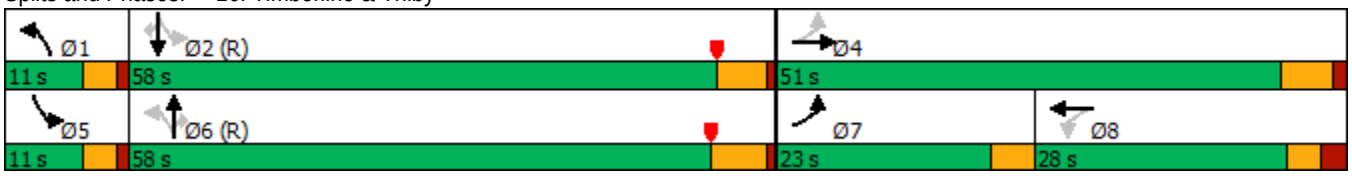
Phase Number	1	2	4	5	6	7	8
Movement	NBL	SBTL	EBTL	SBL	NBTL	EBL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize							
Recall Mode	None	C-Max	None	None	C-Max	None	None
Maximum Split (s)	11	58	51	11	58	23	28
Maximum Split (%)	9.2%	48.3%	42.5%	9.2%	48.3%	19.2%	23.3%
Minimum Split (s)	11	24.5	24	11	25	11	27.5
Yellow Time (s)	3	4.5	4.5	3	5	4	3
All-Red Time (s)	1	1	1.5	1	1	0	2.5
Minimum Initial (s)	4	7	7	4	7	4	7
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		7	7		7		7
Flash Dont Walk (s)		12	11		12		15
Dual Entry	No	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	92	103	41	92	103	41	64
End Time (s)	103	41	92	103	41	64	92
Yield/Force Off (s)	99	35.5	86	99	35	60	86.5
Yield/Force Off 170(s)	99	23.5	75	99	23	60	71.5
Local Start Time (s)	57	68	6	57	68	6	29
Local Yield (s)	64	0.5	51	64	0	25	51.5
Local Yield 170(s)	64	108.5	40	64	108	25	36.5

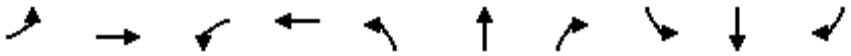
Intersection Summary

Cycle Length	120	
Control Type	Actuated-Coordinated	
Natural Cycle	100	

Offset: 35 (29%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Splits and Phases: 16: Timberline & Trilby





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	365	158	64	103	122	846	69	19	826	511
v/c Ratio	0.73	0.25	0.31	0.33	0.66	0.86	0.08	0.10	0.94	0.54
Control Delay	38.8	21.5	46.5	41.3	38.4	37.4	1.7	13.5	50.0	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	21.5	46.5	41.3	38.4	37.4	1.7	13.5	50.0	8.6
Queue Length 50th (ft)	211	64	43	62	44	539	0	6	624	66
Queue Length 95th (ft)	282	106	81	107	#116	#855	9	17	#817	139
Internal Link Dist (ft)		909		738		1193			874	
Turn Bay Length (ft)	250		170		350		350	275		250
Base Capacity (vph)	503	690	239	361	184	982	882	195	882	943
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	0.73	0.23	0.27	0.29	0.66	0.86	0.08	0.10	0.94	0.54

Intersection Summary

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

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	6	0	19	0	984	8	23	835	0
Future Vol, veh/h	0	0	0	6	0	19	0	984	8	23	835	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	7	0	21	0	1106	9	26	938	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2111	2105	938	2101	2101	1111	938	0	0	1115	0	0
Stage 1	990	990	-	1111	1111	-	-	-	-	-	-	-
Stage 2	1121	1115	-	990	990	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	37	51	321	38	52	254	730	-	-	626	-	-
Stage 1	297	324	-	254	285	-	-	-	-	-	-	-
Stage 2	250	283	-	297	324	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	33	49	321	37	50	254	730	-	-	626	-	-
Mov Cap-2 Maneuver	33	49	-	139	158	-	-	-	-	-	-	-
Stage 1	297	310	-	254	285	-	-	-	-	-	-	-
Stage 2	229	283	-	285	310	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	24.6	0	0.3
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	730	-	-	-	212	626	-	-
HCM Lane V/C Ratio	-	-	-	-	0.132	0.041	-	-
HCM Control Delay (s)	0	-	-	0	24.6	11	-	-
HCM Lane LOS	A	-	-	A	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.4	0.1	-	-

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	0	11	0	1043	8	26	1125	0
Future Vol, veh/h	0	0	0	3	0	11	0	1043	8	26	1125	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	3	0	12	0	1134	9	28	1223	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2424	2422	1223	2418	2418	1139	1223	0	0	1143	0	0
Stage 1	1279	1279	-	1139	1139	-	-	-	-	-	-	-
Stage 2	1145	1143	-	1279	1279	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	22	32	219	22	32	245	570	-	-	611	-	-
Stage 1	204	237	-	245	276	-	-	-	-	-	-	-
Stage 2	243	275	-	204	237	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	20	31	219	21	31	245	570	-	-	611	-	-
Mov Cap-2 Maneuver	20	31	-	109	127	-	-	-	-	-	-	-
Stage 1	204	226	-	245	276	-	-	-	-	-	-	-
Stage 2	231	275	-	195	226	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	25.2	0	0.3
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	570	-	-	-	193	611	-	-
HCM Lane V/C Ratio	-	-	-	-	0.079	0.046	-	-
HCM Control Delay (s)	0	-	-	0	25.2	11.2	-	-
HCM Lane LOS	A	-	-	A	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.3	0.1	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	43	0	1003	815	19
Future Vol, veh/h	0	43	0	1003	815	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	48	0	1127	916	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	916	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	330	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	330	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	330	-	-
HCM Lane V/C Ratio	-	0.146	-	-
HCM Control Delay (s)	-	17.8	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.5	-	-

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↱		↑	↑	↱
Traffic Vol, veh/h	0	29	0	1054	1122	63
Future Vol, veh/h	0	29	0	1054	1122	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	32	0	1146	1220	68

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1220	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	220	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	220	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.1	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	220	-	-
HCM Lane V/C Ratio	-	0.143	-	-
HCM Control Delay (s)	-	24.1	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.5	-	-

Intersection												
Int Delay, s/veh	19.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	5	65	10	3	50	29	966	8	13	759	30
Future Vol, veh/h	50	5	65	10	3	50	29	966	8	13	759	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	150	-	-	150	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	5	70	11	3	54	31	1039	9	14	816	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1978	1954	816	2004	1982	1044	848	0	0	1048	0	0
Stage 1	844	844	-	1106	1106	-	-	-	-	-	-	-
Stage 2	1134	1110	-	898	876	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 46	64	377	44	61	278	790	-	-	664	-	-
Stage 1	358	379	-	255	286	-	-	-	-	-	-	-
Stage 2	246	285	-	334	367	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 34	60	377	32	57	278	790	-	-	664	-	-
Mov Cap-2 Maneuver	~ 34	60	-	32	57	-	-	-	-	-	-	-
Stage 1	344	371	-	245	275	-	-	-	-	-	-	-
Stage 2	188	274	-	262	359	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	276.2	72.5	0.3	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	790	-	-	35	377	116	664	-	-
HCM Lane V/C Ratio	0.039	-	-	1.69	0.185	0.584	0.021	-	-
HCM Control Delay (s)	9.7	-	-	$ 582.9	16.7	72.5	10.5	-	-
HCM Lane LOS	A	-	-	F	C	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	6.5	0.7	2.9	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	15											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	1	30	3	0	25	90	951	13	41	1152	54
Future Vol, veh/h	26	1	30	3	0	25	90	951	13	41	1152	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	150	-	-	150	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	1	32	3	0	27	97	1023	14	44	1239	58

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2565	2558	1239	2597	2609	1030	1297	0	0	1037	0	0
Stage 1	1327	1327	-	1224	1224	-	-	-	-	-	-	-
Stage 2	1238	1231	-	1373	1385	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 17	26	214	17	24	283	534	-	-	670	-	-
Stage 1	191	225	-	219	252	-	-	-	-	-	-	-
Stage 2	215	250	-	180	211	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 13	20	214	11	18	283	534	-	-	670	-	-
Mov Cap-2 Maneuver	~ 13	20	-	11	18	-	-	-	-	-	-	-
Stage 1	156	210	-	179	206	-	-	-	-	-	-	-
Stage 2	159	205	-	142	197	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 560.4	77.6	1.1	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	534	-	-	13	214	78	670	-	-
HCM Lane V/C Ratio	0.181	-	-	2.233	0.151	0.386	0.066	-	-
HCM Control Delay (s)	13.2	-	-	$ 1155.5	24.8	77.6	10.8	-	-
HCM Lane LOS	B	-	-	F	C	F	B	-	-
HCM 95th %tile Q(veh)	0.7	-	-	4.5	0.5	1.5	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

APPENDIX G

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	65	85	60	80	10	70	795	40	25	655	285
Future Volume (veh/h)	400	65	85	60	80	10	70	795	40	25	655	285
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	421	68	1	63	84	6	74	837	1	26	689	175
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	518	313	265	97	131	9	361	1121	950	297	1097	930
Arrive On Green	0.15	0.17	0.17	0.05	0.08	0.08	0.04	0.60	0.60	0.03	0.59	0.59
Sat Flow, veh/h	3456	1870	1585	1781	1725	123	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	421	68	1	63	0	90	74	837	1	26	689	175
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	0	1848	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	13.0	3.5	0.1	3.8	0.0	5.2	1.8	35.7	0.0	0.6	26.5	5.6
Cycle Q Clear(g_c), s	13.0	3.5	0.1	3.8	0.0	5.2	1.8	35.7	0.0	0.6	26.5	5.6
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	518	313	265	97	0	141	361	1121	950	297	1097	930
V/C Ratio(X)	0.81	0.22	0.00	0.65	0.00	0.64	0.20	0.75	0.00	0.09	0.63	0.19
Avail Cap(c_a), veh/h	597	595	504	121	0	412	416	1121	950	375	1097	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	39.6	38.2	51.0	0.0	49.3	11.5	16.0	8.8	13.8	14.9	10.6
Incr Delay (d2), s/veh	7.4	0.3	0.0	8.1	0.0	4.8	0.3	4.5	0.0	0.1	2.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	1.6	0.0	1.9	0.0	2.6	0.6	14.9	0.0	0.2	11.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.7	39.9	38.2	59.1	0.0	54.1	11.8	20.5	8.8	13.9	17.6	11.0
LnGrp LOS	D	D	D	E	A	D	B	C	A	B	B	B
Approach Vol, veh/h		490			153			912			890	
Approach Delay, s/veh		50.9			56.2			19.8			16.2	
Approach LOS		D			E			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	69.5	9.5	23.4	6.2	70.9	19.5	13.4
Change Period (Y+Rc), s	4.0	* 6	4.5	6.0	4.0	6.0	4.0	* 6
Max Green Setting (Gmax), s	7.0	* 43	6.5	34.0	7.0	42.0	18.0	* 24
Max Q Clear Time (g_c+I1), s	3.8	28.5	5.8	5.5	2.6	37.7	15.0	7.2
Green Ext Time (p_c), s	0.0	2.8	0.0	0.2	0.0	1.5	0.5	0.2

Intersection Summary	
HCM 6th Ctrl Delay	27.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

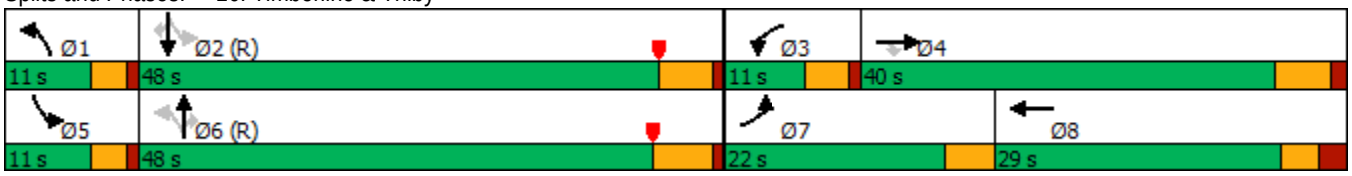
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	WBL	EBT	SBL	NBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize			Yes	Yes				
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	11	48	11	40	11	48	22	29
Maximum Split (%)	10.0%	43.6%	10.0%	36.4%	10.0%	43.6%	20.0%	26.4%
Minimum Split (s)	11	24.5	9.5	24	11	25	11	27.5
Yellow Time (s)	3	4.5	3.5	4.5	3	5	4	3
All-Red Time (s)	1	1	1	1.5	1	1	0	2.5
Minimum Initial (s)	4	7	5	7	4	7	4	7
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		12		11		12		15
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	64	75	13	24	64	75	13	35
End Time (s)	75	13	24	64	75	13	35	64
Yield/Force Off (s)	71	7.5	19.5	58	71	7	31	58.5
Yield/Force Off 170(s)	71	105.5	19.5	47	71	105	31	43.5
Local Start Time (s)	57	68	6	17	57	68	6	28
Local Yield (s)	64	0.5	12.5	51	64	0	24	51.5
Local Yield 170(s)	64	98.5	12.5	40	64	98	24	36.5

Intersection Summary

Cycle Length	110
Control Type	Actuated-Coordinated
Natural Cycle	100

Offset: 7 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Splits and Phases: 16: Timberline & Trilby



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	421	68	89	63	95	74	837	42	26	689	300
v/c Ratio	0.75	0.17	0.21	0.53	0.47	0.22	0.80	0.04	0.11	0.69	0.31
Control Delay	53.1	36.4	4.6	66.6	50.3	10.3	29.5	0.1	9.8	25.7	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	36.4	4.6	66.6	50.3	10.3	29.5	0.1	9.8	25.7	4.3
Queue Length 50th (ft)	145	40	0	44	60	19	500	0	6	364	14
Queue Length 95th (ft)	200	76	26	#94	109	42	#828	0	19	579	66
Internal Link Dist (ft)		2180			738		1193			874	
Turn Bay Length (ft)	250		250	170		350		350	275		
Base Capacity (vph)	592	592	581	120	412	337	1040	952	252	997	967
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.11	0.15	0.53	0.23	0.22	0.80	0.04	0.10	0.69	0.31

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	100	95	65	90	25	145	850	70	30	845	505
Future Volume (veh/h)	340	100	95	65	90	25	145	850	70	30	845	505
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	358	105	12	68	95	17	153	895	12	32	889	349
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	449	291	247	101	134	24	262	1159	982	280	1110	941
Arrive On Green	0.13	0.16	0.16	0.06	0.09	0.09	0.06	0.62	0.62	0.03	0.59	0.59
Sat Flow, veh/h	3456	1870	1585	1781	1544	276	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	358	105	12	68	0	112	153	895	12	32	889	349
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	0	1821	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	12.1	6.0	0.8	4.5	0.0	7.2	3.8	41.9	0.3	0.8	44.2	13.8
Cycle Q Clear(g_c), s	12.1	6.0	0.8	4.5	0.0	7.2	3.8	41.9	0.3	0.8	44.2	13.8
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	449	291	247	101	0	158	262	1159	982	280	1110	941
V/C Ratio(X)	0.80	0.36	0.05	0.67	0.00	0.71	0.58	0.77	0.01	0.11	0.80	0.37
Avail Cap(c_a), veh/h	547	530	449	126	0	372	280	1159	982	345	1110	941
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.7	45.3	43.1	55.5	0.0	53.3	20.8	16.6	8.7	15.2	18.9	12.7
Incr Delay (d2), s/veh	6.7	0.8	0.1	9.4	0.0	5.7	2.8	5.0	0.0	0.2	6.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	2.8	0.3	2.3	0.0	3.6	2.4	17.7	0.1	0.3	19.2	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.4	46.1	43.2	64.9	0.0	59.0	23.5	21.7	8.8	15.4	25.0	13.8
LnGrp LOS	E	D	D	E	A	E	C	C	A	B	C	B
Approach Vol, veh/h		475			180			1060			1270	
Approach Delay, s/veh		54.5			61.3			21.8			21.7	
Approach LOS		D			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	76.2	10.3	23.7	6.6	79.4	18.6	15.4
Change Period (Y+Rc), s	4.0	* 6	4.5	6.0	4.0	6.0	4.0	* 6
Max Green Setting (Gmax), s	7.0	* 53	7.5	33.0	7.0	52.0	18.0	* 24
Max Q Clear Time (g_c+I1), s	5.8	46.2	6.5	8.0	2.8	43.9	14.1	9.2
Green Ext Time (p_c), s	0.0	2.8	0.0	0.3	0.0	2.5	0.5	0.2

Intersection Summary

HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

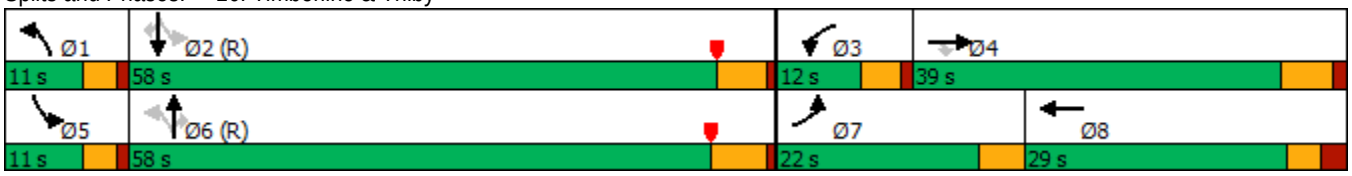
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	WBL	EBT	SBL	NBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize			Yes	Yes				
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	11	58	12	39	11	58	22	29
Maximum Split (%)	9.2%	48.3%	10.0%	32.5%	9.2%	48.3%	18.3%	24.2%
Minimum Split (s)	11	24.5	9.5	24	11	25	11	27.5
Yellow Time (s)	3	4.5	3.5	4.5	3	5	4	3
All-Red Time (s)	1	1	1	1.5	1	1	0	2.5
Minimum Initial (s)	4	7	5	7	4	7	4	7
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		12		11		12		15
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	64	75	13	25	64	75	13	35
End Time (s)	75	13	25	64	75	13	35	64
Yield/Force Off (s)	71	7.5	20.5	58	71	7	31	58.5
Yield/Force Off 170(s)	71	115.5	20.5	47	71	115	31	43.5
Local Start Time (s)	57	68	6	18	57	68	6	28
Local Yield (s)	64	0.5	13.5	51	64	0	24	51.5
Local Yield 170(s)	64	108.5	13.5	40	64	108	24	36.5

Intersection Summary

Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	110

Offset: 7 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Splits and Phases: 16: Timberline & Trilby



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	358	105	100	68	121	153	895	74	32	889	532
v/c Ratio	0.71	0.28	0.25	0.56	0.56	0.61	0.83	0.08	0.15	0.94	0.54
Control Delay	57.3	42.3	8.1	72.3	55.5	31.7	31.1	0.2	10.8	47.6	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.3	42.3	8.1	72.3	55.5	31.7	31.1	0.2	10.8	47.6	9.2
Queue Length 50th (ft)	136	70	0	52	83	59	588	0	8	650	79
Queue Length 95th (ft)	187	117	41	#105	139	136	#963	0	23	#1010	199
Internal Link Dist (ft)		2180			738		1193			874	
Turn Bay Length (ft)	250		250	170		350		350	275		
Base Capacity (vph)	543	527	523	125	376	251	1082	979	228	947	980
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.20	0.19	0.54	0.32	0.61	0.83	0.08	0.14	0.94	0.54

Intersection Summary

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

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	25	5	0	20	10	1190	10	25	940	25
Future Vol, veh/h	15	0	25	5	0	20	10	1190	10	25	940	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	26	5	0	21	11	1253	11	26	989	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1690	2327	495	1828	2348	632	1015	0	0	1264	0	0
Stage 1	1041	1041	-	1281	1281	-	-	-	-	-	-	-
Stage 2	649	1286	-	547	1067	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	61	37	520	48	36	423	679	-	-	546	-	-
Stage 1	246	305	-	175	235	-	-	-	-	-	-	-
Stage 2	425	233	-	489	297	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	55	35	520	43	34	423	679	-	-	546	-	-
Mov Cap-2 Maneuver	55	35	-	43	34	-	-	-	-	-	-	-
Stage 1	242	290	-	172	231	-	-	-	-	-	-	-
Stage 2	397	229	-	442	283	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	47.8	33.4	0.1	0.3
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	679	-	-	125	153	546	-	-
HCM Lane V/C Ratio	0.016	-	-	0.337	0.172	0.048	-	-
HCM Control Delay (s)	10.4	-	-	47.8	33.4	11.9	-	-
HCM Lane LOS	B	-	-	E	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0.6	0.2	-	-

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	20	5	0	10	25	1185	10	25	1355	70
Future Vol, veh/h	15	0	20	5	0	10	25	1185	10	25	1355	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	21	5	0	11	26	1247	11	26	1426	74

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2154	2788	713	2070	2857	629	1500	0	0	1258	0	0
Stage 1	1478	1478	-	1305	1305	-	-	-	-	-	-	-
Stage 2	676	1310	-	765	1552	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	27	18	374	31	17	425	443	-	-	549	-	-
Stage 1	132	188	-	169	228	-	-	-	-	-	-	-
Stage 2	409	227	-	362	173	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	24	16	374	27	15	425	443	-	-	549	-	-
Mov Cap-2 Maneuver	24	16	-	27	15	-	-	-	-	-	-	-
Stage 1	124	179	-	159	215	-	-	-	-	-	-	-
Stage 2	375	214	-	325	165	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	171	68.5	0.3	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	443	-	-	52	72	549	-	-
HCM Lane V/C Ratio	0.059	-	-	0.709	0.219	0.048	-	-
HCM Control Delay (s)	13.6	-	-	171	68.5	11.9	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	2.9	0.8	0.2	-	-

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1	50	10	1	50	15	1200	10	15	930	35
Future Vol, veh/h	10	1	50	10	1	50	15	1200	10	15	930	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	150	-	-	150	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	1	53	11	1	53	16	1263	11	16	979	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1675	2317	490	1823	2349	637	1016	0	0	1274	0	0
Stage 1	1011	1011	-	1301	1301	-	-	-	-	-	-	-
Stage 2	664	1306	-	522	1048	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	62	37	524	48	36	420	678	-	-	541	-	-
Stage 1	257	315	-	170	229	-	-	-	-	-	-	-
Stage 2	416	228	-	506	303	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	51	35	524	41	34	420	678	-	-	541	-	-
Mov Cap-2 Maneuver	51	35	-	41	34	-	-	-	-	-	-	-
Stage 1	251	306	-	166	224	-	-	-	-	-	-	-
Stage 2	354	223	-	440	294	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.3	43.7	0.1	0.2
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	678	-	-	49	524	155	541	-	-
HCM Lane V/C Ratio	0.023	-	-	0.236	0.1	0.414	0.029	-	-
HCM Control Delay (s)	10.4	-	-	99.9	12.6	43.7	11.9	-	-
HCM Lane LOS	B	-	-	F	B	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.3	1.8	0.1	-	-

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	25	5	1	25	35	1160	15	40	1420	55
Future Vol, veh/h	5	1	25	5	1	25	35	1160	15	40	1420	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	150	-	-	150	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	1	26	5	1	26	37	1221	16	42	1495	58

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2264	2890	748	2135	2940	619	1553	0	0	1237	0	0
Stage 1	1579	1579	-	1303	1303	-	-	-	-	-	-	-
Stage 2	685	1311	-	832	1637	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	22	16	355	28	15	432	422	-	-	559	-	-
Stage 1	114	168	-	170	229	-	-	-	-	-	-	-
Stage 2	404	227	-	330	157	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	17	14	355	22	13	432	422	-	-	559	-	-
Mov Cap-2 Maneuver	17	14	-	22	13	-	-	-	-	-	-	-
Stage 1	104	155	-	155	209	-	-	-	-	-	-	-
Stage 2	344	207	-	281	145	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	77.9	70.5	0.4	0.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	422	-	-	16	355	86	559	-	-
HCM Lane V/C Ratio	0.087	-	-	0.395	0.074	0.379	0.075	-	-
HCM Control Delay (s)	14.3	-	-	$ 335.7	16	70.5	12	-	-
HCM Lane LOS	B	-	-	F	C	F	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	1	0.2	1.5	0.2	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	535	430	5	10	40
Future Vol, veh/h	15	535	430	5	10	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	563	453	5	11	42

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	458	0	-	0	1051	456
Stage 1	-	-	-	-	456	-
Stage 2	-	-	-	-	595	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1103	-	-	-	251	604
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	551	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1103	-	-	-	247	604
Mov Cap-2 Maneuver	-	-	-	-	247	-
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	551	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1103	-	-	-	469
HCM Lane V/C Ratio	0.014	-	-	-	0.112
HCM Control Delay (s)	8.3	-	-	-	13.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection	
Int Delay, s/veh	0.9

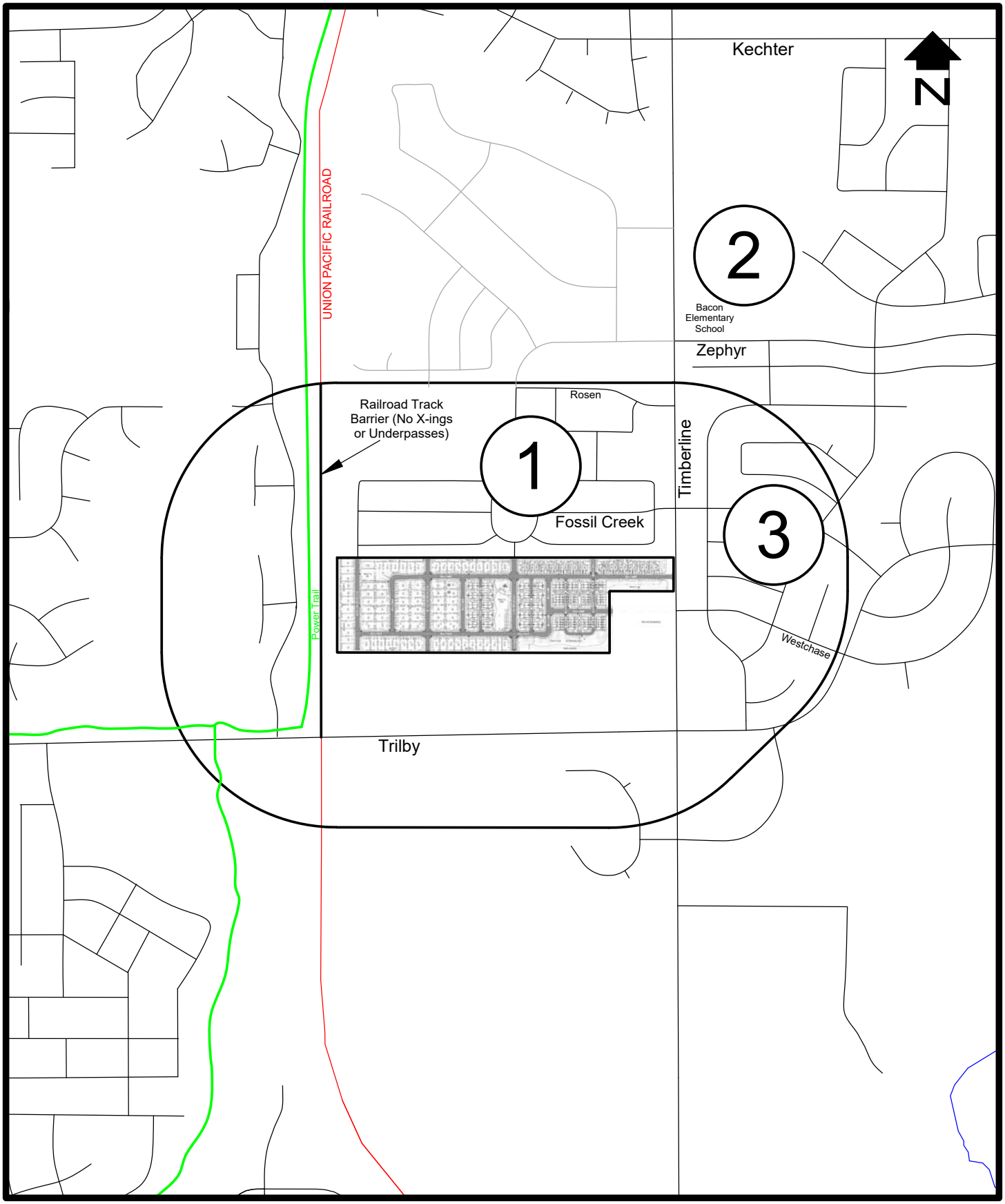
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	525	725	10	10	25
Future Vol, veh/h	45	525	725	10	10	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	553	763	11	11	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	774	0	-	0	1416	769
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	647	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	842	-	-	-	151	401
Stage 1	-	-	-	-	457	-
Stage 2	-	-	-	-	521	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	842	-	-	-	143	401
Mov Cap-2 Maneuver	-	-	-	-	143	-
Stage 1	-	-	-	-	431	-
Stage 2	-	-	-	-	521	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	20.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	842	-	-	-	265
HCM Lane V/C Ratio	0.056	-	-	-	0.139
HCM Control Delay (s)	9.5	-	-	-	20.8
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5

APPENDIX H



SCALE: 1"=1000'

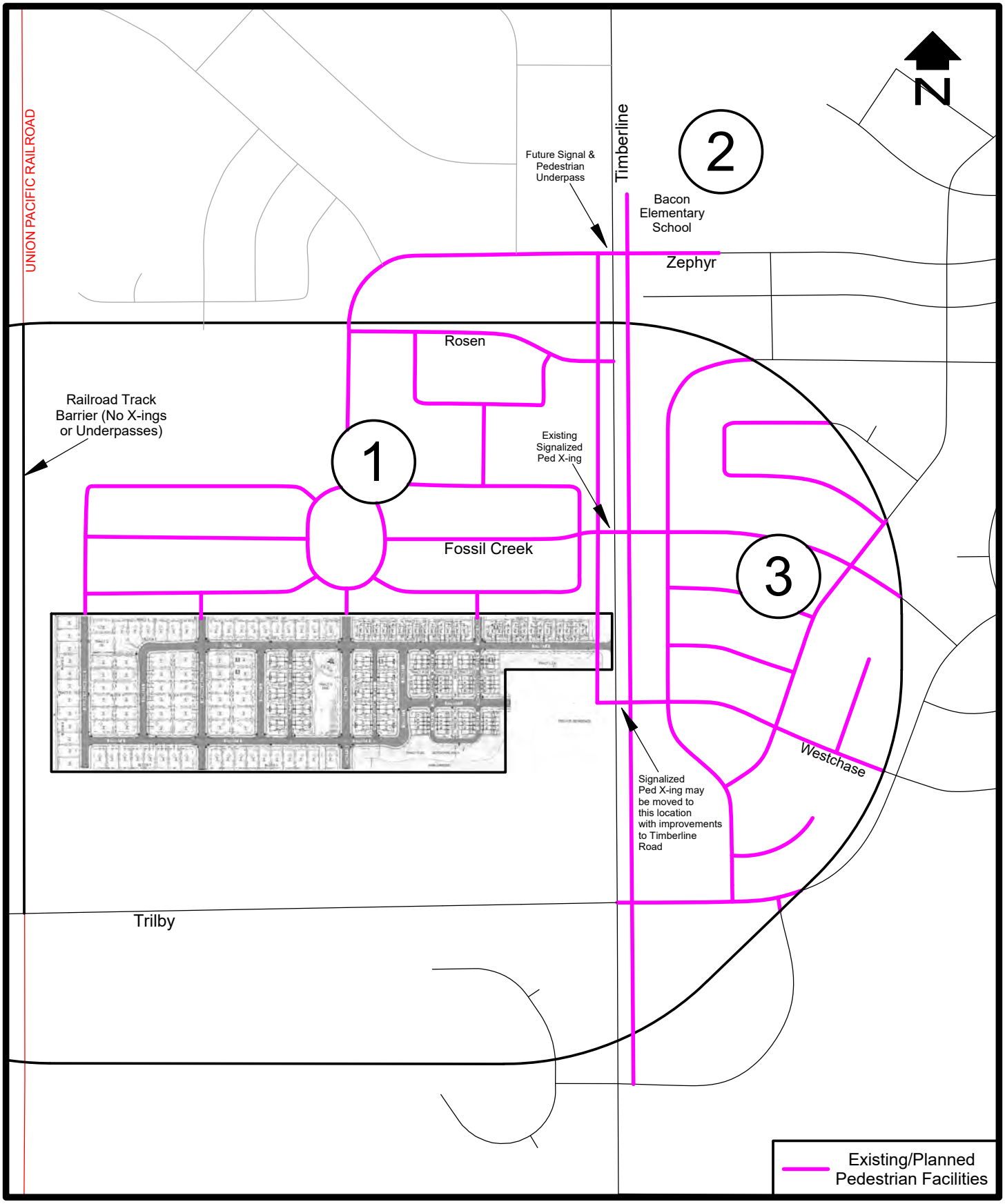
PEDESTRIAN INFLUENCE AREA

DELICH ASSOCIATES

Pedestrian LOS Worksheet

Project Location Classification: Other/School Walking Area

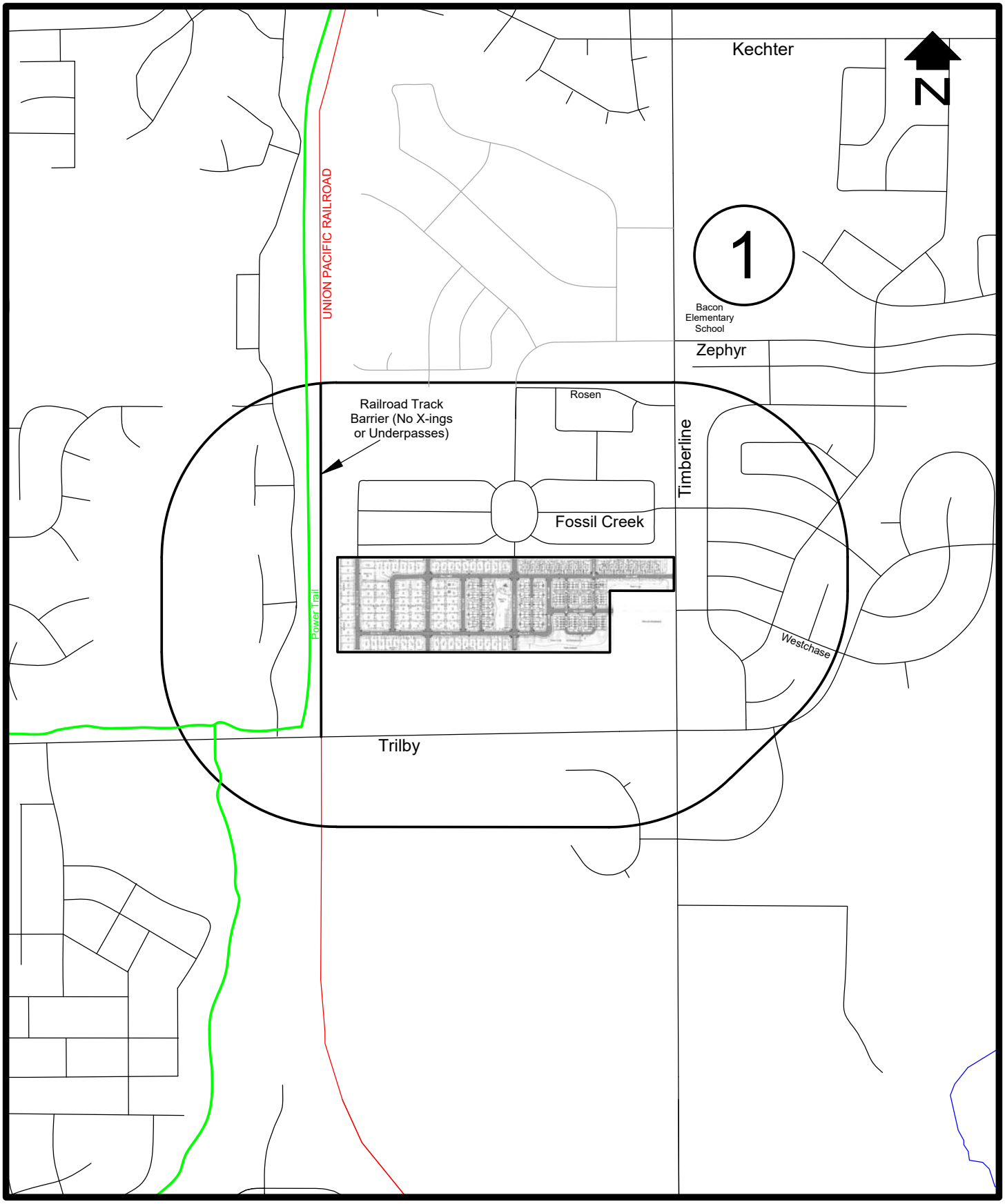
	Description of Applicable Destination Area Within 1320'	Destination Area Classification		Level of Service (minimum based on project location classification)				
				Directness	Continuity	Street Crossings	Visual Interest & Amenities	Security
1	The residential neighborhoods to the north of the site	Residential	Minimum	C	C	C	C	C
			Actual	A	B	B	B	A
			Proposed	A	B	B	B	A
2	Bacon Elementary School	Institutional	Minimum	B	B	B	C	B
			Actual	A	D	B	B	A
			Proposed	A	D	B	B	A
3	The residential neighborhood to the east of the site	Residential	Minimum	C	C	C	C	C
			Actual	A	D	B	B	A
			Proposed	A	D	B	B	A
4			Minimum					
			Actual					
			Proposed					
5			Minimum					
			Actual					
			Proposed					
6			Minimum					
			Actual					
			Proposed					
7			Minimum					
			Actual					
			Proposed					
8			Minimum					
			Actual					
			Proposed					
9			Minimum					
			Actual					
			Proposed					
10			Minimum					
			Actual					
			Proposed					



SCALE: 1"=600'

PEDESTRIAN ROUTES

DELICH ASSOCIATES



SCALE: 1"=1000'

BICYCLE INFLUENCE AREA

DELICH ASSOCIATES

Bicycle LOS Worksheet

				Level of Service – Connectivity		
				Minimum	Actual	Proposed
		Base Connectivity:		C	B	B
	Specific connections to priority sites:					
	Description of Applicable Destination Area Within 1320'	Destination Area Classification				
1	Bacon Elementary School	Institutional		C	B	B
2						
3						
4						
5						
6						
7						
8						

Ecological Resource Consultants, Inc.
2820 Wilderness Place, Suite A ~ Boulder, CO 80301 ~ (303) 679-4820

Ecological Characterization Study Report

South Timber Lark Residential Project
City of Fort Collins
Larimer County, Colorado

June 22, 2021

Prepared for:
AADT Land Holdings, LLC
13005 Lowell Blvd
Broomfield CO, 80020

ERC Project #200-2107

Ecological Characterization Study Report

South Timber Lark Residential Project
City of Fort Collins
Larimer County, Colorado
June 22, 2021

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Appendices

1.0 INTRODUCTION

Ecological Resource Consultants, Inc. (ERC) has prepared the following Ecological Characterization Study (ECS) Report for the South Timber Lark Residential Project in Fort Collins, Colorado (herein "Site" or "Study Area"). This report was prepared in accordance with the requirements of Article 3, Section 3.4.1 of the City of Fort Collins Land Use Code (herein "Code") (City 2020). An ECS is required if any portion of the development site is within five hundred (500) feet of an area or feature identified as a natural habitat or feature on the City's Natural Habitats and Features Inventory Map, or if any portion of the development site contains natural habitats or features that have significant ecological value, and such natural habitats or features are discovered during site evaluation and/or reconnaissance associated with the development review process. The purpose of an ECS is to ensure that when property is developed consistent with its zoning designation, the way in which the proposed physical elements of the development plan are designed and arranged on the site will protect the natural habitats and features both on the site and in the vicinity of the site.

The Site is not within 500' of an area or feature identified as a natural habitat or feature on the City's Natural Habitats and Features Inventory Map, however City of Fort Collins March 19, 2020 review comments requested the ECS as potential natural habits and features may be present.

This ECS Report summarizes the specific natural habitats or features identified by ERC on the Site as outlined in Section 3.4.1 of the Code.

2.0 GENERAL SITE DESCRIPTION

The Site is located northwest of East Trilby Road and South Timberline Road in Section 7, Township 6 north, Range 68 west, in the City of Fort Collins in Larimer County, Colorado (Latitude 40.4982995° north, Longitude -105.0440489° west). The Site is bound to the north by the Linden Park subdivision, South Timberline Rd Avenue to the east, private residences with grassland pastures to the south and the Burlington Northern Santa Fe Railroad and Power Trail to the west. The Site vicinity and location maps are shown on **Figure 1 and Figure 2**.

The land evaluated within the survey area for this Report comprises approximately 35 acres and has an average elevation of 4,937 feet above mean sea level. Topography on the Site generally slopes to the east.

The Site is undeveloped and consists primarily of open ruderal grassland. Land within the Site appears to have been an alfalfa field in the relatively recent past. Several relic irrigation channels exist throughout the Site, however, appear to not have been in use for some time as they are filled with sediment deposits and upland vegetation. The Site is scheduled for residential development with single and multi-family dwellings, numerous roadways, utilities and small landscaping features/amenities. The Overall Site Plan (11-24-20) reviewed as part of this ECS is provided in Appendix A.

The U.S. Geological Survey (USGS) topographic map (Loveland, CO 2019) does not identify any streams or other notable features within the Site boundary. Site evaluation identified an unnamed irrigation channel that begins in the southwest corner of the Site and flows north, then immediately west towards the central portion of the Site where it then turns to the northwest and exits the site near Weeping Willow Drive through an underground cement box culvert. A series of relic irrigation ditches were also observed as stemming from this main irrigation channel and flow east to southeast. The northern boundary of the

Site, adjacent to Linden Park, consists of large mature deciduous trees accompanied by an herbaceous understory. A stormwater drainage on the eastern portion of the Site is an unmapped stormwater discharge feature which flows from north to the southeast along the eastern Site boundary. The drainage is somewhat naturalized containing herbaceous vegetation within the channel bottom. The drainage eventually terminates in the southeast corner of the Site next to South Timberline Road.

3.0 Methodology

A preliminary desktop review was conducted utilizing existing available mapping to identify natural habitats or features within Site boundary. The City's *Natural Habitats and Features Inventory Map*, aerial imagery, U.S. Geological Survey (USGS) topographic maps, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping and Colorado Parks and Wildlife (CPW) data were reviewed. General extents and characterization of natural habitats or features were documented and sketched onto project base mapping as part of the initial review.

ERC completed a Site evaluation on June 1, 2021 to identify, map, and evaluate natural habitats or features within the Site. Specifically the purpose of the Site evaluation in accordance with the Code was to evaluate; wildlife use of the area, jurisdictional (USACE) or non-jurisdictional wetlands, prominent views, native vegetation, non-native vegetation, bank, shoreline or high water mark, sensitive or specially valued species, special habitat features, wildlife movement corridors, general ecological functions, potential issues with timing of development activities and mitigation of projected adverse impact (if available).

Final mapping of natural habitats or features and buffer zones was conducted in GIS using photo interpretation of aerial photography, overlay of GPS data points and digitization of field maps. The Natural Habitat Features Map (**Figure 3**) represents the natural habitats and features including wetlands and other water features identified by ERC within the Site.

Upon review of all available resources, including literature and field inspections, ERC provides the following determination for the Site.

4.0 EXISTING VEGETATION COMMUNITIES

One primary vegetation community exists across the entire Site and is comprised of Western North American Ruderal Grassland & Shrubland. The vegetation community characterized on the Site is somewhat based on natural vegetation associations in the region (NatureServe 2021) however has been disturbed by historic and current land use practices and thus represents somewhat of a degraded form of the community. Following is a summary of the vegetation community within the Site. Refer to **Figure 3** for a map of the vegetation community on the Site.

Western North American Ruderal Grassland & Shrubland

The majority of the land on the Site consists of upland grassland dominated by smooth brome *(Bromus inermis*) and ruderal herbaceous vegetation. The western edge of the Site does contain sporadic, limited individual native shrubs of Douglas rabbitbrush (*Chrysothamnus viscidiflorus*) and two isolated plum trees (*Prunus americana*) with a diameter of less than 6". The shrubs and trees are sporadically spaced, and the herbaceous understory is comprised primarily of non-native species such as smooth brome and crested wheatgrass. Based on historical use, fragmentation, and general lack of natural areas within the Site, the Site was not considered to contain any remnant historic vegetation communities. The vegetation community characterized occurs throughout the western North America and is composed of disturbed

upland grasslands, meadows and shrublands dominated by non-native and generalist native species. It is abundant in waste areas and disturbed land in temperate areas throughout the western U.S. and southwestern Canada, including coastal areas, often as abandoned pastures, roadside margins or other weedy places. Sites are not mowed or otherwise maintained. Generally, these are areas that have been extremely disturbed by heavy equipment, such as old plowed fields, townsites, abandoned millsites, or livestock holding areas and other "waste" places that are now covered in invasive shrub or herbaceous species not native to western North America. Vegetation of the macrogroup can be a monoculture of a single non-native species, or a mix of several non-native forbs and graminoids, often associated with generalist native species (Faber-Langendoen et al. 2014).

Refer to **Photos 1-6** below for characteristics of the upland ruderal grassland habitat within the Site.

Photo 1. View east across the eastern portion of the Site. The vegetation community (Western North American Ruderal Grassland & Shrubland) is limited to smooth brome interspersed with weeds such as Canadian thistle and common burdock. Residential development exists directly to the north and south of the Site.

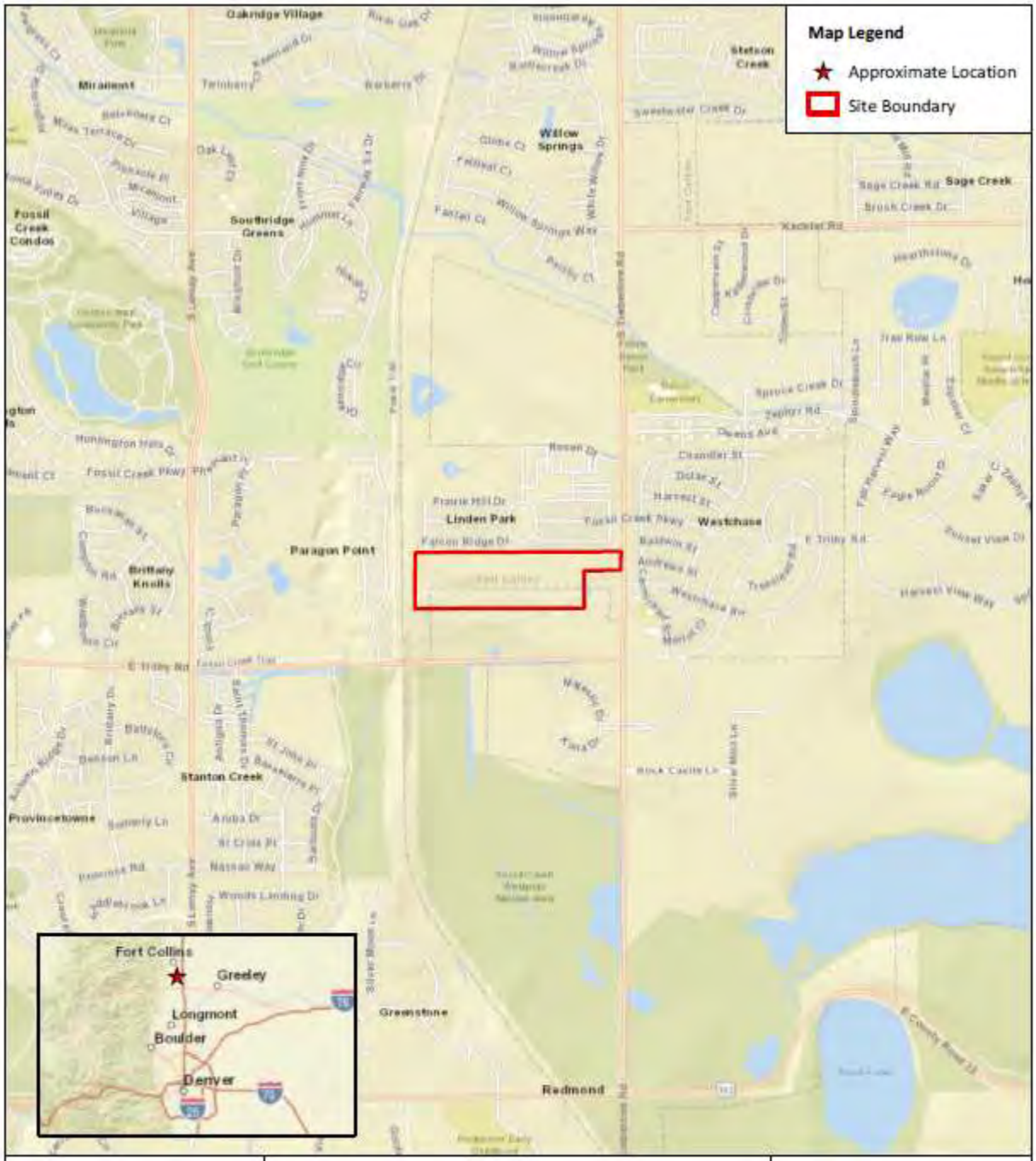
Photo 2. View south at eastern portion of the Site. Private, single family homes exist. The eastern portion of the site is dominated by smooth brome interspersed with weedy species example of Western North American Ruderal Grassland & Shrubland community) .

Photo 3. View west in the eastern portion of the Site. Mature eastern cottonwood and Russian olive trees exist along the northern boundary adjacent to the Linden Park neighborhood.

Photo 4. View southeast in the central portion of the Site. An abundance of weedy species such as diffuse knapweed and scotch thistle are dominate.

Photo 5. View south of the western portion of the Site. Limited native species are present such as buffalo grass and limited sporadic Douglas rabbitbrush are present, however crested wheatgrass and smooth brome make up the majority of the herbaceous understory (90%).

Photo 6. View north of the western portion of the Site. Mature cottonwood trees and sporadic Douglas rabbitbrush with a non-native herbaceous understory exist.



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ERC #: 200-2107

FIGURE 1
LOCATION MAP

ECOLOGICAL CHARACTERIZATION STUDY
CITY OF FORT COLLINS
LARIMER COUNTY, COLORADO

0 1,000 2,000
Feet

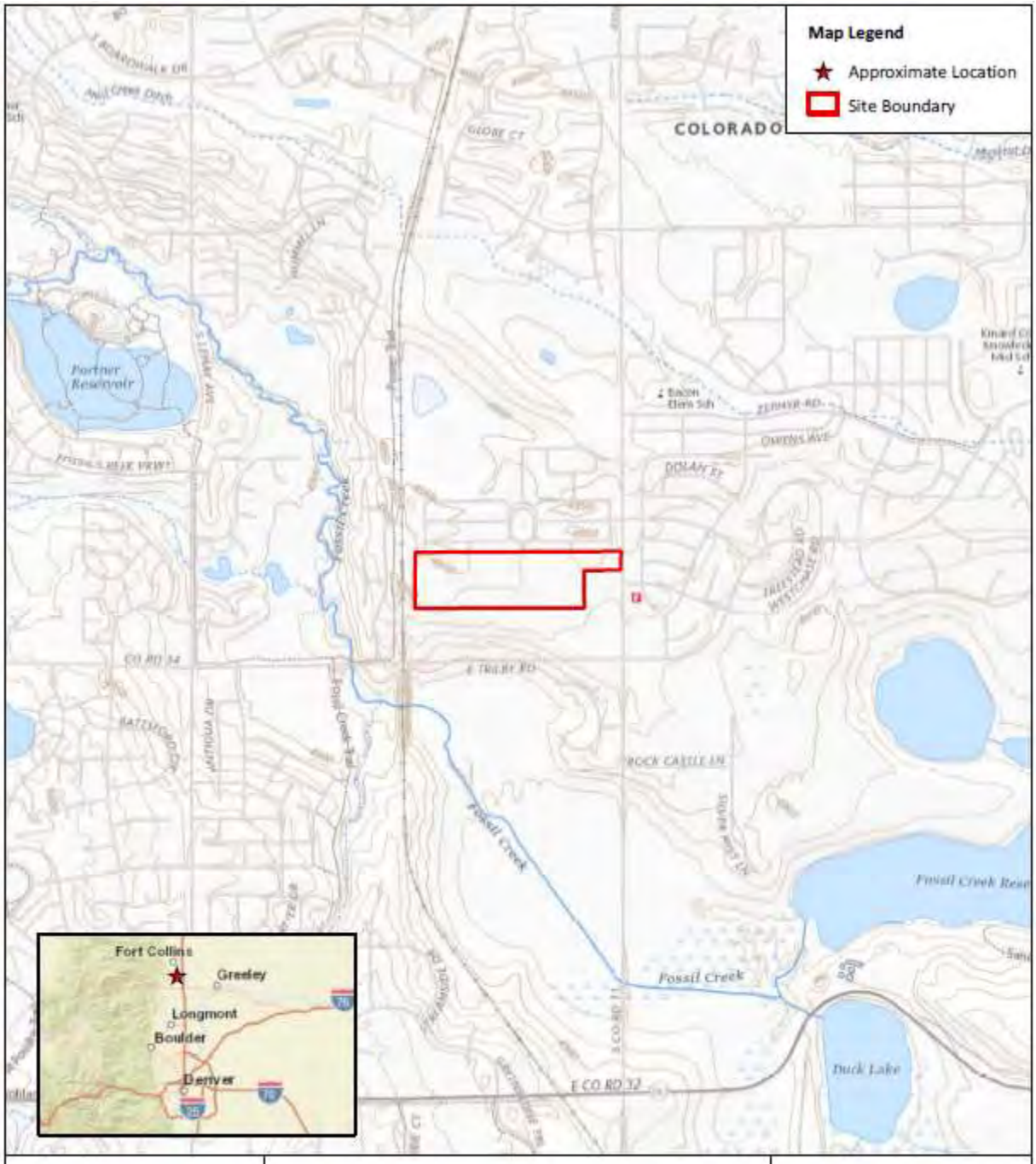

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FIGURE 2
USGS TOPOGRAPHIC MAP

ECOLOGICAL CHARACTERIZATION STUDY
CITY OF FORT COLLINS
LARIMER COUNTY, COLORADO

0 1,000 2,000
Feet

5.0 Wetlands and Other Waters

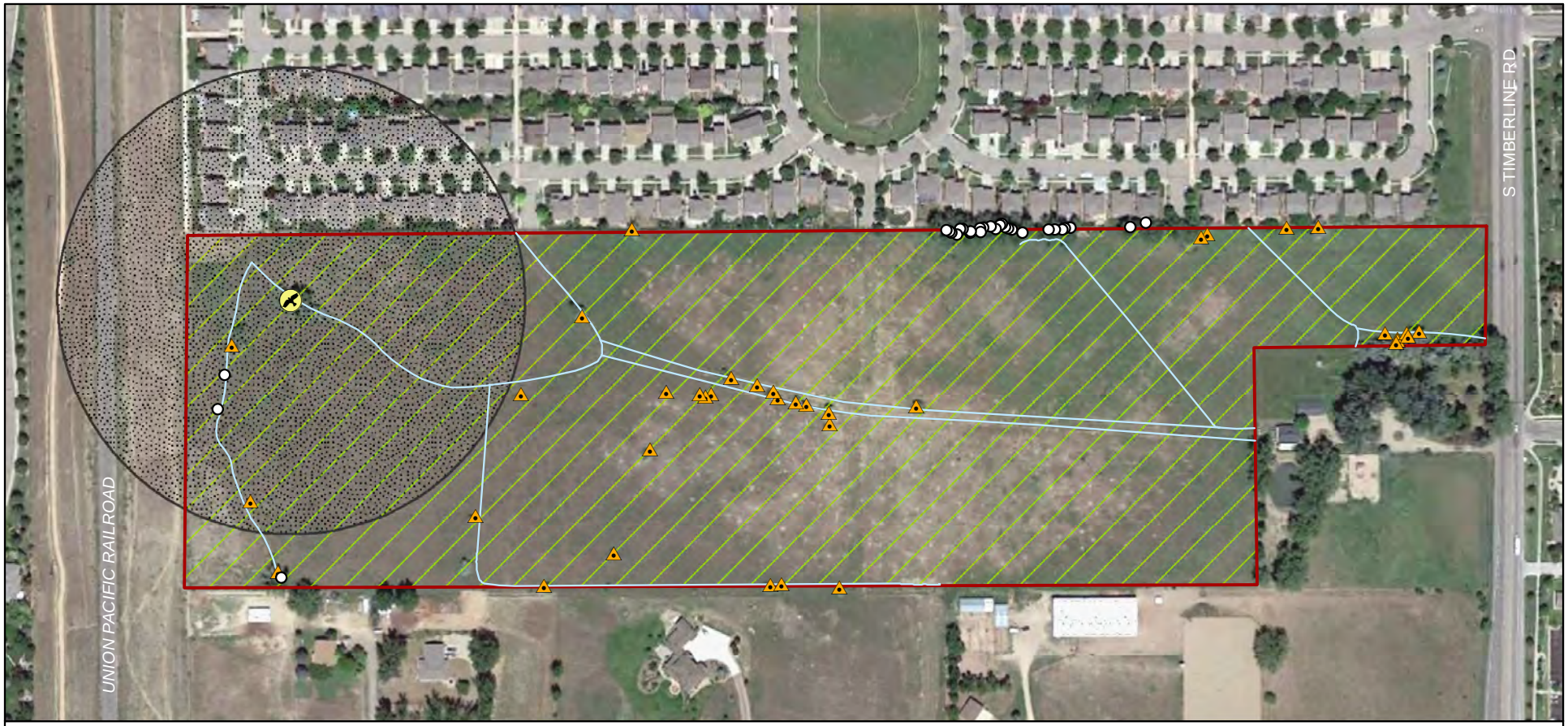
ERC conducted a preliminary aquatic resource delineation during the June 1, 2021 Site evaluation to identify potential wetlands and other water features. The delineation was conducted in general accordance with the USACE 1987 Manual and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0).

ERC observed an unnamed irrigation channel that originates in the southwest corner of the Site and flows in a northerly direction, where it exits the Site in a cement box culvert near Weeping Willow Drive. The irrigation channel was filled with sediment and was observed as having upland vegetation (smooth brome) established throughout. It appears the channel has not been used for agricultural purposes in quite some time. Three separate irrigation ditches stem from the main channel. A cement diversion structure exists at each irrigation ditch and appeared to divert flows from the main channel in past agricultural practices. The westernmost irrigation ditch flows directly south to the Site boundary and then turned east where it eventually terminates in uplands within the Site. This is a relic irrigation ditch as it was also filled with sediment and contained entirely upland vegetation. This ditch was roughly 6" below grade. No hydrology or hydrophytic vegetation was observed. The other two irrigation ditches were parallel to each other and appear to flow in an east-southeast direction from the central portion of the Site. Both appear to be relic irrigation ditches as they were also filled with sediment and upland vegetation. In some areas, the irrigation ditch was filled with sediment causing it to become level with the surrounding field. Both ditches terminate at the Site boundary near a private residence located directly east of the Site. Of this pair, the northern irrigation ditch was observed to have a side channel which connected near the private residence located to the east. This channel was followed in a northwest direction where it terminated within the Site at the northern boundary near Linden Park within uplands. This channel was observed as being fully vegetated with smooth brome and Canadian thistle and mostly filled in with sediment over the years similar to the others. These irrigation features do not represent jurisdictional or non-jurisdictional wetlands/waters.

A cement box culvert was observed in the northeastern portion of the Site. A small swale from the box culvert appeared to flow southeast towards South Timberline Road where it terminated within uplands inside the Site boundary. This swale likely experiences flow during high precipitation events such as convective thunderstorms. The swale was filled with upland vegetation and during the Site visit did not show signs of hydrology or flows. This feature does not represent jurisdictional or non-jurisdictional wetlands/waters.

The majority of the land on the Site consists of dry, upland grassland. Four relic irrigation/drainage ditches were identified within the Site. These features do not exhibit characteristics of wetlands/waters and lack wetland indicators such as hydric soils, a dominance of hydrophytic vegetation, and wetland hydrology or a defined ordinary high-water mark. While no aquatic resources were identified as part of the preliminary wetland delineation, formal delineation and USACE verification of upland conditions could be obtained.

Refer to **Figure 3**-Natural Habitat Feature Map for the mapped relic irrigation channel, ditches and stormwater drainages.



NOTES:
1. THE SURVEY AREA IS LOCATED IN LARIMER COUNTY, COLORADO, SECTION 7, TOWNSHIP 6 NORTH, RANGE 68 WEST.

2. THIS AREAS HAS BEEN FIELD DELINEATED AND MAPPED WITH HAND-HELD SUB-METER ACCURACY GLOBAL POSITIONING SYSTEM (GPS) EQUIPMENT (+/-2 FEET). ECOLOGICAL CHARACTERIZATION MAPPING WAS PREPARED BY ERC USING GEOGRAPHIC INFORMATION SYSTEMS (GIS).

3. SATELLITE IMAGERY WAS OBTAINED FROM GOOGLE EARTH, DATED 11/08/2019.

4. THE PROJECTED COORDINATE SYSTEM FOR THIS ECOLOGICAL CHARACTERIZATION STUDY IS: NAD_1983_STATEPLANE_COLORADO_ NORTH_FIPS_0502_FEET.

5. REFER TO THE ECOLOGICAL CHARACTERIZATION STUDY REPORT FOR MORE DETAILED INFORMATION.

Prepared By:

ERC

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ERC #: 200-2107

Map Legend

- Site Boundary (34.6 ac)
- Abandoned Ditch
- Red-Tailed Hawk Nest (Active)
- Red-Tailed Hawk Nest 450' Buffer

Tree Type

- Eastern Cottonwood (Colorado Designated Native Tree)
- Russian Olive (Colorado Designated Noxious/Invasive Weed)

Vegetation Community

- Western North American Ruderal Grassland & Shrubland (34.6 ac)

FIGURE 3
NATURAL HABITAT & FEATURES MAP

ECOLOGICAL CHARACTERIZATION STUDY
CITY OF FORT COLLINS

N

0 100 200
Feet

6.0 GENERAL WILDLIFE HABITAT AND USE

Wildlife utilizes the general landscape in a multitude of ways and uses a variety of habitats as areas of permanent inhabitance, seasonal inhabitance, breeding grounds, migratory routes, for foraging purposes, or as a temporary shelter. Degraded grassland is not typically considered of high ecological value to wildlife, but this habitat type has beneficial values to certain wildlife species. These areas at a minimum are considered "open space" providing limited foraging and hunting grounds, refuge and nesting in an otherwise developed and urban environment.

Historic and current land use practices (land leveling, routine mowing) have restricted the development of any significant natural vegetation communities within the Site, which limits the overall quality of potential wildlife habitat. In addition, surrounding development and roadways which encompass the Site greatly limits wildlife access to the Site. Non-native species or ruderal native species which permeate the vegetation communities which include Siberian elm, Russian olive, smooth brome, field bindweed, thistle and crested wheatgrass generally do not provide quality habitat for most wildlife.

The Site is generally restricted or isolated to wildlife access by high density residential development to the north and private residences to the south, East Timberline Road and high-density residential development to the east and the Burlington Northern Santa Fe Railroad to the west. No wildlife migration corridors are mapped by the Colorado Parks and Wildlife (CPW) on the Site or within the vicinity of the Site (CPW 2021). The Railroad right-of-way to the west (off Site) is approximately 300' and could serve as a limited wildlife movement corridor in a north-south direction, however vegetation is routinely maintained, and trail access and train use limits the quality of the corridor.

The irrigation channel that originates in the southwest corner of the site and exits near Weeping Willow Drive does not serve as a wildlife movement corridor. This channel is a relic irrigation channel (no longer functioning to convey water) with an incised channel that exhibits upland vegetation and no hydrology. In addition, the channels, ditches, and swales within the Site do not serve as a connecting corridor as they terminate within the Site boundary (fragment by surrounding development) and are entirely contained within the Site boundary. A wildlife corridor, as defined by USFWS, is "an area of native vegetation which joins two or more larger areas of similar wildlife habitat". Urban wildlife species that may use this habitat within the Site include coyote (*Canis latrans*), red fox (*Vulpes vulpes*), rabbit (*Lepus sp*.), raccoon (*Procyon lotor*), barn owl (*Tyto alba*), hawks (*Buteo sp*.) and other small to medium sized predators. It is our interpretation and assumption that the relic irrigation ditches are not considered a special feature in accordance with Section (A)(2)(n) of the Code as they are no longer active ditches and terminate on the Site, surrounded by urban development to the north, roadway to the east, private residences to the south and the railroad and public walking trail to the west.

Large mature trees are located along the northern boundary of the Site. The large deciduous trees include both native and non-native species; however, situated in an urban landscape these trees could provide potential roosting and nesting habitat for visiting and residential raptors and smaller migratory birds. These trees could provide marginal shelter, foraging habitat, nesting habitat to raptors which are accustomed to more urban environments.

Generally, there are features on the Site and the surrounding area that provide general habitat for local songbirds, raptors, reptiles and small mammals; however, habitat on the Site is highly degraded from a

wildlife perspective by historic and current land use practices, specifically from residential development and roadway fragmentation. No wildlife migration corridors are mapped by the CPW on the Site or within the vicinity of the Site (CPW 2021). Any future land use changes on the Site are likely to have minimal adverse effect to general wildlife in the local vicinity.

7.0 MIGRATORY BIRD TREATY ACT

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 730-712). The MBTA makes it illegal for anyone to take, possess, import, export, transport, sell, purchase barter, or offer for sale, purchase, or barter any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations. In Colorado, all birds except for the European starling (*Sturna vulgaris*), house sparrow (*Passer domesticus*) and rock dove (Columba livia) are protected under the MBTA. A total of 523 migratory bird species are known to occur in the Mountain-Prairie Region (USFWS Region 6, Montana, Wyoming, Utah, North Dakota, South Dakota, Nebraska, Kansas and Colorado); 320 of the 523 migratory bird species are known to breed in USFWS Region 6.

Migratory birds likely exist within the Site. The open herbaceous grassland vegetation community, irrigation ditches and stormwater drainage provide potential habitat for migratory birds. Two stick nests were observed in the mature deciduous trees in the western portion of the Site. The following migratory birds were observed directly within the Site during the field inspection:

Scientific Name	Common Name
Buteo jamaicensis	Red-tailed Hawk
Corvus brachyrhynchos	American Crow
Haemorhous mexicanus	House Finch
Melospiza melodia	Song Sparrow
Pica hunsonia	Black-billed Magpie
Sturnella neglecta	Western Meadowlark

- Based upon literature review and an onsite assessment of the Site, ERC has determined that some migratory birds likely utilize the Site. These birds are protected under the MBTA and killing or possession of these birds is prohibited. Future land use changes that may occur on Site which remove vegetation should first ensure that active nests are not disturbed. Generally, the active nesting season for most migratory birds in this region of Colorado occurs between April 1 and August 31.

- An active red-tailed hawk nest was observed in the northwest corner of the Site located in a large mature plain's cottonwood tree. This nest site and tree is considered a special natural feature per Section (A)(2)(d) of the Code and subject to restrictions.
  1.
- Per the Land Use Code *Standards for Protection During Construction:*
  a) No tree with an active nest shall be removed unless a permit for such removal has been obtained by the developer from the United States Fish and Wildlife Service.
  b) To the extent reasonably feasible, trees that are known to have served as nest sites shall not be removed within five (5) years of the last known nesting period. If the tree is removed, it shall be mitigated in accordance with Landscaping and Tree Protection Standards.

c) A temporary limits-of-disturbance of a 450 feet radius shall be established for the red-tailed hawk active nest site during the period from February 15 through July 15 of the first year of a multi-year development construction project.

- In addition, raptor nest Sites further protected by the CPW. The CPW has established recommended buffer zones and seasonal activity restrictions for a variety of Colorado raptors. One active red-tailed hawk nest was observed in a large cottonwood tree in the northwest portion of the Site. In accordance with CPW guidelines, no new disturbance should occur within ½ to ¼ -mile of an active raptor nest (if present), depending on the species, between February 15 and June 15 or until the young have fledged. Once a nest becomes inactive surface occupancy may resume within the buffer and vegetation occupied by the inactive nest may be removed for species other than bald and golden eagles. Eagle nests are protected by the Bald and Golden Eagle Act and destruction of these nest require a permit whether they are occupied or not. ERC recommends that prior to vegetation removal, a follow-up nest survey for potential raptor species be performed during the nesting season to ensure that active nests are not disturbed.

8.0 SPECIES PROTECTED UNDER THE ENDANGERED SPECIES ACT OF 1973

The ESA of 1973 was enacted by the United States to conserve endangered and threatened species and the ecosystems that they depend on. Under the ESA, species may be listed as either "endangered" or "threatened"; both designations are protected by law. The ESA is administered by the USFWS. The USFWS has developed project specific species lists, available online by request, identifying threatened, endangered, and proposed species, designated critical habitat, and candidate species protected under the ESA that may occur within the boundary of the proposed project and/or may be affected by the proposed project (USFWS 2021) (Consultation Code: 06E24000-2021-SLI-0924). The species list for the Site has identified the following species.

Species Not within Range of the Site

The following federally listed threatened and endangered species are identified to occur within Larimer County. However, these species are not known to exist within the specific vicinity of the Site and/or have specific habitat requirements (i.e., elevation range, water bodies) that are not common in the vicinity of the Site.

Common Name	Scientific Name	Status
Canada lynx	*Lynx Canadensis*	Federally Threatened
Greenback Cutthroat trout	*Oncorhynchus clarki stomias*	Federally Threatened
Pallid Sturgeon	*Scaphirhynchus albus*	Federally Endangered

- The Site does not contain the specific habitat characteristics necessary to support the species listed above. The species are not likely to occur within the Site therefore any future land use changes would not likely adversely affect the continued existence or available habitat of the species.

Water Depletions Species

The USFWS under the ESA has determined that water depletions in the South Platte River Basin are considered an adverse effect to the listed species identified below. The Site is considered to be located within the South Platte River Basin.

Common Name	Scientific Name	Status
Piping plover	*Charadrius melodus*	Federally Threatened
Western prairie fringed orchid	*Platanthera praeclara*	Federally Threatened
Whooping crane	*Grus Americana*	Federally Endangered

Any water related project conducted in the Platte River Basin that has a federal nexus; such as federal funding or a federal permits (i.e., Clean Water Act (CWA) Section 404 Permit), is subject to ESA Section 7 Consultation with the USFWS. The consultation is a mandate for water depletion projects that may adversely affect threatened and endangered species that rely on the South Platte River.

- The Site does not contain the specific habitat characteristics necessary to support the species listed above. The species do not occur within the Site therefore any future land use change will not directly adversely affect the continued existence or available habitat of the species.
- Any future project which may be water related or determined to be a water depletion to the South Platte River Basin may potentially be considered an adverse effect to these species. Generally non-water dependent projects such as residential or commercial developments (which are supplied by municipal water) are not considered water depletions and is therefore not likely to adversely affect the continued existence or available habitat of these species. The specific details of a future project must be reviewed to determine water depletion status.

Species Potentially within Range of the Site

The following federally listed threatened and endangered species are identified to occur or historically occur within Larimer County (USFWS 2021). The Site is located within the potential known range for these species to occur. Further analysis was conducted to determine if the species or habitat has the potential to exist on the Site considering Site-specific conditions and characteristics. A brief explanation is provided as to the species life cycle, habitat requirements and potential occurrence on the Site.

Common Name	Scientific Name	Status
Preble's meadow jumping mouse	*Zapus hudsonius preblei*	Federally Threatened
Ute Ladies'-tresses orchid	*Spiranthes diluvialis*	Federally Threatened
Eastern Black Rail	*Laterallus jamaicensis*	Federally Threatened

PREBLE'S MEADOW JUMPING MOUSE (ZAPUS HUDSONIUS PREBLEI)

On May 13, 1998 the US Fish and Wildlife Service issued a final rule to list the Preble's meadow jumping mouse (PMJM) as a federally threatened species under the ESA. PMJM range extends from southwestern Wyoming through eastern Colorado generally below 7,600 feet. Armstrong et al. (1997) described typical PMJM habitats as "well-developed plains riparian vegetation with relatively undisturbed grassland and a water source in close proximity." Also noted was a preference for "dense herbaceous vegetation consisting of a variety of grasses, forbs and thick shrubs" (USFWS 1999). This species is known to regularly travel into adjacent uplands to feed and hibernate. The PMJM hibernates in an underground burrow from September to May. PMJM bears two to three litters per year, averaging five young per litter, in a grass-lined nest. In general, Mouse surveys are recommended for areas with suitable habitat in Larimer County below 7,600 feet and within 350 feet of vegetated irrigation canals, ditches, and wetlands. Areas that are highly disturbed or modified (including landscaped lots and paved areas) or wetland areas dominated by cattails are excluded from this recommendation.

No populations of PMJM are known to exist in the Fossil Cree or Mail Creek locations located directly 1.7 miles northwest of the Site. The Site is not designated as Critical Mouse Habitat by the USFWS (USFWS 2020). The nearest known PMJM populations are on the Poudre River, north of Watson Lake.

- No PMJM individuals were observed on or surrounding the Site. Potentially suitable wetland herbaceous/willow PMJM habitat does not exist within the Site as it is dominated entirely of upland vegetation. The irrigation and stormwater features are void of any wetland species and hydrology is not present within the Site. Any future land use changes on the Site are not likely to adversely affect the continued existence or potential habitat of this species.

UTE LADIES'-TRESSES ORCHID (SPIRANTHES DILUVIALIS)

The Ute ladies-tresses orchid is listed as federally threatened under the ESA. The orchid occurs in seasonally moist soils and wet meadows near springs, lakes, or perennial streams and their associated floodplains below 6,500 feet in elevation in certain areas of Utah, Colorado, Idaho, Wyoming, and Nevada. Typical sites include early successional riparian habitats such as point bars, sand bars, and low lying gravelly, sandy, or cobbly edges. They require "permanent subirrigation" conditions where the water table is close to the surface, but they are not tolerant of permanent standing water. Typical habitat is open and sparsely vegetated, populations decline if trees and shrubs invade the habitat. They do not compete well with aggressive species such as reed canary grass or monocultures of cattails.

- The irrigation and stormwater features on the Site are characterized by upland vegetation and ruderal grasses. These habitat characteristics are not conducive to the orchid. No orchids or suitable habitat were identified on the Site. Any future land use changes on the Site are not likely to adversely affect the continued existence or potential habitat of this species.

EASTERN BLACK RAIL (LATERALLUS JAMAICENSIS)

The eastern black rail is listed as federally threatened under the ESA. The eastern black rail is typically found in areas of dense salt and freshwater marshes in portions of the U.S., Central American, and South America (USFWS 2020). Adults are gray-black birds speckled with white on the upperparts, they have a black crown and chestnut on the back of the neck. The eye is ruby red and the bill is black. The legs are dusky pink. In Colorado, the eastern black rail has been documented near John Martin Reservoir State Park, Horse Creek Reservoir, Cheraw Lake, Holbrook Reservoir, Dye Reservoir and Lake Meredith Reservoir.

Although there have been documented observations within Larimer County (ebird 2021), the Site is located within upland herbaceous land lacking wetlands and is not typical habitat conducive to the black rail. Areas adjacent to the survey area contain private residences, a subdivision, and travel corridors. Irrigation and stormwater channels within the survey area are void of wetland species and appear to not have been used in recent years and are comprised of upland vegetation. No black rails or suitable habitat were identified within the project area.

Due to the information provided above, the black rail is not likely to be present within the project area. Therefore, disturbance to habitat within and adjacent to the survey area should not adversely affect the black rail.

9.0 STATE THREATENED AND ENDANGERED SPECIES

Species identified as state threatened or endangered are protected by the CPW under Colorado Statute Title 33. State regulations prohibit "*any person to take, possess, transport, export, process, sell or offer for sale, or ship and for any common or contract carrier to knowingly transport or receive for shipment*" any species or subspecies listed as state endangered or threatened. The CPW also has identified State Species of Special Concern, which are species or subspecies of native wildlife that are currently vulnerable in their Colorado range and have the potential to become threatened or endangered (CPW 2021). Species of Special Concern are not protected under State regulations but the 'take' of individuals and disturbance of their habitat is strongly discouraged.

The following state listed species were screened as potential inhabitants of the Site based on general habitat requirements and CPW tables, *Colorado Listing of Endangered, Threatened, and Wildlife Species of Special Concern* (CPW 2021). ERC evaluated the species listed by CPW as "threatened" or "endangered" that could potentially exist on the Site. State listed species which also occur on the USFWS federal list, as screened above, were not duplicated below.

Species Not within Range of the Site

The following listed threatened and endangered species are identified to occur within the State (CPW 2021). However, these species are not known to exist within the specific vicinity of the Site and/or have specific habitat requirements (i.e., elevation range) that are not common in the vicinity of the Site.

Scientific Name	Common Name	Status*
Boreal toad	*Bufo boreas boreas*	SE
Arkansas darter	*Etheostoma cragini*	ST
Bonytail	*Gila elegans*	SE
Brassy minnow	*Hybognathus hankinsoni*	ST
Colorado pikeminnow	*Ptychocheilus lucius*	ST
Common shiner	*Luxilus cornutus*	ST
Gray wolf	*Canis lupus*	SE
Greenback cutthroat trout	*Oncorhynchus clarki stomias*	ST
Grizzly bear	*Ursus arctos*	SE
Humpback chub	*Gila cypha*	ST
Kit fox	*Vulpes macrotis*	SE
Lake chub	*Couesius plumbeus*	SE
Lesser prairie-chicken	*Tympanuchus pallidicinctus*	ST
Lynx	*Lynx canadensis*	SE
Northern redbelly dace	*Phoxinus eos*	SE
Plains minnow	*Hybognathus placitus*	SE
Plains sharp-tailed grouse	*Tympanuchus phasianellus jamesii*	SE
Razorback sucker	*Xyrauchen texanus*	SE
Rio grande sucker	*Catostomus plebeius*	SE
Southern redbelly dace	*Phoxinus erythrogaster*	SE
Southwestern willow flycatcher	*Empidonax traillii extimus*	SE
Suckermouth minnow	*Phenacobius mirabilis*	SE
Wolverine	*Gulo gulo*	SE

*Status key:
ST – State listed as threatened
SE – State listed as endangered

- The Site does not contain the specific habitat characteristics necessary to support the species listed above. The species are not likely to occur within the Site and therefore, any future land use changes would not likely adversely affect the continued existence or available habitat of the species.

Species Potentially within Range of the Site

The following state listed threatened and endangered species are identified to occur or historically occur within Larimer County. The Site is located within the potential known range for these species. Further analysis was conducted to determine if the species or habitat has the potential to exist on the Site considering Site-specific conditions and characteristics. A brief explanation is provided as to the species life cycle, habitat requirements and potential occurrence on the Site.

Common Name	Scientific Name	Status*
Burrowing owl	*Athene cunicularia*	ST
Plains sharp-tailed grouse	*Tympanuchus phasianellus jamesii*	SE

*Status key:
ST – State listed as threatened
SE – State listed as endangered

BURROWING OWL (ATHENE CUNICULARIA)

The burrowing owl is listed as a state threatened species in Colorado. The owl is small (length of 24 centimeters), long-legged, boldly spotted, and barred with brown and white. The owl is a breeding species across the plains of eastern Colorado however rarely winters in the state. Nesting habitat is abandoned burrows, especially prairie dog colonies, located in grasslands, mountain parks, well-drained steppes, deserts, prairies and agricultural lands from late March through October. The owl can usually be observed on low perches such as fence posts, dirt mounds or the ground. Clutch size of this owl averages six to seven and incubation lasts up to 30 days. The owlets usually run and forage at 4 weeks and fly at 6 weeks. Primary threats to existence of this species are habitat loss due to intensive agriculture, habitat degradation and fragmentation due to control of burrowing mammals and predation by cats and dogs.

- The central portion of the Site contained the remnants of prairie dog colony. However, during the Site evaluation, it appeared that each burrow had a paper plate buried within the opening and topped with fill material suggesting that the colony was poisoned in the recent past. No prairie dogs or owls were observed on the Site. The drainage corridors and ruderal/weedy grassland communities do not exhibit typical habitat characteristics of the owl. Any future land use changes on the Site are not likely to adversely affect the continued existence or potential habitat of this species.

PLAINS SHARP-TAILED GROUSE (TYMPANUCHUS PHASIANELLUS JAMESII)

The sharp-tailed grouse is listed as a state endangered species in Colorado. The grouse is brown with white horizontal barring and a short, pointed tail. Known populations exist only in Douglas County, Colorado. Typical habitat includes rolling hills with scrub oak thickets and grassland areas. Breeding habitat includes medium to tall grasslands.

- The ruderal grassland vegetation community within the Site does not exhibit the typical habitat characteristics conducive to this bird species. Neither individuals nor potential habitat for the grouse were observed on or immediately surrounding the Site. Any future land use changes within the Site should not adversely affect the continued existence or potential habitat of this species.

10.0 Ecological Characterization Study Checklist

The following provides a summary of information required by Fort Collins Land Use Code under Section 3.4.1 (D) (1) items (a) through (k).

Item	Description - Fort Collins Land Use Code	Site-Specific Evaluation
a	Wildlife use;	**Refer to Section 6.0** Limited wildlife use, fragmented and isolated by surrounding high density development, roadways and general low-quality habitat.
b	Wetlands and other waters	**Refer to Section 5.0, Figure 3.** No jurisdictional or non-jurisdictional wetlands and other water features exist on the site. Four relic irrigation/drainage ditches evaluated do not exhibit wetland characteristics or ordinary highwater marks. Formal aquatic resource delineation and USACE verification would provide confirmation of upland condition.
c	Prominent views from or across the Site;	Residential areas to the north, south and east, Burlington Northern Santa Fe Railroad, a public walking trail and residential areas to the west. No unobstructed views of natural habitats or features.
d	Significant native trees and other native site vegetation;	**Refer to Section 4.0, Figure 3** The Site has several significant native trees (large mature eastern cottonwood trees) situated along the northern boundary adjacent to Linden Park. Native trees should be preserved to the extent reasonably feasible per the City's Land Use Code. No other natural native vegetation communities or habitats per (1) of the code were identified.
e	Significant non-native trees and vegetation;	**Refer to Section 4.0, Figure 3** Non-native species or ruderal native species permeate the vegetation communities across the entire Site. Several non-native Russian olive trees exist along the northern boundary near Linden Park and within the interior of the Site. While these trees may be considered significant (>6" dbh), Russian olives are considered a noxious weed species in the state of Colorado and should be removed.
f	The top of bank, shoreline and high water mark of any perennial stream or body of water on the Site;	**Refer to Section 5.0, Figure 3.** **Figure 3** depicts the irrigation and stormwater features located throughout the Site. These features are situated entirely within uplands. No perennial stream or body of water exist, therefore no top of bank, shoreline and high-water mark has been identified.
g	Areas inhabited by or frequently utilized by Sensitive and Specially Valued Species;	**Refer to Sections 7.0, 8.0 and 9.0** No sensitive or specially valued Species as defined per the Code were identified on the Site. Specifically: No wildlife migration corridors are mapped by the CPW on the Site or within the vicinity of the Site (CPW 2021).

		No federally listed threatened and endangered species and/or habitat protected under the ESA were identified on the Site. No state listed threatened and endangered species and/or habitat protected by the CPW under Colorado Statute Title 33 were identified on the Site. The vegetation communities within the Site were investigated as potential habitat for state listed species. Potential threatened and endangered species habitat was found to lack one or more habitat components critical for the state listed species likely to occur in the area.
h	Special habitat features;	**Refer to Section 4.0, Section 5.0, Section 6.0 and Figure 3.** Per Section (A)(2)(d) of the Code a special feature was identified in the northwest corner of the Site. A large, mature eastern cottonwood tree with raptor habitat features was identified. No CPW mapped buffer zones are located within the Site (CPW 2021). Other areas were not considered significant remanent native plant communities. The limited native shrub specimens in the western portion of the Site have an understory comprised mostly of non-native species such as smooth brome and crested wheatgrass (90%). Remnants of a previous existing prairie dog colony are located in the central portion of the Site. Upon further investigation, each burrow had a paper plate and fill material placed at the surface suggesting that the colony was poisoned recently. No burrows, active prairie dogs or burrowing owls were observed during the Site visit.
i	Wildlife movement corridors;	**Refer to Section 6.0** No wildlife migration corridors are mapped by the CPW on the Site or within the vicinity of the Site (CPW 2021). The relic ditches within the Site are not considered as a special feature as they are not active and fragmented by surrounding development. n
j	General ecological functions provided by the Site and its features;	**Refer to Section 6.0** Due to the ruderal grassland and shrubland, historical agricultural use and fragmented condition, the Site provides limited foraging and hunting grounds for local wildlife use. The disturbed nature of the Site and the presence of non-native plant species diminishes the general ecological function of the Site. The mature cottonwood trees situated along the northern boundary and in the northwest corner do provide limited areas for nesting and foraging. Specifically, the large cottonwood provides an active nest site in the northwest corner of the site.
k	Any issues regarding the timing of development-	**Refer to Section 7.0**

	related activities stemming from the ecological character of the area;	An active red-tail hawk nest was observed in the northwest portion of the Site in a large cottonwood tree, considered a natural habitat feature. Restrictions on construction timing should be employed as not to disturb nesting activity per Section (N)(4) of the Code.
I	Any measures needed to mitigate the projected adverse impacts of the development project on natural habitats and features.	**Refer to Section 7.0** The raptor nest site does require mitigation measures from both CPW and the Code. Raptor nest sites are protected by the CPW. The CPW has established recommended buffer zones and seasonal activity restrictions for red-tail hawk. Per CPW guidelines, no new disturbance should occur within a ⅓ mile between February 15 and June 15 or until young have fledged. Per (N)(5) of the Land Use Code, measurements should be implemented during the construction phase of the project to ensure the protection of the red-tailed hawk nest site. Including; a) No tree with an active nest shall be removed unless a permit for such removal has been obtained by the developer from the USFWS b) To the extent reasonably feasible, trees that are known to have served as a nest site shall not be removed within five (5) years of the last known nesting period. If the tree is removed, it shall be mitigated in accordance with Section 3.2.1, Landscaping and Tree Protection Standards c) A temporary limit-of-disturbance of a 450-foot radius shall be established for the active nest during the period from February 15 through July 15 for the first year of a multi-year development construction project.

11.0 RECOMMENDATIONS

ERC has prepared this ECS Report for the Timber Lark Site located in the City of Fort Collins, Larimer County, Colorado. Per the requirements of Article 3, Section 3.4.1 of the City of Fort Collins Land Use Code, this Report was prepared to identify potential natural habitat or features that may occur on Site and to establish buffer zones surrounding natural habitats and features to protect the ecological character of the natural habitat or natural feature from the impacts of development. The Overall Site Plan (11-24-20) reviewed as part of this ECS is provided in Appendix A. The Site is scheduled for residential development with relatively high density, single and multi-family dwellings, numerous roadways, utilities and small landscaping features/amenities. This development will significantly alter the current condition and character of the Site.

The majority of the land on the Site consists of upland grassland. Four relic irrigation/drainage ditches were identified within the Site. These features do not exhibit characteristics of wetlands/waters and lack wetland indicators such as hydric soils, a dominance of hydrophytic vegetation, and wetland hydrology or a defined ordinary high-water mark. While no aquatic resources were identified as part of the preliminary wetland delineation, a formal delineation and USACE verification of upland conditions could be obtained.

The mature cottonwood tree and active raptor nest is a special feature and should be preserved to the greatest extent feasible. The Plan has been modified to preserve this tree and nest site with a limited protective buffer.

Construction activity should be restricted per CPW and Code for protection of the nest site. The CPW has established recommended buffer zones and seasonal activity restrictions for a variety of Colorado raptors (CPW 2008). In accordance with CPW guidelines, no new disturbance should occur within ½ to ¼ -mile of an active raptor nest (if present), depending on the species, between February 15 and June 15 or until the young have fledged. Once a nest becomes inactive surface occupancy may resume within the buffer and vegetation occupied by the inactive nest may be removed for species other than bald and golden eagles. Eagle nests are protected by the Bald and Golden Eagle Act and destruction of these nest require a permit whether they are occupied or not. ERC recommends that prior to vegetation removal, a follow-up nest survey for potential raptor species be performed during the nesting season to ensure that active nests are not disturbed.

Per the City's Land Use Code *Standards for Protection During Construction (N)(5)(a:c)*:

- No tree with an active nest shall be removed unless a permit for such removal has been obtained by the developer from the United States Fish and Wildlife Service.
- To the extent reasonably feasible, trees that are known to have served as nest sites shall not be removed within five (5) years of the last known nesting period. If the tree is removed, it shall be mitigated in accordance with Landscaping and Tree Protection Standards.
- A temporary limits-of-disturbance of a 450 feet radius shall be established for the red-tailed hawk active nest site during the period from February 15 through July 15 of the first year of a multi-year development construction project.

- No other nests were found within the site. However, seasonal and year-to-year occupation can be highly variable; therefore, ERC recommends that prior to vegetation removal, a follow-up nest survey for potential MBTA species be performed during the nesting season to ensure that active nests are not disturbed.

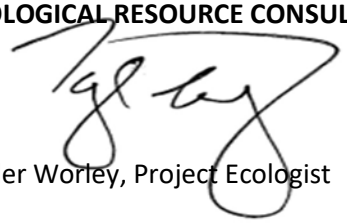
Per the City's Land Use Code (E)(1)(c), the project shall be designed to preserve existing trees and vegetation that contribute to the site's ecological shade, canopy, aesthetic, habitat and cooling value. Any native trees that will be removed during the construction of the project shall be mitigated based on the values established by the ECS or the City Environmental Planner and in accordance with Section 3.2.1, Landscaping and Tree Protection Standards. Native trees along northern boundary appear to be well preserved. Every effort should be employed to maintain these native trees. Any landscaping per the Site plan shall use native plants and grasses to the greatest extent possible and specifically in open areas and stormwater basis.

The Site contained several Russian olive trees, a designated noxious weed in the State of Colorado and a prohibited species within the City of Fort Collins. The Russian olives should be removed and replaced with native vegetation in accordance with Section 3.2.1, Landscaping and Tree Protection Standards.

No other natural communities and/or special features as defined by the Code have been identified and therefore no other buffers or protections are required.

This report has been prepared by:

ECOLOGICAL RESOURCE CONSULTANTS, INC.



Tyler Worley, Project Ecologist

Final review and approval of this report provided by David J. Blauch, V.P. Senior Ecologist

12.0 REFERENCES

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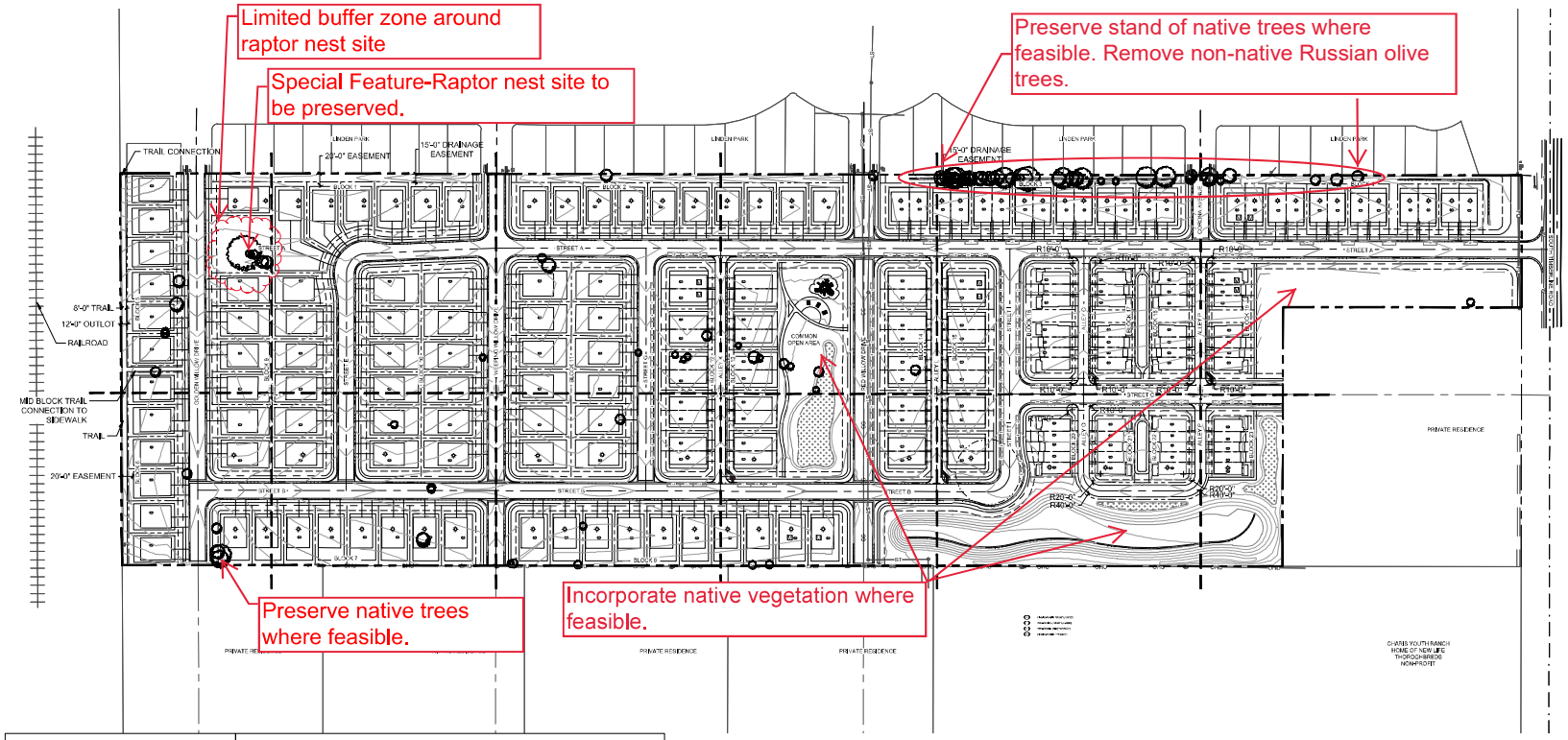
APPENDIX A

Overall Site Plans



SOUTH TIMBERLINE RESIDENTIAL

PDP SUBMITTAL

FORT COLLINS, CO

PREPARED BY:

ripleydesign
LANDSCAPE ARCHITECTURE, LAND PLANNING

LANDSCAPE ARCHITECT

RIPLEY DESIGN INC.
Katy Thompson
419 Canyon Ave, Suite 200
Fort Collins, CO 80521
p. 970.224.5828
f. 970.225.6657

PROPERTY OWNER

AADT LAND HOLDINGS, LLC
Alexander Aginar
13005 Lowell Blvd.
Broomfield, CO 80020

APPLICANT

SCHROYER RESOURCES LLC
Steve Schroyer
900 Greenfields Court
Fort Collins, CO 80524
p. 970.481.5505

NORTH

SCALE: 1"=100'-0"

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	PDP SUBMITTAL	11.24.2020

REVISIONS

No.	DESCRIPTION	DATE

OVERALL SITE PLAN

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.	R19-087
DRAWN BY:	APL
REVIEWED BY:	KT

DRAWING NUMBER:

2

Plotted By: Katy Thompson Layout: 2 Site Plan Printed On: 6/2/2021 2:05 PM File Name: 2 Site Plan.dwg

Community Development and Neighborhood Services

Planning Services

281 North College Ave.
P.O. Box 580
Fort Collins, CO 80522
970.221.6750
970.224.6134 - fax
fcgov.com/developmentreview

Timber Lark Annexation and Zoning
Neighborhood Meeting Summary (8-23-21)

Overview

City Staff:
Alyssa Stephens, Development Review Liaison
Pete Wray, Senior City Planner and Project Planner

Owner/Applicant Team:

Proposed Project Review Process

- Purpose of meeting is to share conceptual plans at an early stage in process and gather feedback from neighbors for inclusion in record.
- A formal application of the project has not been submitted to the City.
- A petition for the annexation and zoning submittal will start a formal review by staff, with each round of review comprising three weeks.
- Staff will determine when the project is ready for hearing.
- Type 2 review and hearing, with the Planning and Zoning Commission with a recommendation to City Council acting as decision maker.
- Residents who receive this meeting notice will also receive a letter for the Planning and Zoning Commission Hearing.
- The proposed project is within the Fossil Creek Reservoir Area Plan.

Applicant Presentation

- The petition for annexation includes a request to annex parcel 860740003 on 35.17 acres
- Property located at 6363 S. Timberline Road, approximately 1000 feet north of East Trilby Road and west of S. Timberline Road
- The requested zoning is Low Density Mixed-Use Neighborhoods (LMN), consistent with the City Structure Plan and Fossil Creek Reservoir Area Plan maps.
- A specific project development plan application is not part of this annexation
- Shared initial concept plan for this site

Primary Issues

- Timing of PDP submittal after annexation
- Impacts on traffic with future development project
- Street connections to existing neighborhoods and out lots

Questions/Comments and Answers

Question: When will the annexation be complete?
Answer: City Council will hold annexation hearings in January/February 2022.

Question: What is the timing of the development project?
Answer: A specific project development plan application is not part of this annexation. The Timber Lark project is anticipated to go to hearing in the 1st quarter of 2022. If approved, the anticipated start of construction is late 2022.

Question: What will be included in the future development project?
Answer: The Timber Lark conceptual plans include 221 dwelling units (70 single-family detached lots, 92 two-family lots, and 59 single-family attached townhome lots), and private park and connecting trail on west border of site.

Question: How will the development project connect to adjacent neighborhood and Trilby Road?
Answer: The project is required to provide street connections to the north to Linden Park, 4 connections to existing street stub outs, and 3 street stub outs to the south vacant property. These streets will not connect to Trilby Road until those existing properties develop.

Question: What is the timing for the Timberline Road widening?
Answer: The city is scheduled to begin the project in 2022.

Question: What is the zoning south of this site?
Answer: Most of this area to Trilby is zoned Low Density Mixed-Use Neighborhoods (LMN), except for the 4 estate lots in SW corner, zoned Urban Estate (UE).

Question: Will there be a traffic signal at Timberline Rd./Zephyr Rd. intersection?
Answer: A signal is planned for that intersection and will be coordinated with the arterial street widening project.

Question: What is the setback for lots abutting Linden Park neighborhood to the north?
Answer: The rear setback is 8 feet for new homes to rear fence property line.

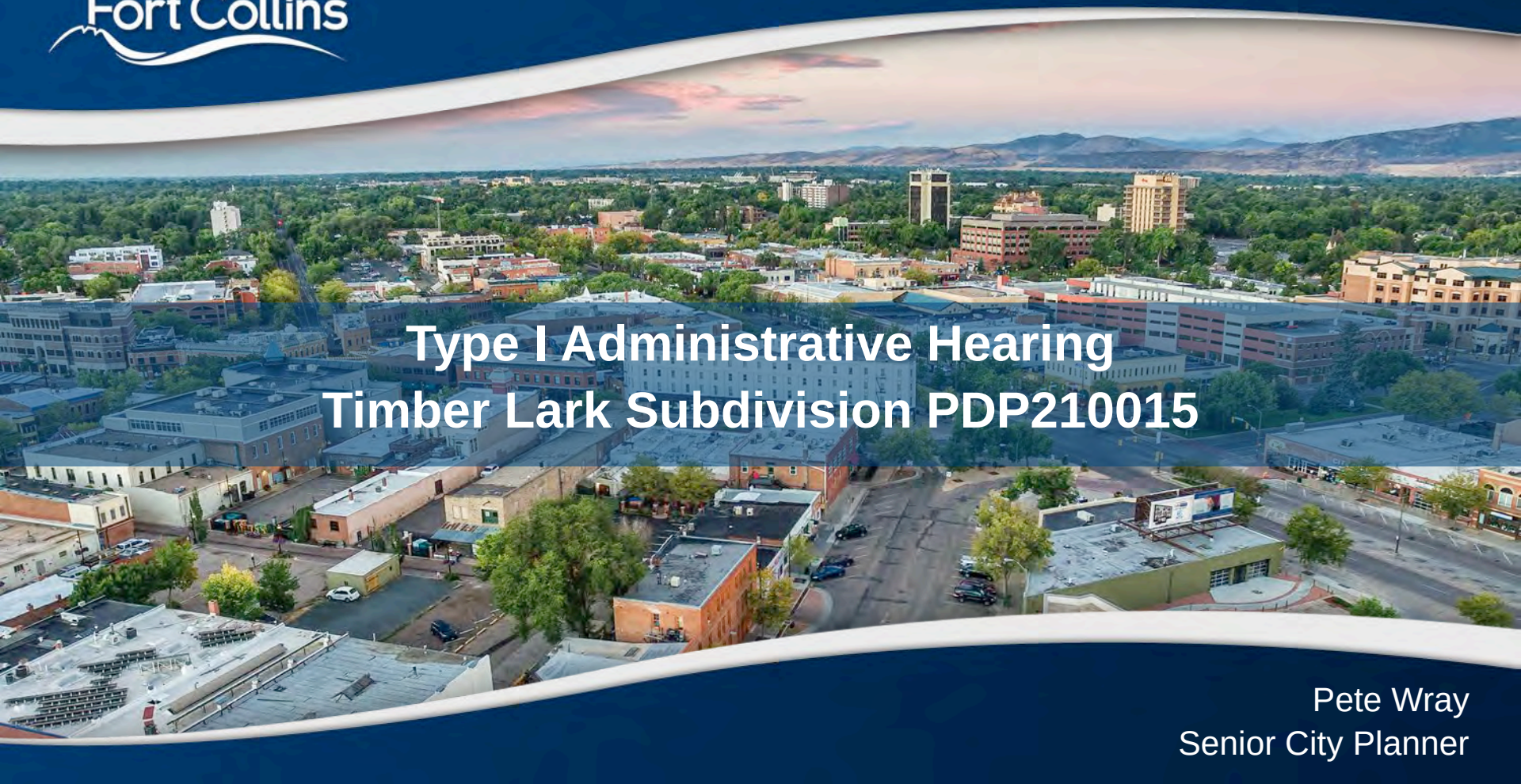
Question: Will the proposed park be shared with public?
Answer: the private park will be managed by the HOA but is available to the public. This park will include lawn area, seating, shelter etc.

Question: How will the existing prairie dogs and mature tree be handled?
Answer: As part of the ECS study recommendations, the existing prairie dogs were removed as part of mitigation option. The existing mature tree on site will be preserved.

Process/Next Steps

Staff: Thanks for attending tonight. The conversation will be summarized and available as public record. Residents that received notice of this meeting will also be notified of hearing. The next step in the development review process is for the applicant to consider a formal project submittal and review by City staff.

March 30, 2022



Type I Administrative Hearing
Timber Lark Subdivision PDP210015

Pete Wray
Senior City Planner

City Contact Information

Pete Wray
Senior City Planner

970-221-6754
pwray@fcgov.com

Leslie Spencer
Community Development

lspencer@fcgov.com

Please email your name and full address to Leslie to receive the decision report.

Hearing Authority

As required by City Council Ordinance 079, 2020, a determination has been made that it is desirable to conduct a remote hearing to provide reasonably available participation by parties–and-interests and the public, because meeting in person would not be prudent.

Providing Public Comment on Zoom

- Please sign in with your **first name** and **last name.**
- The Hearing Officer will call for public comment on each item after a short presentation from staff and/or applicants.
- Use the “Raise Hand” button at the bottom of your screen to let us know you would like to speak.
- OR, if you are listening to the meeting through a telephone, please dial *9 on your phone to raise your hand.
- We will call on you and let you know when you are able to unmute yourself.
- State your name and address when you speak.

Site Area

- Site currently vacant
- 35.17 acres
- South of Linden Park subdivision
- Narrow frontage on S Timberline Road

Site Area

Timber Lark PDP – Overall Plan

LEGEND

	TYPE	MIN. LOT SIZE	DU
	Single-Family Front-Loaded	60'x 105'	83
	Two-Family Front-Loaded	36'x 105'	26
	Two-Family Alley-Loaded	31'x 85'	40
	Single-Family Attached	20'x 80'	48
	TOTAL		**197**

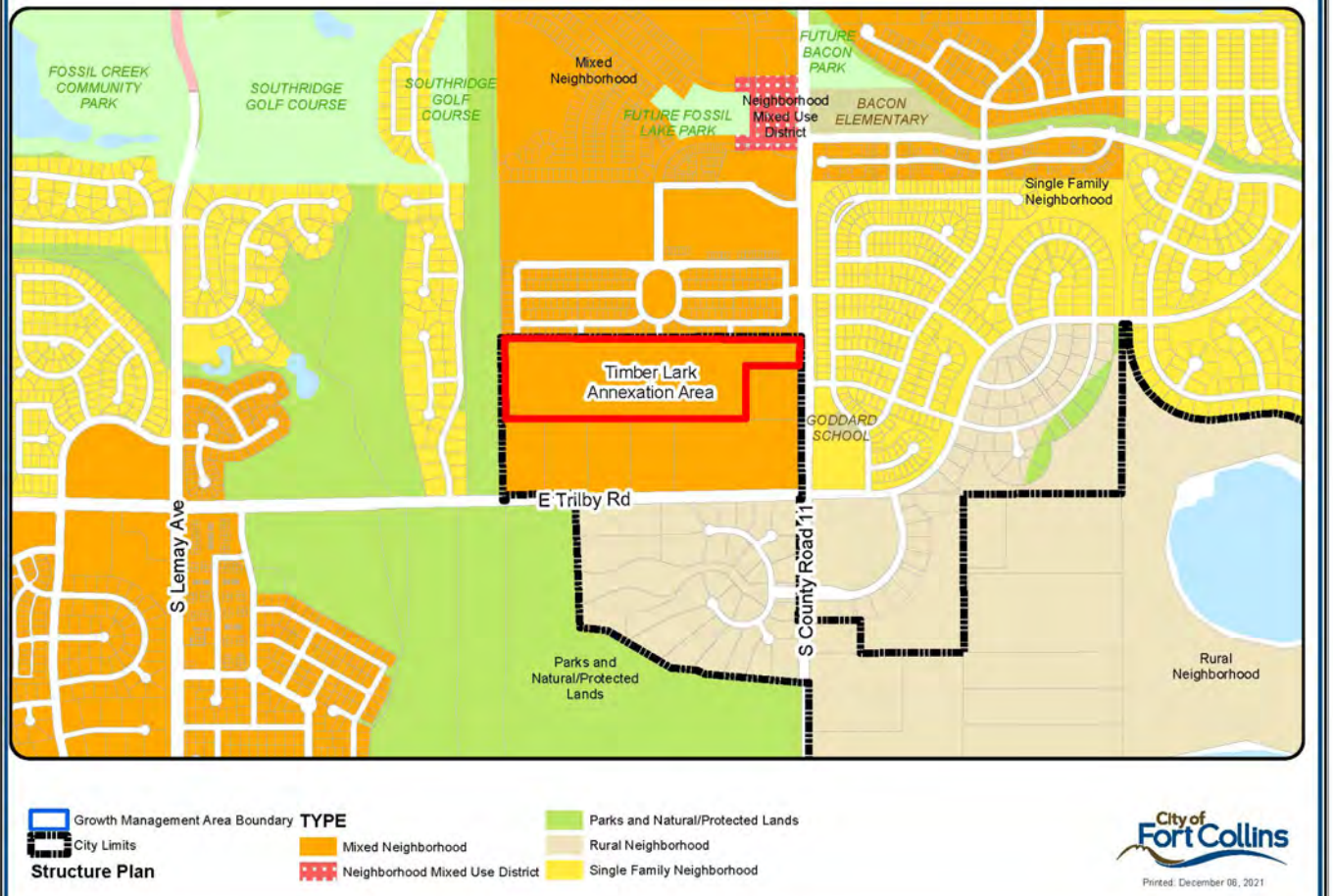
DENSITY

Property Area	= 35 ac
Max Density allowed per code	= 9 DU/ac
Proposed Density (197 DU/35 ac)	= 5.6 DU/ac

NORTH

0 100' 200' 400

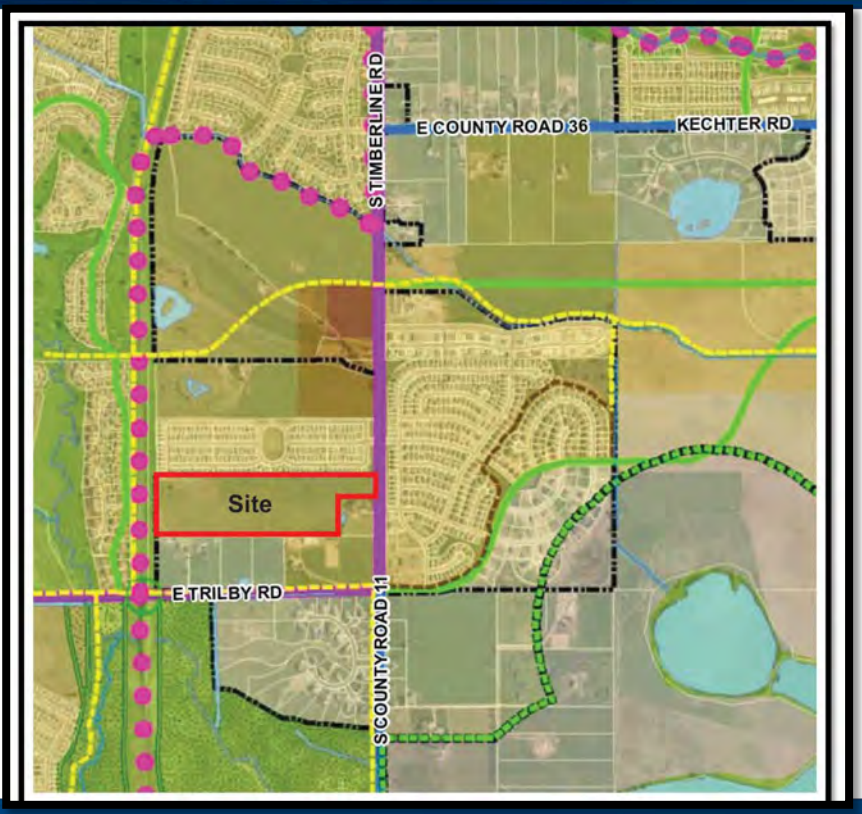
SCALE: 1"=200'



Structure Plan –

Mixed Neighborhood Land Use Designation

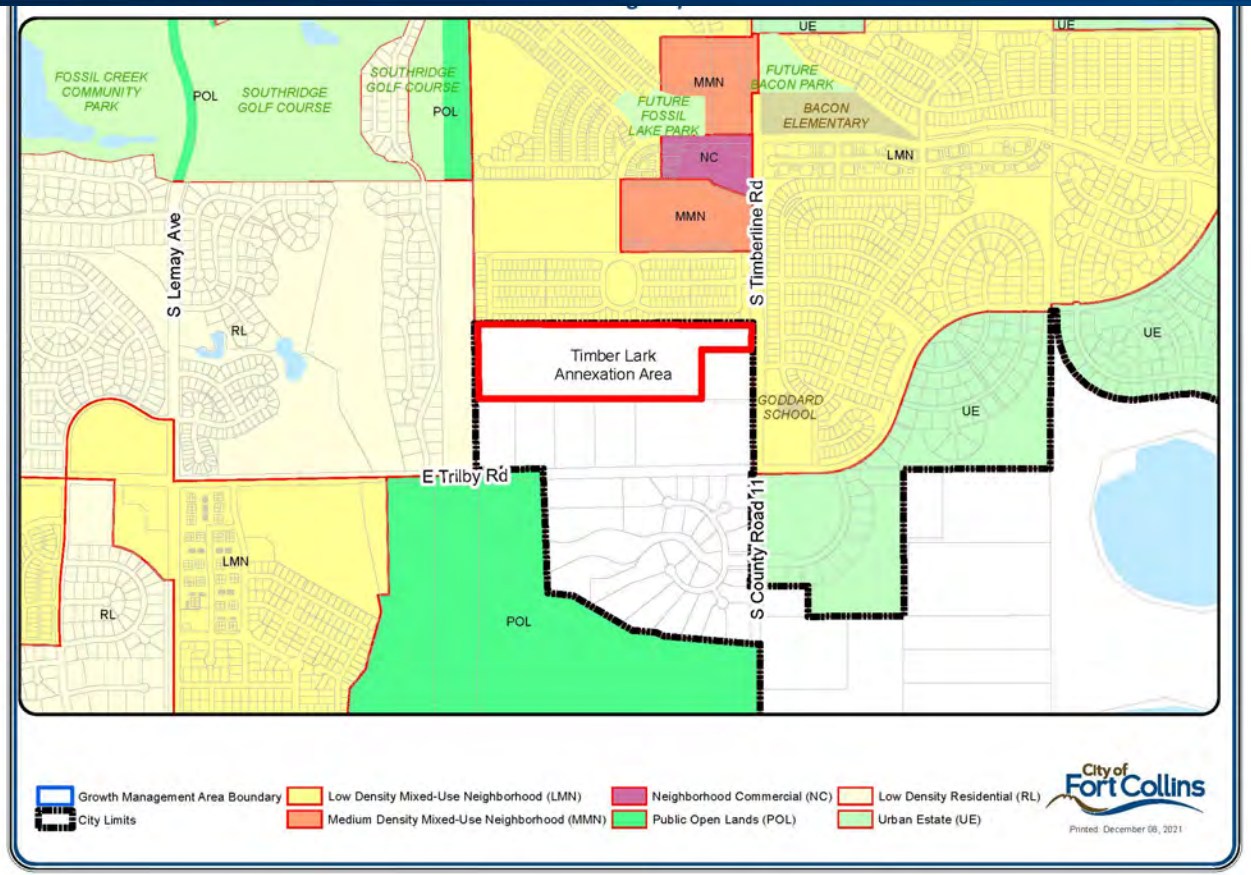
Timber Lark Annexation and Zoning



Fossil Creek Reservoir Area Plan

Low Density Mixed-Use Neighborhoods
Land Use Designation (LMN)

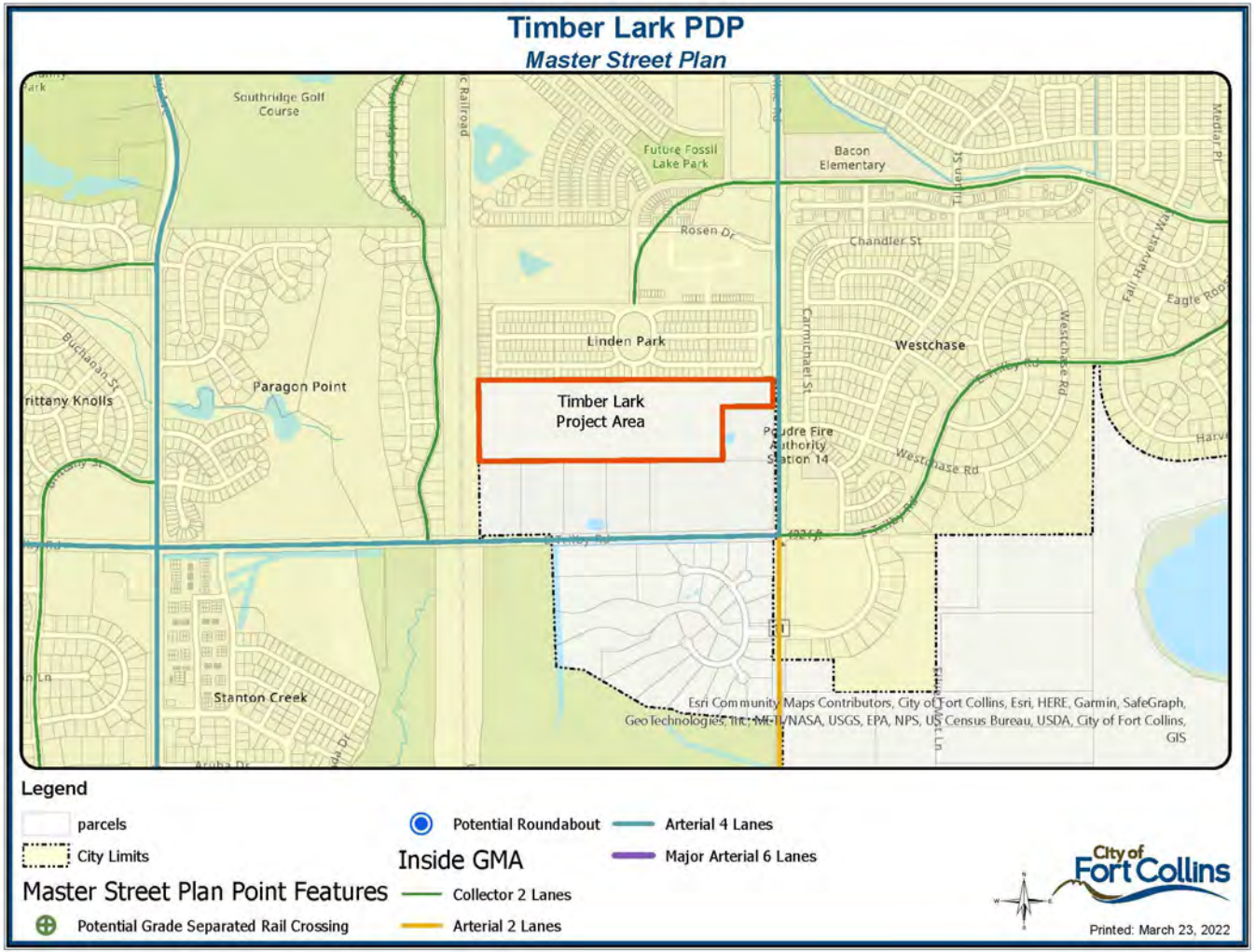
Zoning



Site Zoning:

- Annexation/Zoning (2-25-22)
- Low Density Mixed-Use Neighborhoods (LMN)

Master Street Plan



PDP – local street only (not shown on MSP)

Section 3.2.1 – Tree Protection

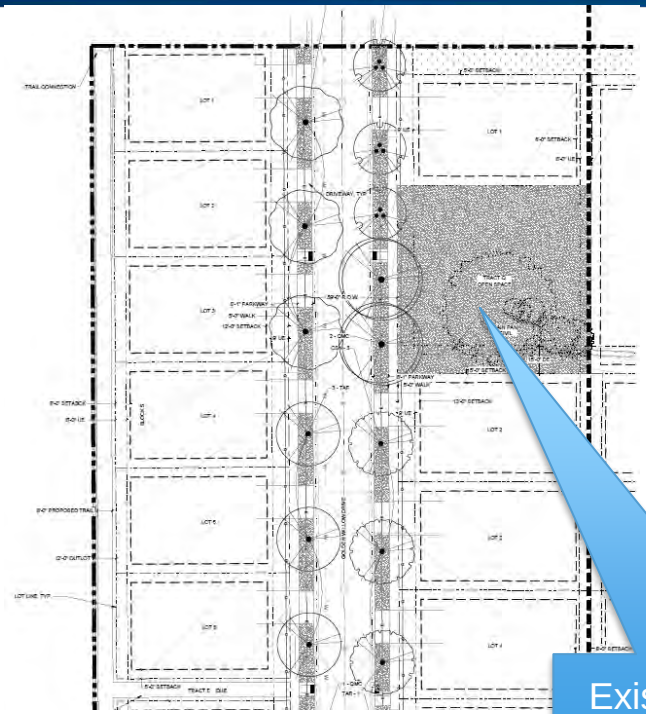
Section 3.2.1(F) – Tree Preservation and Mitigation:

Existing significant trees (six (6) inches and greater in diameter) within the LOD and within natural habitat buffer zones shall be preserved to the extent reasonably feasible. Streets, buildings and lot layouts shall be designed to minimize the disturbance to significant existing trees.

- The site includes one existing significant Cottonwood tree (#40) to be preserved.

Section 3.2.1 – Tree Protection

Existing Cottonwood Tree



Existing Cottonwood Tree

***Section 3.4.1 – Natural Habitat and Features*.**

- Existing site contains an active red-tailed hawk nest which does not require permanent buffering.
- The existing Cottonwood tree is to be preserved and protected
- The nest to be protected through site design. Additionally, a 450-foot temporary buffer is required during the nesting season (February 15-July 15) of the first year of a multi-year construction project.
- PDP provides natural habitat and feature protections and enhancements.

Alternative Compliance – Front Setbacks

Section 3.5.2(E)(2) – Setbacks Non-Arterial Streets:

- Standard requires single-family detached, two-family, and single-family attached (3 unit) buildings be setback at least 15 feet from nonarterial street right-of-way.

- Setbacks from garage doors to the nearest portion of any public sidewalk that intersects with the driveway shall be at least twenty (20) feet.

- Request to reduce minimum front building setback from 15’ to 12’, and to reduce the minimum setback between the garage door and public sidewalk from 20’ to 19’.

Alternative Compliance – Front Setbacks

Must first find that the proposed alternative plan accomplishes the purposes of this Section equally well or better than would a plan which complies with the standards of this Section.

The following criteria shall be considered into the decision:

a. Porches and Entry Features.

b. Off-Street Parking

c. Private Open Space.

d. Front Yard Fences.

Alternative Compliance – Front Setbacks

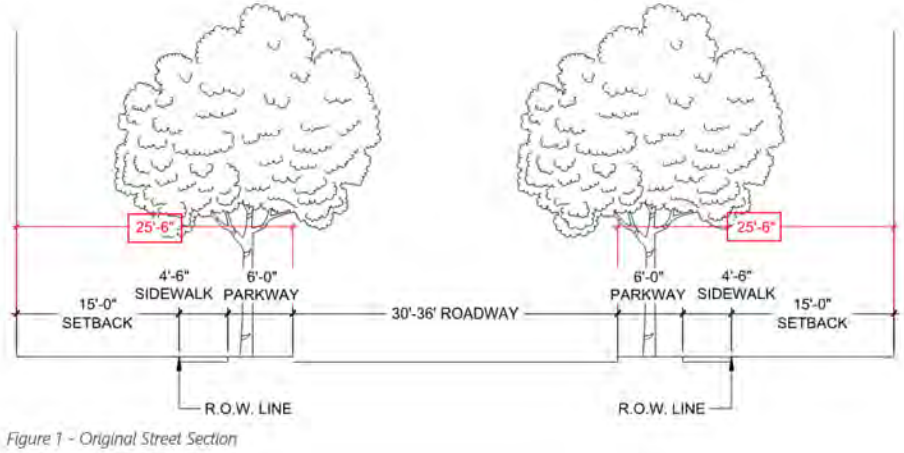


Figure 1 - Original Street Section

Original Street Cross Section

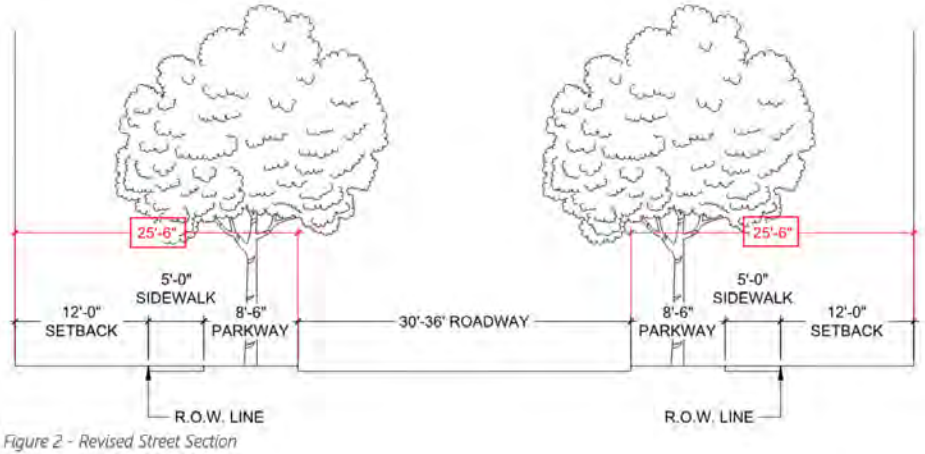


Figure 2 - Revised Street Section

Revised Street Cross Section

A. Modification Description:

1. Compliance with Section 3.2.3 (C) – *Solar Oriented Residential Lots*

At least sixty-five (65) percent of the lots less than 15,000 square feet in area in single- and two-family residential developments must conform to the definition of a "solar-oriented lot" in order to preserve the potential for solar energy usage.

- Applicant requests a Modification to reduce the number of solar oriented residential lots from 65% to 48%.

- The proposed PDP on 35.17-acres includes 149 single- and two-family lots, of which 71, or 48%, are designated as solar-oriented lots.

Land Use Code Modification Criteria:

The decision maker may grant a modification of standards only if it finds that the granting of the modification would not be detrimental to the public good, and that:

1) …plan as submitted will promote the general purpose of the standard… **equally well or better than** would a plan which complies with the standard; or

2) …would, substantially **alleviate an existing, defined and described problem** of city-wide concern or would result in a **substantial benefit to the city;** or

3) **…**would result in unusual and exceptional practical difficulties, or **exceptional or undue hardship** upon the owner of such property; or

4) …will not diverge from the standards…except in a **nominal, inconsequential way…**

Applicant's Justification for Criterion 3 – *undue hardship*:

- *In order to orient at least 65% of the lots so that they front onto an east-to-west street, the site would need to be redesigned to include a third east-to-west street .*
- *Would result in single-family lots with a maximum depth of about 86 feet, rather than the 105' lot depth currently provided.*
- *Reducing the lot depths by almost 20 feet would drastically reduce the privacy and available space for future homeowners to enjoy their backyards.*
- *Further, the granting of the modification would not be detrimental to the public good.*

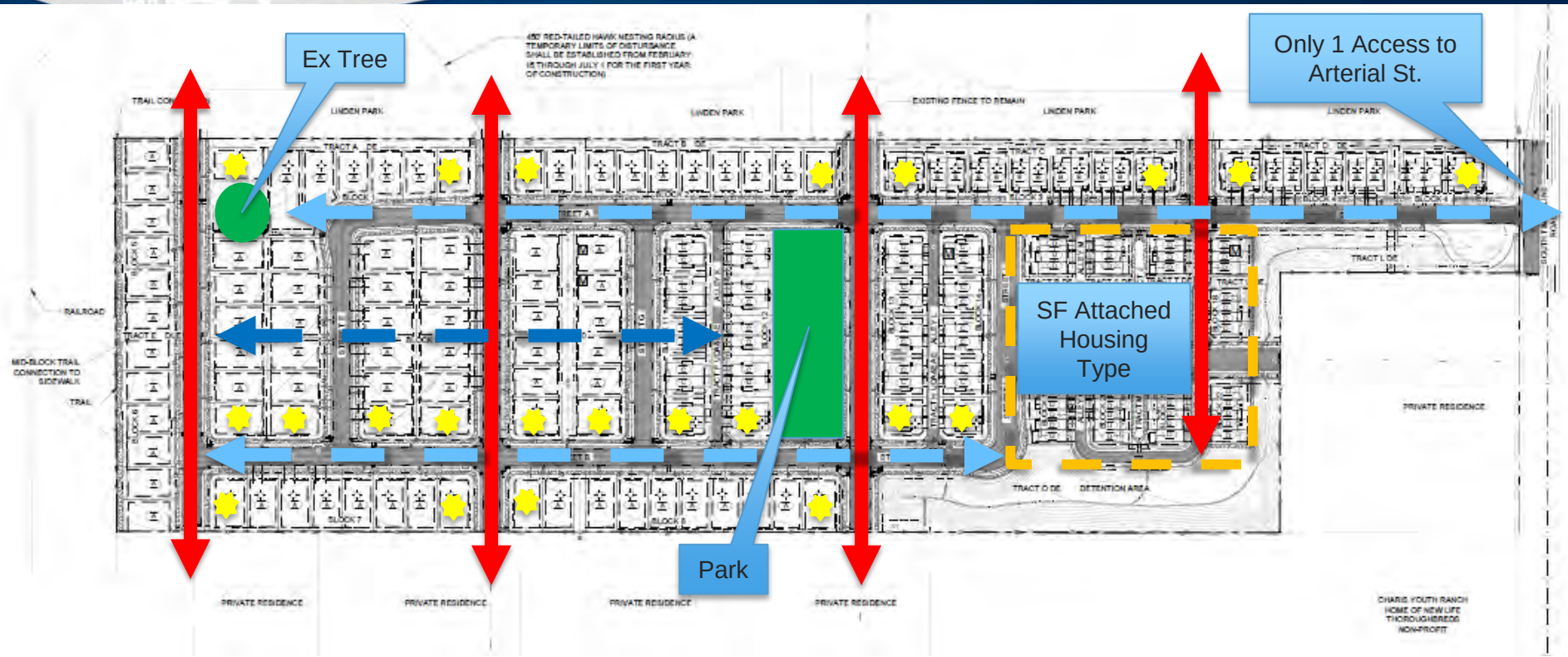
Staff Finding

1. Not detrimental to public good - PDP includes a 17% reduction of the applicable solar-oriented lots (71 lots out of 149). Of the remaining 78, all these lots include varied roof orientations that would accommodate solar energy rooftop systems.

2. 2.8.2(H)(1): "exceptional or undue hardship"

- The PDP includes a large narrow rectangular parcel, and street layout to maximize solar-oriented lots needs to be aligned in an east/west configuration.
- 4 streets are required to connect to existing stub out streets in Linden Park subdivision to the north, further bisecting the property with north/south street alignments. Many of those lots do not meet the solar orientation criteria.
- The overall length and narrowness of this parcel is unique, and difficult to fully apply this standard.

Site Street Layout



A. Modification Description:

2. Compliance with Section 4.5 (D) (2) (c) – *Mix of Housing*

The applicant requests a Modification to add a fourth housing type (two-family – rear loaded garage) to list of required housing types.

1. Single-Family Detached (front-loaded garages)
2. Single-Family Attached (rear-loaded garages)
3. Two-Family (front-loaded garages)
4. Two-Family (rear-loaded garages)

L-M-M Zoning

Section 4.5(D)(2) – Mix of Housing:

Projects 30 acres or larger, four housing types are required.

HOUSING TYPE BREAKDOWN		
UNIT TYPE:	DWELLING UNITS	% (DU)
SINGLE-FAMILY DETACHED (FRONT LOADED)	83	42
TWO-FAMILY (FRONT LOADED)	26	13
TWO-FAMILY (ALLEY LOADED)	40	20
SINGLE-FAMILY ATTACHED	48	24
3 PLEX (4 BUILDINGS)		
4 PLEX (4 BUILDINGS)		
5 PLEX (4 BUILDINGS)		
TOTAL	**197**	**100.00**

Applicant's Justification for Criterion 1 :

- *The Land Use Code provides a distinction between front-loaded and rear-loaded single-family detached housing types; however, there is no provision which distinguishes between front-loaded and rear-loaded two-family housing types.*

- *The two-family housing types proposed will create a dynamic streetscape by alternating garage door placements between the front and rear of the home, creating the same effect as having front and rear loaded single-family detached homes.*

- *Further, the granting of the modification would not be detrimental to the public good.*

Staff Finding

1. Not detrimental to public good: fourth housing type, should contribute to the vitality and quality of life in the area by supporting the overall mix of housing choices

2. 2.8.2(H)(1): "equally well or better than"

   - Four housing types comply with standard
   - The two-family housing types proposed will create a dynamic streetscape, creating the same effect as having front and rear loaded single-family detached homes.
   - The difference between a front-loaded and rear-loaded home product is recognizable and provides both visual and functional variety that contributes to the L-M-N District's purpose

Compliance with Section 2.8.2 (H) - Modification of Standards

Duplex Product
Timber Lark - 30' Series
Fort Collins, CO

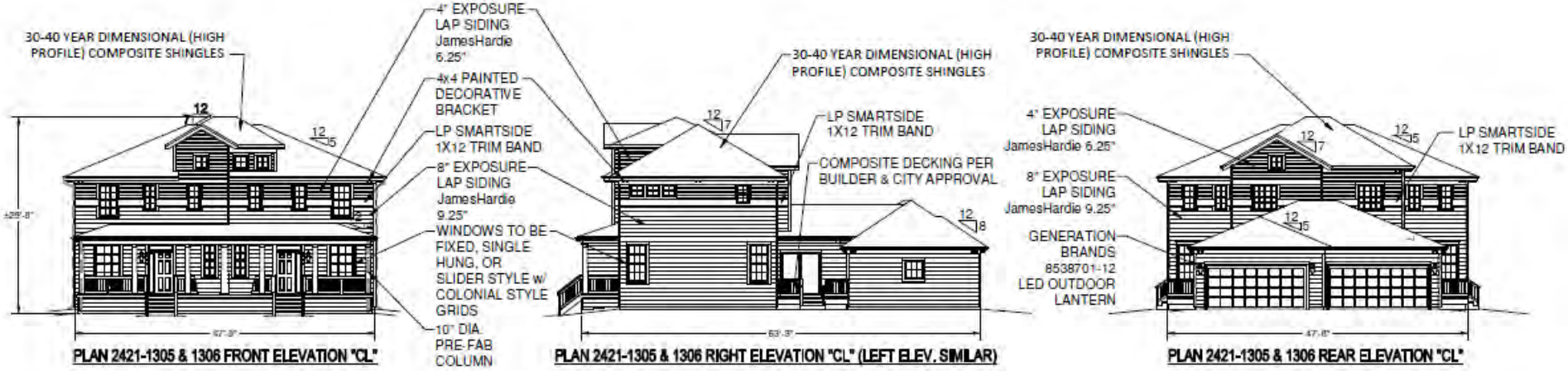
Elev. A - Farmhouse

Elev. B - Craftsman

Elev. C - High Country

Permitted Housing Type:
Two-Family (front-load)

Compliance with Section 2.8.2 (H) - Modification of Standards



New Housing Type:
Two-Family (rear-load)

RECOMMENDATION:

Staff recommends approval of the Timber Lark #PDP210015, with Two Modifications, and Alternative Compliance.

Site Context

Section 3.2.2 (K)(1)(a) - Parking

PARKING REQUIREMENTS				
UNIT TYPE:	REQUIRED PARKING PER UNIT	NUMBER OF UNITS	TOTAL SPACES REQUIRED	TOTAL SPACES PROVIDED
SINGLE-FAMILY DETACHED (FRONT LOADED)	1	83	83	166
TWO-FAMILY (FRONT LOADED)	2	26	52	52
ADDITIONAL ON-STREET PARKING				12
TWO-FAMILY (ALLEY LOADED)				
2-BEDROOM UNIT	1.75	13	23	26
3-BEDROOM UNIT	2	13	26	26
4-BEDROOM UNIT	3	14	42	28
ADDITIONAL ON-STREET PARKING				61
SINGLE-FAMILY ATTACHED				
2-BEDROOM UNIT	1.75	8	14	8
3-BEDROOM UNIT	2	40	80	80
ADDITIONAL ON-STREET PARKING				51
TOTAL PARKING SPACES:			**226**	**510**

1. Single-family Detached Dwellings Will Have A 3-car Garage Option Which Is Not Reflected In The Parking Calculation.

2. Two-family (Front Loaded) Dwellings Will Have 3 Bedrooms.

3. Single-family Attached And Two-family Alley-loaded Parking Requirements Will Be Partially Met Through The On-street Parking Spaces Provided Along Adjacent Public Streets (Per Article 3.2.2.(K)(b)).